

JOURNAL 1983

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JAMES W. BEE

1983

830120-1

Lawrence, Kansas

Jan. 20, 1983

Informant made the following statement: In snow storms, snow geese become confused. They frequently fly low and sometimes fly into fences. ^{The predators of} Snow geese when migrating S are tough and are not tasty, but when flying or migrating N are tender and good to eat.

Jan 4, 1983 (see following page 830305-2)

Feb 1, 1983

Mike Murphy who has an upholstery shop across from the Santa Fe railroad station, observes 1-5 bald eagles, both adults and immatures feeding below the dam and resting in the cottonwood trees. Other people have also seen bald eagles farther down the river toward Mud Creek.

Clinton Reservoir, Douglas Co., Kansas

Feb. 4, 1983

From the dam counted 6 bald eagles generally distributed on the ice to the W. There were 3 groups of ducks sitting on the ice, one group 250, one 60 and one 120. As far as I could tell there was no open water unless a small area near the small group of ducks. The eagles would occasionally move from one position to another but at no time did I see them harass the ducks although I am sure they were there for purposes of feeding on injured ducks.

402 Yorkshire Dr, Lawrence, Kansas

March 1, 1983

Today 4 species of birds fed at feeders that have not been seen during the winter. a grackle, a mourning dove, robin 1 mockingbird and 2 purple finch. I have not seen pine siskin this year whereas last year they were as common as goldfinches. Goldfinches were about the same population as last year. The robin ate corn meal and suet.

March 4, 1983

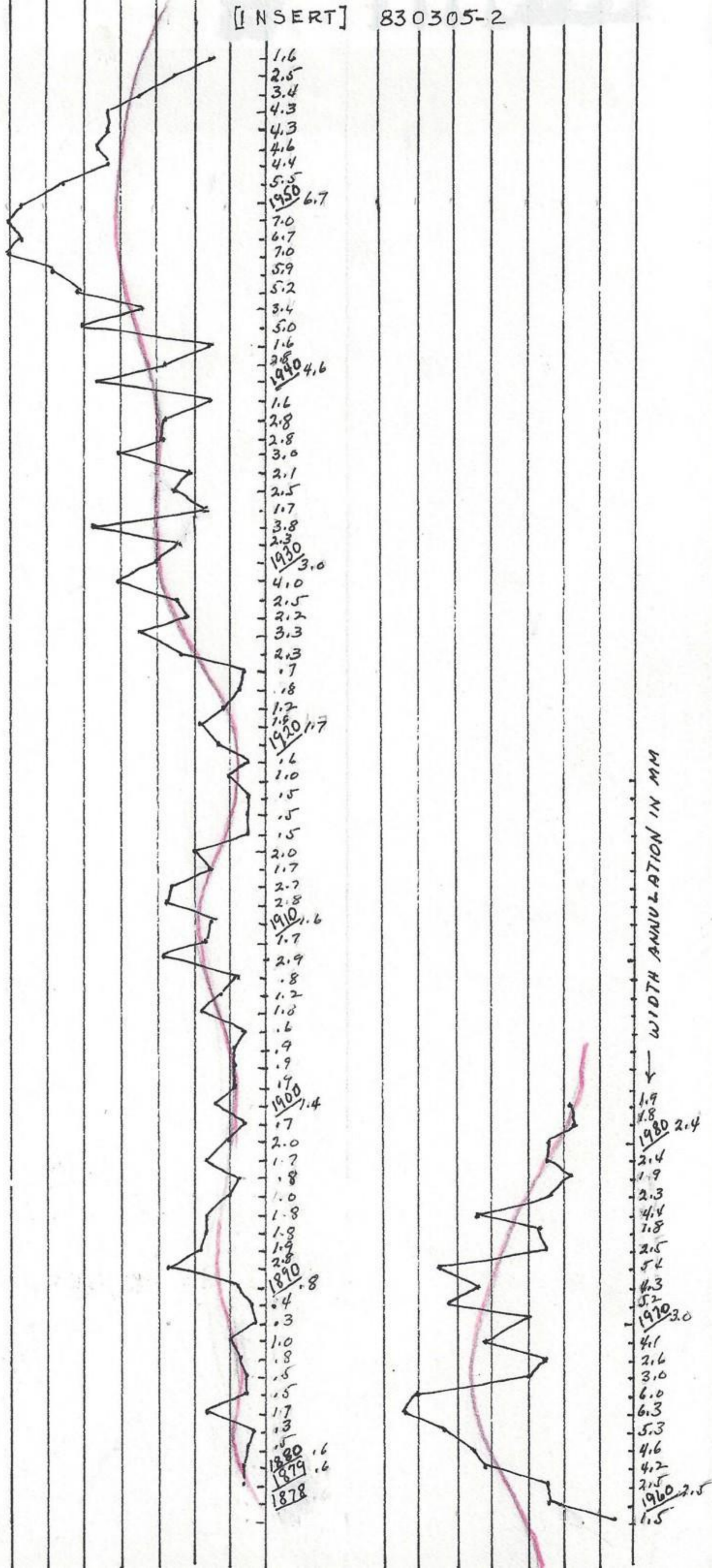
Flocks (5) of grackles? for first time this spring. groups from 60-2000 birds flying in traditional routes in the city.

Lawrence, Douglas Co., Kansas.

Jan. 4, 1983

(see previous page)

NATIVE JUNIPER TREE FROM NW CORNER IOWA ST. AND PETERSON ROAD, LAWRENCE, KANSAS
(TREE DIED 1982, CROSS SECTION 3 FT FROM GROUND LEVEL, DIA 18 INCHES)



402 yorkshire dr., Lawrence, Kansas
~~in~~ ~~in~~ ~~in~~
 March 8, 1983

Photo 830308-1 Annette by window.

" 830308-2 Chinese vase presented by Judy Dailey

" 830308-3 batteries in Barth.

Lawrence, Kansas
~~in~~ ~~in~~ ~~in~~

March 17, 1983

Harward Levenson reported 75 bald eagles on Kaw River from mouth of Delaware River to 8 miles down river. These include eagles that feed at Clinton & Perry Reservoir and presumably return to Kaw River for night roosting. He finally gave me a copy of the bald eagle paper we published last year. His name was changed to senior author although all the information was mine.

Lawrence, Kansas

march 17, 1983

Preparing for departure for extended travel in Barth. (photos)

- ✓ journal
- ✓ journal paper
- ✓ pens - ink
- ✓ color pencils
- ✓ recorder
- ✓ cassettes
- ✓ note books
- ✓ C.B.
- ✓ music & cassettes
- ✓ camera & adapters - film
- ✓ flash - extension
- ✓ tripod
- ✓ Celestron, window adapter
- ✓ 500 mm
- ✓ 300 mm zoom
- ✓ macro lens
- wide angle
- ex. meter
- ✓ books, stamp cat.
- ✓ finish electrical system
- speedometer dial
- shift extension
- battery lid
- ✓ awnings,
- tie wires (electric)
- mud guard (at step)
- fix T.V. antenna
- reflection hood for monitor
- screen door
- stabilize chair.
- ✓ file door lock
- screen plate under tube
- ✓ blind fasteners
- accommodation for recorder
- ✓ fire cloth for motor caulking
- ✓ ^{arch.} research - petroglyphs, Clovis
- ✓ tools. saw, drill, saber saw,
- ✓ drills (small & large), plummer tape
- ✓ hack saw.
- ✓ skinning equip.
- ✓ traps - cotton-wire. pins, labels, tags
- ✓ scales - gun ✓ dry box.
- ✓ sleep bags
- vacuum
- ✓ wind gauge
- ✓ min. max thermometer
- ✓ shovel
- ✓ car registration
- ✓ hydraulic jack
- ✓ knee boots
- ✓ portable radio
- ✓ binoculars
- ✓ glasses
- ✓ electric shower
- ✓ ~~no~~ fish equip.
- ✓ batteries
- ✓ first aid kit, B.P.
- ✓ electric heater
- ✓ insect pins - boards, book
- ✓ fish license
- ✓ paintings
- ✓ journals
- ✓ chair
- ✓ binoculars (2)

Food To stock the Barth:

1 pound oleo
 2 boxes dry milk
 3 dozen eggs
 corn oil
 frozen orange juice
 scrapple
 soups (dry & canned)
 cereal (dry & cooked)
 sugar
 syrup
 pancake flour
 coffee (reg & instant)
 postum
 diet drinks
 candy for gifts
 bread
 potatoes (dry & sou)
 egg beaters
 tuna
 dry meals, mac. etc
 pepper, onion pow, garlic, minced ginger, cinnamon
 . nutmeg, oregano, curry, allspice, bay leaves, sage
 mayonnaise
 jello
 cut. cheese
 sliced cheese
 jelly
 peanut butter
 ice milk
 tuna fish
 beans
 corn
 peas
 crackers

Lawrence, Kansas. March 18, 1983 830318-6
John Bowen & a friend Adra spent a week or so
in Mexico and return the day before we left for
our trip. He reports the following:

Always go on first class fares whether train, bus or
plane, otherwise one might be passenger with chickens,
pigs and piles of boxes. Plane fare from Mexico City to
Acapulca is \$11.00 and by bus was \$3.20. Train fare
from Las Mases to Chihuahua was 7.00 (first class). Food
is unbelievably cheap. Bananas in best tourist sections
was 5 pesos. We went into fruit markets in one of
the many in Mexico City where we stood around and
looked at all the fruit, some kinds of which we had
never seen and an old gentleman came up and
befriended Adra and the next thing we knew we were
tasting all the different kinds of fruits and they
would not let us pay for them. It is necessary to
have a travel agent make reservation otherwise it is
impossible to make headway in Mexico. We got
40 roses (fresh) in a base pot for \$12.00. In the states
it would be a hundred dollars worth of roses. We were
told were over paid for it. A dollar worth of fruit
would be more than you could carry unless you
bought some very expensive stuff. If you are
planning to buy anything down there you are allowed
to send back 1 package per day worth not more than
\$25.00. The main problem is mailing the packages.
The Mexican postal workers are about half as efficient
as American postal workers and I have never seen a
more crazy system than they use but you can still
deal with it. The first thing to remember is you have
to have things in boxes and wrapped in paper which
is hard to come by so if you mail out instead of
carrying them around mail them because postal rates
are cheap. The main thing is to get heavy brown wrapping
paper and wrap them with twine. Don't tape it as
they frequently inspect it. You can register packages.
First at post office you get a customs stamp, and
then fill out a whole bunch of forms which you do not
have a prior advantage of studying the information.

after receiving stamp approval of whats in the package and its cost, you then buy regular stamps, then return + put stamps on and then register it. It took us 5 hours to complete one package mainly because of lack of knowledge of how to proceed, for example we taped packages & then we had to unseal and rewrap. One trailer owner said they should weigh trailers entering Mexico & then charge them for the difference in weight as they leave the country. The people in trailers I talked to, ^{some} had a lot of money in pesos and was equivalent to 300 dollars and planned to stay 3 or 4 months on that amount of money. Trailer people did not complain about insurance cost and \$500 for insurance seem excessive. Buses go about anywhere. Trains follow schedule routes but one can take a bus laterally at most stops. Roads in Baja Calif. were severely damaged by the recent storms and they say it might take as many as 5 years to rebuild, especially S of California. Before the storms the road was paved all the way and passable. Road is now open but there are many rough detours. Biologists from San Diego who have lived in Baja Calif, say that it is the most beautiful place in the world. They were happy that the roads were repped up because it help to slow down the development of the peninsula. The peninsula becomes attractive as soon as one leaves Calif and gets beyond the border habitations. The extreme southern tip of the peninsula is becoming developed by people from Calif. all ferries are prepared to take vehicles and service starts just N of Alcopulca Acapulco to far up the coast. One can ship vehicles on train cars at several different points along the intercoastal highway rather than driving over mt. systems to the central highway and at a very reasonable fee. Baja Calif is no problem if one travels alone and camps out at night. Water, ^{food} and evading weather is of more concern than with people. Americans are safer in Mexico than Mexicans are safe in the U.S. Scenery in Central Mexico is an extension of the Sonoran deserts of Arizona and consists of old homes, ^{+ towns} flowers, rolling hills. Coastal area have views of bays etc. The most unspoiled areas are the canyon of the mt. system E of the Sea of Cortez.

There are waterfalls as high as it takes a stone to drop for 2.9 seconds. River approaching falls over smooth rock. Edge of rock at brink of waterfalls sharp and non-eroded. There were large boulders, faulting and volcanic activity. This falls was just out of Creos. which is in the state of Chihuahua near its edge. The main canyon is about 100 ~~stage~~ the same stage as our grand canyon was 100 years ago as far as people are concerned. The Indians who live in this canyon live under overhangs of rocks with rocklife fences to close them in. Vegetation changes from pine forests on top to tropical climate in bottom of canyon (bananas, mangoes etc.) The Indians change position on slopes of canyon according to the season. Baby cloths are one of the best items to bring back for sale in the U.S. Pay 7.00 there \$40.00 here. Duty free is \$300.00. mail is \$25.00 per address per day. Photos: On trains one can move between cars, hang out window etc. Better food on their trains than we have on our Amtraks. Canyon area about 50 square miles and 5 canyons close together and anyone rivals our Grand Canyon. Arique Canyon is one seen from the train route. There are opals, silver, gold in these canyons but it is almost impossible to get the material out. near a village close to the waterfalls they were selling cardinals, parakeets, falcons etc. Guanada is a tasty fruit. There is an unnamed falls in and unnamed canyon and is 2.2 kilometer walk. This falls is in an unspoiled and inexpensive place. Stayed in one place where they had 128 waiters for 430 people (guests) June, July, Aug are hot months March best month. Mexico City from 7,000 to 17,000,000 + population is moving N. S of Mexico City is a place where hundred miles of canals traverse flower gardens of renown beauty. Hundred of small boats take tourists thru these canals. The sports fishing is the best in the world. The best fishing is in upper part of the Sea of Cortez and then one part of the season and then later they move S. Informant John Bowen of Lawrence, Kansas.

address of natural History Book store: Donald E. Hahn
 natural History Books, Box 1004, Cottonwood, Arizona
 86326. wants Herp. literature.

Info on book transactions: delivered ^{by James R Bee} March 16, 1983. 49 boxes

home
 Mr & Mrs. Peterson
 Peterson Book Co
 P.O. Box 966
 Davenport, Iowa
 52805
 ph. 319-355-7051

warehouse
 Peterson Wild Bird Shop
 1108 Jersey Ridge Road
 Davenport, Iowa.
 open 10:30 - 5:00 except Sunday
 sent selected box ^{by P. post} of approx 15
 books March 18, 1983 - map books,
 Fishes, owls, Nat of Americas etc.

Lawrence, Kansas

Mar. 18, 1983

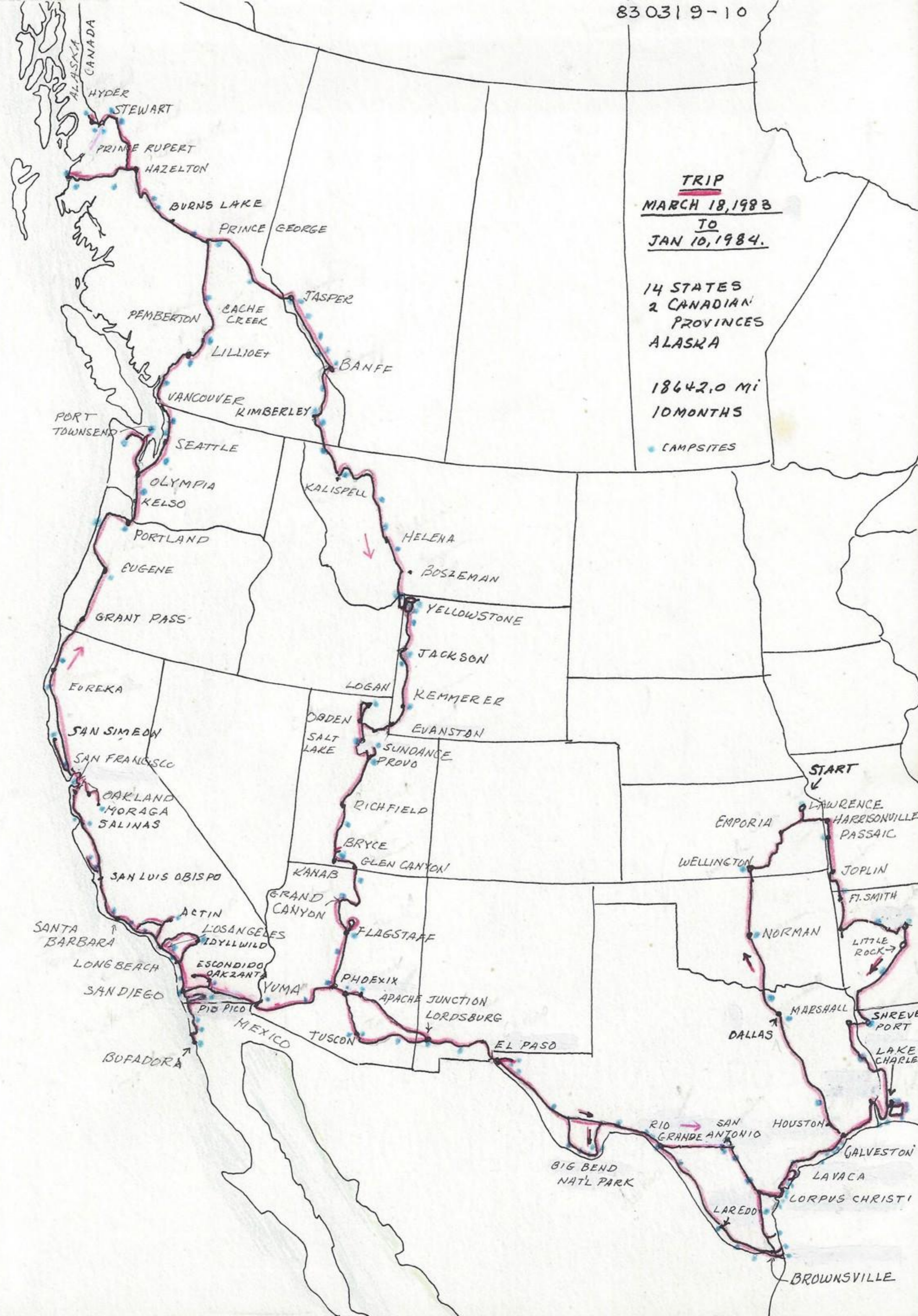
Left at mi. 20435.0 - at 2:40 P.M.

day cloudy, cool, fog to S. 5 on 69. 444.5 striped skunk
 road kill. 444.7 sparrow hawk. winter wheat all green,
 other grasses just showing thru dry vegetation of last year.
 Grass in lawns conspicuously green approx. a week ago. Tree
 buds out & leaves just beginning. 447.6 sparrow hawk.
 449.2 opossum road kill. 450.2 sparrow hawk. 452.8
 sparrow hawk, sparrow hawk, Ottawa, row E on 68.
 From Ottawa to Missouri line, 4 American rough-legs and
 3 redtail hawks, two red-tail hawks 2/10 mi. E of line. Also
 in same route (Ottawa-Missouri) 2 meadowlarks, 4 sparrow
 hawks, 1 mourning dove. The lights are faint because
 of the clouded skies. at Harrisonville 5 on 71. Camped
 at Passaic, Missouri at mileage 20541.3 or 106.3 miles so far.
 7:00 P.M.

Passaic, Bates Co., Missouri

March 19, 1983

Min. temp. last night 38°F. no wind foglike. at 7:30 A.M. 40°F
 winter weather forecast for later today & tonight. 7 flock of about
 150 grackles in trees near camp. Left 541.3 for Butler. at
 8:20 A.M. meadowlark, robin & above grackles at camp. Owner
 of camp had unique post office counter in store of service window,
 and 36 letter holes, taken when post office in Passaic was
 disbanded. Receives 193 dollars per month from Fed Government.
 mail box outside for mail being left after store hours or to be
 picked up by mail truck after store hours. 551.4 leaving
 Butler after getting Kansas State tax form for completion &
 sending in mail at 9:20. Been raining last 1/2 hour &
 skies solid overcast. Visibility 1 mile. Snow forecast tonight.
 (running commentary continues
 on p. 830319-29)



TRIP
MARCH 18, 1983
 TO
JAN 10, 1984.

14 STATES
 2 CANADIAN
 PROVINCES
 ALASKA

18642.0 Mi
 10 MONTHS

● CAMPSITES

HYDER
 STEWART
 PRINCE RUPERT
 HAZELTON

BURNS LAKE
 PRINCE GEORGE

JASPER
 CACHE CREEK
 LILLIOET
 BANFF

PEMBERTON
 VANCOUVER
 KIMBERLEY
 PORT TOWNSEND

SEATTLE
 OLYMPIA
 KELSO

KALISPELL
 HELENA
 BOZEMAN

PORTLAND
 EUGENE
 GRANT PASS
 YELLOWSTONE
 JACKSON

EUREKA
 SAN SIMON
 SAN FRANCISCO
 LOAN
 KEMMERER

OAKLAND
 MORAGA
 SALINAS
 EVANSTON
 SUNDANCE
 PROVO

SAN LUIS OBISPO
 ACTIN
 LOS ANGELES
 IDYLLWILD
 RICHFIELD
 BRYCE
 GLEN CANYON
 WELLINGTON
 EMPORIA
 LAWRENCE
 HARRISONVILLE
 PASSAIC
 JOPLIN

SANTA BARBARA
 LONG BEACH
 SANDIEGO
 ESCONDIDO
 OAKZANT
 YUMA
 PHOENIX
 APACHE JUNCTION
 LORDSBURG
 F. SMITH
 NORMAN
 LITTLE ROCK

PIO PICO
 MEXICO
 TUSCON
 EL PASO
 MARSHALL
 SHREVEPORT
 LAKE CHARLES

BIG BEND NATL PARK
 RIO GRANDE ANTONIO
 HOUSTON
 GALVESTON
 LAVACA
 LAREDO
 CORPUS CHRISTI
 BROWNSVILLE

CAMPSITES

1983-1984

CAMPSITE
ON MAP

3/18	march	18	402 Yorkshire Dr., Douglas Co., Kansas
3/19		19	Passaic, Bates Co., Kansas
3/20-22		20-22	Bella Vista, Benton Co., Arkansas
3/23		23	Wardenelle State Park, Pope Co., Arkansas
3/24-25		24-25	Fairfield Bay, Van Buren Co., Arkansas
3/26		26	De Gray Lake State Park, Hot Springs Co., Arkansas
3/27		27	Shreveport, Caddo Co., Louisiana
3/28		28	Cave Marina, N end Causeway, 5 Yellowpine, Sabine Co., Texas
3/29		29	Sam Houston Jones Louisiana State Park, Calcasieu Co., Louisiana
3/30		30	Sulphur, Calcasieu Co., Louisiana
3/31		31	1/10 mi W Holly Beach, Cameron Co., Louisiana
4/1	April	1	Pecan Island, Vermilion Parish., Louisiana
4/2		2	Belmont, New Iberia, Iberia Co., Louisiana
4/3		3	St. Martinville, St. Martin Co., Louisiana
4/4		4	Mermentau River Bridge, E Lake Arthur, Vermilion Co., Louisiana
4/5		5	E end Sabine Pass Bridge, Cameron Co., Louisiana
4/6		6	D. Ray Harrington Beach Unit of Sea Rim State Park, Jefferson Co., Texas
4/7		7	Port Bolivar, 2/10 mi SE Ferry Terminal, Galveston Co., Texas
4/8		8	Galveston Island State Park, Galveston Co., Texas.
4/9		9	E end Galveston Island, Galveston Co., Texas
4/10-11		10-11	Thousand Trails Camp Grounds (Galveston Island Preserve), Galveston Co., Texas
4/12		12	mouth Brazos River, W side, Brazos Co., Texas.
4/13		13	Palacios Marina, Matagorda Co., Texas
4/14		14	Port Lavaca State Park, Calhoun Co., Texas
4/15-17		15-17	Goose Island State Park, Aransas Co., Texas
4/18		18	West end L.B. Johnson Bridge (over Copano Bay) Aransas Co., Texas.
4/19-20		19-20	Goose Island State Park, Aransas Co., Texas
4/21		21	S side Intracoastal Waterway Bridge, S Aransas Pass, San Patricio Co., Texas.
4/22		22	N of Packery County State Park, Nueces Co., Texas
4/23		23	Mustang Island State Park, San Patricio Co., Texas
4/24		24	Padre Island National Seashore, Kleberg Co., Texas
4/25		25	Padre Island National Seashore, NE Malaguete Beach, Kleberg Co., Texas

- 4/26 april 26 mustang Island State Park, San Patricio Co., Texas
- 4/27 27 NE side Fish Canal, San Patricio Co., Texas.
- 4/28 28 NW Fish Canal (NE end Mustang State Park, San Patricio Co., Texas
- 4/29-30 29-30 Corpus Christi Lake State Park, San Patricio Co., Texas
- 5/1-2 may 1-2 Leo Kaufer memorial Park, Boffin Bay, Kleberg Co., Texas
- 5/3 3 Port Mansfield, Cameron Co., Texas
- 5/4 4 Boca Chica Beach, Cameron Co., Texas
- 5/5 5 S end Padre Island, S Coast Guard Station, Cameron Co., Texas
- 5/6-10 6-10 Bentsen - Rio Grande Valley State Park, Hidalgo Co., Texas
- 5/11-12 11-12 Falcon Lake State Park, Zapata Co., Texas
- 5/13-14 13-14 Lake Casa Blanca, Webb Co., Texas
- 5/15 15 Amistad National Park Recreation Area, Val Verde Co., Texas.
- 5/16-17 16-17 Seminole Canyon State Park, Val Verde Co., Texas
- 5/18 18 Sanderson, Terrell Co., Texas.
- 5/19-22 19-22 Rio Grand delago, Big Bend National Park, Brewster Co., Texas.
- 5/23-24 23-24 The Basin, Big Bend National Park, Brewster Co., Texas
- 5/25 25 Cottonwood Camp, Castalon, Big Bend National Park, Brewster Co., Texas
- 5/26 26 Big Bend Travel Park, Terlingua, Brewster Co., Texas
- 5/27 27 2 mi. N Presidio, Presidio Co., Texas
- 5/28 28 3 mi. W Acala, Presidio Co., Texas
- 5/29 29 22 mi E El Paso, El Paso Co., Texas
- 5/30-6-2 june 2 Hueco Tanks State Historical Park, El Paso Co., Texas
- 6/3 3 Rock Naund State Park, Luma Co., New Mexico
- 6/4 4 8 mi S Bowie, Dos Cabeza mts, Cochise Co., Arizona
- 6/5 5 1 mi. E Dragoon, Cochise Co., Arizona
- 6/6 6 Saguaro Nat'l monument, Tucson mts., Pima Co., Arizona.
- 6/7-9 7-9 Tucson, Puma Co., Arizona
- 6/10 10 Apache Junction, Mariposa Junction, Arizona
- 6/11 11 Phoenix, Mariposa Co., Arizona
- 6/12 12 Painted Rock Historical State Park (Dam Unit), Mariposa Co., Arizona
- 6/13 13 Imperial Dam Park, Imperial Co., Arizona

6/14	June 14	El Centro, Imperial Co., California
6/15-21	15-21	Oakzanita Springs, San Diego, California
6/22	22	Pico Pico, Thousand Trails, San Diego Co., California
6/23-25	23-25	La Bufadora, Baja California, Mexico
6/26-27	26-27	1 1/10 mi. N La Yolla (in sand spit), Baja Calif., Mexico
6/28-29	28-29	3/10 mi NNE Midway motel, Baja Calif., Mexico
6/30-7/1	30-July 1	Pico Pico Preserve, Thousand Trails, San Diego Co., California
7/2-4	2-4	Balboa Park, San Diego, San Diego Co., California
7/5	5	Carlsbad State Beach, San Diego Co., California
7/6-8	6-8	Long Beach, Orange Co., California
7/9-13	9-13	Idyllwild Thousand Trail Preserve, Riverside Co., Calif.
7/14	14	El Toro, Orange Co., California
7/15-16	15-16	Ventura, Los Angeles Co., California (2 camps ^{John's and} _{W. Fillmore})
7/17	17	Soledad Canyon Preserve, Thousand Trails, Los Angeles Co., California
7/18	18	W Los Angeles (SW UCLA) Los Angeles Co., California
7/19	19	Leo Carrillo State Park, Ventura Co., California
7/20	20	El Capitan, Santa Barbara Co., California
7/21	21	Morro Bay State Park, San Luis Obispo Co., Calif.
7/22	22	San Simeon State Park, San Luis Obispo Co., Calif.
7/23	23	San Benito Preserve, Thousand Trails, San Benito Co., California
7/24	24	Sea Cliffs State Park, Santa Cruz Co., California
7/25-26	25-26	409 Miller Creek Road, San Rafael, Marin Co., California
7/27	27	Moraga, Contra Costa Co., California
7/28	28	Manchester State Park, Mendocino Co., California
7/29	29	Hidden Springs State Park, Humboldt Co., California
7/30	30	Patrick Campgrounds (F.S.), Del Norte Co., California
7/31	31	Eugene, Lane Co., Oregon
8/1	Aug. 1	Pacific City Preserve, Thousand Trails, Tillamuck Co. Oregon
8/2	2	Oleha, Washington Co., Oregon
8/3	3	Chehalis Preserve, Thousand Trails, Lewis Co., Washington
8/4-31	4-31	Seattle, King Co., Washington
9/1	Sept. 1	Salt Water State Park, King Co., Washington
9/2	2	Noad Canal Preserve, Thousand Trails, Kitsap Co., Wash.
9/3-7	3-7	737 Van Buren, Port Townsend, Jefferson Co., Washington
9/8-10	8-10	Heart of the Hills Camp Ground, Olympic National Park, Clallam Co., Washington
9/11	11	Dungenesse State Park, Clallam Co., Washington

- 9/12 Sept 12 10814 55th S, Seattle, King Co., Washington
- 9/13 13 S Widbey Island State Park, Island Co., Washington
- 9/14-15 14-15 La Conner Preserve, Thousand Trails, Skagit Co., Wash.
- 9/16 16 Mt. Vernon Preserve, Thousand Trails, Skagit Co., Wash.
- 9/17 17 Birch Bay State Park, Whatcom Co., Washington
- 9/18 18 Brandywine Falls Provincial Park, British Columbia
Canada
- 9/19 19 Cayoosh Creek Park, Lillooet, British Columbia, Canada
- 9/20 20 Lakeview Camp, 5 mi. S Clinton, British Columbia
Canada
- 9/21 21 n end me. Leese Lake, British Columbia, Canada
- 9/22 22 Seelye Lake Provincial Park, British Columbia
Canada
- 9/23-24 23-24 Prudhomme Lake Provincial Park, British
Columbia, Canada.
- 9/25-26 25-27 Prince Rupert, British Columbia, Canada
- 9/28 28 Prudhomme Lake State Park, British Columbia, Canada
- 9/29 29 Kleanza Provincial Park, British Columbia, Canada
- 9/30 30 Meziadin, British Columbia, Canada
- 10/1 Oct. 1 Fish Creek Bridge Camp, mile Past 24, n of
Hyler, Alaska
- 10/2 2 Approx 5/10 mi. n w Stewart, British Columbia, Canada
- 10/3 3 Crown Recreation Division, Lake Meziadin, British
Columbia, Canada.
- 10/4 4 Macleure Provincial Park, British Columbia, Canada
- 10/5 5 Beaumont Provincial Park, British Columbia
Canada
- 10/6 6 Purden Lake Provincial Park, British Columbia,
Canada
- 10/7 7 Beaver View Campground, Mc Bride, British
Columbia, Canada
- 10/8-10 8-10 Whistler's Campgrounds, Jasper National Park,
Alberta, Canada
- 10/11 11 Wapiti Campgrounds, Jasper National Park, Alberta,
Canada
- 10/12 12 Honeymoon Lake, Jasper National Park, Alberta, Canada
- 10/13 13 Icefield Camp, Jasper National Park, Alberta, Canada
- 10/14 14 Mosquito Creek Camp, Banff National Park, Alberta,
Canada
- 10/15-16 15-16 Tunnel Mountain Camp, Banff National Park, Alberta
Canada

- 5
- 10/17 Oct. 17 Mosquito Creek Camp, Banff National Park, Alberta, Canada
- 10/18 18 Radium Springs, British Columbia, British Columbia, Canada
- 10/19 19 Happy Hans Campground, Kimberley Ski Lodge, British Columbia, Canada
- 10/20 20 Fort Steele Campgrounds, British Columbia, Canada
- 10/21 21 Kookanusa Lake, 1/2 mi NE Kelford, Lincoln Co., Montana.
- 10/22 22 Apgar Campgrounds, Glacier National Park, Montana.
- 10/23 23 Chateau, Teton Co., Montana
- 10/24 24 Canyon Ferry Lake, Lewis & Clark Co., Montana
- 10/25 25 Beaver Creek, Broadwater Co., Montana
- 10/26 26 Teepee Trail, 8/10 mi N Entrance Yellowstone Natl Park in Montana.
- 10/27 27 Madison Camp, Yellowstone National Park, Wyoming
- 10/28 28 Grant Village Camp, Yellowstone National Park, Wyoming
- 10/29 29 Slough Creek Camp, NE Yellowstone National Park, Wyoming
- 10/30 30 Grant Village, Yellowstone National Park, Wyoming.
- 10/30 11/1 Nov. 1 Jackson, Teton Co., Wyoming.
- 11/2-4 2-4 Colter Bay, Grand Teton National Park, Wyoming.
- 11/5 5 Jackson, Teton Co., Wyoming
- 11/6 6 Forest Service Camp no. 22, 7 mi. S and 5 mi. W, Hoback Junction, Lincoln Co., Wyoming.
- 11/7 7 Frontier, Lincoln Co., Wyoming.
- 11/8 8 Willard, Bozelder Co., Utah
- 11/9 9 Hyde Park, 7 mi. N Logan, Logan Co., Utah
- 11/10 10 Willard, S Brigham City, Bozelder Co., Utah
- 11/11 11 110 mi S Saltair, Davis Co., Utah
- 11/12-17 12-17 Provo, Utah Co., Utah.
- 11/18 18 Sundance, Stewart Flat, Utah Co., Utah.
- 11/19-21 19-21 Provo, Utah Co., Utah
- 11/22 Dec. 8 Sundance, Stewart Flat, Utah Co., Utah.
- 12/8 9 Provo, Utah Co., Utah.
- 12/9 10 Circleville, Piute Co., Utah
- 12/10 11 Kanab, Kane Co., Utah
- 12/11 12 The Gap, Highway 89, Navajo Indian Reservation, Coconino Co., Arizona

- 12/13 Dec. 13 Grand Canyon Village, Grand Canyon National Park, Arizona
- 12/14 14 Sunset Crater National Monument, Coconino Co., Arizona.
- 12/15 15 Cottonwood, Yavapai Co., Arizona
- 12/16 16 Pleasant Lake, Maricopa Co., Arizona
- 12/17 17 Apache Junction, Maricopa Co., Arizona
- 12/18 18 Oak Falls Forest Camp Grounds, approx 4 mi. E Superior, Pinal Co., Arizona.
- 12/19 19 SE Lordsburg, I-10, Hidalgo Co., New Mexico
- 12/20 20 Mission Campgrounds, E El Paso, El Paso Co., Texas
- 12/21 21 Valentine, Jeff Davis Co., Texas
- 12/22 22 Langtry, Val Verde Co., Texas
- 12/23 23 Amistad Lake, Val Verde Co., Texas
- 12/24 24 2 1/2 mi. E Hondo, Highway 90, Medina Co., Texas.
- 12/25-28 25-28 Medina Lake Preserve, Thousand Trails, Bandera Co., Texas.
- 12/29 29 Pleasanton, Atascosa Co., Texas
- 12/30 30 Mustang Island State Park, San Patricio Co., Texas
- 12/31 31 Padre Island National Seashore, NE Headquarters, Nueces Co., Texas
- 1/1 Jan 1, 1984-2 Grosse Island State Park, Aransas Co., Texas
- 1/3 3 Hopper's Landing, Aransas Co., Texas
- 1/4 4 Freeport, Brazoria Co., Texas
- 1/5 5 Galveston Island Preserve, Thousand Trails, Galveston Co., Texas
- 1/6 6 Conroe Lake Preserve, Thousand Trails, Montgomery Co., Texas.
- 1/7 7 Lake Tawakoni Preserve, Thousand Trails, Rains Co., Texas.
- 1/8 8 Lake Tahoma, Grayson Co., Texas
- 1/9 9 Norman, Cleveland Co., Oklahoma
- 1/10 10 Wellington, Sumner Co., Kansas
- 1/11 11 Lawrence, Douglas Co., Kansas.

ITINERARY 1983-1984

SCALE: ONE FOR EACH STATE

RAND McNALLY & CO. ROAD MAPS 1982

RED = ROUTE

BLUE CIRCLE = CAMPSITES

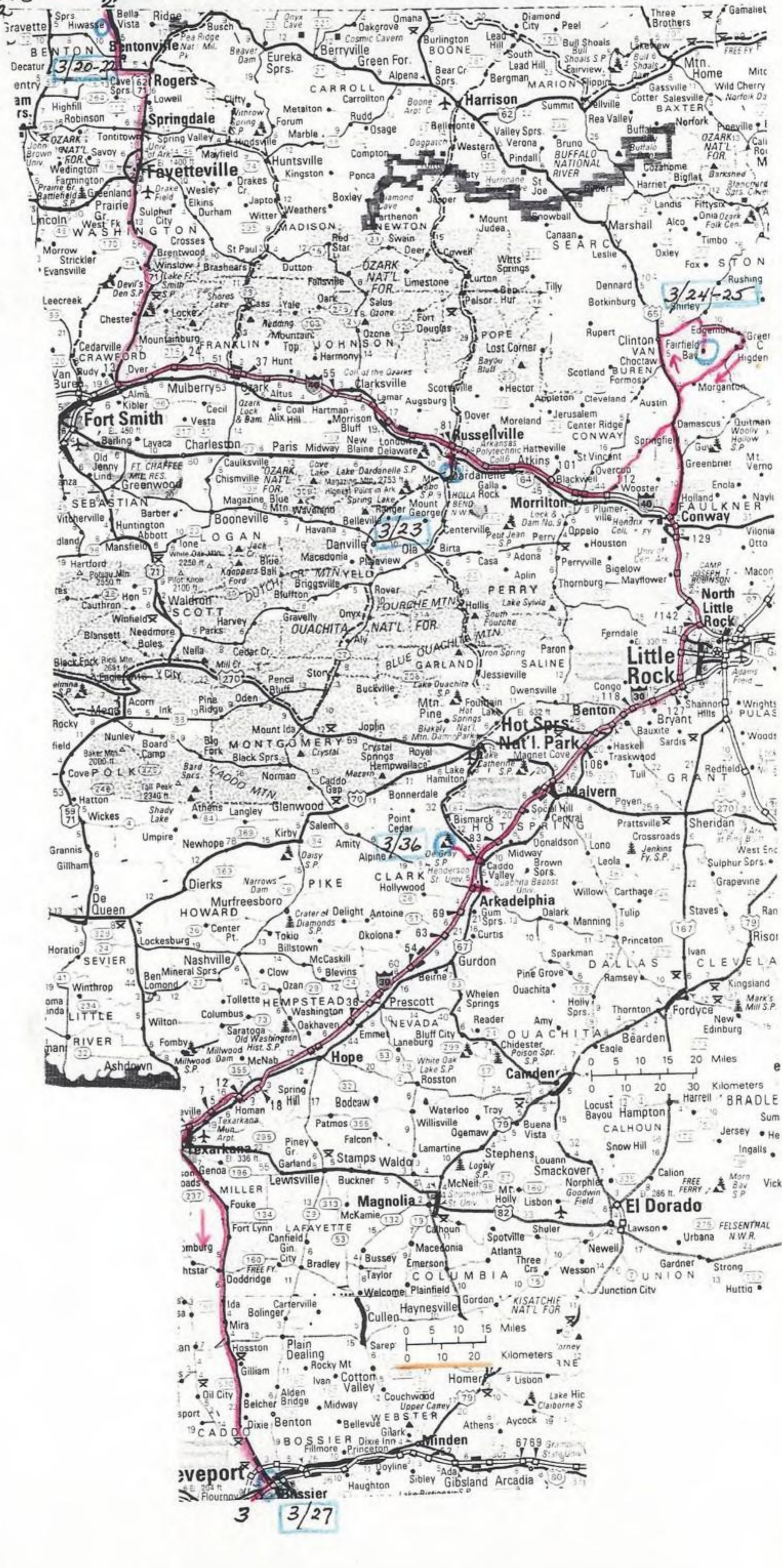
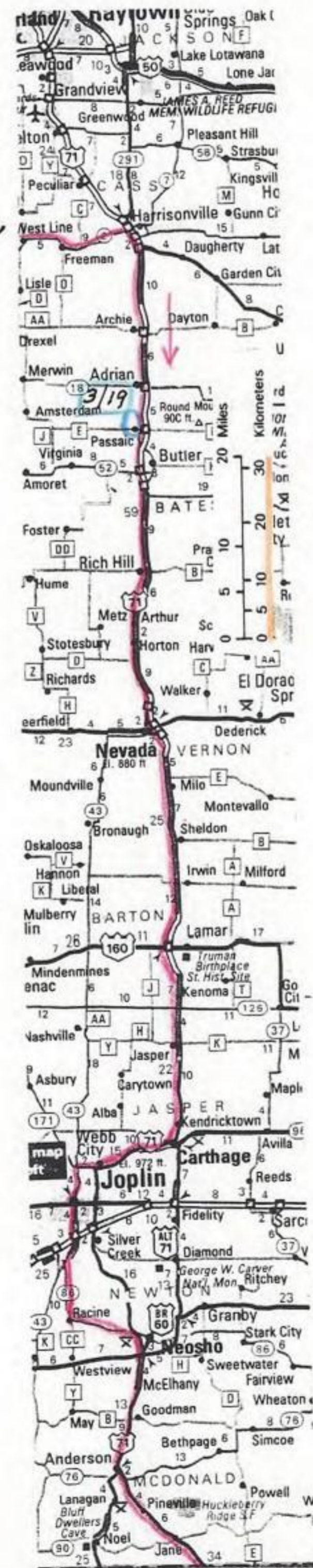
BLUE SQUARE = DATES AT CAMP

ARROW = DIRECTION OF TRAVEL

21

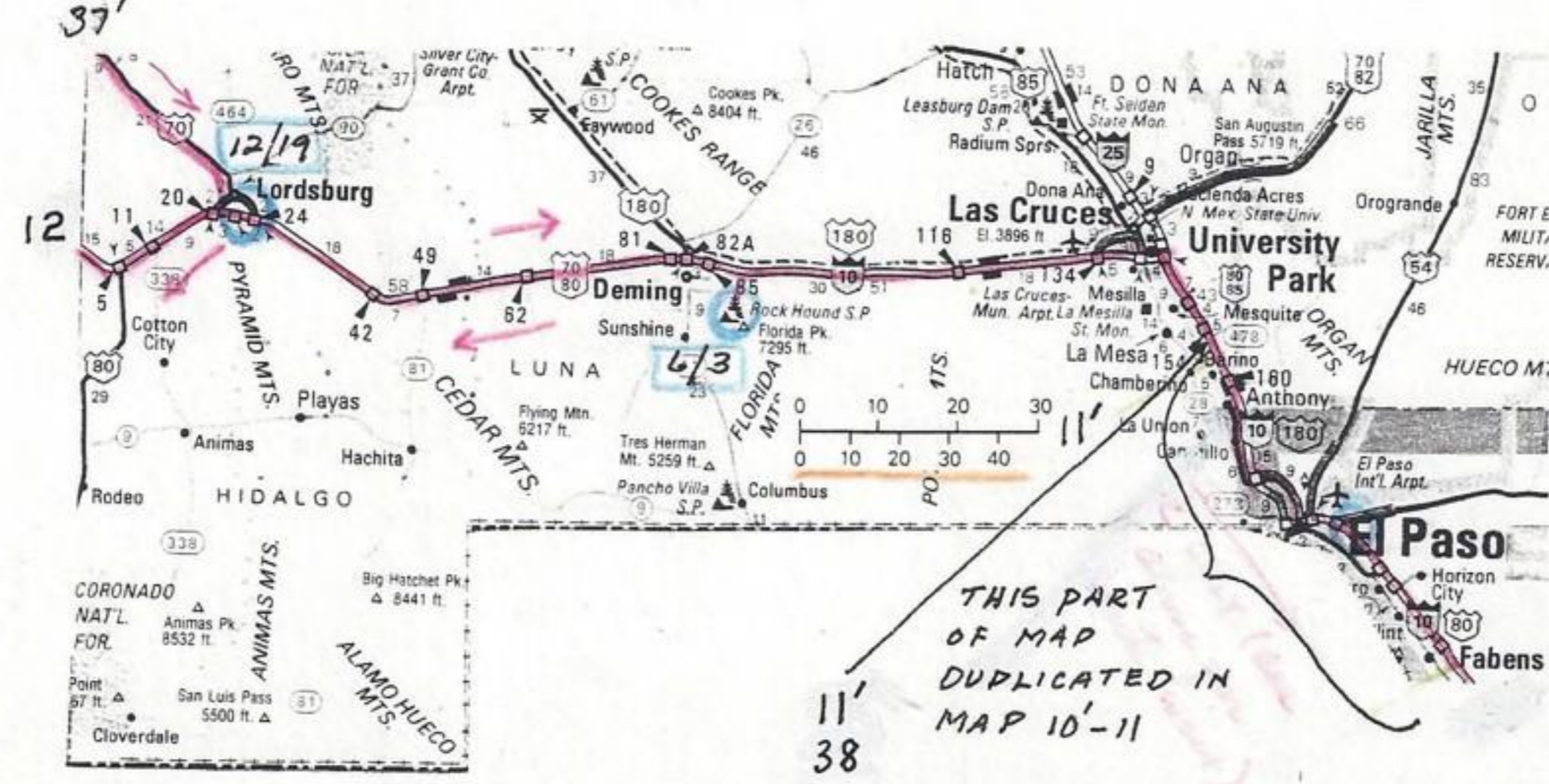
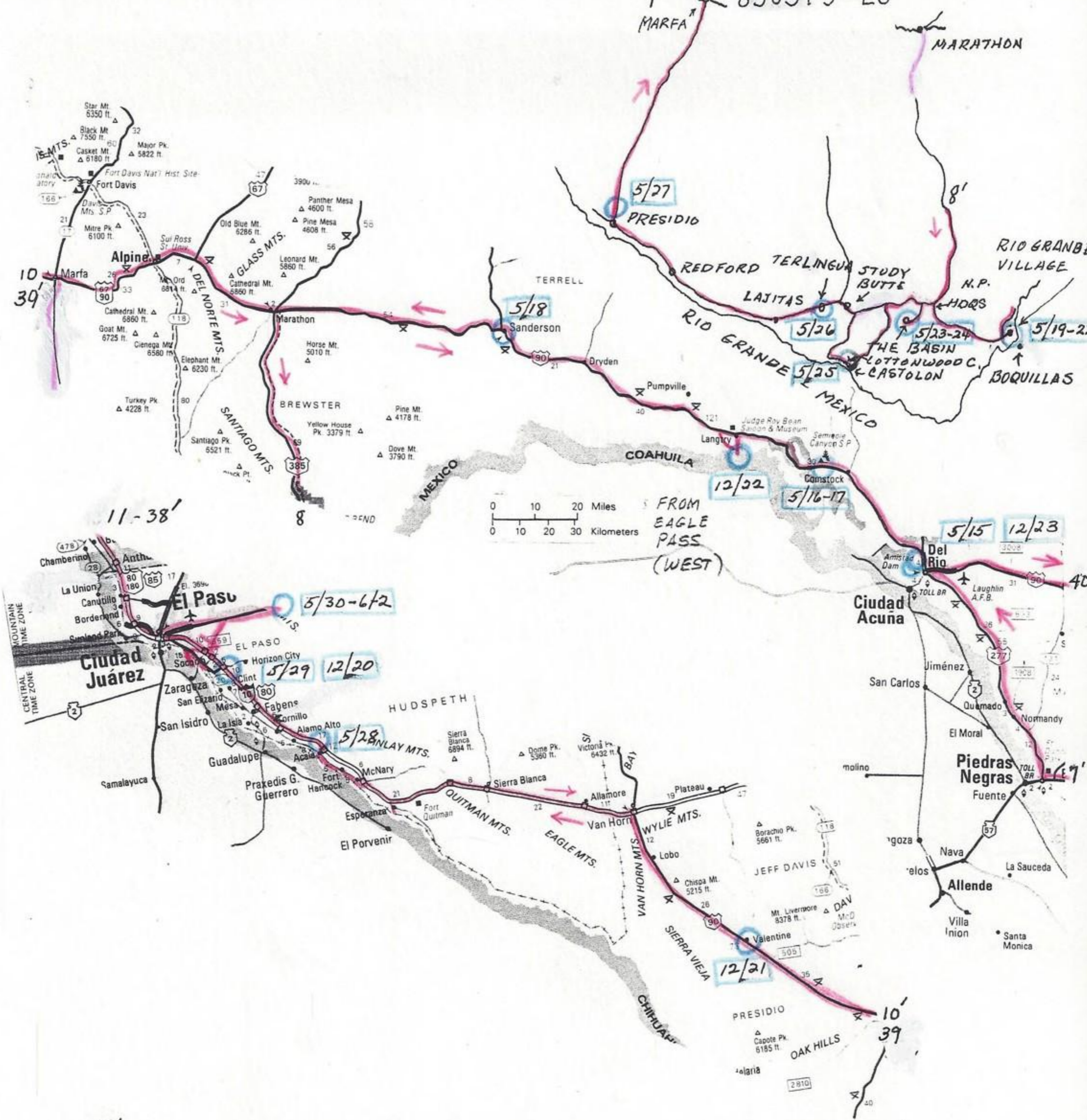
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WHOLE AND PRIME NOS 16 16
CONNECTING ROUTES (ALSO MAP NOS.)

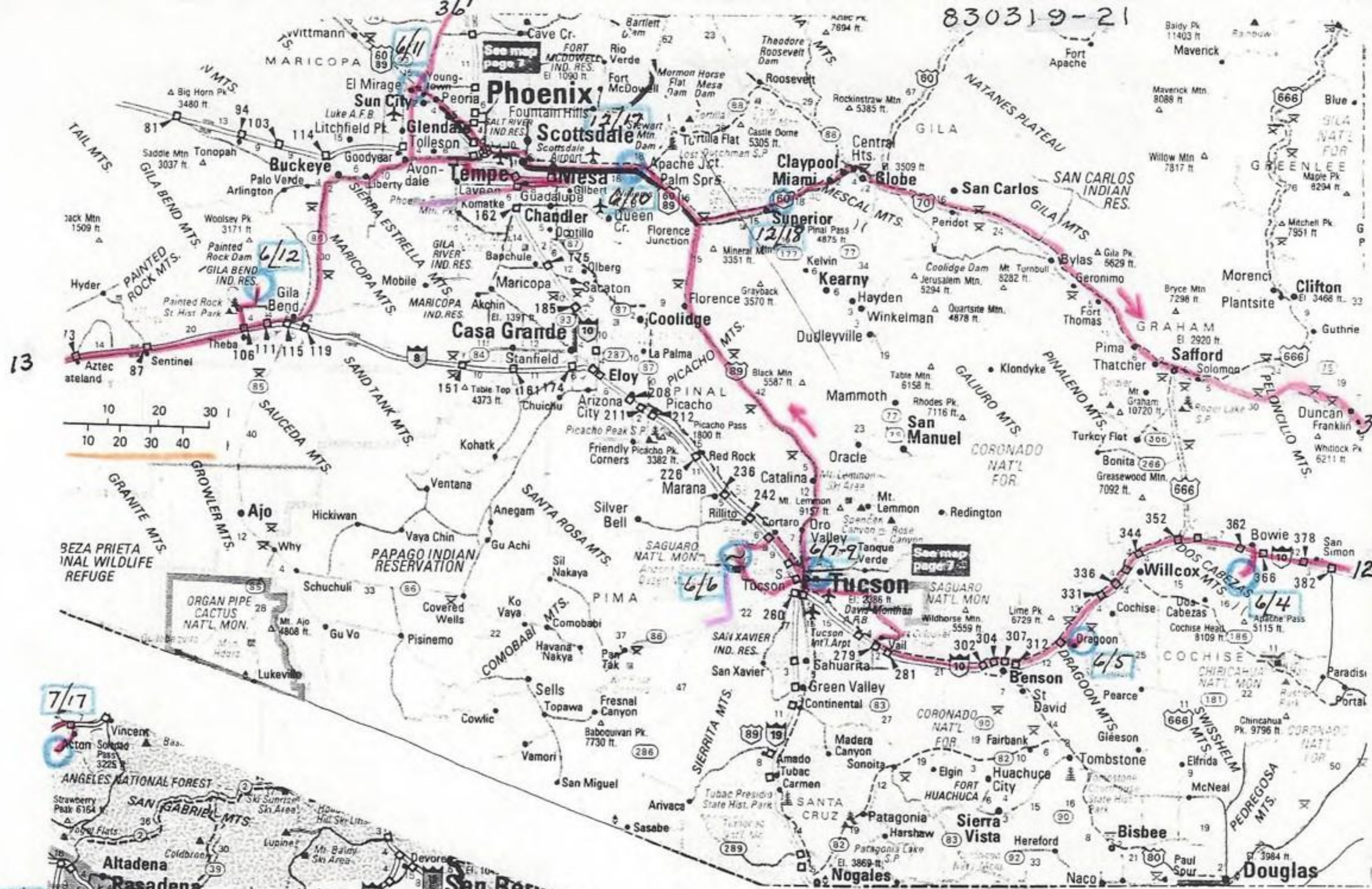


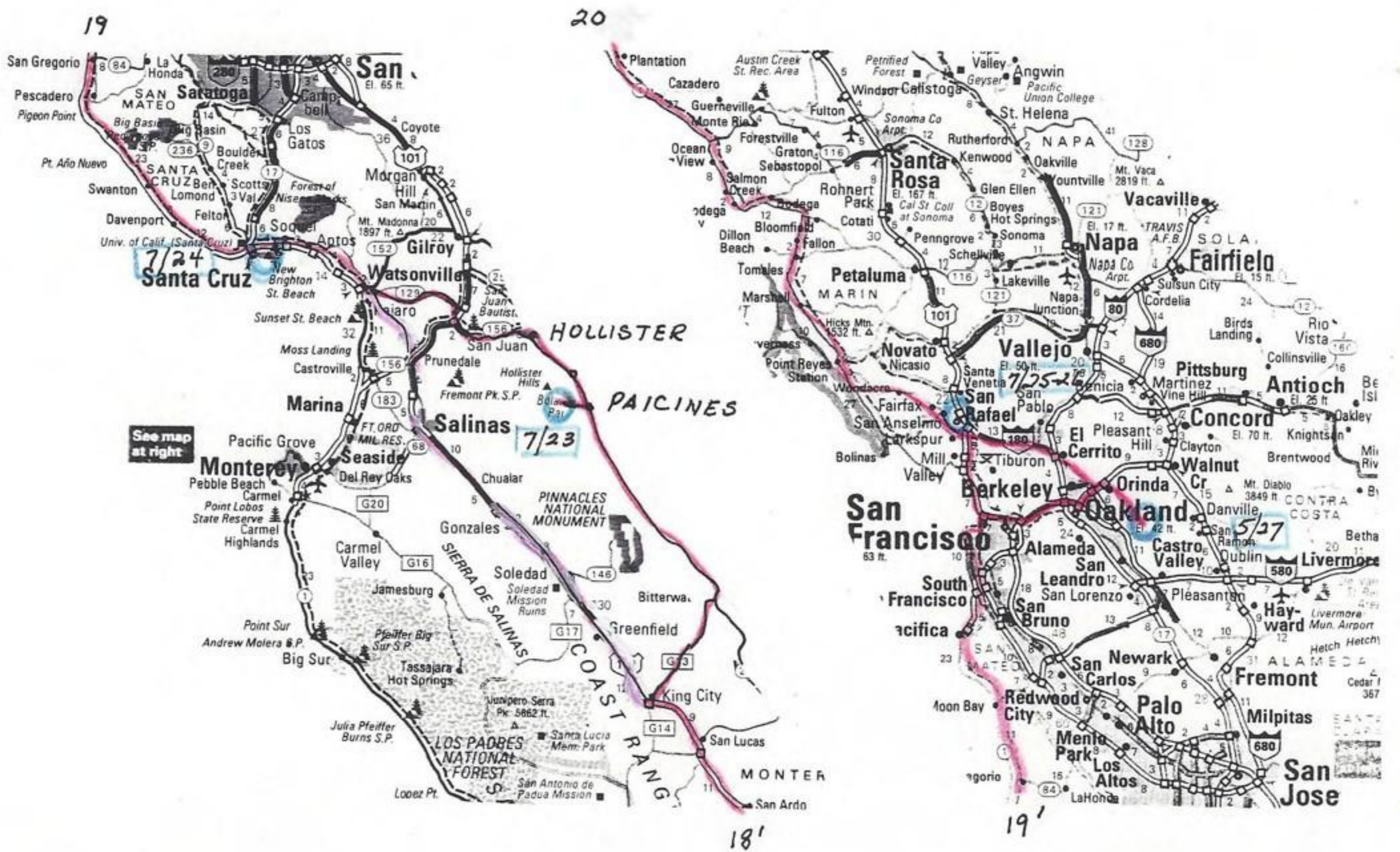


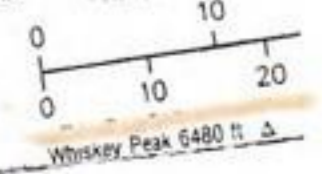
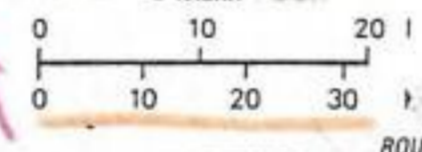
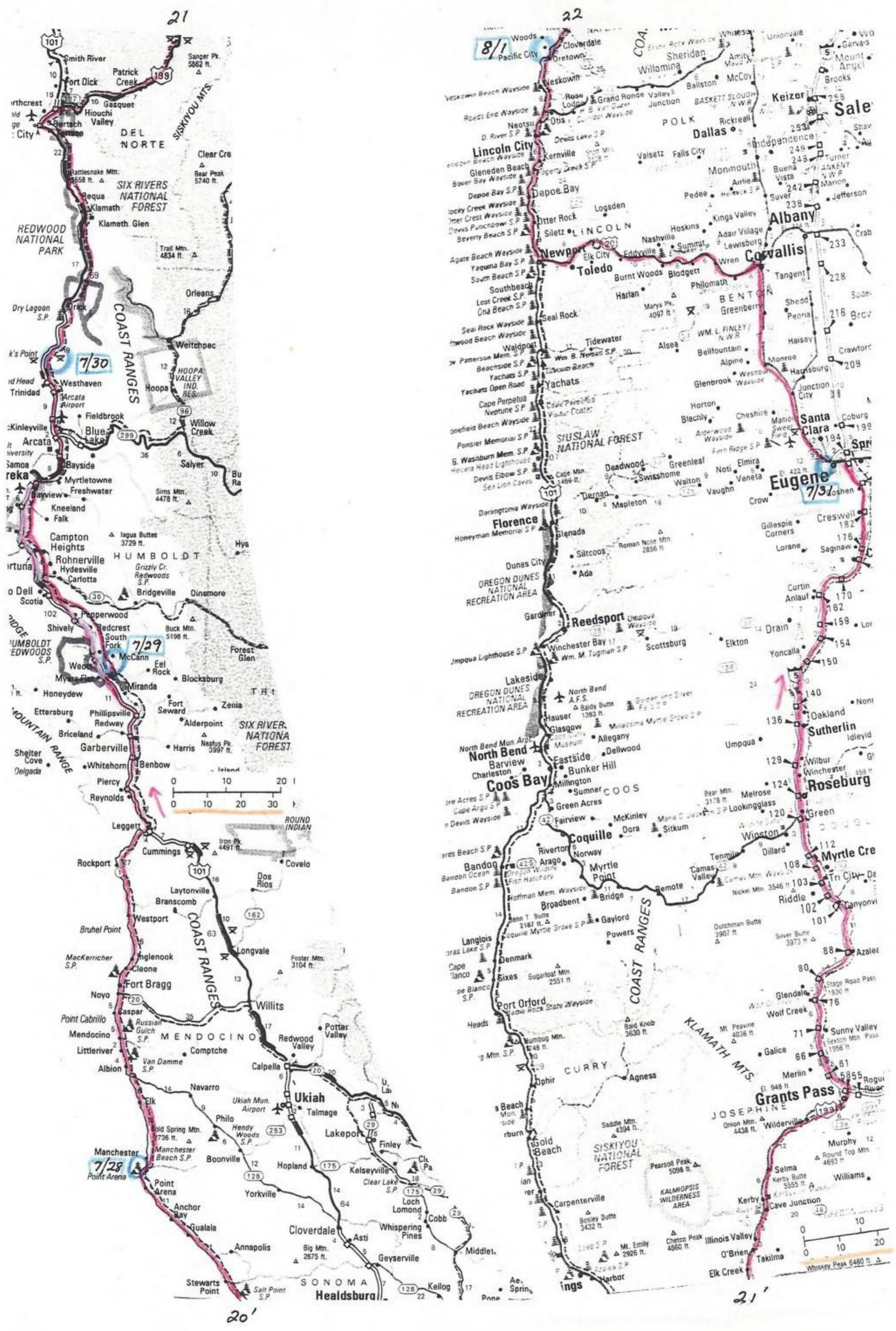


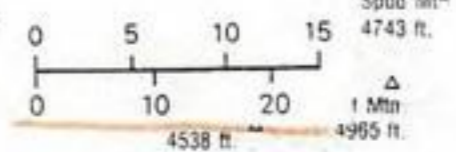
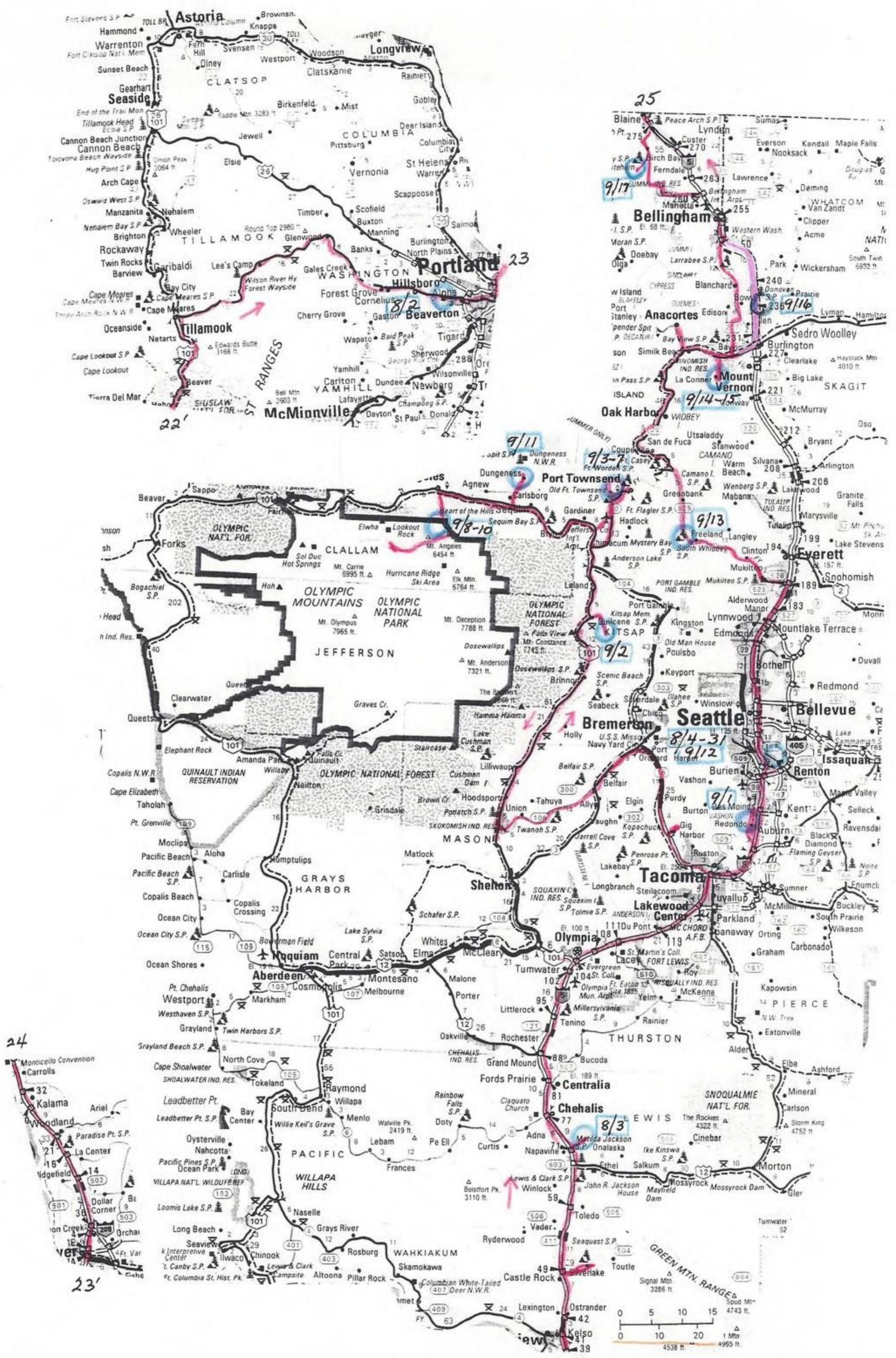


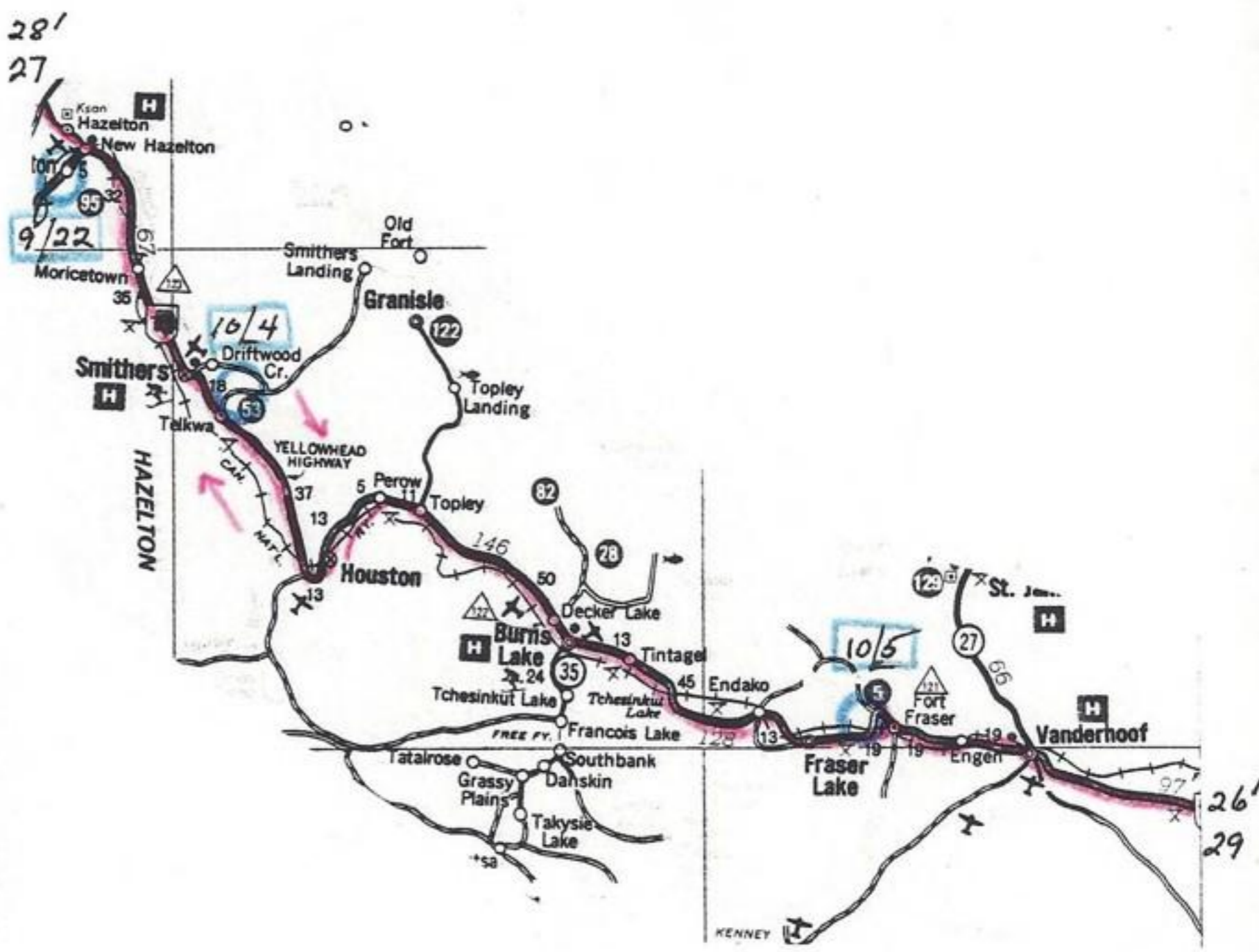
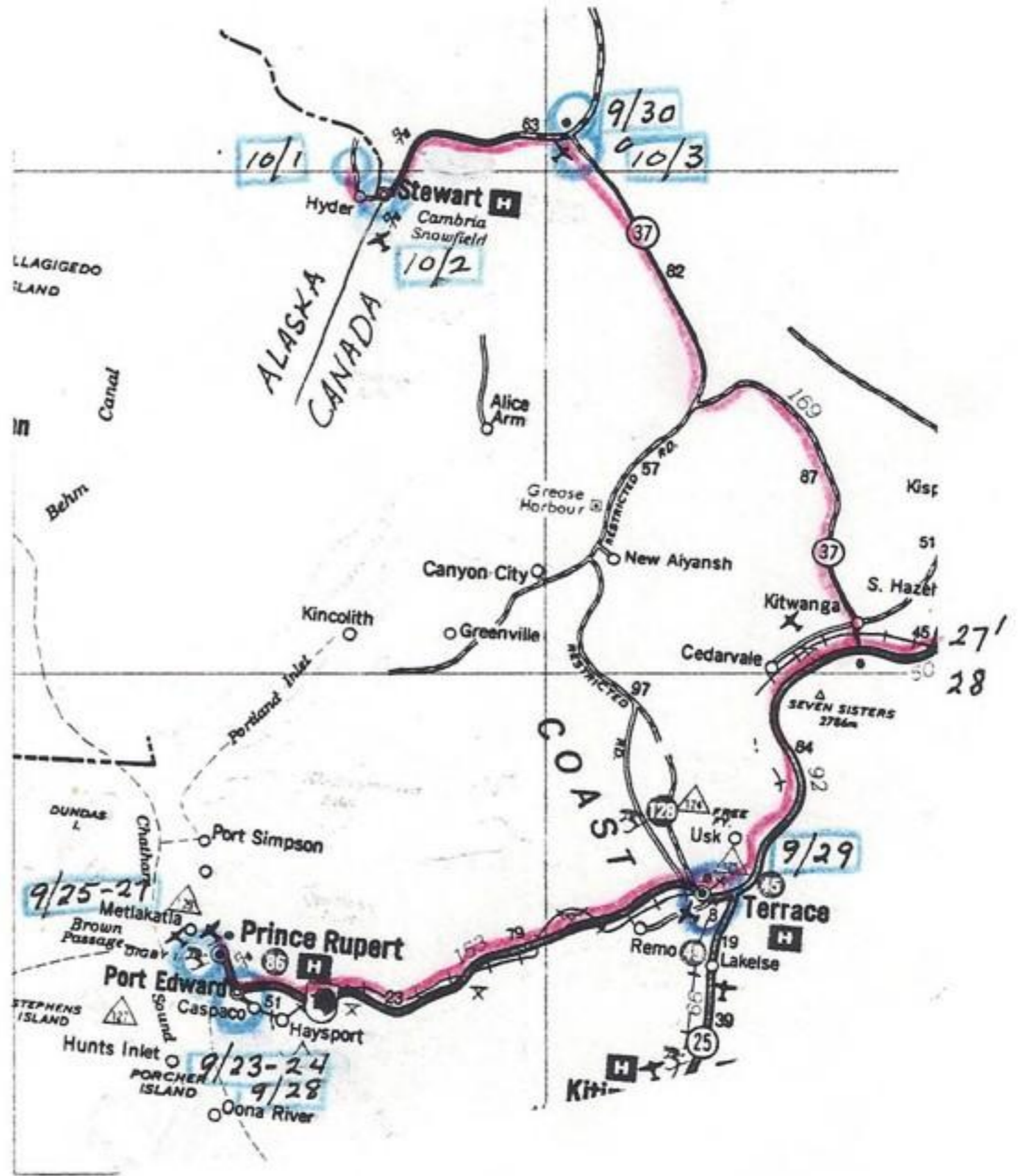
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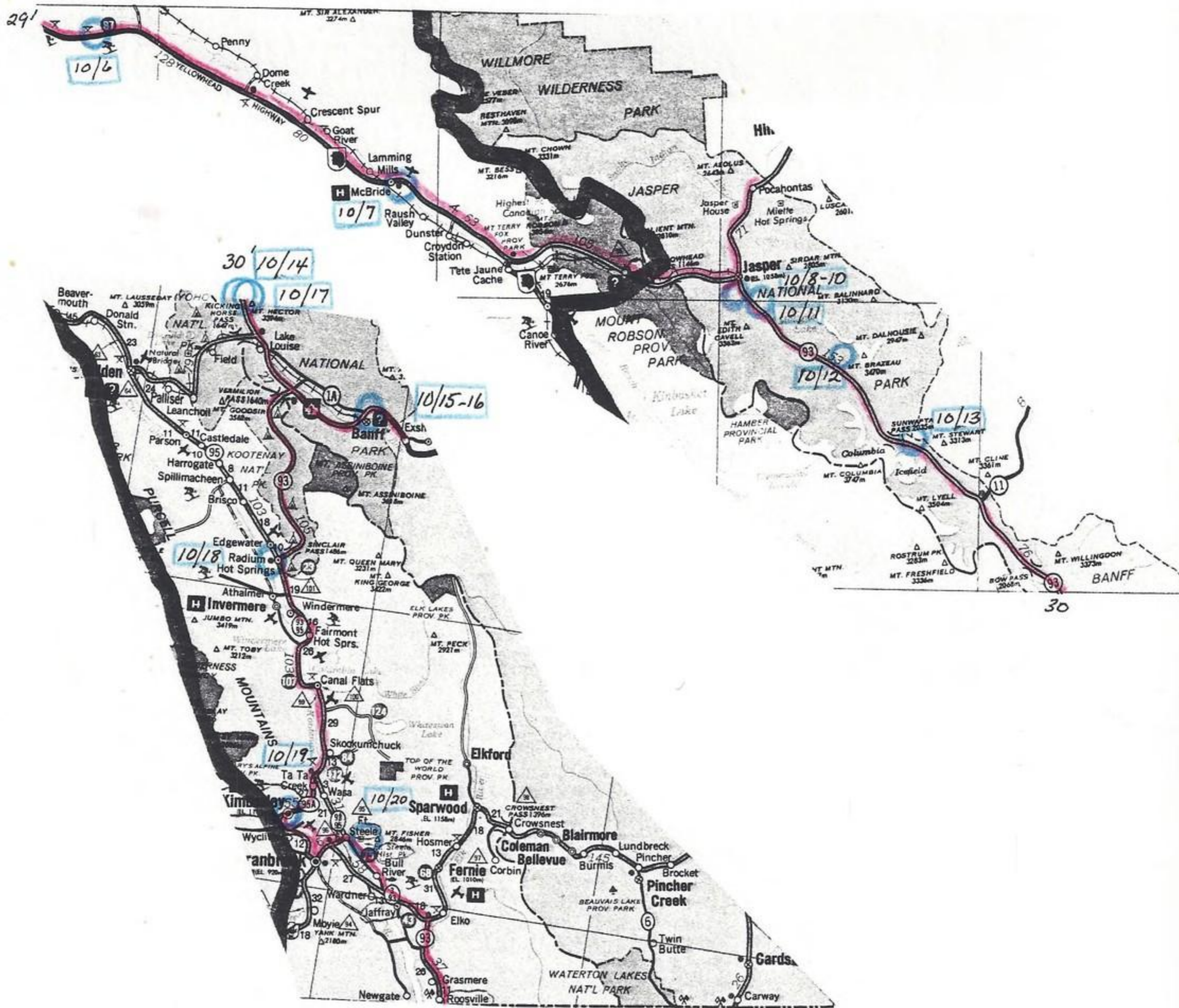




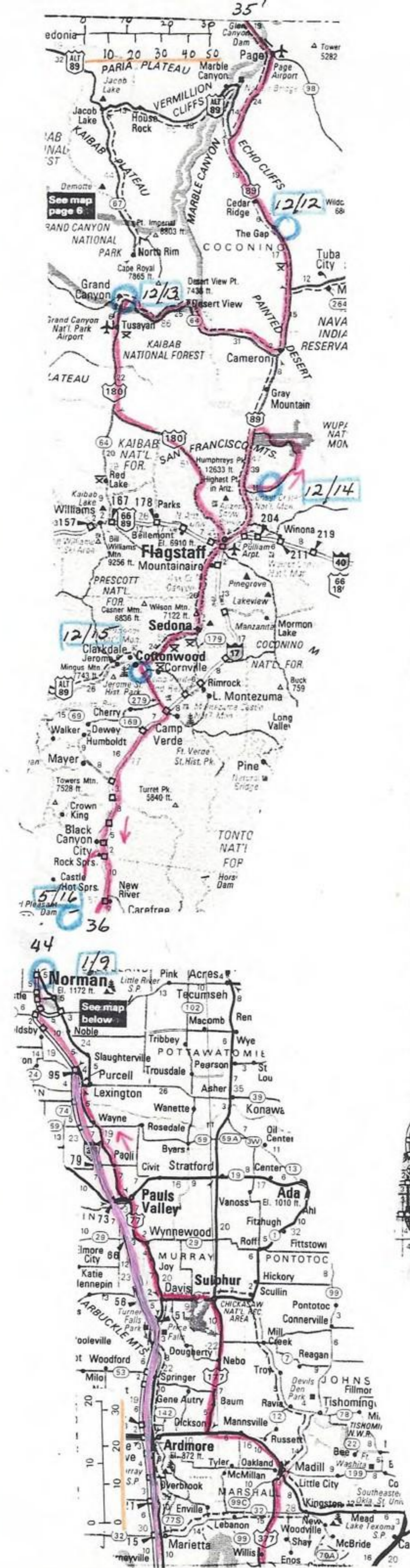












Temp. ^{30°} 38°F. 554.0 mound Branch. will record all birds and mammals between cities or landmarks without reference to mileage as deal obstructs vision of numbers. mourning dove. Last night 2 great blue herons overhead to n. Miami Creek, redwing, redwing blackbird, redwing, redtail. mans de Cyne River ^{at} 559.2. Considerable tree cutting by beaver in overflow area. River low. redwing, arther turnoff. Geasses in all areas more advanced than in Lawrence. no hawks or roadkills. Little Oage R. (size of Wakarusa & low. Flock 50 grackles. 3 mourning doves. Horton turnoff; redwing (all males so far). cottontail road kill, redwing. marmarton River. redtail. 2 grackles, grackle, crow, opossum road kill and another 200 feet away. Highland Ove. turnoff. Turnoff to Nevada Business. 4 grackles, meadowlark. ~~road kill~~, 4 grackles, striped skunk rd. kill, striped skunk, road kill, meadowlark flying 40 MPH. redtail. meadowlark, opossum rd kill, meadowlark, stripe skunk road kill. Sheldon turn off. Barton Co. meadowlark, meadowlark, skunk rd kill. stripe skunk road kill. 2 horned larks, Erwin turn off. 10 Canada geese flying n. Opossum rd kill, opossum rd. kill. Ruccon rd. kill. Larmer spit. Sparrow hawk. meadowlark, 2 hawks (roughleg one black), roughleg (Am) hawk, sp. hawk, redtail, 126 turnoff. 3 meadowlarks, Jasper Co at railroad overpass. redtail. mourning dove, crow, meadowlark, redtail meadowlark, redtail, grackle, sparrow hawk, 2 meadowlarks, 2 redwings. Alba turnoff. cardinal. Spring River at Cottage. 2 grackles. Ozarkian exposures of rock coming into being in road bed cuts. Redtail. Columbus (Kansas) turnoff. Permian red soils starting to appear. Redtail. Temp 38. Center Cr. Carterville turnoff. Redtail. Webb City at railroad overpass. Joplin City limits at 11:35. Tree in leaves (1/4-1/2) in some trees, willows greenish. Turnoff to 44 west. mourning dove, Shoal Cr. Sparrow hawk 5 of Joplin country becomes hilly and slopes covered with trees. Tipton Fed. turkey vulture, grackle, redtail Trees sparse as in parkland & grass to base of trees. Racine turnoff, sp hawk. Crow. Neraho at r r

overpass. Crow, grackle, grackle, Granby turnoff,
 no wood, redtail, kingfisher, grackle, mourning
 dove, 2 m. doves, 120 grackles. turnoff 59.
 Hills now becoming mountains + broad valleys,
 Indian Creek, 2 grackles. Junction 76. Dogwood
 in full blossom when on any one particular tree or
 bush. Porcupine road till. Jumpers onto right of
 ways of road. Elk River. Rivers now clear and
 associated bottomlands beautiful. road turnoff.
 Willows first to come out all green. Most trees in
 winter stage. First pine tree. Sugar Creek. Turkey
 vulture vult. 692.0 ^{3:00} Arkansas border. Belle Vista beginning
 just beyond border, grackle. At Belle Vista Town
 we were assigned home 26 on Sunford Rd just off
 London Rd. Home owned by Mr & Mrs. David (June)
 Marshall of 1818 Longford Ct, Wichita, Ks. 67207.

Benton Co.
 Belle Vista, Arkansas
 march 20, 1983

Took tour of area.
 march 21, 1983

To Bentonville and returned. mailed Kansas income tax ^{3 turkey vultures.}
 march 22, 1983 ^{Temp. 22°F}
 First flare-up of blood pressure 170-98. Left Belle Vista today
 at mileage 747.4 Only 1 gray squirrel rd. kill in Vista Area
 over approx. 30 miles. At home we stayed observed only 2
 crows and 1 phoebe in the three days. The forests of oak
 are depauperate of bird or mammals. at Brentwood first
 sparrow hawk. also first striped skunk road kill. First
 mistle at mountamburg. 830.6 Alma. On Interstate 40
 set monitor 438.8 to correspond with Barth odometer. reading
 at Lawrence. will use until odometer needle is replaced,
 and with mileage designation will keep complete census
 for a little while. The wild plum is in full blossom and
 about only native tree in blossom. Country pine forests with
 deciduous forests equally spaced in pine forests. open fields
 mainly in valley and in green grass for grazing. 439.9
 first meadowlark. Sky overcast + 5% blue. Creeks and
 rivers are greenish color. 849.4 crow. pink fruit tree in
 blossom. 849.6 2 crows. no turkey vultures since Benton-
 ville. 850.7 redtail. 850.9 2 crows. redtail 851.3 striped

skunk road kill. 853.2 turnoff to rest area. 855.6 overpass
 to Ozark, flock 80 starling. 869.0 turnoff to Altus.
 Johnson Co. 862.4³. 863.0 3 turkey vultures circling.
 863.8 2 turkey vultures. 864.7 turnoff to Coal Hill, crow
 sp. hawk, 871.4 sp. hawk, crow. Clarkeville at.
 873.4. 874.8 3 crows. Trees and bushes farther along
 than elsewhere enroute, now 1/2 to 1 leaves and trees
 yellowish green. 879.7 2 crows. Lumar at 882.3
 First contact with one of the arms of the Sardinelle
 Reservoir. 890.2 Pope Co. 896.2 first turnoff to
 Russellville. Sardinelle State Park 901.2.

Pope Co.,
 Arkansas
 March 23, 1983

Camped in site 9 which is the one furthest out on the
 peninsula (n of Marina Channel). Birds in area.
 Eastern blue bird: 4 in area. 1 alighted in a red berry
 bush being used by a mockingbird was immediately
 displaced by the mockingbird. The bluebird
 alighted on ground 6' from bush. The m. bird flew
 to ground and displaced the bluebird which flew up
 4 feet & hovered while mockingbird investigated area
 use by bluebird. The bluebird then flew to bush
 and was immediately displaced again by m. bird.
 The bluebird flew to tree 20' from bush where the
 mockingbird rested during feeding periods at the red
 bush. The mockingbird did not displace the blue-
 bird while the bluebird was in the tree.

The mockingbird that dominated the feeding bush
 displaced any bird that alighted in or on the bush.
 One other mockingbird alighted and the other m. bird
 chased it in a devious route for 250', then returned
 to bush. While feeding it would pick a berry
 and then move several inches to procure another berry,
 although a whole meal could be consumed from
 one position. At marina bay 2 domestic mallards were
 attracted to shore by a person throwing pieces of bread into
 the water. The mallards came within 2 feet of feeder.

2 snow geese approached and kept 6-8 feet away. Other
 domestic ducks arrived and fed close to feet of feeder
 some feeding from his hands. The snow geese finally

moved into 2 feet of feeder after other tame ducks paved the way of confidence. Finally the snow geese would feed from the hand of the feeder. Coot would not approach nearer than 10'-12'. They are more active in chasing the bread than were the geese & other ducks. The snow geese dominated the domestic ducks. The gulls are ring-billed gulls and approx 50 in camp area. The greatest number of gulls, 300, fed on W and N shore lines flying out from shore about 1/10 mi. One horned grebe swam in middle of lake, 2 ♂ & 2 ♀ ruddy ducks swam by about 1/10 mi. out into lake. A single blue-wing teal fed with 18 coot. 1 pr native mallards (they are smaller than domestic mallards). Purple martin and barn swallow fed in bay area. 1 song sparrow along edge of lake. Robins in open areas. Killdeer. 15 Canada geese had bills pointed yellow, 3 without point. One called from channel area and rest responded and all then moved N E along edge of lake with leader in front. This evening and snow goose flew away and the other called continuously. An employee of the park said there were deer, bobcats, grey foxes and a few red foxes in area as well as beaver & muskrats, and increasing.

Birds in area:

slate-colored junco	8	ring-billed gull	350
great blue heron	1	song sparrow	1
killdeer	3	mackinbird	4
grackles	30	bluebirds	4
robins	8	horned grebe	1
coot	82	blue winged teal	1
mallards	3	Canada geese	18
domestic native mallards & ducks	30 ²⁰	purple martin	2
ruddy ducks	4	barn swallow	1
		crow	2

Photo 830323-1 of Barth and lake.

Photo 830323-2 Snow goose

" 830323-3 " "

Left State Park and drove to dam and locks, then back on 40 and thence E to Morrellton, then N to Damascus on 64, thence N to Clinton thence E to Fairfield Bay. Stayed in Condo 42 B directly E. of Rusty and Tennis Club House & Restaurant.

We noticed that all the countryside showed heavy erosion from all streams and were told that this occurred Dec 3 of last year. The entire area was proclaimed a disaster area at that time. Most rivers and creeks at bridges had to be cleaned of debris (rocks) to reestablish drainage. From Sardunelle St. P to Fairfield Bay - 5 Turkey vultures, 2 sp. Hawks. 5 redtail.

Fairfield Bay, ^{Van Buren Co} Arkansas (Cliff House Cndos at Laquet Club).
 March 24, 1983

Took tour this A.M. This evening between sundown and late twilight drove down to the Corps of Engineers marina via 16 and 330. Birds along the way were 3 bluebirds, 1 crow, and 1 cottontail. No aquatic birds at marina. Informant said water raised 1 1/2 foot per hour and ~~canal~~ channel between two lakes moved water at a rate of 1/5 knots per hour. Continued ~~to~~ to end of peninsula which is private property and then return. Logs and debris line some 20' high on slopes having covered computers and roofs. On return observed 1 cottontail. ate at Laquet Club.

March 25, 1983

Birds in immediate area of Cndos:

Blue jay - 3-4 in area several times a day.

Turkey vulture - at least 2-3 passed by every hour of the day.

Purple finch. 2 males, 6 female in trees 50% of the time. male although over masked with red, show some bald head stripes of white as females. Sun near tree tops during early morning.

State-Colored juncos - observed 2-3 times a day in groups of 4.

Titmouse. Once a day.

Robin on open grassy areas.

White breasted nuthatch - one bird fed in trees and seen approx 3 times a day.

Killdeer - 2 on grassy slopes near headquarters.

FUSE for ~~panatomic~~ panasonic car adapter RP-911
 No. 250V 1A ASG3 FKO

Left Fairfield Bay, Arkansas and drove S to Greer Ferry Lake. thence 92 to 65 thence S to Little Rock thence 30 to Caddo Valley thence W to Gray Lake State Park.

Hot Spring Co.,
Arkansas
De Gray Lake State Park,
March 26, 1983

Left 9:25 AM, 195.7. Birds in area. Swainson thrush, Carolina chickadee, crows, 1 common loon, slate-colored junco, no gulls, robin, 2 mockingbirds, 8 robins, 2 pied-billed grebe, meadowlark. Had breakfast at Lodge and called Chris and Steve. This is one of the most beautiful lakes with pine (Loblolly and short leaf pines and with many islands. Rained this AM and continuously. Left and drove to Arkadelphia where we had car serviced (oil, grease, filter, tires 60° pressure) and then S on Interstate toward Texarkana. Skies clearing since rain this A.M. Caddo River, opossum road kill, opossum rd kill, crow, 2 crows, Gurdon turn off, Crow, crow, rest area, Okalona turn off. Clouds now rough cumulus because of SW wind. Nevada Co. at 231.8 mileage, crow, this is first day we have driven Burth with windows open. Crow, crow. Prescott turn off. 234.6 Hempstead Co. Emmet exit. meadowlark, 3 crows, crow. Hope turn-off. Cowbird. crow, 2 turkey vultures (MP 24), vultures partly close wings when soaring in high winds, turkey vulture. (MP 21), Fulton turn off. 268.3 Red River. sand banks. water low. West side bridge is Miller Co. Country now to S is virtually flat. Mandeville exit. MP 3. MP 1 at 284.5. Temperature at Texarkana 62°F. Complete census to Texarkana and to S. now S. mourning dove, turkey vulture, opossum road kill, mourning dove, 2 bluebirds, meadowlark 311.9 area of mounds, localized and 20-30 diameter and 3-4' high and gentle curve profile. Could be made by mammals. meadowlark, crow, crow, mourning dove. Fort Lyon, crow. First Louisiana heron at 314.7. major river and high. most deciduous trees in small leaf, red but full blossom and some with beginning green leaves. Dodridge. redwing, box turtle. 324.5 Louisiana line at 6:55. Ida, myra, opossum rd kill, crow, 3 grackles. 353.4 twilight & end census. Camped Shreveport at 8:50 at 373.7 at Kennedy Camp Grounds.

Caddo Co.,
Shreveport, Louisiana

March 27, 1983

Left camp 10:17 AM 373.7 Day clear, cool and windy. 2 barn swallows, redtail, 3 crows. 384.4 Texas State Line. Called Jay. Will send all letters to Fulton on Wednesday. Crow

Deciduous trees out in beginning leaf but just in initial stages from 1/4 to 1" long. and colors from greens to light green, yellows from almost white to good yellow colors and every variation between green & yellow. Some reddish and other colors. Somewhat resembles fall colors. Dogwood in full blossom as well as plum and red bud. Also fruit trees in blossom. 2 turkey vultures. Scottsville turnoff. Crow, turkey vulture, Crow, Marshall spit (259), at 403.2, 11:53. now 5. 4 vultures. Grass to 1 foot to 1 1/2 foot on right-of-way. 5 turkey vultures, flicker. Sabine River, overage flow. 830327-1 photo junk yard (It's good to get home!) in front of 2 homes along highway. 2 swallows, Crow, first patch of bull-rush type vegetation. Beckville spit. more wet meadows than elsewhere. Carthage, turkey vulture, crow. Gary spit. Turkey vulture, turkey vulture, crow, crow, crow, crow, 2 crows, turkey vulture. Tenaha, now 5 on 96. Just small ground palms, mourning dove, mockingbird, cottontail road kill, 3 redwings, Center (City), turkey vulture, robin. It seems that we always see one or two turkey vultures as we pass through small villages, crow, robin, crow. Spanish moss for first time at 466.2. also good dogwood. Crow, crow, turkey vulture, Crow. San Augustine at mileage 478.1 at 4:15 P.M. now on 21. more and more decorative grass, ^(pampas?) 4-6 feet high around homes. Crow, 2 meadowlarks, 2 lark sparrows, turkey vulture. Fords Corner, crow, bluebird, 2 turkey vultures. 2 swallows. Broad-wing hawk on outskirts of Geneva. 2 blue birds, 8 Cowbirds, turkey vulture, Crow. Milan 499.7 Turkey vulture, broad wing hawk, Crow, bluebird. Semphill, 505.5. Turkey vulture, cardinal, mockingbird. Yellowpine (City), 2 turkey vultures, turkey vulture feeding a striped skunk road kill in middle of road (highway), left and flew thru forest of deciduous trees & pines rather than open areas up or down road. Causeway beyond Yellowpine, spotted sandpiper at edge of water. no gulls. 6 mile Creek. At Forest Service Camp-grounds bridge into Camp out and road closed, so drove back to N end Causeway at 525.9 at 6:25 P.M. Moon already out and full. Camped here \$7.00

Cove Marina, N end Causeway, ^{Sabine Co.,} Yellowpine, Texas
 March 28, 1983

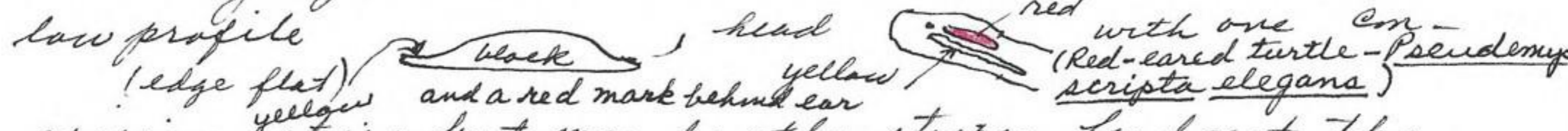
This is an arm of Toledo Bend Res on the Sabine River. Birds in area 40 or so grackles dispersed in area, 2 blue jays only birds in area this A.M. except song sparrow and killdeer & coot

There were approx. 65 coast softshell turtles sunning on logs or bank with backs toward the sun. On logs they were as close together as the log would support. Fisherman used electric knife carver to file bass, first at posterior of operculum back to base of tail and with the flop on body continue posteriorly between skin and flesh, all in one simple operation or stroke. This lake is famous for bass. Left 526.0 at 11:35 A.M. Bluebird. Willow Oak Forest Service turnoff. Leaving Sabine National Forest. Swainson thrush. Eastern chipmunk ran across road in area of deciduous forests and pines at 538.5. Junction 255 at mileage 539.2. Crow. Some pines with leaves 18" and cones to 8 inches may be long-leafed pine. Redtail, broadwing hawk road kill. Burkeville. This area is between deciduous-pine and coastal sub tropics. 551.9 forest fire to east. Brown thrasher. Turkey vulture. noticeable increase in flowering plants around homes, especially beautiful azalea. Newton, now E. at Newton County road side park took nature trail on S side road. Several black swallowtail butterflies feeding on honeysuckle like flowers. no birds. Crow and turkey vulture here. On highway 90. Crow + turkey vulture. Cardinal. Pileated woodpecker, 3 turkey vultures, Crow. Bonweir. 574.6 Sabine runs slightly above normal flow and now in Louisiana. Crow, raccoon road kill. First day since we left that I felt the sun burning my head. Singer, now S. 27 to Sulphur. Country S flat. Waretta, mockingbird. Entering Calcasieu Co. at 603.2, opossum rd kill. Rumey is a town of azaleas, grackle. area flat with extensive fields and pasture like a lawn. First large water canal. Mileage at Interstate 10 & 90 622.9. 636.8 Sam Houston State Park. at 4:52 P.M.

Sam Houston Jones Louisiana State Park, Calcasieu Co., Louisiana
 march 29, 1983

Birds in area: Crow, group of 6-7 and calling most of the time, the call is a shorter, less intense ^{and softer} than common crow. white-throated sparrow, group 3 in brush in forest. Fox sparrow, 2 in forest, hermit thrush in forest and confiding. Woodpecker hole made by pileated (large chips), another woodpecker that sounded like the red-bellied. Myrtle warbler in trees. Another warbler with call that I could not identify. Collected skull of porcupine no. 830329-1. Two other skulls of porcupine found

on forest floor. Eastern Gray squirrel at camp and fed from hands, others observed in forest were wild. Turtles common I would judge them to be 10"-16" in diameter and a low profile



specimens, ^{yellow} stripes, but may be other stripes, head not the soft shell turtle and edge flat. The turtles covered most of the low lying logs in the swamp of cypress trees. The large were all eroded a light tan from used by turtles, whereas logs elsewhere were dark. I would estimate 100 turtles in 1/10 mile of swamp edge. High water 7' above present level.

signs of old excavated dens, some mud imprints and one lying in old tree stump in water. The imprints were associated with a groove in mud so it ^{have} been a Nutria. As I recall there were no trees cut by beaver in the area.

The dens were excavated by a large mammal, resembling digging of the badger in the west. Three photos nos 830329-2 of cypress trees and two turtles on truncated cypress. Turtles extend legs and fan feet as if for aeration or for extending surface area for heat absorption. Photo 830329-3 and 830329-4 of cypress and reflections. Photo 830329-5 of domestic goose snipping grass. 12 gray squirrels in camping areas.

at checkout station, the ranger said that Nutria are in area and are lighter colored than beaver and nest and rest among logs & stumps in swamp and make nest of dried grasses. He did not know of beaver in area. Red fox and Coyote in area as well as bobcats. The flood of Dec 3 to 7 brought 7 feet of water to this area and covered all the camp grounds. no reports of mt. lion or red wolf. white-tailed deer in large enclosure stand on hind legs to reach leaves (for approx 30 secs). also eat green aquatic vegetation from wet areas. otherwise there is not much browsing vegetation on the forest floor. Some small palm leaves had been eaten. Some small deer 1/2 height adults, no antlered ones. Continuing beyond park. opossum road kill, sparrow hawk, brown thrasher, At 648.6 leaving camp ground area after a false start in wrong direction. 3 crows, opossum road kill. In marsh along Calcasieu River bridge on highway 171 observed approx 80 common egret generally dispersed.

First boat-tailed grackle. 677.2 now on 27 south. A mile or two S of 90 and 1 block N of Interstate 10 we met a family who offered a place to park our trailer. They are Mr + Mrs Melton H "Big" Mott, 201 Henning Dr, Sulphur, Louisiana 313-528-2667. We parked in a special place for trailers with lights, water and sewer connection. They own a Holiday Rambler. He presented us with a carved bird.

Sulphur, ^{Calcasieu Co.,} Louisiana

March 30, 1983

Left Sulphur at mileage 681.0, 9:35 A.M. S on 27. Rained last night and intermittently this A.M. First large palm trees at Sulphur. now raining and dark clouds to S. Snowy egret and first one observed so far. First bridge 2 black ducks, 2 snowy egrets and redwing. Area becoming lakes and marshes but still inhabited by man. meadowlark. Clapper or King rail size bird ran across road, 2 redwing, 3 redwing, redwing. Ellender bridge Intracoastal waterway. Great blue heron, great blue heron. Stopped at rest stop 1/10 mi. E draw bridge S side, now being made into camp ground. snowy egret, 2 great blue heron, approx. 40 laughing gulls passed by while we were having lunch, 2 snowy egrets, 8 boat-tailed grackles, Killdeer and a small group of 20 swallows that passed by just as rain was stopping. Cloudy all over but signs of clearing, especially to SE. Left at 693.2 at 11:42 A.M. 694.0 at road. Snowy egret, grackle, 5 swallows, g.b. heron, g.b. heron. 2 laughing gulls & a grackle. Cattle egret, 2 cattle egrets, grackle, redwing, meadowlark, wind from E, snowy egret caught a fish, red-tailed loon, low draw bridge, common tern, grackle, Hackberry at main part of town. 8 common grackle, 3 grackles, sp. hawk, 2 grackles, 100 sandpiper. 8 boat-tail grackles. Started to rain, big storm forecasted but looks like it will clear. 5 common grackles, Long Point Bayou, common grackle, redwing, laughing gull, grackle, redwing 25 MPR, 3 grackles, Canal bridge, common egret. snowy egret, raining hard & dark skies to W. G.B. heron. visited Sabine Wildlife Refuge headquarters.

Superintendent and naturalist reported 2 red wolves in extreme
 west reserve. One imprint cast measured 130 mm length.
 Two redwolves were trapped and sent to Washington State(?)
 for rearing experimentation, 2 others returned to reserve.
 They believe they are hybridized with dogs. Salt
 polluting fresh water. Muskrat coming in from N +
 east. Meticulous common, when surveying with helicopters
 the wolf will put its head into grass and then when
 helicopter passes over will entrance out. Because of heavy
 rains, more animals on dikes and thus more sightings.
 Left, grackle, snowy egret, still raining. Little Grass
 marsh, snowy egret, Kingfisher, Kingfisher, small sparrow,
 snowy egret, redwing, g.b. heron, snowy egret, redwing,
 redwing, 2 grackles, striped skunk road kill, snowy egret,
 snowy egret, 2 grackles, 5 snowy egrets, grackles, redwing,
 snowy egret, kingfisher, coot, kingfisher 25 M.P.R.,
 snowy egret, king rail. Continued to nature trail where
 we stopped but raining too hard. Approx 80 grackles flying
 back and forth over cattle line of 1/4 ^{20 laughing gulls, 7 black necked} mi. ^{15 laughing stilt,}
 gulls, 2 seaside sparrows?, 8 snowy egrets, kingfisher,
 g. b. heron. Fisherman inspected 25 lines & no fish.
 Common turn, redwing, 3 redwings, 3 common grackles &
 2 boat tails, snowy heron. Left to S. Some areas on W
 side road terribly overgrazed like Kansas, to roots. Right
 of way tall grasses, 2 snowy egrets, redwing, redwing,
 redwing, redwing, b.t. grackle, redwing, b.t. grackle,
 common egret, redwing, common egret 32 M.P.R., 2
 blue wing teal, 3 g.w teal, solitary sandpiper, at 713.4
 Leaving Sabine Nat. Wildlife refuge. Snowy egret, boat-
 tailed grackle, kingfisher, 2 redwings, snowy egret,
 common turn, redwing, redwing, common gallinule, redwing
 small sparrow, Second Bayou. 2 snowy egret, 2 b.t.,
 grackles, scoup, redwing, redwing, snowy egret, b.t. grackles
 2 scaups, snowy egret, 5 blue wing teal, b.t. grackle, b.t. grackle,
 2 snowy egret (all observations within 200' from road. First
 Bayou 715.9 redwing, king rail, 4 spoonbills, 4 blue wing
 teal, 5 black-necked stilt, 2 redwings, 3 redwing, 4 blue
 wing teal with black-necked stilt associated with them.
 coot, redwing, 2 redwing, black necked stilt, common egret,
 redwing, boat tail grackles, snowy egret, snowy egret, redwing
 3 coot, 3 king rail, redwing, snowy egret, b.t. grackle,

3 redwings, snowy egret, King rail, snowy egret, 4 coot, 3 redheads, Holly beach at 718.0 at 1:49 P.M. On shore at 1/10 mi. W of Holly beach area and within 100 mi beach length 12 Herring gulls, 12 sanderling, 1 ruddy turnstone and a sanderling fed on insects from a dead fish being consumed by a Herring gull, the two small birds ran back and forth and just keeping out of reach of gull, 15 ovalet, 1 golden plover, 2 ring-billed gulls, 23 Bonaparte gulls resting on beach. On water 1/10 mi into gulf a continuous line of Bonaparte gulls all flying E between 2 and at least 3:00 PM, many alighting on water and flying about a foot above water. Estimated 1 bird per 10 seconds but actually they moved by main line in small groups of 4-10. 3 redwing flew E along coast, 1 Louisiana heron with broken wing, 3 royal terns, 8 common tern, 3 laughing gulls.

Birds on N side of beach in fields and wet pastures were (in same 1/10 mile linear area) 23 black-necked stilt, 5 roseate spoonbills, 6 shovellers, 52 blue wing teal, 110 coot feeding on grasses in one group 200' from water, shrike loggerhead, 2 black ducks, 1 green heron, 1 black crowned night heron, 2 W. willett, 2 barn swallows, 1 killdeer, 22 solitary sandpipers, 1 purple martin, 1 steel sandpiper, 2 seaside sparrows,

Cameron Co.
1/10 mi. W Holly Beach, Louisiana
march 31, 1983

Fog this morning. Birds on beach (1/10 mi). 8 Herring gulls, 2 laughing gulls, 4 ring-billed gulls, 18 sanderling, 2 barn swallows, 1 common tern, 2 royal tern, 1 gull, 1 tern flew by.

water not as dirty as last night. Informants say that waters from just W New Orleans to Galveston dirty but beyond to W are clear.

surf
running surf
sand islands
ponds
white sands
shells and debris
sand,
debris
grasses

full moon last night.
sand bags on sand beach 1 mile removed from source.

This AM

yesterday evening

Fewer birds on beach at twilight than during the day. Some waves almost crest then demish and when the mass hit the shoreline or beach is more forceful than a larger wave that crests and turns over farther out. Surf parallel to shore this am but slightly angled ~~west~~ ↑ yesterday afternoon. Fog gradually clearing. In marshes and pasture N of camp same birds as yesterday and about same population.

Left at mileage 725.7 at 9:30 A.M. water changing from gray to blue by time we left. Will go N on 27 to Nature Trail in Sabine Wildlife Refuge and will keep complete census of birds and mammals along borrow canals on W side of road. 12 American pelicans flew overhead. Temp 54°F. 2 blue-wing teal, 3 snowy egret, snowy egret, redwing, Kingfisher, snowy egret. Snowy egret in breeding plumage. Common egret. 2000 ducks and other birds in fields and lakes to W. Snowy egret, 3 redwings. Ducks in lakes beyond include pintail, baldpate, green-wing teal, gadwall, coot, scaup, shovellers (at least 20 birds), 2 greenwing teal, black duck, black-necked stilt, golden and black-bellied plover and others. Nutria road kill 280^{mm} body and 282 tail. This animal was at the side of a King rail road kill and presuming that it was eating the rail or visa-versa. 727.7 mileage of Nutria rd. Kill. 2 gadwalls, 3 redwings, redwing, 4 bluewing teal, redwing. 728.0 First Bayou. 2 black-necked stilt, blue-wing teal, snowy egret. Many birds beyond borrow pits but not easily censused. Gadwall, redwing, b.t., grackle, monarch butterfly's dominant butterfly and only one seen in area. Second Bayou 729.5. Kingfisher, grackle, bridge across canal, grackle, Nutria road kill at another bridge across canal. Snowy egret. 2 common grackles, small sparrow, great blue heron. Snowy egret on top of telephone pole. Inside refuge there was a decided drop in number of birds and field grazed to roots. 732.9 arrived at Nature Trail. Will keep complete census of birds along trail to observation tower. Started at 10:12 A.M. Coot, heard King rail, ♀ b.t. grackle, 2 blue-wing teal, coot, (at bridge a fisherman had 2 gallons of crabs from salt water canal), 2 coot, 5 boat-tailed grackles, 4 blue wing teal, 2 blue winged teal, 4 coot, 2 blue-winged

teal, so far they have been in pairs, males may be defend-
 ing females by chasing other males away. Bamboo along
 edge of canal to right, at bend to W. a wild swan, snail,
 snowy egret, 2 redwings, 2 blue winged teal. Green
 heron, coot, b.t. grackle, coot, 2 b.t. grackle, common
 gallinule, 2 blue wing teal, snowy egret, 10 coots, 1
 common gallinule, 2 blue wing teal, common gallinule,
 mosquitoes, solitary sandpiper, red-eared turtle on bank
 and moved in water at 10'. alligator 4-5' long. Photo
 of this animal no 830331-1 2 black ducks. Red-
 wing, 8 blue-wing teal, 20 coots, 8 common gallinules,
 Salt water Cordgrass, Pied-billed grebe. Photo of
 general view of open water plants at edge. alligators
 move up & down these passage ways. 8 blue-wing teal,
 5 shovellers, 1 snowy egret. Louisiana heron, seaside
 sparrow. Trail divides 10:30 A.M. Redwing, 2 shovellers.
 alligator 6'; 4 coot, snowy egret, 4 coot, 4 blue-wing
 teal. B.t. grackle, 2 alligators 6'-6'. alligator 5'.
 b.t. grackle, redwing, b.t. grackle, In marsh to N are approx.
 20 coot, 8 common gallinules, 20 blue-wing teal, 10 shovellers.
 King rail, marsh cottontail left edge water, ran across
 trail to grass on other side, nearly all grass along edge have
 overhead protective shelters for rabbits and developed into
 trails. All benches had rabbit fecal pellets as if used
 for dry resting or observation. Redwing, now at first
 bridge (10:50). 2 coot, common gallinule, marsh to right had
 approx. 12 coot, 5 common gallinule, 20 blue-wing teal and
 5 shovellers. most teal are paired. 2 common gallinule.
 alligator, redwing, common tern, seaside sparrow?,
 5 cormorants in dead tree, 5 b.t. grackles both ♀ & ♂
 and don't seem to be paired, although I have seen males
 repel each other. Sparrow. Common egret below
 cormorant and flew up into small bush. 2 alligators. 7'
 2 coot, Louisiana heron, pied-billed grebe, common egret.
 10:45 at two benches. 2 coot, 8 coot, 2 gallinules and
 blue-winged teal. marsh to right. 10 coot, blue winged
 teal & 4 ^{common} gallinules. Alligator to 4' and then rapidly
 moved to water, alligator, meadowlark. 3 coot. Contact
 of land with water does not seem to be excessively used.
 white-faced glossy ibis. 10 blue wing teal, redwing.
 alligator 40' from tower. 10:50 tower. From tower out

about 20' (emergent vegetation - ^{pure} solid & green) have been trampled by animals. Shore heavily used as if people might have dropped food. Some trails in vegetation made by nutria, 2 rose 3 spoonbills over head and alighted, 10 others followed and alighted. From tower can see at least 12 common egret & 2 ^{great blue herons} snowy egret in area, ^{and the usual birds} Photo 830331-3 of open channels and side vegetation with cattails at edge. Photo 830331-4 of nutria in trail in water and 30' from nest platform of 3 young. It remained in one position for 30 minutes then swam away from nest and invaded ^{short} green emergent vegetation to feed. The nest of 3 young was photographed ^{830331-5, 830331-6} showing 3 young on platform, one upper left in bulrush for protection and the third not visible but among rush at edge of platform. In the 30 minutes the young alternated 6 times between open sun protection and bulrush overhead protection. An informant said that 3 weeks ago the young were 3 inches long & 5 in number. One week later 4 remained & today there are 3 left, ^{now 9" long (head & body)} As water rose more sedges were placed on platform to elevate young above water. He reported 3 water moccasins, 2 water snakes & one black with yellow patches. 3 years ago he counted 300 alligators on trail ^{immediately} this side of tower and all left for water. We observed one 9" diameter red-eared turtle. The tree on W side tower has 21 buds 1/2" in diameter & 5' higher than tower. A myrtle warbler fed in this tree. 2 Louisiana heron flew over tower. Common tern flies by ^{approx} every 10 minutes. Can see 12 nutria to N in marsh some on platforms others sunning on vegetation. From tower can see to S beyond area which is overgrazed, short and devoid of birds. This must be a special fresh water section of the reserve and not typical but made to show the public. At parking area and not seen elsewhere were herring gull, ring-bill gull ^{Photos 830331-7, 8 and 9 of killdeer at nest in parking lot. Stands up on nest to defend other birds or man. ♂ & ♀ changed incubation at 2:35 P.M.} Left nature trail and to S. 7:10 P.M. Holly Beach, V. Behaen at 2:35 P.M. here and nature trail were 2 nutria road kills, also 1 King rail and 2 coot. Redwing, 5 redwings, snowy egret, snowy egret, redwing, meadowlark, redwing, redwing, barn swallow, meadowlark, 2 swallows, (census 100' each side of road), redwing, 2 snowy egret, meadowlark, snowy egret, b.t. grackle, snowy egret, Louisiana heron, redwing, snowy egret, swallow, snowy egret,

snowy egret, coot, common tern, 2 blue-wing teal, 2 redwing, pied-billed grebe, 2 gallinule, 1 gallinule, 3 blue-winged teal, snowy egret, c. gallinule, snowy egret, end of water course, now approaching ferry, redwing blackbird, redwing blackbird. plant entrance, plane runway to left, 2 snowy egrets right in town. snowy egret on fence post. Ferry 749.1. no birds except laughing gulls across water. The town of Cameron is now site of mfg of deep sea drilling platforms, 2 dozen or so in the process. The type is with legs on upright as if the platform can be adjusted for height. as a result there is considerably more traffic of coastal road, especially large fast moving trucks. In 1934? hurricane Audrey devastated the town because of lack of forewarning. East of Cameron is residential on n side of road and lower marshland on s side. The demarcation is a shoreline, now grown to live oak trees of great age. Dominant birds are common grackle, boat-tailed grackle, and redwing. Occasionally egrets and ducks, coot but these uncommon although there are water courses along the way. Cattle egret 3' from edge of pavement while cars passed by. Oak Grove (City) just E of this village (1-3 miles) are stacks of debris every 25' or so piled to 1-2 feet high. The wet meadows do not look like they could be harvested for this purpose, like muskrat houses. Duck with 10 young 2-3 inches and first young seen this year. Murrementau river bridge at 772.4. It is 3 miles W of this bridge where mounds of vegetation occur. Now into Grand Chenier. Have not kept complete census because of rural interference, at least from ferry. Wildlife not as common as at Holly Beach. Only few coot in water areas. First local boovertype Sactus. First cormorant since Holly Beach. G.B. heron. Photo of 830331-10a of live oak. between Chenier and Lucky Fellow Tracts. 80 pelicans (white), S of this tree. Striped skunk rd. kill. Rocky Fellow Tracts at 785.6. Decreased activity since last visited (Complete census E.) 5 b.t. grackles & a redwing. Some Canada geese on property. redwing, mockingbird, redwing, grackle, c, 2 c. grackles, 2 b.t. grackles. 5 common egrets, redwing, c grackle, b.t. grackle, mockingbird, mourning dove, 3 redwings, b.t. grackle. b.t. grackle, b.t. grackle, b.t. grackle, redwing, b.t. grackle. Leaving line of live oaks and now n of it. Barrowpits but aquatic life uncommon. B.t. grackle, b.t. grackle, snowy egret, snowy egret b.t. grackle, 2 Loggerhead shrike, 4 bluewing teal, 2 coot, 5 coot.

snowy egret, 2 common terns, snowy egret, 2 redwings, coat, b.t.
 grackle, redwing, coat, foot, nutria road kill, 2 grackles b.t.,
 redwing, redwing, 2 coat, 2 b.t. grackles, king rail, coat, redwing,
 snowy egret, 2 redwings, 2 common grackles, common gallinule,
 redwing, common grackle, 20 coat, b.t. grackle, redwing, at
 794.3 draw bridge over Canal. 2 redwings, redwing, b.t. grackle,
 redwing, 2 coat, redwing, 4 coat, 2 nutria road kills so far,
 3 coat, 3 gallinules (common), 2 coat, 2 coat, 2 b.t. grackles, coat,
 2 coat, redwing, 3 coat, 2 coat, lot of coat in pairs. 15 coat,
 10 coat, 2 redwings, b.t. grackle, 2 redwings. 8 coat (these
 larger numbers of coat are stretched out along barrow pits)
 cormorant, 30 coat, b.t. grackle, redwing, myrtle warbler,
 snowy egret, 2 snowy egret, 2 common egrets, 15 swallows
 in one group. Red shoreline of trees start to right (S) of us. 1/2 mi.
 b.t. grackle. 779.8 Vermilion Parish at 5:50 P.M. Rockyfeeler
 Reserve still south of use. Redwing, snowy egret, snowy
 egret, b.t. grackle, redwing 2 common grackles, redwing,
 grackle, b.t., b.t. grackle, b.t. grackle, b.t. grackle, redwing,
 2 redwings, 2 b.t. grackles, 4 redwings, b.t. grackle, common
 grackle, sparrow hawk, redwing, redwing, redwing, redwing,
 mockingbird, 3 redwings, snowy egret, b.t. grackle, kingfisher,
 meadowlark, now back in line of trees Pecan Island at 804.8
 and end of complete census. Camped 1 1/2 mi. E of Telephone
 Exchange in Pecan Island at 5:50. Called Polly & Chris.
 Photo 830331-11 of Barth + camp.

Pecan Island, Vermilion Parish, Louisiana

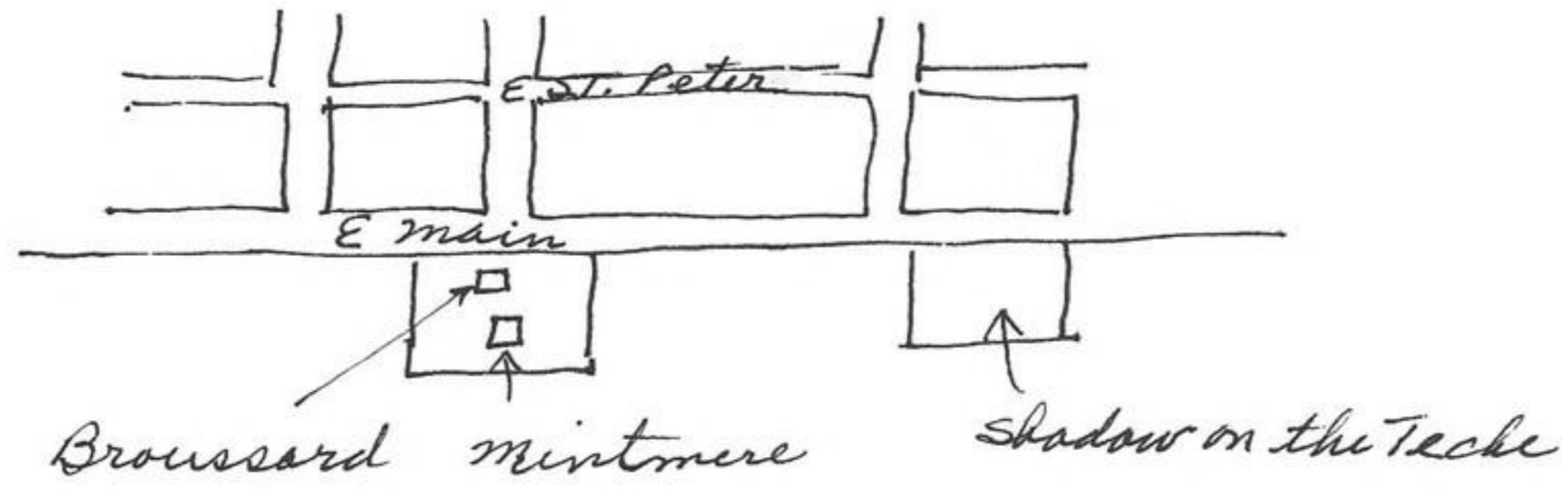
April 1, 1983

at about 7:00 A.M.

Prothonotary warbler at camp. Opossum walked along
 log and gained perch at top of broken limb, both in sun and
 wind, and clean forelegs, top of base of tail, face and
 neck and ears where it could not clean directly with mouth
 + tongue by licking ^{front} feet and then cleaning with paw. After
 about 5 minutes it returned to main horizontal trunk and
 entered a hole to retire for the day. 4 common grackles
 watched at 4-8 feet but did not molest by action or voice.
 when opossum retired birds left. Birds in area are:
 prothonotary warbler, g. b. heron, meadowlark, boat-tailed
 grackle, common grackle, starling, mockingbird. Left
 Pecan Island and later discovered that from here to
 junction 82 and 691. (to Intracoastal City?) that the recorder
 malfunctioned and all info was lost, the information that.

showed a certain area of grackle - redwing sparsity (almost total exclusion). Will try to feel this in by recollection. From Pecan Island to where 82 turn abruptly to the north the birds were about the same as pre Pecan Island census. On the north road (82) the road was bordered on both sides by water canals to the old Intercoastal waterway and the aquatic forms (coot, ducks, egrets etc) were almost absent except near Intracoastal bridge (old). The common & boat-tailed grackles and redwings were constantly present all along the way and I could hardly keep up record on recorder. After the old Intercoastal waterway Bridge to junction 82-333 there were virtually absent with only one or two blackbuds (grackles, redwings) recorded although good habitat for them, waterfowl was also absent even though a great percentage of field were covered with water for growing rice or Crayfish. I'm not sure which. From the Intracoastal waterway (new) one grackle (boat-tailed) flew across bridge at its highest point. Started complete census at 82 and 691 ^{at 8:47.9 10:40}. This area is covered with water for growing of rice. 1 mile S of here on 82 observed 1 field with approx 100 snowy egrets and 6 common egret. Before this observation there were practically no waterbirds back to the old intra-coastal bridge. This aggregation of birds was an isolated instance of egrets, nothing observed before or after. Also a group of 120 ring-billed gulls in part of flooded field. We did not see gulls before or after this sighting. Just prior to the 82-691 junction we passed thru extensive deciduous forests. Continued N 82. Junction 694, draw bridge. Vermillion R. 850.3. Junction 330 one to Abbeville 82, one to Henry. Abbeville City limits. Mockingbird, junction 331-82 still no grackles or redwings. Erath. Junction 339-82 Only a few flooded rice fields in this area. Some fields have stakes every 20 or so feet. Delcambre City limits. Cemetery tombs higher above ground (3-4') than flat slabs at Pecan Island. 2 common grackles in Delcambre. Mockingbird. Iberia Parish 867.4, 2/10 mi. W draw bridge On E side bridge turned left and ^{1 mile to} checked the salt dome that collapsed and could see one building slanting into water. First boat-tailed grackles since old Intracoastal waterway also 6 cattle egret. Blue jay for first time today, marsh rabbit road kill. Live oak gardens closed (Jefferson Island)

3 common grackles. Boat-tailed grackles, bluejay. Few grackles being sighted but rare. Mockingbird, Common grackles, loggerhead shrike, mockingbird, 2 mockingbirds, mockingbirds, now on 675 (14), Junction 682. Opossum road kill. Grackles still rare. Pond to left with cypress trees (man made pond). Loggerhead shrike junction 676. We are on 675, into New Iberia. Crossing 90 and now too close to New Iberia for census at 882.1. 883.3 New Iberia City limits. Visited mintmere on E main st. and also Broussard.



Broussard is an early Acadian house built in 1790. Insulated with mud and spanish moss in walls. It is not furnished inside. All wood Louisiana cypress. It was moved here from about 4 miles on a trailer to barge to present location.

mintmere. Plantation house built 1857 of Greek revival style. Slated for demolition in 1976 but purchased by Mr. Ray P. Bouveralt at same time and now restored with some modification. This house also of cypress except the floors of "red-heart" pine. Some (except usual American Empire Victorian furniture - particularly massive bedsteads of mahogany veneer and one of cherry. Continued 31 W to Belmont Campgrounds at mileage 898.5 at 5:00 P.M. Yellow-bellied sapsucker and 3 gray squirrels in camp. Temp today 73°F, low 47°F ^{in night}.

Belmont Camp, New Iberia, Iberia^{LA}, Louisiana

April 2, 1983

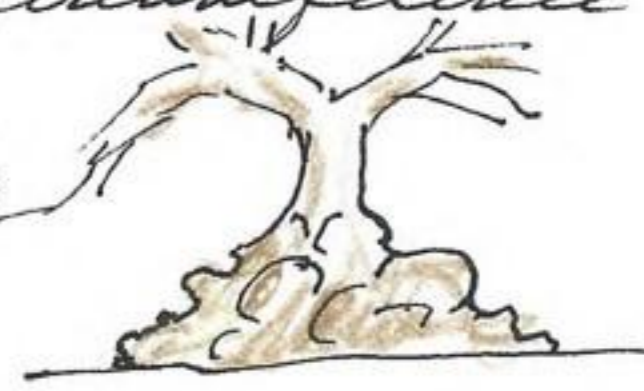
Skies clear. Low temp. 47°F. Today to be 60°F, 45°F tonight. Wind from W 15-25. This A.M. 51°F. Waves 15'-high. 6:32 sunset, 6:00 sunrise. Tide high 7:24^{AM}, low 12:54^{PM}, high 4:07^{PM}. ^{THIS EVENING} ^{AFTER NOON.}

3 Robin, 3 bluejay also in area. This camp is among large deciduous trees and live oak. Also 1 draw. Camped on Teche, one block S of Evangeline Oak (Longfellow's). Camped in parking lot of St. Peter's Church for 2 hours until 8:30 P.M.

St. Martinville, St Martin Co., Louisiana

April 3, 1983

Temp last night 40°F, some this A.M. Will go to low 70's today. no rain and clear skies. Rel. humid. 85 per cent. Left camp on the levee at 9:15 AM at 927.5 and plan to visit Lafayette. There are both common and boat-tailed grackles in the city area. Also observed 4 mockingbirds in camp area, measured one live oak at camp at 60' circumference at outer edge of roots. This was probably an abnormal condition. 932.4 12 cattle egrets, 4 egrets just inside of Park City limits. 3 cattle egrets 3/10 mi N. of city limits. Mockingbird. Grackles uncommon and since we left have seen 5 boat-tailed grackles and 7 common grackles, bluejay, mockingbird, will keep complete census from Park to N. 2 robins, second opossum road kill, 4 cattle egrets, mockingbird, purple martin, striped skunk rd. kill, bluejay. Now at Breau Bridge. Now W. opossum rd. kill, striped skunk road kill, 2 crow, opossum road kill, and 18 cattle egrets. Opossum road kill. Vermilion Bayou and Lafayette Parish at 946.5. End of census at the Lafayette Parish line. In Lafayette visited and St. John's Cathedral (L'Eglise St. Jean du Vermilion), service in session. The second largest oak tree ^{in Louisiana} on grounds measured diameter 8 1/2', circum. 27 ft, 125' high, 210 feet wide (from one side over crown to other side. My spread measurements of tree was 135'. One limb weighed 72 tons. ^(one in my ft. martinville was 115' spread) Church was built in 1821 and replaced by present one in 1918. Photo 830403-1 of azaleas and part of church. Photo 830403-2 of front of church showing lower 1/2 and central part. ^{Live oak second oldest in N. Am. in church courtyard 70 830403-3} In Lafayette, drainage ditches are V shaped and completely lined. Made trip to Acadiana nature trail N E part of city on Alexandria street. Could have been deciduous bottomlands in Lawrence, Lousus. Returned to Lafayette and in area of moss & willow streets observed several old houses. Lafayette does not qualify for old homes. On 167 at Maurice at 993.4 begin census. Loggerhead shrike, common grackle. Fields & rural homes. Striped skunk and 2 opossum road kills. First ice field to right. Opossum rd. kill, more flooded ice fields, opossum rd. kill.



Should be grackles but there is none, opossum rd. kill, Epit
meant to right. Striped skunk road kill, mockingbird, now
on road with canopy of trees overhead as we approach Abbeville.
Abbeville city limits at 001.9 (now in our 3rd thousand).
mileage at turnoff to Kaplan on 14 002.3 and will keep
complete census to Kaplan. Opossum road kill: none.
Loggerhead shrike, striped skunk rd. kill, mockingbird as we
approached Kaplan. Kaplan c. limit at 010.5. Opossum rd.
kill. Rice field devoid of wildlife, Loggerhead shrike.
3:20 P.M. Opossum rd. kill, cottontail road kill, into
mulvey. junction 30-93. 30 sandpipers. There have
been some small birds on utility line. Opossum rd. kill.
Swallows 1 per mile. 2 cattle egret along a canal. Gueydan.
025.6 beginning 2 lane highway to W. 026.8 railroad tracks
now W. 2 meadowlarks, redwing, striped skunk road
kill, killdeer, meadowlark, Last town a storage
place for rice. Opossum road kill, Swallows, increasing,
(not barn swallows), Loggerhead shrike, shrike, redwing.
Cameron Parish. now 717 out around main road.
redwing, redwing, shrike, killdeer, redwing, mockingbird,
now S. 2 robins, now W. redwing, now S, redwing, mockin-
bird, ricefield this far W, meadowlark, now 71, 4:30.
Bayou Canal. redwing, mockingbird, redwing, redwing,
5 redwings, 4 redwings, killdeer. Now closest to lake,
+ right turn. redwing, mockingbird, mockingbird, entering
Vermilion Parish, 2 mockingbirds, redwing, opossum rd kill,
shrike, redwing, 40 sandpiper, 4 redwings, 2 redwings. Now
back on 14. Arrived west ^{side} of bridge E of Lake Arthur.
at 5:00 P.M. at 049.1 mileage. Camp in boat port in
2 pairs wood ducks flew by, they can fly fast. wind
blowing hyacinth up canal from S.

Mermentau River Bridge, E Lake Arthur, Vermilion Co., Louisiana

April 4, 1983

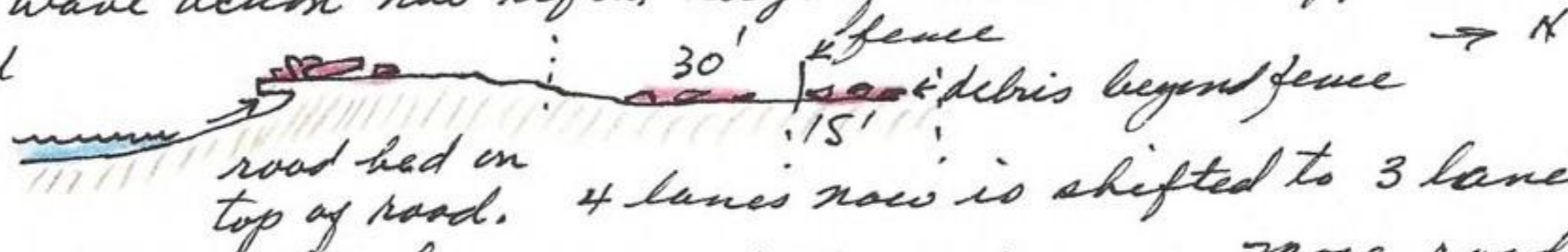
at 6:00 A.M temp 59, rel. hum. 81, wind 14, 29.79, expected to
be 70 today, 60 night. Blasting at about 1 hr intervals a/c
night. Spotted sandpiper at camp. Otherwise no birds in an
area where there should be bountiful. Left 49.1 at 9:00 A.M
54.8 now leaving west on highway 14, at 10:27. Lake Arthur
is a rice storage area. At Lake Arthur had top fixed by putting
2 new rubber rings in bottom section. Skies show rain

mockingbird. Will keep complete census to Holly Beach to
 show distribution of common and boat-tailed grackles and
 other birds and mammals. 4 redwings, loggerhead shrike,
 2 redwings, redwing, 6 swallows, mockingbird, redwing.
 Some fields are in green grass 10" high, maybe rice, loggerhead
 shrike, mockingbird, cattle egret, loggerhead shrike, redwing,
 approx 40 sandpeeps (sanderling?) in flooded field (rice).
 Turnoff 99, 064.7, Sparrow Hawk, opossum road kill, redwing,
 12 common grackles and 2 blue-wing teal. 1 black duck,
 3 redwings, loggerhead shrike, draw bridge, 2 redwing and
 a common grackle, great blue heron, Beyond bridge.
 a good water courses along road and tree but no birds.
 Calcasieu, ^{Parish} 070.6. Striped skunk road kill and 10
 swallows (1-2-3) since draw bridge, Hayes 072.8 at rail-
 road track in town, Redwing. Outside town for 2/10
 mile people have dumped trash and garbage litterly
 2 layers thick because regular dump had been closed.
 There must have been \$50 worth of aluminum cans
 along shoulder of road. Cardinal, mockingbird, opossum
 road kill. Cattle egret, Opossum rd kill, loggerhead
 shrike, Groups of 20 & 10 of closely compacted cattle
 egret, 2 redwings, opossum rd. kill, mourning dove,
 started to rain. 2 common grackles, opossum rd. kill,
 cattle egret 3 feet from passing cars, Armadillo 081.5,
 2 common grackles, 2 common grackles, redwing, redwing,
 Holonwood, no S, 27th at 83.7 It will be interesting to see if grackle
 distribution conforms to route from Pecan Island N to main
 intra-coastal waterway bridge. 3 common grackles.
 redwing, redwing, redwing. Opossum rd. kill, 397.
 Turnoff, Redwing, Canal to left has water 2 feet higher
 than road. Passing thru E-W line of trees but road
 shows no drop in elevation as if it were a shoreline,
 Curial by trees, Opossum rd. kill, Junction 384.
 384. E. Redwing, Opossum road kill, 3 common
 egrets, 2 black ducks, 2 common grackles, First
 snowy egret 094.3 12 cattle egret. 094.7 beginning
 30-40 foot wide road side canals, right side. 2 coat,
 snowy egret, 2 coat, 3 coat, 6 coat, boat-tailed grackle,
 boat-tailed grackle, snowy egret, opossum rd. kill,
 at Intra-coastal waterway bridge at top is mileage 097.6,
 at 11:45, To S is extensive marsh land as far as one

can see, in contrast to N which is drier pasturelands
 with some marshland. This should make a difference
 in aquatic wildlife. Wind from SE. main canal still
 on right side of canal and as usual survey is 200'
 each side of road. 8 redwings, black-necked stilt and
 3 snowy egrets, 2 boat-tailed grackles and grassum
 road kill, 4 redwing, common gallinule, 3 black-
 neck stilts, 4 redwings, 2 coat, redwing, 2 snowy egret,
 snowy egret, 2 redwings, coat, snowy egret, 4 coat,
 coat, snowy egret, cattle egret, cattle egret, 2 snowy
 egrets, common egret, redwing, 3 redwings, boat-tailed
 grackle, black-necked stilt, muskrat road kill, 2 blue-
 wing teal, redwing, snowy egret, 3 redwings, king rail,
 2 ring-billed gulls, coat, common tern, nutria road kill, 2
 blue-winged teal, 2 ring-billed gulls, crow, 2 snowy
 egrets, killdeer, common egret, coat, 4 redwings, crow,
 nutria road kill, redwing, redwing, redwing. Road sign
 mileage 19. Turnoff to Little Cheneer, 2 crows, coat,
 snowy egret, 2 snowy egrets, redwing, common egret,
 mile past 20, common tern, common egret, cattle egret.
 (fed on shoulder of road within 3-4 feet of passing cars,
 and to that extent more confiding than the snowy
 egret, snowy egret, nutria rd. kill, m.p. 21, coat,
 common gallinule, m.p. 22. Uplift of land at Creole^{106.6}.
 common tern. Common grackle, 2 common grackles.
 boat-tailed grackle. Striped skunk rd. kill, 2 b.t. grackles,
 common egret, b.t. grackle, b.t. grackle, 2 common grackles,
 common grackle. m.p. 30 at 13.9. 3 coat, coat, common
 and boat-tailed grackle. now on Oak Grove turnoff.
 Killdeer, 2 redwings, 2 common grackles, 3 common grackles,
 2 crows, b.t. grackle, b.t. grackle, b.t. grackle. Inclusion 1142
 mileage ferry 122.2 at 12:38. Approx 130 at boat. 2 b.t.,
 grackles. In W side channel 200' N of ferry landing,
 on beach had dinner and observed the following, 5
 boat-tailed grackles, 2 horned grebes, 2 boat-tailed
 grackles flew across channel keeping 2' above water,
 water moving N at about 3 miles per hr. 3 common terns
 1 willett, 2 black b-s sandpiper, fed 8' from earth, 200
 laughing gulls, 2 herring gulls. In W side at ferry
 is marshland, E side Cameron moving to E. The channel
 is entrance of gulf into Lake Calcasieu, Redwing, left 1:15

2 boat-tailed grackles, snowy egret, m.p. 39., b.t. grackle, 4
 redwing, snowy egret, redwing, redwing, b.t. grackle, 2 blue
 wing teal, 2 coot, 3 b.w. teal, common gallinule, 2 b.w. teal,
 2 snowy egret, common egret, common gallinule, snowy
 egret, snowy egret, redwing, coot, blue-winged teal, blue
 winged teal, snowy egret, 2 blue-winged teal, 2 blue-winged
 teal, meadowlark, b.t. grackle, b.t. grackle, b.t. grackle,
 (census as usual 200' each side road), meadowlark, meadow-
 lark, snowy egret, snowy egret, 2 g.w. teal, 2 redwings, redwing,
 2 blue-winged teal, checked beach to left just off road,
 one sandpiper took 10 hops on one leg before dropping
 the other leg down for normal use. 12 laughing gulls,
 2 herring gulls, 3 willets, ruddy turnstone, common tern,
 2 b.t. grackle, 2 redwing. 130.6 first buildings of Hally
 beach. checked camp, \$800 per nite so continued W. Junction
 of road 132.0 mileage at 2:43. 2 b.t. grackle, 2 redwings,
 redwing, b.t. grackle, approx 200 Bonaparte gulls hovering
 above water at edge of beach, 80 resting on sands,
 20 laughing gulls. There is a dramatic migration
 of laughing gulls moving E as observed several days ago
 in same area. The usual pattern is groups of 5-15.
 Bonaparte gulls flying just above water and high wave
 action and alighting on water, riding the waves and lifting
 up over crests of waves and then continuing to ride the trough.
 Other small groups of Bonaparte pass over or alight with
 ones on water. The alighting and leaving water is continuous
 and for some intervals of no gulls is a continuous process.
 Some areas are groups of 100-300 Bonaparte gull concentrated
 over water and constantly fluttering above a special spot of
 food. One water the Bonaparte will actually walk on the
 water for 1-3 feet in feeding behavior. On the beach the
 laughing gulls also form compact feeding groups and hover
 above the beach or edge of water, as the water recedes from
 beach (this is high tide and rough water). Many Bonaparte
 gulls will join in on the beach-water contact but for
 the Bonaparte the activity is generally seaward (200') from
 shore. As Bonaparte leave groups on water (to E) they leave
 one or two at a time which makes the column of moving
 birds continuous but not many birds per unit of the column,
 all flying slow and just above the water. There is a
 movement of some 150 laughing gulls to E and these mainly
 over beach and out to 100 or less feet seaward,


noted 5 instances of laughing gull chasing Common Tern, sometimes as far as 1/10 mile in various directions. This observation at 134.1 Sometimes there will be 30 or so laughing gulls hunting beach from air and only 1 or 2 Bonapartes and emerald. 30 Bonaparte gulls with share there searching group with 1 or 2 laughing gulls in their off shore habitat. Laughing gulls do not tread water like Bonapartes. King-bill gulls about 1 per cent of gull population, no herring gulls noted in this particular aggregate of gulls. Boat-tailed grackle on edge of beach-grass contact, at 134.4 ocean edge of mead am of road, no damage of road proper. water of high seas up to edge of road (10' from road), now in area where rocks have been placed on right of way, now wave action has lifted edge of road and stopped it down on road



road bed on top of road. 4 lanes now is shifted to 3 lanes as result of outer lane gone 4 3 2 1, more road damage as one proceeds W. road material now lies N beyond fence line on N side of road. The white lines have been bent and twisted into antelinas without breaking the layer of meadam. This destruction of sand dune barrier a marsh between road & gulf has produced an excellent road to observe wildlife and for a short distance is ok but wildlife needs the protection of an area between beach & road. Some areas of beach should be made inviolate to people. At this time the water is up to road and there is no beach as such. Bonaparte gulls still working E. 138.1 beach line gradually leaves road. Striped sk. rd. kill. 139.1 Johnson Bayou. Boat-tailed grackle, b.t. grackle, 2 snowy egret, 3 whimbrels flying E along beach at twilight, 2 snowy egret, snowy egret, redwing, b.t. grackle, redwing. At Johnson Bayou could be Ocean View. B.t. grackle, redwing, b.t. grackle, Johnson Bayou City limits, 2 b.t. grackles, 2 b.t. grackles, crow, redwing. Sand marshland to left, redwing, redwing. redwing, 2 b.t. grackles, 2 b.t. grackles Johnson Bayou to right at 146.5. 2 b.t. grackles, redwing, b.t. grackle, 2 b.t. grackles, 4 redwings, redwing, redwing, 2 redwings. Coot, redwing, 2 redwing, redwing, redwing, 7 snowy egrets, snowy egret, 2 snowy egrets, rd. kill common gallinule

b.t. grackle, b.t. grackle, kingfisher, redwing, 2 redwings,
 b.t. grackle, meadowlark, green heron, 2 redwings, common
 grackle, common grackle, g.b. heron, 2 redwings, redwing,
 8 snowy egrets, Cattle egret, snowy egret, snowy egret,
 redwing, b.t. grackle, 2 redwings, g.b. heron, redwing, coot,
 b.t. grackle, 6 redwings (all males), coot, 3 redwings, b.t.
 grackle, king rail, 2 redwings, 2 b.t. grackles, boat-tailed
 grackle, black-necked stilt, b.t. grackle, 2 redtails, redwing,
 3 coots, 3 coots, 2 redwings, 10 coots, 5 coots, coot, snowy egret,
 40 coots, 20 coots along canal and almost continuous with
 coots, 8, 40, 40, 50, 30, coots, b.t. grackle. 13, coots, redwing,
 3 blue-wing teal, 10 coots, 40 coots, 12 coots, redwing, redwing,
 snowy egret, 4 blue-wing teal. 20 coot, 5 blue-winged teal,
 b.t. grackle, redwing, redwing, 2 redwings. Rd now 45° NW,
 redwing, redwing, 3 redwing, redwing, redwing, redwing,
 meadowlark, redwing, 3 redwings, 2 b.t. grackles, redwing, 2 redwings,
 redwing. Can see Sabine River, 4 redwings, redwing, now
 along S end of Sabine Lake, redwing, redwing, 3 redwing, 158.4
 Sabine draw bridge, 2 b.t. grackles. Camped at put-in for
 boats on N side of E end bridge (parking area of gravel and
 200' of shoreline. Strong wind from S. but partially protected
 by road leading to bridge. Observed to late twilight and
 a check after dark. Birds at camp, 2 willet, 10 Royal terns
 to S overhead in one hour, the willet ate 2 whole shrimps
 (abdomen) as long as bill. Had not known them to eat
 large items, 2 laughing gulls, 2 ring-billed gull, 2 b.t.
 grackles. These consistently in area. Also Common tern
 about 1 per 10 minutes flew by. 3 Redwing, Boat-tail grackles
 feeding on ground in wind do more sidestepping than
 forward walking. There must be some adaptation in
 the musculature of the body. Sometimes they must run
 sideways to keep from being blown over. The long tail
 must have evolved in a windless habitat. Ring-billed
 gull has legs from bright yellow to green to a light faded
 green according to age. Serrin leg always flesh colored &
 never yellow. Ring-bill 2 year old has black to tip of bill
 and good demarcation. Ring-bill displaces b.t. grackle.
 Boat-tailed grackle displaces redwing. Ring-bill gull
 displaces laughing gull. Ring-bill eats bread but only
 after close inspection. Cormorant flew by, pelican
 S of bridge. Bills of immature ring-bills are larger than adults
 bills. Adult ring-bills displaces immature ring-bills.

At 5:50 21 barn swallows flew E along shore, usually 2 or 3 have been flying in area. Spotted sandpiper came to area 4 times ^{and} then left after each short visit. 2 willets in area the entire time. The two willets used the flat parking lot more than other shorebirds. B.T. grackle displaced willet. The two willets in area copulated at one time. The male ^{with partly open bills +} outstretched wings vibrating rapidly ^{gradually} approached the ^{which remained motionless} receptive female at 1 1/2 feet. In 17 seconds was at back of ♀ and mounted with wings still vibrating. After first successful copulation ^{15 sec.} and still on ♀'s back tried to hold position by grasping the feathers on top of the ♀'s head at ^{by the tip of his bill} but at that point the female reached by moving out from under the ♂. Both birds upright during copulation. The male remain on ground motionless ^{with body horizontal and head pulled in} for 1 minute while ♀ walk out into open parking lot.

At 6:30 20 least tern fished on lee side of pinacula. They fished actively with repeated dives every 5-10 sec. They fly and move like swallows and hover with rapidly beating wings of equal movement above and below the axis of the body, then dive by lifting wings upwards and falling down into water. 18 least sandpipers arrived and fed for a few seconds, then bathed and then formed close group in water at edge of beach with the formation a ^{wind →} elliptical shape  with point into wind. The birds were continually adjusting to leeward position. At one time a willet fed to within 1 1/2 feet of the group and then lunged into the group in an aggressive thrust as if to capture one of the sandpipers. The sandpipers moved 3' then immediately returned after the willet continued on its feeding. A spotted sandpiper fed thru the group with minor adjustment of the formation. The least sandpipers remained almost motionless while standing first in water at edge of beach and then on beach at edge of water. They remained there until after dark. At 1 hr after dark place search light in area where they were last seen but they had moved on. A laughing gull worked on a crab leg for about 8 minutes, then walk to a fresh water puddle in parking lot, drank and then left. A second willet (could have been the same one the was aggressive or could have been its mate) fed thru sandpipers without concern. The sandpipers moved 1 foot away then returned. A second spotted sandpiper came to pod of sandpipers, walked around them & continued on.

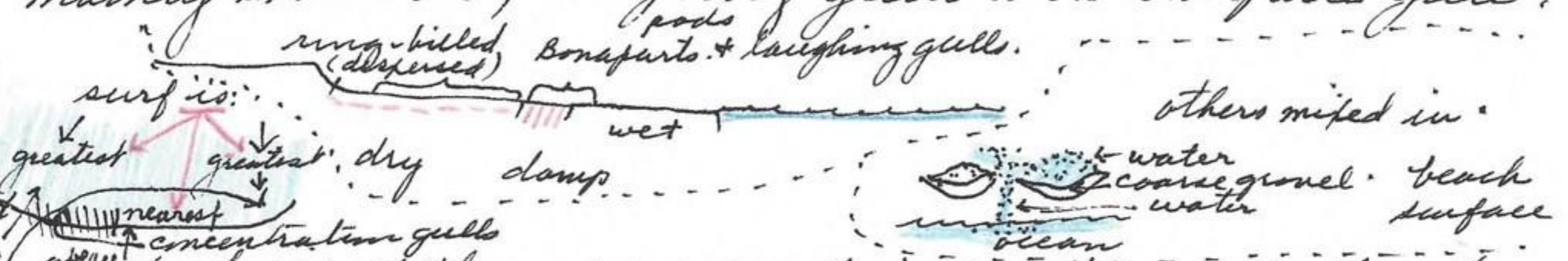
after each disturbance the sandpiper vie for best position in the formation, always trying to get on the lee side of the pod. Once stabilized, they keep their position, at 2 hrs after dark the ♂ + ♀ willet were at edge of water in lee of grasses 100' east of camp.

E end Sabine Pass bridge, Cameron Co., Louisiana

seas calm, red fish ^{back} April 5, 1983 18 Canada geese (20 gulls of 24 stakes in water)
 This morning the male willet was observed vibrating its wings in mid-air 25' above ground and continued to vibrate wings as it angled down to female on the ground. Left 8:50 A.M. and continued W over bridge to Texas. Will keep complete record to Port Arthur Intracoastal waterway bridge S of town.
 Redwing, 8 redwings, b.t. grackles, 3 redwings, 4 redwings, 2 redwings, b.t. grackle, loggerhead shrike, redwing, 2 redwing, common grackle, meadowlark, 4 redwings, redwing, redwing, meadowlark, redwing, 8 redwings, 5 redwings, 5 redwing, 4 redwings, b.t. grackle, 2 redwings, 3 redwings, loggerhead shrike, 5 redwings, 2 redwings, b.t. grackle, 2 redwing, 2 redwing, 2 redwings, 5 redwings, redwing, laughing gull, laughing gull, redwing, first canal, 2 b.t. grackles, redwing, loggerhead shrike, opassum rd. bill, redwing, 2 redwings, redwing (all males). 4 ring-billed gulls, one herring gull, 8 redwings, redwing, b.t. grackle, meadowlark. 8 redwings, 2 b.t. grackles, 2 redwings, Coar, redwing, laughing gull, 3 b.t. grackle, 2 redwings, loggerhead shrike, 3 redwings, 1 meadowlark, redwing, 2 redwing, redwing, killdeer, 2 ring-billed gulls, 5 redwings, redwing, 2 redwings, redwing, redwing, 6 redwings, redwing, meadowlark, redwing, redwing, 3 redwings, 4 redwing, 12 redwings, 5 redwing, 2 redwings, 3 b.t. grackles, 4 redwings, 4 redwings, 8 redwings, 2 redwings, redwing, 4 redwings, 2 redwings, 2 b.t. grackles, willet, 4 common grackles. In new waterfront of newly graded bank there are fewer redwings than elsewhere.
 Redwing, meadowlark 167.7 turnoff to bridge. 8 b.t. grackles and 4 redwings ^{and one mourning dove} on approach to bridge. Now on bridge. Drove thru Port Arthur and thence S on 87 toward Sabine Pass. From top of Intracoastal waterways bridge could see that S of the waterways the land was more marshy and supported more water than N of waterways, as has been true in most waterways we have passed over. Counted 41 boat-tailed grackles from Port Arthur outskirts to Sabine Pass on 87 or 3 grackles per mile. Continued S to turnaround at old gun emplacement. Water running over road for last 1/10 mile

or so from shipping channel which is fresh water & am told. The drop was about 6 inches. Entire road is about water level. Returned and continued W from Salinas Pass. at 1/10 mi before St. Roy Harrington Beach Unit of the Sea Rim State Park observed an armadillo road kill. Set up camp and then checked nature trail. Only 3 redwings on entire walk. Visitors should be told that the marsh is seasonal and after firing area and keeping the marsh in early successional stages that there will not be the numbers of wildlife the leaflets represent. To me it was almost sterile except some trails of the nutria. On coast beach east of the pole fence on beach east of camping and parking area to 2 miles east were aggregations of shore birds on the beach, mostly settling down for the night and not for feeding activity this was at a time when lights were fading in the evening. Periodic rain. In one section of 100 linear feet of shoreline counted 50 aquatic birds of which 75% Bonaparte gulls, 15% ring-billed gulls, 5% laughing gulls, 1% Royal tern, 2% common tern. ^{20% herring gull} This did not include other smaller shore-birds like, willet, sandering, etc. On this beach the Bonaparte gull occurred in aggregates of approx 150 birds, other individually dispersed throughout. Ring-billed gulls mainly shoreward, laughing gulls with Bonaparte gull.

surf ends farthest from beach



On the basis of the ovage count in 100 ft would estimate in the two miles of shoreline (this was the limit of visibility and I could not determine if they went beyond, there would be 7,500 birds or 5625 Bonapartes, 1125 ring-billed gulls, 375 laughing gulls, ^{75% Royal tern, 150 common tern, 150 herring gull.} Also in area are 2 scissortail flycatchers, 21 cattle egrets flew E over surf about 200' out from shore for at least 2/10 mile, then landward at 90° angle.

Group 25 sandering on beach. Uniform synchronized running most when incoming wave rolled up on sand, second desynchronized run when wave left and birds fallowed. However other synchronized movements were random. One sandering with hunched backed profile, head held low. Fed 10-15' up beach (parallel with water) and about every 15 seconds would disperse close group of sandering and chase any one that was closest to his

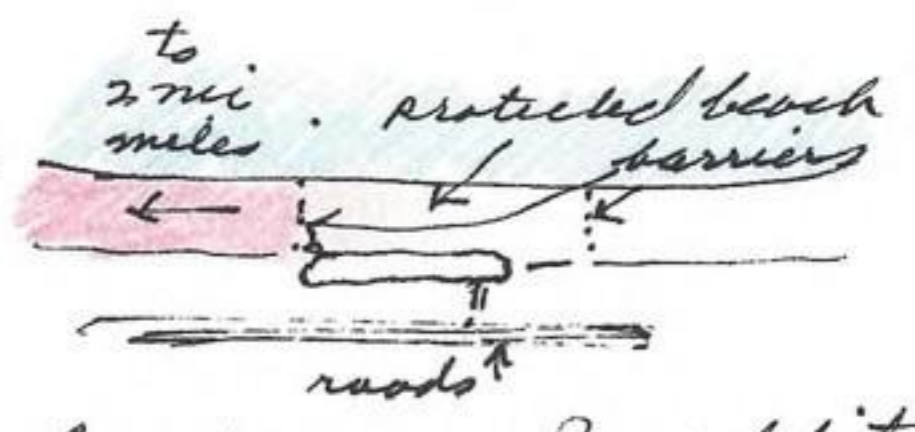
line of movement, sometimes chasing an individual away from group. My logic was that it was a psychologically irritated individual as one time it went landward some 80' from group and pursued its ghost adversary. This activity late evening and continued for 20 minutes at least. The members of the group did not retaliate but accepted the aggressiveness and always maintained group formation after each attack.

Window at rear of Barth measures 32 x 16 1/2 elliptical.

D. Ray Harrington Beach Unit of the Sea Rim State Park, Jefferson Co., Texas.

10:30-11:00 April 6, 1982

Rechecked the area east of protected beach and found the bird composition and population as was yesterday evening.

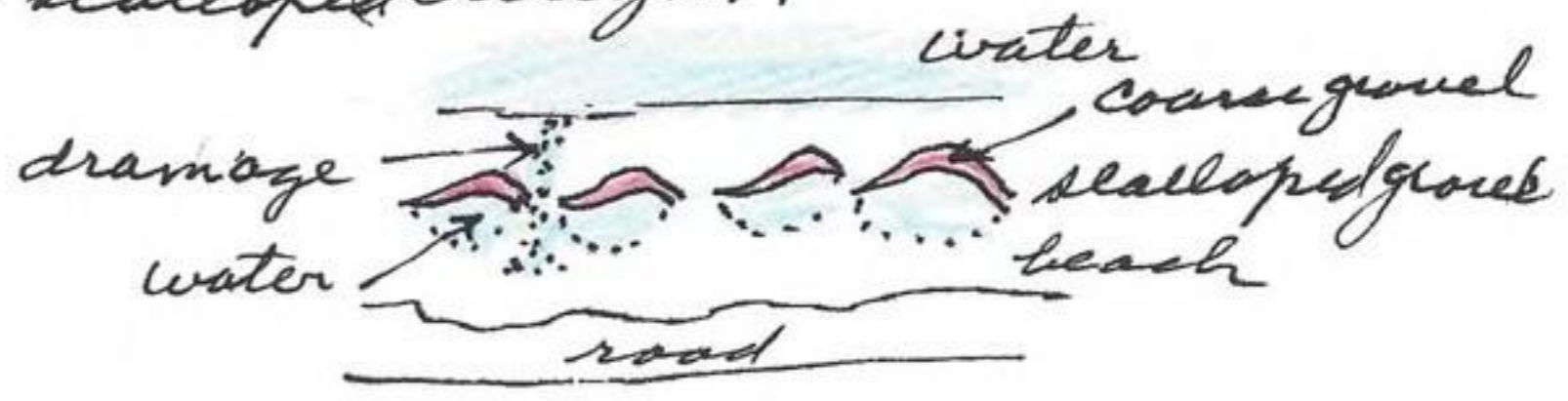


It had not been disturbed by campers. In addition the tree swallows had increased last night dramatically to a population of 20,000 in 2 miles, the same beach area as census was made yesterday evening. With binoculars looking down beach, they appear as a mass of mosquitos. They were found 20' n of vegetation beach contact and 20 out onto the beach and seldom over 15' above the surface of the ground or vegetation. They were principally confined to actual contact of vegetation and beach where the greatest concentration of mosquitos were found. The general movement was from E to W as they hunted for food. Air nearly calm, ^{wind from N.} surf normal but active yesterday & evening. Swallows not feeding in marshland n of beach.

Left 211.6 at 12:00. First Barth we have seen coming from W. Will keep complete census. Sparrow hawk, 4 b.t. grackles. Above average tree swallows than we have seen on previous days. They are occurring in groups of 200-500 birds, all feeding at contact of beach and vegetation, some feeding down into stems of tall grasses. Between these concentrations of tree swallows were fewer birds but more than we observed on previous days. Some birds were resting in middle of road and 3-5 road hill birds were found. The Fadden Marsh Wildlife Refuge. At 213.5 at beginning of closed road. The area beyond has been officially closed for the last 2 years, but we were informed that it was passable. Redwing, b.t. grackle, tree swallows in this area. 215.7 Tree swallows continuous but some area they are absent as much as 1 mile. Striped skunk road kill, redwing.

Beach now 40' from road. marsh hawk 217.6. From the few glimpses of the gulf and beach I would say they are not in the same concentration as at Sea Rim. marsh hawk 217.9. Beach is mainly small gravel to edge of water from base of road under meadow. Bird life scarce along area of road damage, at 218.7 gulf has pushed debris of beach onto road. In effect it has cleaned the beach of man-made debris and piles of high beyond the old shoreline. Now would be a good time to clean the shoreline. Some debris has been pushed over road and right-of-way to marshland \approx beyond the road. Mcadam, buckled and fragmented to $\frac{1}{2}$ of the entire road or 1 lane to yellow line, 2 redwings. Shorebirds rare (1 per $\frac{1}{2}$ mile) and of these the willet is the most common. Gravel from road bed is now on beach and forms a scalloped design.

5 redwing. Beach clean except man's gravel. meadowlark, willets, redwing, meadowlark.



Tree swallows in normal pre migration number. No birds on beach. At exit to Arco Oil is 221.6. Telephone poles now starting on beach to left, some guyed to hold poles upright. meadowlark, sandering, ring-billed gull, redwing. One group 300 tree swallows and localized. Willet and sandering only kinds of shorebirds. up to now we have seen 15 willet 2 willets, 2 willet. Have not seen a gull in a long time. Pod of approx. 200 tree swallows, ring-billed gull, meadowlark 224.1 now left lane gone and road damage into right line. 3 willet. most willets are paired, redwing, redwing, 2 killdeer, 2 sand shanks 20' from shore, 2 willet, 12 redwings in one group, E Kingbird, more tree swallows in a group 250. 10 redwings in one group. common egret, 8 redwing, 2 redwings (redwing groups may be associated with cattle all along highway, 2 killdeer, 2 redwing. 10 redwing. groups of redwings increasing as we go W. Approx. 2000 tree swallows and sitting on the beach. most swallows moving W. 2 meadowlarks. For last $\frac{3}{10}$ mile swallow continuous and in great numbers. 3 redwings, 2 meadowlarks. Pastures to \approx heavily grazed. Common egret. 3 tree swallow road kill and road kills of 3-6 birds are found at intervals along the road 6 redwing, 2 willet, 2 willet, meadowlark. Louisiana heron on beach, 2 more. 2 killdeer. Louisiana heron. meadowlark, 2 willet, 2 willet, redwing, redwing, 12 Bonaparte

gulls, 8 redwings, 2 willet (for every willet are 3 sandherling,)
 231.3. Beach has been pushed up over road, Willet. Because
 of the poor and interrupted view of the beach I would estimate
 4 times the number more of willet recorded. 20 redwings,
 12 redwings (all redwings are ♀). meadowlark, meadowlark,
 2 redwings, 2 scissortail flycatchers, 2 willet, 12 redwings.
 8 redwings. Now at W end of posted road 233.0 or
 19.5 miles of closed road. Road inland from here on (87).
 Common egret, 12 Cattle egret, Larks to left, Common egret
 along canal, redwing, b.t. grackles, meadowlark, Oil
 wells. 234.1 124 turns N. at 1:15. 2 b.t. grackles, meadow-
 lark, 3 redwings, meadowlark. Cannot see beach from here.
 Tree swallows still in area, but not in heavy concentration.
 Royal tern. b.t. grackle, b.t. grackle, redwing, ring-billed gull.
 2 redwings, b.t. grackle. There are many more b.t. grackles
 in this area than the 9.5 miles of damaged ~~road~~ road area.
 Cattle egret, 5 redwings, 5 redwings. No tree swallows for
 some time. Cattle egret, redwing, 2 redwings, cattle egret.
 B.t. grackle. 240.3 Dilchrist. Informant, ^{76 age} who lived
 here when young boy had never seen a redwolf or mt. lion.
 Audrey hurricane of '61 removed 450 feet of beach, and
 destroyed two rows of houses. Armadillo road kill.
 at 246.5. W of Dilchrist are home developments (summer &
 week-end homes. all along the way to Galveston, 250.4
 armadillo rd. kill. Striped skink rd kill. Arrived at
 E end Ferry at Bolivar at 5:00 and camped ^{in shoreline at} 2/10 mi SE
 of ferry terminal. at 262.5 miles. at 6:00 P.M. made some
 general observations. 10 pelicans flew each, 39 pelicans flew east,
 12 pelicans flew E. 2 roseate spoonbills flew E. 13 common
 terns on pier, 605 11 common terns on pier, 18 avocets to E. 6:10 10
 common terns on pier. 6:13 7 pelicans. 6:15 50 pelican all
 flying E. 6:20 13 common terns on pier, 1 pelican to W. 5
 pairs and 1 single willet have passed by to E (since 6:00 P.M.). 5
 snowy egret to E. 6:25 13 common tern on pier. Cattle egret
 to E. 6:30 10 common tern on pier. 6:32 8 black-necked
 stilt to E. 6:35 11 common tern on pier. 6:35 10 common tern
 on pier. 6:47 2 roseate spoonbills to E. 6:50 7 common terns
 on pier. Sun down about now and for the last 20 minutes
 has been behind clouds. 6:59 2 common terns on pier. End
 of census. The above have been selective observations and
 is not all inclusive. At very late tonight no common terns on pier.

Port Bolivar, ^{mi} 2/10 SE Ferry Terminal, Galveston Co., Texas
 April 7, 1983

Common tern not on pier this A.M., at least 7:00 A.M. Foggy and visibility to other side of bay. Common tern still not on pier at 8:00 A.M. Birds in area this morning are laughing gulls, cattle egret, snowy egret, cormorant, avocet, ring-billed gull, one group 12 cattle egret flew E., 6 white-faced glossy ibis to E, at low tide the wake from boats break out 1/10 mile instead of breaking on beach. 8:20 will keep complete census of birds flying by from E to W or vice versa at 5 minute intervals for about a half an hour: (from beach to end of pier or 3/20 mile).

8:20 A.M. 4 white-faced glossy ibis E, laughing gull E, 2 l. gulls E, 2 common terns E, l. gull W, 3 l. gulls E, 2 com terns E, 7 l. gulls E, 2 l. gulls E, 1 cormorant W, 6 l. gulls E, 2 l. gulls W, 1 l. gull E, 1 l. gull E, 1 l. gull W, 1 l. gull W, 1 l. gull W, 3 white-faced glossy ibis E, 1 l. gull W, 3 l. gulls E, 1 com tern E, 2 l. gulls E, 2 l. gulls E, 1 l. gull W, 1 l. gull E, 1 l. gull W,

8:25 A.M. 1 l. gull E, 1 l. gull W, g.b. heron W, 1 l. gull E, 1 l. gull E, 2 l. gulls E, 1 l. gull W, 1 l. gull W, 2 l. gulls W, 1 l. gull W, 2 l. gull E, 1 l. gull E, 1 l. gull E, 1 l. gull E, 1 l. gull W, 2 l. gulls E, 2 l. gulls W, 2 l. gulls E, 3 avocet E, 1 cormorant E,

8:30 A.M. 3 l. gulls E, 1 l. gull W, 2 l. gull E, 2 l. gulls E, 2 l. gulls E, 1 ring-billed gull E, 2 l. gulls W, 2 willets W, 1 l. gull E, 1 l. gull W, 1 willet E, 7 white-faced glossy ibis to E, 1 com. tern E, 1 l. gull E, 1 l. gull W, com tern E, 1 l. gull E,

8:35 A.M. 2 l. gulls W, 1 ring-billed gull W, 1 willet to E, 2 l. gulls E, 1 ring-billed gull to W, ruddy turnstone E, 2 l. gulls E, 1 l. gull E, 3 l. gulls E, 1 l. gull W, 1 l. gull E, 1 l. gull W, 2 l. gulls E, 1 l. gull E, 2 l. gulls E, 3 l. gulls E,

8:40 A.M. 1 l. gull E, 2 l. gulls E, 1 l. gull W, 1 cormorant E, 1 l. gull E, 2 l. gulls E, ring-billed gull E, 1 l. gull W, 1 least sandpiper, 2 l. gull E, 1 l. gull E, ring-billed gull E, 1 com tern E, 1 l. gull E, 2 l. gulls E, 1 com. tern W, 1 l. gull E, 1 l. gull E, 1 l. gull W, 2 l. gulls E, 1 com tern E, 4 l. gulls E, 1 snowy egret 3, 3 l. gull W, 1 l. gull W, 2 l. gull E,

8:45 A.M. 1 com tern E, 1 com tern E, 1 willet E, 5 l. gulls E, ring-billed gull E, 1 com tern E, 1 l. gull E, 4 l. gulls E, 2 l. gulls E, ring-billed gull E, (ring-billed gulls not as flighty as laughing gulls), 2 l. gulls E, 1 l. gull E, com tern W, ring-billed gull E, 2 com tern W, 3 l. gulls E, 3 l. gulls W, 3 l. gulls E, 1 avocet E, 1 cormorant W, 2 l. gulls E, 1 l. gull W, 1 ring-billed gull E, 4 l. gulls E,

8:50 A.M. 3 l. gulls E, 1 ring-billed gull E, 1 Louisiana heron E, 2 l. gulls E,

2 l. gulls W, 1 l. gull W, 1 l. gull W, com tern W, l. gull E, ring-billed gull E,
 8 l. gulls E, 2 ring-billed gulls E, 2 l. gulls E, 2 l. gulls E, 2 l. gulls E,
 ring-billed gull E, ring-billed gull W, ring-billed gull W, ring-billed gull W,
 l. gull E, 2 com tern E, 1 l. gull W, 1 ring-billed gull E, 1 l. gull W,
 herring gull E, 1 cattle egret E, 2 l. gulls E.

8:55 A.M. 1 com tern E, 28 cattle egrets W, 2 l. gulls W, 2 l. gull E,
 1 l. gull E, 2 l. gulls E, 1 com tern E, 1 l. gull W, 2 l. gulls W,
 1 l. gull E, 1 l. gull W, 4 l. gulls E, 2 l. gulls W, 1 l. gull E, 2 l.
 gulls E, 1 com tern W, 1 com tern W, 2 l. gulls E, 4 white-faced
 glossy ibis W, 13 cattle egret W, 2 l. gull E, 1 com tern E.
 9:00 A.M. End of census.

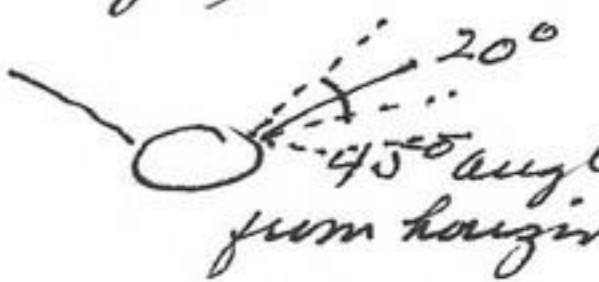
Temp. 53°F this A.M. wind 12 MPH. 28 least tern fed in
 bay and travel in close group and work 2-3 feet above water.
 At 9:22 A.M. 3 white-ibis flew E. 9:30 last 5 minutes 3
 flocks of cattle egret (1-22-32) flew W. Gull & tern traffic
 about same as time of census. The 3rd g. b. heron flew by to W.

Leaving Camp at 262.5 at 10:03 A.M. Now at ferry, 60-70
 laughing gulls at ferry and 12 white pelicans at edge of bay.
 near by. after boat departed, at least 500 l. gulls following the
 boat. One boat-tailed grackle alighted on ferry and searched
 open truck beds. Laughing gulls now spread back as far
 as active wake of boat, leaving 300 still following boat.
 Took tour 1 1/2 hr of city. nearly froze to death. at at shrimp
 boat. Boat-tailed grackles along gulf. Only bird on beach
 was 1 sandpiper. Continued W to State Park (Galveston Island S.P.).
 arriving at mileage 279.5 at 3:00 P.M. One flock of about
 300 laughing gulls and 2 ring-billed gulls fed above a car.
 Some gulls took food from hand extended from window, others
 sliding down side of car. After feeding ended gulls left in
 about 3 minutes except 3 or 4 that remained standing on the
 ground. when through with feeding area they all came back
 to the established camping area.

Will make records of different kinds of birds passing by on
 beach from the Barth now 100' inland from sand barrier. Starting
 at 4:25 A.M. 2 barn swallows, no tree swallows, boat-tailed grackles,
 2 laughing gulls E, 1 l. gull E, black skimmer E, 4:30. 2 royal terns
 W, 32 l. gulls W (displaced on beach), 2 l. gull E, l. gull E, com tern E,
 4:35 P.M. Bonaparte gull W, l. gull W, l. gull E, l. gull W, l. gull W,
 l. gull W, l. gull E, l. gull W, l. gull E, ring-billed gull W, l. gull W,
 l. gull W, com tern W. 4:40 and end of census. (compare with this
 morning census on ^{Port} Bolivar Camp area).

walked beach from site 117 to homes to W approx 2/10 mile.

Black skimmer, pair fed together and one single. Fed 90% into wind and 10% diagonal or with the wind. Work 100'-300' then fly back and start over. One fed continuously for 300' wing moves in a 20° arc at 45° angle thus:



while close to water will catch prey, then eat without bill almost in water. Water plowing over small waves but lifts up over larger or cresting waves. At times will paddle with feet on surface of water. The one remained in area the entire evening and frequently alighted in about same place to rest.

Groups of 4-8-20-10 knots. ♂ about 8% of groups. Behaviour is like sanderling, close organization, running from incoming wave and following water back. They form a line parallel with wave. Their compact organization is characteristic, however I observed 2 instances of single birds on the beach. Unmottled back is good characteristic in flight.

3 black-bellied plovers, one with just an indication of black on belly and chest area, ^{fed in wake as deep as legs.} when in flight, black in air diagnostic. White in wing & tail remind one of the willet but is less extensive or conspicuous. ^{individual birds like the sanderling} no aggressive behavior of

sanderling about 30 all told. Some fed at junctions of grass & beach. Aggressive action occurs with groups of even 2 or 3.

willet. 6. Individuals rather than pairs. They feed in wake up to belly and will tolerate waves that lift them 1 or 2 inches as the wave passes by.

Other birds on beach: laughing gull 18, common tern 3, ring-billed gulls 2.

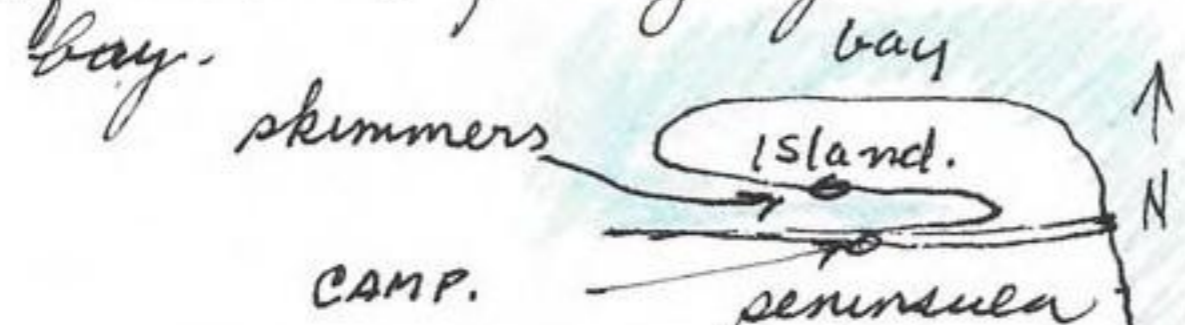
Galveston Island State Park, Galveston Co., Texas

April 8, 1983

(7:00 A.M. - 8:30 A.M.)

most unusual observation was 8 groups of Louisiana herons, of groups of 8-23-15-21-11-13-6-18 all moving E. Each group had cattle egret with one or two in small groups to 5 in the larger groups. They fly about ^{300' seaward, some 2/10 mile out.} 3' above waves or water. ^{ventral part of} The neck does not show white but the white belly is diagnostic. Temp this A.M. 51°F. Cloudy. At 9:00 A.M. Sun shown thru for about 10 minutes for this area I would propose 2 or 3 elevated stalls for viewing the

beach and beyond. also hold parts of beach inviolate to man to show natural population of birds on a beach and to provide a resting or feeding area for birds arriving from Central America via ^{non stop} flight across the gulf of Mexico. Left the State Park and spent the day in Galveston visiting the old homes of which there as several dozen important historical one. of by both State and national Historical Places. Photo 830408-1 and 830408-2 of the Sacred Heart Catholic Church in Indian ^{motive} built in 1903 after the ^{complete} destruction of the old church by the 1900 hurricane. The old church was Gothic in style. The new church is a combination of Gothic and Moorish. The photos will show how much it resembles Indian architecture. Christ of the Andes is on top of the dome. Photo 830408-3 is the Walter Gresham Home "Bishops Palace", which was built in 1887-1893. The building is French medieval style with many towers and turrets. Cast iron work decorates the porches. It is constructed of the hardest and weakest stones, granites (pink & blue) of Texas and white and red sandstone. masonry is a good term for both inside and outside. Photo 830408-4 of the Lemuel C Burr House built 1876 and is Gothic Victorian blend, notable wood-work cover cornice and paired brackets with half finials, heavy hooded windows and the Texas Star in the millwork. not open to public. Photo 830408-5 of great pines at Sacred Heart Catholic Church. The Ashton Villa of two buildings on Broadway and about 25th. an Italianate style built before the Civil war. Built in 1859. The carriage house joins to the E. The woodwork in these homes was all hand-carved in walnut, mahogany, cherry, oak, some cypress with windows, doorways and stairs in fine finishes - ceilings in hallways in the Bishops Palace finished in elegant arched paneling. Some rooms had hand-painted ceilings. The Ashton house had elaborate cornices, medallions and corners of plaster molding that was done in place in such a manner that it could be reversed if damaged. Drove to E end Galveston Island and camped approx 1/10 mi W of the E end of old rack jetty. The S side of the bay now an island of sand N of the jetty with a near complete separation by a long bay.



On arrival counted 87 black skimmer on N side of finger of water.

E end Galveston Island, Galveston Co., Texas.

April 9, 1983

Birds in area at 7:00 A.M. 205 black skimmers resting on sands by water. They first were view at 6:00 A.M. About every 10-20 minutes they would leave together, fly or circle once and return either to same place or adjacent areas of beach. Once they alighted in shallow water on beach, they a few at a time flew 20-50 feet to dry sand 40' away or higher on beach. When alighting they come in low and glide in like a plane. Their flight is much faster for the speed of wing beat than say gulls. The high position of wing beat is characteristic. Other birds in area. 8 avocet, 3 dunlins, 1500 ring-bill gulls that remained separate (300') from the black skimmers, 8 black-necked stilt, 3 godwits, 1 stilt sandpiper, 2 solitary sandpiper, 4 semipalmated sandpiper, 1 semipalmated plover, 3 black-bellied plover, 2 piping plover, 3 redwing, 12 western sandpipers, 8 willet, one fed in water up to $\frac{1}{2}$ body and at times would keep head under water for 4 seconds and at other times swing head ^{and bill} ~~from side to side~~ ^{with bill in water}. At times it would chase fish or small swimming organisms but was never successful. 2 boat-tailed grackles, 4 common tern, 3 least tern, 12 sanderling, 3 cormorant, 5 red-breasted mergansers, eared grebe, Forster tern. 4 Long-billed dowitcher. Will bring large organisms to land to feed on. ^{2 barn swallows,} 12 royal terns, Lesser yellowlegs moves faster and more nervously than willet when feeding. Photo 830409-1 of black skimmers and gulls leaving resting area (500 mm). Left 10:00 A.M. at 308.6. Drove over to pelican island to E end and returned and drove W to Thousand Trails Camp grounds, and one free night on courtesy Thousand Trails.

Thousand Trails Camp Grounds (Galveston Island Preserve), Texas

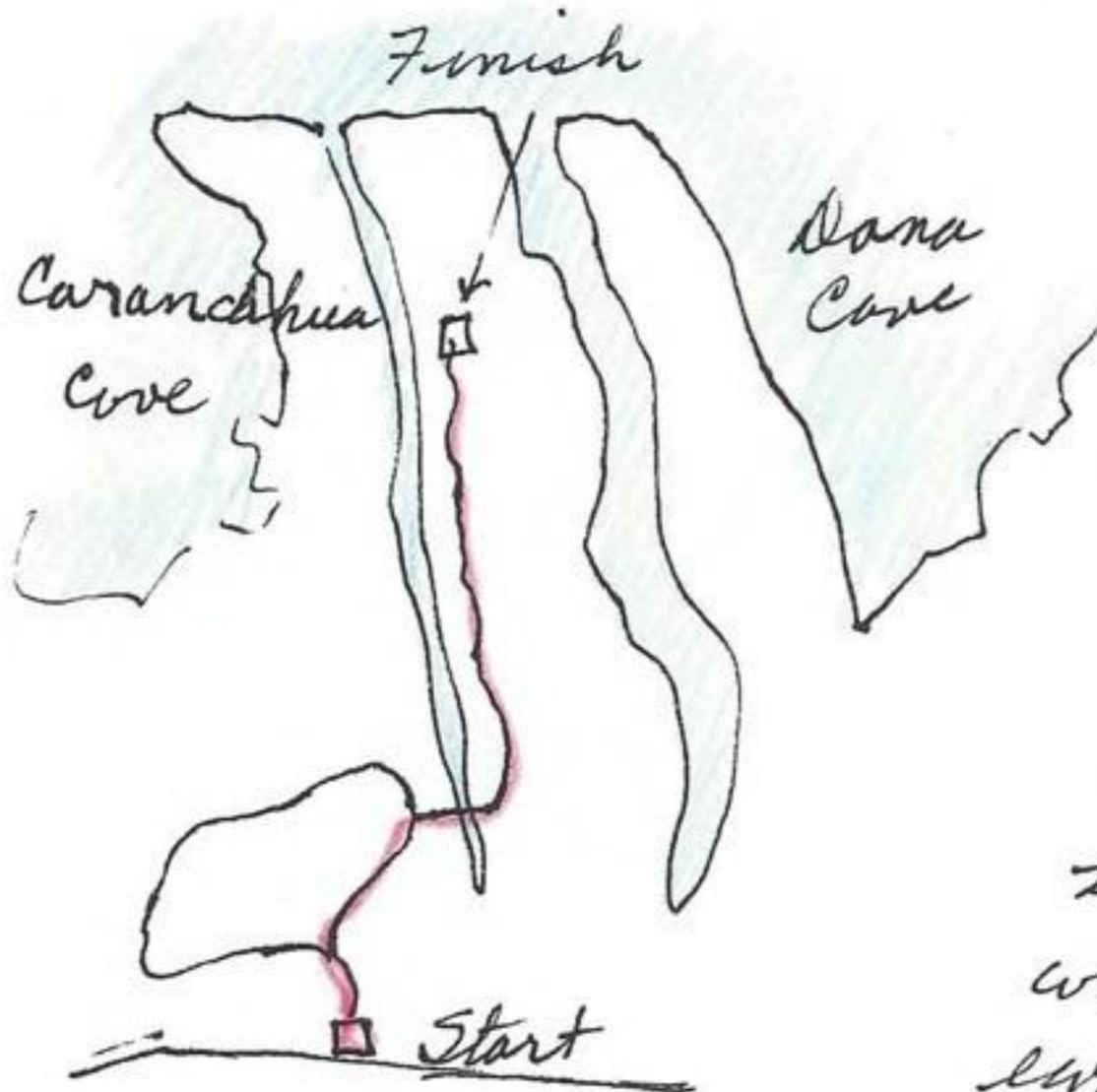
April 10, 1983

This camp is W on 3005 highway. Purchase membership for \$5995.00 (212.00 per year dues). Checked birds in area. Highway to bay to N. 12 black skimmers, one flew over freshwater lake and repeatedly splashed into water without bill contact for purpose of washing body. Would adjust feathers after each splash while in flight. 40 laughing gulls, 4 black ducks, 4 blue-wing teal, 1 Wilson snipe, 1 sanderling, 4 ^{horned} larks, 8 redwings.

2 boat-tailed grackles, 4 coot, 80 royal tern, 15 pelicans, 3 cormorants, 1 mockingbird, 1 copper rail, 2 barn swallows, 6 meadowlarks,

Galveston Island, Thousand Trails Preserve, Galveston, Texas
April 11, 1983

Birds about as yesterday. Laundry at Pirate Beach, thence to marsh unit. Drove first to the amphitheatre (W side) then back to road that leads W to the trail heads of marsh. Checked marsh unit of Galveston State Park on N side of road. Left car in parking unit and followed trail that turns E over 2 bridges and then sharply N to observation platform.



made complete list of all birds enroute to observation tower and then those that could be seen beyond to W.

Galveston Bay, 2 song sparrows, snowy egret, 2 laughing gulls, common egret, willet, ring-billed gull, common egret, 2 great blue herons, laughing gull, 2 royal tern, 1 g. b. tern, willet, g. b. heron, willet, 2 laughing gulls, common egret. My estimate is 1 mile one way and for the number of birds seen,

for a marshland, is extremely sparse, just as was the nature trail on the S side of road where we saw 3 redwings only. Beyond the observation platform ^{to N} could see 5 ^{white} pelicans, 12 common tern, 18 skimmers resting, 10 laughing gulls, 8 willet, approx. 250 small sandpipers, 8 snowy egret, 13 common egrets. Continued W on main highway and at 384.3 at toll bridge in Brazoria Co. Have noticed that many ponds and small linear bays are now dry and have a bottom of hard sand as if filled from Gulf side wind blown sands. 388.2 road now edge of beach. Willet. Continued W to Freeport, thence to mouth of Brazos River, W side at base of jetty where we camped. 14 crests of waves in surf, none in between jetty. B 2 cormorant, 3 common tern, 3 least tern, 8 sanderling, 5 ring-billed gulls, 3 laughing gull, 1 g. b. heron, 1 willet all within 100' of shore from jetty. At sunset 5 groups (5-8-12-8-15) of black skimmers flew W

over jetty at a place where jetty has a 3 feet depression in wall ~~mm~~^xmm, near shore, 100' out.

mouth Brazos River, W side, S of Freeport, Brazoria Co., Texas
(Quintana Park,)
April 12, 1983

Clear last night, 50% clouds this A.M. Foggy this morning. The only boat-tailed grackle that attempted and succeeded to open up a sandwich box on beach which held food was a grackle with a deformed leg. Getting food any way it could was a necessity. Left at 416.1 at 9:30 A.M. Photo 830412-1 of Annette cleaning front window of Barth, Green heron. 424.0 now on 36 to W. Jones Creek City limits at river bridge. 437.4 Junc. 521 now W. Have not seen Egrets or aquatic birds or boat-tailed grackles although favorable area. The country is ^{flat} broad grass fields and deciduous trees in drainages. There live oak ^{and other birds} in fields. Will keep census of boat-tail grackles for comparison with coast. Just crew for long time. San Bernard River. no egret since we left this A.M and now in one field 110 cattle egret, 447.3 pileated woodpecker. 8 Cattle egret, 3 crows, loggerhead shrike, meadowlark, 2 crow, 2 cattle egret, 2 crows, green heron, redwing, junct 2540 - 521 sparrow hawk, mockingbird, orange 3 cattle egret, 2 crows, 2 blue-wing teal, redwing, a reddish flower common all across Texas along right-of-way, is now growing solid in fields, meadowlark, crow, mockingbird, small bridge, 4 cattle egret, loggerhead shrike, loggerhead shrike, 7 redwings, common grackle, 4 common grackle, 2 meadowlarks, loggerhead shrike, Wadsworth City limits, and armadillo road kill, 466.3 Wadsworth & junction 60. at 1:00 P.M. 5 common grackles in town, Crow, Crow, Crow, 472.8 Colorado River. Stopped for lunch at nuclear plant as observed 5 boat-tailed grackles all with 2 heads!, 3 killdeer, 3 meadowlarks, mockingbird, now 1095 down to Collegeport. 2 killdeers, mockingbird, meadowlark, redwing, 4 redwing, meadowlark, meadowlark. meadowlark, redwing, 3 meadowlark, 2 killdeers, 2 redwings, redwing, meadowlark, killdeer, killdeer, outshirts Collegeport. This town is 100% resort and no commercialization. At one time was to be a College. 2 willie at bay now return to 521 at 498.5. 4 common grackles.

continued on to Palacios and at Palacios Marina (privately owned) camped at beach on W side marina. Birds observed from Barth in 1 1/2 hrs: 1 spotted sandpiper, 22 common tern, 15 Forster's tern, 10 least tern, 13 laughing gulls, 2 ring-billed gulls, 1 herring gull, 4 cormorants, 8 eared grebes, 1 common loon, 4 turnstones, 2 willet, 6 black skimmers, 1 snowy egret, 2 great blue heron, 6 royal tern. The skimmer hunt after dark.

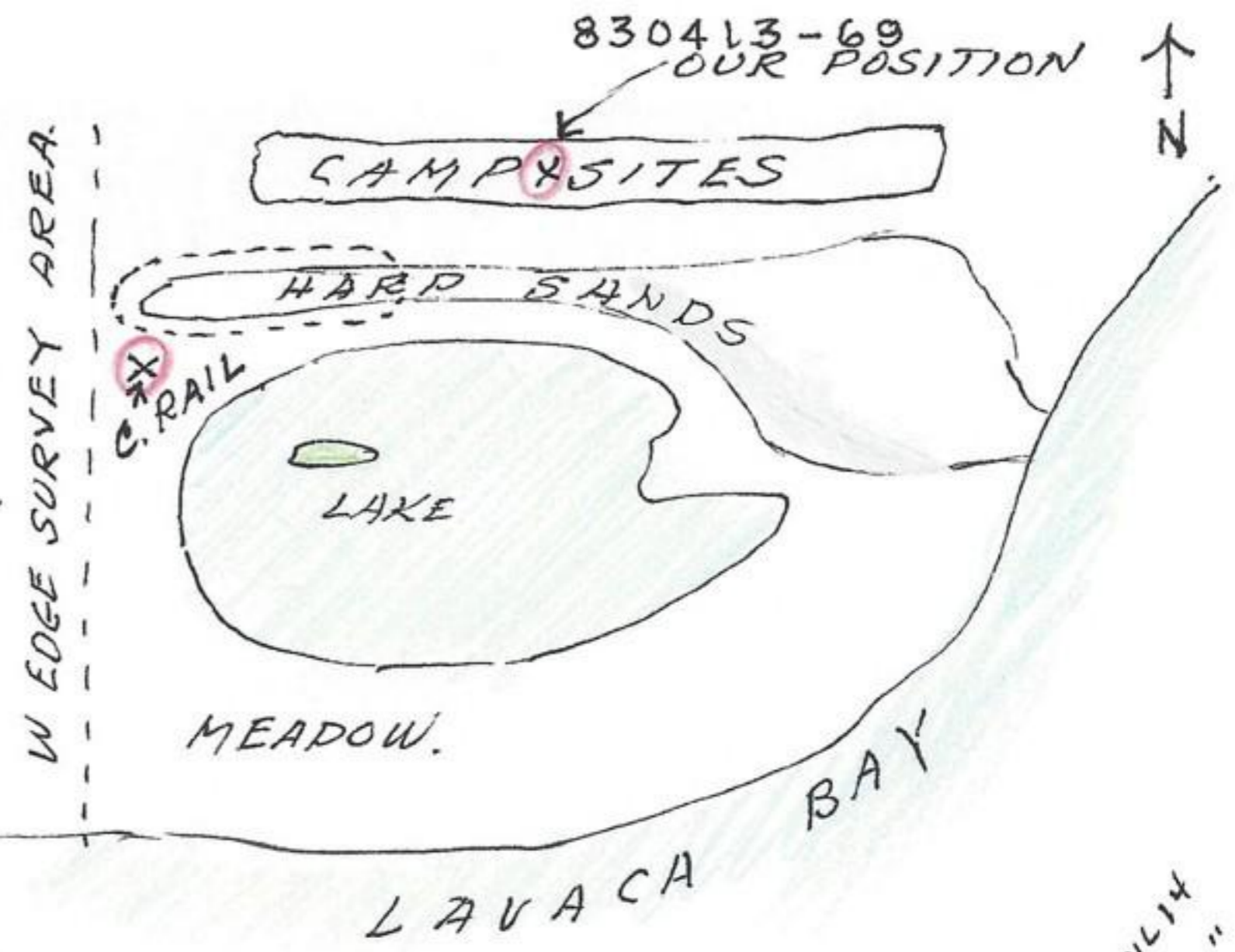
Palacios,
Palacios Marina, Matagorda Co., Texas.
April 13, 1983

made two trip to end of break water. This jetty is made of large blocks of granite. Photo 830413-1 of granite and contact with zone of different type of rock material. The contact is clear cut and abrupt as the photo will show. The finer grained material has reddish, grayish material, some in waves. Photo 830413-2 a close shot of the feldspar, quartzite and hornblend? These 3 materials vary in percent frequency, some with feldspar dominant and nearly 100% but with occasional other two interspersed. The black hornblend also can dominate. The larger gray material frequently has larger phenocrysts and more widely separated. The rocks supporting the blocks of granite are covered with green mosslike material, whereas the granite rocks at some level do not.

Photo 830413-3 Annette and old boat at Marina. Observed 2 ruddy turnstones in parking road circa 100' from water. While at end of granite breakwater observed 5 common porpoise or dolphins feeding about 50-100' from end. They made considerable agitation of water when pursuing their game.

Left marina and drove to Lavaca State Park which is actually a City camping park associated with The State Park Fishing Pier and boat ramp. The camping area is misrepresented as part of the State Park. It is poorly managed with dirty unusable toilets and showers and they are not around until after everybody is settled and ready to retire before they call for their money. I was ready to leave under the circumstances but we already had our beds made and ready to retire. This situation of misrepresentation should be rectified.

In area S of camp sites is a salt marsh to bay with stretches of hard sand among meadow vegetation creating an open. This area, particularly E side is frequently used by cars or people. They effect less the lake in W side. Census area as drawn on page.

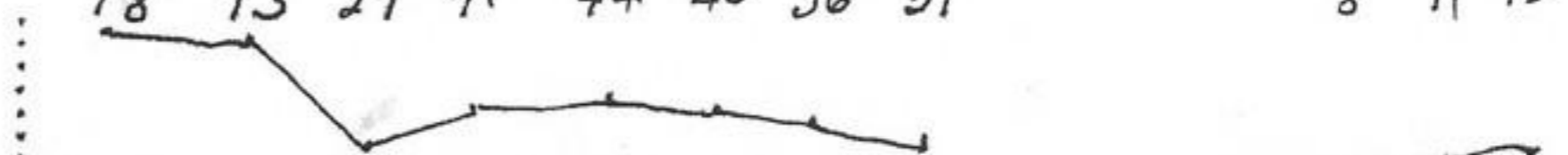


Began census at 12:00 noon and will check area every hour on the hour.

APRIL 13.

	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	TOTAL	FREQUENCY	6:00 AM - APRIL 14	7:00 AM - " "	8:00 AM - " "
ring-billed gull.	2			1			1		2	11			
laughing gull	13	23	10	18	17	12	10		103	1	8		5
least tern	47	35							82	2			
willet	2	2	4	6	8	6	4	4	36	5	2	2	
ruddy turnstone	7				1				8	6			
black-bellied plover	1								1	12			
sanderling	1								1	12			
blue-winged teal	2		8	8	8	8	8	8	50	3			
roseate spoonbill	2	2						1	5	8			
boat-tailed grackle	1	2	1	1	2	2	1	1	11	5a		2	
common tern		1							1	12	1		
whimbrel		1	1	1	1	1	1	1	7	7			
snowy heron		3				1		1	5	8	2	1	6 flew E
clapper rail		1					1		2	11			
Forester's tern		1		1		1			3	10			
Louisiana heron		1							1	17	1		5 flew E
gull-billed tern			2			1			3	10	2		
golden plover			1						1	12			
hudsonian godwit				5	6	9	9	5	34	4			
savanna sparrow		1		1		1	1		4	9			
king rail					1		1		2	11			
barn swallows											3		
lesser yellow-legs											1		
buldeer													1

78 73 27 41 44 40 36 31 8 11 12



General observations: people entering area affect bird population.

Build-up of population slow in A.M.

Gull-billed tern white back and wings most diagnostic.

When laughing gulls are fed in area, boat-tailed grackles arrive in 15 seconds as if understanding voice. Other laughing gulls will leave area all at once on voice from gulls 1/10 mi. away. 2 royal terns flew by area. When Louisiana heron leaves area it flap out into gulf and then proceeds up or down shoreline. A black butterfly has been flying by all day (22), all to E. Laughing gulls left at 6:15 P.M. for the night. At 6:30 P.M. 38 blue-wing teal, ^{plus 3 baldpate,} and 28 fulvous tree ducks swam in gulf about 150' out from shore. They were separate groups, both groups in extremely compact formation. They swam toward each other, merged and mingled for about 20 seconds, then re-collected each group formation, then merged again and continued as one group. The black stripe from head down neck in back is diagnostic. Black skimmers occasionally enter pond, hunt for food then leave. Their flight does not upset other kinds of birds feeding in the area. Snowy egrets and roseate spoonbills feed together as a symbiotic relationship, the spoonbill frequently overpowering the egret by feeding between legs etc. It is the most aggressive in the relationship. There were 3 instances of copulation between laughing gulls. The ♀ is receptive for 2 contacts but seldom allows the 3rd while ♂ is on back. Whimbrel remained in an area 100' x 20' the entire day observed and was last to be in area at late twilight. It walked in open stretch of sands most of the time and fed in grasses on either side.

Port

Lavaca State Park, Lavaca, Calhoun Co., Texas

April 14, 1983.

First bird a laughing gull at 6:45. High wind this A.M. white caps on bay waters (from NE). 6:50 ring-billed gull, 6:55 boat-tailed grackles. At 6:00 A.M. birds in area of census. 8 laughing gulls (flying thru to E and are practically all other birds, 2 snowy egrets (flying pass to E). Other birds at time of appearance; 6:10 willet, Louisiana heron, killdeer, common tern, barn swallows (12) all birds flying E. 2 Louisiana heron could not fly against wind, all other birds could, other ^{Louisiana heron} fly into wind if just a few feet above water or land. At least 15 Louisiana herons true flown E this A.M. to 8:00 A.M.

State Park,
Port Lavaca, Calhoun Co., Texas

April 14, 1983

Left Port Lavaca at 541.6 at 9:00 AM. yesterday afternoon at 4:30 P.M we walked the fishing pier which is remnant of old bridge now replaced by cement bridge. On way out we observed 204 strands of ^{spider} cobwebs on our clothing from webs placed across the top rail and lower rail. These stands were placed across here between 3:00 P.M and 4:30 as a couple at end of pier said they had been at end of pier for 1 1/2 hrs and that no one had been on pier since that time. The domensions of the pier are 8 feet wide and 4/10 miles long. On the basis of these measurement there were 1632 feet of webs place across the pier in 1 1/2 hrs or 18 feet per of webs per minute.

Continued to Indianola. 3 Boat-tailed grackle, 2 scissortail flycatcher, 2 snowy egret, 6 laughing gull are at end of road on peninsula. No evidence of the old port that at one time vied with Galveston for dominance. Continued on to Port O'Conner. At 591.2 first black vultures and first ones seen along coast. This area is ^{grassland} savannas and small live oak clumps. 593.0 2 black vultures. Boat-tail grackle and snowy egret as we approached Port O'Connors. 595.3 3 black vultures, 605.5 extreme SE end of Port O'Conner. Porbs to n and no places to camp. This is a very attractive village with minimum of commercialization. Homes are above average in size and good architecture. Scissortail flycatchers observed at 4 places in town. Laughing gull common along beach. 607.2 black vulture, snowy egret. The route into O'Conner is more dry than wet marsh. 609.9 turkey vulture, 2 scissor-tailed flycatchers, 611.0 black vulture. 612.9 2 cattle egret, great blue heron, kingfisher, coot, 30 white faced ibis, 2 cattle egret, 5 boat-tailed grackles, redwing, 3 boat-tailed grackles, meadowlark, 2 black ducks, 1 white-faced ibis, 1 redwing. 617.0 turkey vulture and scissortailed flycatcher, 2 boat-tailed grackle, First gopher diggings for some time, scissortailed flycatcher, 3 blue-winged teal. 620.0 black vulture. 621.0 3 turkey vultures, 623.5 seadrift city limits. Town arranged with city park around beach and no place to park. 300 coot, another group same size. Great blue heron, great blue heron, and 10 laughing gulls. Approx. 20 boat-tailed grackles in town.

630.6 2 black vulture on 185 highway W. 632.9 Long Matt
 City limits. 635.8 Turkey vulture, By a golf byway. 639.2
 4 black vultures, 4 Cormorant in one of the byways. 2 common
 and 3 snowy egrets. narrow water courses choked with emerg-
 ent vegetation. Guadalupe River bridge. First relief in
 landscape for a long time in Texas. 3000 ft
 644.1 Tivoli. 648.9 sparrow hawk. 654.5 3 Turkey vultures,
 658.4 2 black vultures. 661.6 turkey vulture. Tavas (City),
 meadowlark. 664.5 3 black vultures. 665.2 3 Turkey
 vultures. Holiday Beach, one turkey vulture. 666.0 two turkey
 vultures. 667.9 Goose Island turn off. Camped in same
 stall as previous years no 15 at end of sites on beach. Here
 one can see the point island and a sliver island to the NW.
 Later met a Mr. Volker Friedrich Kuehne

103 Old Oak Road

Bellville 7530

Cape Town %/o Kleinrad Bodner ph 99.5254

S. Africa

while conducting his safari business his address is:

Volker Friedrich Kuehne

%/o C. Ward of Wards Safaris

Windhoek, South West Africa

Namibia.

He and his young beagle have been touring the U.S since
 June of last year.

Bolavia have narrow minded people and very stubborn but
 if you come to the right ones you are alright. Switzerland, ^{German}
 has a complete different dialect, and Switzerland Germans
 do not understand the regular German. The northern Germans
 and Switzerland Germans can converse in English but not in
 their own native tongues. French people are really stubborn,
 and refuse to learn any other language. French people like
 nobody. There are also nice people in France. French
 language is not a world language. English is first and
 Spanish is second and with these two languages one can even
 travel in Russia. There is no other language in Russia
 than Russian. A lot of people speak English and some
 Russian. In American I am Americanized and a
 tourist. Jeans are common in Europe and are not expensive.

Jeans are manufactured all thru Europe and can be bought just as readily as in the U.S. The lowbay ^{boots} are not available. Jeans can be bought for the same price in Europe as in U.S. Used jeans can be sold in Russia for a good price. Russia now accepts Coca Cola and manufacturers at there. I hate the golden arches (MacDonalds) and Colonel Sanders. Both serve junk food. They (MacDonalds) have found the secret of making the hamburger taste the same in Munich and Chicago, or China or in the middle of South Africa. They make it taste like a ^{baked} newspaper. I Heidelberg I stumbled in bought a chicken box and found dead pieces of chicken bodies and I had to decide whether to eat it or not, but I was hungry and ~~eat~~ ^{swallowed} them. And since that time I have never gone into Colonel Sanders again, never. Maybe they are better in the United States. I like the Mexican food. (In reference to cat populations stabilizing at 50 he said) The oldest cat becomes the pot-cat. Hairless cats are already prepared for the pet. To be sure I do not buy cat at a butcher shop I let my dog inspect it first and he will bark at the cat. I absolutely did not have trouble bring my dog into the U.S. and is in fact the easiest country in the world to bring in a dog. One needs the right paper and only takes 5-10 minutes. In Capetown the political condition is alright. We have troubles with the black gentlemen, sometimes we call them Kaffers? just like in America you cannot call the negroes - niggers. ^{95% of them cannot be trained beyond farmers.} We do quite well there. I have a safari business in South-West Africa (Namibia), a lodge for hunting. Most of our clients are from the United States. Animal population are good. African antelope, kudu, spring buck, mt. zebra, troyka?, leopards, lions. Lions forced from the kraal molest and kill humans and these are killed. It is ^{not} a problem to get trophy specimens into U.S. if accompanied with a hunting permit, but ivory or crocodile hides is impossible. American game animals are just as interesting to hunt as African game species. White-tailed deer are more difficult to hunt than antelopes in Africa. All the meat is used in Africa. Of 22 species of N. Am Big Game animals, two of his clients have only 3 more to go to fill the quota. Only 2 or 3 trophy hunters in U.S. have all the big game animals. First extended visit in U.S., will be here until the end of the year. People in the U.S. as it is so easy to meet them, ^{People in} America are different.

than other people and I like it. They are not arrogant or stupid and you can talk to anybody here. Nice, friendly and all over the states and are a mixture, and I like to live as a mixture in a mixture. Namibia is a big country with only a few people and hunting will be good for a year because of ^{political} unrest. It is in the middle of nowhere. Reagan is not bad and he has a lot of problems. But what can he do? He scares a lot of people away, especially in Europe. People in Germany like him because he challenged the Russians in his first days as President. If there is ever a war between Russia and America it would be the end of the world. Russia now has 15 times the overkill of the world and America has 10 times the overkill. Russia will make it to 20 times and America will make it 15 times. It all seems senseless. Nobody can win and is so stupid.

America should put its war expenses into economy of country. Only the nuclear material in W. Germany can cut the world into pieces, and the Russians have the same amount just a few miles to the East and elsewhere and the French have the same, also in England. Everybody in America could live like a King if war expenses were eliminated. Chemicals can also wipe out the world already. Only 5 per cent of negro in Africa are capable of running ^{the government}.

Camped no 15 on waterfront (island). On small island SW Camp about 10' from shore at one moment at 6:00 P.M. were 11 laughing gulls, 1 sanderling, 1 turnstone, 1 black-bellied plover. Wading to pier: 2 willet, 1 b.b. plover, 2 ^{2. eared grebes,} 1 w. sandpiper, 1 ring-billed. at pier to E (at sunset): 14 piping plover, 2 black-bellied plover, 29 sanderling, 1 great blue heron, 3 laughing gulls, 2 common terns, 18 knots, 1 oyster catcher, 9 western sandpiper, 1 willet, 1 spotted sandpiper, 3 black skimmer flew over. The oyster catcher when flying over water dives or rather splashes into the water at a very low angle ~~-----~~. It hit water on 4 occasions about 100 feet apart. 90% islands and reefs exposed

Goose Island State Park, Aransas Co., Texas
April 15, 1983

At 7:30 AM on small island off shore (SW) from camp. A black-bellied plover controlled 15' of beach 1 foot wide at water edge from 7:30 to 9:00 A.M., walking back and forth along segment. A sanderling would be aggressively displaced by the plover at 2 feet. The plover aggressively displaced long-billed dowitcher at 3 feet by

charging. The plover would give way to a laughing gull by walking out around the gull by 1 foot. One ruddy turnstone displaced another ruddy turnstone. A female moved from side to side making bill contact, raising (both) heads high, and each time ♀ moved in front of the ♂ place her tail against the male's breast (5 times), then female partially drooped wing as she stood facing away from the ♂ which then (the ♂) mounted the female and ^{which was translated through its body to its head} after wagging its tail back and forth, forcefully bent the tail downward and to the side of the ♀'s tail which she held up for cloacal contact. The ♂ continued to remain on back but further mating was not completed. ^{Frequently male will leave backs of females without female rejection} Apparently the wagging of the tail is important in preparing for the contact. Another pair were in mating position when the other gulls promptly left to an individual who was throwing bread into the air. The female immediately left from under the male. Food apparently dominates the instincts. Paired gulls generally remain together on island and if one leaves the other will follow. They move independently sometimes within a group but if a male shows interest in the ♀ of the pair the paired male will move over to defend and drive away the intruder.



Birds on SW island at exactly 8:30 AM are:

- 8 laughing gull
- 10 ruddy turnstones
- 1 l. belled dowitcher
- 1 black-bellied plover
- 4 sanderlings

Other birds noted in area other than 8:30 census: 2 coot, 1 boat-tailed grackle on W island, 40 redwings landed on SW island for 1 minute, one redwing held on to tail of another for 10 seconds in combat, 2 royal terns flew by, 2 black skimmers flew by, 2 meadowlark, 4 savanna sparrow feed in opening away from grass or vegetation cover, 1 common loon, 5 long-billed dowitchers

At 10:00 2 laughing gulls and 1 sanderling only birds on either W or SW island. The population varies from day to day and hour to hour.

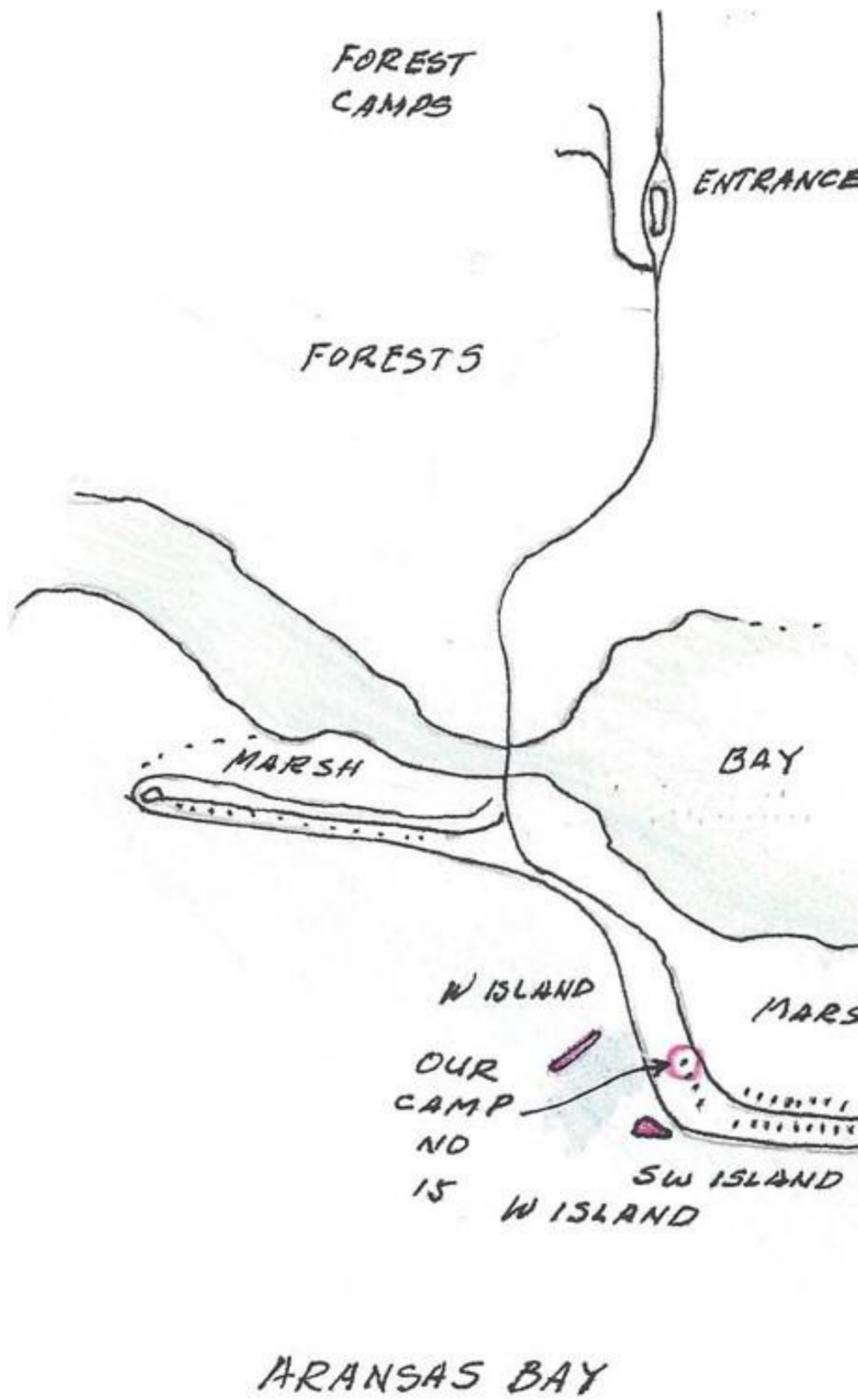
Birds on fishing pier at 4:30 P.M. 3 great blue heron, 5 willet, 6 sanderling, 24 Forrester tern, 5 long-billed dowitcher, 5 laughing gulls, 1 black-bellied plover

Birds on fishing pier at sundown: 4 sanderling, 2 eared grebe, 2 laughing gulls, 2 great blue heron, 3 black skimmers, 1 willet, 6 ruddy turnstones, 1 spotted sandpiper. 80% islands + reefs underwater

ROBERT A. ORY
701 CRESTBEND
HOUSTON, TEXAS 77042

830415-76

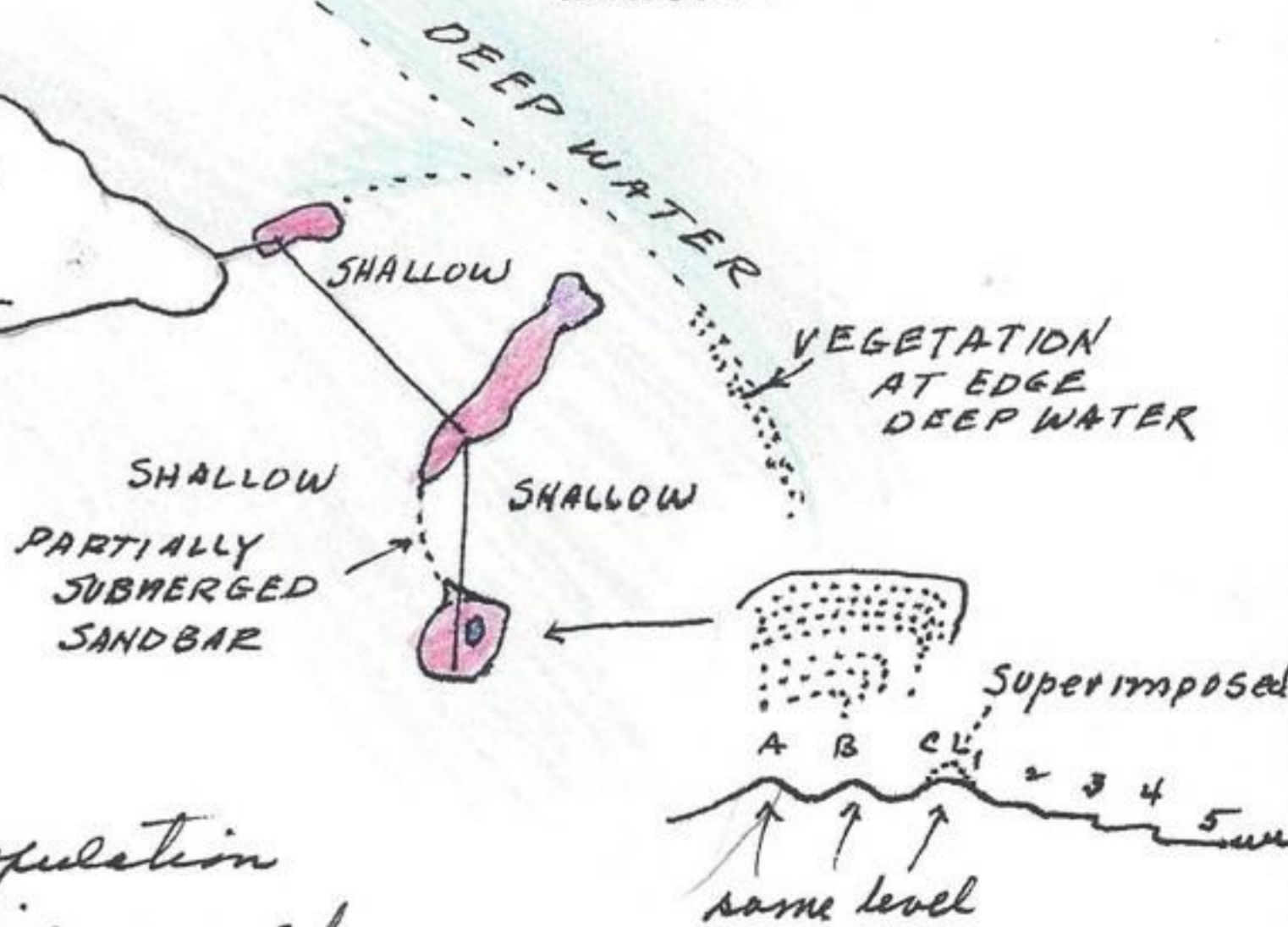
met Mr. Ory on pier on 3 occasions. He is an amateur ornithologist and spent some time on the pier at different times of the day. He recognized most of the birds. Made census of pier area this AM at 7:00 AM: 3 eared grebes, 4 sandwing, 1 laughing gull, 2 ruddy turnstones. Birds flying over area were: 1 royal tern, 3 laughing gulls, 1 least tern which had a small fish in its mouth and may be nesting, 1 great blue heron. The pier is 1620 ft long and is used by fishermen both from the pier and wading out east beyond the islands to deep water.



Two census show effect of man on birdlife. Census made ^{sundown} April 14 when not so many people in area was 12 species and 84 individuals

FORESTS

On April 16^(sat) at 7:00 AM were 4 species and 10 individuals with 4 more species of 4 individuals flying overhead in passing thru. Fishermen were already tromping over the islands to reach deep water.



If all activity could be confined to pier and no feeding of gulls, the population of herds should improve and the pier would produce a much better value to all concerned.

Using the reefs and island destroys the value of birds viewing in the area. Feeding gulls is depressing as the gulls are taken out of their natural position in the community and makes them garbage scavengers. Hydrogen di-sulphide from organic decomposition on beach (from storms blowing sea weed onto beach) was almost unbearable.

Goose Island State Park, Aransas Co., Texas

April 16, 1983

made boat trip (The Whooping Crane) to Aransas refuge to see the whooping cranes. Birds enroute; 3 great blue heron nests on one gas well platform near the causeway with three adults, each standing by a nest and one nest with young. The pilot of boat said the strong winds of a few days ago may have blown the young out of the nest. 5 cormorants, 12 laughing gulls, 2 common tern, 1 Forrester tern, 8 lesser scaup, 2 greater scaup, ^{1 common loon}. In canal or Intracoastal waterway about half way along noted an Audubon Caracara on yucca 20' from shore on S side. Its nest was in a 4 prong yucca near top with small young. It flies much like an eagle. On return trip it was still in same general area, but instead of being in grass near shore was on the contact between water and vegetation. It walked with head down for approx. 40' and on only one occasion stood upright. It was not concerned with the boat and it remained there after we left. In this same area were 5 common porpoise running along side of boat. They were not black but charcoal gray with some spots. They kept up with the boat and on occasions would surge forward at an accelerated speed which was unbelievable for an animal of that size. To others were seen out in the main Aransas Bay. Other birds in the Intrawaterway canal were 8 white pelican, 20 common egret, 12 snowy egret, 2 mottled ducks, 8 Forrester tern, 4 common tern, meadow lark, 2 willet.

At Goose Island checked pier at sundown. Only birds were 1 willet, 2 starling, 2 ruddy turnstones. 8 fishermen were on pier and beach of last island.

Goose Island State Park, Aransas Co., Texas

April 17, 1983

This am at 7:00 3 Sandwich Terns on isolated piles SW of camp. They remained until 8:20 A.M. At one time 2 sat on one pile and were never displaced by laughing gull occupying the other 7 piles. A Forrester tern, both adult and winter plumaged bird occupied 2 piles of the 8 piles. Adult would displace immature but never vice-versa. When sandwich tern feed they fly about 30-40' feet above water and on 3 of 4 dives they stopped before contacting the water and glided up again. The fourth dive was like other terns with solid body contact. They fly more like gulls than terns.

* Aboard to Aransas and S over Intracoastal Bridge S of town and on S side along bay took several photos.

830417-1 of an enlarged bus.

830417-2 seismographic ship (perpendicular on water course S of Intracoastal waterway).

830417-3 ibid but horizontal shot. These are the ships that have one receiving ship (blue) and 3 senders. The 3 shoot 4 blasts ^{one} at each corner of ship, 4 times in one spot then move to next position perhaps 100' beyond.

We noted that gulls followed the seismographic ship because of disturbance of bottom whereas a fast yacht which makes 10X more wake on shore does not attract gulls. Cormorant remained under water 30 and 40 seconds. Least tern dove 20 times in 1 minute.

Returned to Aransas boat harbor and photographed the fishing boats from E end of harbor, ^{photo} 830417-4.

Met Mr. Fowler of Fowlers Lumber Company of Aransas. He had made frequent trips to Mexico:

1. get log book from Santorn Insurance giving detail of travel routes.
2. Watch gas supply in Baja Calif as distances are great.
3. Good roads. Go to coast via Guadalupe. Then N.
4. Get coverage for both liability & collision.

** Common loon in bay to N. Ten eared grebe fed along shore and swam ^(or waded) under water toward shore in water not deeper than 1/2 diameter of water. Moved rapidly but not in unison. They returned with worm like organisms.

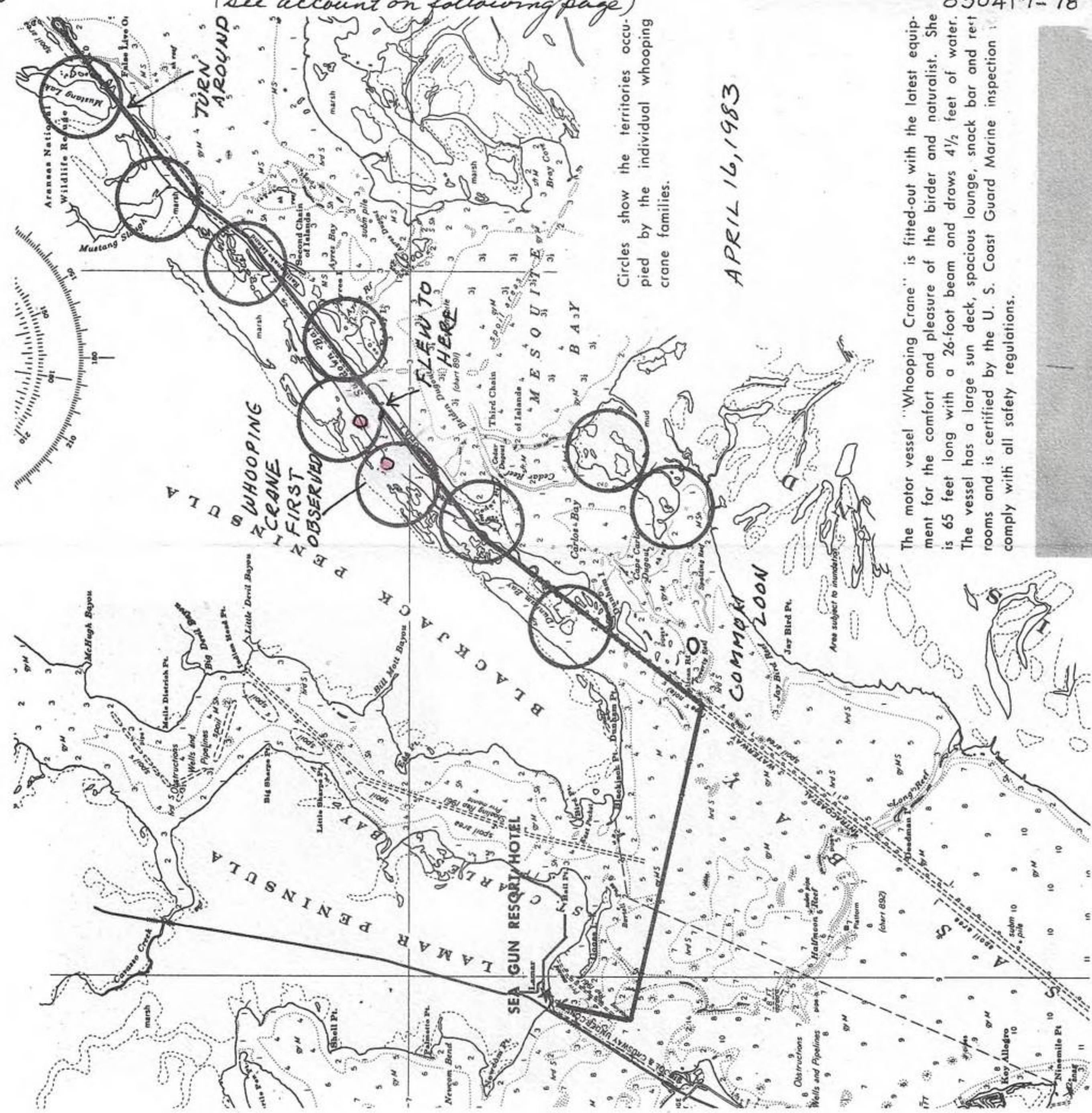


Out of 30 gulls on sands, 3 copulated.

According to ranger of Copano State Park, drum season about over. Porpoises seen every day along the pier. First laughing gulls heard about sunset around 6:00 A.M. Boat-tailed grackle flying across bay some 1/2 mi away. Mulletts leap out of water, sometime 3 or 4 consecutive times. 2 great blue herons & 2 willet in area.

(see account on following page)

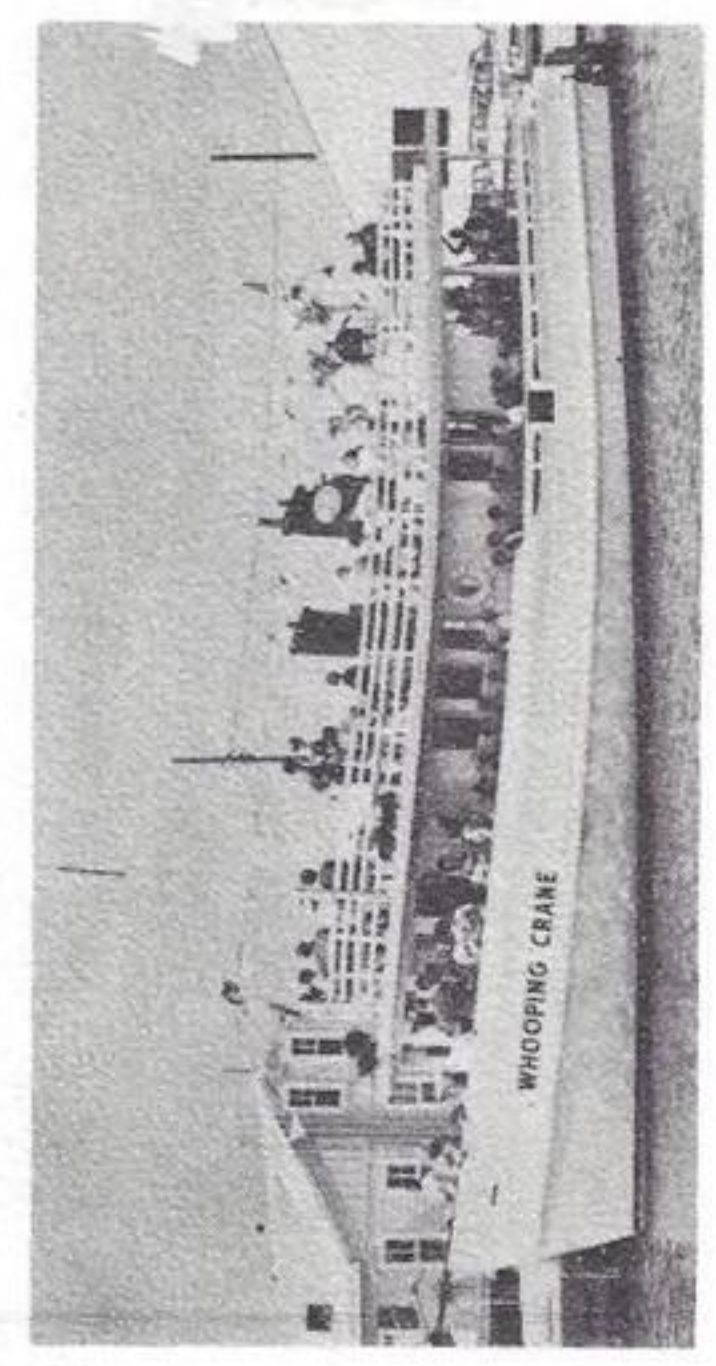
830417-78



Circles show the territories occupied by the individual whooping crane families.

APRIL 16, 1983

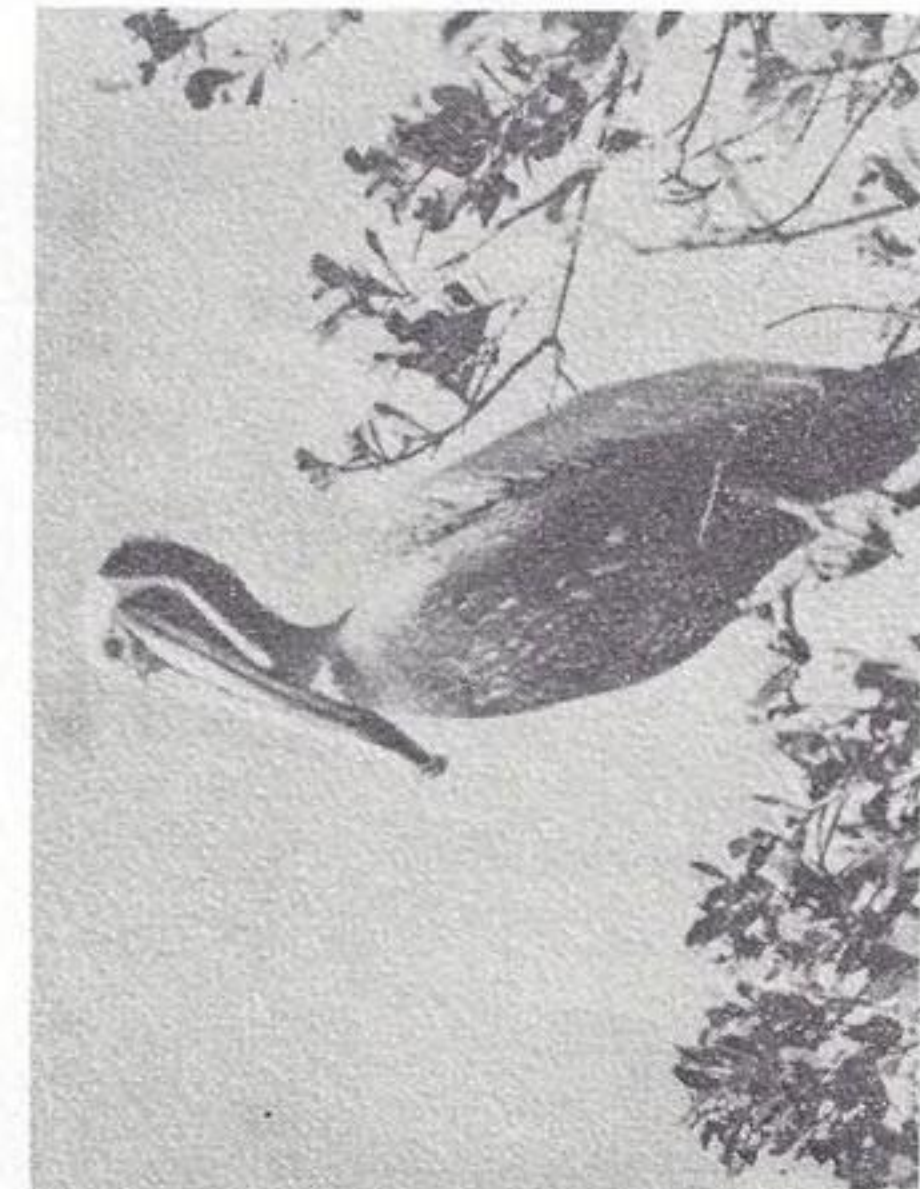
The motor vessel "Whooping Crane" is fitted-out with the latest equipment for the comfort and pleasure of the birder and naturalist. She is 65 feet long with a 26-foot beam and draws 4 1/2 feet of water. The vessel has a large sun deck, spacious lounge, snack bar and rest rooms and is certified by the U. S. Coast Guard Marine inspection to comply with all safety regulations.



TOP—The colorful roseate spoonbill, whose population has diminished in recent years, is now increasing in numbers due to protective measures.

CENTER—One of the few remaining families of the brown pelican may be found on the tiny Second Chain islands in Ayres bay.

LOWER—Two adult whooping cranes fight over territory on the wintering ground. A young adult in the left foreground.



Along the salt flats and the marshes of Aransas, Mesquite and San Antonio bays of the Texas Gulf coast wildlife abounds; deer, wild turkey, javelina and some 400 species of waterfowl and song birds are to be seen. Many of the birds are to be found only in this region, others are migrants and accidentals.

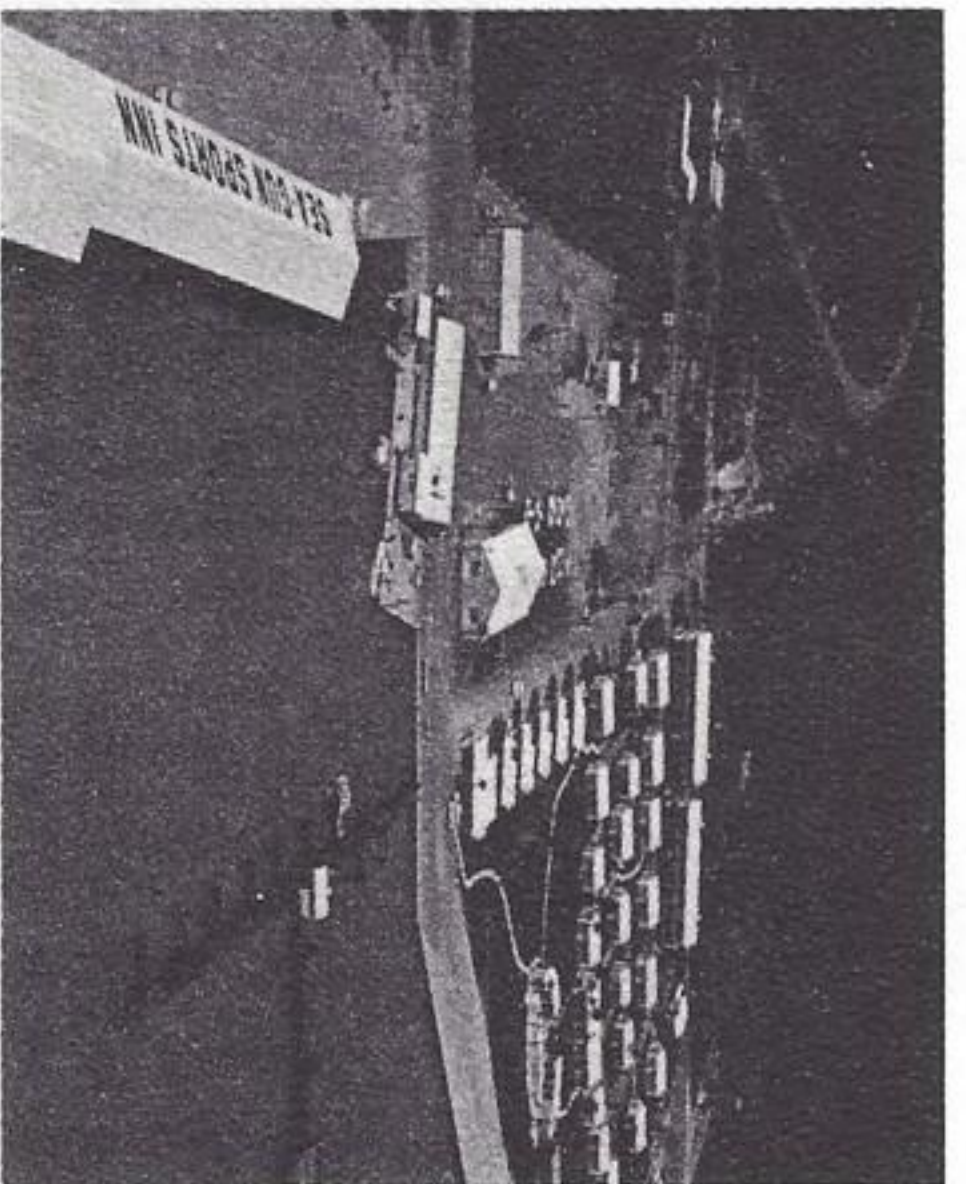
Here the Aransas National Wildlife Refuge, established in 1937, spreads over more than 47,000 acres on Blackjack peninsula. The area is administered by the Bureau of Sports Fisheries and Wildlife, U.S. Fish and Wildlife Service in the Department of the Interior. The refuge provides the winter home for the world's only flock of whooping cranes, one of the largest and rarest of North American birds.

The area consists of bays, tidal flats, salt marshes and sandy higher ground broken by long, narrow ponds or swales. Most of the soil is deep sand, covered by running liveoak and sweetbay brush. Numerous small groves of stunted (ming) liveoak and blackjack oak lean permanently away from the Gulf winds along the lower ridges. Lakes and ponds dot the area impounding the rainfall.

The largest list of birds ever tallied in the United States in one day was made in this area — 204 species. At any time during the year impressive checklists can be made. During the fall Canada geese sometimes number 35,000 at the refuge. Pintails, mallards and teal in mixed flocks have reached a known figure of 120,000.

Sandhill cranes winter here in numbers. The caracara is a permanent resident, white-tailed hawks are conspicuous nesting birds and wild turkeys are to be seen during all seasons. During the spring and early summer, the colorful roseate spoonbill feeds along the bayshores and bayous in mixed groups of white ibises, egrets, herons and black-necked stilts.

The nearly extinct whooping cranes commute some 2500 miles between their summer home in Canada and this winter resort in Texas. Their only known nesting ground lies in Wood Buffalo National Park, an 11 million acre wilderness only 400 miles from the Arctic Circle.



The Sea Gun Resort Hotel, member of the National Audubon Society and Texas' only true resort is located in this fabulous area and offers complete service for the birder and naturalist, including facilities for conventions and field expeditions. Official regional checklists are available.

From its marina, regular trips are scheduled into the sanctuaries aboard the motor vessel "Whooping Crane." Every Wednesday, Friday, Saturday and Sunday (while the whooping cranes are on the Aransas National Wildlife Refuge, usually October 20th through April 10th), this sixty-five foot, diesel powered vessel embarks at 1:30 P.M. for a 3 1/2 to 4 hour run across Aransas bay, past Bludworth Island to the remote areas frequented by the many species.

Write, wire or phone for reservations



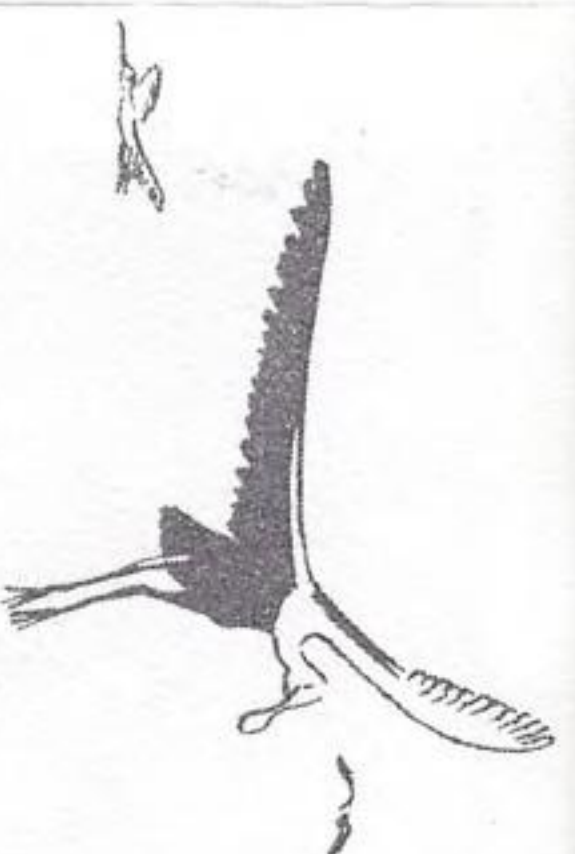
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Nine miles north of Rockport, Texas on Highway 35

Route 1, Box 85, Rockport, Texas 78382

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year around BIRDING PARADISE



On the fabulous
Aransas and Copano bays

*

Contacted Mr. Dailey in Drug Store in Fulton and visited with them for a while, took trip to cemetery to see sprung flower, ^{photo 830417-5 of yellow daisy that completely covered cemetery,} blue bonnets fading but replaced by a yellow daisy that completely covered the grounds. These will be mowed when past their brilliance. Camped at American Adventure Birds there in fresh water lake, family 7 mallards 1/3 size adult, 1 lesser yellow legs, ^{cormorant}, 1 snowy egret, 2 coot. Fox squirrel in camp. In Fulton at marina a one legged laughing gull tried to mount female for the third time but was unable to maintain balance for copulation. A wind over sands may have prevented attaining proper balance. Repeatedly pecked head of ♀ while on her back. 150 gulls in group, two other copulations noted. The area where winter population of ducks stay, is supporting only normal numbers of ducks and birds. The Dailey took us to see daisies at Fulton Cemetery and several points of interest in the area. Camped tonight at W end L.B. Johnson Bridge over Capano Bay.

Aransas Co., Texas.

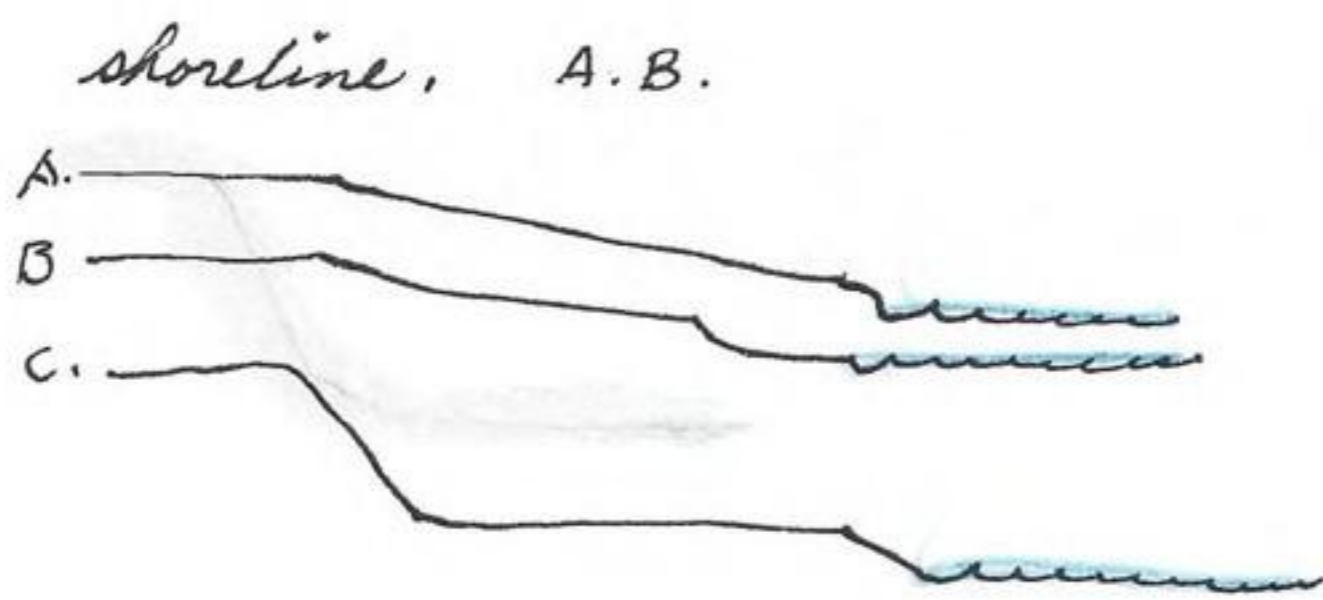
West end L.B. Johnson Bridge (over Capano Bay). Texas.

April 18, 1983

Left 770.5 ^{8:55AM} Camp at W end bridge (N side on mass of oyster shells 2 feet from water) ** will make trip to Aransas Wildlife Refuge and keep complete census enroute. 2 turkey vultures, black vulture, 18 black vultures and 1 turkey vulture in dried pond. Redwing, loggerhead shrike, Bridge and big bay to S. or Cavassa Creek, Louisiana heron, mourning dove, g.b. heron, meadowlark, barn swallows, no to Adswell, at 786.5. Killdeer, first boat-tailed grackle. Turn to E at 788.7. 6 turkey vultures and 5 black vultures ^{probably} eating carrion thrown over the bridge. Turkey vulture now seen to refuge at 795.8. Killdeer, ankings 1/2 mile E of refuge gates. 802.2 Refuge gates. From headquarters learned. (for 1983)

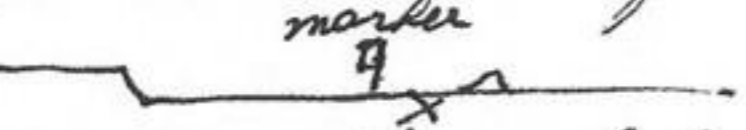
Refuge 71		may have
New Mexico 17		Last one left April 17, 1983
Patuxent Wildlife Research Center 26		or may still be there and
San Antonio Zoo 2		will remain all summer.
International Crane Foundation 1		
	117	

Will keep complete census of birds on visit to reservation. 4 great blue heron, 3 laughing gulls. At Bay View made recording of



↳ farther w

Gopher diggings all over the area to maximum capacity. Several different kinds of butterflies. marshes dry and ponds resolved to shallow pools in depressions. Second

pond and no birds. 2 turkey vultures, 2 Louisiana herons, Turnoff to Dagger Point trail. Will take ^{separate} trail. Kingfisher much like scrub oak trees of Utah. Some trees 10', in sandhill areas to 30' or so. Sand 40' high drops abruptly to water of bay. Sand trail all way. At point 100' had eroded back. 1 inch wide track of snake in sands of trail, no others, 7 lizards 3-7", no birds, cottontail rabbit most common track, no deer or peccary imprints. 4 turkey vultures, mosquitos common. Now back to main road. Barn swallow, burning of fields is disastrous to country. Redwing. Gophers now occupying dried up marshland. Turkey vulture, 2 scissor-tail flycatchers. Barn swallow. Pond of left with aquatic life. 2 barn swallow. At Jones Lake from platform searched entire lake with 17x binoculars and no birds. 2 turkey vultures, arrived tower. From top observed a white object to west near intracoastal waterway that I took to be a single whooping crane but in the period we were there it did not move. It was w of water markers (green) w of elevated island  marker. Other birds: common egret, blue-wing teal, 8 snowy egret, 2 white-tailed grebe, black skimmer, 8 gadwalls, 4 shorebirds, 80 laughing gulls, 2 willet, common tern, Forrester tern 8, 6 pelicans, 18 ring-billed gulls. In a sweep of 17x binoculars in 360° 48 vulture to E, none over bay to S and 5 to W in marshland. Most at W end of trees on mainland. Now on 12 mile trail (car). First pond 2 right, 2 pair scissor-tailed flycatchers, 2 coot, 1 pied-billed grebe, rail called. 2 turkey vultures, 2 turkey vultures, 3 common egret, 2 turkey vultures, turkey vulture alighted in deep grass. Pied-billed grebe meadowland, 2 turkey vultures, 2 turkey vulture. Photo 830418-1 here. 4 greater yellow legs, 2 Louisiana heron, 30 white-faced ibis, Photo 830418-2 ^{N¹⁶} part of flock of 400 white-faced ibis just arising from field, may have been a common egret and snowy egret. Louisiana heron, 18 yellowlegs (greater) associated with ibis, 2 white-faced ibis, 8 wild geese (black & with tails), 2 killdeer, 30 ibis (w.f.), turkey vulture, turkey vulture, opening

Cotton-tailed rabbit, walked Heritage trail. Photo 830418-3 of farm machinery, 830418-4 of white primrose? and fence, large bee all over wood fence and wood associated with coral. 2 scissor-tails, 1 g.b. heron, 2 turkey vultures on trail, cardinal, returned to Barth. Laughing gulls, End of bar trail. Between here and visitor center were 7 turkey vultures & 5 black vultures in middle of road, a deer was 20' away. We passed and they returned to road but there was no road kill or evidence of food there. It (the young deer) attempted several times to get back to trees on other side of road. 2 turkey vultures. 2 photos of white-tailed deer just above interpretive center nos 830418-5 and 830418-6 and 830418-7 in tall marsh grasses adjacent to pond. In pond behind were 3 coot, 4 common gallinules and 1 pied-billed grebe, at 819.0 leaving refuge at gates at 5:00 P.M. 2 photos of evening primrose nos 830418-8 and 830418-9 of front and back lighting. 4 boat-tailed grackle, 2 scissor-tail grackles near gate. On main road on return to Goose Island observed Mississippi kite (last year bird) at Covasso Creek, 18 cattle egrets, one common egret, g.b. heron, 2 b.t. grackles, meadows in area. Photo 830418-10 ^{NG} of Indian paint, ^{and some yellow daisies} along side of road. These roads in Texas are grown to wild flowers by planting & seeding and cannot be cut until flowers are gone. Most roads are beautifully grown to these bright flowers. 853.0 at Goose Island at 6:30 P.M. No buds on pier. Oil rig in to area about 1/10 mi. S of end of pier this morning.

Goose Island State Park, Aransas Co., Texas

April 20, 1983

usual birds in area of site 13. Had breakfast with Darley at the Sea Gun Restaurant and then visited their trailer home in Fulton at Woody's Acres. (M.P no 1840). white at the Sea Gun Restaurant photo 830420-1 of Floyd and Hazel Darley and Annette, 830420-2 of Floyd & Hazel. Left Darley and ^{Photo 830420-2a of back home} at Rockport marina photo 830420-3 of mass of guy wires and other rigging of shrimp boats. Photo 830420-4 of large shrimp boat. Continued to City Park on a peninsula and took several photographs. 830420-5 of Barth, Annette and boat passing by. 830420-6 of Barth, Annette and sea shore homes of Key Allegro. Photo 830420-6a of Annette feeding laughing gulls at side of Barth. Photo 830420-7 of close-up of flying gulls, Photo 830420-8 of (Photo 830420-7a of Key Allegro at entrance, club house & formidable to hurricanes)

82
4 Sandwich terns in some group of gulls and 1 ruddy turnstone. ^{80% laughing gull paired, 8 copulating} 830420-82
laughing gulls on sands. 830420-9 birds, and ^{830420-10 one gull,} some moved
SW along shore 3 photos of gulls at edge of water feeding
on some material washed ashore. Nos 830420-10, 830420-11,
830420-12. Barth, Annette ^{830420-13.} + daughter, bay. Continued to Aransas ^{Pass} and had
mirrors placed in Barth. Continued to beach on W side
Intracoastal waterway bridge, S end for camp along the
waterway and bay. Stranger came to Barth for handout.

S side Intracoastal Waterways bridge, S Aransas Pass, San Patricio
Co., Texas.

April 21, 1983

Laughing gull became active around 6:00 A.M. 28 black
skimmer arrived at point to W across bay and after circling
low 4 times landed on a sand bar with 8 laughing gulls.
Black-bellied plover with 30% more black (30% black) on belly
and chest. One week ago these plover had about 10% or less
black. A great blue heron walked backwards in continuous
consecutive steps for 8 feet. Cormorant fly over bridge,
Louisiana heron fly ~~to~~ under bridge. Other birds in area.
2 Willet, 1 eared grebe. A Forster tern was chased by 4 laugh-
ing gull. Finally a gull snatched a small fish from beak of
tern and the chase immediately stopped and the tern returned
to fishing. The action takes place about 30-40' above water.
Rain just before we left, 883.1. Great blue heron, laughing
gull, 2 willet, 3 Forster's tern. (census is impractical because
beach is invisible). Oleander dominant shrub along
causeway, 3 great blue heron. Arrived Ferry, 3 porpoise
(common) in crossing; They appear black and ^{backs} are above
surface of water. from start to finish in 3 seconds. Port
Aransas. Now to W. On beach are 12 laughing gulls in 2/10
miles of beach, also 2 willet and 1 ruddy turnstone. Beach
wide (100') between sand dunes and water, also 8 sander-
ling. Higher dunes than to E. Different kinds birds
along route, meadowlark, laughing gulls, willet, sanderling,
boat-tail grackles,

Watched mating of laughing gull. Female billed male with
male the passive one and the female moving back and forth
in front of male from side to side. On 5 occasions the male
opened his mouth and offered the open mouth to the female
who took small fish (2 1/2 to 4" long) from the bill or throat of
the male. This was repeated 5 times at interval of about 1/2 to 1'

intervals until the last fish was offered. The female then moved to front of male and passed her tail against his breast from side to side for about 30' and the male then mounted the female and stood on entire length of foot and after balance was attained wagged its tail back & forth and then forcefully separated wings and tail apart and made close contact. He repeated this 3 times and then demounted. vocalization accompany first part of courtship. Out of a group of 28 laughing gulls only 6 remained unpaired. 4 copulations were observed in approx. 10 minutes, males are defensive if other males come near the female. At Mustang State Park much moving sands. In parking lot a group of laughing gulls shared the area with 2 reddy turnstones, 1 Baird Sandpiper and 3 sanderling. Corpus Christi Pass last to channels to gulf are not carrying water, many marshes & lakes are dry. 1852 Pass. Parkey Channel, no junction to Corpus Christi. Windward side of Causeway with windrow of white foam ^{& debris}, whereas on W side there is none. Continued to Corpus Christi and had prints* developed and shopped for necessities. Returned to camped 2/10 mi N of E end of Packery County Park. *(Photos 830421-1 to 830421-10 are of Annette in Barth showing interior arrangements.)

N of Packery County Park, Nueces Co., Texas

April 22, 1983

This camp is not in Park but in lowland of bays and sands bordering the Packery Channel. From Barth took 7 photos of birds to be discussed, all under poor lighting condition of early morning and cloudy skies (500 mm). In a linear pond 80' x 15' that is connected at high tide to bay but separated in low tide, observed 24 species of birds, all inhabiting the small pond at the same time:

Recorded reactions and behaviorism between species.



● CAMP

Black duck - Anas rubripes. Two rested and fed in water, keeping close together. They tolerated all forms and had a confiding respect toward all species but with some respect for the great blue herons. They would swim by snowy egrets, avocets and other herons without selecting response from those birds. When feeding they dabbled continuously. Roseate spoonbill - Ajaia ruber. One fed in pond, it fed

on an average of one item of food per 4 seconds and kept up this rate for long periods of time and made more coverage of pond than any other bird. Except for small sandpipers etc. it could be rated ^{as one of} the most successful feeders. It would feed along side of snowy egret, sometimes pushing it aside and upsetting egret as it swung its bill between its legs. It was accepted by all birds except small birds that respected its size.

- x Great blue heron - Ardea herodias. The dominant bird in group and would forcefully replace common egret and other egrets & herons. At the same time it would allow the common egret to feed by it only 2 feet away. One great blue heron would repel another g. b. heron. It fed on small 1" long fish at a success of 1 per every 20 secs. with a latitude of one every 6 seconds to 1 per 1 1/2 minutes. The roseate spoonbill was able to feed right along side of the great blue heron. When a fish was taken with vegetation it was able to separate fish from vegetation while holding in bill.
- x Cormorand, double crested - Phalacrocorax auritus, definitely the most successful feeder at 1 fish per 1 1/2 secs. It would look as if it were splashing up and down like a bird taking a bath with each air contact with a fish in its bill. It surfaces to swallow food. It moved half und water and was respected by all birds. When it left it waddled to land and took off from the land surface.
- x Cattle egret - Bubulcus ibis. It stood on land at edge of pond but did not feed in pond.
- x Common egret - Casmerodius alba. Respects great-blue but dominates all smaller birds (than the common egret). It replaces its own species. Like all herons, egrets and spoonbill, they leave the water and defecate on land then return to water. The act only takes as long as the time to gain land and return to water. It feeds at an average of 1 fish per 10 seconds.
- x Louisiana heron - Hydranassa tricolor. Respects birds larger than he but is aggressive to those small than he. Feeds at 1 fish per 8 seconds. It walks back and forth on edge of beach, sometimes runs, and when it spots a food item will wade out into water and then return to land. The thrust is with body more advanced than legs and the angle of thrust is low as if picking up surface food. Spread wings while feeding is common. While it works from edge of water, keeps other birds

- especially smaller ones from using the beach. It seems less aggressive and more timid with other birds, keeping wide berth. When another Louisiana heron lands at pond it displaces the original bird which flies to another pond.
- x Avocet - Recurvirostra americana. Fastest feeder when bill is carried in water & birds moves side to side or forcefully forward. Its movements seem out of control. Cannot tell how frequently food is captured or eaten but presume it is about same rate or less than roseate spoonbill.
 - x Reddish heron - Dichromanassa rufescens. Fed at rate of 1 fish per 10 seconds. Displaces birds smaller than he.
 - x Snowy egret - Leucophoyt thula. Second to roseate spoonbill, it is tolerated by other birds while feeding. Feds at 1 fish per 4 seconds. Avocet and smaller birds feed alongside.
 - x Royal tern - Thalasseus maximus. 1 fish per 5 seconds on a pass over pond. May get 5 fish on one pass.
 - x Common tern - Sterna hirundo. Fed 1 fish per 4 sec. May get 4 fish on one pass.
 - x Forester tern - Sterna forsteri Ibid.
 - x Least tern - Sterna albifrons. Fastest feeder of terns at 1 fish per 2-3 seconds. Gets more food items per pass over pond. All terns work over pond without interrupting birds, even small sandpipers etc.
 - x Willet - Catoptrophorus semipalmatus. Do not feed quite as fast as smaller sandpiper, but average 1 per sec. Several (willet) birds chased each other and called.
 - x Dunlin - Erolia alpina. Average 1 per sec.
 - x Black-bellied plover - Squatarola squatarola. Difficult to judge because of interrupted feeding. It is a deliberate feeder and may average 1 item per 15 seconds. Black in breast about 80% black.
 - x Semipalmated plover - Charadrius semipalmatus. Like above and about 1 item 10 seconds.
 - x Long-billed dowitcher - Limnodromus scelopaceus. Continuously probing at about 1 per sec. Like dunlin, they keep together.
 - x Pectoral sandpiper - Erolia melanotos Feds 1 per sec.
 - x Laughing gull - Larus atricilla. Only 1 visited pond but did not feed.
 - x Semipalmated sandpiper - Ereunetes pusillus. Fed 1 per sec.
 - x Black Skimmer - Rynchops nigra. 3 flew over
 - x Barn Swallow - Hirundo rustica. 1 per 3 minutes flew by
 - x Harned lark - Otolario alpina
 - x Savanna sparrow - Passerculus sandwichensis 4 feed around pond in grass.

all birds accepted the hierarchy of dominance except the sandpiper and semipalmated sandpiper. In this case the semipalmated sandpiper would chase a sandpiper but the sandpiper would defend itself and attack the semipalmated sandpiper by stand-off or bodily contact. No other species in the pond showed a sign of defending themselves but accepted the hierarchy.

List of birds according to rate of feeding: (fish 1 inch long but other prey species not determined)

black duck	1/1/2	
willet, long-billed dowitcher, pectoral sandpiper, semipalmated sand-		
piper, dunlin	1/1 sec.	
Cormorant	1/1/2	
Least Tern	1/3	
Avocet	1/4	
roseate spoonbill	1-4 sec	
common tern	1-4 sec	
Forster's tern	1-4 sec.	
Royal tern	1-5 sec	
Louisiana heron	1-8	
Snowy heron	1-10	
Reddish egret	1-10	
Semipalmated plover	1-10	
Black-bellied plover	1-15	
Great blue heron	1-20	

Birds according to aggressiveness.

great blue heron
 common egret
 reddish egret
 Louisiana heron
 snowy egret
 avocet
 willet
 cormorant
 mallard
 roseate spoonbill.
 pectoral sandpiper
 long-billed dowitcher
 dunlin

Photos 830422-1	avocet	Bairds sandpiper
"	"	semipalmated sandpiper.
"	-2 Lesser ^{<i>Recurvirostra americana</i>} yellowlegs.	
"	-3 ^{<i>Totanus flavipes</i>} " "	sanderling.
"	-4 Dunlin, <i>Erolia alpina</i>	
"	-5 Semipalmated plover, <i>Charadrius semipalmatus</i> & Dunlin	
"	-6 Long-billed dowitcher, <i>Limnodromus scelopaceus</i>	
"	-7 Common egret, <i>Casmerodius alb.</i> & snowy egret <i>Leucophoyx thula</i>	

- Left Camp. N of Packer County Park and drove to Mustang Island State Park. On road (Park Road 53) between w junction and park, took photo 830421-20 of sand dunes to show height. From our last camp (N Packer Co. Park) the sand dunes looked like high alpine covered mountain. Continued to Mustang Island State Park and drove on sands E to rock jetty of the Corpus Christi Bay outlet. Water exchange pass to about 1/10 mi inland from beach and from there a reduced channel, mainly filled with sand. These beaches are active with broad expanses of sand and high sand dunes. Photo of the following subjects: (Kodachrome)
- 830422-21 full height of great blue heron.
 - 830422-22 upper body & head of great blue heron.
 - 830422-23. incoming surf.
 - 830422-24 " " " "
 - 830422-25 great blue heron on sand dune. Two others occupied similar dunes.
 - 830422-26 great blue heron full height.
 - 830422-27 Bath on beach at rock jetty.
 - 830422-28 Laughing gulls on sands
 - 830422-29 " " " "
 - 830422-30 Group laughing gull fighting for food
 - 830422-31 " " " " " "
 - 830422-32 " " " " " "
 - 830422-33 yellow primrose on sand dune.

Returned to west beach and set up camp about half way down beach from Headquarters to Corpus Christi Pass to SW.

Mustang Island State Park, San Patricio Co., Texas
April 23, 1983

Gulls active at at least 5:40 A.M. At 7:15 noted several Swainson's hawks circling just beyond dunes to NW and between 7:15 and 7:30 there were approx 500 hawks that passed NNE on outside of dunes in singles to groups of 5 to approx 100 birds. At 7:30 made trip NW of dunes to get a better count of numbers of birds. From a point about 2/10 mi SW of dunes could see that the hawks were moving SSW to NNE from 20' above ground to as high as 500'. One was on ground and flew when approached. Others appeared to be hunting but I never saw one come to ground. At 7:55 observed one flock of estimated number of 3,500 birds, flying from 100' to 500' high and in a compact group measuring

approx $3/10$ of a mile in diameter with a tendency for a slight elongation in same axis as beach but all ^{and above} ~~NNE~~ of the dunes. These birds moved NNE. Some hawk after the mass numbers but tapering off more abruptly than was the build-up to the mass aggregate. By 8:10 most of the hawks had passed by but a few were seen up to 8:45 A.M. generally in 2's, 3's or groups of 5-6. Observed 1 hawk (Swainson) to sail SW for $4/10$ mile, then turn and sail NNE. It was interesting to survey NE and see no birds and then in a minute or so check NE again to find Swainson hawks in small groups circling, having not observed any Swainson hawk pass NE overhead. It made me speculate that these hawks may have been migrating high over the Gulf of Mexico and as they approached land came down ^{unnoticed} to the height that I had been observing them. Observed a 5' yellow-bellied water snake on dunes that had grown to vegetation + 1 yellow-headed ^{blackbird}.

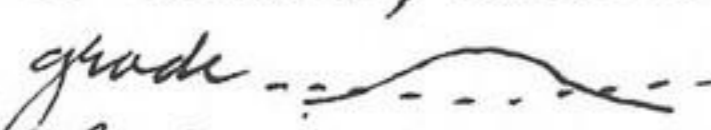
Spent the afternoon in Corpus Christi. At sailboat marina Photo 830423-1 of sailboat with improvised flat house over center cockpit.

N/E Photo 830423-2 another sailboat with dog house.

Photo 830423-3 Silver Miss, a yacht with berth along side.

Photo 830423-4 Full length view of Silver Miss, visited museum and then returned to Padre Island via Ocean Drive, arriving at 3008.3. mileage

Padre Island National Seashore, Kleberg Co., Texas
April 24, 1983

made 1-hour trip at 8:00 A.M. NW of dump on other side of dunes ^{$3/10$ mi.}
 Observed 1 Cooper hawk, 1 common night hawk, 4 meadowlarks, a ⁽⁸⁾ sparrow that flew up and continued at least 200' before alighting again in contrast to those that jump up and right down again, 1 barn swallow per ^{1/2} minute all migrating NE from edge of water to at least $3/10$ mi. NW, 1 lark sparrow, 28 laughing gulls either flying N or NE, 3 snowy egret, one gopher mound $1\frac{1}{2}$ bushel capacity and others in all stages from new dirt to dirt smoothed flat and vegetation removing, tracks of 13-lined ground squirrel common, their trails crossing sand piles and attacking some grade  or channelled from use, kangaroo tracks and holes, black swallow-tailed butterfly 1 per minute, 23 sceloporus-like lizards, 1 marsh hawk.

On S side of dunes along shore are: (at one moment, 5 minutes)

3 willet, 8 sandpiper, 3 ruddy turnstone, 13 knot, 6 laughing gull, 2 royal tern, 3 black skimmers flew by 200' out from shore, 3 Louisiana heron flew by off shore 100', 1 Forrester's tern, 1 common tern.

Photos taken this morning (2/10 mi SW of entry of road onto beach.

Photo 830424-1 Annette in her new bonnet.

" " - 2 Annette (from head to foot)

" " - 3 dunes & blue flowers.

" " - 4 Barth and waters of Gulf of Mexico

" " - 5 Barth and Gulf of Mexico, our camp site

" " - 6 Landward moving dune & yellow sunflower.

" " - 10 Barth from sand dunes and gulf in distance ^{grass foreground}

- 11 Geomys mounds, new in sand.

- 12 dunes with yellow flowers.

- 13 dunes, yellow flowers and Annette

- 14 Annette from top of dunes.

- 15 " " " " "

- 16 " " " " "

- 17 " " " " "

(18c) - 18 Barth from beach showing Annette and new awning
Photo 830424-18a and 18b of students on beach at bath house. Turtle refuge
Left west camping area. Drove to Grasslands Nature Trail. ^{beyond}

Photo 830424-19 of wind crevity on sandy ridge. This trail is controlled by Padre Island National Seashore. This area is grasslands with low flat area of periodic inundation from heavy rains but now in grassland. The vegetation belies the fragile nature of the environment. Some erosion starts by wind channels exposing roots and allowing wind to carry away the soil, sometimes to the expense of the entire as represented in the above picture. *Crotalus atrox* and *Sceloporus catenatus texgerminus* in area. There is no topsoil but only wind blown sand stabilized by vegetation. Prevailing winds are SE. The bright green foliage is *Baptisia leucophaca*. These produce the tumbleweed like stems and are about as coarse as Tumbleweed. It has now a yellow flower just beginning to blossom. The yellow flower of *Cassia fasciculata* in fall. The sea oats (*Uniola paniculata*) forms on dune areas, some 6' tall and is one of the major stabilizing plants. Reproduction by rhizomes. The lizard *Holbrookia propinqua* in area (keeled earless) The spotted ground squirrel (*Citellus spilosoma*) was heard but not seen. Tracks common. The Kingman Rat (*Dipodomys ordii*)





is also present. noted several holes that could have been made by coyote or badger. Geomys personatus everywhere covering all slopes except pure shifting sand dune. The marshy cordgrass (*Spartina patens*) dominant grass. The Seacoast Bluestem (*Schizachyrium scoparium*) coming back from severe reduction in cattle grazing days.

Returned to Camp ground NE of main park. From here checked sand dunes to NW of NE end of camp. Made the following photographs (100 Kodakolor):

- 830424-21 alpine-like peak and surrounding moving sands
 830424-22 " " " " " "
 830424-23 " " " " " yellow flowers
 830424-28 single peak and sands.
 830424-29 peak (E side and gopher diggings in meadow below
 " "
 " "

In this area observed dickcissel, vesper sparrow, orchard oriole ♀, lark sparrow and sawbird. measured coyote tracks, perfectly preserved in low blowout E of peak as front foot 71 mm length, 44^{mm} width; hind foot, 63 mm length, 42 mm width.

This evening observed 28 birds in area of campsite and equivalent distance NE of NE end of camping area, 210.

Small holes on sand  on running water area, when water moves over hole it is leveled flat  then as water leaves, but area still wet, the mound reforms  and when it stops it forms hole as crater  which is maintained until next wave washes over and the process is repeated. These holes were approx 6-8" apart in all directions.

Padre Island National Seashore
Camp, NE Malaguette Beach, Kleburg Co., Texas.
 April 25, 1983

changed to daylight savings time yesterday. At 10:00 took the following photos: 830425-1 of laughing gull in calling attitude showing red interior of bill. Photo 830425-2 laughing gull on sand, and bubbles on beach, both out of focus for effect. Photo 830425-3 of Annette
 Batteries for camera on voltmeter: new 3.75 volts, used 3.20 volts

Holes in drier part of beach (of crabs) range in size from 1/4 to 2 inches in diameter. Spotted ground squirrel reexcavated a hole in sloping sand by rapidly using front feet and almost without a pause kicked the dirt further with hind feet. At one time it entered inner hole and returned covered with sand. It used this hole as a retreat for a particular area it was investigating but when out of area did not return to it. (9:00 AM). Both ruddy turnstone and sanderling fed 1/10 mile from water and seemed to be picking up material on new wind blown sands at camp. Their feeding activity was about same as on wet shore.

Left Padre Island national seashore at 01:13 at 12:00 AM. As we left we estimated number of tree & barn swallows, all flying NE between sand dunes & 2/10 mi NW as 1 per 5 seconds of which 90% are barn swallows and 10% tree sparrows. These birds have been moving to NE for at least the last week. Earlier in the morning there are more ^(3x) than later in the day. Turkey vulture circling over Grassland Nature Trail area. Another turkey vulture sitting on fence post. 26.7 badger road kill, measured 280 mm body only. No tail present. In same area and at pond to NW were 5 Wilson phalarope, 2 willet, 2 black ducks. Across area to here have seen approx. 15 saw buds along road in pairs or singles. Turkey vulture, 28.5. Have not kept complete record. Counted ^(12:50 AM) great blue heron on both side of highway to 100' from shore between the N end of Intracoastal Waterway bridge to where road meet mainland, as 9 birds. Also 1 Louisiana heron, 2 reddish egrets. The great blue herons are highly adaptive to man. Another instance of great blue heron becoming fearless of man was a fish cleaning site where 30 laughing gulls feed on parts of fish to the gulls. In background 3 great blue heron advanced slowly and cautiously to 30' and retreated several times but finally were able to compete with the gulls in acquiring the offal. On return in the same area as was used to census at 12:50 this afternoon, now 6:30 P.M. counted 19 great blue herons. Two laughing gull roadkills across this causeway. Sopher digging 3' from Mcadam road. Continued to Mustang Island State Park.

Mustang Island State Park, San Patricio Co., Texas
April 26, 1983

Between 7:05 A.M. and 7:15 A.M. in an area of outer ridge of

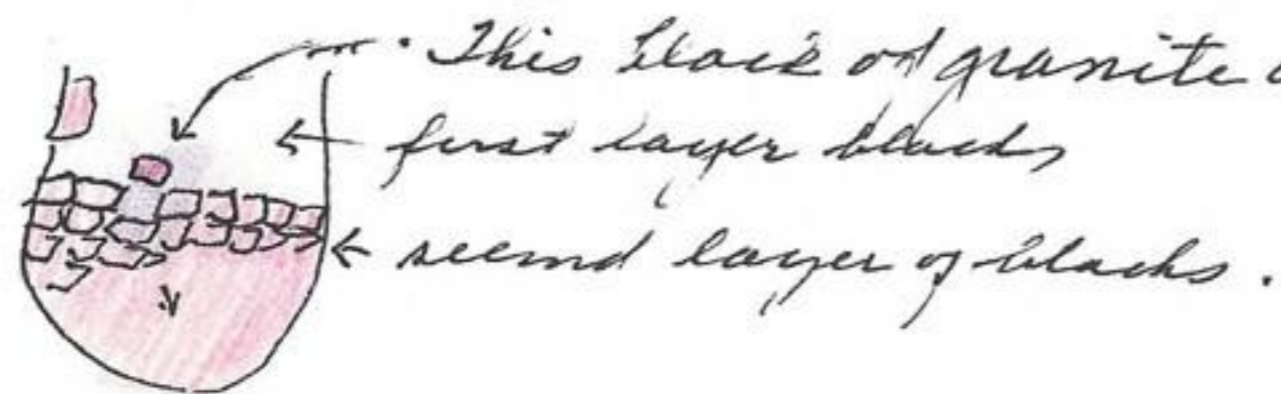
dune, the beach and 100' out into water. 54 laughing gulls flew NE, 80 laughing gulls flew SW or 134 gull pass thru 10x field of binoculars from camp no 34. Barn & tree swallows all travelling NE, most least terns to SW.

To hike NE to channel thence SE to end of rock jetty on NE side of W side of channel & breakwater. From bridge to beginning of breakwater, 8 laughing gulls, 2 common tern, 3 great blue heron, 6 black skimmers, 1 black-bellied plover, 1 sanderling, 8 royal terns, 1 least tern, 1 ruddy turnstone.

From beginning of breakwater to what would be the line of shoreline (in canal area), 2 great blue heron, 21 laughing gulls, 2 ring-billed gulls, 1 herring gull, 3 cormorant, 2 black bellied plovers, 18 royal tern, 1 willet, 6 sanderling, 6 least tern, 1 gull-billed tern. In this area on sandbar from fisherman of barrier beyond were 521 aluminum beer cans.

On SW side 200' from water 80 laughing gulls, 33 royal tern. On barrier (W one) and on both sides of this barrier were: 1 gull-billed tern, 1 Forster's tern, 1 common tern, 8 least tern, 1 ruddy turnstone, 1 sandwich tern.

At SE end of barrier where granite blocks were piled 2 high, one upper block was moved 8 feet by wave action.



This block of granite was 4' x 4' x 7'.

In some cases feldspar erodes least and stands up in relief $\begin{matrix} \text{feldspar} \\ \text{Feldspar} \\ \text{Feldspar} \end{matrix}$

checked birds on edge water from barrier to pole barrier at SW end of picnic area of beach: 5 laughing gulls, 1 willet, 5 sanderling which is actually a depauperate condition for what it should be for shoreline on the gulf.

Observed least tern copulate. ♂ followed female at 3-4' intervals and at last stop. ♀ remained in one position for 5 minutes with ♂ behind her and toward her side and continually moved head from right to left & back as did the ♀. The ♂ held a fish in its mouth the entire period. ♀ occasionally reach up to head of male. ♂ made several false steps toward her body. After 5 minutes the ♂ took stand on ♀ but female left ♂ and flew. The male with small 1" fish in his mouth followed.

Black skimmer extend wings upward until they nearly touch above when stretching ↓

Crabs excavate holes in sand and bring up balls of sand

that is darker and with more moisture than surface sands.

These are placed in several positions from hole; in back, in front or to the sides. I wonder if they (the sands) are held together by some mucous material. The ball completely fall apart if pressure is applied on them.

Noted a black skimmer pick up food from sands away from water as it ^{slowly} moved across the sand.

Things people do on beaches and dunes:

- | | |
|------------------------|-------------------|
| run | observe birds |
| make noise | chase birds |
| fly kites | make sand castles |
| walk | feed gulls |
| jog | play ball |
| frisbee & dog | play badminton |
| " " human | |
| train dogs | |
| wind sail (sail board) | |
| surf riding | |
| swimming | |
| floating on rafts | |
| fishing from land | |
| " " edge water | |
| " " waters | |
| " " boats | |
| ride in cars, | |
| race in cars | |
| ride motorcycles | |
| " mopeds | |
| " sand buggies | |
| " 4 wheel vehicles | |
| " bicycles | |
| sunbath | |
| just watch | |
| picnic | |
| loud radios | |
| camp in tents | |
| " " wheeled units | |
| run dogs | |
| collect shells | |
| beach combing | |
| make love | |

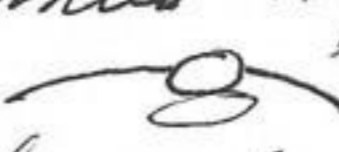

Recommendations:

1. Establish periodic inviolate beaches & dunes along water courses for wildlife. To rest and feed, especially during migration time and for marine turtles etc and other marine animals and for people to observe from beyond the area by scopes & video.
2. Heavy fine for leaving bottles or any glass container on beach. Lesser fine for anything left on beach. Fines could be cleaning up beach. Education is the only solution.
3. Educate people to the need of taking home all materials taken onto the beaches such as garbage, litter and other kinds of debris. Trash can then would not be needed.
4. No permanent installations on beach such as picnic tables and shelters.
5. Divide multiple use in to compatible categories; picnic, swimming, physical activities; fishing; bird watching; etc. It is obvious that one cannot watch & study birds with hordes of people & dogs running or walking along the beach or cars and motorcycles racing up & down the beach like an afternoon on an Interstate. Padre Island National Seashore is a prime example of this incompatibility of such activity and watching of birds or wild life. Divide the beach according to compatible use. Cars & an ^{Sunday} afternoon of students crowding the beaches are not compatible.
6. Central use of beach for certain used where seashore values are to be experienced by reservation.
- 7.

Nearly all laughing gulls are in pairs and frequently copulating, ^{that} 5 are not mated are competing with pairs. The male gives a ^{more} rapid call and a higher pitched note than when calling normally. The female after ♂ dismounts call in a faster and higher mechanical call than the other gulls calling normally around.


At 1 hr and 10" before sundown checked birds 1/10 mi. NE of bridge that crosses the channel that leads NE to Duff where granite jetties carry the sands gulfwise. At this point on sandbar on NW side of channel were 121 royal terns, 8 sandwich terns, 21 laughing gulls, 18 least terns, 6 gull-billed terns and 4 Forster terns. Of this group the royal terns, sandwich terns, least terns were copulating continuously.


The royal terns were most active with 20% copulating. Cloacal contact was from 3 to 12 in one mount, ^{♂ calls continuously when on back of female.} Male carried on precourting with or without fish in bill ^{young} inexperienced ♂ always had fish in bill. The successful ♂ were generally the larger males, always larger than ♀ or young. One ♂ (young?) courted and attempted mounting 11 times without success. It followed one ♀ down stream for 1/10 mile making 8 consecutive stops on sands along the beach. One male ^(with fish in mouth) approach a pair that were in process of copulation with male on back of female. The intruder forced the fish into the other male several times with the breeding male rejecting and pecking at intruders head. Finally the intruder mounted the back of the ♂ that was on the back of the female for approx 5 secs at which time the ♀ gone way. The intruder left and pursued another female. Repeated mounting ^{by one ♂} of several ♀ was observed but usually none materialized in copulation. There were two areas of royal tern, one on wet sands and the breeding birds on higher & drier sands. The older males usually mount and remain quiet without wing movement, sometimes for 30 seconds, then start wing movement at about 45° and calling continuously. The female is general quiet but occasionally lifts head and bill upward. After copulation (3-12 contacts, cloacal) the female moves and the ♂ drop to the sand. Usually the wings of both ♂ + ♀ are held low for a few moments. The fish is sometimes taken from male but only forcefully acquired by female. Royal terns displace small terns.

The Sandwich tern is similar to royal except accomplish with greater ease and success. The same number of cloacal contacts are made but the process differs in that the wings of the male when mounted on female are held at an angle below the horizontal  instead of 45 degrees  and the wings of the male Sandwich tern do not move ^{breed.} except for occasional balance adjustment. All the Sandwich tern

The least terns is similar to royal tern but more frunt of ♀ maneuver. 40% of least tern bred.

The laughing gulls did not breed but at camp they were active ^{breeding} all day today.

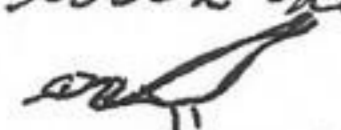
Low tide to near outer end of ^{rack} barrier and stream almost non-existent. Many jelly fish  tenacles ^{2 1/2'} greenish and purple with long stingers. They appear to be alive. They ranged in size from 1 inch to 12" and on beach to picnic barrier and in channel were about 80 in number.

Left Mustang State Park and drove to NE side of Fish Canal. Sand on beach to water and only 4 wheel drives could make it. Some granite blocks 4x4x7 removed 50' from original position at end  by wave action, debris between granite boulders from fishermen. I do believe that fishermen are the greatest disseminators of trash on beaches. all debris should be taken back to home.

Reddish egret runs as much as 20' to new position, sometime objectively to catch a fish. Sometimes stumbles over itself on quick turns and moves in all directions abruptly, sometimes with wings spread out (2:30 P.M.).

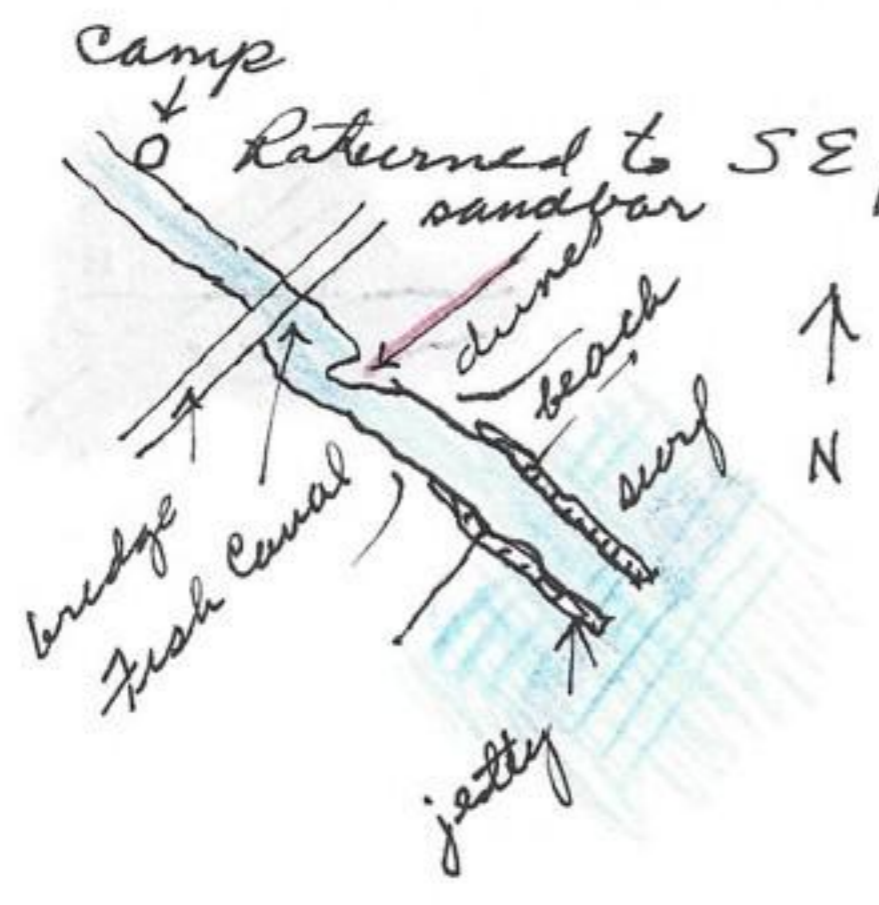
Left this area and drove to NW end of road along Fish Canal where there is an excellent view of the Corpus Christi Bay & extensive mud & sand flats to SE where many more shorebirds are than say along the beaches of the gulf.

Birds in an area of 1/10 sq mile (1/10 by 1/10) are:

Wilson phalarope 11. 2 groups of 5 and 6 ran along beach with heads and necks held low and body at a 45° angle.  and food was picked up by low angle forward movement and quick thrust. No other shorebirds were moving with such speed or energy.

Willet 23. All ^{resting} in one flock. These both were performing the act more vigorously and completely than other shorebirds. Some half way submerged in water and motionless for 4 minutes during a phase of the biting. A black skimmer rested with them.

- Black skimmer, 1 bird with willet.
- Reddish egret 2. One did not capture fish for 6" otherwise one for 6"-10". Fish along.
- Black-bellied plover. 2 Feed solitarily.
- Great blue heron 3.
- Aunlin 18. dispersed groups.
- common egret. 6 Isolated
- Snowy egret 8 some together
- Lesser yellowlegs 4
- Laughing gulls 2
- Least tern 2.
- Common tern 1
- Avocet 6. all resting on sands.
- Kingfisher 1
- barn swallow 3
- tree swallow 1



Returned to SE part of Fish Canal seaward of bridge and counted birds on a sandbar that was regularly used all day every day.

	4:15 P.M	5:15 P.M	6:15 P.M
black skimmers	7	8	0
royal tern	24	16	22
Sandwich tern	23	16	0
Laughing gull	55	73	50
ring-billed gull	3	2	1
herring gulls	1	0	1

Only gulls, terns & skimmer counted. Other shorebirds in area. Sanderling pass thru ^(weak) community of resting birds without resistance.

Returned to NW (NE side Canal) and made camp in edge of canal. At 20' after sunset a laughing gull with trailing broken wing moved continuously around a sand island. At one point a ♂ laughing gull flew over to it and followed it without courtship display for 30 feet with occasional pauses when it forcefully tried to mount the ♀. At one time the female cross water, floating deep, to another small island and when ♀ arrived to sand the male pounced the ♀ directly from flight. The ♀ attempted to shake the male off and for 4 minutes she turned completely around, fell many times onto her side or belly, flattened out, at 2 times completely turn over (rolled over)!

fighting the male with her beak, surging forward and all the time with the male with continuous contact on her body. She finally escaped and the ♂ immediately flew away. She travelled across the island and then swam down stream under the bridge. This behavior is either from action of a member toward a cripple member of its group or the dropped wing was an immediate signal for accepting copulation.

NW Fish Canal (NE end Mustang State Park), San Patricio Co., Texas

April 28, 1983

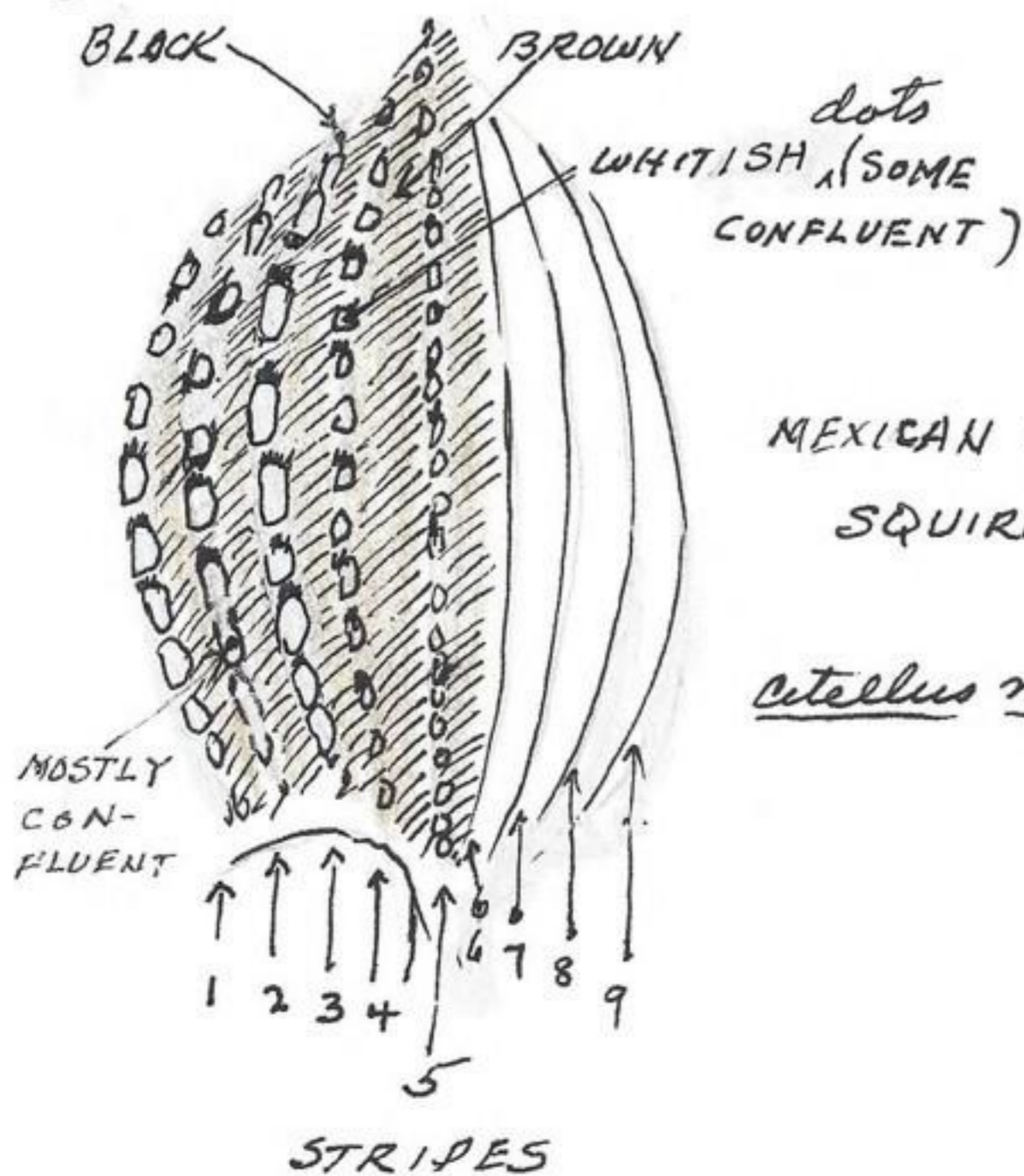
At 7:30 A.M. average number of birds in area of pump.

Great blue heron	4
Laughing gull	12
Lesser grebe	1
willet	2
sanderling	3
dunlin	1
snowy egret	1
Louisiana heron	1
royal tern	1
least tern	4
barn swallow	2

Fish (mullet) in 100' reach of river from side to side, 4 per minute. They do not jump as far or as many consecutive times on calm water (A.M.) than evening with wind when they jump 5' and on occasions 5 times in consecutive jumps. 2-3 (1-5).

~~~~~ →

This morning foggy, slight ripple on water, cool, wind from gulf.



Corpus Christi Lake State Park  
San Patricio Co., Texas.

April 29 1983

MEXICAN GROUND  
SQUIRREL

citellus mexicanus

The Mexican ground squirrel is common, 8-10 in one field and has the marking illustrated to left. No white stripes but dots on a brown base. Line 2 and 8 has the tendency to have dots confluent. Tail bushy 1 and 3 and 7-9 largest dots. Photo 830429-1 of this species.

One of the rangers observed an armadillo cross field. their tracks common.

Birds in area (This place is dominated by hackberry (*Juglans*) *Celtis laevigata*) and mesquite (*Prosopis juliflora*).

Bronzed cowbird, 6 neck can be ruffled and eye is red.  
 boat-tailed grackle 8  
 mourning dove, 1

turkey vulture 1

laughing gull (at lake) 1

red-bellied woodpecker 2

Inca dove. From ground dove, larger, long tail, white in tail, <sup>carried nest material</sup>

ground dove. Small size, no white in tail while in flight,

white-winged dove. Definitely the most dominant bird in area.

It calls from daybreak to twilight, generally in groups in certain favorable tree area. They are continuously in sight. Some are carrying materials for nest building. Their calls are outstanding with many calling at any one moment. They go so:



SLUR

It is difficult to pick out the individual song when many birds are calling.

Sometimes they vary the call and improvise several additional notes within the regular pattern. At times it suggests the call

of the great horned owl. When the call is given there is an audible huff sound immediately preceding the first note and during this time the tail elevates and the wings are raised.

One ♂, alighted by a calling ♀ and the female crouched and vibrated its wings.

Mockingbird at least 2 in opening at frequent intervals.

Walked to lake and observed 2 green heron, 2 black ducks, 2 kill deers, 2 black-bellied tree ducks flew pass, they are easily identified by red neck, large white patch on wing and trailing leg, and 6 bronzed cowbirds. The male of the cowbird ruffles feathers, hovers perfectly 2-4 feet above female for 10-30 seconds. It copulated once; they left female. One ground vibrates wing rapidly.

This evening visited a neighbor who is a civil lawyer from San Antonio. He is President of The (SE US) Musicians Union and dropped such names as Doc Severson, Harry James, Buddy Rich etc as close friends. They made the statement the one does not go to Pasco del Rio after dark. The city has overwhelmed the walk area and it is not as pleasant as at one time. Had 3 bands at one time and played the drums (before going to low school).

Lake Corpus Christi State Recreation area, San Patricio Co., Texas  
 April 30, 1983 min temp last nite 74°F

White-winged doves called (individuals) at least 11:30 P.M., another time during the night and possibly at intervals of 1/2 hr, definitely at 4:20 A.M. and thereafter at about 20 minute intervals either as individuals 1 or 2. The interval decreased gradually from 6:00 to 6:30 A.M. after which it was a continuous full chorus.

Left at approx 11:00 A.M. for Kingsville. will keep check of different kinds of bird only. Between Mathis and 8 miles S of Banquette observed 3 turkey vultures, mourning dove, scissor-tailed flycatcher, loggerhead shrike, W Kingbird, barn swallow, meadowlark.

From 1966 <sup>12.6 P.M.</sup> will keep list of birds to Kingsville. (recorded malfunction, 2 turkey vultures 2.13.7, 1 turkey vulture 2.13.9, 2 black vultures noted 2.18.6, 2 turkey vultures 2.19.3)

at Kings Ranch tower recorded the following birds:  
 (720.8 mileage beginning from gates, 3 boat-tailed grackles, mockingbird, boat-tailed grackle, mourning dove, mourning dove, now left, <sup>on loop road</sup> 2 mourning doves, 3 mourning doves, meadowlark, 3 meadowlarks, scissortail flycatcher, no. 1 at bridge. 2 meadowlarks, meadowlark, meadowlark, meadowlark, m. dove, m. lark, 3 m. doves, meadowlark, nighthawk, bronzed cowbird, mourning dove, ground dove, mockingbird, bronzed cowbird, meadowlark, now w. 2 meadowlarks, mockingbird, scissortailed flycatcher, meadowlark, m. lark, ground dove, m. dove, scissortailed flycatcher, m. lark, boat-tailed grackle, now by red chow silo, 2 boat-tailed grackles, mourning dove, loggerhead shrike, waterfowl in lakes, meadowlark, m. dove, m. dove, 3 bobwhites, 3 scissortailed flycatchers, 5 m doves, m. lark, m. dove, 4 m doves, m. dove, 2-3-4-8-6 m. doves, 2 scissortailed flycatchers, 4 m. larks, 3 savanna sparrows, 3 mockingbirds, 6 m. doves, 3 boat-tailed grackles, 3 boat-tailed grackles, no. 2. road to n, 3 boat-tailed grackles, 2 bronzed cowbirds, 2 meadowlarks, boat-tail grackle, boat-tail grackle, 2 boat-tailed grackles, 2 m. doves, m. lark, 2 m. doves, 3 m. doves, 2 m. doves, mexican ground squirrel, 2 m. doves, 3 m. doves, m. dove, m. dove, lark sparrow. 3. m. doves, m. dove, m. dove, m. dove, boat-tailed grackle.

6 m. doves, mockingbird, m. dove, 4 m. doves, m. dove,  
 m. dove, m. dove, 4 m. doves, m. dove, 4 boat-tail grackle,  
 m. dove, m. dove, m. dove, 5 m. doves, 3 m. doves,  
 2 scissortail grackles, m. dove, no. 3, 2 m. doves, 2  
 m. larks, 1 m. dove, 3 m. doves, m. dove, scissortailed fly.  
 m. dove, (SE turn), snowy egret barn swallow, scissortail  
 flycatcher, meadow lark, 2 bronzed cowbird, 2 m. doves,  
 scissortailed flycatcher, m. lark, bronzed cowbird, m. lark,  
 brown headed cowbird, m. lark, m. dove, m. dove,  
 t.f. grackle, m. dove, bronzed cowbird, scissortailed  
 flycatcher, boat-tailed grackle, 2 scissortailed flycatcher,  
 4 boat-tailed grackles. Back to gate:

Summation of number of birds observed on loop trip  
 thru Kings Ranch. 1-3-1-1-1-1-1-1-1-1 = (30)  
 mourning dove 1-1-2-3-1-3-1-1-1-1-5-1-4-1-2-3-4-8-6-6-2-2-3-2-2-3  
 meadow lark 1-3-2-1-1-1-1-2-1-1-1-1-4-2-1-2-6-1-1 = (30)  
 boat-tailed grackle 3-1-1-2-3-3-3-1-1-2-1-4-1-1-1-4 = (32)  
 scissortailed flycatcher 1-1-1-1-2-2-1-1-1-1-2 = (14)  
 bronzed cowbird 1-1-2-1-1-1 = (7)  
 brown-headed cowbird 1 = (1)  
 quail (bobwhite) (3)  
 mockingbird 1-1-1-3-1 = (7)  
 night hawk (1)  
 ground dove 1-1 = (2)  
 loggerhead shrike (1)  
 savanna sparrows (3)  
 mexican ground squirrel (1)  
 lark sparrow (1)  
 snowy egret (1)  
 barn swallow (1)

or 235 birds of 1 mammal  
 and 15 bird species.

photo 830430-1 of building on  
 King Ranch in Texas.

continued to Poffin Bay.

Leo Kaufer memorial Park, Poffin Bay, Kleberg Co., Texas  
 April 30, 1983

This is evening of 30th. Birds in area of shallow ponds W  
 of Camp. 18 laughing gulls, 300000, 2 eared grebes fed  
 for 1 1/2 hours 30' out into bay among a strip of bright  
 green vegetation lying at surface. This zone of 3-8 feet  
 forms smooth water in an otherwise rough surface from  
 wave action on the bay. The grebe found it difficult to swim  
 at times. In the 1 1/2 hours they did not dive once but pecked



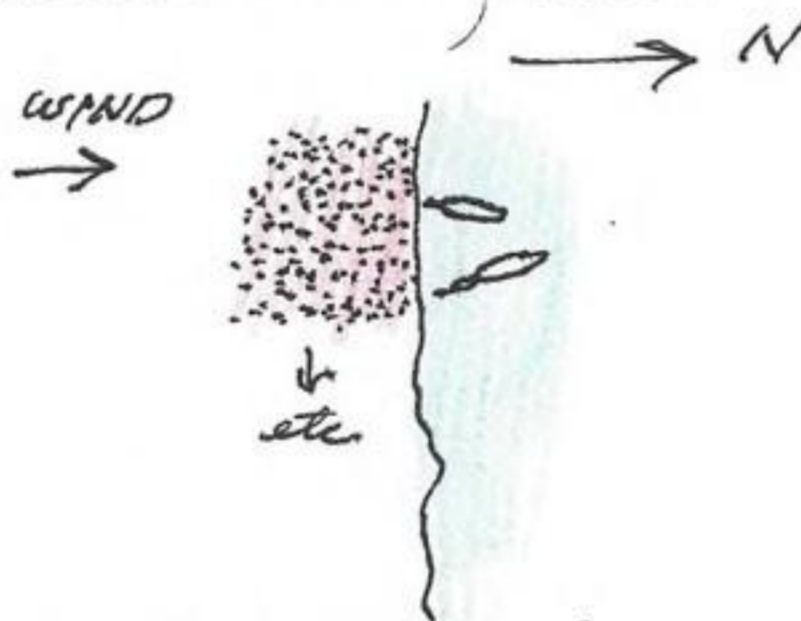
up insects from the surface at the rate of about 1 per second. This slick water strip ran the full length of the beach. (Laysan), scissor-tailed flycatcher, 1 sandpiper, 5 willet, 2 black skimmers, 16 Wilson phalaropes, 1 scaup, 1 semipalmated plover (it was encouraged to speed up its feeding as a group of W. phalarope passed thru the plovers position on the beach), 6 dunlins, 3 western sandpipers.


$\frac{1}{2}$  The beach is covered with dry sea weeds and there is no odor of hydrogen disulphide. Birds not using this  $\frac{2}{10}$  miles of beach.

Leo Kauter memorial Park, Dogfish Bay, Kleberg Co., Texas  
 in ~~the~~ ~~area~~ ~~of~~ ~~the~~ ~~beach~~ ~~area~~ ~~near~~ ~~the~~ ~~park~~  
 May 1, 1983

Birds in bay W of Park just E of causeway (5 end). 9:00-12:00

- Wilson phalarope: 8. Fed in one area of beach or mudflat 60' long. The flies were here by the millions and occupied an area between the edge of water and to inland 1 to  $1\frac{1}{2}$  feet. They were so thick that only 40% of mud was clear of flies. The wind was from S and kept them low on mud. Some remained



in crouched position ~~with~~ with half of body in water. According to depth of water they crouched on mud, film of mud on water to water. They could control body movement with feet. In such position they could move forward. Others floating and moving by water propulsion. Others ran or search from shore in midst of the flies which would be displaced and fly out with wind for 1-2 feet and then immediately return. The most successful birds were those crouched at edge of the water (in the water) and wait for the flies to be either driven by wind or by another bird on land. The ones on land would first try to pick the flies from mud individually by reaction caused them to move rapidly and irregularly without good success. Sometimes the flies in good picking were consumed 1 per sec. It is remarkable how they can pick the flies out of the air or passing by with such precision. When moving on land or shallow water, the body is thus:  They feed in close net groups.

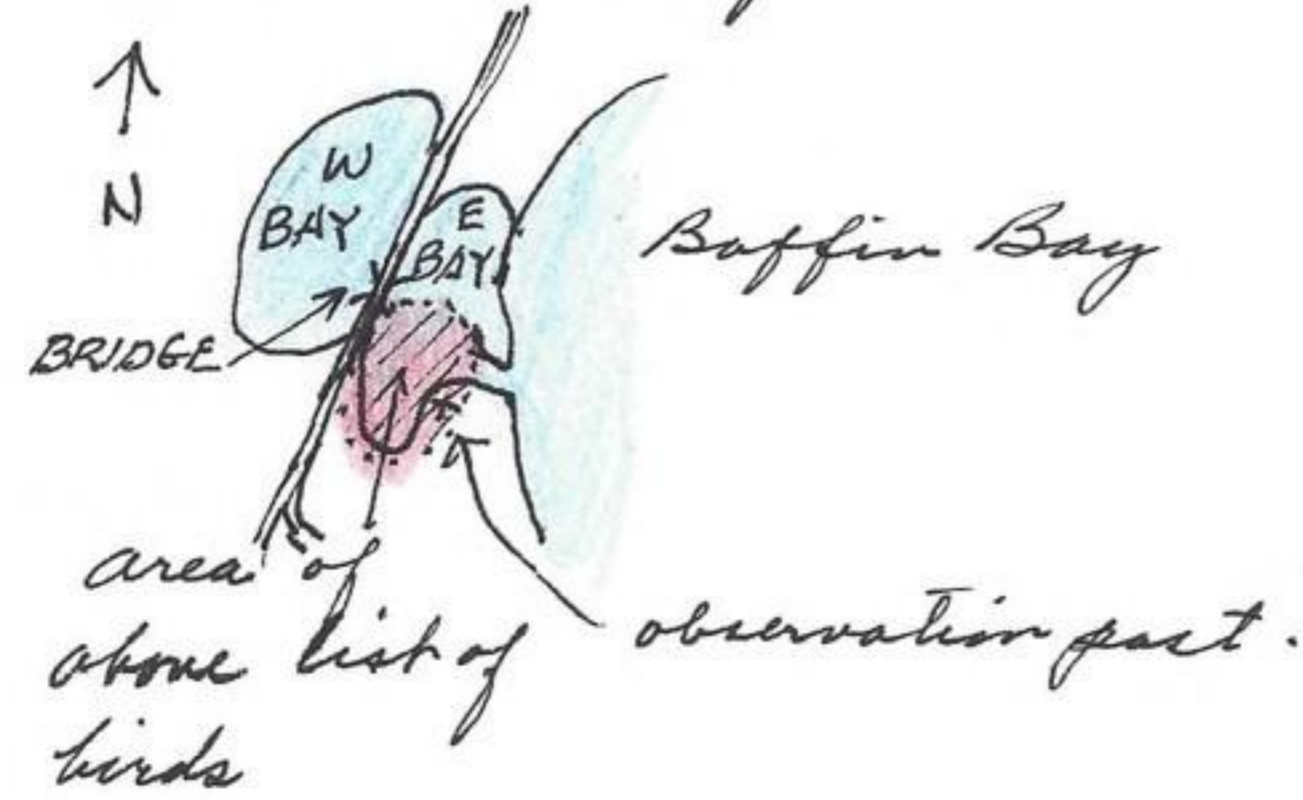
- Snowy plover: 1 bird in area and feeding by running thru mass of flies and getting one or maybe more in bill at one thrust or pass thru.

Black skimmer: 5 in area, fed and hunted waters. A hard object bends bill & head back momentarily.

- 9 laughing gulls. Rested and 3 pairs bred. One pair made 9 consecutive cloacal contact on a mount. One mating pair was rebuffed by a second male that dislodged the mount.
- Cormorant, double crested. 1 came in and then left.
- Least tern. 8 fed thru area.
- Snowy egret 4 in area but 23 on W side of causeway in large bay.
- Semipalmated sandpiper. 4
- Dunlin. 128 fed together most of morning.
- Stilt sandpiper. 18 fed with dunlin.
- Turkey vulture. one moved overhead
- Barn swallow. approx. 14 this A.M.
- Lesser scaup. 3 fed in bay (shallow)
- royal tern. 3 rested on bar for an hour then left.
- Sanderling. 3 isolated individuals, 1 pair.
- Baird sandpiper. 3 joined phalarope for short time.
- Avocet. 3 in this area. 8 on W side causeway.
- Willet. 2 in passing thru.
- Louisiana heron. 1 in area.
- Greater scaup. 5 W of causeway.

- Bronzed cowbird. 1
- mourning dove 6
- ground dove 1
- green heron 1
- semipalmated plover 2
- snowy plover 1

Except when indicated all birds listed above are on E side causeway.



Both the snowy plover and semipalmated plover fed on the hoards of mudflies by running rapidly into the mass of flies for from 1' to 3', sometimes more and then stops abruptly, the purpose is to get as many or one flies into its bill. When the flies are continuous they will

make 4 or 5 consecutive runs in one forward movement of from 4 to 10 feet stopping only temporarily. The body is slightly crouched and the head is held low.

The least sandpiper moves normally ahead and picks up one fly at a time without exaggerated motion.

The willet is not interested in the small flies but walks thru the masses of flies without collecting them.

The eared grebes that continually feed on these flies that rest on the slightly emergent moss-like plants out 20 or so feet from shore are now this evening feeding on the flies

that are on the perpendicular sides of the cement supports of the boat docking ramp. as they swim along the base, they reach as high as possible on the wall for the flies.

This afternoon at 3:00 P.M. drove S to main axis of Baffin Bay. at about 1 mi. W from Leo Kaufer Memorial Park, noted a Harris hawk, the first one seen in Texas so far. It is not an extension of geographical area for the hawk but our first observation in what would be its eastern area. It flew from top of utility pole when I stopped the car and flew to the next pole where it remained while we slowly drove by without stopping. at a pier on the edge of bay a fisherman caught a sand eel. He says the spotted eel also inhabits the bay.

at late twilight photo 830501-1 of artistic shot of gulls in sunlight reflected in water. Legs appear as sticks going into the body. Photo thru screen wire for effect.

also at twilight 13 scissartailed flycatchers dropped into a mesquite tree 30' from water for night roosting. The sudden entrance is characteristic of birds going to roost as it minimizes the chance of predators observing the entrance.

Leo Kaufer Memorial Park, Baffin Bay, Kleberg Co., Texas.  
 May 2, 1983

Birds in area of bays W of camp (see map, May 1, 1983):

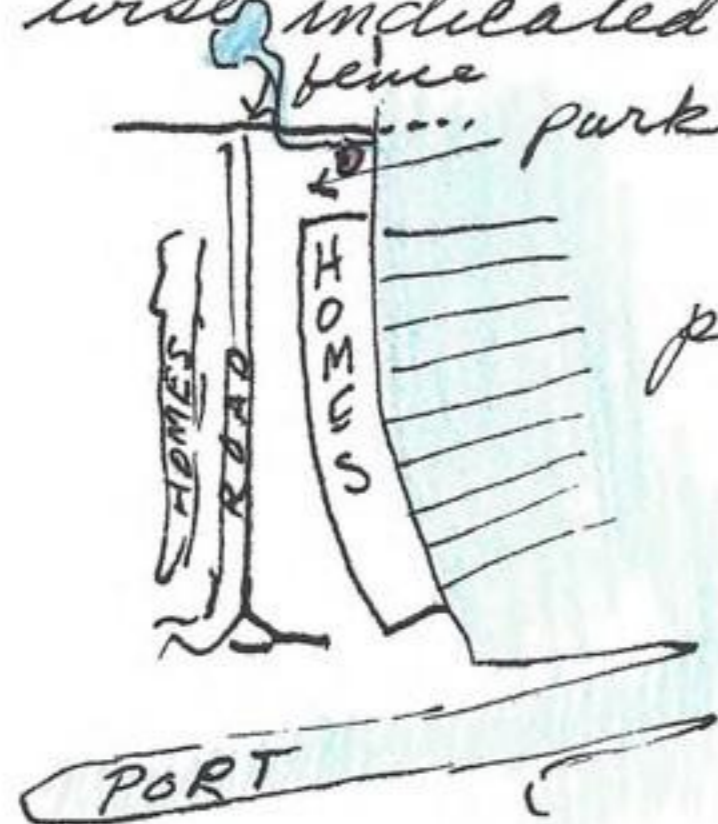
- 1 meadowlark
- 4 boat-tailed grackles
- 1 cormorant feeding in out-going tide channel where the tide is moving with water ripple speed. In 100' there were approx 30 fish <sup>surface</sup> activities. many would run into bank then rapidly move out into main channel. I would judge there to be 300 fish in channel from small 4" flat white fish to 10' mullets.
- 8 laughing gulls resting, pair copulated 56" and 8 contacts, ♀ withdrew.
- 1 eared grebe, fed in tide channel.
- 4 snowy egret
- 37 stilt sandpipers
- 26 dunlin
- 4 roseate spoonbills
- 3 scup, greater
- 1 black bellied plover
- 1 common tern
- 8 sandpiper
- 5 long-billed dowitchers
- 7 Wilson phalarope still feeding on flies
- 1 semipalmated plover
- 2 mourning dove flew by.

Left mileage 272.5 at 10:00 A.M will keep a list of different kinds of birds to Kingsville. meadowlark, mockingbird, brown-headed cowbird, 25 snowy egrets on W side of causeway leaving park area. Birds concentrate on S end of loop, 8 on east side of causeway in study area. Laughing gull, (have included all the shorebirds in the bay), boat-tailed grackle, bronzed cowbird. These cowbirds (♂) ruff neck feathers when they are isolated from female such as alone on telephone wire. Mourning dove, loggerhead shrike, 281.1 turkey vulture, 282.1 turkey vulture, scissortail flycatcher, junction 77 282.4, mileage. Left Kingsville after picking up mail and headed S. at 2:30 P.M. will keep complete list of all raptors. Convent 77 and 77 Business 305.8 mileage. 314.8 turkey vulture, 320.1 turkey vulture, 322.4 turkey vulture. 327.4 3 turkey vultures. Small lakes almost dry. 335.5 first Harris hawk observed so far in Texas, also 2 boat-tailed grackles since last recorded. 347.9 turkey vulture. at Norias only 4 grackles so far. 370.3 79 turnoff to Business district, 4:34 P.M and at this point turkey vulture. Decided increase in grackles as we go into the city. 3 per 1/10 mile. 377.3 27 underpass going E on 186 to Port Mansfield, 384.0 8 white-faced ibis, 386.2 5 turkey vultures. 394.0 turkey vulture, 400.8 Mansfield city limits. End of census. Stayed city park N end village.

Port Mansfield, Cameron Co., Texas.  
May 3, 1983

From park (N end where fence excludes roads and people observed; <sup>(6:30-7:30 A.M)</sup> Wilson plover 2, when it meets semipalmated plover stands up erect and appears much larger than the smaller plover. The large bill is most diagnostic in field, 1 semipalmated plover; 1 killdeer; 10 laughing; 2 snowy egrets, 24 little egret, photo 830503-1 of several that alighted and faced heavy wind from NE, they did not move for at least 20 minutes, photo 830503-2 and 830503-3 (laughing gulls in background) ibid; 4 boat-tailed grackles, 13 sandpiper, 1 Louisiana heron; 1 black bellied plover; 2 willet; 8 least terns; 2 long-billed curlew; 5 ruddy turnstones; 4 barn swallows. One laughing gull (immature) treaded water (washed on surface) for 4 minutes while it pecked

at a dead fish in the water, too large to carry to land. Left for return to Raymondville and thence to Brownsville, Left 403.7 at 10:14 A.M. will keep complete list until otherwise indicated. In Port Mansfield proper there were 18



boat-tailed grackles in one group. Also 10 <sup>one group</sup> brown headed cowbirds, 2 laughing gulls, b.t. grackle, laughing gull, 9 cattle egret, laughing gull, 2 m. doves, m. dove, barn swallow, m. dove, 16 cattle egret. 2 to each low, <sup>one pecked at their group</sup> in pasture, bronzed cowbird, 4 m. doves, m. lark, 2 m. doves, redwing. 409.6 first bridge with tidal river?, barn swallow, barn swallow, 2 scissor-tail flycatcher, m. dove, 3 m. doves, barn swallow, 2 m. doves, 2 m. dove, loggerhead shrike, 8 m. doves, ground dove, 2 m. doves, bronzed cowbird, 2 scissor-tailed flycatcher, m. dove, 2 mockingbird, 2 mockingbirds, bronzed cowbird, redwing, m. dove, barn swallow, w. kingbird, 2 night hawks, 2 b.t. grackles, 5 barn swallows, 2 m. doves, 2 laughing gulls, 2 black-bellied tree ducks at 186 and 1420 junction at 419.5. One group of 4-2-2-3 <sup>beginning</sup> and 55 black-bellied tree ducks in field, other small ducks approx 18 were with the tree ducks. meadowlark, <sup>b.t.</sup> grackle, b.t. grackle, 4 b.t. grackles, b.t. grackle, m. dove, bronzed grackles, 3 barn swallow, 2 b.t. grackles, 4 barn swallows, b.t. grackle, grackles increasing according to houses along the way. 1 group of 120 barn swallows, b.t. grackle, 2 b.t. grackle, 2 mi. E of Raymondville, 4 phalaropes of buffaloes. nos. 830503-4 to 830503-8. Boat-tailed grackles fed around and between the legs of the buffalo, some within 5-6" from head. meadowlark in field with buffalo carried a part of an eggshell of the meadowlark. Buffalo at mileage 425.7. At 425.8 on S side of road were two ponds, the smaller one to E was full of 130 Wilson phalarope, 12 stilt sandpipers, 3 semipalmated sandpipers and 3 long-billed dowitchers. The phalaropes were feeding on the surface of the water in characteristic whirling circular motion, a few at edge but none by low profile stalking as was characteristic of those at Leo Kaufman Memorial Park.

Occasionally one phalarope would chase off another, while there was continuous action on the water surface, the phalarope feeding on wet shore feed as <sup>most</sup> any other shore-bird, walking slowly and deliberately picking up insects, as if they were completely tuned away from the hectic gyrations of the water feeding phalarope. Photos, 830503-9 to 830503-16 of the Wilson <sup>phalarope</sup>.

- 830503-9
- 830503-10
- 830503-11
- 830503-12
- 830503-13
- 830503-14
- 830503-15
- 830503-16

Photos 830503-16 to 830503-20<sup>NG</sup> are of cattle churning the same pond. a black-necked stilt fed in lake to W of the small pond. The pond yesterday when we passed had the approx. same number of phalarope as observed today. Other birds near pond were snowy egret and <sup>3</sup> b.t. grackle. Mileage at junction 77 at overpass is 428.3. Left Raymonville for Brownsville and will keep list of only raptore birds. <sup>spun</sup> 712-77 434.8 439.7 Cameron Co. Boat-tail grackles about 2 per mile. Arrived Brownsville, checked for mail, thence E on 4 to Boca Chica, on the beach at 574.6 at 8:35 P.M. Enroute find this area the most exciting beach approach we have made with extensive expanses of dried lake beds in several stages of succession, some grown to vegetation and some in black mud stage. The remoteness and great distances are enchanting, and except for 3 or 4 small groups of houses and the beginning of real state development, the area is primitive. It would be wise to create and international area of this Rio Grand plain and preserve as inviolate to man, except for a few selected viewing area. It is suitable as a place that shows a dynamic process of gulf & land changes and might demonstrate how nature can solve some of the changing shoreline problems plagued by man and his interference with the seashore. During the week only 4 or 6 fishermen use the beach to extreme N & S. weekends the usual day inhabitants. The beach is

pure sand. from water to sand dunes, most of it actively moving. Even this remote beach is littered with debris from man, meaning paper, cans, bottles and misc trash.

Boco Chica Beach, Cameron Co., Texas

May 4, 1983

Sun up at 6:50 A.M. Laughing gull active 6:30 A.M. Birds in area (7:00 A.M. - 7:30 A.M.)

4 brown pelican (7:30 A.M.) flying S. They moved in trough between first major swells forming the surf waves, sometimes the pelicans would be out of view for 100' or so.

One flew N above beach (40') at 8:00 A.M.

2 willet

1 black-bellied plover

18 sandpiper

1 laughing to N at 1 per 3 minutes

2 ruddy turnstones (one of which had only 1 leg!).

2 common tern

5 least tern.

The above birds were observed in an area 3/10 mile N and 3/10 mile S or 1/2 mile of beach (with 17x binoculars). Other birds later were ♂ & ♀ boat-tailed grackle although no shrubs or trees for 3/10 mi. to W.

Photo 830504-1 Beach

x 830504-2 Barth.

830504-3 Surf.

x 830504-4 willet and surf.

x 830504-5 " " "

x 830504-6 trash on beach

x 830504-7 Annette & surf.

830504-8 Annette and ladder on rear of Barth.

Left at 11:20 A.M. for Brownsville. Recorder malfunctioned. In recollection: no turkey vultures. \* Photo 830504-9 of expanse of sand and mudflats <sup>to NE</sup> and lake from high point along road. <sup>2 palms in foreground.</sup> Most lakes with shorebirds about 1 per 1/10 mi, some shorelines 1/2 mi without birds. Very few birds. Boat-tailed grackles increased along way as we approached suburban areas E of Brownsville. Arrived Brownsville and checked mail and found zip no. for McAllen (78501). Spent the afternoon at Gladys Porter Zoo. 500 Ruggold Street, Brownsville, Texas. 78520. This zoo is one of the best in the world and is made

along one of the channels of the Rio Grande River. They have patterned the backgrounds after natural landscape and all in properly painted cement. no bars, sometimes glass in restricted enclosures. Observed many young of endangered species.

Took roll of Kodacolor 1-24

Photo 830504-10 Stork

" 830504-11 Flamingo

" 830504-12 "

" 830504-13 "

14 "

15 Flamingo (white species)

16 Pelican

17 black-bellied tree ducks

18 rhinoceros

19 Chimpanzee

20 Annette & James in shadow.

Continued to S end Padre Island.

S end Padre Island, S Coast Guard Station, Cameron Co., Texas.

May 5, 1983

Last evening birds in SE corner bay S of Coast Guard Station:

|                           |    |                                 |
|---------------------------|----|---------------------------------|
| 5 black skimmers          |    | This morning May 5 at 7:30 A.M. |
| 8 laughing gulls          | 20 | 830505-1 of improvised          |
| 21 long-billed dowitchers | 18 | camp at N end of S end          |
| 11 sandpiper              | 8  | Padre Island                    |
| 5 boat-tailed grackles    | 5  |                                 |
| ring-billed gull          | 2  |                                 |

Noted a laughing gull with club foot and unusable, 1 laughing gull with broken wing, 1 long-billed dowitcher with one leg. Yesterday evening at sun down (8:00 P.M.) a brown pelican came into bay area, at 7:30<sup>A.M.</sup> it left for gulf.

Guard Station at 8:15 A.M.



A porpoise swam N past Coast Guard Station at 8:15 A.M. From here to Bentsen - Rio Grande Valley State Park. Enroute to Brownsville photo 830505-2 of oil drilling platforms in the building. met this individual in

Bruce W. Talbot  
Box 9, Denali National Park, AK 99755  
field and invited him to dinner. He is working for National Parks and has served in Denali, Olympic Nat Park, Yellowstone Natl Park, Big Bend Nat. Park and other places. Helped to reorganize the peregrine and bald Eagle program that was in needs of help.



He said that Glacier Bay is the most unusual place he has been and is unusual in that it is remote and geologically new. Succession runs from trees 200 years old at old terminal of glacier, thru complete successions to the present end of glacier. For each succession there is a distinct composition of animals and vegetation, from stark lifeless area around glacier to complex communities lower in bay. At Big Bend National Park it snow April 20? and they have had 5+ storms this year which is unusual. Harris hawks are observed all year there and seem to inhabit the same areas. He participated in the peregrine falcon and bald eagle recovery program and implied that it is a very expensive educational program that involves a lot of personal time and effort. It is now under good control. Last winter (Jan-May) he was in N and NE part of Yellowstone where the large mammals winter. This is the time to be in Yellowstone. The big horns suffered from pink-eye and there was a big mortality. He has climbed mountains in Colombia, S.A.M. and would like to try Nepal. He worked with Leggett and Crawford, the former from K.U., Tabot recognized the mammals on the Arctic slope and said Denali headquarters had 2 copies in the library. Meurs idea of busing people in National Parks is working satisfactorily and better than driving thru park.

Bentsen - Rio Grande Valley State Park, Hidalgo Co., Texas.  
May. 6, 1983

Site 49. At site 44 is a *Lichtenstein oriale* just completing nest. would bring in 5 foot vine strands and in 5-15 sec. have them worked in the interior nesting cavity, lower part just above cup the fast to finish. Made trips every 5 minutes or so. At 4 times at 1/2 hr interval a ♀ bronzed cowbird alighted on top of pendulous nest and moved in 3 positions on top and 1 or two times at entering nest and then leave. Male of cowbird in area with ♀. I presume the cowbird was waiting for oriale to lay first egg. Other birds in area: boat tailed grackle, most common bird and about 30 in walking around road circuit. Always at camp. One had a club foot. Chucalacas calling from early morning to about noon and common. One ran into bush from edge of road. Most commonly seen calling from tops of trees. Fox squirrel. Old and young cottontails. White-wing and mourning doves calling in morning

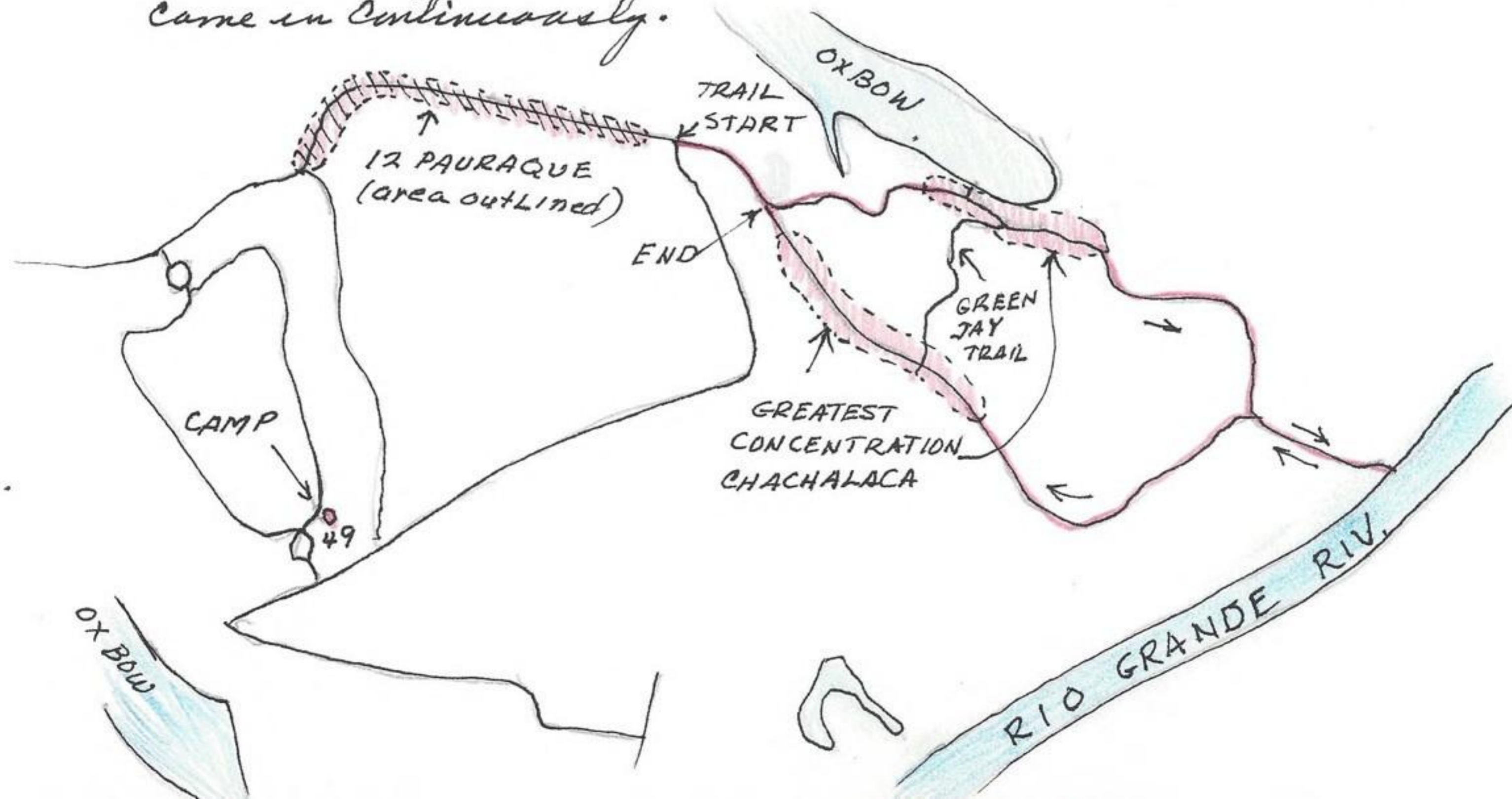
Bronzed cowbirds in pairs. 2 green jays, some feeding on Tops picnic tables. Golden-fronted woodpecker, road runner, Anhinga flaps wings 3 or 4 times & then sails 20 feet and repeats wing beating again. Black-throated green warbler. Kiskadee flycatcher, least grebe, black-bellied tree duck, pied-billed grebe.

At 5:15 P.M. photo Leichtenstein oriole at top of nest after it had just emerged from construction of inner lining near base of nest. Another nest 4 feet away a used one but still in good condition. Much narrower than new nest. This is the nest the bronzed cowbird ♀ had visited several times today and had remained in the general area. The photo number is 830506-1

This evening at late twilight observed 12 pauragues in 2/10 mile of meadum road just road S of the trailer camping area. They first hunted the open area above the road and later alighted on the road. We approached to 40' with flashlight. Most birds in pairs. They have a complicated call which is given on the ground. They jump up & down frequently and when they leave they generally return to the same area in the road.

Bentzen - Rio Grande State Park, Hidalgo Co., Texas.  
May 7, 1983

morning doves and white-winged doves started to call at 6:30 A.M. (day cloudy). Chachalaca started at about 7:00 A.M. but it was not until 8:30-9:00 that the calls came in continuously.



Started on hiking trail 10:00 A.M., day cloudy & practically no wind. Covered part of trail (to first short-cut) at twilight but did not see raccoon or armadillo. Will keep a complete list according to marker. marker 6 Kiskadee flycatcher, yellow warbler, marker 9 fox squirrel. marker 10 Kiskadee flycatcher. marker 13. Broad-winged hawk. Arrived Green Jay trail. marker 19. Golden-fronted woodpecker, Chachalaca, bronzed cowbird (this bird scratches like chicken, also uses bill.) marker 20 4 Chachalacas all calling at one time, one low, 3 higher; long-billed thrasher, grooved-billed ani as like boat-tail grackle. except bill, 2 mourning doves (can hear mourning doves in all directions and only occasionally a white-winged dove. Cactus area of high plants 10:35. marker 25 just before an old river channel (flood plain channel. Gophers in area. End of trail at marker 27. Rio Grande river high, no sandbars. Trail W along river possible with good clumps of bamboo, however, there are also clumps of bamboo inland. At river 3 boat-tailed grackles, 2 golden-fronted woodpeckers. Can hear chickens call from Mexican side. Left 10:50 2 boat-tail grackles, the ♀ with nest material in bill. ♂ ♀ grackle, mockingbird. 11:00 bifurcation of trail, now W. white-winged dove, 2 boat-tailed grackles, 2 boat-tailed grackles, 2 Chachalacas, 3 Chachalacas, 2 white-winged doves, 2 Chachalacas (one followed the first in calling and sounds like a double. 4 Chachalacas in one tree, 2 of them extended tail and placed body in high angle, black-throated green warbler. Returned to first convergence of trail at 11:40. In addition to above heard at least approx. 25 mourning doves and 12 white-winged doves. The Chachalacas rich maximum calling about 12:00. Between trail head and headquarters observed 3 Chachalacas on the ground at side of road and heard 5 calls (pairs) of 2 birds each. Some isolated leaves in trees are bright yellow.

### Birds summary of hiking trail to Rio Grande.

|                                     |                                                    |
|-------------------------------------|----------------------------------------------------|
| Kiskadee flycatcher 1-1 = (2)       | grooved billed ani. (1)                            |
| fox squirrel (1)                    | mourning doves (2) (25 calls from different areas) |
| broad-winged hawk (1)               | gophers - present near river                       |
| golden-fronted woodpecker 1-2 = (3) | boat-tailed grackle 3-2-2-2-2 = (15)               |
| Chachalaca 1-4-2-3-2-4 = (16)       | white-winged dove 1-2 = (3) (12 calls)             |
| bronzed cowbird (1)                 | yellow-warbler - (1)                               |
| long-billed thrasher (1)            |                                                    |
| mockingbird (1)                     | or 82 birds                                        |

In camp area were 36 cedar waxwings and *Leichtenstein oriale*. Red-billed grebe and least grebe in W. Osban lake, also a common gallinule. Chachalaca repeats its name except the last a "chachalac". The white-wing dove sounds like How do - you do? Both species love an extended elaboration of the normal or usual calls. Last night raccoon on table and ate whole wheat bread.

May 8, 1983

To Reynosa today. Town remains about the same but population increased several times since we were there about 10 yrs ago.

Returned to Bentsen-Rio Grande Valley State Park, toward evening checked roads in forest with flash light. 210 boat-tailed grackles flew E in small groups, early groups 15% males (large), later about 50-50%. They stopped at time paucaque began flying. First flew down road above trees, second one about 5 minutes later, then at late twilight one landed on dead limb of tree for 10 sec. then to road for 10 sec and then flew away; when birds were difficult to identify as birds used flashlight. Observed 6 such birds along way. They call like pa-rio regularly and sometimes give a shrill noise in decreasing scale. They give it in stationary position or while flying about in area. Heard call of ferruginous owl (4 secs of series of single notes). It was not the call of the screech owl. Just before fading of lights observed 2 yellow-billed cuckoos in mesquite tree. Collected series of tree and bush leaves for identification. Nos. 830508-1 to 830508-23

May 9, 1983

checked trees in area and collected examples (see next page); Boat-tail grackles ♂ make audible <sup>wing</sup> sound when leaving ground especially as they fly into trees.

Chachalaca and bronzed cowbird feed together. Catantail accepted by all birds but will displace most if transgressing. Photo 830507-1 <sup>and 830507-2</sup> of Chachalaca. When a group of Chachalacas are moving together on ground or perched in trees they give an audible rickling sound (soft and low). The boat-tailed grackle will give call twice and sometimes 3 times in consecutive time. This evening nighthawk flying at 7:30 P.M.

830508-16  
*Tillandsia usneoides*  
Spanish Moss (Paisle)

830508-11  
*Forestiera angustifolia*  
Desert Olive (Chugila)

830508-6  
*Celtis pallida*  
Spiny Hackberry (Granjeno)

830508-1  
*Zygophyllum obtusiflora*  
Zotebush (Clepen)

830508-17  
*Zanthoxylum sagara*  
Colinda (Lindephicklysh)

830508-12  
*Pithecellobium flebilante*  
Texas Ebony (Ebano)

830508-7

830508-2  
*Phaulothamnus spinescens*  
Snake Eyes (Puitia)

830508-3  
*Karwinskia humboldtiana*  
Coyotillo.

830508-18  
*Cocculus diversifolius*  
(Correhuel)

830508-13  
*Condalia hookeri*  
Brazil (Bluewood)

830508-8  
*Celtis laevigata*  
Hackberry (Palo Blanco)

830508-4  
*Ulmus crassifolia*  
Cedar Elm (Olmo)

830508-19

830508-9  
*Prosopis glandulosa*  
Honey mesquite

830508-14  
*Sapindus saponaria*  
var. *drummondii*  
western Soapberry (Gaborcillo)

830508-5  
*Acacia smallii*  
Huaoache (Sweet acacia)

830508-10  
*Porlieria angustifolia*  
Guayacan

830508-15  
*Baccharis neglecta*  
dryland willow (Yara)



830508-20



830508-21

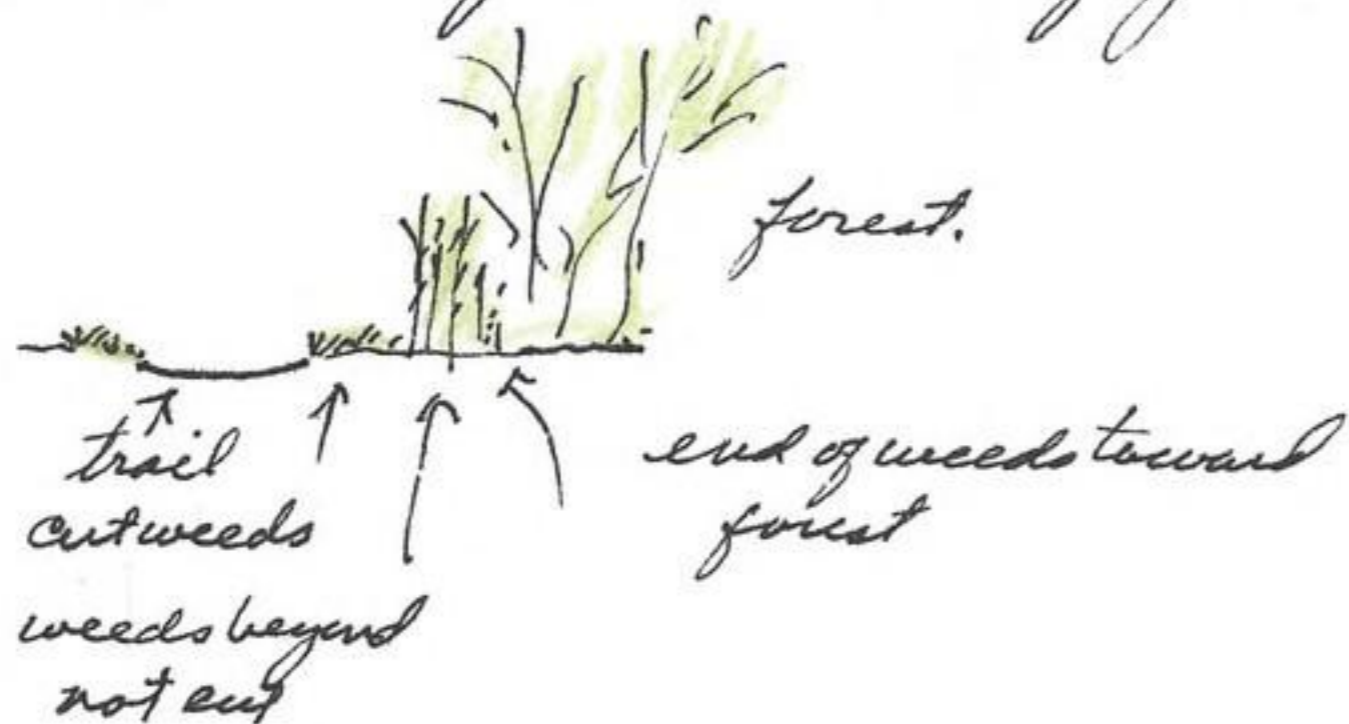


830508-22



830508-23

Noted some individual trees, elm 10%, and hackberry 40% with yellow leaves as if from lack of moisture. Boat-tailed grackles flew east over area - at 7:30-8:00 P.M. with maximum flight at 7:45 max. (approx 250 birds in small group to 30-40, many tree and barn swallows migrating (before rain) and all to E, one group 300<sup>in</sup> group. Observed 2 groups 2 each Chachalaca in low trees. They were roosting about 8-10' high. Green jay active 8:00 P.M. Where they cut grass and weeds along trail is heavy growth obscuring forest.



The more weeds cut the more they extend toward forest. A single beaten trail (1 path) would eliminate spread of weeds.

Some straggler boat-tail grackles move E at 8:20 P.M. Checked road for parakeet, first one at 8:20 P.M. Second one at 8:30, alighted on road, jumped 3-4' 4 times then moved 20' away. After 8:30 P.M. as I walked road with light, counted 11 individuals. Counted 240 separate calls of parakeet, one bird offered 32 consecutive call : : : : . It would estimate 40 birds in area of 2 circuit roads E of camp.

Bentzen - Rio Grande Valley State Park, Hidalgo Co., Texas  
May 10, 1983

Screech owl called last night and early this A.M. white-winged doves called sporadically from daybreak to early morning then continuously.

B.t. Grackles moved W this A.M. just after daybreak mainly as individuals or in groups of 2-4. They flew higher than going E last evening and they flew faster. Cottontail displaces b.t. grackles. Fox squirrel displaces cottontail.

Photo 830510-1 of Chachalaca feeding on ground. No calls from Chachalacas except recognition group call until 8:35 A.M. the almost continuously in all directions. Boat-tailed grackles ♂ display head up without presence females. It is a dominance gesture. Some young ♂ will peck and grab <sup>tip of</sup> tail of large adults without adult acting aggressively.

Two males fought (Chachalacas) for 2 minutes, some moments

extremely aggressively with feather held on and tumbling over and around on the ground. Most of the time was standoff with necks arched and feathers of head ruffled, sometimes 15' apart.

Cottontail shakes head down when mosquito alights on nose. They have dusted several times this A.M. Photo 830510-2 of a cottontail scratching head.

Left 10:30 at 781.7 2 opossum road kills outside of park. Arrived Falcon State Park. 3 turkey vultures in area. Camped in S section site 116.

Lake  
Falcon State Park, Zapata Co., Texas.  
May 11, 1983

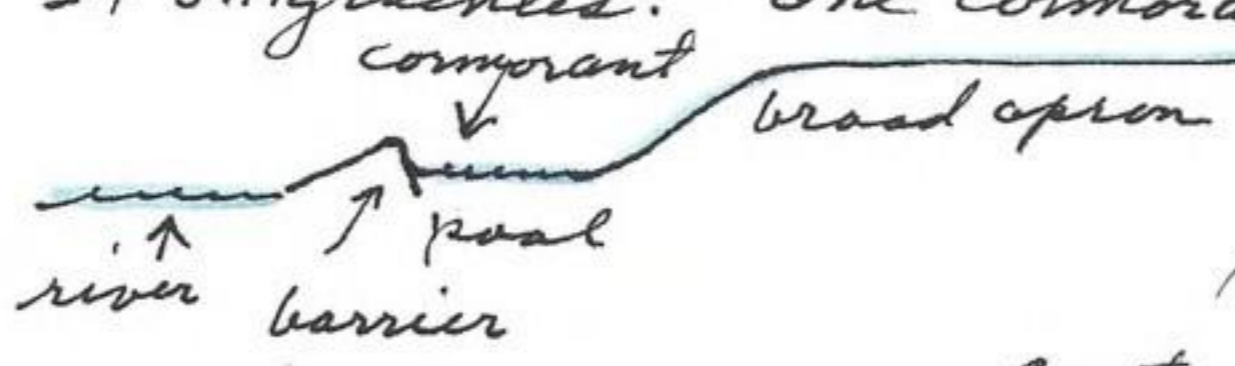
Birds in area:

1 Pyrrhuloxia, 3 curved thrasher, one carrying nest material, of fine hawklike size; mockingbird, fly like bat at times, rests on top shrub and sings, flies up 8 feet and drops back, once toppled down thru bush as if shot then regained perch; 4 boat-tailed grackles; road runner 1; barn swallow, fly E. overhead; white-necked raven; 2 snowy egret flew over E; 3 desert cottontail (Sylvilagus auduboni); 2 bronzed cowbirds. 2 mourning doves; white-winged dove; 1 Inca dove; boat-tailed grackle aggressively displaces the curved billed thrasher; 2 scaled quail; curved-billed thrasher copulated, ♀ crouched and vibrated wing, followed ♂ and presented herself and male then copulated. It is a forceful pressure on ♀. Kiskadee flycatcher, it calls its name; scaled quail displace curved billed thrasher but make close contact with b.t. grackles without fear; at meat feeder, Chachalaca dominate except with some aggressive ♂ b.t. grackles the defense is 50-50; Chachalaca feed young (length of tail of adult) and other adults; curved billed thrashers remain clear of Chachalaca and grackles; at one moment 3 adult Chachalaca, 12 b.t. grackles (2 ♀ only); 1 bronzed cowbird, 2 scaled quail, 4 curved billed thrashers. Chachalaca started calling and all birds left; The small Chachalaca flew into hackberry bush and fed on yellowish-orange fruits. The adult Chachalacas seemed to have left but young remained; later adult returned and young came down from tree and was fed by adult. with noise from trailer or site of movement, the b.t. grackles leave immediately area whereas other birds (Chachalaca, curved-billed thrashers) remain.



A Mr. Mackay from San Diego says: no problem travelling in Mexico. Mexico City cool in summer as is Guatimalabra but lowlands area hot in summer but pleasant in winter. Ferry to Baja Calif is from evening to early morning. Cannot sleep in trailers but must sleep in units or chairs upstairs. Baja Calif is good road as far as grade is concerned but trucks may keep it rough surface condition. Not much ocean is seen. Mts low. Country hot inland and best time is winter months. Temp according to distance from moderating ocean. There are lateral roads to ocean. San Diego best spot to live. Do not drive across highway but ferry boat from Prince Rupert to Haines and then on pavement thru Alaska. In Mexico carry car on train across canyon country, can live in trailer. Takes a week because cars are sidetracked for other trains and 24 hr delays are not uncommon. The trip is not what he would call exceptional. Recession up 30% in Mexico and prices are correspondingly higher. Gas about 65 cents per gallon.

Check Rio Grande River, first at outlet. Left camp at 863.3 at 12:45. Will keep complete census. Mockingbird and 3 turkey vultures. The vultures seem to be E of here near headquarters but seldom seen at camp. Pyrrhuloxia, 2 scaled quail, b.t. grackle, scaled quail, b.t. grackle, white-winged dove. Passing rec. room, turkey vulture. Have made complete circuit around camping area (outer road, Kiskadee flycatcher, mockingbird. Now at headquarters now at gate to park. Mockingbird, sparrowlike bird, scissor-tailed flycatcher. Now on road to dam outlet. Road lined with wild olives at picnic area. Turkey vulture in open field on ground. Customs office. They say water low because of need of water for irrigation. 50-50 arrangement with Mexico. One country can help from other. Now on road to outlet, 2 b.t. grackles, scissor-tailed flycatcher (b.t.), scissor-tailed flycatcher, Photo 830511-1 of Rio Grande River to SE as it leaves dam with water filling river. In this area were 4 common egret, 23 double crested cormorant and 24 b.t. grackles. One cormorant laterward of the basal barrier



Returned to main road to N and continued east. Scissortail flycatcher,

mockingbird, golden-fronted woodpecker, now 5 to Selenaro  
 b.t. grackle, mockingbird, 877.3 Harris hawk. now  
 at Selenaro (Harris hawk was 1/2 way to Selenaro). Very  
 interesting meucan type village. On return one home  
 with entire yard in cans, bottles and paper completely covering  
 the ground. Ordinarily they rake to at least one corner  
 of the yard when their habits are to litter. Returned <sup>up</sup> to  
 road leading to Rio Grande River. 2 mourning doves,  
 2 mourning doves, 2 b.t. grackles, mockingbird, b.t. grackle  
 now E. (now 5 on second road, thence 2 blocks E, thence  
 5 down steep grade to river edge. Water on road in 3  
 directions with just enough room to turn around.

Birds here along river: 1 Nashville warbler, 1 redwing, 2  
 groundbrues, 2 golden-fronted woodpeckers, 4 yellow  
 warbler, 1 long-billed thrasher, 2 black-throated green  
 warbler, 6 b.t. grackles, 1 mourning dove, 2 white-winged  
 doves, 1 Wilson warbler, 2 green heron, 1 spotted sandpiper,  
 1 natrix, 1 yellow-billed cuckoo, 2 cormorant (double crested),  
 1 eastern pewee,

Returned to camp. at lake noted: 3 cormorant, 3  
 imm. Forster terns, 9 adult Forster terns, ~~5~~ 5 adult  
 laughing gulls, 15 immature laughing gulls, 2 snowy  
 egret. By 6:45 m all gulls & tern had left islands  
 and moved E, feeding area

at camp, black-billed grackles left by 8:00 P.M.  
 curved-billed thrashers and green jay to at least 8:25 P.M.

Mr Mackay visited us and reported: all radios and T.V.  
 announcers are from northern U.S. not New England or New  
 York and speak with a standard American accent. I  
 see more rebel flags in California than I see anywhere in  
 the Rio Grande Valley. The mormons were chased out of  
 Navaho and they first landed in Omoho and Council Bluffs  
 then they went on to Salt Lake City. They were chased  
 out of Missouri and Illinois and no sooner had they  
 reach Salt Lake Valley in a veritable desert and facing  
 starvation, they immediately sent out to populate Arizona,  
 parts of Nevada, Idaho and all of Utah. An because they  
 were building an empire the government sent an army  
 to control their increasing power. Their plan was to  
 march directly into Salt Lake City but the mormons  
 sent a message to the army that they would burn their

cities to the ground if the army entered so the army backed off and went to Fairfield in the next valley to the south. There was fear that the mormons would be successful in nominating a president for the U.S. (the native people).

In Brazil they do things without commercialization but by individuals and all for fun.

The Catholic church during time of inquisition tried to stamp out protestantism just as we are doing in fighting communism.

First partridge at 8:<sup>35</sup>~~40~~ P.M., some curved billed thrashers<sup>active</sup> at 8:40 P.M. at late twilight.

Falcon Lake State Park, Zapata Co. Texas  
May 12, 1983

Boat-tailed grackles and curved billed thrasher at feeding area by 7:00 A.M. By 8:00 A.M. these birds have been at feeder: Boat-tailed grackles, curved-billed thrasher, green jays, golden-fronted woodpecker (all fed on grain and bread. A curved-bill thrasher with a piece of bread in mouth chased two other c.b. thrashers from feeding area because they intruded into the aggressor's territory. Golden-fronted woodpecker replaced all of the above species.

A mockingbird for the last two days has called from top of a bush, flew up into air 8 feet then alighted again all the time singing and then after about 3 minutes in area left, in same direction for at least 300' and in about the same time as it spent at the tree, returned and repeated the performance again and again. Collected leaves & trees in area 50x50' at camp. 830512-1 to 830512-19 <sup>in bat flight.</sup> <sup>see next page</sup>

The male curved-billed thrasher feeds ♀ even though the ♀ may be standing on grain or food, sometimes the ♂ will dig a depression in soil with bill and then turn it over to the ♀ while it moves on to excavate another hole.

Chachalaca calling at 8:30 A.M.

Mockingbird aggressively displaces curved-billed thrasher  
Left Falcon Lake and now on road to Laredo. Will keep list of different kinds of birds. B.T. grackle, mourning dove, scissor-tailed flycatcher. 907, 6 sparrow hawk. B.T. grackles along way but more in villages. Ground dove, Inca dove. Tropical flycatcher; scissortail flycatcher 26 MRR.



830512-1



830512-2

*Bumelia coccinea*  
Coma

26



830512-3



830512-4



830512-5



830512-6



830512-7



830512-8



830512-9



830512-10



830512-11



830512-12



830512-13



830512-14



830512-15



830512-16



830512-17



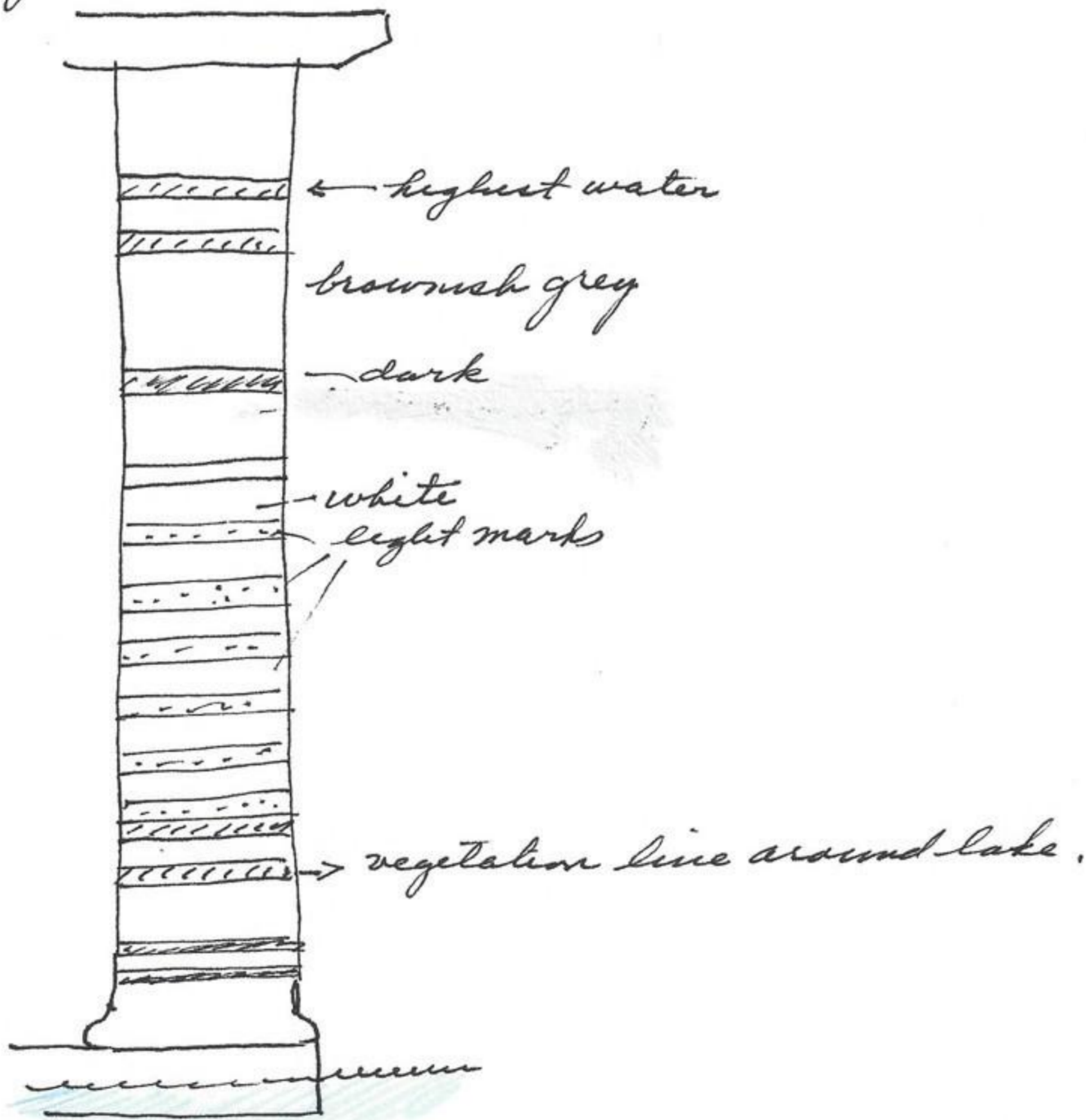
830512-18



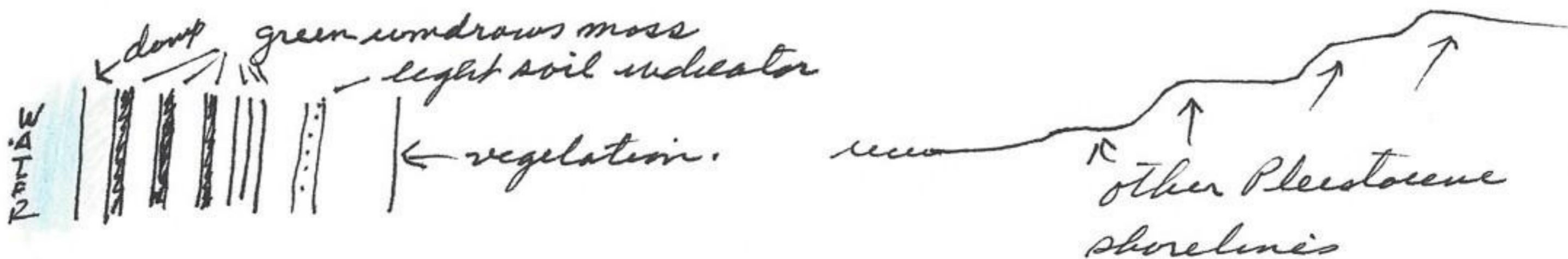
830512-19

*Bignoniaceae*

mockingbird, opossum road kill, white-necked raven. Scissor-tail flycatcher fairly common. 921.2 opossum rd kill, 2 white-necked turkey vultures (5). First Mexican ground squirrel ran across road. Zopota City limits. 927.7 E end of Zopota bridge, at 12:33 AM. 34 cliff swallows nesting under bridge at E end. When they leave nests move rapidly away from area. 1 boat-tailed grackle, cormorant and 1 green heron only birds at lake. This high bridge is across Arroya Velino.



933.4 turkey vulture, 947.1 turkey vulture. From a high vantage point looked down on Rio Grande River. shore line thus.



947.8 is above vantage point.

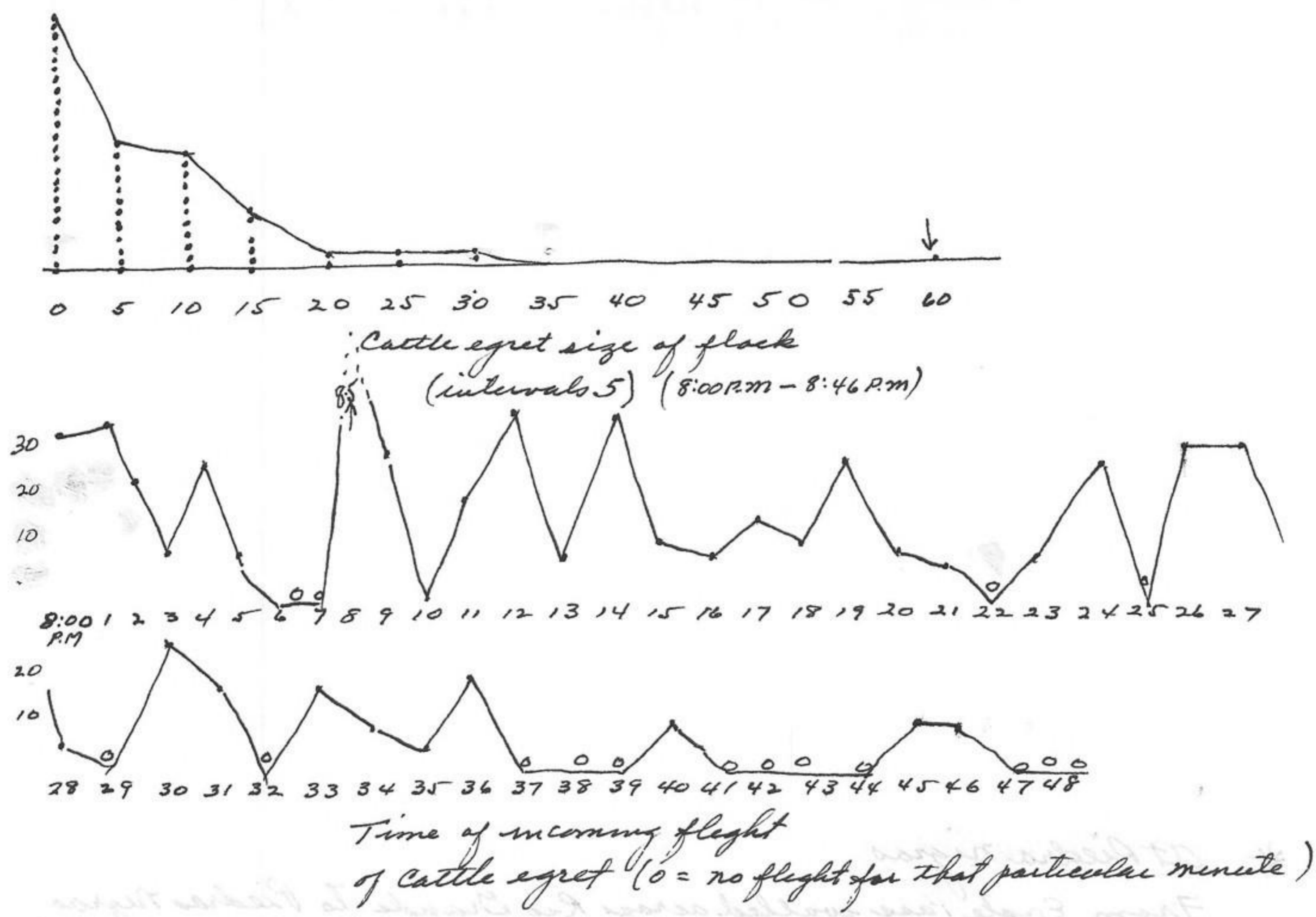
bronzed cowbird. 954.5 increase in number b.t. grackles.  
 956.4 4 turkey vultures. First cactus wren nest at 958.4.  
 Century plant in area. Golden-fronted woodpecker flying  
 30 m.p.r. 2 Harris hawk, 961.0. 978.7 Laredo near  
 center of town. Continued to Casa Blanca Co. lake for the  
 night (Car serviced at 24000.0)

Lake Casa Blanca, Webb Co., Texas  
 May 13, 1983

Yesterday evening to late twilight groups of cattle egret  
 in groups of 3-80 passed over dam, then in thru narrow  
 part of lake. The total number would be approx. 1200.  
 All flew just above water. Approx 10% were a dark heron  
 with blood wing probably a night heron and flew with egrets.  
 Common egret 4, snowy egrets 20 fed in area of the narrows.  
 8 Franklin gulls, 30 boat-tailed grackles, 2 starling (in recollection  
 there are not many starling along the Texas coast), 2 rook, 2  
 black-necked stilt, 4 coot, 2 cormorant, 1 least tern, 1 killdeer,  
 4 bronzed cowbird, 2 Eng. sparrow, 2 green heron, 6 crows, 4 white-  
 necked raven, white of neck shows when wind ruffles feathers.

This evening made quantitative check on movement of  
 cattle egret returning to island E of camp. They were  
 first observed at 8:00 P.M. No birds arrived before that time.

|           |                             |       |                                                                                   |
|-----------|-----------------------------|-------|-----------------------------------------------------------------------------------|
| 8:00 P.M. | 32                          | 8:20  | 4                                                                                 |
| 8:01      | 34                          | 8:21  | 1 (sun down)                                                                      |
| 8:02      | 3-18                        | 8:23- | 2-1                                                                               |
| 8:03      | 6                           | 8:24  | 1-12-11                                                                           |
| 8:04      | 8-16                        | 8:26  | 1-28                                                                              |
| 8:05      | 5                           | 8:27  | 1-28                                                                              |
| 8:07      | (24 ibis, white-faced)      | 8:29  | (2 ibis) 1 (night hawk)                                                           |
| 8:08      | 23-1-41                     |       | (boat-tailed grackles started to island<br>before 8:00 P.M. and 8:29 mov. flight) |
| 8:09      | 8-12-8                      |       |                                                                                   |
| 8:11      | 17                          | 8:30  | 4-21                                                                              |
| 8:12      | 10-15-11                    | 8:31  | 14                                                                                |
| 8:13      | 3 (with 2 green heron)      | 8:33  | 10-4                                                                              |
| 8:14      | 4-5-6-3-1-17                | 8:34  | 7                                                                                 |
| 8:15      | 3 (with 2 green heron), 3-2 | 8:35  | 1                                                                                 |
| 8:16      | 2-1                         | 8:36  | 11-7                                                                              |
| 8:17      | 10-11-1                     | 8:40  | 2-6 end egret & grackle flight                                                    |
| 8:18      | 2-5 (with 3 green heron)    | 8:45  | 7 (few grackle stragglers)                                                        |
| 8:19      | 12-13                       | 8:46  | 5 end egret flight.                                                               |

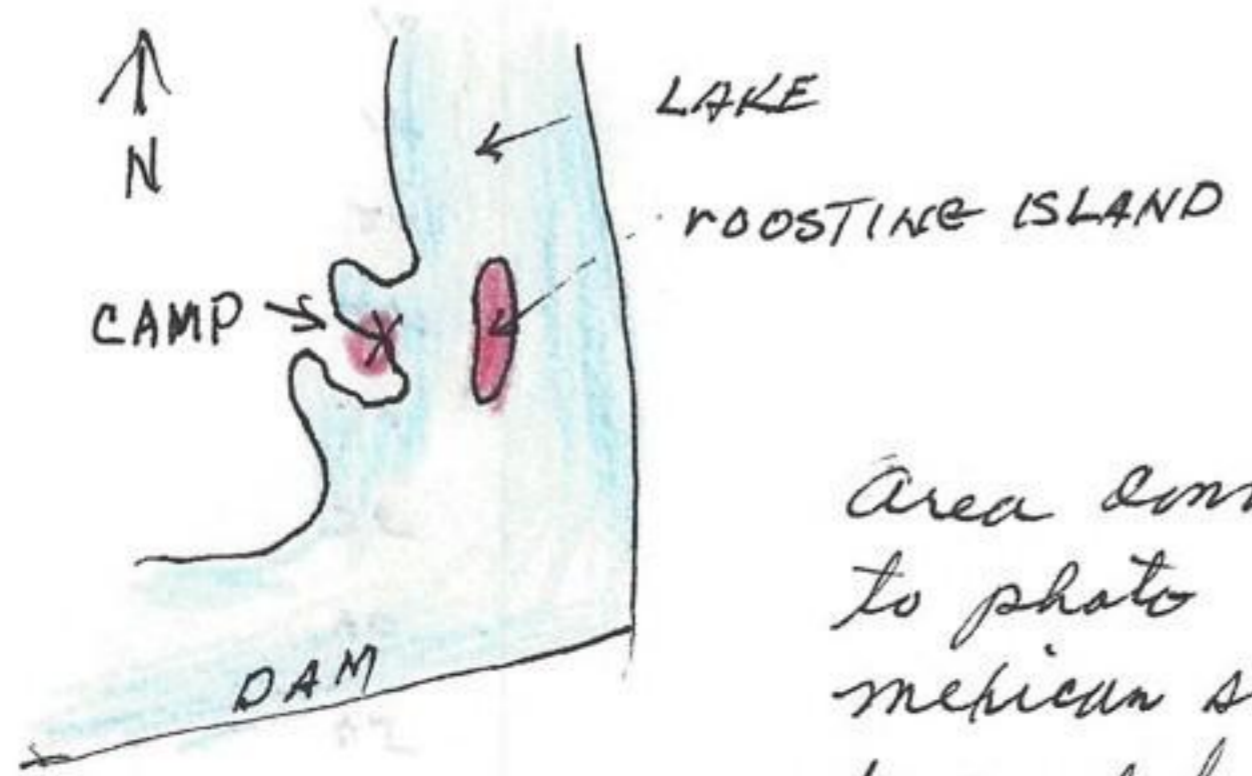


Casa Blanca Lake, Webb Co., Texas (NE Laredo)  
 May 14, 1983  
 (complete)

Great flight of egret between 6:50 A.M. and 7:00 A.M.  
 Flight of boat-tailed grackles from daybreak to 7:00 A.M., few after  
 by about 10 minutes but definite end.  
 Franklingulls active daybreak.  
 Coot always present day & night. Grackles displace Franklingull.  
 The 2 egrets that arrived at camp W of island at time of  
 mass movement were snowy.

Least tern active 6:45 A.M.

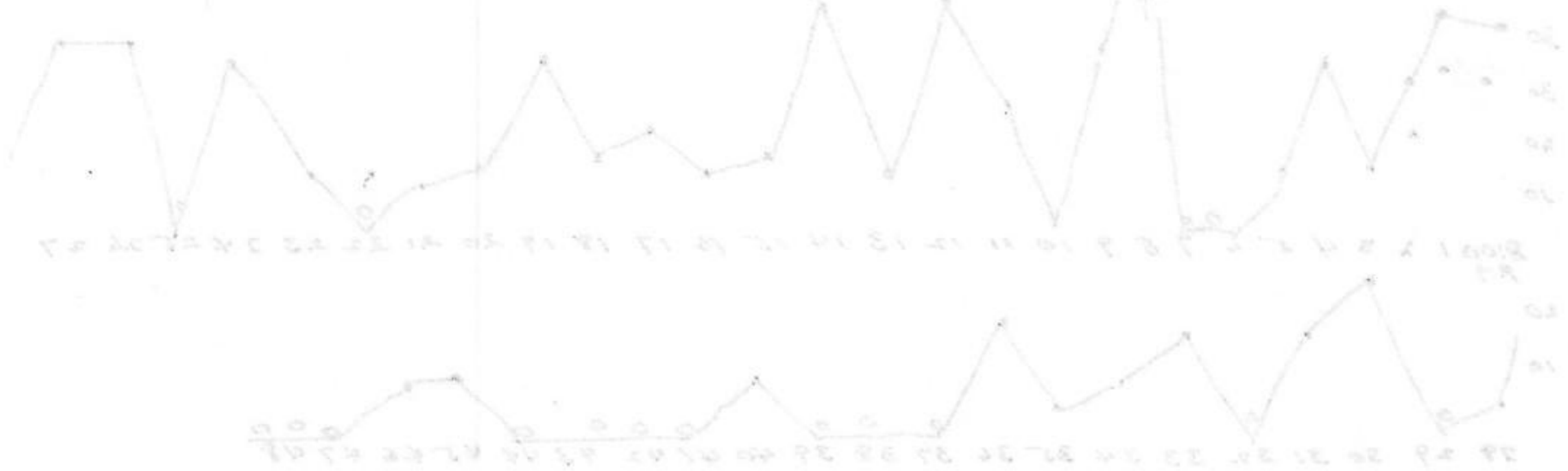
This flight 7:20 A.M.  
 Left Casa Blanca Lake at  
 about 10:00 A.M. and drove to  
 bridge in Laredo, parked car  
 in Church year and walked  
 across bridge to Nuevo Laredo.



Area convenient for shopping. On return  
 to photo 830514-1 of debris off bridge on  
 Mexican side. Trash is every where and is  
 discarded at random in any position or place.



Little spot size of flock  
(1000m - 2.02 km)



\*

From Eagle Pass walked across Rio Grande to Piedras Negras and visited the Mercado. On way over photo 830514-2 of Mexican shantytown built below the bridge. <sup>also</sup> On way back from Piedras Negras photo <sup>to E</sup> 830514-3 of Rio Grande River on the Mexican side.

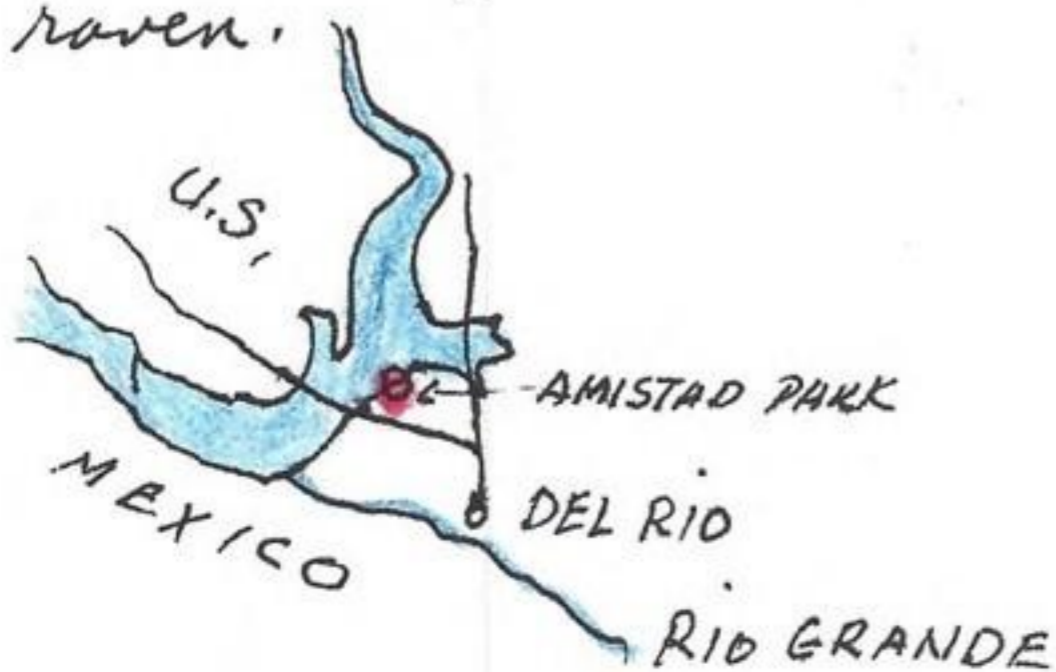




On american side in church yard photo 830514-4 of  
 Annette and Hilton Hotel sign. Continued on 35 and  
 at exit 3A mileage, 26.7. Will keep record of different <sup>flycatcher</sup> ~~scissor-tailed~~  
 kinds of birds. Bronze cowbird, boat-tailed grackle, 035.7  
 036.6 turkey vulture, 024.4 now on highway 83, 5  
 cowbirds (brown h). 057.5 8 turkey vultures; 2 white-necked  
 raven, Cotarina 8 turkey vultures. 089.4 armadillo  
 road-kill, 90.7 turkey vulture, 92.4 2 turkey vultures,  
 mockingbird, Asherton 97.2, and opossum road kill,  
 106.2 Carrizo Springs, at 2:22 P.M. now W on 277,  
 109.5 turkey vulture, 114.2 turkey vulture, meadowlark,  
 118.9 4 turkey vultures, 139.6 turkey vulture, W. Kingbird,  
 2 scissor-tail flycatcher attacking raven, 143.8 hawklike  
 nest in small tree on right-of-way (1 1/2' wide), 145.7 2  
 turkey vultures, 147.0 t. vulture, 156.6 Elm Creek,  
 grackles still present. <sup>Opposite page 1</sup> 164.2 turkey vulture, Normandy  
 177.7 8 turkey vultures, 184.6 4 turkey vultures, 184.9  
 3 turkey vulture, 188.4 2 t. vulture 189.9 turkey vulture  
 194.6 6 wild turkeys flew across road and 4  
 turkey vultures, 195.2 Sycamore ~~river~~ <sup>Creek</sup> bridge (middle of  
 bridge). Distribution of century plant across Texas is  
 irregular and spotty, 200.6 black-tailed jack rabbit  
 alive, 201.2 now passing SW under high power  
 lines, 204.6 2 ravens, one selecting food with  
 vibrating wings, 206.0 city limits of Del Rio at 7:54 P.M.  
 Continued W on 90 to National Park Recreation area on lake where  
 we camped (mileage 216.9). Jackrabbits (black-tailed)  
 approx. 7 per acre and more in favorite areas. Some  
 cottontails (desert) in same area. Rec. area (Amistad 115.6 mileage

Amistad National Park Recreation Area, Val Verde Co., Texas  
 May 15, 1983


Birds and mammals in area: 20 Black-tailed jackrabbit, 2 bobwhite  
 4 boat-tailed grackle, desert cottontail, bronzed cowbird, white-necked  
 raven, 2 turkey vulture, jackrabbit walk with



front feet and hops with back feet  
 and moves steadily forward with  
 head held steady and nose just  
 above the ground as if recognizing  
 food by odor. If it overruns food  
 it will stop and back up rather

than turn around, green heron, barn swallow, killdeer, 5 scissor-tailed flycatchers, 1 ♀ scissortailed flycatcher gathered 12 particles about 1 inch long and impacted in her bill for nesting material. She would pick up material then fly 1 1/2' and pick up or search for more material in series of 1-2' flights or jump-flights. She was closely followed by 5 ♂ suitors, attempting contact at several times.

Left Amistad Park 216.9 at 10:37. 18 Franklin gulls, 3 brown-headed cowbirds and mourning dove, 2 b.t. grackles, brown-headed cowbird, mourning dove. 218.0 main road at gates to park. At E end of bridge over Amistad Reservoir photo 830515.1 of greenish blue water of Reservoir with Annette in foreground. Mexican ground squirrel in area. Road cuts Cretaceous. 248.5 at W side of bridge and on ridge to N. photos 830515-2 and 830515-3 of blue water in reservoir with two variations of beaver-tailed cactus in foreground. at 5:56 P.M. 2 barn swallow 253.0 bridge across an inlet and a good place to camp. 2 mourning dove. 2 mockingbird. Road cut 256.1 shows 40' series of synclines thus:

 mourning dove  
 258.4 just beyond spur 406, white-necked raven, mourning dove, 2 barn swallows, mockingbird, 261.3 turkey vulture and 2 barn swallows. 262.0 T. vulture, 2 mourning doves, 262.5 t. vulture, 2 mourning doves, 2 barn swallows, bronzed cowbird. 263.5 good exposure of Cretaceous. 1 1/2 foot bedding plane intervals. 267.2 Comstock junction 163, Scissor-tailed flycatcher. Increase in Antennary plant. 270.1 Harris hawk, scissor-tailed flycatcher 272.5 long distance views with blue background. Cretaceous flat bedded. 275.7 turkey vulture, 2 mourning doves. All country has sheep. 276.4 now park road 67 to Seminole State Park. at 6:22 P.M. Turkey vulture. 276.7 3 mule deer ran across road and up ridge just north of ranch, lark sparrow, now headquarters, 278.6 camp no 9 at trailer camp. In an arc of 180° from ranch E to round knolls in Mexico observed 11 turkey vulture with 8x binoculars, from horizon into sky.

Seminole Canyon State Park, Val Verde Co., Texas  
 May 16, 1983

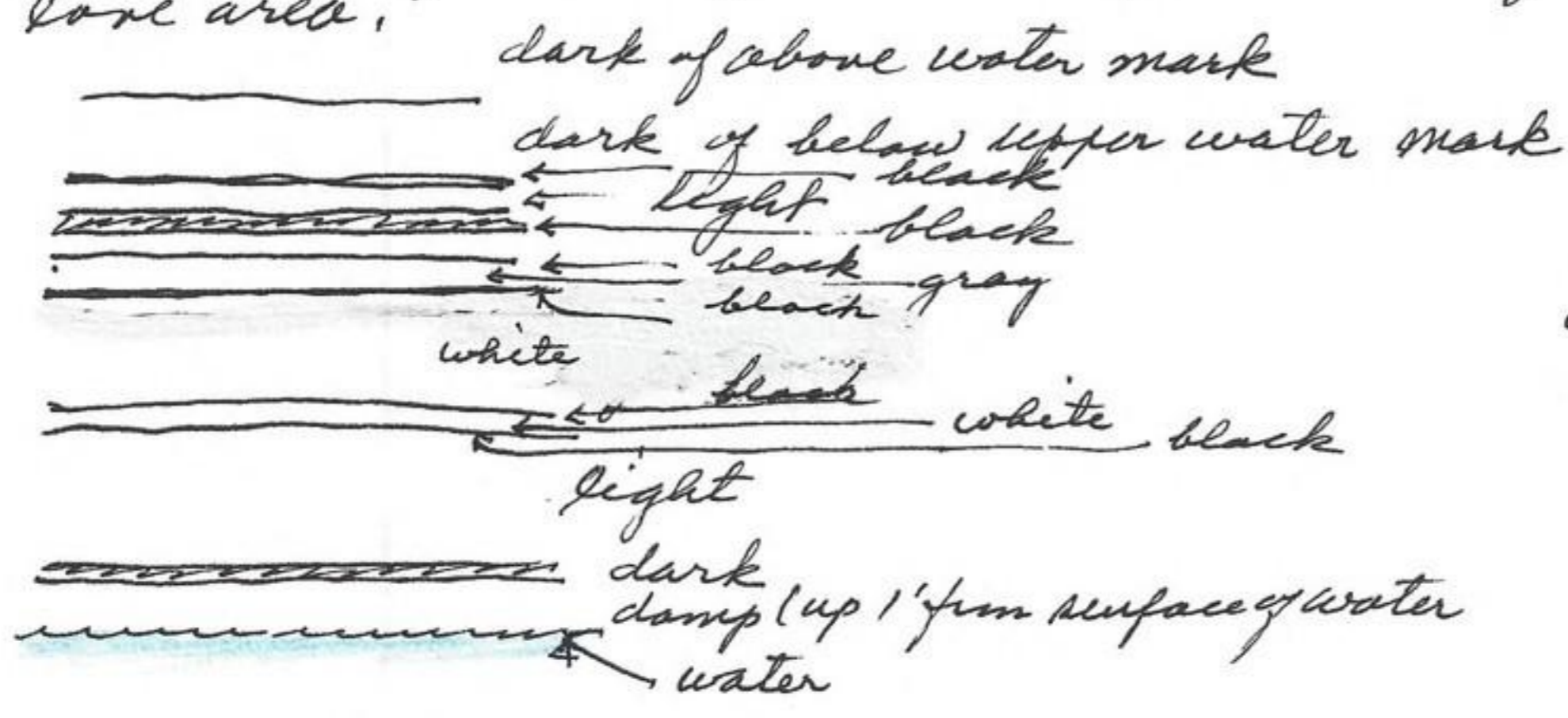
Annette and I made hiking trip to mouth of Seminole Canyon as it enters The Rio Grande (7 mile round trip). Left at 12:20 P.M. day clear. Black Throated sparrow, 4 cactus wrens, mockingbird.

redtail hawk, black vulture, black-tailed jackrabbit, lark  
 Lechugilla and sotol. bunting, meadowlark,  
 cactus wren nest, 2 turkey  
 vultures, black-tailed jack  
 rabbit, turkey vulture, lark  
 sparrow, turkey vulture, turkey

wide leaves  
and no spines

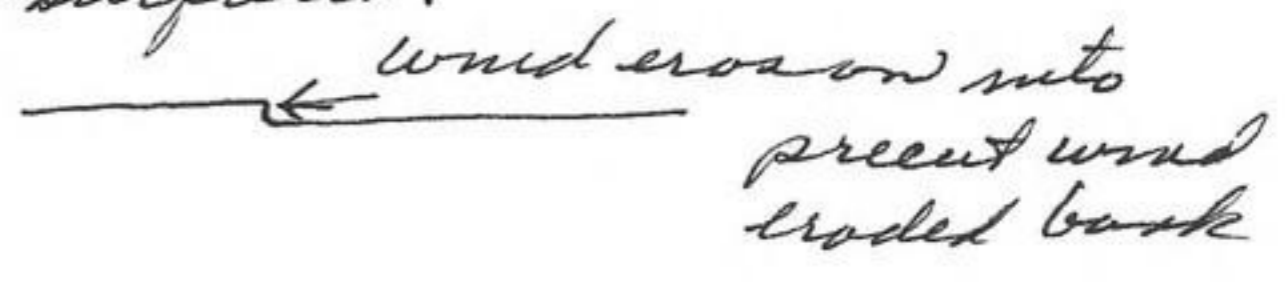
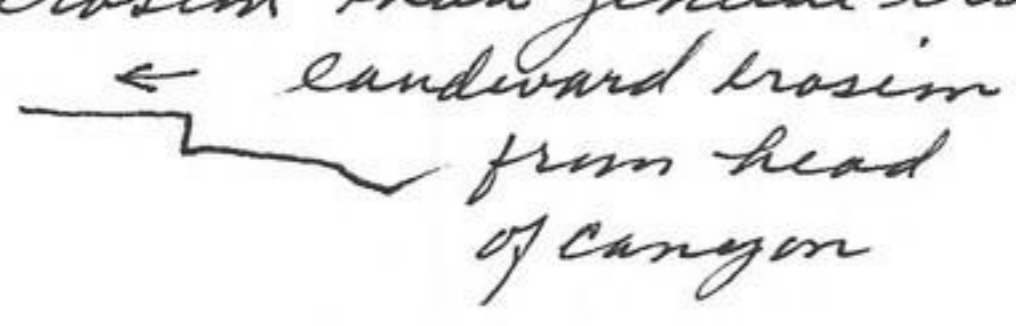
narrow  
and spines  
on leaves

vulture, mesquite in mesquite, grasshoppers 1 per 100 ft.,  
 fresh badger digging, 1:08 P.M. at oasis of large mesquite and  
 grasses as if a spring seepage area. 2 turkey vultures, Mexican  
 ground squirrel, cliffswallow, 2 turkey vultures, redtail hawk,  
 turkey vulture, 4 cliff swallows, 1 canyon wren, 1 white-throated  
 swift. During the route observed 7 lizards along entire way.  
 Arrived at 1:30 P.M. Took several photos here. This is a really  
 good scenic vantage point with high perpendicular cliff and  
 greenish water below. Photo 830516-1 down river from W bank.  
 830516-2 ibid. 830516-3 Panther cave with mt. lion drawing  
 on S end of cave. 830516-4 Annette looking up river with  
 binoculars. 830516-5 Annette and Mexico beyond <sup>to right</sup>. 830516-6  
 up canyon, all photos from vantage point at mouth canyon.  
 Birds in area 4 cliff swallows, 4 turkey vultures, sparrow hawk.  
 no evidence of bald eagle that is reported nesting in the Panther  
 cave area.

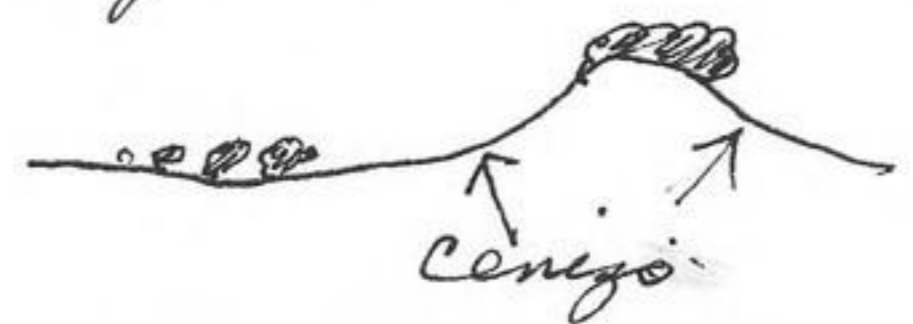


water marks on  
cliffs from high  
water mark to present

Left Panther Cave area 3:03 P.M. and on way back noted 4 cliff swallows,  
 4 lizards, 6 turkey vultures, 1 Mexican ground squirrel,  
 Note 2 forms of erosion that may contribute more to surface  
 erosion than general erosion of all surfaces.



Noted that ridges and center of valley with darker and higher  
 bush and slopes with Cenizo.



Plants collected on Panther Cave trip  
 are nos 830516-7 to 830516-23 (next page).



830516-7



*Renea*

830516-8



830516-9



*Paga  
multinervis*

830516-10



*Mitella  
concolor*

830516-11



*Marguerite*

830516-12



*Rubly*

830516-13



*oculata*

830516-14



830516-15



*Black  
Branch  
Alouan*

830516-16



*Asplen  
Culinar*

830516-17



*Alouan*

830516-18



*Alouan*

830516-19



*Alouan*

830516-20



*Alouan*

830516-21



830516-22

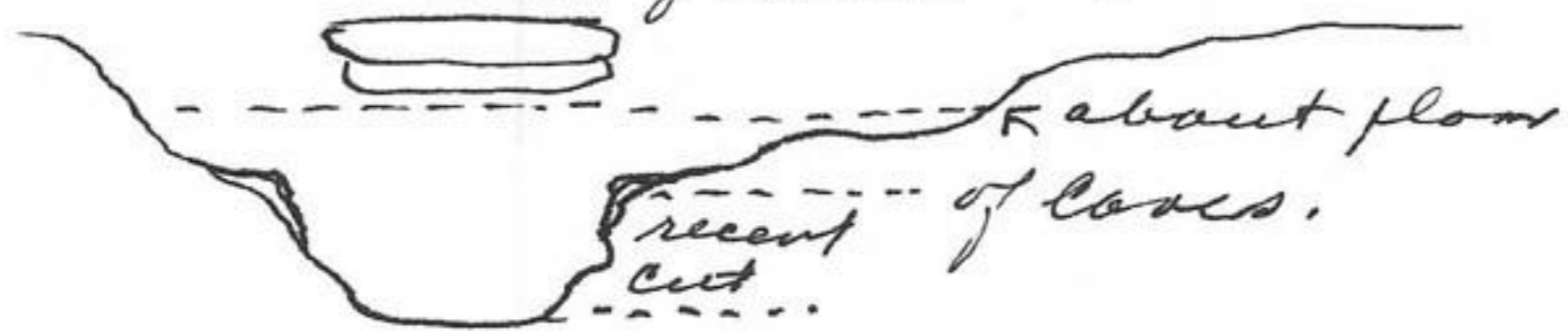


830516-23

129  
 Semmole Canyon State Park, Val Verde Co., Texas

May 17, 1983

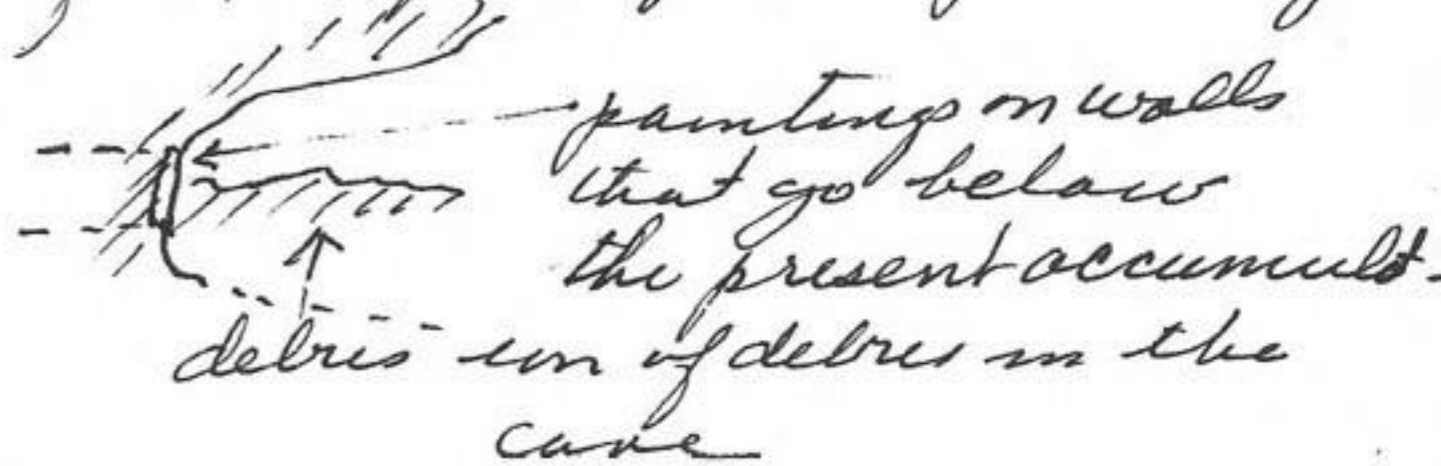
Made trip to cave below visitor center with Ranger. Trail to bottom of canyon 200 feet with steep steps thru erosion banks to bottom of canyon.



The floor of canyon is smooth up 10-15' of sides, all in solid Cretaceous limestone. This river must be antecedent

to uplift, recent cut may have been done in late Pleistocene. The fauna and flora is a mixture of Texas Hill Country, Tamaulipas Thorn Shrub and Chihuahuan Desert. The vegetation is sparse and the canyon is deep. In Fate Bell Cave observed pictographs 8000 (2000-10000) years old. Early man visited area 12000 years ago and hunted elephants, bison, camel & horse. Climate then more moderate than today and supported lush vegetation and included pine, juniper, oak woodlands with grasses on uplands. No rock painting as old as early man in cave. By 8500 years ago the area had a climatic change, like today, and a new culture appeared that produced the pictographs. Some caves have faded colors from superimposed painting and these on floor level.

Some caves have had these dry debris floors completely wash out by high floods and the pictographs have been left high on the walls.



pictographs found original level of floor now washed out to bare cave rock

Took following photos:

- 830517-1 young rattlesnake.
- 830517-2 pictographs on wall in Fate Bell Cave, long triangular figures.
- 830517-3 Long triangular figure
- 830517-4 curved lines
- 830517-5 rock cavities and Annette in cave.
- 830517-6 up Canyon from cave

At mouth of cave was a purple finch. Black vulture soared in canyon.

Returned to Information Center and met Rick Chavez a ranger.

Ranger reports: 3 golden eagle nest in canyon in cliffs. The bald eagle at Sanchez Cove. 2 redtail hawks chased golden eagle up to nearly out of sight and when the hawks reached low oxygen? content of atmosphere returned to earth by almost free dropping. They alighted on rocks and appeared to be utterly exhausted. When jack rabbit population is high, ranchers never worry about coyotes, when rabbits reach low they control coyotes. no Harris hawks or rarely so. They begin E & S of Laredo. mule deer being displaced by white-tail deer and are only about 20% or less of deer population. Round structures are water supply for railroads of 100 years ago. Baking oven removed from area of main state road 90 and moved onto park. Replication or reconstruction not as they would have liked it to be. One wind mill E of here is huge and has reservoir tank about 150' wide and is always full. One hundred years ago a land owner from Norway? bought 100,000 acres from ads that claimed water was available but when he got here he found the water in the Rio Grande several hundred feet below perpendicular cliffs. His son bought equivalent area in Mexico S of here at 3¢ an acre. 1¢ was later added by Mexico for grazing rights and later more was added for game right, so the owner, without receiving money for his land, left and returned to his father's land that now has been subdivided into 18 names. Eagles now escape into canyons when hunted by planes. Ranchers also dislike eagles. Cattle egret nested behind maintenance buildings this year and are the first seen in park. They can be fed bread at 20' away.

Nick Chavez Park Ranger II

Also photos 830517-7 and 830517-8 of rock work of build-  
in and circular enclosure outside building. Inside museum  
photos 830517-9 and 830517-10, 830517-11, 830517-12 of  
paintings on wall. also 830517-13 and 830517-14 (of deer)  
830517-14 exhibit  
of canyon with mammoth & camel and horse. 830517-15  
of model of women Indian in cave, also 830517-16 and  
2 male Indians. Photo 830517-17 of exhibit showing  
hunting of jackrabbit.

new highway 90 should be studied for succession of plants  
on new extensive exposure of Cretaceous rocks & shoulder of road.  
maintain area to Rio Grande as remote untrampled area and  
get people to vantage point by single track tramlike facility.

Left and at overlook on Pecos River noted 3 turkey vultures in canyon. 295.4 photo of road cut showing white chalk and bedding planes and topped with darker <sup>brownish</sup> stratification. 300.4 fault and brecciated zone of Cretaceous in road cuts. 301.1 now back to horizontal lying bed planes of Cretaceous. Eagle Nest <sup>canyon</sup> 302.0 deep canyons. Interpretive Center at 303.1 at Langtry. at cactus garden associated with Center took the following photos; 830517-18 Guayacan - *Parliersia angustifolia*. 830517-19 ibid but entire bush. 830517-20 Creosote bush - *Larrea divaricata*, close up. 830517-21 Coyoteillo - *Karwinskii humbaltiana*, close up. 830517-22 *Spinellus prichly pear* - *Opuntia lindheimeri* var. *stricta*, of flower and bee. 830517-23 *Petama - Parkinsonia aculeata*. 830517-24 Catclaw - *Acacia greggii*, close up. 830517-24a. *Draxillo - acacia belanderew*, close up with flower + pod. 830517-25 Black bush - *Acacia rigidula*, yellow leaves (other part of tree dark green) and bean, close up. 830517-26 *Cenizo - Leucophyllum frutescens*, close up. Other plants noted but not photographed: Black willow - *Salix goodingeri*, Seep willow *Baccharis algerita* - *Berberis trifololata* (toadlike leaves) Photo 830517-27 of Ray Bean Court House at Langtry.

Left Langtry 304.7 after visiting overlook where we camped about 10 years ago. One well formed benchland in from large cove to E which is about thru core level. 4 turkey vultures 306.5 2 turkey vultures at Osmond Canyon. 306.7 2 turkey vulture Antonio Creek at 30317.7 In Cretaceous road cuts N facing wall well preserved with some enhancing of bedding plane whereas on S facing wall the original surface is highly eroded in most of the cases and produce a fragmented surface. saw swallow. Budlike rare. 321.7 long ridge across wash but dry bed and floor of sand and gravel. Turkey vulture. cedar station at 320.5. yellow flowers along roadway. Area beyond fence short greasewood like plant, this side higher shrubs. 341.0 *pyrochulopia*. 344.4 Dryden. 342.8 turkey vulture, mockingbird, scissor tailed flyc. 350.1 mex. ground squirrel. Road kills are rare along this route, especially in face of so many jackrabbits in the area. T. vulture. mt to S in mexico blue. 2 scissor tailed flycatchers, mockingbird, mockingbird, mockingbird. Higher shrubs and closer arrangement may reflect the increase birds. Deer sp. ? road kill. 357.8 red tail hawk. Sotal common. 360.7 3 Turkey vultures. Arrived. Sanderson for night.

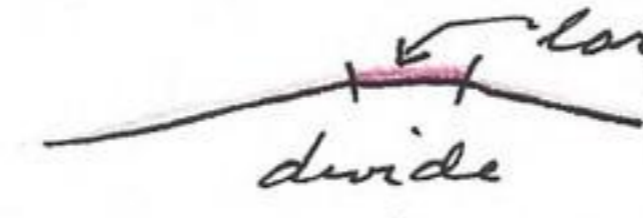
Sanderson, Brewell Co., Texas

May 18, 1983

Left 370 . will keep list of all birds . 7 turkey vultures, 3 mourning doves, 1 mockingbird, cowbird (brown headed), Cassin's flycatcher. Vermilion flycatcher, mockingbird, cardinal. 379.6 turkey vulture, mockingbird, 2 mourning doves, mockingbird, 4 turkey vultures, 380.4 2 turkey vultures 282.9 turkey vulture, mockingbird. 383.7 t. vulture, some small birds are unidentifiable, loggerheads. 385.6 t. vulture, 2 m. doves. 2 brown-headed cowbirds, 2 m. doves, m. dove, birds increase size of brush and small trees, 2 m. doves, Cassin's flycatcher, 3 m. doves. 390.8 t. vulture, 2 m. doves. Vine-like plant along road like a melon vine, more windmills in operation than say Kansas. 398.6 turkey vulture. Stumble lunch 398.9. 402.4 turkey vulture, mockingbird. Lechuguilla and sotol both very common and gives the desert its character. Other shrubs sparsely arranged and low. 405.1 first steep dip of rocks 45° and seem different than Cretaceous we have been following. 405.7 turkey vulture, 2 cliff swallows, rocks steep at 45° all thru valley. 407.5 badger road kill, 3 F. vultures, rocks now almost perpendicular 408.7 broad valley & a mt. Santiago to S., horned lark, barn swallow. 411.3 t. vulture all ponds dry, 5 barn swallows, more and more like Utah. Tall trees are along road and not in natural surroundings, lark sparrow. The playa lakes are in grass. Ground squirrel mounds in area and common at 416.0 6 turkey vultures feeding on black-tailed jackrabbit road kill. Cassin's flycatcher. At contact with hillside brush the flat part of valley receives some of the brush in an ecotone of about 1/10 mi. Grass consists except a few beavertail cactus and rarely a yucca. M. dove. 419.0 west side lake, brown headed cowbird, mockingbird, 15 yucca with compact white flowers on top. Junction 385 and 90 423.0 Now S on 385 at 423.9 from Marathon, <sup>10:45 A.M.</sup> will continue to keep complete record to headquarters Big Bend Nat'l Park. Turkey vultures identify mileage position and other birds occur between and are so recorded the turkey vulture mileage designation. Mockingbird, mourning dove. 426.2 turkey vulture. 427.9 t. vulture, sparrowlike bird. 429.3 black vulture. 431.4 redtail, 2 turkey vultures. 431.6 Turkey vulture. Flat-irons to NE. Mockingbird, 2 curved-billed thrashers. Black-throated sparrow, 434.6 t. vulture. 436.2 divide of first hogback. One pond



left with trace of water. 437.2 redtail. 438.0 t. vulture  
 mockingbird. 438.9 t. vulture, m. dove, mockingbird -  
 441.1 t. vulture. 441.9 2+ vultures (one glided straight for  
 400 ft., 443.6 floor of broad valley. The valley in  
 shrubs whereas first one before manathin in grass. 444.3  
 4 turkey vultures, m. dove, m. dove. 445.3 turkey vultures  
 on consecutive poles, 2 white-wing doves. Brown-headed  
 ewbird, mockingbird. 447.2 <sup>common</sup> raven, small bird. Creosote  
 has evenly placed arrangement with gravels as base, look  
 like orchard. 448.5 redtail. First whirlwind seen on trip.  
 3 common raven + m. dove. 450.0 mexican ground squirrel,  
 mockingbird. small sparrow, Cassin flycatcher, Mockingbird,  
 lark sparrow, mockingbird, mockingbird. Complete cast skin  
 of pilot snake, mockingbirds. 460.2 redtail, <sup>turkey vulture</sup> Cassin flycatcher,  
 scaled quail, cactus wren nest, 2 mourning doves, 463.0  
 route to Black Gap. 463.8 boundary Big Bend Natl Park, 12:44  
 cactus wren nest. small bird. 469.2 Bone Spring draw, 2 mocking  
 birds, small bird, small bird Green valley go to base of mt.  
 and then abruptly to bare slopes. 477.2 stretch of road with  
 8' creosote bushes as an avenue along side of road and  
 then 2' creosotes bushes beyond, turkey vulture here, 2  
 mockingbirds. Yucca in wettest places. || 478.8 turnoff to  
 Giant Dagger Flat. Will record on this side trip and then  
 pick up on main road again on return. Two curved-billed  
 thrashers, small bird, mockingbird, pyrruloxia, small bird,  
 mourning dove, m. dove, 2 m. dove, 2 pyrruloxia, 2  
 mockingbirds. 485.6 t. vulture, 2 cactus wrens, Cassin  
 flycatcher. 4 photos of giant dagger cactus and Barth.  
 830518-1, 830518-2, 830518-3, 830518-4. <sup>830518-4a purple cactus (ground)</sup> 488.4 at beginning  
 of turnaround circle. Creosote 3X size as plants in flat  
 valley below.



largest yuccas at divide, get small as one descends.

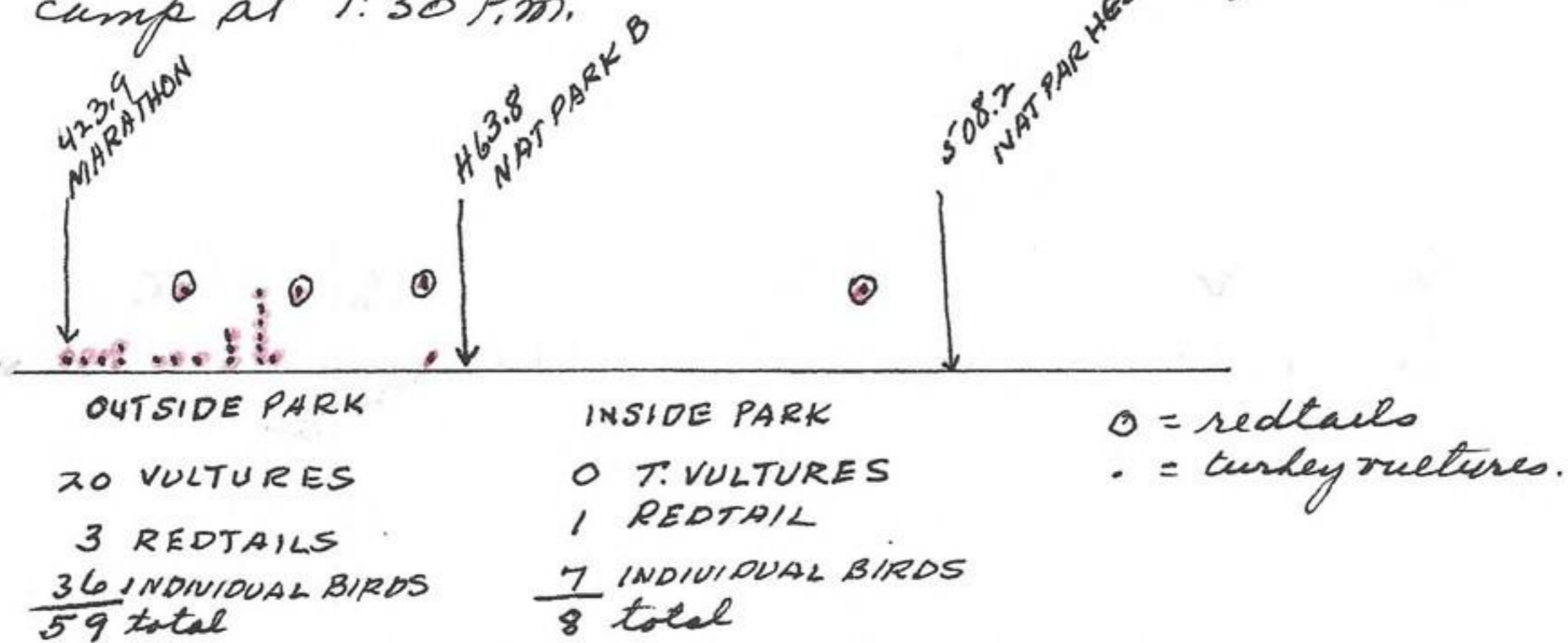
Purple finch, Schotts orcale, mockingbird, Schotts orcale,  
 mockingbird, mourning dove, turkey vulture, mourning  
 dove, mourning dove, 495.3 now back to highway 385, 4:30 P.M.  
 501.0 redtail pushed up prey on side of road. 508.2 <sup>4:50 P.M.</sup> Headquarters  
 Big Bend Natl Park. at headquarters found only book  
 adequate for trees, shrubs and woody vines cost 40.00. no  
 other book was adequate for vegetation, so copied the  
 names of all plants from picture cards set up for identification  
 in central exhibit hall. The following is the list.

- scotillo - *Forigueria splendens*  
 rock nettle - *Buenaide bartenioides*  
 guayacan - *Porlieria angustifolia*  
 lecheguilla - *Agave lecheguilla*  
 nipple beehive cactus - *Coryphantha macromeris*  
 wild Gourd - *Cucurbita foetidissima*  
 Tree tobacco - *Neotiana glauca*  
 Range Ratany - *Krameria glandulosa*  
 Hechtia or false lecheguilla - *Hechtia scariosa*  
 nipple cactus - *Mammillaria meecantha*  
 basket grass or nolina - *Nolina erumpens*  
 damianita - *Chrysoactonia mexicana*  
 Turks head - *Ferocactus hamatocanthus*  
 desert baileya or desert marigold - *Baileya multiradiata*  
 blind pricklypear - *Opuntia rufida*  
 Chisos pricklypear - *Opuntia lindheimeri chisosensis*  
 Tasajillo - *Opuntia leptocaulis*  
 dog cholla - *Opuntia Grahamii*  
 yellow trumpet - *Stenolabium incisum*  
 woolly butterbush - *Buddleia marubifolia*  
 Longspur columbine - *Aquilegia longissima*  
 Texas rambow cactus - *Echinocereus pectinatus mexicanus*  
 Orange Caltrop or Mexican poppy - *Kalbitroemia grandiflora*  
 sotol - *Dasylirion leucophyllum*  
 Mexican piñon - *Pinus cembraides*  
 notched lead leaf - *Leucaena retusa*  
 drooping juniper - *Juniperus flaccida*  
 honey mesquite - *Prosopis juliflora*  
 mountain flax - *Phlox mesoleuca*  
 strawberry cactus - *Echinocereus stramineus*  
 silver leaf or cenizo - *Leucophyllum frutescens*  
 bracted paint brush - *Castilleja latebracteata*  
 Texas madrona - *Arbutus texana*  
 wright verbena or sweet wilkams - *Verbena wrightii*  
 Goldena - *Coldenia greggii*  
 catclaw cactus - *Ferocactus uncinatus*  
 devils head - *Echinocactus horizontalis*  
 mountain sage - *Salvia regia*  
 Harvard nama - *Nama harvardii*  
 globeberry or balsam apple - *Obervillea tenuiseta*

- Engelmann pricklypear - *Opuntia phaeacantha discata*
- Torrey yucca - *yucca torreyi*
- black-brush acacia - *Acacia rigidula*
- white-flowered cactus - *Echinomastus <sup>dasyanthus</sup> intertextus*
- brown flowered cactus - *Echinocereus chloranthus*
- Edwards nicollet - *Nicolletia edwardsii*
- blackfoot - *melampodium leucanthum*
- claret-cup hedgehog - *Echinocereus triglochidiatus*
- long-spined pricklypear
- golf ball cactus - *Mammillaria lasiocantha*
- trumpetella or scarlet bouvardia - *Bouvardia ternifolia*
- century plant - *Agave scaba*
- giant dagger - *yucca canerosana*
- desert willow - *Chilopsis linearis*
- living rock - *Ariocarpus fissulatus*
- althea - *Koeberlinia spumosa*
- forestiera - *Forestiera angustifolia*
- lingtube - *Microsiphonia microsiphon*
- white milkweed - *Asclepias elata*
- cob cactus - *Coryphantha strobiliformis*
- dayflower or widows tear - *Commelina erecta*
- roemer acacia - *Acacia roemeriana*
- apache plumb - *Fallugia paradoxa*
- new mexico vervain - *Vervain neomexicana*
- wolly loco - *Astragalus mollissimus*
- norningglory - *Sporocaea castellata*
- white horse-nettle - *Solanum elaeagnifolium*
- trailing four o'clock - *Abutilon incarnata*
- prairie flax - *Linum lewisii*
- spiderwort - *Tradescantia brevifolia*
- feathered dalea - *Dalea formosa*
- prickly joppy - *Argemone chisosensis*
- tansy aster - *Aster tanacetifolius*
- huisache or sweat acacia - *Acacia farnesiana*
- Douglas fir - *Pseudotsuga menziesii*
- fragrant ash - *Fropinus cuspidata*
- Cutclaw acacia - *Acacia greggii*
- allegator juniper - *Juniperus deppeana*
- norman tea - *Ephedra sp.*
- mountain mahogany - *Cercocarpus montanus*
- mesquite bean - *Sophora secundiflora*

whitehorn or mesquit - *Acacia constricta*  
 southwest Cordalialia - *Cordalia lycoides*  
 white spine cactus - *Coryphantha dasycantha*  
 button cactus - *Epithelantha bokei*  
 Chisos pitaya - *Echinocereus reichenbachii* <sup>chisosensis</sup>

Birds to Boquilla's Village camp. 2 scated quail 6:21 P.M., 2 sparrow size birds. 513.3 turkey vulture, 514.3 turkey vulture. small bird, m. dove, 2 common raven at 520.7, m. dove, Lower Tornillo River at E end, 524.6, turkey V. 526.7 (1/10 mile before tunnel. 528.8 Boquilla Village Center. Camped at site 39 in camp grounds. Upon arrival at camp photos 830518-5, 830518-6, 830518-7, of turkey vultures in camp at 7:30 P.M. <sup>830518-8 and 830518-9</sup>



This evening heard talk by Debbie Liggett on geology.

Big Bend National Park, Rio Grande Village, Brewster Co., Texas  
 May 19, 1983

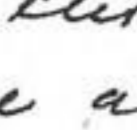
made trip to mouth Boquilla Canyon with Debbie Liggett, ranger and group of tourists. She reports: about the Lechequilla "Take a good look. Does anyone know the name of this plant? Know? This is a century plant. This is a plant named Lechequilla. Lechequilla is Spanish for lettuce, illas is a diminutive for small so this is little lettuce. When they refer to little lettuce they mean the leaf of the plant and while a hiker contacts this plant it takes a little imagination to think of it as lettuce. This plant grows only in the Chihuahuan Desert. If you were hit in the head and then transported you to another part of the country, when you woke up, you would see this plant, you would know you were in the Chihuahuan Desert. It grows in no other part of the earth. Early pioneer thought they bloomed every 100 years and called them century plants. We know know they bloom every 15-30 years, more or less. The stalk grows at a tremendous rate at perhaps a foot a day, the plant literally burns itself out. It is a one shot deal, it blooms and then the stalk and flowers dies. It grows and conserves all its energy for many years and then sends the stalk and flowers upward in one mighty surge, a last gasp if you will,

flowers and then dies. We have a larger century that lives in the upper basin that has the same lifestyle. So this is the Lecheguilla and grows up and down the roads in the park and it is blooming, most are dead. These stalks are dead and in fact they are last years stalks. and have not yet fallen over. The plant is not edible to us but the peccories in the park with push aside the leaves and pull up the individual leaves by their roots and then eat the basal parts because they are moist and succulent. They are like asparagus and are full of moisture and sugar. At the bottom of this plant is a cortisone like substance, but more important has been the use by Indians for sandals, rope and other materials from the fibers in the leaves. Some people say the century plant is a combination of artichokes and an asparagus root. As in an artichoke the terminal part of the plant is only eaten. I could not survive on eating the Lecheguilla only. We know the Indians lived on desert plants but we only know of their successes, not their failures. I am not an advocate of walking thru the desert and eating the desert plants as most of them are poison during part of their development. Even though plants might not kill you they would make you sick. We are not used to this kind of food but the more refined food of <sup>the</sup> present day. The main thing with the deer. We feed them marshmallows, cookies, candy and as a result they become ill. and shorten their life span. What are these two. They are cactus, they are spiny and are prickly pear cactus to be more specific. These two are different. One has spines and one is spineless. What part of the cactus is the spine. It is the leaf. Cactuses are probably the best adapted plants. The first thing they have found is that it is a disadvantage to have a large leaf, so what the plant has done is to reduce its leaf size to a spine. The pade is the stem of the plant and it is this portion that photosynthesizes the energy for the plant. Root system is very close to the surface of the ground, and gets more moisture from rains that move off the surface of the ground rapidly. This plant has gone a step further and has no spines. The brown dots are crowded with short spines that are much more difficult to remove than large spines. The best way to remove them is by putting a layer of rubber cement, wax if temperature is not too great, and masking or duct tape. Cattle eat the spineless prickly pear and the small thorns get

into their eyes and blinds them. Cactus are made palatable to cattle by burning off the spines. The blind (thornless) cacti are named because of the effect on cattle. These cacti are found only in the Chihuahuan Desert. The spined cactus is named brown spine prickly pear. Other similar cactus have white spines are they have a different name. All these cacti have yellow flowers and some are in bloom now. The fruit is edible. The fruit become dark purple <sup>like orange plums</sup> and are good to eat and at that point in August you can use them for jelly or wine or to eat. As jelly they are difficult to jelly. The pad can also be eaten or made into jelly. The pads can also be used as you would prepare an eggplant. The new pads just beginning can be pickled. Cacti are closely related to roses, and flowers do look similar. People now believe that spines are used to protect plant from the wind and not for protection as birds eat them, nest in them, cattle and other animals eat them, deer & horses eat them spines and all, insect feed on them. The myth of eating barrel cactus, we do not have any in this part, is substantiated by the small amount of juice, poor taste, <sup>bitter</sup> and the hassle of getting to the pulp. But if one is down to no water you would drink antifreeze from a car radiator. Humidly at noon 5% and you dry out by breathing or just standing. Leather stems name means blood of the dragon (*Jatropha dioica*) sangre de drago. This plant grows and loose leaves 5 or 6 times a year, already it has lost 2 sets of leaves this year. Like the cactus, leaves are a liability in drought or extremely hot weather. Last week and a half ago were had a 1 1/2 inch rain and the plant grew leaves and took energy from the sun. Shed leaves if cycle is wet-dry. A clear liquid stains red and was used as an antiseptic by Indians. (blood of the dragon). People lived here 4500 year ago up to 10,000 years. The holes in the rocks were made by these people. They were not used to hold water. These mortar holes (momo and metate) were ground into the soft limestone to grind with a moya the dried seeds of the mesquite. You can imagine what it would do to your nuckles. after you got down too deep. One theory is that they were used down to a useable depth and that then they were abandoned and water settled in them and as limestone is soluble in water the hole became deeper and wider. Carbonic acid from water and limestone also reacts on the walls of the hole. It is also believed that they dug the holes for crockpots and fired the holes

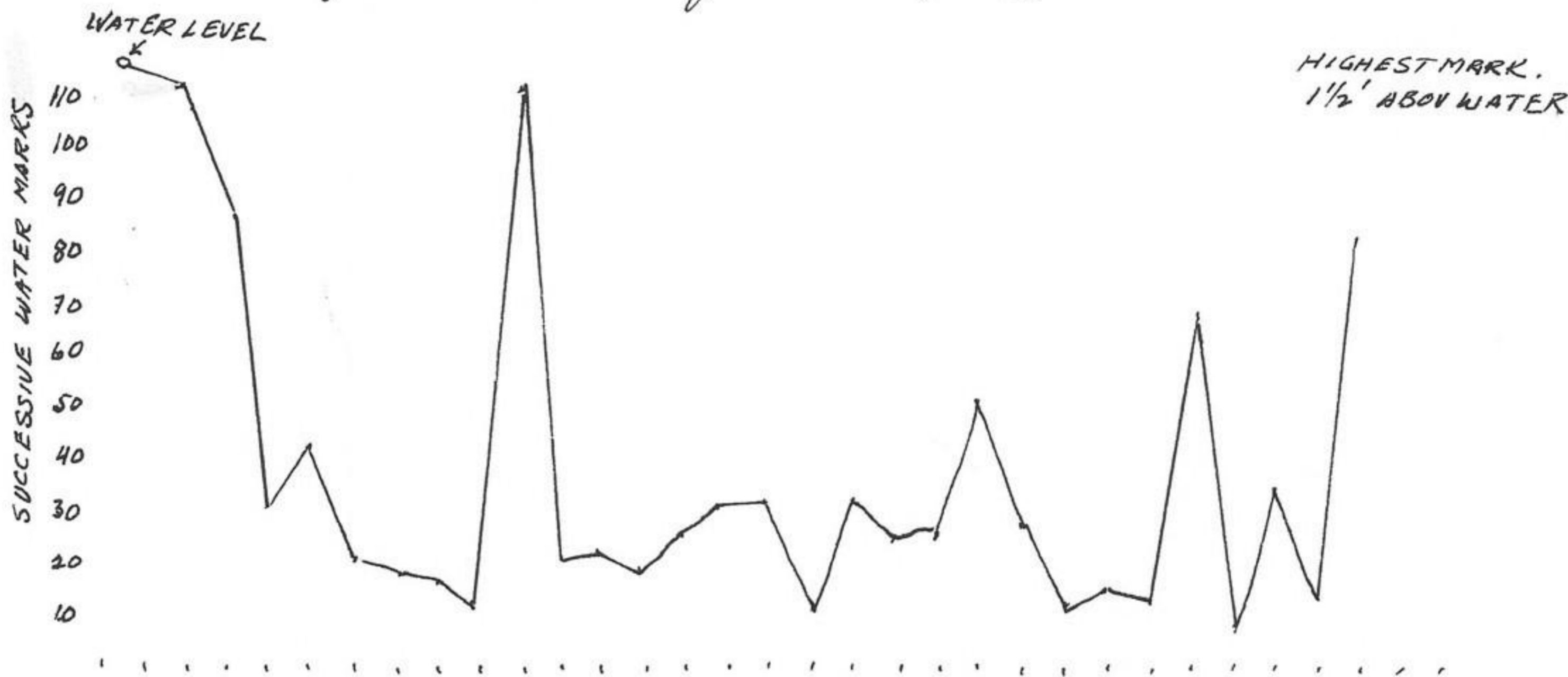
for cooking food. Put coals in the bottom, a rabbit on top and sealed for 24 hours and then a fine meal. Both these ideas are our best guesses. Accumulative evidence of these holes associated with Indians, water courses etc suggest that they were made and used by Indians. The petroglyphs and pictographs in the park are almost all (pictographs) reddish in color. Red because there is a mercury mine and outcrop in the park where red pigment <sup>Cinnabar</sup> is attainable. Some say the drawings are religious and are <sup>in</sup> revoking the gods and for a good hunt or good fishing, or a good whatever but others say they are secular and been come on down, the fishing is great. We do not know and it is our best guess. The springs in the park are small and may have only supported one family at the most. They flow at a gallon a minute and the availability determines the size of the lamp. Boquillas Canyon means mouth-little. Should be La Boquilla, feminine, and means little mouth not little mouths, referring to small opening of the canyon. There are also several small holes in the wall that might be of some significance. When floods occur the small mouth of these canyons in the park block water and the flood spreads out onto the extensive flood plains in front of the canyon. It came up in 1978 22 feet and created a huge lake. Solution caves in canyons have prehistoric caves. A hot spring sends water in a small stream to Rio Grande just S across river and in winter it steams. All the water at Rio Grande River Camp grounds is from hot springs. Lizards taking 5 means 5 push-up to circulate the body thru air. This is common when temperature is hot. Border is defined as center of deepest channel and fluctuates as river changes its course. Sierra del Carmens on S side river. Lead horse range on N side. Creosote has a creosote odor and is the smell of the desert after a rain. Leaves are coated with a resin to protect from heat and from the poison in its root, protects it from its neighbor. The plant established and based themselves to assure themselves enough moisture. They have hairy seeds for dispersal and are eaten by cottontail and jackrabbits. Camels can eat them also. Small rocks placed around ant hills are to deflect water and heat. Cane patches are cool and humid. We drop onto flood plains from desert in a matter of inches. The immediate difference is large leaves because of increased moisture. Used for poles for fishing and roofing.



In Mexico they routinely burn cane patches, our policy here is <sup>that</sup> if the fire is started from lightning it is allowed to burn out, unless it could cause lives or property. Fires crackle from moisture in cane and seem to explode in some cases. Last frost was 1000 feet and burned overnight. Upper trail on slopes require constant rehabilitation, in cane patches people along maintain trail from traffic in and out. Tamarisk has salty taste. It is introduced. It is a water hog and a patch will consume 200 gallons per day. It was introduced by Spanish but some say as late as 1930's. Tolerant to salt waters and is now on all the major rivers in <sup>S</sup>western U.S. Tamarisk in park are moving in on springs and due to their high water content are shutting them off and they become dry at the detriment to wild life populations. They are controlled in the park. It has no competition by insects, animals or other plants. Hydrilla in Florida is not hydrangea and is choking waterway. Tarantula killer wasp can carry a tarantula to its burrow. Horses from Mexico if repeated offenders are impounded. Transpeers is area west of Pecos to Rio Grande. Big Bend area <sup>N</sup> to Union Pacific railroad. River dry at El Paso and fed below from river from Mexico. Rio Grande a gruddy river because of kinds of land it runs over. Sand below cone on N side can only get larger. The walls of the canyon are 1800 feet high and were put down by deposits in the sea from calcified skeletons of small organisms. At one point these rocks were below the sea and as they are now 1800' above this level we can only assume that they have been elevated, not all to the same degree as they slope in one direction. At that time there was this river that crossed the low lying mountains and when the mts were uplifted the river kept pace with the uplift so that today the river is down to about the same level as before the uplift. The river cuts much more quickly when associated with uplift so much so that the walls are steep and the upper profiles have not eroded. If the river had cut slowly without uplift the walls would have been  shape and the top of the canyon because of the great time would have been more rounded and more extensively eroded. I can never resist taking pictures of sheer canyon walls and blue sky. The Canyon wren is my social barometer and where a canyon wren lives so will I. Plants in crevices have a tenuous hold on life and they get just enough moisture to make it.

The white-wing dove says who gooks for who. I think I take the canyon for granted but when Victor who guides the boat across the river claimed on a trip thru the canyon that "the adventure in the canyon of Bocquillas is very good and beautiful" and we should always be appreciative of the beauty that has been recognized by one who has lived here in Bocquillas all his life.

Photo 830519-1 of Annette at mouth of Bocquillas with *Fragmites communis* to left. Birds in canyon: white-winged dove, turkey vulture, cliff swallow, raven.



These water marks could represent night-day fluctuations or recessional marks from last rains a week or so ago.

There are no water marks on cliffs in canyon.

This afternoon photos 830519-2 and 830519-3 of mouth of Bocquillas Canyon E of Rio Grande Village (same area as 830519-1)

Birds in area:

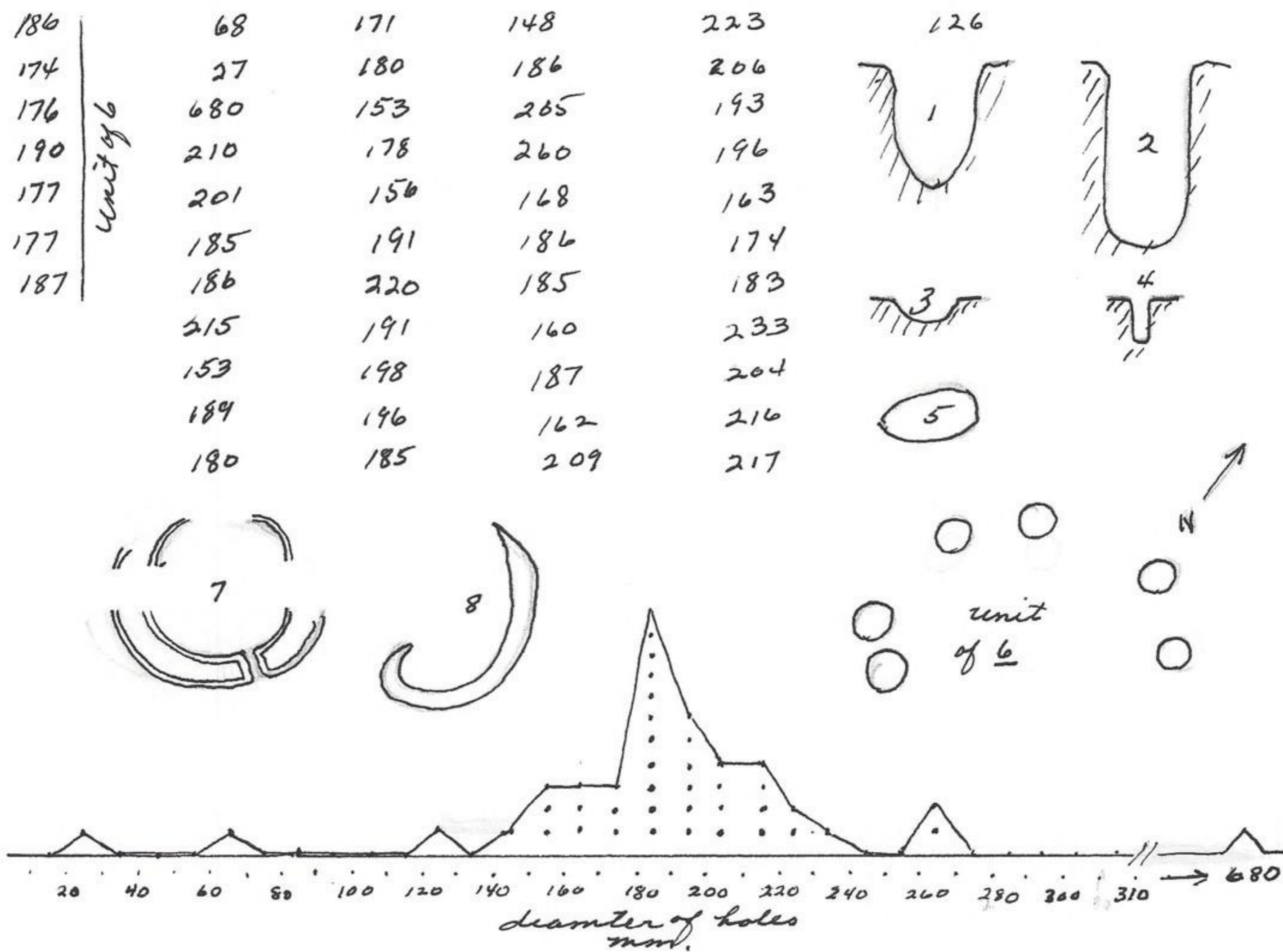
- 14 turkey vulture
- 5 boat-tailed grackles
- 2 summer tanager
- 2 white winged dove
- 1 cliff swallow
- 2 common raven
- 42<sup>♀</sup> brown headed cowbird
- 48<sup>♂</sup> bronzed cowbird
- 4 area dove

- 1 yellow-billed cuckoo
- 1 cardinal
- 2 vermilion flycatcher
- 1 Cassin's flycatcher
- 2 night hawk

The brown-headed cowbirds feed at 8' and travel and feed on ground in compact group. average 6" apart.

Have three calls, a recognition call like gurgling water, a high pitch call & a musical call.

Examination of holes used for grinding by Indians, holes from water level to height of recent benchland



1. best preserved hole and gradually sloping walls and tapered at bottom, original surface, slightly beveled at top of hole.
2. parallel hole and deep, some 400 mm deep, some concavity and pestle would not function, too much contact surface and resistance too great. no reservoir for flour or grain at top.
3. shallow
4. deep and small in diameter
5. irregular hole.
6. systematic placement
7. gastropod fossil of average size and calcite outlines
8. fossil that could initiate hole
9. graph of normal curve of natural occurrence of water-pebble worn action
10. near water
11. height above river
12. Indian grinding holes also occur at springs some distance from running water abrasion

Indian made:

water-pebble formed:

nos. 1-6-10-11-12

2-3-4-5-7-8-9-10-11

Photos 830519-4 of these mortars in limestone. 830519-5 mortar at water level.

90 brown headed cowbirds fed in area  $5 \times 4\frac{1}{2}'$ . The male expands head and neck and back feathers for approx 2 secs then back to normal. This may be a courtship move or a way to release heat. The female have a modified ruffling of feathers. These birds do not act like setherids but are more delicate in flight, and action on the ground. This evening to mouth of Boquillas Canyon and observed a *Citellus variegatus*. Photo 830519-17 of Indian markers in rocks that were researched earlier. Photos 830519-17, 830519-18, 830519-19 of prickly pear cactus, full plant, fruit side view, fruit from top.

Rio Grande Village, Big Bend National Park, Brewster Co., Texas  
May 20, 1983

made trip to Boquillas Village across river in Mexico. Crossed river in Victor's boat, a Mexican who lives in Boquillas, thence by burro to town and return same way.

Photo 830520-1 of Annette on burro

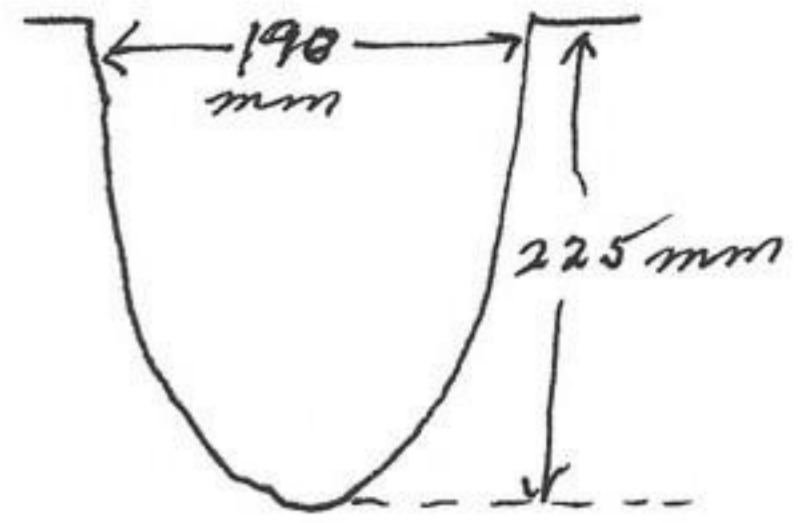
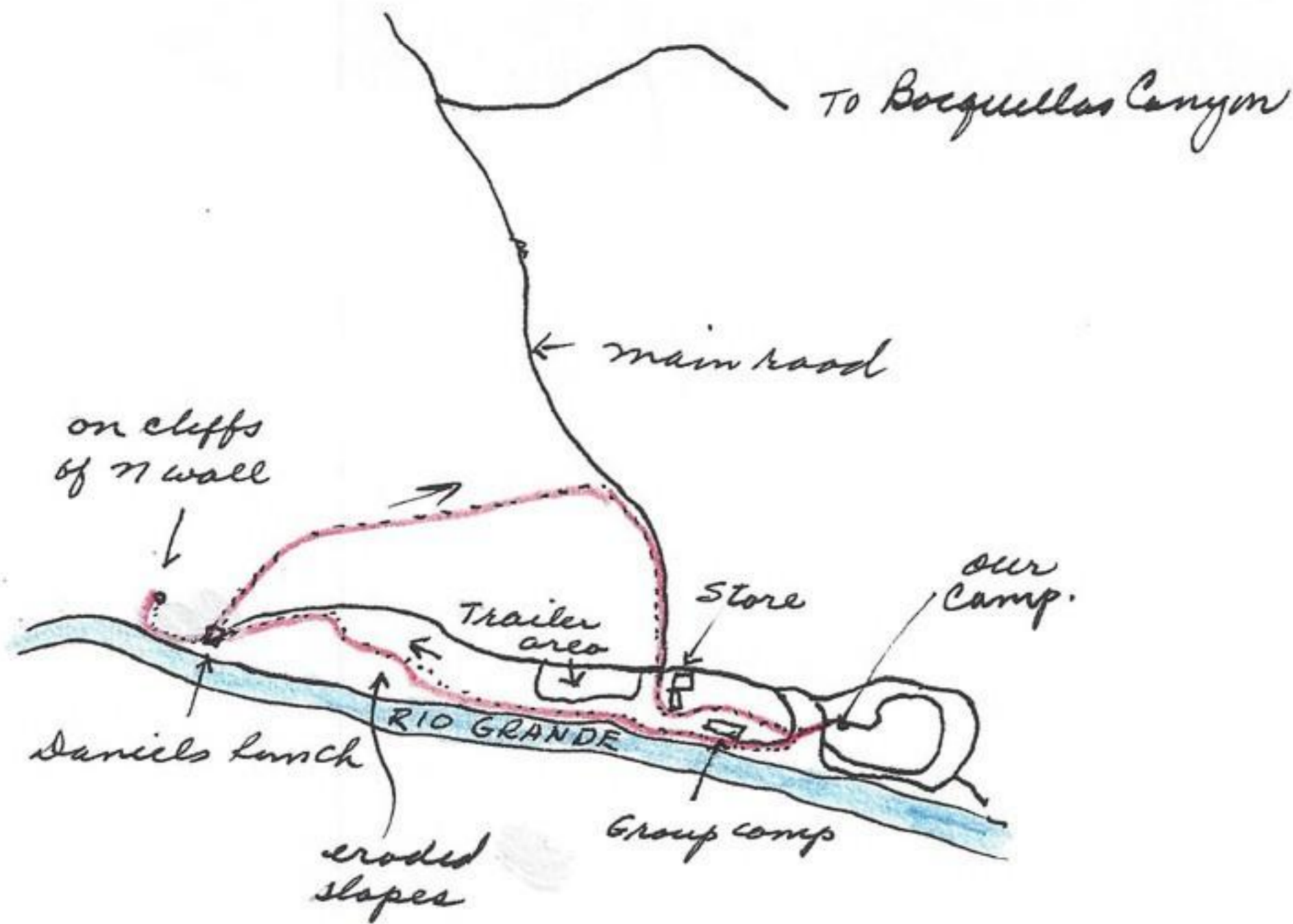
830520-2 of head of my burro, the best profile of the pack,  
830520-3  
830520-4  
830520-5 } NG  
830520-6  
830520-7 }

These people are desperately poor in contrast to American side. There should be a program of introducing these people to the visitors that come to their village by eating the meal with some of them with interpreter, visit their homes and families and organized young kids so they are interpreters and leaders of small groups 2-3 of Americans who wish to see the village, instead of giving them money like baggers.

On return we visited Boquilla Canyon and photographed the Indian markers Photo 830520-10, the Boquilla Canyon photo 830520-11. Returned to camp and photographed a vermilion flycatcher no 830520-12, This evening photo 830520-13 of Cottonwoods and shadows at Daniels Ranch.

May 21, 1983

made trip from camp to Daniels Ranch to us via eroded slopes between Rio Grande and camps, thence up canyon for  $2\frac{1}{10}$  mile thence to irrigation Canal to main road thence to camp. Recorded all mammals and birds as they occurred. Time from 9:00 to 12:00; day clear.



Indian mortar  
on n side canyon  
about 1/10 mi from  
mouth.

and mammals  
Birds observed:

- |                         |                          |
|-------------------------|--------------------------|
| 6 <i>Sylvilagus</i>     | 2 long-tailed chat       |
| 1 <i>Inca dove</i>      | 1 rufous crowned sparrow |
| 8 turkey vultures       | 1 blue grosbeak          |
| 4 " "                   | 1 vermilion flycatcher   |
| 13 " "                  | 2 painted bunting        |
| 3 <i>Sylvilagus</i>     | 1 cassin's flycatcher    |
| 2 " "                   | 1 <i>Sylvilagus</i>      |
| 2 bronzed cowbirds      | 1 long-tailed chat       |
| 4 brown-headed cowbirds | gopher digging           |
| 3 boat-tailed grackles  | 1 <i>Inca dove</i>       |
| 1 <i>Sylvilagus</i>     | 1 varied bunting         |
| 3 orchard orioles       | 1 <i>Sylvilagus</i>      |
| 1 boat-tailed grackle   | 3 turkey vultures        |
| 1 white-winged dove     | 1 common raven           |
| 9 turkey vultures       | 2 mockingbirds           |
| 1 <i>Sylvilagus</i>     | 2 <i>Inca doves</i>      |
| 1 summer tanager        | 2 common raven           |
| 1 yellow-billed cuckoo  | now up canyon            |
| 1 <i>Sylvilagus</i>     | 1 common raven           |
| 1 white-winged dove     | 2 white-winged dove      |
| 1 " " "                 | 4 turkey vultures        |
| 3 boat-tailed grackles  | 1 yellow-billed cuckoo   |
| 2 " " "                 | 4 cliff swallows.        |

- along irrigation route
- 2 *Sylvilagus*
  - 1 mockingbird
  - 1 flycatcher sp. ?
  - 1 white-winged dove
  - 1 *Lepus* (black-tailed)
  - 2 mockingbirds
  - gopher digging
  - 2 *Sylvilagus*
  - 2 " "
  - 2 bronzed cowbirds
  - 2 " "

Raven flew into nest  
n side n of stack on  
S side. Fed in camp  
area and brought food  
back to nest.

a summer tanager  
picked up beetle in  
air & placed on branch,  
the beetle dropped from  
branch & tanager caught  
8' below. Was repeated 3 times  
like a cat and mouse act,

This evening checked Daniels Ranch and observed:

ladder-backed woodpecker  
summer tanager  
meadowlark  
mockingbird  
trees all lean 10° to SE in grove  
bronzed lawbird  
blue grosbeak  
white-winged dove

area dove  
yellow-breasted chat  
western wood pewee  
hummingbird (black-chinned)  
white-winged dove.

To photos 830521-1 and  
830521-2 of canyon W of  
Daniels Ranch from top of  
first ledge on N side.

This evening to end of road E of camp and heard elf owl. It was reported 1 week ago of having entered a hole near top of telephone pole just W of a house. It hopped several times at 9:00 P.M. One Turkey vulture flew by at late twilight. Yellow-breasted chat performed in evening and to night banks in area. Collected leaves of dominant trees in The Rio Grande Valley area.

830521-3

4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21

just before leaving noted a black-tailed flycatcher enter its nest (B) and leave a wad of cottonlike material.

Record Golden Age Passport no 15 33438. Panther Junction Zip 79834

Left camp - (63) 5-47.5 12:56. To Panther Junction, boat-tailed grackle, Cassin's flycatcher  
mockingbird, 2 T.V. at Panther Junction 5:58 P.M.



830521-3



*honey  
mesquite*



830521-4



830521-5



830521-6



pine

830521-6



Cottonwood

830521-7



ash

830521-10



830521-8  
fern



830521-9



willow

830521-11





830521-12



830521-13



830521-14



830521-15



830521-16



830521-17  
Creosote bush *Larrea tridentata*  
PANTHER JUNCTION



830521-17



830521-22  
Mexican walnut  
*Juglans microcarpa*



830521-23  
yellow trumpet  
*Teesma stans*



830521-24  
Big Bend Nipplecactus  
*Coryphantha macromeris*



830521-25  
Candelilla  
*Euphorbia antisiphilitica*



830521-26  
Lote bush  
*Ziziphus obtusifolia*



830521-27  
whitehorn acacia  
*Acacia constricta*



830521-27  
Leather Stem  
*Gatropha divica*

Left Rio Grande village and at Panther junction collected  
8 leaves nos:

830521-22

23

24

25

26

27

28

29

Continued at 3:06 P.M. 571, 6 now on road to Chisos basin.  
Mockingbird. 5280 ft level, <sup>also</sup> turkey vulture. Camp site 23 759.1  
at Chisos Basin. This evening from 5:00-7:00 continuously scanned  
the ridges and above sky from Vernon Bailey E then S to other  
side of basin and noted 10 turkey vultures in air at one time,  
The average scan 5 in number. They sailed & circled mainly  
above ridges and n end basin. at 7:10 P.M. first roven appeared  
increase of barn swallows at this time. At 7:30 3 roven arrived  
from W. 2 fly E and the third sailed with a vulture to out of sight  
(with naked eye), then glided rapidly W toward Vernon Bailey Peak  
and at final approach of 300 closed wing and dropped at a steep  
angle

May 22, 1983

The Basin, Big Bend National Park, Brewster Co., Texas

May 23, 1983

made trip to Lodge, thence Boulder meadows and return.  
On trail to lodge (W of prominence) turkey vulture, mockingbird,  
aloum woodpecker, barn swallow, mourning dove. Photo  
830523-1 of prominence and Casa Grande Peak in background.  
mourning dove; Cassin flycatcher, barn swallow, mockingbird.  
Lodge. From here up regular trail to W & then S. black-headed  
grusbeak, western pewee, black crested nuthatch. At Boulder  
meadows photo 830523-2 of flower of prickly pear with some  
reddish brown in center, also 830523-3 of a small yellow  
flower, <sup>damia</sup> that is in full-bloom in area and bushes to 6' wide. On  
return to lodge, brown towhee; black-chinned hummerbird,  
returned to camp via main road. Today a helicopter has been  
search for a hiker lost a week ago. E of camp there has been  
a ground fire that has burned out the drainage leading up to  
W slope Casa Grande. The following leaves collected in basin:

BASIN



830523-4



830523-5



830523-6



830523-7



830523-8



830523-9



830523-10



830523-11



830523-12



830523-13



830523-13



830523-14



830523-15



830523-16



830524-10  
Fragrant Ash



830524-11  
Shaggy mountain mahogany



830524-12



830524-13



830524-14



830524-15



830524-16



830524-17



830524-14



830524-15



830524-16



830524-17



830524-18

ocho.



830524-19  
Madrone



83052420



830524-21



830524-22

Basin, Big Bend Natl Park, Brewster Co., Texas

May 24, 1983

Took trail to Lost mine. See plants collected on previous pages. Observed only birds observed were 3 Mexican jay near top. 3 species of oak hybrids here. Trail well graded except last 300' to ridge then levels off to S end of trail. Several Turkey vultures<sup>(3)</sup> but no sign of peregrine falcons. Casa Grande set aside in hopes peregrine falcon will return and nest.

Photo 830524-1 From ridge on top to WSW

- |   |   |   |   |   |                                                          |
|---|---|---|---|---|----------------------------------------------------------|
| 2 | " | " | " | " | to WSW and large boulder.                                |
| 3 | " | " | " | " | at end of trail of hikers from <sup>view</sup> Laussaine |
| 4 | " | " | " | " | W SW, rock border to left                                |
| 5 | " | " | " | " | to WSW, <sup>Mexican</sup> piñon pine                    |
| 6 | " | " | " | " | just below top to W of Casa Grande, dead tree            |
| 7 | " | " | " | " | Barth in niche of rock.                                  |

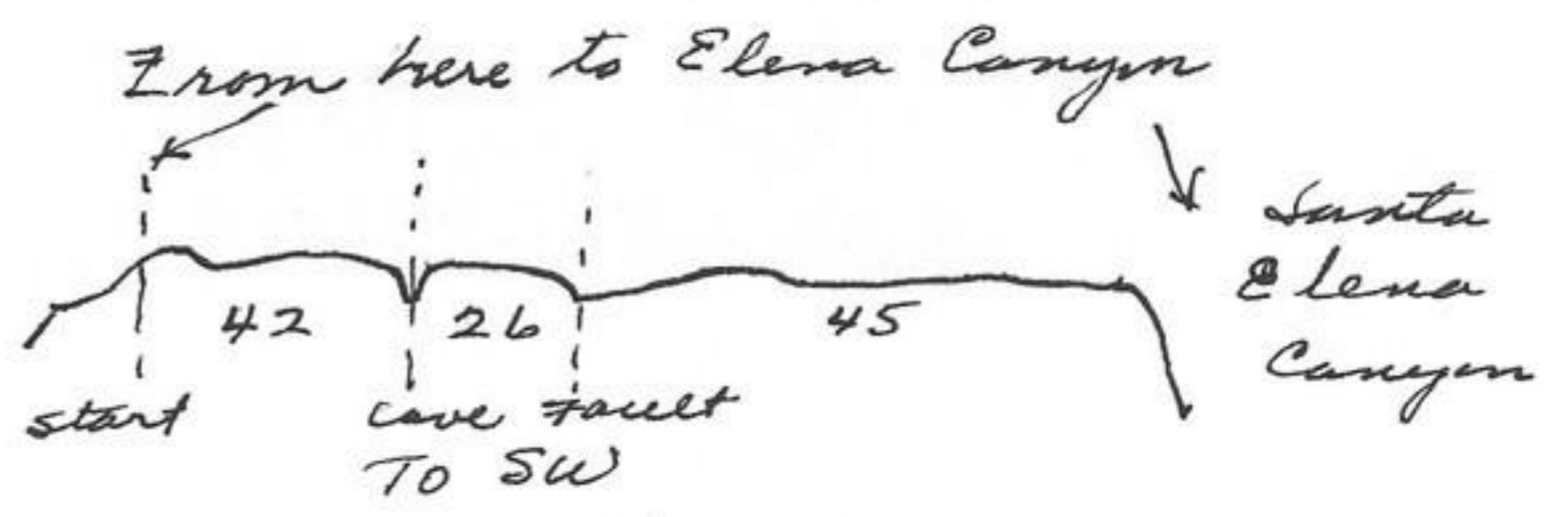
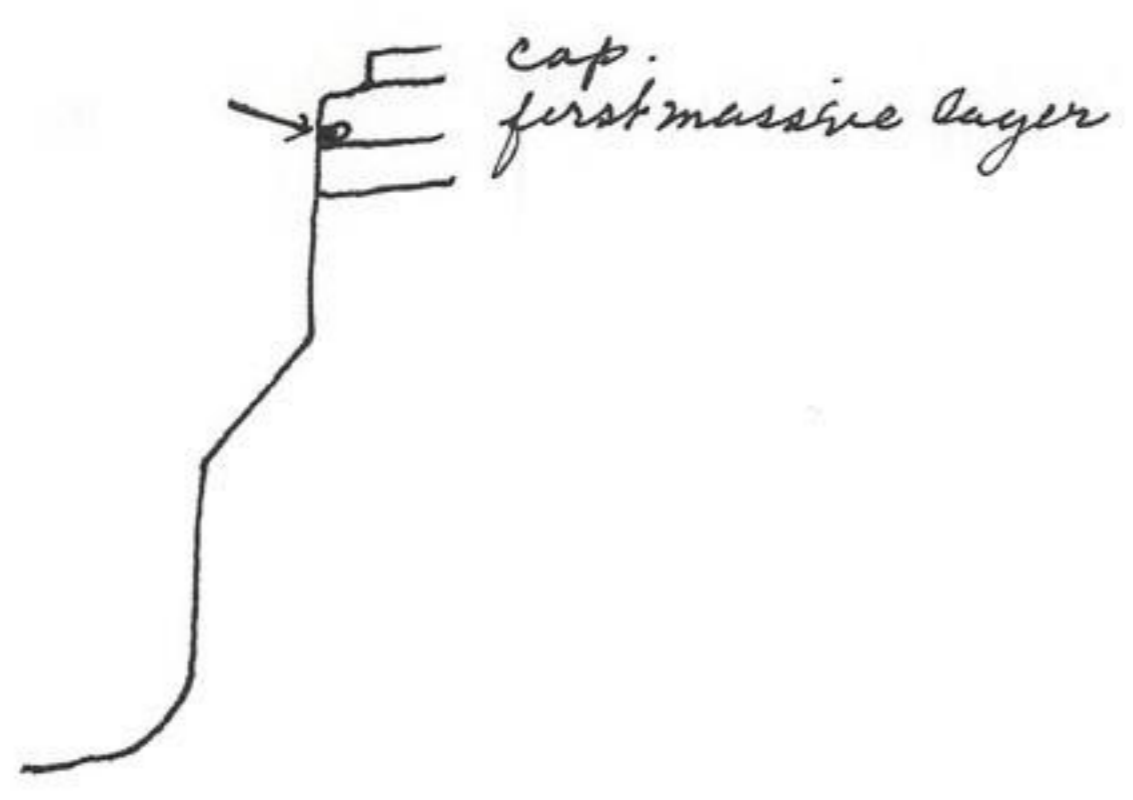
At camp in Basin photos 830524-8 flower of cholla close up, 830524-9 general view of stem & flower, 830524-10 cholla and agave leaves. 830524-11 sunset.

Left Basin and drove to Cottonwood Camp. Enroute, 594.2 approaching chimney and t. vulture, 595.6 t. vulture. Cactus wren nests 1 per 1 1/2 mile in different kinds of shrubs, may be bushlets. Satal stacks by few degrees N of E from winds. A short hummocky grass grows close together and not seen before. It holds soils on steep banks. 6407.4 t. vulture. 613.7 Turkey vulture (2), 616.8 photo of ash with boulders residuals on top, no <sup>N.G.</sup> 830524-10. Photo 830524-12 of Cerro Castolon showing layers of different volcanics, lava, ash, tuff etc. 620.5 Castolon store and Ranger station. 621.4 Cottonwood Camp (8) Birds in area. Summer Tanager, white winged dove, turkey vulture, vermilion flycatcher ♂ + ♀, ♀ has redder color like male than shows in book, yellow-billed cuckoo, orchard oriole, hummingbird, yellow-breasted chat, bronzed cowbird, brown-headed cowbird.

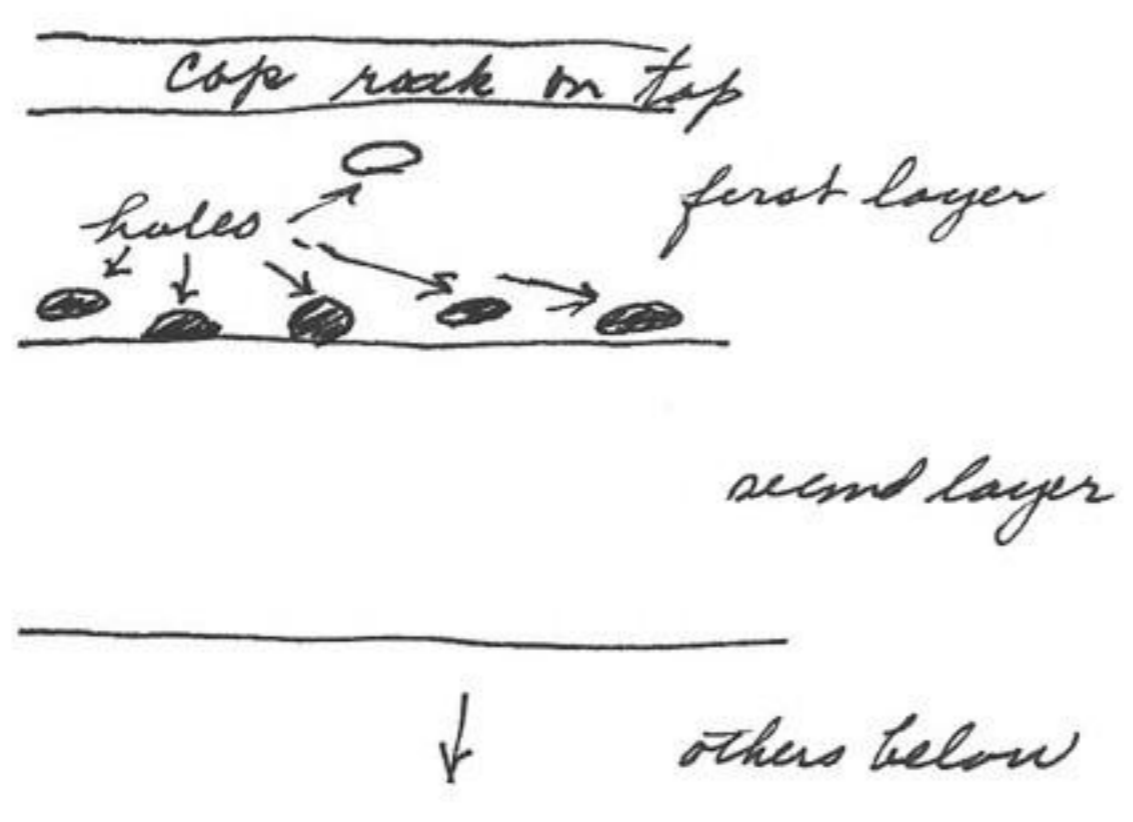
Cottonwood Camp, Castolon, Big Bend Natl Park, Brewster Co., Texas

May 25, 1983.

Left camp 621.4 10:05 A.M. at old Castolon store, pyrrhloria, 2 barn swallows, Cassin's flycatcher, cottonlail, ground dove. roven, 6 turkey vultures, most of them on ground rather than in air because lack of wind. Enroute to Elena Canyon, Turkey vulture, checked holes in cliffs to W (Mexico) these holes occur mainly in one part of strata.



Prominent point to Cave 42  
 Cave to fault 26  
 fault to <sup>Santa</sup> Elena Canyon 45  
 or 113 hole favorable for  
 raven, prairie falcon, peregrine  
 falcon.



holes only occasionally  
 below upper layer of  
 holes. These holes are  
 where they are because  
 of solution from top of  
 cliff made before  
 uplift as they continue  
 up canyons.

Search in this area for  
 1 hour with 17x binoculars  
 revealed only 1 raven.  
 There are not many white  
 excrement signs on cliffs.  
 with Rio Grande valley below  
 would make good nesting  
 sites for eagles, raven and  
 both peregrine falcon and  
 prairie falcon.

Next stop at site of 4 old dobbie houses used by early farmers in  
 area. Jackrabbit and meadowlark here.

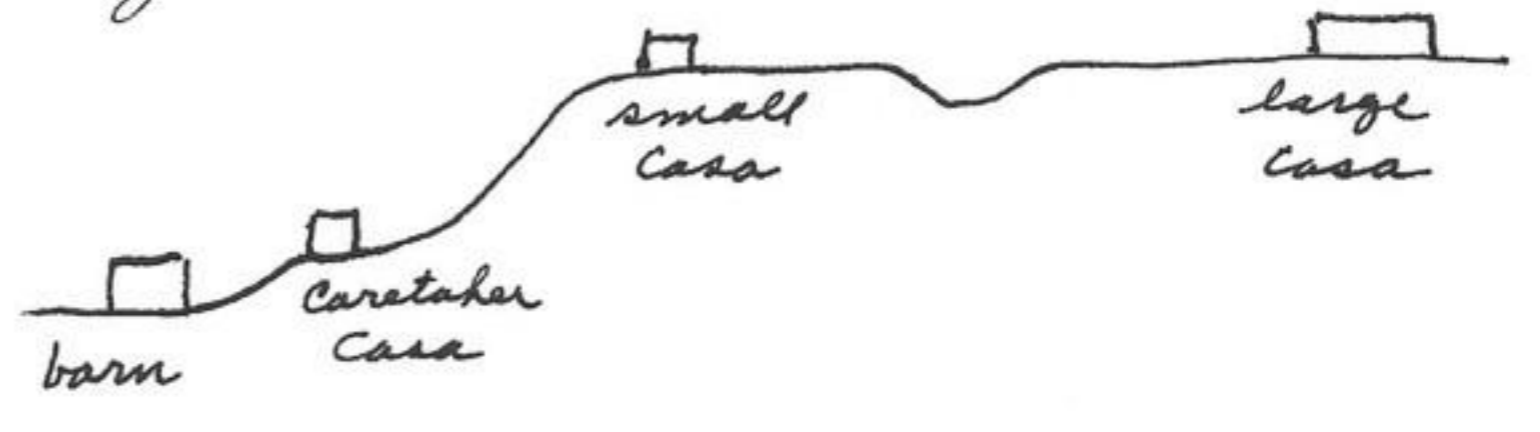
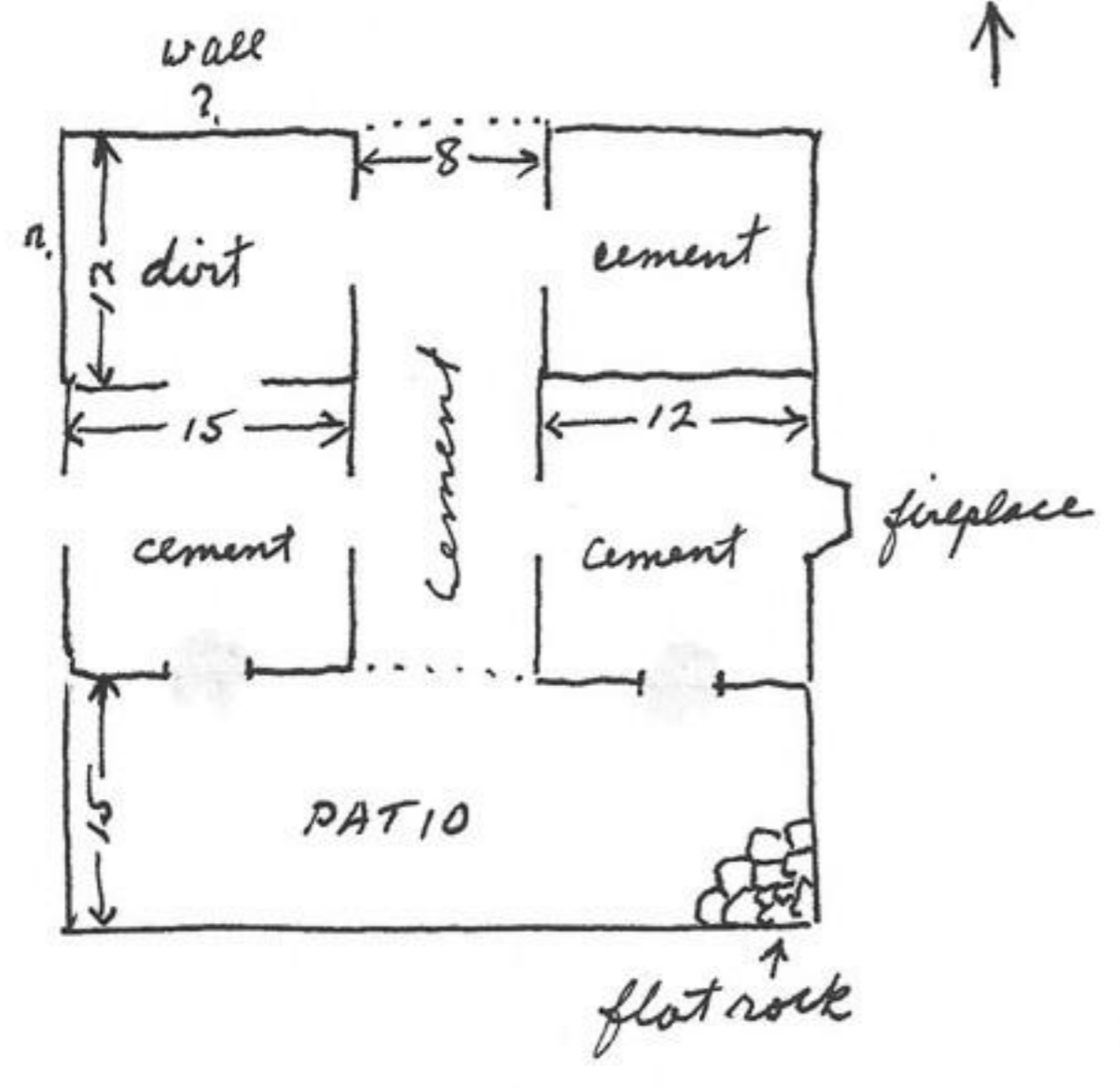
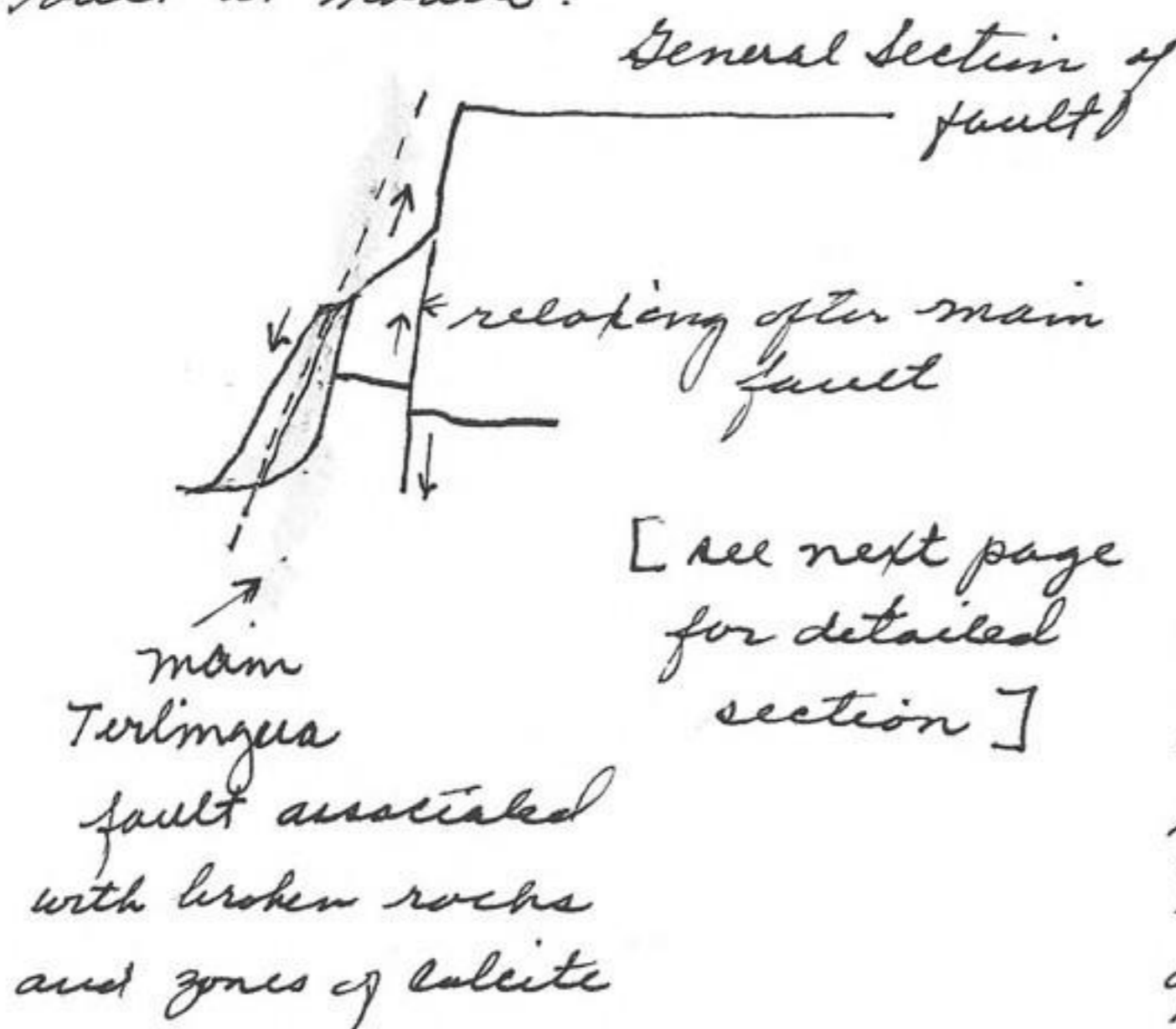


Photo 830525-1 of the small casa  
 which has floor plan to left.  
 Photo 830525-2 also of this house  
 Photo 830525-3 front view of the  
 large casa to E. The two casas  
 on benchland had commanding  
 view to mt & valley to W & S and  
 also to the N & E.

On Mexican side there are rarely trails on slope, except one that leads from Casa up to overhang where presumably are Indian signs. This cave is W of mileage 625.2

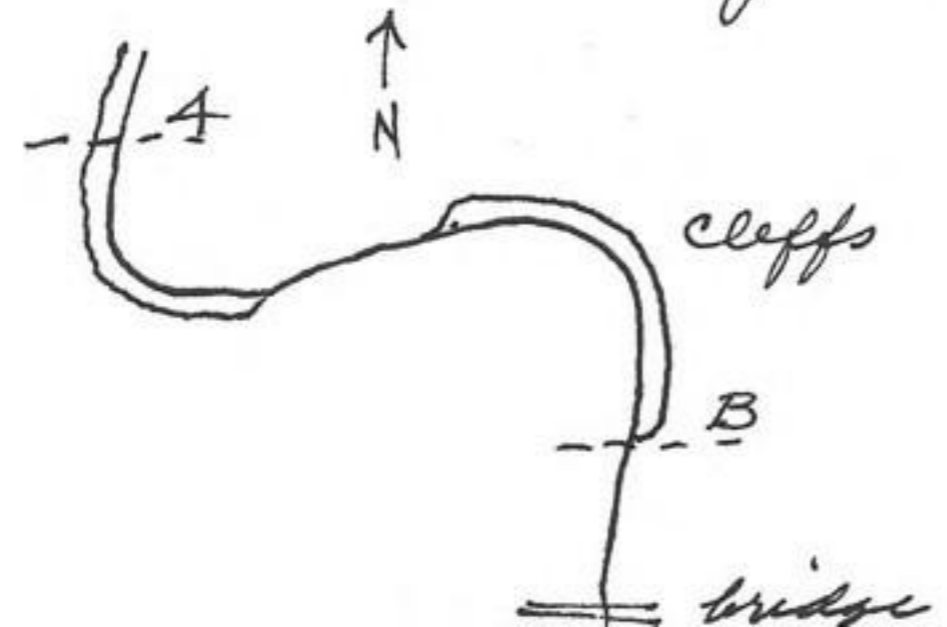
white-wing dove, Left old building at 626.4 and drove to mouth of Santa Elena Canyon. Hiked up to end of trail, on N side. This area is of large boulders, made smooth <sup>up to 50'</sup> by water action. 1 Canyon wren, yellow-breast chat, cliff swallows in area. Fault at mouth.



This canyon will never be inhabited by eagles or peregrine falcon if the white voyageurs don't respect the canyon. Three rafts came thru and I literally had to plug my ears from the yelling, screaming and vociferous conversation of the members of the party. Also 15 people were floating (swimming) <sup>in the river, equipped to</sup> the length of the trail, most of them screaming all along the way. This canyon is becoming

a recreation area of the first class and I see no way the peregrine falcon can successfully nest there. People in the canyon should not carry conversation over a normal face to face conversation, preferably less than normal intensity.

Left Santa Elena at 631.1 <sup>at Luna jacal photo</sup> 830525-4 of house where Luna lived <sup>for</sup> 25 years. Had 6 wives and 58 children. Lived to be 108 years. Garden in front of house for feeding family. 632.6 turkey vulture at Luna jacal place. As we approached main road at mileage 653.0 on right hand side the best ocotillo plants in the Park. They are high, thick and close together and should be photographed. Sage thrasher. 644.0 now at main road (170) 645.0 leaving Big Bend Natl Park. 3 turkey vultures just before park boundary. Arrived Big Bend Travel Park (outside Park) at 649.2 at 5:50 A.M. Checked canyon to W near sunset for nests of cliff swallows

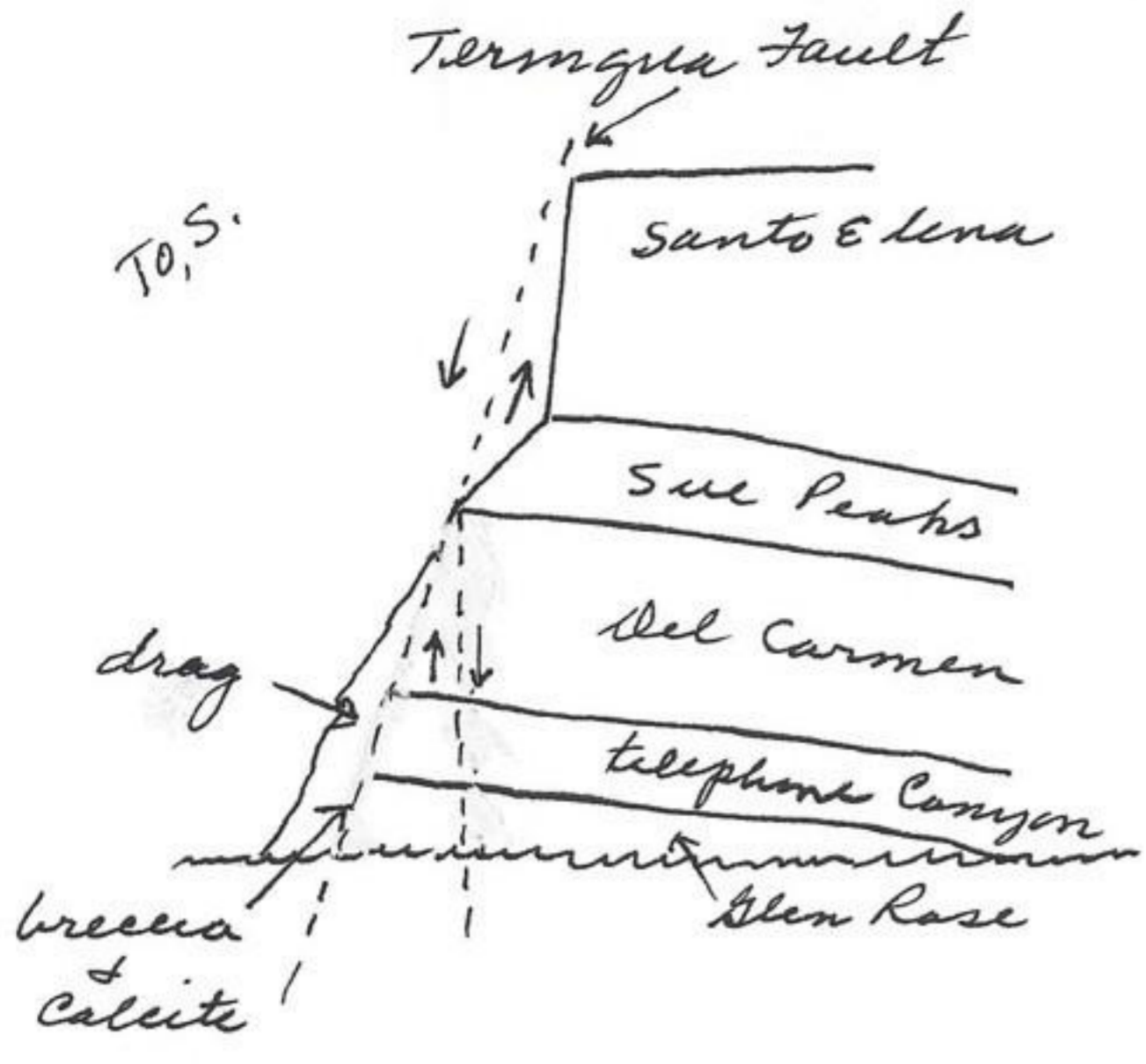


cliff area 2/10 mile long. These cliffs are a whitish yellow rock in stratified layers and have many overhangs. nest from 30' to 60' high above canyon floor.

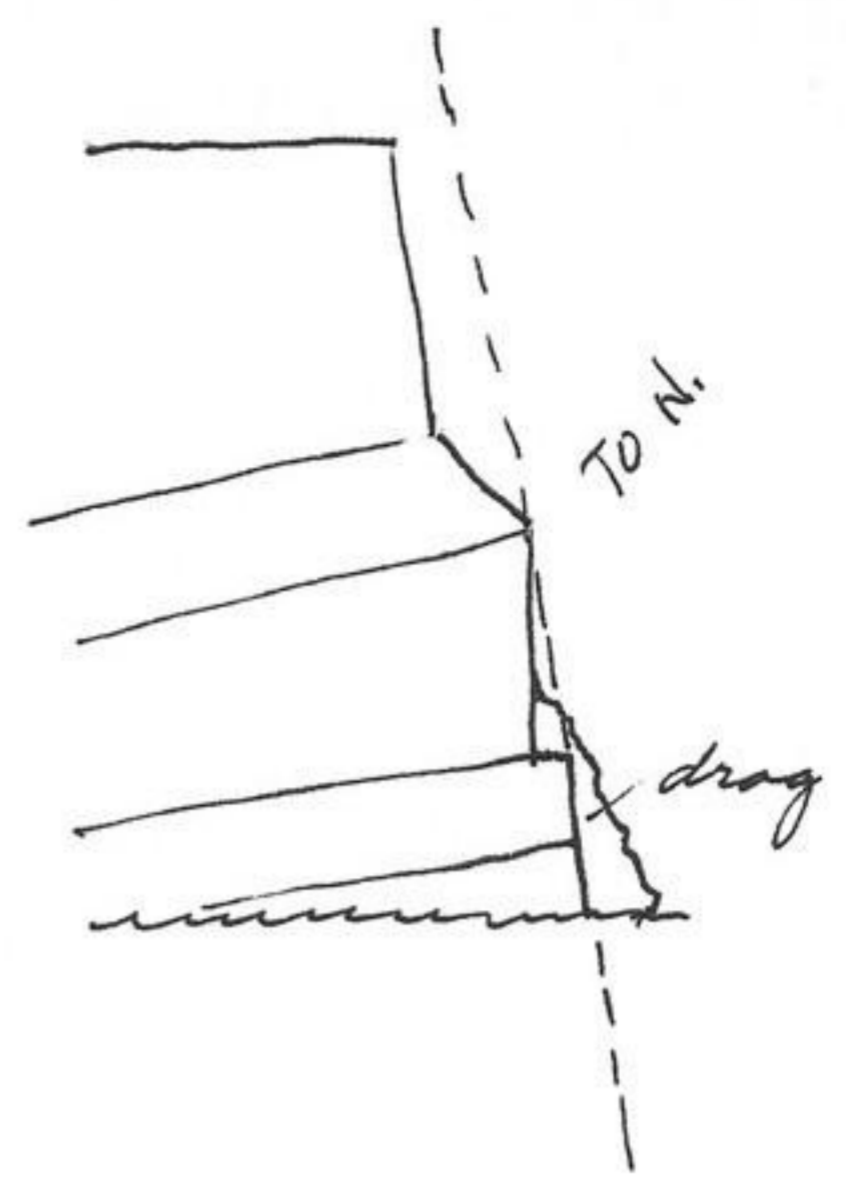
|      |
|------|
| x 60 |
| x 30 |



Insert from previous page of faulting at mouth of Santa Elena Canyon.



Cross section 200' S of mouth canyon



Cross section N wall at mouth of canyon

Continuation of cliff swallow observations: Starting up stream to down stream counted number of nest in each aggregate of nests:

|         |    |
|---------|----|
| 36      | 31 |
| 50      | 23 |
| 300 max | 29 |
| 59      | 23 |
| 50      | 79 |
| 63      | 7  |
| 51      | 22 |
| 2 min   | 20 |
| 32      | 28 |

total 911 average 50 per site, excluding 300 and 2 the average is 39.

Big Bend Travel Park, Terlingua, Brewster Co., Texas  
May 26, 1983

Birds here: cliff swallows, Cassin's flycatcher, 3 turkey vultures, rowen.  
Left 1:37 P.M. at 664.5, 662.7 red-tailed hawk 667.6  
Presideo Co. 675:1 3 t. vultures, dove. 680.9 at  
W side of 15° grade two photos of Annette and Leo Grande lower  
To W. Hillside to N in fields of lava rocks. The photos are  
830526-1 and 830526-2. This is a wonderful science route.

2 turkey vultures in canyon below. 662.5 3 turkey vultures. There are no road kills along this road, perhaps because there is so little traffic along the way at night. 689.7 Rio Grande no within 50' of road. 692.9 old wind mill, and first 2 adobe houses. These adobe house are extremely interesting and it would make a good project to study them for instances of common designs. Cultivated fields now to left, in Mexico. 694.9 yellow-billed cuckoo. 697.5 2 t. vultures. 700.0 Redford. Photo 830526-3 of sign and Annette; Turkey vulture, 704.5 t. vulture and mourning dove. 706.3 t. vulture. Now 30' away from Rio Grande. 708.4 t. vulture. 710.7 Alamedo Creek with water, turkey vulture, mourning dove. First road visible on Mexican side since we left Santa Elena Canyon. There have been some trails but rare. 711.3 first boat-tailed grackles (4), Cassin's flycatcher, m. dove, m. dove. 713.6. Fort Leaton (closed), a massive fort in adobe, m. dove. 715.4 now at Presidio at first turn w at a red motel, Presidio about 1/2 mile to W. Checked city and facilities then n on 67 to top of first benchlands and camped on E side road at end of promontory with valley & eroded hills to E and Presidio (US) and Ojinaga (Mex) to S. The Mexican city is larger and modern with considerable business buildings such as factories, etc.

2 mi. n Presidio, Presidio Co., Texas  
 May 27, 1983

Coyotes called last night at 10:00 P.M. This AM between 4-6 AM the ferruginous owl called. Annette saw (10:00 P.M. that) a young coyote came up onto benchland in front of Barth 20' or so, ignored the motor home, looked around and then returned to flood plain below the same way. Birds in area: 2 cactus wrens, 6 turkey vultures, 2 lesser night hawk (flushed from end of promontory), ash-throated flycatcher, pyrrhuloxia, 1 scaled quail, cottontail, 24 mourning doves flying by, The yucca thompsoniana (1/4 width leaves), and yucca torreyi (leaves 1" wide). Former blooming latter less so at least beyond mesquite. Neither of these two species have spines on leaves. Continued n on 67. Will keep list all raptors and other general observations. Left 719.9 at 10:05 AM. 721.4 t. vulture, 725.1 t. vulture; common raven. 726.3 t. vulture. There are more Torrey yuccas near the mts than Thompsons yucca. 731.6 t. vulture.

at higher elevations Torrey only yucca. 735.3 t. vulture.  
 Cassin's flycatcher 734.5 t. vulture. 737.5 Shafter on 67  
 741.8 t vulture, at divide and old lake bed beyond to N  
 in grass. 742.6 t. vulture, mackinbird. 746.5 2  
 road kill porcupines 1/10 mile apart (the second one).  
 Torrey cactus present and now sotol cactus increasing.  
 brown-headed hawkbird, 749.5 t. vulture, Cassin's flycatcher.  
 big snake road-kill (1 1/2" wide), 754.0 foot high  
 bunch grass appearing, t. vull 755.8 divide with  
 first Cholla common on top divide & beyond, broad  
 valley beyond, t. vulture, Torrey yucca dominant,  
 759.2 2 white-winged dove, Cassin's flycatcher. 752.4  
 turkey vulture. 762.8 2 antelope, 4 mourning doves,  
 meadowlark, barn swallow. 766.7 2 antelope, photo  
 830527-1 and 830527-2 of a ♂ antelope. 769.5  
 antelope. 770.4 junco 169 from E. 770.9  
 antelope. They are not as agile as those in Wyoming  
 and seem to favor feet & legs and definitely are not as tame,  
 Good Citellus Country but no squirrels, 774.2  
 antelope. Torrey cactus are confused for antelope  
 775.2 2 antelope. 775.4 Photo 830527-3 and 830527-4  
 of a group of 4 antelope. 776.4 5 antelop. 776.8 6 antelope  
 and photo 830527-5 and 830527-6 (with young), 778.2  
 Photo County building in Marfa. City progressive and  
 not run down like so many cities in S Texas. 780.0 leaving  
 Marfa at Cemetery at 1:32 P.M. 781.0 antelope. 785.8  
 antelope. 797.1 t. vulture feeding in road. 798.4 t. vulture,  
 798.9 crow. 800.1 antelope. Valley to SVN nearly all in grass.  
 804.2 2 antelope 806.4 raven (common). 807.2 antelope.  
 808.2 redtail. 812.3 t. vulture 814.2 middle Valentine,  
 turkey vulture, Cassin's flycatcher 815.0 t. vulture. 824.2  
 t. vulture, 2 Inca doves, 823.4 4 t. vultures. At Lolo boot-tailed  
 grackle. 842.1 increase in number of sotol plants,  
 865.7 first bridge W Van Horn on highway 10. 869.8 raven.  
 876.0 common raven, food in mouth. 896.4 2 t. vultures,  
 beyond Sierra Blanca 907.5 2 t. vulture, at turn off 85 to Esperanza.  
 916.0 McNary & deserted on 20. 920.3 Fort Hancock  
 at 4:34 Mt. Time. 924.6 road runner sitting in top of  
 12' tree (shrub). 931.0 at camp 3 mi. W of arala  
 Birds in area. Cassin's flycatcher, mourning dove, white-  
 winged dove. Photo 830527-7 of canal & cottonwood at camp  
 mistletoe in cottonwood,

3 mi. W Acala, Presidio Co., Texas  
May 28, 1983

Tamarisk in full blossom, 8 boat-tailed grackle, house finch, mourning dove, ladder-backed woodpecker (hawked three times for insects 15' away from trees), Cassin's flycatcher. Left for El Paso: 931.9 El Paso Co., mockingbird, Cassin's flycatcher, striped skunk road kill, El Paso. Had film developed and returned to 22 mi. E on 10 from 54 junction (center of city).

22 mi. E El Paso, El Paso Co., Texas  
May 29, 1983

2 mockingbird and 3 black-tailed jackrabbits here. Thompson's yucca dominant and many in blossom. Crenate bushes more treelike, some 9' high, and in yellow blossom and round hairy seeds. [Alternator belt Sleeps 15495]. [Tucson zip 85702]. Toured Juarez, Mexico for 3 1/2 hrs. There is no doubt that it is the fourth city in Mexico and is widespread. Near center of town the population crowds the streets. There are many fine buildings but nothing compared to those in U.S. at El Paso. Market place well organized and relatively more roomy than other small Mexican towns. The glass factory is about 3 miles from border and at one time had a small branch near the bridge which we patronized about 10 years ago. We purchased 3 glass items: \$8.50, \$10.50, \$14.50. We also purchased a ram at one of the better shopping areas for \$3.50 on a \$4.75 item so marked.

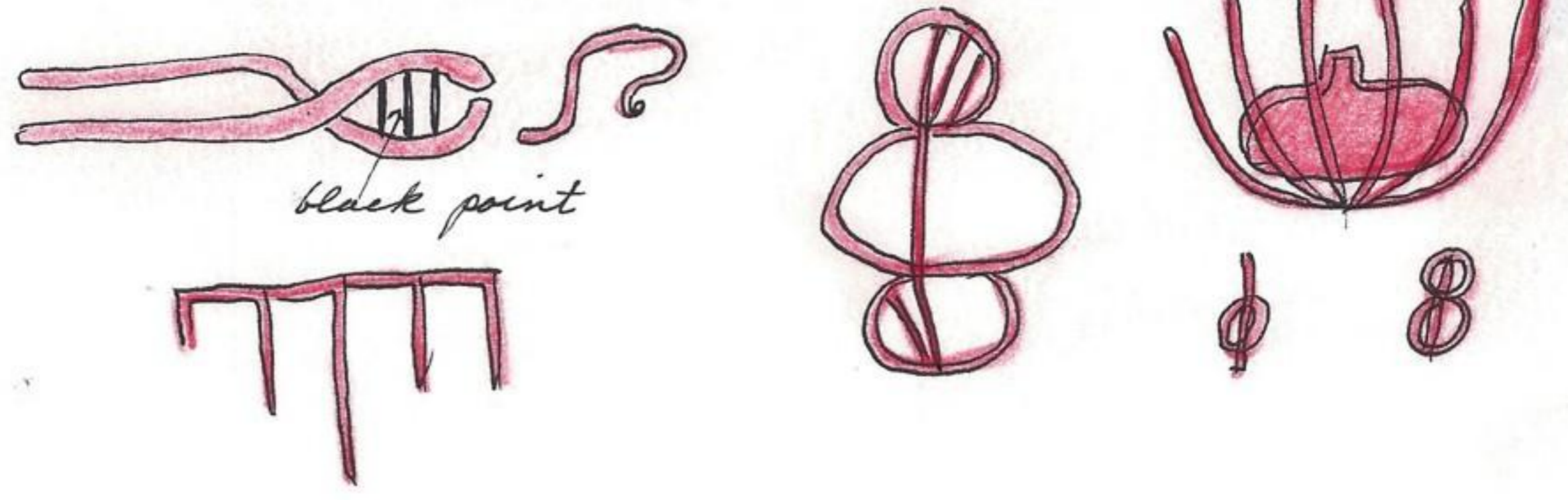
Left Juarez and El Paso and drove to Hueco Tanks State Historical Park and camped in no. 13 site. In evening at least 3 small brownish bats in air at one moment all along E side of East mountain. 8 turkey vultures hovered in one place at high point over E. mt. Also one redtail at S pass on E. mt. Scanned mt E for 1 hr & no eagles or falcons.

Hueco Tanks State Historical Park, El Paso Co., Texas  
May 31, 1983

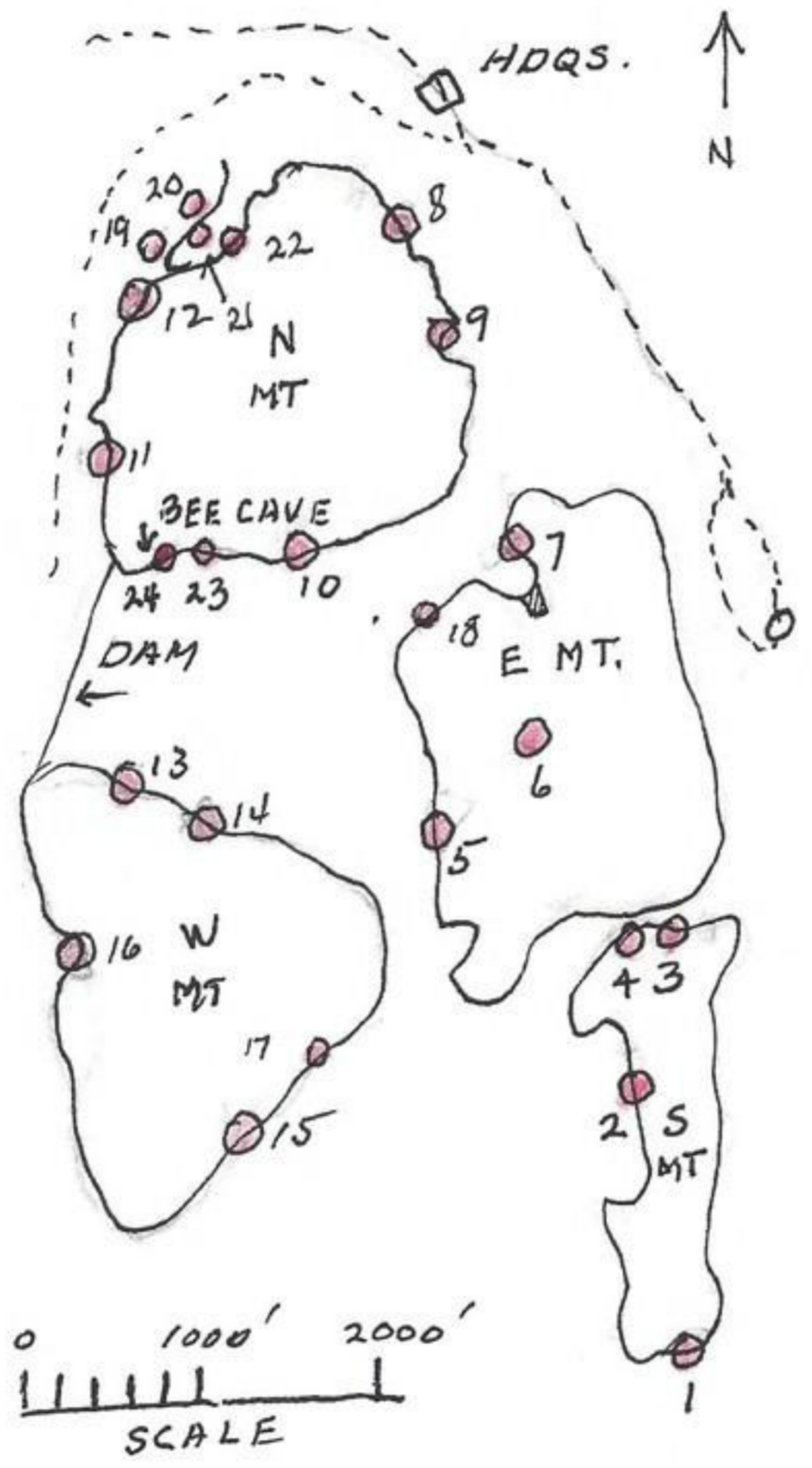
Birds in area: (AM)

|                             |                                 |                  |
|-----------------------------|---------------------------------|------------------|
| 1 white-winged dove calling | 1 white-throated swift          | 4 rock wren      |
| 3 mockingbird               | 1 barn swallow                  | 1 brown thrasher |
| 2 W. Kingbird               | 3 cliff swallow                 | 1 brown towhee   |
| 1 loggerhead shrike         | 21 turkey vultures 18 one group |                  |
| 1 ferruginous rufuleg       | 1 road runner                   |                  |

Cove 2 (S half W side S mountain)  
all above smooth rock



Photo

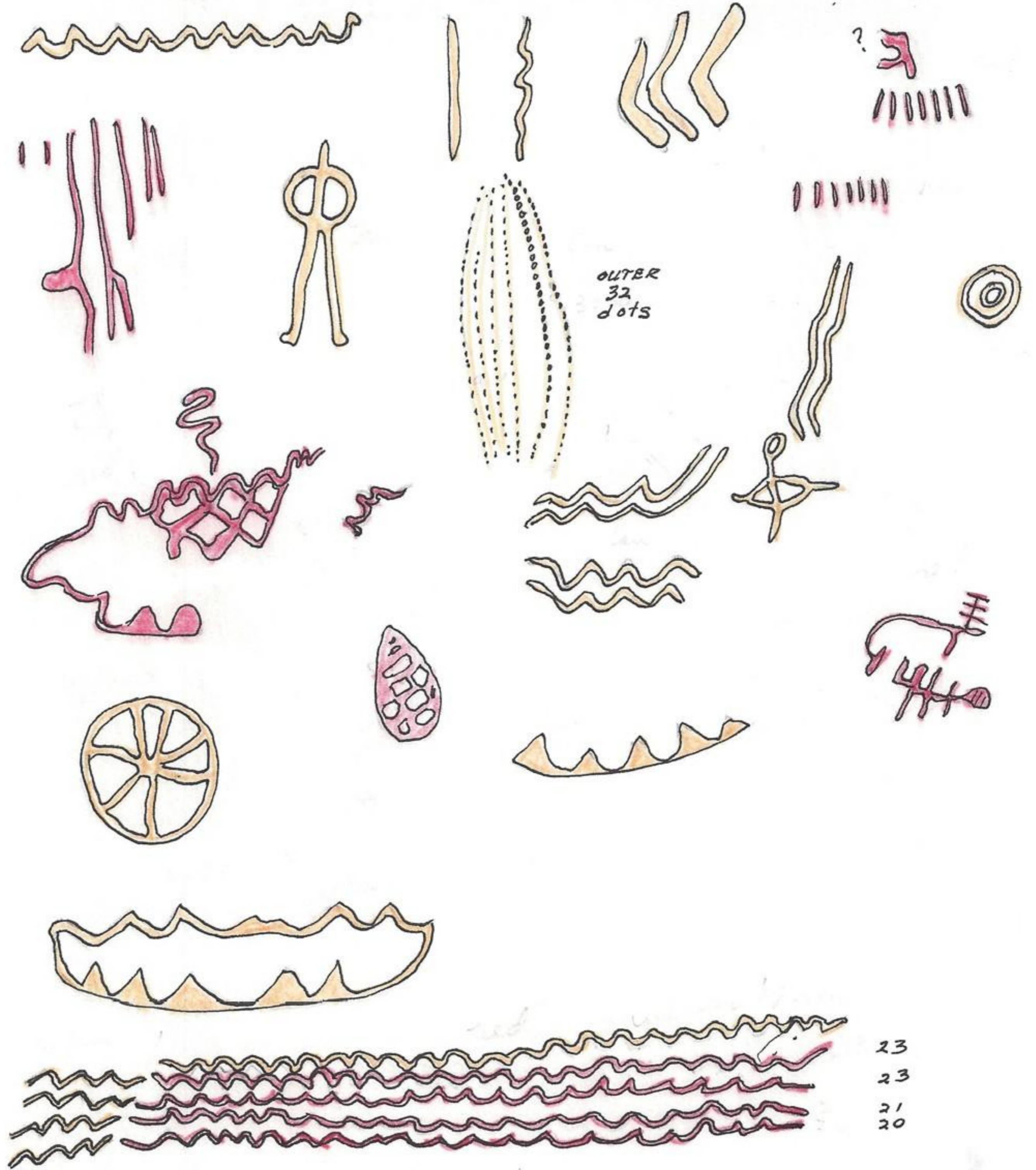


CAVES WITH PETROGLYPHS

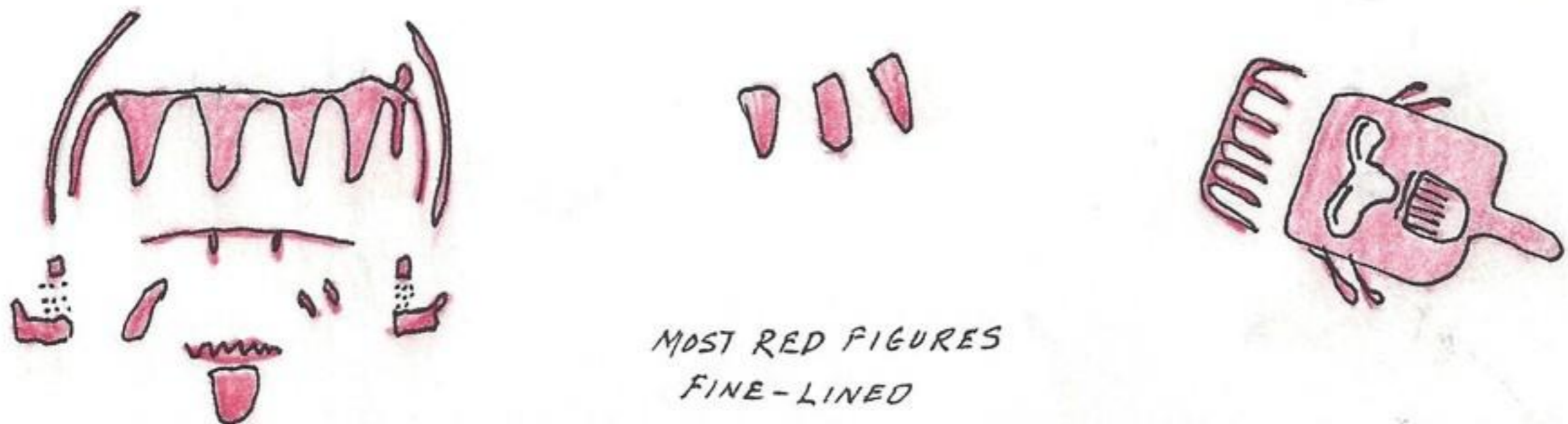
These mountains are tops of laccoliths of syenite porphyry that had intruded into Cretaceous rocks. Potassium/argon dating is 34 million ago. The older sediments have eroded away from the porphyry. These mts are 300 feet above the desert floor. The best pet holes, some 24 x 10 to smaller ones are best represented on S side of N mt at upper rim. "Hueco" is the Spanish for these hollows. Rain is captured in these holes. Observed several holes of 8-10" diameter of natural order. Ocho, juniper hackberry & other unique vegetation are on these mts.

This evening from top North mountain observed 2 groups of turkey vultures 58 and 69 at 20 minute interval fly and sail W from over top of East mt W thru pass (dam) to valley beyond. They dropped in altitude from above E mt to 200 feet above pass. Over E mt they were in an aggregate where one vulture was within 20-30' of each other. Wind from NW. Some storm and lightning.

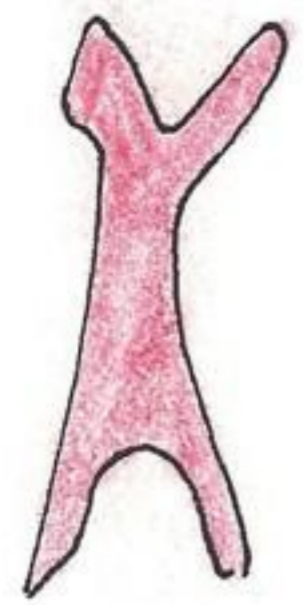
CAVE 8



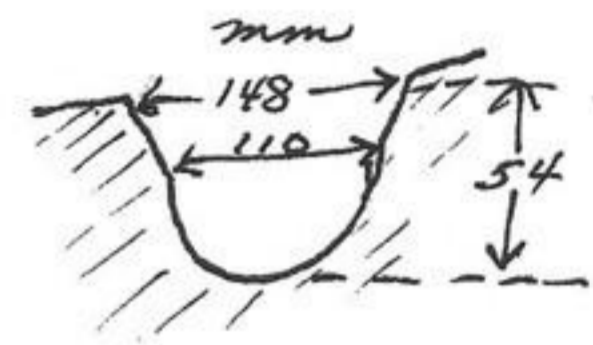
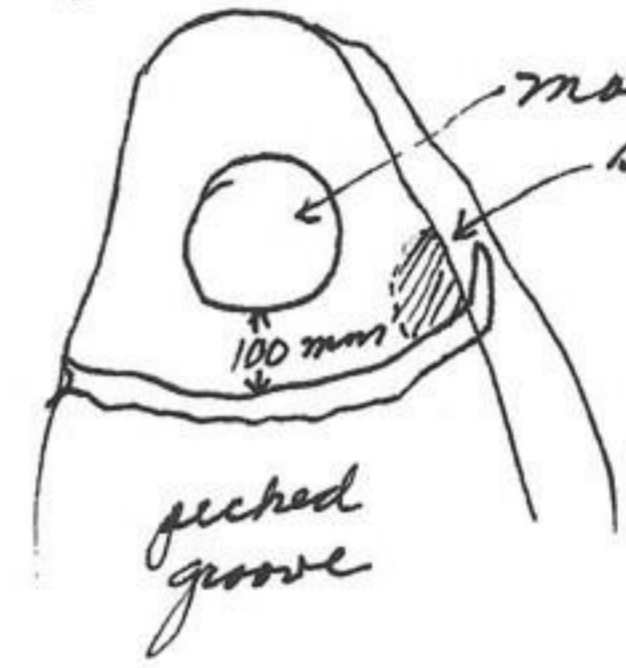
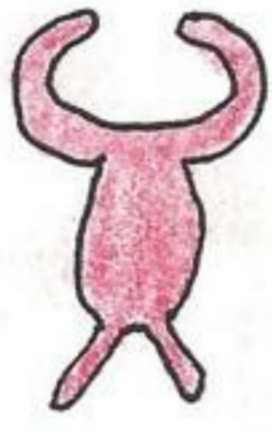
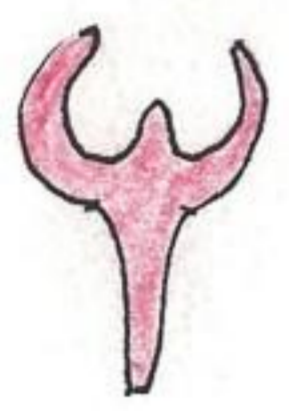
CAVE 7



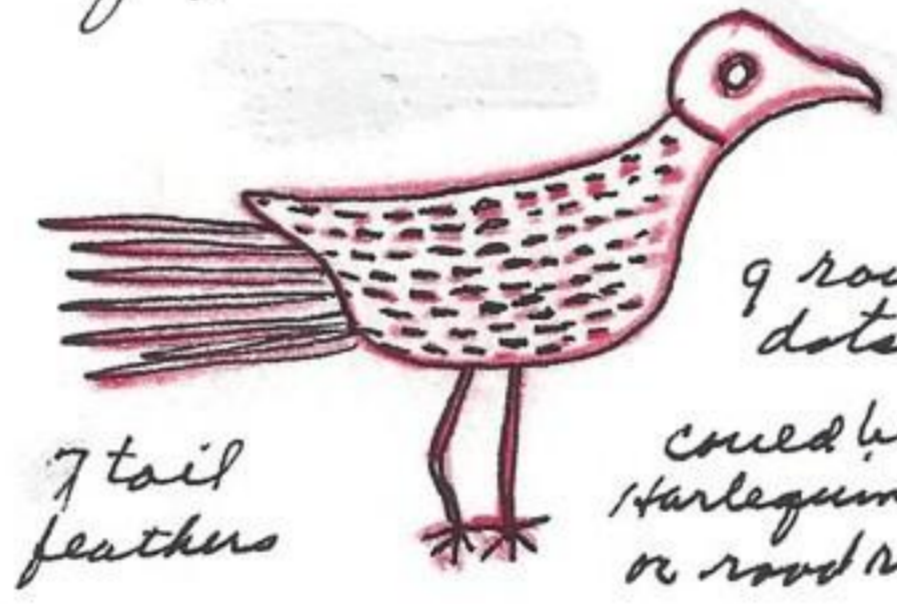
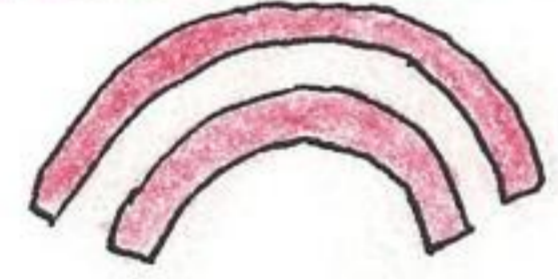
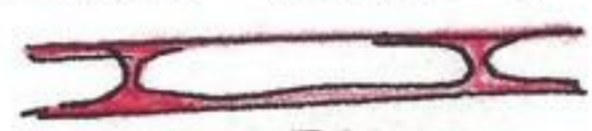
Circumnavigated 5 mt. for Indian pictographs: THIS AND NEXT PAGE)  
Cove, 5 end 5 mt. Recorded selected paintings. Figures not placed in proper position.



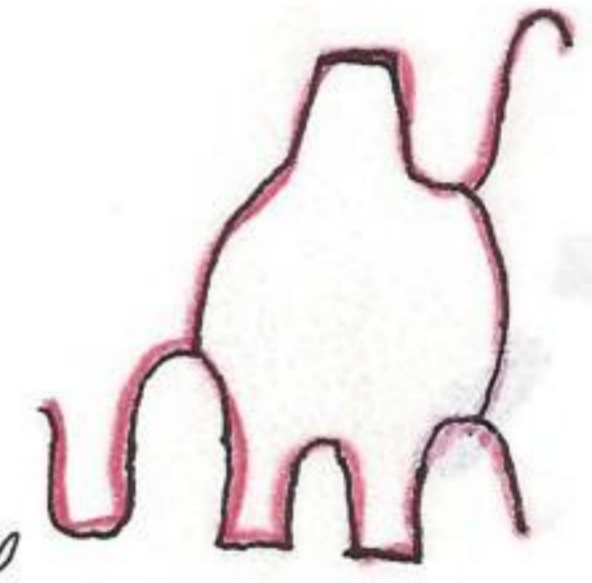
(20 overall)  
There were 5 other figures, all unintelligible because of faint preservation of figures. Cove faces S and good wind.



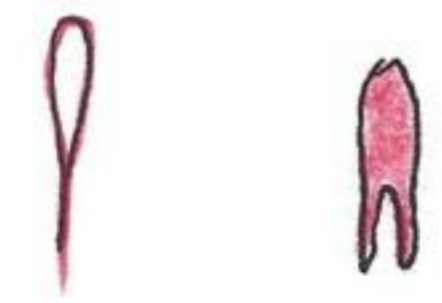
Cave Pass 3 (pictographs above metates.)



could be Harlequin quail or road runner



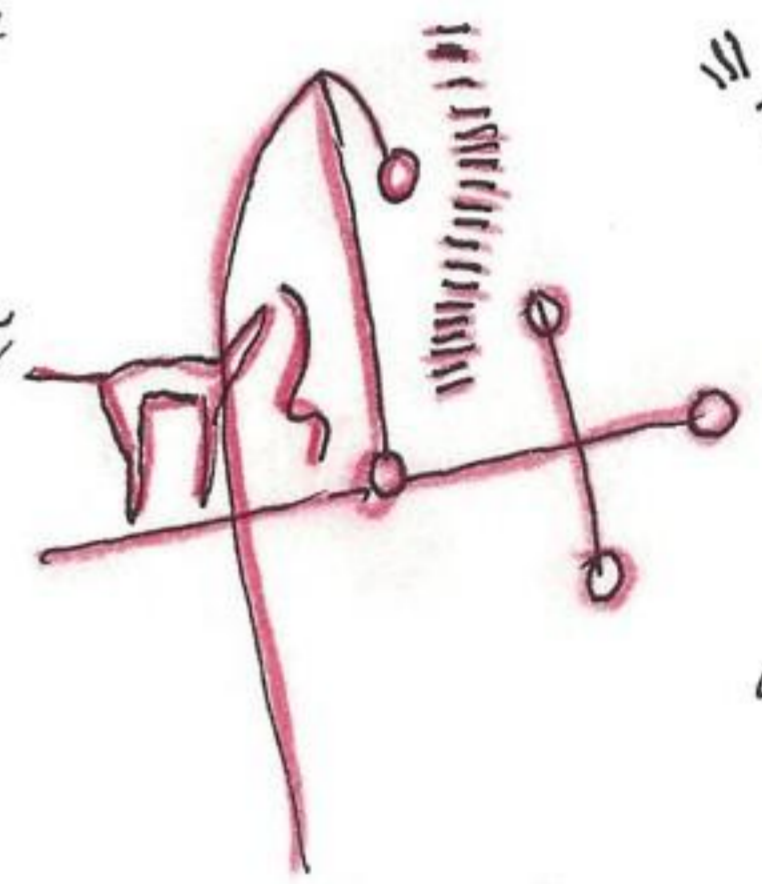
Cave Pass 4



white point

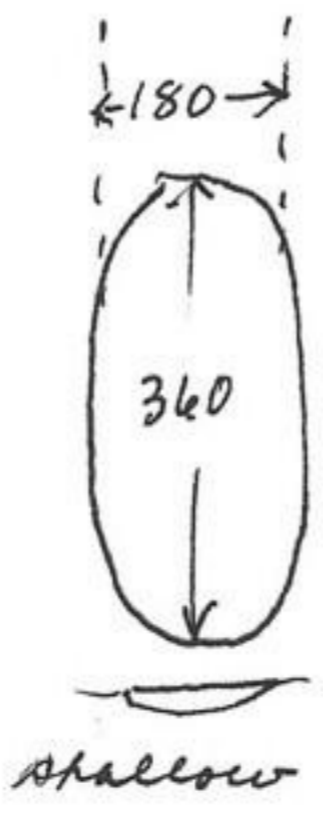
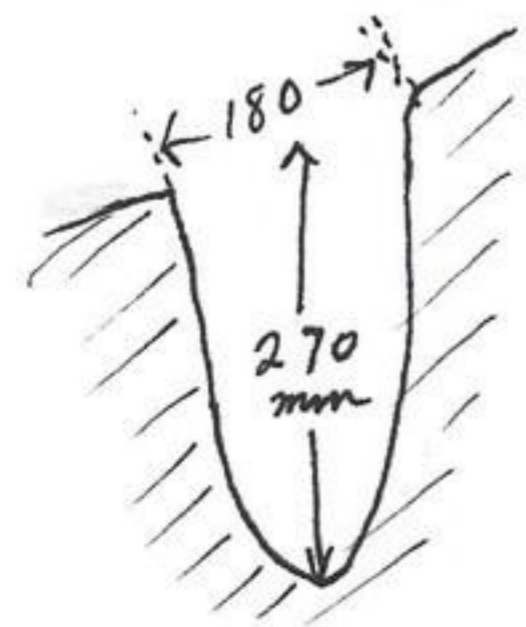


more



black point

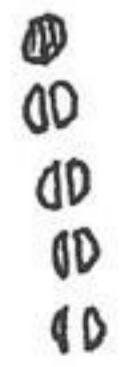
white point



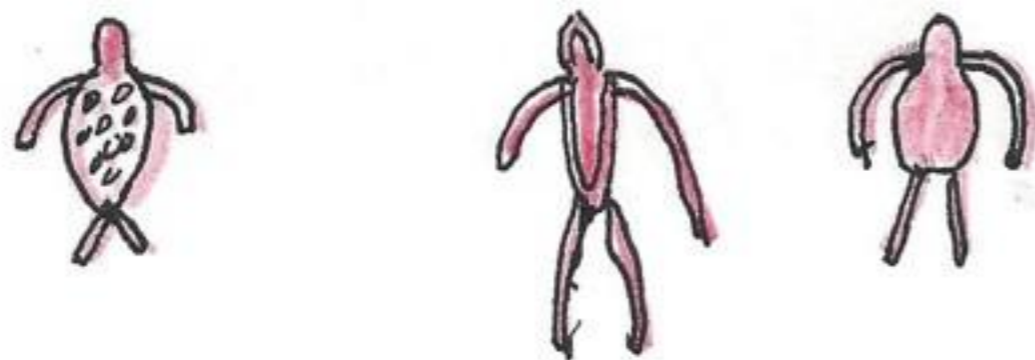
three others slightly smaller (3 one place 1 nearby)



19 lines as if brushed in one sweep



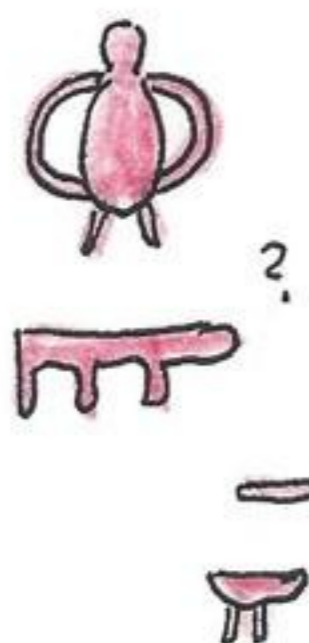
CAVE 16 (CONT.)



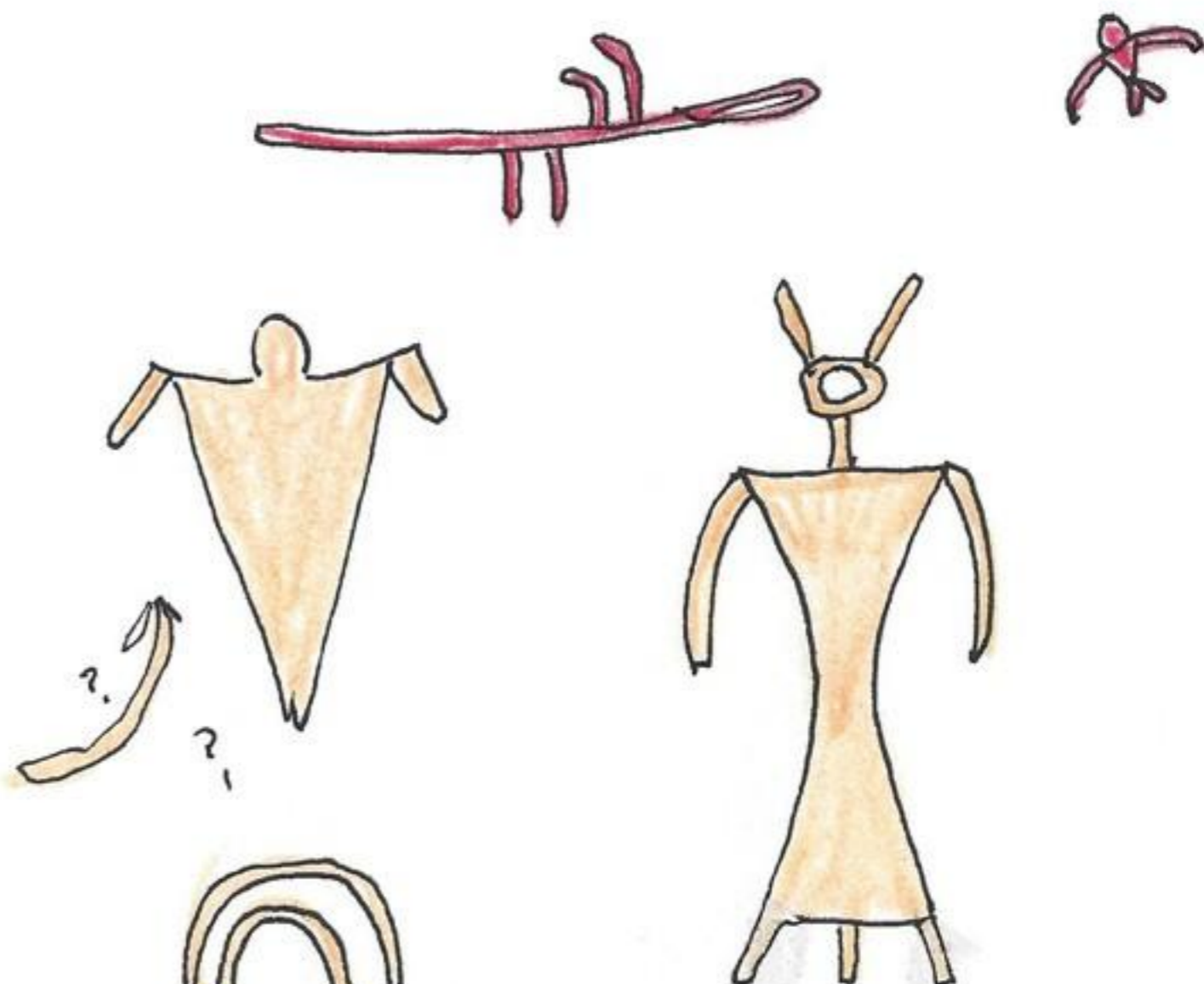
CAVE 16 (ADJOINING)



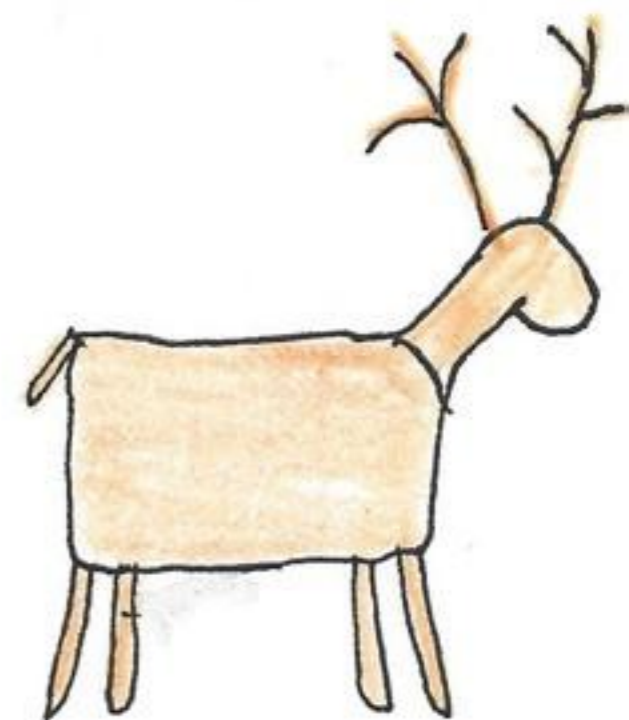
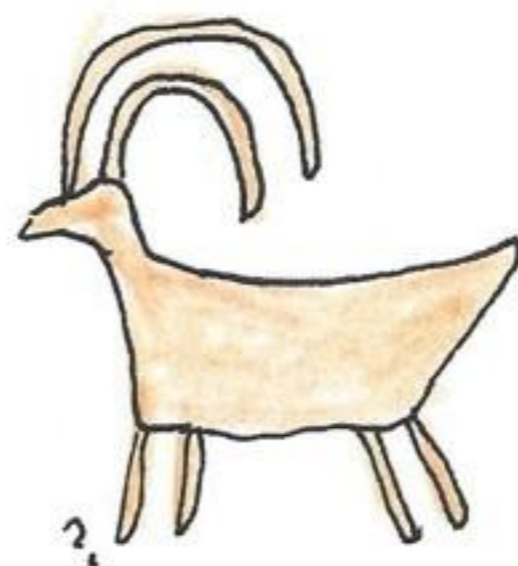
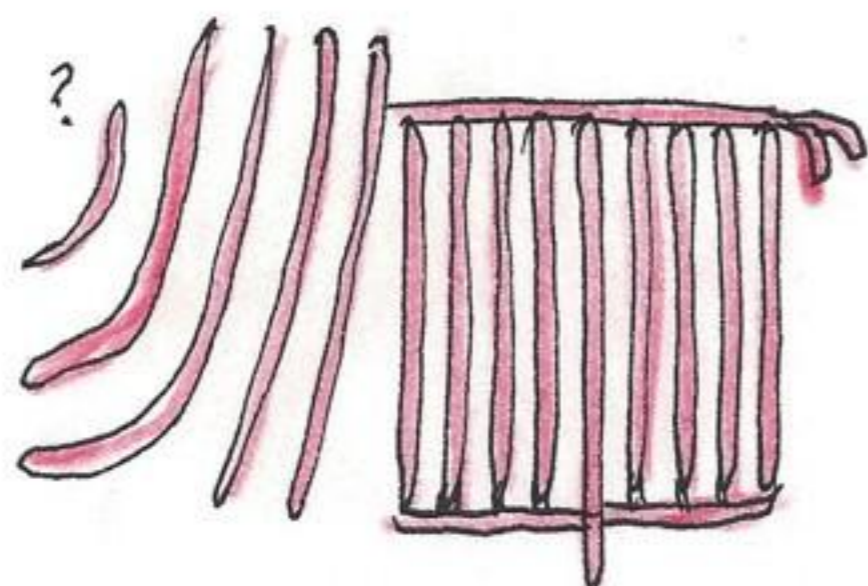
CAVE 13



CAVE 13 (E END)

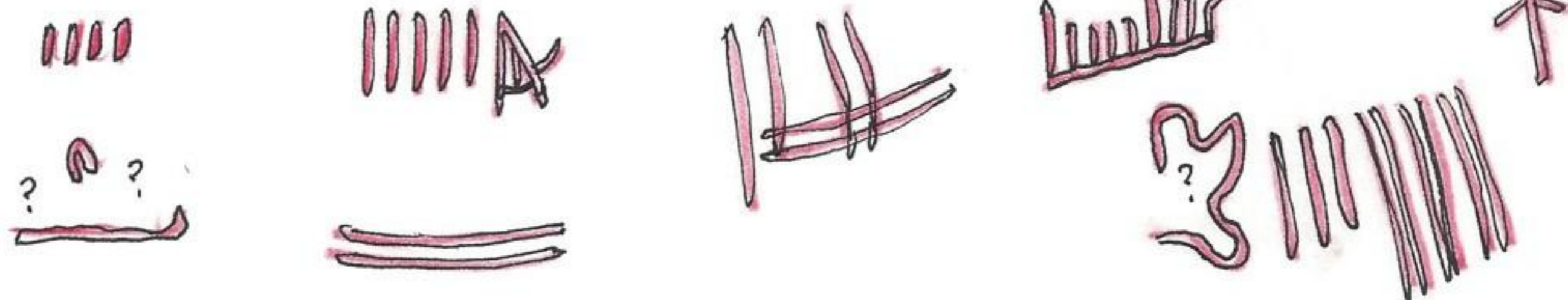


CAVE 14



2 mortars 7x11, 7 1/2 x ?  
1 shallow mortar

CAVE 18 (remnant red paint on ceiling)

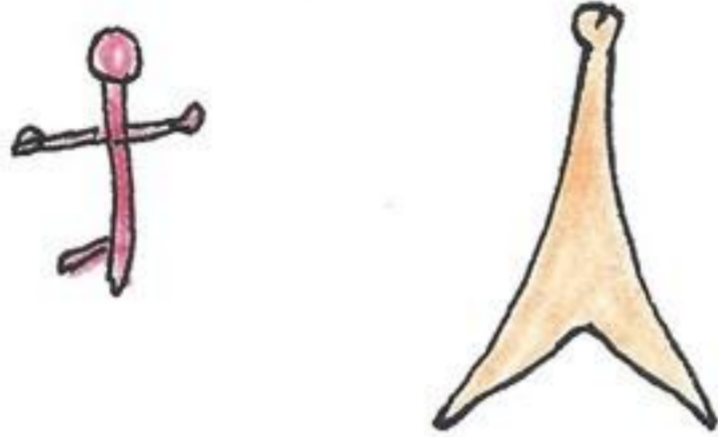




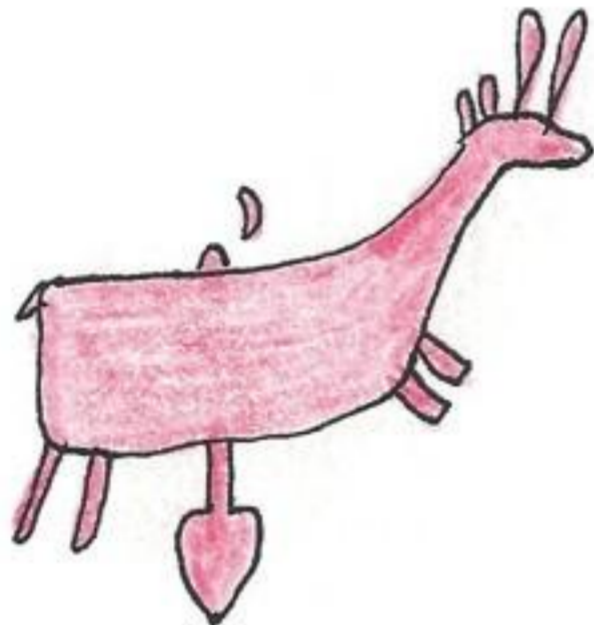
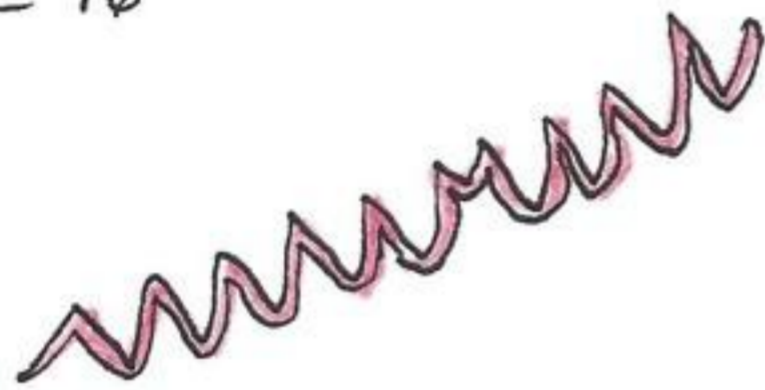
CAVE 17



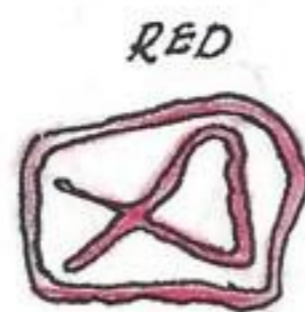
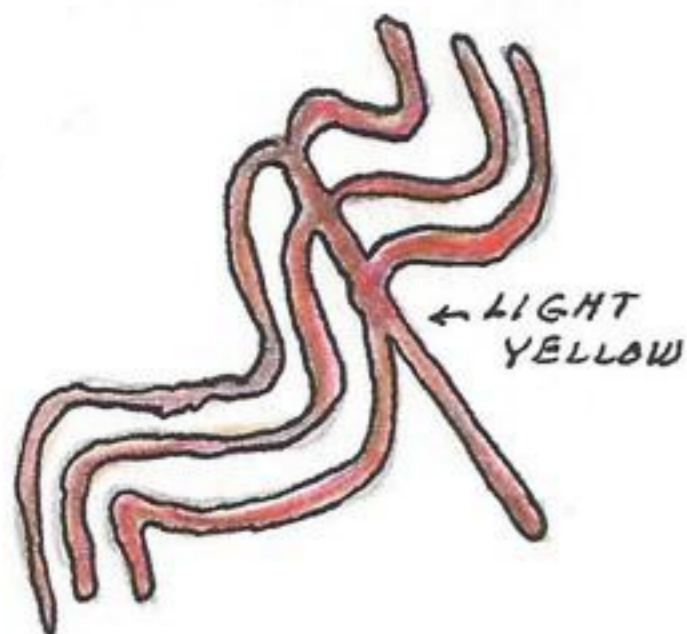
CAVE 15



CAVE 16



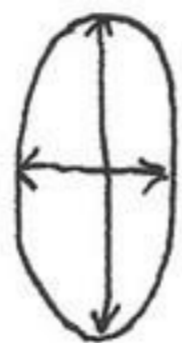
CAVE 9



RED



YELLOW



SHALLOW GRINDING SURFACE

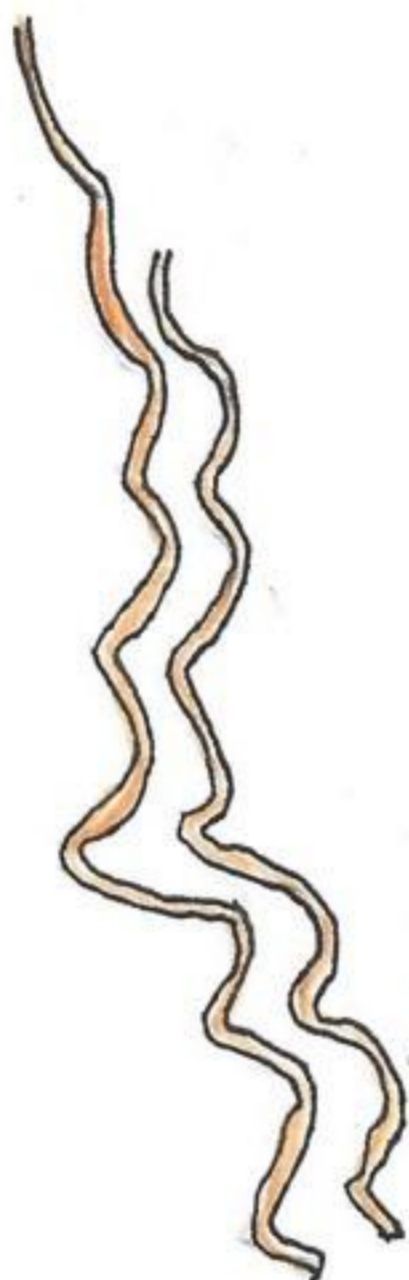
- 4x6"
- 5x8
- 6 1/2 x 10"
- 6 x 9 1/2
- 4 1/2 x 6
- 5 x 8
- 5 1/2 x 8
- 6 1/2 x 10

MORTARS

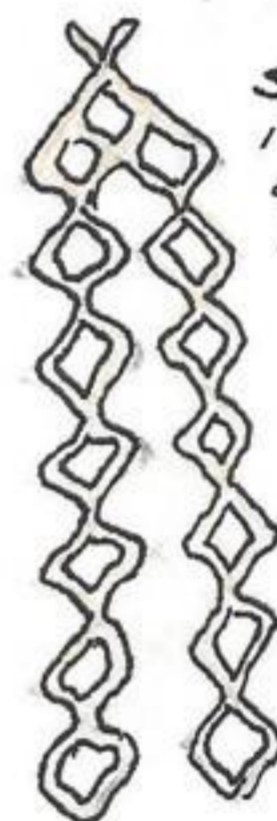


- 9" x 14"
- 8 x ?
- 9 x ?
- 8 1/2 x ?
- 9 x 14

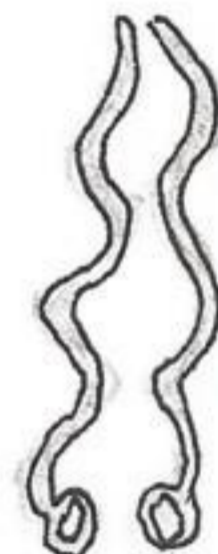
CAVE 8



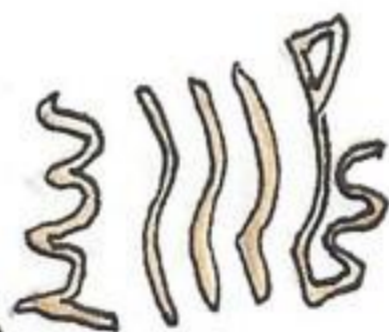
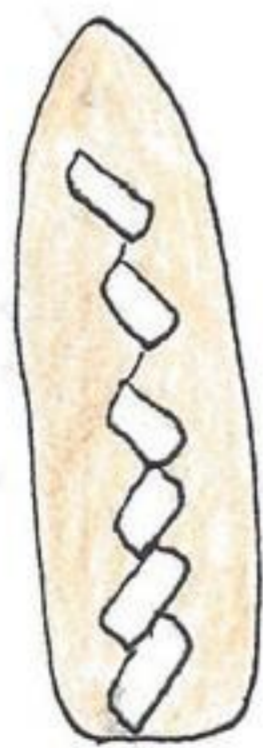
OVER RED FIGURES



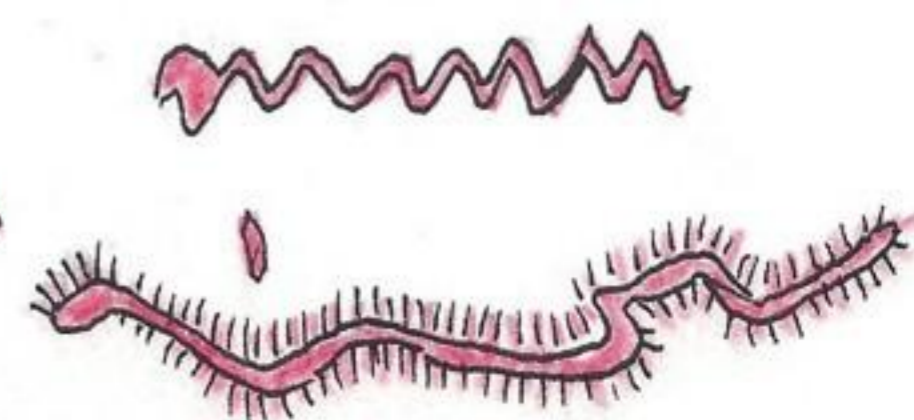
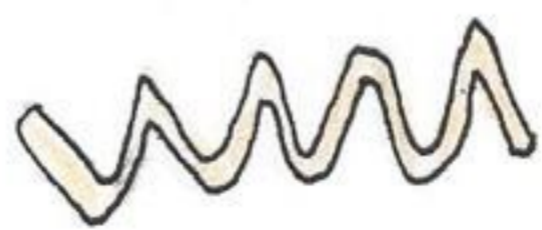
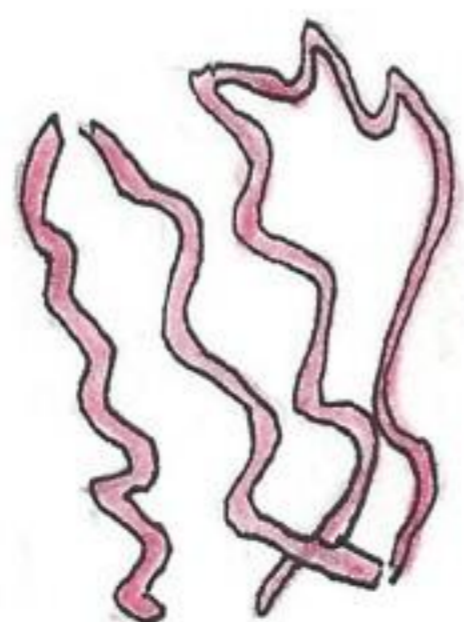
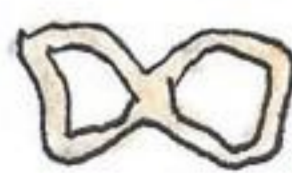
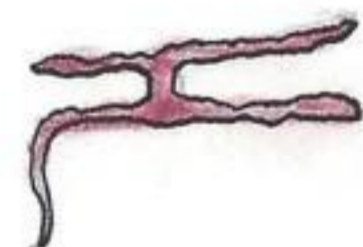
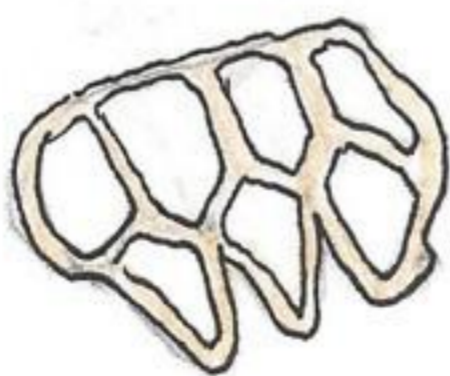
SUPER-IMPOSED ON RED FIGURES



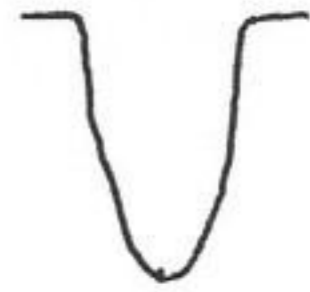
WHITISH TAN



TAN



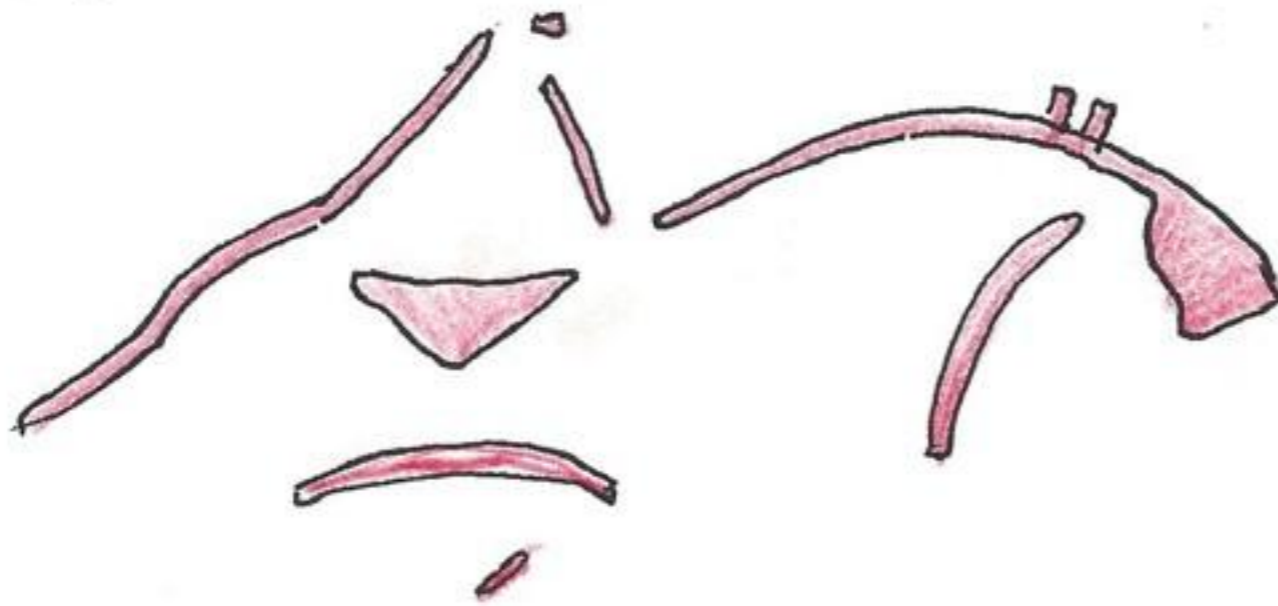
CAVE 18  
(Cont)



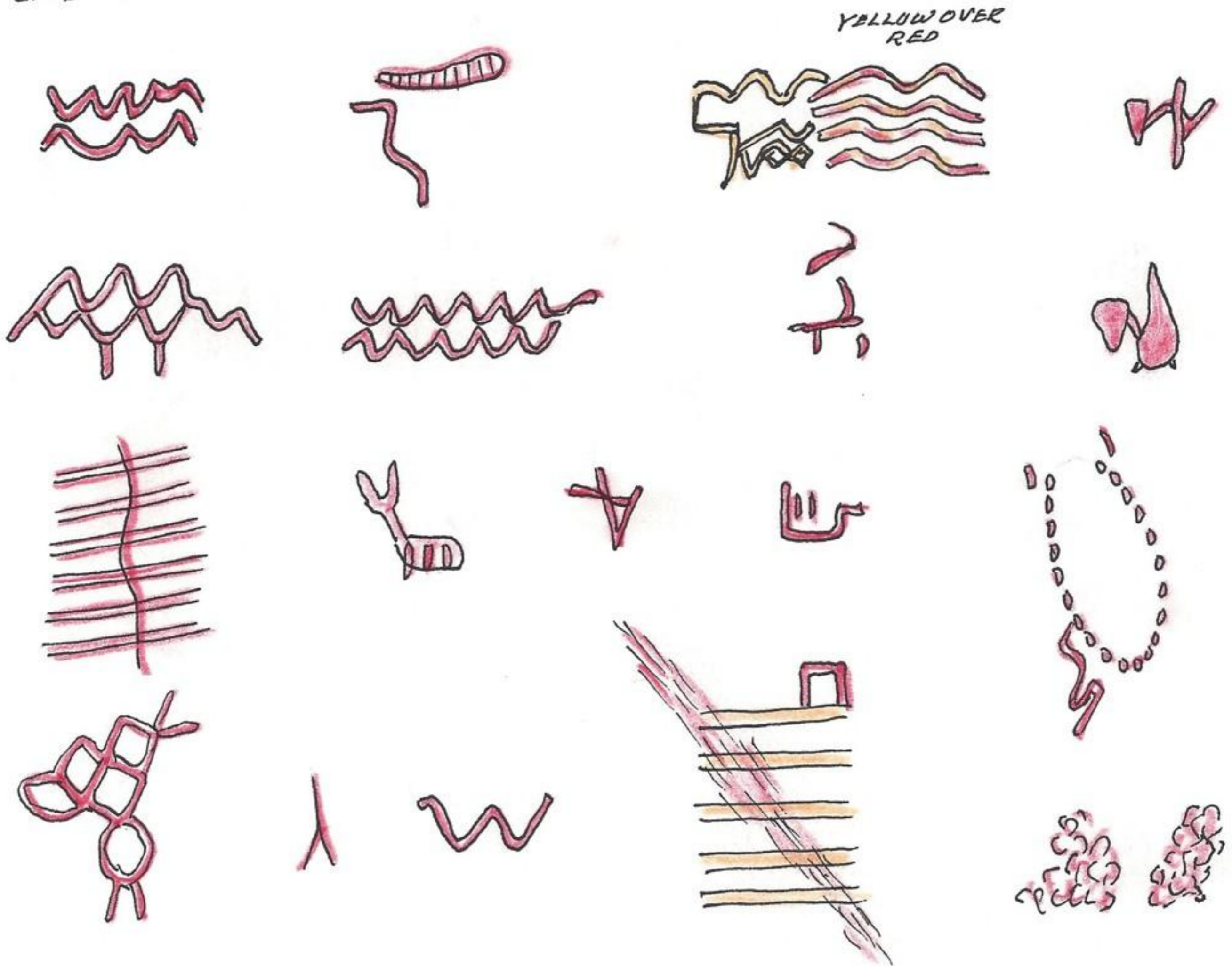
paint pits  
16 measuring an  
average of 1/2 deep  
2 inches wide

- |          |                     |
|----------|---------------------|
| 12x8     | 12x7 1/2            |
| 6x7      | 15x10               |
| 18x8     | 14x7 1/2            |
| 15x7 1/2 | } 7x5 1/2<br>joined |
| 21x12    |                     |
| 7x8 1/2  |                     |

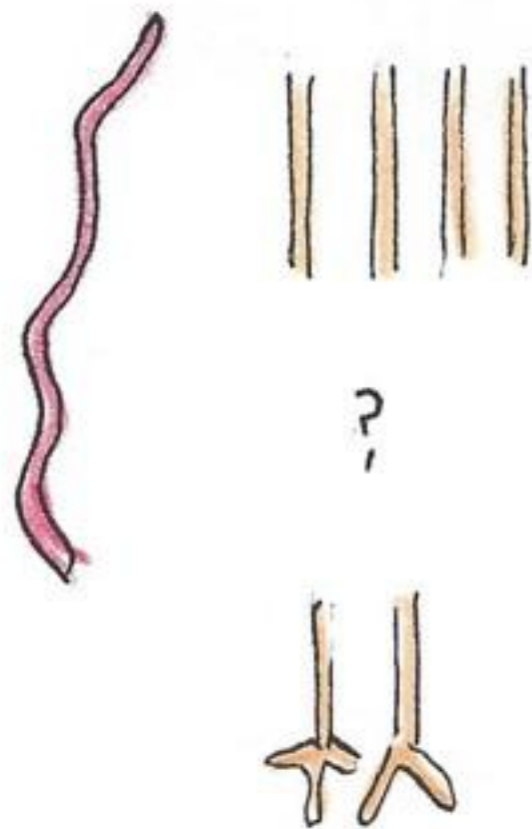
CAVE 24



CAVE 10



CAVE 10 (cont.)



4 mortars, 8 shallow polished

CAVE 23



diameters at top of five mortars in porphyry in mm.

198-212-219-230-238

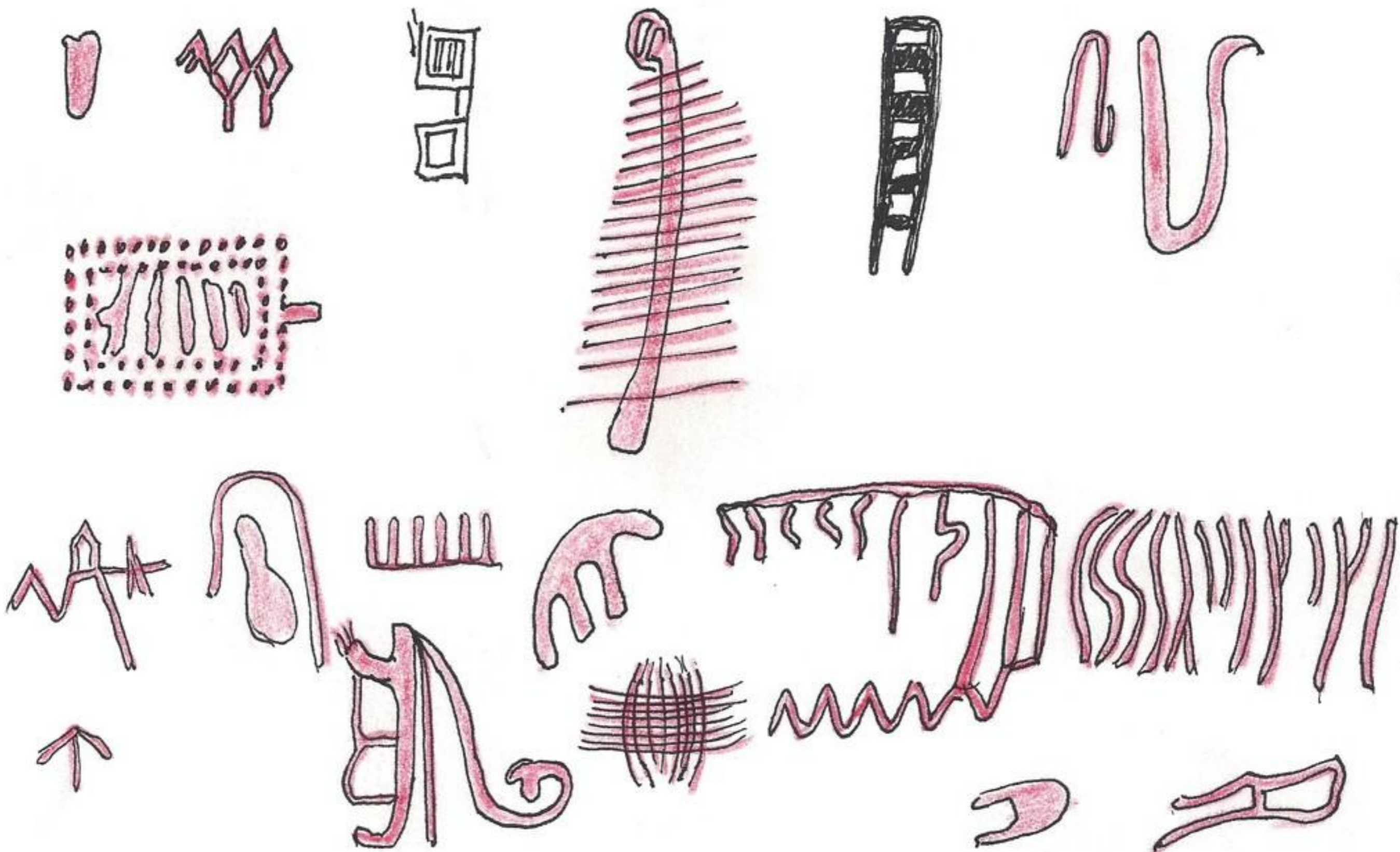
one 502 mm deep.

there were other faint reds, blacks and large white figures

CAVE 11 (double)

This cave had septa between cove and worn smooth from crossing. 3 pit mortars, some red figures. Deep fissure cove to E.

CAVE 19



CAVE 20

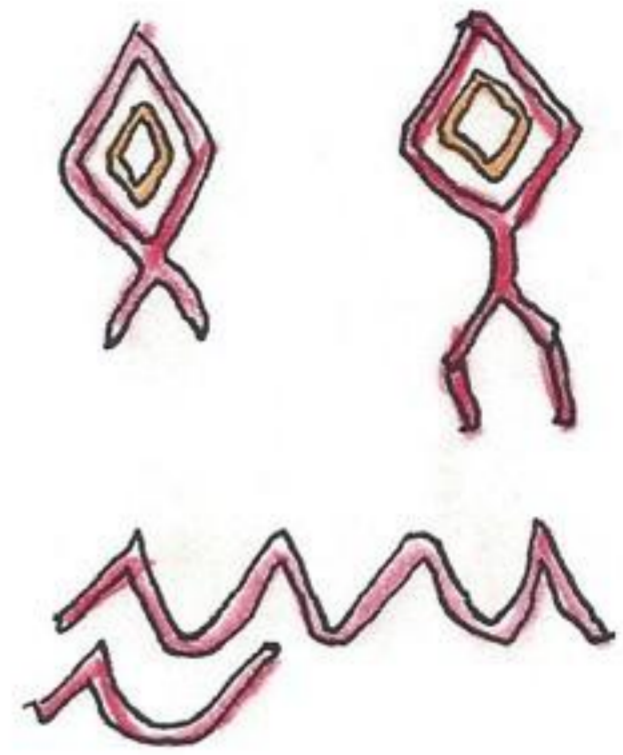
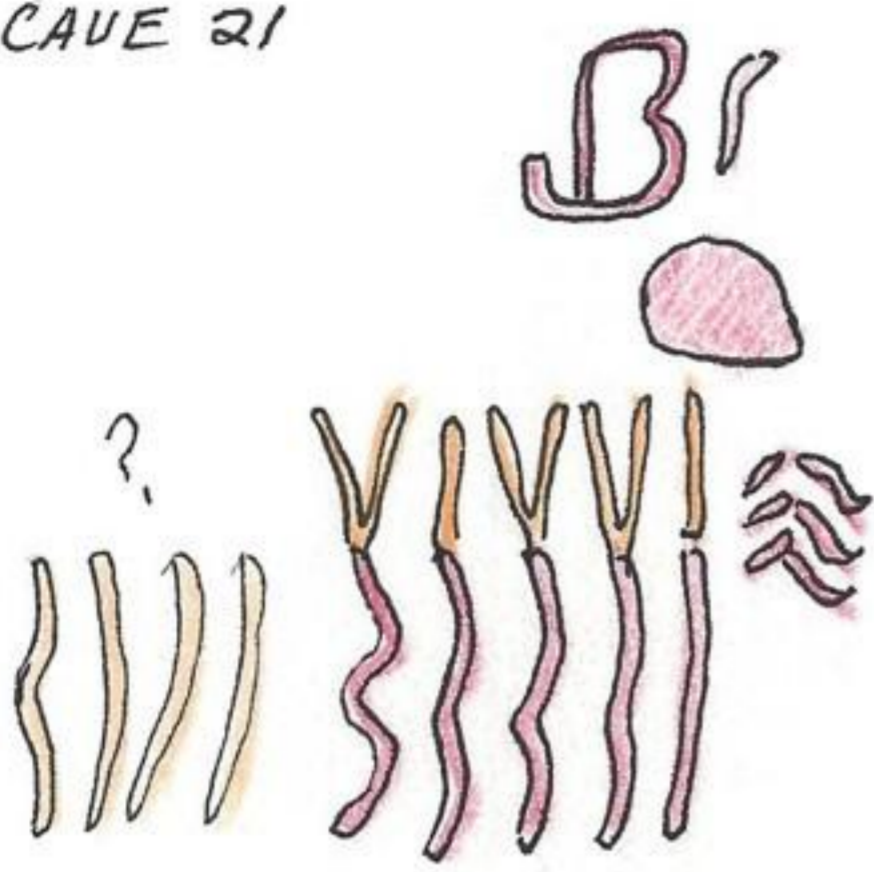
1 mortar, same red figures not recorded

CAVE 22



some other faint red.

CAVE 21





CAVE 23

OUTLINE TOP

MORTAR (actual size)

Oblong mortar on this page and  
on next page of unexplainable  
configuration.

In one cave (number of cave not associated  
in notes but as I remember near cave 23 had:

5 smooth rock surfaces, 3 of which had  
been converted into depressed shallow mortars  
old surface



R. superimposed depressed mortar

6 mortars

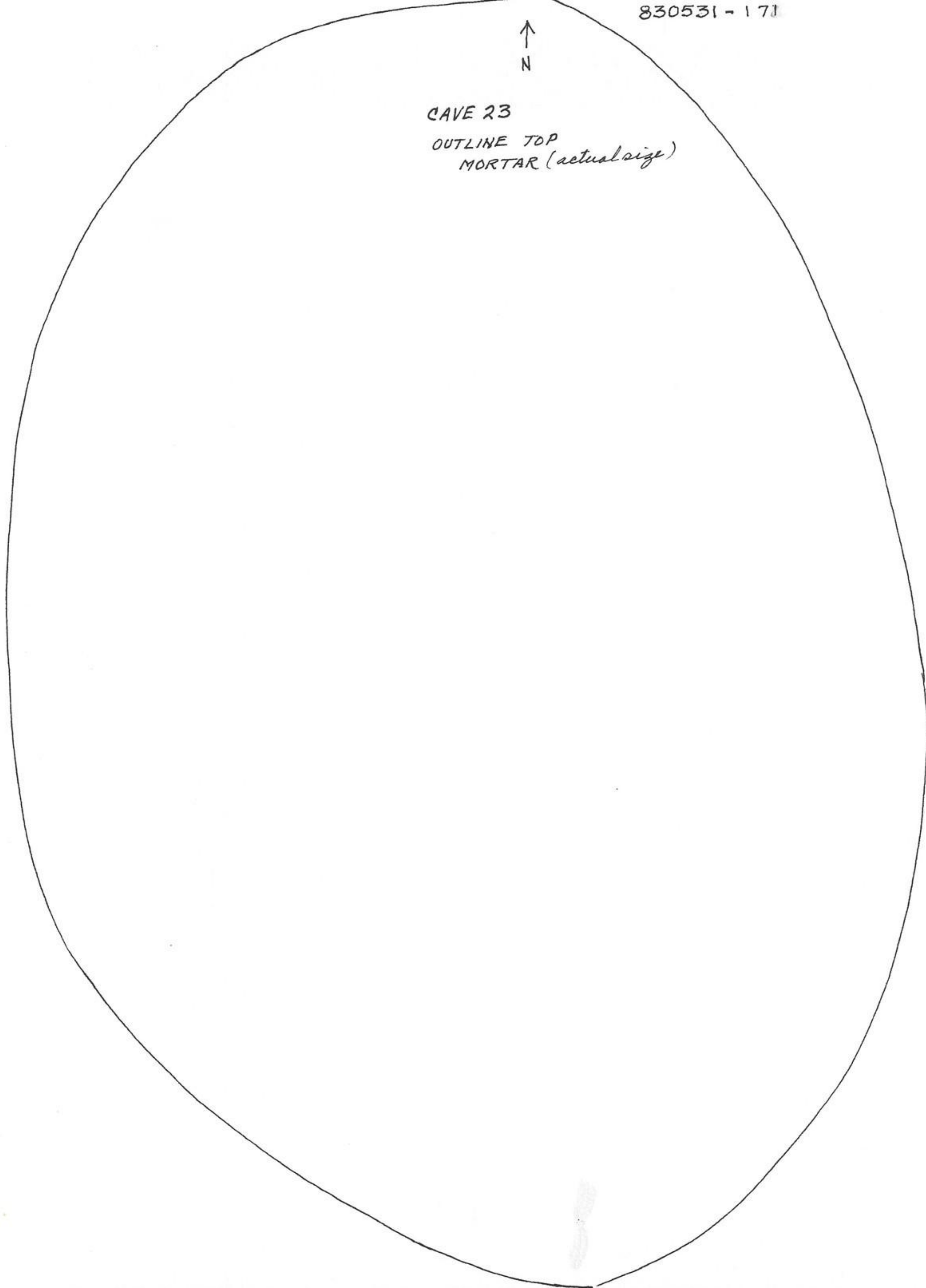
19 shallow mortars on rock

5 on floor of cave




CAVE 23

OUTLINE TOP  
MORTAR (actual size)

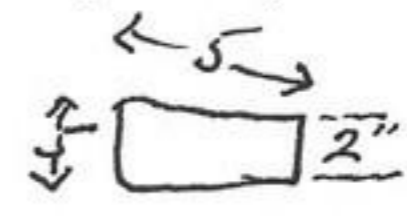


Took the following photos:

- 830531-1 of modern name on wall superimposed on pictographs. Cave 9
- 830531-2 of deer in cave 9
- 830531-3 Yucca elata outside (E) cave 9
- 830531-4 cross hatching figure  in cave 8
- 830531-5 wavy line of red and yellow added, cave 8
- 830531-6 spotted bird in cave 3
- 830531-7 elephant in cave 3
- 830531-8 deer in cave 4
- 830531-9 nut cracker device in cave 2 superimposed on a yellow

checker pattern of yellow.

Examined a piece of mortar (porphyry) near cave 16



in inches

2 antelope chipmunks at cave 16.

830531-10 from cave 16 of large <sup>(yellow)</sup> foot, parallel rows of dots, 2 basket maker type figure, and a globular figure with yellow stripe. Will draw from photo and add to others recorded. He is one of the best caves for physical appearance.

At cave 7 measured hickberry at 85" circumference, another at 73". At this place watch a grey fox run along ledges above ground across Indian shelters. It ran 150' on ledges rather than drop to valley floor.

The most ideal place for Indian site with pictographs, rock pit mortars, polishing concavities and small paint holes is:



overhang waterproof ledge

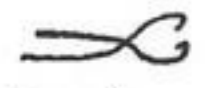
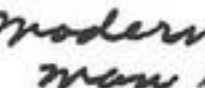
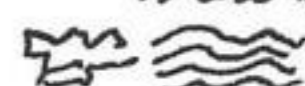
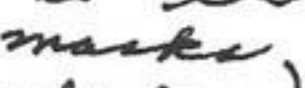
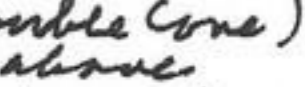
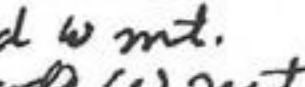
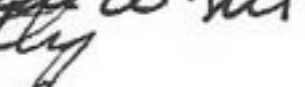
wall for painting

place to develop mortars

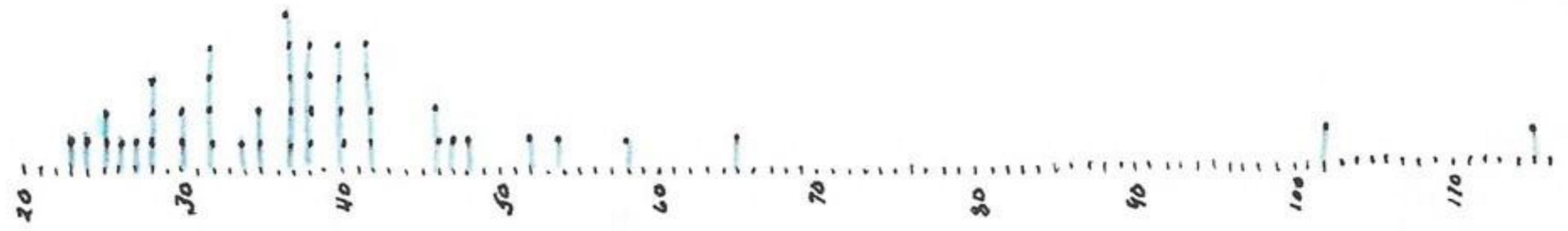
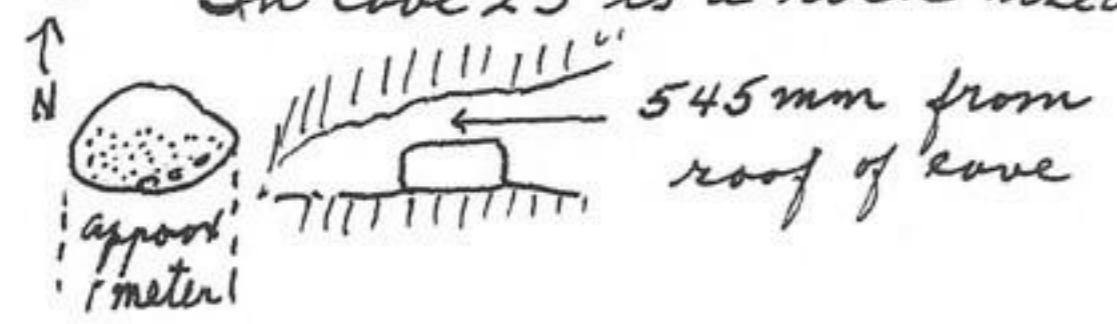
elevated above valley floor.

sufficient area in cave for activity and directly exposed to wind and skylight.

fallen boulders are less desirable.

- Photo 830531-11 Cave 2 
- 830531-12 Cave 9 modern man initials 
- 830531-13 cave 10 
- 830531-14 cave 16 2 masks 
- 830531-15 Cave 23 (double cave) at base and rock cliffs above 
- 830531-16 cliffs SW end w mt. 
- 830531-17 above w mt w mt. 

In Cave 23 is a rock used for small quantities of material grinding, 46 in number.



MEASUREMENT OF 46 mini MORTARS IN DIAMETER (mm)



Leaves of Mucro Tanks:



830531-18



830531-19



830531-20



830531-21



830531-22



830531-23



830531-24



830531-25



830531-26



830531-27



830531-28

- 830531-18
- 830531-19
- 830531-20
- 830531-21
- 830531-22
- 830531-23
- 830531-24
- 830531-25
- 830531-26
- 830531-27
- 830531-28

Have observed 2 *Citellus variegatus* at park. Also 6 sets of tracks of the grey fox. These foxes are associated with base of the mt system and use racks <sup>and ledges</sup> for passage ways. There are more *Sylvilagus* than *Lepus* and both inhabit similar area: Mr. Michael J. Bilbo, 5114 Wally Dr. - El Paso, Texas 79924 (915) 755 1668 archaeologist hired by State Park for inventory of pictographs!

~~Yucca~~ <sup>Tanque</sup> State Historical Park, El Paso Co., Texas

June 2, 1983

Left for Rock Hound State Park. Enroute observed 5 common ravens, 2 mockingbirds, and no turkey vultures. Yucca more localized enroute and country greener than Texas area. There were very few birds enroute.

Rock Hound State Park, Luna Co., New Mexico.

June 3, 1983

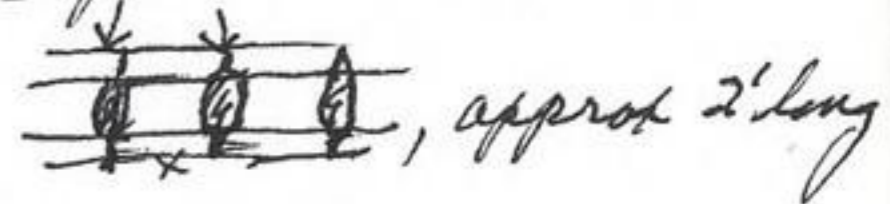
Birds and mammals in area:  
jackrabbit, black-tailed 3  
*Sylvilagus* 2

Photo 830603-1 of inflorescence of *Agave parryi*. 830603-2 of basal leaves of same plant.  
830603-2a Cholla.

*Citellus variegatus* 1

marks on back spaced 1 1/2 inches

*Crotalus lepidus lepidus* (Rock Rattlesnake)



Did not hear coyotes last night.

Left camp for Bowie area. At 2660 dense stands of yucca slata appeared and then drastic reduction immediately W of continental divide.

Between Lordsburg and Gary turnoff creosote uniformly distributed and approx 1 1/2' high, with grass growing between bushes instead of bare soil. Yucca rare in playa valley. Arizona 338. at 5:30 P.M. At Bowie a turkey vulture.

Birds between Rock Hound State Park and Bowie were 3 common raven, 1 turkey vulture and rarely other kinds of birds. Arrived 8 mi. S Bowie in Dos Cabezas mts. Took 2 photos 830603-3 of granite ridge and granite residual boulders from camp. At the lower W end of <sup>this</sup> ridge where it meets creek observed an Indian mortar developed into the granite ridge some 4 feet above the creek channel. The mts are formed from granite laccolith with subsequent erosion to granite. Many large boulders and many faces where exfoliation has reduced granites to smooth slopes.



smooth exfoliated slabs.

Birds in area this evening 3 white-winged doves, 13 mourning doves, 2 Gambel quail, 1 mockingbird, 3 house finches.

8 mi. S Bowie, Dos Cabezas mts, Cochise Co., Arizona

June 4, 1983

Poor will, flammulated screech owl called at 9:00 P.M and 8:30 P.M respectively, no coyotes called.

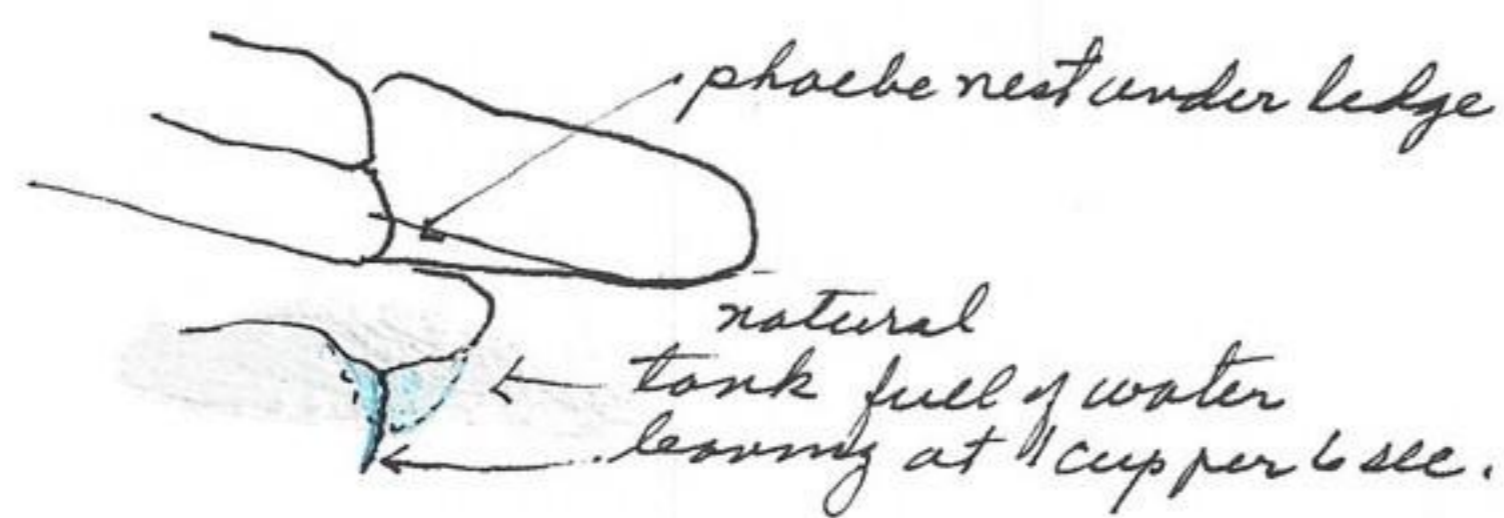
This am. at 8:30 A.M. hiked to tanks on mt above large boulders in drainage at base of mt. Birds, mammals and herps observed  
3 pairs Gambel Quail. They called all day.

12 house finches generally distributed, one adult fed a full grown young. One ♂ fed repeatedly on on flower of thistle

8 white-wing doves. Called in two call patterns. (yellow eyes)

52 mourning doves, called continuously, mainly in pairs and most of the time one of the two was chasing the other. 21 nests with eggs were observed. Eyes black.

- 3 cardinals,
- 3 ash-throated flycatchers.
- 1 red-tail hawk.
- 1 Turkey vulture.
- 3 turned-billed thrashers yellow eye.
- 3 lesser goldfinch
- 13 cactus wrens, always scolding
- 3 black phoebe



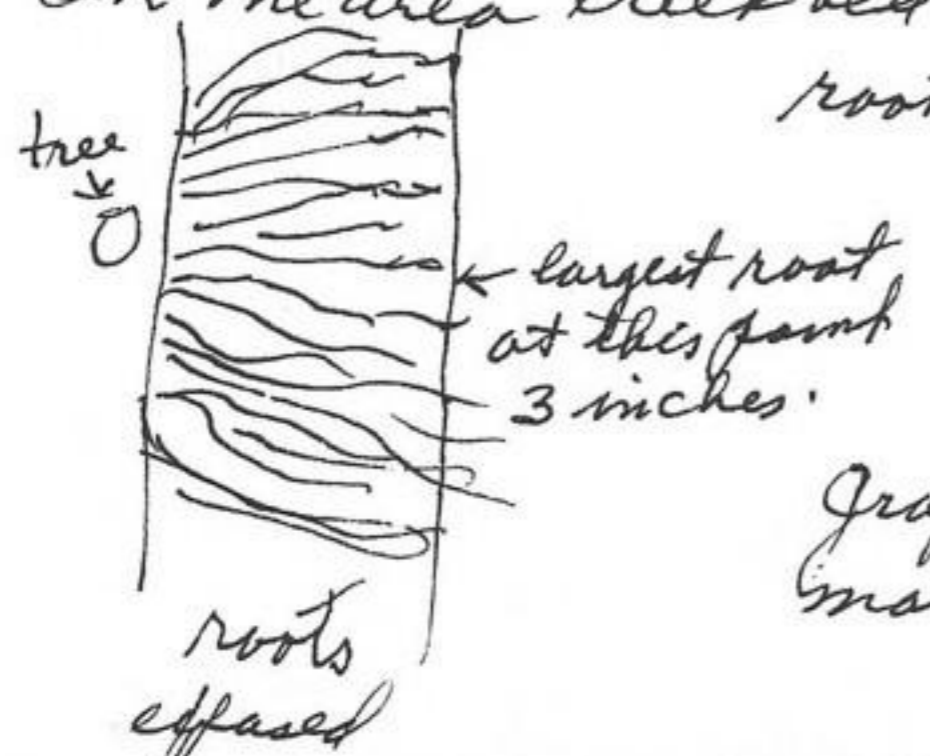
Phoebe hawked for insects in tank area almost exclusively bordered by rock (granite)

- 1 turkey vulture
- 2 black-chinned hummingbird
- 1 calliope hummingbird

Took 2 photos of black-tailed rattlesnake (*Crotalus molossus molossus*) nos. 830604-1 and ~~830604-2~~

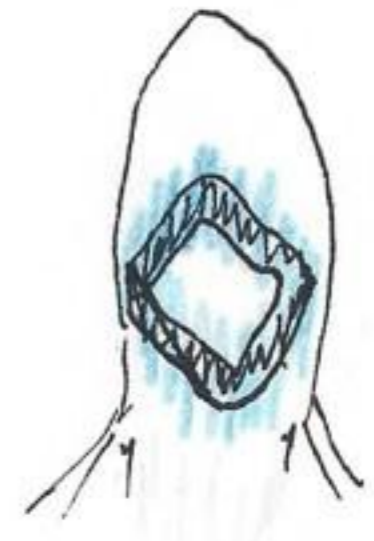
observed a large lizard (robust) with colored blue underparts and tail (underparts) and with a gular (blue) pattern

In one area creek bed had exposed shallow root system of hackberry.

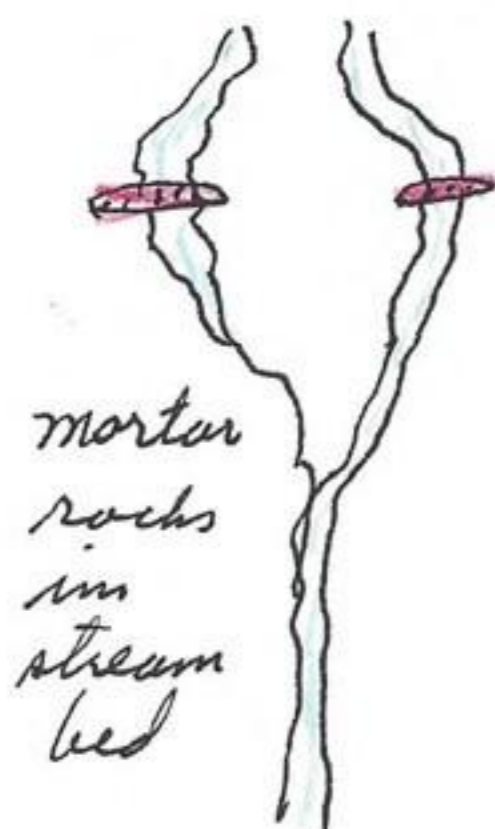


50 roots in 50' of creek bed.

Grape vines had covered many hackberry trees.



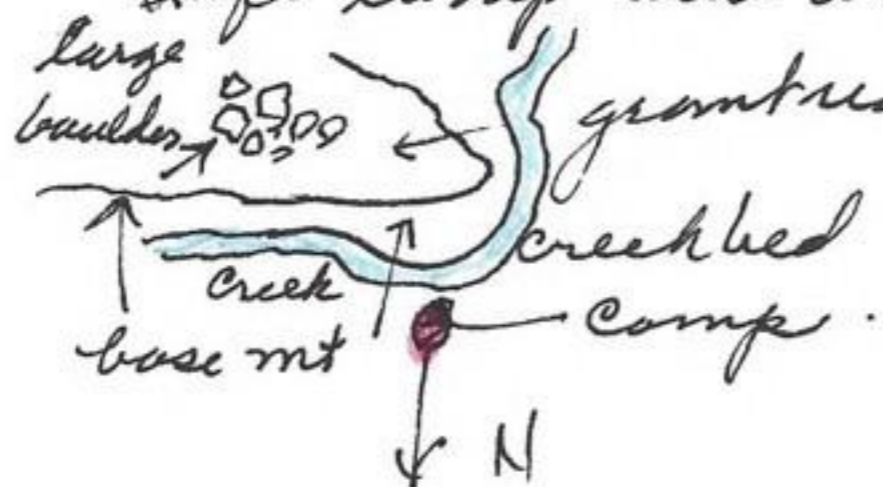
at base of mountain among large boulders examined 15 Indian mortars (recessed into granite diameter 90 mm, greatest 150 mm, narrowest one measured 152 mm deep. These mortars were placed on granite rocks in the stream bed and all water and debris had to cross these mortars during high water level. There was no evidence of stream bed erosion of these mortars which means that there must not be much rock load in stream across these mortars or there has never been much water passing over them since they were used.



from above in stream bed showing 11 of the mortars on granite rocks in stream bed, 830604-4 viewing up into tanks and wet area on rocks

most birds use are (see black photo map) for watering, less so among large boulders below. Water now reaches the last large boulder in drainage but does not reach mortars.

Left camp and drove 1/10 mi. W and took 4 photos of <sup>5</sup> yucca elata nos. 830604-# of Barth and yucca. nos 830604-6, 830604-7 and 830604-8 of macclan-saus shots of yucca.



Continued down road from above yucca at 372.9 and at 373.5 observed a *Eutamias minimus* which is an extension of range. at 574.8 photo 830604-9 of general shot of extension of the community of yucca elata. The whole slope is green and populated with this species. Mileage at forks of road (main road 5) is at 375.6. 379.5 at Interstate 10 underpass. The farther from mt these fewer yucca elata are in blossom. Continued W on Interstate 10 to Texas Canyon, thence 3<sup>rd</sup> Dragoon 1 mi. E where we camped.

1 mi. E Dragoon, Cochise Co., Arizona.

June 5, 1983  
Camped 1 mi E on slope. Birds in 1 acre: (area of yucca elata, mesquite, grasses.)  
western flycatcher  
black-tailed jackrabbit  
curved-billed thrasher  
ash-throated flycatcher  
brown towhee  
mockingbird  
cassin's flycatcher  
veils flycatcher  
gopher deggung

Birds more active in early morning than later in morning. Weeds flycatcher (one without tail ♂) come to within 1 foot of Barth to inspect.

Photo 830605-1 mesquite blossom and leaves.

" 830605-2 yellow flower.

830605-3 4 species of flowers common in area.

830605-4 creosote bush and fruit.  
Left 9:48 A.M. 5 roven, 1 turkey vulture between here and Saguaro Nat'l Monument. Towed road to E. <sup>Saguaro Nat'l Monument</sup> could take 10 photos of various subjects.

830605-5 Palo Verde in blossom E part of car trail

830605-6 ibid, saguaro, old & young in foreground plus palo verde

830605-7 E end car trail of saguaro, palo verde against outer sp.

830605-8 Barth at E end trail, palo verde by Barth

830605-9 inflorescence of ocotilla, most past blossom period.

Turkey vulture in area.

Continued to Saguaro Nat'l Mon (Tucson mts) and camped at Gilbert Ray Camp grounds. 1/2 mi E camp, grey fox picked up. jockrobbet road killed and carried it into bushes at side of road.

Saguaro Nat'l Mon, Tucson mts., Pima Co., Arizona

June 6, 1983

Bird in 100x100 area of teddy bear cactus, saguaro, ocotilla and greasewood (creosote).

- 1 purple martin nesting in saguaro
- 1 common bushtit fed on ocotilla seeds
- 6 white-wing doves, 2 songs (who cooks, for who, and preparatory notes for final coo) nests & called in ocotilla & searched t.b. cactus.
- 3 mourning doves, rested in ocotilla
- 2 cactus wrens in nest in teddy bear cactus.
- 3 curved billed thrasher, building nest in t.b. cactus, one repeated searched ground under palo verde for nesting material, 60' from nest. A second ♂ was chased from nesting area, sometimes in battle in teddy bear cactus! It is unexplainable how these birds and other species can climb over the thorny (some like needles) branches. They show no preference for position on the stems. It would be interesting to make histological examination of the tissue of these birds - epidermis.

curved bill thrasher and cactus wren feed 1 foot from each other.  
Curved bill thrasher has yellow eyes instead of orange-red.

Drove thru monument and on way out at N. end valley at divide on Picture Rock Road made 2 photos:

- 830606-1 large saguara on skyline ridge
- 830606-2 " " " " " " with teddybear cacti in foreground.

Continued to home of Dorothy and Phil. Krutzsch at 1145 N via Entrada, Tucson. Birds in their yard were: white-winged dove, mourning dove, verdin, common bushtit, curved-billed thrasher, cactus wren, Gambel's quail, purple martin, psittuloxia Texas night hawk (gave a chattering noise while on the ground), and a screech owl that came to patio in the evening. Robid challenged the owl. a gila monster passed over patio a few days previous. There are 6-7 species of lizards and as many snake. We captured a white gecko in rood after dark, readily lost its tail when handled.

Tucson, Arizona

June 7, 1983

Visited Phil and Dorothy at their home.

June 8, 1983

Left Krutzsch's and checked Tucson Mall. Insurance from Allstate checked and found we must wait overnight for confirmation of report of status. Camped in Mall tonight

June 9, 1983  
Tucson

June 10, 1983

Left Tucson and travelled 89 toward Apache Junction. at 624.6 redtail hawk. 650.1 2 common raven. Camped this side of Apache Junction at mileage 696.1. Black-tailed jackrabbit in area. Curved-billed thrasher and common bushtit only birds. also Gambel's quail and cottontail rabbit. Li had left for Calif, Utah, Colorado and Iowa for the summer. Continued W to Phoenix and stayed at Mr. Byron Walters' home in Sun City. They will visit friends at Larnish Bay (construction of peninsula) Emir Petersen's 204-766-6591 in August. The Walters live on the edge of a golf course and receives cooler than normal temperatures. It is cool enough to set outside after. The sun leaves the horizon and in the morning when sun is shaded by overhead protection. Homes range from 60,000 to

200,000 dollars. Property taxes are 300.00<sup>per year</sup>, insurance same amount. Food is at a reduced price, all recreation except golf fee is included in taxes, the recreation aspect is total and nothing is desired. Hospitalization and medical care is at a greatly reduced cost with rooms for intensive care or long period care. Two colleges on campus fulfill the needs for further specialized education with credit. 50,000 people live in Sun City. Cost of living here is considerably less than elsewhere at retirement places or even on the outside. Walters recommends 35-36 foot sailboat with diesel and deep full keel. He has travelled the world over. William Walters, his son, is now a full Colonel in the arms services and is stationed in Alaska at Anchorage. Just completed trip to Prince Rupert and will moor there until spring and then continue to Anchorage. In meantime will travel Alaska highway to Anchorage by jeep. Has beautiful home with artifacts from all over the world. His last trip, or next trip, will be on the Nile on a regular boat.

Phoenix, Arizona

85375 zip June 11, 1983

Left Walters home this A.M. for Painted Rocks Historical State Park. Enroute observed Turkey vulture at Theba turnoff.

Maricopa Co. Co

Painted Rock Historical State Park (Dam Unit), Arizona

June 12, 1983

At ramp below dam along lake there at W side of cable crossing (chair) observed the following movement of the egrets, and green heron across <sup>the valley of</sup> an intersection of the cable axis.

- 9:13:10 (hour, minutes, seconds) 6 Cattle egret to W
- 14:25 5 Cattle egret to W.
- 19:45 2 snowy egret to E
- 22:30 3 " " " "
- 25:05 2 " " " "
- 25:65 1 green heron to E
- 26:10 5 snowy egret to E
- 27:05 4 Cattle egret to E
- 37:25 3 snowy egret to E

|          |                     |
|----------|---------------------|
| 9:37:25  | 3 snowy egret to E  |
| 36:45    | 3 " " " W           |
| 36:40    | 1 " " " E           |
| 36:48    | 1 green heron to E  |
| 41:55    | 1 cattle egret to E |
| 47:04    | 1 snowy egret to W  |
| 47:10    | 2 cattle egret to W |
| 57:02    | 1 snowy egret to E  |
| 59:44    | 2 cattle egret to E |
| 10:00:00 | 1 snowy egret to E  |
| 00:06    | 1 " " " W           |
| 10:01:00 | 1 " " " W           |
| 10:05:06 | 1 " " " W           |
| 07:02    | 1 " " " E           |
| 14:50    | 4 " " " W           |
| 14:52    | 1 green heron to W  |
| 14:20    | 1 snowy egret to W  |
| 18:40    | 1 " " " E           |
| 18:40    | 1 green heron to E  |
| 20:40    | 1 cattle egret to W |
| 21-30    | 2 " " " "           |
| 23-08    | 2 snowy egret to E  |
| 34-30    | 1 " " " W           |
| 38-20    | 5 " " " E           |
| 40-10    | 5 " " " W           |
| 41-18    | 1 " " " W           |
| 50-05    | 1 " " " E           |
| 52-30    | 1 green heron to W  |
| 53-12    | 1 snowy egret to E  |
| 56:20    | 1 " " " E           |
| 58:20    | 1 " " " E           |
| 11:02:10 | 4 " " " E           |
| 04:35    | 4 " " " E           |
| 08-40    | 2 " " " W           |

Birds in area at camp:  
 5 green heron (repeats)  
 70 snowy egret (repeats)  
 17 cattle egret (repeats)  
 8 coot  
 38 boat-tailed grackles

Summation: (Period of 1-hr: 55 min <sup>30</sup> sec)

22 snowy egret passed to W  
 48 " " " " E

10 cattle egret passed to W  
 7 " " " " E

2 green heron passed to W  
 3 " " " " E

or

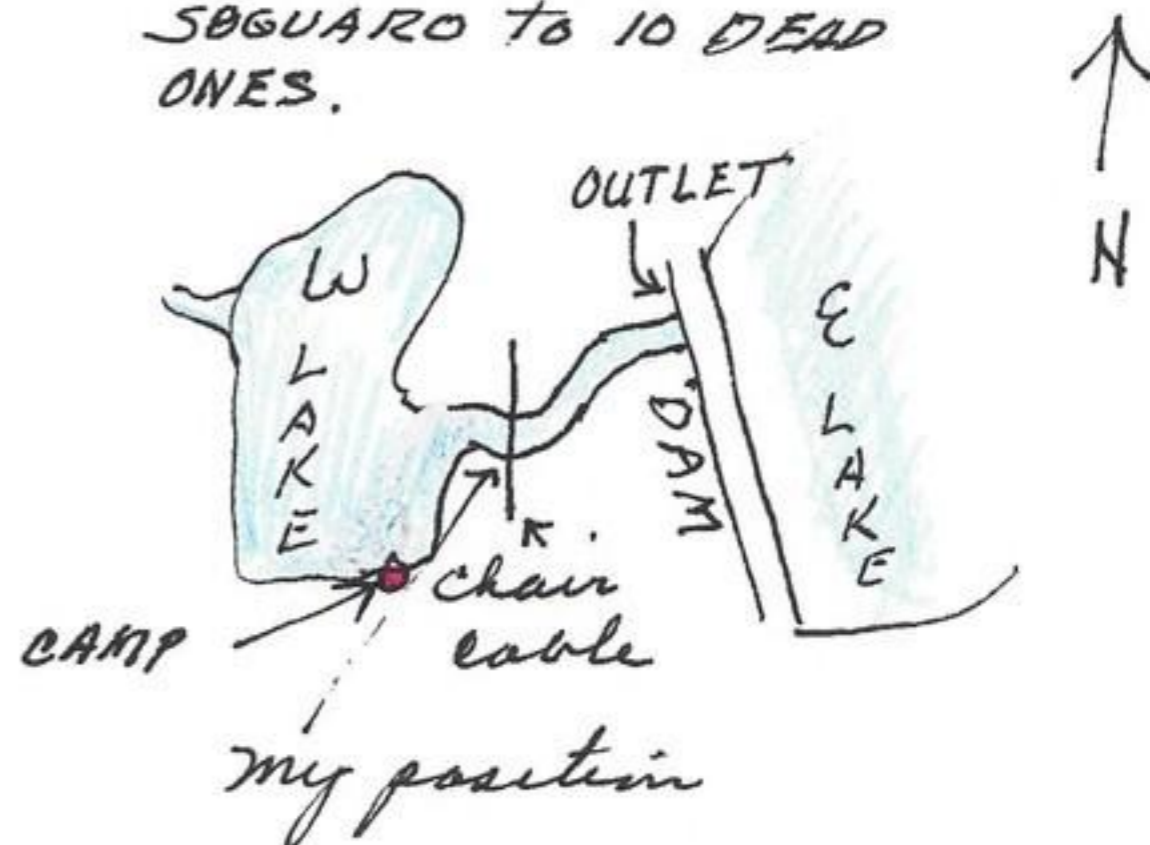
34 egret-herons flew to W  
 58 " " " " E

or

92 egret-herons observed

Those flying E would generally gain elevation to fly over high dam, others drop to river edge to E to feed. Those flying W would drop elevation and fly W beyond lake below dam.

HILLSIDE OF 40 LIVE SAGUARO TO 10 DEAD ONES.





- 36 cliff swallows.  
 2 turkey vultures  
 1 redwing  
 4 Gambel's quail  
 1 red-shafted flicker  
 6 yellow-headed blackbirds  
 3 mourning doves.  
 4 white-winged doves  
 1 western flycatcher.  
 2 black-tailed jackrabbit  
 5 cotton-tailed rabbits  
 8 brown-headed cowbirds.

(♂?)  
 white-winged dove, vibrated wings rapidly for a few seconds then moved them with pivot at humerus at a rate of one per second for 2 minutes, as <sup>clicking</sup> mechanical movement.



The mate was 4' away and made no gestures

Boat-tailed grackles with young (15 pairs) and would feed in camp area they fly N across river to nests in tamarisk. Males would follow females back and forth across river, not every time, but most of the time and alight on top of either nest bush or next available bush nearer nest. Sometimes 2 ♂ would follow one female, several times 3 males would travel together.

Left dom area and drove to petroglyph site at the Painted Rocks Historical State Park to S and recorded one roll of Kodacolor. These petroglyphs are on an isolated knoll of rocks in valley.

- |                                                  |                                                       |
|--------------------------------------------------|-------------------------------------------------------|
| 830612-1 knoll of petroglyphs, nearly all rocks. | 830612-12 human hand, left                            |
| 830612-2 major boulders with petroglyphs         | 830612-13 hub & spokes, dot in hub                    |
| 830612-3 main rocks completely covered           | 830612-14 " " "                                       |
| 830612-4 human figure, all toes & hand 3 digits  | 830612-15 spiral with head                            |
| 830612-5 " " feet reversed                       | 830612-16 cross and circle                            |
| 830612-6 figure common in Utah art               | 830612-17 goat                                        |
| 830612-7 2 figures joined, on hand 3 digit       | 830612-18 mt. lion                                    |
| 830612-8 " " " " tarsus enlarged                 | 830612-19 deer?                                       |
| 830612-9 spiral, man and 4 circles               | 830612-20 goat                                        |
| 830612-10 human, right hand joined to nose       | 830612-21 goat, 3 dactile, hand <sup>odd tail</sup>   |
| 830612-11 4 nobled wheel + 2 extra               | 830612-22 mane, ball, snake, <sup>dotted</sup> circle |
|                                                  | 830612-23 human figures, 4 dactile                    |
| 830612-24 sample of rock with desert varnish     |                                                       |

Left and returned to main highway. dust storms common in valley along main road.

1 turkey vulture at Sentinel and 2 at Wellton Arizona continued w to (highway 8) near Yuma, thence n to Imperial dam camp on W side (BLM operated) across from Oasis camp. The Laguna Lake camp. (E side) was for freaks. even Oasis was disorganized. There are more freaks in this area of Yuma than elsewhere we have visited. At the camp collected a dozen <sup>(8)</sup> samples of rocks, mostly associated with volcanic activity.

830612-30

830612-34

830612-31

830612-35

830612-32

830612-36

830612-33

830612-37

Photo 830612-38<sup>N/E</sup> from Barth E across lake. 2 Antelope chippmunk, raccoon, mourning dove, white-winged dove, Gambel's quail, Turkey vulture, redtail, in area.

Imperial Dam Park (BLM) Yuma, Arizona:

June 12, 1983

Left and picked up mail in Yuma, thence w to Camp (KOA) at El Centro, California. 2 turkey vultures and 1 redtail at Holtville.

El Centro, Imperial Co., California

June 14, 1983

Called Jay in Lawrence. He received a note from Polly:

She met the sherpa Norgay at the airport in Katmandu. He was with Hillary when they climbed mt. Everest.

The national geographic is celebrating the 30 anniversary of Hillary's ascent of Everest.

Norgay had invited Polly to participate in the anniversary trek, where the national Geographic will film the event for publishing in the N.G. magazine.

Polly has already made a circumnavigation trek around mt. Annapurna.

Polly has been given logistic support by George Anne and husband.

Polly is learning nepalese songs and folk dancing,

photo 830614-1 of granite boulders w of Yuma on graded up mt. 830614-184  
 Left and at Live Oak Springs observed a common raven. also 2 common ravens at Cameron Station, both on highway 8. Continued W to Pine Valley, thence 80 to 79, thence N to Oakzanita Springs (Thousand Trail Preserve); where we camped. Birds observed this evening (to gravel pit NE on mt.):  
 scrub jay  
 Steller's jay  
 red shafted woodpecker.

Oakzanita Springs, San Diego Co., California  
 June 15, 1983

Last night to 48° F. Heard doglike call that came from animal moving around the camp area. Two doglike barks and then 4-5 undoglike calls of high frequency of descending order.

Birds in area (average number per day)


- 6 Bullocks oriole, blue gray gnatcatcher
- 5 Phainopepla, yellow-bellied sapsucker
- 5 acorn woodpecker, Calif quail
- 1 scrub jay, brown towhee
- 3 Steller's jay, rufous sided towhee
- 1 gilded woodpecker, mule deer
- 8 English sparrow, robin
- 3 starling, flycatcher (all white below)
- 1 lark sparrow, Cooper hawk
- 1 common crow, black-chinned hummer
- 1 Bewick wren
- 5 western bluebird
- 2 band-tailed pigeon
- 1 cottontail
- 1 Calif ground squirrel
- 1 house wren
- 1 mexican chickadee
- 1 lesser goldfinch
- 1 western gray squirrel
- 1 merriam chipmunk (Eutamias merriami)
- 2 common raven
- 1 mourning dove
- 1 western meadowlark
- 1 Cassin's flycatcher
- 1 Oregon junco
- 2 plain titmouse
- 2 violet-green swallow.

and mammals  
 a lizard, about length of head and body of the scrub jay was resting on top of granite rock (the lizard like a broad-headed lizard of E. US but a rich deep brown color) and a scrub jay displaced the lizard which quickly moved out 1 1/2 feet for the jay to alight in its spot. They remained unconcerned of each other and when the jay left the lizard remained unaffected and in one minute returned to its position on the peak of the rock where it performed 6 pushups.

Phainopeplas regularly hawk for insects above tree tops. Acorn woodpecker also hawks for insects and does it with more grace and agility than the other woodpeckers. Phainopeplas also glides like the Steller's jay.

Photos:

- 830615-1 3 species flowers -
- 2 orange flower -
- 3 dandelion -
- 4 thistle -
- 5 desert varnish -

- 830615-6 Annette at pool with Barth behind, our camp 26  
 830615-7 Annette in jacuzzi, water 105°F  
 830615-8 Annette in jacuzzi and 830615-8a  
 830615-9 Annette entering Barth after swim.  
 830615-10 and 830615-11 yellow + white flowers  
 830615-12 Thistle flower  
 830615-13 fondle seed head 2 main trunks   
 measured a Canyon live oak, *Quercus chrysolepis* as 17'8" cir.  
 at main headquarters at camp. measured a Calif. black oak  
 at green valley area St. Park n of here 1 mi at 15'7" cir.  
 Watched 5 *shamoepela* chase a common raven as it flew by.

Oakzanita Springs, San Diego Co., California

June 16, 1983

min temp last night 46°F Hiked to Green Valley, 1 mi, thence  
 E up trail to E. Some pines with large cones 4' in diameter and  
 80' high.

June 17, 1983

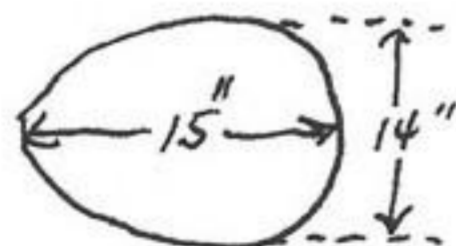
This camp is located in the Cuyamaca mountains at 3800 ft.  
 Today we drove to Julian, thence to Santa Ysabel where we purchased  
 pastry at the famous Dudley Bakery. Returned and at 1/10 mi.  
 n of Inaja monument on 78-79 highway collected 3 examples  
 of granite with a black layer associated. 830617-1

830617-2

830617-3

Of the granite rocks and associated granites there are in  
 the area traversed today. Cuyamaca gabbro, Woodson mt.  
 granodiorite, Julian schist, Stonewall granodiorite  
 rattlesnake granite and Bonsall tonalite.

at the turnoff to Los Caballos (horse camp) on Stonewall  
 mine road, recorded measurement of two mortars in granite




10" deep.



8 1/2" deep

measurements of diameters are 3" below  
 lowest rim of mortar 

11 shallow mortars  <sup>axis</sup> facing

n S and 4 facing approx E-W. These mortars along with smooth  
 areas are on <sup>large</sup> granite boulders W of the horse camp ext.

measured a *Pituophis melanoleucus annectans* (San Diego  
 Gopher snake) road kill at 2/10 mi. S of Stonewall mine road off  
 highway 79. In area of pine, live oak etc on slope of mt.

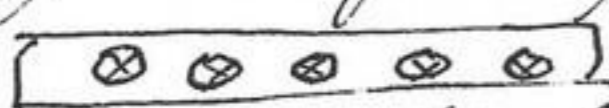
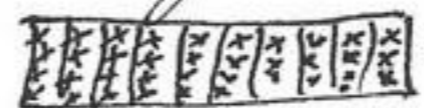
observed 2 ot along lake bordering 79. I would imagine  
 there to be more aquatic birds but these were the only 2 observed.  
*Thomomys bottae deggeni* common. 3 mule deer at park headquarters.  
 (State Park)

Oakzanita Springs, San Diego Co., California

June 18, 1983

Drove to El Cajon to check for ceiling fan. Pollution obscures distant ranges and is as far east as camp. The air is definitely unfit to breathe. Road is a long relatively low grade. At El Cajon orchards are planted on steep slope of granite mts and ridge are subject to severe erosion which will cause untail damage to drainage systems down to as far as the coast. 3 seven enroute.

June 19, 1983

Drove to Wild Animal Park between Romona and Escondido. They have over 3600 animals of 275 species. There are over 11/2 million plants of 3000 species. The divisions of African and Asian areas are separated but each area has animals associated together as is natural, for instance the rhinos, antelope, buffalo, giraffe etc. Monorail does not have satisfactory conditions for viewing or photographing the animals and these animals are generally too far away. Best way is central of both sides with  instead of  Long stops with telephoto facilities should be available so that each species could be studied and interrelationship of mammals & birds could be studied. <sup>(1/2 day)</sup>

Returned to Oakzanita, <sup>Springs</sup> via same route (Julian, Romona etc). Along route at Romona noted sparrow hawk and 2 turkey vultures. At Wild Animal Park (Zoological Society of San Diego) took following photographs

- 830619-1 Pigeon.
- 830619-2 Cooper Hawk that come into performing pigeons above arena
- ~~830619-3 From monorail.~~
- ~~830619-4 " "~~
- ~~830619-5 " "~~
- 830619-6 Pelicans
- 830619-7 "
- 830619-8 Talking parrot on show. (T.V. parrot on Johnny Carson show)
- 830619-9 Wildbeast.
- 830619-10 " grazing on grassy slope.
- 830619-11 Bobbie Vinton band at the outdoor amphitheater

On way to Wild Animal Park at Ranch Santa Ysabel Turnoff noted 1 prairie falcon, 2 turkey vultures, 1 crow.

at Oakzanita Springs collected the following plants 830619-12 to 830619-30 (following page)

OAK ZANITA SPRINGS, SAN DIEGO, CALIF  
JUNE 19, 1983



830619-12



830619-13



830619-14



830619-15



830619-16



830619-17



830619-18



830619-19  
Canyon live oak  
*Quercus chrysolepis*



830619-20  
Incense cedar



830619-21



830619-22



830619-23



830619-24



Burkhol of *Cercocarpus*  
*Cercocarpus betuloides*  
830619-25



830619-26



Calif black oak  
*Quercus kelloggii*  
830619-27



830619-28



830619-29



830619-30

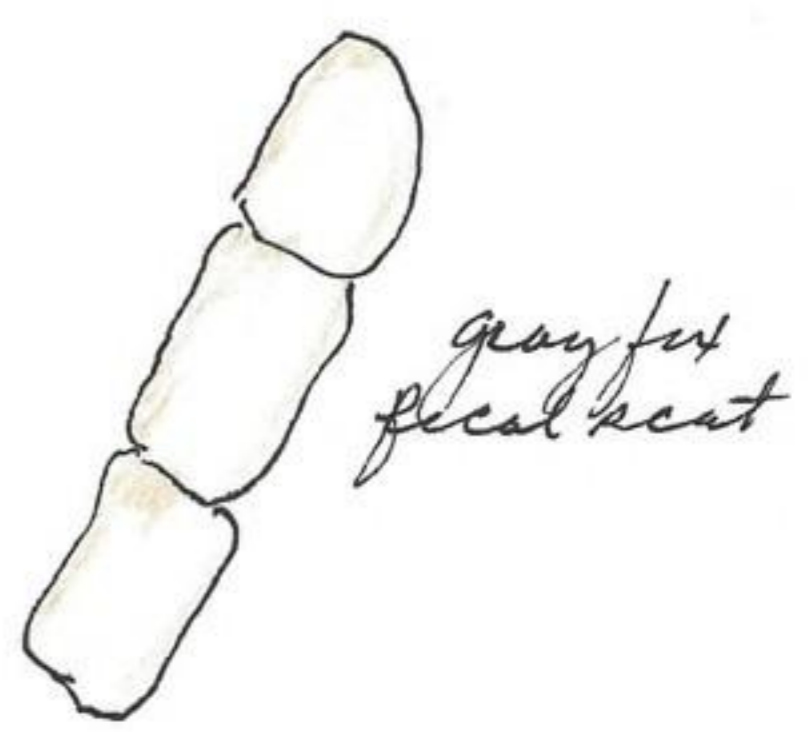
Oakzanita Springs, San Diego Co., Calif.

June 20, 1983 min temp. 44°F

Hiked up canyon to divide SE of present S boundary of park (T.T.) and recorded animals observed. (8:00-10:00 AM)

Day clear, Temp cool.

- Calif. quail 4 pairs
- starling 6 individuals
- phainopepla 6 separate birds
- gilded woodpecker 1
- bluebird, western 2-4-3
- rufous-sided towhee 1-3-1
- brown thrasher 2 Together
- scrub jay 1-1
- turkey vulture 1
- Bullocks oriole 2-1-1-2-1
- mourning dove 1
- <sup>all</sup> white-bellied flycatcher
- yellow-bellied sapsucker 1
- blue-gray gnatcatcher 1
- violet-green swallow 4
- mule deer, (track 60 mm) 2
- black-chinned hummingbird 2
- desert cottontail 2
- calif. ground squirrel 2
- raccoon (tracks)
- gray fox (scat and tracks)
- coyote (tracks)



noted a black-chinned hummingbird chase a starling.

an erasional ditch exposed 2" roots out 20' from outer edge of live oak

a California quail used the top of a granite boulder on side of mt. that had been used by a calif. ground squirrel the last 2 days as a vantage point.

Oakzanita Springs, San Diego Co., Calif.

June 21, 1983

Left for Pio Pico Camp. (T.T.). Sparrow hawk at Alpine. 125 to 94, thence W to camp.

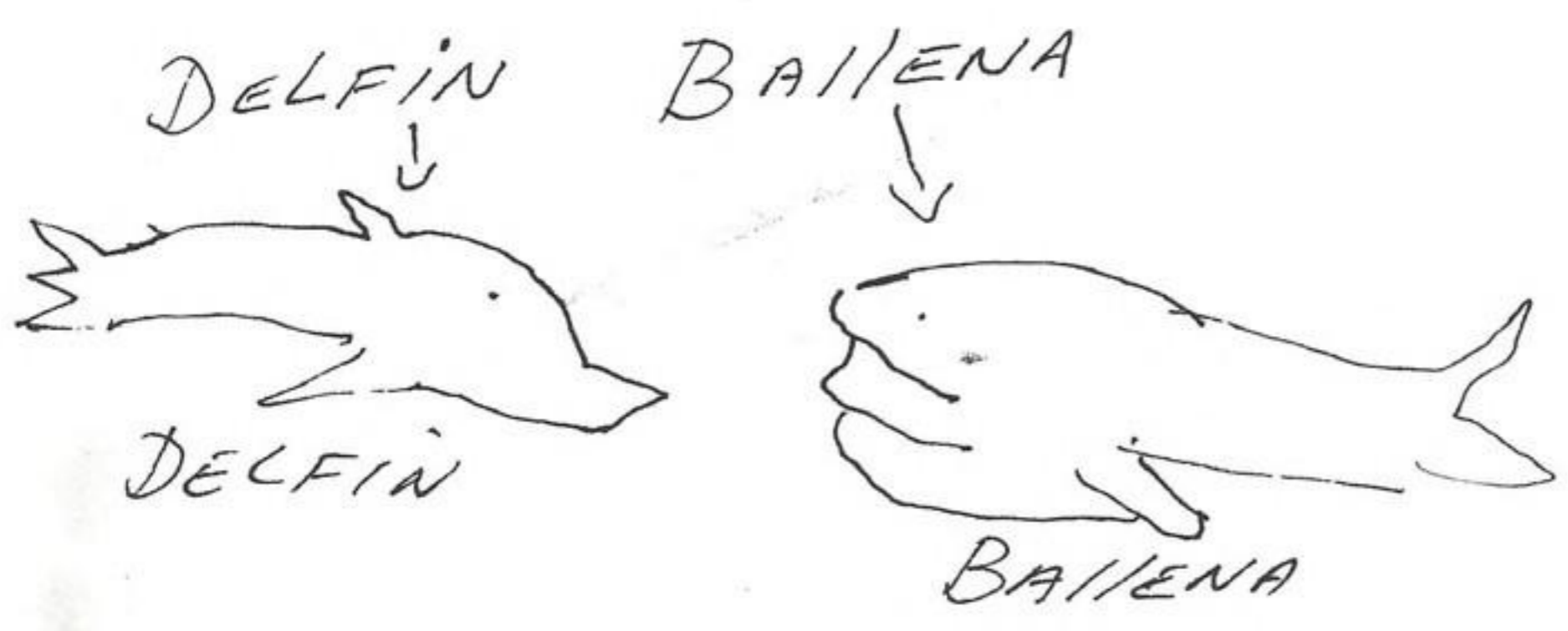
Pio Pico (T.T.), San Diego Co., Calif.

June 22, 1983 min. temp 60°F

Last night poor will called almost continually at about 10:00 P.M. This A.M. Brown towhee, rufous-sided towhee, Cliffswallow, acorn woodpecker, crow, common raven. Left camp and drove W to 805 thence S to Tijuanana. Purchased insurance at Gladys H. King Agency, Travel Lodge in Tijuanana, near U.S. (bl. N.) Customs. Drove to Manzaneros but check station moved back to

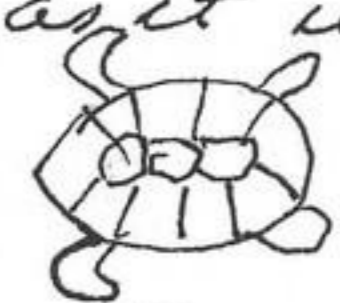


IRON WOOD CARVINGS  
 MADE BY THE CERI INDIANS  
 FROM KINO BAHIA ON  
 SONORA STATE ON THE  
 MAIN LINE  
 ALL MADE BY HAND



Ensenada. Camp at Faro Beach. From an Indian purchase examples of Ceri Indian woodwork carvings. Delfin \$12.50 of a porpoise *Delphinus* no 830622-1. The baleen whale or *Balaena mysticetus* no 830622-2 (\$12.50) and a sea turtle, probably loggerhead *Carella carella* because of high angle of carapace in front, although the 4 costal shields place it as the green turtle. It is no. 830622-3 (\$23.00), the individuals uncle made the carvings.

Recorded by individual who sold us the carving. He did not record the turtle as it was purchased at a later time that same day.



Checked the beach this afternoon and observed 3 groups of willet 3-3-1 flying S. One group of 9 brown pelicans to S, one group 11 to N and one group 8 to N. The western gulls (46) was the only one identified. 2 roven flew by.

Left camp and followed highway 1 south to turnoff for Punta Banda and thence S along high road to Bufadora. From a vantage point high on road near top noted a sparrow hawk. Also approx 500 western gulls among kelp beds. Also approx 50 dolphin-like mammals with high fin. Some exhaled blows immediately upon surfacing. These mammals fed in groups of up to 10-12 in ocean beyond kelp, some however swam thru kelp where open water was present among the mass of kelp. They fed out beyond to 2/10 mi and hunted up & down coast. Continued to Bufadora where we camped on edge of cliffs N of the village. This area is known for the water spout along cliffs.

La Bufadora, Baja California, Mexico  
 May 23, 1983.

Birds and mammals in area.

- Rock wren
- house wren
- common crow
- Common raven
- western gull

- rough wing swallows
- house sparrow
- brown pelican
- Pelagic cormorant
- Pacific bottlenose porpoise  $\Lambda$  (high fin)

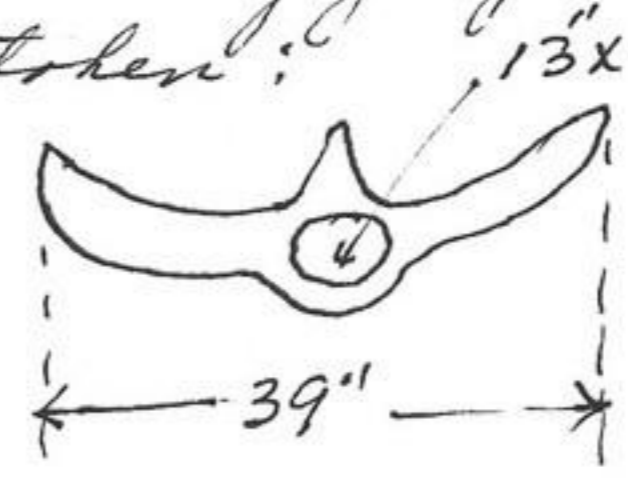
harbor porpoise. *Phocaena phocaena*.

Two Pacific killer whales, <sup>(*Orcinus rectipinna*)</sup> were seen in the bay in the past 2 months and of course the gray whale <sup>(*Eschrichtius grampus*)</sup> has been reported in bay. this year. Some fish and lobsters noted by snorkel swimmers.

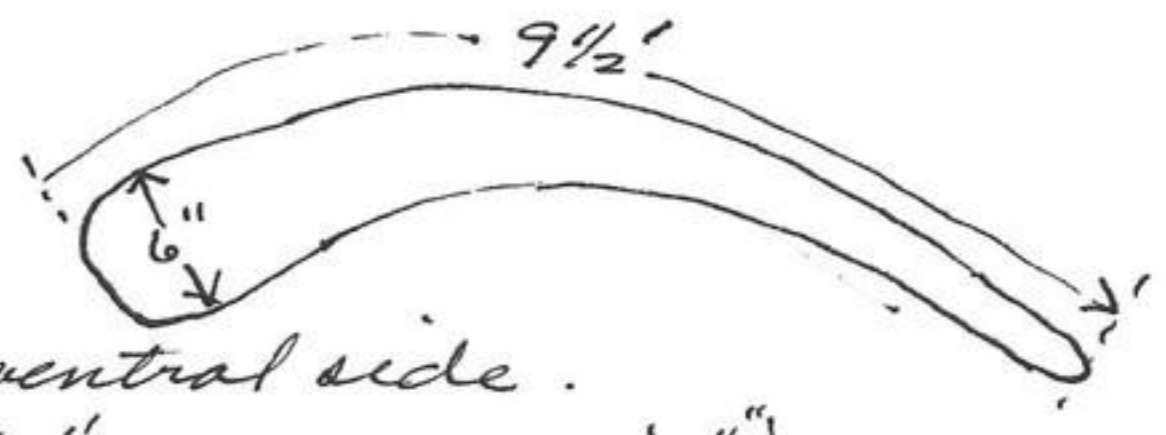
Several Calif. ground squirrels noted.

Photographed bones of whales presumably gray whale. will check identification from photos taken:

830623-1 vertebra of whale.



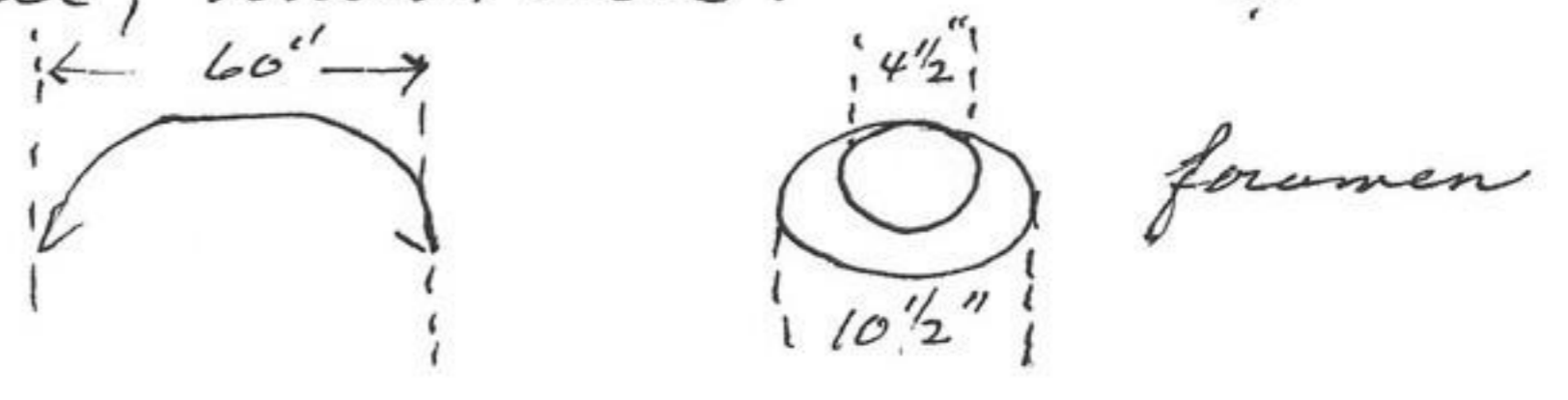
830623-2 general view of 2 ribs.



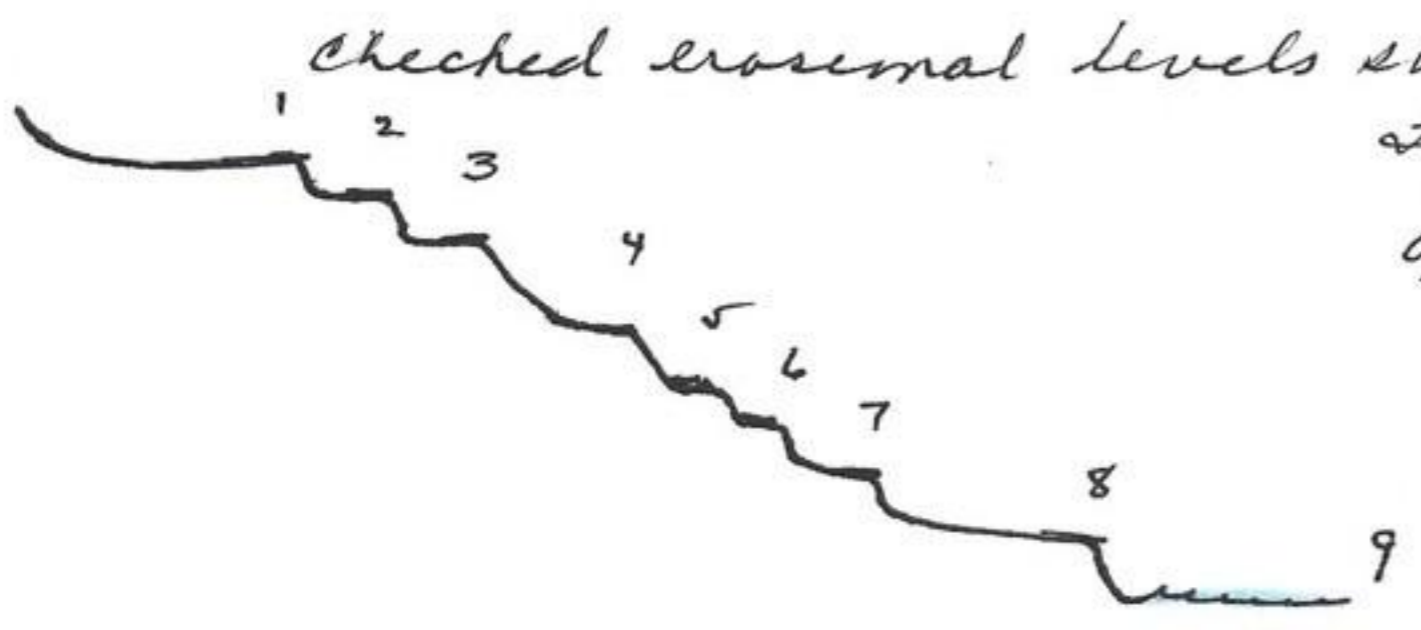
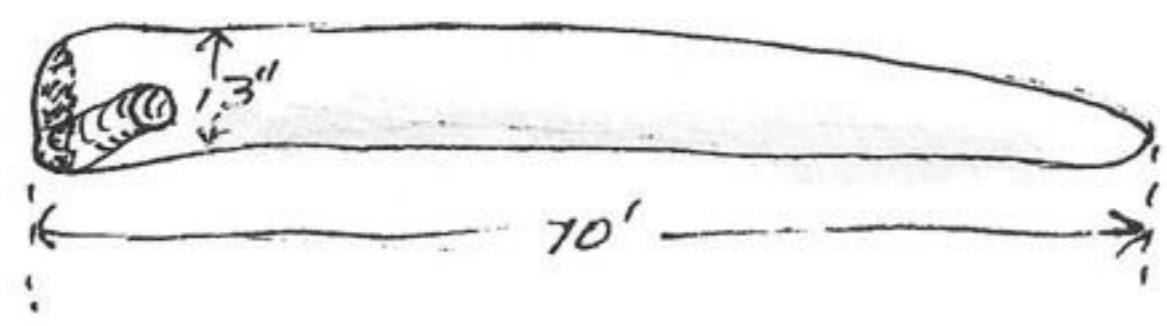
830623-3 proximal end rib

830623-4 close up of skull, ventral side.

830623-5 whole view



a ramus measured



checked erosional levels since uplift as 9 major ones.

These have been created with stages of uplift and regular in time sequence. The last active stage is result of stabilization of uplift or possibly sinking shoreline.

La Bufadora, Baja California, Mexico.

May 24, 1983

Annette and I walked to SE end bay. At the last point took photo 830624-1 N/G of ocean below. Enroute noted where 3 snakes had crossed the road in the dust and had left a trail approx. 1. inch in width. } Three Calif. ground squirrels also noted, some of them on rock cliff faces.

Back at camp on a boulder beach photo of round pebbles 830624-2 and 830624-3 which were being push up beach by waves and returning seaward by gravity and returning water. Also recorded sound 830624-4 on tape. This tape also holds sounds of waves entering a cove and general wave action.

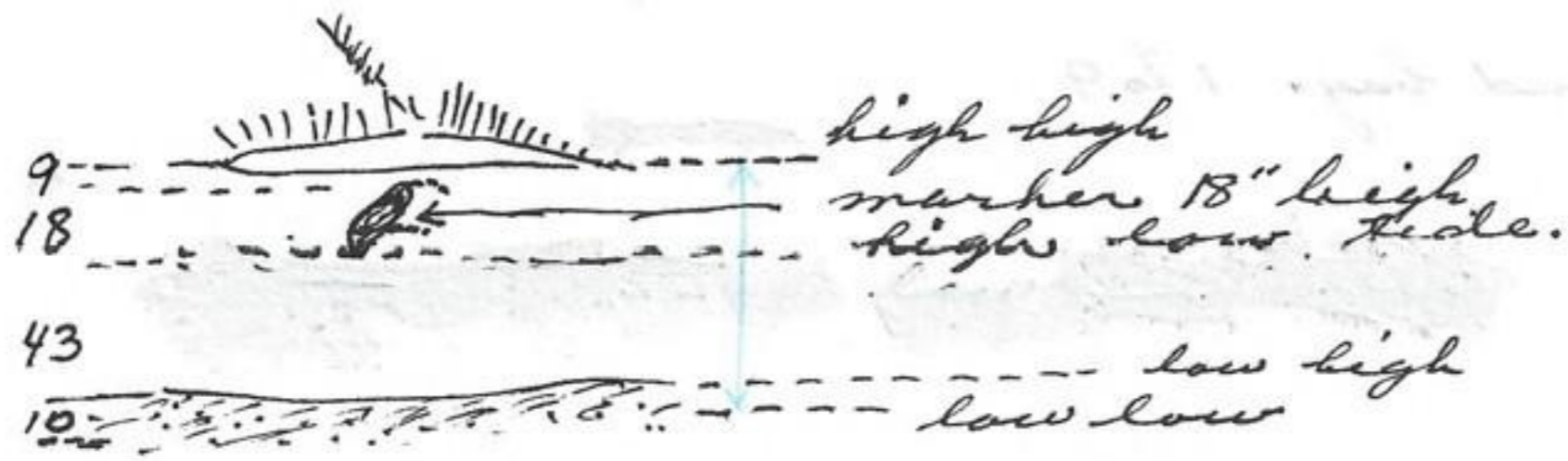
Photo 830624-5 N/G of wave action on rocks.

Photo 830624-6 of western gulls and water action below camp.

Photo 830624-7 2 gulls with Annette and my shadows on rocks below them (familly).

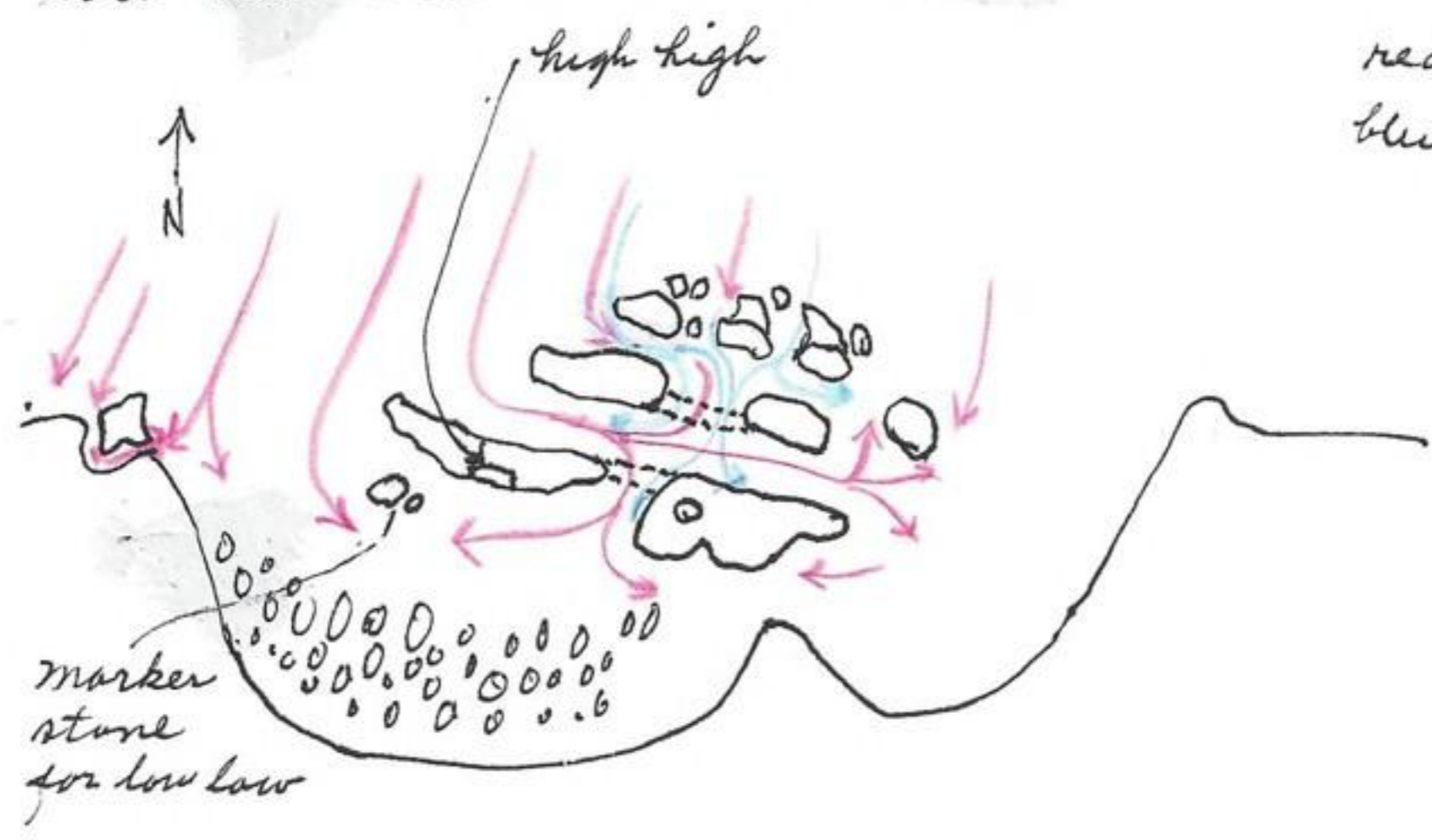
Photo 830624-8 of 3 homes on SE end of bay with commanding view of ocean below. Other homes are on slopes surrounding bay.

checked tide levels on rocks below camp. Between low low and high high is 6'10" Low high is approx 2'3" below high-high tide.



high high to low low = 6'10"  
high low to low high = 3'7"

High high tide about 8:00 P.M.  
low low tide about 5:00 A.M.



red = swell waters  
blue = counterdirectional

waves in some channel go the full course and meet the oncoming waves straight on.

It would be of interest to place 10 plaques of material of 10 different hardnesses on the surfaces of rocks that receive erosive action of waves and after certain periods of time (1 hr to a year or so) examine these surfaces. The electronic scanning scale to determine degree of erosion. With such information one could predict the rate of erosion of shorelines. One would naturally take into account the nature of massive afforestation of the land heads.

Bufadora, Baja California, Mexico  
~~inferred~~ ~~inferred~~ ~~inferred~~  
 May 25, 1983

Temperatures in A.M. about 60°F, every day foggy and sun not out until about noon.

This P.M. took following photographs

- 830625-1 From Barth of view of rocks and water action below. Points of reference can be seen such as circulation of water, tide markers etc.
- 830625-2 *ibid* m/G
- 830625-3 Same area but close-up of water falls over rock partition between 2 basins. Falls reverse movement.
- ~~830625-4 *ibid*. Shadow of Annette me on rock.~~
- 830625-5 Rocks and wave action
- 830625-6 " "
- 830625-7 <sup>m/G</sup> " "
- 830625-8 Annette and water action, all below camp.
- 830625-9 Barth and villa on SE point.
- 830625-10 Cone & water action on round boulders E of flow-hole area.

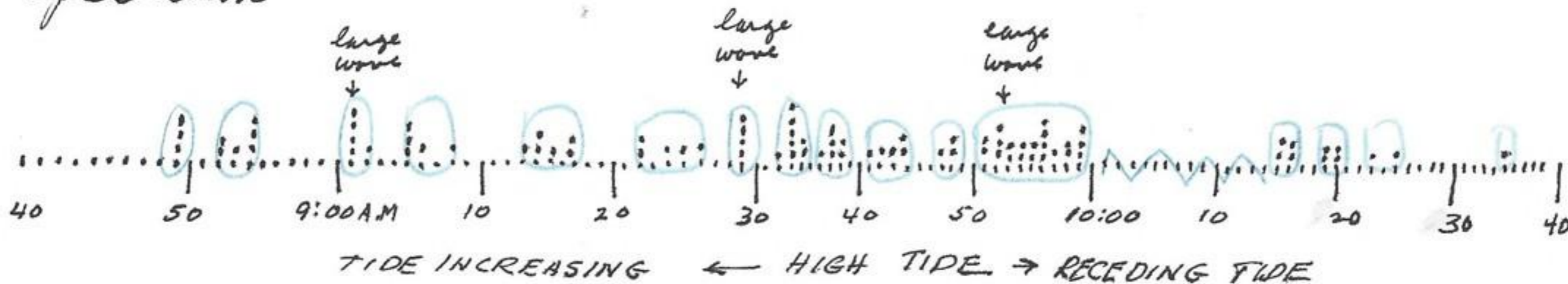
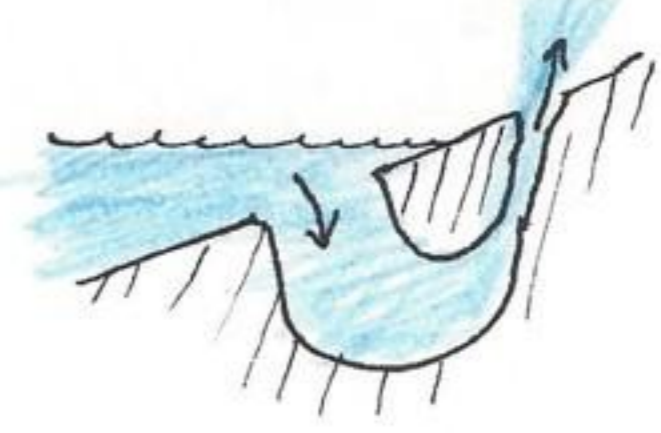
A harbor seal passed 50' to E of 830625-8. Photo, also an American oystercatcher flew by. This is an extension of the usual range of this bird which is more generally found further to the south.

up to 6:00 P.M. brown pelican dropped from range to E, probably from W side of peninsula in groups of 65-20-32-48-60-2. after six o'clock one group 14 at 6:03, 1 at 6:06, 1 at 6:30, all flying to W past bay.

Some noticed that debris moves N with incoming tide & S with outgoing tide. One can move three rocks below camp to N, thence E, thence S to be caught 10' into mass of floating kelp. Kelp trap surface scum which is finally broken or dissolved. Larger particles remained trap in kelp.

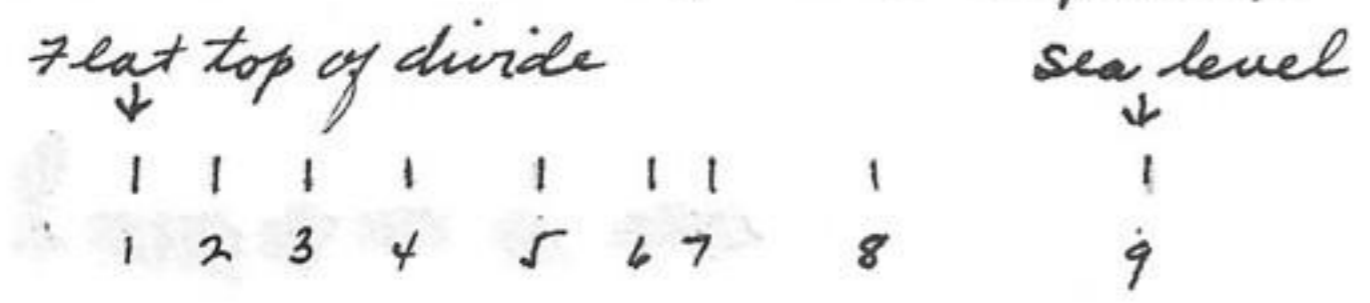
In some channels water flows constantly, first one direction, then another and the kelp and other vegetation is always moving with great pressures.

At Bufadora is a water blow hole that sends water into the air some 200 feet. I presume the incoming swell fills a reservoir and under pressure forces water up thru a constricted nozzle to create an unbelievable force of pressure. During high tide the blow hole is not as effective as at other times when water level is at an optimum



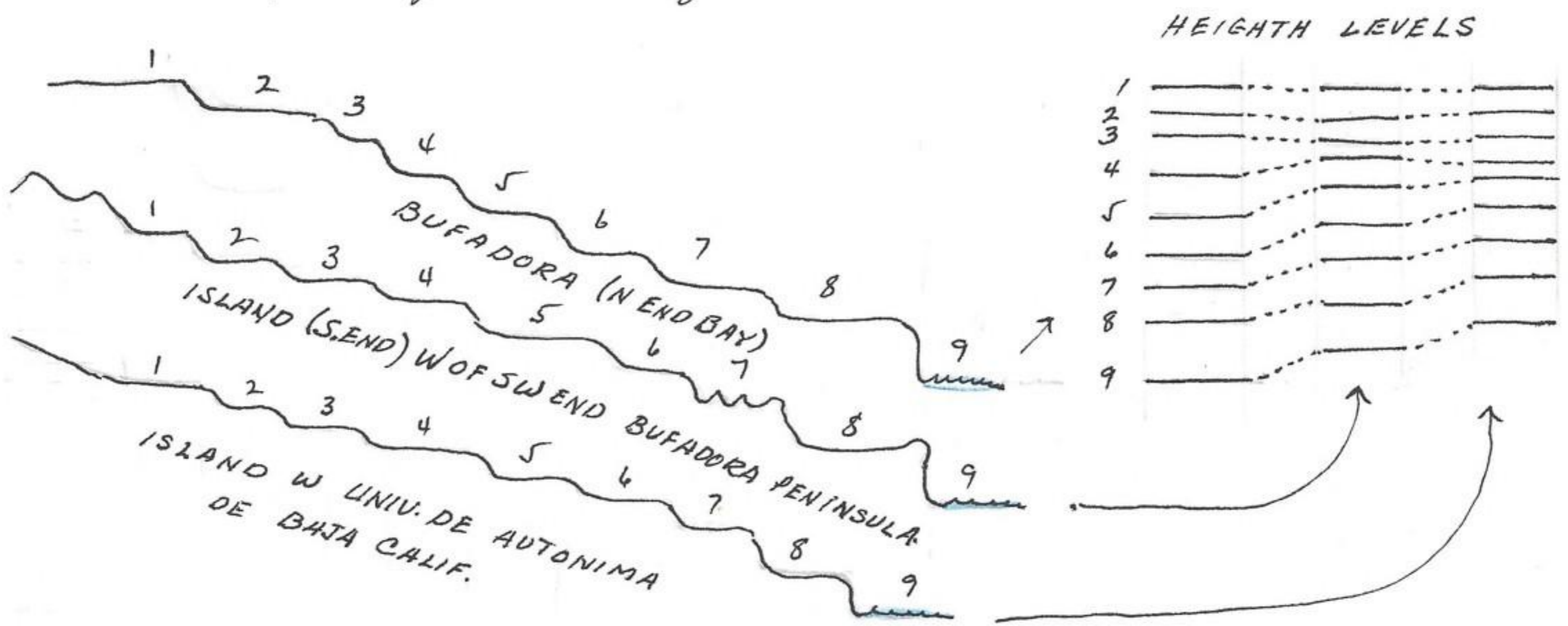
Dots represent water spilling into a tide pool. It also shows cyclic nature of large waves and increasing & decreasing height of tide.

Photo 830625-11 of N end bay at Bufadora showing 9 erosional levels on hillside (marked on photo).



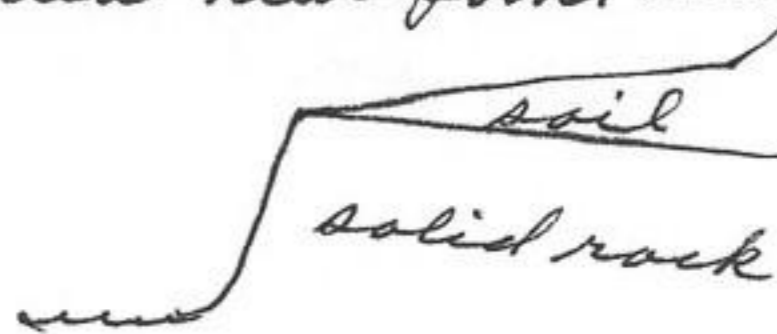
The upper 3 levels are as fresh looking as the Bonneville levels in Utah. Some erosional levels have barely been eroded in drainage systems. On

the basis of the erosional surfaces of slopes above and below first level would say that the slopes of the lower levels have been eroded before. These could be Pleistocene levels rather than uplift of coastal range.



Left Bufadora at mileage 737.5, at 740.4 photo 830625-12 of eighth shoreline on west side of peninsula near point where shoreline turns easterly.

Continued to La Yolla and camped along beach 1.6 mi N of highway at La Yolla.



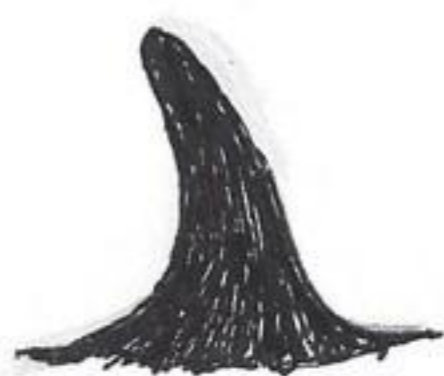
1.6 mi. N La Yolla on sand spit, Mexico.

June 26, 1983

On beach 25 willets  
2 marbled godwits  
6 western gulls,  
4 brown pelican

Common porpoise in area from at least 2:30 P.M. to 5:00 P.M. swimming both to N & to S, in groups of 2-10, sometimes 3 groups could be seen in ocean at one

time ranging from within first breaker (outer) and second breaker to 2/10 mi out to sea.



white undertail and belly



From this camp recorded the ocean terraces on the W end of and island NE of the Bufadora peninsula (see June 25, 1983 for profile comparisons with other terrace profiles).

At camp photo 830626-1 of Annette & Barth facing N. 830626-2 of Annette & Barth to N. Photo 830626-3 of beach N of camp.

At camp were 3 horned larks, 4 house finches, willet, western gulls and 6 western grebes plus brown pelican and pelagic cormorant.



1.6 mi N La Jolla, Mexico B.C.

June 27, 1983

Left and drove to Ensenada, thence N along highway to Univ. de Autonoma de Baja Calif. where I recorded an ocean profile of terrace on mainland to S. (see June 26 for comparison with other beach profiles. Continued N to high point on main road at Camino y Puentes Federales de Ingresos YSC.

Parador, at which point took 4 photos

830627-4 Pacific Ocean below (SE) with yucca leaves in left side

830627-5 " " " " 3 yucca in foreground.

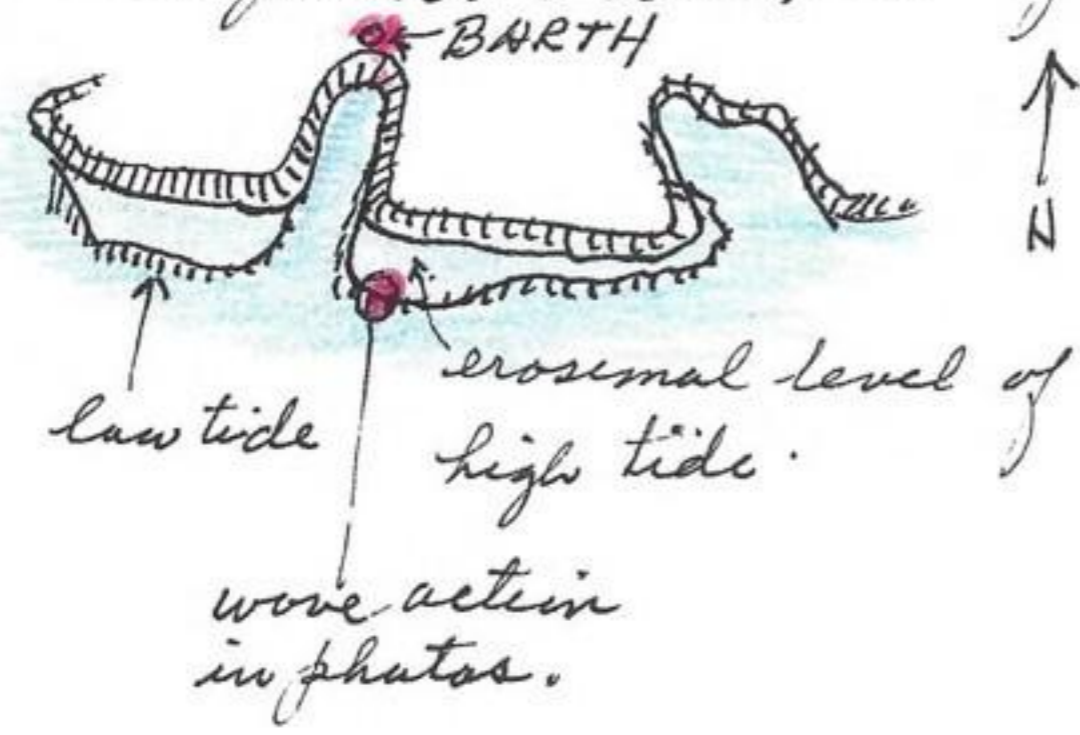
830627-6 " " " " yucca and yellowish common flower

830627-7 " " " " SW with beach below.

crow, canyon wren, brown towhee, common raven in area. Continued N to camp approx 3/10 mi. N of Midway motel.

Barth on top cliffs (see photo 830627-9) of lava underlain with ash and boulder beach beyond. High tide to top of ash

also photos 830627-10 of wave action on cliffs near Barth. Wave



not against rocks run into channel to base of Barth.

Photo 830627-11 ibid and shows intertidal pool from high waves.

Excess water flows over edge as waterfalls. These wave ate

high-high and during storm send water to 15' beyond Barth. Ground

there wet and muddy. Photos 830627-12 to 830627-15 ibid, Photo 830627-16 of tidal pool and water falls.

At high tide, this platform is covered with water. Photo 830627-17 of wave coming out toward Barth at low tide.

In evening approx 1500 western gulls in groups of 10-300 flew SE along coast at edge of cliffs. Brown pelicans also used same route and with camera there are unusual shots to be had.

3/10 mi. NNE of Midway motel, Baja California, Mexico

May 28, 1983

Western gulls flew N (NW) along coast from 5:00 A.M. to at least 10:00 A.M. in groups of 2-12 and just above tops of cliffs.

By 10:00 A.M. there would be groups of 100 or so gulls at different points and others generally distributed along the coast. The ratio was approx. 70% x 30 adults

Of one group of 137 W. gulls 17 were adults and 120 immatures or 14% adults

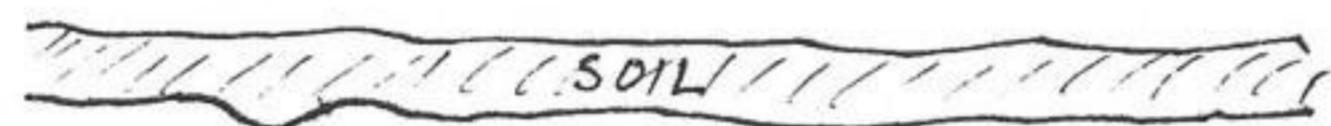
May 29, 1983

ibid

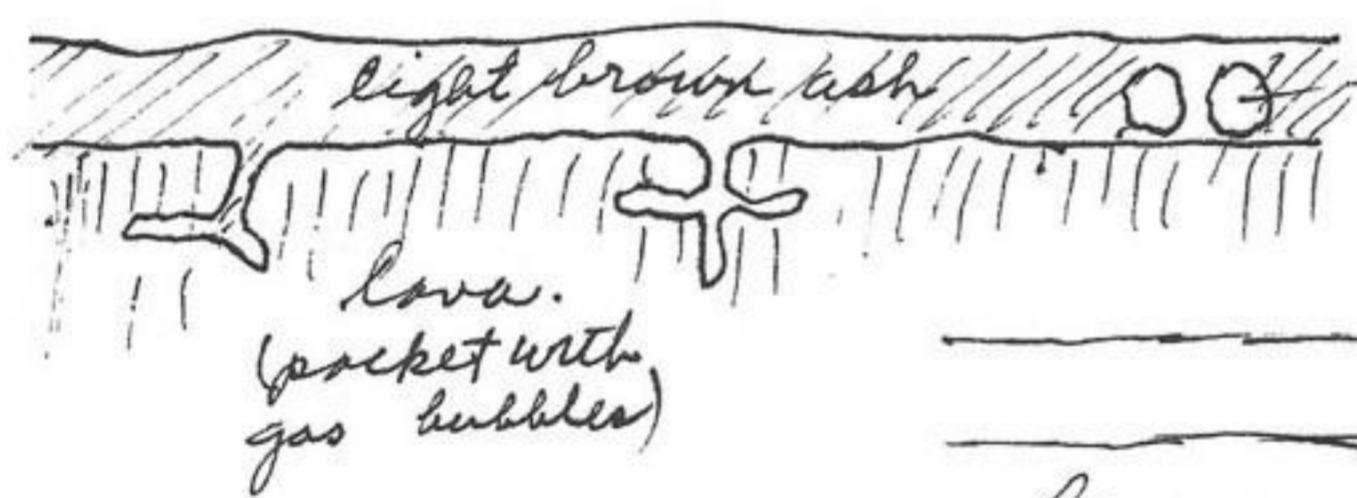
## Birds in area:

- 75 brown pelicans
- 90 cospian tern and generally distributed
- 1 horned grebe.
- 8 pelagic cormorants
- 50 redwing blackbirds
- 2 horned larks
- 1 killedeer
- 30 Forsterlike terns
- 3000 western gulls,
- 48 cliff swallows resting and sunning on E exposure of cliffs near top. Bird on sides, wings expanded or pulled tight to expose sides of wing, tail fanned and to one side, mouth open

Profile of cliffs about 200' E camp and near top of cliffs.



white ash 1/8' laminated



large eroded lava boulders in light brown ash

lava.  
(pocket with  
gas bubbles)

white ash

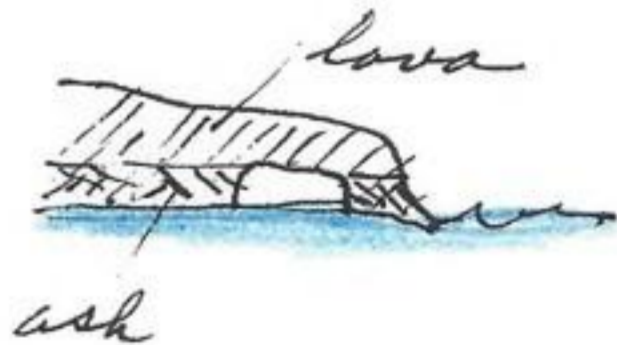
lava

lava light brown ash

where white ash is <sup>directly</sup> on lava the lava surface has about 1 inch <sup>beach</sup> of desert varnish and the surface of the lava is of a flaw surface.



The window S of midway is erosion of ash overlain by lava. There is a second small window just N of the large one.



This area is perhaps the best spot along upper W coast of Baja, Calif for a camp spot. The wave action is a wild as can be found although there are several places where one can drive out on such vantage points along the coast.

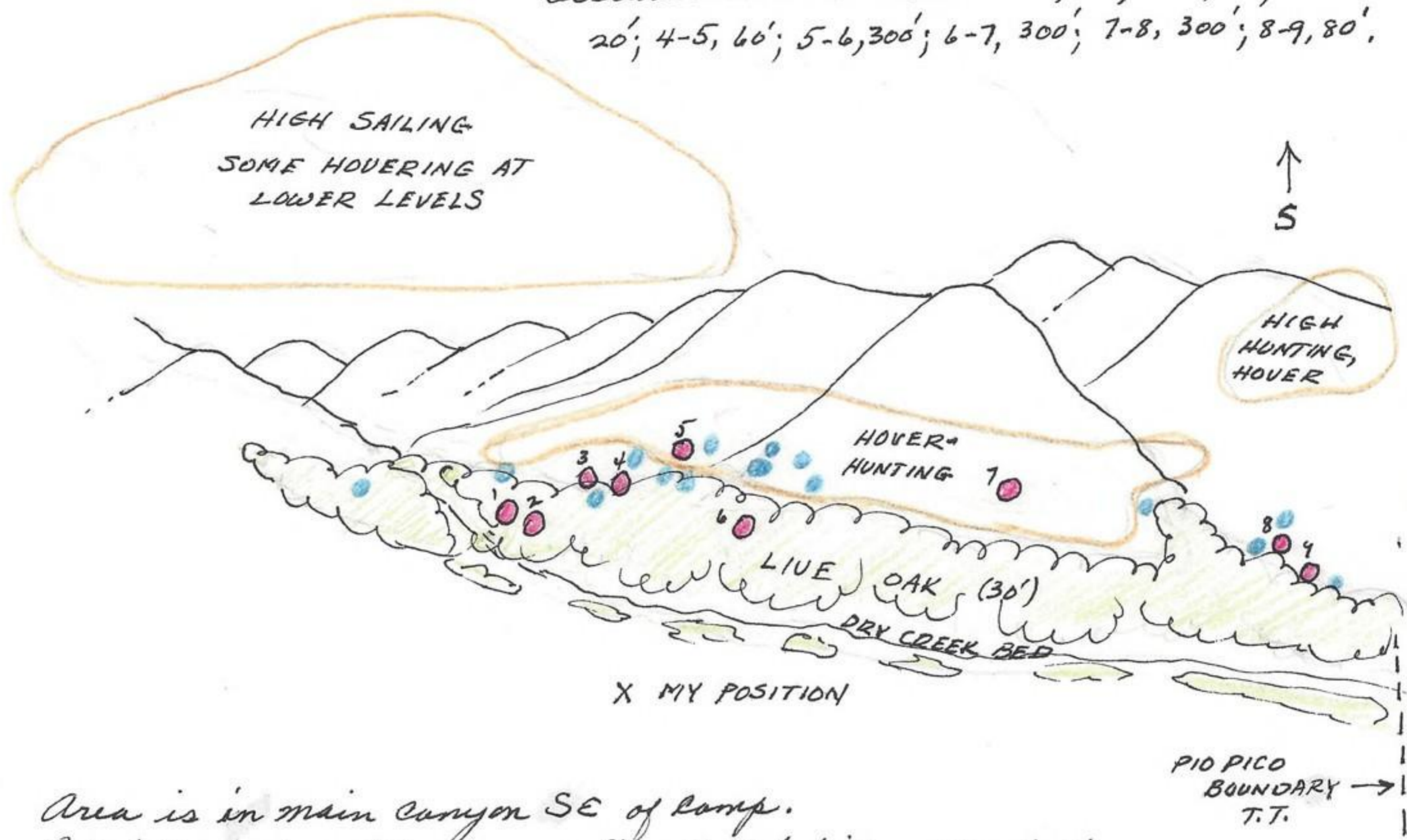
Left camp and continued N to Tijouana, thence across border. no questions or suspicion held, thence to Pico Pico TT. for June 29.



Pio Pico Preserve, T.T., San Diego Co., Calif  
June 30, 1983 all adults

830630-198

Observation of 9 white-tailed kites, SE of Pio Pico Thousand Trails Preserve between 20' before sundown to 1 hour later. Some clouds forming on high peaks, temp cool, wind about sundown, then relatively calm. Distance between birds. 1-2, 40'; 2-3, 60'; 3-4, 20'; 4-5, 60'; 5-6, 300'; 6-7, 300'; 7-8, 300'; 8-9, 80'.



Area is in main canyon SE of camp.  
 Red dots are position of 9 white-tailed kites, all adults at one moment 20' before sundown.  
 Blue dots other positions frequently taken by the kites as they moved around.  
 nos. 1, 6 and 7 remained in same position from 20' to sundown to middle of twilight 1 hour later.  
 Lowest yellow area used for hunting microstines (grass runways and burrows in area) with 80% from hovering position. High area to left hunting and hovering. Highest area for sailing and some hovering at lower levels at sundown to 1/2 hr after sundown.  
 no use of area from my position to Pio Pico boundary on N side canyon.  
 Birds at right moved E as evening advanced  
 At sundown 1/2 bird group left for high sailing then returned to same areas observed earlier but moved lower into trees for roosting?. 4 birds were on high tree perches when I left.  
 Birds flutter with rapid wing beats, hold position with slight movement of wing from shoulder axis to complete stabilized position.

From hovering position bird drops relatively slowly with high angle wings held in stationary position to contact on ground

Some birds had 1 to 2 missing tail feathers and some had last primary (proximal) missing.

no calls heard.

A red-shouldered hawk observed 2 different times in area.

A marsh hawk flew up canyon

Group of crows called until sundown at head of trees as if harrasing an owl, then left down canyon. Two alighted in same tree as no to kite and called but kite <sup>did</sup> not react but remained in same position.

Some chasing of two kites but mostly, resting, hunting and hovering, sailing high (400')

Barbara Shepard

Charlotte I. Pearson

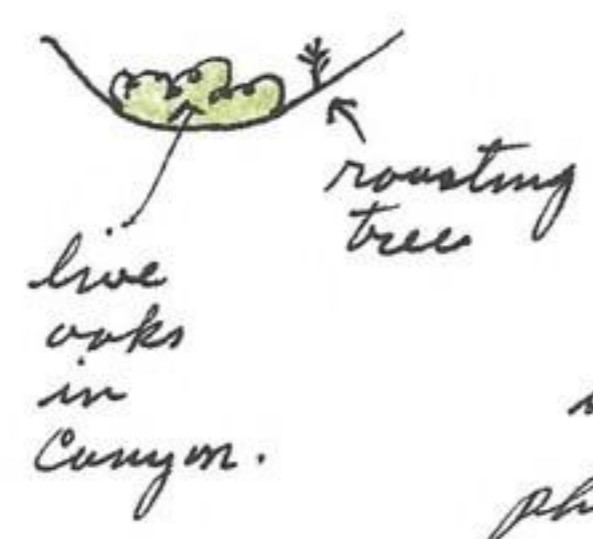
10425 Valle Vista Rd.  
Lakeside, California 92040

Friends at Pio Pico T.T. (plus 3 dogs)

Pio Pico Preserve, T.T., San Diego Co., California

July 1, 1983

checked white-tailed kites this AM at 11:00 A.M. walked thru trees on S side canyon and no evidence of kites until I approached position 5 (see map previous date) when 9 kites (7 adult, 2 imm) left an isolated dead live oak about 100' from edge of main trees.



They flew to about 150' and then gained elevation of around 200'-300' but above tree area. They then dispersed in several directions and later (20') 2 imm kites returned and alighted in

same roosting (resting) tree <sup>100' away</sup> when I took 4 photographs 830701-1 to 830701-4, while I was hidden among trees and on upper slopes of canyon walls. The other kites never came closer than 1/10 mi, for the 2 hours I was there hidden among the trees. I would say that their tolerance for man is about 1/10 mile and that when they leave they remain in area but about a 1/10 mi distance separation. Three great horned owls (together) in same area.

## Birds at Pio Rico: (average number per day)

- 1 white-breasted nuthatch
- 5 acorn woodpecker
- 8 common crow
- 2 common raven
- 2 house wren (feeding young in nest)
- 10 brown towhee
- 2 rufous sided towhee
- 8 Calif. ground squirrel
- 2 scrub jay
- 6 cliff swallow
- 2 western bluebird
- 4 mourning dove
- 1 white-tailed kite
- 1 red-shouldered hawk
- 1 marsh hawk
- 1 mockingbird.

Left 1:30 P.M. for San Diego, and visited Balboa Park in late afternoon. Camp at Navy Hospital parking lot.

Balboa Park, San Diego, San Diego Co., California  
~~San Diego, San Diego Co., California~~  
 July 2, 1983.

Checked San Diego natural museum (Erik Schulenberg <sup>research</sup> an associate there but neither he or other staff members were there. Spent most of day at zoo, and it is undoubtedly one of the best in the world as far as being all inclusive. It is large and most animals are displayed near to the observer. Some impossible to photograph because of wire netting.

July 3, 1983

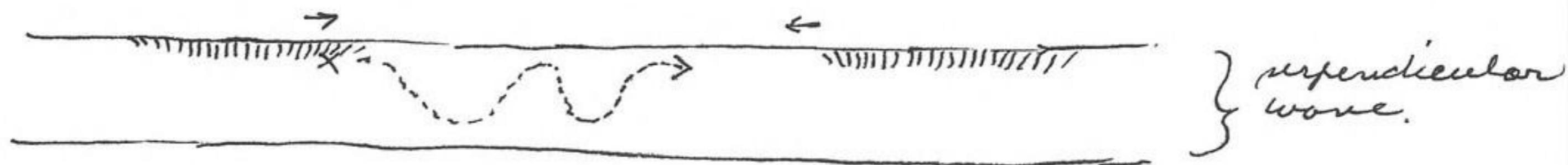
Today drove across San Diego-Coronado Bridge, thru town, thru S along narrow peninsula and return some way to Balboa Park where we took photos of mammals & birds in the San Diego Zoo.

- |          |                   |           |                  |           |           |
|----------|-------------------|-----------|------------------|-----------|-----------|
| 830703-1 | Buzzly bear       | 830703-9  | zebra            | 830703-17 | muskopen  |
| 830703-2 | " "               | 830703-10 | " "              | 85070378  | " "       |
| 830703-3 | hen and chick     | 830703-11 | antelope?        | 830703-19 | antelope? |
| 830703-4 | elephant, african | 830703-12 | Pres. horse      | 830703-20 | " "       |
| 830703-5 | rhino             | 830703-13 | " "              | 830703-21 | " "       |
| 830703-6 | antelope?         | 830703-14 | bold eagle       |           |           |
| 830703-7 | giraffe           | 830703-15 | Emu (pair)       |           |           |
| 830703-8 | small antelope    | 830703-16 | Bananalike frond |           |           |

Balboa Park, San Diego, San Diego Co., California

July 4, 1983

Left parking lot of Naval Hospital and drove N to Carlsbad State Beach where we camped. many surfers from daybreak to twilight. There is a specific size of wave and part of the wave that is used. Best position is at edge of breaking



crest. The wave is used until it meets another segment of breaking water at which point the surfer rides up over the wave to stop the riding action. Brown pelicans flew by here, a few common porpoise.

Carlsbad State Beach, San Diego Co., California

July 5, 1983

Left and drove N to San Juan Capistrano where there was some interesting archeological excavation in progress, then N to Long Beach where we stayed at John & Mary Kenagy's residence.

Long Beach, Orange Co., California

July 6, 1983

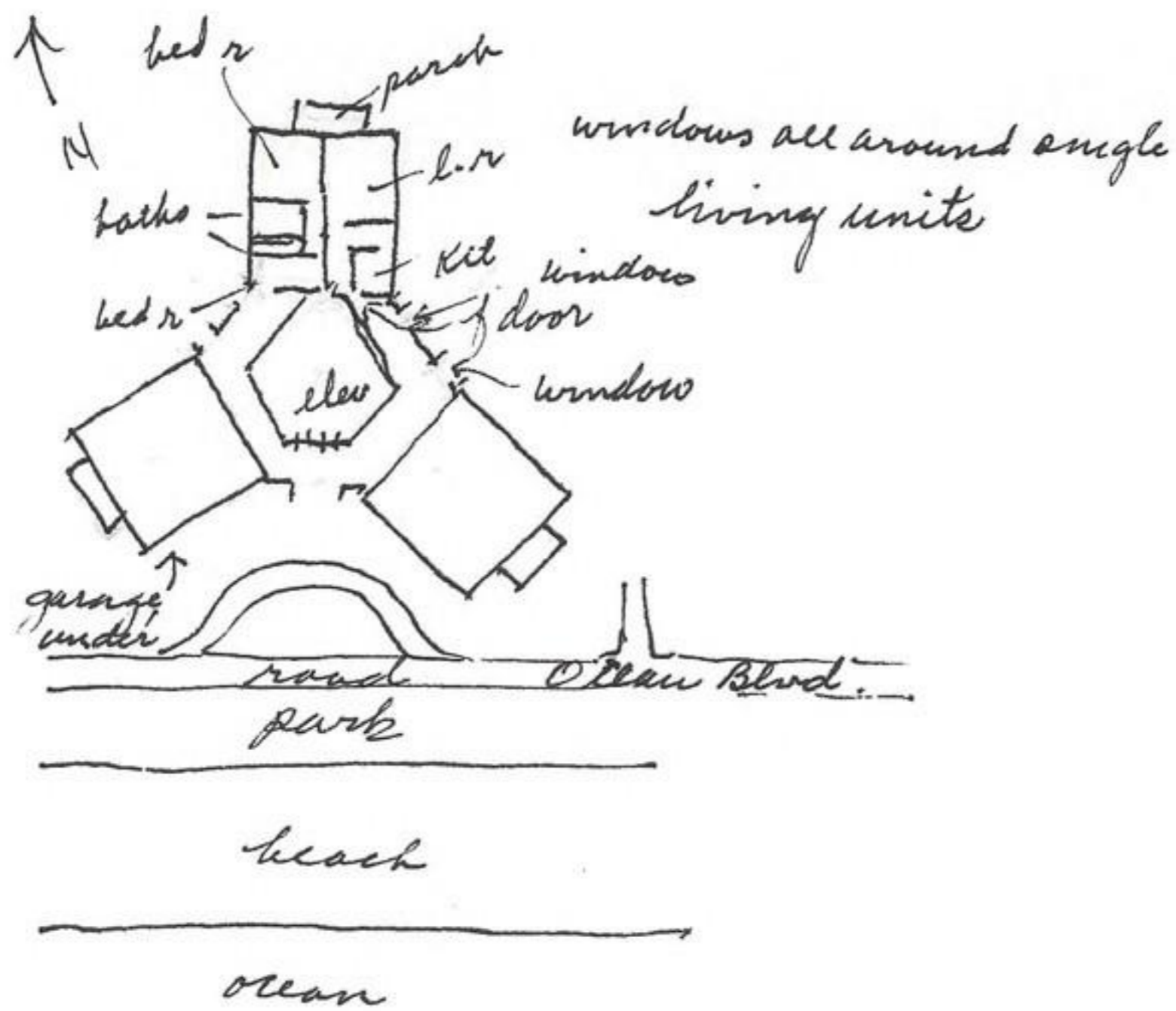
This afternoon drove to Farmers Market, La Brea Tar pits and part of Los Angeles with John and Mary Kenagy.

July 7, 1983

With John & Mary Kenagy. They live in apartment tower (20 stories high) on the 16<sup>th</sup> floor. 2999 E Ocean Blvd #1690 213-434-0677

July 8, 1983

visited the Queen Mary and the spruce goose. Birth broken into and police no. 833-1543 Photo 830708-1 of Annette on Queen Mary with line of life boats. Photo 830708-2 of Annette and Queen Mary from Birth. Photo 830708-3 Long Beach and marina from Queen Mary. Photo 830708-4 Spruce Goose, front end. Photo 830708-5 of parts of propellers of spruce goose. Returned to Kenagy's and Photo 830708-6 of their Baldwin prau. Photo 830708-6a of a bronze Buddha statue and another one of the gods no 830708-7. Photo 830708-8 of Annette and John at breakfast table. Photo 830708-9 of Kenagy's apartment building from beach E of towers. Their apartment is on N side, 16<sup>th</sup> floor.



Left John and Mary Kenagy and checked on a William M. Bee at 3133 Woodruff Avenue, Long Beach that turned out to be a Bee from Virginia. Their daughter Kay Bee occasionally taught ball room dancing at Brigham Young University and knew of Mary. Called Jay and gave him Diana Millers telephone number 213-997-1302. The above William Bee is to contact Bob

Bee on matters of genealogy. Continued to Upland, California and visited with Phillip Malseed, thence E to Idyllwild Thousand Trails Preserve, approaching from the N. This area of granite range and conifer forests (7000 ft elevation). The preserve needs paved roads and flat platforms for tents, campers and motor homes. Friable soils need stabilization and dust eliminated. One strong wind sends campers to shelter. Every passing car <sup>creates</sup> a dust problem. Camps 70% crowded.

Idyllwild Thousand Trails Preserve, Riverside Co., California  
July 9 1983

Birds in camp area:

robin  
Common crow  
Oregon junco  
mt. Chickadee  
red-shafted flicker  
acorn woodpecker (hawking insects)  
white-headed woodpecker  
western bluebird  
Stellers jay  
violet-green swallow  
red-tail hawk  
band-tailed pigeon  
white breasted nuthatch  
mourning dove (calling)

Costa hummingbird  
Common raven  
black headed woodpecker  
mt. chickadee

mammals in area:

gray squirrel  
Calif. ground squirrel.  
Merriam chipmunk  
deer.  
Coyote  
sheep (heard)

Measured a white pine at 14' 8"  
Circumference.

Photo 830709-1 of samples of needles and cones of conifers:  
 Ponderosa pine, western white pine, <sup>Coulter pine,</sup> white fir, incense cedar,  
 spruce and larch (introduced). Live oak and manzanita other  
 dominant trees in area. Did not find cones large enough to  
 qualify for sugar or Jeffrey pine.

Photo 830709-2 of Coulter pine cone.

Photo 830709-3 penstamen.

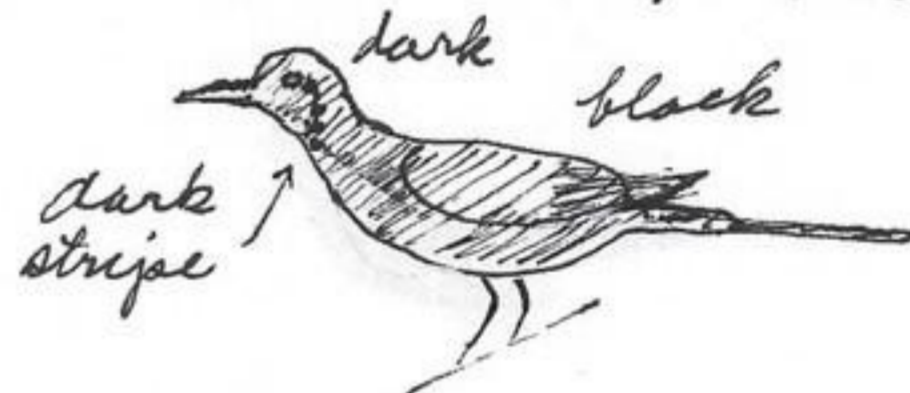
Photo 830709-4 manzanita with yellowish-green moss.

Photo 830709-5 basal part of manzanita on ridge.

Photo 830709-6 high peak (forest service fire observation shelter)  
 and mass granite face framed in broken trunk (leg lightning)  
 of a pine.

Photo 830709-7 ibid but framed with dead white-pine limbs  
 at divide S of camp. no. 701. A flycatcherlike bud on limb.

Photo 830709-8 close-up of above bird.



Largest western white cone 14"  
 which is not large enough to  
 qualify for sugar pine.

Frogs calling at trout fishing lake  
 in camp.

July 10, 11, 12, 13

At Idyllwild Thousand Island Preserve. Left for El Toro.

At Escondido Lake noted a band-tailed pigeon. Steep climb up  
 and over granite range to W of lake which at this time is flooded.

Continued to Don and Chris Jensen in El Toro. 21061 Avenida Albercon  
 714-837-2949. 92430

El Toro, Orange Co., California

July 14, 1983

Had a visit with Don & Chris and children last night and this A.M.  
 Don in administration and flights every 45 days to maintain  
 flight rating. Left and made appointment with Wadsworth V.A.  
 hospital for removal of skin keratosis on right mandible.

Appointment Monday 1:00 P.M. Continued to Kenney Grove County  
 Park (via W. Pacific Coast highway <sup>(101)</sup> to 23 to Fillmore, thence W to park  
 via 126. Will visit John Gessford in Santa Paula or at his  
 Ventura, Los Angeles Co., California

July 15, 1983

Mr John B. Gessford and Jewell. (remarried)

740 E Virginia Terr. Santa Paula, Calif 93060 525-9475

or 4000 W Pacific Coast highway, Ventura, Calif 643-4756

Stayed at beach home <sup>W. of</sup> Ventura area. Buds on beach: Heermann  
 gull, western gull, brown pelican, 12 willet together, 1 sandpiper,  
 4 cormorant, hundreds swallows top hill to N.

John has retired and spends his time influencing people to write to political officers who are not sympathetic to Reagan plan for reduced spending. He showed us the film made in 1934 of our troop 51 in Pecos Utah. <sup>JAMES W. BEE listed as co-author of film.</sup> This film was shown in the scout area of W. U.S. and when John retired, he received the film. John gave us the addresses of two former scouts now living along our route to Seattle:

Marcus Hitchcock (wife Berthy), 109 Catalina Ave., Antioch, Calif. 94509 - 209-561-4426. Vern Hatch (wife Bessie), 220 C St., Box 761, Jacksonville, Oregon. 97530. 503-899-7221.

Ventura, Ventura Co., Calif.

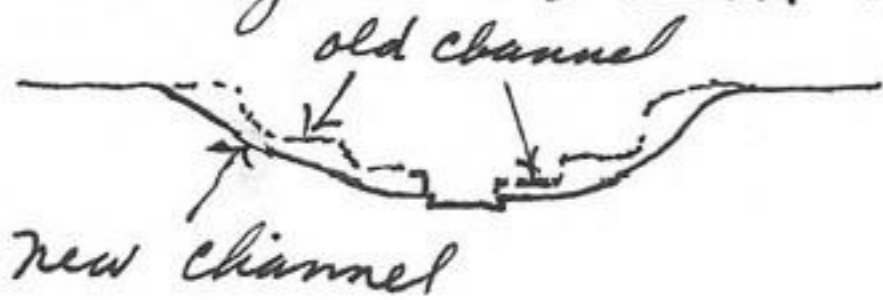
July 16, 1983

Left Johns and returned to Santa Paula, thence E to 5, thence E to 14, then Actin, thence W to Soledad Canyon, Thousand Trails Preserve. Enroute at Piru noted a turkey vulture. Arrived Soledad T.T. at 5:00 P.M. A red-shouldered hawk alighted on dead limb of cottonwood for 3 minutes, then left. Observed in area later in evening. 23 common crows alighted along stream and turned small rocks (in wet soils) over in search for food.

Soledad Canyon Preserve, Los Angeles Co., California

July 17, 1983

Birds in area: red-shouldered hawk, violet green swallow, scrub jay, common crow, bluebird, Brewer's blackbird. Stream is set aside for preservation of the stickleback, an endangered species, although the stream bed has been channelized and modified.



This is a procedure of channelizing through-out the drainage system. Water clear and cold, not at all murky or muddy. It supports a bright green algae on banks and edge of water. Left this noon for V.A. SW of UCLA in W Los Angeles.

W Los Angeles (SW UCLA), Los Angeles Co., California

July 18, 1983

Camped at SE end V.A. in recreation field 1 block E Interstate 5. Checked V.A. but their schedule not suitable for our timetable so moved N. Drove W along 1 and then 101 to Leo Carrillo State Park. Photos 830718-1 to 830718-4 of waves and surf riders. Photos 830718-5-10 of western gulls and Heermann gulls.

Birds in area of trees in canyon and on beach.

- 1 black-headed grosbeak
- brown towhee, most conspicuous and dominant bird of the area. In creek bed of boulders and gravel from site no 58 to ocean, <sup>approx 2/10 mi</sup> observed 55 of these birds, some in groups of as many as 8. There was considerable chasing of each other and feeding together.
- 8 scrub jays
- Calif. quail. 2 families together totalling 18 birds, the young of different sizes. Three other pairs.
- 1 cottontail rabbit.
- 18 pelicans
- 6 cormorants
- 20 western gulls
- 9 Heermann's gulls
- 3 elegant terns
- 2 Calif. thrashers
- 2 black phoebe
- 1 black chinned hummingbird.

Leo Carrillo State Park, Ventura Co., Calif.  
~~in area of trees in canyon and on beach.~~  
 July 19, 1983

Left and drove to Oxnard, thence S to Port Hueneme at Channel Island Harbor (Anacapa Island marina). Photo 830719-1, 830719-2, 830719-3 of sail boats in harbor. Continued W to El Capitán State Park in Santa Barbara Co. Enroute to Santa Barbara checked Reed Biddulph in Santa Barbara (Garcia St) but they spend 4 months at Aspen Grove in Utah and would not be back until October. He is retired.

El Capitán, Santa Barbara Co., California.  
~~in area of trees in canyon and on beach.~~  
 July 20, 1983

- Camped overflow park on bench above ocean. Birds in area:
- 1 Calif. Thrasher (mockingbird like call),
  - 25 brown pelican
  - 8 western gulls
  - 4 Heermann's gulls.
  - 12 Brewer blackbirds
  - 8 cormorant
  - 4 common crows.

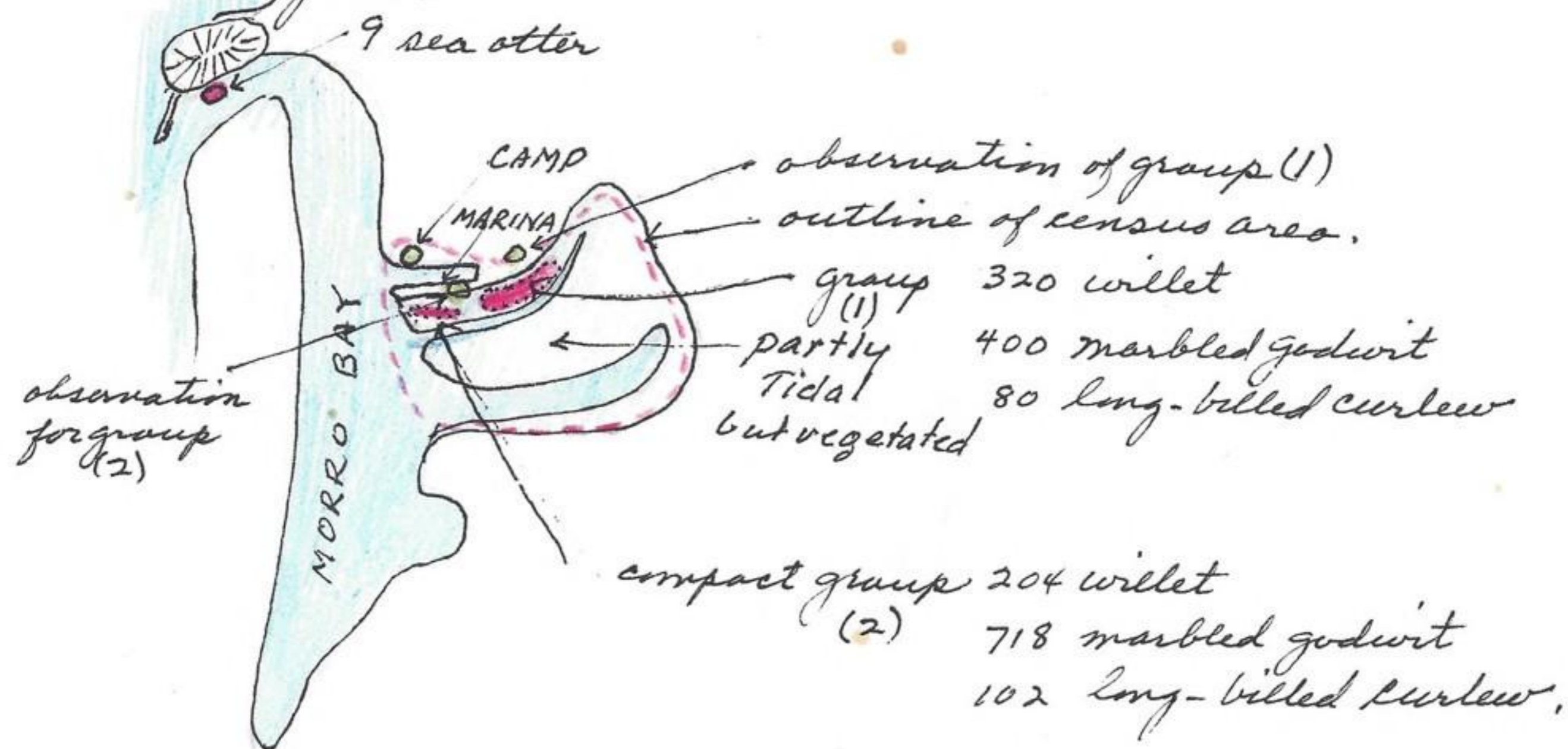
Last night a harbor seal noted 100' out from shore between incoming swells.



Left El Capitan and noted a turkey vulture at Buellton, one at Santa Maria and 2 red-tail hawks at Solvang, 6 turkey vultures at Shell Beach. Continued to Morro Bay State Park Camped in overflow area W end of marina.

Morro Bay State Park, San Luis Obispo Co., California.  
 July 21, 1983

checked Bay area



Birds in above area: (area 1 between canal and mainland and as outlined above. census x 10 for entire bay area Area 2 of single land raft of birds separate but added to total census.) Area is only lateral bay of Morro Bay.

2 common loon  
 1 western grebe  
 28 western gulls  
 8 snowy egret  
 112 brown pelicans  
 1 black oystercatcher  
 902 long-billed curlew  
 3404 willet  
 4718 marbled godwit  
 42 barn swallows  
 8 black-crowned night heron  
 1 scrub jay  
 10 great blue heron  
 1 common murre  
 1 belted kingfisher

19 Hermann gulls  
 2 lesser yellowlegs  
 3 elegant tern  
 1 mourning dove  
 9 harbor seal.

9443 total birds and mammals

9 sea otter (at channel of Morro Rock.

Photo 830721-1 of marshland and hills E of bay in mourning light. 830721-2 of sea otter, and 830721-3a 830721-3 of Calif. ground squirrel, Citellus beecheyi. 830721-3b from museum at park of Morro Rock and bay.

Peregrine falcons are reported nesting on morro Rock. Left and drove n to Hearst San Simeon State Nat. Mon. Visitation is by bus and conducted tours. (Tours ① 2-3-4). The castle is massive, elegant, too overpowering to see the details, swimming pools most interesting. This Castle was built as a result of inspiration of camping in area in early days of Hearst's life. Statuary principal feature throughout house and gardens. Photo 830721-4 Annette and Greek Roman swimming pool. 830721-5 general photo swimming pool (outside one). Photo 830721-6 Upper section of one of twin towers. 830721-7 Annette and front door of Castle. 830721-8 roof garrets. 830721-9 Iron work in door (Statued 3) 830721-9a Annette at swim area 830721-10 Castle in distance. 830721-9b Annette & statues 830721-9c on return trip down mt. Black-chinned hummer only bird except 2 vultures at Hearst Castle. Brewer blackbirds and brown-headed cowbirds common at center at base of mt. Visited San Simeon at bay. Hearst tied a 200' yacht at <sup>his</sup> pier there. Continued S on 1 to San Simeon State Park. Surf scoter, 1 harbor seal, 18 brown pelicans, 8 western gulls, 12 Heermanns gull 2 willet flew by. Photo 830721-11 rock in ocean and sun? 830721-12 me, gwb.

San Simeon State Park, San Luis Obispo Co., California  
July 22, 1983

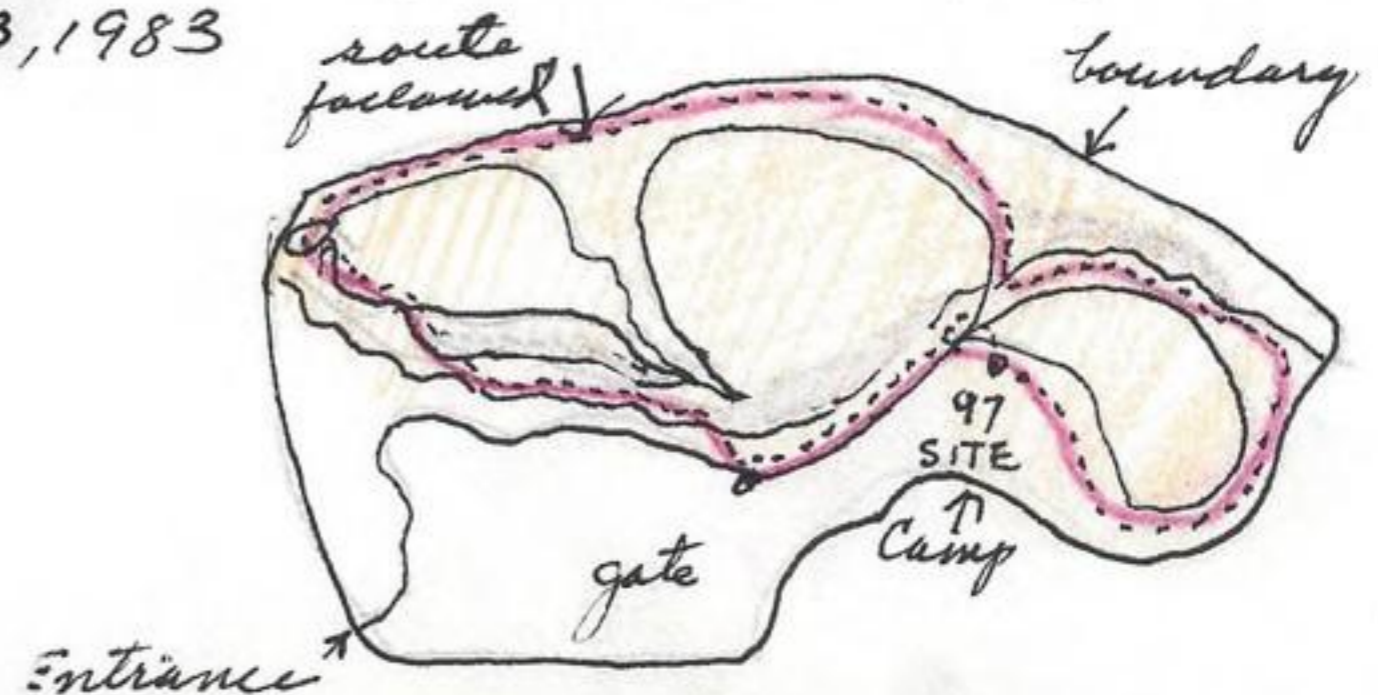
Camped in overflow to S of regular camp. Birds on beach 18 brown pelicans, 1 harbor seal, 3 western gulls, 6 Heermann gulls 4 willet. Left for San Benito. Turkey vulture at Cypress Dr. beyond divide on highway 46. Turkey vulture just n of Paso Robles. Turkey vulture Camp Roberts. and at San Ardo. Mileage 990 first yellow-billed magpie, next lake to n 996.0 or 6 mi S of Lake. 18 pintails at lake First crows (110) <sup>small</sup> near lake and 2 mi from San Benito River. Arrived San Benito Preserve. This area flat valley, <sup>clear</sup> stream, cottonwoods sycamore, live oak, few pines, elderberry etc. and grass now being replaced by roads. One area near gate and one E almost finished, other ~~or~~ area just being developed.

San Benito Thousand Trails Preserve, San Benito Co., California  
July 23, 1983

Census birds & mammals:

Between 8:30 AM and 10:00 AM.

Census area n of creek and entire E section. (orange) route - red



Brown towhee 24  
 house finch 24 (one group 12 included)  
 turkey vulture 1  
 mourning dove 4  
 California ground squirrel 212  
 merriam chipmunk 1  
 valley pocket gopher diggings  
 western blue bird 38  
 acorn woodpecker 21  
 scrub jay 28  
 rufous-sided towhee 1  
 white-breasted nuthatch 1  
 red-shafted flicker 12  
 desert cottontail 27  
 lesser goldfinch 6  
 robin 5  
 California quail 68  
 yellow-billed magpie 17  
 common crow 8  
 bat (*Eptesicus fuscus*) 5  
 lark sparrow 6  
 plain titmouse 12  
 black-headed grosbeak 14  
 black phoebe 14  
 song sparrow 5  
 great-horned owl 1  
 downy woodpecker 2  
 house wren 6  
 western wood pewee 11  
 Nuttalls woodpecker 3  
 common titmouse 21  
 Bewick wren 6  
 violet green swallow 8  
 barn swallow 1  
 tree swallow 5  
 black-chinned hummingbird 2  
 Brewer's blackbird 6  
 brown-headed cowbird 1  
 sparrow hawk 2  
 red-tailed hawk 2  
 band-tailed pigeon 1

830723-208 tracks 33 mm

mule deer 3 " 71 mm

coyote 1

bodger-(diggings)

raccoon (tracks)

45 species

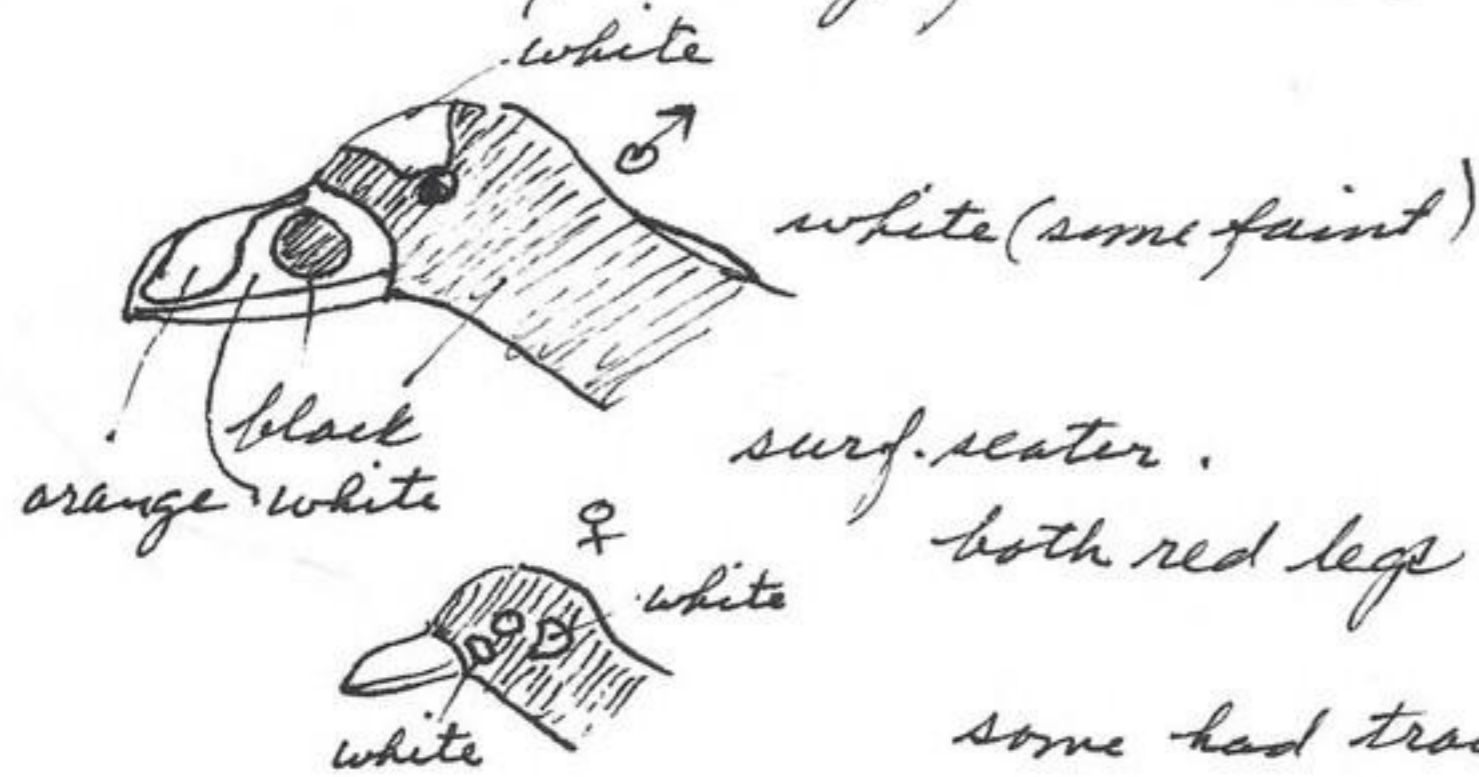
543 individuals

Left San Benito Preserve and drove N, thence W and camped at Sea Cliffs S.P. just E of Santa Cruz on beach just W of park.

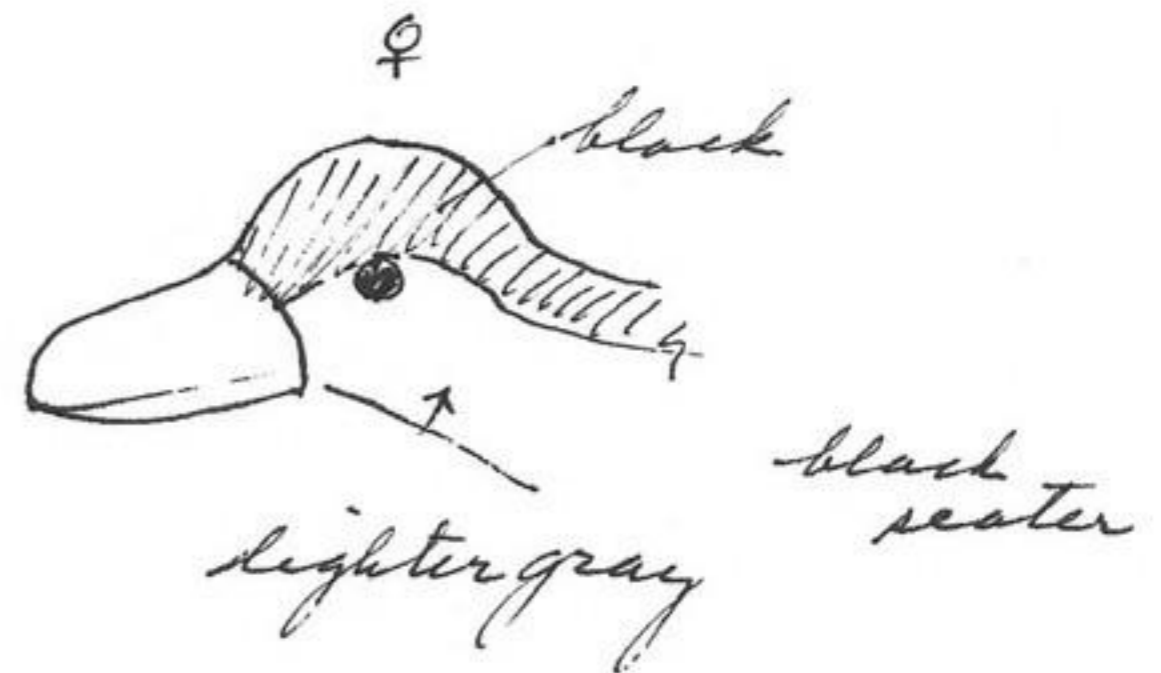
Sea Cliffs State Park, Santa Cruz Co., California.

July 24, 1983

checked cement cargo ship at end of fishing pier, once a fashionable show place now a wreck. Storms had broken ship thru in several places. At least a hundred people fished on pier but last section (bow) of ship now separated from people and used by brown pelicans, western gulls and double crested cormorants. This shows that birds need protection from presence of people, if only a short separation of space. The surf<sup>42</sup> and black seaters<sup>2</sup> in area in one group off pier. They swam to pier twice to feed on trash thrown over pier by fishermen.



surf. seater.  
both red legs.



some had trace of white in wing and could have been white-winged seater.

met a woman lawyer (Long) a former student in law at K.U. Left and continued N to San Francisco along highway 1. Drove thru Golden Gate Park, thence N to Hyatt Regency where we listened to Tom Montgomery at "the other tree", then with him to San Rafael where we met Georgia and Venessa. Parked in drive way.

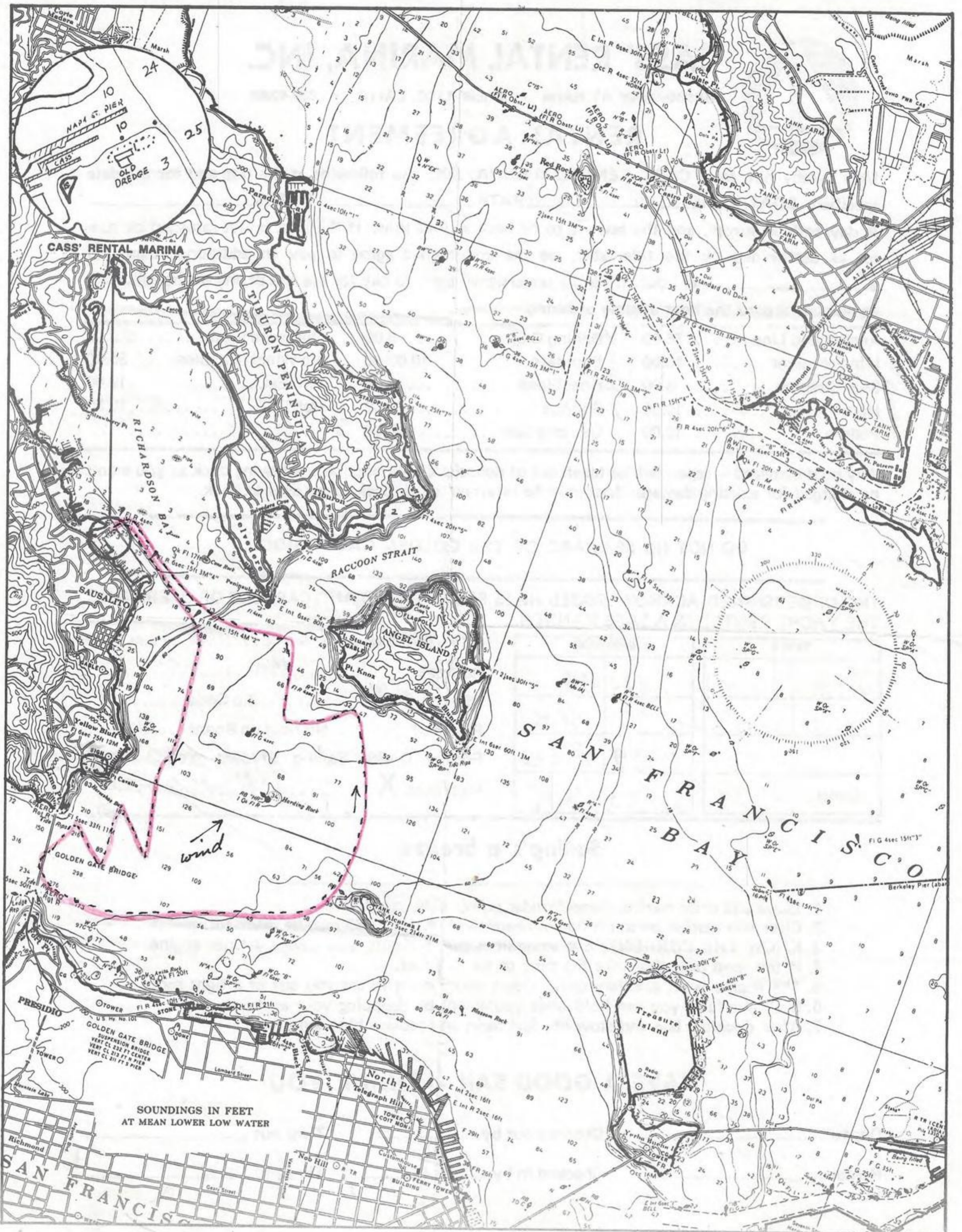
409 Miller Creek Rd, San Rafael, Marin Co., California.

July 25, 1983

Spent the afternoon on sail boat with James R and Tom and Annette. (see map for route taken in San Francisco Bay.

Several photos taken on trip

- |                                                 |                            |
|-------------------------------------------------|----------------------------|
| 830725-1 regging sails -                        | 830725-9 Annette on boat   |
| 830725-2 gay, Tom & Annette                     | 830725-10 James Robert Bee |
| 830725-3 Annette, gay & me                      |                            |
| 830725-4 " " " "                                |                            |
| 830725-5 San Rafael boat harbor & San Francisco |                            |
| 830725-6 Tom Montgomery on boat                 |                            |
| 830725-7 " " " "                                |                            |
| 830725-8 " " " "                                |                            |



SOUNDINGS IN FEET  
AT MEAN LOWER LOW WATER

SAN FRANCISCO

SAN FRANCISCO

CASS' RENTAL MARINA

TIBURON PENINSULA

RACCOON STRAIT

ANGEL ISLAND

SAN FRANCISCO

Treasure Island

North Pt.

Telegraph Hill

GOLDEN GATE BRIDGE

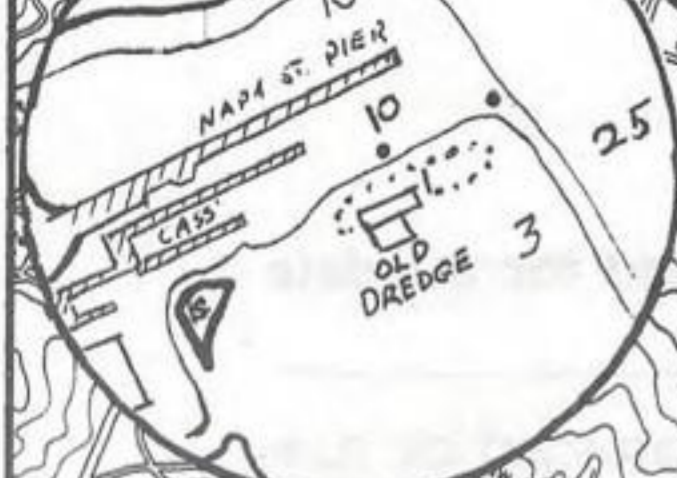
SUSPENSION BRIDGE

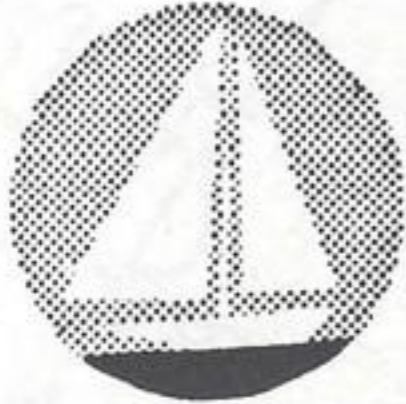
VERT CL 232 FT CENTER

VERT CL 217 FT S PIER

Richmond

SAN FRANCISCO





# CASS' RENTAL MARINA, INC.

BRIDGEWAY AT NAPA • SAUSALITO, CALIF. • 332-6789

## RENTAL AGREEMENT

I/We hereby hire from CASS' RENTAL MARINA, INC. the following at the rate and for the date specified: BOAT NAME East Wind RATE 36 DATES 7/25/02

A day ends at sunset, and the boat is to be back at that time. If the boat is not returned by sunset as determined by the tide table, we the undersigned agree to pay an additional charge of \$ 20.00 per hour. I/We the undersigned agree to pay for the loss of any of the following equipment aboard the boat at time of hiring:

|                                   |                               |                                     |
|-----------------------------------|-------------------------------|-------------------------------------|
| 1 Anchor and Line . . . . . 75.00 | 1 Bailing Can . . . . . 5.00  | 1 Outboard Motor . . . . . 550.00   |
| 6 Life Preserver . . . . . 10.00  | 2 Bumpers . . . . . 10.00 ea  | 1 Jib Winch Handles . . . . . 35.00 |
| 9 Seat Cushion . . . . . 8.00     | 2 Boat Lines . . . . . 5.00   | 1 Fire Ext. . . . . 12.00           |
| 1 Horn . . . . . 10.00            | 1 Sponge . . . . . 3.00       | Bell <del>10.50</del>               |
| 1 Paddle . . . . . 12.00          | 1 Gas and Can . . . . . 10.00 | 3 Hares <u>30.00</u>                |

Any boat damaged – repair will be taken out of deposit. Check boat before leaving dock so you won't be charged for existing damage. Boat must be returned to our dock to get deposit back.

**DO NOT GO SEAWARD OF THE GOLDEN GATE BRIDGE.**

THE UNDERSIGNED ACKNOWLEDGES HE IS EXPERIENCED AND CAPABLE OF OPERATING THE YACHT RENTED IN A SAFE MANNER.

| TIDES  |       | CURRENT |       |
|--------|-------|---------|-------|
| 1406   | 4.7 H | 1212    | 3.7 f |
| 1829   | 3.0 L | 1527    | SLK   |
|        |       | 1739    | 2.1 e |
| Sunset | 8:27  | 2053    | SLK   |

Name (Printed) Tom Montgomery  
 Address 409 Miller Creek  
 City S.R. Zip Code 94903  
 Phone . . . . . Number on Board 4  
 Former CASS' Sailing Student Yes  No   
 Signature  Tom Montgomery

### Sailing's a breeze

1. Leave and enter marina channel under power only, sails furled.
2. Clear end marker on south side of channel. A charge of \$5 may be made for towing.
3. KNOW THE CURRENT; it is sometimes over 6 Knots, you have a 4 Knot engine.
4. If the wind picks up, take the time to tie in a reef.
5. The engine is an auxillary only. Don't count on it to get you out of a tight spot.
6. If all else fails, you can hold what you've got by dropping your anchor.
7. After docking, bag and stow jib, furl main and replace blue sail cover.

### HAVE A GOOD SAIL – THANK YOU

Deposit 200.00 Checked out by Shane Time out 4:00  
 Rental 36.00 Checked in by \_\_\_\_\_ Time in \_\_\_\_\_

San Rafael, Marin Co., California

July 26, 1983

At Tom & Chris Montgomery home.  
At community swimming pool.

830726-1 Vanessa

830726-2 "

830726-3 "

830726-3a "

830726-4 Vanessa and life guard.

830726-5 "


Earlier this morning James R., Tom and I hike to ridge N of his residence. Two deer tracks measured 40mm and 63mm.

Sceloporus on trail as well as raccoon tracks. 2 redstarts circled above. Visited the Asian Art Museum of San Francisco and saw the treasures from the Shanghai museum 6,000 years of Chinese art. Most impressive was the fact that good art appeared abruptly and from that point on showed little improvement with advance of civilization. (Neolithic and Bronze Age). The reflective mirror was given special consideration.

This afternoon drove to Leonard and Mary Lou's home in Magara (304 Rheem Blvd). They took us to dinner and we slept in Barth in front of their home. Si had left 2 weeks ago. Mary Lou said that mule deer, raccoon, opossum, squirrels are in back yard at times. The brown towhee, scrub jay, Calliope hummingbird, and Anna's hummingbird observed in backyard.

Moraga, Contra Costa Co., California

July 27, 1983

Left and drove James R to Woodacres via San Pablo Dam Rd, 80, Richmond, Richmond bridge, 5101 to Fairfax-Woodacres road where he met Cynthia and friends. We then continued to highway 1. James Robert is to go to Bette's wedding in New Mexico, at divide to highway 1 observed 6 turkey vultures. At Point Reyes Station 2 turkey vultures. Bodger Bay first ring-billed gulls up coast. Ocean View, 22 Calif. Sea lions. Jenner, 1 turkey vulture. 10 mi N Jenner 2 turkey vulture, and 3 common raven. Rock moon, turkey vulture. 4 mi. N Rock Moon 4 turkey vultures. Kuslala 2 turkey vultures. Arrived Manchester State Park. All afternoon fog bank to W over ocean, now clouds to mountains.  when it remained from 5-8 P.M. Clear beyond with sunshine on mts. beyond. Fog bank stopped by mts and although some low pass into range the clouds did not advance from straight line contact with range

W.

(top view.

E

San Rafael, Marin Co, California

July 21, 1983

The top of this mountain...  
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(see Aug 1, 1983)

Photo 830801-1, 830801-2 and 830801-3 of trees and  
 Pacific Ocean Beach somewhere between Eureka and  
 Crescent City. At a place where a narrow peninsula  
 juts out into the ocean and where there is a plaque  
 in memory of a arms services plane crashed into peninsula  
 and killed all crew members. These 3 photos are, in fact,  
 Pacific City Thousand Trails camp. (off rock in distance, from  
 the above described peninsula)

830801



Manchester State Park, Mendocino Co., California,

July 28, 1983

Birds in area: white Cr. sparrow 3, Song sparrow 6, common raven 2, black-tailed jackrabbit 1, marsh hawk 3, 2 mule deer. The deer were observed leaving park. The ♀ jumped a wire fence and stood in middle of road ~~way~~ for her spotted fawn to follow but pressed by on coming car she continued and jumped over a high wooden fence rather than return to fawn. The little deer ran up & down first fence with our vehicle 200' away and finally crawled under lower wire and cautiously approach road, then stood on road for 30', then crawled under wooden fence to escape beyond. It lowered body <sup>perpendicularly</sup> rather than turn body laterally to crawl under fence.

Irish Beach 2 turkey vultures. 2 mi. N Irish Beach 2 turkey vultures. Elk Creek 2 turkey vultures. Abion 2 turkey vultures. Little river 2 turkey vultures, 2 striped skunk road kill, 2 miles beyond above, 1 striped skunk road kill. Golden eagles 10 mi. N Leggett on highway 101. Percy spit 1 turkey vulture. Garberville 1 turkey vulture. Phillipsville 2 turkey vultures. Arrived Hidden Springs State Park (part of Humboldt State Park system). One tree on bench above river 4 1/6" cir.

Hidden Springs State Park, Humboldt Co., California

July 29, 1983

- (see below) ~~delete~~ Photo 830729-1 Annette and river. <sup>NG</sup> Tameascurus douglasi in area.  
 " 830729-2 River view at camp area. <sup>NG</sup>  
 " 830729-3 Barth on highway of Avenue of Giants (redwood)

This area was flooded in 1964 and whole towns were destroyed and many people lost their lives. The water flood benchlands where redwood trees grew, depositing soil that covered seed of the redwood which resulted in a growth of young trees. This also happened 7 years previously but not as severe as 1964.

Photo 830729-1 of river from redwood bench. 830729-2 of Annette and river background. Left camp & drove N on Avenue of Giants. Photo 830729-3 of Barth and redwoods. <sup>Camped Patrick Forest Campgrounds,</sup>

Patrick Campgrounds (F.S), Del Norte Co., Calif. <sup>July 30, 1983</sup> <sup>Stollers Jay,</sup> left for Oregon on highway 199, Oregon state line 28730.5. Myrtle Creek 2 turkey vultures, porcupine road kill. Continued N to Eugene where we stayed at home of Gregg and Julia Estes. Eugene an unusual city of stability and organization of city.

Eugene, Oregon.

July 31, 1983

Dregg & wife sole publisher of Programmer Journal, 1B7M PC.  
Says my journal could be copied on Commuiter and then  
program could be established for use of information. Left  
and drove to 34 just this side Corvallis, <sup>(2 turkey vultures)</sup> then 20 to Newport  
thru 101 to Pacific City then to Pacific City Thousand Trails Preserve.  
At summit on highway 20, 2 turkey vultures and 1 sparrow hawk.

Pacific City Preserve (T.T.), Tillamuck Co., Oregon.

and mammals  
Aug. 31, 1983 (see page 83728212 for added information)  
Birds in area: <sup>20</sup> 2 western gull, <sup>8</sup> Herring gull, Ring-billed gull,  
Wilson warbler, cedar waxwing, Sewick wren 2, Townsend chip-  
munk 2, Chestnut-sided chickadee 4, White-crowned sparrow 3,  
crow 3, golden-crowned kinglet 2, robin 2, wandering tattler 6,  
surfbird 4, <sup>2 Townsend chipmunks.</sup> Left and drove 6 to Aloha, Oregon and stayed  
at David and Marian Bee. Bryant now playing basket ball.  
He drove Barth 2 blacks. (See previous page for photo near Pacific City T.T.  
Camp)

Aloha, Washington Co., Oregon.

Aug 2, 1983

Left, highway 5 to Washington (exit 71 Onalaska, 2/10 mile  
to Forrest Rd., east 1.6 mi to Jackson highway, turn left  
4/10 to north Fork Road, right 4.1 mi to Alpha Centralia  
right 6/10 to Chehalis Thousand Trails Preserve. <sup>site 276</sup> But this  
evening 8 chestnut-sided chickadees, 2 robins, 1 crow  
Enroute up N. Fork Toutle River to Silver Lake to see St. Helens but too cloudy.  
met Bill Meller of Kent. 852-4719

Chehalis Preserve (T.T.), Lewis Co., Washington.

Aug. 3, 1983

Best preserve so far. Birds and mammals in area:

Chestnut-sided chickadee feeding young.

black-capped chickadee

robin

golden-crowned kinglet.

crow, northwestern.

mule deer, tracks to 70 mm, one deer observed.

Townsend chipmunk

Valley pocket gopher.

Tamiasciurus douglasii

Took trails to Beaver Ponds in valley to S.

Area has good system of trails.

Left for Chris & Steves in Seattle.

10814 55th S, Seattle, Washington

Aug. 4, 1983. to Aug 31, 1983

Stayed at Annette C. Bee and Steven Kuzay home until Aug 31. During our stay we visited Ron, Linda & Muckleberry family, John and Nancy Vann <sup>symatius</sup>, <sup>Polly arrived from Nepal Aug. 4</sup> <sup>Mark de Fournant with Polly.</sup> <sup>Made one trip on</sup> <sup>ferry to Bremerton and back.</sup> <sup>On this trip noted 4"-6" jelly fish at Bremerton dock spaced 4 inches apart whereas at Seattle only 2 observed, one of which was 10" diameter.</sup> At Chris & Steve home a mole came into yard (front and established 3 piles of dirt one night. They are active in daylight hours also. They push soil out of hole without exposing themselves or the hole. The second night they reestablished the same three hole areas and one beyond. Each day I removed the soil. This occurred for four days and on the 5th day <sup>29</sup> the holes were open and they remained open for 2 days after which they were closed and dirt again piled in area where I removed the soil (daily). Two weeks later the 3 hole first established were not used but 3 other new holes appeared 20' away which remained active at least to Sept 12. Helped cut and chop 5 cords red alder for firewood.

The band-tailed pigeon was observed on several occasions in tops of Douglas fir tree at Chris & Steve's home. Northwestern crow passed thru area on several occasions. <sup>Chin surgery Aug. 18, 1983</sup> <sup>Dr. John Wallner</sup> <sup>Vet. Hosp.</sup> visited water front on several occasions as well as <sup>Mam</sup> Market (Pike) and City Center.

Left Chris and Steve's Aug. 31, 1983 and drove to Saltwater State Park. Last trip about 42 or so birds observed, this trip only 6 observed.

Salt Water State Park, King Co., Washington


Sept. 1, 1983

Left for Hood Canal T.T. Preserve via Tacoma, Gig Harbor, 5 end Canal, thence N on 101 to Quilcone, thence up and around bay and S to end of peninsula (E of Diablo Bay) to Hood Canal Preserve.

Hood Canal Preserve, Washington

Sept 2, 1983

Thousand Trail Preserve on upland, lodge on vantage point near water. Did not keep complete list birds, some are: spruce grouse, n.w crow, band-tailed pigeon, 9 deer, tracks 40-70 mm. Ranager

reports young faunas smaller than usual for this time of year and they may not survive if they have a severe winter. no mt. lion, deer, bob-cats, coyotes in area (which I question). Oyster beds best in NW. Each individual allowed 10 each. measured largest at 204 x 85 mm.  830902-1 photo of oysters to W over Hood Canal. Left Preserve and drove to Max Bee and Phyllis

737 Van Buren, Port Townsend, Jefferson Co., Washington.

Sept 3, 1983 to Sept 7, 1983

visited areas in the Port Townsend area including Indian and maritime islands. Left with Max and Annette and drove to Heart of the Hills Camp Ground in The Olympic National Park.

Heart of the Hills Camp Ground, Olympic National Park, Wash.

Sept 8, 1983

Yesterday afternoon drove to near top of Hurricane Ridge but rain and fog drove us down again. This morning drove to lodge on Hurricane ridge with clouds above and below us. Foglike clouds shrouded drainage systems  $\approx$  N of Hurricane Ridge. Max and I followed trail to base of Mt. Angeles but clouds turned us back. Enroute along trail observed golden eagle (1/2 way along trail just below trail on S side, 4 commm crow, blue grouse 2, marsh hawk 1, sparrow hawk 1, Oregon junco 8, rosy finch 2, mt. chickadee 3, raven 1. Near lodge observed one group 5 does and 1 buck, another buck came from S up open slope to 5 deer but neither he nor the other deer reacted to each other. 10 photos on top of <sup>Hurricane Ridge near Visitor Center.</sup> distant and local scenes and deer:

830908-1 mt range to SW

830908-2 " " " "

830908-3 mts to S.

830908-4 Conifers in mist on ridge to NW.

830908-5 mt range to SW

830908-6 black-tailed deer

830908-7 " " " ♂

830908-8 clouds on lee side SE continuation of <sup>Hurricane</sup> ridge.

830908-9 black-tailed deer ♂

Returned to base camp, Douglas squirrel and chipmunk at camp. Steller jay confiding at camp.

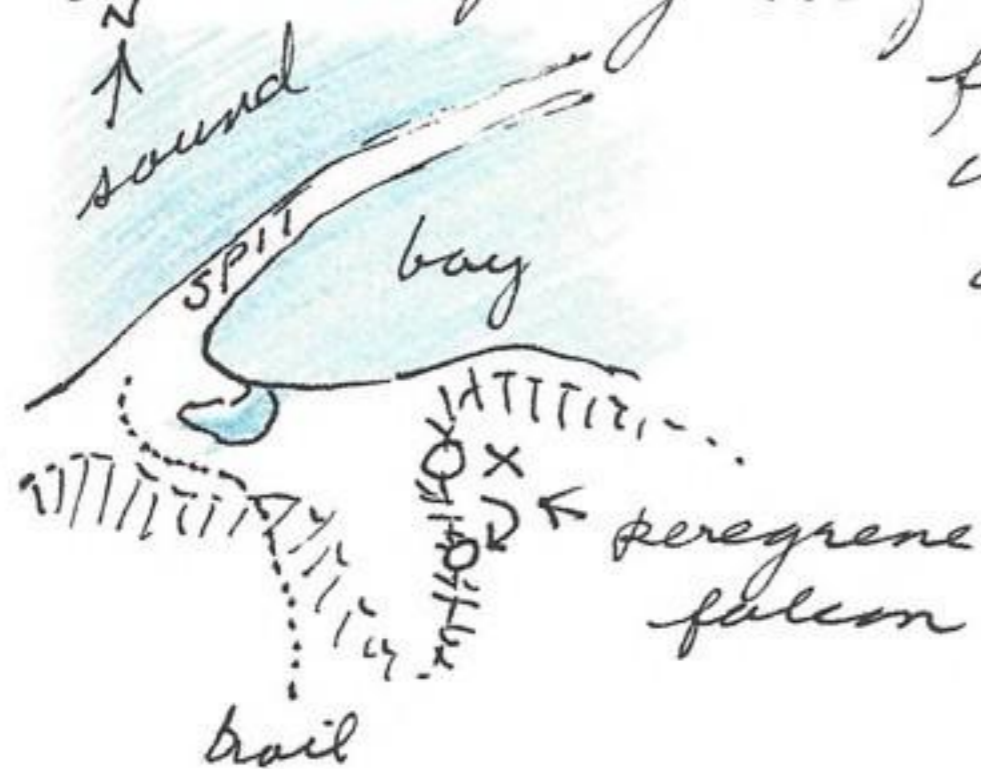
Sept 9, 1983

Camp and area.

Heart of the Hills Camp Ground, Olympic National Park, Washington.

Sept. 10, 1983

Left this A.M. and started for Elwha Canyon but too much rain and clouds. Drove then to Klungeness State Park. Camped near cliffs on W side. In evening walked down to spit. Observed peregrine falcon on top dead Douglas fir tree. It flew to new position up ridge about 1/10 mi. while in tree, preened and stretched for approx 20 minutes. Other birds in area:



marbled murrelet 5  
Bonaparte gulls 12  
glaucous winged gull 185  
Heermann gull 16  
herring gull 25  
Calf gull? 18  
godwit, sp? 600  
willet 10  
NW crow 6  
great blue heron 2  
surf scoter 18  
savanna sparrow 2  
chipmunk  
gopher or mole.  
robin.

white-crowned sparrow 8  
song sparrows 2  
rufous sided towhee 2  
bush tito 48  
red-shafted flicker 2  
Skeldeer 1  
black-capped chickadee 2  
mt-chickadee 2  
2 harbor seal

Klunings State Park, Clallam Co., Washington.

Sept 11, 1983

Left Klunings State Park to Port Townsend and left Max there. Drove to Wmslow, thence ferry to Seattle, thence to Chris and Steve's home where we stayed overnight.

King Co.  
10814 55th S., Seattle, Washington.

Sept 12, 1983

Left Chris' and drove to S W idbey State Park. Camped there.

S W idbey <sup>Island</sup> State Park, Washington.

Sept 13, 1983

This park is climax Douglas fir forests. One Douglas tree 4' in diameter, one maple 3' in diameter. Glaucous-winged gulls, Bonaparte gulls and arctic tern common along beach. Left and at a land fill between here and Coupeville, counted 808 glaucous-winged gulls and 173 crows. Continued to LaConner Preserve

La Conner Preserve, Thousand Trails, Skagit Co., Washington.  
Sept. 14, 1983

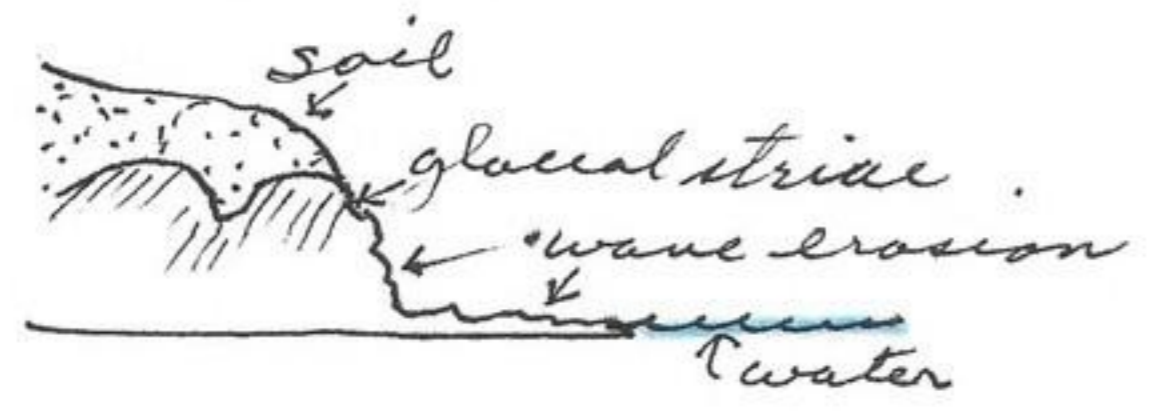
Came in yesterday afternoon.

Western grebe, 3  
 Horned grebe, 1  
 ring-billed gull, 1  
 glaucous wing gull, 18  
 Kingfisher 1  
 N.W. Crow 8  
 great blue heron, 5.  
 Killdeer, 2.  
 Common loon, 3,  
 double crested cormorant 3.  
 pelagic cormorant 1  
 white-winged scoter, 14

Jay clear

Birds in area: 9:00-10:30 AM  
 SW end of Camp area. Our  
 stall no. 145.  
 surf scoter 143, Common scoter 3  
 robin 1  
 song sparrow 3  
 fox sparrow 1  
 osprey, 1.  
 catbird 1  
 Oregon junco 4  
 brown creeper 1  
 savanna sparrow 4  
 white crowned sparrow 3.

Osprey carried 12" fish NW by long fir tree on vantage point  
 One help measured 45' long  
 empty <sup>1/2 shell</sup> mistle shells float as tide  
 Comes in.

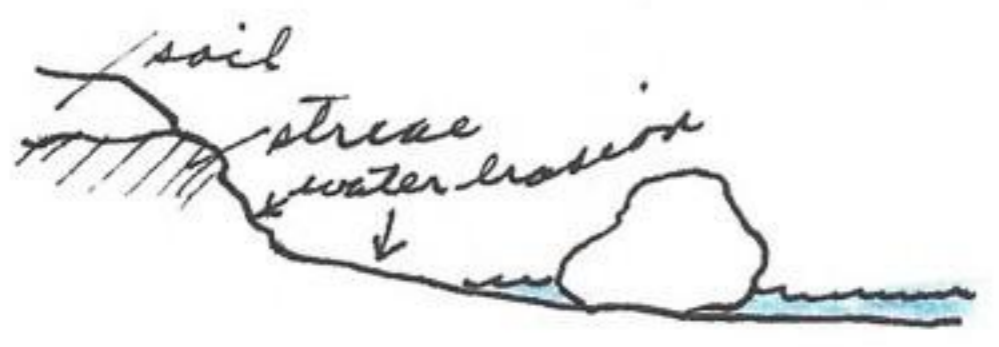


I believe that the entire country was eroded to bed-rock and later filled with gravel and sand.

There is a monadnock NW of camp on main Widbey Island.

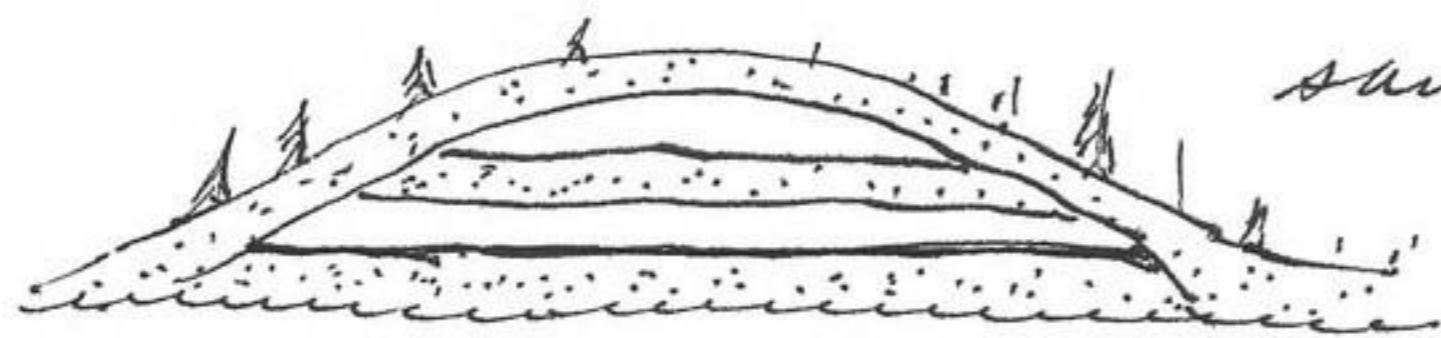


La Conners Preserve is leased from the Swinomish Indians. The Indians are allowed to drive thru preserved to <sup>ancestral</sup> tribal <sup>salmon</sup> fishing area at tip of peninsula  
 One boulder on beach and probably an erratic (no striae)

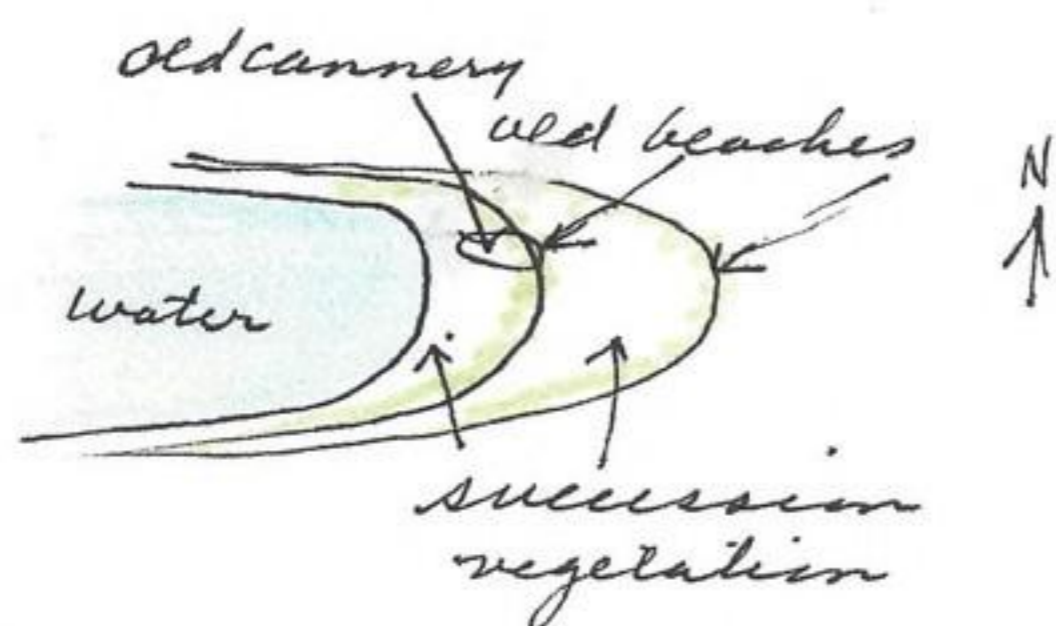


La Conner Preserve (Thousand Trails), Skagit Co., Washington  
 Sept. 15, 1983

Cool last night, fog this morning. Continued to Anacortes and took ferry to Lopez, Shaw and Orcas and return. The approx. numbers of birds were observed: double-crested cormorant 15, glaucous-wing gull 120, marbled murrelet 3, thick-billed murre 15, arctic tern 6.



sand and gravel profile NW of Anacortes.



at Anacortes noted flock of 23 Brewer's blackbirds.

Continued to Mt. Vernon Preserve.

Mt. Vernon Preserve, IT, Washington  
 Sept. 16, 1983

Rained last night, some sun this AM.

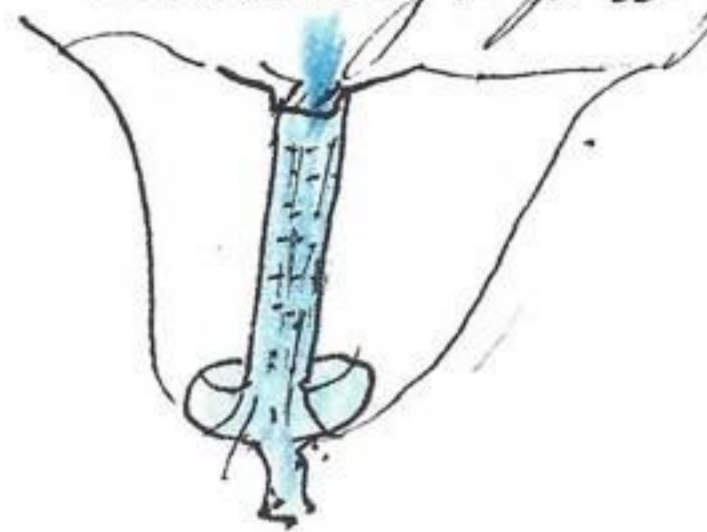
Birch Bay State Park, Whatcom Co., Washington  
 Sept. 17, 1983

1 Hurlerquin duck, <sup>8</sup> Bonaparte gull, <sup>16</sup> MW crow, <sup>28</sup> glaucous-wing gull, 2 great blue heron on beach to N. Bonaparte gull stamps bottom (1 inch water) at about 5 per second and moves back and forward for at least 1 foot in length. In 1 foot will pick up approx. 3 insects. Beach 1/10 mi wide of small boulders covered with barnacles, surface water. Clams spouting one per 10' or so. Continued N along edge of coast to Vancouver, thence 99 to Brandywine Fall Provincial Park, Canada.

Brandywine Fall Provincial Park, British Columbia, Canada.  
 Sept 18, 1983

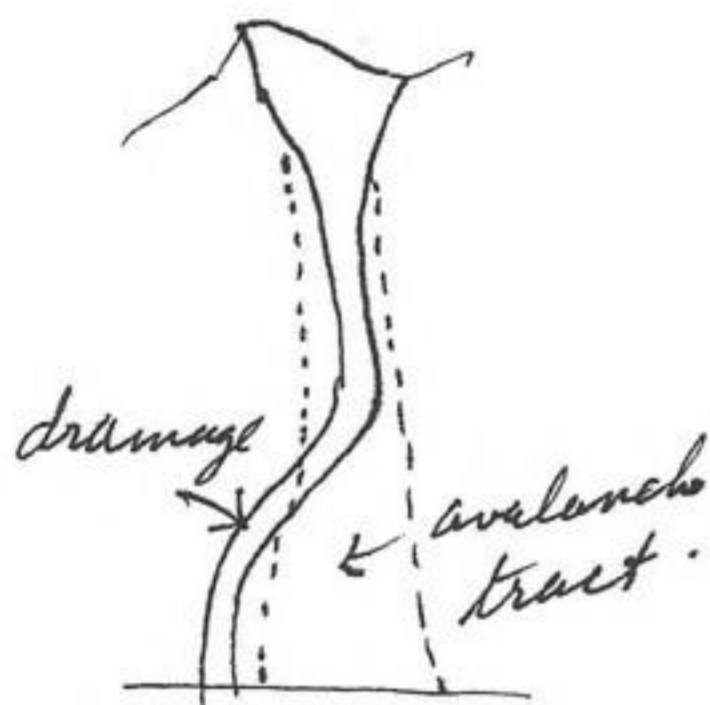
Informants say fall started about two weeks ago and that Sept & October are pleasant months. Made trip by boat to Swim Lake. <sup>Enroute</sup> Observed 8 Oregon juncos, 1 roven, 2 robin, 2 tree squirrels. (one called like a bird (PERO) as it advanced slowly down a tree trunk toward me below, 1 chipmunk. On a second

trip 1 hour later at 9:00 a.m. with Annette, observed 4 robins, 6 tree squirrels, 1 chipmunk, 8 Oregon juncos. On this trip made photo 830918-1 of moss covered rocks, Douglas fir & a dead log in foreground. At falls (Brandywine Falls) photo 830918-2 and 830918-3 to W showing lake and canyon leading up to falls. Fall not shown but symmetrical.

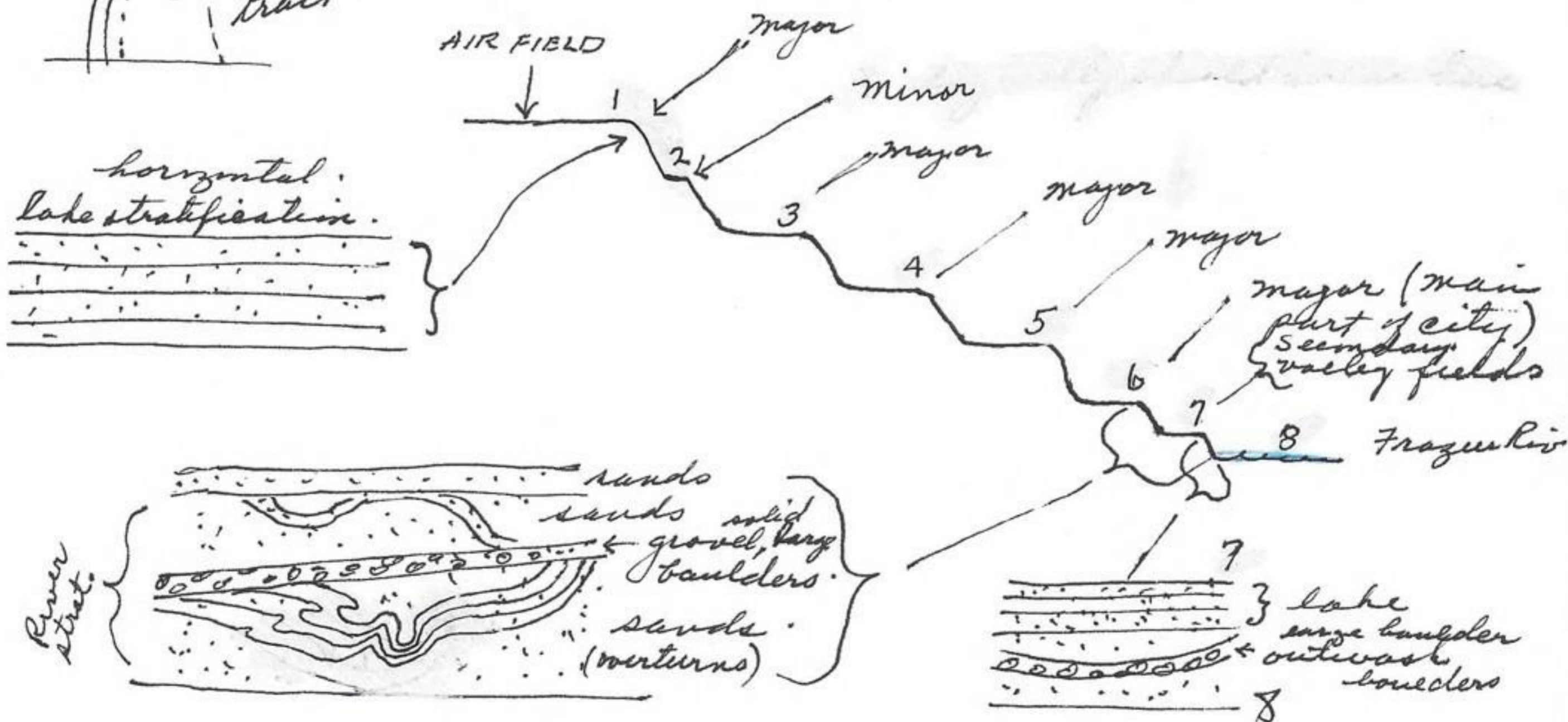


Left camp and continued E. Photo 830918-4 of upper end of Lillooet Lake with old bridge pilings in foreground. At this lake 4 red-breasted merganser, 1 osprey and 6 green wing teal. Photo 830918-5 of glacier and snow covered peak just west of Yale - Lillooet electoral district sign.

at E end Duffey Lake photo 830918-6 of mt on N side. Saw avalanche tracks all along this range to E. One shows how avalanche tract can jump out of channel thus.



Continued down canyon to Lillooet where we drove around valley and checked the various Pleistocene benchlands and later camped at Cayoosh Creek Park, <sup>at Lillooet</sup>. The profiles on E side of Fraser River, <sup>at Lillooet</sup> thus.



13 juv and 3 adult white-crowned sparrows fed on weeds on uppermost erosion level. Walked along edge of Cayoosh Creek Park at Lillooet and observed no birds but two dead salmon. Two flocks of Brewer's blackbirds flew S down canyon. Granite boulders broke (in river) <sup>more</sup> round than other kinds of rocks. Copied black bear tracks from mud at camp. (see next page).



Cayoosh Creek Park, Lillooet, British Columbia, Canada.

Sept 19, 1983

Before leaving took 3 photos of Pleistocene Terraces.  
830919-1 of all 8 (except 7 between river border terrace  
and river.

830919-2 ibid.

830919-3 to mouth Cayoosh Cr from top terrace on N side  
city.

Photo 830919-4 of flows and mt Range E of Lillooet.  
Left Lillooet and followed 12 to 97. Where Fraser River  
passes thru narrow canyon are excellent terrace <sup>in detail,</sup>  
formations. At Pavilion, noted 2 sparrow hawks, 2  
cooper hawks, and first black-billed magpie. Continued  
to Lakeview Campsite, 5 mi. S of Clinton on Hwy 97 (Caribou  
Highway). (see page 830922-221 and 830922-222 for drawing of bear  
imprints at Lillooet camp above)

Lakeview Camp, 5 mi. S Clinton, British Columbia, Canada.

Sept. 20, 1983

up log road to W to about 2nd level <sup>from top</sup> of 8 cyclic Pleistocene terraces.  
Varied thrush 1, robin 3, white-crowned sparrow 7, raven 2. Many  
deer tracks. 2 red-wing blackbird at lake. 2 sparrow hawks.  
Along 97 north between Lakeview and McKeese Lake noted <sup>teal</sup>  
8 sparrow hawks evenly distributed along the way, 5 raven, <sup>approx 130 green wing,</sup> no  
mammals, 3 flocks of Brewer's blackbirds. Camped McKeese Lake  
at N end. 2 Common loon at camp, 3 red-necked grebe. Photo 830920-1  
of lake to E.

N end McKeese Lake, British Columbia, Canada

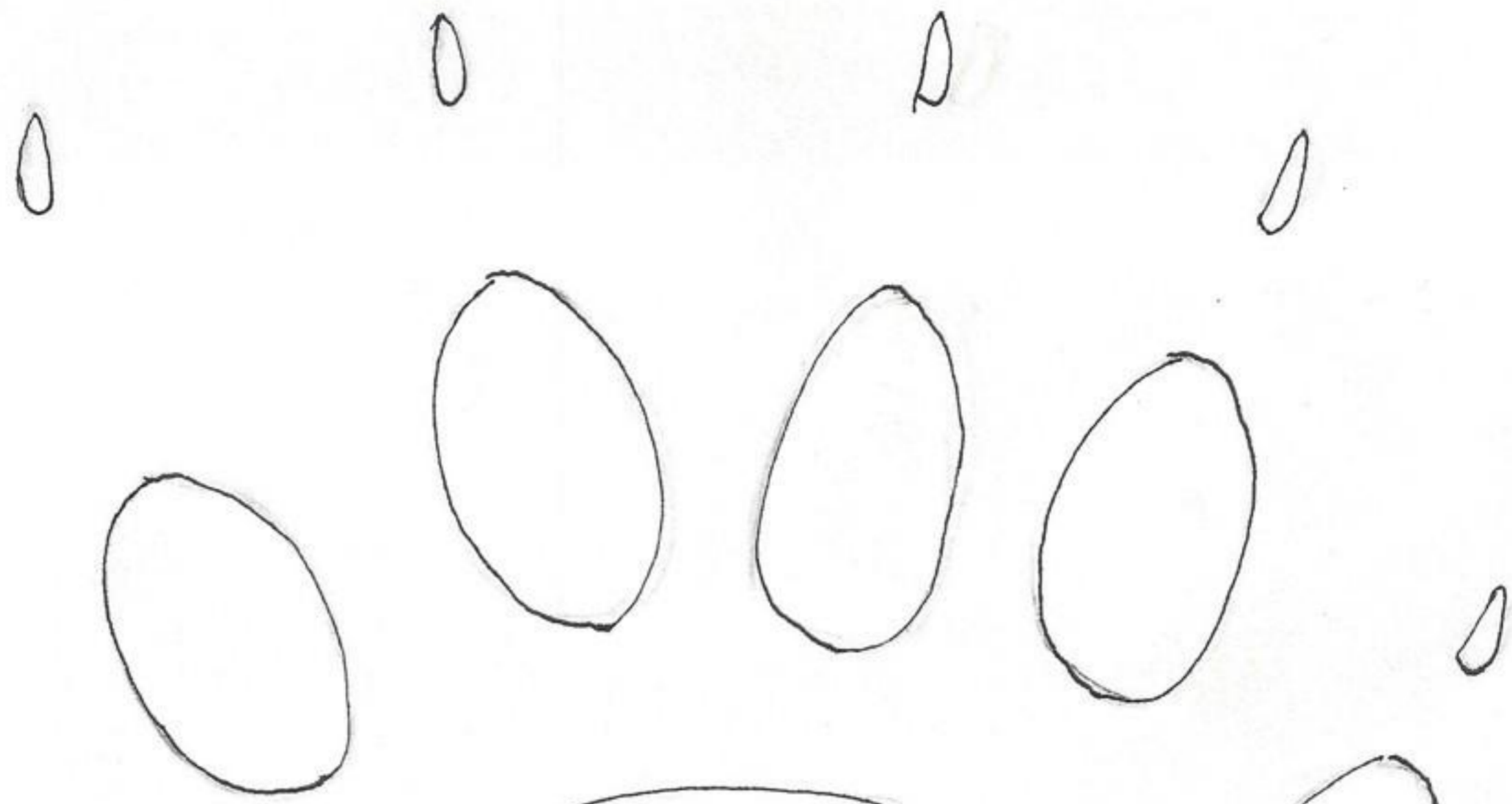
Sept. 21, 1983

Continued on 97 to Hazelton. Observed 4 sparrow hawk on first  
1/2 of way, 5 raven, several (5) flocks of crows, one of approx 500 birds,  
a chipmunk on road. Birds and mammals are rare, in fact  
since Vancouver we have not seen a deer, moose or bear, however  
recorded tracks of the deer & bear. Road kills are rare and I have  
seen approx 6 mammals and 2 crows on the entire route, nor have  
I seen crows feeding from road or road shoulder.

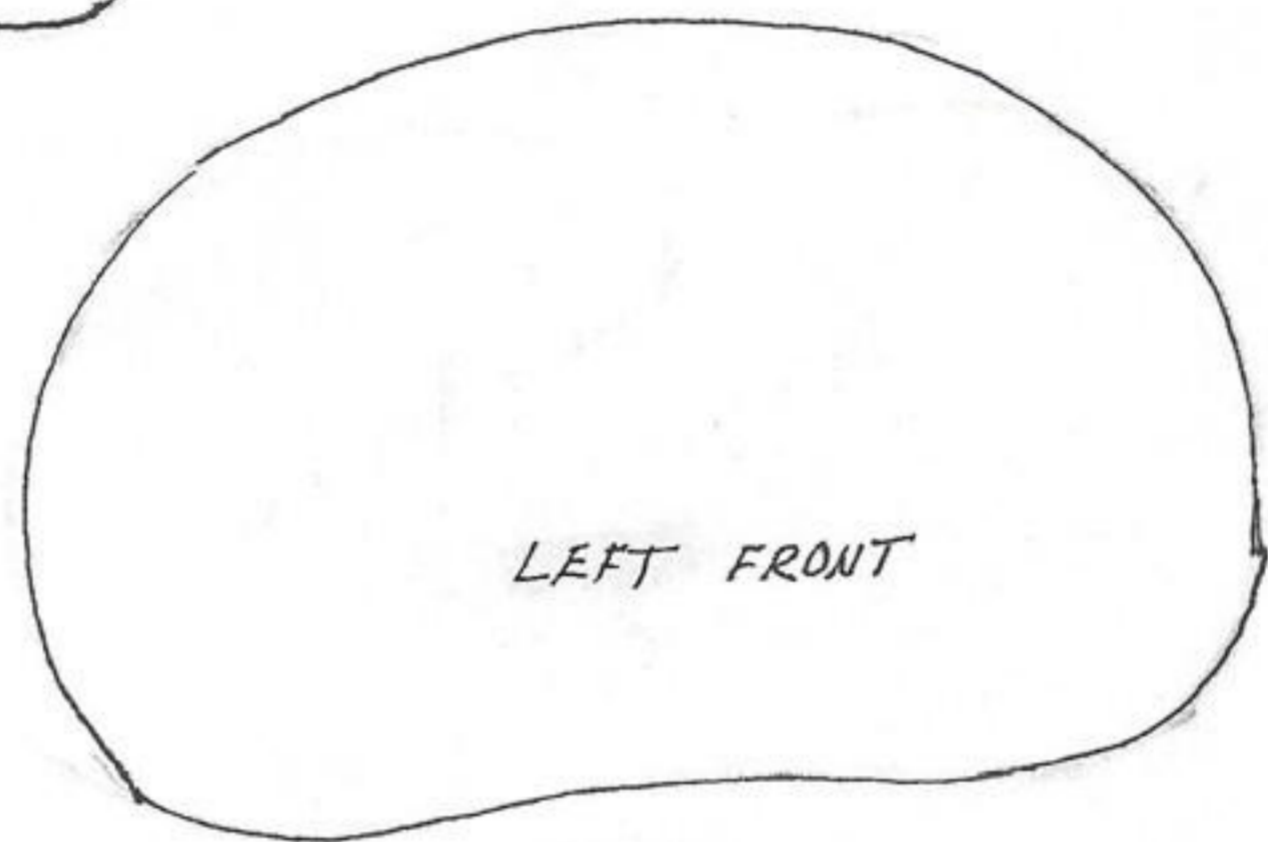
On long grade S of Tilkwa from upper terrace to lower at river  
counted 12 well established terraces, which is 4 more than at  
Lillooet (8). Continued west of Hazelton to Seely Lake Provincial  
Park by lake. Black-capped chickadee at camp. (no 6)

Seely Lake Provincial Park, B.C., Canada

Sept 22, 1983

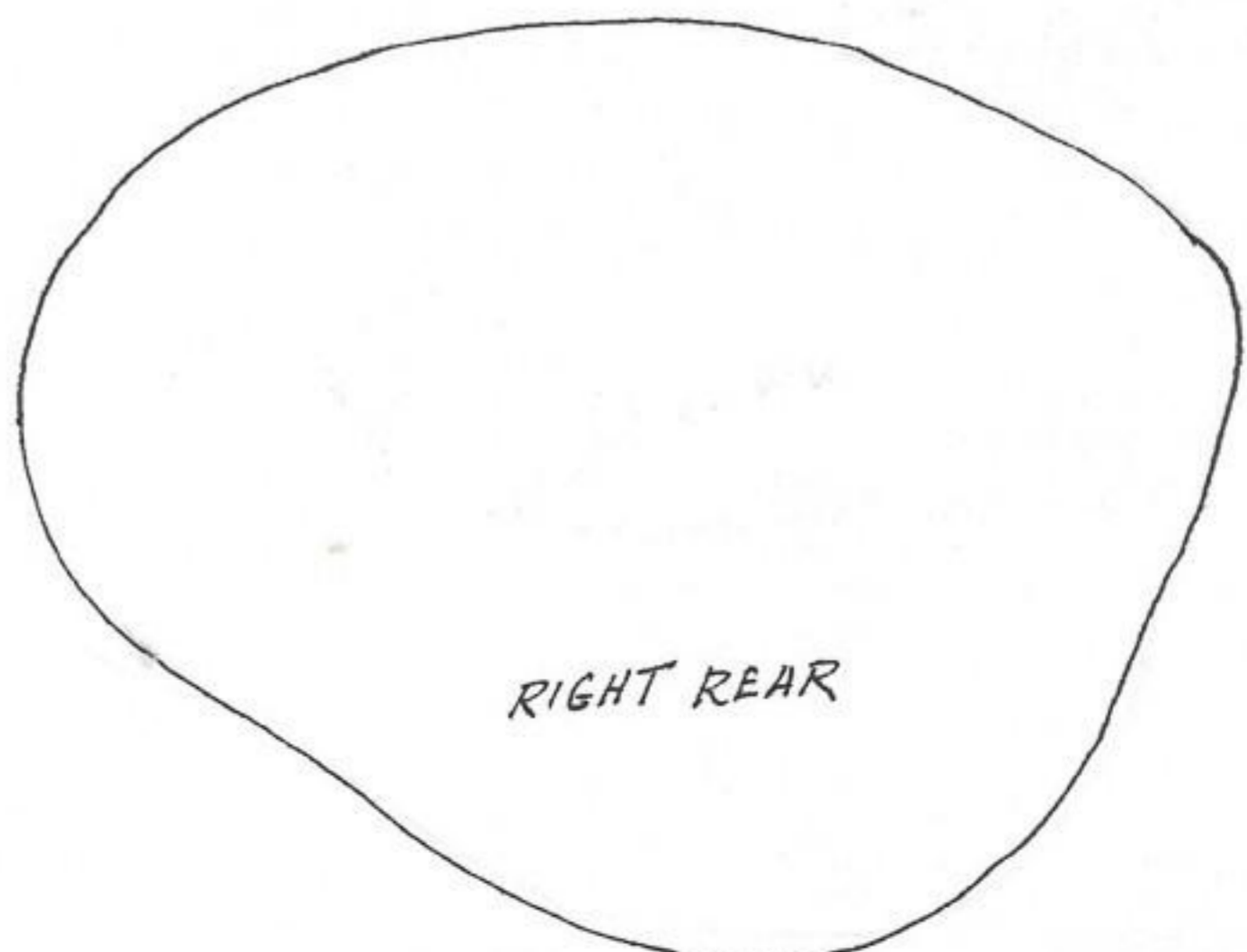
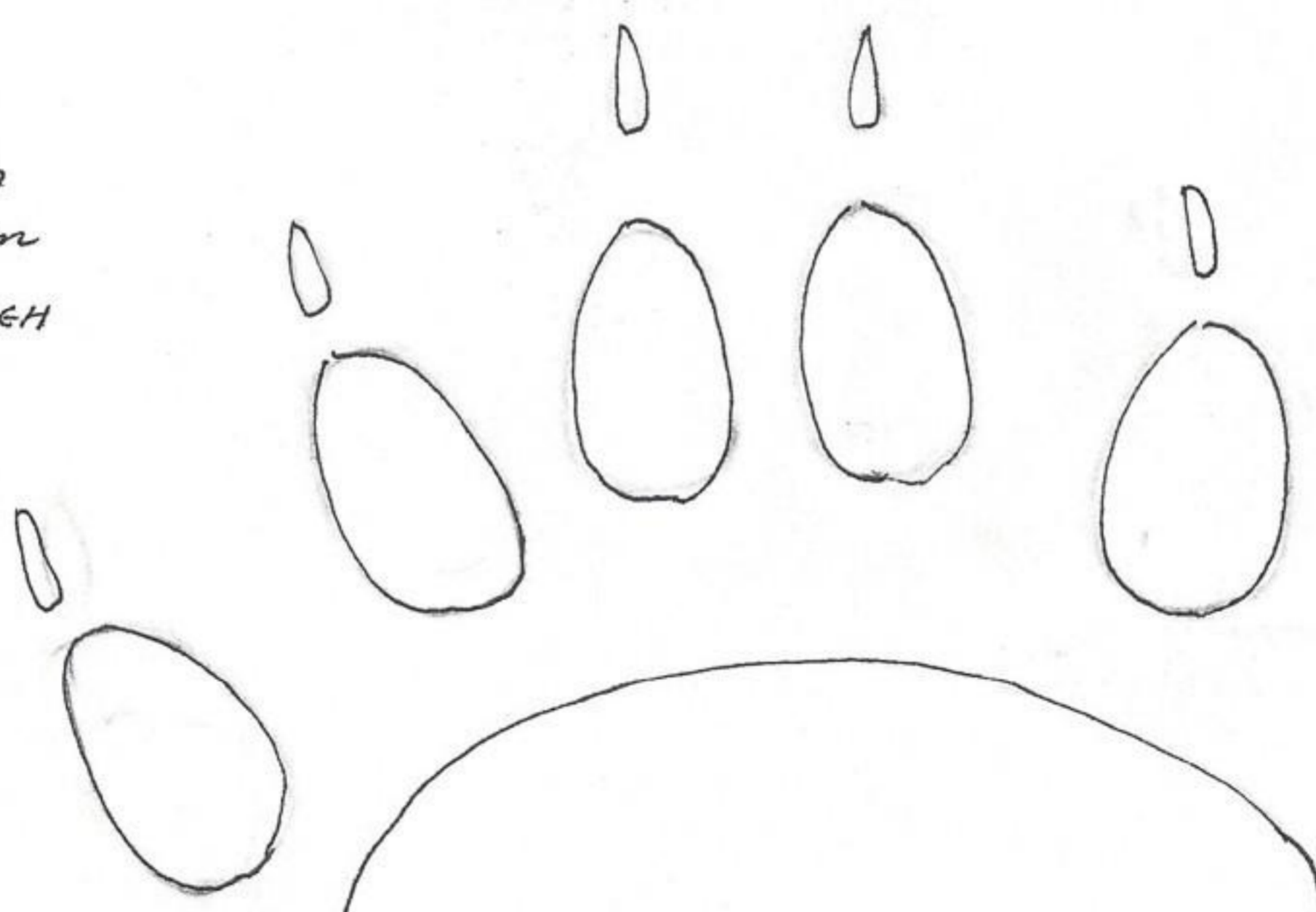


URSUS AMERICANUS  
 LILLOET, BRITISH COL.  
 CANADA  
 SEPT. 19, 1983

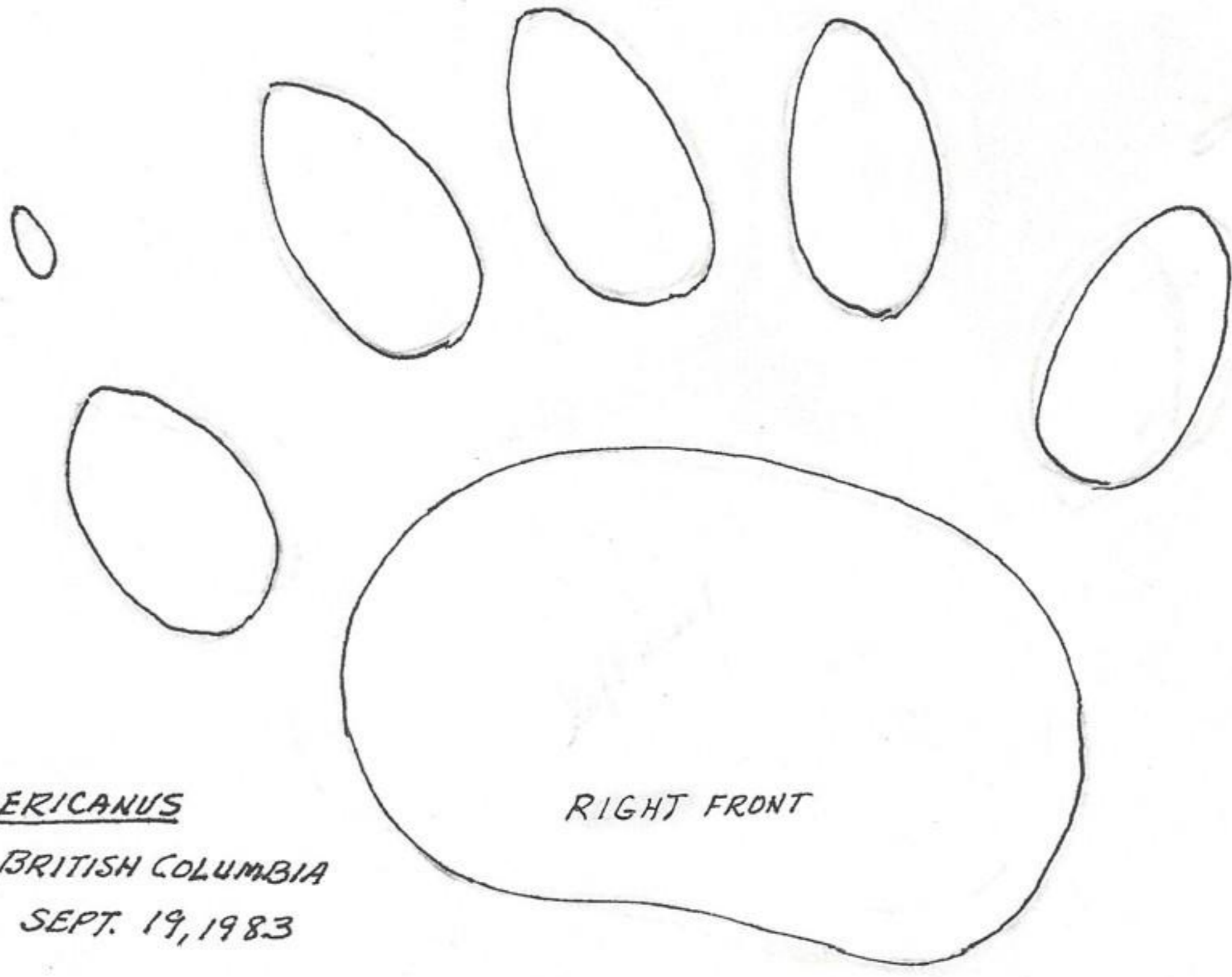


GREATEST LENGTH  
 FRONT FOOT 124mm.  
 WIDTH TOES 127mm.  
 PAD 79x48

GREATEST LENGTH  
 HIND FOOT 127mm  
 WIDTH TOES 110mm  
 PAD. 58x68 (LENGTH  
 NOT FULL PAD)



RIGHT REAR



URSUS AMERICANUS  
LILLOOET, BRITISH COLUMBIA  
CANADA. SEPT. 19, 1983

RIGHT FRONT



LEFT REAR

Red-necked grebe (2) at lake, when swimming underwater among lily pads and if swimming among pads from water bordering, would swim rapidly to beyond lily pads as if apprehensive of being among the pads. When swimming would move head forward and backward for better view of fish.

Birds and mammals observed enroute to Prudhomme Lake State Park:

Least shrewmunk - *Eutamias minimus* seen across road 5 mi. W of Kitwanga turnoff. May be *W. septentrionalis* of range.

marmota *Caligata*. 5 mi. W Terrace. saw across road golden eagle. 8 mi. W Terrace. adult.

pileated woodpecker & ruffed grouse. 18 mi. W Terrace

*Citellus* (sp.?) (Could be *ferreus*?). 20 mi. W Terrace.

raven increased over crows as we travelled W although there were only a few birds. Crows more common to E.

First gull observed at beginning of tidal water.

Good Pleistocene terraces, although not as continuous as in the Fraser River drainage, along the Bulkley River. I would estimate 10-15. Less so along the Skeena River. Along Skeena River the <sup>solid</sup> spruce <sup>peaks</sup> valley <sup>mixed aspen-conifer</sup> aspen mostly confined to area of terraces and solid spruce? above to timberline or peaks, Cottonwood along water course. I would judge this to be maximum color or nearly so for aspen in the Houston-Terrace area. West the aspen finally leave the area as we approach Prince Rupert. E to Prince Rupert the aspen may be just beyond the maximum, many places have aspen which are as red as maples. The entire country is dominantly yellows, greens and minimum amount of reds.

It seems incredible but we have not seen a deer, moose, bear, coyote or other large mammal since we left Vancouver, although we have search sandbar in rivers for bear, mt slopes for deer, elk, and goats etc. Camped at Prudhomme Lake Provincial Park. Rain since about 4:00 P.M. to 8:00 P.M. at least.

Prudhomme Lake Provincial Park, B.C., Canada

Sept 23, 1983

Rained continuously last night and today. Left camp and continued to Prince Rupert. Camped in area S of town. at museum they have some rare publications for sale. mainly

about Indians.

Sept 24, 1983  
ibid

Prince Rupert, British Columbia, Canada

Sept. 25, 1983

Rained all day yesterday and today. 42 mew gulls and 8 glaucous wing gulls resting near bay. 10 mi. E Prince Rupert at Prudhomme Camp rain up 3 feet to, in some places, on the highway. Approx 50 waterfall, first yellowish then clear, over cliffs or thru hillside growth, along side of road. Rain constant. 5 Canada Geese at Galloway Rapids.

Problems of City of Prince Rupert.

1. Commercial plants almost completely usurp shoreline bordering city and private. no access <sup>for</sup> to people or tourists.
2. No vantage points to see bay. Best place in parking lot at Safeway!
3. Area E. of Prince Rupert along <sup>one of the</sup> unique and beautiful channels in the NW is being gutted and leveled off and filled in from hillside leveling. An unexcusable crime.
4. It seems too late to overcome present problem of coastline commercialization but bordering firms could each supply limited areas for public use, at least vantage points. Also commercial buildings on <sup>edge of</sup> upper terrace could provide rooms for overlook of harbor and supply with comfortable seating & binoculars & scopes.
5. The most unexcusable sin is the painting of nearly all rock surfaces along the highway with high school "GRAD-1983" etc. Apparently each student must leave his or her personal mark. Celebrated 70<sup>th</sup> birthday today. Rain abating.

Sept 26, 1983

at Prince Rupert observed 1 harbor seal, 2000 glaucous-winged gulls (city landfill). No other kind of gull associated. It seems as if the glaucous wing gull is the garbage feeder as is the glaucous gull at Point Barrow.

Sept 27, 1983

Occasional rain but sky clearing from last 4-5 days of rain. Air crisp and clear and in most of the day. <sup>and 830927-2</sup> Photo 830927-1 at Prudhomme Lake St. Park <sup>Galloway Rapids E Prince Rupert.</sup>

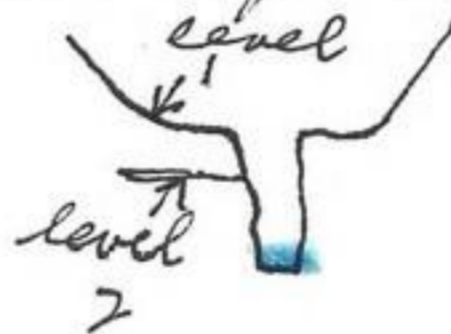
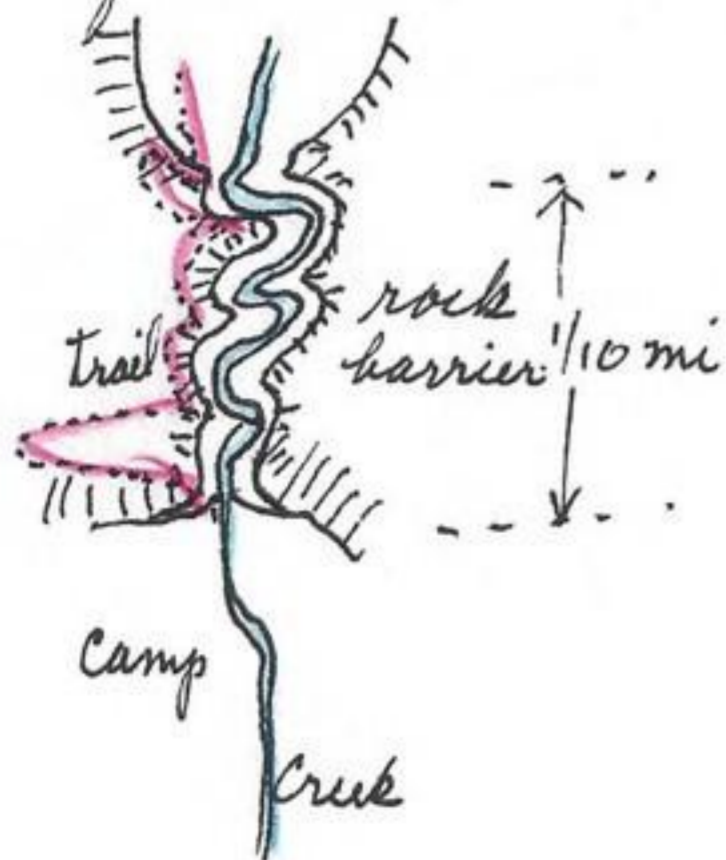
Sept 28, 1983

Fog clouds in mountains minimal but occasional light fog. Clouds higher in sky than yesterday or days before. Purchased rear view mirror (left side). Mfg by MCI Challenger of 1149 St. Matthews, Winnipeg. Model 3.22. Also place in N. Sakata. 5 Steller Jay at Rampun one group.

Left camp 31435.6 at 9:30 A.M. Clouds high above mt tops but fog layers below in valley. Oregon junco in camp and 5 Steller jays, mosses and lichens and fungi transformed into maximum size and gross appearance as result of last 5 days of solid rain. Rocks, trees and ground beautifully covered with this enriched growth and color. Raven. 443.6 Kleanza <sup>River</sup> Creek. Steller jay 449.5 Inver Cr. Steller jay. Photo 830928-1 at mouth of this Creek. Glaucous winged gull, glaucous winged gull, 31459.3 at Telegraph Point photo 830928-2 of mt, clouds to S. First color in cottonwoods (black) and aspen occurred at this point. Practically none to west and increase in number to E. Raven, glaucous-winged gull, glaucous-winged gull, glaucous winged gull. 476.1 first Brewer blackbirds (2). 31479.8 at Echamsiks <sup>River</sup> Provincial Park. 5 Oregon juncos, 5 tree squirrels, bears (black?) attempted to chew away 4x6 boards protecting garbage cans. This park has closed camping units. In beautiful grove of Sitka spruce. Steller jay. Conifers when view are light colored (cedar and dark colored conifers (sp.?). Aspen only on lower slopes, solid conifers above. Steller's jay. Occasional small butterfly. Cottonwoods increase as one goes up river. Steller's jay. Aspen now higher on slopes than to W. (N of Sharnes River). Cottonwoods grow high and straight in many places. Steller's jay. Terrace. 512.0. Camped at Kleanza Provincial Park. 528.4

Kleanza Provincial Park, British Columbia, Canada.  
Sept. 29, 1983

This camp is on Kleanza Creek at point (below) barrier canyon of rock some 200' deep.



Birds and mammals in area.

water ouzel 1

Swainson thrush 1

tree squirrel 6

Black cottonwood, cedar, hemlock, sitka spruce, aspen, alder and lodgepole pine in area, white bark, 15 species fungi.

Photo 830929-1<sup>76</sup> of two of the mushrooms, lodgepole pine, hemlock, cottonwood and a red-leaved plant.

Left at 31528.4. 535.0 Photo 830929-2 up Skeena River and 830929-3 to N showing general colors aspen & cottonwoods

Left camp 31435.2 at 9:30 A.M. Chances high above Mt. ...  
 for layers below in water. ...  
 and good appearance in ...  
 this and ground ...  
 after ...  
 31437.3 at ...  
 830929-2-1 mt, ...  
 (that) and ...  
 west and ...  
 gull, ...  
 31478.8 at ...  
 2 ...

830929-6a and 830929-6b colors and mt. to W of road  
 somewhere between mileage 537.5 and 568.1 (see opposite  
 page).

3150.0 Camped at ...

Left 3150.0 on ...



Good and ...  
 water ...  
 ...

Black ...  
 after ...

Left at 3152.4 ...  
 and 830929-3 to ...


537.0 photo 830929-4 of snow covered peaks and yellow colored foreground. 537.5 another shot of color (cattinwoods mainly and peaks. 537.8 St. Croix Creek. 550.5 photo 830929-6 of aspen color and peak to W. 562.9 red fox (cross fox with black legs and gray foxlike body color, at least 4 inches of white in tail. Hunted for mice along right of way and walked at least 200' along right-of-way. In way out to Prince Rupert the colors were not as intense in this area as they are now and even so there are greens of aspen still to come into color. I would just this time <sup>of year</sup> to be maximum for this area, say Oct 1. Cattinwoods are not as yellow as in Lawrence. Many aspen reddish but most are a brownish yellow, some brilliant yellow. 564.9 Coyote Creek. Informant said that two grizzly bears had been killed at Kitamat. in the last week where they were feeding on fish. Three have been killed at service station near Baulda Creek ~~but~~ in the last week because of annoyances and danger of bears in the area of habitation. Fish & Wildlife give them sanction to kill bears whenever they troubled the area. my guess is that if the garbage cans were bear protected they would not <sup>App photo of wolf (live, and 6' man man) measured 1800 T.L., body 1400, tail 400, hind foot 28 have trouble in camp.</sup> 568.1 photo 830929-7 mass color of aspen to n on other side of Skeena River. 569.4 Whiskey Cr. 31578.4 turn off to 37 n. now n. Small dark colored butterfly. Raven. 589.1 redtail. 5 butterflies so far on 37 and including a morning cloak. There are definitely more butterflies here than in Prince Rupert area. The country also is considerably drier and supports a different community of vegetation. Some aspen have already lost their leaves. 31599.9 photo of aspen, lake & distant mts no 830929-8. <sup>and 830929-8a</sup> 616.8 small ruffed grouse 1/2 size adult. 630.7 junction with Cranberry River road. 633.9 now on paved rd. 639.9 most brilliant colors (aspen-cattinwood) seen so far. 640.9 porcupine road kill approx 18" long. Steller jay 672.3 Nass River. 681.1 junction 37 and Stewart road. (Meziadin) from here went w to near head of Meziadin lake and then returned to Meziadin and camped. Could not find parks listed on map. Mileage at Meziadin 31693.4. Both raven and crows at camp. Informant said logging for pulp wood. Only a few cedars which grow normally along coast. Balsam, hemlock principal trees. Reports grizzly fed on salmon & rally verdan at headwaters of Fish Creek and Salmon Creek. Roads are kept open in winter

head 400 mm

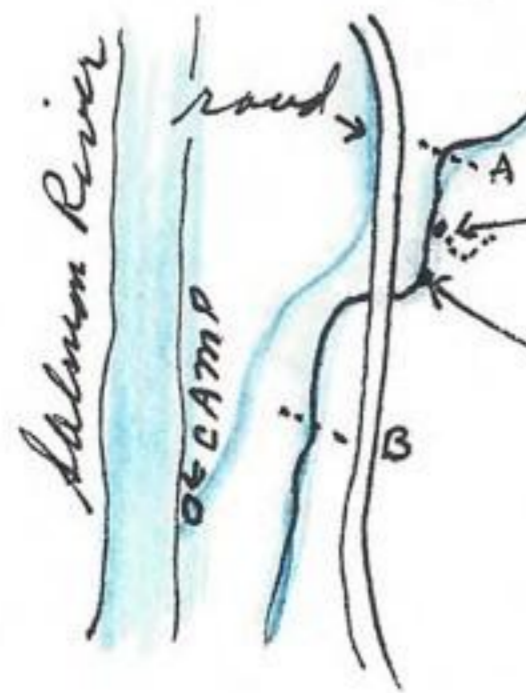


Meziadin, British Columbia, Canada  
Sept, 30, 1983

Left camp and drove S to Provincial Park just beyond second creek. This area has been a hunting & fishing camp in the past (still used) Enroute at second creek a blue grouse flew across the road. The park is named Crown Recreational Division. On Meziadin Lake observed 350 Canada geese and 1200 Calypate ducks feeding off a point N of camp. They were feeding bottoms up. 3. Horned grebe feed in lake. 3 glaucous-winged gulls and a kingfisher pass camp. The camp is just south <sup>3/10 mi</sup> of Tintina Creek. On way back noted an immature bald eagle 1/2 way up dead cedar at Hanna Creek. Back to junction 37 and 37A to Stewart. 702.0 Stewart (and color aspen) 67 kilometers. 704.3 photo snow covered mountains of snows of a few days ago. This photo of Entrance Peak is 2381 meters high. and photos are 830930-1 and 830930-2. at 706.8 Five photos of Entrance Peak nos 830930-3, 830930-4, 830930-5.

Some laterally from peak. Two Steller's gays flew by. Bracken fern now brown 711.3 Photo 830930-8 and 830930-9 close-ups of Entrance peak, 714.7 Photo 830930-10 of peak just beyond Entrance Peak. This peak has a Columnar support  at 1/10 mi down Canyon from Cornice Creek. 717.1 now at E end lake of Bear River Glacier. 830930-11, 830930-12, 830930-13 and 830930-14 in area of road glacier. Sun low to S and canyons sunless. Ice <sup>thin</sup> on water in ponds above lake.

745.1 mileage at Stewart after having checked camp, driven to end of pier and now at S side of airport. On route to Hyder at first pond to right (created by road across <sup>part of</sup> bay, 40 mallards, mostly in pairs and 85 green-winged teal. Aspens to at least Stewart and as far down Portland Canal as visible, mostly on lower, water bordering slopes. 750.8 Hyder Photo 830930-15 of Annette, Barth, Center street of Hyder and mts to S. Cambria Icefield beyond top of mts but not visible from here. Steller's gay, glaucous winged gull. Continued up Salmon River to mile post 24 at Fish Creek bridge.



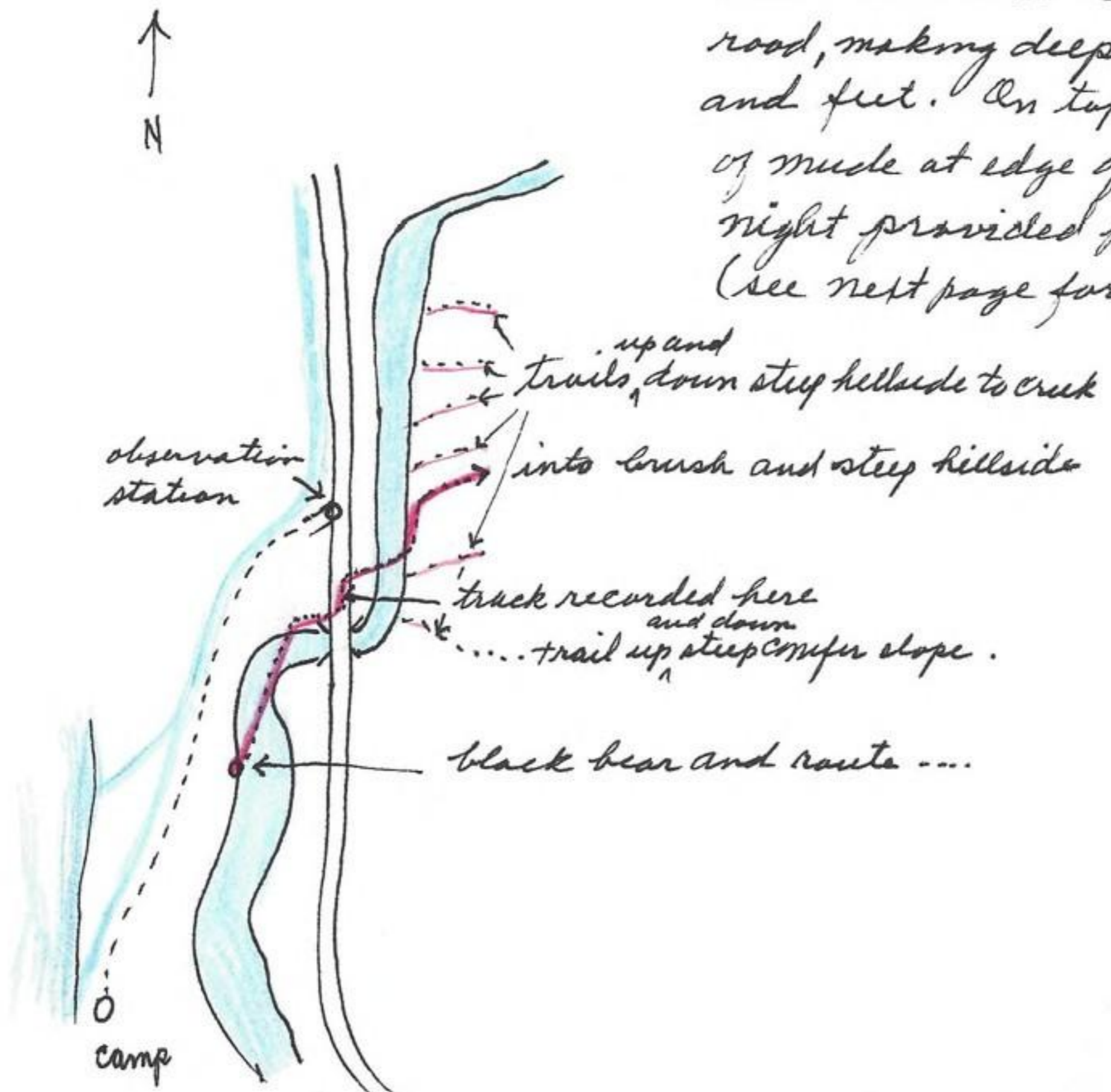
Another black bear came to edge of creek and picked up a dead salmon and immediately returned to brush. It came down steep conifer hillside. photo 830930-16. of black bear standing on rock at edge of creek and 830930-17 of bear with dead fish moving back into brush along side of creek.

The bear jumped at a live fish along side of creek but finally picked up a dead one. Checked creek from marked A-B. by on the spot check and by visual observation from a point 100' N of bridge.

The time of photo was 4:15 P.M. just as shadows from mountain to the west advanced to the E. across the creek. Photo 830930-18, 830930-19, 830930-20 of spawning salmon (chub?) 110 Bonaparte gulls, 11 glaucous winged gulls and 2 mew gulls feeding on creek. at 5:35 sun off creek. at 6:05 20 gulls left, at 6:45 10 more left and and 6:50 P.M. all gulls had left the area, down canyon. Camped along side of Salmon River. This river, <sup>bed</sup> is approx 1/10 mile wide of a braided system of boulders and logs + root systems of conifers. The present river is approx. 90 feet wide and meanders in the river bed. At flood the entire river is used. Fish Creek empties into the Salmon Creek lower down in the canyon. 99+ salmon are in Fish Creek but some are in one of the small channels of Salmon Creek. Watched river bed of Salmon until dark but did not see mammals of any kind. 6 rovers moved down river bed and investigated sands and debris.

Fish Creek Bridge Camp, <sup>n Hyder,</sup> mile past 24, Alaska.  
 Oct 1, 1983

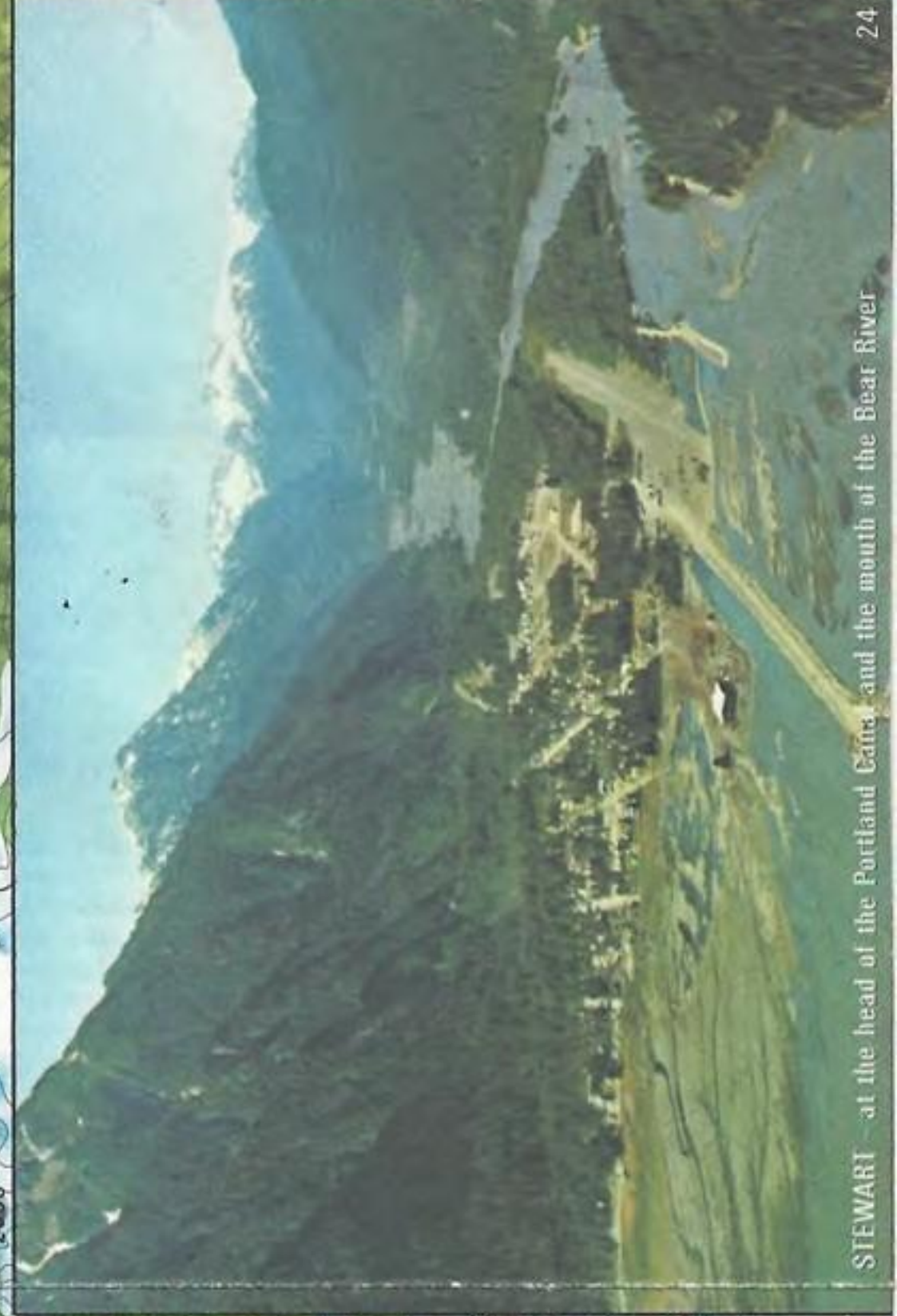
Before 7:30 AM check Salmon River beds for mammal activity but no signs. At 7:30 AM left camp and took our position on road approx 100' n of bridge over Fish Creek. Enroute noted a large black bear along edge of creek as indicated on map. It was fishing for salmon and when it saw us it ran into the shallow water and ran to edge of creek, then gained road, making deep excavations from claws and feet. On top of road the thin surface of mud at edge of road from <sup>gentle</sup> rain of last night provided perfect imprints to measure. (see next page for measurements of the right front and hind feet, which for instance are larger than the maximum recorded measurement of black bears in Kansas.) This bear was extremely fat and <sup>deep</sup> imprints in gravel indicate so. Pelage of this bear was coal black and in perfect condition. When on E side of Fish Creek it walked slowly along gravel edge of creek and then turned into the bush.



(see next page for measurements of the right front and hind feet, which for instance are larger than the maximum recorded measurement of black bears in Kansas.) This bear was extremely fat and <sup>deep</sup> imprints in gravel indicate so. Pelage of this bear was coal black and in perfect condition. When on E side of Fish Creek it walked slowly along gravel edge of creek and then turned into the bush.



BEAR GLACIER - one of the most spectacular scenes on the road

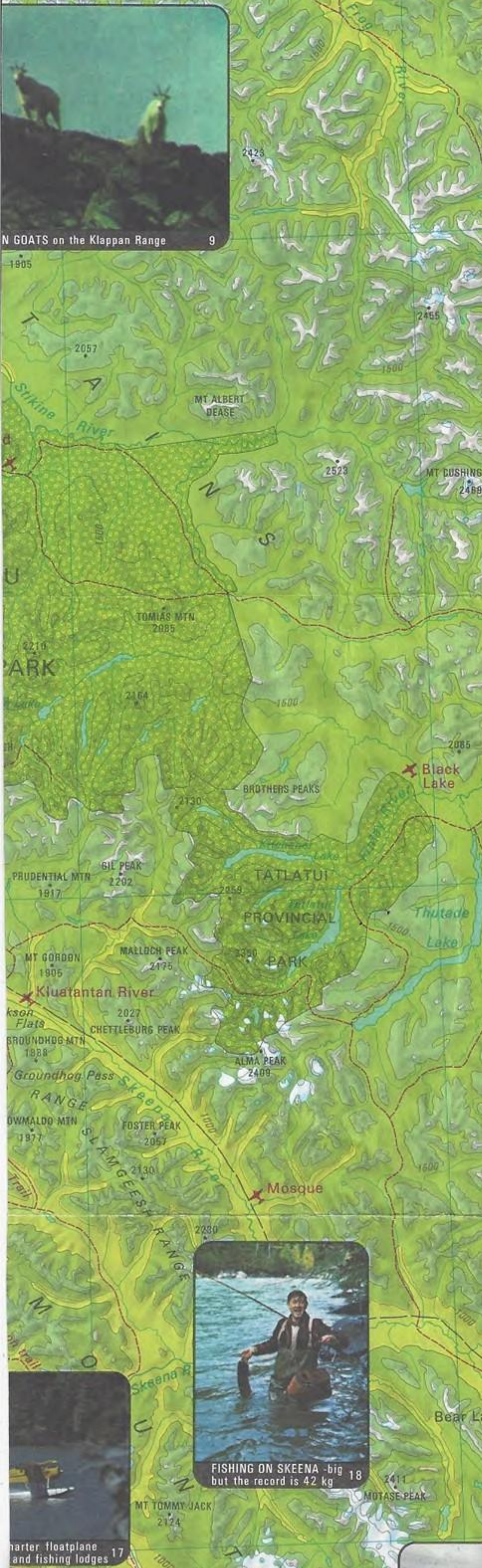


STEWART - at the head of the Portland Canal and the mouth of the Bear River



GRANDUE-COPPER MILL - at the foot of the Berendson Glacier



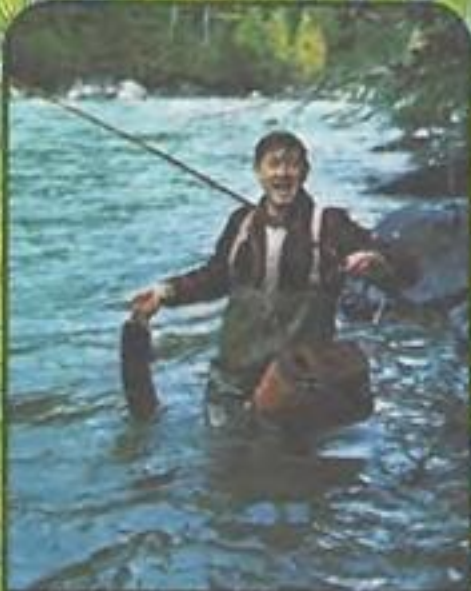


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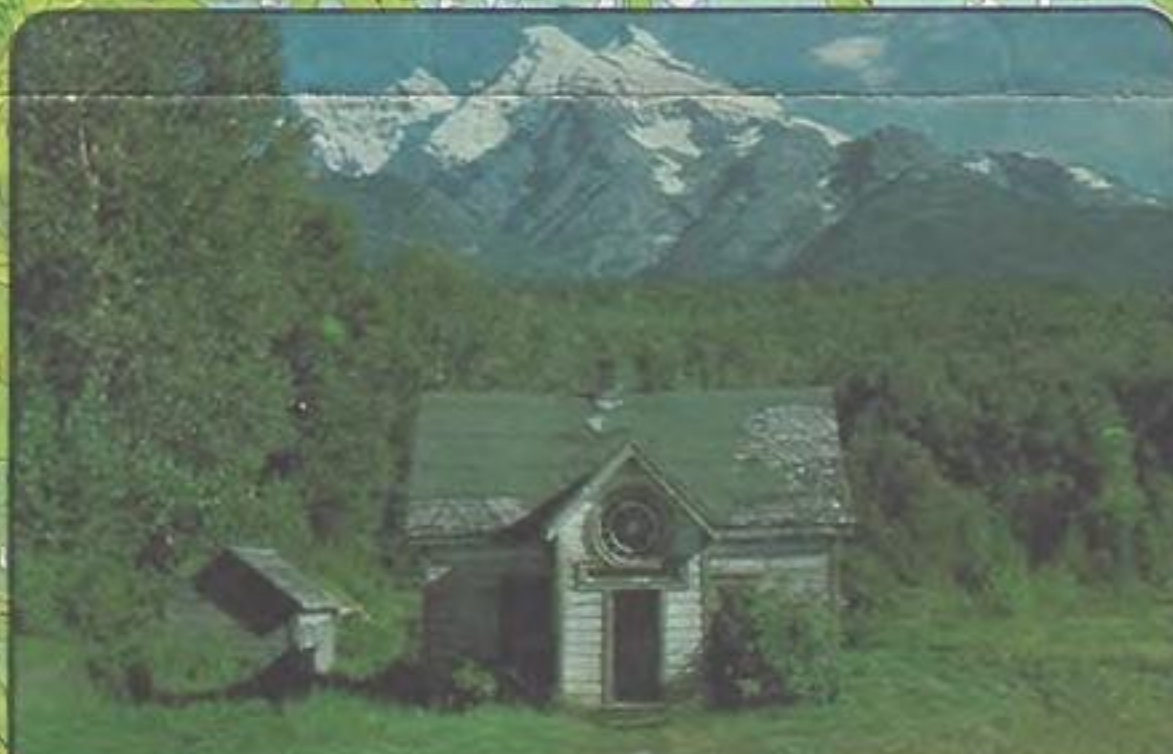
|          |                               |     |                            |     |                              |     |                                  |     |
|----------|-------------------------------|-----|----------------------------|-----|------------------------------|-----|----------------------------------|-----|
| <b>A</b> | Alice Arm .....               | E7  | Forestdale .....           | F10 | Lower Post .....             | A8  | Scow Bay, Alaska .....           | D4  |
|          | Alliford Bay .....            | G5  | Francois Lake .....        | F11 | <b>M</b>                     |     | Sewell .....                     | G4  |
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|          | Auke Bay, Alaska .....        | B2  | Glen Vowell .....          | E9  | McDonald Landing .....       | G10 | Shearwater .....                 | H8  |
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|          | Bella Bella .....             | H8  | <b>H</b>                   |     | Camp .....                   | D7  | Smithers Landing .....           | E10 |
|          | Bella Coola .....             | H10 | Hagensborg .....           | H10 | Meziadin Junction .....      | D7  | Southbank .....                  | F11 |
|          | Bennett .....                 | A2  | Hagwilget .....            | E9  | Middle River .....           | F11 | South Hazelton .....             | E9  |
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|          | Boat Bluff .....              | H8  | Haines, Alaska .....       | A1  | Moricetown .....             | E9  | Strathdang Kwun .....            | G4  |
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|          | Brown's Mill .....            | F7  | Haysport .....             | F6  | Muncho Lake .....            | B11 | Summit Lake .....                | B12 |
|          | Bulkley Canyon .....          | E9  | Hazelton .....             | E9  | <b>N</b>                     |     | Sunnyside .....                  | F6  |
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|          | Danskin .....                 | G11 | Ketchikan, Alaska .....    | E5  | Petersburg, Alaska .....     | D4  | Toad River .....                 | B11 |
|          | Days Ranch .....              | B6  | Kimsquit .....             | H10 | Phelan .....                 | F6  | Tongass, Alaska .....            | F6  |
|          | Dease Lake .....              | B6  | Kincolith .....            | F7  | Port Alexander, Alaska ..... | D2  | Tonka, Alaska .....              | D4  |
|          | Decker Lake .....             | F11 | Kispix .....               | E9  | Port Chilkoote, Alaska ..... | A1  | Topley .....                     | F10 |
|          | Dodge Cove .....              | F6  | Kitamaat .....             | G8  | Port Clements .....          | G4  | Topley Landing .....             | F10 |
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|          | Douglas, Alaska .....         | B2  | Kitselas .....             | F8  | Priestly .....               | F11 | Ukatcho .....                    | H11 |
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|          | <b>F</b>                      |     | Klawock, Alaska .....      | E3  | Rosswood .....               | F8  | Waterfall, Alaska .....          | E3  |
|          | Fanshaw, Alaska .....         | C3  | Kleanza Creek .....        | F8  | <b>R</b>                     |     | Watson Lake, Yukon .....         | A8  |
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|          |                               |     | Kwintisa .....             | F7  | Saxman, Alaska .....         | E5  | Wistaria .....                   | G10 |
|          |                               |     | <b>L</b>                   |     |                              |     | Woodcock .....                   | E8  |
|          |                               |     | Lakelse Lake .....         | F8  |                              |     | Wrangell, Alaska .....           | D4  |
|          |                               |     | Loring, Alaska .....       | E5  |                              |     |                                  |     |

9 N GOATS on the Klappan Range

17 Charter floatplane and fishing lodges

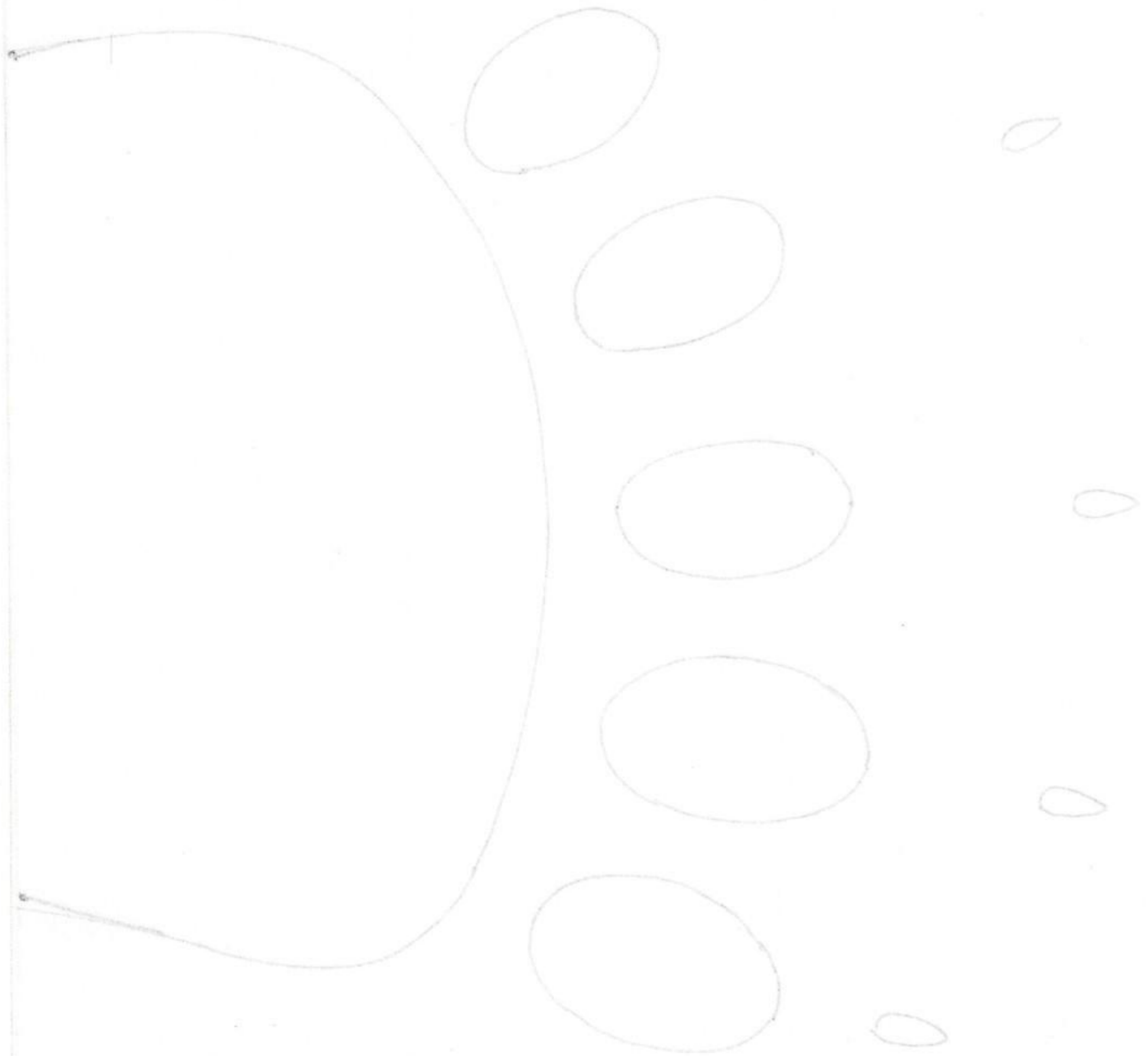


18 FISHING ON SKEENA - big but the record is 42 kg

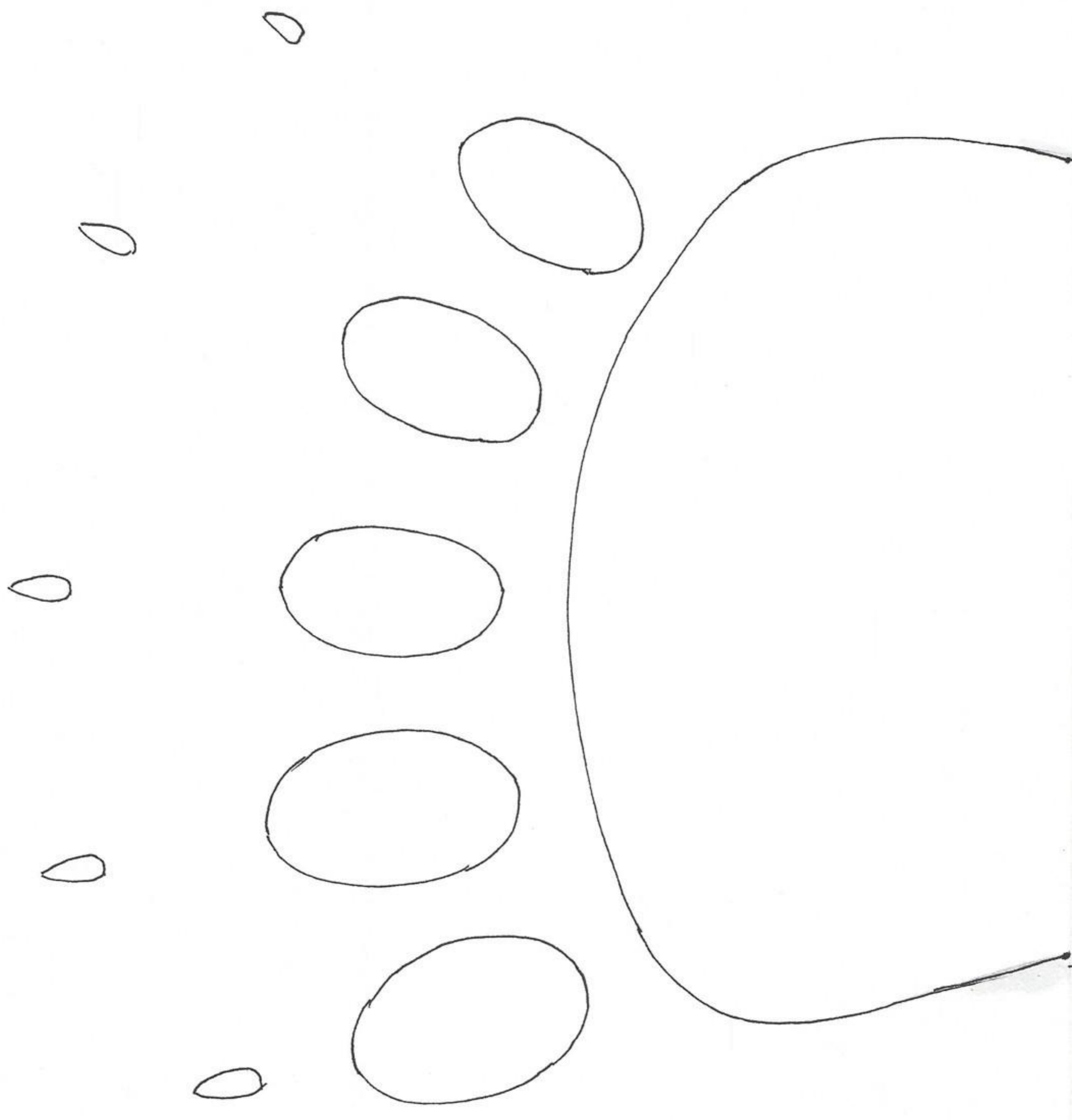


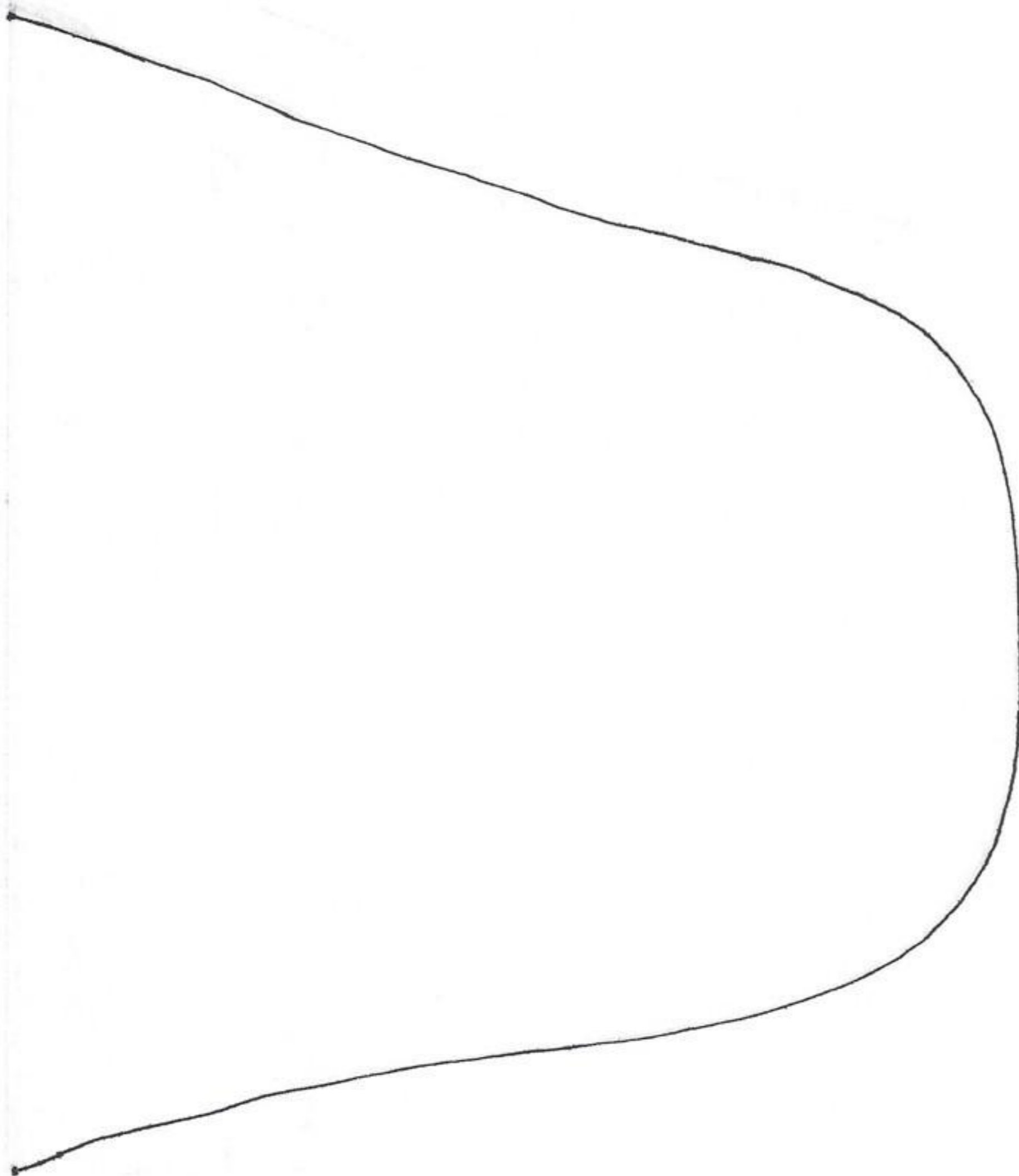
19 CEDARVALE - the Seven Sisters Mountains rise to 2750 metres

(see back side of page)



(see back side of page)





Oct. 1, 1983

URSUS AMERICANUS (REAR RIGHT FOOT)

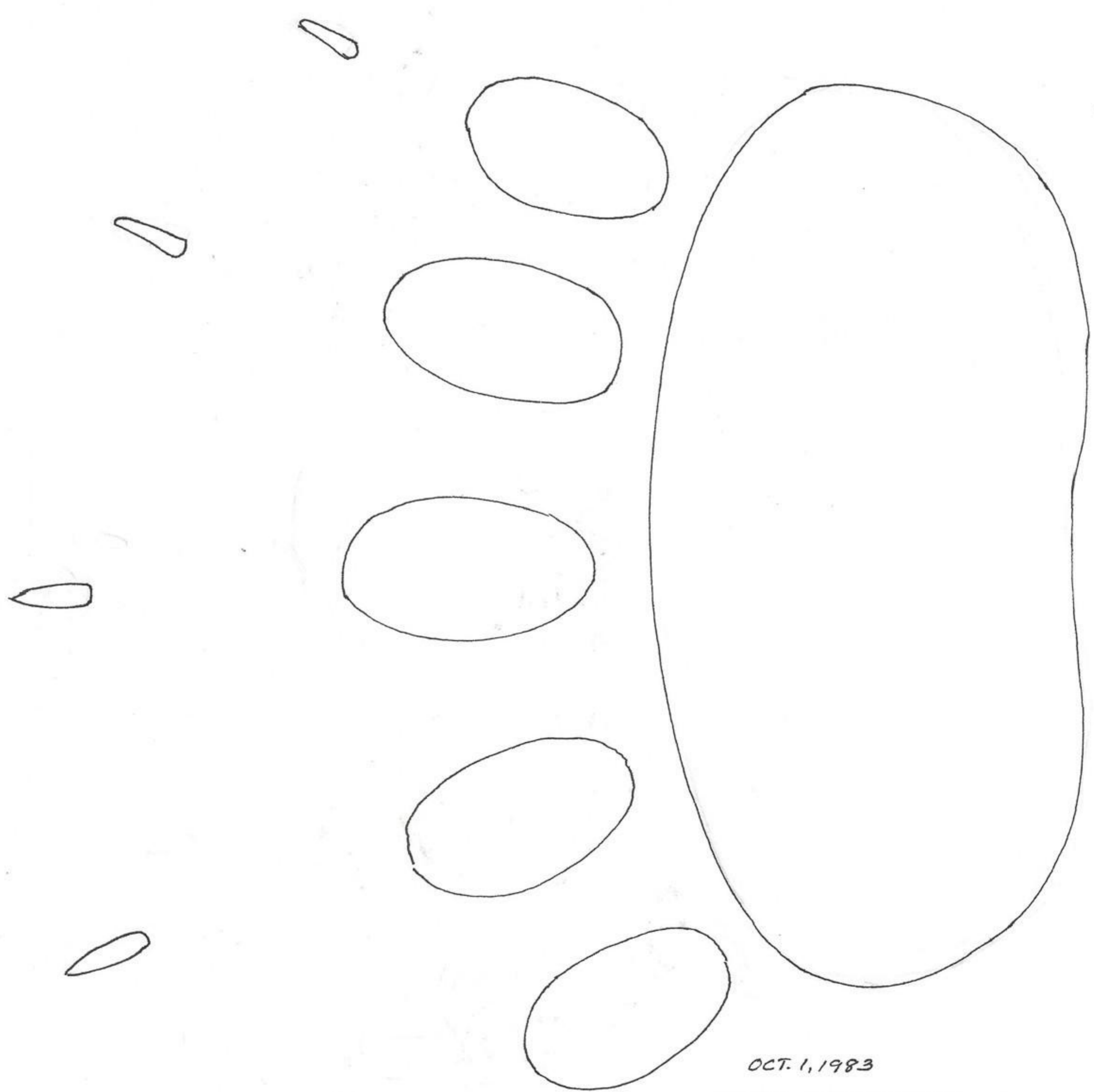
TOTAL LENGTH 292 mm

WIDTH PAD 149 mm

WIDTH TOES 161 mm

GREATEST WIDTH CLAWS 182 mm

LENGTH PAD 199 mm



OCT. 1, 1983

URSUS AMERICANUS (FRONT RIGHT FOOT)

TOTAL LENGTH 191 mm

WIDTH PAD 162 mm

WIDTH TOES 183 mm

GREATEST WIDTH 212 mm

LENGTH PAD 77 mm.



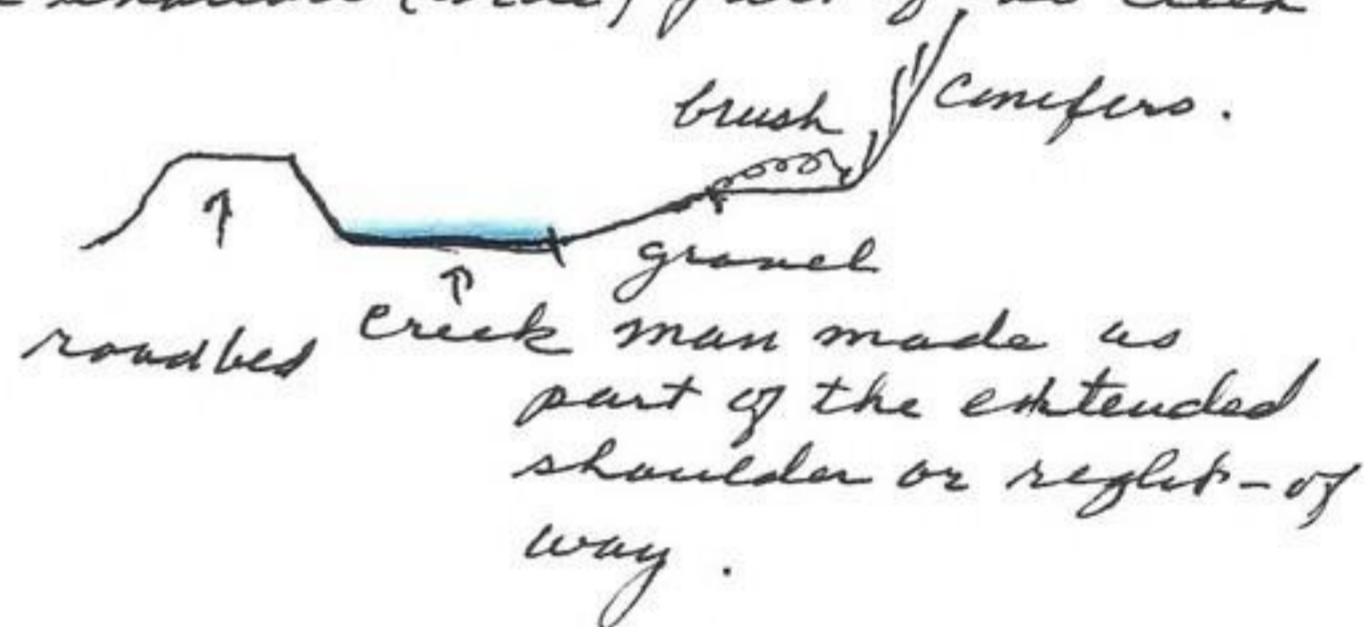
The bears are present here because of the salmon and trout. It is reported that several species of salmon use this creek at different times of the year. One informant said that it was the "Chubb", others listed 5 species. This one ranged from approx 20" to a few inches less than 3 feet. Must had a black side stripe, some with colorful reds on side. Census of salmon in creek (average <sup>in width</sup> 24-30 ft) was made at 1 place at random along creek from approx. 300 above to 300' below bridge as follows.

| live salmon. | dead salmon |                                                                                                                                                                                                                   |
|--------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18           | 0           | Average number of live fish per 10' of creek is 12.7 (3-31)                                                                                                                                                       |
| 17           | 0           |                                                                                                                                                                                                                   |
| 31           | 0           |                                                                                                                                                                                                                   |
| 14           | 0           | Dead fish = 35 (0-4)                                                                                                                                                                                              |
| 7            | 0           |                                                                                                                                                                                                                   |
| 8            | 0           | One sandbar (10' along bar) supported 12 dead salmon.                                                                                                                                                             |
| 5            | 0           |                                                                                                                                                                                                                   |
| 9            | 1           |                                                                                                                                                                                                                   |
| 14           | 0           | For the 600' under census there were 762 live salmon and 21 dead salmon. Shallow points where <sup>dead</sup> salmon collected were not used in the census but I would estimate there were at least 60 dead fish. |
| 10           | 1           |                                                                                                                                                                                                                   |
| 18           | 0           |                                                                                                                                                                                                                   |
| 12           | 0           |                                                                                                                                                                                                                   |
| 21           | 0           |                                                                                                                                                                                                                   |
| 15           | 0           |                                                                                                                                                                                                                   |
| 4            | 0           |                                                                                                                                                                                                                   |
| 3            | 4           |                                                                                                                                                                                                                   |
| 9            | 0           |                                                                                                                                                                                                                   |

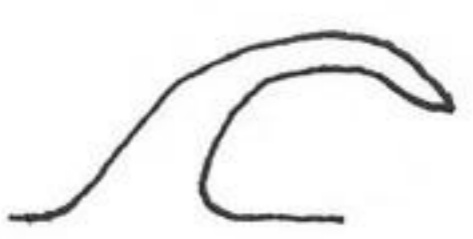
supported most of the fish

On our arrival at bear area there were 8 raven associated with the bear and general area but no gulls. The first <sup>imm</sup> glaucous winged gull arrived at about 7:35 A.M.

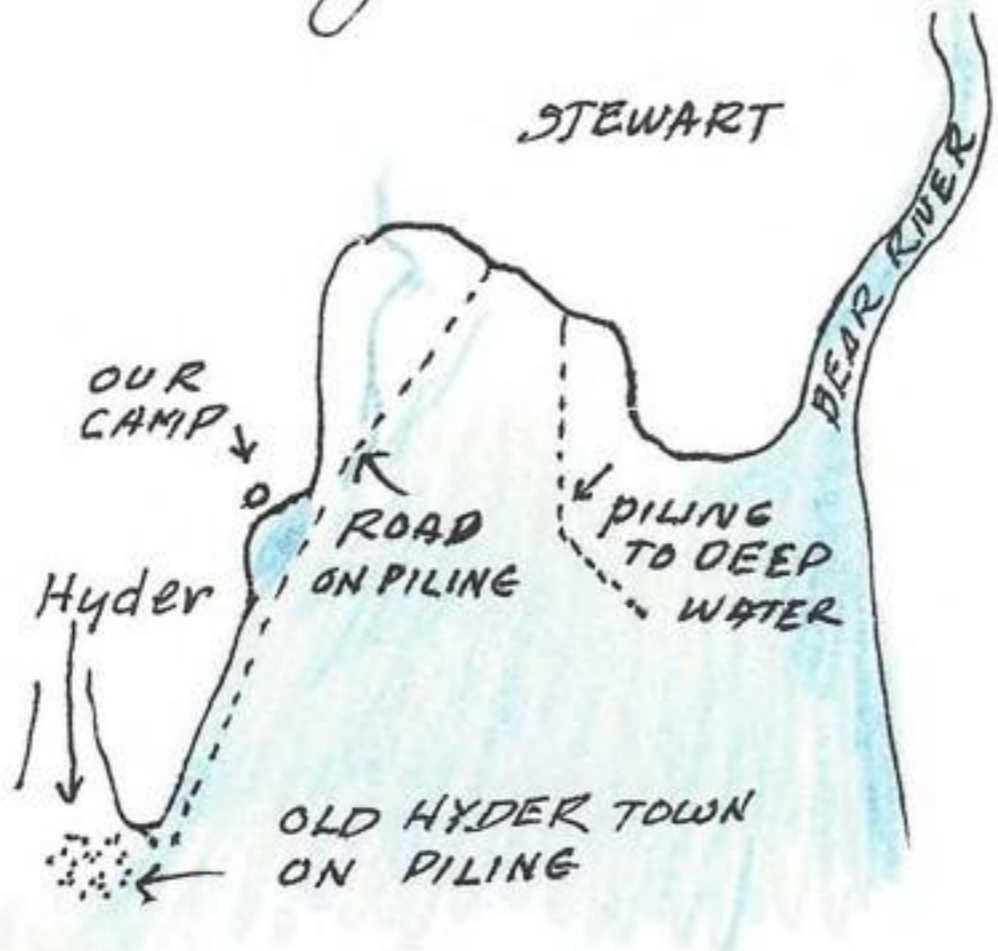
At 7:40 23 Bonaparte and 5 glaucous winged gulls were at the creek. Raven dominate gulls by small amount as 2 or 3 gulls together can convince raven of their near dominant status. Raven feed on dead fish either standing on dead fish in water (the fish) or fish dead on the shore. At 8:00 A.M. there were 46 Bonaparte and 10 glaucous winged gulls and still only 2 mew gulls. By 8:20 the gulls had increased to 60 Bonapartes and 18 glaucous winged & 2 mew gulls. 8 red-breasted mergansers flew by creek.



most gulls (90%) are immatures. At 8:30 60 gulls left area, <sup>by flying,</sup> to S in one group. 12 red-breasted mergansers flew down creek. 40 more gulls left at 8:35 A.M. to S. and by 8:40 all but 3 gulls had left the area. approx. 70 crows circled S. at about 200' high. at 11:35 A.M. usual complement of gulls back again in area. An adult bald eagle searched stream and then alighted in tree. Three photos of clouds and mts and the spawning creek below the bridge are: 831001-1, 831001-2 and 831001-3. 831001-4 peaks of some photos as above. Some gravel slides below in canyon are white boulders and flow out like a snow slide covering current shrubs on the talus fan. Visited with some people in Hyder. met a Mr. Dulsky who is the post master at Hyder and who lived in Topeka before he came to Hyder. He has been in Hyder for the last 4 years with wife, who runs a gift shop, and 2 or 3 sons. He reports the following:

1. Snows Dec, Jan, Feb and first part of March but practically leaves ground by late March.
  2. Snow 4-5 feet deep but temperature is only a few degrees below freezing. Has been down to 15°F.
  3. Snow is from large ice crystals 1 to 1½ inch diameter and lay on ground as a slush which freezes into solid ice. at 15°F the bay and rivers freeze. Sometimes 3' of slush on ice freezes to a thick layer of ice and can support cars.
  4. Winters are humid.
  5. Harbor seal, killer whales and dolphins are occasionally seen, especially the harbor seal. In about 1978 a Risso's dolphin was grounded at Stewart and died on the beach. A photo shows a long tapering dorsal fin bent down at end which could have been a post-mortem change. The dolphin tissue was heavily infected with parasites.
- 
6. mink, weasels, marten, otter are always present but difficult to find and see.
  7. Wolves are in area and in winter stay on the outskirts of town where they frequently call at night.
  8. Grizzly bears occasionally come into town, black bears commonly do so, especially in winter.
  9. moose and mule deer are farther to E on E side range. In Stewart area the snows are too deep.
  10. There are no mt. lions but many lynx.
  11. Rentals for homes are practically non-existent. If mines close there should be many places available in Stewart.

12. In early days when there was more water in the bay there was a road on piling that connected Stewart with Hyder. Also a piling road to deeper waters from Stewart west. At Hyder practically the entire town at one time was built on piling out from mouth of Salmon Creek. The bay has filled in 2 or 3' since the town of Stewart was started. One year a high tide came up thru town and destroyed many buildings.



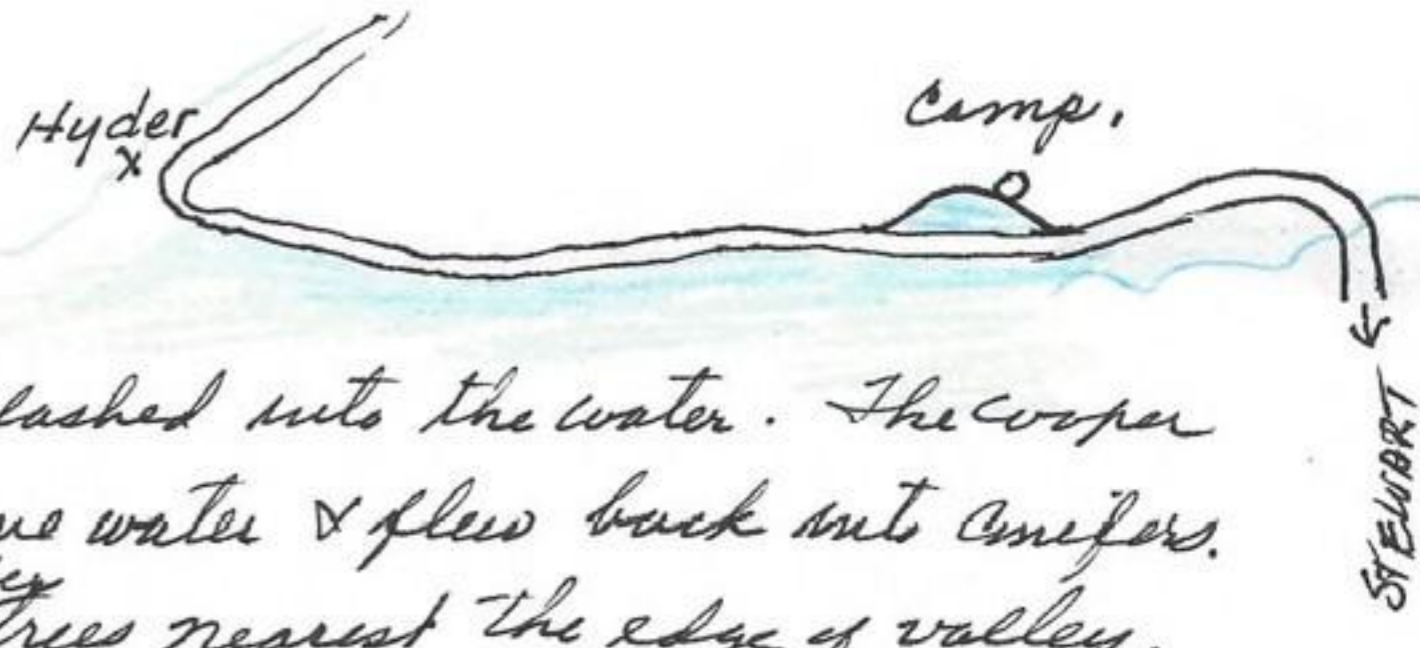
On way back to Stewart visited museum. In section on wildlife recorded the following information.

1. mounted grizzly bear from Meziadin area shot by Neil Ball. Hind foot = 255 mm. Front pad enlarged longitudinally.
2. Photo of a grizzly bear from refuse site near Bear River (Stewart?)
3. Photo of a grizzly bear from refuse site at Tide Lake.
4. A mounted black bear had a hind foot of 204 mm.

Camped at first bay separated by road w of Stewart. 10 mallards and 36 green-winged teal in bay near camp.

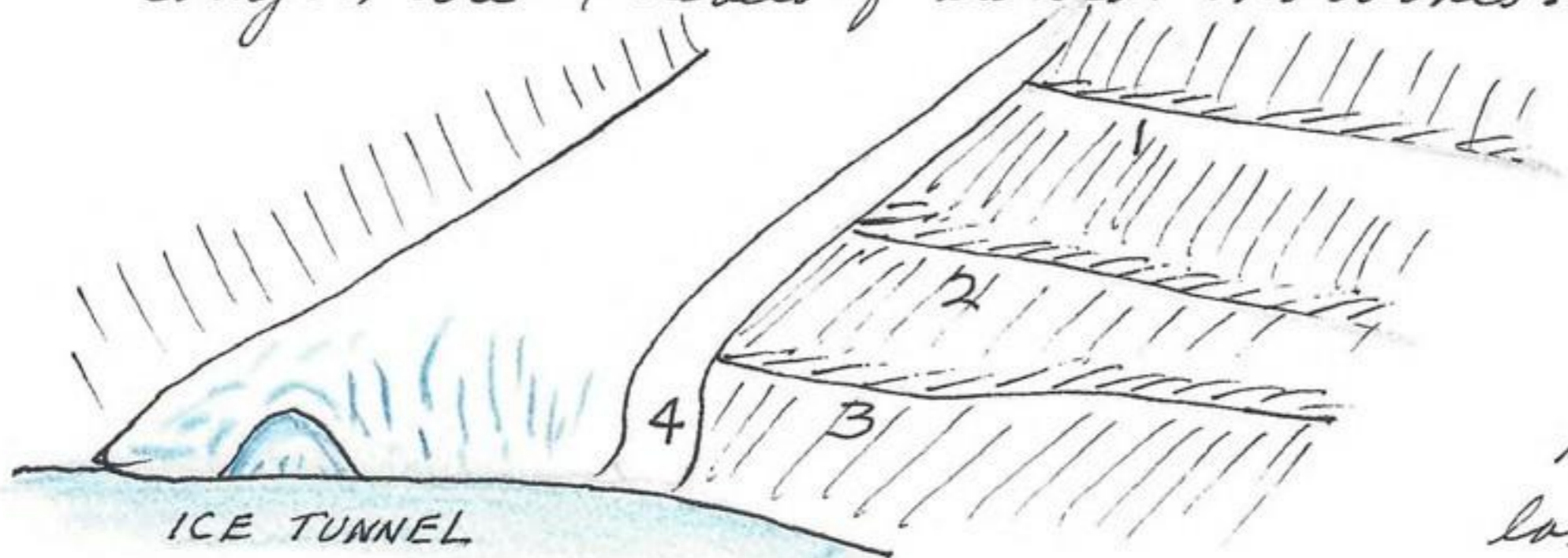
Approx 5/10 mi. NW Stewart, British Columbia, Canada  
 Oct 2, 1983

Camped first enclosed bay NW of Stewart on 37A. At about 8:00 A.M. a Cooper hawk attacked a green-winged teal. The teal dropped almost perpendicularly for 200' and then splashed into the water. The Cooper hawk left the duck at about 50' above water & flew back out <sup>emifer</sup> over Spanish moss on most of the lower trees nearest the edge of valley, some completely, some partially covered.



Left Stewart area and moved E on 37A. Recorder malfunctioned to mileage 811.3 at lake where left hand side road traverses N side of canyon towards Bear Lake Glacier. At this point an adult bald eagle left shore and flew across lake to alight in a tall dead tree. This lake is the result of influence of the glacial deposition in valley down canyon a short distance of approx 1/2 mile. This glacier is disconnected from its source of the Desrochi glacier above but still retains the terminal characteristics of a glacier. Photo 831002-1 terminal of glacier. 831002-2 at lateral moraine.

Color to this point has increased measureable since we pass thru just a few days ago. more shrubs and different kinds of trees are now yellow. moss unusually rank and colored from intense green to yellow. moss on rock beds in river channels, particularly those just above usual water level are covered with a greenish yellow moss. no birds except bald eagle, <sup>at lake just mentioned</sup> so far. There are more small water falls than our trip by here a few days ago. many of these falls appear to be intermittent. 813.3 at W end of Bear River glacier lake. Raven left lake area. water in river below and in lake is a <sup>light</sup> brownish color and not so glacial flourlike as expected, more muddy in appearance but obviously due to glacial action. Took 3 photos showing blue of ice in crevasses. Photos 831002-3, 831002-4 and 831002-5. The 40 some odd ice bergs and fragments had moved in lake by wind. On W side on S wall of Canyon are 4 levels of lateral moraines. The area to N



should have been preserved in natural physiography instead of running a road directly thru the moraine and lake area. The road engineers should have

consulted somebody other than road builders. A terrible think has happened in gutting this landscape. This would have been a good place for by-pass thru a short tunnel. No ice on ponds E of glacial lake. Water going E from glacier area is a pure crystal clear water, not muddy like in Bear River to W. 619.9 Entrance Creek. 820.0 from vantage point can see a beaver dam about 300' long but long since stabilized. The color in this area has increased 2 fold since we passed here on Sept. 30, 1983, mainly from more different kinds of trees and other shrubs. The full complement of deciduous trees seem to have turned to yellow and yellows - golden and brown. Reds are poorly represented (such as would be in oaks or maples). These color completely cover the valley & hillsides. 822.5 major river crossing. Colors still continuous. I would say that this is maximum color 824.8 2 photos 831002-7 and 831002-8 of upper end Mezadin Lake to E. Raven here. 830.2 junction 37A and 37, now S. 834.5 Camp at Crown Recreation Division.

Low clouds and occasional rain. 2 red-breasted mergansers flew N, one horned grebe and 2 glaucous-winged gulls. Can see birds in protected part of lake to SW but will check tomorrow in better light. (Canada geese & baldpates)

Crown Recreation Division, Lake Meziadin, British Columbia, Canada.

Oct 3, 1983.

7:00 A.M clouds to just below mt. to W, Stratum 1/2 below and form, dissolve and reform. This side lake smooth, W side ruffled.

7:30 red-breasted merganser to S, Canada geese & baldpates to SW on opposite side of lake as of last evening. may be same group as observed Sept 30, 1983.

7:32 2 raven from W

7:33 1 raven from W

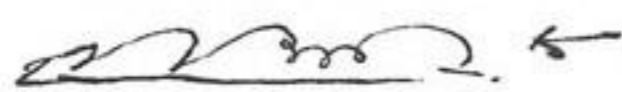
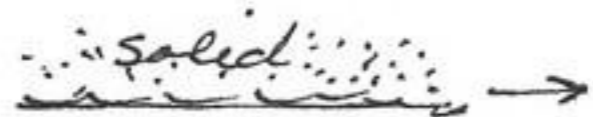
Only 3 fish surfaced so far.

7:35 horned grebe swam out from shore about 200'

7:55 no birds have passed by, grebe still working area, few mosquitoes outside.



wispy clouds move faster than solid white clouds.



strata on W side lake only, also ruffled water on lake.

8:07 saw 3 grebe.

8:20 2 raven flew W across lake

8:21 common loon swam S. It swims greater distances than grebes and dives gradually in contrast to horned grebe that jumps slightly upwards then more forcefully into water with the two leg the last to disappear into the water, generally with a flip motions. The 3 grebes have been in area since first observed at 7:35.

8:25 first glaucous wing gull (imm) flew N along E shore. The horned grebes surface, move head 3-4 times forward in synchrony with paddle movement (3 secs) and then dive again.



8:35 rain (gentle) white-winged seater swam S then returned & swam N.

8:42 clouds (stratum) grebes have now left. same clouds moving N+S

8:55 first blue sky above. + sun rays low under clouds.

9:15 2 layers of clouds in valley. 2 group 8 and 4 Canada geese flew S full length of lake from N to S, calling all the way. 4 sets fox tracks on beach.

Left camp at mileage 834.5 at 9:30. Wind has just changed from N to S and with greater intensity. The lower stratified

band of clouds, however, are still moving S. 835.8 on main road (37) and now S. at 9:45. Nearly all trees and shrubs and grasses are turning yellow, golden or brownish. meadows are a beautiful golden-yellow! 838.1 Steller's jay. Some trees are still green but only a few. Alder are one of the last to turn and are yellow now. 840.6 Nass River bridge. 850.7 parcupine road kill, may be same as one observed on trip up. The birch are the principal golden trees and dominate forest, aspen are more yellow, some few reddish and are found higher on slopes although found throughout. Some leaves of aspen & birch are falling with wind gusts and appear as a snowstorm. Aspen precede birch in succession of color change. Venation of birch leaves is regular  whereas aspen are forked. 

882.4 junction 37 and road to right (Craneberry junction). 895.8 now on paved road. 902.6 first roven. From Camp this morning to Kitwanga there has been an increase in number of green leaves of trees, but color is about as intense as at camp. There are some trees that have lost their leaves. The understory of bushes are also greener than at camp area. Habitation and ranches along 37 are non-existent and the entire length of road is in rather primitive, undisturbed condition. There are a few shed but no homes. Road & timber camps are about the only building along the way. This road and the continuation of the road to the clean highway is thru the former wilderness of British Columbia. 911.3 at shore of Kitwanga Lake. Heard Canada geese, saw 1 fox sparrow and 1 red-necked grebe. The fox sparrow has more of an upright stance than the song sparrow. 2 blue grouse at side of road at entrance to the lake. One cottonwood measured 3 1/2' in diameter 926.4 Steller's jay. 931.4 roven. 937.0 highway 16. There is even a greater increase in green leaves of trees that have not as yet changed color along the Skeena River than at Megeadin Lake area. There is also a dramatic increase in color since Sept 21, 1983 when we passed thru to Prince Rupert. 956.3 3 Brewer blackbirds. 975.1 roven. 979.3 Steller's jay. Photo of falls in Moricetown Canyon no. 831003-1 997.4 3 crows. Continued on to Telkwa Lak. Prov. Park at mileage 32018.3 Annette observed a common loon and horned grebe in lake. Several trees of aspen have lost their leaves.

Maclure Provincial Park, British Columbia, Canada

Oct 4, 1983

Common loon submerged to just 1/3 of head and a fraction of back and then disappeared and resurface approx. 200'. It 'stood' up on water and flapped wings after reappearing. The red-necked grebe (3) in lake. They sit high and long neck & smaller head than



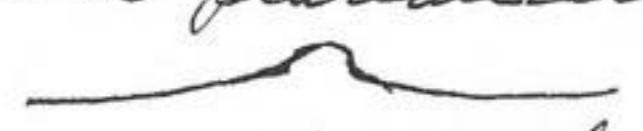
A large leafed (now yellow) is probably a black cottonwood although looks more like a balsam poplar. Runways of both

species borderline. No bear, beaver, raccoon tracks along lakeshore. This valley, lake and mts to W is one of the most beautiful areas for living. E side like <sup>slopes</sup> <sup>areas</sup> open and forested areas. Some \$200,000 homes on E side lake, 2 hour private plains. May have heard wolf calling 8 times this A.M.

Left 019.4 026.2 two deer (mule) with black tip to tail. They ran across road. 034.1 red-tailed hawk in dead tree. In this area the aspen-birch <sup>trees</sup> are about 50-50 leaved and unleaved, or leafless. more yellow (aspen-birch) on higher slopes than in valley because of cold valleys. This area is definitely more advanced (loosing leaves) than in the Mezzadin area and south of there which at this time is in its climax of color. 049.2 6 crows and 5 Brewer's blackbirds. 062.3 bridge east of Houston over Buckley River and R.R. tracks. NE of Houston approx 80% yellow trees (reference is aspen & birch and cottonwood or balsam poplar) have lost their leaves in valley. As we move E there is a gradual loss of colored leaves. Willows along creek are last to change color. 062.2 two green-winged teal. 063.2 raven. 064.5 beaver ponds and recently cut aspen trees (8). 075.3 9 green-winged teal. 085.1 more beaver activity by pond. 075.5 Eutamias minimus ran across the road. 6 crows. The color (yellow of aspen & birch) is 70% around Decker Lake & slopes which is a decided increase in color and shows influence of lake on associated trees. Elsewhere along route before lake the leaflessness has been 80-90%. Both sides of lake have these colored leaves. 102.4 railroad station at Burns Lake. Colored trees (native in all cases and reference is made to natural slopes around lake) 50-60%+. Robin 120.4 common loon in small lake. Here yellow color to 90% leaflessness. All along there is more color on higher slopes 131.0 Trees are 100% leafless and no color.

137.0 raven 138.5 Endaka 142.1 Bald eagle. circled several times in valley 150' high and then flew directly overhead across road. There is a decided increase in color as we approach Frazer Lake valley. Frazer Lake identified by big hump in valley. 154.5 Coyote ran across road, at 9:45 A.M. All shrubs are turning yellow. Clouds still down 1/2 way on sides of valley. Wet meadows have golden color. 158.1 steller's jay. Some trees still green, esp. in lowlands. 161.3 Beaumont Provincial Park, British Columbia. Camped on boat ramp. Observed 11 mallards, 2 common loon, 7 red-necked grebes, 36 baldpates, 7 green-winged teal, 1 raven, heard crows, 1 eared grebe.

Beaumont Provincial Park, British Columbia, Canada  
Oct. 5, 1983

mileage 161.3 at 10:00 A.M. an <sup>adult</sup> bald eagle flew W 15' above water to peninsula then gained altitude to go over trees on one of peninsula where it met 2 Bonaparte's gulls. The eagle attacked the gulls and a close pursuit for 10 seconds then gull easily moved out of range of eagle. The two gulls then confidently circled around eagle at 20-40 feet. Twice the eagle dove at one of the gulls when the gull was 20' or so below but in each case the gull easily evaded the eagle. The gull left after playing with eagle for about 12 circles. The eagle flew S and alighted in *Empetrum* on hillside about 200' up slope. Left <sup>port</sup> and at 163.4 5 ravens just beyond the river. 164.4 <sup>port</sup> Frazer 168.0 now country is flatter and gently rolling hills and color just localized trees. 95% of aspen and birch leafless. most pasture yellowish brown, some cultivated fields although the exception are bright green of winter wheat?. Antlers of a recently killed moose are <sup>dark</sup> brownish. First wheat field in some time. I hope the wheat idea doesn't catch on in this country. 179.0 color 98 gone <sup>that is</sup> trees leafless. Country to N is flat ridge or plateau like. 3 robins volcanolike mt. to SE  185.6 7 crows. 188.2 airport turnoff. W of Vanderhoff. 2 crows outside town. 4 more. 212.6 raven, hairy woodpecker?. At Bednesti Lake common loon. It stood up on water and flapped wing <sup>then stretches them outward</sup> then settled down on water again 238.6 Except for understory tall birch & aspen are 100 leafless. might be a few <sup>isolated</sup> trees in color. Beaver activity. 240.3 *Eutamias minimus*

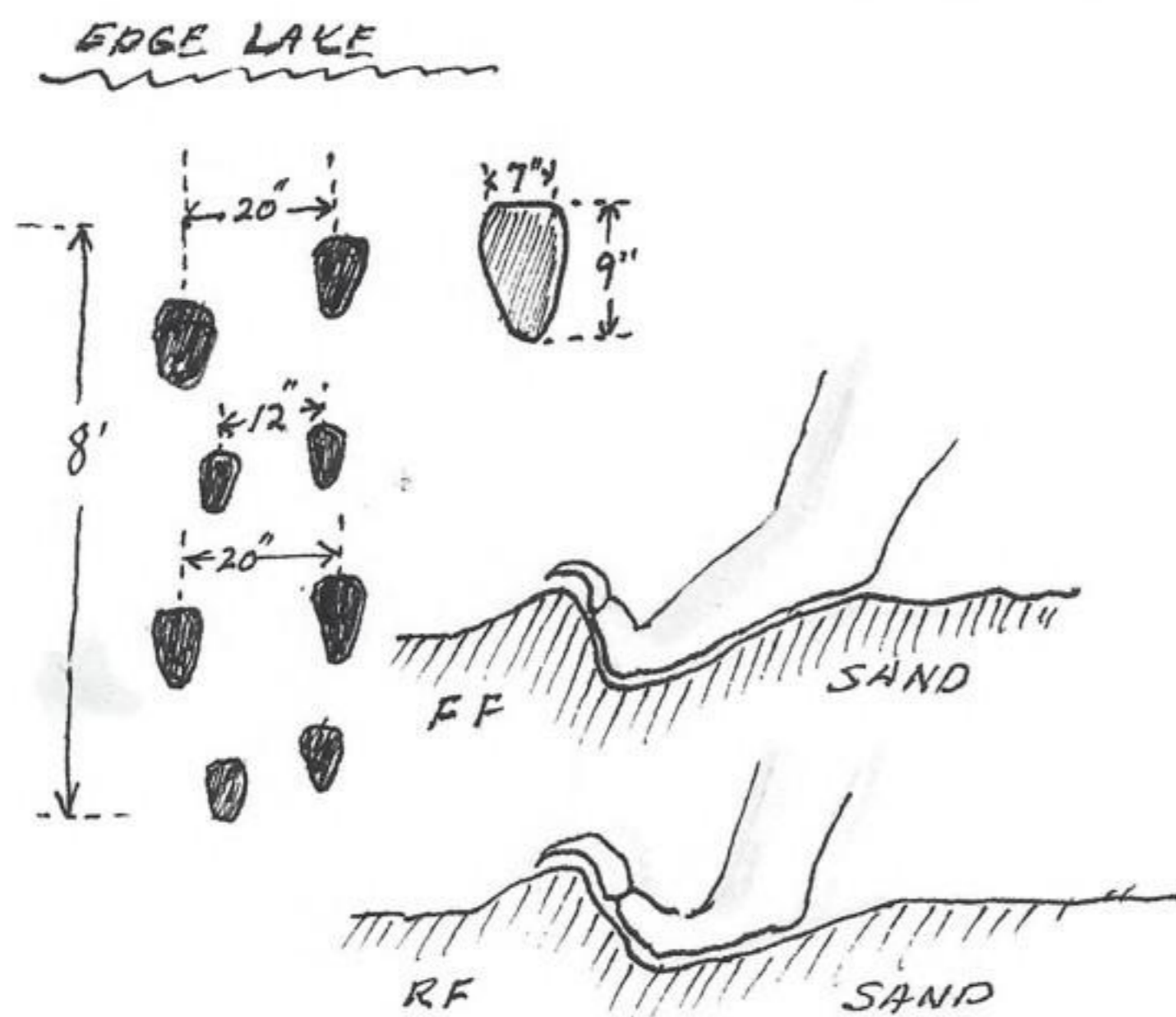
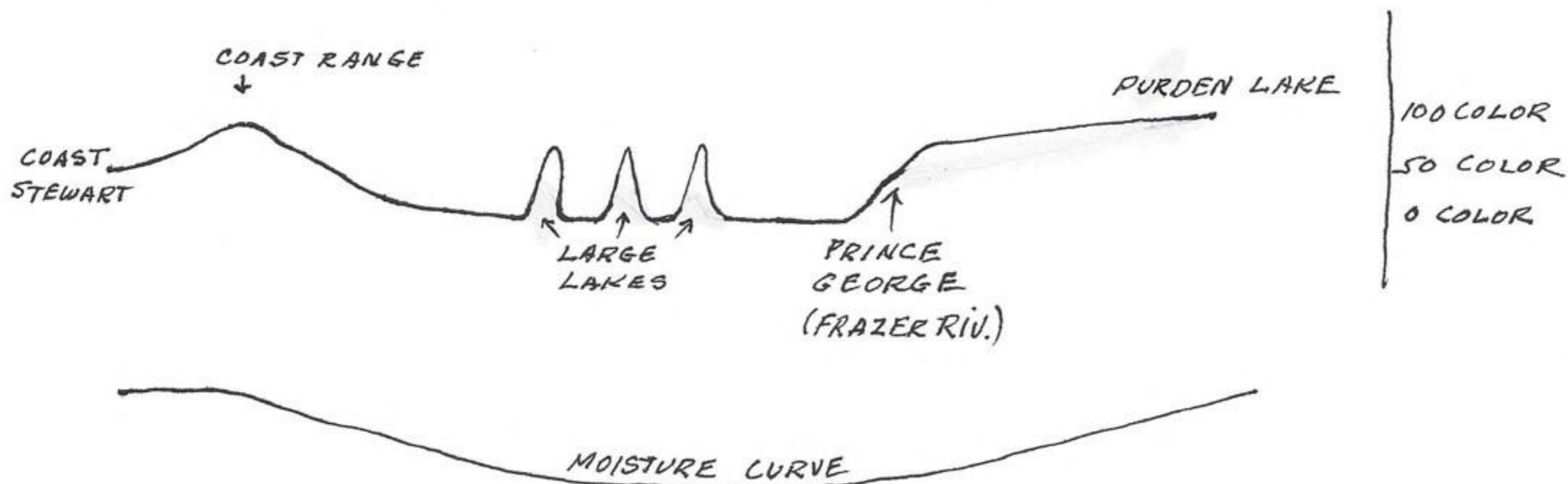


6 crows, continued to Prince George. This town was a primitive town in 1968 when we went thru here. Now it is a large city of 72,000. This town shows how a nation can develop if it has resources to use and in this case has built the town on lumbering. When the trees are gone they will slow down as in the U.S and England.

At Prince George along the Frazer River the aspen and birch are 70%-80% in yellow leaf. They continue E with slight decrease then continue to hold to 70-80% to Purden Lake where colors at camp both trees & understory are nearly 100% in leaf. Those not are only at the very top of trees. At Bowron River we checked possible camp site but went on to Purden Lake Provincial Park where we camped. Highway 16.

Purden Lake Provincial Park, British Columbia, Canada  
Oct. 6, 1983

Birds and mammals in area: 1 Oregon juncos, 2 Canada jays, 1 Steller's jay, 1 common loon, 2 red-necked grebes, dusky grouse, 1 imm. bald eagle, 3 tree squirrels, 1 goshawk.



Examined black bear imprints in sand of an animal that was charging to edge of beach and then suddenly stopped as if pursuing a bird that was on edge of water. Tracks leading to those were normally imprinted and only those of the last plunge and stopping action were those impressions deeply recorded in the sands. Tracks probably made yesterday.

Left camp at 307.2. Some alder leaf on ground are green  
 310.5 mileage at main road. At next service station reports of  
 2 moose kills, one 800 lb. Black bear are common and some  
 visit open garbage dump at night and cause no harm. Grizzly  
 bears are higher in mts and are associated with cedar trees,  
 Raven at station. Moose meat will last a family <sup>(A)</sup> 8 months.  
 no deer in area. Color <sup>just</sup> beyond maximum. Hillside terraces  
 present. 328.4 2 raven. 334.6 good stands of cedar trees,  
 339.6 red fox 120' from road Slim Creek 349.5 3  
 lower bench lands associated with immediate area of creek.  
 raven. 357.4 Dome Creek turnoff. Aspen 70% in leaf and not  
 the brilliance of maximum colors. 361.2 raven, 362.6 Pterodactyl  
 Creek. 1/2 trees of aspen & birch are in some degree of green  
 color and have not changed to color. 376.6 Inawashae Cr.  
 385.4 2 raven. Birch dominant over aspen, and in  
 brilliant colors 20% still green. 60% trees have some of the  
 leaves gone at the top, or 80% of trees are in color at 696.0.  
 On S side valley at McBride 80%+ color. N side only 30-40%  
 color, reflecting exposure. Of two black cottonwood  
 one is green and one is in color (sideside), also 2 groups of aspen,  
 one yellow, one green and others are leafless. 405.6 McBride.  
 2 photos 831006-1 and 831006-2 of color of birch & aspen on  
 N side of Frazer River Valley. Some evidence of terraces but some  
 of these may be horizontal outcrops (10 major & some minor) and these  
 are marked by lines of conifer trees. There is a rather abrupt  
 demarcation between conifers and aspens. The colors were  
 maximum on this hillside 1 week ago and should be about  
 same at Jasper although they get snow earlier than at McBride.  
 406.7 Frazer River Bridge. 407.4<sup>m</sup> Beaver View Campsite, where  
 we stayed. The owner is Ronald Hawkins and Sharon. Mr Hawkins  
 is district supervisor of the McBride Forest District of the Ministry  
 of Forests. Box 40 McBride. (604) 569-2265. Fish home is Box 10  
 569-2513. He has diary of his mother Mrs Rose Hawkins which is  
 the autobiography of her early life from her birth in Illinois in 1870  
 through her elopement and marriage at the age of 15 and the  
 attempts of earning a living at farming in Kansas and Colorado until their  
 return to Illinois in 1890. Some events to 1896. I advised him  
 to contact John Neugent at Spencer Library at K.U. for possible  
 publication and deposit at the archives there. On my return to  
 Lawrence will see John about helping Hawkins with the manuscript.  
 Mr. Hawkins took me to the District office and the facilities. We have

40 people under his supervision. The facilities are modern and up to date with host of computers, drafting equipment, map room etc. This office serves the forestry for SE British Columbia. Had tea & cookies with Sharon & Mr. Hawkins in their home.

Beaver View Campgrounds, McBride, British Columbia, Canada  
Oct. 7, 1983

Mr. Hawkins took Annette and I to vantage point on a lookout mt directly N of camp. <sup>From this A.M.</sup> He reports that one of the drainage to Columbia river was diverted to Frozer drainage and the Columbia water in the new drainage attracted salmon that traditionally had used the Columbia River to migrate up the Frozer River to where the Columbia river system was being diverted to the Frozer River.

80% of lumber to U.S. Cedar no value & left after fir & pine are removed. Cypress more valuable than red cedar. Forest products are more valuable than farming of the land. No cooperation between National Parks & Forestry Dept. Forestry wants timber control of infested area or burned area but parks say no management.

In way up slope about half way observed <sup>and 12 Oregon junco in one group.</sup> 2 moadi cross road. On a young male. This slope is steep and covered with deciduous trees. At observation point, <sup>approx 4200', valley 2000 ft. (maybe meters?)</sup> took several photos of valley below and mts beyond.

- 831007-1 Peaks to S
- 831007-2 general view to S of peaks and meander of Frozer river.
- 831007-3 range to S, valley and Mc. Bride lower right side.
- 831007-4 range to S and valley. Mrs. Hawkins born & raised S of Oklawaha.
- 831007-5 Mrs. Ronald Hawkins and Annette.
- 831007-6 aspen and birch below vantage point.
- 831007-7 range to S showing peaks

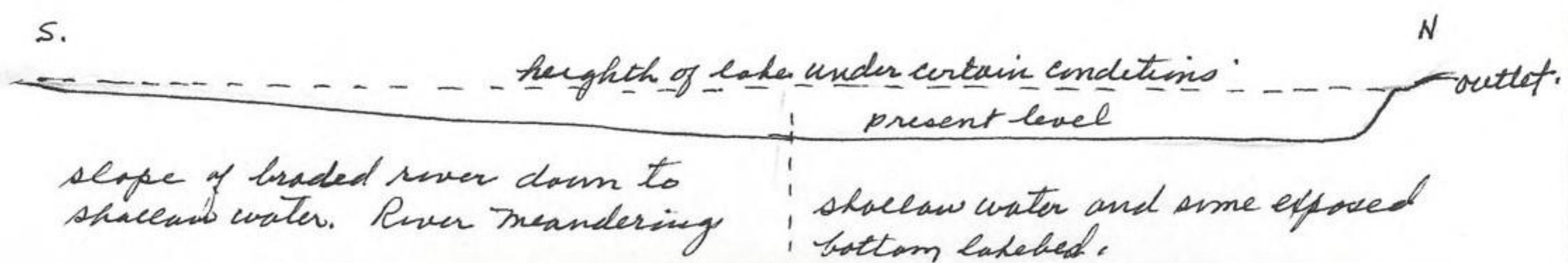
831007-8

He reports no permanent Indian sites in valley. On return to camp visited 2 full <sup>(Rainbow Falls)</sup> on mt on lower slopes. at edge river measure 6' of annual lowering of river at 24 levels from 3 (2-5) inches in height. Red-throated loon in river. River thaws first at banks and there is minimum erosion of banks. Left at 407.4. at 414.0 big fire scar on mt to N. 424.4 Dunster turnoff. N side valley on slope is 90% free of leaves, whereas on S slope almost 85-90% leaves are in color and on trees. 545.9 junction Jasper-Kamloops. Photo 831007-9 of mt to N before mt Robson Robson River & aspens on side (mouth of Canyon before river goes into trench). Aspens in Canyon 80% in color & in leaf, others leafless. At Terry Fork <sup>memorial</sup> 450.6 2 photos of mt. Robson 831007-10 and 831007-11.

453.7 Swift Current Creek. 454.7 Robson Provincial Park 555.2  
 Robson River. 456.2 2 photos mt Robson (telos) 831007-12 and  
 831007-13 the latter showing stratification. Aspen brilliant.  
 Aspen on right side canyon being crowded out by conifers but  
 wherever single trees occur is brilliant in color. 468.4  
 open, lake <sup>(more lake)</sup> with greenish water. Aspen rare on S side. on N side  
 leaves 50-60° in color, the rest leafless. 472.3 Steller's jay 475.1  
 126 Canada geese and 27 mallards in swampy meadows. 2  
 muskrat houses, 2 Steller's jays associated with some of the geese  
 resting on land 480.5 Steller's jay, hooded mergansers (3). 481.8  
 3 muskrat houses 483.8. Frazer River. 487.0 Mt. Fitzwilliam  
 831007-15 and 831007-16 of mt. somewhere beyond above photo.  
 and photo 831007-14. 487.3 yellowhead Creek. 2 Steller's jay  
 491.0 on W side. 90-95 leafless. E side 60% leaves gone.  
 493.5 more aspen N on N side and 95% leafless 494.2 now in  
 Alberta and entering Jasper National Park. Clock 1 hr ahead.  
 Photo 831007-17 annette.  
 497.0 Jasper Nat Park gates This area seems dry compared to W.  
 Steller's jay. Aspen 95% free of leaves but rest in brilliant color.  
 511.3 Jasper railroad station. Stayed Whistlers Camp. S of town

Whistlers Campgrounds, Jasper National Park, Alberta, Canada  
 Oct. 8, 1983

At camp, 3 tree squirrels and 1 raven only birds & mammals.  
 Raven walked <sup>on road</sup> 150' past 3 campsites before inspecting a campsite.  
 Left at mileage 515.3 for Maligne Lake. Enroute at Maligne  
 Canyon observed deeply incised canyon thru dolomite? to grade  
 to Alberta River. Canyon formed by boulder drilling and  
 abrasive action of glacial flour. A morning cloak butterfly  
 here. Ice has formed on small bodies of water. 533.4 Eutamias.  
 537.2 23 mallard ducks on shallow waters of lake bed. 539.2 8  
 mt sheep foraging on vegetation of lowered lake bed  
 They maintained close grouping. Photo maximum level sheep present level  
 831008-1 of these sheep. 8 in number of  
 2 rams with horns 1/2 curve, 4 other adults and  
 a young that at the height about shoulders was 1/2 height of mothers  
 body. This young attempted to suckle the ♀. Photo 831008-2 of  
 group with zoom lens. and 831008-2a  
 540.0 approx position of S end of lake.

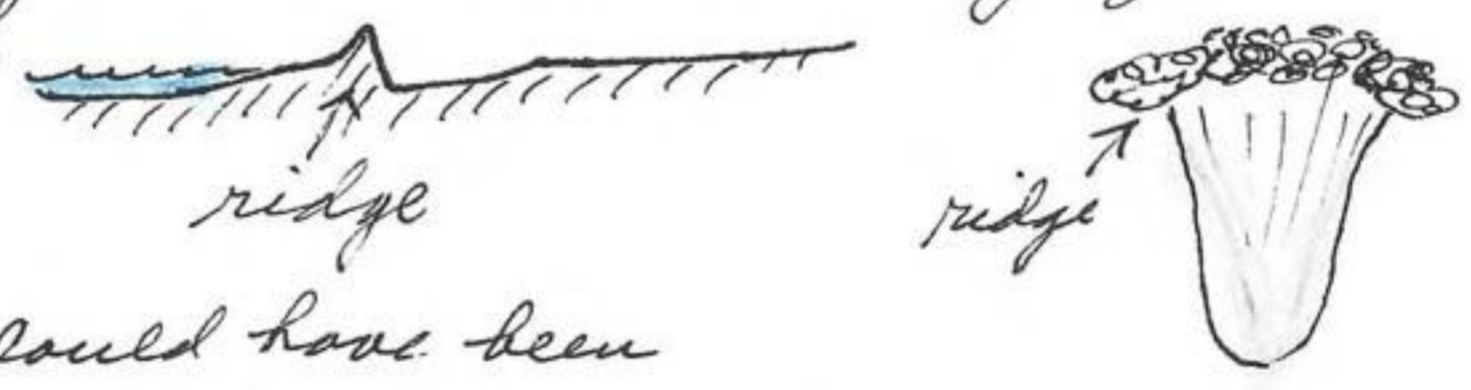


This lake has lakebed level outlet thru gorges of valley and reenters outlet stream several miles down the canyon. There is much more water coming into the lake than reissues in stream bed below outlet. Only in exceptional wet periods does the water go over its natural or surface outlet, all other times the stream beyond the lake is dry. Water coming into lake has some glacial flour but below outlet is crystal clear. Snow in protected places just south of S end of lake. 250.0

- end of road W side Maligne Lake. Three photos of mts To S
- 831008-7 S end lake to W.
- 831008-8 S end of lake.
- 831008-3 Prominent Peak to E of Lake
- 831008-4 " " " " " " " " 831008-9 S end lake from outlet.
- 831008-5 Mt beyond S end of lake.
- 831008-6 same as 831008-3

Drove to E side lake and walked trail to S to observation point. In sands of beach between here and back to N end lake recorded one elk track 125 mm in length. at least 2 others that were smaller were along beach. One bear, probably a large black bear with length of pad 250, width of pad 185 and length from upper end pad to claws 126 mm.

On the basis of these measurements the bear would certainly have been a grizzly bear. The beach showed the bear to have walked in <sup>shallow</sup> water out to 6 feet and a general use of the beach water contact. These tracks were observed in 4 different spots along a 400' beach area. One beach excavation could have been a bear plunging toward the edge of the water and then stopping abruptly. The beach had be gauged and ridge formed lakeward thus:



The excavation could have been made by the rump of the bear following the slowing of the front feet.

An immature Myrtle warbler, Dendroica coronata, was observed on beach at edge of water approx 1/2 way from N end of lake (Maligne Lake) to observation point to S. It definitely had a white chin and typical tail feather marking. There is possibility of the subspecies (Auduboni) but this subspecies has a definite yellow chin as does the Magnolia Warbler. There is always chances of hybridization between the two subspecies D. coronata coronata and D. coronata auduboni. 2 roven in area. 4 common <sup>2♂ 2♀</sup> goldeneye

Left 5:30 at 550.0 at me place on mt., timberline occurs in


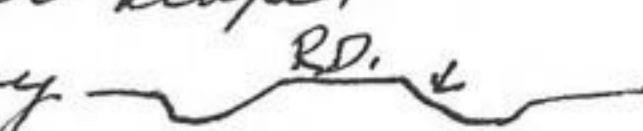
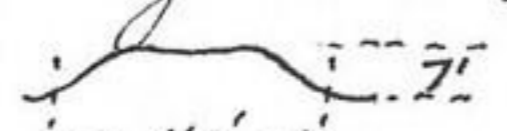
a zone of approx 200 or less feet. Entire area we have passed thru is dry including vegetation in fields and among trees. It is certainly not the condition of the Coast Range. On a small 1/2 acre lake, ice covers half of it at S end. at 562.8 the 8 mt sheep were just below road on <sup>upper</sup> lake level. They fed below and above the upper lake level, then came to road and remained there for about 20 minutes. Photos 831008-10 to 831008-20 are of this band of 8 sheep. It was possible to drive past these sheep without disturbing them. They had complete confidence in man.

Lake shows 16 major transverse levels on receding shoreline. These were of equal spacing and did not show dramatic changes in lake level from sinking lake bed. Side drainage form regular delta whether water in lake or not and have formed on the original valley floor. No noticeable logs or branches in lake bottom but just good sand and mud bottom. Except for current river, it is possible for man or animal to walk across lake bed without sinking below ankles in mud or sand. rare

Aspen at Maligne Lake present and some in color but most leafless. Cottonwood had yellow leaves. Photo 831008-21 of range to E at Tabbot Lake. 831008-22 Oct. sheep, Barth at salt licks on highway 16. (See above for position of salt licks.)  
Returned to Whistlers Campground at mileage 584.8

Whistlers Campground, Jasper National Park, Alberta, Canada.  
Oct. 9, 1983

at 11:00 A.M.  
Left camp 584.8 for Pocatontas and then return. Day clear and cool, strong prevailing wind. At camp a large raven in camp area. One tree squirrel foraged 200' and always returned to resting site. Movement rapid. Elk bugled from late twilight to day break mainly W of camp. I have been informed that there are approx 200 in Jasper area. The elk also called the night before. Went thru by-pass of Jasper on 16 highway. Athabasca River blueish. Most aspens in valley are without leaves as well as understory plants among trees although some good color in trees on upper slope to W. Athabasca River is in a broad valley and braided river has islands with conifers. Shallow water in most of bed.  
589.6 <sup>end</sup> Turnoff to Jasper, 590.8 Turnoff to Maligne Canyon  
Black Cottonwood in valley show some trees with green leaves, some colored leaves and some leafless. For the most part aspens are leafless in the valley. Aspen, generally single

in solid stands of conifers are in brilliant color 592.2 raven. 593.5 raven. Gravel of river bottom white. Good terrace on east side, as is the one we are on. Terraces are good when found but seldom continuous. These lower terraces are the winter grounds of elk. At Palisade picnic grounds first black-billed magpie. 7 mallards on pond n of picnic area. At overflow area (NP), 98 per cent aspen leafless, 2 per cent in color. 598.8 Snaring River. Good <sup>active</sup> sanddunes to n e of mouth of river. a raven and <sup>6.5</sup> magpie at dunes. Average lean of black spruce to down canyon from prevailing western winds. 600.9 Crossing Athabasca River, on E side is a good face of glaciated rock. River along side of face has not eroded original face. 6 mallards in lake to left. One group of 13 male and 31 females in one feeding group. Another group of 13 males and 21 females. Also 7 pintails. Lake impounded by road is crystal clear and deep green whereas main river to n of road is blue. Some isolated aspen as yellow as climax conditions. Willows nearer green than yellow. Kinnikinnick associated with willows. 602.1 red-breasted merganser sleeping on water. Athabasca River, broad at this point and is rather a lake of shallow water with 80% lake bed exposed. Entire lake bed above water is damp. 605.4 beginning of <sup>continuous</sup> sand dunes on S side of lake. There are also dunes on n side of lake. Aspen in conifers on sidehill a brilliant yellow others 50% in color. 606.0 sanddunes continue. 8 mallards and 2 ♀ Barrow goldeneyes, 2 more Barrow's golden-eye ducks beyond. Sand dunes in 3-6 consecutive rows all trending down canyon and paralleling old lake. 608.1 beaver house at outer edge of rushes  and winter supply of branches 15' away. Have seen others in this lake (Talbot Lake). Hillsides on lower Miette Range are dry and vegetation looks dry and poorly developed. The vegetation alludes to dry conditions in general in the park. 610.0 Rocky River. <sup>Individual</sup> Aspen in conifers on sidehill a brilliant yellow and extend 1/2 way up lower slope. 612.1 8 mountain sheep on edge of road. Right of way  4 ♀ and 3 young and one young male. Three photos of these sheep nos 831009-1, 831009-2 and 831009-3. 612.4 Suet Lick turnout. The tracks of mt. sheep 80% and mt. goat 20%. Hooves (total length minus dew claws) measured 80x40, 72x60, 60x40, 55x40. measured one track mt. goat as 75x50. A salt lick 1/10 mile beyond measured . mild taste of salt from this white material.

614.6 80 mallards in small ponds among extensive grass meadows. Overturn in mts-to E. 615.5 Pacheontas Returned to Jasper here. Along way 618.3 2 photos, 831009-4 831009-5 of mt. sheep along road. This group has one male, 5 females and 2 immatures. One of the adult females come to Barth and brought nose 3" from a curtain that was moving by the wind. The left eye was injured and 1/4 open. The large males lied down occasionally. 619.0 The 8 mt. sheep observed on way E earlier (see mileage 612.1) had moved 100 feet whereas the group observed at medicine Lake had moved 3/4 mile in same amount time. 622.4 photo 831009-6 of range to E showing patches of sparse vegetation, Talbot Lake in foreground. This is the lake with several beaver houses of conventional pond structure. On benchland and on side of bench to valley are at least 15 trails used by elk. The main trail on top had several elk tracks measuring 120 mm long. Several sets of coyote tracks in same series of trails. 629.0 group of mt. sheep of 1 large ram, 5 young, 7 adults of ♀. Some young trying to feed from females. Sand blowing in river bed. Stellers jay. 638.6 Raven 640.2 group mt. sheep, 4 rams, 4 ewes and 1 young. These sheep were near main bridge and were 200' from road. visited Lake Annette and Lake Edith, thence to Jasper lodge (28 Canada geese in lake at lodge, also 2 Canada jays and 8 Oregon juncos. Aspen in this area free of leaves. 644.8 is lodge, <sup>thence Jasper City.</sup> 650.4 main highway junction with 93. Continued to base of tramway. Stellers jay. 60% in leaf. At hotel 80% leafless but those in leaf a brilliant yellow. Golden <sup>(birch)</sup> colored leaves dominate over yellow <sup>(aspen)</sup> color. Many <sup>Raven bark of</sup> aspen, eaten by elk. Some conifer trees 23 inches in diameter used for scraping antlers. Now at Camp 57-H at 661.2.

Whistler's Campgrounds, Jasper National Park, Alberta, Canada  
~~summit~~ ~~meadow~~ ~~meadow~~  
 Oct 10, 1983

At 11:20 P.M. 10 wapiti grazed thru camp. 4 were within 20' of the Barth and one passed by within 2 feet. They were feeding on vegetation close to the ground. In approx 20 minutes they had passed beyond our area. A spot light 200,000 candlepower was directed onto these animals but without concern, even when the first beam of light was directed onto their bodies. They continued grazing or looking around for other elk action. The retinal reflection is a large conspicuous white with a trace of amber. Elk 400' away



reflected the strong eye reflection. At the time I had my head out of the open window listening to the bugling of the elk perhaps 2/10 or so miles away to the SW, with eyes mainly directed downward and when I left my sight upward, 4 large dark forms were moving 20 feet ahead of me and making absolutely no audible sound. They moved like shadows in the night. 3 were females, one an antlered male. (antlers about 2 1/2' long D.)

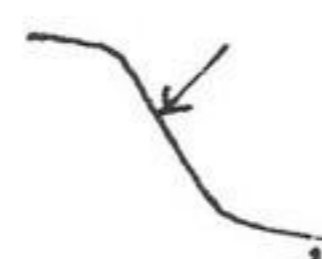
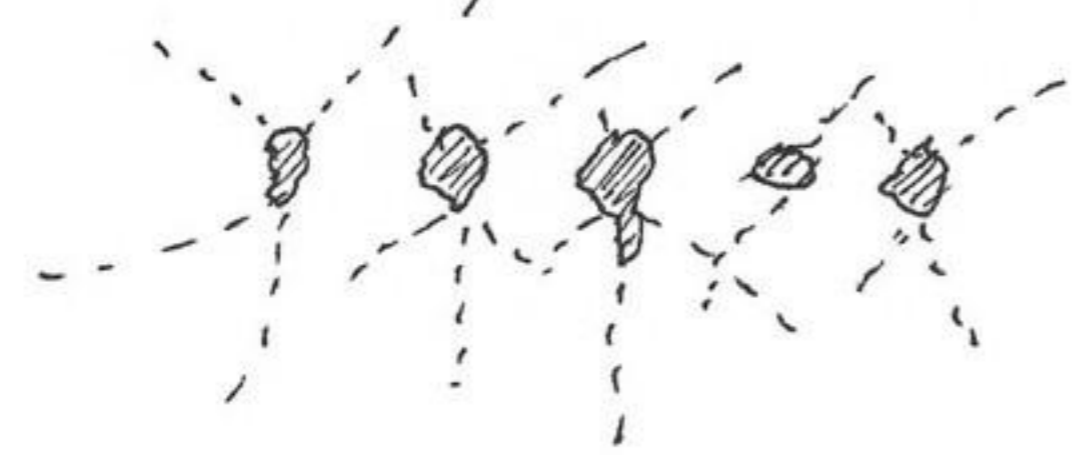
1810-1811 Expedition

This morning we visited David Thompson Memorial just S of Lodge (E side old river bridge) and climbed stairs to plateau. Thompson discovered pass between Jasper & Banff. Drove to tramway and rode to top and back. From top took 5 photos:

- 831010-1 Annette to NW
- 831010-2 General view to NW
- 831010-3 Annette to S
- 831010-4 general to N
- 831010-5 general to W, Annette lower right.

This area is above timberline. Approach over long extensive rock slopes.

From top could see 2 areas opened and developed by elk, they are lighter color than sidehill and have trails leading to them. About 150-200 feet up on side hill of moraine.



They are also represented up Canyon <sup>2/10 mi</sup> in same position on sidehill and <sup>same distance up</sup> from base of moraine. Series of lakes perched high on rock platform is interesting. Temp -2 C at top. Wind strong and freezing. Snow about 6" deep in protected places. Trail to top takes 45 minutes.

Aspens in valleys almost 100% leafless. On slopes above hostel and W of Whistler's Campground 2% colored aspen, 40% golden willow like tree, dark smooth bark and 1/2 size aspen.

On return passed thru 34 elk in field and along road just a 100' or so higher at NW part of Campgrounds, Whistler's. Photos

- 831010-7 large elk rubbing antlers on rock
- 831010-8 " " " " " " , licking and eating? cambium layer
- 831010-9 " " among females
- 831010-10 " " smelling ♀ at 30 feet, later charged ♀

Some graze on edge of road 3' from car. Large male attempted copulation 2. Would raise head, smell air and then rush at females. Copulation attempts were not made with rushing action. Female simply walked forward when male attempted contact. Continued down road to 93 highway thence to Wapiti Campgrounds.

Wapiti Campgrounds, Jasper National Park, Alberta, Canada  
~~near campgrounds~~ ~~near campgrounds~~ ~~near campgrounds~~ ~~near campgrounds~~  
 Oct. 11, 1983

This section is new and is a double parking lot surrounding toilets. There is not enough room for cars between trailer sites and there is not one site that doesn't require double shoring of vehicle. This is a serious mistake. There is absolutely no privacy or room to open door between trailers. This is an attempt to have a winterized camp. At 93 highway 8:25<sup>A.M.</sup> (from Wapiti Campground). This area along road is used extensively by elk during winter. Aspen trunk with blackish zone to height of elk and may be due to elk or is common winter height of snow. Aspen + lodgepole pine used by elk to remove velvet are distributed about 1 per 150 ft. 80% of scarred trees are associated with aspen-pine flats. The topography (flat) is more important than vegetation. In 1/10 mile there were 43 scars on aspen, lodgepole pine and small 8-foot conifer saplings. Some saplings can be completely debarked. These scarred trees are more frequently found at edge of forests and to that extent the elk may be an important influence in the establishment of scatores. In one particular area and in 90% of cases the scars are on lodgepole pines, 691.6. Sentier Tonguin valley sign on road to Marmot Basin ski area where road makes turn, crosses river and goes up slope to NE. 694.3 Marmot Basin Ski Lodge. The expensive road and poor scenic value of the area, does not justify the expense of road. In the first place the road + sking area should not have been built in the first place in a national park.

In the <sup>first</sup> curved of the road coming down found elk trails, droppings and bedding spots all thru the timber. A microtine like trail was associated with all suitable area in the wetlands and grasses among the trees. Watched one red-backed mouse, <sup>1 1/2 min</sup> *Clethrionomys gapperi*, in good sunlight, run along ground branches, run along & over ground litter and work among root systems.

These areas were not in places where *Clethrion* usually forages. They usually are found under protection of log or heavy conifer growth (ground). With the number of microtine trails in area would not doubt that the population is high. Activity at 10:30 AM. Ice on protected water but not now freezing - Steller's jay and one tree squirrel here. Lodgepole pine are shorter here than along Athabasca valley floor. This area about 1000-feet below tree line. 695.4 photo of synclinal mt. (Kerkeslin) <sup>831011-1</sup>

Few elk scarred trees from Marmot Basin down to valley but not as numerous as in valley, approx 2 per 1/10 mi. On one road bank, forest floor is mounding down slope as islands.



Steller's jay at Tonguin valley cross-over. Greenish-gray grasses along road are in better condition than those lower down. These grasses may be planted.

700.9 at 93A, now S. Will count elk scarred trees from 700.9 to 701.9 counting on right hand side. First mile produced 12 elk tree scars. 703.7 turn

off to Edith Cavell mt. There are 2 good high ridges on E side Athabasca valley for easy hiking and unexcelled panoramic views. must try them someday. Slope (E side valley) a series of glaciated N-S trending levels and ridge prominences. Now in ballmounds.

Very few scarred trees by elk. 705.4 2 Steller's jays. 705.8 edge of Athabasca River. 707.6 convergence Athabasca and Whirlpool rivers. 708.4 raven. 711.2 edge Whirlpool River going up canyon.

2 red-breasted mergansers left river & flew up river. 711.8 12 Oregon juncos. Bud life rare. 713.3 end of road. Walked up trail to Moab Lake, took boat to first turn and returned.

One red-necked grebe in lake. Outlet of lake is controlled by 2 beaver dams, keeping lake 2 feet higher than outlet. Returned to car, Canada jay here. 713.3 left. morning slook butterfly, Steller's jay, tree squirrel.

Water in Whirlpool River clear but blue. 4 juncos (Oregon). Not many logs in river bed in fact in places none. Most on higher benches. Steller's jay 717.6 back to 93A. Sun so far to S does not allow light on many peaks and is poor subjects for photography.

726.2 Leach Lake (middle of it). This lake and 3 disconnected lakes all green and as intense as I have seen (like copper sulphate). These drying produce alkaline shorebirds. 721.8 photo 831011-2 of mt to NW. (pyramid), might be Edith Cavell. 723.1 Athabasca Falls.

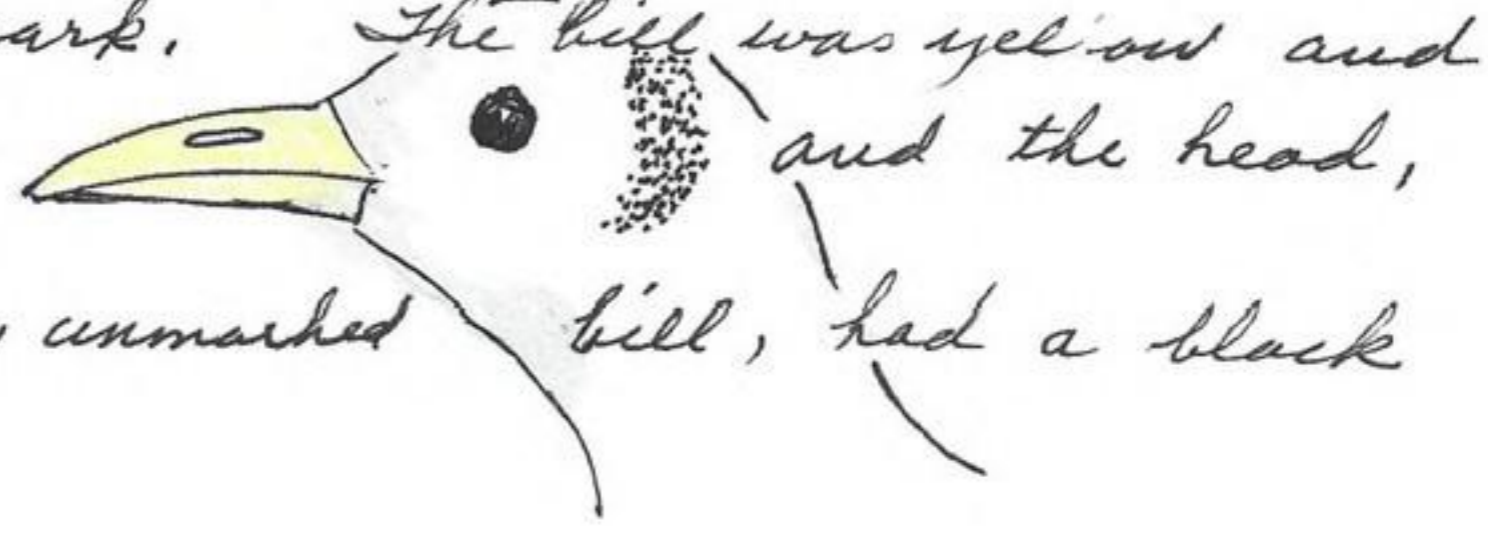
Photo 831011-3 and 831011-4 at mouth river thru falls area of cliffs on S side river. Photo 831011-5 of Kerkeslin mt.



Kerkeslin is only lighted in afternoon. morning cloak butterfly here. None seen 10 today so far. One tree squirrel here. 3:00 PM 2 Canada jays here. 724.8 Photo 831011-6 of group of mts to S with snow banners or clouds forming to SE. These dense cloud banners are continuously being formed to lee of these peaks. <sup>Photo 831011-6a of peak with clouds forming on lee side</sup> 727.4 at Kerkeslin viewpoint Photo 831011-7 down Canyon of Athabasca River, mts in background and mineral deposits low corner. Photo 831011-8 of up Canyon view with mt in background, mineral deposits on E side river. These deposits have salt and are eaten by mt. goats. There are 60 <sup>goats</sup> in area.

Informant says that Edith Couell trail is the best area he has experienced in N.P.

On hillside to E is a pink stratum producing "gog" mineral a quartz. 736.6 Honeymoon Lake Campsite. 2 tree squirrels and 4 Canada jays in camp. Hiked to NE side of lake. At N end of bay observed a black-legged (adult) kittiwake in bay. It gradually drifted to N end of lake where it lost balance and tipped to one side. Its head when below water for 20-30 seconds but was able to lift it above water. I believe we witness the death of this bird. It was breathing with difficulty and did not have control of bodily functions. Will check tomorrow to see if predators captured this bird. If it is a kittiwake will take to warden for documentation of a very rare bird for the park. The bill was yellow and typical of kittiwake or mew and the head, unlike a winter plumage of the mew which <sup>also</sup> has a yellow unmarked bill, had a black crescent behind the eye.



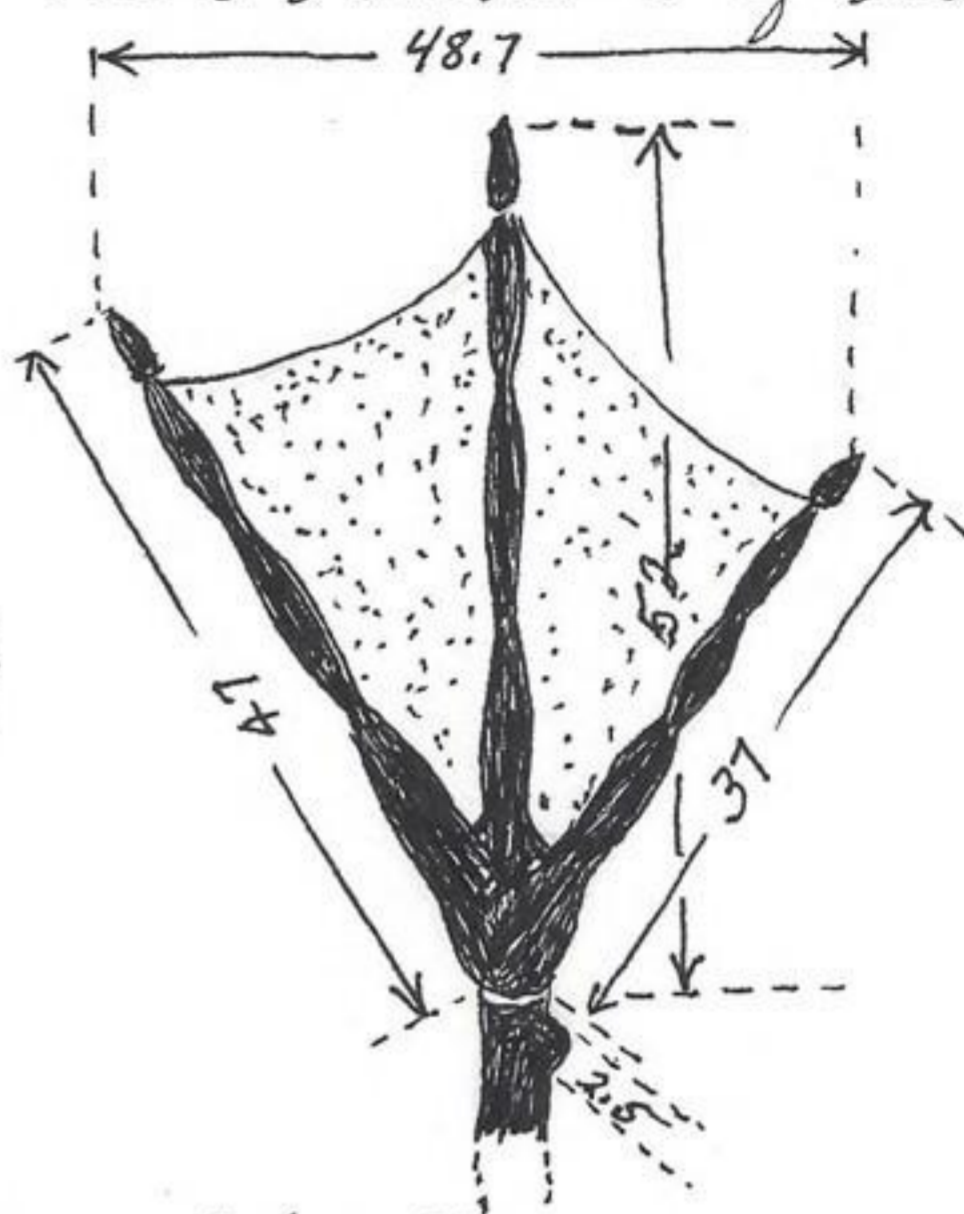
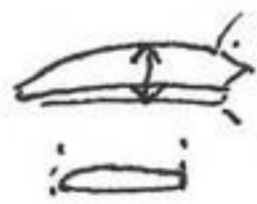
Honeymoon Lake, Jasper National Park, Alberta, Canada.  
 Frost on ground Oct 12, 1983 831012-1

At 8:00 A.M. checked black-legged kittiwake, observed last evening. It was found dead some 6' from where we observed it yesterday. I believe the bird died a few minutes after we left it last night. It was 4' from shore and among sparse water vegetation with belly down and head under water. Returned it to camp and made 5 photographs: 831012-1a photo of head showing bill, eyes and black zone of black that runs from one side of the head, across nape

and down opposite side of head. Photo 831012-2 of close up of yellow bill showing curvature of bill not found in other gulls. Nares are distinct. Photo 831012-3 of primaries showing 3rd primary in development stage, both wings show this condition. <sup>also No 831012-3a</sup> Photo 831012-4 of back, tail and wings and head. When the tail is nearly closed shows a slight forked condition. Photo 831012-5 of feet. There is a nubbin rather than a claw. Photo 831012-6 of band of black on back & side of head.

Measurements of this bird are:

|                        |         |
|------------------------|---------|
| Total length           | 433 mm  |
| tail                   | 120 mm  |
| wing                   | 300 mm  |
| bill, ex culmen        | 35.8 mm |
| width bill (height)    | 12.8 mm |
| nasals                 | 5.7 mm  |
| foot (tarsus-phalange) | 85 mm   |
| tarsus                 | 40 mm   |
| wing spread            | 970 mm  |
| weight                 | gms.    |



3rd primary lacking, 50 mm of normal length.  
adult in winter plumage.  
inside mouth and tongue orange.

Presented the Kittiwake to Warden at the Park Warden Station at mouth of Poboktan Cr. It was suggested that he send it to University of British Columbia and have it placed in regular museum collection as a voucher specimen. It was also suggested that other institutions such as Edmonton would be satisfactory but not the local park museums or other institutions that did not maintain permanent collections. This bird is too rare to allow the specimen to be lost or not be brought before the scientific awareness. It was placed in office refrigeration. He reports bears are in hibernation. Honeyman Lake was stocked two years ago but not this year. This lake is definitely overused as a fishing lake. My opinion is that all fishing should be excluded from the park. It is also my opinion that roads have been built without consultation with people who have knowledge about scenic values and environmental impact. Jasper is occupying and building out of bounds in the ancestral winter grounds of elk, deer, sheep & goats.

now back to recording from Honeymoon Lake. we left and drove back N to see if we could see mt. goats at the salt slope. This was at 745.4. Although we did not see goats we did take 4 pictures from this vantage point (day without a cloud in the sky. Photos

- 831012-7 peak with parallel erosional crete with glacier remnant & terminal moraine <sup>below</sup>
- 831012-8 " ibid
- 831012-9 close-up of above
- 831012-10 " " "

These peaks were <sup>on</sup> mt. just N of mt. Fryatt. Sun <sup>rays</sup> in morning or afternoon or midday do not shine on many N slopes and the general view looking S is blue shaded mountains. S facing slopes receive full illumination. For sight seeing and photography it is best to travel from S to N thru the park.

747.9 2 elk, a young one and an adult ♀. Photo 831012-11 of the adult. <sup>831012-11a pointed peak to W.</sup> 751.7 2 photos of high peak to W, nos;

- 831012-12
- 831012-13

This mt has an upper half dome projection.

753.5 photo of half dome mt, as above, to the west. no.

831012-14 telophoto showing aretes or parallel drainage system.

831012-14a as above but further along

753.9 passing Honeymoon Lake entrance. Tree squirrel ran across road.

756.1 Sunwaptis Falls. Similar to Athabasca Falls but less of the dominant walks, ledges and overlook points.

at 2/10 miles beyond falls took 5 shots at the bull elk. This elk was rubbing antlers against kinikinik which was a slender non-supporting shrub and then licking the stems after rubbing.

These photos are:

- 831012-15 elk rubbing on a reddish shrub (kinikinik)
- 831012-16 elk browsing on willow
- 831012-17 ibid
- 831012-18 elk walking thru conifers

Canada jay here. 767.8 Warden Station at Hobarton Creek. Left the black legged kittiwake specimen here (see part of notes at beginning of today's notes).

Beyond N 93 is a massive talus of rock slides of large boulders at the base of the mts that dip strongly to the W and carry S for many miles. On W side canyon the conifers of one kind goes up to near timberline and then a darker conifer continues to tree-line 775.7 photo of Mushroom Peak.

- 831012-19



776.4 2 photos to south with reflection of mts in pond nos.  
831012-19a. Ponds have 40% ice.

Braided river system covering entire valley floor. 778.1  
photo to SW of a glacier no.

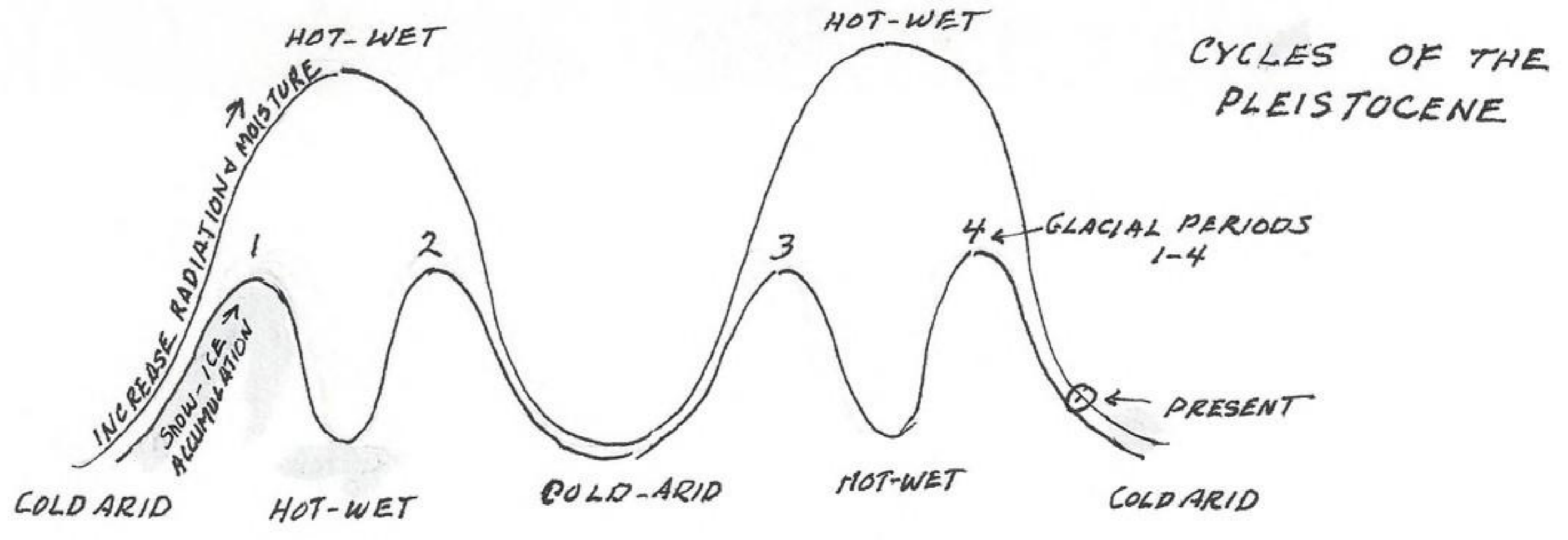
831012-20. glacier to W and somewhere between above and next photo.  
831012-21 just beyond an avalanche from W mt. brought down  
a pile of timber and deposited it on the river bed. The  
river had not as yet remove the deposit of dead trees. This  
is one source of trees in river beds. Canada Jay, 780.2  
entire river valley <sup>(E side)</sup> covered with a white cottonlike plant.  
(*Cerophorum*?) except of course the river proper. This plant  
has been common on the highway right-of-way all along  
the way. 782.1 photo <sup>831012-22</sup> of glacier field and timber in  
lower right hand corner also segment of Columbia ice field,  
782.8 roven 783.7 5 photos of several peaks glaciers and  
peaks both up & down canyon.

831012-23 Athabasca Glacier and Little Glacier to the E.  
831012-24 to N of above at 783.7 mi. of mts above timberline, moraines  
and eroded canyon to left  
831012-25 as above showing more clearly the avalanche down thru forests.  
831012-26 same backgrounds as above with Annette in foreground.  
831012-26a before Columbian Glacier area. Columbia ice cap on top.

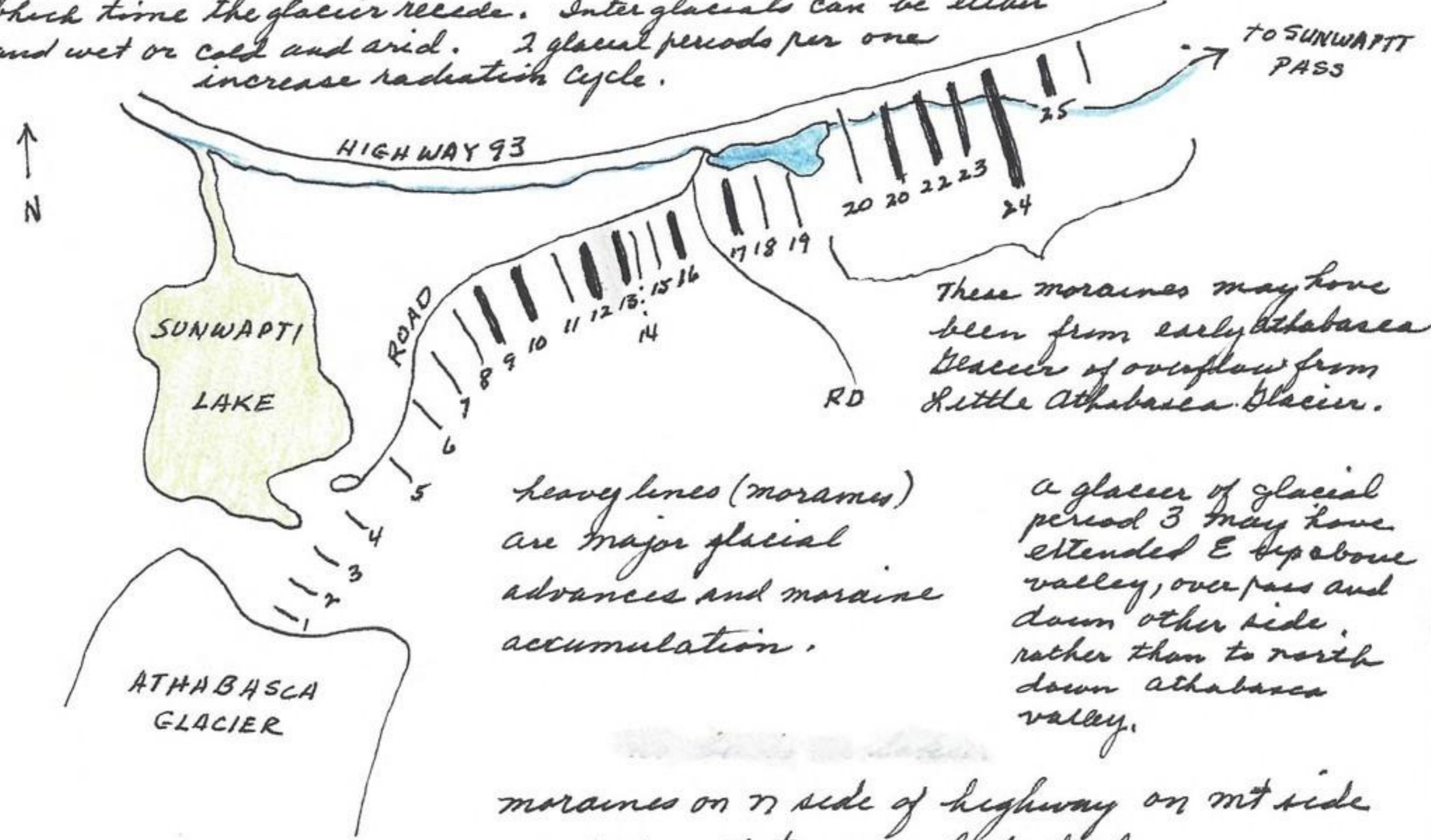
3 Canada jays, a roven and 2 mt. sheep here.  
786.2 photo of Athabasca glacier and mountains & glacier to E.  
831012-26b Athabasca glacier to E.  
831012-26c from same position as above but to S (Athabasca glacier).  
831012-27 crowds at base of glacier. They are physically eliminating  
the finer details of the terminal moraines as the ice mass recedes!

Other general photos are:  
831012-28 Athabasca glacier to E showing glaciers on mts + Athabasca  
Glacier in foreground  
831012-29<sup>nb</sup>  
831012-30<sup>nb</sup>

at terminal of glacier one roven, no ducks in Sunwapti lake.  
which was 1/2 frozen glacierward. Greenish in color. The  
Columbian Icefield which support the Athabasca and some  
glaciers as well as many others. It is a vast snow-covered  
upland and is sandwich between Mt. Columbia, Stelfield,  
Kitchener, Athabasca and Castleguard mts. It is much  
like Greenland. It is 100 meters thick and is seen at tops of  
mts as a high wall of ice sitting on top of the mt. The Athabasca  
glacier comes from this icefield and after crossing 3 icefields  
ends in a gentle tongue of ice. This glacier is gradually receding.  
From along road made map of recessional lateral & terminal moraines.



With increase sunspot activity of sun there is an increase in radiation and an increase in precipitation. Snow and ice increase because of more precipitation until temperature exceeds the snow and ice tolerance at which time the glacier recedes. Inter-glacials can be either hot and wet or cold and arid. 2 glacial periods per one increase radiation cycle.



heavy lines (moraines) are major glacial advances and moraine accumulation.

a glacier of glacial period 3 may have extended E up above valley, over pass and down other side, rather than to north down Athabasca valley.

moraines on N side of highway on mt side are difficult to judge but it shows some

levels above glacial levels represented with Athabasca Glacier. One twice as high as other moraines. They may be from 3rd glacial period.

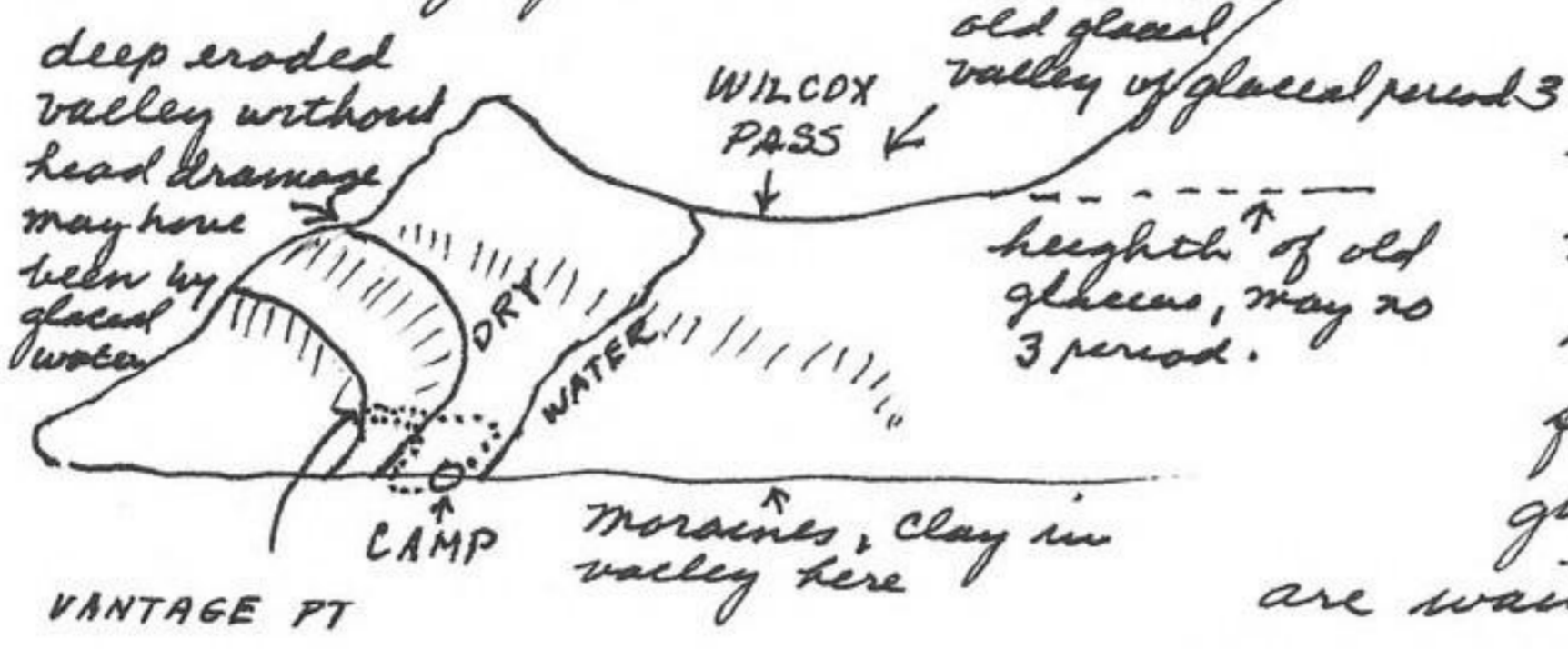
Photo 831012-31<sup>70</sup> of mt E of Athabasca Glacier and part of glacier proper. Left and drove to Icefield Camp for night. Here 3 Canada jays, 2 Eutamias minimus, 2 Tamiasciurus hudsonicus. Check creek in valley and found trout to 9" in length. no birds or mammals. willows in flats and with large catkin, waist high. The trout can be chased up broad shallow ripples and captured. most swim to overhang and cannot be dislodged. water from falls disappears at about 50' N of point where creek bed turns S.E.



Icefield Camp, Jasper National Park, Alberta, Canada

Oct 13, 1983

Last night there was a continuous display of northern lights. Frost on ground and parts of creek edge in ice. At 8:00 A.M. hiked up slope to N to vantage point.



Started up waterfall canyon, thence W across slope to next eroded canyon, thence up E side to where valley flattens, thence across dry gulch to vantage point. There are waist high willow with large catkins and at vantage point more like tundra.

Citellus holes every 20' in all directions. Others down to at least camp. From vantage point look 4 photo (panorama) of some and Athabasca glaciers. Returned to camp. As I approached the dry gulch at head there were approx. 300 Cedar waxwing feeding on exposed soils of slope and on berries among stand of coniferus. They all instantaneously left and flew out into valley in one close group then returned to same feeding ground. At one point under a protective lip of a boulder ~~approx~~ approx 50 feet on ground. An examination found 33 scat ~~seeds~~, red in color and full of berries seeds. On way up a Clark's Crow flew W and on my return one flew E. Coyote tracks only mammal recognized

Left camp <sup>791.8 - 12:20 P.M.</sup> and continued S on 93. At 792.4 2 Canada jays. 793.8 Crossing into Banff National Park but still this side of divide. David Thompson of Prairie Village, Kansas, said that he saw 14 caribou on mt E of Maligne Canyon. They were as tame as other park mammals, one with big set of antlers. The Edith Covell and glacier was the most interesting trip he has made in Jasper N.P.

797.0 photo mt of 2 prominent peak which are continuation of peaks E of Athabasca glacier. They are:

831013-5

831013-6<sup>76</sup>

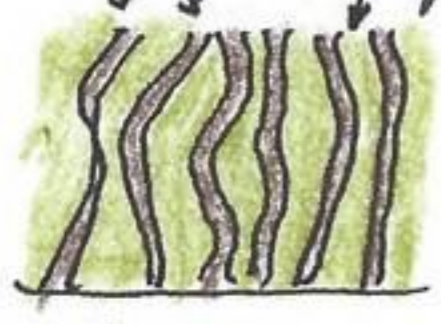
799.1 photo SE peak, one major and one in distance.

831013-7

Valleys are broad and are solid gravels from wall to wall with stream. First aspen and no color. 791.1 more aspen, all on E side of valley, no color. This is upper limit of aspen in the drainage. 808.6 first elk abrasion on conifer trees. First color of aspen, concentrated, and 10 per cent of aspen grove. 809.8 Rodd engineers placed road

down middle of valley over gravel fields instead of along edge of valley where there is already the old road. They use valley floor and will bisect a lake to put their roads. *Eriophorum* covers the gravel field as looks like snow. Valley still filled with barren gravels. Aspen still confined to E side of valley. Just beyond the valley is supporting some vegetation and islands of conifers and grasses and some isolated lakes. In first small lake 5 Barrow goldeneye ducks. 816.1

avalanches on W mt clear cut and meandering on sidehill  
 avalanches forest These tracts confined to no drainage channels and trees bordering like a wall. Looks something like a cut ski run but is natural setting. Canada jay Good timber demarcation on mt to E. now at



Saskatchewan Crossing. Excellent panoramic view of mountains at 822.1, 827.5 photo of hanging glacier with first faint sun today. misty peaks in background.

831013-8

831013-9 matterhornlike peak, <sup>(mt. Chephren)</sup> in poor lighting. The upper part of peak is quartz sandstone from Dog group formation, the yellow stratum (not visible) of shaly mt white formation and all the base of grey Cathedral limestone. 828.4 photo to W of high peak and hole at glacier terminal; 3 Canada jays

831013-10

831013-11 mt. Chephren to W of above  
 Steller's jay. 839.0 photo to S at reflection of mts on a lake

831013-12 Chephren Lake of reflection of mts to S

835.5 photo of massive mt in foreground and 3 peaks in background.

831013-13 Midway Pk, mt. Synges & Aiguille prominence from left to right. next glacier down Canyon is a hanging glacier and next one in an crete or gulch.

Right of way in small pine 1/2 to 10' and joins abruptly with forest of lodgepole pine. Silver Creek area is an excellent place to view continuous panorama of mts.

843.9 now up to snow level (in patches). 845.1 Bow Summit ponds mostly in ice. most lakes are blue green. Bow glacier is the highest glacier so far ~~in~~. 2 roven. 857.5 Mosquito Creek Camp ground. Camped along creek. 8 feet away. Raining now and at dark snowing. The day has been cloudy and without sunshine. In afternoon rain. no birds in area. Creek cold and crystal clear.

Mosquito Creek Camp, Banff National Park, Alberta, Canada

Oct. 14, 1983

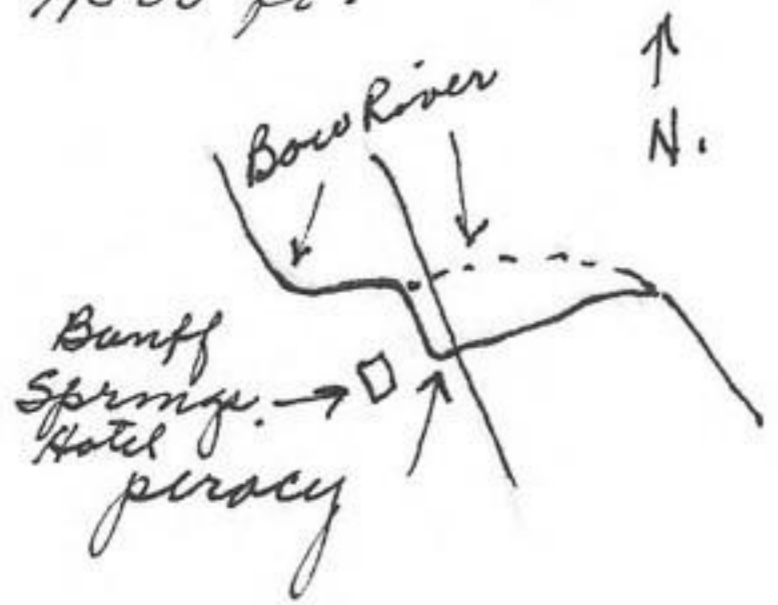
Snow last night and at 9:00 A.M. 1 inch accumulation. From 9 to 11:00 A.M. snow and rain intermittently. Faint <sup>misty</sup> fog or clouds so one could see top mts, now at 11:00 A.M. clouds to base of mt. 1 Raven only bird in camp. no chance for photographs except one at camp for record (Annettes birthday and our anniversary). <sup>83 10 14-1</sup> Left camp 12:20 P.M. clouds low and occasional rain. Four ravens generally distributed between Mosquito Creek & Lake Louise. Aspen increase and farther down are well represent (including black cottonwood in valley. <sup>and 98% leafless.</sup> Aspen, generally singles in conifer stands on hillside are all a brilliant yellow against the dark conifers 877.4 at Louise Lodge. we had lunch there and then at Lake Louise overflow camping area at 884.6 2 magpies and one raven. 888.5 2 elk feeding at edge of pond in grassy meadow bordering the lake. Elk trees used for antler abrasion in 2/10 mile were 12. 882.6 Canada jay and raven. 893.2 all along there is evidence of elk abrasion trees but not compared to Jasper area. Nor are there other big mammals in this area like the Jasper area. 895.0 raven 897.6 Copper Lake a deep blue-green. aspen mainly (98%) leafless but a few in yellow. 903.0 magpie. 903.5 Red Earth Creek. 904.4 raven. Occasional small group or single trees in color but 95 leafless. 905.2 Magpie 908.1 Wolverine Cr., dry. 911.8 raven & 2 magpies 912.9 good groves aspen in valley and mt side but no yellow. 150 cedar wot-wings. 914.0 vantage point and 3 beaver houses visible in marshy-lake area. Good cottonwoods and aspen in valley but 99 leafless. In <sup>sold</sup> green conifer on hillside the single aspen are 100 in color and brilliant, perhaps of protection. They are random in distribution, 915.0 9 mallards in lake. Arrived Banff. at museum one magpie. Clerk at desk said they have no records of the black-billed kittiwake. walves are reported by hikers and more than ever before. One group of 2 and 3 young, all black. all big game and predator increasing. Elk herds reduced by 800-1000 each year. Moose moving N into Jasper area. 2 mallards in river.

Tunnel Mt Camp, Banff National Park, Alberta, Canada

Oct. 15, 1983

3 large raven, 3 black-billed magpie and red squirrel (*Tamiasciurus hudsonicus*) Reference to tree squirrel <sup>in notes</sup> is the red squirrel. clouds in canyon and toward the mountains but none on camp benchland.

This afternoon went top of sulphur mountain via Gondola left. Bow Valley and Banff below. There are several good scenic shots. Today practically no sun and snow erratic. 12 mt sheep at observation area <sup>at</sup> top of left. They were hand confiding. Summit 7,500 ft. at summit noted golden eagle flying (soaring) south.



Tunnel mt Camp, Banff, Banff National Park, Alberta, Canada  
 Oct 16, 1983

Clear sky except a high haze. 933.1 left camp. Gulls at Banff as far as I can tell are the California gull. At Vermilion Lake 9 pintail ducks and 14 mallards. The pintail bob up for feeding and paddle feet on water as if to attain deeper extension of body. Beaver house to W, <sup>2</sup> magpies and 2 mt sheep along road, and one steller jay. 943.4 photo to NW, right hand side in series of cliffs and left in snow covered mt slope, 2 raven. 75% ponds covered with ice, magpie. 2 Canada jay, magpie 948.2 3 white tailed deer, Canada jay. 960.4 Trail head for Taylor and O'Brien lakes. Photo here to W of snow covered mt. no. 831016-2. High mark on edge of river is 1/2 distance of boulder band. 962.1 Coyote 10 feet <sup>river</sup> <sup>soil</sup> <sup>black stain</sup> <sup>mark on boulders</sup> <sup>lighter than above,</sup> of edge of road, turned and walked back into forest, magpie. 964.9 Coyote walked across road, poused on edge of road while a car passed and then walked down onto right of way. Twice it looked back from where it came as if expecting another coyote to follow, Canada jay, raven. Elk foot prints along road. 965.8 photo 831016-3 of imp. like mt. to west. Steller jay. 966.2 at an unnamed bridge, photo 831016-4 of mt top of aretes and snow covered. This is the same mt as 831016-3. 3 Canada jay, Canada jay. at 1A took short run up road (old highway) and then returned to highway 1. at 970.4. at this point photo 831016-5 of Nector formation (Precambrian 600 million years old) of scale-blocklike structure. Steller's jay, 971.0 photo of Aspen-Grone type mt. (Lake Louise Canyon) no 831016-6 just as we entered Lake Louise (town outskirts) Canada jay. 974.8 parking lot at Lake Louise Hotel. Photo 831016-7 of our Barth <sup>and another</sup> and another one (18') from Mississippi. Both about same year.

at the SE corner of Lake Louise took 3 photos of lake and canyon walls beyond; (with snow covered conifers)

831016-8

831016-9

831016-10

also four photos of upper cirques and snow fields at head of same canyon:

831016-11

831016-12

831016-13 <sup>nb</sup>

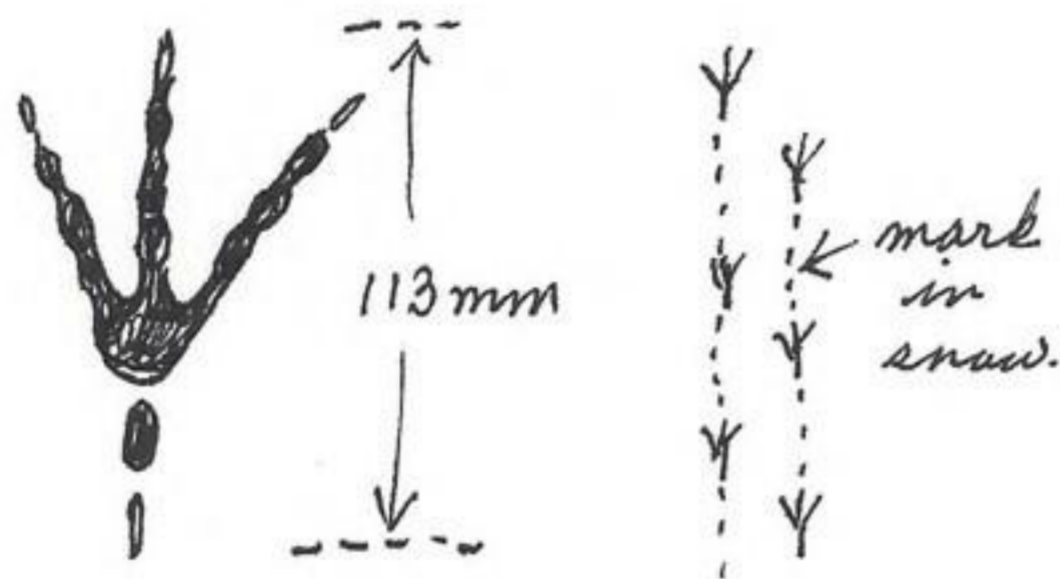
831016-14 <sup>nb</sup>

Photo 831016-15 of bulldozer, ear and dirt pile at edge of Lake Louise.

Photo 831016-16 from Lake Louise Hotel, entrance.

Photo 831016-17 of Annette at <sup>dining</sup> table looking out onto Lake Louise. Watch a Clarke Crow bury potato chips in friable <sup>soil</sup> flower bed at 4 positions and after it left a second Clarke crow came 5 seconds after the first one left and dug up the potato chips and consumed them. Left Lake Louise and went back to highway 1, Canada jay 984.0 photo 831016-18 to S of massive mountain with dead tree on right of photo. This mountain is in area of Lake Louise. As we drive along we notice that usually one tree (conifer 4-8 feet high) is completely denuded of branches and bark instead of several that would seem to give better and fresher structures to continue antler abrasion. None observed 3 white <sup>mothlike</sup> lepidoptera. 990.0 Photo 831016-19 of Hector Lake <sup>area</sup> of mt. Wapta icefields in Waputik Range. Rowen, Larch still golden yellow but duluted because of leave dropping, generally at timberline, <sup>or</sup> around edge of high rock slopes. Canada jay 999.7 Photo 831016-20 of mt. to NW with cirque and shallow glacial canyon. Glacier to left but not in photo is Crofoot. in Crofoot Range, Big Lake here below glacier but no name. Bow Peak is to S. 33000.1 turned around and returned to mosquito Creek Camp. High overcast has been unfavorable for good photos so have passed many shot that I hope to get tomorrow. At the turnaround, Photo 831016-21 of Crofoot Glacier and some of the ice field above. 001.7 photo 831016-22 to S of mt with complex folding structure. 002.7 photo 831016-23 to S of above. 003.1 avalanche to left has clear a path down to near road of all trees and their root systems and has deposited them at the base of the slide, indicating how shallow

is the root systems of these conifers. 005.8 mosquito camp ground for the night. Took hike W to main river, thence N 3/10 mi, thence S thru camp grounds to Mosquito Creek. Only one medium size elk track, 1 deer track, <sup>60 mm</sup> red squirrel tracks at least every 20'. One area 8' wide in conifers had at least 40 sets of tracks in snow laid down yesterday, 5 sets snowshoe rabbit tracks, 4 Peromyscus-like tracks. Some Clarke crow tracks and one bird feeding on forest floor with bill and eating something about every 10 seconds. One raven track thro. The hind toe left a continuous track in snow



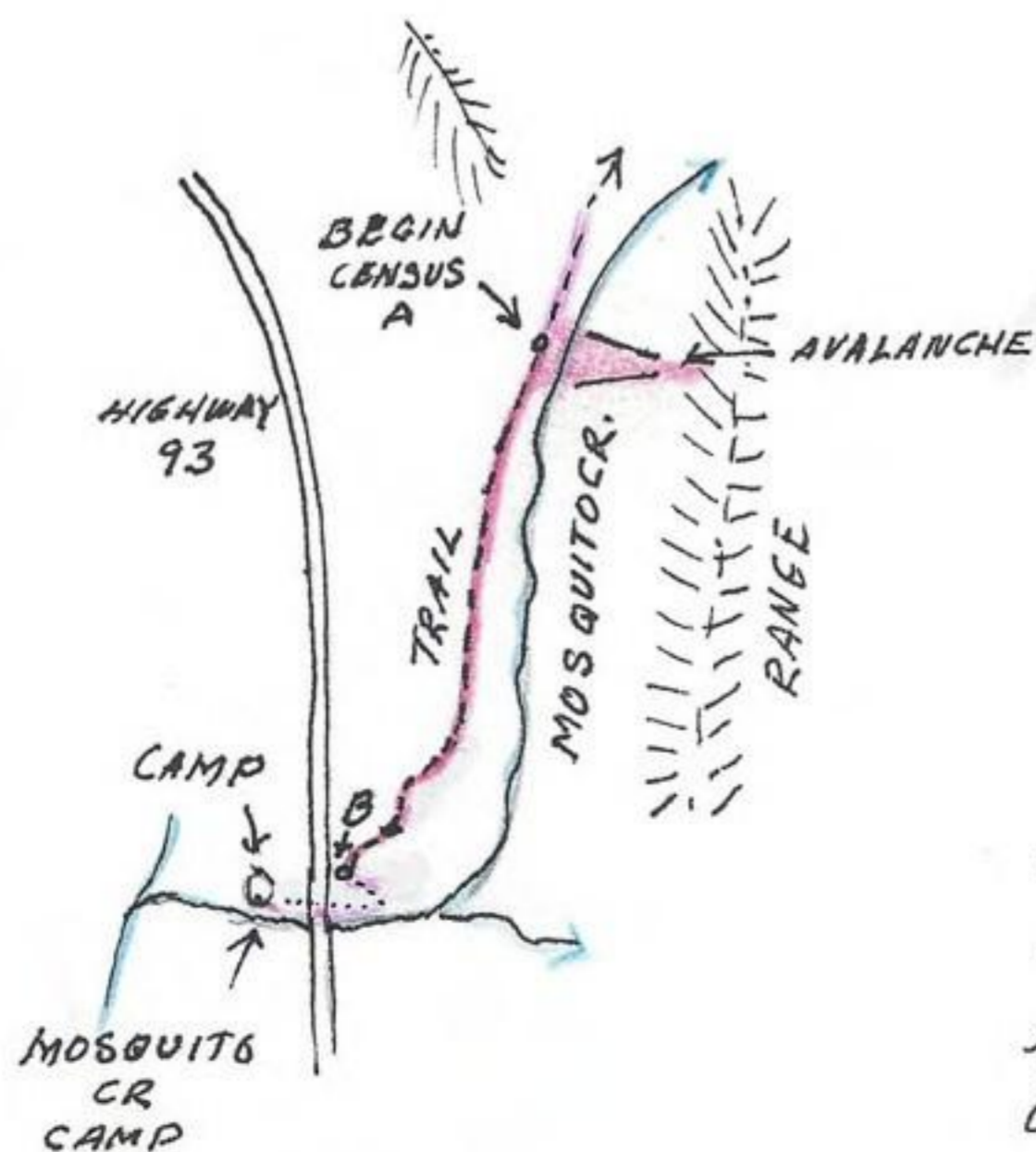
These tracks in snow for long distances (at least 200' in some cases). I am impressed how much time is spent walking on the ground. The raven also has a call that is given about once every 10-30 seconds

when given that sounds like the human sound 'yelp', a faint sound for such a large bird and in contrast to its hoarse, <sup>croak of the</sup> normal call. The sound is lower in pitch than if the same 'yelp' was given in the human under 'yelping' conditions. <sup>relatively</sup> Call loud close range <sup>at</sup>

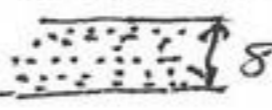
<sup>Cr.</sup> Mosquito Camp, Banff National Park, Alberta, Canada.  
Oct. 17, 1983

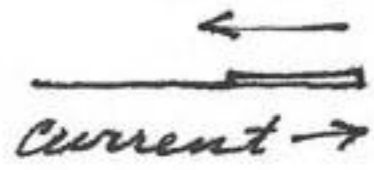

Froze enough last night to form ice on moving parts of creek. Into clear but high overcast that might move on or break up. 2 raven at camp. Snow still under trees but gone of flat exposed parking area. Raven walk with toes stiff as if they were snowshoes

This A.M 9-11:00AM made hike up regular trail from Mosquito Creek Camp. It gains moraine ridge between main valley and what I guess is Mosquito Cr. It is relatively flat except the first 2/10 miles where the trail grades up to flat ridge. This benchland is in conifer forests of fir, lodgepole pine and spruce. Continued up to trail to point where one can clearly see creek and canyon bottom to the E. It is at the base of a large avalanche that comes from high peaks of range to E and has crossed creek and to within 30' of the trail where <sup>TRAIL</sup> conifers have been knocked down. <sup>TRAIL</sup> <sup>AVAILANCHE TRACK</sup>



On return from avalanche to camp, counted all tracks of mammals along trail <sup>A-B (2.4 miles)</sup> as they had crossed in snow from one side to the other. Snow of night before last and about 1 1/2 inch deep. Initials with numbers following are concentrated tracks in a narrow corridor (4 to 16") across trail where probably one or two animals has repeated crossed and recrossed in the same area. Initials are: S = red squirrel, P = Peromyscus-like, R = snowshoe rabbit, C = Coyote, D = deer, Sorex = shrew. The tracks were recorded consecutively.

P3, P3, S, S, P, P, S, P, P, P6, S, R, P2, S2, P4, S, P2, S, S, P, C, P5, Sorex, P2, S, S, S, S2, P, S, S, S, S, S, S, S, S, S, S, S, S, S, S, S, S, S, P6, S, S, S, S5, S, S, S, S, S, P6, S, S, P, S4, S2, S3, P4, P, P, P5, S, S2, Sorex, S, P7, P4, S3, S, P, P3, S, S3, P2, S, S, R, S, D, S2, S, S2 (now all swirl) S, S, P3, S3, S, (now going down grade, w side ridge) S2, S5, S5, S, S, S, S, S, D, (now at drainage ditch, manmade) S, S, S, and end of census. The trail down steep traverse and to camp along creek was only partially covered with snow and while squirrel tracks were present, did not include in census. Of this census there were 70 red squirrels, 27 Peromyscuslike, 2 Sorex, 2 deer, 2 snowshoe rabbits and 1 coyote or 104 mammals. In camp red squirrel common and 1 set of tracks 18 in parallel route crossed in 8' width  8'. Coyote walked thru camp near Barth.

The mosquito Creek freezes up current  and when glazed over water slushlike ice builds up over ice  slushice to 4" (stairwaylike)

at the mouth of mosquito Canyon are very unusual and beautiful boulders.

at camp placed food (ground suet) on ground 10' from motorhome. 2 raven that had been searching for food at shelter remained approx 60' from Barth with food available, but not approaching food closer than 50'. After 25 minutes we started to move Barth (the motorhome) and instantaneously the ravens started to move to food. We stopped 120' from food and the 2 ravens were already at our preempted spot. They would pick up a piece of suet, then jump up & back a foot and 1/2. For each piece of food they made this peculiar movement. They may have been natural reactions but I wonder if it is not a conditioned reflex of being trapped by campers on other occasions.

Left camp at 003.9 and drove N to see if we could take

photos of mountains. 2 Canada jays. Snow on south side of road but melted on N side, along right-of-way. 013.4 Bow Glacier Turnoff. 014.8 pond at edge of lake frozen 024.1 after having gone up N on 93 and returned to upper Exhibition Point overlooking from here took 3 photos of greenish-blue lake below (Peyto Lake and Peyto Glacier Canyon to W.)

831017-1

831017-2

831017-3 <sup>nb</sup>

Also 8 photos of the Clarke's Crow and Canada jay.

831017-4 Clarke's nutcracker

831017-5 " "

831017-6 " "

831017-7 " "

831017-8 Canada jay

831017-9 " "

831017-10 <sup>nb</sup>

831017-11 <sup>nb</sup>

In the subalpine forests observed snowshoe rabbit tracks, red squirrel, Peromyscus and Clethrionomys. The snowshoe rabbit tracks were at least 70% more numerous than observed on census of this morning.

Photo 831017-12 from above vantage point of canyons, walls and snow covered slopes to SE.

Left and at 024.9 Bow Summit and now travelling S.

025.3 photos S near:

831017-12<sup>nd</sup> mt near Crowfoot Glacier area (middle one of the 3 peaks)


026.4 rough legged hawk circled valley as it moved S and alighted in tree for 30' then circled S to alight in another tree and then after 3/10 mi to south alighted in another tree top. at several points it hovered 80' or so above ground.

028.2 Crowfoot glacier <sup>831017-13</sup> and associated mts with lake in foreground

029.6 Telophoto of N side of Crowfoot glacier 831017-14 and last shot on film strip. Today has been most unfavorable. Sun can be seen thru clouds but clouds never cleared.

030.3 photo 831017-15 <sup>and 831017-15a</sup> Crowfoot Glacier straight on. Raven Glaciers near Bow Summit are close to valley whereas to S they are higher on mt side. Raven at town Lake Louise a Canada jay, Canada jay, 2 Canada jays. 068.1 junction 93 now following same. Raven. This canyon has fire scar of standing timber from one side of canyon to other and from creek to





timber-line in many cases. Some isolated trees or protected or separated groups of trees and some along edge of river. It would be of value to check these protected areas, especially the higher ones on mt sides to see if their isolation has also given them protection during past fires. Their community structure may be different than other areas that have repeatedly gone thru fire successions. 074.4 Continental divide, Leaving Banff National Park and now into Kootenay National Park in British Columbia. Raven. Passing Painted Pots. Avalanche track straight walled and some with eroded gullies with soil banks and other avalanches not associated with shrubs  erosional drainage systems. Floor of track with a reddish-purple-brown short shrub except at bottom where shrubs are replaced with yellowish grasses with irregular contact with shrubs above.

An intense reddish stain water and rocks from creek to south has stained the W side of creek at least 1/10 mile, then disappears (by dilution). At about this point the golden leaved larch is appearing in conifer forests and gradually increasing as we travel down canyon. Aspen present but leafless. Passing Numa picnic grounds. Extensive avalanche slope to W on mt. 080.2 elk with large antlers. Definitely more weary than those at Jasper or Banff. 088.5 Floc Lake hiking trail. 093.7 Vermilion River bridge. In Banff Nat Park snow today, in Kootenay N. Park rain. 106.1 Kootenay river. meadows with isolated conifer trees a new feature in the landscape. 112.5 6 elk and 5 of them weary (all females). 117.5 white tailed deer Canada jay. Dramatic increase in larch and all in brilliant golden color as if climax color of the season. These larch are mixed equally among conifers or in consocieties among conifers. Aspen present but leafless. Continued down to Radium Springs thru a narrow canyon to springs. Camped at a camp in canyon bottom W of Radium Springs. 135.8.

### Radium Springs, British Columbia, Canada

Radium Springs at Oct 13, 1983

Left 139.7, 93 to 5 at 11:30 AM Sagebrush here. Good Pleistocene terraces in fact Radium Springs is situated on one. Larch 80-90 per cent in leaf. 2 rovers. Birch main colored tree in valley proper. Trees are lodgepole, spruce, larch, aspen, balsam poplar juniper and ponderosa pine?, fir, birch.

aspen 98 per cent without leaves, birch hanging on about 90 per cent leafless. 158.0 definite increase in aspen & birch color as we go S. Raven, 2 raven, 2 raven. 160.3 deer road kill and magpie on top of carcass which had been heavily consumed by magpies & raven. At Fairmont that Spruce can see crater of yellowish soils from hot water deposits. 161.4 Columbia River (20' wide). Maybe local name. 162.8 An unconsolidated cliff 250' high of outwash base of gravels sands clays and a more stratified gravels and clay above. 2 raven. The broad valley and sidehills of the Kootenay River are in conifers. 164.7 sparrow hawk and first one seen since last record a long time back. Big Lake to left (Columbia Lake). Raven. This lake extends 5.13 miles to Canal Flats. 169.0 osprey or eagle type nest in top of dead pine about 200' off road. 171.0 310 Canada geese and one snow goose. The snow goose had higher bill profile  versus  of the Canadian goose. Head more goslinlike and more round. dusky stripe back head & neck, black stripe thru eye, white tail, wings with black primaries. General color medium grey except tail & lower back. They left and flew down to lake when I left car and walked toward them (350'). 174.5 at Canal Flats marker. Shrub & tree growth on flats leafless. (willow, aspen). Larch gaining more dominance and color. Larch almost to top mts and competing with green conifers. 2 Steller's jays. 184.0 to E larch 40% of conifers. 178.1 deer road kill and 8 raven feeding on it. 187.3 raven. 188.3 raven, raven. First meadowlark. 199.6 approx 60 crows in one group. Best color and extensive populations of larch as we approach Kimberley. 218.8 photo 831018-1 of larch among conifers. 219.9 main part of town at first stoplight. Visited the Platzl. In town some trees (maples?) in dark red color, other deciduous trees still green, asters <sup>and marigolds</sup> in full bloom and other kinds of vegetation not yet affected by late fall. A most unusual sight as compared to what we have lately observed to N.

Happy Hans Campground, Kimberley Ski Lodge, British Col., Canada  
Oct. 19, 1983

Hiked from camp to first tunnel and drainage of narrow track railroad in process of completion. Noted deer tracks overlying 40' apart, some groups of 3-4 sets of tracks. One Ursus americanus front paw measuring total length 145 mm, width 131 mm, pad 82 mm.

Length and measured:

width from outer edge toes.



Left Camp and checked Kimberley. One informant told of chasing a black bear from his yard last week. Others say black bear are common in area as are deer. Left Kimberley 3:15 P.M.

Lombardy poplar 90% green. Raven. 259.3 Kootenay River. 262.3 Fort Steele Camp Grounds just to S after dropping down on benchland to beautiful <sup>brood</sup> river valley. Informant said 3 days ago he chased a black bear out of the campgrounds with his truck. Arrived. 262.2.

Fort Steele Campgrounds, British Columbia, Canada  
~~in an upper~~  
 Oct. 20, 1983

This morning took 1 hr. hike up canyon from camp to end of property, thence N up ridge, thence E to main road and thence back to camp. Observed 1 Canada jay, 5 mt. chickadees and 1 red-breasted nuthatch in one group, 2 red squirrel and 18 sets deer tracks. From W property line on N ridge of canyon dropped down 8 terraces from 8'-20' high to main valley side terrace (lowest). The valley of Kootenay River has beautiful native grass sedge field of reddish yellow and they are cut for hay. All cottonwoods (or balsam poplar) and aspen in valley are without leaves. 263.7 Kootenay River. Stopped at Fort Steele and photo 831020-1 of water wheel used in gold mining to bring more water or power to nozzles of hose. Photo 831020-2 from water tower of bend of Kootenay River and fence to N. This restoration of an early mining town is replete with actors for stores and businesses, horse drawn carriages etc. something on the order of a Williamsburg in Virginia. Left 264.4 The General Store and Post Office had more interesting souvenirs than any place we had found in Canada. There are a series of ice-age terraces on side of mt. The highway follows <sup>on</sup> some of the lower ones. Large boulders the size of cars are on these terraces and it is a question how they got there. The basal block of aspen bark winter erosion is about 1 foot high. 273.1 now on main highway to S. We had been travelling on road E of main road. From road on usual terrace to valley below there are 6 major terraces. Snow arrives middle Nov. & leave middle April. Temp to 15 below according to one informant, 279.4 raven. 281.6 now on terrace that goes E to base of mt. 283.4 raven. Few aspens with leaves still on tree, most of them leafless. Hills to S show terrace twice as high as the one we

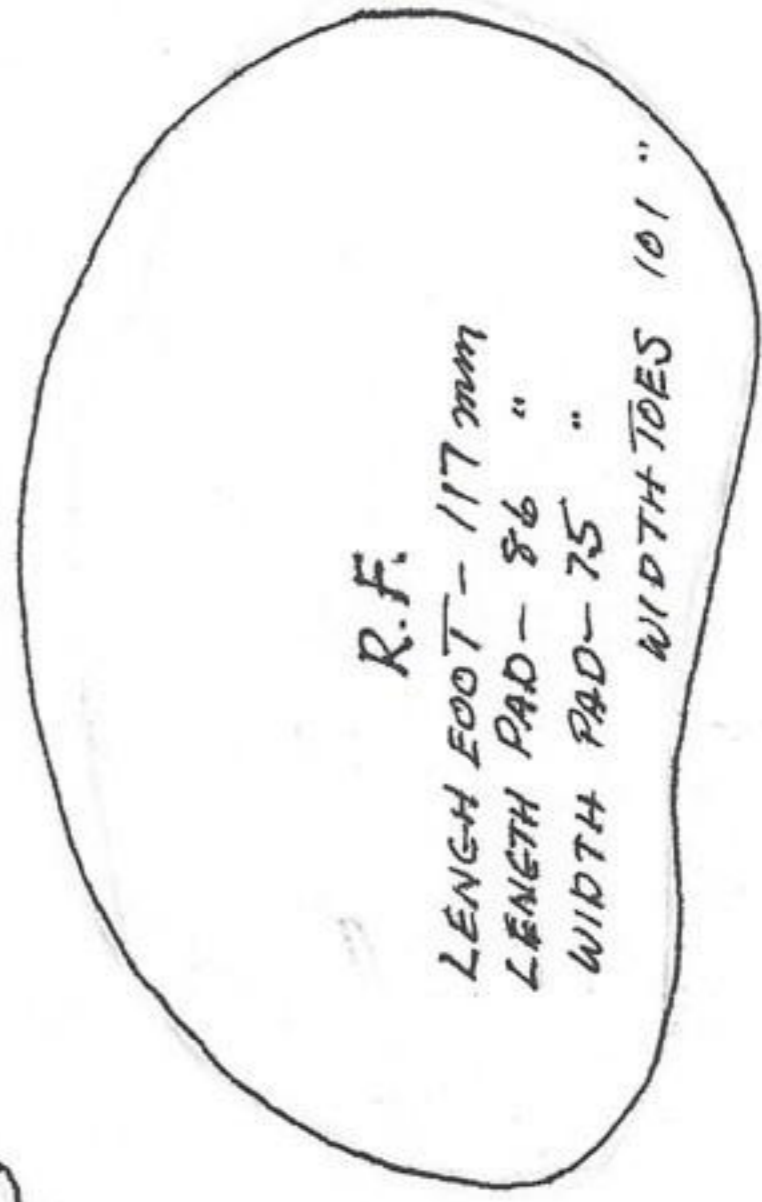
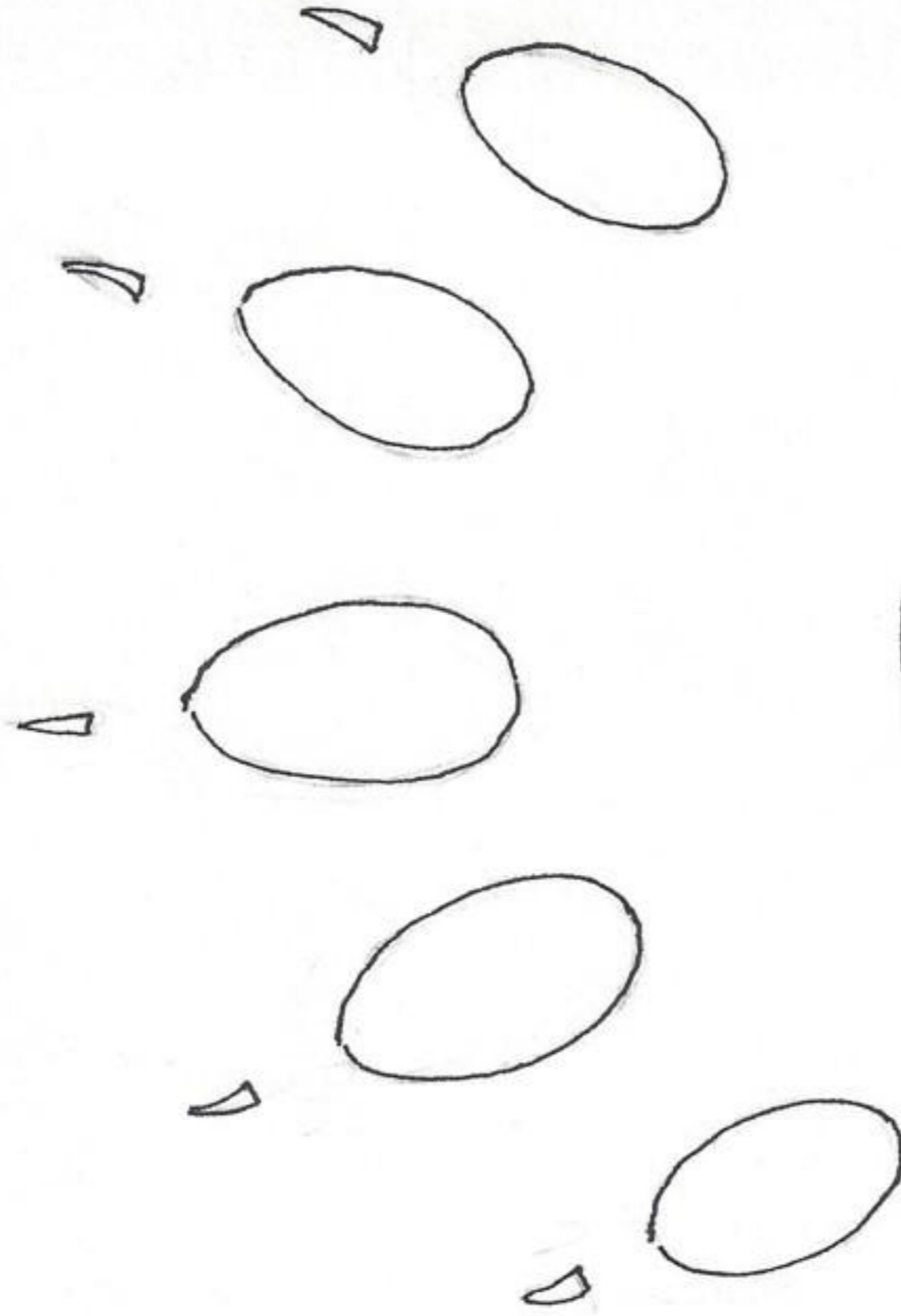
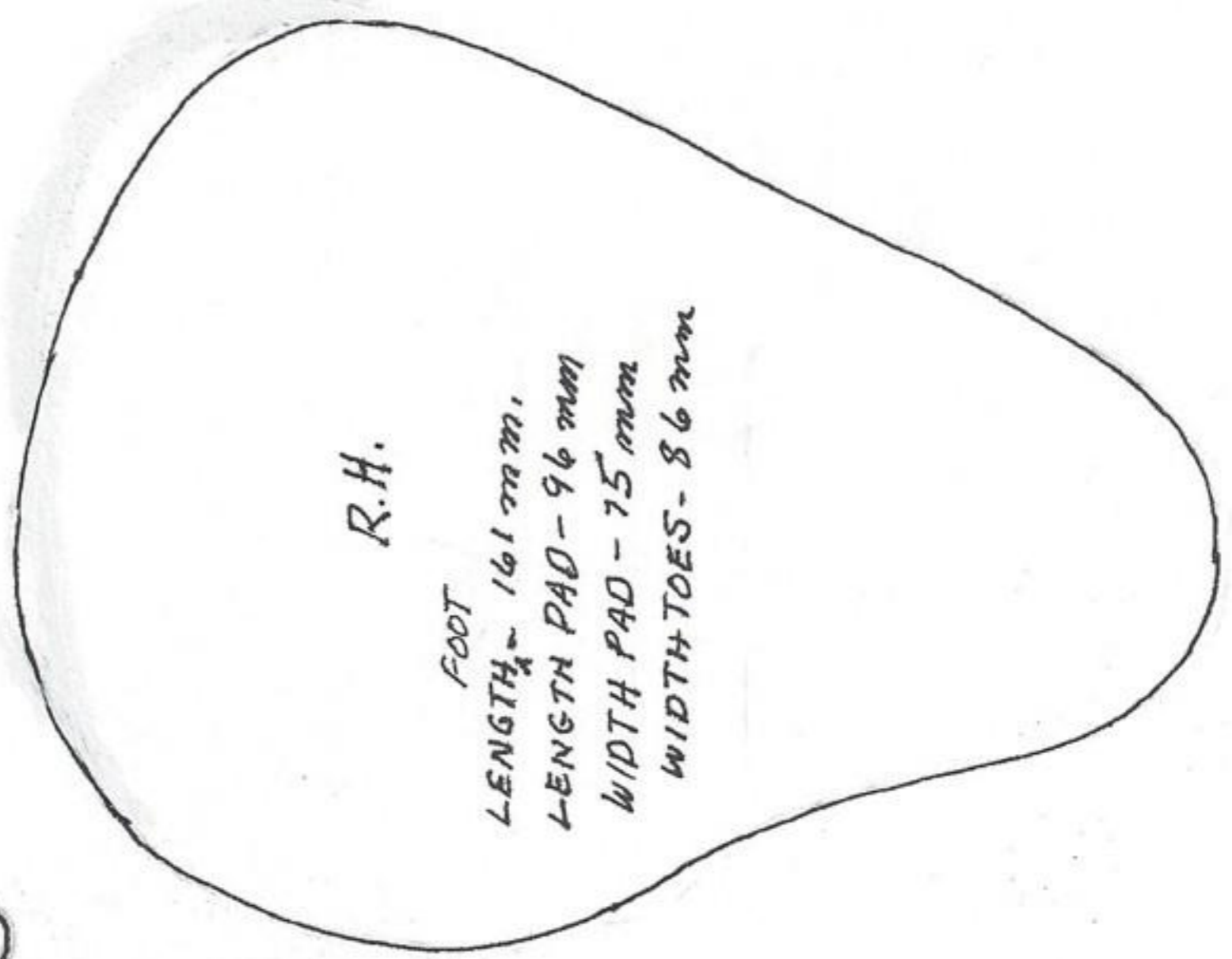
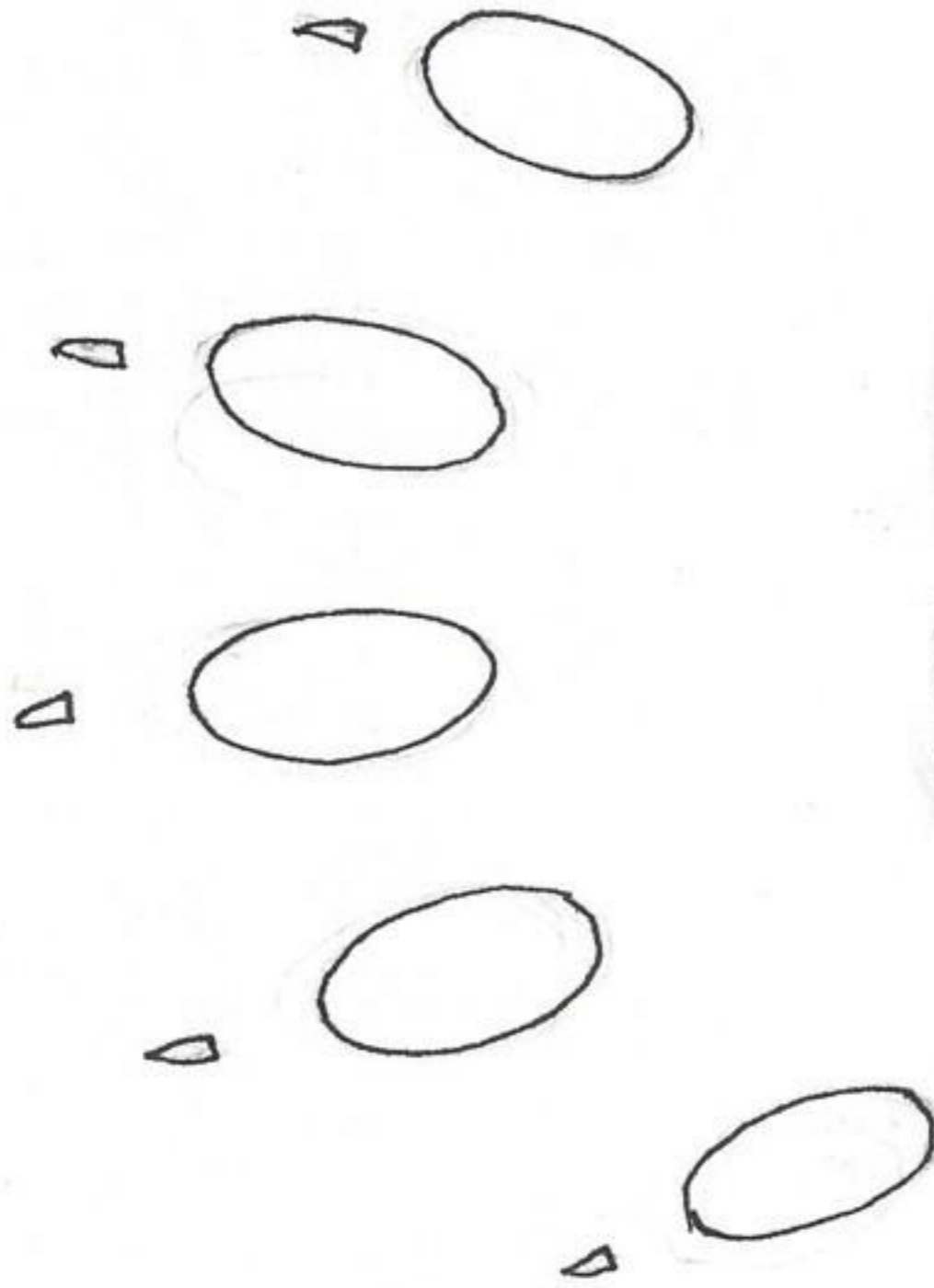
are on and one major intermediate one. 288.5 crossing  
 one of the larger rivers from the E, that enters the Kootenay to W.  
 291.0 extensive colony of bank swallow nests bordering road  
 to E. 298.7 Jeffrey. 303.1 first good colored cottonwoods  
 along river. Larch are pointed as distinguished from aspen,  
 birch or balsam poplar. 311.2 now 93 S. 324.3 to E  
 up to near top of mt and in snow. 330.1 nearing Rossville  
 2 <sup>high</sup> prominent terraces on mt to E. Shrike 334.2 U.S. at  
Montana border. Rosen. 339.6 a drainage system  
 with aspen and cottonwood at their maximum color!  
 This is the first time we have seen aspen of this nature. 347.5  
 Willows also in brilliant yellow. Arrived at Corps of Engineers  
 Camp on S end of Kookonusa Lake. Camp at boat put-in.  
 1 western grebe and 1 eared grebe in lake. 21 mallards  
 feed near shore to W of boat ramp. Regular Camp Closed.  
 The shoreline of this lake has receded in 16 steps of equal  
 duration. On windy shores there are 4 major steps  
 with intermediate steps not recorded or eroded  
 by wave action.

Kookonusa Lake,  $\frac{1}{2}$  mi. NE Redford, Lincoln Co., Montana  
 Oct 21, 1983

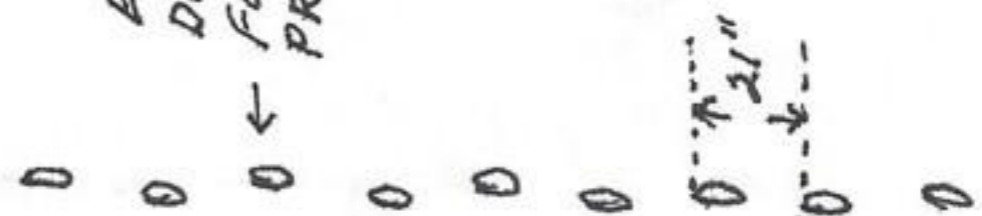
(8:30 AM)  
 check shoreline to point W of boat ramp, of The Corps of Engineers  
 Camp. At promontory to W where shoreline turns S, 2 photos  
 of recessional lines. <sup>nos. 831021-1 and 831021-2</sup> At this point counted 21 levels, But  
 count 36 just E of point. At swimming beach of gravel  
 counted 48 levels. This beach has a long gradual slope and  
 shorelines beautifully recorded. At the best point in a protected  
 bay found recession about 1 per inch for the entire beach. The  
 4-5 major levels are caused by major winds of the evaporating  
 season. The regular inch drop may be correlated with daily cycles.  
 Recorded measurement of deer tracks (mule deer?) along the  
 upper levels of receded shoreline. most of these seemed large.  
 At places one deer would charge down slope of beach to contact one  
 on lower level. 72 mm, 75 mm, 78 mm, 84 mm, 85 mm, 86 mm, 87 mm,  
 2 of 95 mm, 96 mm and one 102 mm.

At one point a wolverine came on to upper levels from the hillside  
 and walked approx. 300' E. It would climb or step onto a trunk  
 of a down tree (1' high) without missing a step ..... It walked  
 a rather straight course without hunting laterally. At one point  
 it stopped to investigate a red squirrel and then left beach to sidehill  
 (see next page for feet impress-  
 ions in sand)

GULO LUSCUS  
 KOOKANUSA LAKE, 5 MI. NE REXFORD,  
 LINCOLN CO., MONTANA.  
 OCT. 21, 1983.



EACH A  
 DOUBLE  
 FOOT IM-  
 PRINT.



The tracks were fresh and because of the nature of the squirrel tracks in the sand I would judge there to have been an actual encounter which would have placed it in daylight, probably this morning.

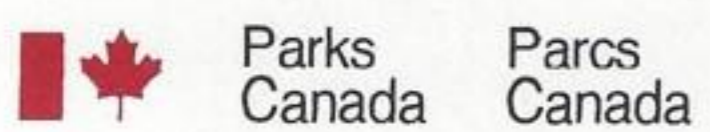
Birds in area: 3 loven, 1 magpie (b.b.), 35 mallards, 2 bald eagles, 28 killdeer, 1 western grebe, 1 eared grebe. Grasshoppers and dark butterfly active. at about 8:45 A.M. heard group coyotes calling and a howling I took to be wolves.

Left 347.4 visited Refford and then returned to 93 and then S. 355.3 at 93 junction. 2 loven. 371.6 Murphy Lake 379.7 Flathead Co. line. Canada jay 400.7 photo 831021-3 to W of larch, green fields in foreground and aspen (leafless to right side). Logging trucks passing with logs 3' in diameter. They are bringing in timber like crazy. years ago they were fewer and small, now they are large institution with stock piles of timber 1/2 mile long. It is just unbelievable. 404.8 2 photos of mass exposures of colored larch 831021-4 and 831021-5. 405.2 at lake with 2 photos of larch in foreground, dark background and reflection of lake. The second one 831021-7 of selected group larch on sidehill. 410.6 S side whitefish. 412.3 now on 40. mt NW Glacier barren from fire. In narrow part of canyon there are fewer larch but beyond where canyon opens up they are just as common as area W of mt. range. 437.4 Gates of W-Glacier. From camp grounds photo 831021-8 of 2 high mts at S end of range and larch on slope to right. These mts are the ones at upper end of McDonald Lake. Photo 831021-9 to N of mass of larch in golden color. Photo 831021-9 of 2 peaks to E and color of larch on slope.

This evening after sun left area observed bald eagles below bridge. 2 adults, 3 imm. Ranger said tracking devices have recorded eagles banded here in N. Calif, Nevada, Oregon, (average 15") N Utah but not in Kansas area. The Kokanee trout, are spawning below bridge. 28 live, 8 dead. Most have spawned and waiting dying period. Others, especially those jumping are spawning. These trout are landlocked. They are not as aggressive as the ones in S. Alaska. The trout are about 150'-300' from the bald eagles and only 75' from people watching them from the bridge. The viewers are too close to trout for eagles to prey upon the trout. Plan to take Sunrise route to St. Mary Lake tomorrow.

(see Oct 8, 1983) warbler  
(see Oct 12, 1983) kittiwake

831021-271



Parks Canada    Parcs Canada

Jasper, Alberta  
TOE 1E0

October 21, 1983

9850

Our file    Notre référence

Your file    Votre référence

James W. Bee  
402 Yorkshire Drive  
Lawrence, Kansas  
66044

Dear Mr. Bee:

On behalf of myself and Parks Canada, I would like to thank you for your interest in our parks wildlife resource.

Research into Parks Canada's Checklist of Birds of Banff and Jasper National Parks and the Ecological (Biophysical) Land Classification of Banff and Jasper National Parks indicates no prior observation of either a Black Legged (Pacific) Kittiwake or a Myrtle's Warbler.

Considering the two parks have a combined area of 17,518 km<sup>2</sup> makes both observations an even greater accomplishment. Your observations have been forwarded to our Resource Management Wardens for documentation and, hopefully, further study.

Input from concerned citizens such as yourself is an important and necessary tool for the continued protection of the park and its resources. Again, let me thank you for your time and co-operation.

I hope you had a pleasant stay in Jasper National Park.

Yours truly,

G.A. Balding  
Superintendent  
Jasper National Park



Parks      Parcs  
 Canada    Canada  
 Box 10  
 Jasper, Alberta  
 T0E 1E0

November 29, 1983

Our file    Notre référence

C9850-6

Your file    Votre référence

Mr. James Bee  
 402 Yorkshire Dr.  
 Lawrence, Kansas  
 U.S.A. 66044

Dear Mr. Bee:

Further to my letter of October 17, I took the bird you found at Honeymoon Lake in to the provincial museum in Edmonton and they confirmed its identity as a Black-legged Kittiwake. This is only the fourth record of this species in Alberta and the first from the mountains. It was quite a fortunate coincidence that someone as familiar with birds as yourself should be there to collect this rare specimen.

Also, regarding the Myrtle Warbler you reported at Maligne Lake, our bird checklist incorporates the changes made in 1976 to the A.O.U. Checklist of North American Birds. This species was combined with Audubon's Warbler under the name Yellow-rumped Warbler which is listed on page 22 of the park checklist.

Again, I would like to thank you for your helpfulness in adding to our knowledge of the Jasper birdlife.

Yours truly,

Ken Walker  
 Interpretive Planning Assistant  
 for G.A. Balding  
 Superintendent  
 Jasper National Park



Aggar Campgrounds, Glacier National Park, Montana  
~~Aggar Campgrounds~~  
 Oct 22, 1983

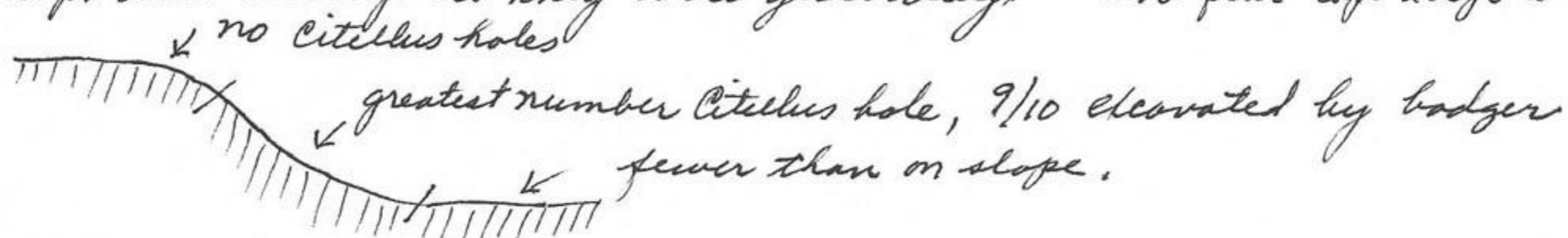
Left with rain and heavily overcast and reports of a big storm in area. Road to Logan Pass open so we made trip over mountain. About half way up McDonald Lake observed 2 western grebes and 1 eared grebe. Entire lake shore of lake is gravel. 458.8 Snyder Cr. 464.3 Avalanche Cr. 468.8 Logan Cr. 478.6 first snow mtd. 480.1 Continental Divide at Logan Pass. Lodge closed. High speed clouds up from canyon to N and almost straight up at pass. Some clouds would shroud pass and lodge area and then clear according to cloud mass. Cloud mass held as evidenced by condensation of inside Barth when we ran into a cloud coming up canyon. Rain all time we were there. Photo 831022-1 to S of large mt and cloud covered peak to S. Photo 831022-2 to SW of alpine slopes and snow moving in from NW. Clouds from E up canyon. Temp at pass 39° F. No larch in upper levels of park on either side of divide. First we observed <sup>4846</sup> (on descent to E) yellow willow and balsam poplar. At near head of St. Mary Lake 487.1 First colored larch of a very limited area of less than 30 trees at 492.3 at Ross Cr. Lake low and delta large. Open slopes are a dry yellow grass. All aspen without leaves. 497.5 E end St Mary Lake. Photo 831022-3 of ocean surflike formation. Robin here and first bird observed since we left Aggar Camp at W end McDonald Lake this A.M. 497.8 St. Mary's River. 498.2 leaving Glacier National Park. All aspen are leafless. Aspen on plains is dwarf from W winds off mts. Sparrow hawk at Kiowa 521.4 first hawk having difficult time flying against W wind. Wind sometimes puts the Barth out of control. As one moves E the aspen stops and the willow becomes dominant plant. 542.8 Two medicine river. Poplar in valley .5% in leaf. Extensive grazing lands and overgrazed. 549.7 A *Cynomys* observed 1 foot from highway and very much alive. It seems late for these prairie dogs not to be in hibernation, <sup>if indeed they do.</sup> This species is probably *Cynomys ludovicianus* on the basis of its plains distribution, and its black-tipped tail. There were some prairie dog holes and mounds in general area. 555.1 Pondera Co. line on highway 89. First evidence of farming of plains. 563.3 First starling and group of 200 in 3 flocks. 576.6 Teton Co. Valley of Muddy Creek has more cattails than

country to N. Kielder. 595.1 2 magpies & 8 quail.  
 Some cottonwoods still green here, others yellow leaves but  
 majority without color. This is definitely a change of  
 color. 3 magpies. Chateau 603.8. Camped E of town on  
 sidehill. Today we had rocky mts in view most of the way.  
 They have bald storm clouds on peaks, rain in valley and  
 higher black storm clouds and all the same from N to S.  
 The storm center or front is being held by the mts from advancing  
 to the E, although there are 3 parallel masses of dark clouds  
 E of the mts before blue weather farther east.

Chateau, Teton Co., Montana

Oct. 23, 1983

more clouds in sky this AM than yesterday afternoon but  
 they are higher. Clouds above peaks of Rocky Mountains but  
 rain or snow falling. The clouds are not smuggled on mt  
 tops and valleys as they were yesterday. On flat top ridge to N:



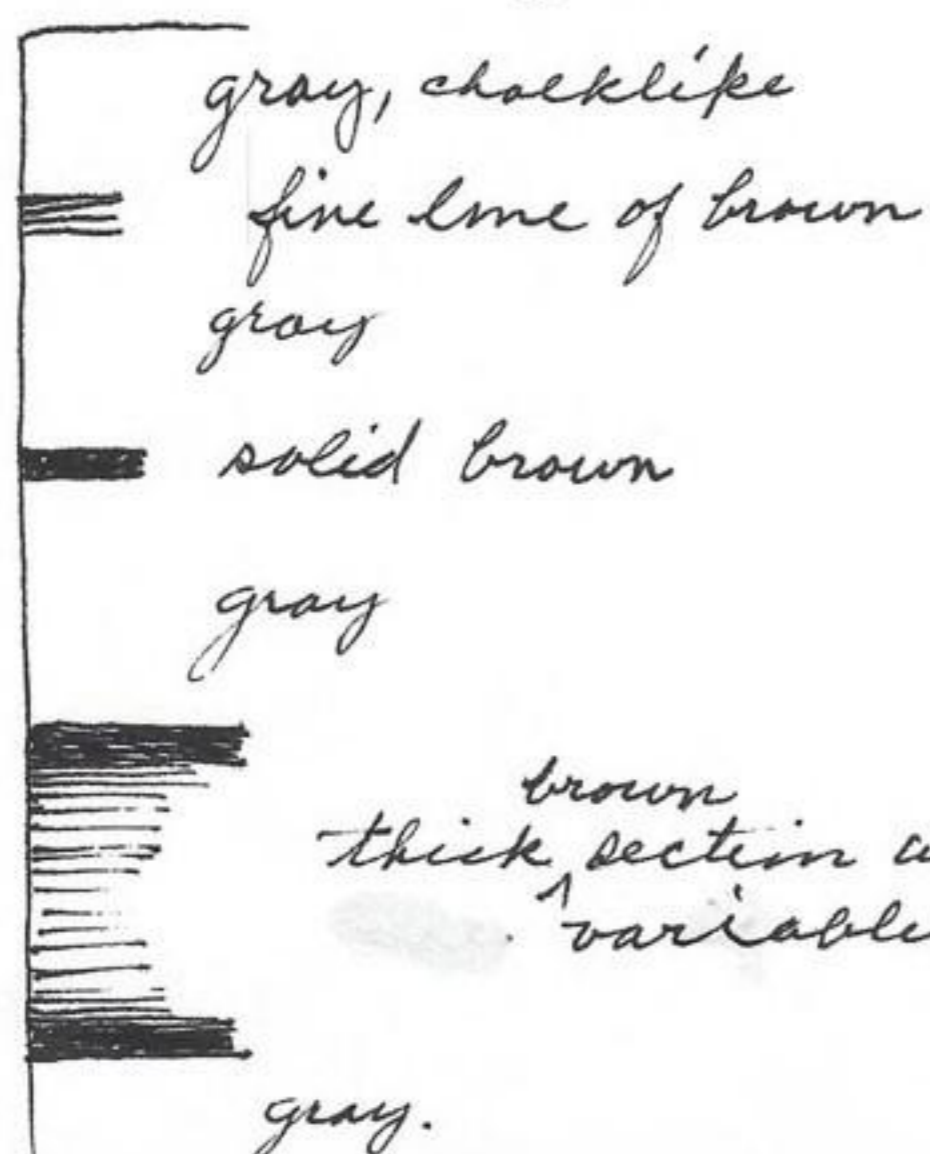
Left camp at 606.2 Sky clearing above. Clouds above Rocky  
 mts but rain in some valley and along E side of range. Cottonwoods  
 40% yellow, some on the greenish side. 608.4 Teton River.  
 Grazing land 2 1/2 - 3" high of grass and completely covers ground.  
 On right-of-way, 6-8" high and multicolored whereas in grazing  
 land all uniform yellow. <sup>(grazing lands)</sup> not suitable for birds or especially  
 Citellus. On top of benchlands, flat and generally plowed to wheat.  
 616.4 2 horned larks. 623.2 lake bisected by road, 42 bullfrogs,  
 4 killdeer. 623.1 junction 408. 629.0 Lewis & Clark Co. N Fork  
 Sun River. 634.2 SF Sun River S of Augusta. 646.3 approx.  
 60 starling on group and 30 horned lark 648.4 20 roven associated with  
 cattle range (starling may have come from here). 5 horned larks on top  
 of benchland beyond. 50 horned larks one group. no evidence of  
 Citellus activity or digging by badger. No rd. kills. 662.2  
 junction 260 - 287 now S. Grass is now a bunch grass  
 rather than even distribution of a grass. 659.4 Beerborn  
 River. 662.5 porcupine rd kill and beaver dam to left.  
 666.6 roven. 666.9 mule deer road kill. Cottonwood in  
 canyon all in color! also reds & yellows in low shrubs in  
 drainages. Color of cottonwoods definitely picking up. This

may be due to real cottonwoods instead of balsam poplar. I will check distribution of these 2 species. 95° in color and a brilliant golden-yellow. 673.1 junction 15. Cottonwood on Wolf Creek 100% yellow. mule deer rd. 692.3 roses. 705.8 first antelope (6) on slope to E. 707.6 8 antelope to E. These on open slopes n. of residential area. 741.8 Camp on east end of causeway on Canyon Ferry Lake. Took hike on hill to E. Cacti almost prohibited walking because of spines. I wondered if after grazing cacti more in a inhibit large mammals like deer from using area until grasses have reestablished themselves and crowd out the cacti so mammals can use area again. did not see deer tracks in this area. 900 From 10" to 5" before sundown <sup>continuous</sup> flocks of ring-billed gulls moved out of canyon part of lake to SW. Some gulls in lesser numbers preceded the main flight. Common loon called.

Canyon Ferry Lake, Lewis and Clarke Co., Montana  
 Oct 24, 1983

34 common mergansers fed in lake NW of camp on n side of causeway. Two of these were male and rest females. In fishing, they would stretch out in linear line, sometimes single file and maybe coincidental a male on each end, and then the trailing birds would dive first and immediately the wave of diving moved toward the front. They would resurface in linear line but more compact. If one caught a fish, all would attempt to share it. The one that consumed the fish would not dive the next or sometimes several dives later. Consecutive dives could be in one direction or reversed or laterally when the front was abreast.

made stratigraphical record of rocks east of old bridge pelinge.

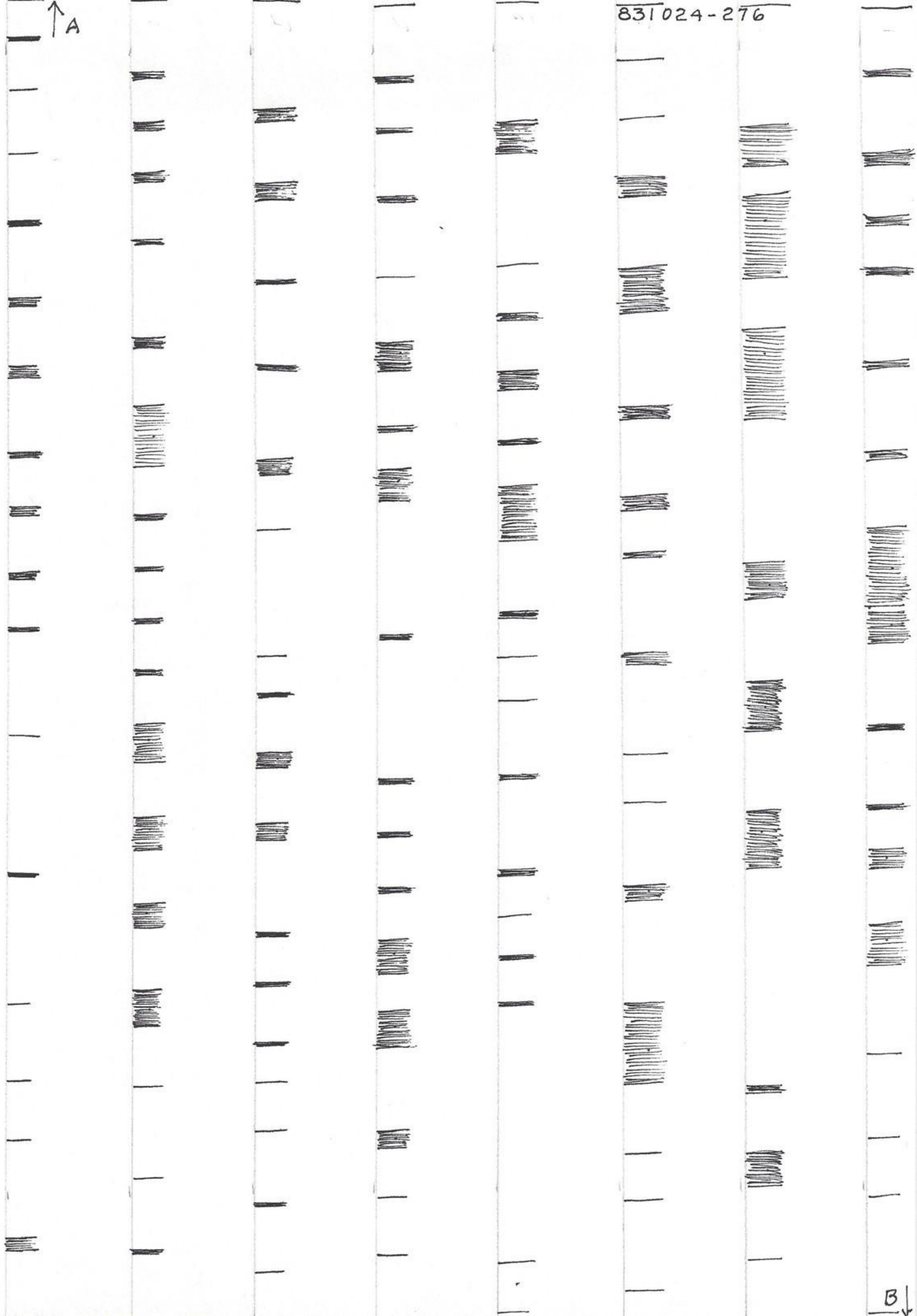


mainly gray chalklike strata separated by from a fine brown line to a thick brown zone of variable thin lamina or strata of brown

See next page for continuous record A to B (A youngest). actual size.

could be Paleozoic or even Precambrian.

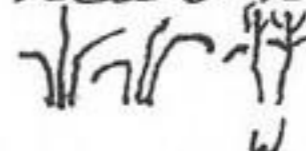
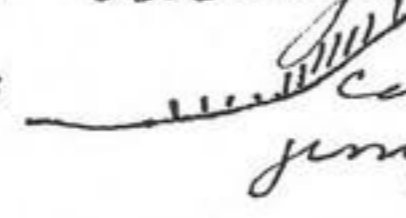
A ↑



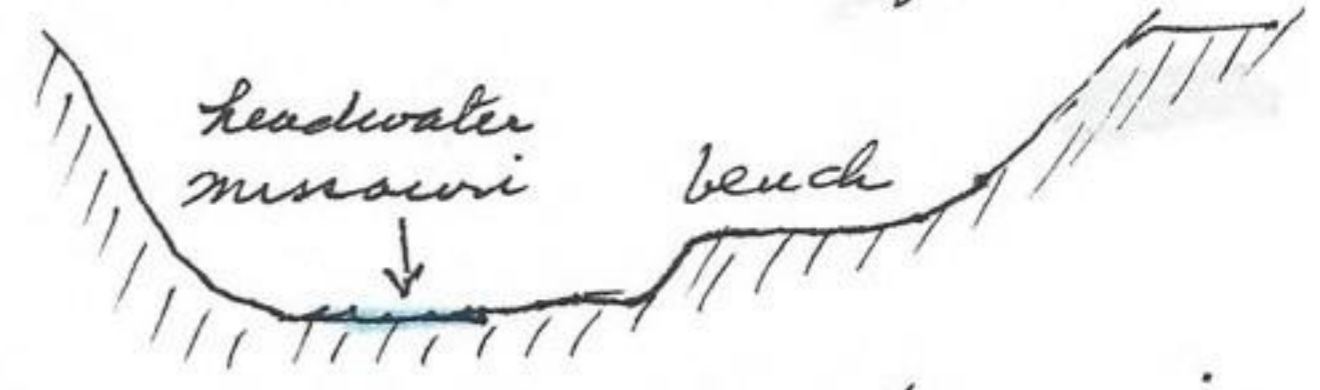
B ↓

Photo 831024-1 and 831024-2 of sections of this formation. Left and spent most of the day in Helena. Left and followed 287 S. at mileage 754.0 Camp among aspens on E side road 2 white-tailed deer here. Back at 749.6 observed a rough-legged hawk flying S at approx 80' above ground.

Beaver Creek, Broadwater Co., Montana  
Oct 25, 1983

3 photos of sunrise clouds nos. 831025-1 831025-2 and 831025-3  
2 magpies, 1 cottontail, 2 red squirrels near camp. Aspen, some large in diameter, are scraggly. , all leafless. 756.1 Winston or camp last night 2.9 mi. N<sup>W</sup> of Winston. 760.7 11 antelope 761.1 2 groups of antelope 12 and 18, small, halfway stunted juniper extend valleyward from conifers that are on the mountain side;  some more bushlike than tree like.

I have noticed these for most of the length of this valley. 761.9 2 antelope. 764.3 raven. 12 plovers flew across road. magpie, magpie. 95% of antelope observed so far have been lying down. magpie. Ponds and creeks all open. 2 magpies. magpie. 5 ring-billed gulls, another group 28 gulls magpie. 771.5 magpie. Now on 90 to E. 783.0 Jefferson River and Gallatin Co. 809.2 confluences Gallatin River and the Jefferson, Madison rivers (or head of the Missouri, had lunch here. On E side of canyon there is a bench cut out of solid rock but no sign on W side. Deer tracks common in area along bench. Those measured are 64, 64, 75, 75, 77, 78, 78 mm.



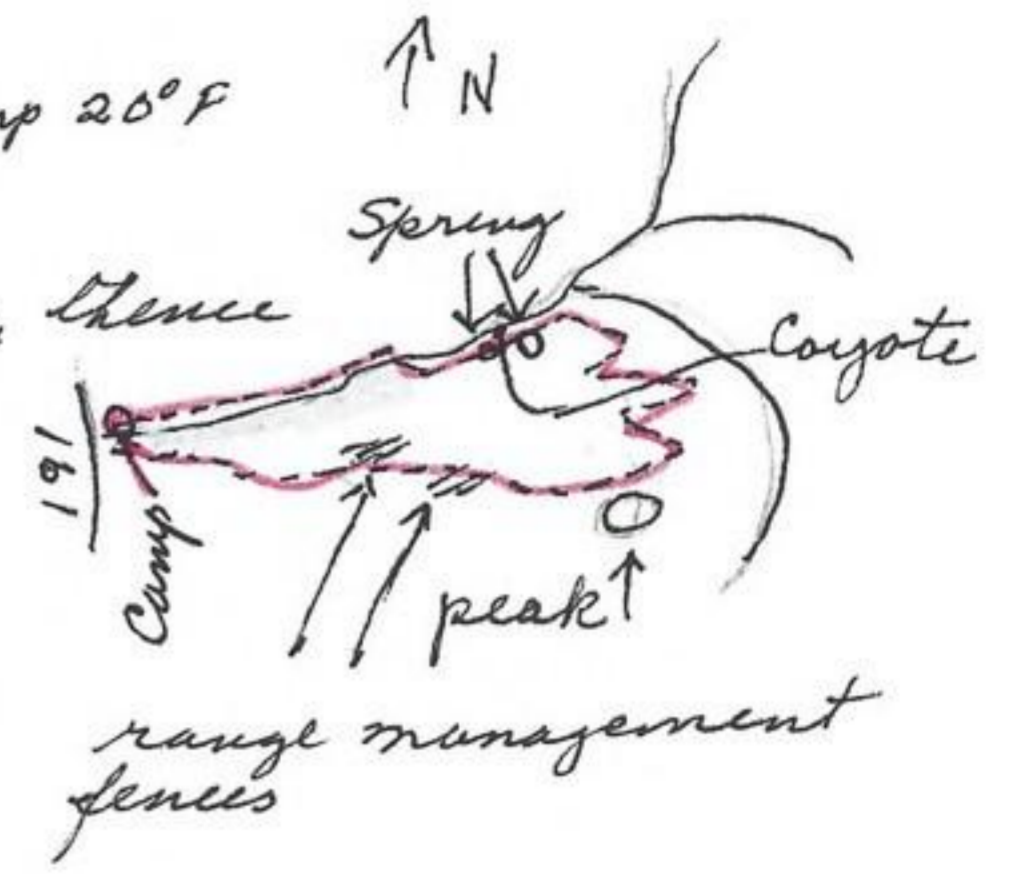
Birds here. Redtail, 2 magpies, 2 song sparrows as a medium size butterfly. Trees leafless also willows. Left and followed highway 10 to Belgrade, magpie. Occasional cottonwood yellow but unusual to see them. 2 magpies. 816.1 Logan. Gallatin River high. 824.1 Manhattan. 825.1 Gallatin River. 831.1 left Belgrade. 842.1 raven 846.2 roughleg. 846.2 roughleg. 850.7 Gallatin River and the Gateway to the Gallatin (mouth canyon) 873.8 back on main road after checking Big Sky. 875.9 15 meadowlarks and these in one group along road. 880.3 Red Cliff Campgrounds. wherever canyons broaden people occupy. 886.4 Skeller's jay 887.9 Taylor's Fork. 889.1 now left side Gallatin River. River getting smaller. 889.8 Teepee Trail. Camp 100 E up side road

On the main road is a mileage marker '32' from W Yellowstone. miles

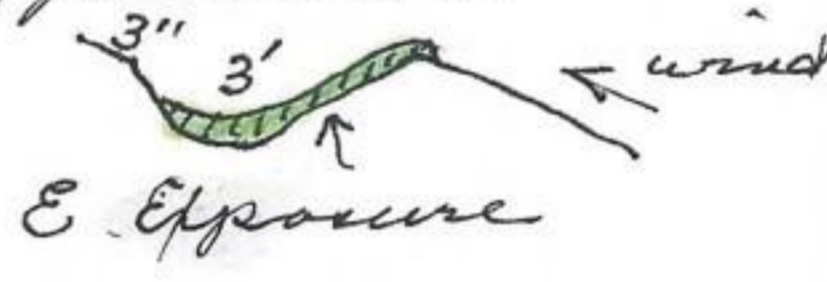
Tepee Trail, 8/10 mi. n Entrance Yellowstone National Park, in Montana.

Oct. 26, 1983 temp 20°F

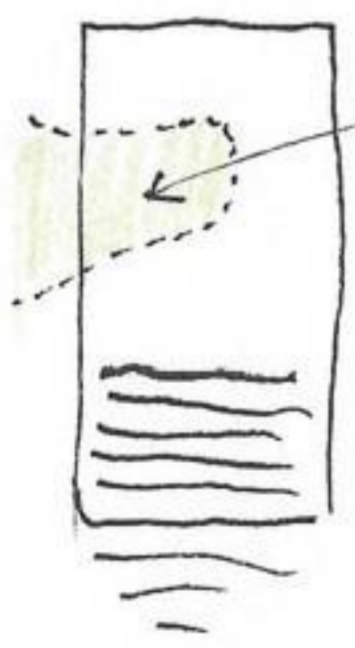
made trip from camp to top peak to SE thence down slope to Tepee Trail Canyon, thence to camp. Followed up ridge to fences placed to capture moisture from snow to encourage growth of grasses. The first set showed only slight improvement of growth.



There must have been some improvement as there was an increase in Citellus holes and badger digging. Fences may have protected the squirrels from hawks and eagles. The second set of fences showed no improvement. These fences are not on right exposure to begin with. In a natural catchment basin



of E exposure just above the fences the snow fell on proper exposure and luxuriant grasses dominated the slope with growth 3' compared to 3 inches just beyond. Old elk droppings all up & down ridge with seldom one not over 3-4 inch apart. Grasses also grow on flat areas on n exposures. The enclosure across canyon shows the following



Artemisia in enclosure higher, darker and closer together. Bare area above less green than outside area. Terraced zone in enclosure shows no improvement and may be detrimental.

All elk droppings old, no elk trails. No foot imprints. Moose not in river valley as in the valley there are no droppings or tracks, no droppings and trails. The willow are higher by twice than our last visit. Moose droppings are high in timber now but rare,

microtine trails in dry situations on exposed ridge, other grassy places common. Estimate 48 badger diggings and twice as many elevated Citellus holes.

Only bird a Clark's Crow near top of peak. Sage hen? called ♪♪ ♪♪ also a red squirrel.

Coyote hunting in matted bush grass at springs (see map) a beautiful pelage. Spotted me before using sight.

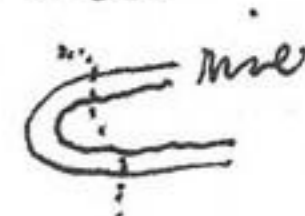
at enclosure below camp in river valley. 2 dead elk (bones) on w side. Beaver have dug channels to up under fence but do not seem to have eaten the high willow in the enclosure.

Left camp (at highway) at mileage 890.0 890.8<sup>+</sup> Entrance to Yellowstone National Park. 894.0 farther up the canyon the higher the willows. 894.5 ♀ elk, also Clarke's Nutcracker, and <sup>b.b.</sup> magpie. 897.5 2 beaver houses and 3 dams blocking off part of the braided river system. 898.0 on E side of canyon a mud slide of recent occurrence out of volcanic slopes and cliffs. Willow all some height (1 1/2'). 901.2 rough-legged hawk capture something on ground and ate it on top of a high conifer. Also a golden eagle circled above ridge. 907.7 rough-legged hawk moving S as have all other recorded in notes so far. Canada jay 903.1 Lake to left, 3 green-winged teal. 50% water supporting emergent vegetation. 904.0 old lake bed with lake bed covered with emergent vegetation. Lakes about divide. Water now flowing S. Grayling River rapidly increasing in size. 904.8 area of many beaver house, domestic. Ice on <sup>beaver</sup> ponds. 912.2 Crossing Grayling Creek, Steller's jay. More aspen now but up drainage they are rare, all leafless. 913.8 junction 287. 921.2 2 roven. 922.4 w Yellowstone. 925.4 Entrance Sign, Yellowstone Natl Park, Madison River full but shallow. 932.0 4 Canada geese, <sup>2 mallards</sup> 932.7 4 geese 932.4 18 Canada geese, 2 red-breasted merganser. Stream low grade, but good current. 932.8 3 Canada geese 933.2 large mammal <sup>skeleton on opposite bank.</sup> 933.3 4 Canada geese on bank 933.3 Madison Bridge. 933.4 male elk (antlers 2') in velvet, just above bridge valley is broad with good grasses and willows but conifers dead in river valley. 935.8 2 mallards and 2 Canada geese along edge river where current is least. Most geese have been lower in drainage where water flows slower. 937.2 2 mallards and ring-billed gull, 2 Canada geese. 937.9 area where in spring where there were dozens of elk but none now. Some tree scars from elk. 938.3 9 Canada geese and muskrat house. 938.6 photo of buffalo grazing. <sup>831026-1</sup> This is the spot where photo was taken on a previous trip with 15-20 elk and a beaver house in foreground. Continued a short distance to Madison Campgrounds where we stayed. At river took measurement of elk tracks: 115-82-97-92-95-96-93-104-107-90-99mm. Most are in the 90 mm range. After dark heard a great horned Owl.

Madison Camp, Yellowstone National Park, Wyoming.

Oct. 27, 1983

2 Canada jays  
 Raven at camp. As soon as a lumber moves from position  
 the raven (1-2) move in. Park Ranger said that <sup>of</sup> buffalo  
 have a call like a bull low and sound does not carry very  
 far away. adult ♀ low has high pitched call but cannot  
 be heard as far away as a bull elk whose sound may be  
 like ♀ bison. Coyotes can give calls that are not typical coyote.  
 There have been more coyote sightings in the last 2 weeks than  
 all summer. 1982 winter killed many elk and some of the largest.  
 Bear stay high in winter. Park has received bad publicity about  
 grizzly bears from renoun authors that carry lies or non-scientific  
 fabrications. People who ready about this problem from poor  
 publicity are the ones who believe the articles and the same people  
 with the Disney complex and put their children on buffalos for  
 picture taking. The Nat. Park is controlled by political world and  
 is always sitting on the fence with decisions that could easily go  
 either way such as "should the grizzly bear be exterminated in the  
 national park. Two years ago they had practically no operating money.

Left camp and picked up mileage at junction as 947.7  
 continued W<sub>1</sub> <sup>to W Yellowstone & return</sup> to place where we noted a buffalo and photographed  
 it (site of beaver house in photo of elk years ago) and arrived at  
 948.7 or 1.1 miles. (By twilight last night this buffalo had moved  
 1.1 miles from where photographed to field 5 of camp, keeping on  
 n edge of meadows all the way). Ice building up on leading edge  
 of emergent rocks. 2 Canada geese. The wet grass fields  
 have remnant meanders. 2 + 2 Canada geese, 3 Canada geese,  
 4 and 2 and 6 and 2 Canada geese. 9 Canada geese, 3 + 2 mallards,  
 953.7 <sup>young</sup> ♀ and 2 spike male swam across river to S. On land the  
 young ♀ shook herself while larger ♂ jump in air, kicked its hind  
 leg 2 times and playfully pursued young female. On other side  
 of the meander they swam again and got out on opposite side of  
 river. The ♂ kicked and shook itself and started to pursue young  
 female but a large ♀ (larger than male) warded the ♂ off and on  
 two other instances chased the ♂ who retreated each time.  <sup>river</sup>

In crossing the grassy peninsula the young female had  
 no difficulty but the ♂ sank down several times and  
 struggled to make forward movement. 954.2 bridge to S  
 side Madison River. Baldpate. 5 Canada geese, 4 Canada geese  
 The (most) Canadian geese in lower slower grade part of  
 river, however, some manage in swifter current. The area

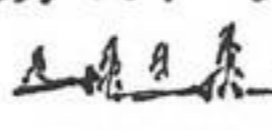


is below the bridge. The bridge has caused as is incidentally placed at end of wide marshy & dead timber in valley.  
 953.6 22 Canada geese one group, 955.6 2 roughleg hawks circling together. 956.7 blue grouse. 559.2 Canada jay.  
 961.6 W Yellowstone gates. Checked in town for antifreeze and the returned to Madison Junction. 964.3 gates at W yellowstone. In W Yellowstone there are more roven <sup>in winter-fall</sup> than in summer. Temp 55°F. 970.3 first long turnout all river. Canada jay - Small dark butterfly alive. Along river width 200' x 1' all the way across. 971.3 end of river road. The banks of the river are as stabilized as I have ever seen, grass to edge and side to water without evidence of going higher. 16 Canada geese. 7 Canada geese, 10 Canada geese, some snow on N exposure but most has disappeared. Animal trails (elk) well developed and without other minor trails between. 3 ring-necked ducks. 3 Canada, 2 red-breasted mergansers. 10 Canada geese 1 Canada jay  
 973.0 Madison River bridge, 3 mallards, Canada jay  
 978.5 photographic area with beaver house in foreground. 979.4 Madison Junction  
 979.5 Gibbon River.

Summation of birds and mammals between W Yellowstone & Madison Jct

| Oct 26, 1983 To Madison Jct.            | Oct 27, 1983 To W Yellowstone.     | Oct 27, 1983 To Madison Jct |
|-----------------------------------------|------------------------------------|-----------------------------|
| Canada geese 4-4-18-3-4-2<br>2-9 = (46) | 2-2-2-3-4-2-6-2-9-5<br>4-22 = (63) | 16-7-10-3-10-1-9-6 = (61)   |
| mallards 2-2-2-6                        | 3-2 = (5)                          | 3-5 = (8)                   |
| red-b. merganser (2)                    |                                    | (2)                         |
| elk (1)                                 | (3)                                |                             |
| ring-billed gull (1)                    |                                    |                             |
| buffalo (1)                             |                                    |                             |
| baldpate (1)                            |                                    |                             |
| rough-legged hawk (2)                   |                                    |                             |
| blue grouse (1)                         |                                    |                             |
| Canada jay (1)                          |                                    |                             |
| ring-necked ducks                       |                                    | 1-1 = (2)<br>(3)            |

At the convergence of Firehole River & the Gibbon River measured buffalo tracks as 110, 101, 115, 121, 110, 95 mm. At this point observed 1 muskrat in river and a water ouzel and <sup>a roven & great blue heron.</sup> red squirrel. Now on Firehole Falls loop road. Roven. 982.4 now back on main road. 4 Canada geese. 984.2 (8 Canada geese) and 3 mallards. 17 Canada geese on Fountain Flat drive,

fresh buffalo on road. 987.2 Coyote 987.5 turnaround.  
 Occasional tree with elk abrasion. *Eutamias minimus*. River  
 edge constant and sealed with grass showing little annual  
 breakdown, raven, 981.1 back main rd. 989.7 Nez Perce  
 Creek. Extensive flat grassy meadows to thermal activity to S  
 990 lake to left dry. Raven. Photo 831027-1 of geyser steam  
 and 831027-2 and 831027-3 of Clepsydra geyser. The  
 latter geyser is most active geyser in Yellowstone Park. A  
 coyote went from conifers at this geyser SW across flowery  
 water and sterile slopes to conifers beyond. It lifted its leg  
 and feet high as it walked across the water. His general  
 area is known as <sup>Fountain</sup> paint pots. 1/10 mile up loop road many  
 lodgepole pine trees blown over from winds from W. Open  
 exposure provide uninterrupted wind tract. 993.6 Firehole  
 Pool. 199° F Tracks around <sup>White Dome</sup> geyser, 90% buffalo tracks, 10% elk,  
 at upper end of loop, all conifers have been high lined by large  
 mammals. 994.5 Firehole Lake, 2 Canada geese at edge  
 at W end. High-lining all around lake. 3/4 beyond the  
 conifers show no high lining. 996.1 back main road. at  
 the S entrance of one-way <sup>Firehole Lake</sup> loop road one ♀ mallard in geyser  
 pond. Less than a mile beyond a large with beautiful grasses  
 and open lake in middle. 998.4 midway Geyser Basin. 2  
 Canada geese in firestone river. more trees have been blown  
 down by high winds from W. These trees are blown over with  
 roots exposed or uprooted.  W. wind. Canada goose  
 Passing Biscuit Basin, 34003.4 <sup>open field</sup> observed 5 young and  
 6 adult buffalo. young kiddish and kick up heels. These  
 buffalo grazing on <sup>steep</sup> roadside cut. 004.7 old faithful overpass  
 at Cloverleaf. 005.8 Firehole River Bridge. Elk in bottom open  
 canyon to S. 2 Canada jays. 009.3 4 ring-necked ducks in Scaup  
 lake to left. Another small lake on right side frozen and snow  
 on ice. Snow approx 4 inches, some on road but mostly clear (road).  
 012.2 Continental Divide 8262 ft. Blue grouse, Clark's Crow  
 near second divide. 017.9 Continental Divide 8391 ft.  
 Approx. 022.0 now S. Continued to Grant Village (late  
 twilight) where we camped.

Grant Village Camp, Yellowstone Natl Park, Wyoming  
 Oct 28, 1983.

Min. temp 23°F. Day cloudless. Steller's jay, red squirrel in  
 camp. Lake smooth.

Photo 831028-1 of native cutthroat trout from lake.

At camp 2 roven, 2 Canada jays, 2 red squirrels, 1 chipmunk. along lake (Yellowstone), 2 red squirrels, 2 chipmunks, 23 Canada geese, 18 horned grebe, 12 eared grebe, 8 lesser scaup, 1 baldpate, 1 common loon (called) and 3 bufflehead ducks.

032.0 is spit to west thumb Deyser Basin. 5 Canada geese 2 goldeneye (common), red squirrel, 17 lesser scaup, 1 eared grebe. 038.9 off-shore bar. 12 lesser scaup, 6 mallards behind this bar. 040.4 11 Canada geese 044.8 Canada jay

Roadside ponds are icy. 046.3 red squirrel, goldeneye, 049.0 39 Canada geese, 13 mallard, 8 lesser scaup, 2 baldpate, 2 coot.

At Bridge Bay on bord in marina bay is one common loon, 8 scaup in budge area. 060.7 on main road out of Bridge Bay. 40 buffle-head 2 or 3 chasing each other for 15 seconds and completely churning the water, 3 ruddy ducks and 50 lesser scaup. 051.4 18 ring-billed gulls, one Canada goose, 8 mallards. Photo 831028-2 of these gulls and mt. range to E. These are the only gulls seen so far, microtine runways riddling grasses between road and lake.

In fact microtine evidence in in all places suitable for them and the runways are concentrated. must be a high year. Deep snows may kill elk but favor microtines. 052.6 Lake

054.9 Fishing Bridge. Photo 831028-3 of spit of Yellowstone Lake, 831028-4 of Annette and some setting as above.

approx 20 16" cutthroat trout at bridge. years ago (see notes)

these waters were full of 2-3' trout crowding each other for space. 055.2 main road out of fishing bridge. 057.2 12 Canada geese 057.4 4 Canada geese, 1 lesser scaup. Overlook. Yellowstone Lake low and went down in 7 major steps.

059.7 12 buffleheads, roven. 061.7 vantage point over-looking broad meadows. 50 Canada geese, 10 mallards.

15 buffalo (in groups of 2-2-11), that is 2 50' apart, 3 100' 400' apart and other 11 in close group. Major buffalo track to water or passing up ridges. There is a general distribution of

buffalo droppings & tracks (will refer to buffalo as bison now)

062.8 Elk Creek. muddy areas at mouth of creeks as result of low waters covered with bison tracks. 063.2 Trout Creek.

So far all bison have been E of Yellowstone river, and

generally on upper slopes of valley. 2 Bison NE. 065.6

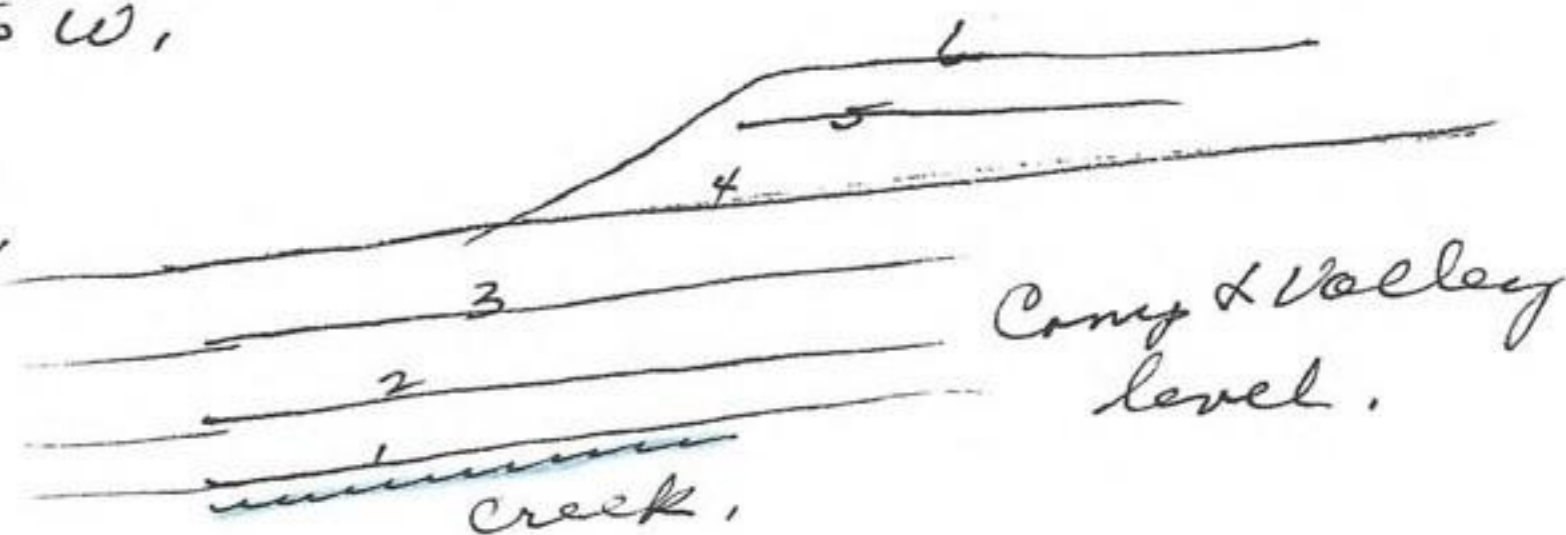
golden-eye. 062.7 2 Canada geese. 062.7 2 Canada geese.

5 bison, Canada goose, raven 064.2 2 bison E side river  
 on benchland. 15 Canada geese, 3 mallards, 2 Canada geese,  
 Canada goose 065.1 vantage point. 4 adult and 3  
 juveniles in river below feeding. Photos 831028-5,  
 831028-6 and 831028-7 of these Trumpeter swans.  
 2 Canada geese, 3 bison to E, 1 bison at water edge.  
 Country is dry. 065.8 bison, 22 Canada geese, 3 mallards.  
 1 roughleg resting in top 15' conifer, 2 curlew to S,  
 066.0 pond, 7 bison, 4 common merganser. 066.7 20  
 Canada geese. 067.4 Canada goose, 067.5 40 Canada  
 geese & mallards and 3 goldfinch. 067.6 beaver house  
 in middle river. 8 Canada geese, 8 mallards, 067.9  
 10 Canada geese, 2 mallards, gadwall. 068.1 Otter Cr.  
 068.4 3 adult <sup>just above cascades to falls</sup> swans, 069.5 Grand Canyon of the  
 Yellowstone turnoff. 070.3 Canada jay, 3 bison,  
 070.0<sup>2</sup> bison. 070.9 Conyn Village. 075.8 Sunroven Pass  
 8859 ft. 080.8 road turnoff to Mt. Washington, 2  
 bison here (elevation 8600 ft.) First aspen trees, 083.1  
 several trails (bison?) lead to area of springs. Soils  
 trampled and black surrounding springs. 086.9 Tower  
 Falls, 12 Eutamias minimus at stop. Also clark's  
 nutcrackers, raven. 088.6 at lake in former river  
 valley, 12 Canada geese, 7 mallards. 089.2 junction to right.  
 Toward Lamar River area, 090.2 glacial lake to left, 2 adult  
 trumpeters swans, 14 mallards, 2 gadwalls feeding 1'-2' from  
 swans as the swans surfaced with food. The gadwalls  
 respected the swans, 8 lesser scaup. Young <sup>conifer</sup> trees growing on  
 the old glacial landscape are associated with granite boulders.  
 These large boulders were brought down by glacier from E.  
 This entire valley is moraine material and lakes from  
 blocks of ice lodged in moraine mass and later melted to lakes,  
 some terminal glacier lakes. 092.1 2 bison, 8 mallards &  
 12 Canada geese, 092.8 glacial lake to left at big boulder erratic  
 1 pintail, 5 mallards, 4 less scaup and 7 antelope. Trails  
 leading into timber like cattle trails. 094.1 now evidence  
 of terraces as we approach mouth canyon. 094.8 Lamar  
 River 095.8 39 bison one group, 80% resting on ground,  
 20 mallards, 14 lesser scaup in river. 098.3 Camp in  
 Slough Creek Camp. This area has more deer tracks  
 along river than human tracks. It is actually a hikers  
 camp site. We are the only trailer type vehicle. Only 1 tent  
 and no other cars.

Slough Creek Camp, NE Yellowstone National Park, Wyoming  
 Oct 29, 1983

Left 098.3 at 9:00 AM. There are several prominent Terminal moraines SW of camp. These moraine are 90° to axis of canyon and form dry depression 150' x 80' and approx 25-30' deep. In one, there were 2 skeletons of elk and in another 2 more. It is possible that they seeked these depression to escape wind and became so weak they could not get out and died. Some bear actively on dead trees on ground. Deer and buffalo tracks common in camp area. At mouth of canyon recorded 6 levels on N side, with tendency to slow or dip to W.

As they leave the mouth of canyon they level out. no evidence glacial



lateral moraines on S side of canyon. The valley to W for long distance is moraine relief and lakes created by blocks of ice imbedded in the moraine material. The most conspicuous thing is large granite boulders from high range to E distributed on all the surfaces of the glacial valley. 3 mallards. Cannot see the group of bison at mouth of canyon observed yesterday afternoon. 25 mallard 100.8 paved road, now W. 101.3 Lamar River. On return to Grant Village via Mammoth, Norris, Canyon etc.

Snow mark on aspen about 5' high (blackish bark). Will keep on selected observations to Tower junction road then complete to Canyon, and selective to Grant Village. Some *Artemisia* 9' high. 2 pintails, 104.6 4 trumpeter swans along with 8 mallards & 2 pintails. <sup>3 scaup, buffle head, 2 baldpate.</sup> Swan action feeding with tail up is deliberate and graceful. Lake has been 4-6' higher. Four bison and first ones seen since camp. One large pond without ducks. One lake with 8 mallards & ice around edge. 106.0 Yellowstone River. Jumper trees in area. 106.8 Tower Junction now W. At Roosevelt Lodge, 4 bison. Colled Chris & Jay. Chris expecting in June. In this area all conifers are highlined. 107.0 at Roosevelt Lodge junction (updated). Will keep complete record to Mammoth, Norris, Canyon. 106.7 Canada Jay. 109.4 2 photos to E showing grassy fields & country to E. 110.2 big glacial lake, (Floating Island Lake.)

6 golden eye ducks. Canada jay & bison. 111.9 2 Canada jays just beyond forest insect infestation, dead tree break off from 1/2 way up to 3/4 way as if weakened by insects.

112.3 photo 831029-3 <sup>to E</sup> showing extensive slope of yellow grass and a bison trail leading from valley to top of mt. Old erosion gully may have been created by bison in the past. Bison trail meanders.

2 Clark's Crow flew by. Wherever we have stopped there have been bison tracks along side of road. 113.4 2 bison in trees. In some grass-sedge meadow, the dominant color is brownish-yellow. but bordering creek channel the color is green



115.1 dry lake to left and has been 6' deep. 115.8 passing Blacktail <sup>plateau</sup> drive. Raven. 116.7 3 antelope. 119.0 large lake and marshland to right but no ducks.

Up to now we have seen only 2 bison droppings on road, as we near Mammoth, juniper trees increase in size and number. 123.8 middle high bridge over Gardner Run 124.9 Mammoth Springs. 125.1 Church at Mammoth.

On lawn under trees just N. of Church were 48 elk, all ♀. Informant says <sup>winter</sup> 1981-1982 deep snow & cold temp. Killed great numbers elk and some <sup>bison</sup> <sup>photo 831029-3a</sup> all junipers are high-lined at Mammoth. 126.1 photo 831029-4 of hot spring of varied colored travertine set between conifers. 2 magpies. Informant says it has been a peculiar year for animals: male elk are still high in mts because of moderate weather.

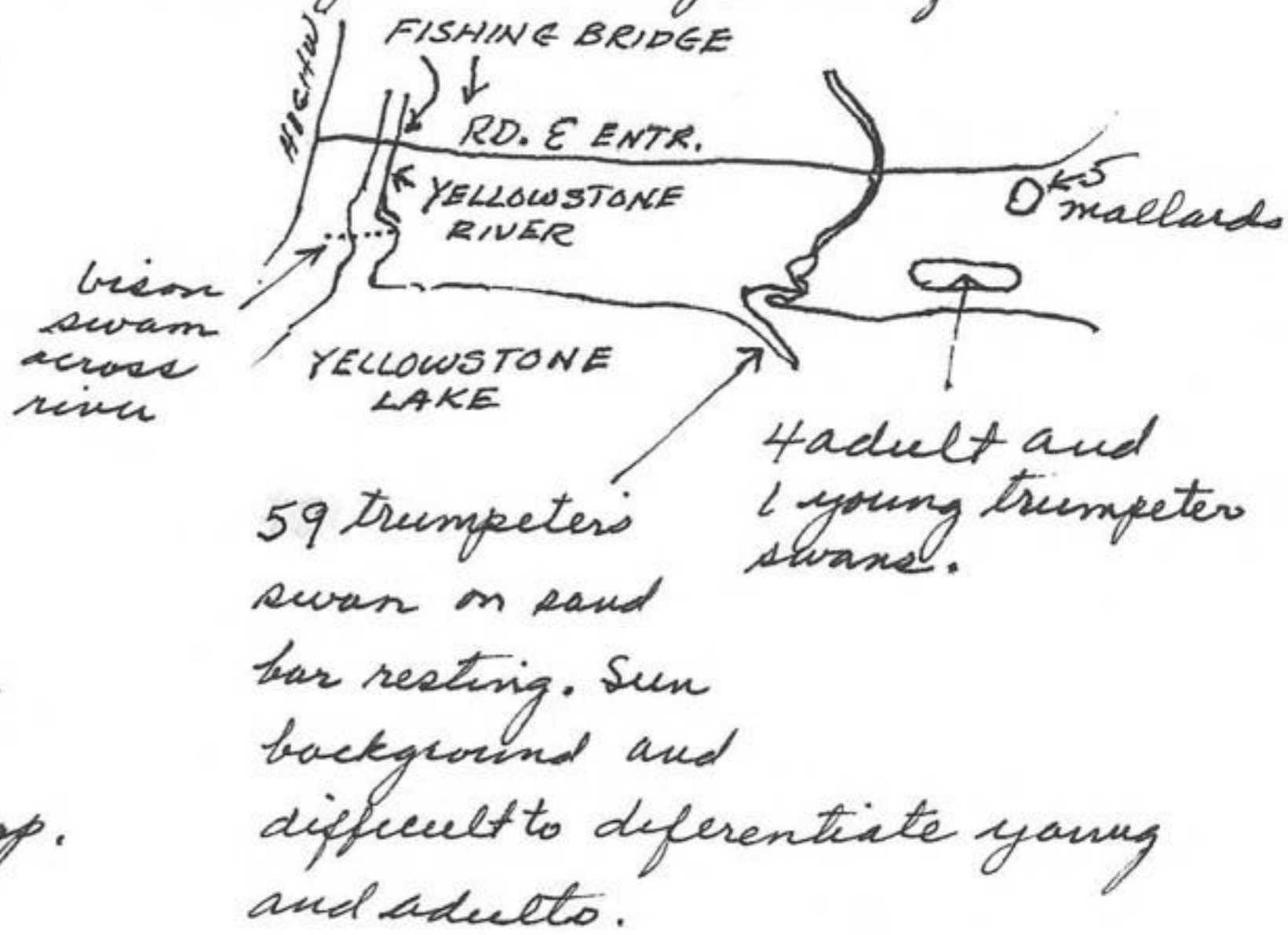
127.3 photo 831029-5 of bright travertine of varied colors, blue water above, in same spring as above. <sup>831029-5a same spring as above</sup> About 150 SW of spring two photos 831029-6 and 831029-7 of mule deer. There were 2 juveniles and 2 does.

128.0 now back from <sup>loop trip</sup> part of. 129.1 lake to left, no ducks, red squirrel road kill at 130.2. 130.9 Swan Lake Flat, no ducks. Meadow lusciant and beautiful color of yellowish-brown. 134.5 Canada jay. 135.8 broad meadow with 80% willow, rest meadow grass. Good area for moose but no moose in area. 139.5 big lake to right, 25 mallards.

142.3 Roaring mt. Raven, 2 Canada jays. No ducks or geese in Twin Lakes. 144.6 Nymph Lake, no ducks, Eutamias road kill. 146.5 Gibbon Run. 147.3 now E. to Canyon. Lodgepole pine contradicting all life forms of the species.

149.0 now on loop trip 158.4 conifer forests encroaching on meadows with many 1/2 to 3' lodgepole pine. I have

noticed that new trees are growing on road sides like  
 weeds and all very young. Meadows are grasses, a  
 red low shrub and then Artemisia. Clark's crows. 159.1  
 Canyon Village; <sup>From here to Grant Village only selective observations.</sup> now to Canyon of the Yellowstone. 162.8  
 Inspiration Point. Photo 831029-8 of river, red slope  
 down canyon from point. 2 Clark's nutcracker. Ground  
 covered with needles of lodgepole pine. Clark's crow.  
 164.5 2 trumpeters swan. 166.5 mouth of the muddy flat  
 creek. Around bend of the Yellowstone River to E 2  
 trumpeters swan. Only gull observed so far. 167.1 4  
 bison. 167.6 vantage point one photo 831029-9 to E  
 showing meandering river, 2 bison in upper left hand  
 corner. The swans of adults + juveniles observed below <sup>this point</sup>  
 yesterday are not here today. 168.0 7 bison on benchland E  
 of river. 168.2. 2 bison. 168.7 2 photos 831029-10  
 and 831029-11 of Canada geese. 169.9 <sup>young & old</sup> conifer trees and  
 others up canyon are being mutilated by bison. 2 bison  
 to E. 169.4 Trout Creek. This is the creek with good  
 meanders. 169.7 2 bison. 170.1 2 bison E <sup>of river</sup>, 2 bison  
 E side of river, 4 on W side. More bison on W exposure  
 of this valley perhaps because of warmth. 170.2 vantage  
 point. 5 adult & 6 young trumpeters swan. Photo  
 831029-12 and 831029-13 <sup>new</sup> of these swans, 175.2 muskrat,  
 in river. 177.7 Fishing Bridge on west bank. one  
 swam river about 3/10 mi to S and only part of head and  
 back above water. It finally joined the 3 bison mentioned  
 above. 2 Canada jays. 179.1 bridge in slough E of  
 Fishing Bridge 5 trumpeter  
 swans feeding without  
 tipping up. 8 mallards, 2  
 baldpates, and 6 lesser  
 scaup in same pond with  
 swans. Their call was a  
 low not call. 181.1 back  
 to main road, now S. 181.8  
 5 bison, photo 831029-14 of one  
 of them. 184.7 Bridge Bay  
 Bridge. now on gull Point loop.  
 white-fronted goose resting on  
 edge of water, swam out as we  
 approached. It would have flown if it could as we were only 25' away.





This species is out of its range and may not have been able to cope with the conditions or may have been injured and unable to fly. At the mid-point along off shore bar. 91 Canada geese in impounded lake to right. also 20. baldpate, 1 horned grebe, 8 mallards and 6 lesser scaup. On mainland 8 squirrel. 187.3 now back where <sup>S</sup> gull loop joins main road. Canada jay, 3 raven. At Grant turnoff 2 ♀ elk stepped into edge of timber, looked back as we passed. Continued to Grant Camp grounds where we camped at edge of <sup>yellowstone</sup> lake on the boat ramp parking area. On beach a path of wet sand led landward from lake to 30' where water stopped and tracks continued (Elk size tracks), Could this animal have swum across the lake?

Summation: 83 trumpeter swans observed between Slough Cr and Grant Village via Roosevelt Lodge, mammoth, Norris, Canyon, Fishing Bridge. also 3 antelope, 34 bison, 50 <sup>(one pelee)</sup> elk, 4 mule deer.

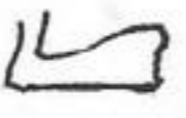
On trip to Slough Cr via canyon, Tower: 12 trumpeter swans, 7 antelope, 77 bison, no elk.


Grouping of 83 swans 4-2-2-11-5-59  
 " " 34 bison 4-4-1-2-1-7-2-2-2-2-2-5  
 " " 50 elk 48-2  
 " " 12 swans 7-3-2  
 " " 77 bison 15-2-2-3-1-1-7-3-2-2-39.

Grant Village, Yellowstone Park, Wyoming  
 Oct 30, 1983

min temp 26°F. Photo 831030-1 and 831030-2 of sunrise. Last night stars to horizon and reflected all across lake. Northern lights. Fog center & E side lake and hills. Later moved away from side of lake but still at 9:00 A.M. all along E side lake & hills. Common goldeneye fed in lake 80-150 feet from shore (we camped on boat ramp at edge of lake.) 11-15 in view at one time but generally in groups 2-5. 2 groups Canada geese swam S (1.4 and 1 of 6) swam all the way (approx 8/10 to 1 mile). Some ♀ common golden have yellowish-orange bill, ♂ black.  bill pointed less white on side & back than  purple reflection Barrow and a point of black in front of wing. 8 ring-billed gulls, 2 coot, 1 common loon. The horned grebe always turn posterior to sun when not diving. The posterior



is held high and  a great area of white is exposed. This may be a way of receiving heat from the sun. Some ♂ common goldeneye have no <sup>white</sup> present and those without have minimum amount of white in wing. <sup>or faintly</sup> Several ♀ had a yellowish orange bill and greenish eyes instead of yellow. One female had dark eyes.

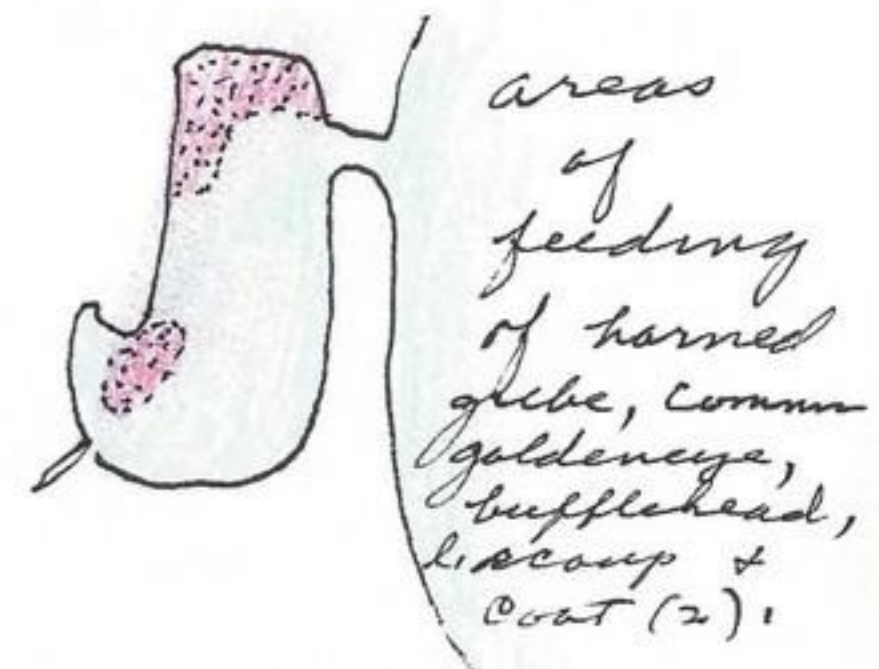
 yellowish-orange

at 10:00 A.M. 5 swan (adults) circled by <sup>on lake</sup> from N then flew into fog bank to E.

By 10:30 fog cloud off lake and valley and sky absolutely clear. 8 Herring gulls. Water with almost microscopic algae or plankton out to at least 15' 8' out a greenish yellow mass in windrows (a jelly gelatinous like substance. Otherwise water clear.

Left 207.5 at marina harbour

Informant said that some elk here might migrate to Jackson Hole. This year elk are staying high in mts and a deep snow will drive them down. Last winter fell hardly put a dent into the population and it will take two in a row to balance the population with the winter food supply. The trumpeter swan congregate in Madison drainage from junction to W. Yellowstone. Now they are moving into their winter area, from their general distribution now. Chipmunk active. 221.8 West Thumb red squirrel. Will keep complete census. 213.1. Eutamias melanurus road kill. 213.7 West Thumb 215.9 Continental Divide. 219.7 Lewis Lake, no ducks. Small ponds frozen <sup>4 Lewis River</sup>. 223.3 Extensive fields of marsh grass and rice and willows cropped. Beaver pond, 232.3 Crawfish Cr. Willows normal size, 4-6' high. 236.4 Beaver dams & ice on ponds <sup>40</sup> 234.4 Beaver house. Willows have a variety of color, purple, yellow, <sup>orange</sup> green, red etc. 240.5 Grand Teton Nat. Park, Canada jay 240.8 Canada jay road kill. Lodgepole (young) growing along side of road scraggly & diseased. Good stands of aspen which we have not seen for some time. 244.1 N end Jackson Lake Photo 831030-3 and 831030-4 of S end of Teton. no herds on mud flats and about 200 in middle of bay to W; Redtail. 245.2 36,000 ducks 4/5 holdgate 4/5 redhead ducks. 4000000 and a few shovelers and maybe other species. 253.9 Co.



262.1 2 raven 265.1 2 Canada jay 268.1 2 raven.  
 Cottonwood and aspen all leafless, 273.8 Cottonwood Cr.  
 277.3 Snake River. 282.2 raven, raven, 283.8 Gros Ventre  
 River. 265.2 leaning Park. At outskirts of Jackson in  
 River 20 trumpeter swans, 290.0 Jackson at 5:30 at  
 47°F.

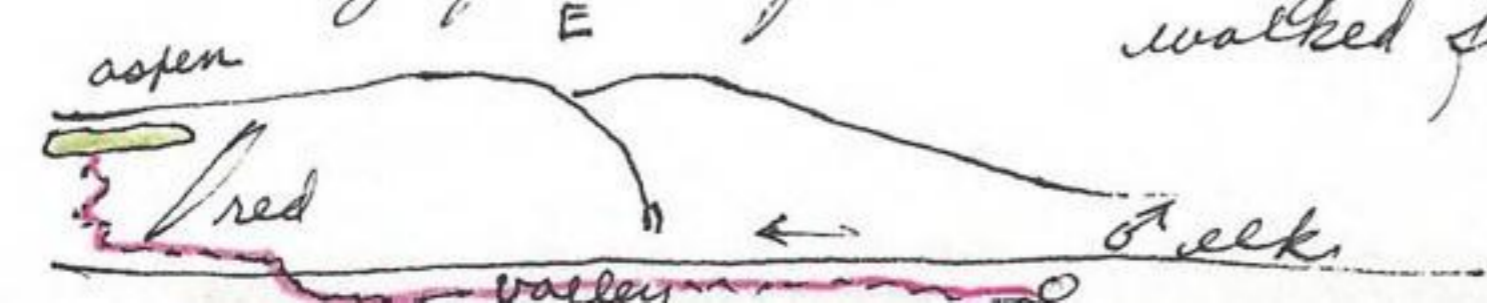
Jackson, Wyoming  
 (Jenny) ~~spending~~

Oct 31, 1983, <sup>Hunting</sup>

Rained last night, clouds low. Guide informant said that he  
 has seen several wolves this year and they seem to be  
 increasing in number. Two weeks ago he saw one on  
 pass between Hoback Canyon and the Green River drainage.  
 He claims that official statements declare the wolf extirpated  
 in Wyoming including Yellowstone & Grand Teton.  
 Elk remain high because of better food than on winter  
 range & that deep snows will drive them down. Black  
 bear and numerous but are not as large as they were  
 3-4 years ago. more big game mammals now than  
 50 years ago. Buffalo & Antelope cross Hoback -  
 Green River pass to get into Teton & Yellowstone. Remembers  
 talk of 500 antelope on pass beyond <sup>Highway 22</sup> to W of Jackson.  
 The son of Mr. Helman Wackerman is a guide for hunting  
 parties in the Gros Ventre mts E of the Grand Teton Park. He  
 flew with the Forest Service fire surveillance group and flew  
 with the helicopter pilot as a Forest Service employee and on  
 one occasion photographed one of the wolves which is on  
 record at the Forest Service Office in Jackson. His father  
 has the Wyoming Truck & Auto, 1170 S Gregory Lane, Jackson  
 Wyoming 83001. Phone 733-6777 (home). I advised him to  
 contact John Kenagy regard his patent of a pipe cutter and  
 threader.

Nov 1, 1983.

Checked trumpeter swans this A.M at meander river in  
 Elk Refuge. These waters are in S end refuge. There were  
 37 in small group of 2-3-15-6-4-7. Last night I counted  
 20 but did not have the advantage of upper hillside  
 vantage point for viewing the refuge. One large elk  
 walked from center of field at S end  
 of refuge to group of aspens on  
 sidehill where a ♀ was stationed.



On going up hill it would walk about 10 steps and then stop and look ground. It was the only ♂ elk in the Southern part of refuge, in fact the only elk. We saw no other elk to the E & N. This male may be the first one to come to the refuge. They say that hungry overcomes elks and they then accept the fear of being in the refuge.

Left Jackson for Colter Bay. As we past Elk Refuge observed 3 large elk ♂ in one group in about middle of refuge. magpie at Fish Hatchery entrance. 325.1 entering Grand Teton National Park. 325.8 raven. 326.5 Glas Ventre River 327.4 raven. Informant says that in early days every body would pass Jackson and go to Yellowstone or Tetons, now they stop in Jackson and drive to parks for a day period. 330.8 raven. 333.0 Snake River, an immature eagle circled down river over bridge, then circled back up river. At Visitor Center, <sup>area</sup> 8 photos of mts to W.

831101-1

831101-2

831101-3

831101-3a

831101-3b


831101-3c

831101-3d

831101-3e

334.6 Snake River Bridge going E. 336.3 good evidence of benchlands in cyclic pattern of small increments of 3'-10'. Just beyond on a terrace that is wide and extends north as far as one can see. Evidence of strong winds from mts blowing timber down in an easterly dir. 338. Cottonwood creek. 338.8 Photo to W. of mts; (W Glacial Gulch)

831101-4 a peaks surrounds by clouds & dark lower right.

Aspen & willow completely devastated. Life form with main trunk and many offshoot  from base. 339.6 Photo <sup>831101-5</sup> of two prominent peaks just W of Glacial Gulch. This gulch show how a glacier can modify on mt slope by basal erosion. 340.9 18 horned larks. 343.3 Photo N.W 831101-6

and 831101-7 to SW with back lighting. 348. <sup>2</sup> moran Overlook. 831101-8 NW of snow in valley.

831101-9 mt. moran.

348.8 glacial dry depression to right. 349.9 11 raven on an elk kill (poacher took only antlers and canine tooth and left entire carcass) 350.4 raven. 351.6 Signal Mt. Lodge. Got water here. He reports: migration of elk. unnoticed to S and at night. He does not believe wolves are in area. One grizzly to E from Yellowstone and area closed to hunting to protect it.

First small lake NE junction (Jackson Lake) a swan nested and raised young. At this time of year, this lake, mud flats N + W of dam and of low lake are used by trumpeter swans. He has never seen them at Signal Mt. Lodge except as they might fly past the lodge. Jackson Lake seldom fished with flies. Temp Colter by 42°F. Photo 831101-10 of mt. Moran surrounded by clouds. 352.0 now back on main road, Eutamias minimus active. 353.7 Jackson Lake dam. Approx 500 ducks in lake just above dam. Raven. 355.1 Junction, now to Colter Bay. 356.1 Christian Lake, 52 baldpates, 6 pintails, 2 godwits. 358.2 Pilgrim Creek. Continued to Colter Bay and camped in picnic area at recommendation of ranger at moose visitor center. Immature bald eagle flew N along lake. A rare gull, and common loon only birds observed.

Colter Bay, Grand Teton National Park, Wyoming.

Nov. 2, 1983 min temp 42°F last night.

Left at 366.1 (main road). 368.1 back on main road from Leech marina. 378.1 leaving Grand Teton. Continued Flogg Ranch Village. Caught trout and returned to Colter Bay. Camp in parking lot in front of visitor center. Photo 831102-1 of moron from camp.

Nov 3, 1983

min temp. 38°F

Checked with District Ranger at Colter Bay. He reports that the 120 trumpeter swans that I observed in Yellowstone and Teton Nat parks conforms to summer census by plane. Skiers are worst disturbing factor of wild life. They will chase an animal until complete exhaustion for photographic advantage. 40-60 snowmobiles will be in picnic area for ice fishing in winter time. He believes like I that winter in National Parks should be respected and held inviolate to human trespass because of the nature of winter and the critical balance of life in animals which stay in the park. He does not doubt that grizzly bears are in the mts E of the Teton National Park but not S of them. The documented record of wolf in Gros Ventre National Forest area is probably true. Funds as low as previous year. Forest Service also cut back especially on trail maintenance. I may have taken some early photos at camp:

Left camp and at 408.8 at Willow Flat Overlook, took 2 photos of Grand Tetons extending above clouds:

- 831103-10
- 381103-11

407.3 junction to dam. Continued to Signal Mt Turnoff and at 407.5 *Eutamias minimus*. Turned around of this road and returned to main road 414.0. From Moran Mt. vantage point, two photos:

- 831103-12 NW showing Eagle Rest Mt. and peaks to N covered with clouds.
- 831103-12a " " " "
- 831103-13 To W of next Mt. S of Moran which is between Mt Moran and Rockchuck Peak.

419.9 *Eutamias minimus*. 420.1 several shot of of a small group of conifers and a scraggly conifer with Grand Teton group of Mt Peaks to left now hidden by clouds. This is from Jenny Lake Flat.

- 831103-14
- 831103-15
- 831103-16
- 831103-17

at Glacier Gulch advantage point. 3 photos of Nez Perce with middle Teton in the background etc.

- 831103-18 and 831103-18a and 831103-18b Nez Perce with middle Teton in background.
- 831103-18c Mt. Wister with a little of Buck Mt. Ridge showing thru the clouds.
- 831103-19 Photo to N along range of peaks.

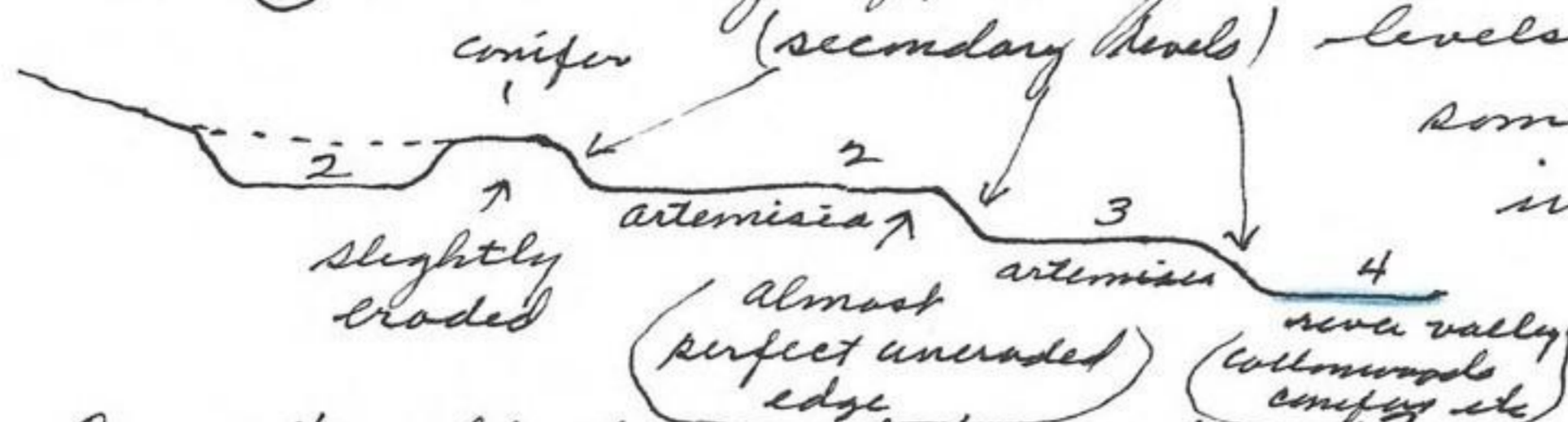
along the route to Moose, 4 raven and 2 redtail hawks. at Moose Lodge from dining room took several photos of mts to W (thru thermopane glass)

- 831103-20 Grand Teton Peaks
- 831103-21 near " " "
- 831103-22 First Peak N of Grand Teton.
- 831103-23 First Peak N of Grand Teton.
- 831103-24 Second peak S of Grand Teton

checked at Mrs Merie home, <sup>at moose</sup> and was told that she had just returned from Washington and was staying with her sister at 640 E Broadway, Jackson. (at Mc Leods) She had trouble with her back and was taking it easy for a day or two.

435.1 main highway going N out of Moose. 437.0 raven 440.1 raven 440.5 Teton vantage point, 22 antelope in sagebrush land to E, Photo 831103-25 of benchlands to W

There are 4 major benches, (1) on top of conifer covered ridge which may have been alluvium from mts to W prior to glaciation, (2) glacial outwash, (3) drainage outwash or terrace formation cutting thru glacial outwash and (4) river valley supporting trees. Each of these major levels have secondary levels some showing 2-5 feet increments but these show only in special or protected areas. I've seen gophers, 454.7 striped skunk



One noticeable terrace between 1 and 2. I've seen gophers, 454.7 striped skunk road kill 451.3 103 Canada geese 452.1 2 raven. 452.6 valley with brilliant reds and yellow willow stems. This is extraordinary in color. 453.0 photo of 2 moose crossing a Buffalo River Channel. This is at the bridge which is approx 1/10 mi or less S of Moran junction. 553.1 Moran junction. 455.4 redtail and leaving Grand Teton National Park, 457.9 muskrat, Raven. 461.7 from return of Hatchet 2 photos of peak N Grand Teton 831103-27a cathedral group in silhouette 831103-27b " " " " 831103-27c " " " " 831103-26 Peak S of Grand Teton. 831103-27 Grand Teton with fence in foreground. at this point 2 trumpeter swans in Buffalo River directly S. 462.1 Lava Creek. 462.6 Grand Teton National Boundary. 464.8 junction (Moran) 467.8 along Osbow, Kingfisher, 20 mallards, muskrat, 1 Calif. gull, magpie. 470.0 2 moose ♂ Photo 831103-28 and 831103-29 of these moose. also photo 831103-30 of Grand Teton with evening clouds in background. 470.1 junction. at Willow Flat overlook, 4 moose, at a point <sup>in broad grass meadow</sup> between dam and junction to NE counted. 45 ♀ elk 473.3 now back to junction and going N. at big lake to left, 25 mallard ducks Continued to Colter Bay and camped at visitor center. Coyotes called late this evening. Heard loons call on Jackson Lake. Only bird an eared grebe.

Colter Bay, Grand Teton National Park, Wyoming.  
Nov. 4, 1983

min. temp 32°F, Common loon called several times this A.M. Last night at 9:30 P.M the Barth made one sharp <sup>solid</sup> adjustment for less than a second as if responding to an earth quake. Before sunrise <sup>at picnic area</sup> during early morning lights took at least 10 photos of

mt. moran: progression of early morning lights.

- 831104-1
- 831104-2
- 831104-3
- 831104-4 and mt to S of mt. moran
- 831104-5 mt. moran increasing light
- 831104-6 " " " "
- 831104-7 " " " "
- 831104-8 " " " "

Photo 831104-11 of mts to S from picnic area with ridge of conifer trees in foreground.

Photo 831104-12 of mts to S from marina.

Left Colter Bay and at 481.4 main highway S, 486.1 Christine Cr. 486.5 Willow Flats vantage point. The elk observed last evening had moved N thru willows to a point directly W of us and moving N. From Willow Flats vantage point took 6 photos of mts to W.

- 831104-13 Teton Peaks
- 831104-14 mt. moran
- 831104-15 Teton Peaks
- 831104-16 moran and Tetons
- 831104-17 Teton Peaks.
- 831104-18 mts S Tetons.
- 831104-19 Glacier of moran

486.8 4 moose (one adult and 3 smaller ones) 487.0 now at junction and going W. 487.4 photo 831104-21 of mts to SW with hill of conifers and meadow in foreground. (Grand Teton) observed white ptarmigan among bushes. 488.4 dam. 3 photos of mts and coast (1400). no other kinds of ducks in group. Some on land.

- 831104-22 Grand Teton and cools on Jackson Lake.
- 831104-23 Mt. moran " " " " "
- 831104-24 " " " " " "

Another raft of ducks of 1200 of 50-50 cost and halfpate, 12 gulls sp.? at dam. (below) 491.2 Signal Mt. Turnoff 496.1 top and photo 831104-25 to NE in Buffalo River country. E side Signal Mt. steep and covered with artemisia, W side monoclinal and covered with conifer. Few spots of outcrop on E side of mt. but otherwise all glacial boulders elsewhere.

At Jackson Hole vantage point on top. The photos of mts to SW  
 831104-26 mt. St. John and Rockchuck mt.  
 831104-27 mt. Moran  
 831104-28 mt. Moran  
 831104-29 Teton Peaks, mt. Saint John and Rockchuck mt. (and 831104-29a)  
 Photo 831104-29b of Annette pointing to top of Grand Teton in  
 clouds and 831104-30 of plaque with photographic notation,  
 831104-30a of Teton peaks (Grand Teton)  
 2 elk in trees below. Extensive grasslands and open areas  
 surveyed with 18x binoculars but no mammals. Roads  
 are objectional artifacts in the landscape. 3 cans reflected  
 sunlight in valley below. Clark's nutcracker, 16 finch sp.  
 2. probably Cassins and a mt. Chickadee on top. No other  
 birds or mammals along road enroute. 498.7 on way  
 down noted willow with good green leaves, 498.8 photo  
 mt Moran and lake below. Several elk tracks here,  
 500.9 now back to main road. 501.8 2 ravens on the  
 poached elk carcass. 505.6 now to Jenny Lake, 506.5  
 red squirrel drinking from rain puddle in road. From  
 vantage point <sup>and Cathedral Pt.</sup> mt. Moran, 507.7 Photo 831104-32 of mt. Moran  
 with two horns (E+W) and glacier between. Watched an adult  
 eagle come into area at N end Rockchuck mt, fly  
 across area of <sup>recent</sup> fault displacement and alight in dead  
 conifer S of displacement area, <sup>to base of St. John mt.</sup> where it remain for 5  
 minutes and then flew S towards Jenny Lake. 6 photo  
 from Moran mt. Cathedral vantage point.  
 831104-34 Teewinot peak, Grand Teton Peak, mt. Owens (left to right)  
 831104-35 " " " " " " " "  
 831104-36 " " " " " " " "  
 831104-37 " " " " " " " "  
 831104-38 S shoulder mt. Moran, remnant glacier field.  
 831104-39 In vicinity mt. Moran? 831104-40 Fault base Rockchuck mt.  
 515.7 raven. 518.8 Moose (Village). 519.3 toward Teton  
 Village but returned because of road restriction. 520.7 turn-  
 around at top of terrace. In Mill Pond, 45 mallard ducks.  
 522.6 now back to main road. While at moose called on Mrs  
 murie (Olson) but she had just returned from Seattle and was  
 in Jackson visiting her sister Mrs McLead. Noticed that  
 Jackson pollution comes into park about 8 miles N of  
 Jackson. at Gros Ventre River, raven. Raven, 2 raven.  
 530.9 5 large antlered elk in Elk Refuge and as far  
 as we can see are the only ones there. Continued to Jackson  
 and camped in same camp (river boat camp) in Jackson as we  
 camped several days ago.



Teton Co.,  
Jackson, Wyoming

Nov. 5, 1983

made count of trumpeters swan in S end of Elk Refuge. from 1/5 way up mt to W. Counted 23 adult and 7 immatures in groups of 5-1-6-18. The group of 2 adults and 3 young were feeding by moving feet underwater presumably on bottom of river and then placing head & neck under water to feed on organisms or plant material displaced. The mallards <sup>(16)</sup> followed in close association with the swans and profited most by capturing organisms from the foot shuffling of the swans whereas the common goldeneye <sup>(12)</sup> by diving in the immediately vicinity of the swans. The mallards worked more closely to the swans than the goldeneye. The mallards would chase the goldeneye.

Returned to Jackson and visited Mrs (Olus) Murie at 640 E Broadway where she was visiting her daughter Mrs McLeod (formerly married to Adolph Murie (Sisters married brothers)).

Mrs. Murie is on several boards of Conservation groups. She meets E.R. Hall on many occasions on these meetings. She & Olus honeymooned on the S side of Brooks Range on one of the rivers. She was familiar with many places on the Arctic slope and other parts of Alaska as well as in Yellowstone and Tetons. She has a home on the San Juan Islands in Washington and has a daughter in Seattle. She is a close friend of George Shaller and recently visited with him in Connecticut. Shaller received the Bob Marshall award. She said there were only a few of the old naturalists left and named Hall and Bee. She does not approve of modern naturalist and their mathematics, statistics and serology methods. 1975 71 Hwy, 89 P.O. Box 712 Jackson, Wyo 83001

Left Murie's and visited the Wilcox Gallery. met Jim Wilcox who is a young artist, born in Orem, graduated at Brigham Young. He is willing to exhibit our Salsburgs if we sent them to him. He has many Utah clients. From his gallery we could see 12 large male elk. They were lying down with spacing of approx 30' between each other like <sup>spots in a</sup> fence line. [In retrospect at 7:30 A.M. 3 groups of Canada geese (18-13-12) flew W. 7:33 another group 70 flew by. At 7:35 25 Canada geese flew W and at 8:40 4 more to W. These geese flew at

approx 150' high. Ducks also have been seen to fly W across the City. Heard several geese call last night as they flew W. 6 magpies at Camp I Continued up 22 to Teton Village, Enroute 18 Canada geese, then returned to main road S. There are some interesting terminal moraines in this area (nearer Jackson).


573.8 Junction 22 & road S. As we neared Hoback Junction noted broad area cottonwoods and all of them large tall trees as if <sup>edaphic</sup> climatic. would be interesting to get series of diameter or circumference measurements.  
 885.7 <sup>Hoback</sup> Junction & now W to Camp (no. 22 Forest Service)

Forest Service Camp no 22, 7 mi S and 5 mi. W Hoback Junction, Lincoln Co., Wyoming.  
 Nov. 6, 1983

min temp 37°F. Two bald eagles (adults) flew up river at 8:10 A.M. They were separated by approx. 1/10 mi. They flew straight up canyon at approx. 85' high above the river.

checked W half of Camp 22 and found 17 trees had been cut from camping area. 1 aspen, 3-4 cottonwood and the rest spruce. One spruce 5' in diameter. 85% of these trees were in good shape, 15% showed rotting in centers. Whomever cut these trees should be discharged from the Forest Service as incompetent management. This area of old spruce is protected on S from river and N by relatively sparse forests.

Water ouzel flew down river. Horses have devastated areas around hitching trees by completely trampling soils and vegetation and by destruction of tree growth. manure in places completely covering ground. Solution; provide corrals for hunting horses.

Sand bank on edge of Snake River shows 7 major shoreline levels. 2 ♀ common mergansers alighted in what I would consider the most productive fish population. In isolated pond of older river channel among rocks of river bed 20' x 6', approx 250 1" minnows. One mass Indian foam 6 x 3'  on side of river, but otherwise free of foam. Beaver house, <sup>unsuccessfully</sup> attempted to fell cottonwoods 2-3' dia.

Left camp 596.7 607.1 Hoback Junction. Wolf sightings have not been verified. 60 mail boxes in Hoback Junction.  
 608.7 interesting mud slide to left, now covered with artemisia.  
 610.6 road passes brownish-gray conglomerate of over 100' thick.

612.8 Hoback River bridge (1st), 3 magpies and 1 raven feeding from large animal kill, 615.8 Sublette Co. line.  
 623.5 Beginning of open valley from Canyon Terrain we have been passing thru. valley E & N exposures in conifers W & S exposures in sagebrush. First small herd (15 starling) Peaks to E in snow and low fog layers at their bases.  
 628.5 Bondurant. 2 raven here. This area of valley and hills like Strawberry Reservoir in Utah but without the lake, raven. 631.5 raven. 634.0 raven. 634.2 2 raven  
 634.6 3 raven. 634.8 25 raven as if on a carcass, 636.2 2 major terraces. These drainage systems have many <sup>beaver</sup> pools and dams but no <sup>beaver</sup> houses. 641.2 divide and good examples of lake deposits in road cuts, but no signs of lake terraces, To SW sky clear over Great Basin area and first kind of sky we have seen in weeks. 645.6 raven. First time today that the photovoltaic cells have functioned. 648.5 raven. 646.8<sup>4</sup> raven. 646.8 golden eagle left utility pole and flew E and alighted on ridge 150' away. Beautiful bird in 18x binoculars. Head whitish streaked rather than golden. No white at base of tail. 651.0 first good view of Wind River Range. 653.9 to W of Salt River Range in snow with 500 mm lens. Photo no 831105-1. 654.8 16 antelope 2/10 mile and they ran when car stopped. 655.4 area of mounds 50' apart. 660.3 junction (Pinedale and Kemmerer). 661.0 4 mule deer in willows. 684.9 outskirts Markleton. 686.4 Big Piney. 701.5 Raven. 706.9 Lincoln Co. 713.5 striped skunk road kill. 718.6 24 antelope near lake on broad recessional lake bed (2/10 mile from vegetation. They were all investigating the lake bed sands and were in a <sup>single</sup> forward echelon and separated by about 20'. This is at the end of <sup>(Pontenelle Res)</sup> lake, at a point where the sphinx-like rock looks E over lake. approx. 50 ducks here. Lake about 18' below high water. 727.0 first view of Uinta mountains. 729.0 will check jackrabbit road kill for 10 miles. 730.0 Slate Cr. jackrabbit rd. kill. Jackrabbit 735.6. at 739.0 end of jackrabbit road kill (2 per 10 miles). 744.4 sparrow hawk. 749.4 magpie. 755.4 junction 233 at Kemmerer. Camped in Post Office parking area at Frontier just N of Kemmerer. at late twilight but still light enough to see, a great horned owl alighted in top of a utility pole where it remained for at least 10 minutes.

Frontier, Lincoln Co., Wyoming.  
Nov. 7, 1983

At Frontier a magpie and 2 ravens. 760.4 middle of town of Kemmerer. 765.1 magpie. 765.8 12 antelope. The mountain being flattened for coal mining does not support the amount of coal that justifies exploitation of a natural landscape. Coal about 1/10 the area of the mt. 766.8 20 antelope. 767.0 3 antelope. 769.6 sage hen and 4 antelope. 772.8 4 antelope. 773.3 12 antelope. 776.0 25 antelope. 776.6 Wintok Co. 780.2 magpie. 780.9 antelope. 785.6 4 antelope. 785.9 35 antelope. The entire route so far is 7100 ft. 788.6 magpie. 791.0 marsh hawk ♂. Outcrops of range to W are whitish. 793.8 35 antelope. When first observed the entire herd went into movement, 3 continued S for 5 lengths between poles then turned around and ran full speed back to the main herd which had already become stabilized. They were too far away to have been influenced by our presence. 795.8 12 antelope. All antelope have been on W side <sup>road.</sup>  
 Summation: antelope = 12-20-3-4-4-12-26-1-4-36-12 = 134 Total.  
 797.7 I 80. 802.2 divide. 806.3 magpie. 810.7 first exit into Evanston. 817.0 Utah State Line. Just west of Evanston is red soils that continue W to Echo Res area and beyond toward Ogden. 823.2 Canyon full of beaver houses and dams. 828.3 flooded fields from recent rains and 5 ducks. 185 Exit the red soils to E are now forming cliffs in Canyon. Mule deer rd kill 832.8 mule deer rd. kill. 837.6 magpies. 844.5 at visitor center at red cliffs. 848.7 4 magpies. 850.5 isolated group of willows in full yellow golden fall color. Cottonwood are 2 per cent in yellow leaves. Just beyond approx 40 per cent of cottonwoods are in color. These are associated with several communities (human). Natural areas are about 15%. The willows are mainly in color. 854.7 mule deer road kill. 2 per cent cottonwoods in color. Understory and small shrubs are 60 per cent yellows and other colors. Sidehill vegetation is more reddish than valley colors. Weeping willow are a brilliant yellowish-orange. Shrubs in valley are picking up in color to 60-70 per cent. 869.5 1 percent to 6 percent cottonwoods in color. Some willow groups are 100 percent in color. 864.6 mule deer rd kill 872.8 at this point there are no cottonwoods in color.

878.3 raw mouth of canyon and decided decrease in numbers of cottonwood. On approaching Ogden lombardi poplar are in yellow color, some still green. Some weeping willows still green. In fact there is an abrupt change <sup>80 percent</sup> increase in color of trees and vegetation. Many trees are green and many brilliant yellow, some trees are red. Many flowers (asters, mums and marigolds) are in typical fall color. Grass and other ground cover is still green. This area beyond mts is less advanced in color change (loss) than we have seen Jasper or even Nyder, Alaska. Sycamores are still green and only lower <sup>not</sup> leaves are brownish. Many dead leaves on ground and <sup>not</sup> stabilized (still moving about with wind currents). Continued to Willard where we camped. Rain most of afternoon.

Willard, Boxelder Co., Utah.

Nov. 8, 1983 To Logan.

Hyde Park, 7 mi. N Logan, Utah

Nov. 9, 1983

Stayed yesterday afternoon and night at Sidney Bayle and Rowena. Rowena had two violins made by her father Mr. Christensen, one in 1941 and one in 1952. He made about 43 violins. Sid reports that ♂ pheasants will shake lower branches that were covered with food but ♀ never developed that habit. He presented me with two flower banks of yellowstone area. Sid has now discontinued fishing.

On the way to Logan from Brigham City <sup>ground free of</sup> snow but at Bonneville level. As we drove up canyon immediately ran into snow on ground and soon on trees (1" thick). At divide all trees and ground. Continued N into Cache County where snow was on the ground and slopes. Color of trees is like main Great Basin Valley is brilliant with green trees and colored fall flowers, which again is the first abrupt color change since, say, Jasper. Cache Valley had approx 100 crows.

Left at 950.6. 953.3 sparrow hawk. 2 crows, and red-wing blackbirds in flocks of 100. Crow. In valley to w streams up to banks and fields flooded. Sid says last 2 years 30" rain instead of usual 15". Farms are getting 3 crops of wheat (dry farming) usually <sup>successful</sup> 1 crop in 5 years. Approx 200 ducks, 80% coats. Ice in protected places.

magpie. 961.1 raven and <sup>3</sup>Boulder Co line, <sup>2</sup>Burnsville,  
 Provo and <sup>3</sup>Stansbury. <sup>2</sup>skid on side hill.

961.7 redtail. 962.6 mule deer road kill. 963.2  
 striped skunk road kill. 966.7 Callison and  
 jackrabbit road kill. It is difficult to determine if  
 Cache Valley is less or more advanced in leaf color than the  
 W slope and valley of the Wasatch. 987.1 Brigham City.  
 993.3 on way to Bear Lake Refuge. 20 ducks so far, 5 coot,  
 2 eared grebe. Fields flooded. 200 count on lake where  
 causeway crosses the lake. 997.7 ♂ marsh hawk. 998.1  
 110 Canada geese on bare open flats 999.7 2 marsh  
 hawks. no ducks in swollen river. 35001.0 ♀ marsh  
 hawk. 200 ducks, 2 oocot, 2 great blue heron. 18 coot

003.2 Bear River Refuge at 003.2 Visitor Center. Individual  
 at desks says son excavated a complete Titanotherium in  
 Wyoming and is now at Salt Lake City Natural History Museum.  
 Jim Jensen was not interested. I told her to contact Univ Kansas  
 for advise and possible chance for education of his son.

Started trip thru refuge at 003.3. Identified all birds  
 along immediate route and approximated numbers of birds  
 beyond, many as duck only etc. 2 great blue heron, 203 Canada  
 geese, 100 <sup>malpud</sup> ducks. Pheasant in road, 3000 ducks <sup>and coot</sup> on lake to E  
 and water almost to road in canals. 2 Canada geese, Shoveller.  
 ducks react to marsh hawks at 15' overhead. 4 Cinnamon Teal.  
 Calif gull,

Now at bridge over canal. Eared grebe. 2 muskrat houses.  
 5 coot. 18 Canada geese flying E. marsh hawk. 2 oocot, coot,  
 10 ducks, 80 ducks, 2 gulls, 2 gadwalls, 80 ducks & coot to E.  
 150 ducks & coots to W, 2 eared grebe, ruddy duck, 80 ducks to E.  
 4 horned larks, g.b. heron, 4 eared & 1 horned grebe, 80 ducks to E  
 and none in main lake to W, 15 goldfinch. 2 eared grebes, 8 coot,  
 3 shovellers, 6 red-wing blackbirds, 50 goldfinch, 3 gadwall, gull,  
 savanna sparrow, 20 mallards, 8 ducks 2 eared grebes, shrike,  
006.8 now W. 42 Canada geese, 12 ring-billed gulls. G. b. heron,  
 eared grebe, 4 western grebes, 5 eared & 4 horned grebes, 3  
 g.b. heron. no ducks in lake to W but occasional eared grebes  
 and these mainly near shore. Eared grebe, ring-billed gull.  
 gull, eared grebe, 20 ducks on S side (Great Salt Lake side, water  
 not salty at least near outlet gates of fresh water, misc. debris  
 on S shore of road, salt water to Antelope Island. Song sparrow  
 & coot. Only birds 100' of road on S side at least to point where

24 Canada geese, ring-billed gull, 12 goldfinch, coot; 3 mallards, 008.9 observation tower. 400 cliff swallows nest, one heron? nest, 88 pelicans at turn of bend. 40 ring-billed gulls, 18 western grebes and 2,000 ducks to W.

009.0 at first bend to NW just beyond tower; 400 western grebes and generally distributed. This area is inhabited by many fish-eating birds, 4 lesser scaup, 8 baldpate

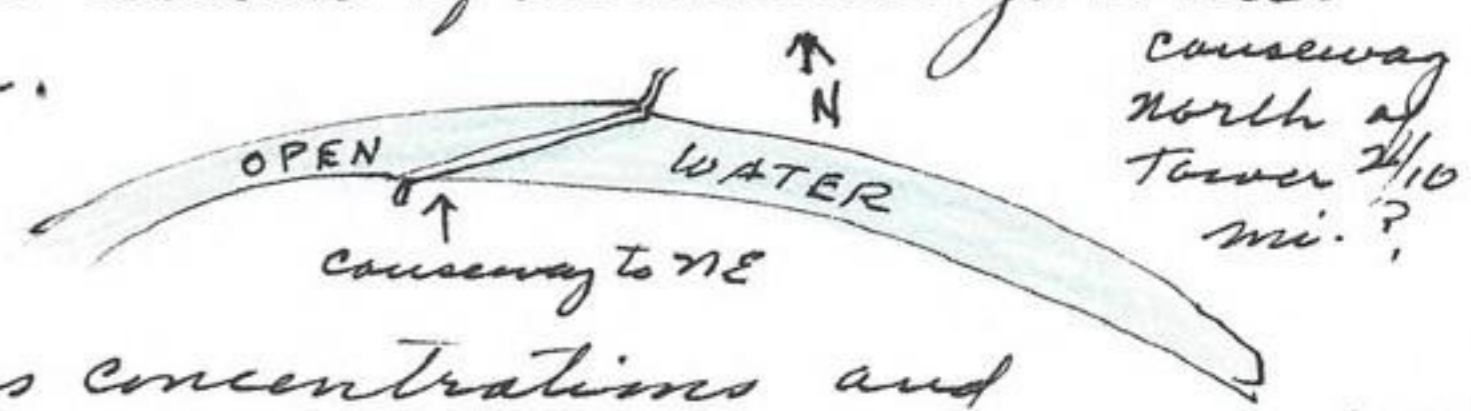
009.5 Now N. 270 pelican pelicans to W, 40 goldfinch, 20 goldfinch. 20 whistling swan flew to W. In the distance there is considerable flight movement of swan & pelicans which I will account for as we move into the area. Red-throated loon as close range. 3 pied-billed grebe. Beaver felled willows on E side road. 5 pied-billed grebe, 4 mallards, 5 gulls, 15 goldfinch, g. b. heron. 21 black crowned night heron, 18 red-wing blackbirds all ♀. 3 Canada geese, 4 pelicans. 13 western grebes, 18 ducks and 8 pelicans. 5 black-crowned night herons, 18 black-crowned night herons. These heron are in compact group in willows and after leaving circled several times as if loath to leave area. 25 W grebe. 2 pheasant, 18 black crowned night heron, 8 pelicans, 12 coot, 8 mallards, 24 black crowned night herons out of rushes, g. b. heron, 29 pelicans, 380 pelicans, 400 pelicans, 160 gadwall, 4 pied-billed grebes, 15 goldfinch, 80 gadwall (pure flocks), ♂ & ♀ pheasant, great blue heron, 40 spombills, 8 redheads, 2 Forrester terns.

011.3 Tower, now E. 8 Bonaparte gulls, 800 pelicans, 7 coot. Far to N are great numbers of swans which I will census from tower at visitor centers. In lake to N are approx 7,000 swan and at least 2000 ducks and 1000 coot. associated with swans, 2 mallards, 12 W grebe (favor outlets of fresh water), 8 coot, 2 coot, 40 young whistling swans to 105 adults from sample of 2000 swans. I would estimate 20,000 swans to N. 18 red-wings, 2 photos of a sample of whistling swans in this area, 2 Oregon junco.

831109-1  
831109-2.

The call of the whistling swan is similar to Canada geese but not as loud or sharp a honk as the Canada goose. It is conversational and more yelping, like than Canada geese. There is no suggestion of a whistle. Photo of group of whistling swans. This group consisted of 5 adult & 5 young or 50-50. This photo is 831109-3. 12 goldfinch, black-crowned heron.

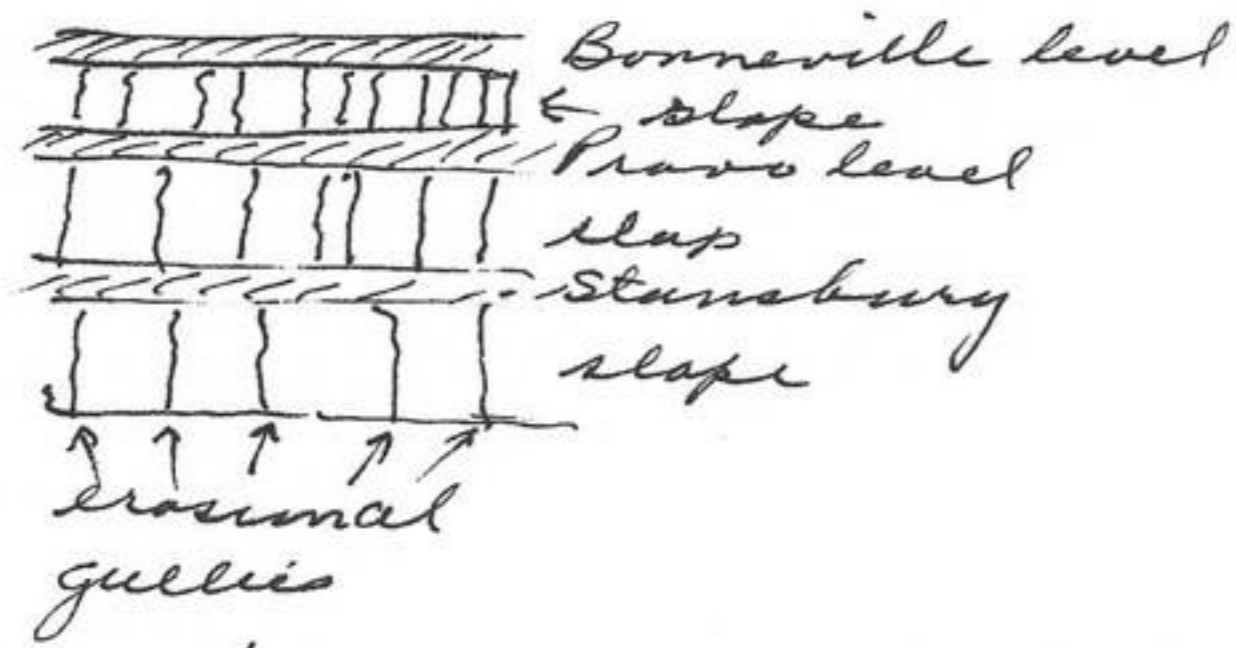
012.8 Nov 7, 2 gadwalls, orcaet, black-crowned night heron, (white-faced) coot, mallard, gull, 6 glassy ibis, 8 pintail, 6 green-winged teal  
Observation tower. Approx. 400 nests of cliff swallows. Swans all along lake to NW and far N to dryland, also E in a lake N of main Visitor Center. at this point I would say 28,000 is an indirection. 4 b.c.-night heron, 20, 20, 18 mallard, 2 eared grebe, marsh hawk, 8-12-18-6 mallards. 110 Canada geese, 2 song sp. 2 eared grebe, 180 red-wing blackbirds.  
 arrived visitor center and made census of whistling swans from top of observation tower.



In the general area to NW, N, and NE to E → estimated by count of various concentrations and then scanning entire area outlined above with 1000 mm (celestron) as 41,000 swan. (The viewing windows should be optically clear and at least one on each side made openable).  
 On way out of refuge at shortly after sundown several (2) thousand red-winged blackbirds in large flocks flew W and SW. Continued to camp in Willard.

Bojelder Co.,  
 Willard, S. Brigham City, Utah  
 Nov. 10, 1983

min. temp. 32°F. At 9:45 OF. Photo 83110-1 of Bonneville shorelines E of camp at Willard. 3 magpies in camp. Farmer plowing field and 43 gulls following (ring-billed gulls?). on shorelines to E Bonneville 11 drainage to 7 of Provo level



major drainage straight thru, minor drainage offset from level to level. 2 of Bonneville may converge for one of Provo

Left Willard camp and took old road S and finally to Interstate 15. One field being plowed had 120 gulls sp? in field. Continued S to Salt Lake airport that goes N & W of airport and finally ends at airport terminal. Thence 80 W to Saltair. Enroute (2 mi. E Saltair) 18 Canada geese on mud flats. Some ducks, grebes & loon along, was in flooded field. Camped 1/10 mi. S Saltair. Earlier drove to marina S of here. Old road inundated. New road within



one or two inches of being covered. At marina parts of parking area under water. Talked to one individual who says that I 80 is expected to be closed sometime next year because of rising waters. Saltair will suffer heavy damage. already a dike of a few feet high has been placed around the structure which only 2 feet or two from flooding. Wet cycle predicted for 2 years at least. Dilution of salt in lake has already caused some decay problems. One can still float in water.

We visited Saltair which is the newest Saltair. The first one of 1893-1925 was on pilings north of here where 80 turns SW. 1929-1970 in new position as well as no III Saltair in same position as 1929-1970. Fires have leveled Saltair several times.

In present state (see photo 831110-2 of skat of Barth and Saltair in distance) it consists of a large hall with stage and surrounding dining area. Some enclosures of food & drink fountain in N & E side. Outside a <sup>water</sup> ~~crater~~ in final stages of construction and a temporary pool for <sup>drinking</sup> ~~drinking~~.

Birds in area (of Barth) 6 eared grebe, 2 ring-billed gulls, 2 mallards. Elsewhere (to marina) 18 eared grebes, 6 horned grebes, 8 ring-billed gulls, 2 Calif. gulls, 6 avacet, 18 red-winged blackbirds, 3 coot, all in salt water. (In recollection Sid says to read Blue Highway by Williams <sup>Heat moon</sup> East and Atlantic <sup>high</sup> ~~high~~ <sup>by Buckley</sup> also two in a high sea in a 20' sail boat.

<sup>Davis Co</sup>  
 1/10 mi. S Saltair, Great Salt Lake, Utah  
 Nov. 11, 1983.

approx. 450 Herring gulls, some circling high. Saltair 2 feet above water, foundation below water. Waves on 2 1/2' dike 1 1/2 way up dike. 38 eared grebes 1-2- to 8 birds in flock.

Left. Past Black Rock, the slopes (NW) on Ogden mt have great amount of deposits of Calcium carbonate. Some shorelines have cut into solid rock. 114.7 now S from I-80. 115.6 sover 117.0 limestone outcrops in valley indicating valleys may not be of block faulting. 12 horned larks flew S along road at 35 MPH 125.6 Toole more wave action on N side of Bonneville peninsula that spans the valley than on S side of peninsula. 139.6 now 73 E.

Solid white grasses on base of mt beyond artemisia  
 120.6 = 1 mi on mule path. 144.2 Ophir Turnoff, 2 magpie. 144.0  
 mule deer road kill 145.1 mule deer road kill. 146.4 mule deer  
 road kill. 148.6 marsh hawk and striped skunk road kill.  
 149.0 marsh hawk. 150.8 mule deer road kill. (in 15 miles the  
 car odometer is 1/10 mile more than the intrinsic mile. 154.5  
 raven. 155.3 turnoff to Faust. <sup>road feed of white grass to W.</sup> 155.6 Utah Co. line. 156.2  
 2 raven. 156.5 3 raven. Road kill <sup>jackrabbit.</sup> 156.6 raven. 157.3 4  
 raven. 157.4 4 raven. 157.8 2 raven, raven, raven, raven  
 raven, raven. 158.1 3 raven, marsh hawk. 158.2 2 raven,  
 raven. 159.4 2 raven. 160.5 Camp Floyd. 161.4  
 mule deer road kill 165.7 striped skunk road kill. 166.8  
 mule deer road kill. 168.1 jackrabbit road kill. 169.5  
 2 jackrabbit road kills. 177.3 Jordan River (up to bridge and  
 flooding fields in all directions. 2 goat, 5 muskrat houses.  
 181.1 Museum at Lehi. Harold Hutchings finished paleontology  
 exhibit and open house Fri + Sat. Vegetation on mt. slopes  
 seem <sup>more</sup> red. than I can remember. Continued to Provo.

Provo, Utah Co., Utah.

Nov 12, 1983

at Ann and Mary Bee Jensen home 1593 N, 1450 E. at  
 BYU - Colorado State football game made set of photos for  
 Mary of her dancers. Field completely covered with dancers.  
 Also photo 83112-1 of lights at stadium (out of focus method).  
 at Mary's home set of photos of her yadras.

Nov 13-14, 1983

at Mary's. She entertained 25 of her associates in a pre-Thanksgiving meal

Nov 15, 1983

Photo 83115-1 of sunset over Utah Lake showing old shoreline  
 extending S of airport (Provo) with water E of airport & Mead  
 Lake to S. Compromise point S of old shoreline vegetation  
 Earlier today photo 83115-2 of Stewart Flat and Trump  
 cirques beyond. Photo 83115-3 of cirque wall at N end of  
 Stewart Cirque and 83115-4 of cirque wall in middle of  
 Stewart's cirque.

Whistle, Utah Co., Utah

Nov 16, 1983

Photos 83116-1 and 83116-2 (panoramic) of slide.

On way back to Provo, stopped at Central Bank in both Springville and Provo and looked at Paul's Salisbury paintings. Mrs. Chloe Salisbury Peary's home is 4738 E Cliff Ave. Ph. 225-5927, at mouth of Spanish Fork Canyon about half way to Mapleton photo 831116-3 and 831116-4. of Bonneville Lake Level showing terraces higher than Bonneville Lake and in case of 831116-3 of alluvial fans at mouth of canyons with inenspecimen erosion across terraces.

At Provo just NE of Mary's home on Bonneville terrace, photo 831116-5 of Chrysothamnus foreground and Utah Lake and Mud Lake in distance. Photo 831116-9 same area with Nebo and east end of Mud Lake in distance. Scrub oak on left side. Photo 831116-9 of mudslide onto road NE Mary's (to S)

Photo 831116-10 of mudslide (as above) on road in front of 2 homes. From NE to SW. Photo 831116-11 to E showing how slide pulled away from unconsolidated deposits. A long straight line formed on N side as if a fault. 2 ponds on road at top may have saturated deposits. It took approx 2 weeks for soils to creep down slope.

Provo, Utah Co., Utah

Nov. 17, 1983

Sundance, Stewart Flats, Utah Co., Utah

Nov. 18, 1983

Stayed at Little Chalet in Mary's home. Took following photos:

- 831118-1 From ski slopes to N. Series moraine slopes and mt N of Aspen Grove.
- 831118-2 Ibid but aspen in left side photo.
- 831118-6 Stewart Cirque from Little Chalet.
- 831118-7 Cheops Ridge.
- 831118-8 Cheops and S half of Stewart's Cirque.
- 831118-9. Floor of Stewart's Cirque.
- 831118-10 Facet Peak (cirque walls to left, base E of peak to right).
- 831118-11 Ibid.
- 831118-12 Ibid.
- 831118-13 Ibid.

Provo, Utah Co., Utah

Nov. 19, 1983

Don't Mary gave tickets to BYU - Univ Utah football game

BYU UTAH

55-7

Provo, Utah Co., Utah

Nov. 20<sup>21</sup>, 1983

Spent day in Provo at Mary Bee Jensen's 1593 N, 1450 E.

Nov 22, 1983

Left Mary's and returned to Sundance to the Little Chalet. Snow all day. (see map on next page for trip this date and animals observed)

Sundance, Little Chalet, Mt. Timpanogas, Utah Co., Utah

Nov 23, 1983 min temp 20°F last night, 30°F 3:00 P.M.

Snow all night. mts in a transparent veil most of the day with light snow in air most of the time. Don to surgery for heel injury. Jack  
facinating photographs of trees with snow and mts:

831123-1 Ashley Peak from road at Little Chalet. Scrub oak and maple with snow.

831123-2 Stewart Cirque from same area as above

831123-3 Facet Peak bordered by ring of maple branches covered with snow.

831123-4 Ashley Peak from same area as above bordered by maple left and Conifers right.

831123-5 From upper ski road on Conifer mt. of conifer covered with snow.

831123-6 Same area as above near where road turn S, Facet Peak and left<sup>(S)</sup> shoulder of Elk Peak.

831123-7 Same area as above of Facet Peak to left & Elk Peak to right.

831123-8 Same area as above. Elk Peak.

831123-9 Same area as above of Facet Peak & S shoulder of Elk Peak.

831123-10 Conifer covered trees near Hooker's Chalet.

831123-11 Home of Jack Hopkinson from <sup>just below</sup> Hooker's Chalet on ski slope. Facet & Elk Peak in background. The ridge above Jack's home is the 3rd recessional moraine of last glacier to come out of Stewart's Cirque. It is interesting that conifers and larger trees have not established themselves on these slope. The lateral moraine 2 and 1 are above this one and they are covered. Could it be a time factor. These moraines slope to E. Mary's Little Chalet is probably on the 4th lateral moraine just visible to W of the 3rd moraine and below.

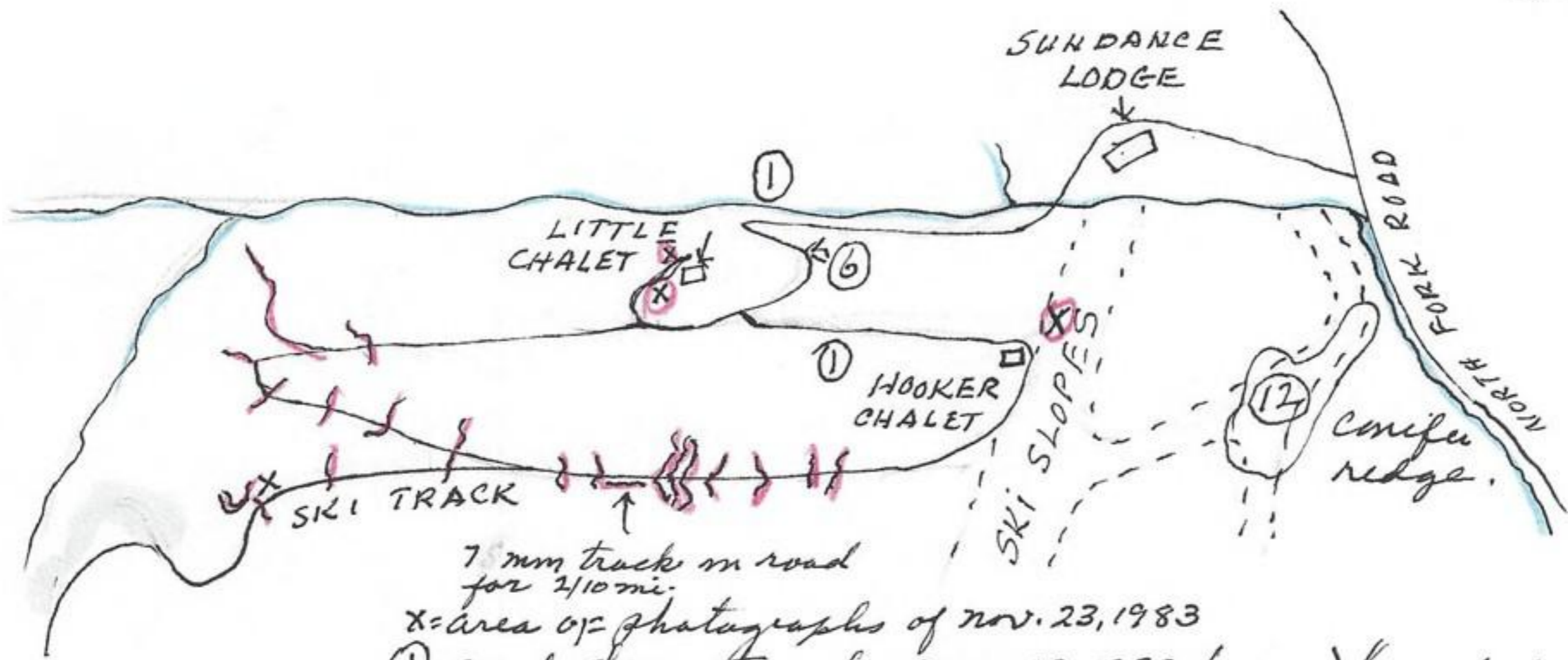
831123-12 Facet Peak and Elk Peak from above area

831123-13 From same area as above but with zoom lens.

831123-14 Same area as above of Stewart Cirque.

Route of above photos from Little Chalet W to end rd (5 drainage) thence E to ski route (ski track), thence W to first curved road to S, thence return E to ski slopes, thence to Hooker Chalet, thence W to Little Chalet.

② LIVE MULE DEER



7 mm track on road for 2/10 mi.  
 x = area of photographs of nov. 23, 1983  
 ① = mule deer tracks, nov. 22, 1983 (green) (see below for notes on this trip).  
 = mule deer tracks nov. 23, 1983 (blue)  
 red = route

microtine tunnel intermittent under snow ~ - - - - -  
 21 horned lark in open area E of ticket office.  
 Snow grader for residential area pushes snow into Stewart Creek and indiscriminate over area to creek.  
 The deer were definitely associated with conifer ridge and moving mainly N across open areas.

As clouds cleared and sun came out took several more photographs of snow on trees and mts. Skull days produce a bluish cast to photos: The following photographs were taken: all near Little Chalet,

- 831123-15 snow on scrub oak out S window of Little Chalet,
- 831123-16 Conifers and mt. maple covered with snow on back of Little Chalet. To west.
- 831123-17 To west
- 831123-18 " "
- 831123-19 Stewart Cirque and Facet Peak.
- 831123-20 Cheops and Stewart Cirque, Ashley Peak slope to left.
- 831123-21 Facet Peak + Elk Peak,
- 831123-22 Stewart Cirque. Ashley Peak to left.
- 831123-23 Stewart Cirque.
- 831123-24, 831123-25, 831123-26 snow covered branches.
- 831123-27 Top Conifer tree + Ashley Peak to left.
- 831123-28 and 831123-29 snow covered branches,

*Peromyscus maniculatus* caught near dead Little Chalet: 176-77-21-18. ♂ Testes 3.5 mm.

Sundance, Little Chalet, Mt. Timpanogas, Utah Co., Utah

Nov. 24, 1983 min temp last night 24°F  
40°F at 3:00 P.M.

Thanksgiving. Am doing well for second day in hospital. Annette and I at Little Chalet. Chris & Steve will be in Provo (Salt Lake airport) <sup>Flight 86, 9:25 P.M.</sup> Wed, Nov 30. Jay & Polly are making final arrangement to come.

Listed some observations of Sundance problems:

Snow grader should put snow in designated places and not into Stewart Creek or anyplace at random. The vehicle is destroying vegetation bordering creek and elsewhere where snow is pushed beyond the road.

Builders play radio music on sites that can be heard all over the Sundance area.

Snowmobiles should not be used on roads in labor areas for race tracks but for that purpose, designated areas beyond Sundance should be used. For in Sundance area use for practical transportation at low speeds (non-noise)

Packs of dogs continually roam area. They bark and are a nuisance around buildings.

Other noise producing items are: heavy equipment, chain sawing, carpenter hammering, cars, road grader, ice-making equipment, ski slope equipment, snowmobiles, loud yelling of people, airplanes,

Sundance, Little Chalet, Mt. Timpanogas, Utah Co., Utah

Nov. 25, 1983

min. temp 35°F. Snowed all night to approx 14" in addition to approx. 28" of previous days. This snow is a wet snow and when trees are hit the snow remains on branches. Yesterday if one were to hit a tree an avalanche resulted. At twilight last evening the floor of wooden porch which was periodically shovelled of snow was melted of all snow because of 40°F temperatures.

Since we arrived we placed 4 feeders in trees, one of suet, average of 2 Steller's jays (up to 4) at feeders, 3 black-capped chickadees (up to 6) and 1 mt chickadee (up to 2-3). The black-capped chickadee is larger and dominant. It has more color on sides. The usual procedure is to alight on suet and after getting a fragment of fat will fly away (as far as 100') to consume it. It is at the suet feeder for less than 5 seconds. The Steller's jay seldom feeds of suet feeder but prefers grain on open board feeder.

Little Chalet, Sundance, Mt. Timpanogos, Utah Co., Utah.  
 Nov. 26, 1983

Min. temp 23°F. Took several photos (Kodacolor 100) of snow covered trees: (all in vicinity of Little Chalet).

831126-1 Conifer covered with snow of last few days accumulation, base elk peak in background.

831126-2 ibid. moraine at base of photo. Elk mt base in background.

831126-3 snow covered conifers

831126-4 Conifer covered with snow.

831126-5 Top Conifer (white poodle<sup>dog</sup> leap frog over another!)

This evening drove down to Don & Marys in Provo. at Bridal Veil Falls took photo to WSS of upturned beds of Carboniferous limestone no 831126-6. Photo slightly angled (note icicles).

Red-breasted nuthatch at feeder for first time since feeder started

Nov. 27, 1983

min temp at Little Chalet 24°F. Took several photos at cabin.

831127-1 of N end Little Chalet with Wagoner covered with snow.

831127-2 Wagoner covered with snow (at moraine Chalet).

831127-3 Icicles on E side Little Chalet.

Nov. 28, 1983

min temp. 22°F. Photos today are:

831128-1 Eagle Eric from Little Chalet.

831128-2 Little Chalet of W side.

831128-3. 200' SW Little Chalet at bend of road (top grade). of scrub oak and mountain maple bordered above by Douglas fir. Ashley<sup>Peak</sup> in background.

831128-4 Same area as above. MT maple with old dry orange leaves<sup>of mt. maple</sup> still on some branches, Ashley Peak<sup>and scrub oak</sup> in background.

831128-5 ibid

831128-6 ibid with scrub oak and old leaves of mt. maple. Douglas fir in background.

831128-7 Mt. maple, some scrub oak, Douglas fir and Ashley Peak in background.

831128-8. Icicles on E side Little Chalet: actual ice is white.

831128-9 ibid. Some icicles from eaves to ground.

831128-10 Close-up of droplets of water on end of icicle.

This P.M. drove down to Provo. On return<sup>after dark</sup> at grade up Photo 831128-11 of overturned cliffs in N Fork Provo Canyon. Caecid in background.

hill from Old Power Plant where road crosses Provo River to S side noted 2 mule deer on side of road. Also on way down noted 2 water ouzel on Provo River at Vivian Park.

Nov 29, 1983

Min. temp last night, 26°F. Drove to Provo. 3 deer at Olmstead on E side road at top hill. (See page 831021-272 for letter from Jasper National Park, Superintendent Ken Walker about black-legged Kittiwake)

Nov 30, 1983.

Drove to Salt Lake Airport and picked up Chris & Steve and returned to Mariji's home in Provo.

Dec 1, 1983

Annette, Chris, Steve & I drove to Sundance, got stuck in snow at ~~last~~ turnoff from main road. Able to park and leave car at head of road. We walked and carried luggage to cabin.

Little Chalet, Sundance, Mt. Timpanogas, Utah Co., Utah.

Dec 2, 1983

Took photos at and near Little Chalet:

- Photo 831202-1 Chris in cabin making Polish snow flakes for Christmas tree
- 831202-2 Icicles on E window, some 4' long, but not yet coalesced.
- 831202-3 From front window Little Chalet to S, showing Evergreen mt.
- 831202-4. Bird feeders out W window of kitchen of Little Chalet.
- 831202-5 From front window Little Chalet of conifers on Evergreen mt, to S. Scrub oak & mt. maples loaded with snow but more massive than previous views.
- 831202-6 to N from Little Chalet of conifer tree (right) on Jack Hopkins's property. Road in middle. Deton home to left beyond trees
- 831202-7 Eagle Erie (Chalet no. 2) to W
- 831202-8 Moraine Chalet to SW.
- 831202-9 From moraine Chalet to NW showing moraine across canyon & base and peak of Elk Peak. The conifers on top of moraine best site in area for cabin.
- 831202-10 Stewarts Ceregee & Cheaps from Moraine Chalet.



831202-11 *ibid*,  
831202-12 *ibid*

Little Chalet, Sundance, mt. Timpanogas, Utah Co., Utah  
Dec. 3, 1983

In A.M. took 7 photos:

- 831203-1 Little Chalet to SE showing new snow, conifer protruding above snow pile.  
831203-2 path leading N from porch of Little Chalet, Moraine Chalet.  
831203-3 Don says he has never seen snow as high on E wall as in this photo.  
831203-4 snow piles higher than wagoner at Little Chalet,  
831203-5 to E at Little Chalet showing height snow  
831203-6 *ibid* an general shot to show depth snow.

This evening to Provo and attended Mary's 25<sup>th</sup> Christmas around the world at Marriott Hall at BYU. Excellent reception by audience. On return to Sundance car stuck in road and by 3:00 AM extricated and backed to Sundance Lodge. we all walked up to Cabin in deep drifted snow in road.

Dec. 4, 1983

- Four photos this A.M. min temp last night 22°F  
831204-1 General view of cleared path for car & people.  
831204-2 Little Chalet and new snow. Cory Smith's car under snow to right. Slope snow piled in front by snow plow.  
831204-3 Cory's car (care-taker of Moraine Chalet & Eagle Eric).  
831204-4 Snow piled off road in front Little Chalet.  
831204-5 Path N from porch with snow piled 8' high.

Chris and Steve left and we all helped to haul the luggage down to lodge where car was parked. Jay, right wrist drove them to Salt Lake. Jay returned to Cabin, Annette fractured,

Dec. 5, 1983

- Took several photos this A.M. min temp last night 15°F. Daily temps from 32 - 40°F  
831205-1 Iceles E window Little Chalet.  
831205-2 James Robert Bee in Little Chalet.  
831205-3 *ibid*  
831205-4 Mary Pauline Bee at Little Chalet.

- Jay & Pally skied at sundance all day while Annette and I to Provo where Annette had a splint placed on right arm and hand. Enroute to Provo took following photos:
- 831205-5 Half way down N Fork of overturned strata. Cascade mt in distance.
  - 831205-6 Wall at same place as above on E side Canyon
  - 831205-7 Snow covered rocks <sup>(N side)</sup> about 3/10 mi - up canyon from Vivion Park.
  - 831205-8 ibid
  - 831205-9 mouth Provo Canyon 2/10 mi. W Bredal Veil Falls showing upturned rocks and ice seal.
  - 831205-10 Bredal Veil Falls in Provo Canyon.
  - 831205-11 Rock Canyon. Windy Pass upper left. From approach to Provo.
  - 831205-12 Slide Canyon and Maple Flat to right. Devils Gate in lower right.

Dec 6, 1983

Pally & Jay ski-ed this A.M. then to Provo for glasses <sup>(frame)</sup>, for Pally  
Took several photos in Provo

- 831206-1 Tamparogoo with cloud on front face.
- 831206-2 Slide Canyon, Provo Peak in background, maple flat right, Y mt left
- 831206-3 Slate Canyon, maple flat left.
- 831206-4 same as 831206-2
- 831206-5 Slate Canyon.

831206-6

Dec 7, 1983

Returned to Little Chalet but could not make road to cabin because of snow on last 2/10 mi. so parked below until road was cleared later in evening. <sup>Pally & Jay ski-ed this P.M.</sup> Photo 831206-7 of Cory Smiths car covered and extricated from snow piled on it by snow removing equipment. (10 sec. et.) On way back to cabin observed 5 mule deer at Wildwood on outwash bench E of mouth of N. Fork Creek.

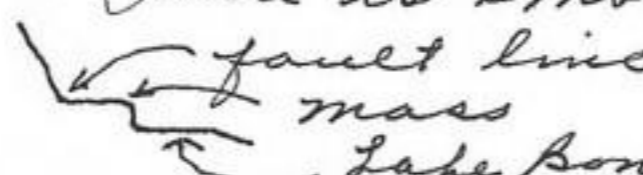
Dec 8, 1983

Cleaned Little Chalet and returned to Provo. Pally & Jay taken to Salt Lake Airport by Ann & Mary. Annette & I went to Ediths and stayed there for the night (Parked and slept in Barth in Ediths driveway. Met Gene & Dick Gunn in evening at Ediths

Provo, Utah Co., Utah

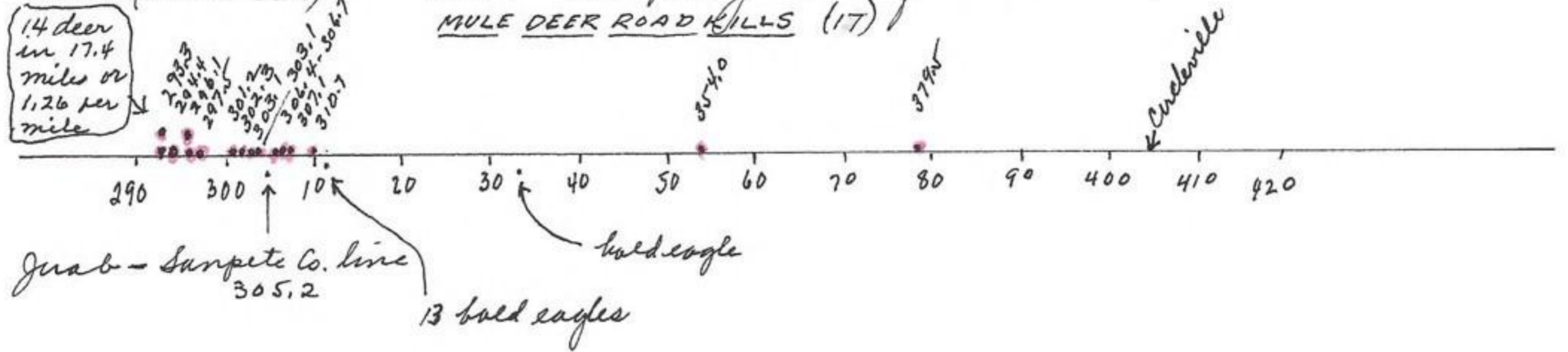
Dec. 9, 1983

Left Edith and Arnold's at 9:00 A.M. and started S on Interstate 15. Left at mileage 35277.8. at center street interchange, water over cloverleaf road, elsewhere at edge of road. Concentration of loot along edge of road and in water in old traditional feeding area at head of mill creek. water and loot (to 3000) to 3/10 mi. N of Springville exit of Interstate 15. The two homes W of road are inundated. 35 Brewer blackbirds in one flock.

250.1 Took three panorama photographs of Mt Loofu to left and ending at Payson Canyon to W. nos 831209-1, 831209-2, 831209-3. There is considerable land mass above Bonneville level.  The faceted ridges

Continue beyond Bonneville level and are not made by wave action but by faulting. 12 crows crows. 2 crows at Payson turnoff. 268.8 4 raven. Crow at N end Nephi. 233.4 <sup>2</sup> crows. Lavan 2 crows. 293.3 2 mule deer road kills. 294.4 mule deer road kill. 296.1 <sup>2</sup> mule deer road kills. 297.5 mule deer rd. kill, raven. 298.3 sparrow hawk, raven. 301.2 mule deer rd. kill. Jackrabbit road kills 1 per 2 miles average. 302.3 mule deer road kill. 303.1 mule deer road kill. 303.2 mule deer road kill. 305.2 Sanpete Co. line. 306.4 mule deer road kill. 306.7 mule deer road kill. 307.1 mule deer road kill. 310.7 mule deer rd. kill. 312.0 E side of Yuba reservoir at side road vantage point. 80% of lake in ice. 11 bald eagles generally distributed on ice. Approx. 150 mallards in water but before we left 2000 or so arrived in groups of 30-80 from the N. 24 Canada geese. Two adult bald eagles flew & circled E and for 20 seconds made several bodily contacts. One of the two continued E to beginning of junipers where it alighted in a flat-topped juniper tree. Left and at 315.9 turnoff to Payette. 333.1 bald eagle. 338.2 Sevier brown. 338.9 sparrow hawk. 346.7 sparrow hawk. 349.2 raven, sparrow hawk. At Richfield talked to beaver management informant that raises beaver and owns over 300 of them. Feeds all smooth bark trees (willow, cottonwood, aspen etc) which he gathers in the valley. \$100.00 per pelet and current price is \$40.00, some as low as \$10.00. Breeds dark to dark and light to light to get dark & white pellets respectively.

Of black or white beaver return to nature they maintain their adapted colors. Beavers produce every other year and it takes 2 years to produce a sellable pelt. Mink in 9 months. Elmore, red tail. 354.0 mule deer road kill. 371.4 Sevier. 377.4 Chukar partridge. 379.5 mule deer rd kill. 382.4 3 magpies (first seen since Provo). Junction, 38 Canada geese. 405.9 Circleville (Center town) 406.4 Camped just S of Circleville.



Circleville, Piute Co., Utah

Dec. 10, 1983

min temp last night 40°F. Temp. 9:00 A.M. 41°F Low solid clouds but blue sky 80%. Left 9:30 A.M. at 406.4. on 89 S. 408.3 3 magpies at Garfield Co. line. 409.3 mule deer road kill. Sevier River has been full all along the way. Country all volcanic. 419.4 2 raven. 420.4 raven. Sevier River now in wide flat valley. 423.7 junction 20. 425.7 marsh hawk. no ducks in Sevier River or in ponds. River open and most ponds except shallow field ponds that are frozen. Snow as remnant drifts in fields but solid snow on hills and among sagebrush. 429.2 marsh hawk. Storm winds from NW. 433.9 now E on 89 S. 436.4 magpie. 437.5 mule deer road kill and 6 magpies feeding on dead deer. more snow in valley than to north. 440.3 turnoff to Bryce Canyon. 18 pines at mouth of Red Canyon. Snow on all at ground on plateau beyond canyon and windswept. 450.2 sparrowhawk, 1619 ft at summit. Water in E fork of Sevier River. 454.6 7-12 junction and 63. Storm winds (drifts) from W. 455.6 sparrowhawk 455.9 Ruby's Inn, raven. 456.0 raven. mule deer tracks to gates average 1 per 20' along side of road. Snow 1' high. Snow on side road 2' and deer tracks along road uncommon. 460.6 Inspiration Point. Took several photos from rim:

831210-1

831210-2

831210-3

831210-4

831210-5

831210-6

831210-7

Two <sup>mule</sup> deer tracks measured 80 mm and 58 mm. They use open clear walks rather than open snow, some to edge of amphitheater. Manzanita green and some pushing above snow. From here to Sunset Pt. observed approx 10 deer tracks. at Sunset Point took several photos:

831210-8

831210-9

831210-10

831210-11

831210-12

831210-13

831210-14  
831210-15 Bryce, Annette in foreground. 831210-16 Bryce to W. 831210-17 Annette.  
Measured the following deer tracks from several tracks at point, 45, 48, 53, 52, 83. 2 roven in canyon and 2 Clarke Crows on top.

At Sunrise Point one photo 831210-18 of snow slopes at top of canyon. Porcupine, cottonwood & deer tracks here. One mule deer track measured 37 mm. Main roads dry except in N slopes where there is ice & slush in road. 470.2 E Fork Sevier River on way out of park. 481.7 now 89 to S. 483.2 <sup>Photo 831210-19</sup> golden eagle  
831210-20 roven chasing eagle (same as above).  
488.7 roven. 490.3 Hatch (S end), 492.0 Sevier River leaves valley & trends W. 495.4 Asay Creek. 4 crows, 1 redtail hawk, shrike 498.4 Kane Co. 500.1 strike. Beyond Asay Creek, main creek about 1' wide. 502.6 junction 14 to Cedar Breaks. 516.8 Glendale. 527.0 Virgin River at Orderville. 523.6 mt. Carmel Post Office. 525.3 junction 9 to Zion 528.1 30 cedar swallows. 536.1 redtail, 2 roven. 542.5 Kanab. Put new stacks on front end Barth. Camped E on main highway.

Kanab, Utah.

Dec. 11, 1983

From this point on to New Mexico recorder malfunctioned and except where some information had been recorded in field notebook (and so indicated in journal) all information is by recollection. Information on photos (most of them) will be recorded on left facing page when photos are developed and posted.

Left Kanab and travelled E on highway 89 to Page. Raven about only birds observed and these averaged 1 per approx. 5 miles. At Waweap observed only 3 ring-billed gulls. From main 89 above took 2 photos to E.

831211-1 Power Plant to S.

831211-2 Powell Lake and cliffs to E.

checked Page and then returned to 89 and thence to S. The Echo Cliffs show a Wingate Formation that is not cliff forming but individual layers eroded to major sequences. Chinde is not as variegated, Shmarump was not observed and Moenkopi difficult to define and then a dark blackish formation. These Cliffs are one of the longest series in area. Camped at The Gap. next morning (below) photo 831212-1 Annette + petrified tree 5' in diameter (chinde?). Photo 831212-2 at Gap. an upright tree in same formation. Photo 831212-3 large limb, place on petrified tree. The Gap, Highway 89, Navajo Indian Reservation, Arizona (Chinde) by Navajo's  
 Dec. 12, 1983

Continued S on 89. Left highway to find Moenave and Moenkopi but returned without reaching our destination. I wanted to photograph and see the type localities of these formations. Returned and continued S on 89 to Cameron, thence W on 64 to Desert View where 4 photos were taken:  
 831212-4 mesa NE of Desert View (Moenkopi capped with Shmarump)  
 831212-5 Good crop pryorons at Desert View (every 7 years a bumper crop) juniper also with many berries.  
 831212-6 To N of E wall Grand Canyon  
 831212-7 Swall between Desert View + Canyon Village.

thence W on 64 to Grand Canyon Village:  
 Several photos from near Grand Canyon Village.  
 831212-8 To SW of Grand Canyon.  
 831212-9 To N of Grand Canyon  
 831212-10 Ibid  
 831212-11 Phantom Ranch and yellow leaves of cottonwood trees

Camped in campgrounds and we were the only 2 campers in the entire camp.

Grand Canyon Village, Grand Canyon National Park, Arizona  
 Dec. 13, 1983

(From notes) min temp 30°F. This A.M. hiked in forest S of camp and back to rim. Approx 1/10 mi. N of camp checkpoint at approx 150' west of road where <sup>light colored</sup> insulated lines traverses road found a pack belonging to Alex Johnson, (8:35 A.M.) 15 E Cucharas, Colorado Springs, Colorado 80903. This pack had apparently been stolen and emptied at this point. The contents had been removed and piled up at head of pack. A watch was on top and a letter dated (marked) Aug. 25 visible among the other contents (Bottle spirits, <sup>4/5 gone</sup> partly under cloths, cowboy coat, worn jeans, black pants, black oxford shoes, several package matches and packaged food.

Birds observed in area: (1 1/2 hours observation)

Cassins finch 22  
 western bluebird 70  
 white nuthatch 1  
 Steller's jay 2  
 Oregon junco 18  
 raven 40  
 evening grosbeak 4  
 cliff chipmunks 2

Later hiked from camp to rim, thence E to Yaki Point and return. On way to point took 10 photos:

831213-1 To W  
 831213-2 To NW with juniper border  
 831213-3 To NW of unconformity (Tonto rim, Old Precambrian & dikes)  
 831213-4 To W, juniper to left. Snow remnants.  
 831213-5 To W.  
 831213-6 Bright Angel Canyon. To N  
 831213-7 " " " to upper left. Photo to N showing inner gorge.  
 831213-8 To W  
 831213-9 To W. juniper left.  
 831213-10 buck mule deer, foot 91 mm.

831213-11 to NW.  
 831213-12 to NW.  
 831213-13 to NW, inner gorge.  
 831213-14 S side canyon below D. Can. Village

Deer tracks every 20-30 feet at least, many in continuous trails paralleling rim. One of these deer trails crossed the main trail to rim and continued on without deviation. Deer tracks as examples measured 96-74-68-67-55-35. The smaller one may have difficulty surviving the winter. Met Mike Swartz at the museum at Yaki Point. He graduated from U. under environmental studies. Has been at Grand Canyon for 8 years. While at point noted 4-20 raven always in evidence in canyon from base of first cliffs (Cocconino) to 200' above rim. They seem to be there for pleasure or for digesting of food. Four or 5 inches of snow in protected areas and free of snow in exposed situations.

As we left camp on highway 180 approx 1/2 mi, from junction 64 found an Abert's squirrel on road as if stunned by car. When I approached it it left and walked 100' to climb a ponderosa pine. Both western + mt. bluebirds (320) from Grand Canyon to Flagstaff. Continued S on 108 to Flagstaff, thence N on 89 to Sunset Crater where we camped in front of Visitor's Center. One ponderosa pine across street N of Center measured 13' in circumference. A larger one was recently cut down in <sup>comp.</sup> grounds.

Black thorned in area; (The lower streambank)

- 831213-1 To W
- 831213-2 To W
- 831213-3 To W
- 831213-4 To W
- 831213-5 To W
- 831213-6 To W
- 831213-7 To W
- 831213-8 To W
- 831213-9 To W
- 831213-10 To W

After lunch from camp to trail, change E to park point and  
 section. On way to front look to photos;  
 evening photograph  
 a cliff dip  
 831213-1 To W  
 831213-2 To W with juniper border  
 831213-3 To W of juniper (to W. of juniper border)  
 831213-4 To W, juniper to left, juniper  
 831213-5 To W  
 831213-6 To W  
 831213-7 To W  
 831213-8 To W  
 831213-9 To W, juniper left.  
 831213-10 To W, juniper left.  
 831213-11 To W  
 831213-12 To W  
 831213-13 To W, seven photos  
 831213-14 To W, seven photos

Pleasant Lake State Park, N Phoenix, Arizona  
 Dec 16, 1983

- at camp below lake took the following photos:
- 831216-1 <sup>Old</sup> nest of Cactus wren in teddy bear cactus.
  - 831216-2 Teddy bear cactus,
  - 831216-3 Lake below dam showing leaves in yellow + barrel cactus
  - 831216-4 Lake below dam with bushes, Colored willow? leaves which is late for season.



Sunset Crater national monument, Arizona

Dec. 14, 1983

- Took nature trail and took 4 photos; min temp. 30°F.
- 831214-1 to E with ponderosa pines highlighted on under slope at base of Sunset Crater. Lava flows that issue from base of W side Cone.
- 831214-2 lavas issuing from a deep fissure of lava flows.
- 831214-3 San Francisco Peaks and under bench in foreground. 2 chipmunks here.

Checked first 50' of ice core.

- Continued on Wupatki National Monument loop road and at Wupatki Indian Site took 2 photos of structures to W.
- 831214-4 To W showing general how building ties in with Moenkopi. S.
- 831214-5 Moenkopi flat stones as walls.

Also checked Citadel Site. From here can see at least 12 other structures, some only piles of Moenkopi rock from which they built their structures. Some sites on Moenkopi, others on volcanic lavas covering Moenkopi & Kaibab limestone. <sup>digging</sup> photo 831214-6 of double crater and gopher.

Continued loop road to 89, thence S thru Flagstaff to 179, thru Oak Creek Canyon to Sedona, thence 89A to Cottonwood where we camped.

This cone about 3 miles E of 89 junction on Nat. Mon (Wupatki) loop road.

Cottonwood, Yavapai Co., Arizona

Dec. 15, 1983

Frost on ground last night. 68 Brewer's blackbuds at camp both ♂ & ♀. On way S on highway 279 checked Thousand Trails; they are just beginning to build check station will be open April, May or June, next year. Dec 16, 1983

Continued S on 179 to <sup>to Pleasant Lake where we camped. next day 16</sup> Sunset City at Phoenix and visited with Dr. Walter's. He is buying a house boat for Lake Powell (made in Salina, Kansas). My recollection that from Cottonwood to Phoenix, we saw approx. 25 ravens. Continued across Phoenix to Apache Junction and camped at Si Evans trailer court (Planas) for the night. Si walks 5 miles every day. We took him to a restaurant and a ride in the country. Love is to visit him during holidays.

Apache Junction, <sup>Maricopa</sup> Arizona

Dec 17, 1983

Left Si and followed 60 to Oak Flats just E of Superior on top first range.

Oak Flats Forest Camp Grounds, Approx 4 mi. E Superior, Pinal Co., Arizona  
 Dec. 18, 1983

On short 1 hour hike noted 18 Oregon junco (one group), 2 brown towhees, 1 scrub jay, 3 raven, tracks of black-tailed jack rabbit, cottontail rabbit, gray fox, coyote, all numerous. no deer tracks. Left on 60 to 70 and thence SE on 70 to Safford, thence E to Lordsburg, where we camped a few miles SE of town along 1-10. Along this route in the valley Germamo - Eden - Safford noted 5 rough-legged hawks and 2 redtails. Also 6 sparrow hawks, 18 meadow-larks, 3 shrike, 12 mourning doves, and some other birds not identified. The area from Safford to Lordsburg had 7 redtails, 5 sparrow hawks, 20 meadowlarks and 15 mourning doves. There is a decided increase in numbers of birds in these lower valleys. The area from Duncan to Lordsburg is a wide valley with almost flat alluvial slopes and dominated with creosote bushes. As one goes S there is a change in degree of slope of valley and vegetation changes to grass, then yucca and shrubs. Along the entire Gila River Valley are fields of cotton. There were two or three hills with isolated stands of saguaro (S exposure) and with great intervals without this plant.

From this point on notes from recorder at 36 425.8 approx. 5 1/10 mi. beyond Franklin on 70 going S.E. at this mileage, marsh hawk, 2 mourning doves and 4 meadowlarks. 427.7 New Mexico. 488.7 at mile post 1, redtail. 429.2 redtail. 430.6 sparrow hawk, redtail. This valley is a wide almost flat valley and dominated with creosote bush. now in area where slope of valley increases and creosote disappears and area becomes grassland and sparse shrub. 441.4 redtail, sparrow hawk. 444.1 redtail. now landscape is <sup>dominated</sup> by stemmed yucca and <sup>other</sup> low shrubs. 446.0 marsh hawk. This is one of the flattest valleys between 2 <sup>deer</sup> ranges I have ever seen. I would not be surprised if there is a slight alluvial grade to this valley on both sides, rather than a flat lake bed. Checked odometer with road mile post. To correct times odometer readings in notes by 1/10 mile. (Example):

10.0 → 20.0 = 10 miles from two points.

1/10 × 10 = 1 mile

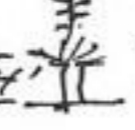
1 mile + 10 miles = 11 miles (corrected distance between 10 and 20 miles.

453.1 redtail. 456.2 redtail. 457.0

continued to 464.8 to SW of Lordsburg on Interstate 10 where we camped just SW of an overpass. 2 white-crowned sparrows here.



SE Lordsburg, I-10, Hidalgo Co., New Mexico.

Dec. 19, 1983

Left at 464.8. min. temp last night 24°F, Sky clear. The above camp was at Turbau Station frontage road (W of I-10 approx 300' Left 10:21 A.M. 464.2 meadowlark. 468.3 7 meadowlarks. 469.6 2 meadowlark 670.0 Grant Co. line 672.5 review. 483.3 meadowlark 487.4 Continental divide 490.2 redtail. 495.5 Luna Co. Black-tailed jackrabbit and striped-skunk road kill. Finstones seen for a long time. 497.5 redtail. 150 horned larks, redtail. Noted several yucca with 10' base stem and 5' flower (branched) stock. Most of them average 4' high . 508.1 country developing more shrublike plants and less cacti as well as more sandy soils. (soils red). 510.2 sparrow hawk. 514.2 back to yucca 519.1 Deming (Safeway) 532.8 shrike. Since 519.1 seen 20 black-tailed jackrabbit rd kills, 543.6 redtail 576.0 Rio Grande River, sparrow hawk. 603.4 Visitor Center in Texas. 603.7 mile post 1 in Texas. 628.1 E El Paso in Shopping Center (Bassett). ~~608.8 redtail.~~

Mission Campgrounds, E El Paso, Texas

Dec 20, 1983

Left and at 660.8 redtail. 665.1 striped-skunk road kill, 667.9 redtail. 676.1 2 golden eagles. 676.6 overpass, exit 55 to Terrell. From 11:30 to 12:30 dust increased from W and now visibility 2 miles. Wind from SW. Dominant plant and almost exclusively so is creosote & occasional long base yucca. 720.0 picnic area at <sup>mead</sup> granite ridge. Dust moved in while we were here for 30' and change vision from infinity to approx 3 mile distance. and blocked vision of Sierra Blanca to the NE. Wind from SW. Left at 4:00 P.M. 720.5 exit 99 to Lasca 727.6 Sierra Blanca exit 105 at overpass. 729.6 striped skunk road kill. The large leaved, stemmed yucca (Giant) are already in area and have been so for at least the last 20 miles. These large yucca are mainly along the roadbed. Blossom stem branched and heavy ~~at~~ base (rapid taper).  734.3 visibility to N <sup>and sunshine</sup> approx 3 miles and dark white to S 4-5 miles clear, and blue sky. This dust storm (from El Paso to here has a sharp edged storm track. Looks like a heavy rain storm. Have passed several communities of yucca.  737.0 enough sun to make shadows and turn photovallain cell.

744.6 Coyote walking inside fence line bordering right-of-way approx 100' from road, I-10 traffic did not seem to influence coyote. 751.3 exit 129 overpass to Allamore & Hot Wells. Creosote to base of mt slope. 772.6 roughleg. The road cuts show stratified Cambrium - Precambrian rocks, highly folded and tilted and varied colors. 753.6 now at divide. 757.4 Culberson Co. (change to Central time but I have been carrying central time since El Paso for convenience of setting. 762.2 now S on 90 at Van Horn, at 5:08 P.M. well drive until dusk. 764.9 jackrabbit road kill. Far to N the dust storm is dark & active. Cotton fragments along road so must be a product of the valley. There has been a reviving of cotton growing all along New Mexico & Texas so far. 765.6 redtail. 774.1 junction 1523. 784.3 redtail. 791.4 redtail. Dust storm to N even after sundown. 801.1 Valentine. Camped at Catholic Church. Highway 90.

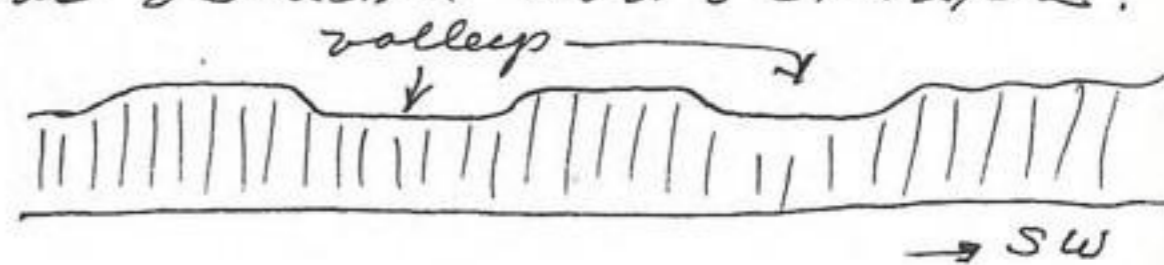
Jeff Davis Co.,  
Valentine, Texas

Dec. 21, 1983 <sup>40°F</sup>  
Left 10:42 A.M.

min temp 30°F 804.3 <sup>2 meadowlarks</sup> 3 horned lark,  
810.2 sparrow hawk. 812.1 redtail. 814.5 marsh hawk  
in road eating black-tailed jackrabbit rd. kill, 816.9 marsh  
hawk eating black-tailed rabbit rd. kill, 818.0 marsh  
hawk, 2 meadowlarks. 819.9 redtail 821.6 jackrabbit  
road kill. 822.5 marsh hawk, redtail hawk 229.0  
19 horned larks. 836.7 City limits marfa, 837.9 Alamita Creek  
just E marfa. 844.2 redtail. 12:00. 856.4 juniper round, short  
and evenly but sparsely spaced. Some live oak 858.3 picnic  
area in mts. At this stop observed 1 acorn woodpecker, 15 meadow-  
larks, <sup>2</sup> brown towhee, 2 scrub jay. 854.1 Alpine at railroad  
station 870.3 <sup>3</sup> meadowlarks 872.5 junction 67. In far  
distance to N dust but clear here. 876.6 2 shrikes. 883.3 redtail.  
886.0 2 redtails circling together 888.6 3 redtails circling together,  
2 horned lark, shrike. 889.7 redtail. 891.4 shrike. 893.6  
redtail. 895.0 Marathon 895.7 junction of road to 5 to Big Bend.  
901.3 sparrow hawk. 903.0 center of 2-3 miles of extensive Citellus  
community, none before or after (both sides of road). 903.7 end  
Citellus community. Have observed several giant cacti with  
leaves <sup>also</sup> growing up from base (on ground). 907.8 redtail. The  
redtails have been on top utility poles, in trees or high bushes and  
soaring. Yucca increase as one nears mt. slopes, then stops at base.

mt E of here are beginning of Cretaceous (Comanchian). They are stratified, relatively horizontal and without faulting or distortion. Creek beds brilliant white. To W we have passed three Cambria to Carboniferous rocks with some volcanics, most of them perpendicular and distorted.

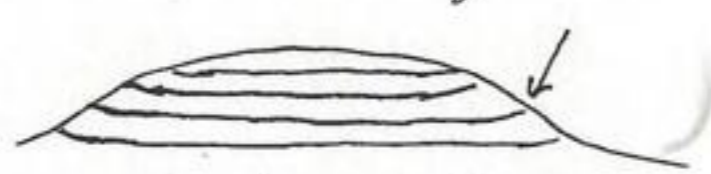
911.1 road-cut with perpendicular rocks (non Cretaceous). Two photos of these rocks. nos 831221-1 and 831221-2. Cliffs to SE are crossing earlier valleys most pre-Cretaceous dip to SE.



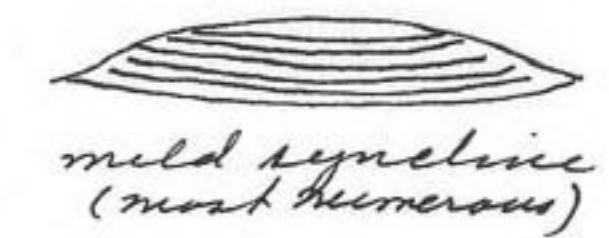
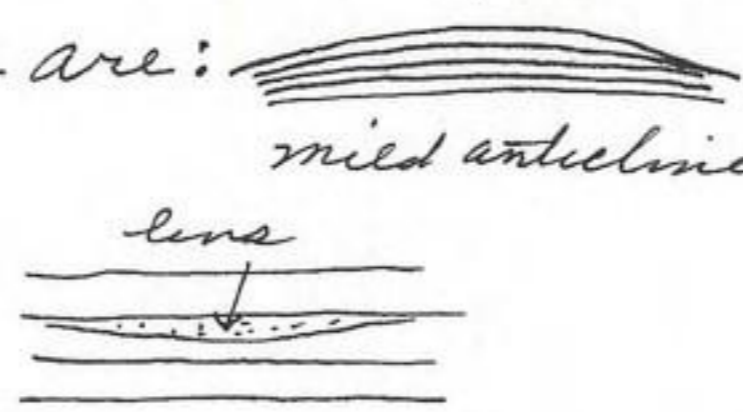
917.9 mule deer?, road kill, 3 horned larks, shrike. 527.0 Brewster Co, shrike.

932.4 wild turkey.

Road cuts of Cretaceous are:



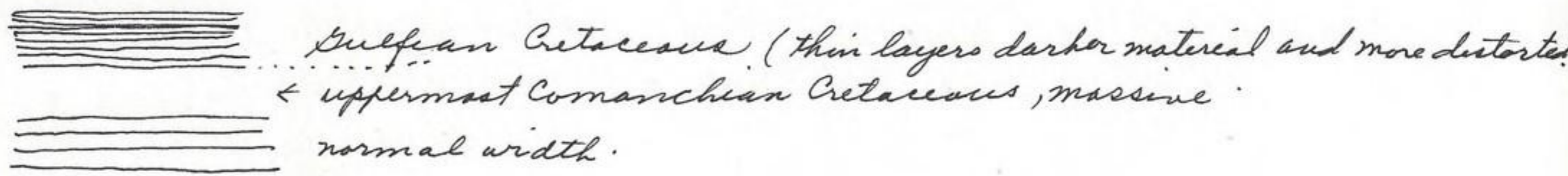
may be optical illusion but contact of horizontal beds turn slightly up (may be weight of current mass)



948.8 junction 285, at Sanderson.

passed thru several <sup>isolated</sup> communities of yucca

Continued to Langtry. A short distance to W is the contact of massive Comanchian and Gulfian Cretaceous.



Langtry, Val Verde Co., Texas

Dec. 22, 1983

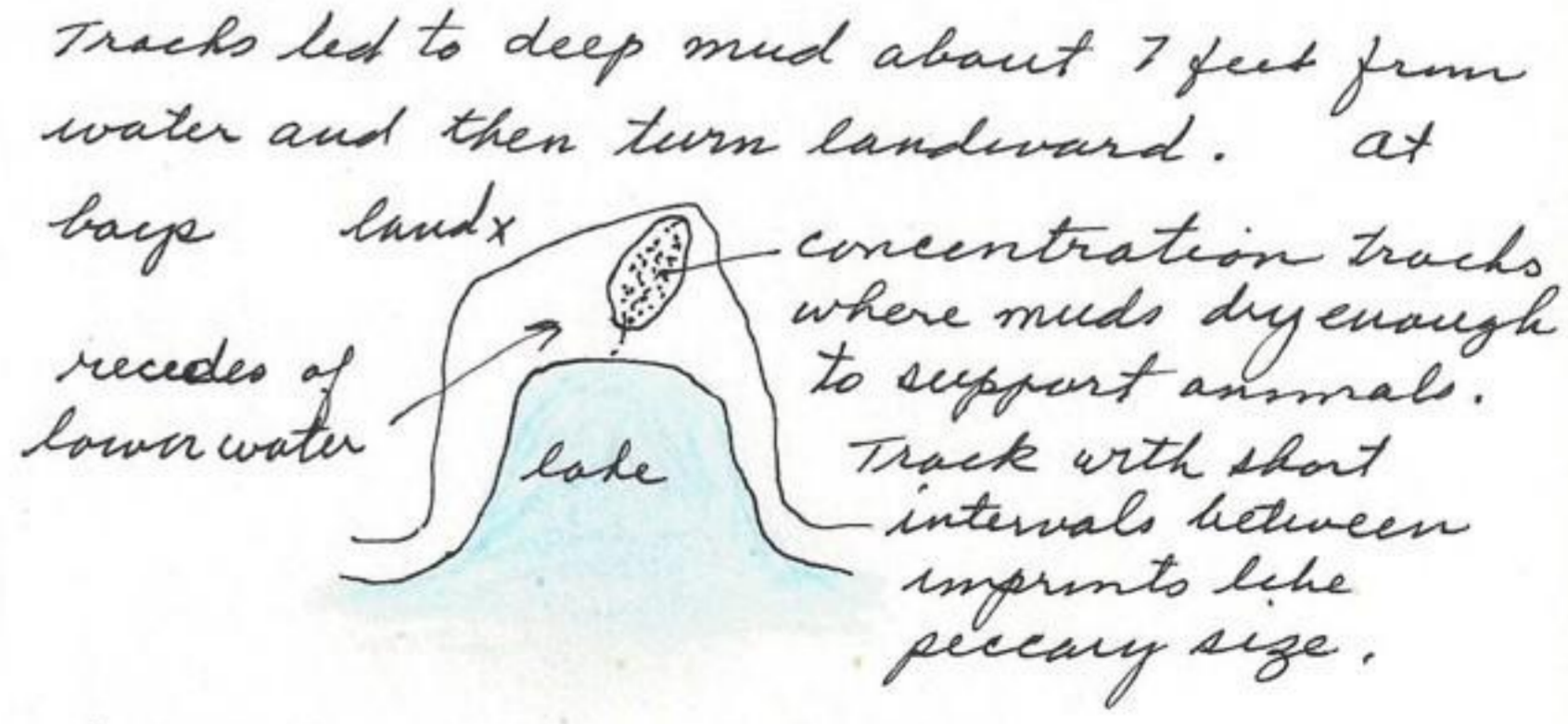
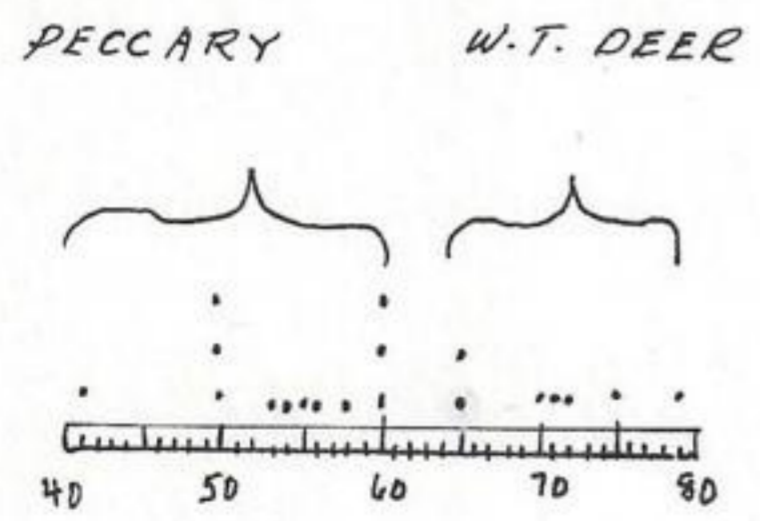
min temp, 21°F, 012.2 made short trip to S to edge of canyon of Rio Grande. Height of canyon approx 280'. Willow and cottonwood still in green leaves, some yellow. Comanche Cretaceous forms canyon. At visitor center, some blue flowers in blossom. Pyrrhuloxia and sharp-shinned hawk at camp. <sup>TO W on 90 at</sup> 014.0 road cut photo 831222-1 of Comanchian lower white layers and contact with Gulfian younger <sup>dark, closely stratified</sup> Cretaceous above. Note uppermost massive layer (5') of Comanchian with normal 1-3 feet layers below. I have noticed that up to this contact the Comanchian formation is uniformly white and regularly stratified. Above have noticed some white zones as below and also zones of friable yellow soil-like layers and other misc layers. 014.4 turn off to Langtry as we move E from last described road cut. Friable material on surface of ground to solid rock below is from bare rock to approx 1 foot. 015.1 Eagle nest canyon, no water. There are uninformative on

2 meadowlarks. 204.9 San Francisco Creek, 3 meadowlarks,  
 3 meadowlarks. 207.8 45 meadowlarks one group. 210.5  
 Medina River in Castroville. meadowlark, sparrow hawk,  
 3 meadowlarks, sparrow hawk, 2 mourning doves, 3 meadowlarks,  
 5 meadowlarks 218.7 4 meadowlarks, sparrow hawk. 221.1  
 9 meadowlarks. 1604.7 then 471 W. meadowlark, <sup>2</sup> sparrow  
 hawk, meadowlark, meadowlarks, junco now (240.2)  
 mixed in with mesquite and live oak, red leaves of  
 autumn color are probably an oak other than live oak.  
 254.8 Campground at Thousand Trails (120B.)

Checked area to S on peninsula. Water must be down 20  
 feet or so. Followed shoreline counterclockwise and observed.

- 1 red-breasted merganser
- 3 ring-billed gulls
- 2 black-crested titmouse
- 12 Coot
- 1 mockingbird
- 52 eared grebes
- 3 great blue heron
- 6 double-crested cormorant
- 2 buffle-heads.
- 1 sparrow hawk
- 3 white-tailed deer

peccary tracks (20 sets)  
 skeleton Pond slider turtle (*Pseudemys scripta*)



deer tracks sink into soft soils more than peccary and stride interval longer,

Some tracks under dead trees suggest a peccary size for clearance.

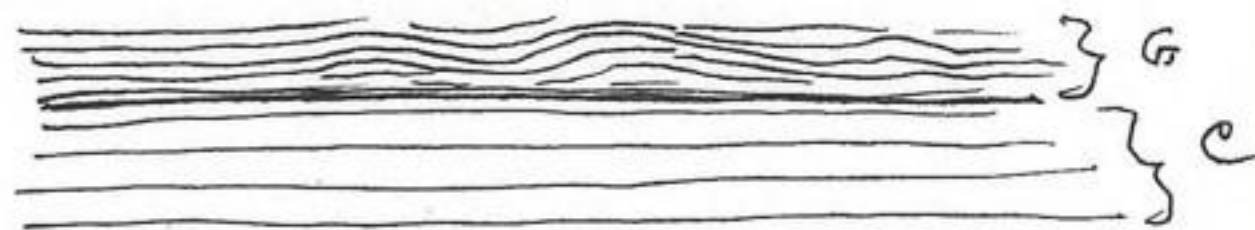
top of Comanchian Cretaceous

These may be old river channels.



also Gulfian above shows distortion whereas the massive layers of Comanchian are straight.

Gradually shrubs are increasing and dominating vegetation types.



Cresote, mesquite, live oak and light grayish sagebrush type.

030.9 W end of Pecos River Bridge. <sup>Black Vulture</sup> water greenish, stains of manganese <sup>or iron</sup> stain upper 1/3 of Cretaceous rocks (black) and progressively less stain to base. Some faces are entirely stained. Mockingbird at boat ramp. 035.2 back on main highway.

At Seminole headquarters noted black vulture (2) circling to W. This is the second positive evidence of black vulture and these in the Pecos - Seminole river area.

038.8 Seminole Canyon Bridge. 041.2 redtail, 045.2 redtail. 045.3 redtail. 050.7 from this vantage point scanned 380° for vultures <sup>or hawks</sup> but did not see any. Loggerhead shrike here. Left 1:54 P.M. 066.0 E end Amistad Bridge. Lake low.

Amistad Lake, Val Verde County, Texas

Dec. 22, 1983.

Left and continued E of 90. 083.7 boat-tailed grackle. 085.4 Laughlin Air Base exit to right. 086.4 boat-tailed grackle, 6 meadowlarks. 087.9 sparrow hawk. Increase in live oak and especially mesquite. 091.4 middle Sycamore River bridge. 093.9 redtail. 095.7 sparrow hawk. 101.3 striped skunk road kill. 114.7 redtail. 120.5 first armadillo road kill. 120.8 Aransas Cr., dry. 126.4 3 mourning dove, m. dove. Mesquite getting taller & taller. 133.5 mockingbird. 135.4 25 black vultures in one dead tree approx 20' high, 2 shrikes. 139.5 4 meadowlarks. 143.0 sparrow hawk. 143.1 Nueces River. 146.2 marsh hawk. 147.1 sparrow hawk, 5 meadowlarks and 7 red-wing blackbirds, cardinal. 149.5 Cooks Slough in Uvalde. 156.2 sparrow hawk, 2 mourning doves, 165.4 killdeer. 173.5 Sabine. at 6:00 P.M. 195.7 2 miles E of Hondo for camp, abandoned.

2 1/2 mi. E Hondo, Highway 90, Texas.

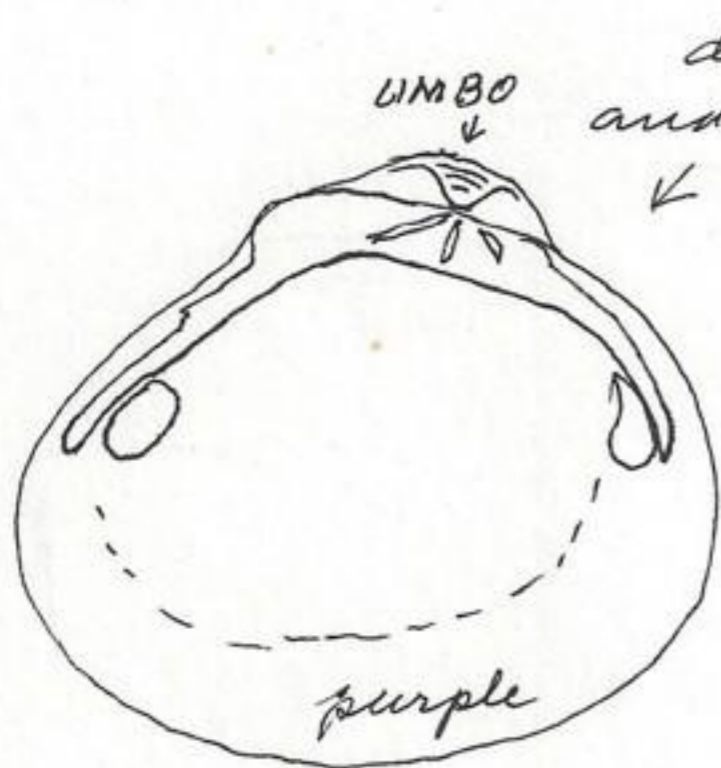
Dec 23, 1983

min temp 16°F. Redtail and 5 meadowlarks here. Left 7:51 A.M. 3-2-5 meadowlarks. 3 meadowlarks. 203.0 Sunday. 3 meadowlarks.

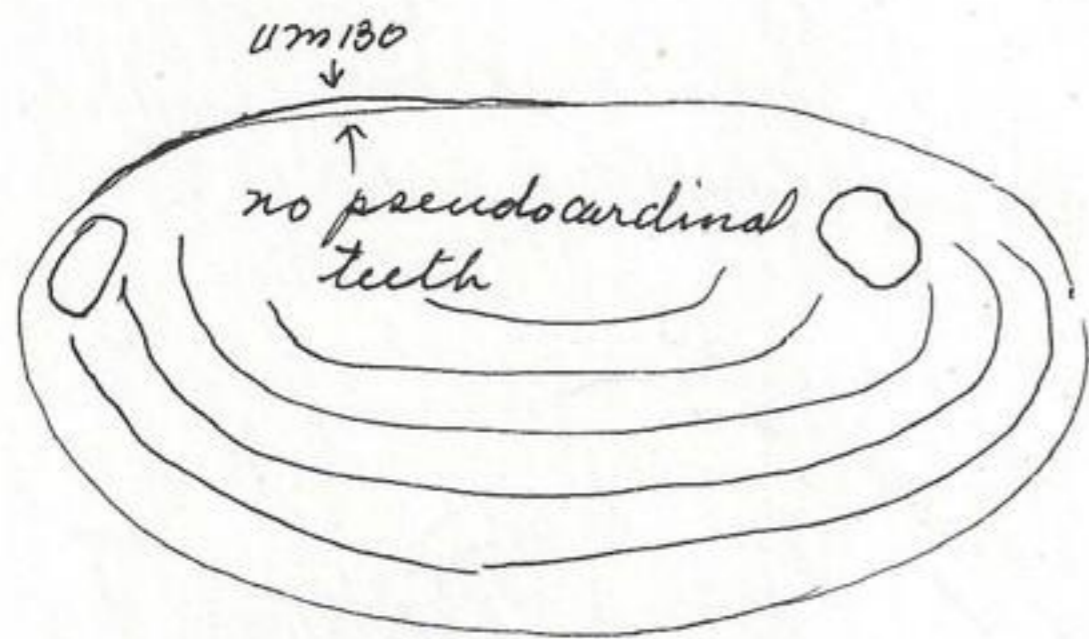
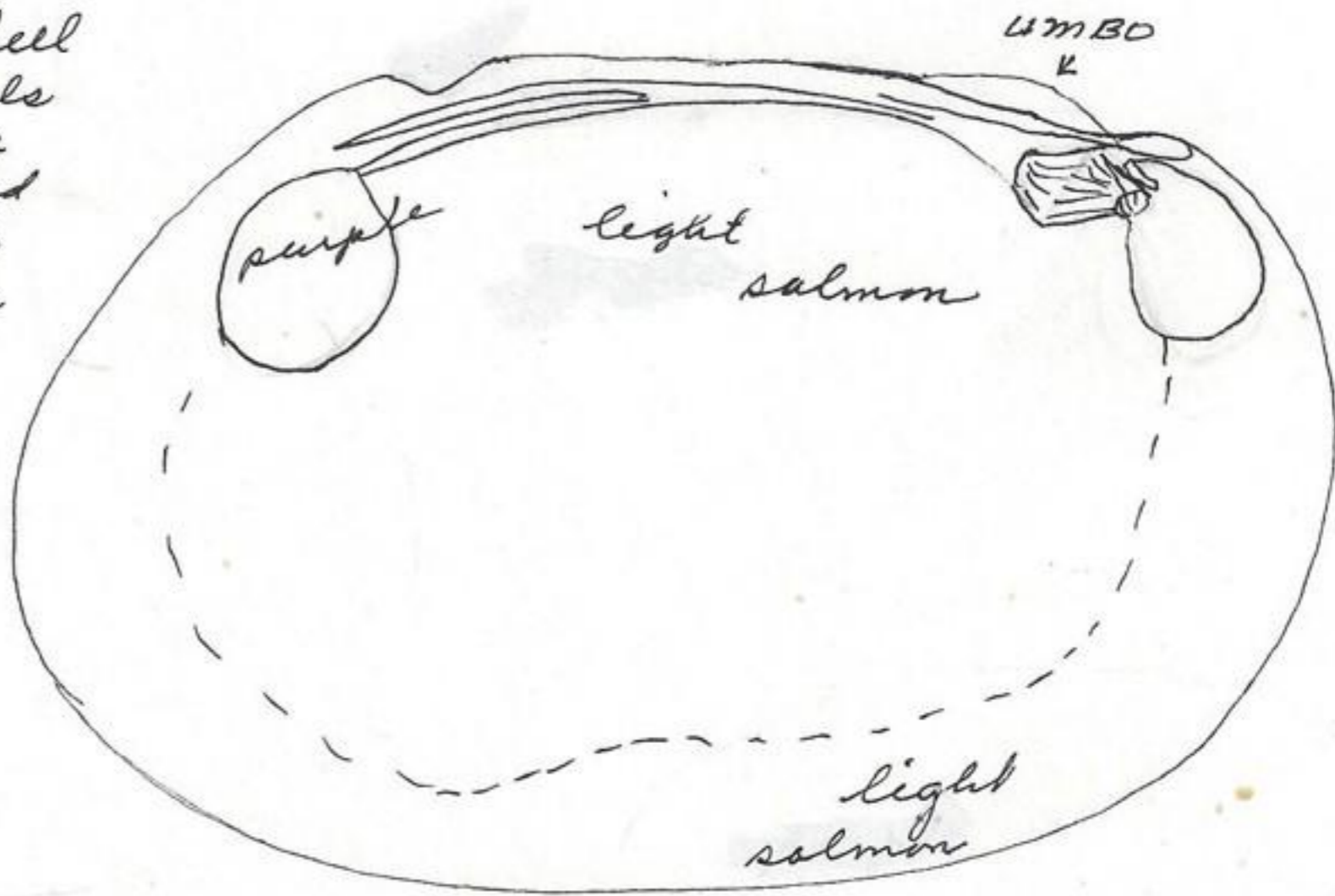
Medina Lake Preserve, Thousand Trails, Texas

Dec 24, 1983

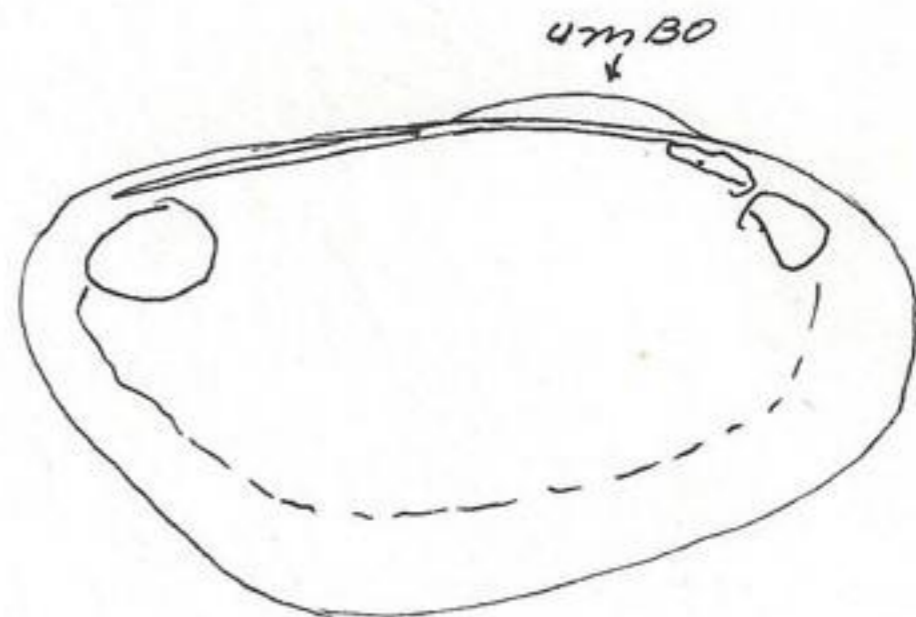
min. temp last night 15° F. Wind last night to this AM. 25-35 MPA. <sup>from NE</sup>  
 or -25° F wind chill. Steam on lake to about 11:00 A.M., collecting  
 in S end where thick and streamers up to 30'-40'. white-caps on  
 lake all morning. Have observed: 1 red-breasted merganser,  
 6 ring-billed gulls, 5 double-crested cormorant, 3 eared grebes  
 and 1 sparrow hawk by 12:00. Collected the found dominant species  
 of bivalves.



dominant shell  
 and at all levels  
 ↓ (largest one  
 found and  
 this size to  
 smallest size  
 1/4")



ANODONTA.





This evening drove to a mall n of San Antonio. 3 mockingbird and one sparrow hawk were the only birds observed enroute. (from camp to 37 to 16 to 410 for approx. 1 mile (35.6 miles one way)).

Medina Lake Preserve, Thousand Trails, Bandera Co., Texas.

Dec. 25, 1983

min temp 12°F. 10:45 AM 20°F, slight wind, sky clear, <sup>at camp,</sup> 23 double-crested cormorant flew n., 8 ring-billed gulls, 3 eared grebes, 1 marsh hawk. 5 lesser scaup, 4 am. coot. At 3:00 P.M. a golden eagle circled S down lake at about 500' high. 12 white-tailed deer at camp, and 1 armodillo.

Dec. 26, 1983

min temp approx 16°F last night. (17 this A.M.). Cloudy this morning. On two hour trip to E bay thence W thru junipers. Observed 3 killdeer, 1 spotted sw. sparrow, 1 mockingbird, 5 deer, 1 coyote. Hind foot of raccoon measured 91 mm, track through old mud channels of bay. Largest deer track (W. tailed) 82, smallest 41 mm. Dog tracks frequently follow deer tracks across mud exposure, I would say tracks are numerous and most of them cross at this point.



Along S side preserve tracks, trails lead N-S. At deer crossing area would indicate that the herd on preserve shares areas to S of here and to that extent that area (to S) should be protected. Oregon junco, scrub jay in camp.

This P.M. at 2:00 drove to San Antonio. Left 329.9 thru juniper forest, one scrub jay & one blacktailed jack-rabbit. 338.1 20 goldfinch. 343.3 highway 16 356.8 approx position of fault between Cretaceous & Tertiary. Sparrow 370.4 Sears in San Antonio at 4:00 P.M. 372.0 Tower of Americas. Returned to camp <sup>via longer route</sup> 417.4 after dark.

Summation of mileages.

Camp to highway 16 = 13.4

Camp to Tower of Americas = 42.1 Travel time 2 hrs.†

Dec 27, 1983

at 8:00 A.M. 58 cormorant flew n in small groups. min temp. 26°F  
8:00 AM 28°F. 1 Brown towhee, black-crested titmouse.

Dec 28, 1983

73 cormorants flew n at 7:30 A.M. This morning they all flew just above water (1'). Wind started at about this time with white caps.

Temp. 8:00 A.M. 35°F and going down to below freezing tonight. Left camp and drove to Towers of Americas, had lunch on Paseo del Rio. Small fish 3" to 7" dead, hundreds of 1 to 1 1/2 inches at entrance of street water into river, packed as closely as physically possible. This fish kill is probably result of freezing weather. Enroute to San Antonio observed 1 sparrow hawk and 4 meadowlarks. Left San Antonio and drove 37 5 to Pleasanton where we camped just W of town, at mileage 500.0 at sundown, a few minutes before 6:00 P.M. Birds observed between San Antonio & Pleasanton were: 2 sparrow hawks, 32 (one flock) common grackles, 4 boat tail grackles, 23 meadowlarks, 6 mourning doves.

Pleasanton, Atascosa Co., Texas  
 Dec. 29, 1983

min. temp. 18°F. Sky clear. Windy from N. on 281 highway  
 501.1 left at 10:15 AM  
 502.6 Harlan hawk, sparrow hawk, Harris hawk, shrike. 506.1  
 black vulture. 506.4 redtail and sparrow hawk. 506.9 now  
 on 37, ferruginous hawk, 508.3 2 redtail 513.4 redtail, shrike.  
 516.2 sparrow hawk 517.9 redtail (junction 93) alternate 281  
 Lakes and ponds without ducks or other waterfowl. Bovertail  
 cactus common. Large mesquite and wherever there are live oak  
 they are large, 522.1 meadowlark. 522.3 Liton Cr. 527.2  
 redtail. 543.2 meadowlark. 545.7 sparrow hawk, 2 meadow-  
 larks. 546.6 sp. hawk. 548.9 10 meadowlarks, sp. hawk, 2  
 meadowlarks, 2 meadowlarks. 550.0 2 meadowlarks, 550.7  
 2 turkey vultures, one sp. hawk. 551.5 redtail. 554.8 sp. hawk  
 meadowlark. 557.4 2 meadowlarks. 558.0 redtail. 559.6  
 turkey vulture. 551.5 2 meadowlarks. 555.2 2 robins. 566.8  
 2 m. doves, meadowlark. 569.2 turkey vulture, meadowlark.  
 572.1 San Patricio Co. line, meadowlark. Off 37 at exit 36 at  
 575.8 577.3 now back on 37, redtail, 2 meadowlarks. 580.1  
 marsh hawk. 581.6 sp. hawk, meadowlark. 583.3 2 redtail,  
 sp. hawk. 585.7 2 redtails. 586.5 redtail. 590.0 sp. hawk,  
 meadowlark. 592.4 sp. hawk. 596.7 Nueces river, 2 redtail,  
 meadowlark. 613.8 sp. hawk. 623.8 first water bridge, 3  
 boat-tailed grackles thru town. Waldron Rd + Padre Island  
 St. in Corpus Christi. 625.9 first causeway. across here approx.  
 3000 ducks, 2 long-billed curlew, shorebirds, great blue heron.  
 629.6 to of bridge over intra-coastal waterway. 632.6 now to  
 E to Mustang State Park. 636.0 2 marsh hawks 638.0 State Park, onto 36  
 at 3:42 P.M.

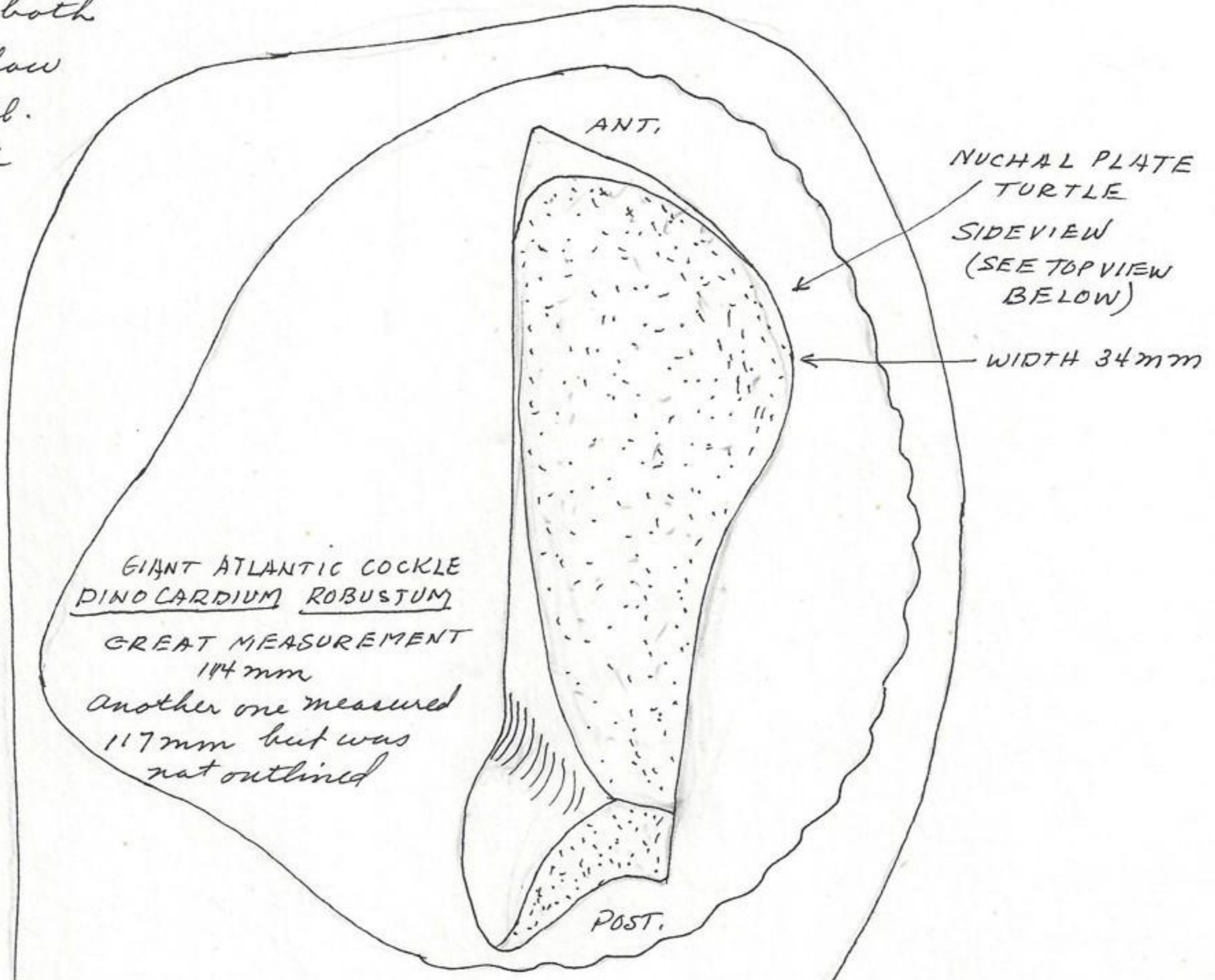
San Patricio Co.

Mustang Island State Park, Texas

Dec. 30, 1983

min. temp 18°F.  
at beach, both  
species show  
winter kill.  
Recorded out-  
lines.

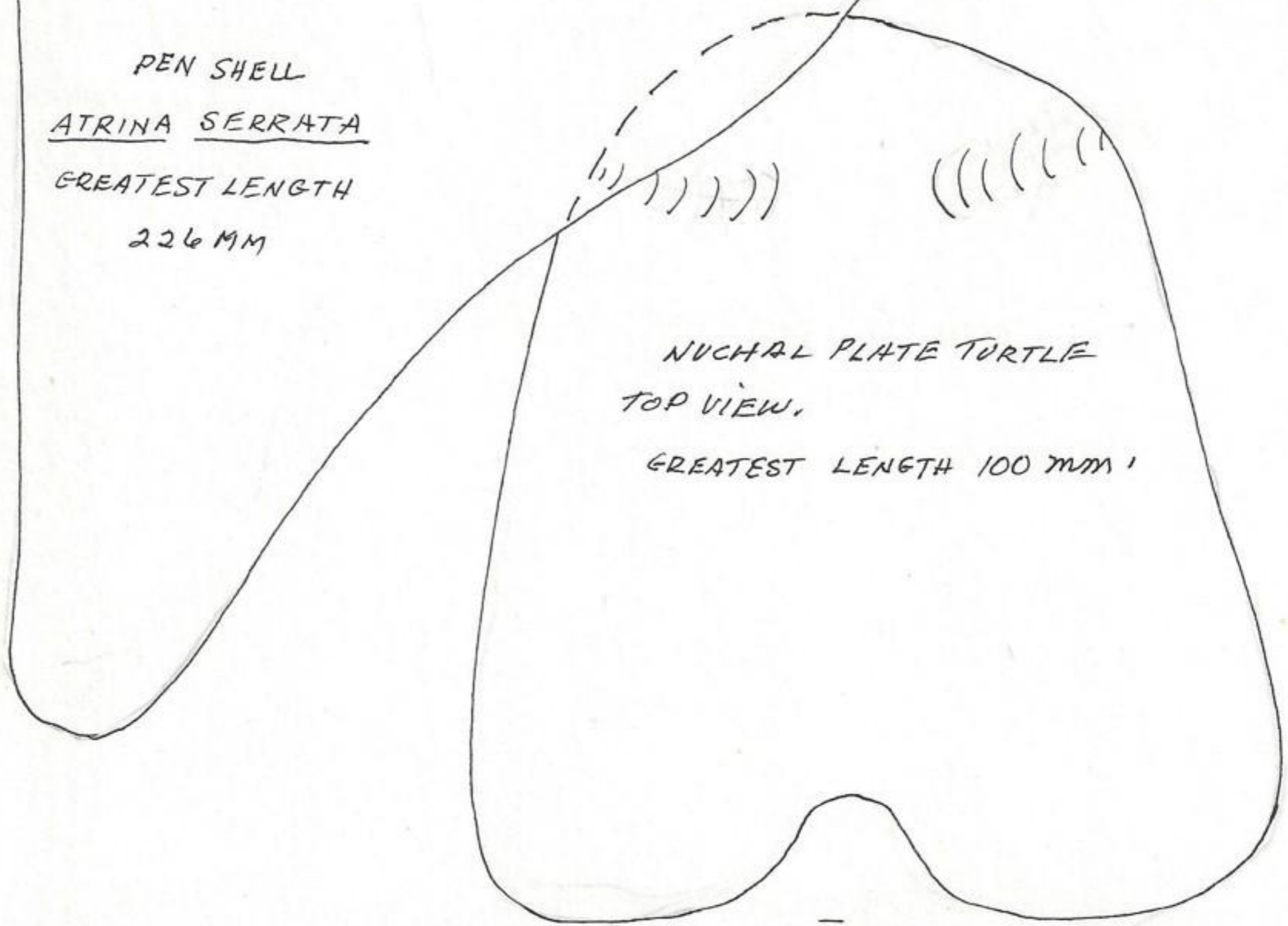
Collected the largest pen and Atlantic Cuckle shells



GIANT ATLANTIC COCKLE  
DINOCARDIUM ROBUSTUM  
 GREAT MEASUREMENT  
 114 mm  
 Another one measured  
 117 mm but was  
 not outlined

PEN SHELL  
ATRINA SERRATA  
 GREATEST LENGTH  
 226 MM

NUCHAL PLATE TURTLE  
 TOP VIEW,  
 GREATEST LENGTH 100 MM!



a marine turtle was found where sands had blown away and left an early surface exposed. Collected neural bone and some other bones from the disarticulated skeleton fragments.

Birds at channel at NE end of State Park: 8 sandwing, 1 black skimmer, 6 greater yellowlegs, 4 dunlin, 1 reddish egret, 1 little blue heron, 1 green heron, 1 Louisiana heron, 3 snow egret, 1 dead black-bellied plover, 1 least sandpiper, 1 royal tern.

noted oysters to 2" on granite breakwaters.

Collected largest Atlantic cockle 117 mm greatest diameter. One 115 traced. Largest pen shell 226 mm.

There were no birds on beach from camp NE to channel. 150 cormorants flew by over water.

while checking birds this A.M. made the following photos:

831230-1 ice on facet at camp.

831230-2 ibid.

831230-3 plastic trash SW bank of channel NW of highway bridge which is NE of camp. Most plastic bags of garbage dumped by people driving over bridge. Current carried NW instead of out to gulf.

831230-4 representative fish species from late low temp kill in shallow bays, including 2 species sea trout, box fish, sheep head, perchlike fish, etc.

831230-5 pen shell SE end breakwater channel. Recorded outline of largest.

831230-6 miscellaneous low temp fish kill at water edge SE end breakwater canal. These are different from those NW of bridge. They are:

831230-7 group placed starfish temp killed in same area as above

831230-8 large fish 3' long on main beach just SW of breakwaters.

831230-9 grasses on sand on dune.

831230-10 ibid.

Oil on beach, largest 10" and 1-4" thick and at least every 3'. This oil also on rocks of breakwater and on shells and inland from beach. Mainly from tankers cleaning tanks.

Left camp and drove to Corpus Christi. Enroute observed 2 marshhawks. One group in pond of 8 redheads, 10 baldpates & 6 coot. Crossing causeway counted 15 great blue herons, 10 on W side & 5 on east side. Also 2 reddish egrets, 8 gulls, approx 4000 ducks and many shore birds. After visiting Corpus Christi. Drove to Padre Island National Seashore.

Padre Island National Seashore, Texas

Dec 31, 1983

Camped last night at 103 site N of headquarters area.

min. temp 30°F.

Between 6:30 A.M. & 7:00 no birds in air, water or beach; a (moon lost earth reflected light at 7:00 A.M.) 7:15 first ring-billed gull flew by. Sun up 7:25 A.M. First sanderling and water pipit. 7:35 first willet. 7:38 second sanderling, 7:40 black-bellied plover, second gull and ruddy turnstone. By 8:00 these birds left and a willet was the only bird on beach. At 9:00 A.M. counted birds on beach from our position in camp to barrier at beach house to S: 2 ring-billed gulls, 1 ruddy turnstone, 12 sanderling, 2 willet, 1 black-bellied plover.

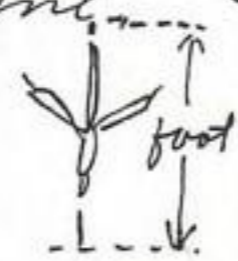
at one point a willet fed on a 3" dead (fresh) fish on beach. A sanderling and ruddy turnstone attempted to also feed on some fish but unsuccessful. The sanderling would take chances at grabbing at the fish while the willet fed upon the fish. The willet is a scavenger of large prey.

One coyote washed 40 miles on beach sands. Its tracks were (front foot) 62 length, 40 wide.

Dead royal tern measured 450 mm total length.

Checked sand dunes N of camp (approx 1/10 mi. N of N end campgrounds road). Took 3 photos of a sand dune that I had photographed on April 24, 1983. To show change of sand & grass. 831231-1 "Alpine Peak", same setting as 830424-27. much more <sup>less sand</sup> grass and 831231-2 ibid but different lens. 831231-3 "Alpine Peak" same as 830424-28 831231-4 "Alpine Peak" same as 830424-29.

There is evidence of considerable more grass and less sand accumulation. <sup>most of dune</sup> Sopher's activity now covered with grass.

Six sandhill cranes had used this prominent peak for curiosity or vantage point. There imprints (perfect in sand) measured 1 at 103 mm  , one at 101 mm and 4 at 99 mm. <sup>N-E and S</sup>

These birds walked at bases of steep part of peak and some on slope below but definitely at base of peak. 3 of them "climbed" the peak by assistance of their wings which showed primary feather marks on the sandy walls. Their feet would slide down wall and create low strial on the steep slopes. None of the birds gained the top. There was definitely a preference of these high sandy slopes for their activity.

These sandhills could have been the 6 birds observed 20' earlier approx. 2/10 mi. n E of "peak". At this time one bird stood on a knoll overlooking marsh and general area. The 6 left when the guarding bird lowered its head & neck 45°. They all then left and flew n 1/2 mi at 20' high, calling the entire way in their raucous call.

Other birds and mammals observed in sandunes were; kangaroo tracks in all situations mainly from 1 hole to another hole in the sand. <sup>4 horned lark</sup> Cottontail tracks common. Black tailed jack rabbit tracks, 2 meadowlarks, 2 savanna sparrow, 28 redwing blackbirds, 2 marsh hawks, 1 Harlan hawk. Water pipit or maybe horned lark tracks measured.

— — — — — (anterior). Kangaroo tracks 18 mm length.  
 ↓ ↓ ↓ ↓ ↓  
 ↓ ↓ ↓ ↓ ↓

National Park personnel reports: 12 gas & only 1 oil rig in gulf off shore. 38 peregrine falcons pass thru this area and divide, one to alaska, one to Greenland. They are marked & radioed here. Good fish populations of many species here. Only marine nesting populations of white pelicans in N. Am. All cattle out of National Park. Where there is no traffic on beach there are no dunes. Gulf true eddies to E of New Orleans and sands from Guadalupe are deposited on W side Florida. Currents go n E in area here at Padre Islands.

Left and will drive to Gosse Island. at 708.9, 709.3 now on main highway. 150 ducks in pond to n. 60% baldpate, 40% redheads, 2 rest coast. 3 marsh hawk. At 12:01 P.M noted a sandhill crane on top of "Alpine Peak" to SE. It was standing on top of very peak they were attempting to climb this morning. It stretched its wing & then leg and remained there as long as was visible as we travelled n E on highway. This crane is certainly properly named. meadowlark calling. 2 eared grebe & 4 shoveller, 4 redwings, 711.8 now left to Bird Island Basin, 712.4 12 redwing, marsh hawk, 712.8 bend of road. 713.4 15 sandhill cranes left field on both side of road and flew 1/10 mi to SW and alighted. They called 713.3 edge of water of bay. 1 Common loon, 1 willet, 1 dunlin, 1 black-bellied plover, long-billed curlew, 4 double-crested cormorant, marsh hawk, 2 boat-tailed grackles, 2 willet, sandwing, dunlin, 18 willet, 1 mallard, meadowlark, vesper sparrow. 713.9 shrike, marsh hawk, 150 redwing, 2 coast, 714.4 7 sandhill cranes, 2 of which were young, 714.9

back to main road, meadowlark, 715.5 Harlan hawk.  
 717.0 end boundary Nat. Park, 718.2 2 sp hawks. 720.4  
 sp. hawk, 720.7 shrike, 721.2 sp. hawk, 2 ducks, 20  
 ducks. 722.1 shrike, 721.8 sp. hawk, shrike, 722.4  
 marsh hawk, 722.8 meadowlark, sp. hawk, 723.4 sp hawk.  
 723.7 shrike, sp. hawk. 724.6 sp. hawk, killdeer, 725.3  
 shrike. 725.7 Gulf Access Rd 3A, at lake on SW side;  
 350 ring-billed gulls, 90 coot, 20 pintails, 25 gadwall, 8  
 redheads, 10 baldpates. 726.9 now E on 53, 727.3  
 Parkway Channel, 12 eared grebe, 20 ducks, 2 g.b. heron and  
 30 shorebirds. 727.9 snowy egret, 10 shorebirds, reddish egret,  
 728.2 reddish egret - 729.9 2 Canada geese 730.9 20  
 ducks, 1 meadowlark, 731.9 Mustang Island State Park at  
 1:07 P.M. 732.5 2 greater yellowlegs, 733.5 marsh hawk.  
 Palm trees are getting browner and drier every day since  
 their original freeze. 737.0 2 gulls. 739.0 sp hawk.  
 740.6 3 snowy egrets. 741.3 sp. hawk. 741.7 sp. hawk,  
 marsh hawk. 742.9 3 boat-tailed grackles. 150 redwings.  
 744.0 8 boat-tailed grackles. 745.6. Ferry at Port Aransas.  
 746.6 now on E side bay at 2:29 P.M. 747.3 sp. hawk and red-  
 wing. 748.1 reddish egret, 748.2 reddish egret, 749.2  
 sp. hawk. 750.3 E end Redfish bay bridge. 22 cormorant,  
 1 reddish egret, 20 eared grebe, 12 spoonbills, 4 snowy  
 egret, gull, 752.2 top bridge. 18 cormorant, 150 gulls,  
 shorebirds. 753.0 Aransas Pass at 341-35 junction.  
 754.6 8 meadowlarks, 2 boat-tailed grackles 756.6 Kingfisher.  
 It is at Aransas Pass where live oak begin barrier growth &  
 extend E to at least to Aransas Refuge, 757.6 sp. hawk,  
 760.3 12 snowy egret, g.b. heron, sp. hawk, 8 common egret  
 20 snowy egret, sp. hawk, 2 boat-tailed grackles, 6 Cattle  
 egrets, Kingfisher, 10 meadowlarks 761.6 now on Business 35.  
 mockingbird, sp. hawk. 764.4 Rockport. Bay at Fulton.  
 500 ducks of which 90% redheads, 5% canvas backs, 4%  
 coot, 10% of 9 great blue herons, 4 killdeer, 8 dowitchers, 2  
 snowy egret, 15 pintails, 10 gadwall, 5 pied-billed grebes, 4 willets,  
 8 gulls, 2 boat-tailed grackles, 1 clapper rail, 2 common egret, 8 spoonbills.  
 This is a fraction of the millions observed here on other occasions.  
 One group of 80 gulls of which 60% laughing gulls, 40% ring-billed gulls,  
 Great blue heron at Copano Bay. No fishermen on pier, 778.8  
 Headquarters Goose Island State Park at 4:55 P.M. An arrival  
 at site 12 observed 20 ♂ & 3 ♀ pintails (50% ♂ following a single ♀.  
 1 marbled godwit, 12 willet, 3 redheads, 1 g.b. heron, killdeer, 2 ring-billed

2 gadwalls, 1 royal tern, 20 dunlins, 12 coot, 1 reddish egret,  
1 long-billed dowitcher, 4 cormorants. These were the birds  
in the immediate bay at 5:27 P.M.

