

JOURNAL 1979

JAMES W. BEE

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Lawrence, Douglas Co., Kansas

Jan 1, 1979

A combination of low temperatures, uptake of water as ice and an ice jam in river lowered flow of water at intake valves for Lawrence water (24 hrs). 12 inches of snow on ground from snow of 2 days ago.

Jan 2, 1979

Last night temperature -9°F and a record for Lawrence. Birds continued to feed at feeder in normal activity and numbers. ^{Jan. 2, 1979} First Brown-headed cowbird at feeder this winter. Observed at 11:00 A.M. It is completely compatible with the Eng. sparrow, both species almost touching each other when feeding. The Eng. sparrows feed from four to twenty seconds at the feeder and then fly to a bush eight feet away, returning to feeder approx. 3 to 4 seconds later. The cowbird leaves the feeder with the sparrows but remains in bush for a period of 3 or 4 feeding-flight cycles of the sparrows. Other birds at feeder on an average feeding period are: 35 Eng sparrows, 1 slate-colored junco, 4 tree sparrows, 1 cowbird. Other birds that frequently visit are bluejay 3, red-bellied woodpecker (1 every 3 days), starling 8, black-capped chickadees (1 every 4 days), Harris sparrow (8 earlier in season but not lately), goldfinches (2 or 3 every 6 days), cardinal (1 or 2 2 or 3 times a day). There seems to be a depreciation in numbers of juncos this year.

Jan 9, 1979

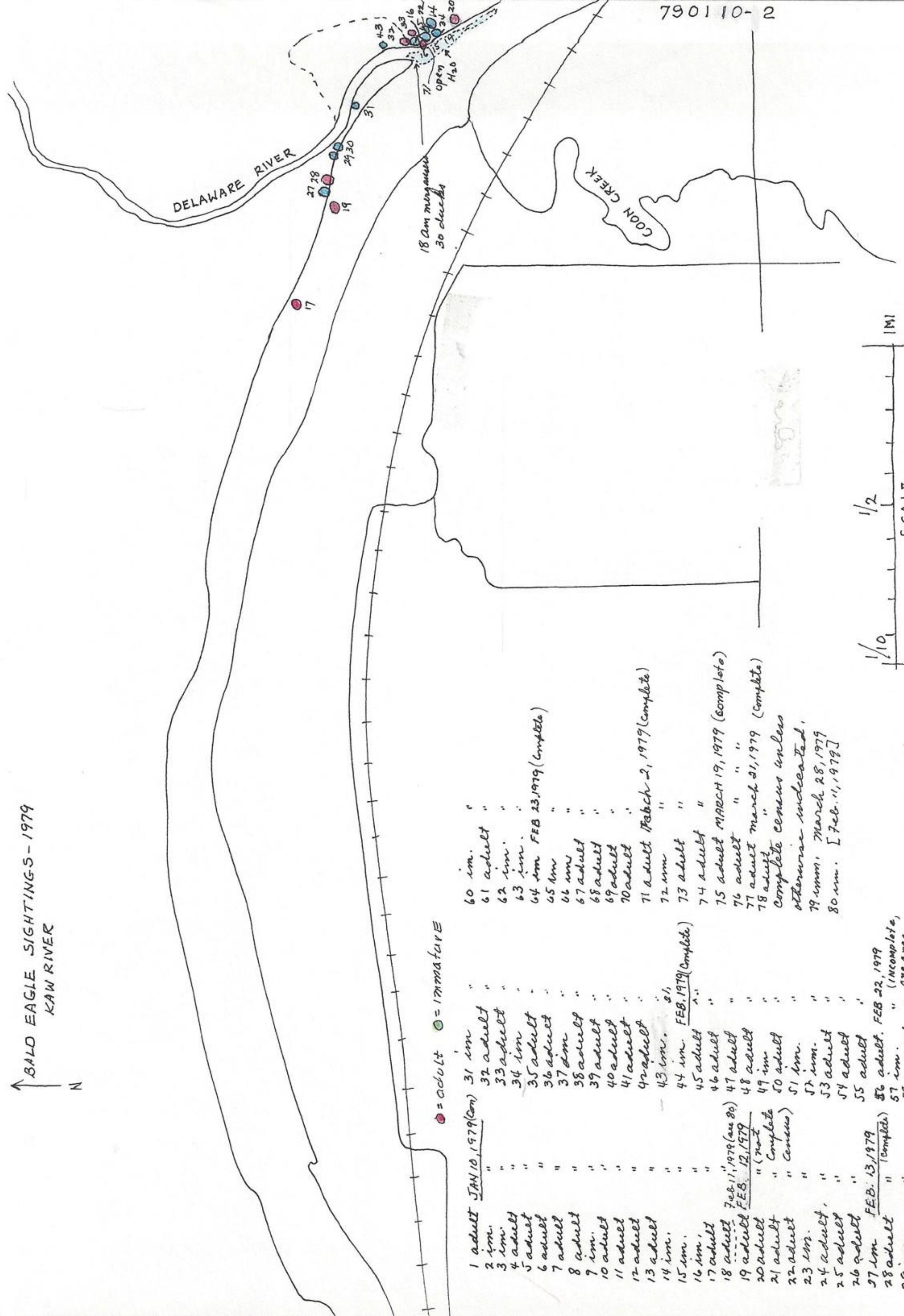
First meadowlark at feeder at 402 Yorkshire Dr.

Kaw River, Leecompton area, Douglas and Jefferson Counties, Kansas

Jan. 10, 1979

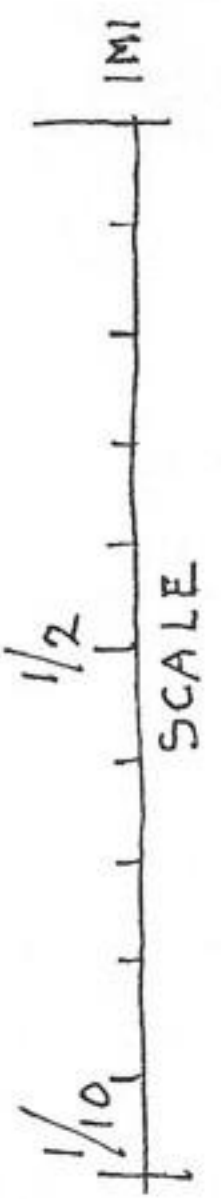
Made complete census of bald eagles along Kaw River (see map). Left home at 402 Yorkshire Dr., Lawrence at mileage 97967.6, temp. 12°F, sky completely overcast, slight wind, 11:30 A.M. Will keep list of meadowlarks observed along edge of roads where they are congregating for food. All fields covered with snow. Prediction is for snow this afternoon and evening. Route Peterson Rd W to Kasard, thence N to Farmers Turnpike thence W to Lake View turnoff, thence lower river road to Leecompton. at 69.6 10 meadowlarks all crouching low and at edge of road along contact with ice and snow. 69.9 15 mourning doves. 70.7 3 meadowlarks 70.9 bridge at Rouseway at Lakeview; Lake all in ice and covered with snow. 73.1 18 horned lark larks at edge of road along with 12 meadowlarks, the horned larks left but meadowlarks remained. 73.4 parked at dike-road contact and walked to river to N to check on eagles. The dike was almost cleared on upper W edge from wind, ordinarily the snow is fairly deep across the full breadth of the dike. At contact with riparian

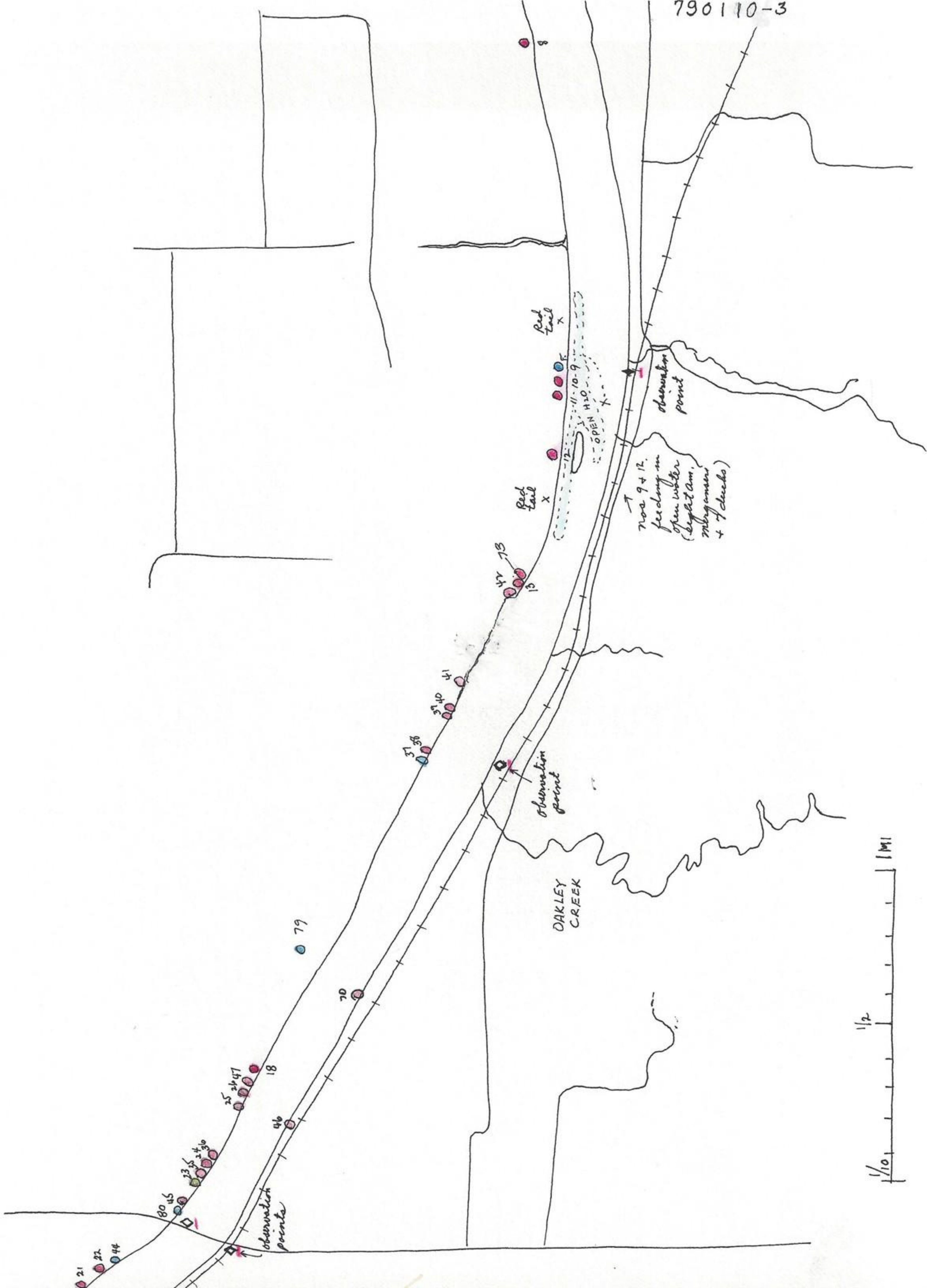
↑ BALD EAGLE SIGHTINGS - 1979
KAW RIVER
N



● = adult ● = immature

1 adult	JAN 10, 1979 (com)	31 im	60 im.
2 im.	"	32 adult	61 adult
3 im.	"	33 adult	62 im.
4 adult	"	34 im	63 im.
5 adult	"	35 adult	64 im FEB 23, 1979 (complete)
6 adult	"	36 adult	65 im
7 adult	"	37 im	66 im
8 adult	"	38 adult	67 adult
9 im.	"	39 adult	68 adult
10 adult	"	40 adult	69 adult
11 adult	"	41 adult	70 adult
12 adult	"	42 adult	71 adult March 2, 1979 (complete)
13 adult	"	43 im.	72 im
14 im.	"	44 im. FEB. 1979 (complete)	73 adult
15 im.	"	45 adult	74 adult
16 im.	"	46 adult	75 adult MARCH 19, 1979 (complete)
17 adult	"	47 adult	76 adult " " "
18 adult	Feb. 11, 1979 (see 80)	48 adult	77 adult March 31, 1979 (complete)
19 adult	FEB. 12, 1979	49 im	78 adult
20 adult	" (not complete)	50 adult	Complete census unless otherwise indicated.
21 adult	" (complete)	51 im.	79 im. March 28, 1979
22 adult	" (census)	52 im.	80 im. [Feb. 11, 1979]
23 im.	"	53 adult	
24 adult	"	54 adult	
25 adult	"	55 adult	
26 adult	"	56 adult. FEB 22, 1979	
27 im	FEB. 13, 1979	57 im. " (incomplete)	
28 adult	" (complete)	58 adult " (one area only)	
29 im	"	59 adult	
30 im	"		





OAKLEY CREEK

nos 9 + 12. feeding in open water (light am. mbranner + 7 ducks)

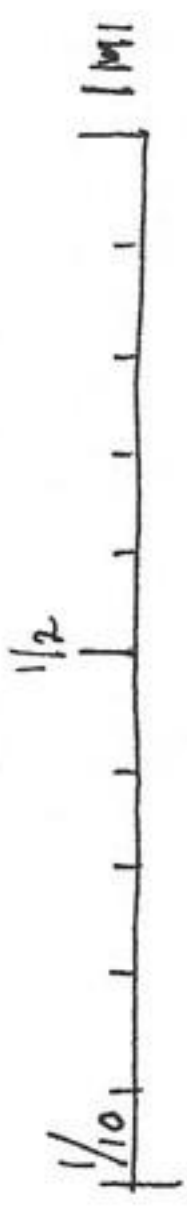
Red tail X

Red tail X

Observation point

Observation point

Observation points



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70

25

24

47

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18

80

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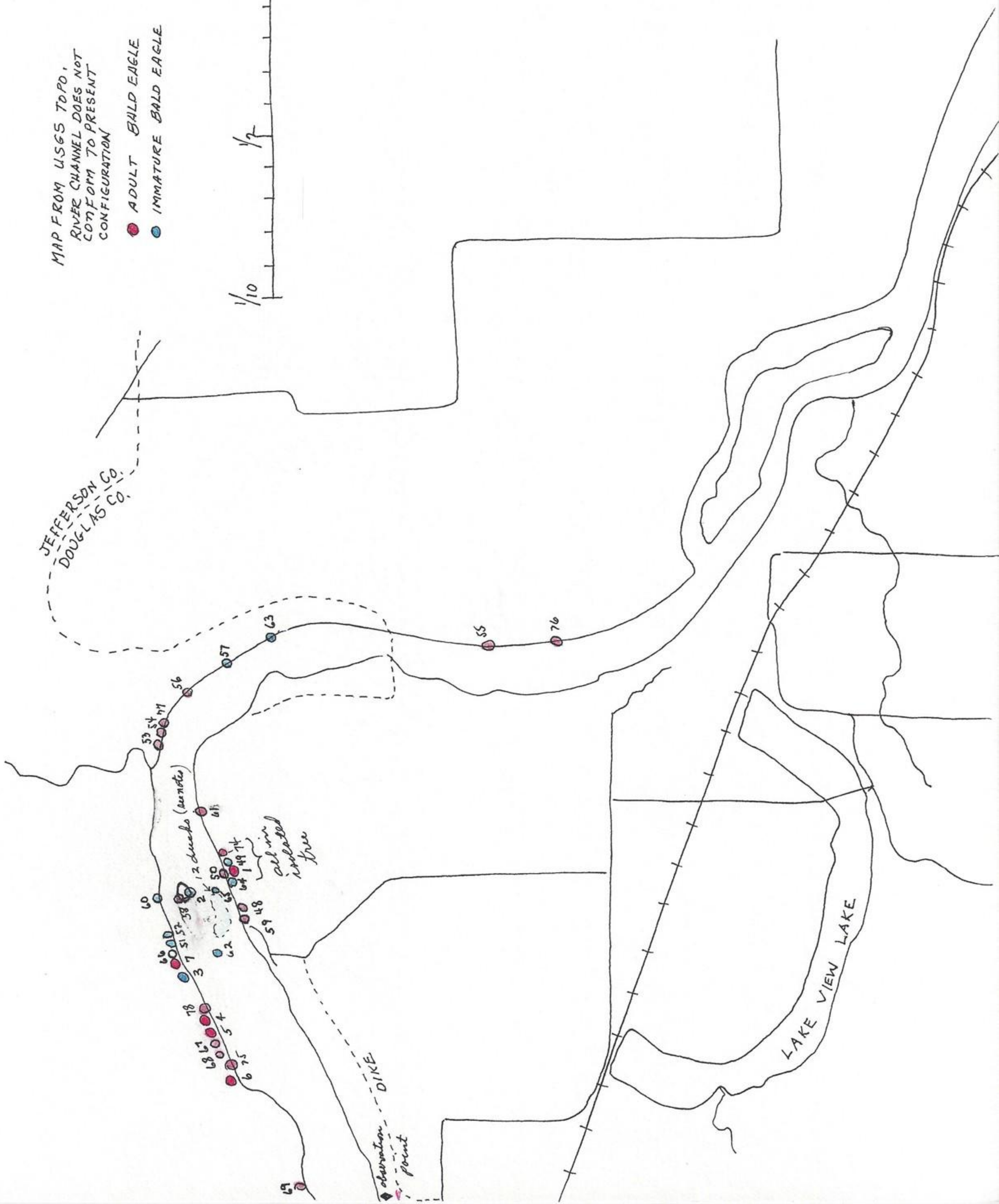
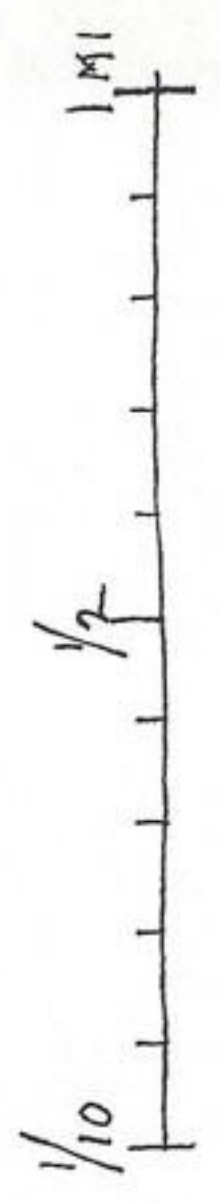
98


99

100

MAP FROM USGS TOPO,
RIVER CHANNEL DOES NOT
CONFORM TO PRESENT
CONFIGURATION

- ADULT BALD EAGLE
- IMMATURE BALD EAGLE



forests, fox squirrel tracks led out from trees to 100 feet onto open fields where food was being dug out by snow (soybeans). The tracks this year are entrenched because of the quality of the snow (non-adhesive) which permits the animal to sink into the snow rather than be supported by it. I noticed that I was not gathering snow on boots or pants because of its non-adhesive nature (of snow). I cannot recall that there were so many dog tracks in this area for this time of year but had noticed that the trailer to the west had 5 dogs which could account for the numerous trails & tracks. This residence and numerous dogs is a disturbing factor in the bald eagle area. From 2 vantage points, one directly N of curve of dike and one at road access to river (from residence to W) where one can see up river to distant bend observed 6 adult and 2 immature bald eagles. no. 1 on S side of river $\frac{4}{5}$ up height of large isolated cottonwood tree, no 2 an immature in small cottonwood tree $\frac{2}{3}$ of height. This bird on island of younger trees. no 3 and 7 20' apart $\frac{2}{3}$ up large cottonwood tree, no 4 and 5 $\frac{2}{3}$ up large cottonwood tree and no 6 $\frac{2}{3}$ up large cottonwood tree. no 8 in medium size tree $\frac{1}{2}$ way up tree. all trees bordering river. Some open water in ice supported 12 ducks, probably mallards. all other areas in ice covered with snow. Returned to car. 74.5 Continued to railroad creek and checked eagles from mouth of creek on W side. Although I could see these from first observation area (dike observation point) recorded their position from the railroad creek position (get name of this creek). number 9 was on ice and snow when I approached. It flew from X and flew to no. 9 position. no 12 fished (3 unsuccessful attempts and returned to no 9 position. The nos 11 and 10 remained in trees. I was only $\frac{3}{10}$ mile, ^{or less} from eagles but because of my approach to edge of river they did not leave. Ordinarily when one goes to the bank of the river, eagles will leave the area. All eagles in large cottonwood tree bordering the river. Two redtails of normal plumage were in trees as marked on map and the eagles & redtails must have some mutual relationships. Eagle no 9 had a noticeable white ^{natural feather} band or stripe on underside of wing . Open water in blue. There were eight American mergansers and 7 ducks (mallards) in open water, they left on my approach and to that extent are more weary than the eagles. Returned to car and continued W. at 76.0 left car and walked to Oakley Creek observation point. Sand pit shows increase development and truck road to mouth Oakley Creek. High ridge vantage point to S is best overall point for observing eagles as one can see both up & down river, however, the distances are great for high powered scopes because ^{and} of atmospheric interference would limit good visibility. Several smaller observation points nearer the river at centers of eagle concentrations would produce more satisfying results.

Bald eagle no. 13 near top of large cottonwood tree at edge of river. This bird could be seen from railroad creek observation point. The river bank immediately upstream from this group of trees on slight promontory is denuded of tree because of farming practice of removing trees to edge of bank and as a result the bank is receding more rapidly than the tree covered bank. This field on S side has always been used by juncos and tree sparrows that feed on seeds that are on stocks above the snow. Returned to car and continued W and finally to 78.2+ at ~~east~~^{south} end of Leecompton bridge. From here can see ⁽⁴⁻¹⁵⁻⁷⁶⁾ 3 immatures in large cottonwood trees on east bank of mouth of Delaware River. They occasionally left perches and flew over open water but returned to same tree. One of them had considerable white under wings. From bridge (new ~~to~~ N end) observed an adult no. 17 flying up stream from Delaware River. Although used 60x scope, the atmospheric conditions and dull lighting did not permit positive survey of this part of river which should be checked from mouth of Coon Creek. The time at Leecompton bridge is 1:30 or two hours utilized for checking eagles. If one were to check at mouth of Coon Creek there would be an extra hour or 3 hrs for complete survey of river for eagles. The open water (see map) starts at mouth of Delaware River and continues just less than 3/10 of a mile down stream on ^N side of river at bank. Most open water seems to be on N side of river in the bald eagle area. 18 eagles observed today, 12 adults, 6 immatures.

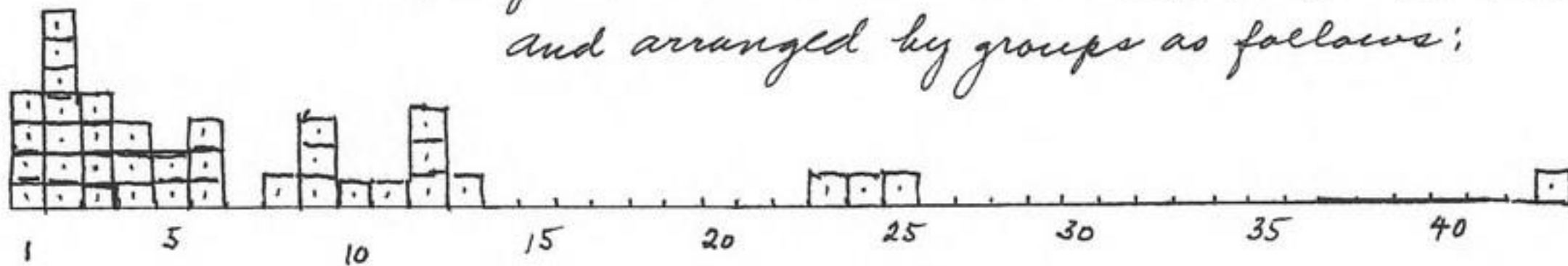
Perry Reservoir, Jefferson Co., Kansas

Jan 10, 1979

From Leecompton bridge (as of above) continued to Perry Reservoir to check on ducks & geese and bald eagles, as well as roadside meadowlarks. This is a critical time for meadowlark as fields are covered with snow and near starvation results for these birds. They are along the edge of road where ground is exposed and food is available. Car pass these birds at six feet and they remain. If they leave they immediately return to road. At N end of bridge one meadowlark. 79.4 23 meadowlarks one group. 79.6 12 meadowlarks, 80.5 6 meadowlarks at outskirts of Perry City. 81.1 6 meadowlarks, 81.2 Delaware River bridge, ice covered with snow on river below. 81.7 3 meadowlarks. 82.0 43 meadowlarks. 82.4 8 meadowlarks. 82.5 now N. 3 meadowlarks. 82.6 4 meadowlarks. 82.7 3 meadowlarks. 83.3 highway 24 11 meadowlarks at intersection. 83.4 2 meadowlarks. 83.7 9 meadowlarks. 84.5 2 meadowlark and Thompsonville. 85.4 now N up grade to Perry Reservoir area, redtail. 86.2 Overlook. Lake completely in ice either covered with snow or rippled effect with snow & ice like pattern of Crested waves in summer. Waves and snow-blown ripples move have same physical pattern and caused by same wind influence

no fracture systems in ice or former opening maintained by ducks, geese & mergansers, continued to outlet gates on top dam, 100 feet of open water beyond outlet on Delaware River. no ducks. Snow piled against railing 3 feet high.

89.2 SE corner of Reservoir area (crossroads). Will continue census of meadowlarks and raptors on return to Lawrence. All meadowlarks have been recorded so far and will continue to record. 2 meadowlarks, 89.7 12 meadowlarks, 89.8 2 meadowlarks. 90.1 6 meadowlarks. This is along new road and mileage will not be equivalent with old census when old road used. There are groups of juncos and tree sparrows but not as many as meadowlarks. 90.4 9 meadowlarks, 1 red-billed woodpecker with meadowlarks. 91.8 highway 24. 92.6 2 meadowlarks. 92.9 railroad tracks. 2 meadowlarks, ^{1 meadowlark} 93.5 24 meadowlarks. 94.6 South end Leecompton bridge. 95.5 ⁵ meadowlarks (now 5 on Leecompton road to Farmers Turnpike, thence E to Lawrence) 96.3 2 meadowlarks. 97.3 meadowlark. 97.9 now E, meadowlarks. 98.0 13 meadowlarks. 98.6 5 meadowlarks. 98.9 meadowlark. 01.8 meadowlark. 03.0 9 meadowlarks. 03.1 4 meadowlarks. 03.4 25 meadowlarks. 03.5 4 meadowlarks. 03.9 Kasold Rd. 04.9 Peterson Rd. 05.7 home at 2:00 P.M. Total of 290 meadowlarks in 38.1 mi or 7.6 meadowlarks per mile and arranged by groups as follows:



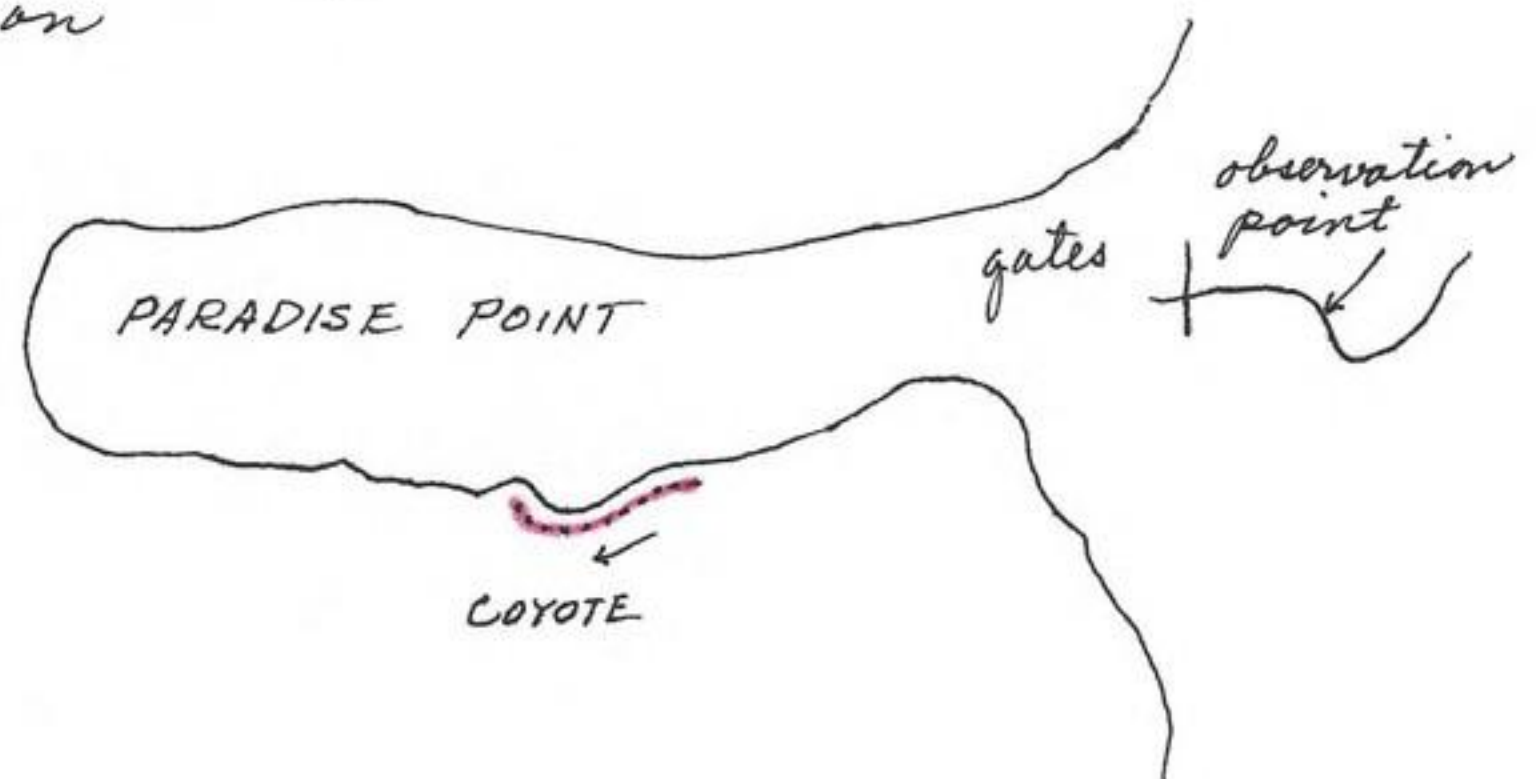
Perry Reservoir, Jefferson Co., Kansas
 Jan 11, 1979

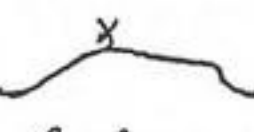

To check on winter population of ducks, geese, mergansers etc. and bald eagles. Left mileage 98020.0 at 9:30 A.M. Temp. 12°F, wind ENE, trace of fine snow in air. Will keep track all meadowlarks & noteworthy items between here and Perry Reservoir and all birds in reservoir area. areas to include Ferguson Rd to Paradise Point to Ozawie, thence S along W side of reservoir, across dam to SE corner area thence back to Lawrence via valley road N of river. 21.2 meadowlark, 22.0 2 meadowlarks. 22.1 10 meadowlarks, 2 meadowlarks, all crotched on bellies and refuse to fly when cars pass. 22.7 4 meadowlarks, 8 meadowlarks, 2 meadowlark, 1 meadowlark, 1 meadowlark, 23.0 40 ^{horned larks} and 18 horned larks, 24.2 3 meadowlarks, 2 meadowlark, snow covering field with coedo stalks above snow, high snow drifts along side of road. Road dry to shoulder then deep snow beyond. 15 horn larks at 25.8. 26.0 2 crows. 27.1 8 horned larks, 27.6 horned lark. 27.8 Leecompton road N.S. 28.7 4 meadowlarks, bluejay feeding on cottontail roadkill. 31.4 W end Leecompton bridge at 9:50 A.M. 31.7 3 crows feeding on meadowlark roadkill.

60 horned larks and 2 meadowlarks. 32.0 6 meadowlarks, meadowlark.
 32.1 4 meadowlarks, 32.4 2 meadowlarks, 2 meadowlarks 4 meadowlarks 6 meadowlarks,
 2 meadowlarks. 32.8 R.R. tracks 33.2 4 meadowlarks 33.4 now N at Perry
 34.0 highway 24. 34.7 red-bellied woodpecker feeding on side of road in same
 position as meadowlarks. 35.2 red-headed woodpecker ^{at edge of} ~~in~~ road with 2
 meadowlarks. 35.5 5 meadowlarks and one red-bellied woodpecker feeding
 with them. 36.1 5 meadowlarks & 40 horned larks. 36.4 9 meadowlarks.
 36.5 SE end Perry Reservoir area and will keep complete census. 36.7
 2 meadowlarks, road kill. 37.1 4 tree sparrows. 37.5 now on Ferguson
 Rd. 30 juncos & 40 tree sparrows. 37.6 7 juncos, wind blowing snow
 across road from SE. 38.1 2 red-headed woodpeckers. 38.7 middle
 bridge over Big Slough. yellow shafted flicker at bridge. Entire lake
 in ice and snow, some places drifted in wavelike pattern, other areas
 solid snow 39.1 6 bluejay and 20 juncos & 8 tree sparrows in road.
 39.6 7 juncos. 40.0 2 tree sparrows. 40.2 turnoff to Big Slough
 Park but continuing N. 42.7 5 tree sparrows. 43.5 3 crows. 44.4
 tree sparrow. 44.7 Little Slough Creek, 6 juncos. 45.2 2 meadowlarks,
 45.9 4 corners but continuing N. This is now a paved road and
 mileage of previous trips cannot be directly compared because of curve
 modification. This road as an old county dirt road always produced
 many small birds but since paved & right-of-way extended & cleared, there
 are unusually few birds present. The main difference is removal of
 fence lines (brushy) and clearing shoulders & right-of-way. 47.5 turnoff
 to Paradise Point. No birds along new highway! Since Lawrence there
 has been a freezing snow & rain that freezes on windshield. 48.7
 8 juncos. 48.8. from vantage point on road (sandy outcrop) just before
 gates of Paradise Point noted a coyote walking on
 snow covered lake as indicated on

map. It maintain a parallel
 position to shoreline out
 approximately 150 feet and
 maintained that position
 around promontory point
 until it disappear from view.
 It walked at a leisure rate.

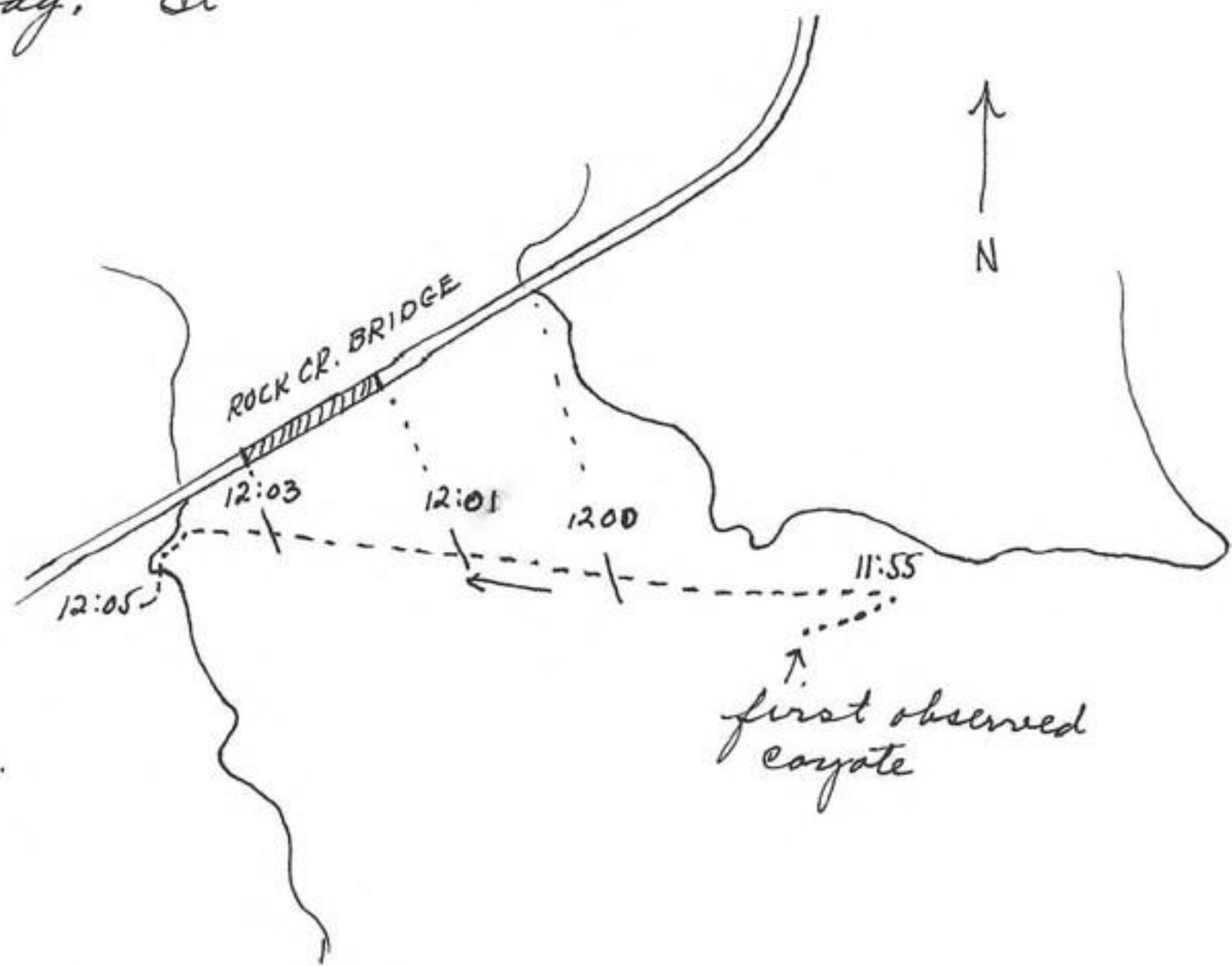
Continued W on peninsula to
 west end but was so preoccupied with snow drifts and getting stuck that
 I could not record specifically. at NW end 2 fox squirrels fed among
 trees and were very tame not having had contact with man this winter.
 13 bobwhite left road at about center of peninsula, no meadowlarks,
 15-20 tree sparrows & juncos, few coyote trails. I could not see



see evidence anywhere on lake where an open pond had been maintained by waterfowl. There were no ducks or geese flying in the area nor raptors. Hints for navigating snow and drift covered roads: stay on upper shoulder away from curves ; travel just off packed track ; if car spins off road clear all snow before trying to pull back on road; on hill move car up with ^{fast} momentum and ^{at base of hill} minimum wheel acceleration, wheel acceleration from motor will pull one off the road; don't try to buck a high drift. Returned to main road N-S at mileage 54.7, thence S. to 4 corners ^{56.7} (no census this stretch). From 4 corners W. will keep complete list of birds beyond this point. 4 juncos, 57.0 3 juncos. 57.6 3 juncos. 57.8 turnoff to Old Ozawie Park but continued on W, blue jay and seven juncos. 58.5 middle Ozawie bridge on causeway. No open water in any direction. 59.3 3 meadowlarks. 59.7 13 juncos, 2 meadowlarks. 60.8 now to S. 61.9 12 cardinals in one group flew across road (one group); 62.3 5 meadowlarks, 2 juncos. 64.0 2 horned larks. 64.3 road turns E for short distance and then new modified road (paved), in fact road now paved entire W side lake. 65.1 2 female pheasants, one in middle of road and the other along fence row 100' beyond. 65.7 2 juncos. 67.2 Rock Creek bridge. No open water except by some boats at marina. One lane across causeway because of snow drifts. 69.0 leaving 237 for lake road to dam. 70.0 cardinal and 3 tree sparrows. 70.3 gales to Rock Creek Recreational area, blue jay. 71.4 some ice piles along edge of lake, 8 tree sparrows. 71.6 12 juncos 71.8 from highest part of road overlook boat ramp & peninsula to S can see a coyote on ice and snow on N side of Rock Creek bay. It was sitting when first observed and looking toward Rock Creek bridge area. It moved to E & sat down again then moved W across lake to west bank. At which time it moved by running, galloping and fast trot, occasionally stopping for a few seconds but never sitting. Started W direction 11:55 A.M.

12:00 intercepting E end of causeway,
 12:01 intercepting E end bridge;
 12:03 " W end bridge;

12:05 entering forest on a fast run, faster than at any other time. From this observation point can see Gap Point to E but distant ridge faint because of snow in air. The lower one goes the more indistinct the distance becomes,



as one leaves the level of the lake and gains elevation on the hillside the more distinct the distances become so am wondering if this condition is due to an atmospheric factor near the ice & snow of the lake rather than to the fine snow now in the air. 72.4 6 bluejays in road, one junco. 72.8 passing road that goes E out to peninsula. 74.1 gates at W end of dam. at 12:22. 2 crows on ice below. 75.6 where causeway road contacts ridge, one crow. 76.5 SE end reservoir area, 12:30 P.M. end of complete census. Horn larks leave edge of road but immediately return after car passes by. 1 mi. N of highway 24 intersection 2 red-headed woodpeckers in road (edge). Continued thru Perry towards Leecompton and at mileage 81.0 left main road and travelled E on river valley road. I am impressed with the great distances between this road and habitations and the Kaw River which accounts for the undisturbed area now used by wintering population of bald eagles. I was also impressed with how few birds there are in the river valley, the lack of them probably due to complete harvest of bottomlands and the sterile plowed fields of this time of year. I would estimate that between 81.0 and junction of 24-40 highway N of Lawrence that there were 12 meadowlarks, 50 horned larks, 15 juncos, 10 tree sparrows, 1 sparrow hawk (near end road to east), 4 yellow shafted flickers (one group), few starling & Eng. sparrows, 1 group 20 mourning doves at cattle pens at one of the farms and that's about all.

402 Yorkshire dr., Lawrence, Douglas Co., Kansas

Jan 13, 1979

Snow and wind last night. This morning temp. 7°F and winds to ^{from N.} 35 RPM, ^{gusting to 50} which translates to a -35°F chill index, ^{or so.} Wind blowing snow horizontally. High drifts. At bird feeder the birds are not reacting to -35° chill indicating that feather insulation counteracts the wind chill. Birds crowd to center of ^{leafless} bush and low when gusts blow snow thru the feeding area. The birds also do not leave feeder as they do when there is commotion from the house as passing by the picture window. Starlings feed 3 time faster than Eng. sparrows, Harris sparrows or tree sparrows nor do they chew their food but take the food directly down the gullet. The seed eaters have same rate of feeding and adjust food in bill before swallowing the seeds. The tree sparrows come into feeder area faster than Eng. sparrows, alight faster and then move about with active fluttering of tail and wings. This am. they (tree sparrows) fed to the lee of the feeder. The ³ meadowlarks that have been at feeder the last four days (Jan 9) are not at feeder this morning at least by 11:00 A.M. and would indicate that blizzard snows may interfere with their activities or

orientation. The cowbird and starling are completely compatible on feeder. meadowlarks feed with bills partly open but not of the same action as starling. Two meadowlarks will approach each other one the aggressor and both will stand upright, the defender will open its bills in defensive attitude until aggressor pulls away. The meadowlarks remain at feeder when all other kinds of birds leave at sign of disturbance.

at feeder this A.M are 45 Eng. sparrows, 9 starling (periodically), 1 Harris sparrow (first one since earlier this season, see notes), 4 tree sparrows, 1 brown-headed cowbird, 2 blue jays (periodically), 1 slate-colored junco (periodically). Wind continued all day a developed drifts around houses and in roads. When a strong wind ^{35 RPM} with driven snow hit feeding area and bush the birds immediately moved to bushes on lee side of neighbors house. moderately speed winds 20-25 MPH kept birds wobbling and adjusting on branches of bush. Less than 20 the birds were able to remain on branches and rest. Eng sparrow with bill behind ~~at~~ angle of wing



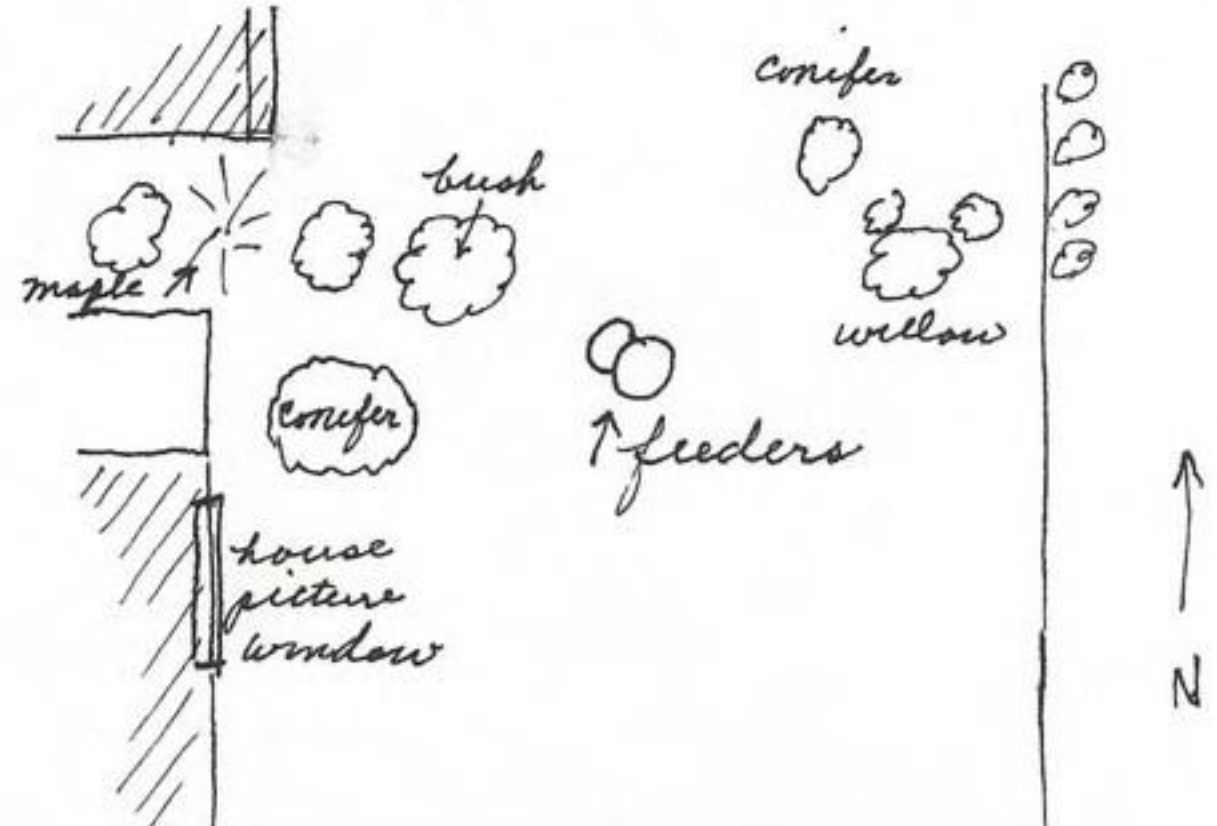
Cowbird same way. Tree sparrows, at least those I observed did not tuck bill back of wing but drew head down, bill horizontal, as close to the body as possible. Wings of junco and tree sparrow when resting with feathers fluffed are aligned with tips of primaries above tail whereas the Eng. sparrow drops tip of wing even or below the tail level.



at intervals all birds fly up into upper branches of larger trees for a minute or so and then return. The A.M birds had snow on heads & backs but now this snow or ice is gone and snow is only found on angle of wing, around eyes and back angle of mouth. Noted the Harris sparrow and tree sparrow to eat snow, pecking up from 8 to 15 mouth fulls generally in succession. The feeding and resting cycle seems to go on schedule regardless of the temporal condition of the wind and snow in the air. At approx 5:15 P.M most of the birds left except

6 tree sparrows and a late arrival - white-crowned sparrow. They fed until 5:30 and then collected in a small pod in the adjacent bush for 2 minutes after which the tree sparrows left to N in one group and the white-crowned sparrow returned to feeder for 1 minute, then back to bush and then left to N in same direction as the tree sparrows. There were no other birds in area after that time as

lights were fading. This afternoon a male brown-headed cowbird arrived and remained all afternoon. (over the other species) It did not favor the ♀ cowbird that has been here since Jan 8. Before the last snow the bush was completely covered with fecal droppings.



402 Yorkshire Dr., Lawrence, Douglas Co., Kansas

Jan. 14, 1979

Activity at feeder: 7:15 A.M. 4 tree sparrows, 1 bluejay, 7:30 full complement of birds including 70 Eng. sparrows, 5 tree sparrows, 1 ♀ cowbird, 1 ♀ redwing blackbird (first this winter), 2 bluejays, 1 white-crowned sparrow (came in late yesterday), 3 starling, sun up 7:50, sun on house 7:55 but not on bush (top of bush at 8:20 A.M.). Temp this morning at 7:00 = -8°F, ^{slight wind from N.} no wind, clear skies. The birds this morning are fluffed and occasionally bill under wing (overtop) except when feeding and then on their bellies. Yesterday with temp 7°F and snow blown winds to 5 P.M. with a wind index more than -35°F, the birds were very active and less fluffing of feathers than birds this morning, so intrinsic temp. is more controlling than wind chill temperatures. This morning the birds are noticeably awkward in the bush with poor balance and inability to grasp limbs. Birds are in top of bush in sun. 8:30 first sun on feeder. An adult ♀ Eng. sparrow approached a ♀ cowbird and grabbed and held on to the ^{end of the} tail of the cowbird and pulled it from its perch. They both dropped a foot and a half with the sparrow maintaining its hold on the tail. As the cowbird grabbed another limb the sparrow relinquished its hold. Measured a non feeding period 8:45-9:00, a feeding period from 9:00 to 9:20 and beginning of another feeding cycle at 9:35. Before the feeding cycle 6 Eng. sparrows left bush and flew 100 feet to top branches of a 30' high tree and after 5 seconds all flew upward and eastward out of sight. This same thing happens regularly, the last group ^{of 6} left from different parts of the bush and flew to the top of the same tree before leaving to the east. As they leave the tree they forcefully gain altitude and all keeping within a dispersed area of 100 feet width in contrast to departure as a compact group. This is in contradiction to protective behaviorism of travelling in compact group for security. Last Eng. sparrow left feeder 5:15. Last tree sparrow at 5:25 P.M. No meadowlarks today.

Lake View, Douglas Co., Kansas

Jan 14, 1979

Drove out into river valley beyond Lake View to check meadowlarks. None observed entire route where the day before yesterday before the storm they were unusually abundant on shoulder of roads. Noted a male mallard in middle of road. It flew 200' just above the snow and alighted on snow bank with outstretched wing and completely exhausted. Snow fields (all slopes) ~~deep~~ deeply sculptured by wind, looks like badland. I have never seen such sculpturing in the area before.

402 Yorkshire Dr., Lawrence, Douglas Co., Kansas

Jan. 15, 1979

Birds arrived at feeder as usual, the tree sparrows 15 min. before the ^{Eng.} sparrows

This A.M. 4 ♀ and 1 ♂ redwing blackbirds feed for 1 1/2 hrs at feeder. One meadowlark returned, no white crown sparrow, Cowbirds still in area. Cloudy this morning but clear this afternoon. Temp. at 1:00 P.M. = ^{wind from S.} 24°F. Observed one male Eng. sparrow chase all other Eng. sparrows from feeder and maintained dominance for at least 3 minutes. The greatest aerial flight display was with a female. It did not challenge starlings. Harris sparrow periodically at feeder. many Eng sparrows & starling dusted in friable soils exposed by wind. Even when temperature were - 9 Eng sparrows dusted.

Clinton Reservoir, Douglas Co., Kansas

Jan. 16, 1979

at 8:30 A.M. observed a sparrow hawk capture a tree sparrow. While driving S on Lone Star road 3/10 mi. N of turnoff road to S end dam a sparrow hawk was noted flying parallel to car some 80' off road. It continued S at same speed as car (30 R.P.M.) at about 5 feet above the ground and after 2/10 miles dropped into a drive way and captured one of 5 tree sparrows. It adjusted its prey in claws and then flew back in same direction as it came. Continued to S end dam but drifts were so high near top of hill that snow plows were unable to clear. Lake frozen and covered with snow.

402 Yorkshire Dr. Lawrence, Douglas Co., Kansas

Jan 17, 1979

This morning correlated arrival time of birds to feeder with time and light intensity (weston exposure meter). ^(sky readings) at 6:50 daybreak, 3/4 moon, Temp 12°F, no wind, snow covered all ground. Light .2. 7:00 light .4. 7:07 first bird (tree sparrow), light .6. 7:08 second tree sparrow. 7:10 light .6, first tree sparrow left. 7:13 slate-colored junco. 7:13:30 tree sparrow at light .8. 7:14 tree sparrow. 7:15 tree sparrow, Harris sparrow. 7:16 meadowlark, light 1.0. 7:20 light 1.6. 7:21 first Eng. sparrow. 7:23 light 1.6 - 3.2 (between), 4 more Eng sparrow. These sparrows stretched and preen feathers as if just out of roosting areas. 7:25 cardinal ♂ at light 3.2. Birds at the feeder now are: 8 Eng sparrows, Cardinal, meadowlark, 6 tree sparrows, 2 juncos, Harris sparrow. 7:30 clouds pink tinted to east, light 6.5, 2/3 of ^{usual} full complement at feeder. Eng. sparrows arrive as singles, twos or threes and from different directions. Birds feeding on ground rather than on top of feeder. 7:35 light 13. 30 Eng sparrows now at feeder, some adjustment in numbers. meadowlark prefers milo. 7:40 light 25. 2 starling & bluejay arrive separately, when birds temporarily leave feeder all go except meadowlark.

7:45 light 37. 7:50 light 50, approx. sun-up. At this time and shortly after there is the usual complement of birds that use the feeder during the day. Later in the morning a yellow-shafted flicker came to feeder. Of all the kinds of birds the flicker disperses seed the greatest distance with side movement of the bill. At one time the meadowlark fed from top of feeder (^{edge} concrete harrow disk on pedestal) for first time and it kept all starling away but allowed the Eng. sparrows to feed with it, sometimes as many as 8-10 crowded around it.

Lakeview Road, Lawrence, Douglas Co., Kansas
Jan 17, 1979

at 9:00 A.M. made trip from Kasold Rd W to LeCompton Rd on Lakeview Road (Farmer's Turnpike) to check on meadowlarks & horned larks. all fields in snow, road clear to shoulder. Between Kasold Road and top of hill thru road cut to W (1.6 miles) counted the meadowlarks in groups of 1, 3, 13, 18; horned larks 2, 25, mourning doves 16 in one group. Between the hilltop to LeCompton Rd (4.5 miles) observed group of meadowlarks as 1, 13, 2, 1; horned larks 22, 25, 20, 2, 30, 10, 3, 6. One group of 2 starling and one red-headed woodpecker ^{at edge of} on road (shoulder). The total number of 42 today compares to 51 on same route on Jan 10, 1979. The interesting thing is that they disappeared from the roadsides for at least 2 days ^{following} after the heavy snows. On Jan 11 on this same road counted 34.

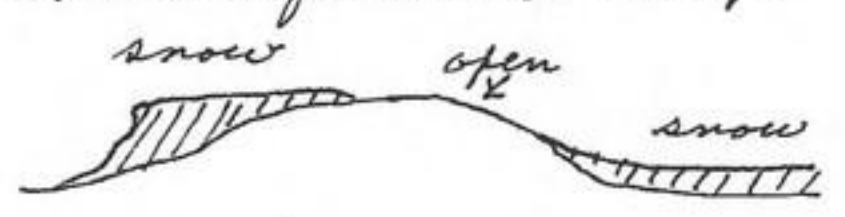
402 Yorkshire, Lawrence, Kansas
Jan 18, 1979

at 12:30 took three photos of feeder. nos. 790118-1 of general view with bush to left, no 790118-2 close-up of usual complex of Eng sparrows and starling and no 790118-3 same as above. There were 14 starling in area which is high for the feeder. The meadowlark is here today and was here yesterday. The cowbirds & redwings have been absent the last 2 days. 19 cedar waxwing started to feed on fruit (^{red} cranberry) in bushes N of house but they left in about 5 minutes. Photos 790118-1 to 790118-8 deep wind blown snow at home or from home towards Harley & Thompson.

N. Peterson Road, S half sec. 23, R 19E, T 12S., Lawrence, Douglas Co., Kansas
Jan. 19, 1979

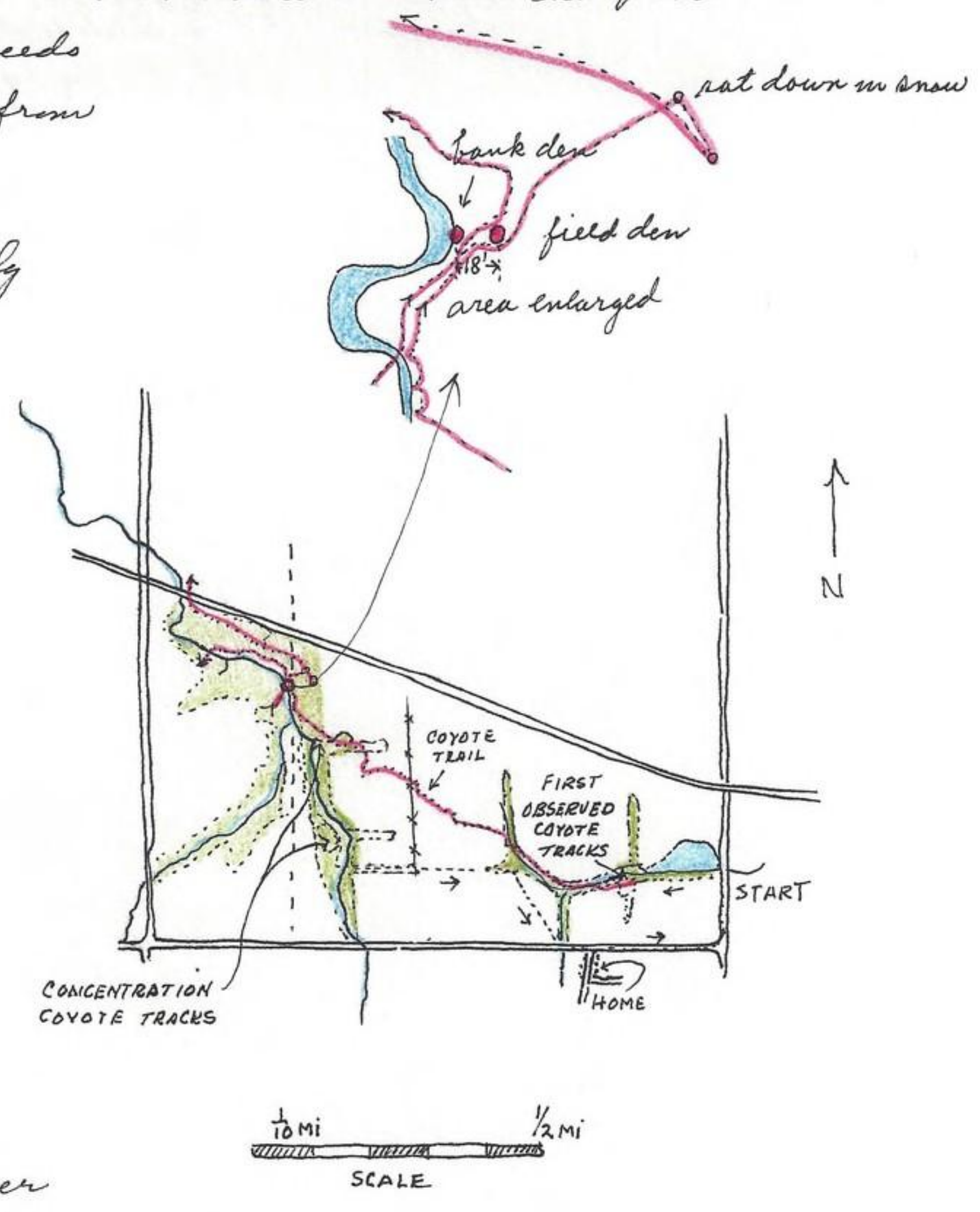
checked mammals and birds in fields and forests N of Peterson Road between the turnpike on N side and Peterson to S, Kasold to W & Iowa St to E. Left 11:20 A.M., temp 40°F and first day of thaw after a long period of subfreezing temperatures, snow and winds. Walk by road to E end Peterson Pond, ^{11:32} thence three trees on S side of pond. New 4 lane road

road has removed trees and embankments on the E end pond. W end pond area in cattails, high weeds and marshy growth. Water from Deerfield drainage now flowing but creek packed with slush. Water relatively high. On dike on S side pond the crest of dike was free of snow as result of wind action. The drifts were deep

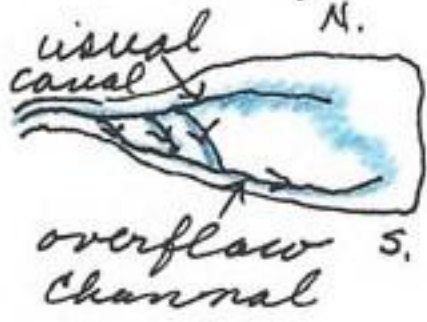


on N side and especially deep and high on south side. This is generally contradictory to the usual case of south and W slopes clearing first. The area free of snow supported many birds as did the weed areas of the upper limits of the pond outwash.

Birds included on this date, trees & weedy patches included 1 robin, 1 bluejay, 2 purple finch, 2 song sparrows, 8 goldfinch, 18 tree sparrows, 18 juncos (slate colored), 2 cardinals, one singing, 2 downy woodpeckers, 2 red-bellied woodpeckers, one of which called. Noted on tree sparrow fan tail to right and then extend its right wing as far back and as broad as possible over the ^{fanned} tail. Upper end pond where one stream fans out into three channels at 12:10. This is at point where ^{the north} orange-fence row intersects the drainage. From here to next fence row of trees that follows S along Deerfield drainage along Yorkshire Dr. observed 1 cardinal, 1 flicker (yellow shafted), 4 juncos, 2 black-capped chickadees, 2 red-bellied woodpeckers, and 2 tree sparrows. This area traversed so far seems to have an unusual number of birds for a forested area. At the point (12:10) at convergence of channels noted fresh tracks of the coyote which I followed to the W. The tracks were a walking animal in no particular hurry. First good rabbit tracks. Because of the barrier effect of ice & slush in the channels, water was streaming as overflow from the main channel that usually

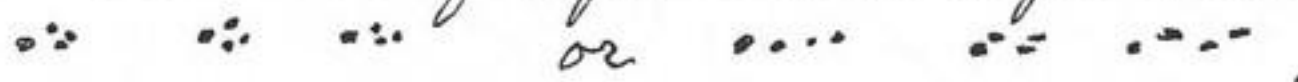


leads directly to the pond and which is located on the N side of the drainage area. The water is now mainly flowing along S side of drainage.

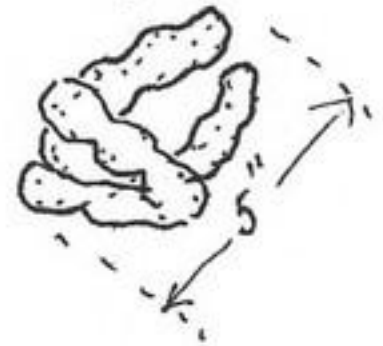


Arrive fence row (Yorkshire) at 12:30. Continued to next orange fence row (along utility line, no birds observed in this distance between Yorkshire fence row and the utility line fence row except one bluejay.

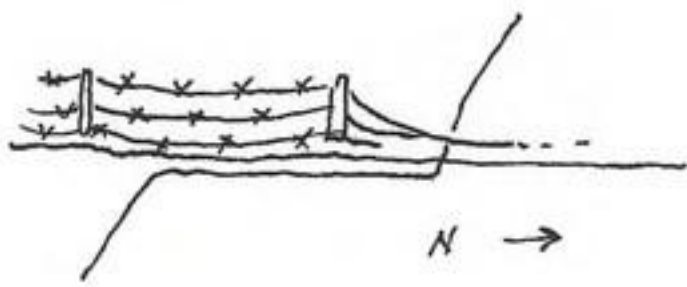
Continued 1/10 mi N along fence row and then coyote tracks left timbered area and trended NW across the open field. The gait now from walking to running. For the distance along this fence row observed 8 juncos, 2 chickadees and one redwing blackbird. The tracks across the field were regularly ^NW except three occasions when it followed a bare contour ridge for 10'-20' to the N. The tracks were of 2 patterns separated by 5 foot intervals thus:



At one point and without directional deviation but merely dropping back slightly on its hind legs deposited a fecal dropping of the following dimensions.

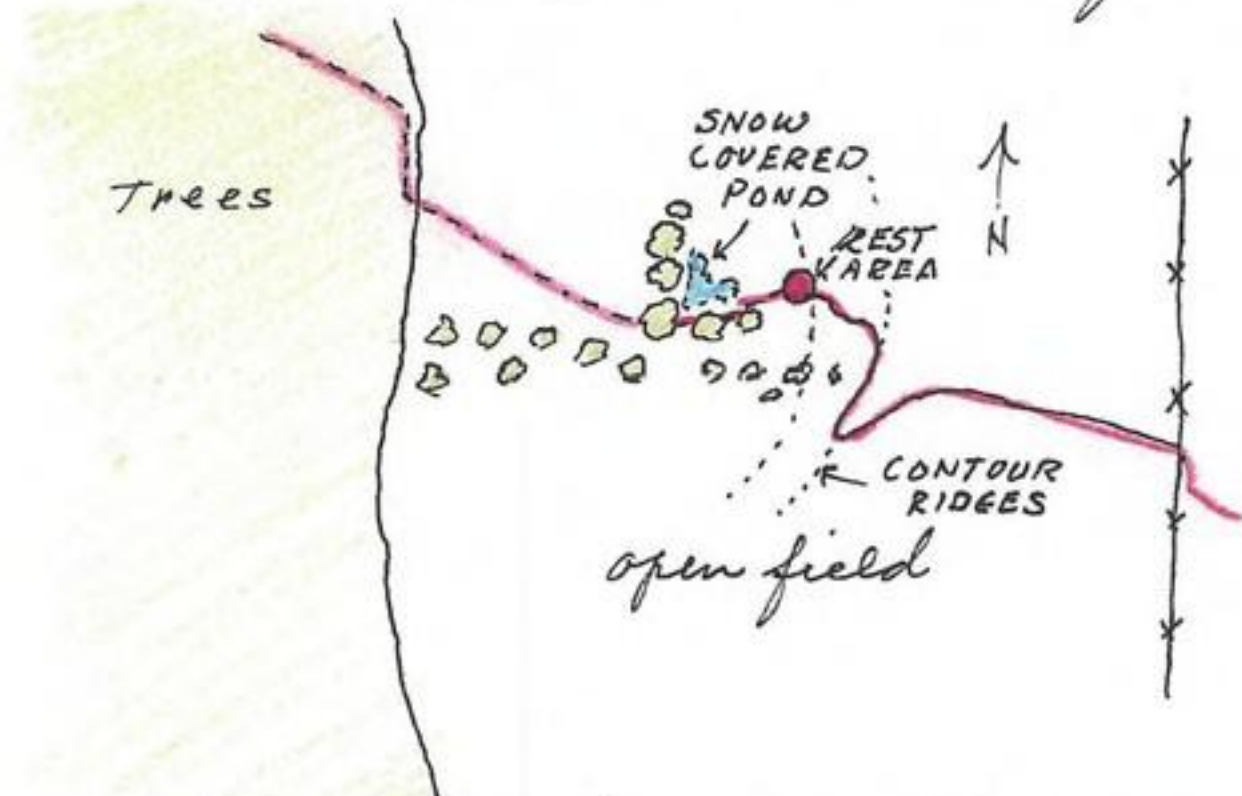


At the fence line it deviated twenty feet to low strand of fence but crawled under the line (12" high) rather than step over it.



at one time, and without losing rhythm of motion (running or fast lope, turned SW for 40' and then followed snow free contour ridge for 20' before continuing NW.

On W side of fence it continued NW except one deviation to the SW for approx. 100', thence N, across a swale of grasses (all other parts of field plowed) and came to rest on an exposed grassy slope (W exposure) where it it rested until I came along (40' away but hidden) at which point it left resting slope and ran W along bases of willow trees and thru the small shrubs without



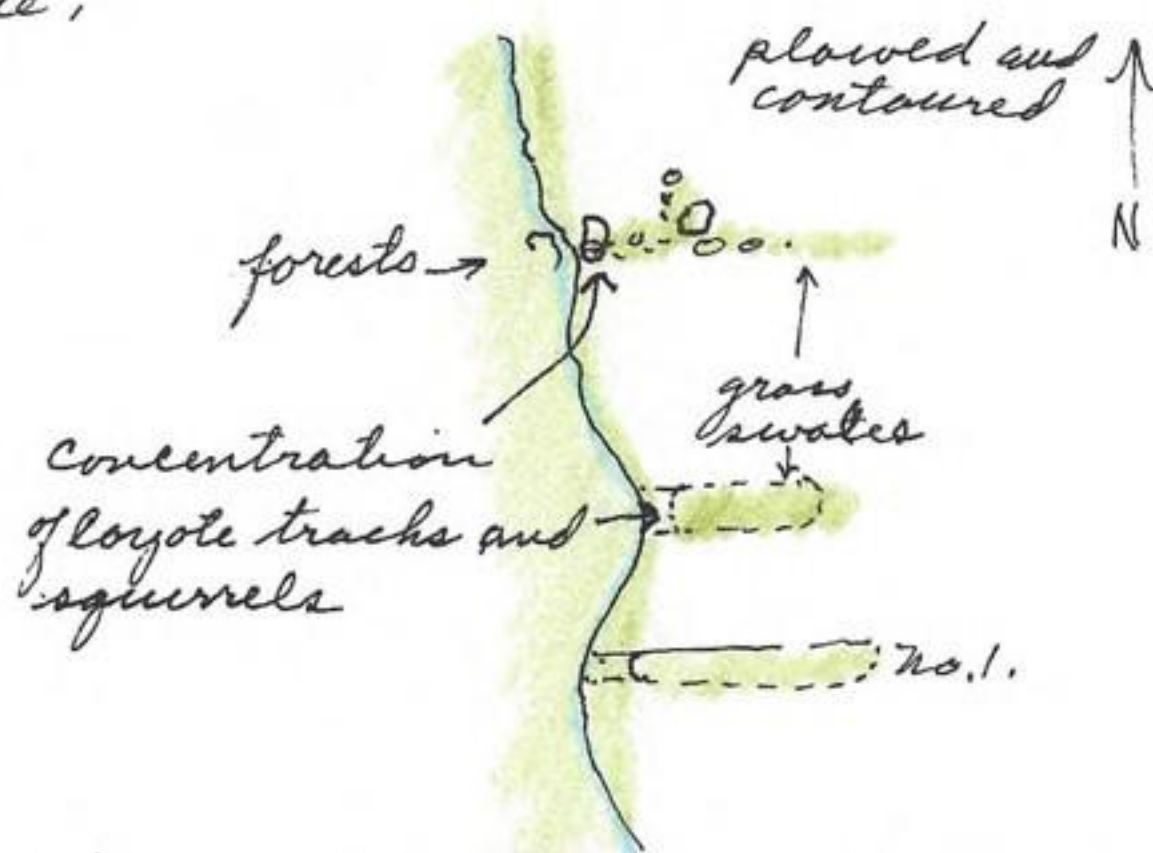
regard of barrier effect and thence across the open field to the NW. The interval between sets of tracks varied from 6' to 12'. At edge of forest it stopped, looked back and the continued (1:20). For the first 100' it followed the thick trees & shrubs at the border of the field but then left and followed thru forests to the NW. From the time the coyote left the forests and went out on to open fields it trended in exactly the direction of its den. The route thru the forests was NW toward its den along the Deerfield drainage. It dropped down into a small drainage

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and up the other side rather than deviate across the level bench above the drainage, in other words the route was strictly NW. As it approached the den site it stopped three times at the edge of the creek to look for crossing but finally went to within 3 feet of bank den site and then across field site and thence NE up a drainage at the head of which it sat down ^{in snow} then moved 30' where the den area could be seen and then at a rapid run travelled thru the forest to the point where the creek flows under the turnpike. The coyote crossed the turnpike about 30' this side of the creek underpass. There is considerable more trail evidence in area NW of den site than elsewhere and although it is nearer the turnpike there is no ^{direct} disturbance by man from that direction. The coyote that I followed this morning and early afternoon (for 2 1/2 hours) was a relatively heavy set, shaggy + long furred coyote and could have been a female. Another coyote presumably the same time as the one I followed came into the den site, came from W side of creek, to den site and then follow down stream on N side among trees. It dropped down to edge of creek twice for possible crossing but returned each time to forest level above bank. It finally crossed the creek. I am not sure these two coyotes communicated at the den site with one following down stream to divert my attention. Trails of freshly made have brilliant white reflection from sides of deep snow imprints whereas imprints made earlier or duller and with smoother exposed edges. Only birds in the Deerfield drainage were, 2 yellow-bellied sapsuckers, 1 downy, 3 juncos which is depauperate.

at the base of each of the grassy swales there is unusual concentration of coyote tracks, diggings etc. at the base of the grass swale and within the forest were coyote tracks in the greatest concentration so far observed. One 2 1/2 deep hole, narrow was dug

into the ground, some soil removed by 10'. 18 orange orange fruits had been consumed by squirrels in an area of 30x50 feet, one under bank from a pat hole from swale drainage had been elevated. I would assume that a lot of the feeding is by excavation of trapped animals. The tracks in areas of concentration cross creek to W as if travel was E-W. There are very few tracks between these areas of concentrations. Two tracks followed along the route (no 1) marked on map. Between den site and home did not see a single bird arriving ^{home} at 3:20 P.M. Summary. no evidence of microtine activity either on exposed ground or in snow. Birds localized and absent between groups. no raptors or meadowlarks. no evidence of winter kill except on redwing eaten by coyote.



402 Yorkshire Dr, Lawrence, Kansas

Jan. 20, 1979

Cowbird ♀ at feeder after absent for a day or so. Never more than 1 ♂ & 1 ♀ cowbird at feeder at once but one or both absent for periods up to 2 days. Birds at feeder today at 12:30; 87 Eng. sparrows, 13 starling and no other kind. Judy Dailey across the street reports a loggerhead shrike at the feeder eating suet. First one observed at her feeder. 790120-1 of bird feeder.

Jan 21, 1979

Birds at feeder at 2:00 are approx. 100 Eng. sparrows, 21 starling. (occasionally a cowbird, male cardinal. no tree sparrows or juncos. In the last three days the snow has cleared from feeder and grass is exposed. In the last 2 days the juncos and tree sparrows have selected to feed on top of snow in the peripheral areas. meadowlark here earlier this A.M. with the increase of numbers of birds more areas are used instead of just the feeding area and bush nearby. They now fly to almost all areas of the backyard and activity is everywhere. The large numbers of birds have developed after the thaw of about the 15th.

Lake View, NW Lawrence, Douglas Co., Kansas

Jan 24, 1979

Took two photos of drifted snow, 10:00 A.M. no. 790124-1 of edge of drift with tree limb + shadow. no. 790124-2 of rolled grasses and drift. Did not see meadowlarks and fewer horned larks along side of road.

402 Yorkshire Dr, Lawrence, Kansas

Jan. 25, 1979

There were 65 starling at feeder and the largest number observed so far (4:30^{P.M.}) They consume great quantities of food ^{in a short period} because they do not manipulate the seeds in their mouth but swallow it directly. One bird small and nearly all black. Some ate snow.

Jan 26, 1979


a loggerhead shrike fed on suet this A.M. Also a ♂ cowbird at feeder. The large numbers of starling come into feeder in afternoon.

Jan 31, 1979

Placed goldfinch feeder in tree for first time at 10:00 A.M. at 11:00 AM 2 goldfinch were at feeder and 10 minutes later 16 were present and they remained henceforth. The last meadowlark was observed Jan 24 and has not been observed since, a lot of snow on ground and Temp 8°F at 12:00. Went below 0 last night. Four apples were placed on snow below feeder for cottontails that visit the feeder at night but starling, rather than rabbits have consumed them in last 2 days.

(16)
The goldfinch⁽¹⁶⁾ left at 4:00 P.M. with sun still on the feeder and during the 5 hrs of continuous feeding consumed 1/2 lb of black niger thistle seed at a dollar per pound. The sparrows & starling at the other feeder are still active.

Feb. 2, 1979

Moved goldfinch feeder (8 positions) to in front of viewing window. They changed without a problem. One bird had light color in crown ; another male with yellow at bend of wing and more yellow in head and neck region with yellow spots on back between the wings which in other males is continuous grayish-brown (light). There does not seem to be any dominance of males in group. Tail fans out during aggressive behavior. Yellow at bend of wing is good character to differentiate ♂ from ♀.



Lawrence to Linwood, Kansas

Feb. 3, 1979

Enroute to Kansas City, ^{12:00} via route 32 noted an unusual number of horned larks on side of road bed. They occur in relation to topography and vegetation, found most commonly in broad river bottoms of open fields and on upland approaching nearest the conditions of broad flat fields uninterrupted by trees or low vegetation. There was a decided change beyond Linwood as country becomes segmented with smaller fields surrounded by fence ~~low~~ rows and only 3 groups were observed up to Bonner Springs, beyond which the country is unsuitable for this species. Between the city airport in Lawrence to Linwood I would estimate that there were 50 groups of horned larks ranging in numbers from 4 to 250 and averaging toward the large number in flocks of 120 birds or approx. 6,000 birds. There were only 16 meadowlarks, approx. 200 junco & tree sparrows, 3 cardinals, no hawks except 1 sparrow hawk. On return on highway 10 no horned larks to Eudora and then in bottomlands of Wabasha only 4 but the sun was just setting and the horned lark activity had already stopped. Only one redtail and this bird NE of Eudora.

402 Yorkshire, Lawrence, Kansas

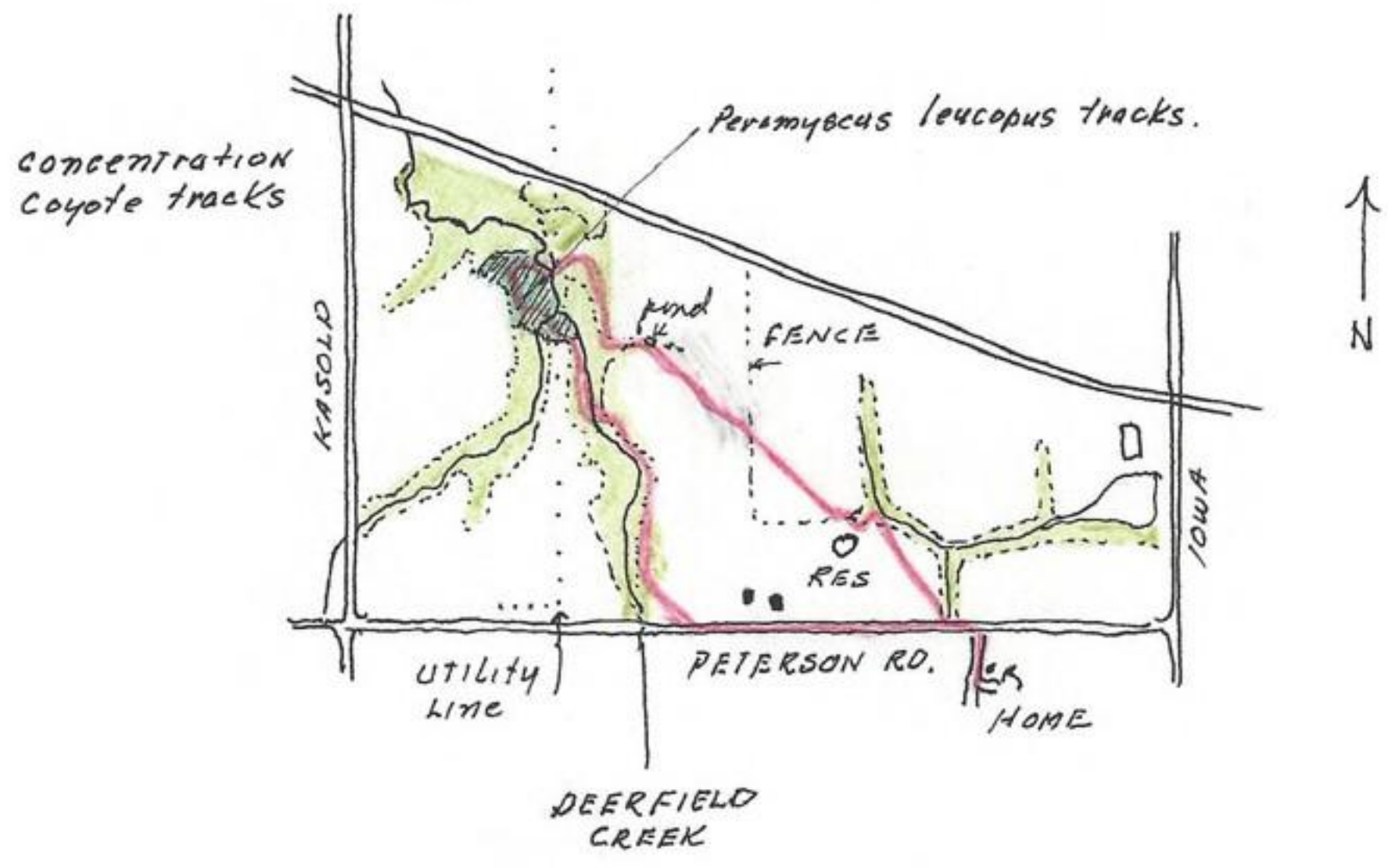
Feb. 4, 1979


2 ♂ cowbirds at feeder and first noticed since last recorded. Yellow-shafted flicker eats corn, some pieces of the size that can hardly be swallowed. While corn was on ground it prefers to dig down thru packed snow to retrieve the food below. Flies to tree and clean each side of bill progressively as it climbs the trunk.

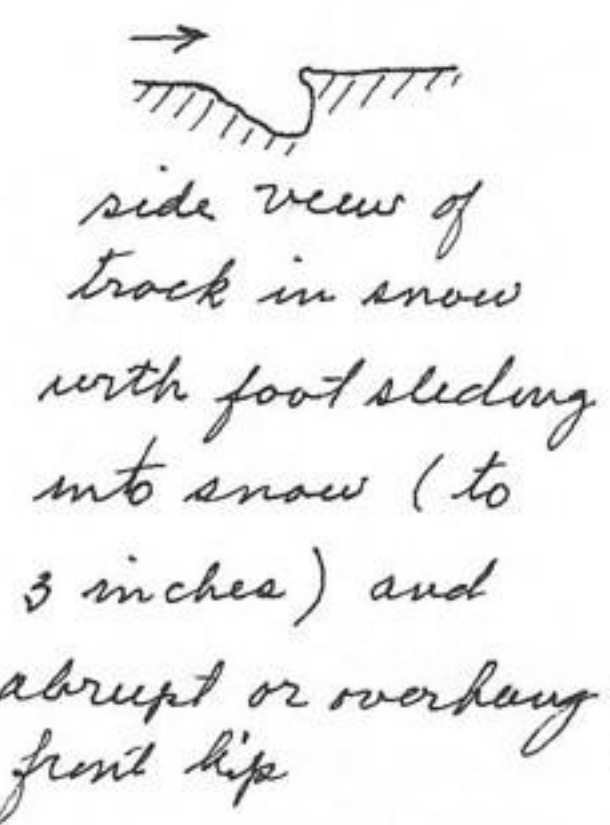
N Peterson Road, South half sec. 23, R19E, T12S, Lawrence Douglas Co., Kansas

Feb. 10 1979

Checked Coyotes in fields and forest NW of home. Temp 33°F, no wind and brilliant sun. Deep snow on all exposures, some drift at least up to my waist, difficult to walk as surface crust kept breaking and dropping one down a foot into snow. Left 1:15 P.M. Cottontail numerous wherever there was trees or brush but their tracks did not extend out into or across open fields. Between the reservoir and fence there were 5 sets of tracks most of them trending S or SW and traveling in both directions but



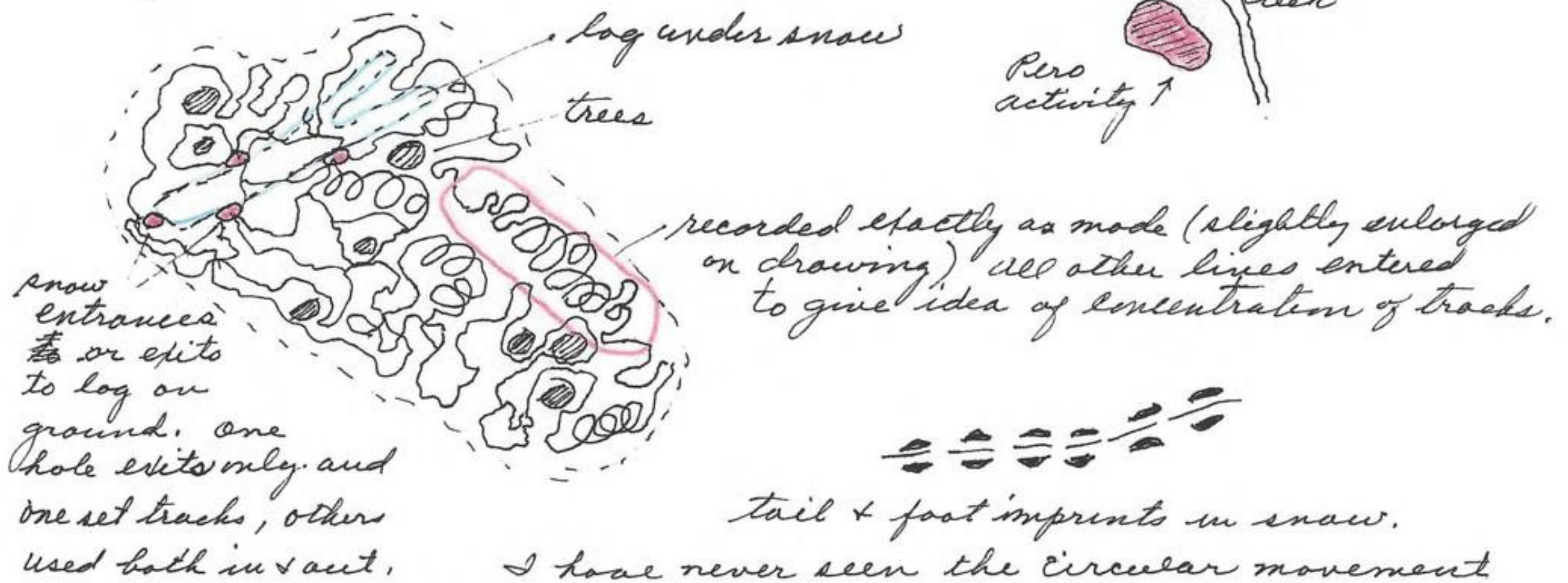
normal gait of imprints approx. 18 inches apart. Most recent but some old and obscured by blowing snows. In areas of past wind erosion the old trails were elevated thus  and continuous ridges rather than segmented imprints as trails are made. Depending on the



conditions of the snow the feet leave a drag in the snow (red beyond the imprint) and a drag of foot in snow just as it passes an alternate foot (also red). These drag marks vary according to depth of snow. Some tracks on firm snow produced perfect imprints. One track measured; front 83 mm, hind foot 69 mm. Cottontail tracks measured 102 on the average. No tracks across fields but many in swale of pond. The cottontails were digging down 1 foot into the snow and exposing orange orange for food. Two titmice came to within 6 feet of me and then dropped to the ground by me to feed on the orange orange and other debris brought to the ground by the rabbit. The Coyote trail (3) passed along the edge but they did not seem to be interested in the rabbit trails and

activity. Arrived at this area (by pond) at 1:45 P.M.

Continued to Coyote den site. Not used by Coyotes but by cottontails which are numerous in the area of short shrubs in the utility right-of-way, no running water in creek but iced over from prior water. ~~Since~~ level end now collapsed but covered with snow. On ^{top of} west bank SW of coyote den site a Peromyscus leucopus or Microtus pinetorum had left its trails and imprints in an area 35x20 feet. The activity was concentrated in this area and not beyond its borders.



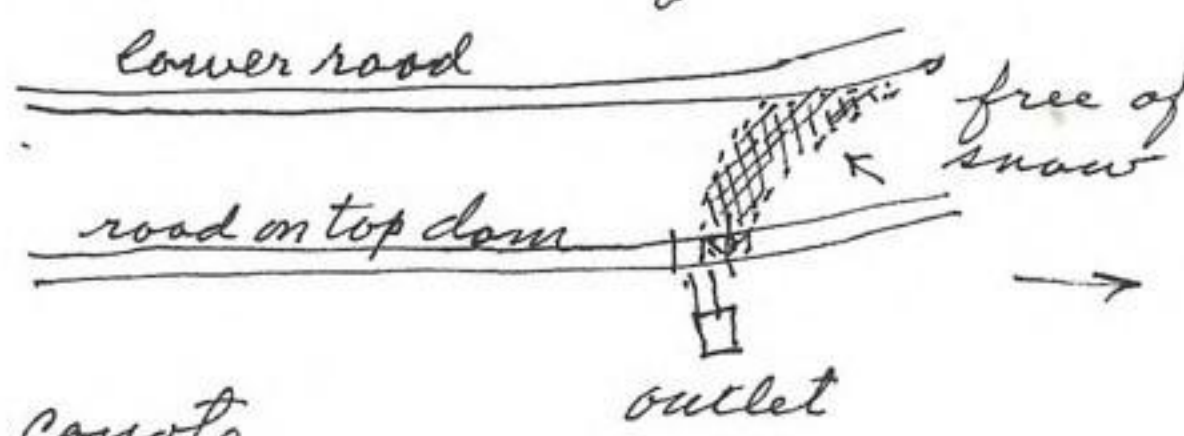
I have never seen the circular movement in snow before and I wonder if the mouse had semi-circular problems or some other balance ^{related} disease, starvation, malnutrition etc. I had examined all the large oaks where this mouse is captured by placing traps at the base of the trees. There was no evidence that these mice were active in these situations or did I notice them anywhere in the forested area except the above locate situation. It is unusual that it confined its activity to definitely prescribed area and did not go beyond.

The greatest activity of coyotes is in area marked by hatches on map and in this area the tracks were about every 30' or so, some using trails in snow. Beyond this area, except to SW where I did not check the tracks were of coyotes generally passing thru the area. Noted tracks of one coyote following a rabbit trail and when 28' away from an old dead oak that was inhabited by gray squirrels, it increased pace to 8 foot jumps toward this tree and apparently caught a squirrel as blood was in trail leading away from the tree. Also noticed coyote tracks with 10' intervals of coyotes entering forests from outside as if being pursued or was evading being pursued. Most coyote tracks were concerned or associated with areas inhabited by squirrels or rabbits and in this area there are many this year. One coyote had dug thru snow to a dead rabbit and had consumed all but some of the hair. From the Coyote area

south thru forest. at 2/10 mi from Peterson road noted a trail that lead directly south, passing thru areas of concentrated rabbit activity but always maintaining its identity as a thoroughfare trail. This trail continued to brushy area and old pond near Peterson Road along the Deerfield Creek. The rabbit trail was just inside of bordering forest growth and for the last 1/10 mile along a fence line and trees. In open field 200' from Peterson Road noted where a coyote had dug up a meadowlark from 10" snow and had consumed it on the spot. One wing and the tail were all that remained. Arrived road 3:00 P.M.

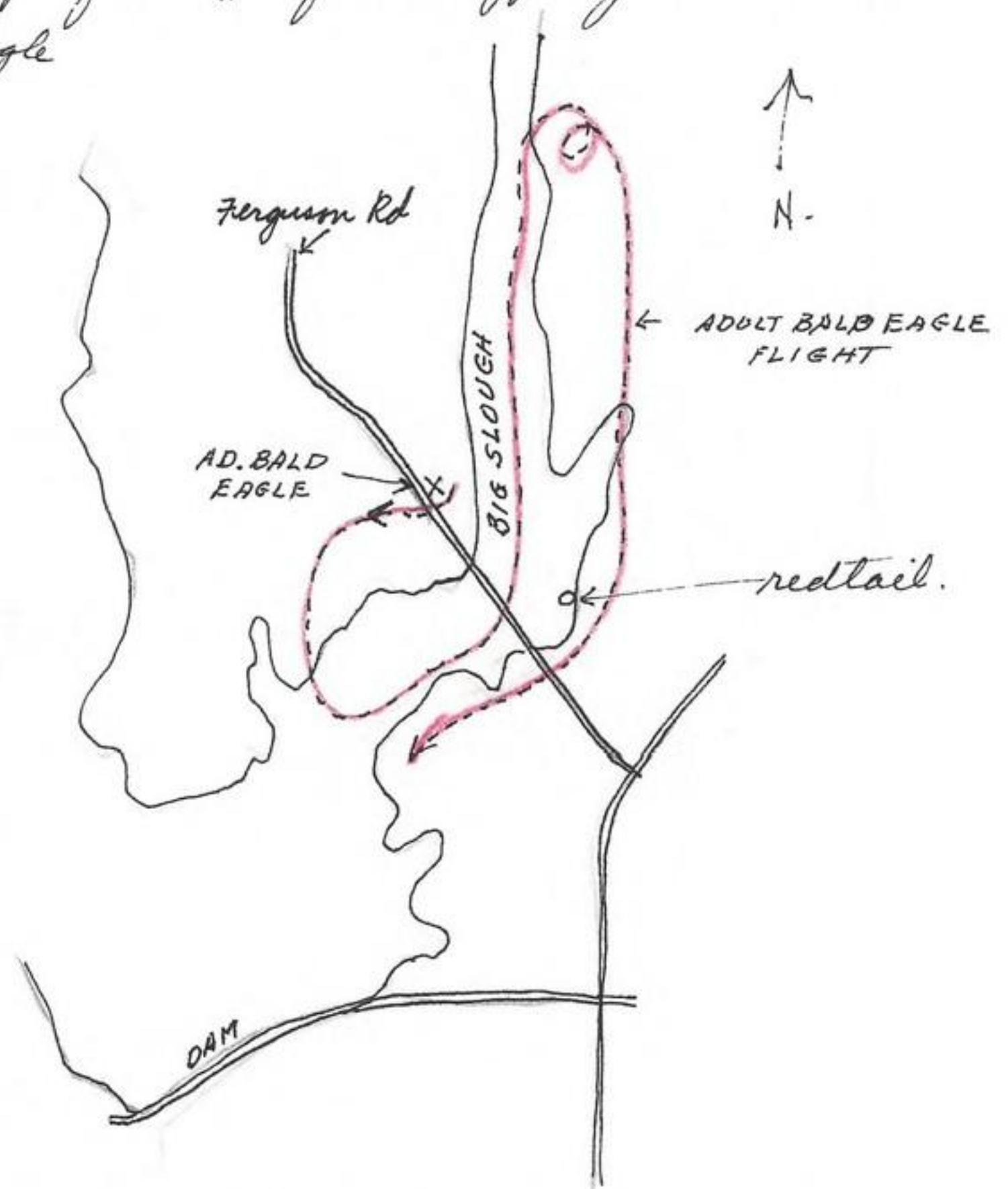
Perry Reservoir, Jefferson Co., Kansas.
Feb. 11, 1979

Annette and I drove to Perry to check on eagles. Kept complete census enroute. Temp. 35°F and first of above freezing for several weeks, slight wind from S, sky with trace of ^{hazy} clouds, left at 10:45, mileage 98716.3 18.1 Kasald, and Farmers Turnpike, (County highway 438). 19.1 nine meadowlarks on side road, 12 horned larks. 19.4 sparrow hawk feeding on small bird on side of road. 19.7 redtail in tree. 20.4 1 meadowlark, 12 horned larks, horned lark. 22.7 4 juncos. 23.5 2 meadowlarks. 24.2 LeCompton Rd. 26.6 5 meadowlarks, 1 bluejay (LeCompton City limits). 27.4 E end LeCompton bridge. no eagles, river from 80 to 180 feet wide and following a meander course in river channel, snow elsewhere in channel. Open water starts about 150 upstream from mouth of Delaware River, and down river as far as I can see. no waterfowl, 2 bluejays. ^{3 sets skt. trails w end of bridge to W towards mouth Delaware.} 31.0 highway 24 on main route to Reservoir. 33.6 SE end of Perry Reservoir area. 34.5 E end of dam. Lake entirely ^{uninterested cover of} snow, no ice or irregularities showing. Snow on dam plowed and cover guard rails except of outlet where wind has kept road ^(150') clear and 5 exposure of dam.



All other places covered with snow. This pattern has occurred ^{also} in previous years. Two or three sets of tracks on snow at base of dam to N and probably Coyote. Water marker at outlet 890 feet and scale encrusted from 893 to 890. Delaware open (fully) but no waterfowl. 5 fishermen below spillway. 36.9 west end dam, now N. 36.3 redtail. 37.3 turnoff to peninsula but continuing on. ^{groups} 8 fishermen on ice S + SE of peninsula. First year I have seen this activity at the reservoir. 37.7 redheaded woodpecker. 39.3 gats. The road has been graded of snow this year and in several places a single route thru 4-5' high cuts which is more than it has ever been. 40.0 redtail. 40.3 redtail. Redtail will remain in roadside tree

if car does not stop but if car is slowed or stopped the birds will leave their perch. 42.0 marsh hawk, 42.4 Rock Creek bridge, 6 fishermen on ice NW in bay. 12:00 P.M. 43.0 bluejay. 45.2 now N and sparrow hawk, 47.6 shrike. 48.5 shrike (loggerheads). 48.7 now E. toward Ozaukee. 49.4 3 meadowlarks. 50.4 Ozaukee now to N end to check on lake. no opening water. 52.9 back to highway, redtail in trees at edge of lake (all in even lower of snow) no open water anywhere in the lake Perry area which is the first time this has occurred since the reservoir was built. 54.6 bluejay. 55.4 four-corners, now N, sparrow hawk. 58.8 vantage point overlooking Paradise Point and lake (about 3/10 this side of gate). Snow had not been removed so did not continue. Redtail in tree, 2 soaring 1 mi W and marsh hawk in tree in meadow area. no open water nor waterfowl of any kind. 62.2 4 corners and continuing S. (1:20 P.M.) 62.9 Little Slough Creek bridge, creek in ice & covered with snow, 6 sets tracks in creek. 64.9 2 slate-colored juncos. 66.6 sparrow hawk (S boundary Dr. Walters property) all sparrow hawks on line of utility poles. 66.8 redtail. 68.4 adult bald eagle. This is at top of hill, before dropping down into Big Slough Creek. an adult bald eagle flew across the road, circled back and then continued in a westerly direction, then circle to south to middle of Big Slough, gaining altitude and then trended up Big Slough Creek and at turn to N. gradually dropped down grade to about 1/2 way up N-S Big Slough bay when it was as low as 30' above the ice & snow. It continued N at this low level, then left valley and gained the ridge, thence S until it disappeared over ridge toward the marina. Redtail in tree on east side of bay. 68.9 Big Slough bridge 69.4 bluejay. 70.1 end Ferguson Rd., bluejay road kill. Continued to marina. 73.0 marsh hawk on S side slope of dam at E end of dam. 73.7 Outlet gates. marsh hawk flew full length on south side of dam near top level. Redtail in tree below just beyond dam. Redtail west end dam and a redheaded woodpecker. 75.1 Overlook 75.9 valley road into Thompsonville. 76.7 Thompsonville. 2:00 P.M.



80.0 Delaware River, open, water greenish, 2:15. 82.0 3 horned lark.
 From ~~the~~ ⁿ side Leecompton bridge noted an immature eagle 300 feet down
 river on n side, 86.6 Crow, 87.3 tree sparrow. 90.4 3 horned larks.
 92.3 Kussel. 94.1 home at 2:40 P.M.

Summary: Unbelievably few small birds along road or in
 country side, 68 total (up to and include bluejay size), 11 redtails.

	10:45 A.M.	2:00 P.M.	11:30 A.M.
	Lawrence - Perry Res.	Perry Reservoir - Lawrence,	Perry Reservoir.
meadowlark	9, 1, 2, 5,	3	3,
horned larks	12, 12, 1,	3,	
sparrow hawk	1,		1, 1,
redtail	1.		1, 1, 1, 1, 1, 2, 1, 1, 1, 1,
slate-colored juncos	4		2,
bluejay	1, 2,		1, 1, 1,
red-headed woodpecker	1,		1,
marshawk			1, 1, 1, 1,
loggerhead shrike			1, 1,
bold eagle		1 (imm)	1, (adult)
Crow		1	
tree sparrow		1	

Leecompton and Perry Reservoir area, Douglas, Jefferson Counties, Kansas
 Feb. 12, 1979

Spent most of day in field as host to a group of people interested in the
 natural area or eagle site proposal now being finalized by myself and
 Howard Levenson. Individuals in party were Stephen P. Preston, Staff
 Biologist, Land and Water Resource Development and planning, office
 Suite 106, U.S. Dept. Interior, Fish and Wildlife, 2701 Kuck Creek Parkway,
 N. Kansas City, Missouri, 64116, Roberts R. Constock, Dept. Corps of
 Engineers, Ecologist; Mr. Smith, an assistant to Preston, Mr. Ted Talman
 of remote sensing NASA, at K.U. (Nichols Building and his assistant and
 Howard Levenson of the Museum Nat. History K.U. Visited Leecompton area
 and Perry. at Leecompton from E end bridge over Kaw note seven
 adults and one immature (see map of Jan 10, 1979) bold eagles, all
 from E end Leecompton bridge. Eagle number 19 only bird in flight.
 Continued to Perry Reservoir to Overlook (W side), thence n to Ozawhee,
 thence to Paradise Point. Left cars at gate and walk to valley n side
 peninsula via first divide. Snow about 20" and one would sink
 down to knees all the way down to river valley level. Great horned
 owl feathers and rabbit fur half way down. Few Coyote tracks, no
 deer tracks. Valley in weeds & no eagles in usual roosting place

on north side of valley.

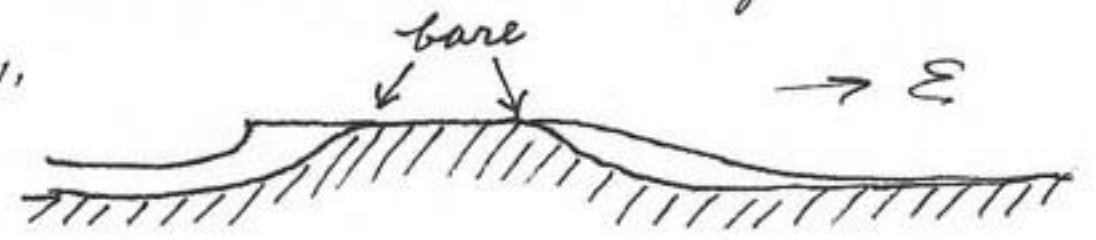
Returned to gates and observed an adult bald eagle flying NW along shore (300' above) then N to Paradise Point ridge. Continued S to Big Slough bridge and noted an adult bald eagle flying along the ridge to SW. Continued S to Leecompton, then E to levee vantage point, no eagles there because river channel not open. Continued to University. Not as many redtails as previous day but small bird population about the same - rare.



Leecompton, Douglas Co., Kansas
Feb. 13, 1979

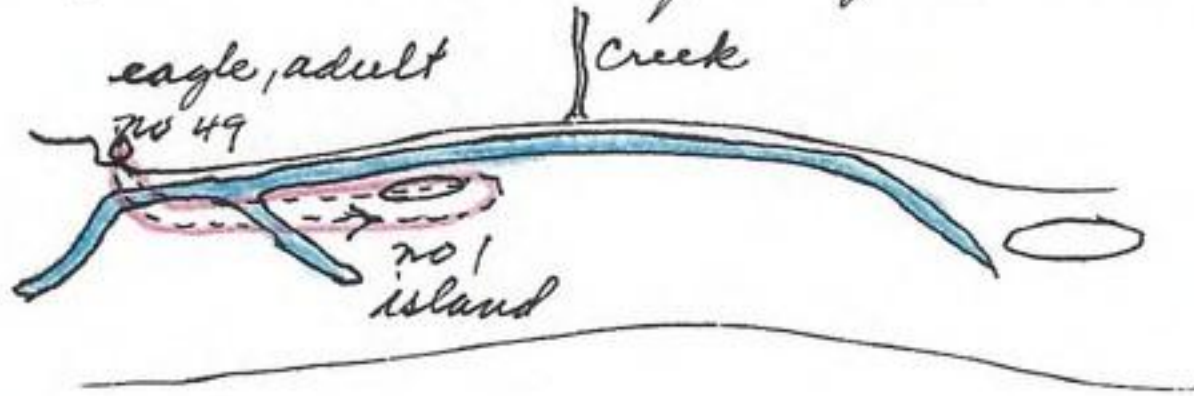
Checked eagles, Left 98893.1 mileage, 9:00 A.M., sky foggy and sun trying to break thru, temp 18° F, wind from E, slight. Will keep list of all birds to and from eagle area. 96.3 3 tree sparrows, 2 cardinals, 96.4 causeway bridge at Lake View, lake still covered with solid snow, 97.2 cottontail road kill, 97.7 4 bluejays, 98.3 horned lark, 98.6 horned lark, 98.9 levee and will leave car to check on eagles. Levee with following distribution of snow.


Edges bare of snow and less snow on top than in previous years when it was deep. Abrupt ridge on west side and flat from there across the levee, lee side graded without this abrupt lip. No sign of mice trails on snow or rabbits. Continued to vantage point at rock jetty. Snow eroded in field on lee (S) side of trees but deep and soft among trees. From vantage point could not see eagles.

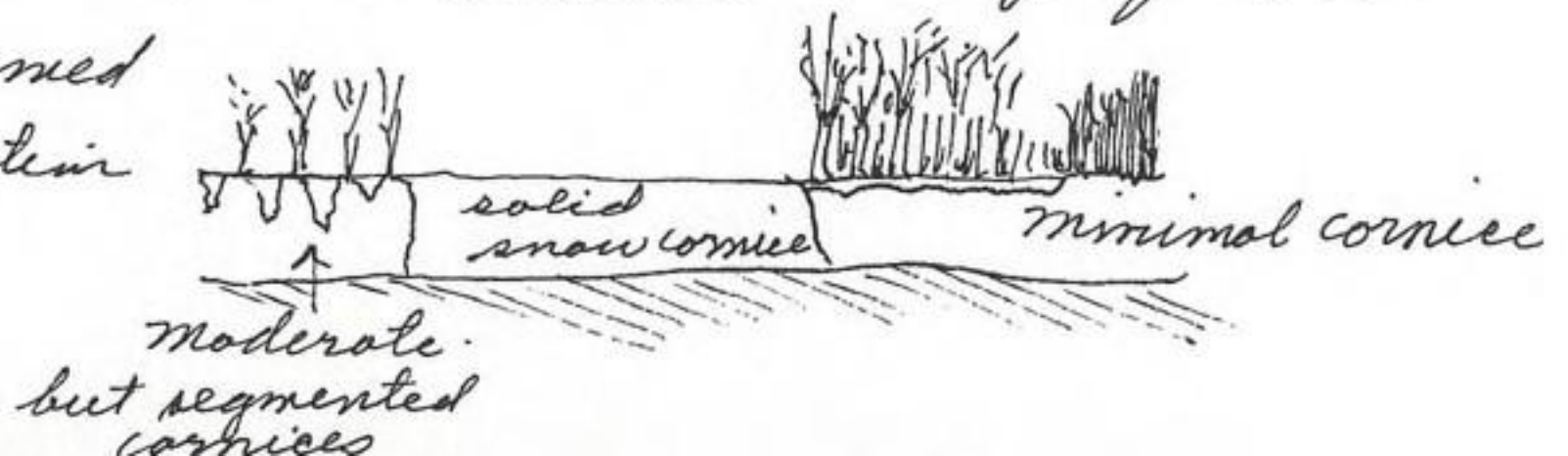


Snow cornices occur where the riparian forests are the thinnest and absent where thickest. On the south side of river channel the banks are sealed with snow except some parts with perpendicular walls, but in the main are solid white. There are ski trails along S bank in channel. Returned to car at 9:50 Continued to railroad creek at 00.0 and checked from mouth of this creek on W side. An adult eagle no 42 left its perch in high cottonwood tree, flew down channel to island and then returned to same perch where it remained. This was the first eagle observed. The open water is just beginning

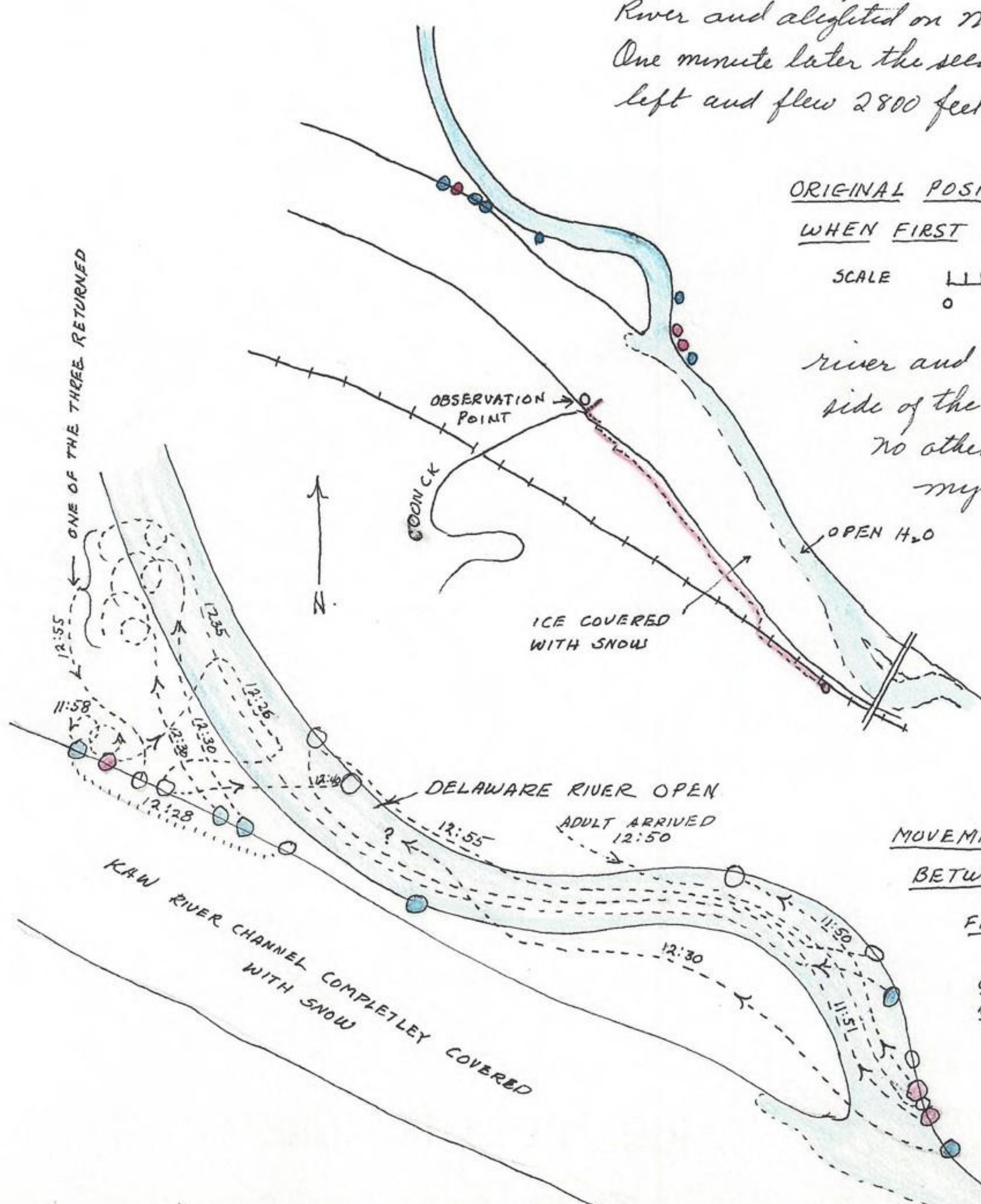
to open and is narrow but open from the point of abrupt angle in river, just downstream from bank without trees to first island at extreme E end of eagle area. The river has a tendency to meander although the channel is open the full length of the river on the N side. This open water may be the result of exposure and warmth of bank.



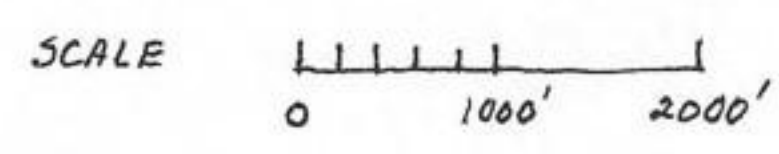
It is interesting how optical illusion works in the river channel. From down stream looking up stream the island no. 1 looks like it is opposite the mouth of the creek but in fact is some distance up river. The open water in the meander above island no. 1 looks like it touches the bank in a very sharp angle. ~~but in~~ fact from an aerial view would be . Returned to car and continued W. at 00.8 opposite first eagle. 28 common mergansers and 2 pintail ducks. a short distance down stream 4 more mergansers (Common or American). 01.5 left car and walked to vantage point 150' E mouth ~~Oakley~~ ^{Oakley} Creek (see map for position of eagles. River open on N side and river swings to S side just up stream from mouth of Oakley Creek. Directly opposite from my position an adult and immature bald eagle were in the top of the same tree. When within 20' of the edge of the bank, although the eagle could see me 1400', the adult left at 1200 feet and flew down river 3000ft and alighted in same tree as the eagle first observed today (no. 42). The immature remained. The approach is across an open field. While watching these 5 eagles the Atchison - Topeka and Santa Fe freight train passed by toward Lawrence and blew its whistle twice at point where I had left the car. The immature stood more perpendicular but neither the immature or the six other eagles ^(including no. 42) left their perch. Returned to car. Ordinarily, in past years, there has always been many junco & tree sparrows in this area but none today. Only 2 bluejays in area plus one Harlan hawk that left trees at mouth of Oakley Creek & flew across river to N. This dark bird has been seen in this same area for at least the last 5 year in winter and always fly N across the river. Left at 9:50 A.M. 01.7 Oakley Creek still in ice & snow. While on the river bank of the last observation Pt. (E mouth Oakley Creek) could see that where the trees had been removed to edge of bank on N side, the snow had formed cornices and snow accumulation to edge of river.



03.1 Leempton road. 03.6 sparrow hawk 03.8-10 E end Leempton bridge. 2 adult bald eagles ^{10' apart} on N side 900 feet downstream. When I walked out onto bridge ~~to~~ one of the two left and flew 300 feet down river and alighted in another tree. This was at approx 900 feet away from the eagle when it left. Drove thru Leempton and left car at railroad tracks N of town at 04.6. at 11:08. Walked thru riparian forest part of way and on S side forests at junction of the fields to mouth of Coon Creek, arriving at 11:45 A.M. Just before arriving at mouth of Coon Creek left my position on south side of riparian forests and walked thru forests to N until 10' from N edge and then walked 50', thence to upper river bank and walked another 50' then at base of bank for fifth feet, then N out onto the river channel for 50'. It was only when I left bank and started out onto the channel that the first eagle ^(adult) left. It flew 1100 feet up the Delaware River and alighted on N side of this river. One minute later the second adult eagle left and flew 2800 feet up the Delaware



ORIGINAL POSITION OF BALD EAGLES WHEN FIRST APPROACHED 11:50



river and alighted on N side of the Delaware River. No other eagle reacted to my presence at this time by leaving their position on the river bank. Returned to base of bank on W side of the

MOVEMENT OF BALD EAGLES BETWEEN 11:50 AM - 1:00 P.M.

FIGURE ENLARGED FROM ABOVE

ORIGINAL POSITION OF BALD EAGLES COLORED

MOUTH OF DELAWARE RIVER.


Coon Creek where I observed the eagle activity from 11:50 AM to 1:00 P.M. (see drawing). There were no ducks or mergansers in open water at mouth of Delaware River or open water of the Kaw. No noise from ice. no ice in open water. I am surprised that there is not more fragments of ice in the river.

The snow has accumulated against south bank up to 3 or 4 feet and is uncompacted requiring coyotes to follow along upper edge of drift on slope of bank. In crossing these drifts I would sink up to my hips and progress was difficult. When the three juveniles or immatures were circling, one would drop down in an attempt to contact ~~the~~ one of the other two and the one being approached would somersault forward, sometime 2 consecutive flips before gaining normal flight level rather than by a side turnover.

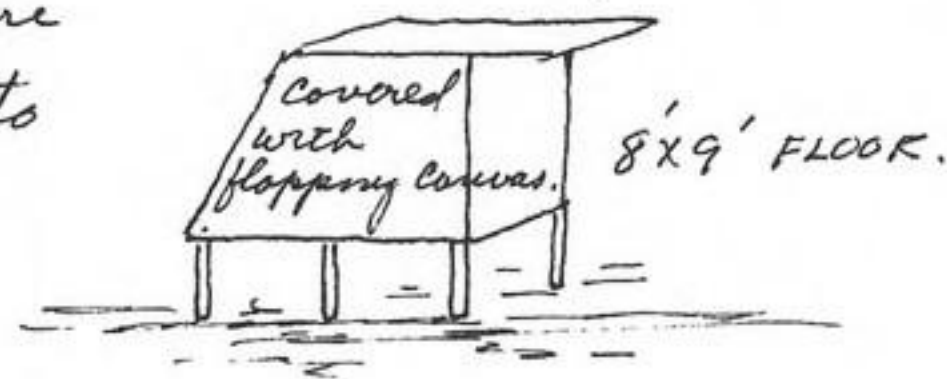
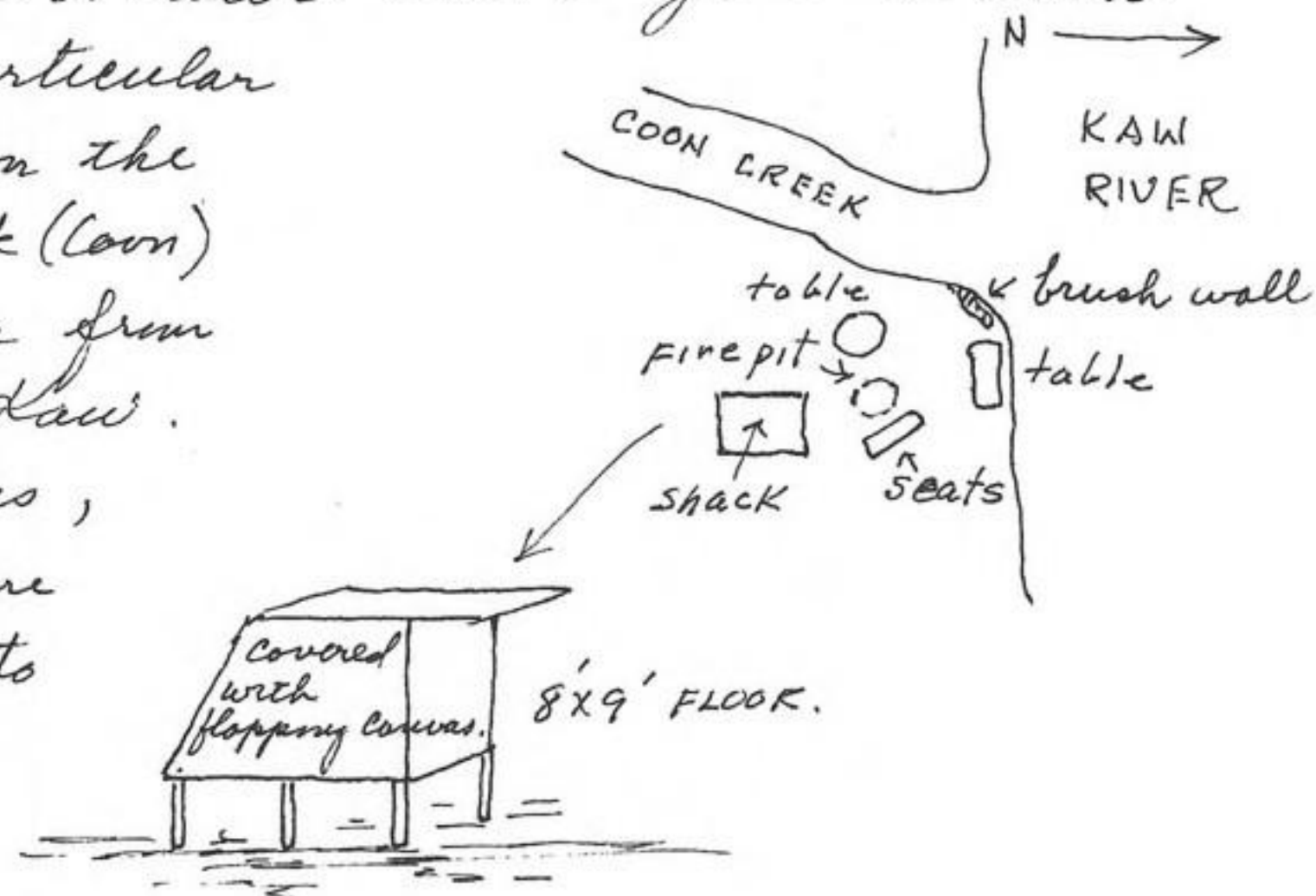
Only birds in river channel were 2 crows that alighted on snow near other side of river. Of particular

importance is new structure on the east side of the mouth of the creek (Coon) and is directly S across the river from the greatest eagle activity on the Kaw.

It consists of a building, two tables, fire pit and seating logs. There are 3 tops of gallon can nailed to trees and each one is full of rifle holes. A brush wall has been constructed as a blind for birds

that might alight at mouth of creek (last fall when water was open). There is another structure on the east bank of the mouth of the Delaware River which is the most vulnerable position as far as disturbance of eagles is concerned. This structure from here looks like a A frame type of perhaps 8 feet high . This kind of activity so recent and along with cross-country skiing is a new threat to the winter eagles. Left observation point at 9:00 P.M. and returned to car which took 1/2 hour walking time. Left 04.6

07.0 2 meadowlarks and fox squirrel road kill. 07.3 junco. 08.2 now E on Farmer's Turnpike. 10.6 2 horned larks. 11.5 4 horned larks. 13.3 8 meadowlarks, 12 horned larks. 16.0 home at 1:45. Weather today has been hazy this A.M. with sun trying to break thru, at times successful, but at 2:00 P.M. heavy haze with hillsides of trees at 1 mile solid bluish cast instead of tree detail under normal atmospheric conditions.



402 Yorkshire, Lawrence, Kansas.

Feb. 18, 1979

Judy Bailey reported a purple finch at her feeder (403 Yorkshire) on Feb. 16, 1979. For the last few days have seen a goldfinch at feeder with bright yellow upper rump which is lacking in other goldfinch at my feeder. For the last 3 weeks a cottontail has been coming to feeder and feeding on grain on ground. It has made a deep path thru snow but last night after about an inch and a half of new snow on firm snow beneath, the rabbit utilized six different approaches to the feeding area.

Kasold,

Peterson - deerfield drainage research area, Lawrence, Douglas Co., Kansas.

Feb. 18, 1979

made census of field NW of home on N side Peterson Rd and S of Turnpike. Followed established route and made complete census of mammals and birds by ecological units and time. Snowed last night to about midnite and deposited approx. 1 1/2 inches on a ^{deep} crusted snow and except for some drift areas the snow completely supported my weight. New snow recorded perfectly the activity of last night and this A.M. Temp at 9:40 A.M. approx 16°F and rising to low 20's. Changed from overcast to clear skies. Started at Yorkshire and Peterson Rd at 9:45 A.M. Snow covers all exposures.

Peterson Rd, 9:45 A.M. Open plowed field and few bushes N side, residents S side. Black capped Chickadee.

Pine Corner, 9:50 A.M. no birds. corner of several pines of old homestead.

Iowa St., 9:51 A.M. no birds. open fields each side.

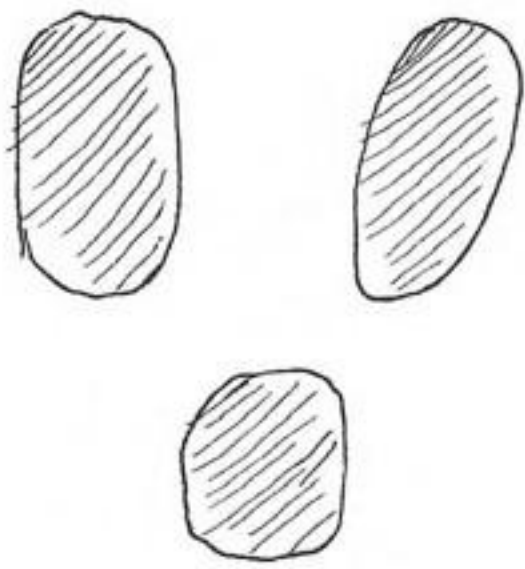
Peterson Pond, 9:53 A.M. Weeds, cattails in old pond bed bordered by trees on S side, fewer isolated trees on N side. Cardinal singing, cottontail tracks, cottontail tracks, cottontail tracks, cottontail tracks, cottontail tracks.

Peterson Creek, 10:30. Tree-lined creek, creek bank 3-4' deep, in ice & snow. *Peromyscus leucopus* tracks, ^{cottontail} rabbit tracks, cottontail tracks, cottontail tracks, 3 cottontail tracks, 7 goldfinch, yellow-bellied sapsucker, 3 cottontail tracks, ♂ & ♀ cardinal, 3 rabbit tracks. Creek bed not being used by rabbits.

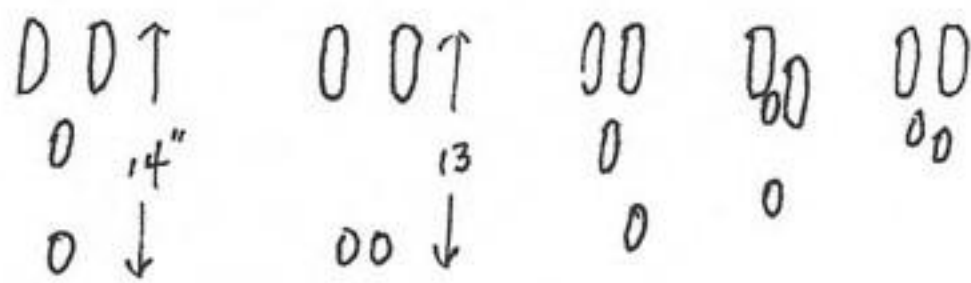
Grackle roost, 10:13 Shallow drainage and ^{thick growth of} young trees mainly elms. cottontail track, cottontail track, Blarina trail on surface of snow but occasional thru or under snow: natural size + stride
Cottontail track, toward W end
area squirrel track sp.?



Osage fence row, 10:17. *Peromyscus leucopus* trails at least ^{linear} 40 feet, 4 cottontail tracks, squirrel tracks, set of what I took to be weasel tracks:



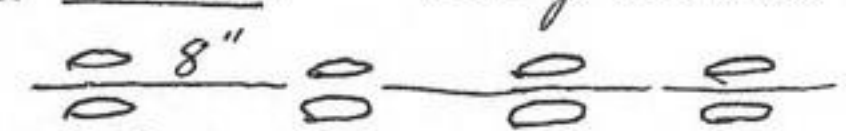
actual size.



cottontail tracks, cottontail tracks, some eating of dried weed stems at snow level, also girdling of small trees, cottontail tracks, cottontail tracks, cottontail tracks, cottontail tracks, 3 cottontail tracks, 3 cottontail tracks from den in side of drainage, squirrel tracks, 2 1/2 feet deep drift crosses fence row, *Per. leucopus*, fallow set squirrel tracks for 150', Cottontail trail for 80'.
Some variation of cottontail tracks in snow:

The two back feet are parallel and same position oft but one foot may be slightly farther back than the other foot.

Grass meadow, 10:34. This is an open field of grass, but each fall, old contours. The juniper is in line w as leaving the Osage-fence row. no animal activity around this juniper or to beginning of plowed field on divide. Protruding weed stacks.

Plowed field swale: Only tracks a *Peromyscus maniculatus* with tail mark . Trail into snow hole and return 2 feet beyond, hole 1 inch in diameter.

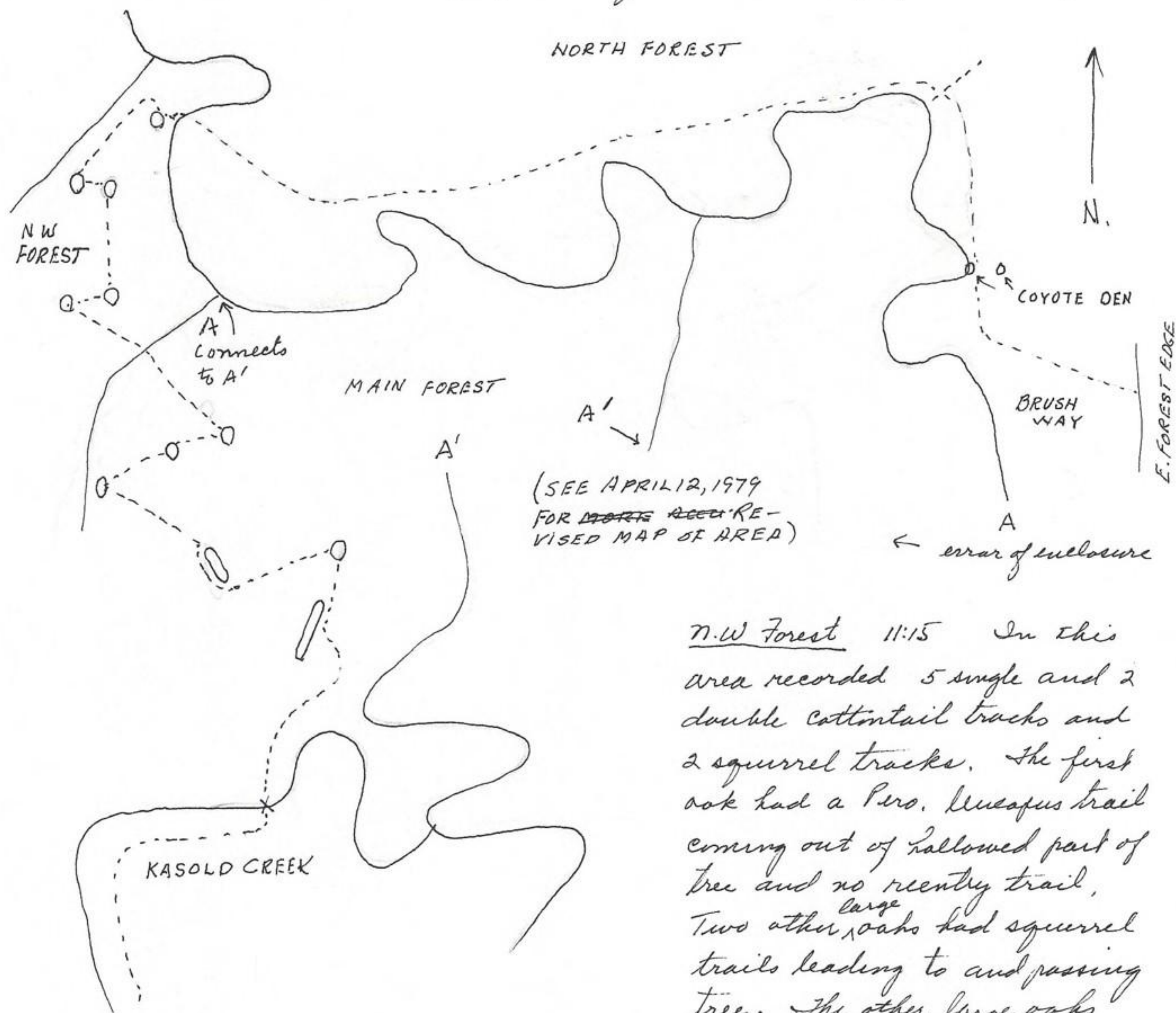
Swale pond 10:49. 10' diameter pond surrounded by ^{few} juniper & small trees and swale continues as ^{small} tree inhabited. The first cottontail track was 20' before forest.

E. Forest edge 10:52. Cottontail tracks out 20' from forest. Just inside forest of mature trees is a hummocky area covered with vines but not used by rabbits although looked like a good place. In this area at end of swale were approx 8 sets of cottontail rabbit tracks and common in distribution on snow, 2 black-capped chickadees, squirrel track, cottontail track, 5 cottontail tracks, cottontail track, cottontail track, cottontail track, cottontail track.

Brush way 11:03. Clearing of small trees and brush below utility line. no mammal tracks in creek bed nor from w coyote den. 2 sets tracks from this den left to meadows & not to creek. 3 sets Cottontail at den to E. Overall would say 6 cottontails in brush way. No coyote trails.

N. forest, 11:07 along creek. Cottontail tracks all along route in forest, none in creek bottom. Would estimate there are 13 rabbits in this area. They occur at least every 30 feet in the forest. They do not seem to be eating but just moving in straight to circuitous routes of investigation, some eating of dry stems

of *Symphoricarpos* and eating the ^{red} berries at the ends of the branches. Pellets are associated with these feeding stations. No snow digging for food.
N.W. forest
Creek crossing 11:15 Still in typical deciduous forest. Crossed creek. Map shows drainage pattern from Brush Way (from memory).

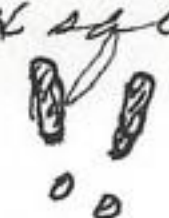


N.W. Forest 11:15 In this area recorded 5 single and 2 double cottontail tracks and 2 squirrel tracks. The first oak had a *Peromyscus* trail coming out of hollowed part of tree and no recent trail. Two other ^{large} oaks had squirrel trails leading to and passing tree. The other large oaks were not visited by squirrels, *Peromyscus* or rabbits. Cottontails utilized entire area.

main forest 11:27 First large oak with squirrel tracks to tree, no other of the large oaks had *Peromyscus* tracks or squirrel tracks but area well used by both squirrels & cottontails. In this area were 5 single set of tracks and 2 double set of cottontail tracks. From here checked area when walking mouse was observed on February 10, 1979.

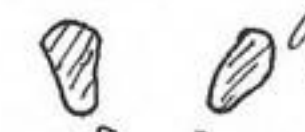

Kasold Creek, 11:39. Mature forest, route along E edge of creek all the way. Blue jay, squirrel tracks, 2 cottontail tracks, 2 coyotes crossed forest from west to east on straightline course. There are not as many cottontail tracks as elsewhere.

Silo ridge 11:45. 2 fox squirrels and one gray squirrel ran from edge of

forest near isolated field oaks ^{int} to forest. The gray squirrel was with 20' of the fox squirrels. Noted that tracks of both gray & fox squirrels ^(running) were similar and the two front feet are not aligned,  one is slightly advanced of the other.

Right-of-way: 10:50 open grass area.

Deerfield Creek: 10:51 Regular deciduous forest, Red-bellied woodpecker, 4 sets squirrel tracks, 2 cottontail tracks, 2 cottontail tracks.

There is a tendency for squirrels to have wide and slightly angled imprints . Checked the stone house which now is down with stone  walls as a ground ridge, The cellar is still not filled. no unusual track activity here except 2 cottontail tracks.

New Grove: Consocius of young elm in open clearing of years ago, surrounded by mature forest, 3 cottontail tracks, squirrel tracks, Cottontail track, 2 cottontail tracks.

First Forest 12:03 mature deciduous forest, (W side creek), Red-bellied woodpecker, most concentrated cottontail tracks and would estimate from 12 rabbits. Eating berries of *Symphoricarpos*, many pellets.

Forest road: 12:08. Short distance of road thru forest. The concentration of First Forest extends to E side of creek. 21 crossings of cottontail tracks across ^{ing} the road plus 6 sets of squirrel tracks. 3 fox squirrels ran from island of trees S of road. One concentrated pathway of cottontail tracks (a trail) at E end of road.

Field edge swale: 12:13 no rabbit tracks. Swale between plowed field and grass field with few small isolated trees and bushes.

Pond fence row. 12:18 Fence row between grass meadow and pond bordered by weeds and some trees. 12 sets of rabbit tracks, ^{and} coyote trail, all along fence row, none in grass meadow, fence row to right only 1.

Peterson field. 12:30. Grass field cut annually. Yellow-shafted flicker flew across field to Grackle Roost area. Microtine snow runway between old hard crust & new snow. no rabbit tracks. Peterson road at 12:33 P.M. End of census.

Summation: Cottontail rabbit 149. It is difficult to judge the numbers of cottontails by trail or imprints and at the best is subjective. I believe that by careful analysis of tracks that there are at least 149 individual rabbits in the area surveyed.

Peromyscus leucopus 4

" *maniculatus* 1

squirrel sp. ? (fox or gray) 21

fox 5 (live)

gray 1 (live)

coyote 2

weasel 1

blarina 1

domestic dogs (covered 80% of area)

microtine 1 crow 1

red-bellied woodpecker 2

black-capped chickadee 2

yellow-shafted flicker 1

yellow-bellied sapsucker 1

goldfinch 7

bluejay 1

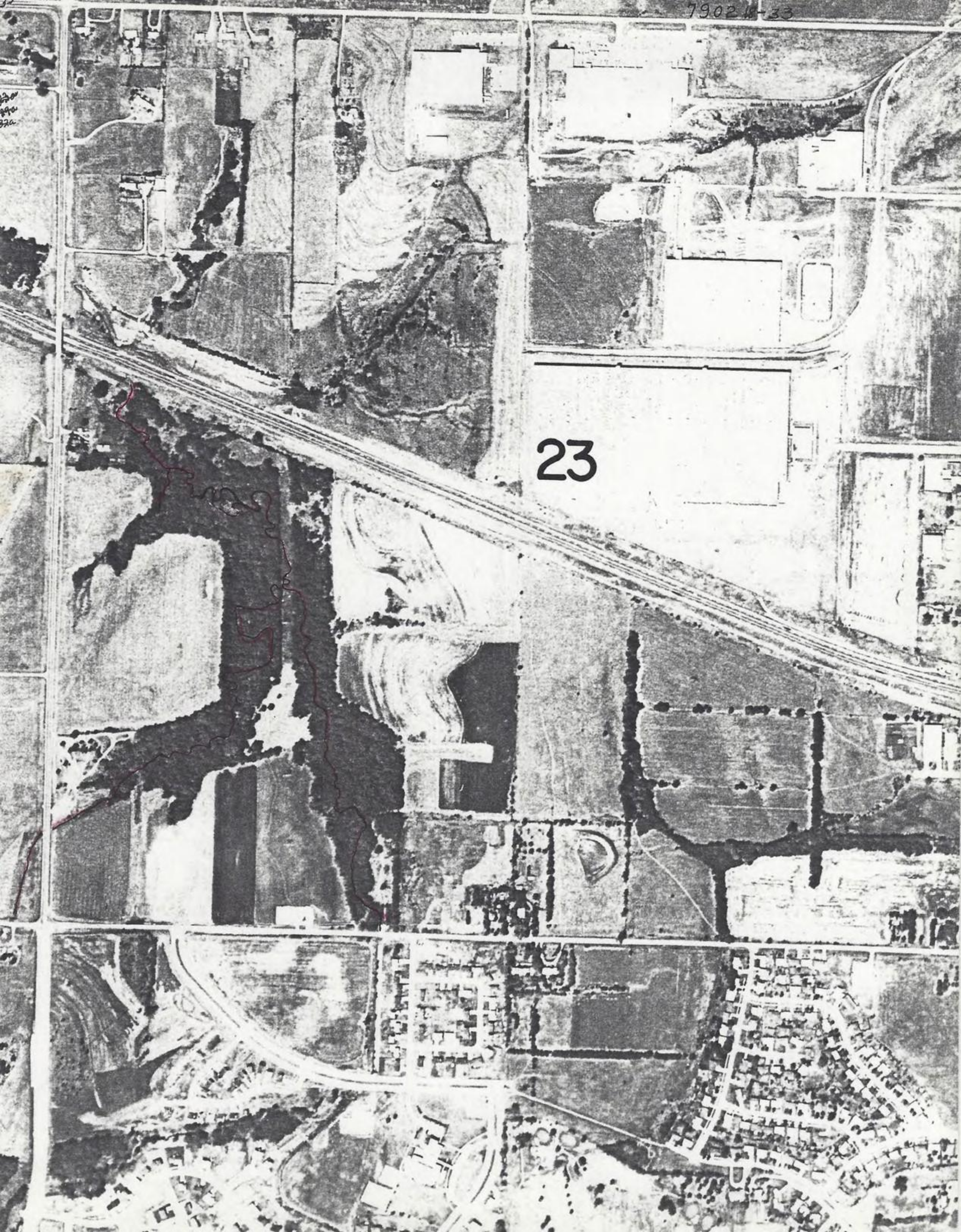
TOTAL BIRDS

15!

320
320
320

23

East

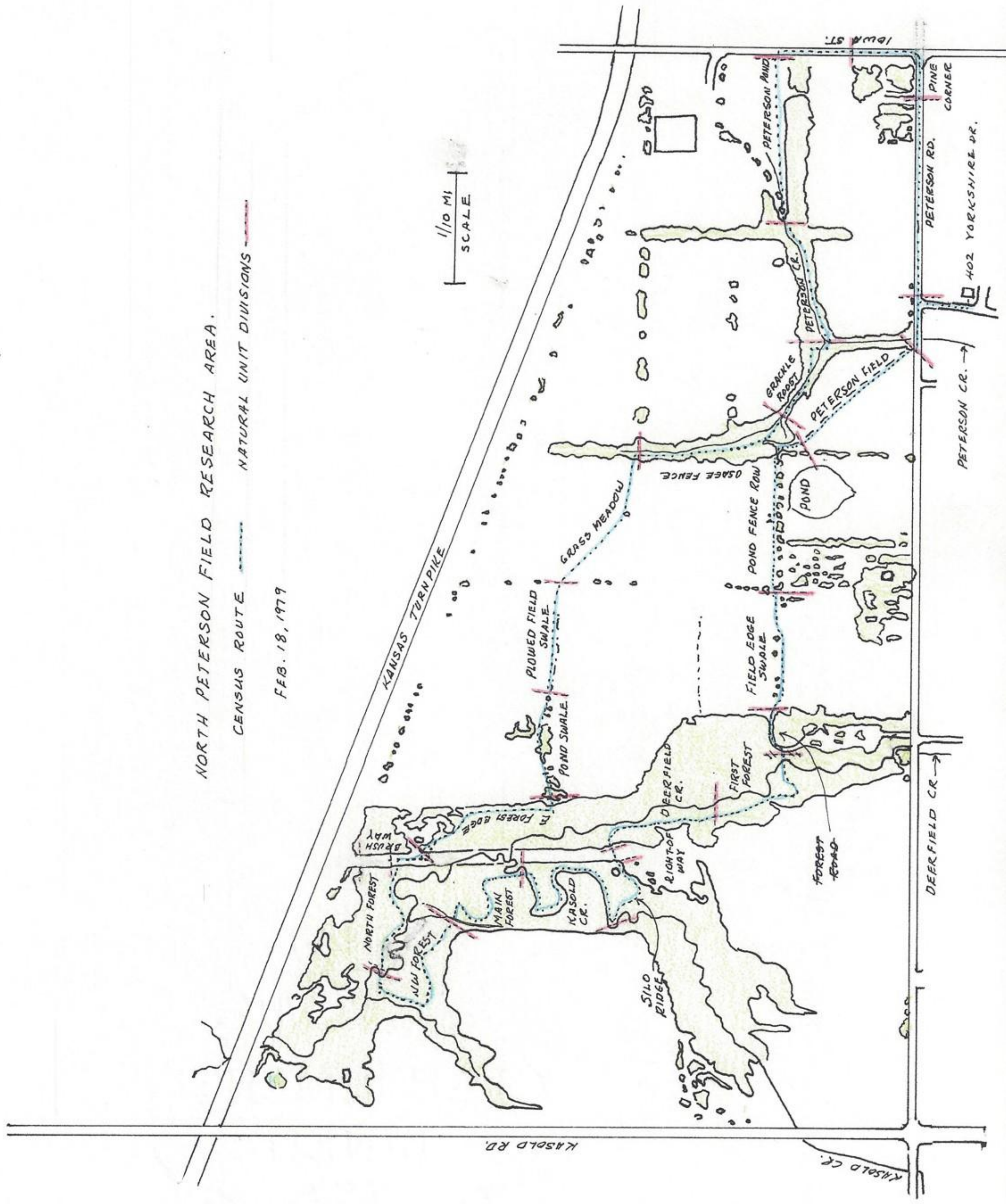


NORTH PETERSON FIELD RESEARCH AREA.

CENSUS ROUTE NATURAL UNIT DIVISIONS - - - - -

FEB. 18, 1979

1/10 MI SCALE



Plan to survey this area from time to time and compile a seasonal aspection of the fauna. This census of today should document the cottontail population. The census of Feb. 10 was three this same area and as the census of today, bird life is indeed scarce in the area.

Ramada Inn, Lawrence, Douglas Co., Kansas.

February 18, 1979

On north slope below the inn noticed a trail of Blarina in the snow. It moved under the new snow and travelled an irregular course in a 35' diameter area. Trail occasionally went through basal snow and reappeared 2 or feet beyond. Seemed to be concerned with weed stems that stuck up thru the snow. On the entire width of the snow covered golf course did not see a single cottontail track (over 1/2 mile).

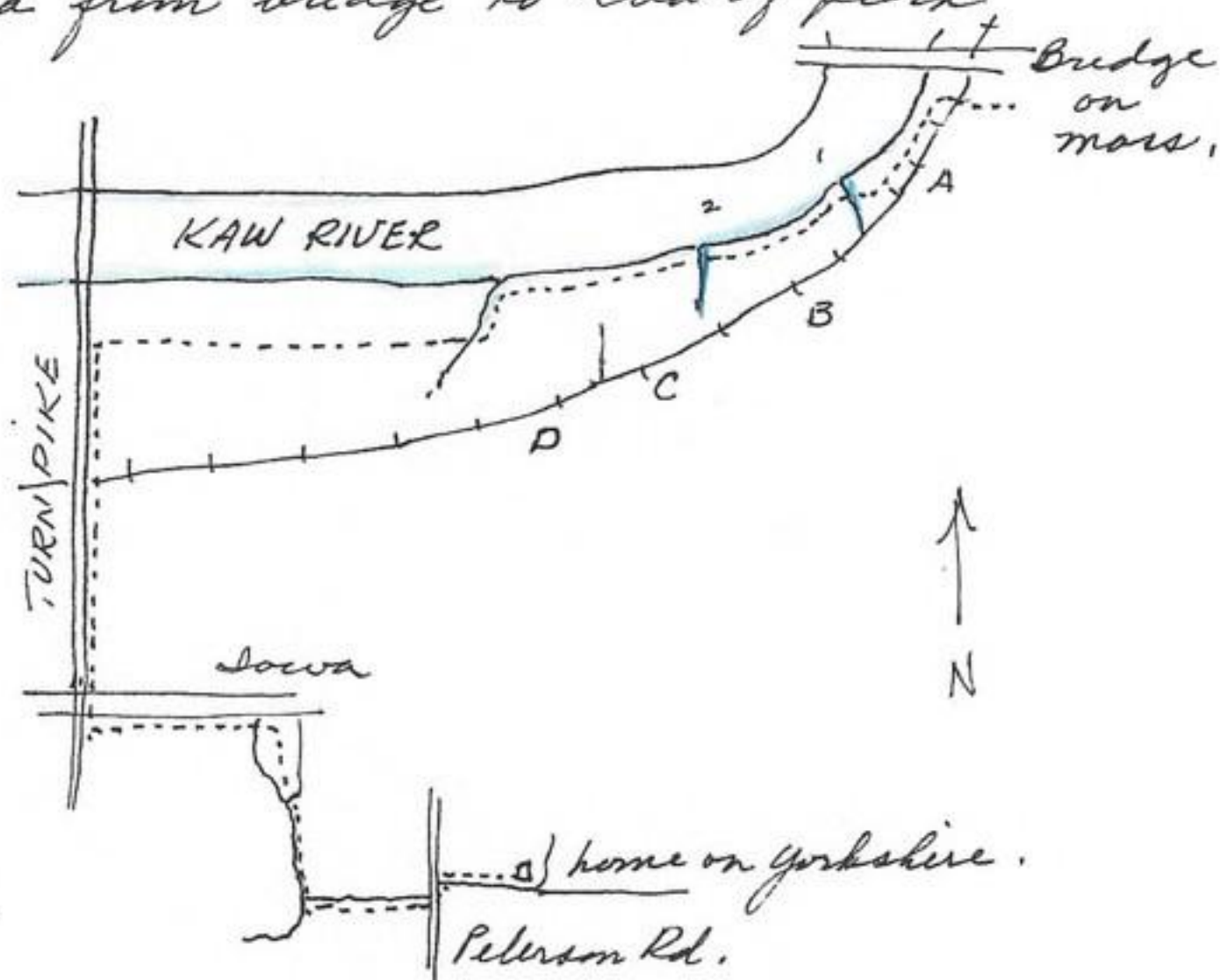
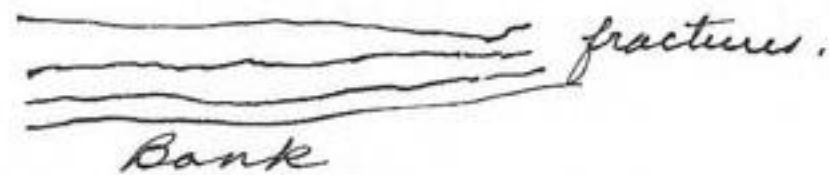
Kaw River, Lawrence, Douglas Co., Kansas

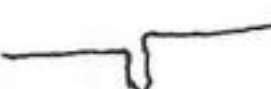
Feb. 20, 1979



walked home from town via Kaw River, turnpike right-of-way. Checked on birds and mammals thru park area from bridge to end of park beyond waterworks area. Left bridge 9:15 A.M., juncos, bluejay.

approx 18 squirrel nests in trees in A, mainly young cottonwoods.

Rabbits scarce. 9:30 creek, frozen as is river, beaver cutting trees on S side creek at mouth. Fracture in ice along edge of river first near bank, second 20' out and 3rd 30 or so feet.

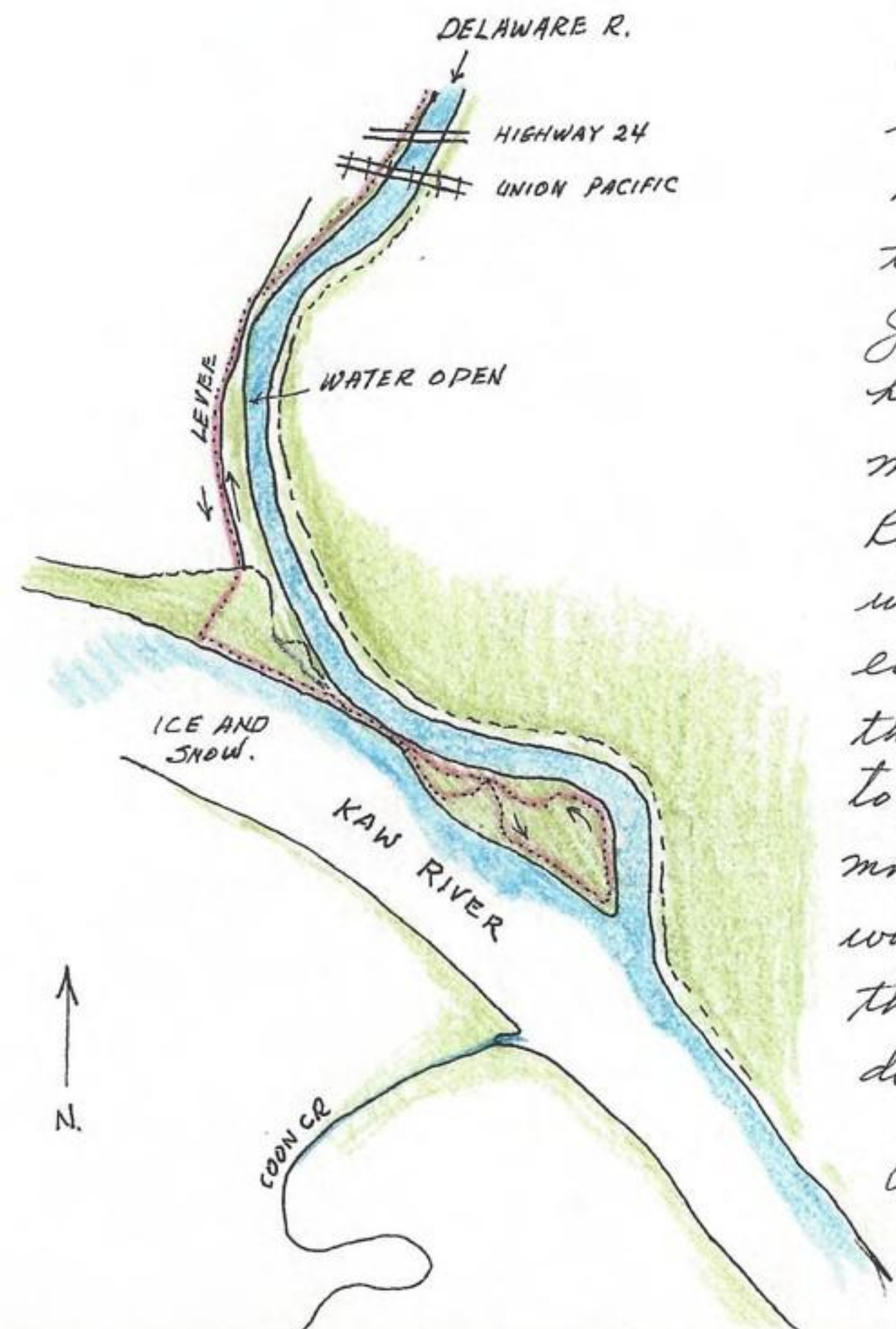


The riverward side always higher if ice has been displaced —  crack to 1 1/2 inches wide, someplace water overflowed crack. 9:35 second creek (odoriferous, clay colored, from waterworks plant. Open. Beaver cut six small trees 1 1/2 to 3" diameter and 2 chewed but not felled. Area B has fewer tree nests than A, but trees larger. Another area of beaver activity. 20 trees cut, 6 down. 9:48 passed thru C, fewer tree nests of squirrels. 9:45 across B of picnic area. 9:45 creek, not open. dog had eaten dead mallard uncovered from snow. 10:01 bridge.

noticed that in ideal snow, squirrel track  whereas cottontail  sides.
 10:15 turn pike, no S on S side of slope, no snow but on flat country there is a covering of snow. Some brush and small trees had been cut under turnpike bridge and cottontails had eaten bark and many in area. None in open field. Slope of turnpike with active microtus (microtus) about every 10 feet. 10:50 railroad tracks (Santa Fe).
 6.0 redwing blackbirds on elapsed slope. There is a correlation between numbers of runway of microtus and height of cut grass on right-of-way, many in long grass & none in short grass, at West Gate exit noted a redtail. 11:15 Iowa. 11:33 end creek now S to Peterson Rd. Only bird in Pond area and along creek was 1 cardinal.

Delaware River - Kaw River, N Leecompton, Jefferson Co., Kansas.
 Feb. 21, 1979

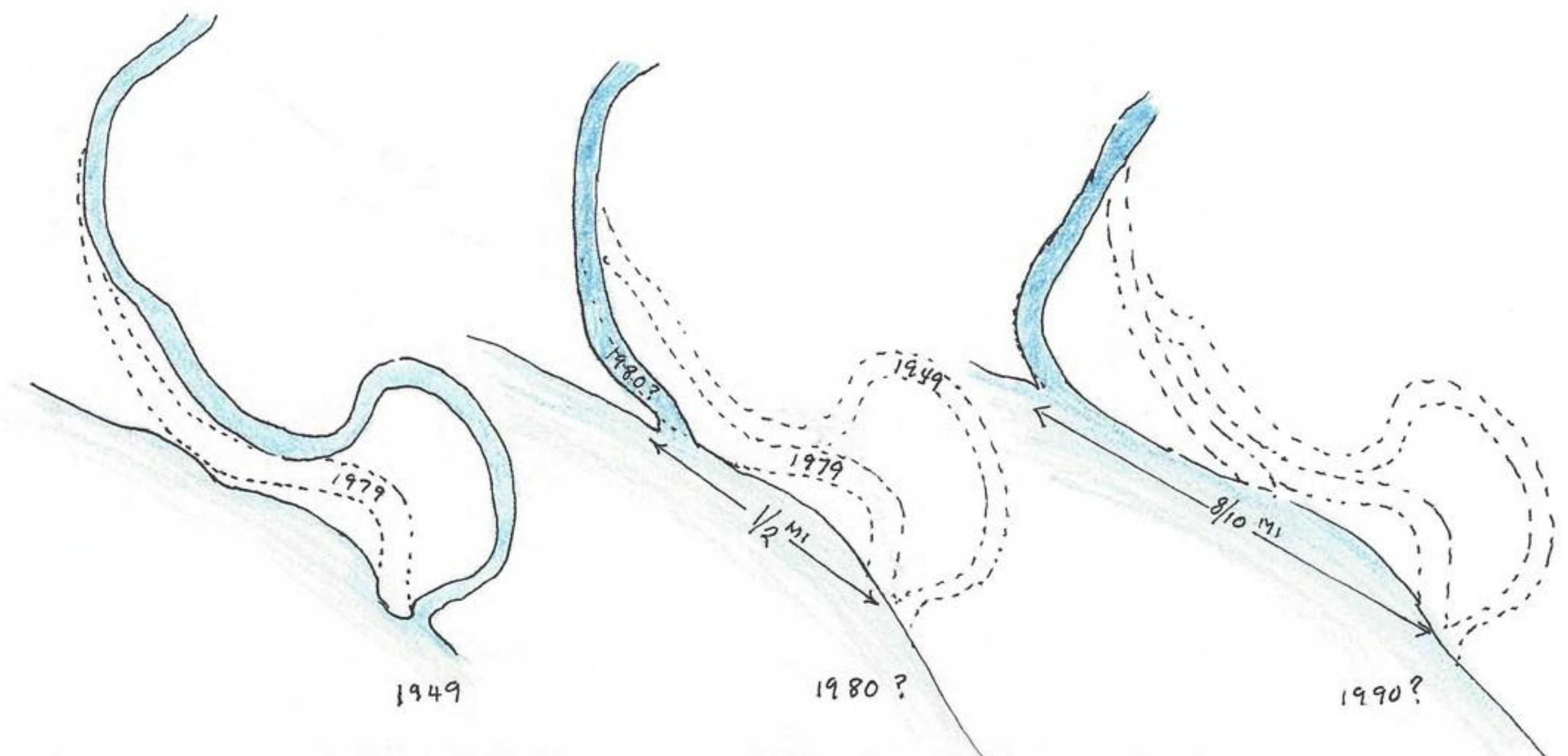
Will check Delaware River from Highway 24 to mouth to see what effect a canal has upon the eagles. Left home at mileage 99056.7 at 9:20 A.M. Clear sky, no wind, temp. 33°F. Should be 40° or above today. Will keep complete list of all birds enroute to Perry via Leecompton. 58.5 Farmers turnpike. 10% of fields are clear of snow (not areas controlled by drifting caused by county roads).

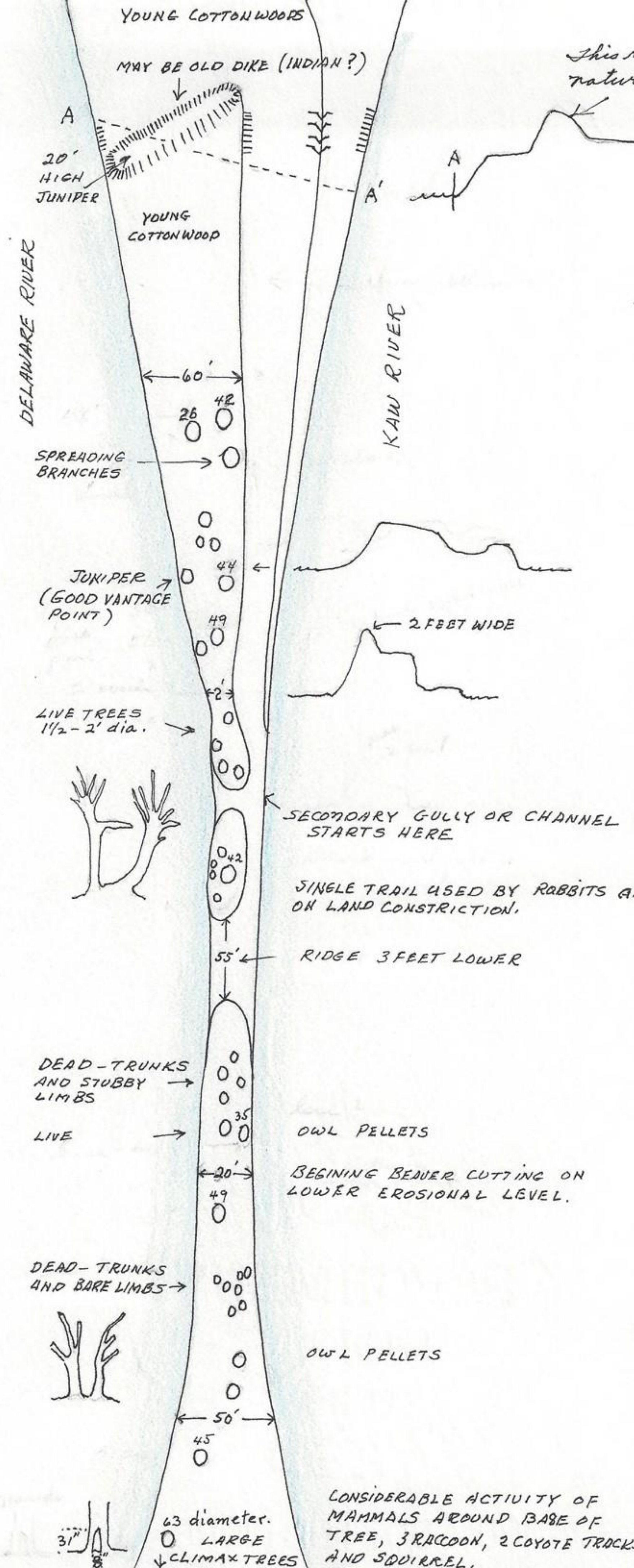


Ponds free of snow but still in ice.
 63.0 fresh striped skunk roadkill.
 64.5 Leecompton Rd, no birds along entire route so far. 70.8 Delaware River at highway 24, Open. At this time Mr. Van Hoesen of the Journal World newspaper of Lawrence had just returned at the bridge after making a trip down the Delaware River to its mouth and return. He was interesting in photographing the eagles for a news report. He claims that two other newspapers are trying to photograph the eagles. He uses a 500 mm and has an 800 mm available but was not satisfied this morning because the eagles ^(3 adults) left too far ahead and they did not return. He commented on the great number of beaver tracks and cut trees at the mouth of the Delaware.

He indicated full cooperation for publicity of our eagle research in the area.

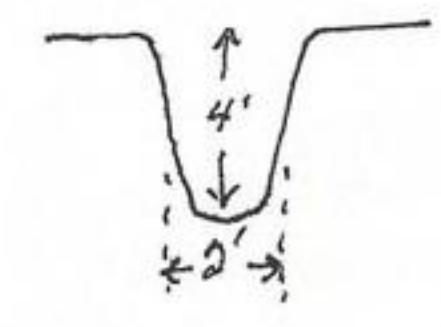
This would be an opportunity to see what effect this morning's disturbance has had on the eagle population so planned to follow down the river from highway 24 to the mouth and see when the eagles would return as well as record information of the area for this time of year (see previous map for route). Will keep complete census of birds and mammals. Left. 9:50 A.M. will follow edge of bank. 10:00 10 male and 7 female Common mergansers and 8 mallards in river, they swam down river rather than fly. Bluejay, 16 mourning doves on south espase of river, the first to leave was one without a tail. The bank at this point and for that matter all along is nearly free of snow on steep bank, free of snow on lip of bank, 1 foot snow on tree bench and 3-6 feet snow drifts at n side riparian trees where snow blows from open fields. At this time there is a foot to 3 feet of open ground at brink of bank. The mourning doves were in the open part of bank. Crow overhead. Left bank of river and gained levee which is snow-bound except top where grass showing thru. arrived end levee where it goes into forest at 10:25. Between here and the river are numerous raccoon tracks and trails, always one in sight. They go from tree to tree, many of the trees have bark removed by these mammals. The ^{fresh} coyote trails thru this forest to edge of River (Kaw) arriving at 10:35. Ice moving in river in channel the largest islands 20' x 40', others down to fragments 1 foot square. I would say ice in flowing water is 20%. Continued toward mouth of Delaware. Recorded construction of land between The Delaware and Kaw rivers (next page). Possible change of river geomorphics must be taken into consideration in propasing boundary limits.





This remnant should not exist as a natural topographic form as it is higher than the flood plain.

Profile beaver trail up bank



Dominant tree in area figured is cottonwood. On flat surfaces snow covered except base of trees

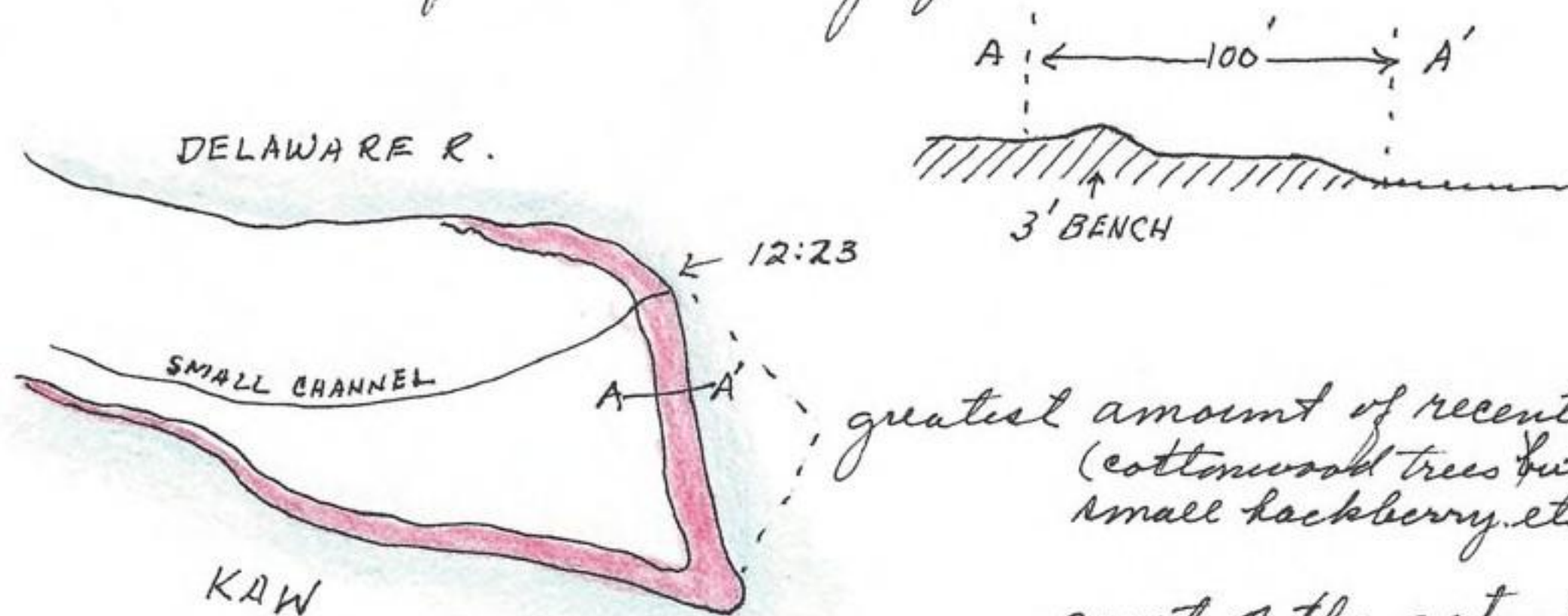
many rabbits (cottontails) and droppings.

Only birds observed thru this area were 2 slate-colored juncos and 1 cardinal.

Coyotes and deer would be vulnerable if driven onto the peninsulalike construction of land as in some places they would be obligated to pass within 20 feet of a hunter. This would be an excellent place for photographing animals. It is predicted that this narrow strip of land will be eroded this year or next by the Delaware River and a new channel created. A natural area must take into consideration this changing river course.

CONSIDERABLE ACTIVITY OF MAMMALS AROUND BASE OF TREE, 3 RACCOON, 2 COYOTE TRACKS AND SQUIRREL.

Arrived mouth Delaware River 11:56 having kept a critical eye on any bald eagles that might be returning to the area since disturbed by Van Huesen this A.M. At mouth were 92 mallards, 28 mergansers, 12 goldeneyes. They all flew up the Delaware and alighted again. The W bank of the mouth of the Delaware as far up river as trees grow near river and up N side Kaw to place indicated on map, the beaver were unusually active. I believe this activity is the result of several families of beaver. Most activity has taken place the last two days as far as snow trail evidence is indicated and may be a late winter renewed activity. Undoubtedly they have been moderately active throughout the winter, but new chips on new snow indicates very recent cutting of trees.



greatest amount of recent activity:
(cottonwood trees but black willow, small hackberry, etc.)

most of the activity was on west bank of mouth of river and


in an area approx 1000' long by 100' wide. The N side of Kaw had activity for over 2000' of river bank, considerable new cutting and much old cutting. In one area of bench, 100' from water were 15 trees felled, one right after the other ranging in diameter from 1' to 1 1/2'. Most activity last night or since last snow. Felled trees were not being dragged to water but bark eaten from upper limits of trees. Small trees in several instances were removed from area but snow along side of trails did not show drag scars.


Trails about every 50' from edge of water and snow to water. The most common one from water edge was a trail of 3 or 4 uses, some individual beaver tracks (one animal) but trails mainly patted down 4-6 inches with white sides of snow and bottom stained with dirt. Once beyond the concentrated pathway, individual trails led to other trees, some approached but not touched. Considerable trampling of snow where they fed on bark of downed trees & limbs. Highest cut on tree (standing 33 inches), highest reach of limb on ground 38".


beaver tracks
in snow.

Coyote tracks led thru the full length of beaver activity. This was an animal that was near point, probably watching the ducks and when

approached run to the west. This coyote was followed the entire return trip to dike. Tracks measure (front paw) 77 mm. (see map) Temp 45°F

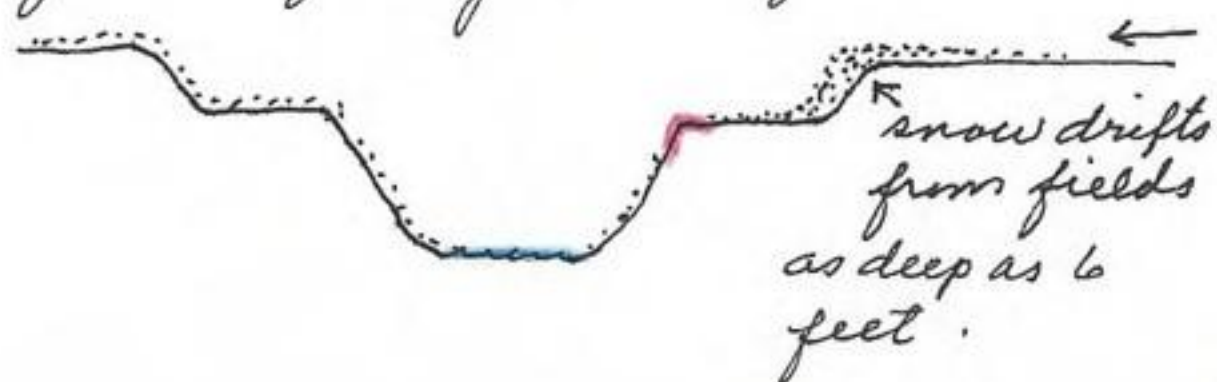
Left Channel at 12:23. At high ridge the coyote passed N end by climbing to top and over rather than an end run around the N end. This required prior knowledge of the area as I found the north slope impassible and I like the coyote climbed up the steep slope to continue. Coyote running most of the way. At construction it used establish animal trail. From jumper tree could hear frog calling from opposite side of Delaware River. Some beaver activity on E side river but nothing like S side near mouth. Steep banks exclude trees on W side here. Continued same way back to end dike, thence to car arriving at 1:50 P.M. Only line for squirrel at railroad bridge across the Delaware River. Raccoon tracks are:  the hind foot placed in front foot imprint.

not much coyote activity between end of dike & car. I had noticed that man places its foot into and out of snow much like other mammals with sliding movement at insert and perpendicular withdrawal  Continued E thru Perry, thence

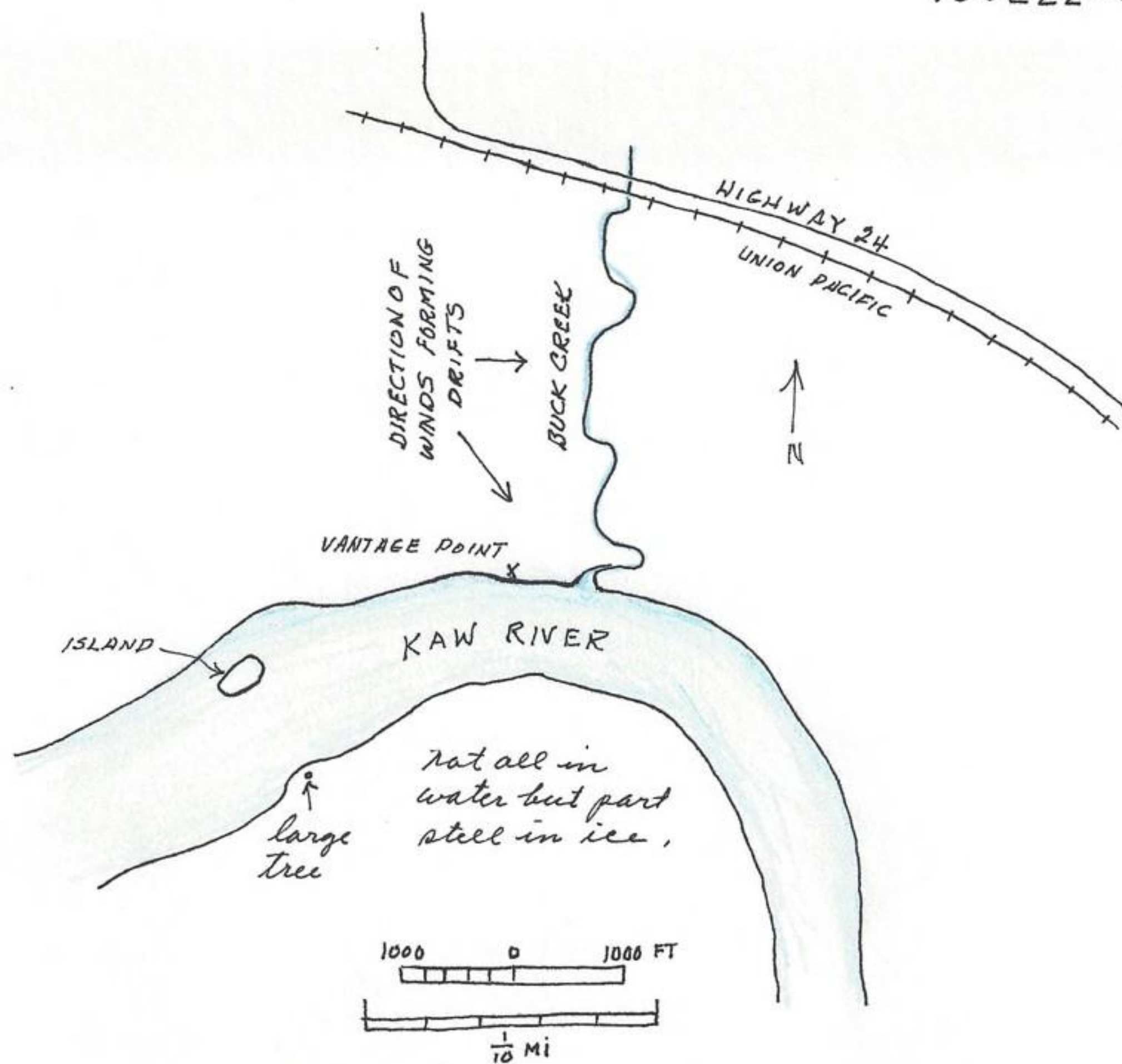
Leesumpton bridge (four eagles) thence to levee at first eagle observation point, having checked intermediate points along the way. Left car at levee and walked to river. From here observed 8 eagles (see map Jan 10, 1979) There were 52 common mergansers and 16 mallards in river. One other flock 8 mallards flew up river. Only birds observed between Leesumpton bridge and levee were 2 cardinal, 2 bluejays and 1 flicker. Only one horned lark between levee and home and this one in valley just around bend from levee. Lake Veves in ice on W bay but 20' open in E bay because of water coming in from Baldwin Creek. At junction of Kasold and Peterson Rd noted a Kingfisher  over Kasold Creek which is now open for first time this winter. First Kingfisher here this season.

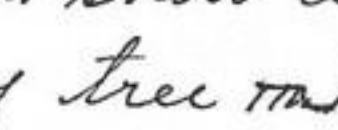

Buck Creek, Jefferson Co., Kansas
Feb. 22, 1979

Drove to Buck Creek at highway 24 crossing. Left there 10:55. Visibility approx. 300'. River free flowing, no ice, muddy. Not much contribution from highway drainage. Followed W side creek to mouth. Profile here:



Snow on all exposures except where indicated in red. These areas are used by animals in traveling thru area. Climate trees on upper & lower bench.

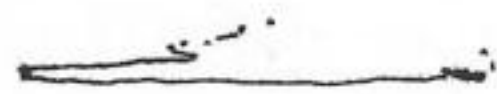


at 11:05 remnants or abutments of old bridge across Buck Creek, still in solid condition (rock walled, both sides). Tracks of skunk and raccoon common, also dog tracks. Two dogs left creek and returned $3\frac{1}{10}$ mile across ^{plowed} open corn field to farm houses. These tracks were found as far as $\frac{1}{2}$ miles down creek. Just beyond 12 mowmow downs on south exposure near top of lower level where snow had been melted. This is a common place for mowmow doves to occur. Area brushy and near climax trees. 11:10 Cable crossing. measured Cottonwood tree as 54 inches in diameter. Creek not as free flowing here and iced in places. 11:18 Cottonwood 46" diameter. 11:22 deep erosional draw W side. 11:25 Cottonwood 43" diameter. The raccoon tracks are developed into trails and pass from tree to tree. The trees however melted snow down to bare ground at base generally 1 foot out from base of tree . Squirrel tracks numerous. 11:30 erosion gulch, W. side. Cardinal singing. Snow in these erosional gulches can be 10' deep. One drift off of field over upper bank 9 feet deep. Visibility now 300'. 11:38 bank slip. . 11:42 Sycamore 42" dia. 11:45 fox squirrel ^{run} up tree, 2 juncos, 2 Cardinals. 11:46 Sycamore 30" diameter. 11:50 erosional gulch, these gulches are deep & narrow. Sycamore 39" in diameter. 11:55 utility line. 3 bluejays. Second bend from mouth log across creek and one saw use if required. In some place

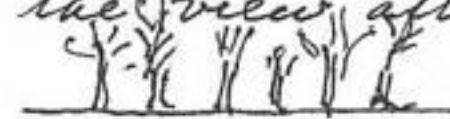
as one there years ago. Used by squirrels and other mammals, foggy and blowing off river three trees onto fields beyond. Last 1/10 mile at mouth of creek nice stand of cottonwoods same size 16" to 24". Arrived mouth 12:10 P.M. The west bank at mouth developed into picnic area with old trailer, used by farm people. Also boat outhaul. Another recent development along river. I would predict that this sort of private facility will be all up & down the river in the future. Continued on to vantage point arriving 12:15. Visibility 200'. The vantage point was on edge of river bank with almost perpendicular cliff below, small vines, shrub and ^{partially} weeds concealed my position.

Visibility 150' and view riverwise a void except occasionally clearing to see outline of what I thought was the other side of the river both in outline and distance, approx. 1000 feet. At this time an adult bald (No. A) eagle ^{from W} circled directly overhead, trended in low glide to the S, out of sight into the fog which then way 150' visibility. I was confident that the ^{S.} shoreline I was seeing was the other side of the river but at 12:57 the wind increased and abruptly passed N and cleared the river valley to the S. At this moment the S side of the river turned out to be a sandbar (not 1000 ft away but actually about 300 feet away). The south bank, ^{and trees} appeared as if in the sky and unbelievably large. The adult eagle had apparently glided to the tree where it was first observed at 12:57 P.M.

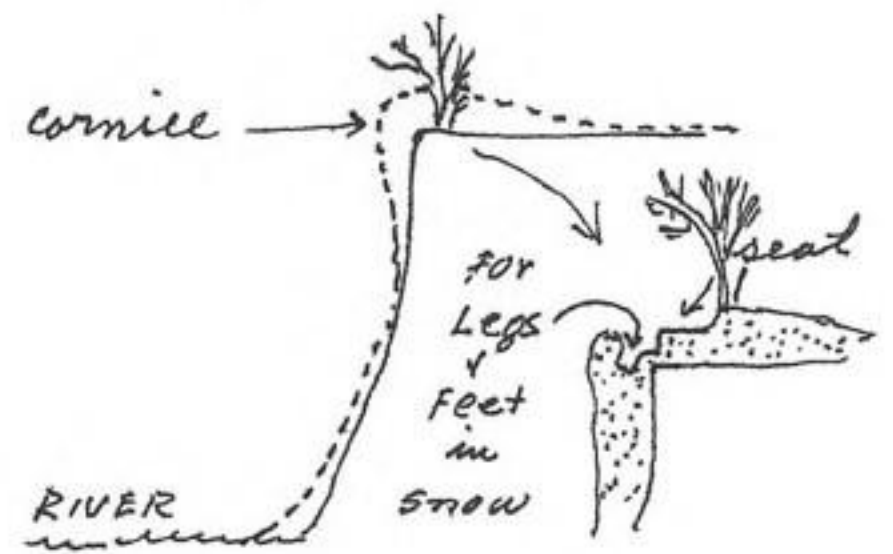
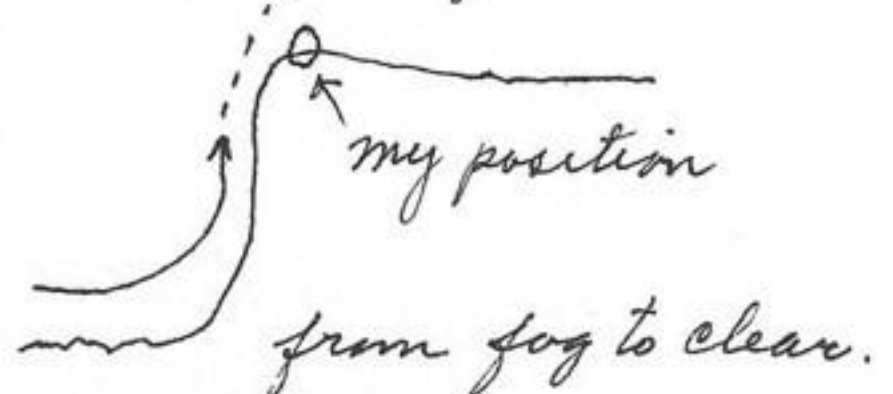
view in fog was so:



The view after fog cleared



River below clear at times to ice fragments 1 foot to 30' x 40' islands of floating ice. At 12:57 the valley was clear S of river with fog low in field (trees with upper branches showing only), the distant ridge at side of valley faintly discernable. The river channel was still partly foggy at lower levels or where wind from S had less effect on the channel fog. It never cleared up river to the point where one could discern detail of trees (trees a bluish haze without detail in distance say beyond 2 1/2 miles. Before listing eagle activity noted that islands of ice drifted to the north shore when wind from the south. From my position on bank I felt no wind but when I put my hand out over the edge there was considerable cold and wind pressure. Toward end of stay above fog rain clouds came over area and darkened the countryside. Some fields with patches of fog. Stay somewhat variable



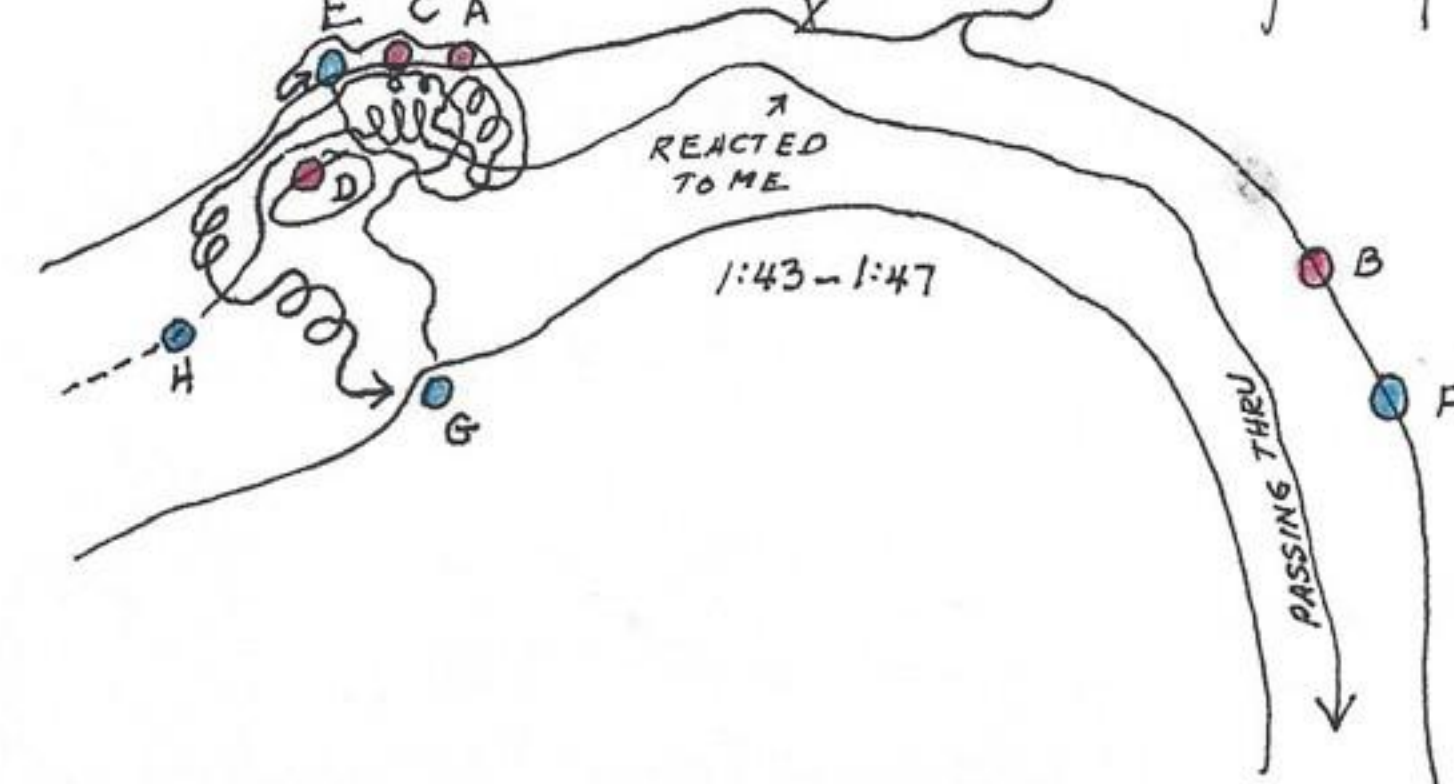
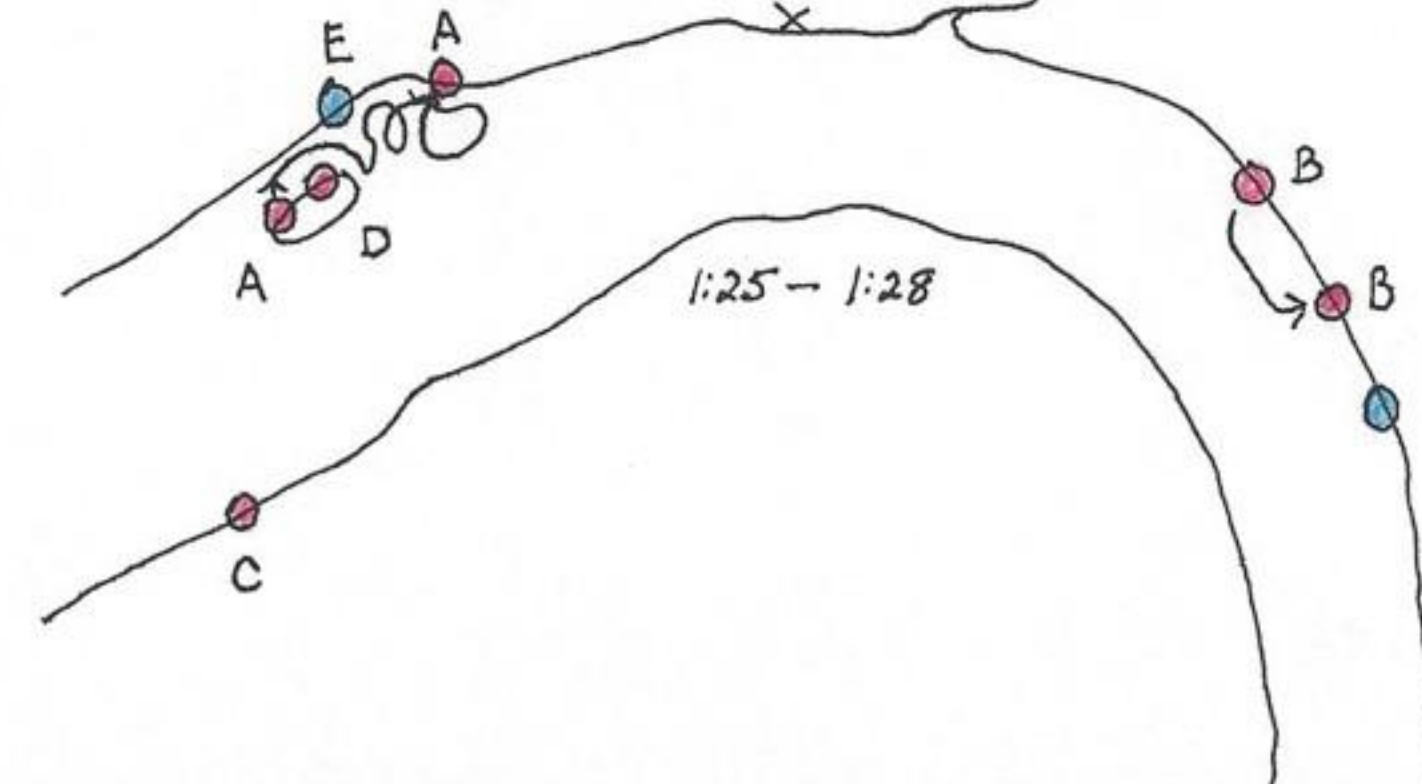
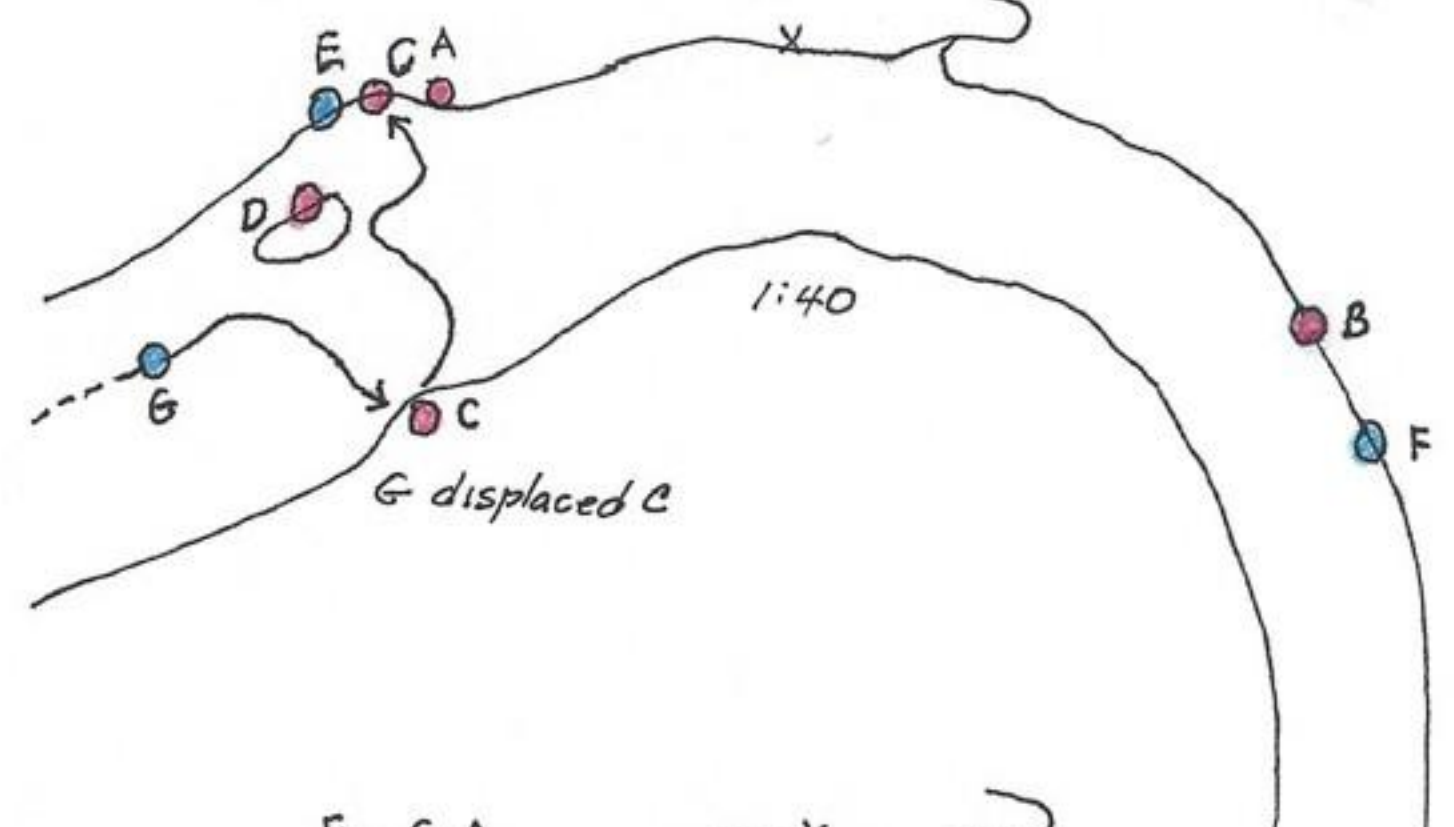
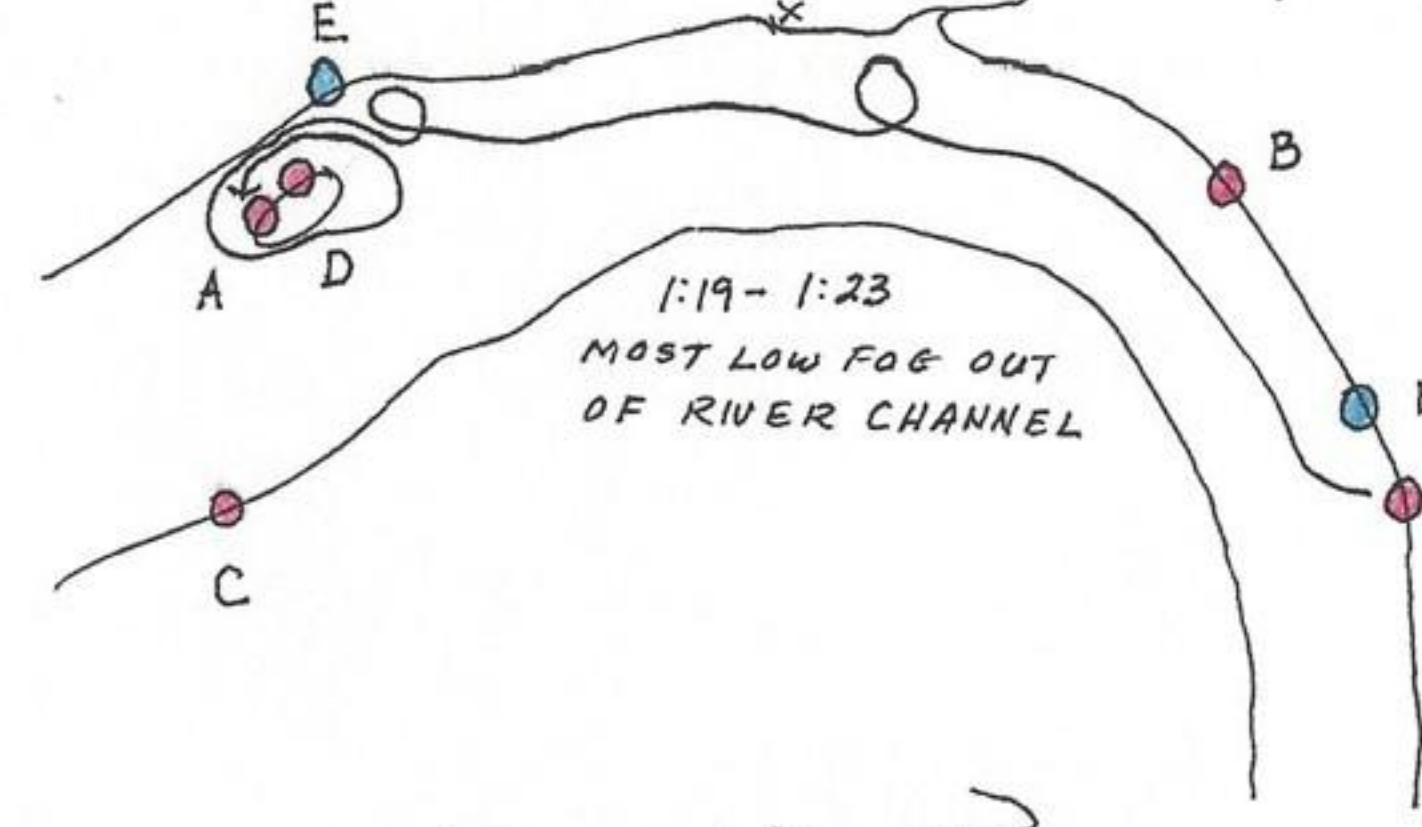
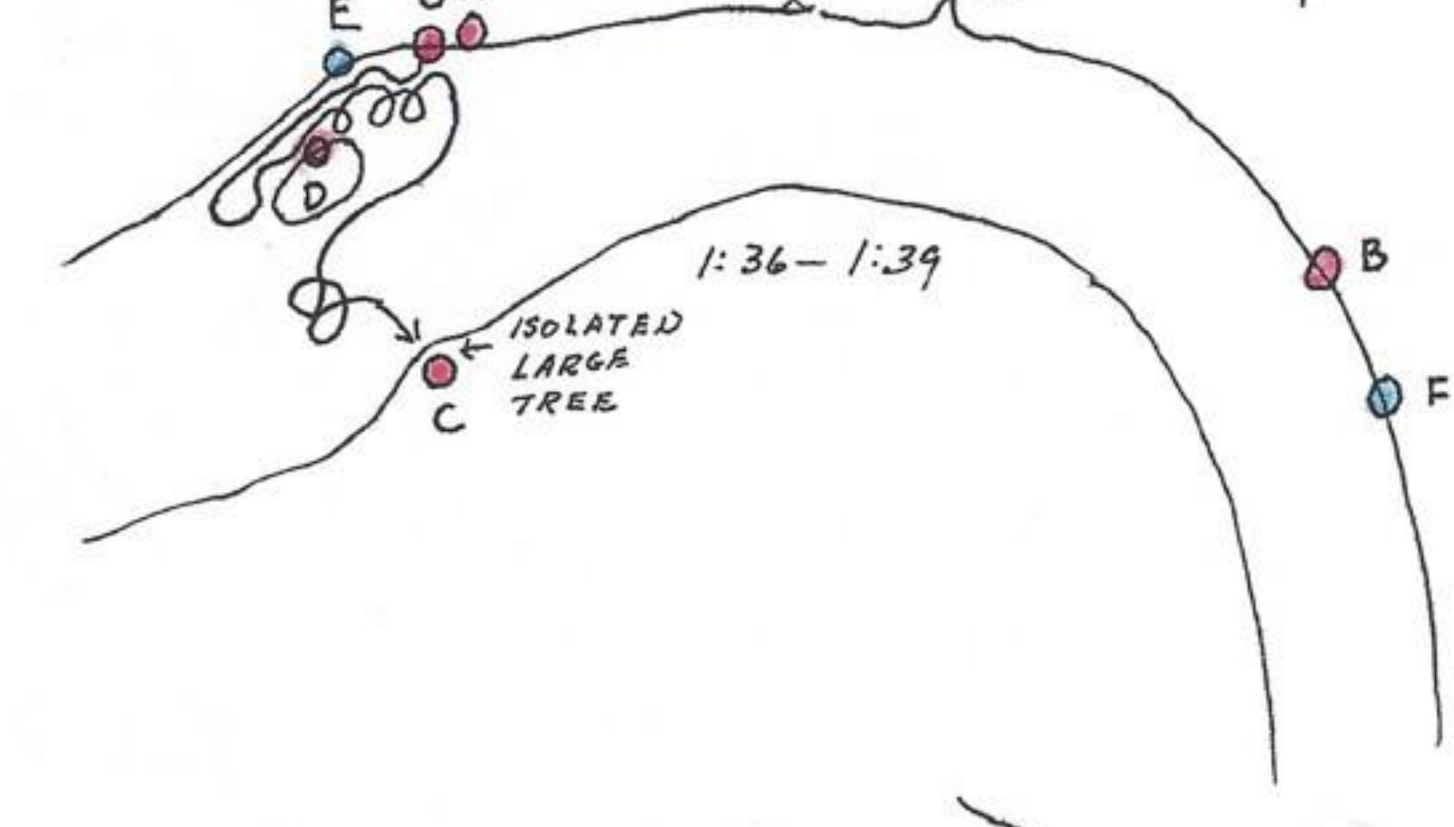
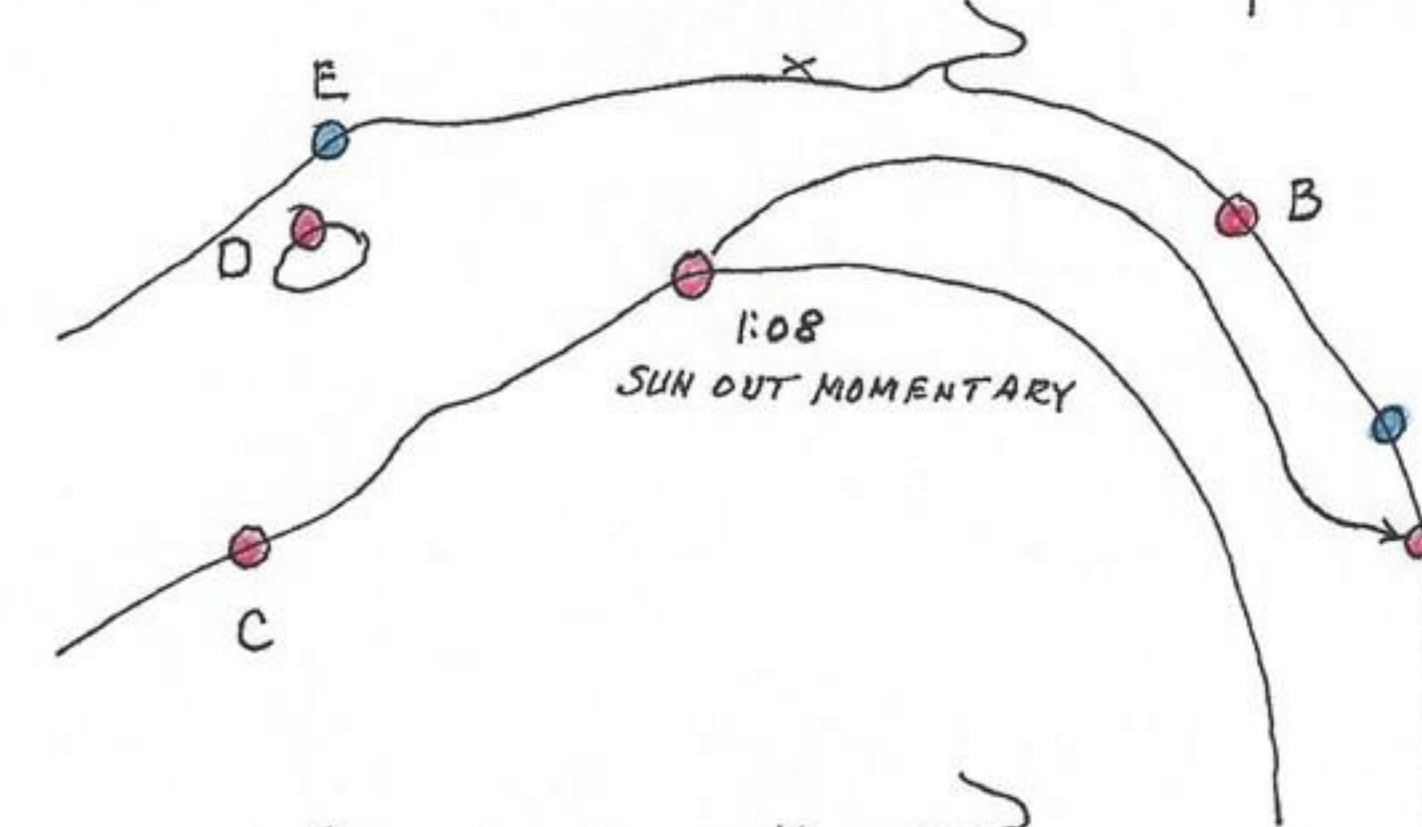
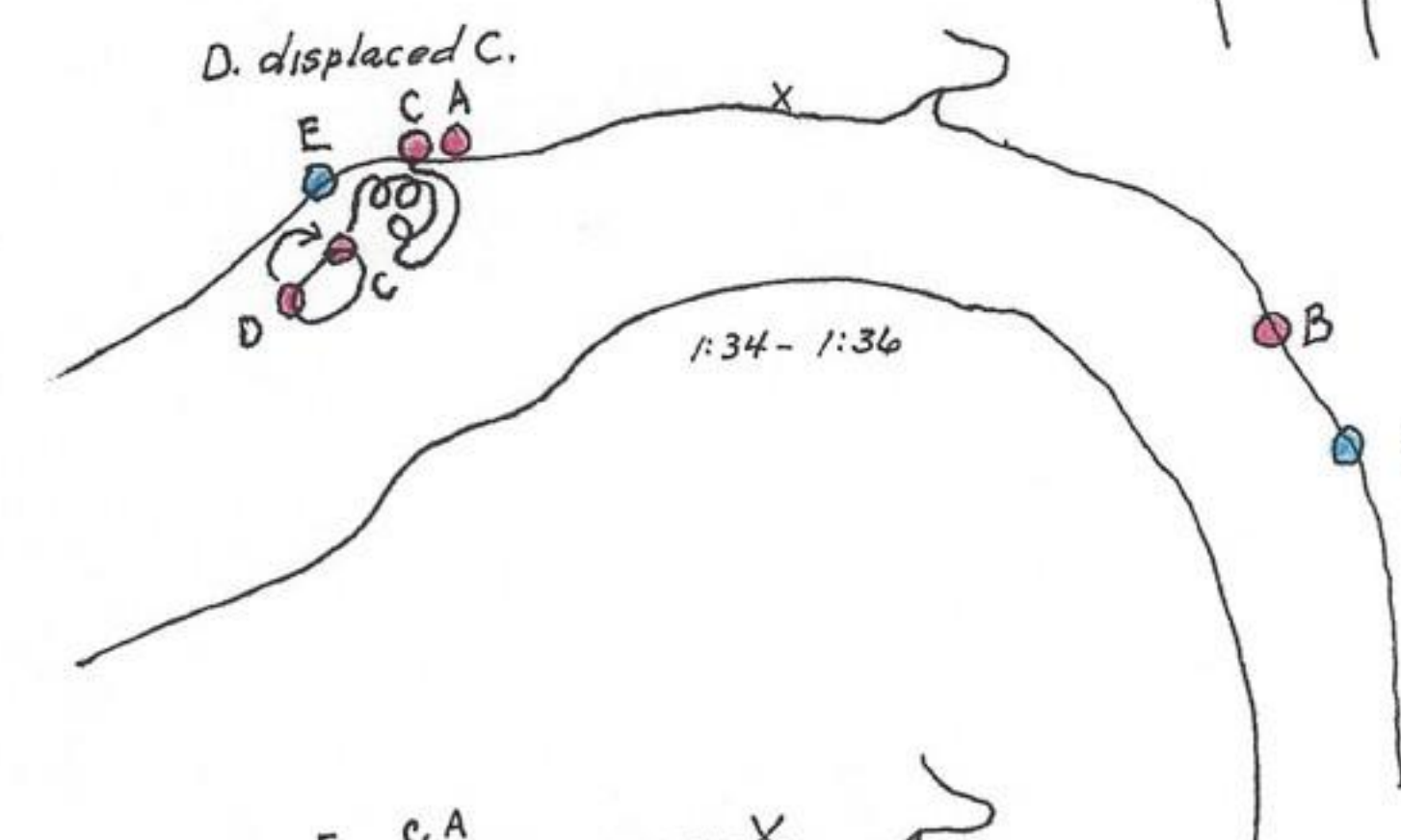
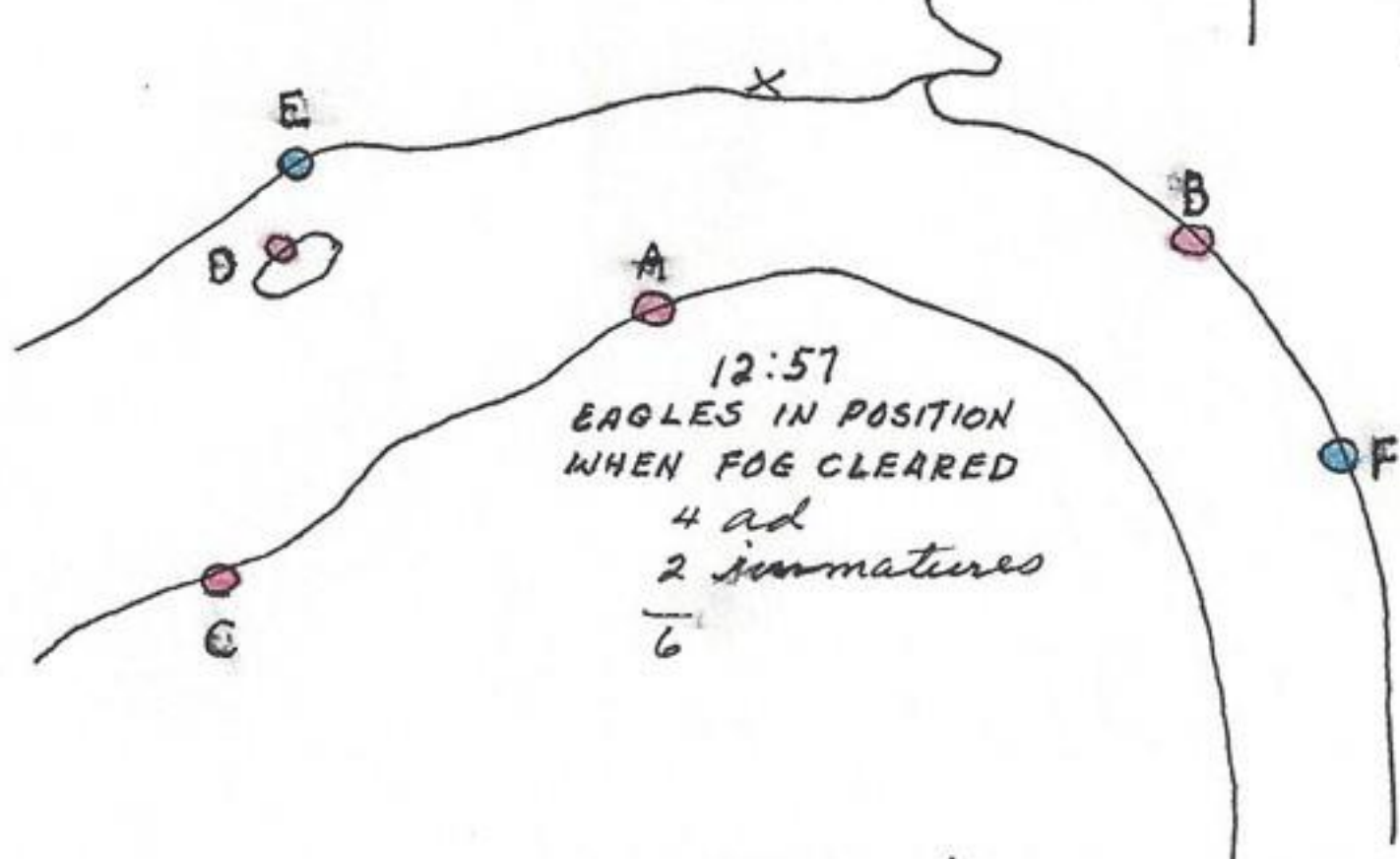
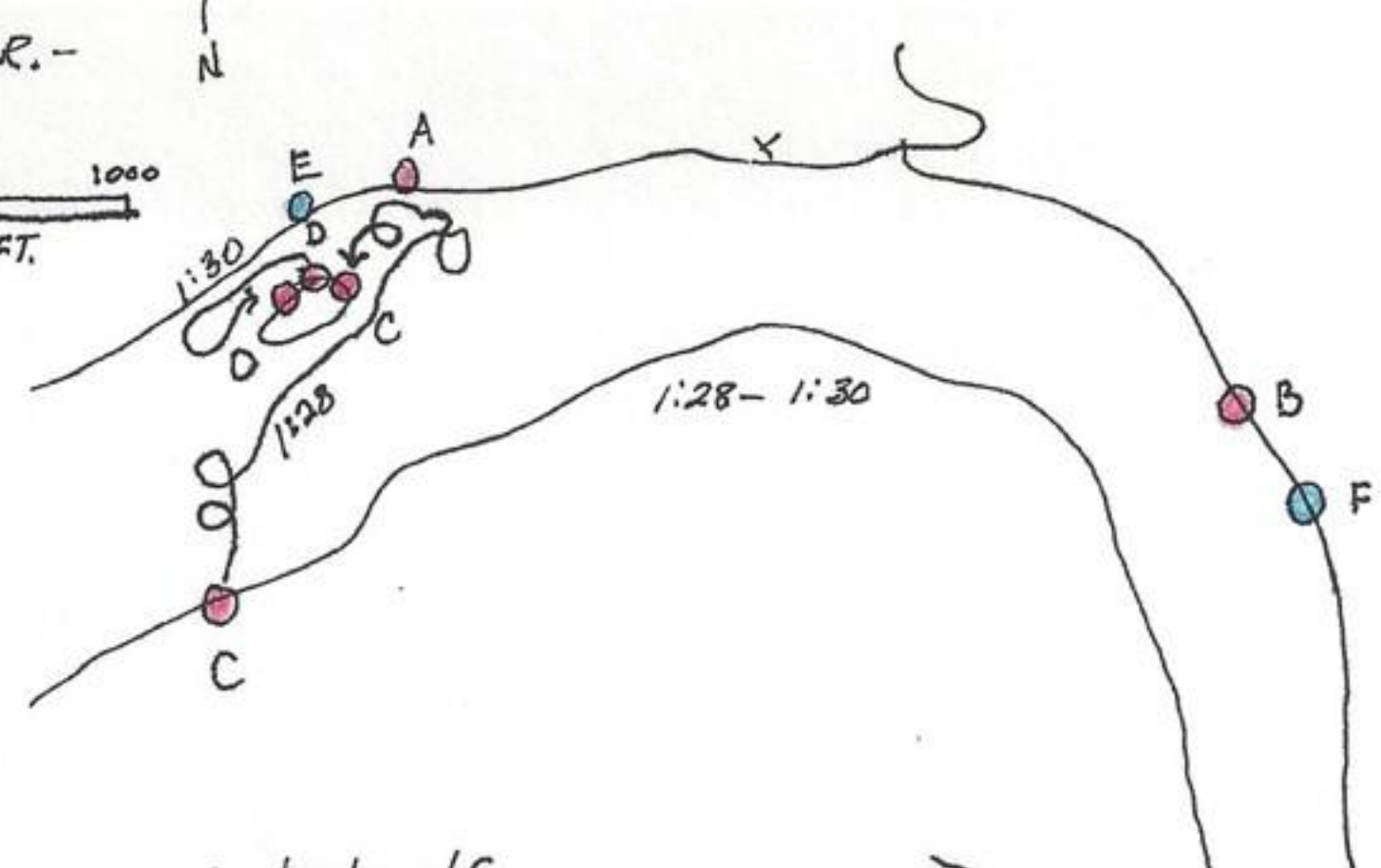
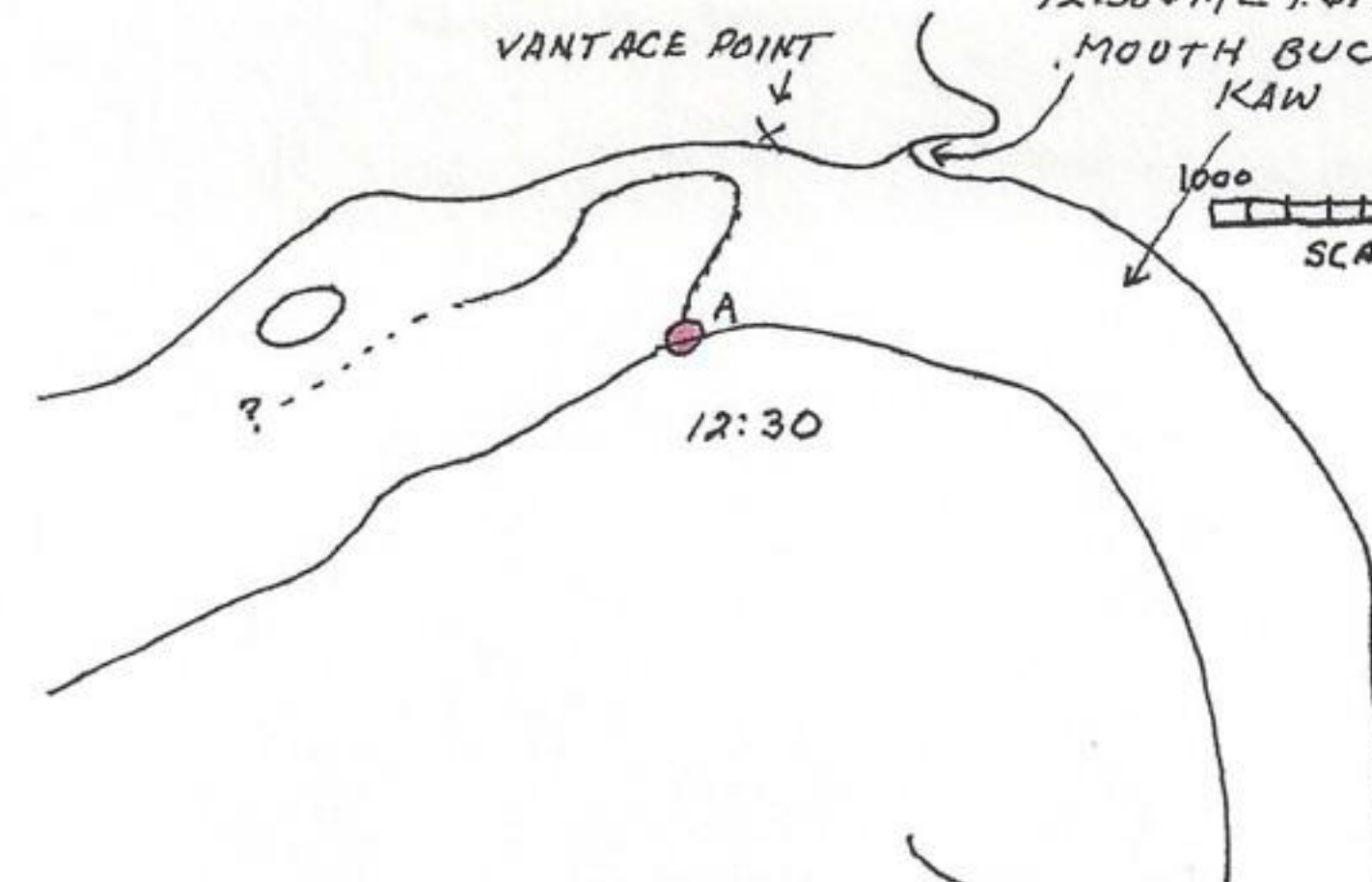
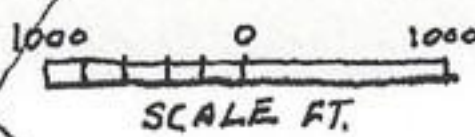
BALD EAGLE ACTIVITY

790222-43

12:30 PM - 1:47 PM

MOUTH BUCK CR. - KAW

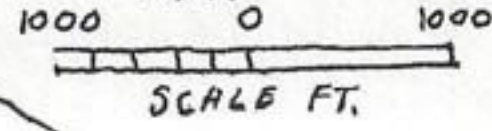
VANTAGE POINT



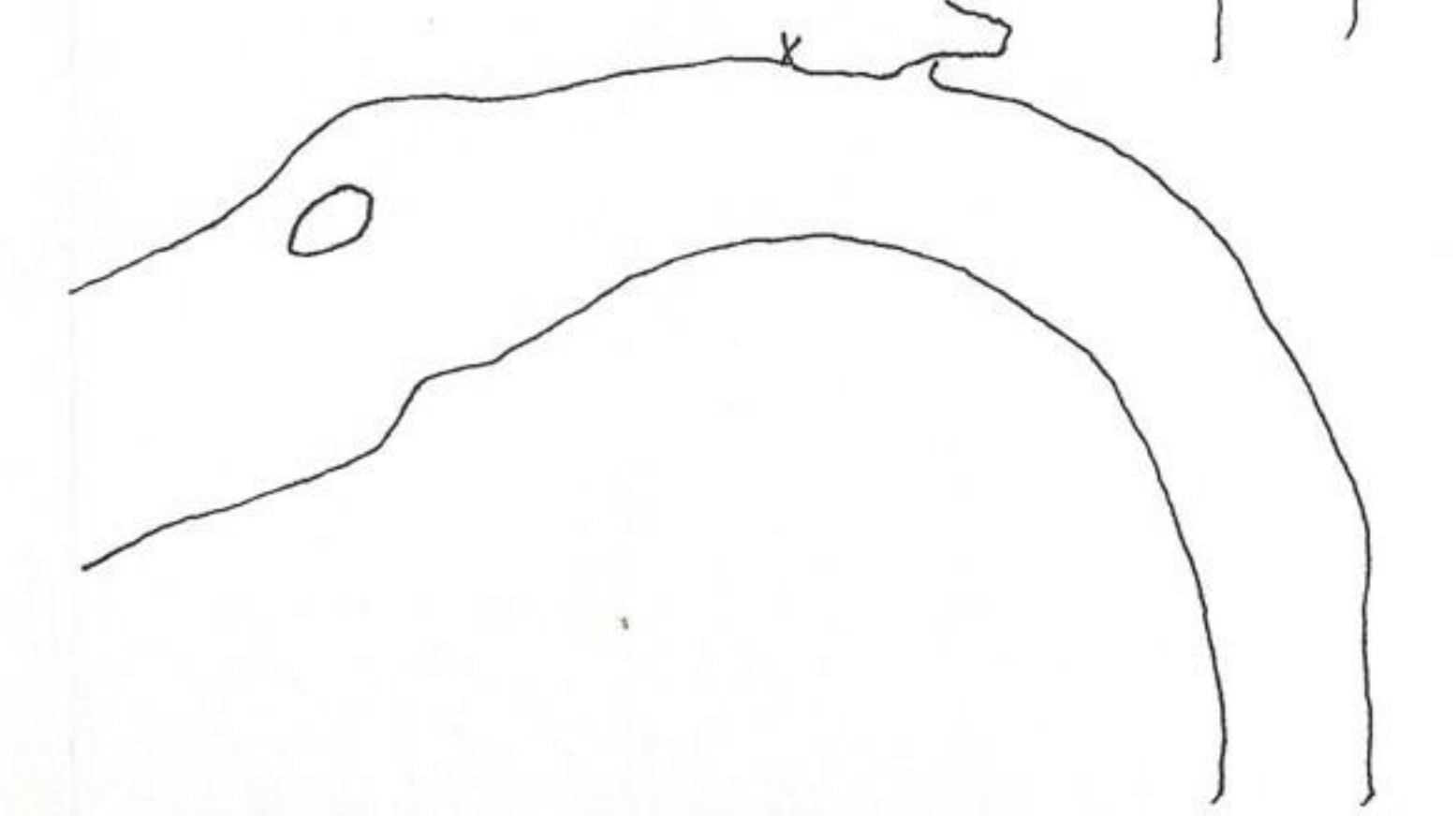
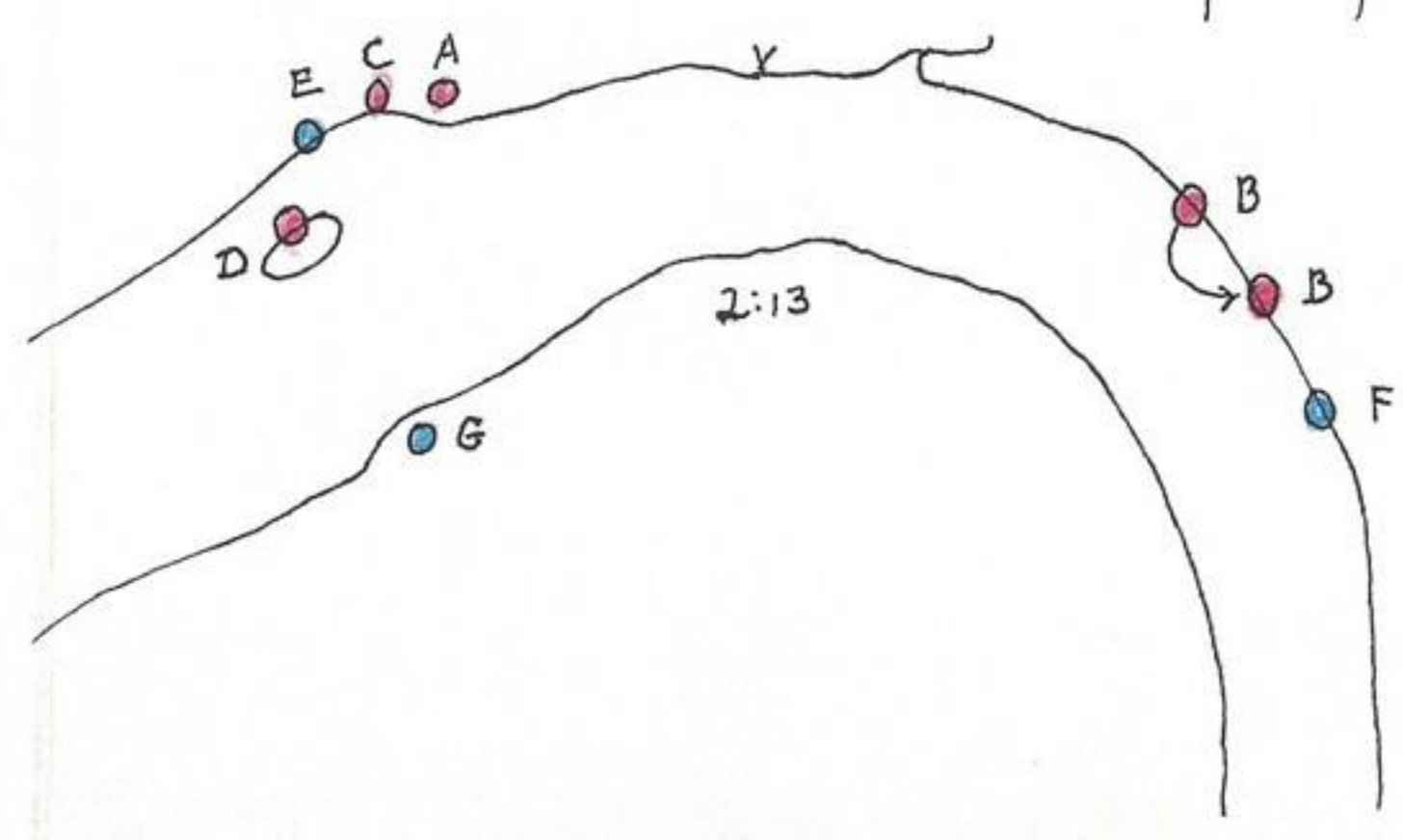
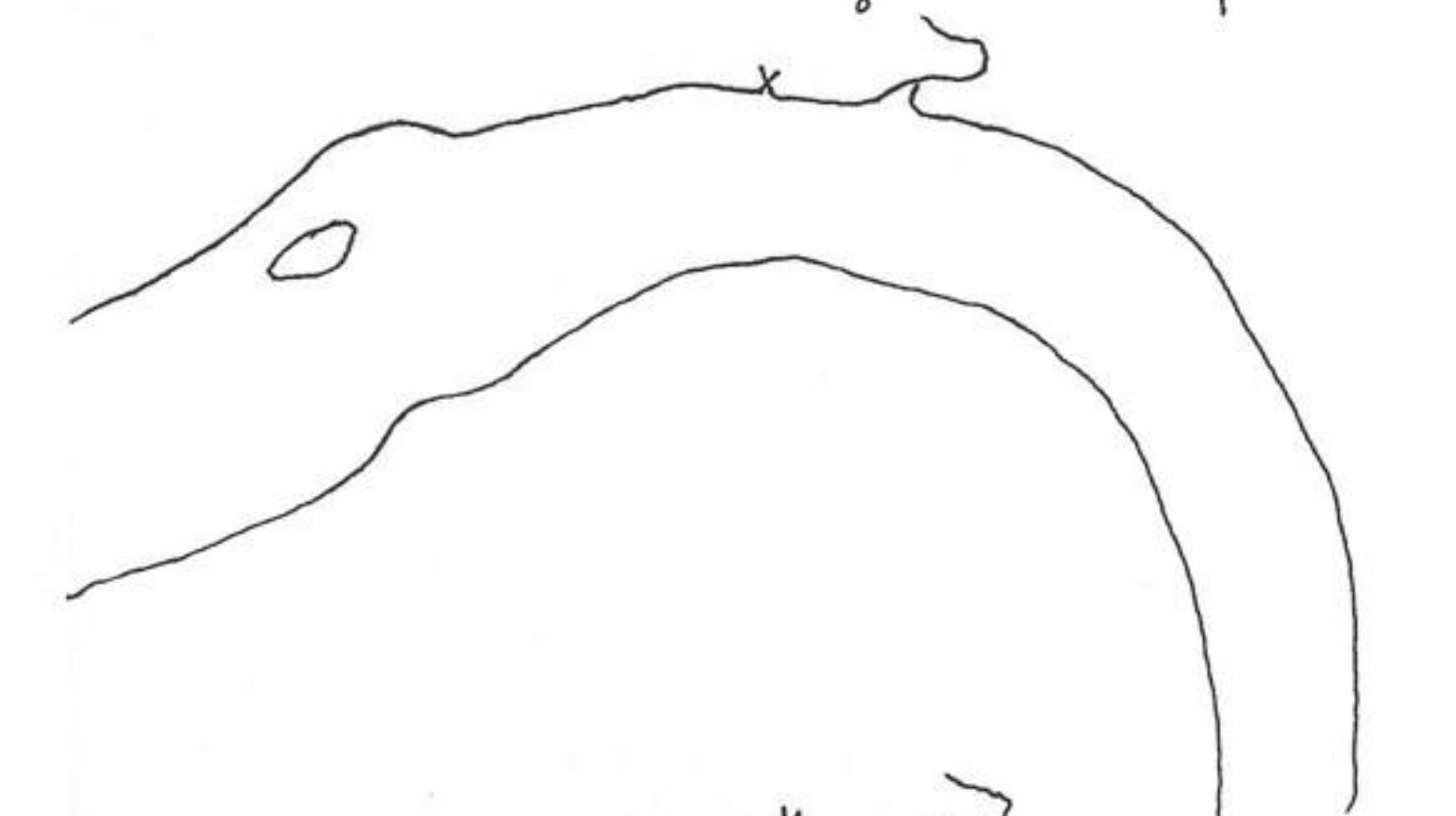
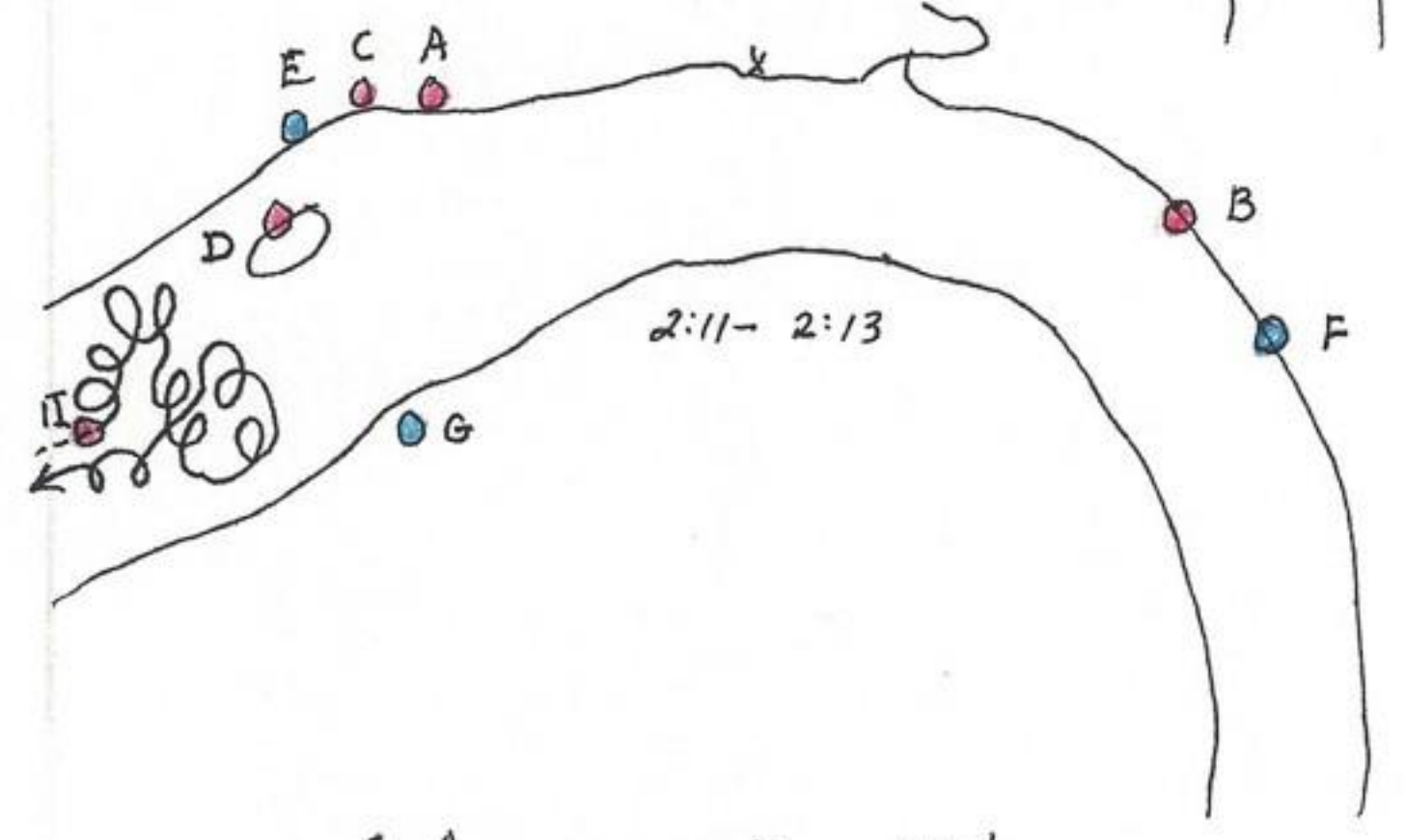
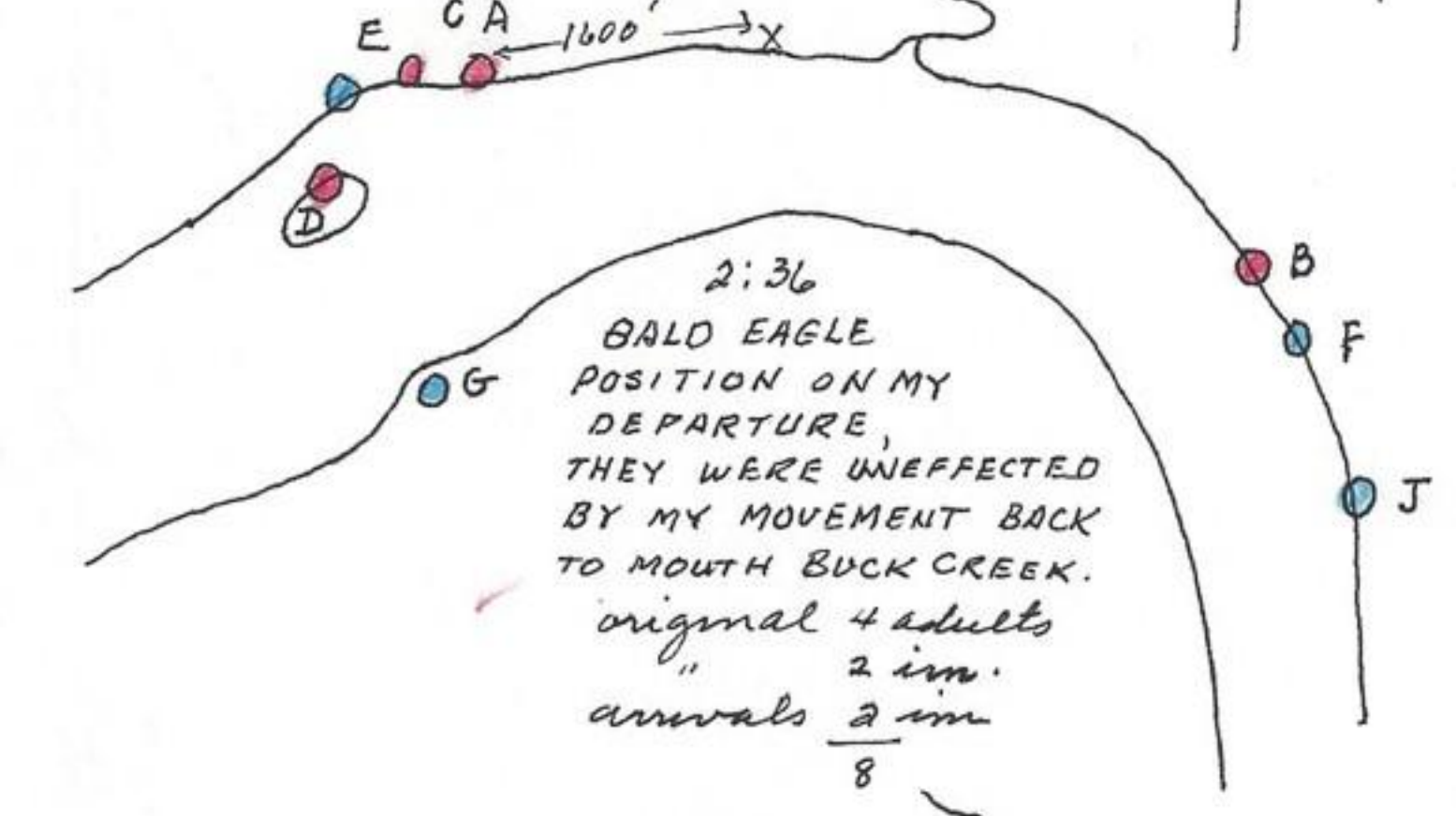
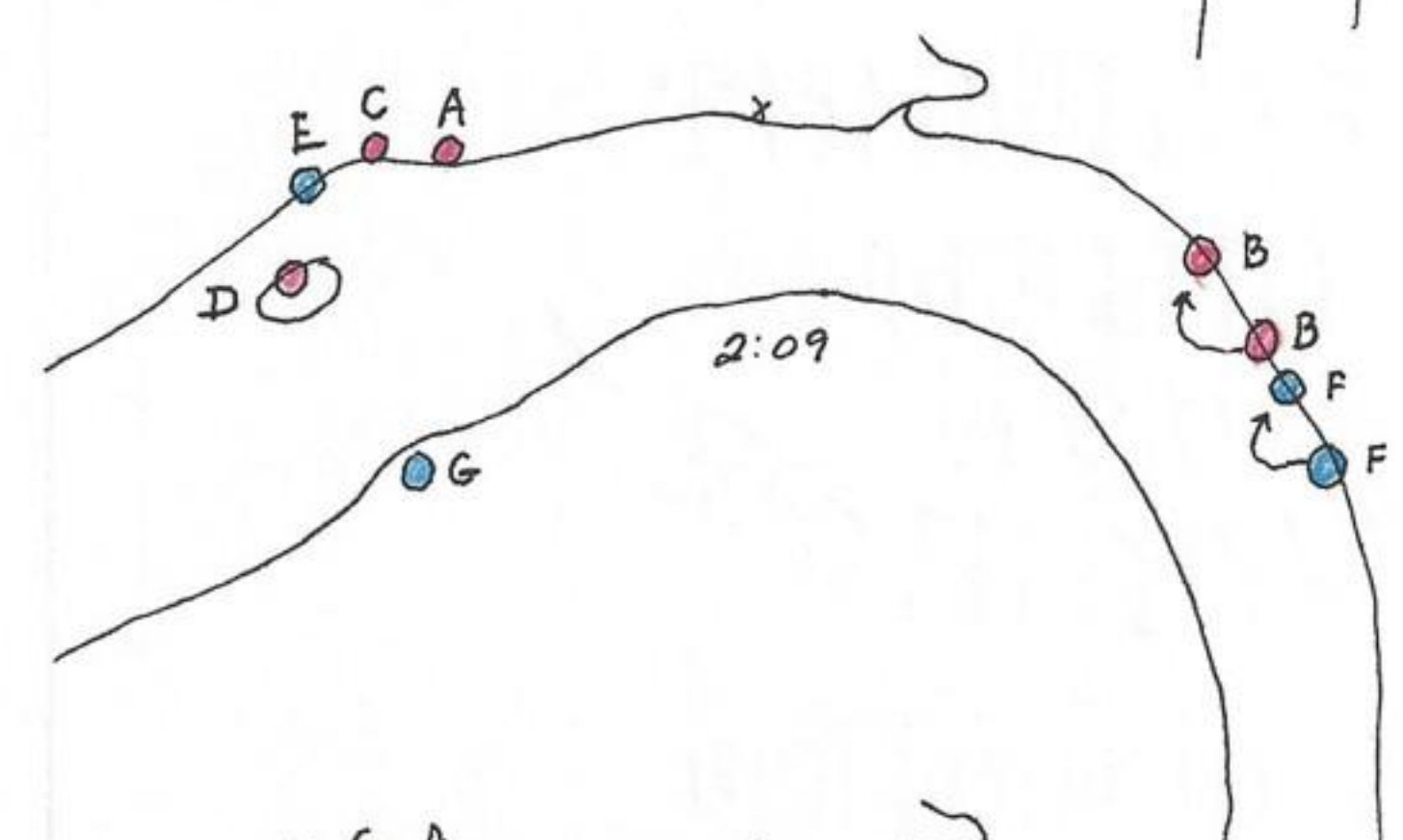
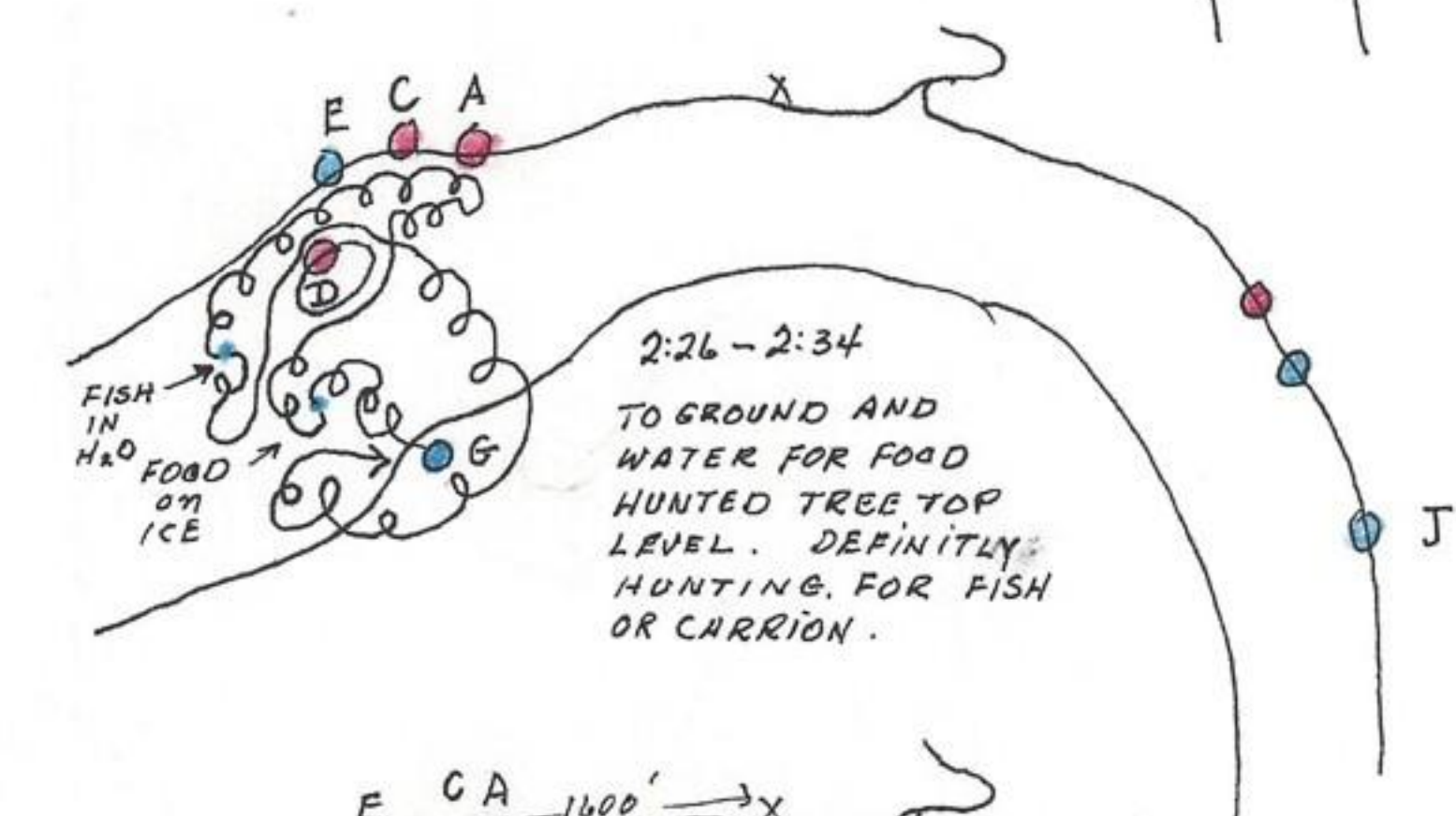
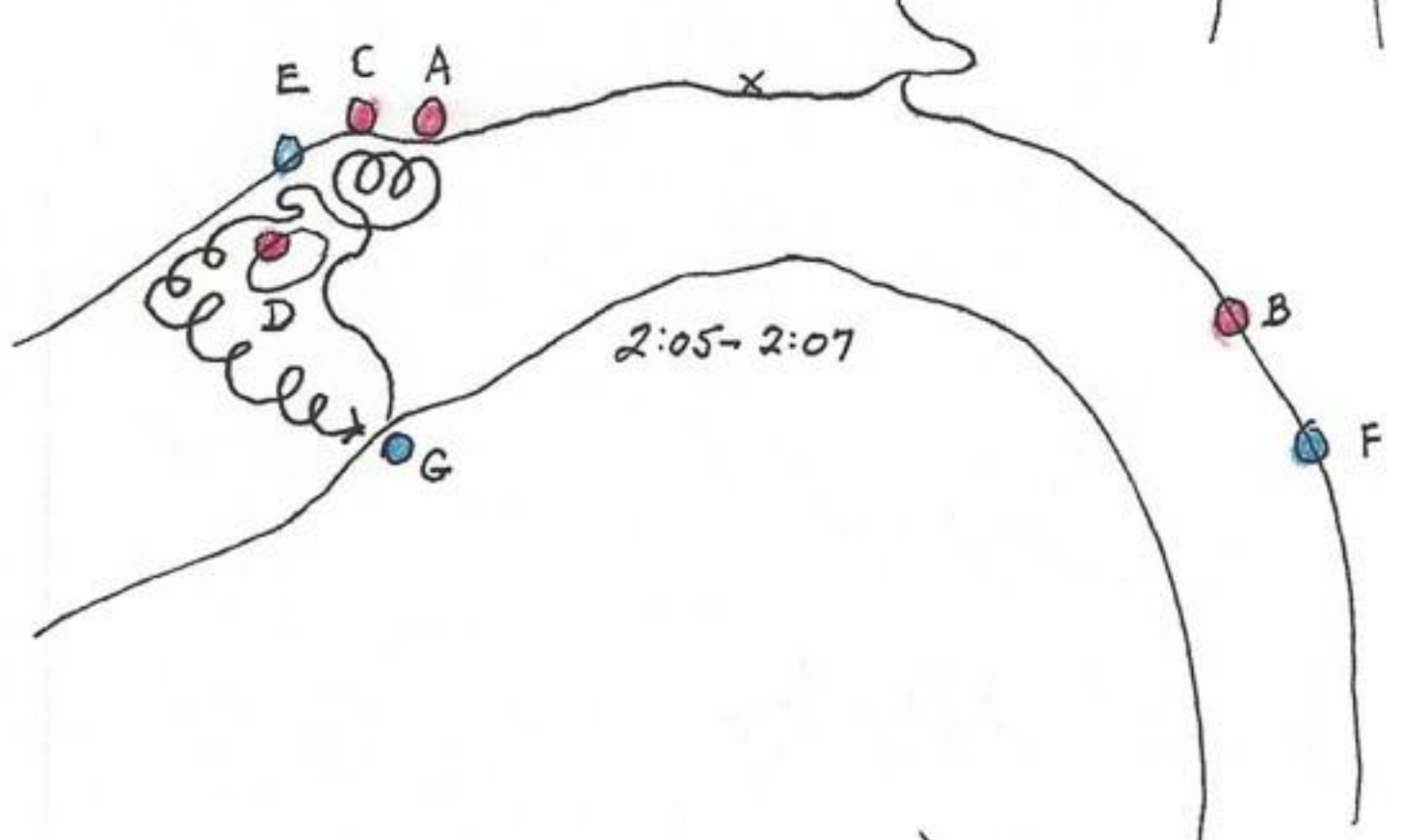
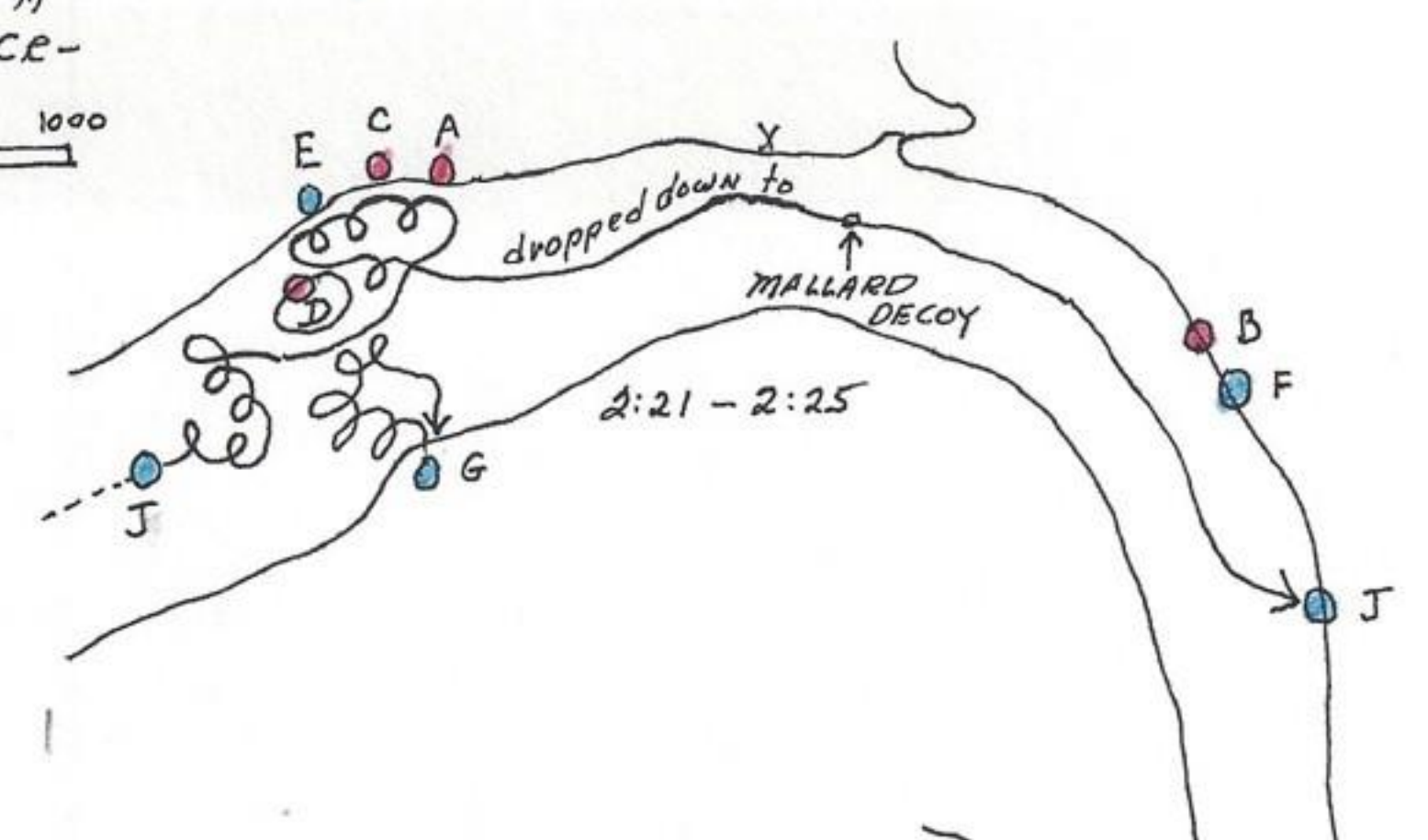
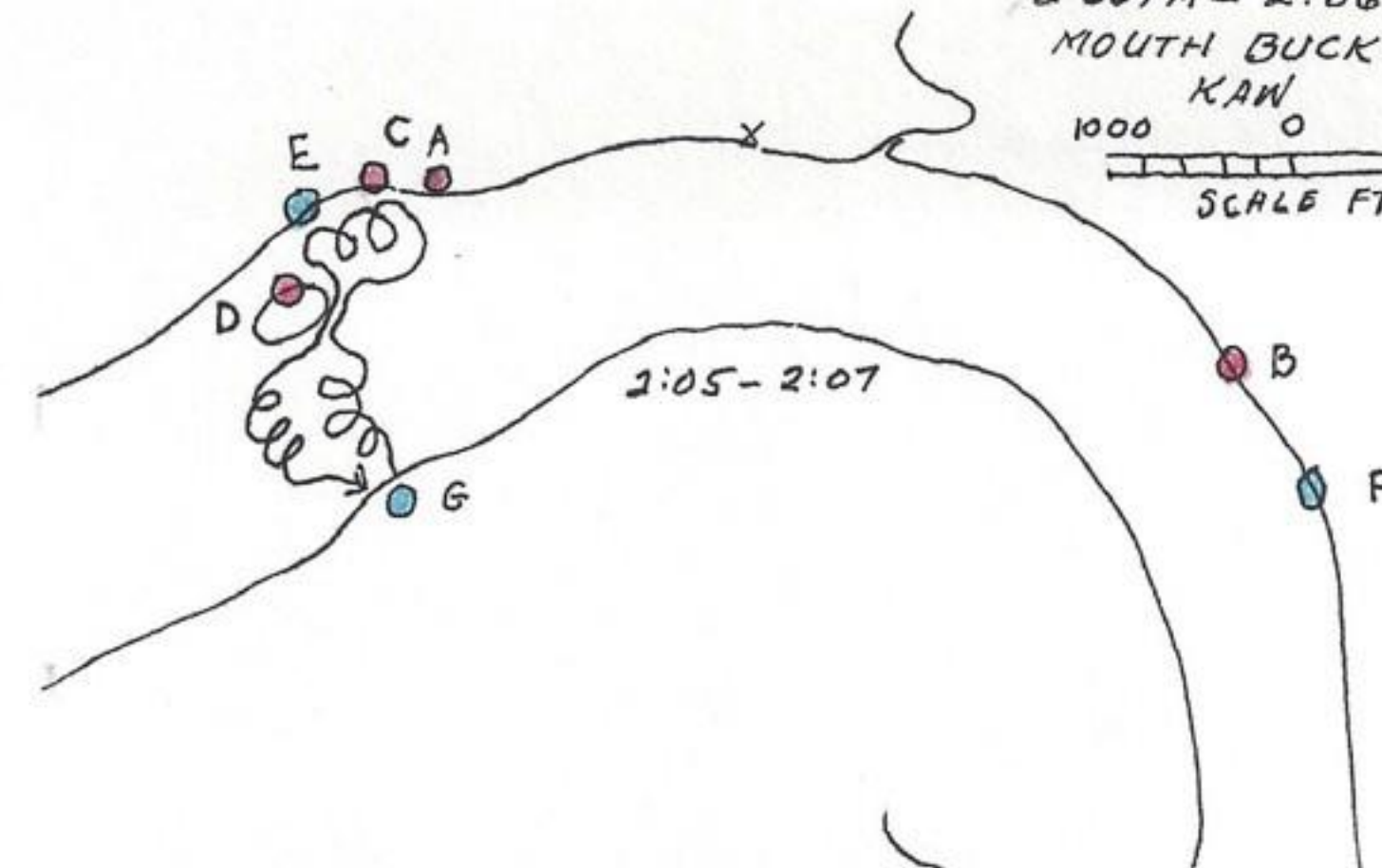
BALD EAGLE ACTIVITY

12:05 PM - 2:36 PM

MOUTH BUCK CR -
KAN



● = ADULT 790222-44
○ = IMMATURE



The adults moved twice as much as the immature, especially in the beginning of the observation period. Local populations seem to maintain their identity as groups. All eagles moved at least once in the 1 hour and 56 minute period. Most of the activity NE of island and W of high cottonwood tree on S side river. It was used 7 times by two birds, mainly an immature (6). No ducks in area except 3 groups of 4-8-7 mallards that flew up river. No eagle flew beyond riparian forests laterally.

Left area 2:36. Mouth Buck Creek in ice with flees of water. As one goes up stream the creek becomes free of ice. At highway 24 the water from E along right-of-way was flooding down into Buck Creek and adding $\frac{1}{3}$ of the river flow capacity. Field in this area along highway are in lakes and right-of-way choked with ice + water that is not draining.

Returned to Lawrence. Kaw frozen above bridge and open to W end of island but solid beyond.

Kaw River, Leecompton area, Douglas Co., Kansas

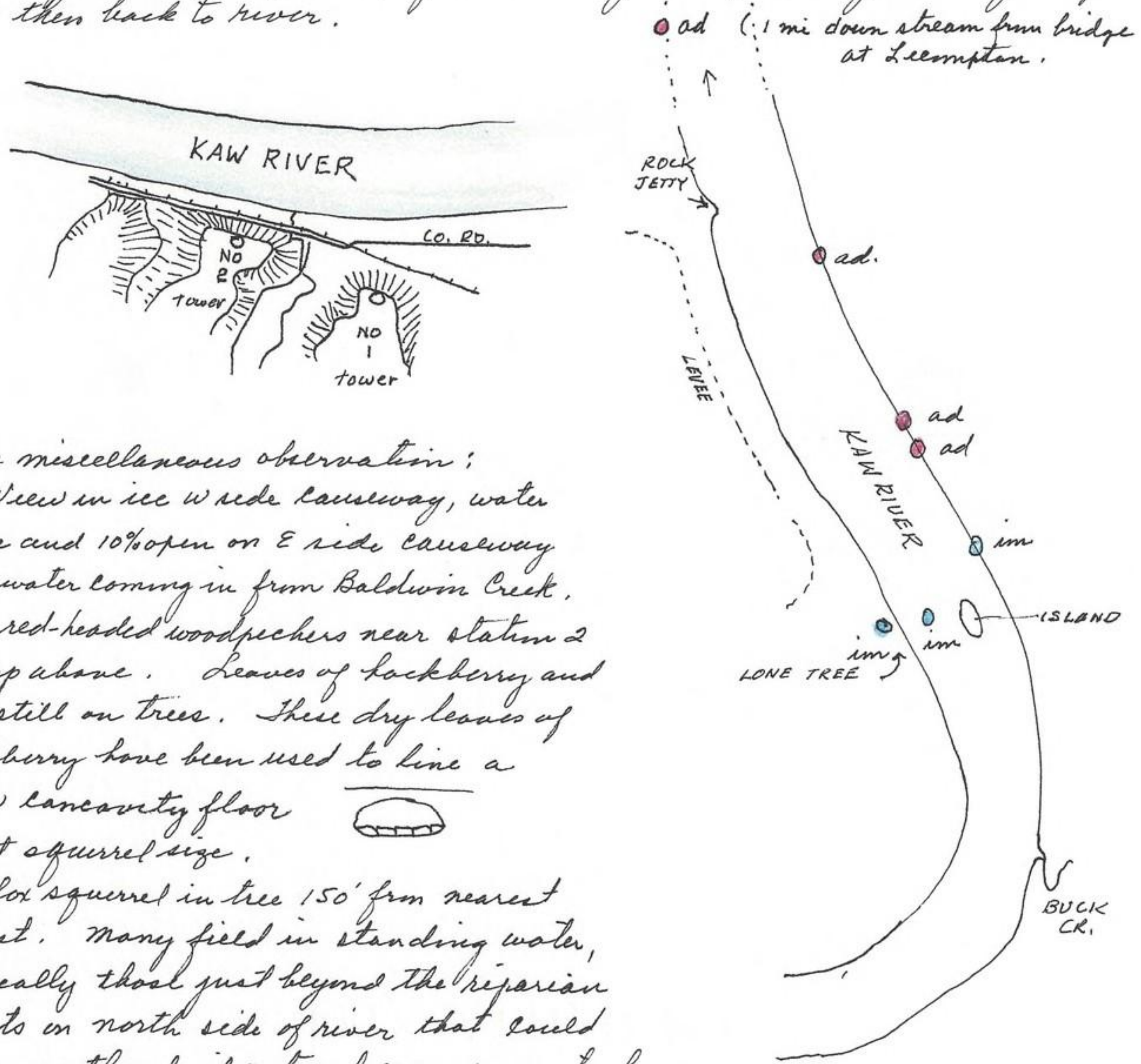
Feb. 23, 1979

Checked 2 promontories on S side Kaw for possible location for observation towers, no 1 site and giving most complete view of river between Leecompton and bend of river N of Lake View is located at 150' E, 600' S NW corner sec 8, R19E, T12S and no 2 nearer the river and although has not the full view of the river system has values that would classify it as no. 1 the better of the two promontories. It is located 4000' E, 100' N of ^{SW corner} sec 6, R19E, T12S. Position no 1 would require a tower 100' high to clear tops of cottonwood trees on S side of river



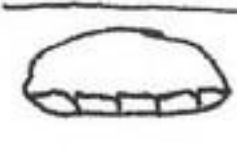
whereas in case of no. 2 the height would be less than 50' which would also be high enough to clear tops of hillside trees. The scenic values in both cases are magnificent but in no. 2 the river is nearer and if tower is placed on W end of ridge, it would also overlook a well forested drainage system. From no 1 the view in foreground is mainly agricultural. The top of ridge is almost flat and approach from the S would not be a problem. One of the best river bank stations is directly below no. 2 tower. From no. 2 the entire natural area (except parts of mouth of Delaware River) can be seen. No. 1 is even better situated for complete survey of eagle and other animal activity. Enroute to promontory points at a point where river levee connects to county road noted a vesna (blue and white) plane no. N72315 flying in river channel just at tree height. It had its flops down and was cruising at a low speed. As far as I could

tell they were following, at least, the entire natural area. This was at 9:45 A.M. At 10:10 A.M. it repeated its flight pattern and I was beginning to think it was on a regular scheduled run to show the public the bald eagles. As the plane passed the first time an adult eagle left at about the levee river censusing point and flew S to ridge, leaving as plane passed by at 9:45. The eagle circled the ridge to a point where road enter hillside at which point it turned N, circling all the time and finally circled down river and alighted at a point near where it left the river channel on N side. A second adult eagle did the same thing except approx. 2 miles farther up the river, first leaving river, circling W along ridge and then back to river.



Some miscellaneous observations:

Lake View in ice W side causeway, water on ice and 10% open on E side causeway from water coming in from Baldwin Creek. Three red-headed woodpeckers near station 2 on map above. Leaves of hackberry and oak still on trees. These dry leaves of hackberry have been used to line a snow concavity floor about squirrel size.



One fox squirrel in tree 150' from nearest forest. Many fields in standing water, especially those just beyond the riparian forests on north side of river that could become wetlands if natural area were to be put into effect. Deer tracks (4 sets) from canyon W of tower 2. They went to river across county road and railroad tracks and then returned same way. Creek E side of tower 2 ridge about 10 gals per second. Redtail at levee observation point. Snow still covers ground in riparian forests except around base of trees and top of down logs & trees. Cultivated fields 80% open.

Recommendations for river bank observation sites are mouth Buck Creek, W bank; mouth railroad Creek, W bank; mouth Coon Creek W. bank.

402 Yorkshire dr., Lawrence, Douglas Co., Kansas.

Feb. 24, 1979

a cowbird ♀ and redwing blackbird ♀ visited feeder this P.M. and first seen for at least the last two weeks. Goldfinch eating a half pound thistle seeds per day. 30-40 English sparrows and 8-15 starling regularly at feeder, fewer tree sparrows and even fewer juncos.

Feb. 25, 1979

Partial eclipse of sun this A.M., last in US for next 38 years.

Took photos 790225-1 (three at 32x 1000, 500, 250₁ ^{at 10:10 A.M.}). Records light intensities by time.

10:23 = 100

10:55 = 125

At 10:30 the sun looked thus:

10:28 = 120

11:02 = 165

10:30 = 100

11:05 = 175

10:33 = 85

11:11 = 200

10:43 = 85

11:34 = 320 ☉

10:48 = 100

11:46 = 350 ☉

12:03 = 352 ☉



Birds carried on normal activity

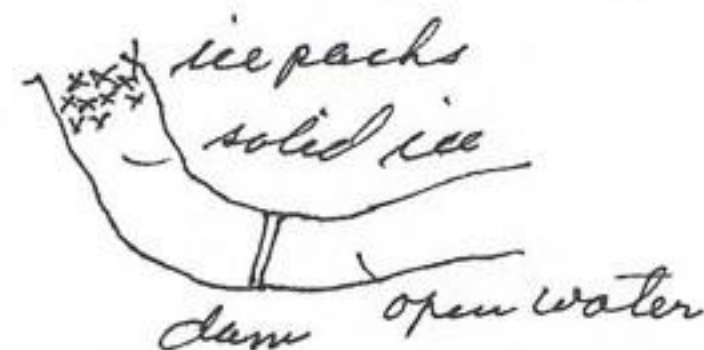
Stephen P. Preston called from Kansas City to inform me that project looked favorable and best procedure was to send proposal directly to Director of Environment, Fish & Wildlife Service, Wash. D.C. One of their people was in Leecompton area and saw only one eagle. He said that best procedure for Corps of Engineer participation is three Myers of Perry Reservoir.

Kaw River, Lawrence, Douglas Co., Kansas

~~March~~ Feb. 28, 1979

Kaw River at dam with frozen or winter ice solid above dam and open water without ice fragments below dam. 2 zones of solid ice packs above water intakes up stream.

The surface of ice variable with surface water and ice.



March 1, 1979

Early A.M. same as Feb. 28 but by noon open channel of flowing water on N and E side of river, later bring down great quantities of ice debris and almost filling river below dam.

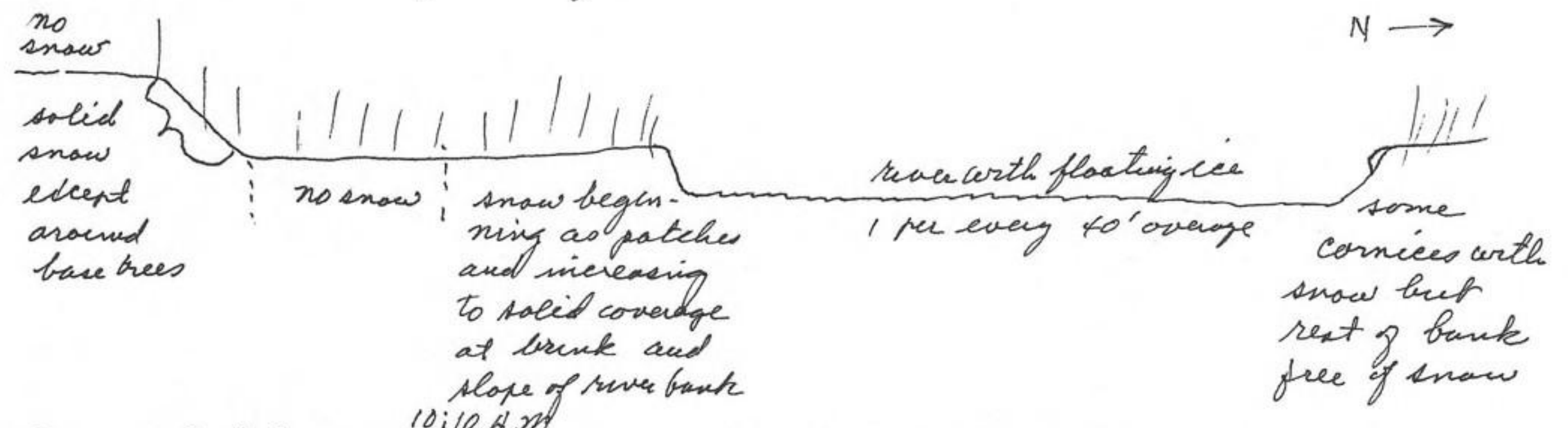
March 1, 1939

Tom Swearingen reported: Best trapping of coyotes this winter and populations will come out low for this year because of great demand for long hair furs this year. It will take several years to recover from over trapping. Beaver hair not as popular and not as many taken and as a result there are more this year than usual. Spotted skunk and weasel never will recover because of poisons used in agriculture and insect eradication. Good year for trapping raccoons and opossums. Bobcats increasing but heavy trapping pressure. Cottontails hungry this year and invading barn area. Protected hawks and owls taking increase numbers of robbers. This year has been hard on meadowlarks & bobwhites.

Kaw River, LeCompton area, Douglas Co., Kansas

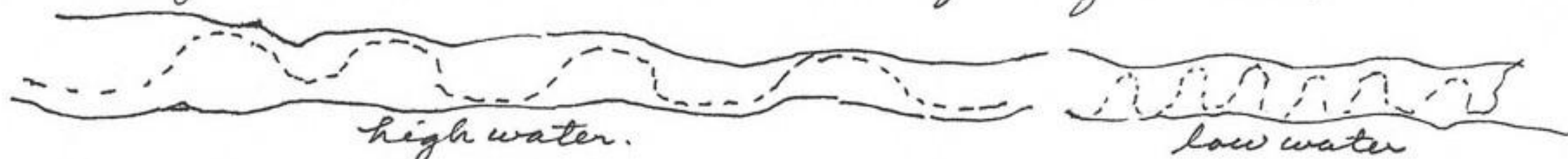
March 2, 1979

Checked ^{bald} eagles along river (see notes of Jan 10, 1979) for position on river map). At Lake View the lake on W side causeway in ice with thin veneer of snow and unfractured whereas on E side causeway lake in open water. At 9:30 A.M checked levee position on river and noted one adult bald eagle in isolated tree on S side river opposite island. no other eagles observed ^(overage 2 ft) up or down river. no ducks. See fragments, largest 10' in diameter, overage 40' apart in river. Water from bank to bank and covering 99.9% sand bars, but water shallow enough on some bars to hold large trees & logs ^{from concentrated in some areas but slight & generally} from moving down stream. ^{at dist-} ^{ributed} 9:45 checked river at railroad creek, ~~no~~ one adult bald eagle in ^{elsewhere} tree up stream, N side at bank erosional cleft. Back tracking in notes to levee census point add: fields free of snow, some isolated snow along County road. At river



From Dakey creek, ^{10:10 A.M.} can see adult bald eagle in tree where erosion indents bank. Dakey creek open and flowing water. upper half cottonwoods taking on a new yellowish color, some grasses just turning green.

Current swing across river from S side to point where bank has eroded and meets point of large trees and then follows the north side of river for 2 miles before turning S. This is not the course followed when waters are shallow. Arrived Deempton bridge 10:30. Noted one adult & 1 immature in trees on E side mouth Delaware River. A tree house structure has been constructed in a cottonwood (1/2 way up) in group of cottonwood trees on bank of N side just W of crossing of utility lines, W of the Deempton bridge. From bridge can see that currents follow major meanders when channel full of water in contrast



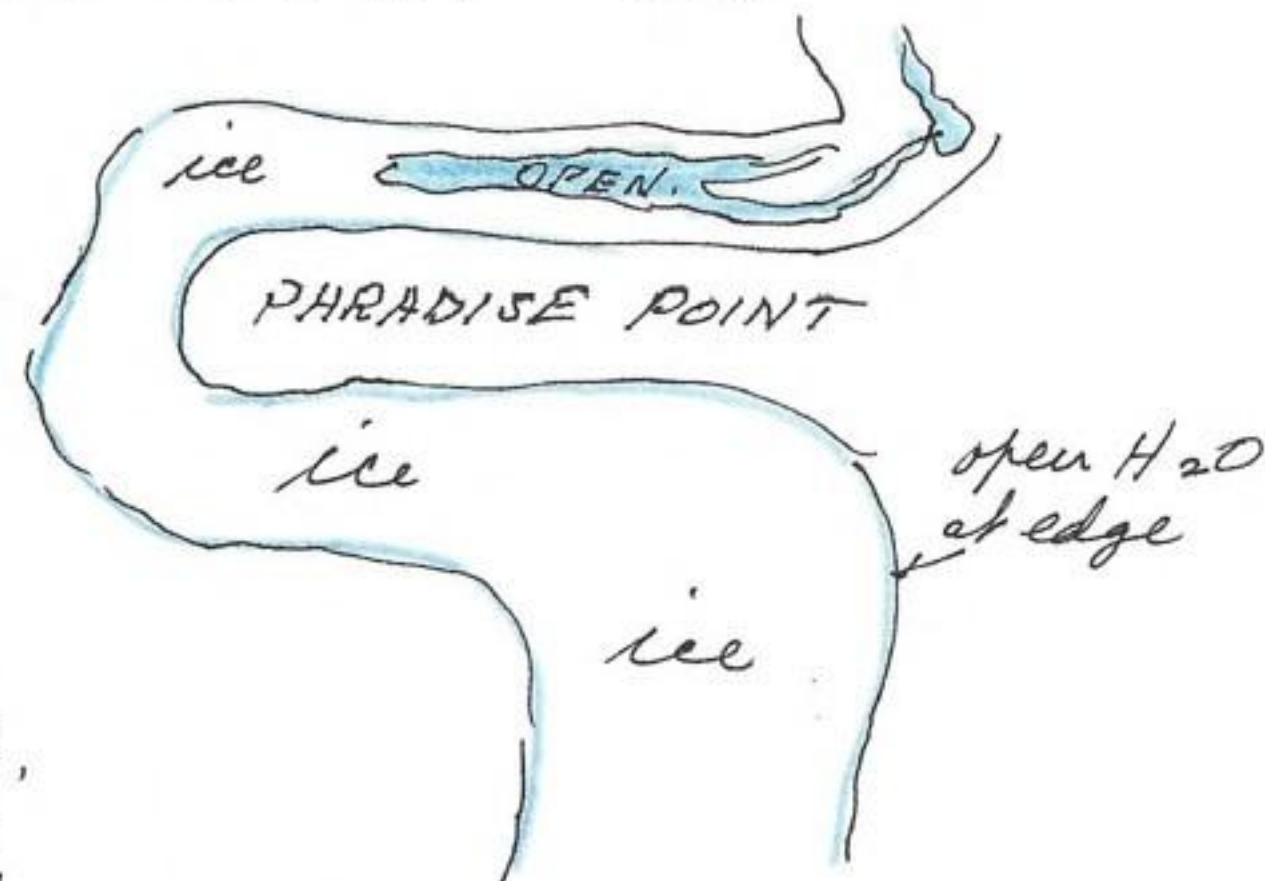
to close arranged meanders of low water level. approx 70 Canada geese passed S.

Perry Reservoir, Jefferson Co., Kansas
march 2, 1979

This afternoon from 1:00 to 4:00 P.M. checked Perry Res. for bald eagles. Across dam, west side to Ozawkie, Paradise Pt., S along east side lake to Big Slough thence S out of area, no eagles observed. From dam all lake frozen in ice except 10 to 40' around edge. no major ice fractures. Open water under Ozawkie bridge, solid N & S. At Paradise Point open water N side, all other areas closed except around edges. In open water 2 ring-billed gulls, 48 common mergansers, 2 golden eye ducks, no other waterfowl in entire lake area.

Birds rare: 8 redtails, 1 marsh hawk, 12 crows, no meadowlarks or small birds.

Two flocks starling, 50-80 birds each, all road clear of snow except some areas where drifts were still on edge of road. One killdeer. As far as I can tell there has not been any open water in Perry Reservoir this winter and as a result there have not been wintering waterfowl.



Lawrence, Douglas Co., Kansas
march 7, 1979

Low high and no ice but some floatsam. Photo 790307-1 of Jim & Liz manded at 402 Yorkshire.

Lawrence, Douglas Co., Kansas

March 7, 1979

Gene passed over 402 Yorkshire and called. 11:30 P.M.

March 8, 1979

Gene passed over home and called 9:00 A.M.

March 9, 1979

Gene passed over home and called 9:30 P.M.

402 Yorkshire, Lawrence, Douglas Co., Kansas

March 9, 1979.

Prepared for trip to Casper, Wyoming to visit daughter Mary. Snowed last night (1 1/2" - 2"), a wet snow which disappeared by the end of the day.

March 10, 1979

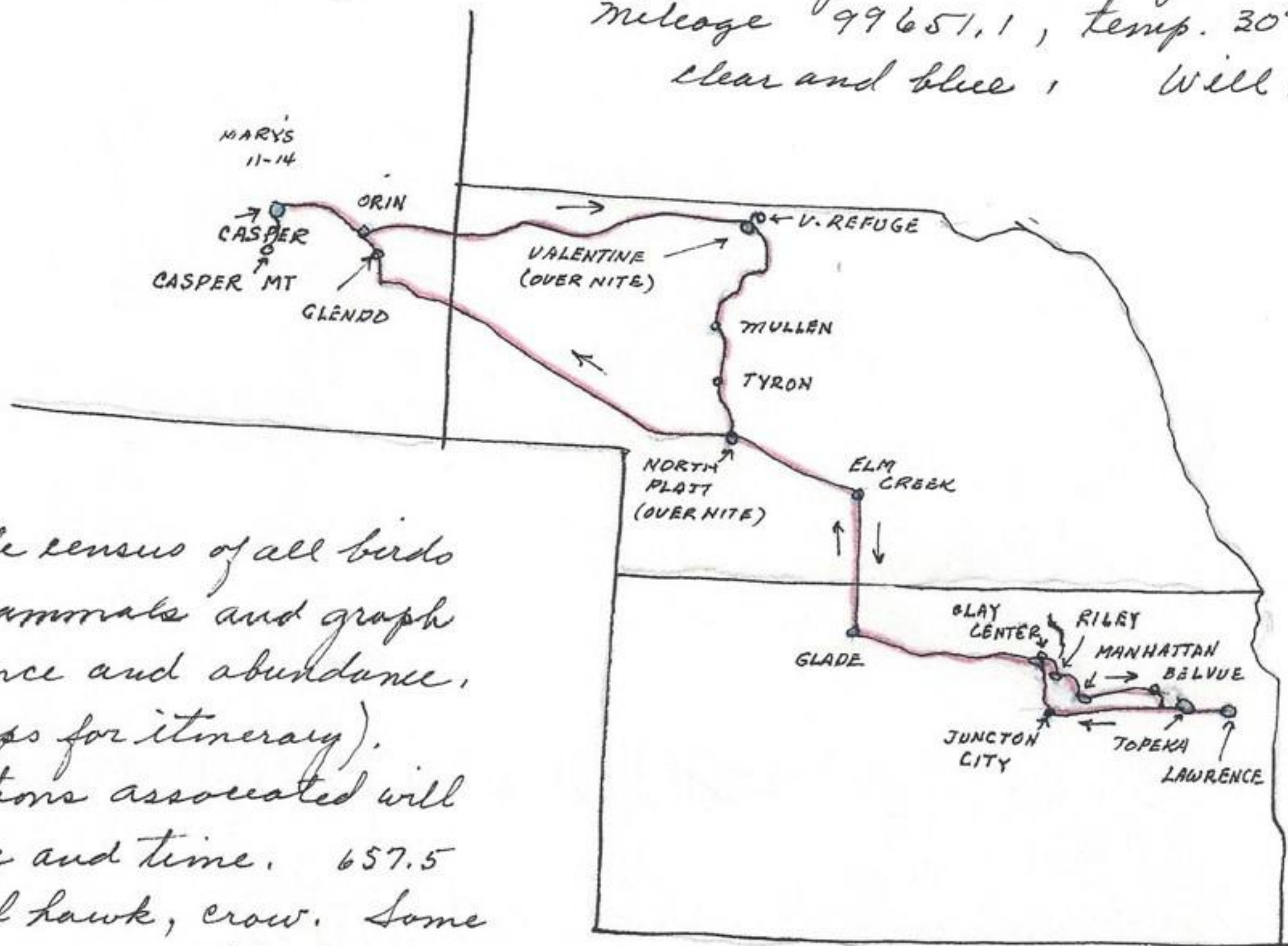
Snow again last night. Left for Casper, Wyoming this A.M.

Lawrence, (Casper trip), Kansas

March 10, 1979

Annette and I left for Casper, Wyoming this morning at 10:45 A.M.

Mileage 99651.1, Temp. 30°F, sky clear and blue. Will keep



Complete census of all birds and mammals and graph occurrence and abundance. (see maps for itinerary).

Observations associated with mileage and time. 657.5 redtail hawk, crow. Some

snowdrifts of winter still along side of road and on north exposures.

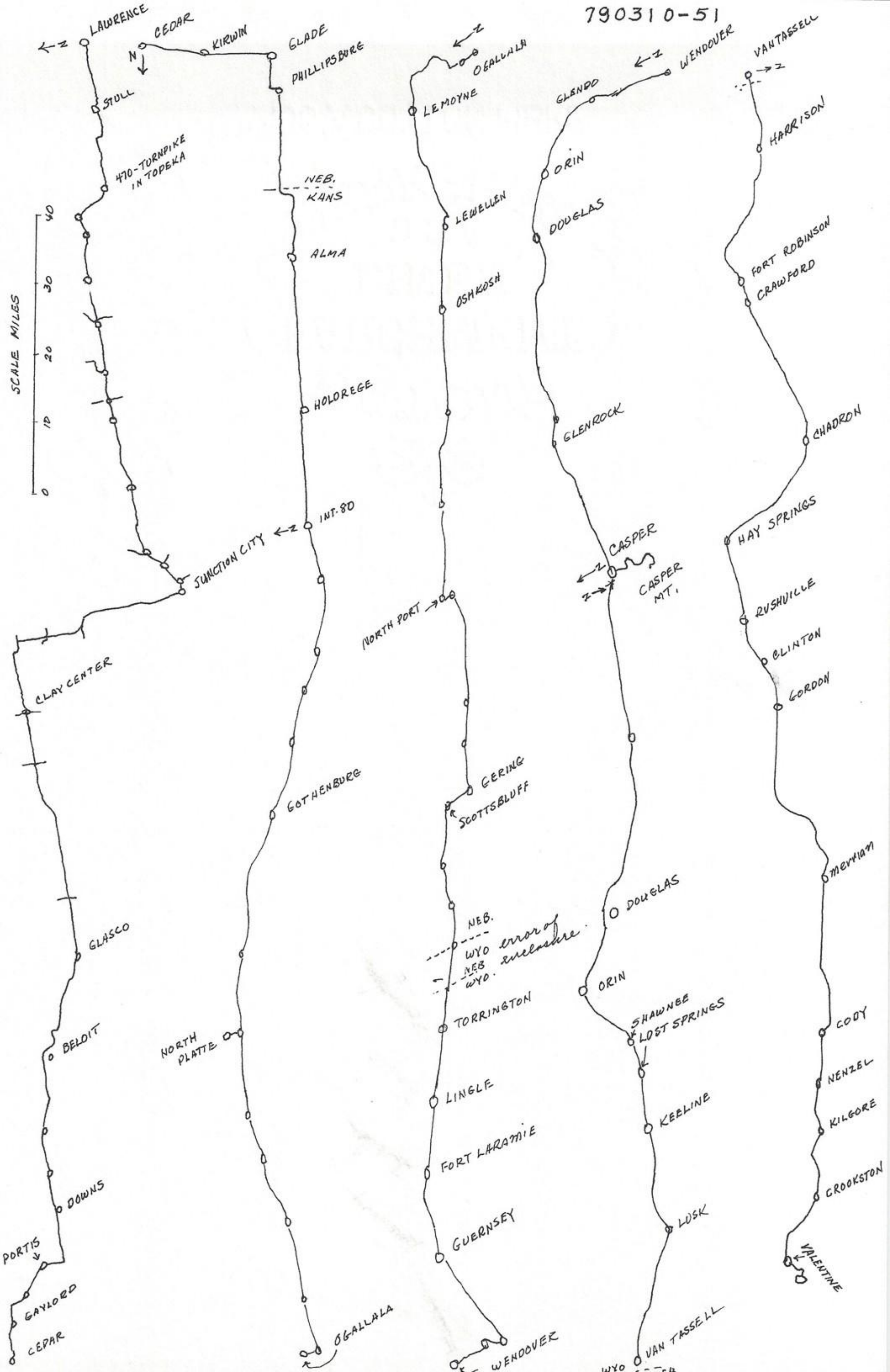
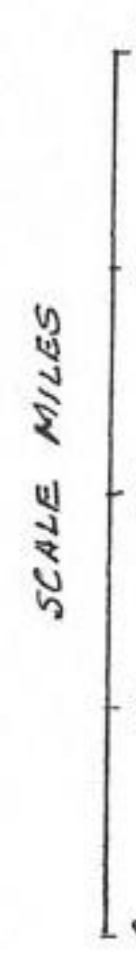
663.4 Still, some pond clear and water blue, others in ice.

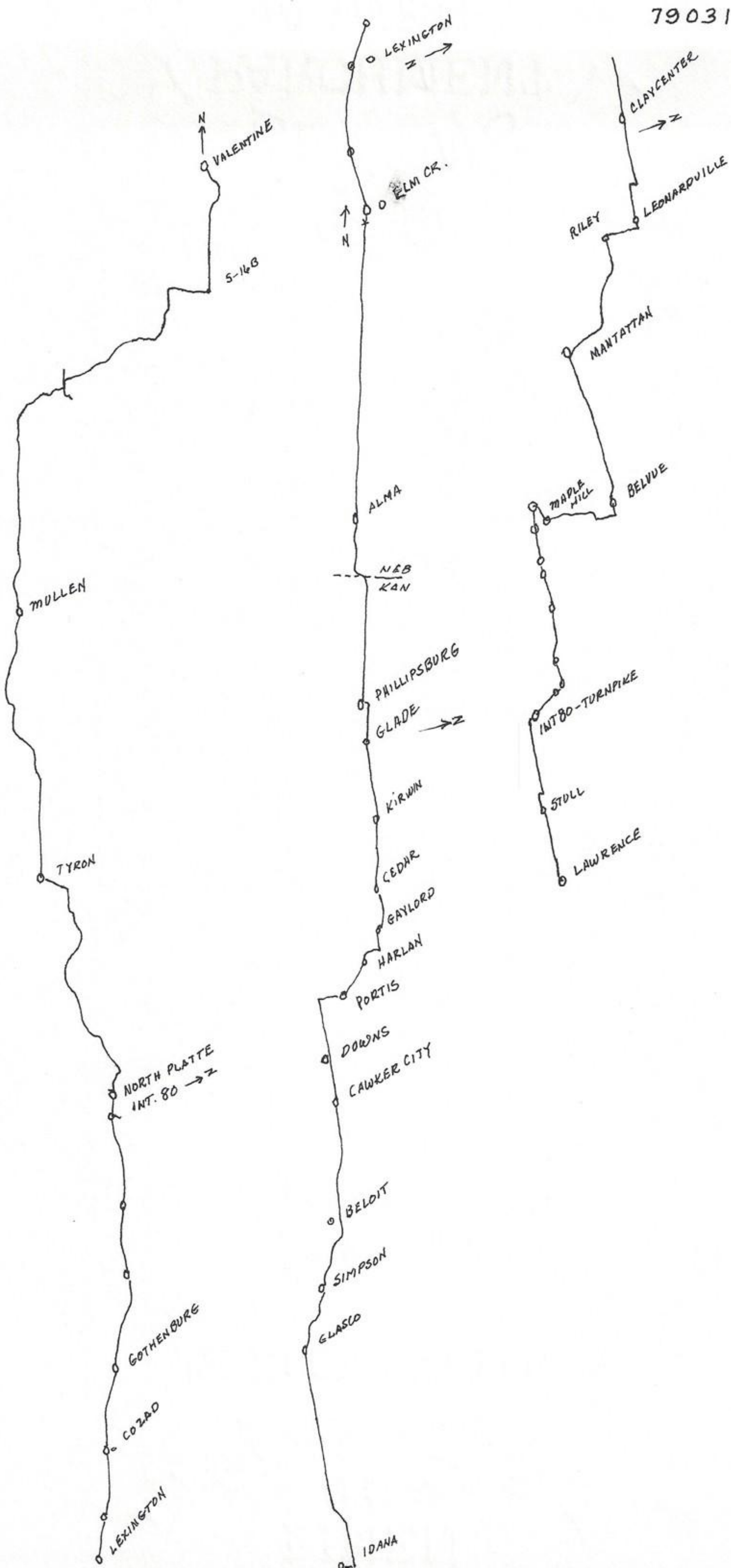
667.4. Fox squirrel road kill.

671.0 2 crows. The 1 1/2 of snow of last night still on north exposures and plowed fields. Shawnee Lake in solid ice except where water enters lake and then restricted.

677.6 Topeka Avenue and 470 bypass, now going W on interstate. (11:20). 693.8 Wabounee

LAWRENCE - CASPER TRIP MARCH 10-15, 1979





Co. line, 696.5 In Flint Hill area distant ridges show approx. 15 small patches of snow per mile. 721.5 striped skunk road kill. 723.7 Geary Co. line. 725.5 red-tail hawk 728.7 striped skunk road kill. 737.2 striped skunk road kill. 741.2 Smokey Hill River. 745.7 now on 77 north. ^(12:40) The Interstate up to now has been so rough with damaging potholes, especially along seams of cement that I would have chosen an alternate route if I had intended to continue west. It is criminal that they allow this condition to exist. Other highway do not have this problem or if so have been repaired. 745.8 striped skunk road kill. 746.4 2 crows. This route has many junipers. 750.0 Republican River, water almost bank to bank. 752.6 redtail. Milford reservoir from what I can see is in ice except some areas on south exposures and then these openings limited. 755.5 redtail. 756.0 redtail, impressed with numbers of junipers in area. 756.7 Farnum Creek which is an arm of Milford reservoir, bay n road partly open and to south for 1/10 mile. 758.8 marsh hawk 759.9 Madison Creek, some open water in upper bay, few ducks ⁸⁵ & Canada ¹⁸ geese 761.0 redtail, no evidence of recent snows in this area. 763.8 redtail. Snow drifts along fence rows in some areas but few. 765.1 redtail. not much agriculture but grazing. Now W on 396. 773.2 2 crows. 775.5 redtail. 99782.0 ^(1:40) at Clay Center. Stopped for lunch here and left at 2:15 P.M. Continuing W on 24. 785.0 Republican River, water open and bank to bank. Fields seem to be greener than Lawrence area (winter wheat). 788.0 marsh hawk. 792.5 red-tail. 794.6 striped skunk road kill. 795.4 Cloud Co., line and a redtail just beyond. 796.0 first sparrow hawk. 800.6 redtail. 802.6 considerable land slippage on slopes. It seems incredible that we have not seen some small birds, not even starling or English sparrows. There are times when practically nothing moves. Some large snow drifts in road cuts along 24 from n winds, otherwise just an occasional cornice on distant ridges. Ponds still about 1/3 open. 817.3 striped skunk road kill. 825.1 marsh hawk 827.4 striped skunk road kill. 829.4 3 crows. 8~~29~~²9.5 redtail just out of Beloit. 840.5 crow, redtail. 842.8 2 red-tails. 843.0 passing by turnoff to Solomon Rapids. 844.0 30 crows in one flock. 847.4 sparrow hawk. 850.4 Glen Elder State Park. Lake in ice except edge n side and near dam. 851.1 first ring-necked pheasant road kill, marsh hawk. 852.7 marsh hawk, water inundating trees and shrubs along side of lake. 853.5 Granite Creek, 300 ducks marsh hawk 5 of causeway and 150 n of causeway, water only

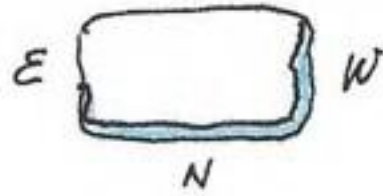
in bay nearest the causeway and 1/10 mi to S, rest of lake in ice except on south exposures where there is a narrow open lead. 858.8 oak creek, 2 ducks, striped skunk road kill. 864.0 2 redtails. 865.6 North Salomon River, 2 crows. 868.4 redtail feeding on ground. 870.9 striped skunk road kill, redtail. 871.6 redtail. 880.8 15 starling (first observed since Lawrence) and one hit car, marsh hawk. 882.1 first meadowlark since Lawrence, now W on 9. 892.8 first yucca and looks like Cretaceous rocks. 894.3 2 redtails in tree 1 1/2 feet apart, meadowlark, pheasant road kill. 895.3 3 marsh hawks hunting together, pheasant ♂. 895.9 Waddell, meadowlark. 896.9 2 meadowlarks, marsh hawk. 897.6 sparrow hawk. 898.5 meadowlark. 900.6 Kirwin, seems like more snow drifts out here than eastern Kansas. 904.2 redtail. 908.4 9 Canada geese 909.9 redtail. 911.1 highway 183, now N. Temp (5:00) 44°F. 919.6 sp. hawk. 920.4 meadowlark, marsh hawk. 922.6 meadowlark. 923.7 marsh hawk. 925.4 2 redtails 1 1/2 feet apart in tree, crow. 927.0 redtail. 927.8 striped skunk road kill. 935.7 nebraska line. at 5:20. sky clear. 937.3 8 redwing blackbirds on a telephone line about 100 feet spaced (on territories). 941.6 Republican River ^(Harlan Res.) bridge, 12 ring-billed gulls. Water open where river enters lake at W end. approx. 500 ducks, 100 mallards in flight in area east of bridge, 3 crows, 945.0 marsh hawk. 950.4 3 redwings (♂) on telephone poles, 150 ducks in a pond. 951.5 2 magpies. 953.5 redtail. 955.4 redtail (dark). 959.7 Phelps Co. line. (5:50, temp 44°F) 964.8 approx. 125 crows at city landfill. 965.8 Holdrege (at R.R. tracks) 971.1 striped skunk road kill. 971.6 meadowlark and 12 redwings. 972.4 3 redwings. 973.7 redwing, water along road. 981.1 sparrow hawk, last 4-5 miles old sand dunes as we approach the North Platte River. 981.8 Buffalo Co., 5 redwings. 982.8 Platte River, ~~now~~ ~~on~~ 80. The river fills all the channel (active) except a few islands grown in grasses. 983.8 highway 80 now W at 6:20 P.M. Sun about 20 minutes from setting. 985.5 Dawson Co. line. 888.9 21 Canada geese and ^{9 sandhill cranes alighted in field to S,} 150 ducks. 991.3 redtail. Borrow pits frozen except narrow lead on south exposures. 999.2 sun at horizon at 6:35. 0000.2 (change of mileage meter to 100,000) approx disappearance of sun beyond horizon at 6:40 P.M. 008.0 end of census because of failing light. 064.3 North Platte at 8:00 P.M. having travelled 413 miles. (gas 17+ miles per gal). In summation: birds extremely rare in eastern part of Kansas but increase slightly in travelling W and N. Redtails associated with lakes and reservoirs. Starling & Eng sparrow uncommon, approx 150 starling and 100




Eng. sparrow entire route. Starling associated with feed lots.

North Platte, Nebraska

March 11, 1979

Stayed last night in motel. Left 9:05 A.M. at 00064.2. The North Platte River has several channels besides the main channel. It is characterized by islands of grasses in both the channel types. This condition could occur in eagle natural area at Lawrence - LeCompton if the water is ever reduced. Sky blue and no clouds this A.M. Temp. ^{above} ~~below~~ freezing. 3 crows in field in City area. at 67.7 pheasant road kill. Countryside, except occasional drift, is free of snow. Water along roadside. 071.2 2 redwings on turturaries. 071.7 redwing. River valley wide and flat mostly grass and riparian forests of cottonwoods + isolated patches of black willow, ^{and west} Temp. 46°F. Borrow pits frozen except lead on south ^{and west} exposures. 4 redwings. 75.0 2 redwings. 78.8 3 redwings. All redwings isolated and associated with favorable nesting areas. 81.3 10 American or common mergansers in borrow pit in open water or lead at west end. 82.5 2 redwings. Small canals and small ponds are open as are shallow ^{ponds on} inundated fields. Seems to be a predominance of black willow in this valley. 84.7 Sutherland overpass, striped skunk road kill. Some fields in corn but most of country in grasslands. Cottonwood trees not as large as those along the Kaw at Lawrence. 90.9 2 American roughlegs. 92.3 redtail. 93.1 marsh hawk. 93.5 entering mountain zone and watch turned back one hour. Approx. 250 mallards. One area of cottonwoods burned. 95.6 striped skunk road kill. 97.4 American roughleg. 101.9 15 ducks. 105.8 striped skunk road kill. 112.7 first horned lark since Lawrence. 116.3 South Platte River on highway 61 north. River only occupying 1/10 its channel. 119.9 3 horned larks, horned lark. 122.8 horned lark, horned lark. Kingsley dam (Lake McCondughy) 125.6 outlet gates, see above and water partly open below. 127.6 3 gulls, partly open water on N end of dam, water clear + blue, many yucca plants on hillside. 130.6 now on route 92 on N side of lake. wind from N. In looking across lake would say that ridge is 1/10 per cent in snow. 134.8 3 heldeer, 12 horned lark. 138.8 14 horned larks, some parts of lake have been open and then refrozen, some slopes almost completely covered with yucca. 146.7 west end reservoir open, 2000 ducks. Some cattle trail on slopes eroded to 4' deep. Junipers on S side lake associated with Cretaceous cliff areas ⁱⁿ 150.6 Garden Co. 151.2 sparrow hawk. 153.0 one group of six and



and one group of nine sandhill cranes flew low and alighted in field near riparian forests along river ^{rd.} ^(10:05) 154.3 junction 92-26 at Brodwater can see good trapping. ²⁰⁰⁰⁻ areas in cliffs and junipers on south side of north Platte River. Upper branches of cottonwoods showing slight color change ^(yellowish brown) from the gray of winter. 157.0 7 horned larks. 163.4 8 horned larks. Willow (weeping) are definitely yellowish. 173.4 7 horned larks 178.4 8 Canada geese. 178.5 sparrow hawk. 179.6 striped skunk road kill. 182.3 striped skunk road kill. 184.2 striped skunk road kill. 188.7 north Platte River channel braided with grass covered islands. gradually getting out onto flat country, especially noticeable to the south. 191.0 3 horned larks. 196.6 now left on 92. 197.6 bridge across north Platte River. River full but still braided ^{and ice on islands.}. Channel on S side of valley greenish-blue with aquatic vegetation. 200.4 striped skunk road kill. 203.5 7 horned larks 204.8 emerge 92 and 385. at 11:10 A.M. Have not observed much digging of badger, gophers or other prey digging mammals. 208.0 cottontail road kill (may be first observed since Lawrence). Stand of cottonwoods either planted or natural. ^{three} ^{each} ~~second~~ trains of 110 new coal cars moving W. Have not observed stone fence pasts three nebraska. 220.5 3 horned larks. Have observed several extensive areas of cattails but no red-wing blackbirds. 221.0 good examples of marshy cattails, alkali deposits and springs. 223.3 peculiar grass, hummocky and upper parts pointed  225.0 Chimney Rock to left (S) and upper parts telescoping to a point. 227.7 Scottsbluff Co. line. Some restricted areas covered with alkali like a covering of snow. Excellent area for redwings but none in area. 230.4 Mc Grew. 231.6 striped skunk road kill. Cottonwoods have different life forms, here more branches and fewer outer limbs.  in contrast to . Many magpie nests. 237.0 sparrow hawk. 237.4 striped skunk road kill. 238.7 100 ducks. may be other ducks missed but recorded all ducks observed so far. 241.5 8 horned larks. 246.3 N. Platte River Bridge at Scottsbluff. 60°F. 252.8 ² striped skunk road kill. 255.1 sparrow hawk. 262.2 magpie 265.0 fox squirrel. 265.7 striped skunk road kill. 267.4 2 horned larks 269.3 striped skunk road kill. 271.4 Wyoming State line at 1:00 P.M. 272.0 striped skunk road kill. 285.1 striped skunk road kill. 299.3 Fort Laramie National monument turnoff, will check. Laramie River low 305.3 back to highway 26. (one should check Laramie River that runs thru the national monument for artifacts). 305.6 striped skunk road kill. 306.9 striped skunk road kill. 314.9 Laramie river partly in ice. 318.4 North Platte River very low water level. 333.3 junction 25 now N. 352.2 Glendo, now along west side of reservoir (26-87). Glendo Res.

in ice except where rivers enter reservoir, at west end open. No ducks or geese. except where river enters at W end where the following were observed; 120 red head ducks, 2 greater scaup, 400 Canada geese, 400 pintails, 15 mallards, 3 baldpate. From here can see a high, ^{red} perpendicular cliff on N side of reservoir that exposes some interesting stratigraphy. no water entering reservoir. 361.5 Converse Co. Cattle herds with very young calves. 365.8 N Platte River water bank to bank and clear water, may actually be river that enters the reservoir elsewhere than observed at place where the ducks & geese were observed. 370.3 7 antelope, some light colored. 380.4 N. Platte River at Douglas nat as full as lower down stream, magpie 391.4 2 antelope, drifts toward Casper have great depth and width, 398.0 4 antelope. 401.2 3 muskrat dens in pond, 401.7 at least 50 antelope, 12 of them at edge of a pond. 403.1 off main road to Glenrock to follow lower rd (26-20) to Casper. 410.0 cottonwoods, smaller and more sparsely distributed (individual trees) than elsewhere. Some ice masses along edge of river. 6 ducks. 417.9 striped skunk road kill. 430.2 Casper at 5:30 P.M. at 835 E 14th Street at Mary P Bee home. Travelled 366 miles today.

Casper, Wyoming

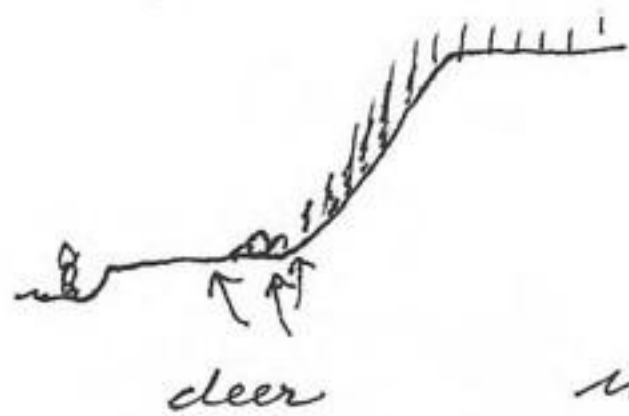
March 12, 1979

Visited Mary today. Installed 2 lights in kitchen.

(Frank the dog)

March 13, 1979


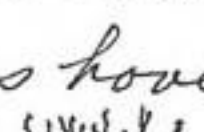
Mary, Annette and I drove up to top Casper mt this afternoon. Snow from benchland of yesterday fell to top of mt. From base mt to ^{top in} good winter covering of snow. This mountain has lost its natural beauty and character by road scars on the front, hundreds of cabins on top, systems of roads to snowmobile parking lot, skiing lodge, trails etc. In my estimation it is already over developed in an area that could have been a natural area of the highest value. Annette observed a golden eagle near ski lodge. The only other bird was a small bird (junco). On top near ski lodge (road to S) recorded six photos of ^{bank} snow, Mary and the dog Frank, nos 790312-1 to 790312-6. At base of mountain noted three groups of deer. 9-10-12. These deer are wintering just below base of mountain in draws and shrubby vegetation that is preempted by homes. At present they seem to be compatible. I would imagine that the deer at one time wintered from here to the riparian forests along the North Platte River now occupied by Casper.



Casper, Wyoming

March 14, 1979

9:30

Left Casper this A.M. Two photos of Mary's home 790314-1 and 790314-2.
 00479.5 mileage, winds from SE. No clouds in sky. Will travel to
 Valentine, Nebraska. Temp. 36° F. 491.2 whitish jackrabbit
 road kill (*Townsendii*), 493.5 Converse Co. line. 20 antelope.
 494.3 58 antelope, some lighter than others 494.8 15 antelope, all ^S side
 have been on S side road ^(except first group) and about 600 feet away, 495.8 10 antelope,
 498.9 13 antelope S side, 509.5 Lake to N, 20 antelope + 23 ducks, 510.7
 road kill antelope. more yucca as one travels E from Casper. 517.4
 natural Bridge overpass. 525.2 road kill mule deer, 528.1
 Douglas Turnoff (1st). 530.0 N. Platte River. water almost bank to bank
 with some sand and gravel beaches (10'). Some ice masses still along
 shoreline, 538.4 2 antelope N side. 539.3 3 antelope. N side.
 541.6 first horned lark (first bird other than ducks (see 509.5) since
 Casper). At Orin took road 26-87 across N. Platte (coyote road kill on S side)
 but returned to Lusk turnoff (overpass at 5⁴4.7 (highway 18-20, (10:56)
 548.3 Cottontail road kill, 549.0 mule deer road kill, 549.4 mule
 deer road kill, 553.2 6 antelope, 554.2 10 antelope, 556.8 Shawnee,
 557.9 stripe skunk road kill, 561.2 Lost Springs. Black willows have
 a more upright life form than the usual spreading type.  versus: 
 562.6 11 antelope. 562.9 Niobrara Co. line, 564.6 horned lark.
 567.3 horned lark. 571.0 5 horned larks, 571.5 2 horned larks.
 574.1 more snow drifts 576.4 horned larks, 577.3 Manville,
 ridge to S with ponderosa pine almost covered with snow (the ridge)
 whereas the ridge without pines show only a few patches of snow
 which contradicts the statement the conifers reduce snow by absorption
 and transpiration. The greater amount of drifted snow in this area
 must be a factor of increase wind in this area, 580.4 horned
 lark, 2 horned larks, 581.7 horned lark, 583.7 4 horned larks.
 586.4 Lusk at junctions of roads, 586.9 now 20 east out of Lusk,
 591.2 6 horned larks, 592.2 horned lark, 594.0 2 horned larks.
 596.6 horned lark, 597.0 5 horned larks, 598.0 3 horned larks.
 598.4 3 horned larks, horned lark, horned lark, 598.0 2 horned larks
 600.1 2 horned larks, 600.8 horned lark. Damed ^m lake about 1/3 open
 cattails below dam in drainage system, 602.4 striped skunk road kill,
 604.0 horned lark, 604.4 horned lark, 606.9 Van Tassell, 608.8 Nebraska
 state line at 12:15, whitish jackrabbit road kill, 609.1 2 horned larks.
 611.4 jackrabbit road kill, 617.7 Harrison 621.6 National Forest
 to north. This is the beginning of coniferous forests although not along
 the road but at some distance away, 624.4 horned lark, 625.7

horned lark, 2 horned larks. 634.2 Scenic overlook, tree near road.
 The ponderosa pine are about the only kind of trees in the canyon and
 on slopes with no understory of shrubs or other kinds of bushy growth.
 Trees medium in height and not many young trees. 636.4 Steller
 jay. This is the first bird other than horned larks & ducks observed
 since Casper including starling or Eng sparrows. Most road cuts
 are stratified sandstone. The yucca is the second most dominant
 plant, the ponderosa pine the primary. Cottonwoods in valley have
 line form more like black willow. 640.0 Dawes Co. line. 640.8
 Soldier Creek at Fort Robinson. 641.2 crow 643.8 Crawford.
 644.3 junction 2-71 with 20. 649.1 has seen three isolated lakes
 without drainage? and partly open. winter wheat mainly green
 in damp swales and damp places. 654.0 turnoff to Whitney.
 655.6 striped skunk road kill. 657.1 7 antelope. 664.0
 junction 385-20 at 1:30 P.M. Overall the winter wheat is just
 coming up. 666.6 striped skunk road kill. 667.7 into outskirts
 of Chadron. Left Chadron 2:07 after having had lunch there.
 676.3 2 crows. 693.1 2 crows. 699.3 67-20 converge. 700.0
 Rushville. 50 °F, 3:00 P.M.; 706.8 Clinton. 716.1 striped skunk
 road kill. 721.0 Cherry Co. line. 726.1 2 horned larks 726.7
 3-7-2 horned larks. 727.2 3 horned larks. The topography
 suggests we have been going thru the sandhills country for
 the last 10 miles or so. Surfaces exposed are pure sands, and
 blow-outs are present. 733.3 first large lake to N and a few,
 5000 ducks including mallards, pintails and Canada geese for
 sure. 734.4 second shallow lake with ducks, 300. 735.0
 lake with 40 pintails, 20 mallards and 2 godwits. Sand
 hills are covered with grass and yucca. Cottonwoods but
 mainly willows around the lakes. Some lakes not open
 and many have muskrat houses in the shallow parts. Water
 a deep dark blue and almost unreal. Some wetlands
 almost a yellowish orange. 739.8 marsh to left with 6-8
 houses (muskrat) per acre. A reddish berbed willow associated
 with waterways. 744.8 Merriman, 20-61 junction. 746.1 striped
 skunk road kill. Lake with unusual abundance of muskrat
 houses. Jackrabbit road kill, marsh hawk. 750.8 60 redwings
 in one group and 20 mallards, 14 pintails and sage hen.
 751.9 30 redwings in one group. 753.1 jackrabbit road kill.
 754.5 jackrabbit road kill, 2 horned larks. The jack rabbits
 probably are *Lepus townsendii*, Crow, horned lark. 755.0 Eli.
 756.7 2 antelope. 758.3 horned lark, 3 horned larks 763.1 horn lark

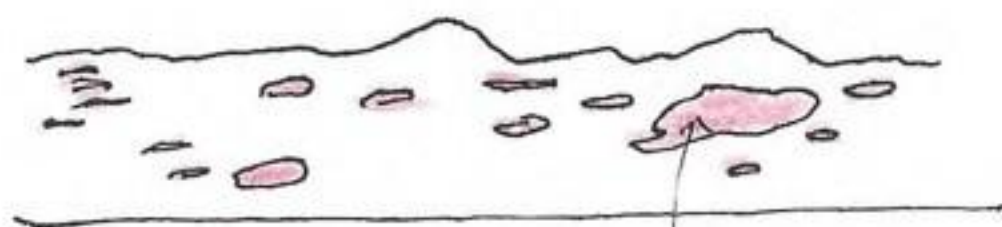
764.9 3 horned larks, 2 horned larks. 765.6 horned lark. 766.5
 2 horned larks, 3 horned larks, 1 horned lark. 767.1 horned lark, 2 horned
 larks. 768.8 Cody. South Dakota is only 3-4 miles to N. Cottontail
 rd. kill. 772.2 horned lark. 773.7 horned lark. 774.5 meadowlark
 and first one since Casper. 776.1 Nenzel, junction 20-97.
 779.7 2 horned larks. 781.6 2 horned larks. 784.1 Kelgare.
 786.5 approx position for change of watches to central time (advanced
 1-hour). 788.3 meadowlark, horned lark, marsh hawk. 794.7
 Crackston, large ^{full} creek running thru (minnechadaza), 2 redwings.
 All redwings have been males, overflow waters from creek follow
 a small meander system. 804.7 male pheasant. 806.1 middle
 of Valentine, temp 30°F, after sundown. Drove to Fort Niobrara
 National Wildlife Refuge NE town and on drive thru roads
 observed buffalo, Texas longhorns, elk (2 large males in open field)
 antelope, 8 Canada geese, 12 golden eye ducks. Niobrara River
 is full and ice masses ^{1 1/2 feet high} along shore, used for conaeing. On
 road on top of bluffs noted 8 mule deer feeding in open meadow.
 at late twilight. These drive thru roads seem to be satisfactory
 and cause no disturbance of our presence. This area should be
 checked out for possible system for a local drive thru for the ^{proposed}
 Tallgrass prairie park in Kansas. Roads should be curved, not
 straight as in most places in the Fort. Niobrara refuge. Returned
 to Valentine and stayed in the Elmes Motel.

Valentine, Cherry Co., Nebraska

March 15, 1979

376-1345

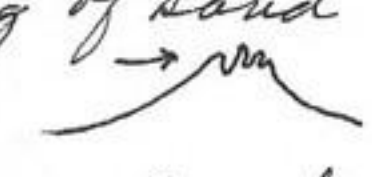
Mr. Doug Ballard of Valentine is a pilot for Fish & Wildlife Service
 and can advise on where the best place would be to see sandhill
 cranes and whooping cranes in the area. Left Valentine 7:35 A.M.,
 temp 16°F at mileage 825.5. Low clouds moving in from W.
 Started 5 on ~~83~~²⁰. 827.5 Niobrara river bridge, channel clear
 some ice mass on side, crow. 829.1 3 horned larks. 829.7
 now 5 on 83. 830.1 jack rabbit, 2 horned larks. 830.4
 jackrabbit. 830.6 jackrabbit. 832.8 2 crows. noted several
 magpie nest in small trees. 834.1 marsh hawk. There is more
 snow drifts here than to the W. Road cut drifts average 3' high. Dis-
 tant ridges look like this:



at 838.8

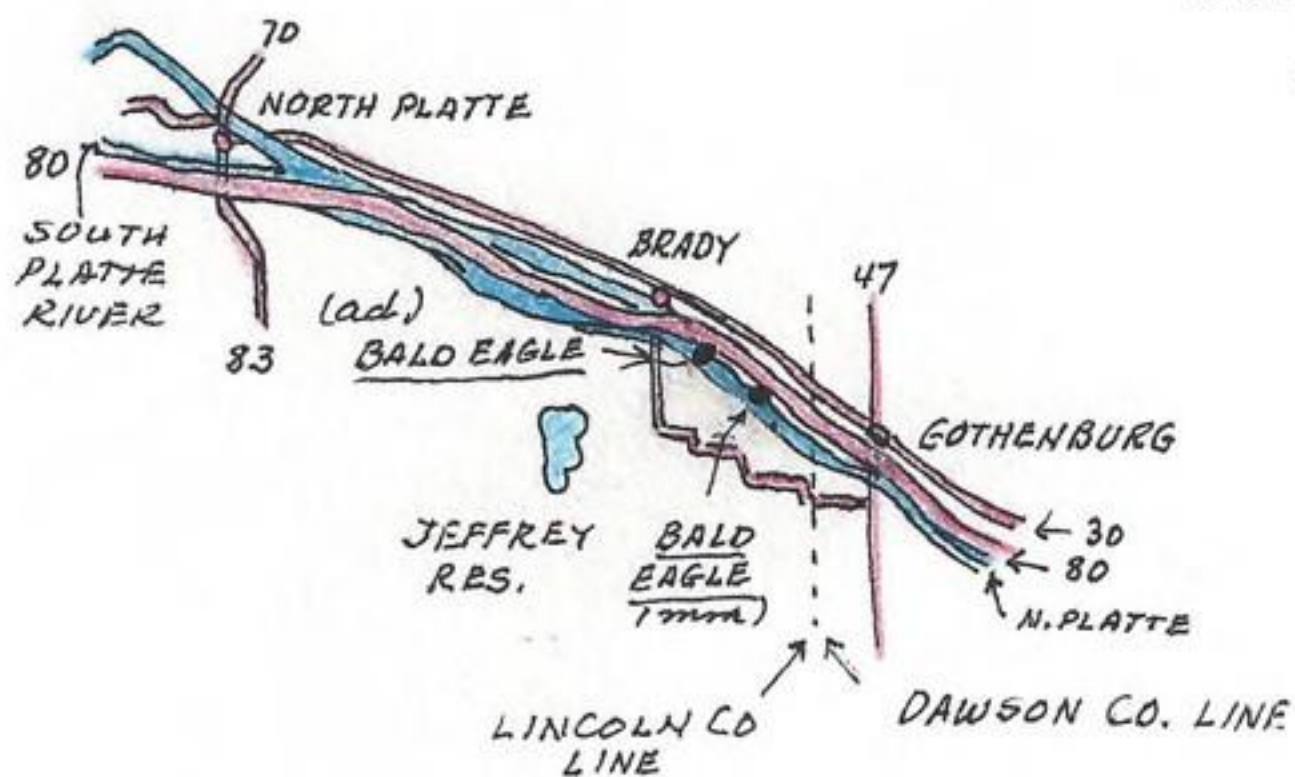
snow



drainage canals frozen. 839.2 2 ring-billed gulls. 841.4 approx.
 Turnoff to S-116B. 844.2 Large lake to N frozen and snow on top.
 846.5 2 mule deer. 847.2 2 meadowlarks. 848.7 300 redwing
 blackbirds in single flock, all ♂. 851.4 marsh hawk. 851.8
 marshhawk feeding on ground. 852.0 marsh hawk. 853.7 large
 lake to N, frozen and covered with snow. 854.9 lake to left
 closed, many muskrat houses sealed in ice. (5 per acre). Some
 small lakes have been open but refrozen last night, 2 horned
 larks, some road cuts with drifts 5' high. 853.0 marsh hawk.
 864.0 200 redwings in one flock, none on territories. 866.0
 now on macadamized road, 80 redwings. Roads are primitive in
 this area. 886.8 3 redwings, fields flooded. Some open water
 around lakes 870.4 road with blowouts on cuts and sand actively
 drifting across road, some drifts 1 1/2' high. most areas stabilized
 beyond road. 875.0 horned lark. 880.4 bridge, ^{North Loup River} 881.5 passing
 by small building (school house). One travels miles in this country
 without seeing buildings except few ranches and these the road can
 pass thru their barnyard, mostly ranch turnoffs without seeing the
 ranch buildings. Roads from dirt to regular to single trail macadem-
 ized. 881.6 2 horned larks, 2 horned larks. 886.9 lake in
 valley, ^{flock of} 200 redwing blackbirds, muskrat in optimum numbers in
 marshy area. 887.8 Crow. 100 ducks flying N. 889.7 horned lark,
 horned lark. 890.6 3 horned larks, 20 horned larks. 892.0 5
 horned larks feeding on snow bank, 3 horned larks, 2 horned larks.
 894.2 2 horned larks, horned lark. 896.2 2 horned larks, 900.2
 6 teal in small pond. 902.3 2 horned larks. 904.0 middle
 Loup River, 18 horned larks. Seems like more Andropogon as we
 move S. 905.5 Mullen 10:00, lunch and left at 10:30 A.M.
 The last stretch was on a single trail macadamized and was an
 exceedingly interesting route, remoteness thru the sandhill region.
 Surprised not to have seen antelope, but I am sure they are there.
 906.5 on highway 97 at mullen, will continue S. 912.7 horned lark
 916.6 9 horned larks, 2 horned larks. temp 30°. 920.2 Klamath
 River, full and sand laden, run thru deep canyon thru sand ridges.
 921.1 horned lark. Some of the most dynamic sculpturing of sand
 ridges is at apex of ridge where deep pockets are formed 
 and although formed by wind are actually protected during moderate
 or low winds. There are more blow-outs here than to the north.
 Sun out for first time and skies blue to east. Maybe a temporary thing.
 924.0 horned lark. more snow drifts than to the north. Isolated
 groves of juniper may be introduced although some are extensive.

929.5 2 horned larks, 3 horned larks. 929.4 McPherson Co. line., horned lark, gopher digging common here but inconspicuous in some other places.
 932.7 horned lark, country becoming less hilly, broader valley and ridges more elongate and organized rather than individual dune formation, meadowlark. 933.7 2 horned larks. 935.5 horned lark 937.8 horned lark. 939.0 20 prairie chickens? in flight along a ridge. 940.1 3 horned larks. Horned larks occur in groups and in the case of 3 may be from 50' to 150' apart or may be within a yard or so of each other. Those over 150' are considered, for the census as a different sighting and are so registered. 940.9 3 horned larks, 2 horned larks. 941.7 4 horned larks, 2 horn larks 942.7 Tryon, horn lark, now 292. 945.4 3 horned larks. 946.2 horned lark, horned lark, 947.3 4 horned larks. 947.5 2 horned larks, ^{now 5 on 97} 948.0 2 horned larks. Snow drifts slightly less but surface area of hills not as irregular and produce less irregularity for snow to accumulate, horned lark. 949.5 9 horned larks, horned lark. 950.7 2 horned larks, 2 horned larks, 3 horned larks, horn lark. 952.9 3 horned larks. 954.9 horned lark, horned lark, horned lark (these 3 birds in 1/10 mile as all other ^{listings} such). 956.8 Lincoln Co, horned lark, gophers still active, 3 horned larks. 959.6 2 horned larks, horned lark, 951.3 horned lark. 965.5 4 horned larks. 967.1 2 horned larks, 2 horned larks, 3 horned larks. 969.5 lakes open, fewer and fewer snow patches. 970.1 Horse Shae Cr 4 redwings together, meadowlark, 4 meadowlark (following along Horse Shae Creek), 971.8 9 horned larks, 16 meadowlarks. 974.1 now on n edge of North Platte flood plains, 2 meadowlarks. 975.1 white Horse Creek, one group 12 crows, another of 50. Some fence drifts but fields inundated and water flowing. 976.4 north Platte River. open and bank to bank. Borrow pits frozen. 977.5 overpass (railroad) in North Platte City, 11:45 A.M. and end of complete census for trip, ^(continue raptors + unusual observations) 978.9 South Platte River and only 1/5 water in channel. Borrow pits along 80 still in ice except leads on W, N and E edges. 985.0 Borrow pit with 1/3 open and approx. 100 small gulls (Franklins?). Where utility lines go thru riparian forests the right-of-way is in juniper. These clearings would make good observation points for observing movement up or down the river and riparian borders. Borrow pits open first on west side, then north side then east side and last on S side but in nearly all pits the south side is still frozen to bank. 990.5 regular riparian toward river and mixture of juniper toward edge of valley. It would appear that the ^{riparian forests} junipers are crowding out the pinyons. 998.3 no small birds along road since north Platte. 1003.2 Bald eagle with tail just turning to white. near a diversion dam (secondary)

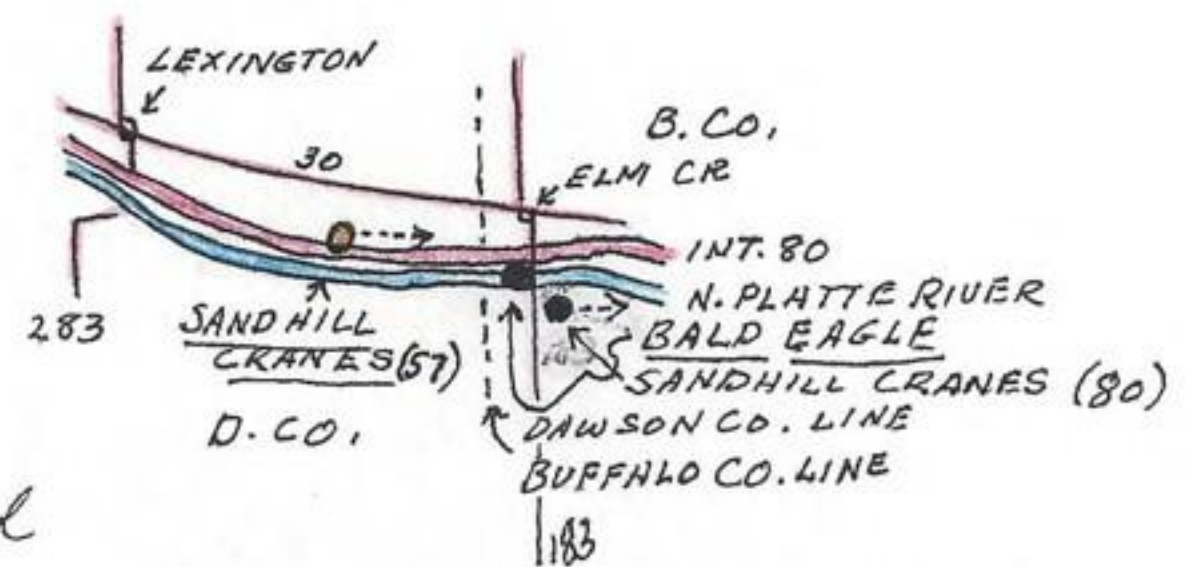
It soared about 200' above trees over river near road and remained in same area taking advantage of the wind. This eagle is 7.5 miles from the Dawson-Lincoln Co. line. Another immature bald eagle was observed at 007.1 near Gothenburg Canal, which is dry. It was a bird with upper part of tail (basal) mottled white, the upper surface of wings with considerable white as was the under side of wings. This eagle circled 100' above trees and remained in same area. Both eagles were approx. 250' from interstate 80. This bird was 3 1/2 miles



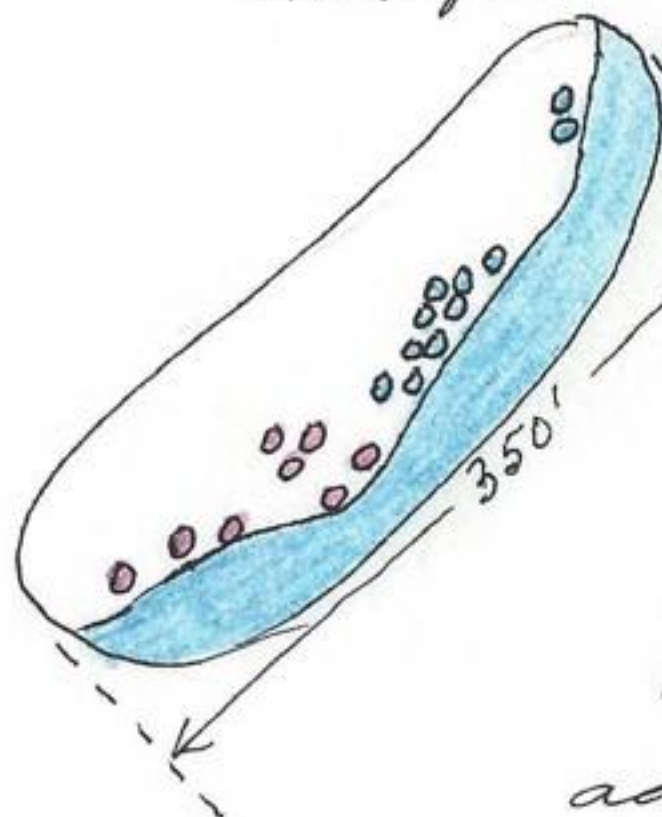
from the Lincoln-Dawson Co. line. 009.5 red tail in tree. 019.3 approx 150 great blue heron nests in trees along river not over 400' from road. 031.9 sparrow hawk. 047.2 a borrow pit 3/4 open, most just beginning to open. 051.0 Two groups of sandhill cranes, one 32 and the other 25 individuals. They were circling and moving progressively east down N. Platte river (above interstate 80) The two groups merged and continued east. They called almost continuously but not the ^{loud} raucous call they usually give. These sandhill cranes were 6.5 miles W of the Dawson-Buffalo Co. line. 055.8 sparrow hawk. 057.5

Buffalo Co. line. 059.3 elit
257 to 183 to S. (Elm Creek elit)
will continue S. (1:32). 060.0

Platte River bridge. An adult bald eagle flying at edge of river about 30' above the ground. 22 crows calling and harassing the eagle, some making contact. In 50' it alighted on sandbar at edge of water and 14 of the crows alighted with the eagle. The first 5 seconds the harassing continued but then all crows remained near the eagle but did not seem to be concerned with the eagle. Eagles look stumpy while on the ground. Some of the crows were within 3 feet of the eagle when on the ground but they did not harass the eagle nor was the eagle concerned. At least 12 more crows were in the river channel to the west. Because of the large size of the bald eagle, crows look more like blackbirds in size when near the eagle. East of the bridge ~~there were~~ 15 crows, 2 ring-billed gulls, 18 mallards, 8 common mergansers and 12 pintail.



at 1:38 (400 high)
 060.3 80 sandhill cranes flying east, 80 crows disappeared over flood plane, 2 meadowlarks. The cranes circled as they moved east and called, 066.0 15 crows, 083.2 Harlan Co. line, 092.7 redbill. An interesting problem would be to determine erosional effect of concentrated cattle trails on the surface of the ground, especially on edges of washes or banks of creeks etc. At 101.7 middle of bridge that crosses the Republican River. at 2:35 P.M.



● = adult bald eagles
 ● = immature bald eagles.

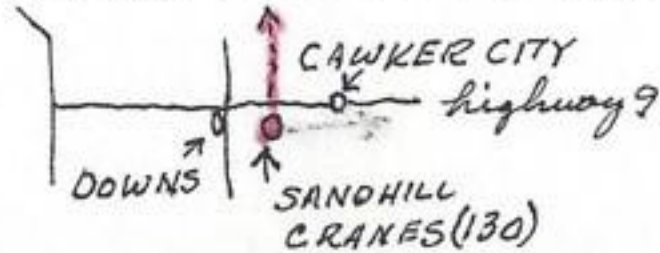
The immatures were definitely segregated from the adults, one group of 9 immatures in close formation. The adults

were grouped but the spacing between each adult was considerably greater than the spacing of immatures which was close order. The two adults on the edge of the ice seemed to be feeding on their prey.

In the same area were approximately 5000 ducks including pintails, mallards, gadwalls, common mergansers, teal, goldeneye and spoonbills.

Continued S on 183. Kansas state line at 107.6 at 2:50 P.M.

126.3 Phillipsburg, 40°F. 132.2 now E on 9. 136.1 2 redbills, 140.3 redbill on bush 3' off ground, wheat (winter) much greener than in N. Nebraska. 148.5 redbill, 149.7 152.4 sparrow hawk, 153.9 redbill on haystack. 155.7 sparrow hawk. 161.2 sparrow hawk. 162.3 redbill on line of telephone wire. Snow drifts rare in this part of country. 171.5 sparrow hawk, 172.1 sparrow hawk, 172.7 junction 24, now E. (Recorder malfunctioned at this point). at 3 miles W Downs in Osborne Co., Kansas 130 sandhill cranes circled & called as they moved north, approx 4:30 P.M. Arrived Lawrence 9:00 P.M. at 01383.4. Total trip 1734.4 miles.




Estimated 18 redbills and 9 sparrow hawks between Downs and Manhattan on highway 24.

Leecompton - Perry Reservoir area, Jefferson Co., Kansas

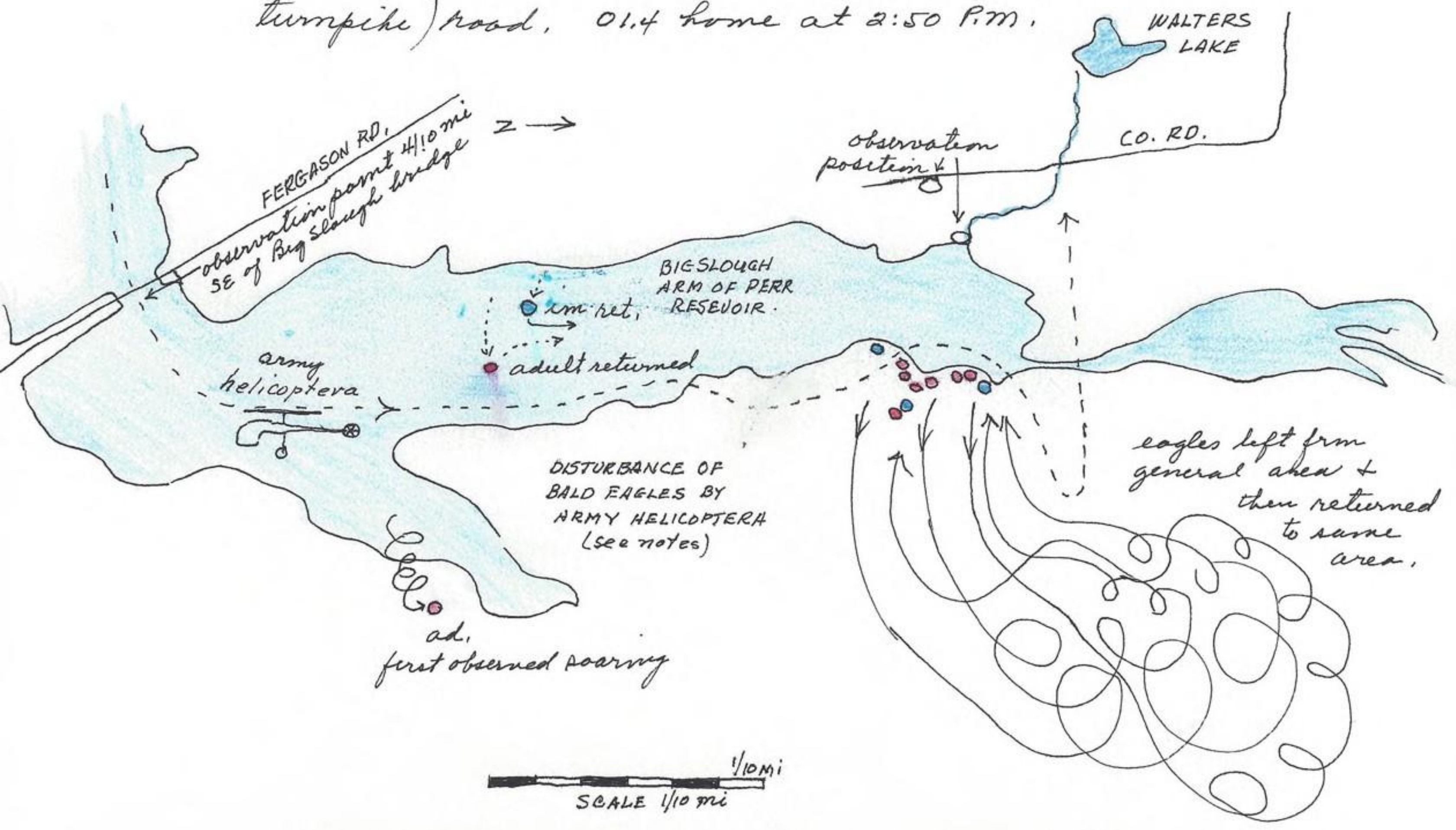
March 19, 1979

Checked on Bald Eagles along the Kaw River from 2 mi. above mouth of Delaware River to 8 miles or so down the Kaw. and the Perry Reservoir area. Left mileage 1415.4 at 9:06 A.M. few clouds near horizon to W and S and clear otherwise. Temp. 50°F. Wind from W. no evidence of snow on any exposure. 18.1 robin. 18.7 bridge on causeway on Lake View, no ice or snow, approx. 80 ring-billed gulls, half on water and the other half hunting in small groups, especially at inlet from Baldwin Creek. Several gulls had 4-inch blue gills in bill. 2 crows. 19.4 on dike E of Bruner. Can see one adult bald eagle in tree along river on E side Kaw River at a point 1/10 mi N of the extension E of this county road that leads to the dike. Cannot see any other eagles from this position. 20.5 9 meadowlarks in one group. 2 redwing ♂ on territories. Although the lake is full and the Kaw near upper banks, the slough beyond W end of Lake View is not flooded. 20.8 2 redwings on territory. 21.7 dike parking spot. Continued to river, dike in short grass about 2 inches in height. at jetty water up to cut willow on E side and logs & limbs caught on underwater part of jetty. Large logs in river are on the average 150' apart and much closer in areas of stream flow channel. Small debris every 15' apart. Some Indian soap. Water with 3' of bench on S side and approx 9' on N side. One adult bald eagle approx 1/2 way down to island on N side. Map shows the two eagle in this area. Birds in area 1 redbellied woodpecker, 2 cardinals, one ^{dead} great horned owl probably shot. Returned to car & continued W along river road. 22.6 4 meadowlarks. 22.8 hillside road, 1 bluejay & 4 juncos. 23.1 vantage point just W of usual railroad creek point, no eagles. 2 kingfisher 1 crow, 1 bluejay, one cardinal. 23.6 redhead. 24.3 Bradley Creek observation point, no eagles. (10:25), 24.8 slate colored juncos. 25.6 4 juncos, 8 robins. 25.8 Leecompton Rd. 26.5 E end Leecompton bridge. (10:40) Water over bank and up 100' drain on W side of N end bridge. no eagles. An individual stopped at bridge and reported having seen 3 adult bald eagles in Big Slough Creek from bridge 1/2 hour ago. He has driven this route all winter and says he has seen bald eagles in Big Slough area twice when lake was completely frozen over and at least 20 sightings after ice started to leave the lake. 29.4 highway 24 N of Perry. 31.9 SE corner of Perry Reservoir area. 32.9 Ferguson Rd. at slope on road S of

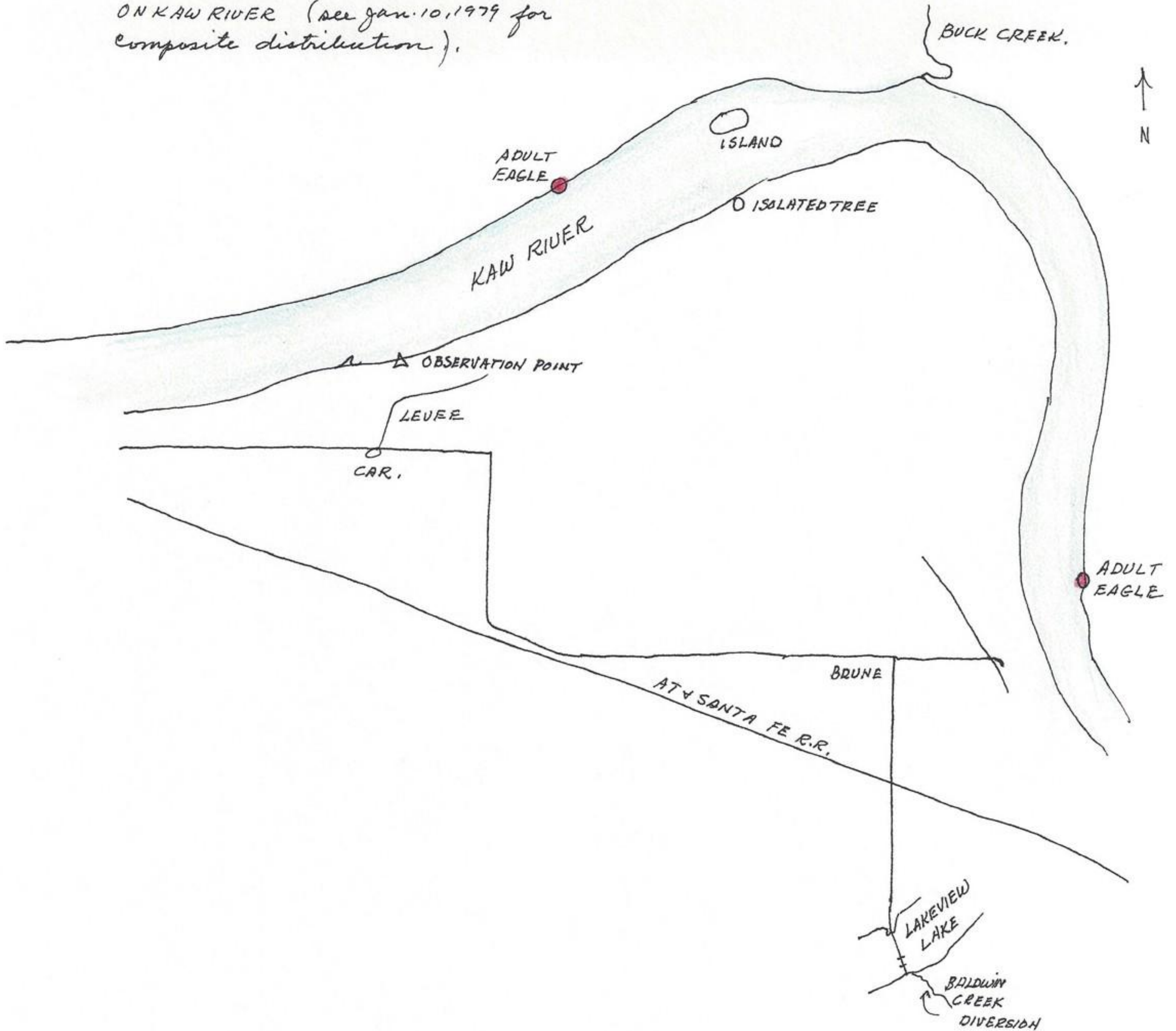
the Big Slough bridge on the causeway, ^{at 10:55} noted a helicopter 
 move, ^{first} up Big Slough area across causeway, thence N on E side
 flying just a few feet above the dead trees in water and 10 miles an
 hour for 300' thence along sidehill along lake for about a mile,
 thence E to top of ridge and thence W toward the main lake.
 It appeared as if it were following precisely the position of
 eagles as if to displace them. One adult and 2 immatures
 left the dead trees at beginning of dead trees, 1 to W and the
 other two to E. At first heard 6 adults and 4 immatures
 bald eagles left to E and rapidly gained and altitude of
 perhaps 1200-1500 ft at a height that with x8 binoculars
 immatures & adults were difficult to distinguish. The tail of
 the adult eagle is the best marker at these distance, especially
 in some positions. The eagles tended to segregate into pairs
 either adult-adult, adult-immature, immature & immature
 and aerial contact was common. An adult eagle returned 11:03
 to top dead tree standing in water, the first bird to be displaced
 in 8 minutes after the helicopter passed over. An immature
 returned 4 minutes later. The group of 10 eagles in air returned
 after ^{some time after} the helicopter has passed by. The first eagle of the 10 in the
 air ~~or~~ returned to area where they were flushed out at 11:10, two more at
 11:15. By 11:20 all but 3 of the 10 in air had returned, the 3 about
 400 above ridge. 11:22 3 still in air but descending. 11:25 two in air but
 gained altitude. 11:30 all eagles ^{except 2 circling high.} have returned. At 11:32 two motor
 boats arrived from marinas and pulled into first of dead trees some 1/10 mi. from
 the first eagle that returned. At 11:34 a third boat come into area and
 went directly to the eagle which was displaced & flew up Big Slough. 11:38
 2 eagles still circling high. ~~11:38~~ Position of road is 33.7 on S slope
 leading down to causeway and bridge, 34.1 Big Slough bridge. While
 watching eagles, several ring-billed gulls and small flocks of ducks
 passed thru field (26 gulls, 18 groups of 4-12 ducks). From station on
 road can see 2 groups of people in fields of Topeka Environmental
 area, just W across slough where eagles are alighting on E side.
 36.5 meadow lark 36.6 Dr. Walters front gate. Continued to curve
 where one can look down into Slough Creek but not adequate so
 returned to N End Walters property and drove down to the Topeka
 School Environmental property. From open field S of buildings
 observed 6 adults ^{bald eagles} and 4 immatures, ^{bald eagles}. One adult and immature in
 low tree near top of ridge, all others 4/5 up in tall Cottonwood trees
 on E side of Big Slough arm of lake. The 2 groups of 12
 students each did not cause the eagles to leave although they

they were conspicuous and vociferous. Their actions were not in keeping with a study area. While these eagles have been in area they were not cognizant of their present just across the lake. When directed to their whereabouts the keen eyes of the individuals (8-10 years of age) could see them without binoculars. There were no binoculars in either of the 2 groups. It is interesting that the eagles are on the east side of lake rather than the west side, mainly because of the large Sallowwoods on that side. They circled ^{above} on ridge to E today and many times in the past they have used this area of aerial flight. Ideally the entire drainage should be set aside for a bald eagle natural area but new homes have already encroached upon winter territory on the west side of the lake as is the 60 some odd acres of the environmental study area. Open water may be a problem in this area during winter. ~~40.1~~ ^{40.1} now on Ferguson Rd + N 43.1 Little Slough Creek, full, water in bays at head of lake. 45.2 dark redtail. 47.2 Sandy Point vantage point. would estimate 400 ducks generally distributed, 32 ring-billed gulls generally distributed. Considerable flatsam in lake, some on rafts. 47.4 gates to Paradise Point. 47.7 redheaded woodpecker. 48.3 turnoff to N to shelter. 48.4 vantage point at 12:30. can see only 4 ducks (mallards) and 6 ring-billed gulls. I expected this area N of Paradise peninsula to be heavily populated. Large area of willows now inundated. No eagles. 5 gulls flying directly N over peninsula. 48.7 frogs calling from pond. 48.8 saw 5 on loup. 49.0 frogs calling from old camp site in trees to left, Cowbird, Killdeer. Considerable debris on west shore of peninsula. On the debris (20' out into lake) or 18 male grackles, 6 starling, 1 killdeer, 1 ^{immature} female redwing blackbird. All except killdeer had difficulty navigating the flotsam. 4 ring-bills on water to NW and no ducks. Grackled called. From the west shore of the peninsula to 1/10 mi. E of boat ramp is lined with trees, limbs, and small wood floats flotsam from 20' to as much as 250 feet, especially in bays. I have never seen this amount. Most of the limbs are clean of bark and I wonder if the greater amount could be contributed by beaver. will check this next time out. Photos ^{TO E} 790319-1, ^{TO W} 790319-2, ^{TO EAST} 790319-3 are photographs of this floats flotsam. ^{and 790319-4 of blue & gray geese flying N.} Now would be the time to clean this material up before it is dispersed or carried into main lake. This material is from the Delaware River! ^(Mr. Myers, Supt. Corps Engr says the flotsam will remain) At boat ramp 150 yds. flotsam in front of it. ^{Reservoir filling in this area from Delaware River.} Three robins and 2 slate-colored juncos here. 52.6 gates leaving Paradise Point, at 1:15 P.M.

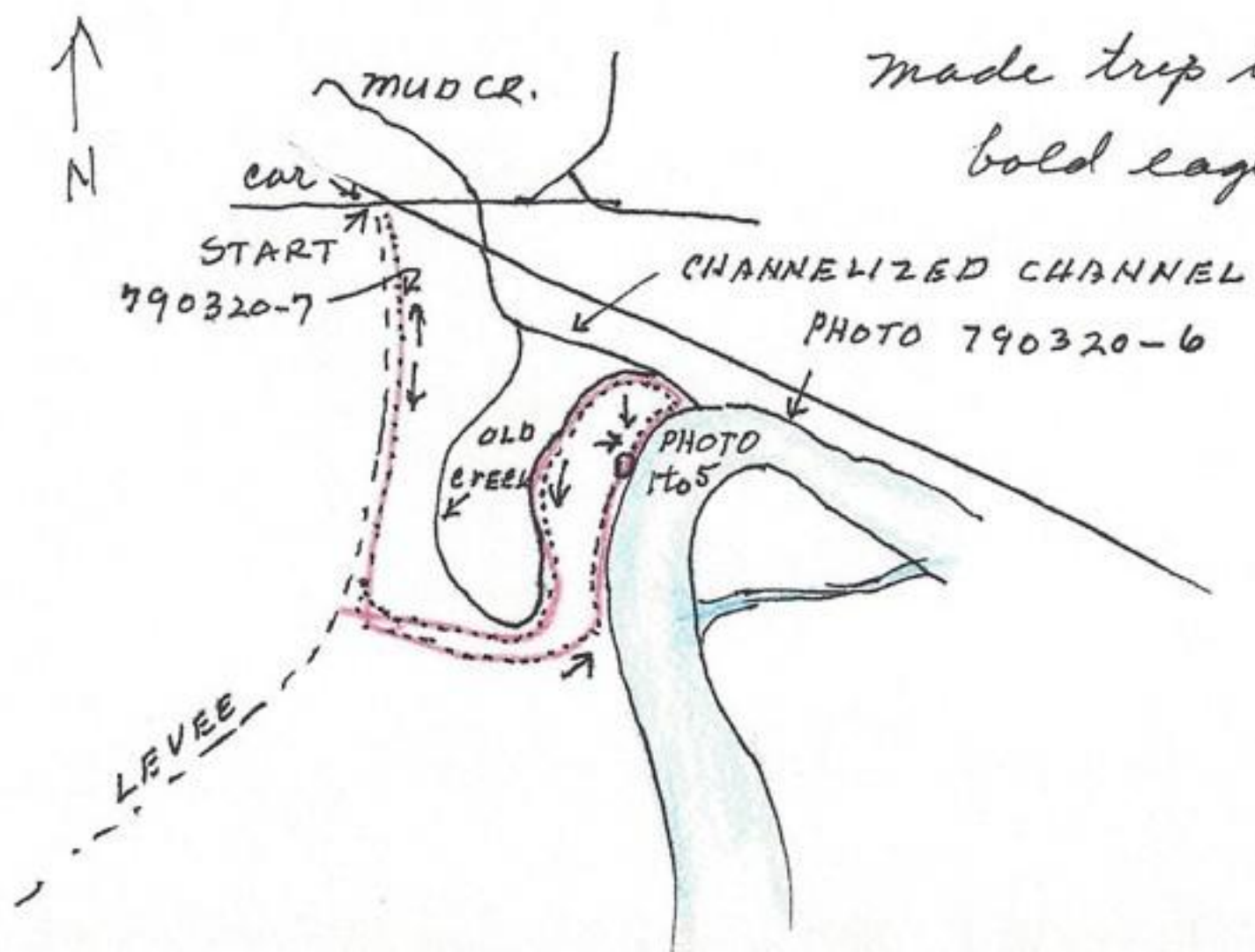
56.1 4 corners. Considerable exfoliation from road cut cliffs. It is hazardous to collect ~~from~~ ^{from} these cliffs, 57.2 to Old Town circuit, water about 1 foot from lake side road, has been over road this year, 58.2 now checking local area. 230 snow + blue geese flew N. in this group were 31 snows together, the rest blues. Temp 55°F
 59.4 four corners, now S. 70.2 Little Slough Creek, water about 2 feet from bank. 72.9 sparrow hawk, 74.7 now turning off to Big Slough Park. 74.9 sparrow hawk, 75.6 gates, pond on right base hill full. 76.3 now left, redheaded woodpecker, new building across lake to SE. not blended with environment but conspicuously out of place. 77.0 boat ramp turnoff but continuing 4 gull. 77.4 from point, no ducks or geese but 14 ring-billed gulls generally distributed over lake, 78.7 Gape Point, water over Co. road, ^{and north side} no ducks to N but 12 ring-billed gulls. 5 patches of ice on shore at S end bay, and only ice I have seen today, water muddy and high. 4 motor boats on lake, 80.3 Gales on return. 81.1 sparrow hawk, 81.2 main road, now S. 82.7 Big Slough bridge. 13 ring-billed gulls. Hackberry in forest on hill S end causeway still on trees, 84.9 SE corner of reservoir area. End of census except raptors, 90.3 E end Leecompton bridge, 94.5 sparrow hawk, 97.8 redtail. 99.2 redtail, 99.6 Kasald + Lake View (Farmer's turnpike) road, 01.4 home at 2:50 P.M.



DISTRIBUTION BALD EAGLE, MARCH 19, 1979
ON KAW RIVER (see Jan. 10, 1979 for
composite distribution).

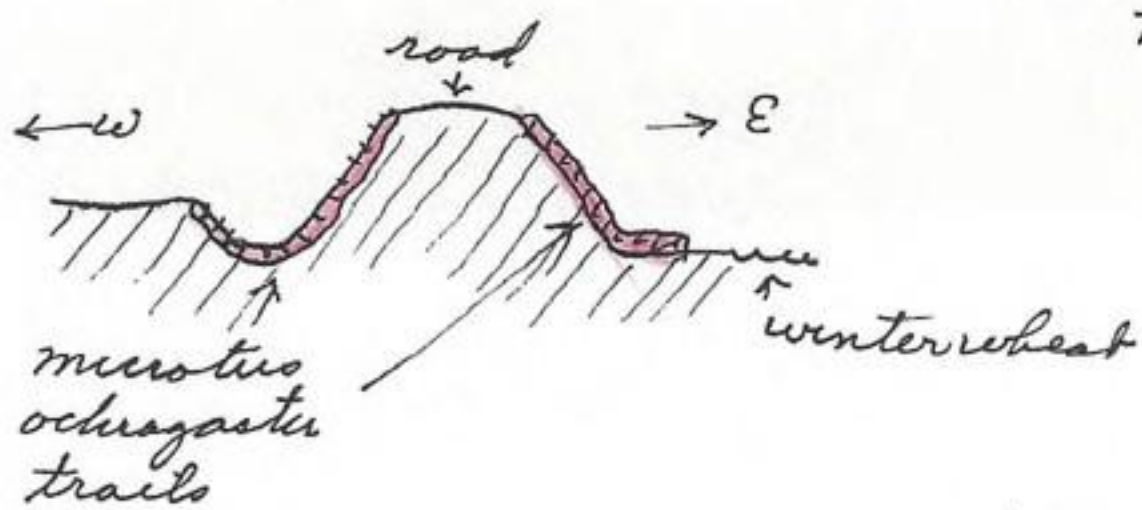


mud creek, Jefferson Co., Kansas
March 20, 1979



Made trip to mouth of Mud Creek to see if
bold eagles were using this area.

Across valley to mud creek
noted 8 redwings, 1 sparrow
hawk, 2 horned larks.
Left car 10:00 at n end dike
mud creek full and murky.
Followed along dike to
near river (Kaw) and thence
n toward mouth mud creek.



Trails more numerous ^{on east side of dike} than on west side. The trails are continuous

on both exposures on all surfaces of the dike except the groveled top. These runways, at least

some of them are used but not as completely as say a month ago when snow covered the slope.

The runways indicate beneath snow activity.

Runways on slope show erosion from water.

many trails extended over grasses by mudlike

soils. Photo 790320-7 show condition of trails without

overhead protection. Some shallow diggings have cores of soil and grass stems extending from excavation as if forced into snow tunnel

soil and plant material. Some trails built up at edges with soil and plant material. Others excavated into

soils. Grass stems 1 1/2 inches long in trails. Soils damp on east side dike, drier on w side. Adjacent winter wheat up to 3" high, grass on dike slope 9"-10". No evidence of winter wheat being eaten. No digging by predators. Few grass nests lined with fine grasses.

at gate thru dike water level 80 ft. mark. Top dike 100 ft. Frogs calling. In old creek channel

12 wood ducks, 8 bluewings, 5 mallards. In flooded young cottonwoods 8 mallards, 3 bluewings. In river (1/10 up river, 3 baldpates, 30 mallards. Along Kaw a muskrat swam down

river and climbed on log 10 feet away from me without noticing. It finally saw me & left underwater. 10.45 Arrived at beaver

cutting about 1/10 mi from mouth mud creek. Took photo 790320-1 of beaver cutting, 790320-2 of river framed with branch, 790320-3

of general cutting by beaver, 790320-4 near mouth of mud creek of grass in foreground & down river in background. 790320-5 of mouth of mud creek to E down river. River without noise.

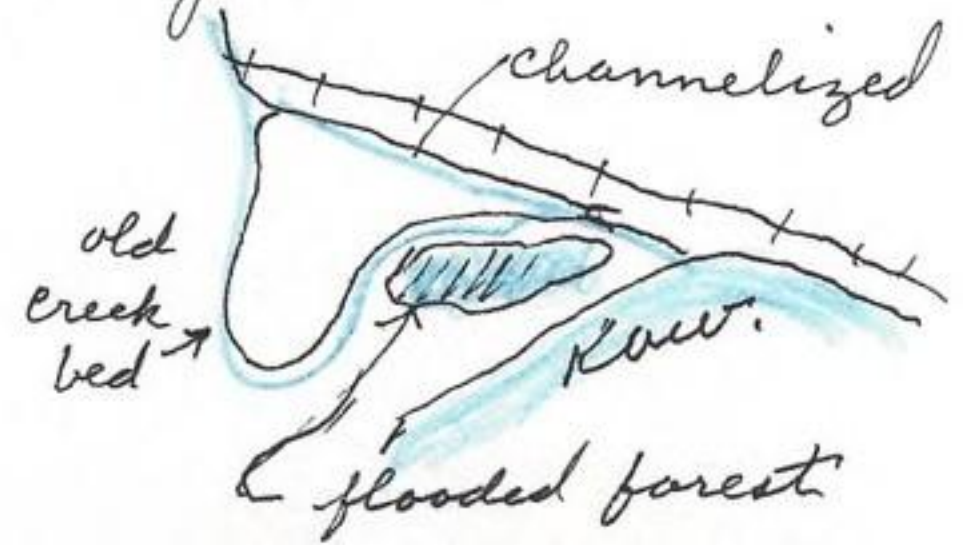
Cardinals singing, one red-bellied woodpecker. Coot swam down river and up mud creek. Duck up river feed down river with

current then fly back to original position. Good surface of dry leaves on forest floor. Stinging nettle 3" high, a bladed plant up. 6", grasses to 9 inches. One large deer track measured 76mm.

Cicindellids (brown + white blotched) active in sandy areas.

In riparian forest a large area inundated. Did not find the bald eagles in area. Also no

geese. Returned to car 1:40 P.M. From N side mouth mud creek photo 790320-8 of Kaw to S thru fine pattern of tree limbs.



Clinton Reservoir, Douglas Co., Kansas

March 21, 1979

checked areas of State Park and Clinton put-in area (old bridge, ^{area} 72. Clinton). From home to headquarters 6.6 mi. Checks State Park; buildings too conspicuous, no consideration for natural landscape, muzzymug man made artefacts not considered, road straight instead of curved, forest edge cleared and now park-like, mushroom shelters should be in protection of trees, not in open fields. From here to valley road, ^{N. side} that formerly led to bridge N of Clinton. Water now almost to valley side at Coon Creek which is about 3 feet from flood level. Met Mr. Theodore Buchheim who lives in first house to N where yard is in rock fences. He was born in 1907 and he and father lived here all their lives. He reports: river valley in early days all in timber - oak, walnut, elm, hickory, sycamore etc, and was cleared for farming. Swamps and ponds in some area with waterfowl by the millions. High grasses in meadows. On March 5 and 6, hundreds of snow geese in area mallard now stay in area all year. Coyotes kill chicken and one ^{unsaved} trap placed under a pear tree caught 6 coyotes last year. The coyotes eat the fruit.

11:00 A.M.
While I was parked at the end of the road at water edge noted 6 baldpate, 3 coot, 73 redhead ducks, 12 canvas backs, 3 mallards, 15 bluewing teal, 6 common golden eye, 2 buffle heads, 17 greater scaup, 2 shovellers. At 11:05 an immature eagle flew W up lake and finally dropped down below level of the trees at about 1/2 mi. NW of Belvone bridge position. It was circling about 300' above trees. 11:08 marsh hawk flew from S to N across valley. at 11:20 a helicopter come from the west and increased the ducks in air from approx. 5 groups of 3-10 ducks to per minute to 20x this number so the harassment was positive. Helicopters use the area as an exercise ground for training and defy the law on low flying. This condition is hard on wildlife and should be corrected. Left 11:30 P.M. Left and drove to Leecompton.

Kaw River, Leecompton area, Jefferson Co., Kansas

March 21, 1979

Made complete check of river for bald eagles, making observation from usual vantage points. At the valley levee point (1st check point) found 8 soft drink cans, ^{together} with an average of 9 22 shot holes in each can and 4 beer bottles shattered.

From the vantage point on river at the dike locally observed an adult bald eagle on n side river 1/2 way to island (see map march 10, 1979. From dike E of Bunes at end of road observed an adult bald eagle just down river from mouth Buck Creek (see map march 10, 1979. Both eagles 1/2 way up tree. At Lake View Lake noted 18 ring-billed gulls, 11 together on water and 7 generally distributed and also on water. An opossum rd. kill at Kasold & Petersen road.

University of Kansas, Lawrence, Douglas Co., Kansas
march 22, 1979

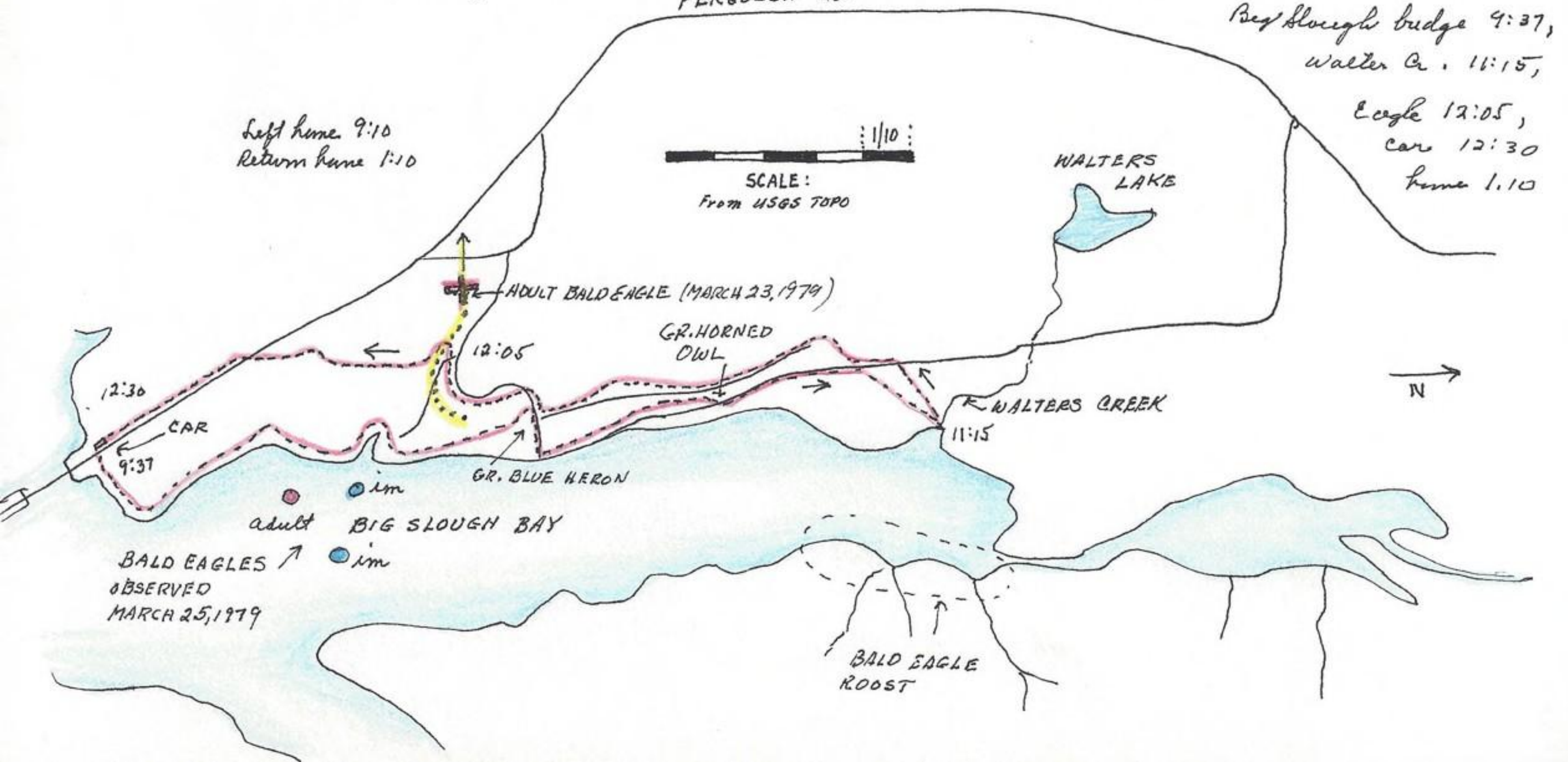
Approx. 800 robins on playing field S of Roberson Field House. These and others on campus would indicate a great increased of robins in the city.

Clinton Res., Douglas Co., Kansas
march 22, 1979

Checked lake from dam this A.M. & P.M. and did not observe any wildfowl. Duck now in flooded field to west at heads of Rock Creek & Wakarusa. Rained almost an inch today and fields flooded. Bay and low spots in State Park in fog. this P.M. at sundown, elsewhere clear. Beautiful cloud effects this evening over lake as cloud masses moved out of area.

Perry Reservoir, Jefferson Co., Kansas
march 23, 1979

checked bald eagles in Slough Creek area. Left home 9:10 A.M., Leemington bridge 9:25, Big Slough bridge 9:37, Walter Cr. 11:15, Eagle 12:05, Car 12:30 home 1:10



This early morning was overcast a occasional rain. By the time I left it started to snow and by the end of the trip snow had accumulated to 2 inches of slushy snow. It continued for the greater part of the afternoon. While in the Big Slough area the wind ^(from N) was producing big waves with whitecaps. Occasionally, average 1 per 5 minutes gusts would blow and trees would bend with noticeable wind noise. Across open fields and water the wind and snow was almost intolerable, even the protection of a trunk of a lone tree was gave some personal protection. Snowed the entire time in field with visibility 1/10 mi for detail and 2/10 obscured of detail and beyond 2/10 obliteration of landscape. At point of mouth Walters Creek, could just see trees on E side of lake but no detail, just a grayish outline of ridge, so could not determine if bald eagles were in their usual area. Wind up to 40 miles.

Some observation in the field:

1. Observed 4 redbreasted woodpeckers (2 groups) among dead tree in bay along lake. Considerable drilling & bark exfoliation on living trees.
2. Great blue heron alighted on top dead tree in small bay but left on my approach.
3. 5 cardinals, 1 fox sparrow, no juncos, chickadees or tree sparrow in what would be considered prime habitat.
4. Snow is plastered on N side of trees, especially those trees in open exposure. Dead trees in lake were ghosts. On return home signs were covered with snow on north side but clear on S side. Could not be read.
5. 4 Crows in 2 groups and flushed from protected areas.
6. 1 great horned owl.
7. Wild onions on floor of forests 8-11 inches high.
8. one cottontail.
9. dead raccoon 38" total length.
10. 3 scoups at mouth Walters Creek and only ones observed entire trip.
11. fragments of a perch ^{fresh in forest}, 300' from water
12. 1 bluejay.
13. only 2 ring-billed gulls where flying up wind with difficulty.
14. Less snow on ground on lee side of isolated trees or forests.
15. A bald eagle (adult) flew by me (see map) about level with tree tops and continued up an open field in a NW-SE drainage. As it neared the top of the ridge the winds buffeted the eagle and caused it to loose flight control temporarily. Visibility thru snow at this time 1/10 mi.
16. measurement of water at road culvert (at great blue heron sighting is 8 inches below cement which is the top of the road ^{rd.} _{plastic} ^{8 inches})
17. noticed several qt, gal, ^{plastic} containers in forest some 200 feet from water edge and am wondering if they are being blown inland from the water. Several areas where boats have had picnics on shore and ground littered with debris.

Perry Reservoir, Jefferson Co., Kansas

March 24, 1979

Annette and I visited with Debbie & Jay at Aldrich's place and then checked eagles in Slough Creek. Two immatures and 1 adult were observed in the lower part of Big Slough Bay (see map of March 23, 1979). These eagles were circling low above water and finally flew N at about the same elevation. (4:45 P.M.). At Gap Point (Devils Gap) waves and water onto road at Boat ramp, waves like surf, considerable erosion of bank to E. 5 ring-billed gulls to N. Along east shore of lake from Gap points to 5 ring-billed gulls flew by at about 150 per minutes and all travelling N along shore. They could be migrating or returning to lake for night.

Leecompton, Jefferson Co., Kansas

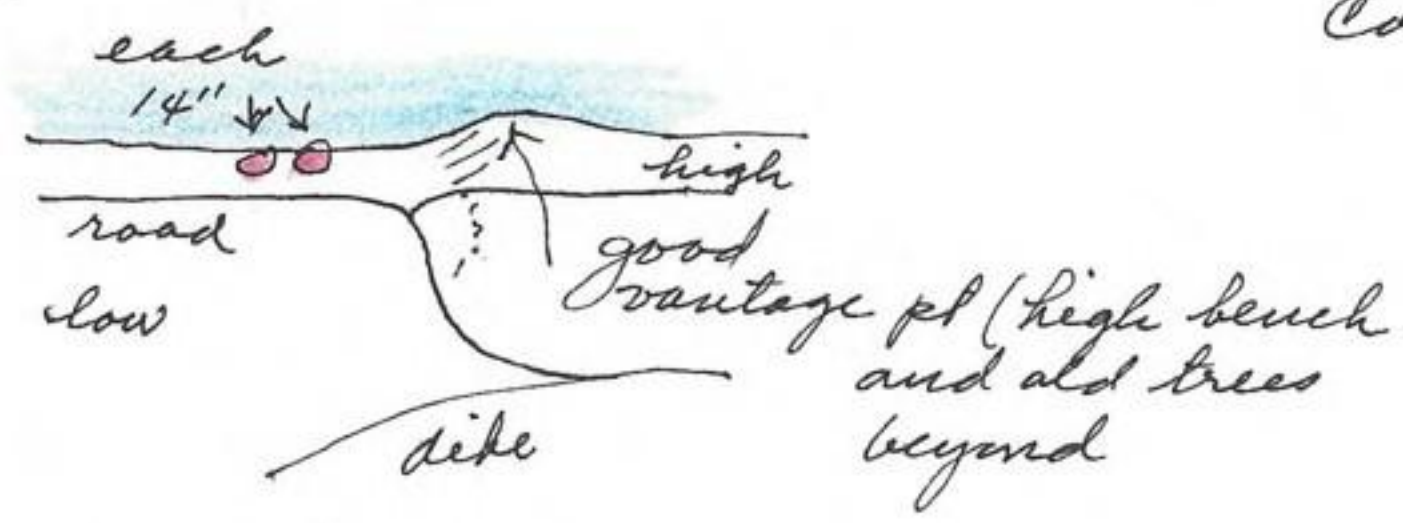
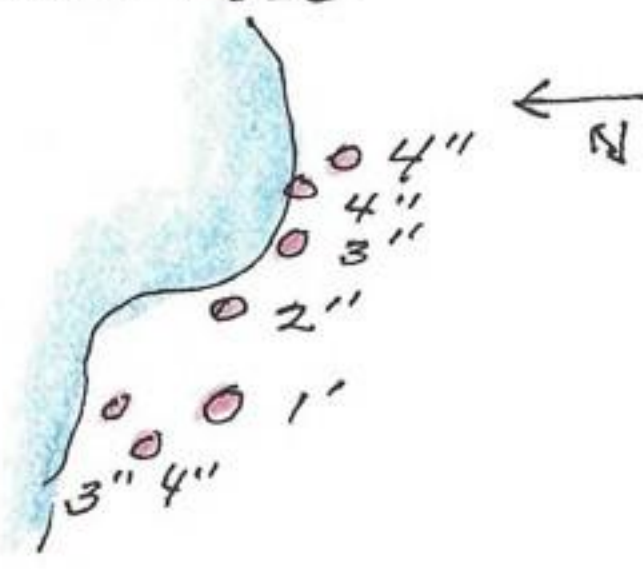
March 28, 1979

checked Kaw in eagle area this A.M. Temp 58°F. Wind from SE gusting to 25 mph, low rainlike clouds, occasional sun, some blue spots. Left car at 9:45 A.M. and followed dike to river arriving 9:55. From vantage point can see immature eagle to NW circling above trees on north side (see March 10, 1979 map). It continued W. Water on S bank to within 4' of top of bank, in some places 3 feet, flotsam 1 per 250'. no ducks or gulls. Will walk E to big tree and check for beaver activity and complete census of birds & mammals (by time). At observation point beaver tree 1 1/2 feet diameter, red-bellied woodpecker. 10:05 river over bank into shallow channel. Beaver tree 1 1/2 feet in diameter (these trees are all within 20' of river and show beaver activity to cut tree. Coyote track in mud measured 68 mm hind, 76 mm front. Leaves on ground a soft mass and 20% disturbed by animals. Leaves in trail (deer, coyote, raccoon, opossum) all disturbed. Several places tree broken over trail (foot high arch) and trail directed around trees. Deer have alternate route where trees have blocked passage but high enough for small mammals. Deer pulverize rotten limbs in trail. Elsewhere deer press dead leaves into soils thus incorporating plant material.



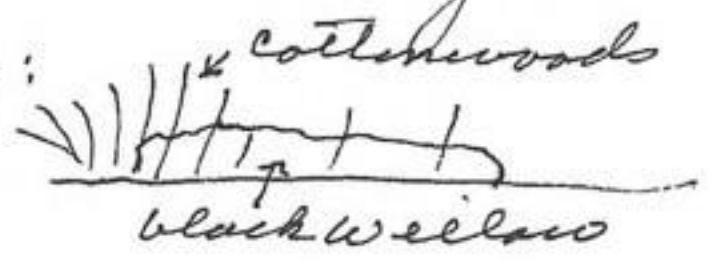
Today the clouds and sun produce a reflective surface toward north side of river that looks like a shallow sandy shoal but after sun leaves the sandy condition disappears. The water in the Kaw is moving faster than I can walk. 10:17 beaver tree 1 3/4 feet in diameter. A channel enters from SW and full of water from Kaw level. Backtracked to 10:22 before I could cross. Water flowing up channel from Kaw river.

E side of mouth hornetail 120' on lower bench but a few on higher bench at 10:27. no birds or song. A *Lana pipiens* 20' in forest and gain water by about 20 hops of continuous speed.
 10:30 beaver tree 1 1/2 feet in diameter, another equal in size felled, another 8" dia. felled into another tree and not available to beaver. A 1 1/2" vine attached to ground & top of tree had swung back and forth on the ground and had cleared the ground to bare soil 4 feet x 8 inches wide. 14 greater scaup flew up river about 20' high. 10:40 3 common mergansers. Beaver tree 1/2", 2", 1 1/2". at bend of bank seven trees worked by beaver. Left this area 10:50 cardinal singing. Purple lined unionids frequently observed on upper bank of river and placed there by mammals. 6 slate-colored juncos. Mud from overflow. Open field and old road at 10:57. 11:00 convergence of road from dike Coyote track 75 mm. 11:06



first racks (from Old Froze at KU) along bank. dead cottontail rabbit. 3 slate-colored juncos. 11:08 coffee tree pod eaten for seeds.

yellow-shafted flicker. 11:10 second road access which is opposite the W end of island near N side river. Beaver tree (at 11:12) 2" in diameter; 11:14 at isolated large cottonwood tree used by perching ^{bold} eagles in winter. This tree is 107 inches in circumference. Another larger tree is about 50 SW and best place from a photographic blind. The other possibility is 200 W along edge of river. The larger tree branches determine position for blind. This tree is in line with middle of island. at 1/3 way down island from W is beaver activity. From this position at tree the trees on island is: cottonwoods The trees on north bank are:

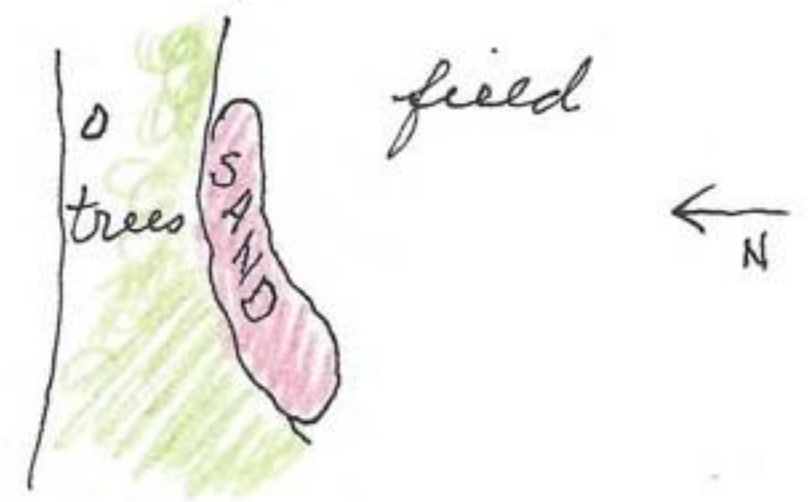


- cottonwoods
- black willow in front near river.

Sandy areas being commercially elevated are:

Some places:

- old cottonwoods
- young cottonwoods
- black willow.



The same? immature bald eagle circling in some areas as observed earlier at 11:22 at about 400' above trees. 11:45 turkey vulture moving NW with wind. 11:50 great blue heron fly NE either circling, half circling, flying straight or gliding with wind. Left perching tree 12:00 A.M. 12:01 vulture flew W over Big tree. gophers along dike about 1 per 300', moles 1 per 200'. no birds. Wind blows sand over field from localized patches of soil. Only 3 gulls observed on this trip. Arrived car 12:43, also merotum on dike but only in most favorable grasses. Arrived railroad creek 12:50, no eagles at vantage point, also no eagles at mouth Oakley Creek. Arrived E. end Leempton bridge at 1:40. no eagles. Gained high point to E at top of old cement foundations. Good position for Kaw & Leempton bridge with Delaware^{R.} in distance. Logs sometimes in masses stretched 300' downstream with adjacent areas free of flotsam. Returned to Lawrence.

Lawrence, 7th and Iowa, Douglas Co., Kansas

March 28, 1979

while eating at J.B.'s noted flock (almost continuous) of grackles with 10% redwings flying NE over area from 20 minutes before sundown to about 5 minutes after sundown. Would estimate 20,000 birds.

Big Slough, Perry Reservoir, Jefferson Co., Kansas

March 29, 1979

Left 9:26 A.M., overcast. Sky overcast with low discrete clouds, some black, few blue spots, 70% rain predicted with thundershowers but I doubt it. Temp. 67°F. Mileage 1825.4. Wind to 25 MPH from the south, 3 robins at home. 77.2 Lake View rd. and Kasald, 2 grackles, 77.4 crow. 2 red-wing blackbirds on territories. 77.7 Lake View road. 78.0 red-wing. 78.7 Causeway at Lake View, 4 ring-bill gulls flying, 6 on water. 78.8 flock 30 red-wing blackbirds. 79.1 40 grackles and another flock 60 red-wings. 79.5 turnoff to N at Bruner. 79.7 dike, no eagles. water high in Kaw, frogs calling, approx. 300 ring-billed gulls in inundated green winter wheat N from my position on the dike. 8 others flying up and down river. 80.0 main road at Bruner curve. 80.8 w end Lake View, 2 redwings on territory, frogs calling, old marsh not inundated. ~~81.0~~ 81.0 9 meadowlarks in one group. ~~81.1~~ 81.1 left car and checked river, no eagles, but two turkey vultures and 1 red tail at river, less flotsam than yesterday. 83.3 4 turkey vultures circling above middle of river 200 feet above water. Wave action minimum



+

+

ad. 12:05
12:25
11:50

im
im

12:47

10:45
10:55
12:56

ad.
→ → →

2:10 →

1:56

1:40

1:25
im
↓

WALTERS LAKE

+

+

FERGUSON RD.

ad.
im.

+

+

ROAD

+

+

ROAD

+

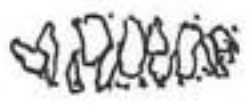
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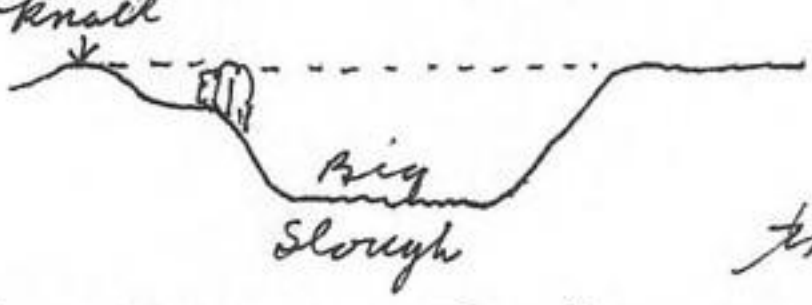
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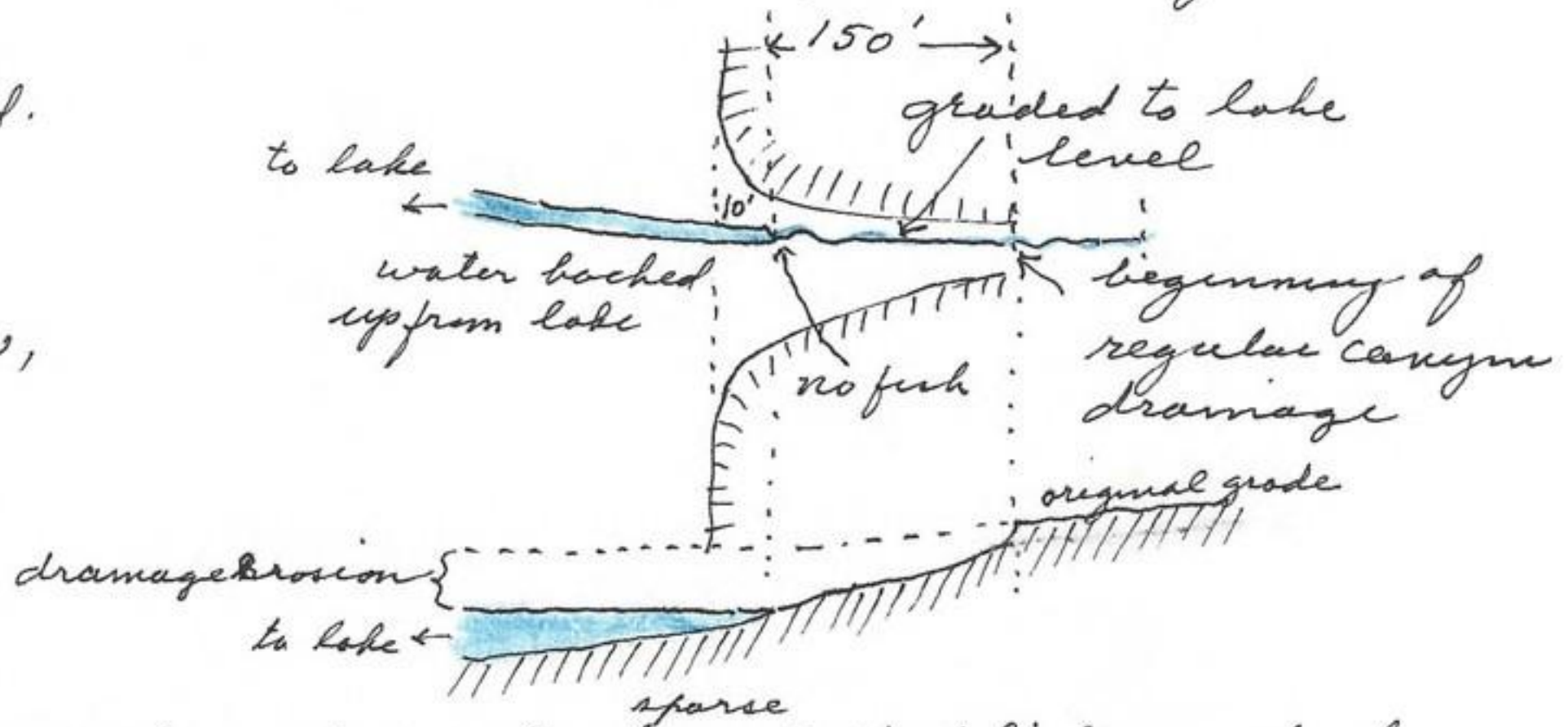
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on river because of winds from the south blocked by south bordering ridge, more, ^{wind} on N side than south side. Eagles may prefer protection from N winds by using protected N side of river which may also interfere less with surface of water for spotting fish. 84.5 Oakley Creek + back-up from Kaw River, no eagles from this or last vantage point. Red-headed woodpecker road kill measured: 225 total length, 139 wing, 75 tail, 78 weight in grams, ⁷⁻⁵ bill 28 mm. 85.7 frog calling, have heard others not recorded. 85.9 Leecompton Rd 86.5 E end Leecompton bridge. no eagles. 88.5 2 grackles. 89.4 highway 24. 91.9 SE corner reservoir area. 93.0 Ferguson Rd. Birds have been scarce along way (have made complete census. 93.7 on slope S Big Slough bridge and can see 2 immature and one adult bald eagle in ^{Big} Slough Creek Bay. The adult and one immature together in tree on point and the other immature about 2/10 mi. S in tree. 94.1 Big Slough Creek bridge. 94.5 redtail. 95.6 passing Big Slough Park exit. 97.1 Turnoff N side Walter property. 97.6 left car at angle of road that turns S, at 10:45. Will check several ridges for vantage points. Vantage point at end of ridge 10:55 marked by an Indian burial cairn on SE point. Nelt ridge to S cut off some view of slough to S and trees to N but for limited scope, good. The burial is large stones of native sandstone, each approx 2' long, piled in orderly way:  10:55

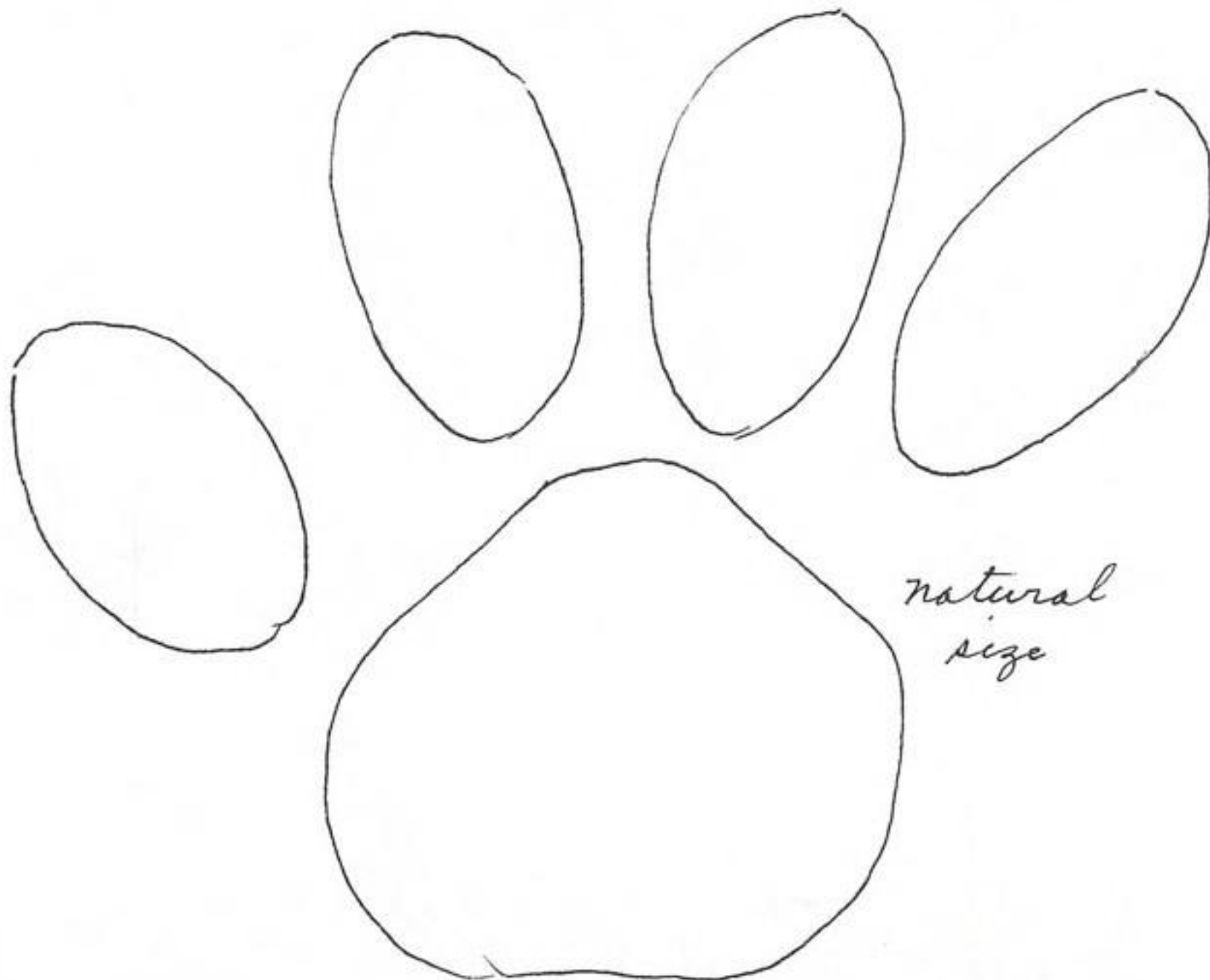
An adult bald eagle was in dead tree in water. It flew E to another similar tree and then onto dead tree on east side of lake where it remained until 11:15 when it left and flew 6" above water back to the original tree when first observed. At 11:19 3 crows came down slough and alighted in same tree with eagle. They did not call or harass the eagle and in 5 minutes continued S. Two immature bald eagles flying above water about 3/10 mi. N of adult. Left Indian burial point at 11:25 and dropped into valley to N. no wind in this canyon. Generally distributed in this canyon were 28 slate colored juncos, 1 field sparrow, 1 redheaded woodpecker, bluejay, yellow-shafted flicker, 2 titmouse, towhee (white feathers in tail good field character when heard in flight). 3 deer crossings in lower part of this valley. One deer ^{track} measured 74 mm. another in same trail 56 mm. 12:00 an immature with almost white tail and head crossed bay and alighted in tree on S side. This observation from second vantage point. Good point for NE but too many trees. Knoll at 12:05 top of trees on ridge same height as east ridge and blocks view. ^{knoll}  Blue-wing teal flew NW over this knoll. From this knoll scanned the ridge (full length) S side Big Slough and at one moment observed in sky above ridge the following: 5 mallards, 2 imm bald eagles, 5 redtail hawks, 3 turkey vultures, 4 ring-

billed gulls, 10 ducks? sp. This is an average condition and will vary to more or fewer birds from time to time. *Microtus ochragaster* runway on slope of knoll in fine matted grasses. Left 12:15 and dropped off ridge to N to telephone or power lines running E-W. From here can see cormorant, 2 green-wing teal, 8 greater scaup, and 16 gadwall. Coyote tracks measured: 81 mm long x 59 wide. Set of deer tracks measured 78 mm and another 68 mm. In flooded field between line and next drainage to S observed 2 bluebirds, 4 wood ducks, 6 shovellers, 2 green-winged teal, 8 blue-wing teal, 4 mallards (2 pairs), 9 gadwalls and 3 ring-billed gulls. I find that immature eagles in trees are difficult to see today because of poor lighting (dark day). 12:47 drainage with rock crossing, good deer trail, 2 field sparrows, can hear great horned owl in trees at lake on W side. Continued to second drainage arriving at 12:56. Only birds were 2 pairs mallards in milo field.



This drainage has some unusual features, first it follows an old fence row, straight to E to lake. The upper 150' graded to lake level. Continued S.



Good microtine activity all along in fine grass, matted, with overhead weeds 3'-4' high. Actively used trails all way. 2 red-headed woodpeckers, 2 mallards, many microtine holes had dirt pellets piled outside of hole as if carried out by mouth. 1:12 2 wood ducks. 1:16 next small drainage to S and beginning of old road or drainage ditch. At this point recorded tracks of a bobcat? could be a dog? although I could not see claw marks in mud imprint. 1:25 end of fence tree line as it meets water, pied billed grebe. One immature eagle flew S. above water then W. Left 1:30. black capped chickadee 1:40 upper slope of field at base of ridge. Excellent full view of big slough area both N & S. Rain clouds making area dark. No gulls



natural size

On east ridge this moment are 5 vultures in one group and 2 in another group. Thunder and rain at 1:51, mostly to W. Left vantage point 1:52 and at top where fence makes slight angle at 1:56. At vantage point to N, trees too thick to see Big Slough area, 2 red-headed woodpeckers. At 2:10 the perfect vantage point (see map) except for trees but 25' ^{elevation} would clear trees gray squirrel. I would certainly recommend this point  for observation platform for observing eagle activity in the Big Slough area. Left and dropped into canyon to N arriving at head of drainage at 2:30 A.M. 2 redheaded woodpeckers. Followed up an old deer trail on S side of gulch of the N gulch, across open field, 2 bluejays, 1 cardinal. Arrived car 2:31. 98.0 now main road and to N. 98.7 shrike, 99.6 now to E. 900.0 Scout Camp. 00.8 2 shrikes, 02.1 upper bridge of Big Slough Creek. Best canoe put-in at ^N side W end bridge or if enough water in old creek bed E of ^{causeway} ramp on N side where one can drive to edge of water, 2 Turkey vultures. 02.8 turkey vulture. 03.7 redwing, 800 starling in one flock. 04.6 Mr. Lewis' Turnoff to W. which leads to only house on ridge E of Big Slough and to good vantage point SW of his place. 04.9 junction at ^{Evans Co.} FH property. 05.5 bridge but water ^{Evans Co.} not at lake level. 06.7 main ^{Co.} road. red-headed woodpecker. 07.0 meadowlark. 07.3 ² crows, 07.8 great blue heron flying S with curved wings . 09.0 ¹ shrike. 10.3 Ferguson road (bypassed). 10.9 now W to marina. 12.0 head bay & water 1 foot from culvert top of bridge (at marina water separates road from ramp, 36 foot head bay. 12.04 E end dam. 2 Swanson hawks hovering almost motionless on windward side of dam. One almost black but tail with about 10 indistinct bands, ^{undersurface} primaries light but banded and coverts dark. This bird stayed almost motionless and when spotted a redwing on ground on other side of road at base of dam glided down at great speed and attempted to capture it in flight but missed. When after microratines drops down in steps until 30' or so above mammal then drops abruptly without the great speed it attains in pursuit of a ^{small} bird. 13.9 W end dam, turned around and when back across dam (3:45 P.M.). 16.3 SE corner reservation, and end of census except raptors. 23.8 home at 4:10 P.M.



black all over.
9-10 bands in tail.
same intensely

402 Yorkshire, Lawrence, Douglas Co., Kansas
march 30, 1979

Great horned owl call from top of utility pole at home at 6:30 A.M. also cardinal called at this time. Downy woodpecker at feeder later this A.M.

Lawrence, Douglas Co., Kansas

March 30, 1979


Stephen Preston of the Fish and Wildlife Service of K.C. called and would like me to join a group (He, 3 members Nature Conservatory, 1 Army Engineers) to inspect the natural area (bold eagle) at the Leecompton area and Perry Reservoir April 6, 9:30 Nassau Building.

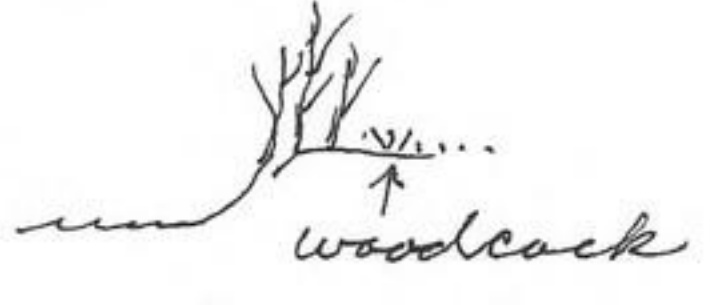
Goldfinch are consuming 1 lb. thistle seed in 3 days whereas in winter were eating 1 lb. per day.

E. side Big Slough Bay, Perry Reservoir, Jefferson Co., Kansas

April 3, 1979

checked above area for bold eagles and recorded complete census of birds and mammals. Left 402 Yorkshir, Lawrence at mileage 00.0 at 9:15 A.M. Sky overcast and prediction of rain and snow this P.M., Temp. 50°F. Wind from ESE. 02.7 Lake View Rd., robin. 03.1 2 bluejays. 03.5 approx. 450 cowbirds in one flock, no redwings or grackles in flock. 03.7 Lake View Lake Causeway bridge. 9 pied billed grebes in one group and resting without changing position on water, area occupied approx. 8 x 12 feet, as if resting from migration. 2 common mergansers flew w over Causeway and continued down lake at about 30' elevation. Six Bonaparte gulls circling above lake, 20' feet above water, one black head the others black patch behind eye (3 times area of eye proper). One on telephone line ^{on causeway} and did not move when passed by. 6 redwings on territories on n side lake (E of causeway). Killdeer. 04.9 meadowlark and robin. 05.2 robin. 05.4 shrike. 06.0 grackle. 07.3 hillside road. 07.8 redheaded woodpecker. 08.1 redheaded woodpecker, 2 bluejay. 08.7 redtail (dark head, all white breast, im). a grackle was concerned and about 2' from redtail. Cardinal at base of tree. 09.0 Oakley Creek, water backed from river (Kaw) and greenish in color, 4 bluejays one group. 09.6 redheaded woodpecker. 10.4 Leecompton Rd. no eagles between Lake View area and Leecompton (Delaware River). Area n Kaw (E Leecompton rd n of bridge) plowed or harrowed, one section in winter wheat. 12.8 Union Pacific railroad tracks, redtail. 4 grackles, 1 robin thru Perry. 13.9 highway 24. wild Horse Creek just beyond backwater from Delaware and green. 05.4 Crow. 16.3 sparrow hawk. 16.4 SE corner Perry Reservoir area. 17.0 sparrow hawk. 17.4 Ferguson Rd. 18.6 Big Slough Bridge (middle) meadowlark at S end of bridge way out of its elements. 20.0 turkey vulture. 20.4 turkey vulture, 2 grackles. 22.7 now right. 24.9 middle upper Big Slough bridge leaving taken low road from Ferguson Rd and found the road almost impassible because of mud and slippery surface.

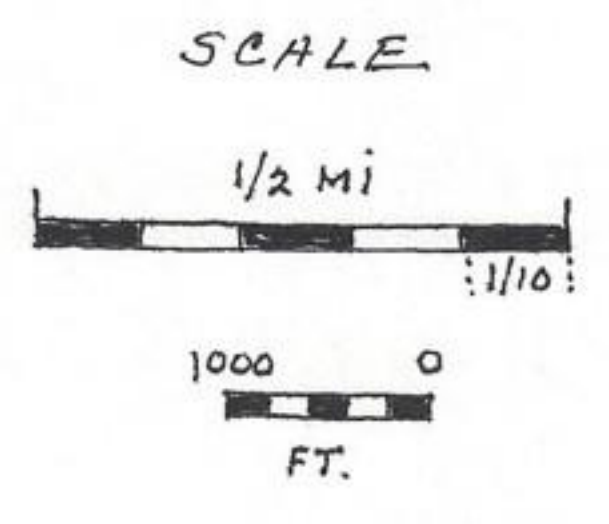
would not recommend this route when raining. At bridge a great blue heron flew up valley. 25.6 parked car at three way turn and started trip by foot on E side Big Slough Bay (see map). Left car at 10:18 A.M. Sky overcast and snow is predicted this afternoon. In open field one redheaded woodpecker and 1 robin. Good microtine sign. 10:20 head of canyon Two dozen 6' juniper trees associated with a dead tree with woodpecker hole. At head of canyon measured an erratic boulder of granite as 6' long and 41" wide. 10:30 2 redheaded woodpeckers. Forests are oak-hickory. 10:33 2 redheaded woodpeckers. 10:25 now W. 10:26 noted a Corps of Engineers survey marker no. 1726. 10:42 old road across drainage and beginning of deeply graded creek channel in good meanders. 2 redheaded woodpeckers. no wind in forests. Water in this creek flowing 1 quart per 30 seconds. Rocks in creek covered with moss and dead leaves. Forest floor completely covered with dead leaves except an occasional patch of green moss. 10:50 drainage. 2 bluejays, good oak-hickory forests, gooseberry leaves just starting and 1/2 inches long, only green in shrubs or trees. 2 robins. Squirrels about 1 per 30 feet by either cottontail, squirrel or armivore. 10:53 redtail. Green moss on N exposure zoned and brilliant green against dry leaves of forest floor. 10:56 fence and turn of ridge to SW. 10:58 2 redheads 11:00 crossing deeply eroded gulch at falls. water 1 gal per 5 sec. Rocks in creek not covered with moss and leaves as in other stream beds. water as small bay at mouth. 2 bluejays. 11:08 2 mallards and 2 woodchucks left open bay. 11:15 at power line pole, 2 woodchucks from bay. Right-of-way with good microtine activity. Can hear 2 cardinals. Red-headed woodpeckers. 11:19 drainage, fresh deer tracks. 11:25 flushed a woodchuck at 5 feet in lee of trees in short weeds and shrubs. It flew down three trees along lake. Redheaded woodpecker and 2 rufous-sided towhees. 11:30 at this stage or level of high water there is a channel that goes W from main river channel. From here 9 cormorants, 8 mallards, 2 golden-eyes left the bay (3/4 way across bay). 11:33 n promontory of Pincer Bay, 3 redheaded woodpeckers and 2 bluejays. 11:36 old road crosses drainage, water of bay extends 30' beyond rd. to east. water 1 gal. per 10 sec, clear in creek but greenish in bay at lake level. Red-headed woodpecker. Road up S side eroded to  a U with deeper groove in base.



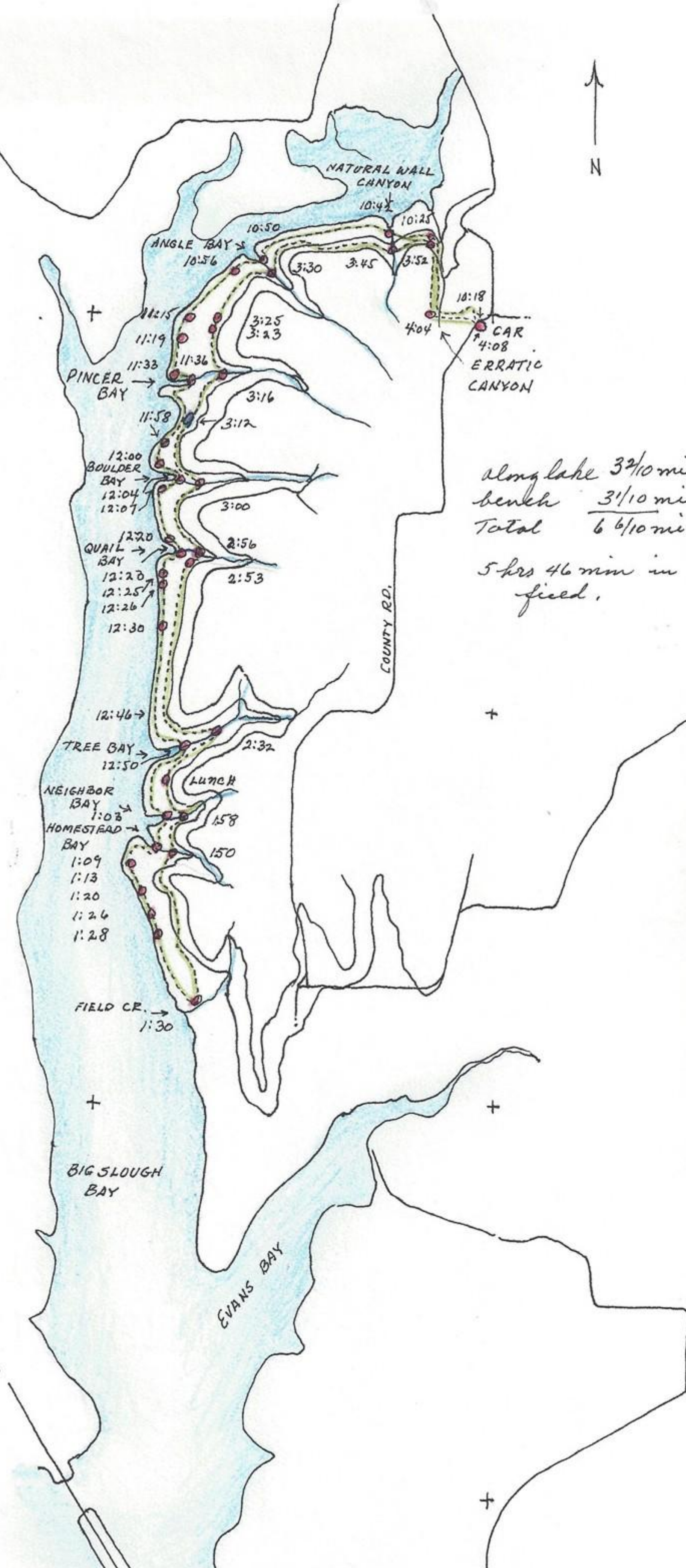
EAST SIDE
BIG SLOUGH BAY -

ROUTE APRIL 3, 1979

NEW NAMES OF MAJOR
PHYSIOLOGICAL
FEATURE
(created by new reservoir)



FERGUSON RD.



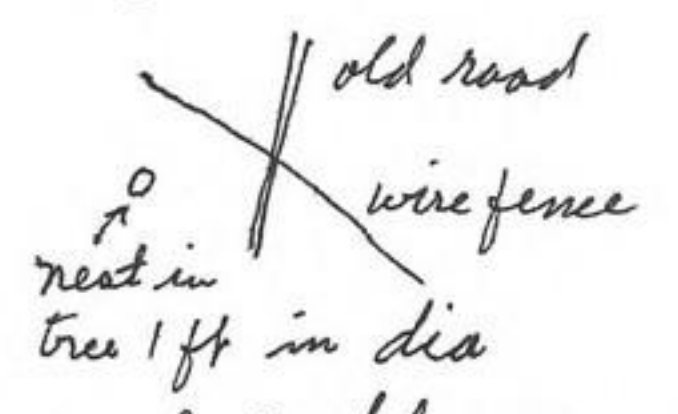
along lake $3\frac{2}{10}$ mi
 bench $3\frac{1}{10}$ mi
 Total $6\frac{6}{10}$ mi
 5 hrs 46 min in field.

FERGUSON RD.

COUNTY RD.

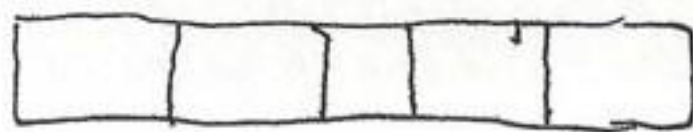
11:45 either redtail or g.h. owl nest. Bluejay, 2 bluejays. 11:55
 large hole in dead trunk 8' high may be used by screech owl. a
 2" x 1/2" x 4' plus near tree. 11:58 ridge now trends SW, redheaded wood-
 pecker. 12:00 n entrance Boulder Bay. 12:04 crossing at head of
 bay. 12:07 S entrance B. Bay. old road drops down into lake here.
 Boulder Bay is named for large boulders at head of bay and in
 general area. water entering bay 1 gal per 5 sec, clear, rocks in
 bottom creek covered with algae. 12:10 road reappears from
 lake, 2 red-headed woodpeckers. Fence of wire N-S. shrub with 1"
 red buds. 2 red-headed woodpeckers. tree 1 1/2" diameter felled
 across road. 12:20 drainage at head of Quail bay. This bay is
 named from an old truck body (The Quail Dairy - GRADE) a short
 distance up drainage on S side. 3 sets deer tracks. Beyond is a
 new forests with green grass beneath. 12:25 drainage. 12:26 drainage
 The drainages are from fields that have previously been cleared
 of timber but now regrown to forest. Considerable droppings of
 deer, moreso than elsewhere on trip. 12:27 3 wood ducks and
 a large cottontail. 12:30 drainage 12:35 2 junipers The
 largest 400 mm. in circumference and 30' from present level
 of lake. 2 downy woodpeckers. 12:37 redtail left nest and
 did not call. The tree measures 49" cir. 2 redheaded woodpeckers
 near. 12:41 redtail? nest on upper bench, tree 1' dia. This
 is the best time of the year to make census of redtail nests as
 they are easily observed without the foliage but at the same time
 the redtails are nesting. 12:52 2 redheads. 12:46 old rock
 fence row E-W, individual rocks covered with green growth.
 This fence ends abruptly. The fence line continues E up to ridge
 that slopes to S ^{with} trees standing in ^{water of bay} ^{this sheltered} area used by bald
 eagles this spring. 12:53 wire fence line N-S. 2 red-headed
 woodpeckers. water of bay 100' above fence. 1 gal per 3 sec.,
 water clear 1:03 head of Neighbor Bay, named because
 nest to Homestead Bay beyond. It has been snowing (few
 flakes) the last 20 minutes. 1:08 head of Homestead Bay, from
 old Homestead near by. a juniper at falls above bay 32" cir.
 water 1 quart per. 4 secs. 2 red-headed woodpeckers, 3 crows.
 1:13 at old Homestead by Homestead Bay (S). Old buildings gone
 but collapsed well, old bedstead & fence remain. of special
 interest are the daffodils that are in full height and blossom
 they are extending their growth but still as a single mass
 rather than difused mainly because of their growth by bulbs.

It would be interesting to measure the rate of lateral growth in these cultivated plants. Is it possible they could dominate the forests. In a localized sense they are doing just this at present and given time they just might displace the native flora of the forest floor. Next visit I will measure precisely their expansion dimensions. Fine bladed grass greener and more prolific here than elsewhere. Deer droppings more numerous than I have observed so far today. Many micratinic trails (active) in area. 1:20 rock fence. Snowing at irregular intervals and with it an increase wind. 1:20 minor drainage and small bay or cove. 1:25 2 red-headed woodpecker, 2 bluejay 1:26 beginning old field, downy and cardinal. 1:28 minor drainage with red sails exposed, trickle of water. These fields are favorable for micratinics and especially *Sya Sigmodes*. Redtail circling on ridge to E. Snow from ESE. 11:30 major drainage of field. 1qt water per. 10 sec. Now returning and will follow upper bench. Several young bonelder in field the largest 12', some have few seeds on from winter. Cottontail left weed covered resting place. Floor of resting place damp and bare. Deer track 73 mm. 1:40 redtail left nest which was 35' high in oak tree. It did not call. The oak ^{very} ~~was~~. 1:46 fence, 2 red-headed woodpeckers, deer track 53 mm. 1:50 old E-W road to home-stand. 1:52 a truck van crossing. 1:55 2 crows, 1 bluejay. 1:57 2 redheaded woodpeckers. 1:58 major drainage (Neighbor Bay). 2:00 lunch - left 2:18. Crow left nest in tree 25' up.



Another old nest 20' up and in tree 1' in dia probably an alternate. 2 crows in area but they did not call or return to nest in 18 min. while I had lunch. 2 red-headed woodpecker and 2 blue jays in area. 2:30 leaving old road and now to N. to drainage below. 2:32 drainage. 2 red-headed woodpeckers. 2:53 old road from top. 16 red-headed woodpecker in pairs since last drainage (at 1:58). 2:56 drainage (Boulder Bay). 7 red-headed woodpeckers since last drainage (2:53). 3:12 pond. 4 blue-winged teal flew N overhead. 3:15 one of the most complete junipers I have seen, branches to ground & symmetrical. dia. approx 14 inches. 3:16 (Pincer Bay). Crossover at big oak with collapsed shed. 3:23 approx 70 young juniper around base of large juniper. No other junipers seen today have this arrangement. 3:25 power lines at top of field. 3:30

Angle Bay
crossing ~~natural wall~~ Canyon where wall is exposed on E side.



Fence line on E side. 3:45 crossing
natural Wall Canyon? 3:52 Erratic
Canyon now to top. 4:04 top at boulder. 408 car.

Summation 3 $\frac{2}{10}$ mi to turnaround and 3 mi back or $\frac{6.2}{10}$ miles
for entire trip. It is unusual that I did not see either the
fox squirrel or gray squirrel on entire trip although diggings
were present along the way. Some wild onions in forest but
nothing compared to numbers in riparian forests along the
Kaw River. Birds observed on first half of trip (turnaround)
red-headed woodpeckers - 30 of which 4 were singles and 1 of 3.

It is obvious that these birds are paired. On return trip noted
31 which may or note represent repeats.

robins 1-2 = 3

bluejays 5 pairs, 1 single or = 11

mallards 2-8 = 10

wood^ducks 2-3 = 5

cardinals 2-1 = 3

woodcock 1

rufous sided towhee 2

cormorant 9

golden eye 2

cattontail 1

downy 2-1 = 3

crow 3

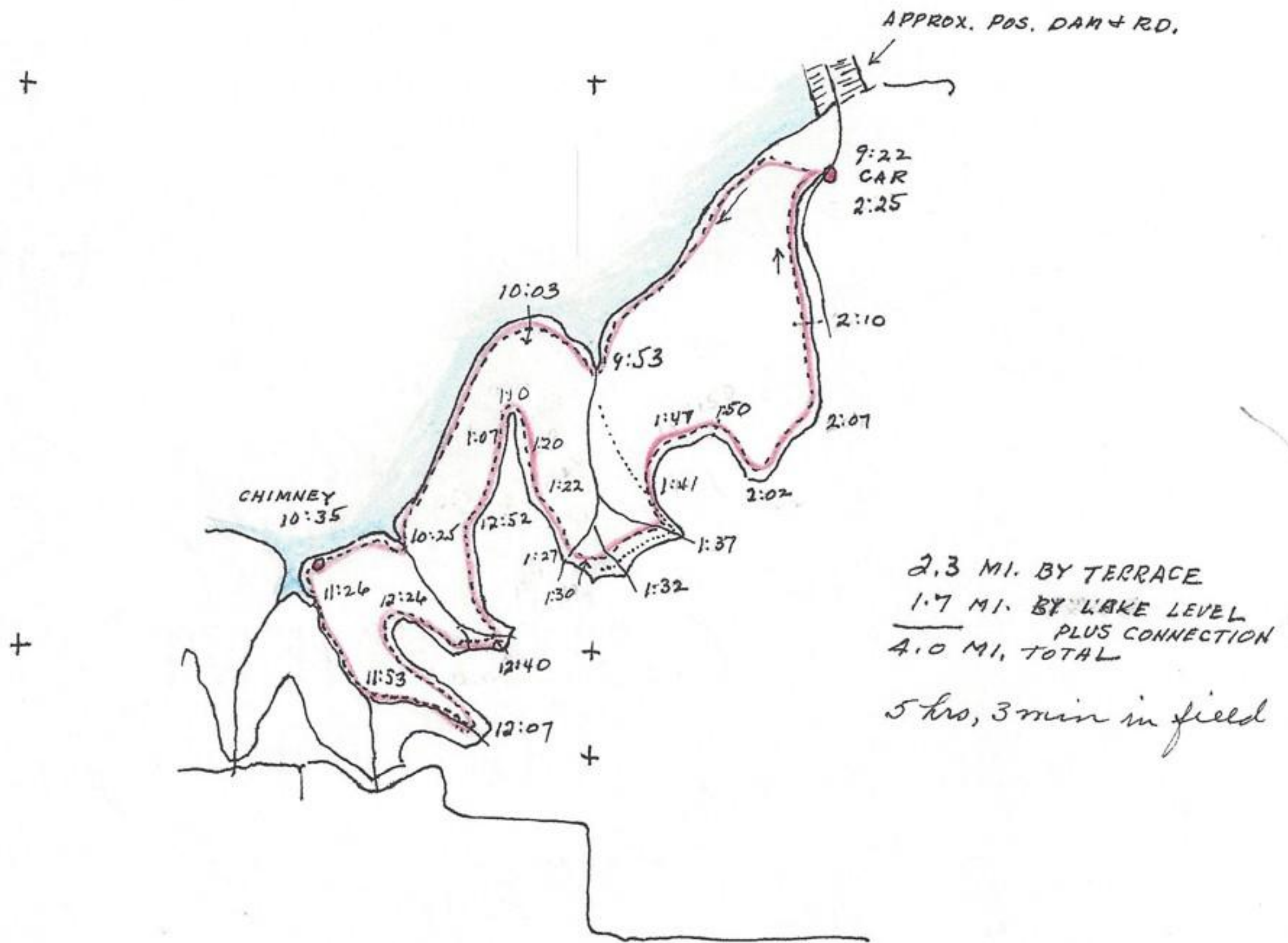
g.w. teal on return noted 4 g.w teal flying N overhead.

redtail 1-1-1 = 3

Clinton Reservoir, Douglas Co., Kansas

April 5, 1979

Left car at S end dam at 9:27 A.M. 6 cormorants from
E of dam flew over dam & continued up Rock Creek. 5
gulls along dam. Wind from WSW producing good white-
Caps. Slope of dam at SE end west side good microtic
runways. Arrived lake shore directly below at 9:24. 9:27
first point, soils along shore wet and many good Sigmodon
trails. Small sparrow sp.?. 9:32 point and small pond, frogs,
approx 30 trees around pond & in drainage. up to 25' high.
9:35 drainage ^{+ lake level water} at road crossing 200' from lake proper. water
clear and 1 gal per 6 sec. 9:45 2 redtails in valley to SW. 1 crow,
at first drainage bay & coat and 3 cormorants left and flew out
into lake but returned by swimming. Lana pipiens at head.

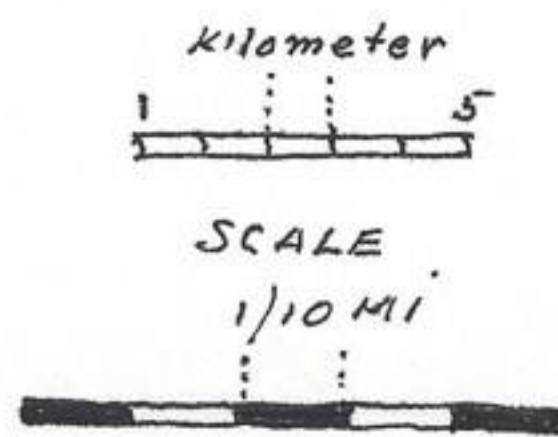


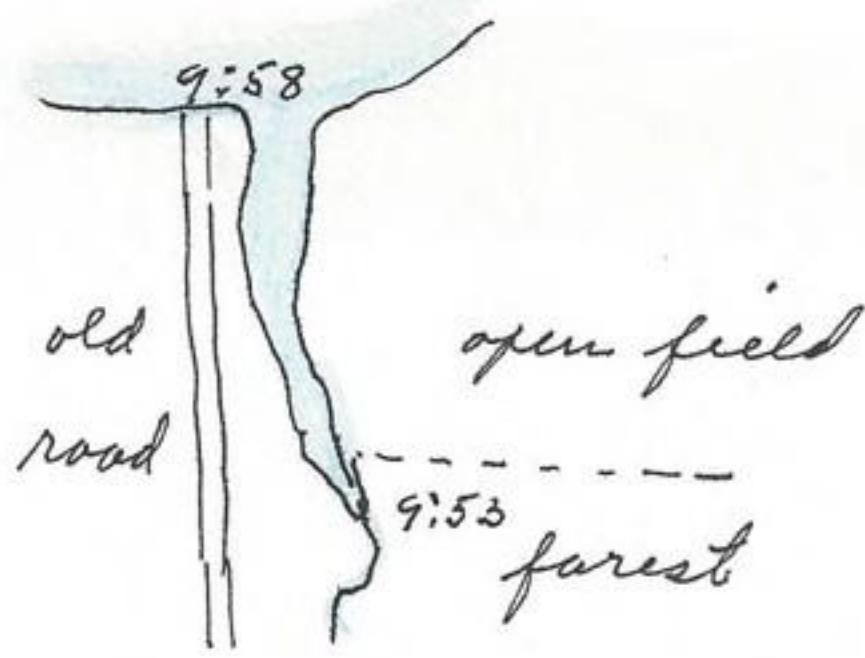
FROM USGS MAP

ROUTE SOUTH SIDE ROCK CREEK, CLINTON RESEVOIR

APRIL 5, 1979

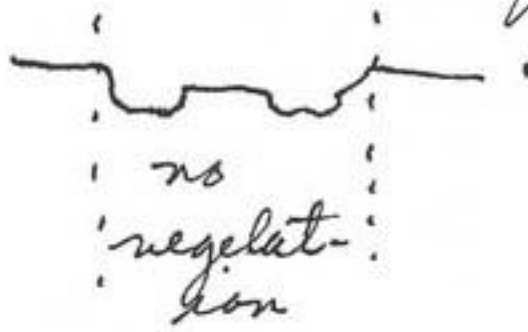
From south end dam to Chimney.



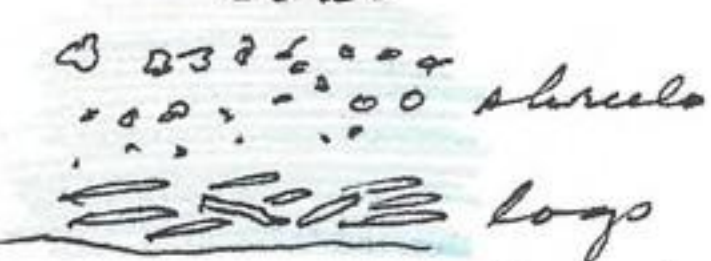


arrived head of bay 9:53. water level (of lake) 25' beyond or S of the open-field-forest contact. water entering clear, 1 gal per 3 sec. no fish at contact of lake water and creek. At this point two crossings by deer, one imprint 85 mm. The old road is now in weeds and short green vegetation

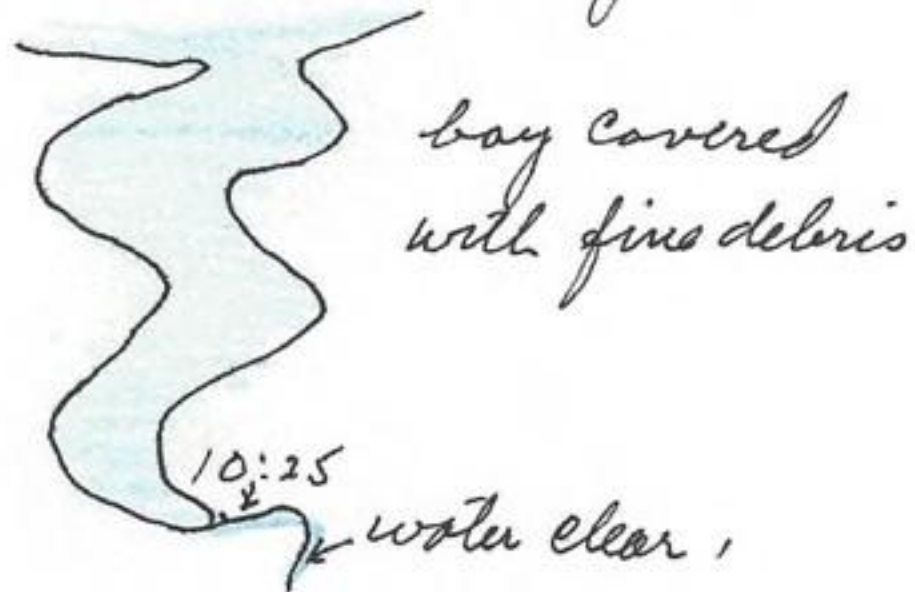
Some original road bed of gravel showing but in the main is covered with vegetation but still discernable as an old road. One of the two tracks of road used by animals, the other overgrown and wet. 9:58 W side bay at point. Old road to house completely grown over and eroded 90% ^{isolated} 10:03 Corps Engineer marker 1976 - R-1A. 30' ENE of old tree on knoll. An hill to S are scars from off-road vehicles, some ruts 2 feet deep. Profile




This has been a criminal defacing of a point of land. On slope between forest & lake on W side ridge deer trails & tracks. Grass matted and good microtine habitat. 10:09

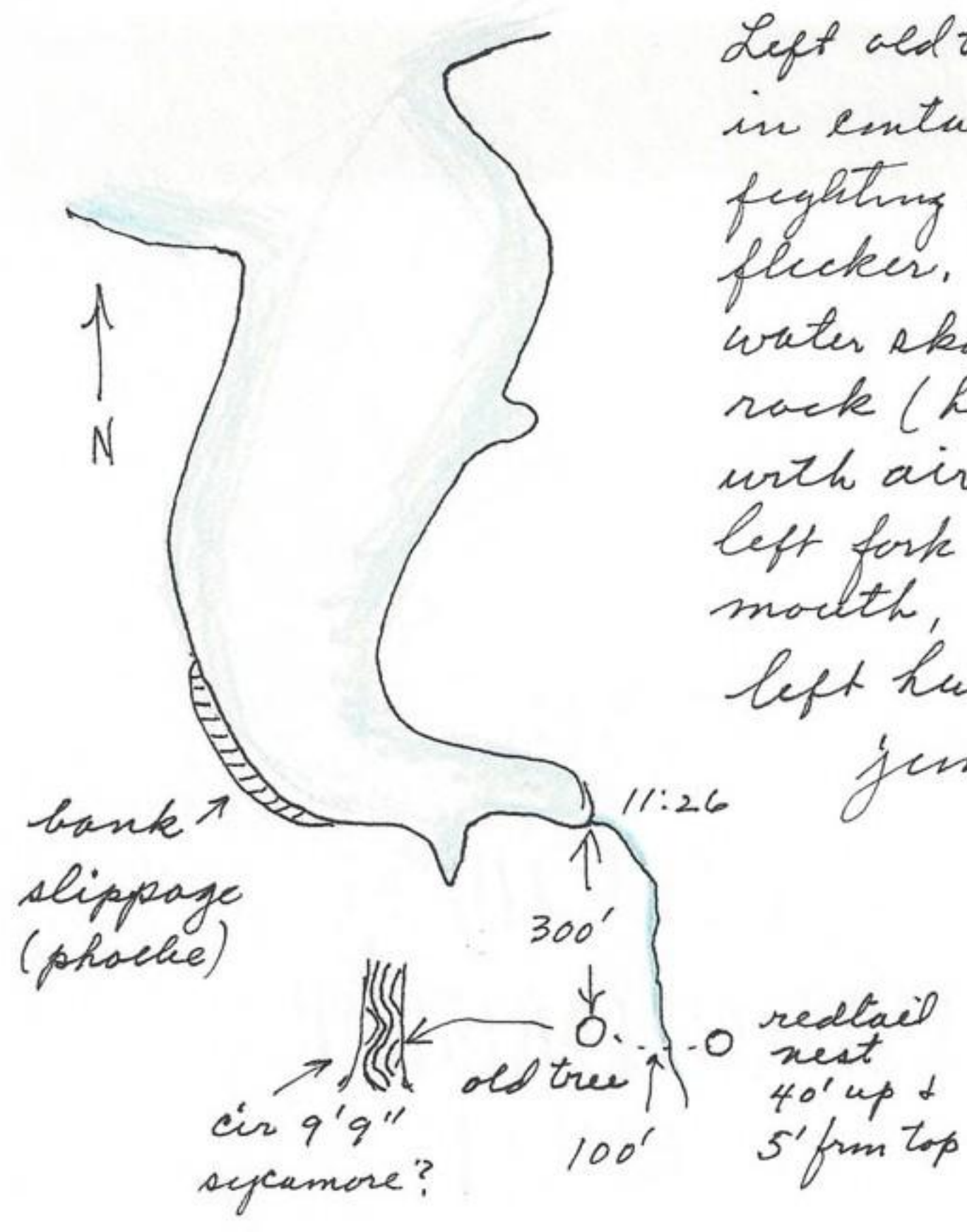
D.B. Heron flew S. Water approx. 100' from forest, shrubs to 15 feet high. 10:13 song sparrow. 2 crows. Log, some ^{lake} 3' diameter working against shore and question is how they got there thru the shrub barrier,  logs

10:21 3 song sparrows. Several damp places along route land. but no running water. 10:25 major drainage, crossover above bay, water flowing 1 pt per 5 sec. 2 crows 2 Turkey vultures. 10:35 Chimney beaver activity on shore to N. Just before Chimney land slope to 2 feet. 52 Coot, 3 red-breasted mergansers left bay and flew west into white caps then swam SW to shore.

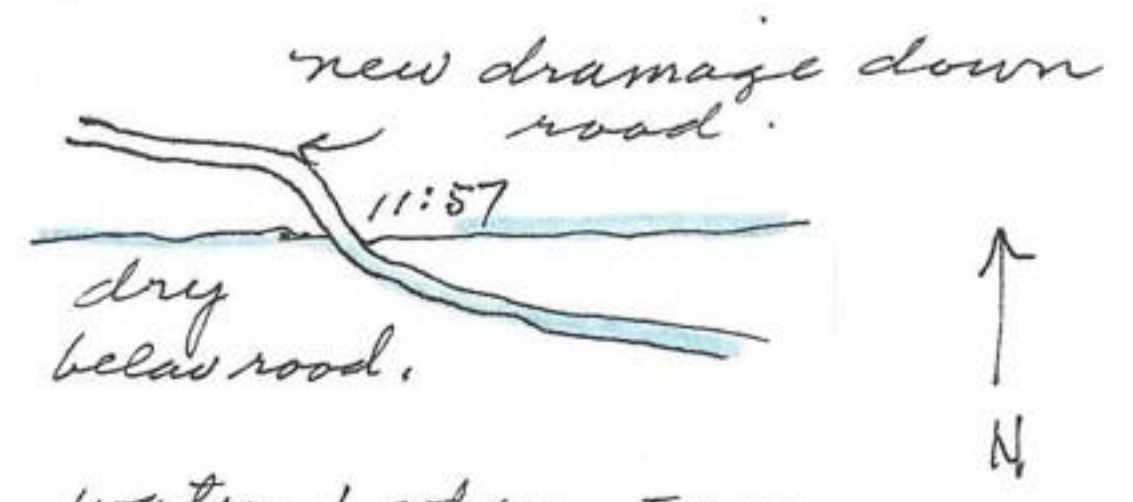


One eared grebe flew into bay & alighted but swam out into lake. a redtail circled above and wings showed a transparency of inner primary feathers  when seen back of wing.

11:14 crow flying W clear just above trees at top of ridge Erosion of E bank of bay yellow clay which was defusing into water of bay. The classical meanders and piracy of drainages now covered by bay water. The original chimney is now about 3/4 reduced. Left at 11:20 and arrived at head of bay at 11:26. clear water enters ^{1 gal per 5 sec.} bay. At slide area noted a phoebe which probably has or planning a nest site there.



Left old tree 11:42. 2 red-headed woodpecker in contact in descent from trees as if fighting. Tail feather of red-shafted flicker. 11:49 2 redheaded woodpeckers water skaters on water in creek. Some rock (half way up drainage) covered with air bubbles. 11:53 forks with left fork showing bank slippage at mouth. Slightly more water from left hand fork. 2 slate-colored juncos. A short distance up drainage is an old road that descends from from the S side and crosses the drainage. at this point there has been an interruption of the drainage.



Vegetation in drainage is more advanced in area of damp water course than on the banks and slopes above. Stinging nettles 6" high in stream bed.

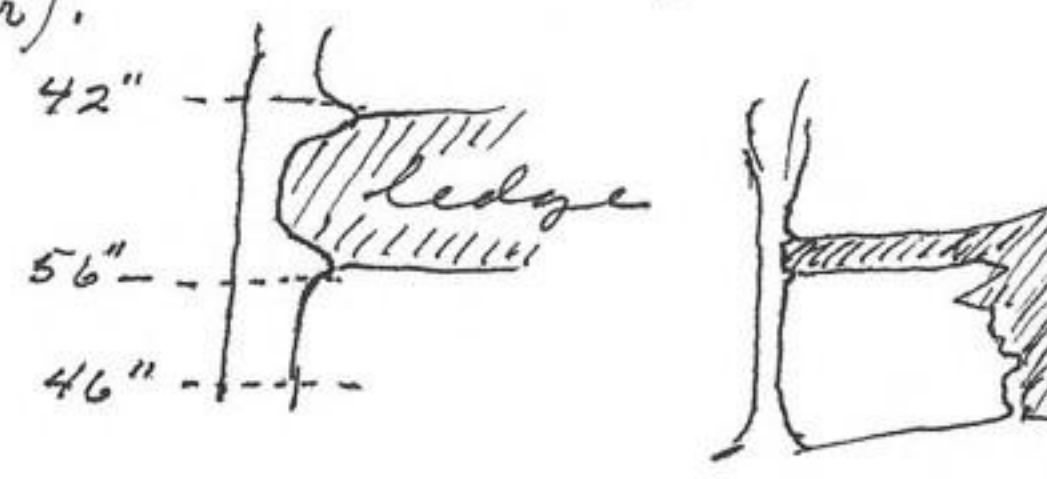
white lilies in full blossom. Continued up drainage and at 12:03 left bed & gained ^{upper} grasses bench to W thence E to drainage at point where rock fence crosses drainage arriving at 12:07. Fence runs 174° S, 354° N 2 titmice, robin. Leaves on W exposure are drier, more curled than other exposures. 12:15 low rock fence. Red-headed woodpecker. 12:22 W-E rock fence. Old crow nest. Continued up to upper bench with rock ledges. Red-headed woodpeckers. 12:26 Shelter Point. Turkey vultures. no view because of trees. 2 red-headed woodpeckers. 12:37 tree barked by deer rubbing antlers. 12:40 cross over drainage Pools of water but only a trickle. (at forks) 1 qt per 12 sec. Some parts of trail wet because of deep ~~erosion~~ ^{erosion} & concavity & lack of drainage. These sections create adjacent trails parallel. Long-eared owl left from low branch of a small juniper tree on bench. Turkey vulture seemed to be curious of me. 12:51 5 robins and 6 slate-colored juncos in one group. 12:52 Point, some view. 12:54 drainage. no water.

water 1 qt per 5 sec.

12:52 12:54

1:00 2 red-headed woodpeckers. The entire ridge above is a good vantage point. There is ^{an old} displaced flat iron shape block of sandstone that has slid down onto bench, probably when ground was frozen and covered with ice + snow.

1:05 5 slate, colored junco hanging rock against tree. This has been there as long as I have records for this area. measurements (cir). of tree supporting ledge are:



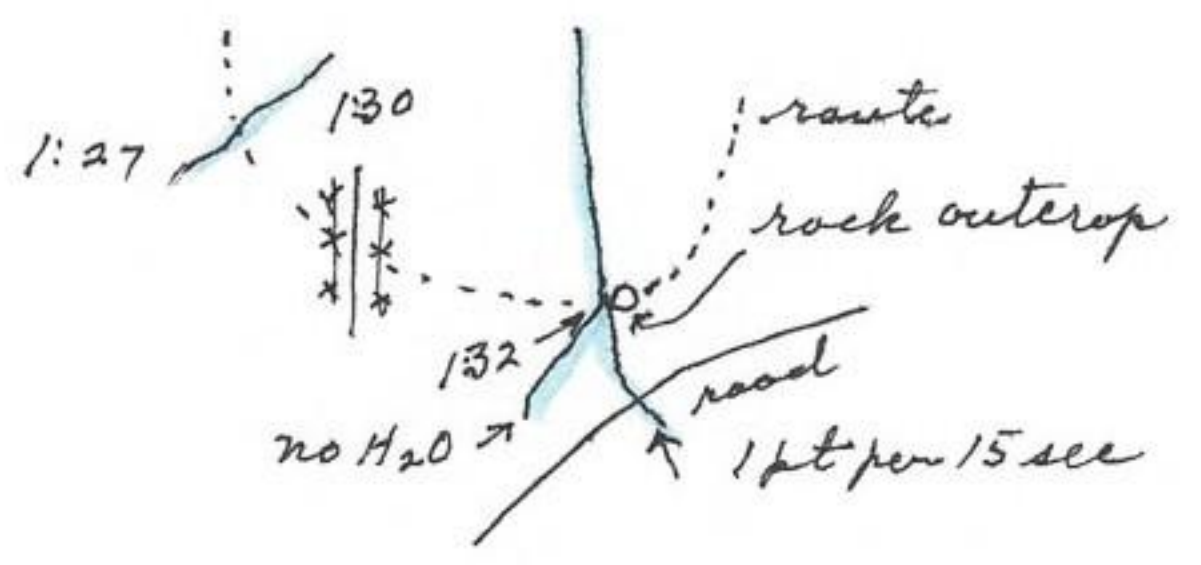
From the top view one can see beginning of fracture that has already dropped some roof of rock and a fracture that carries across rock. Some rock has dropped down from roof of rock. Woodrat house under protection of rock. The unique structure should be protected from vandalism as it would be easy to break the ledge away from its support. I am surprised that someone has not already done so.



The rock overhang is approx. 30' from vantage point. Vantage Point is excellent for viewing lake below.

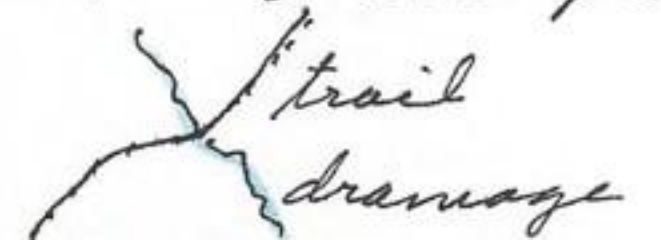
1:19 well developed animal trail across bench, 1:20 old road up grade from N. 1:22 minor drainage. no water. Some isolated patches of grass where light penetration is favorable, 1:27 drainage, pools but no flow of water. Some deer tracks but scarce 1:30 drainage old road lined on either side with wire fence.

1:32 drainage, 2 red-headed woodpeckers. 1:37 drainage 1 pt. per 6 sec. 1:41 old gravel pit road now a single trail (one of the two ruts) dark reddish butterfly (seen 7 today), 1:47 drainage, no H₂O. Ringed-billed gull flew overhead just above tree tops.



1:50 point, 2 red-headed woodpeckers. This point has an isolated elm surrounded by grass. Slightly less wind than this A.M. The pond and roads below should be grade to natural profiles. Red-headed woodpecker and cardinal. 2:00 G.H. owl. 2:02 drainage crossover. 1 pt per 15 sec, mostly underground and channel covered with leaves. Downy woodpecker. 2:07 small drainage

2:10 end forest now open. Following



the first bench below top, 2:16 dead raccoon hung in tree. 2:19 woodrat house. 2:25 ear. Some off-road vehicle had defaced slopes on ridge (to E.), Itinerary. 23/10mi via upper terrace or bench, 1.7 mi via lake shore and Connection with upper bench = 4.0 total. 5 hrs. 3 min

Perry Reservoir, Jefferson Co., Leecompton Eagle area, Douglas Co., Kansas
 April 6, 1979

The following individuals met at Nassa Building at K.U. to tour the natural area. (Kaw River, Leecompton) and Big Slough Bay & Paradise Point for appraisal: Stephen Preston of Fish and Wildlife Service of K.C., 3 members of Nature Conservancy of K.C., 2 Corps of Engineers from K.C., Marvin D. Schwilling wildlife Biologist of Kansas Fish and Game Commission from Emporia. Research Office, 1803 West Sixth, Emporia, Kansas 66801 Office phone 316-342-0658, Bill Losier and Ray Coffey of the Kansas River Parkway Association, Martha Eager of Remote Sensing Lab K.U., Howard Levenson and myself from museum. We met Meyers and his ranger & biologist at Perry. Big Slough (entirely) the best area for bald eagle refuge and natural area. Paradise Pt less so as this area is filling in with sediment. debris on N shore Paradise Point will allow to sink into mud and remain as natural change of lake. Nature Conservancy are starting to solicit money for the Kaw River Bald Eagle area, and are favorably impressed with area. Mr. Schwilling reported:

All bald eagles in Kansas in winter are *Haliaeetus leucocephalus alascanus*. Only one specimen in Kansas is the southern form *H. l. leucocephalus* which Tordoff missed in his measurements of Kansas eagles. Only 10 marked eagles are known from Kansas and these from Canada. Bald eagles feed in one place and roost in another, generally isolated clumps of tall trees, like turkeys in upper branches. There are some places in Kansas where the bald eagles have built sizeable nests in trees in spring but are not used. Best method of censusing eagles is by plane. Not much is known about migration. Young eagles leave territory and return 3 years later. Bald eagles more sensitive to man (nesting) and require remote areas. Bald eagles use great blue heron rookeries for roosting in winter. On return to Lawrence at dike vantage point on Kaw, noted 22 blue and 6 snows in one flock.

Peterson Field Research Area, Lawrence, Douglas Co., Kansas
 April 12, 1979

checked area NW & N of home (402 Yorkshire Dr). Left 10:25 (see

Feb. 18, 1979 for plotting of area.) Wind, S-W. Strato-cumulus and low.

10:28 Peterson Rd: 80 starling one group open field, 2 robins

10:30 Pine Corner: - 2 grackles

10:32 Lawa St: -

10:33 Peterson Pond: coyote den?, wood rat house, mushroom trail.

10:43 Peterson Creek: 2 robins, brown creeper, robin with nesting material in mouth.

10:51 Grackle roost: -

10:56 Osage Fence: - 290 mm cir. elm thru old tractor where of old homestead. (no. 790412-1). Well pump parts all there and will bring home before it is vandalized (no 790412-2). Woodrat house in osage fence row by pump. Polyurethane mat partly eaten by mammals, cottontail tracks in mud, Symphoricarpos leaves 1/2 inch long, wood rat nest.

11:07 Grass meadow: - 2 meadowlarks flew up from grass as if concerned for area, they remain on bush 150' away (SW of juniper tree). Counted 12 microtine runways across the field.

11:14 plowed field Swale: -

11:20 Pond Swale: - Pond full & overflowing. juniper in H2O. cardinal from juniper, robin, 3 robins.

11:24 E Forest Edge: - robin, 2 bluejays, red-bellied woodpecker, gray squirrel, leaves of ash out 1-inch, 2 woodrat houses, robin

11:33 Right of Way Brush Way: - Squirrel nest had blown out of tree, creek with clean erosion and good clean gravel bars and less mud bars, bars solid enough to walk across or on, no artifacts.

11:42 North Forest: - 2 wood rat houses (see map). racoon tracks in mud.

12:00 NW Forest: - (see map for measurement of oaks).

12:12 main forest: - (see map for measurement of trees).

12:00 Kasals Creek: - wood rat house, old tree NW silo now down.

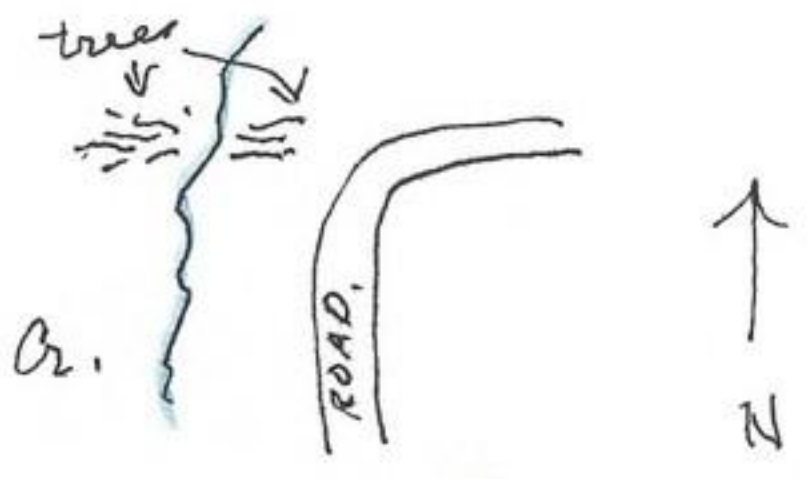
12:35 Silo hedge: -

12:37 Right of Way: -

12:38 Deerfield Cr: - first deer track, racoon tracks in mud, 2 crows,

12:44 young tree forest. - at old road from stone house (now raised) to W, 6 nests (squirrels) in forest. I have noticed that squirrel (Sciurus) prefer young stands of trees for nest mainly because of their close proximity, to each other

12:47 First Forest: - squirrel & rabbit tracks in mud. at a point where road turns E, a strong wind had knocked down a group of dead trees on W side of creek and on E side of creek, all facing E which would eliminate tornado.



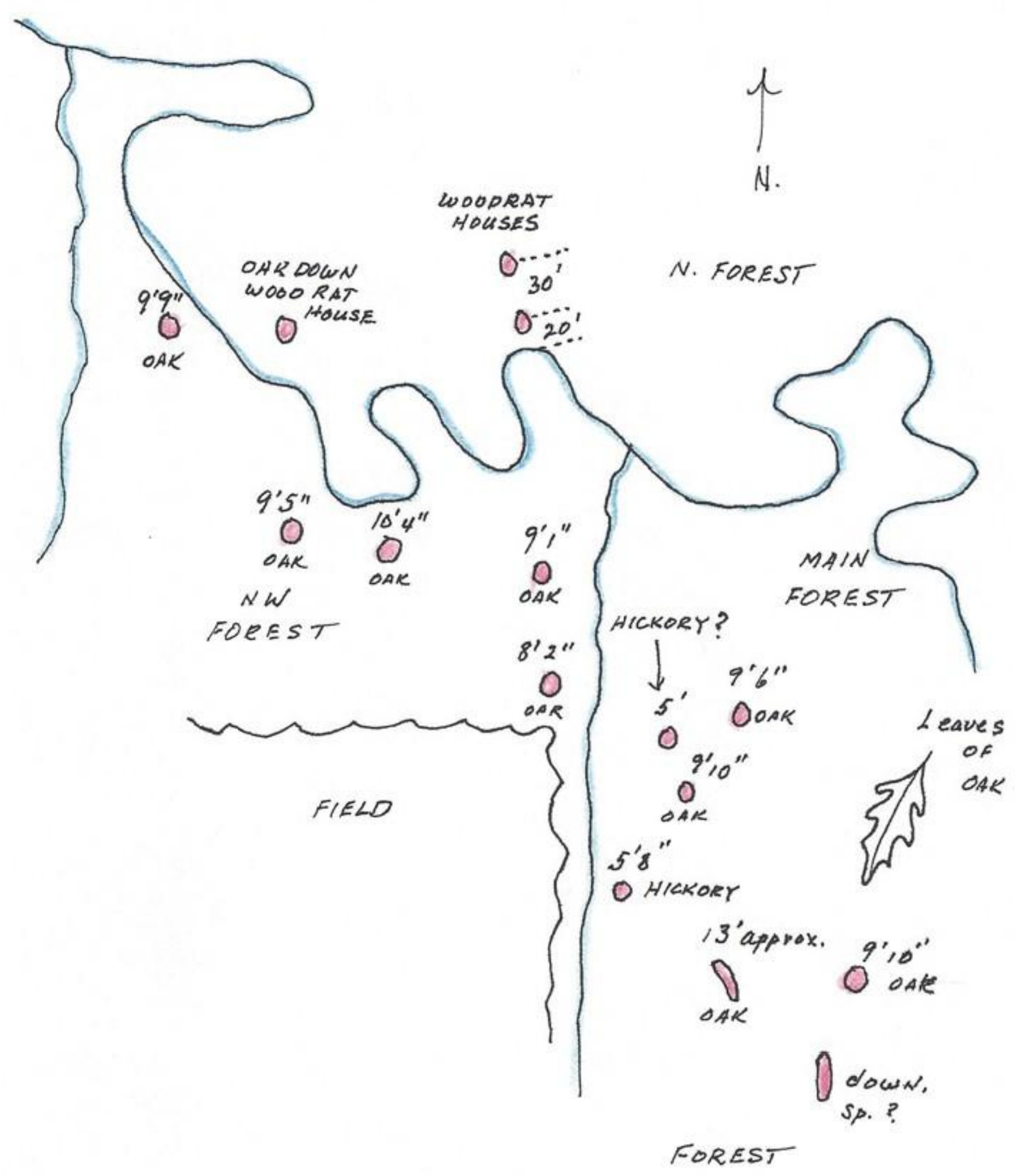
12:55 Field Edge Swale: - 8 robin, field sparrow.

1:03 Pond-Fence Row: -

1:10 Peterson Field: - meadowlark, robin.

In summation: where are the rabbits and squirrels that were so common during winter? Deer tracks fewer than in previous years and no sign of coyote or tracks in area.

The following map shows revised drainage system and measurements of large trees. (Field sketch)

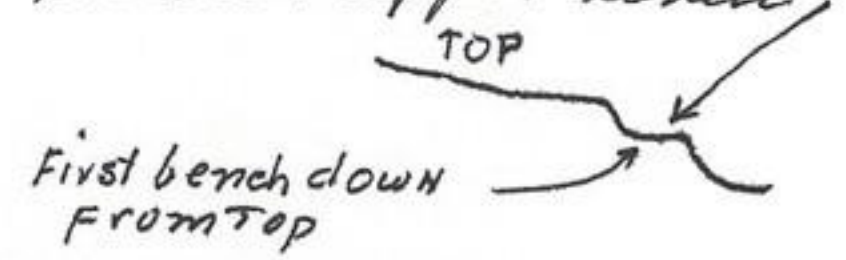


South side Rock Creek, Clinton Reservoir, Douglas Co., Kansas

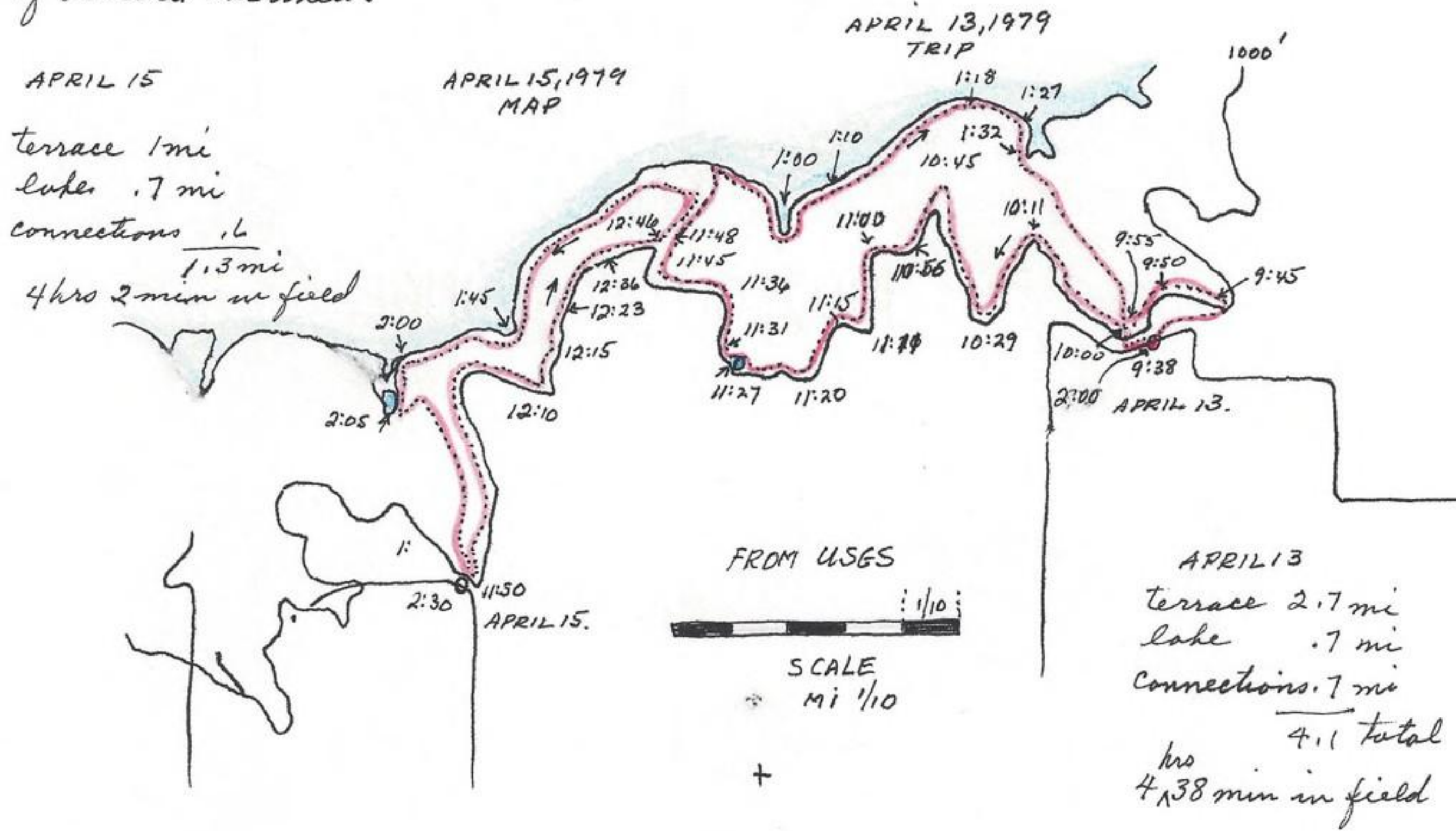
April 13, 1979

made complete census of deciduous forests on south side Rock Creek bay. Left home 9:15 A.M., outlet on dam 9:25. Sparrow hawk and 2 redheaded woodpeckers and a few grackles between dam and start of census (all the way) at head of Chumney. (see maps on next page). Follows upper bench and returned by edge of lake.

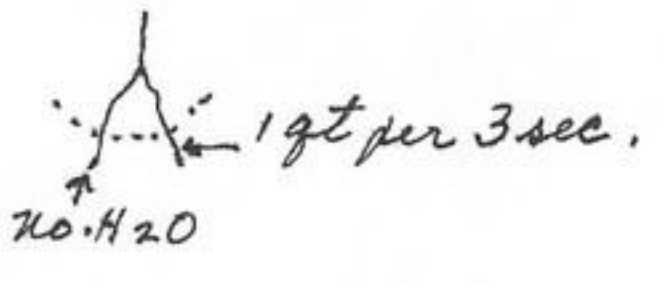
(See map next page for route.)



Left car 9:38. 9:45 rock wall that crosses drainage. Red-headed woodpecker, 2 field sparrows. Good mat grass on bench and some microtine trails, can hear 3 mourning doves calling. On slope of bench grass mat was overlain by a system of ridges of dry leaves introduced from above in a series of braided channels.

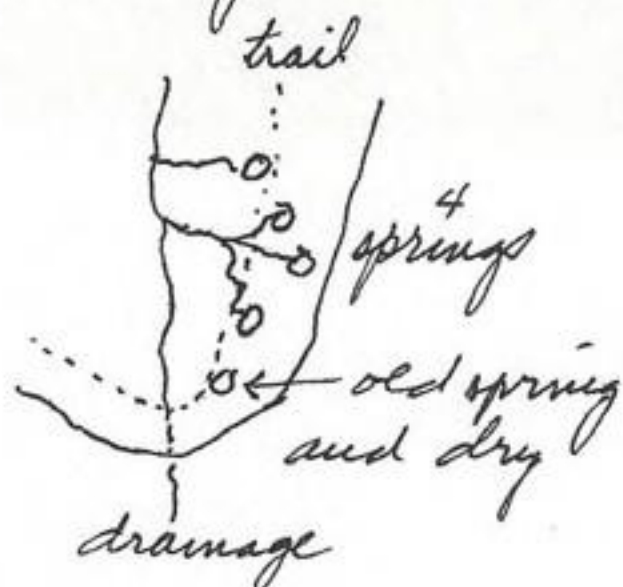


9:50 Point, Cardinal. 9:55 just above convergence of drainage systems, 10:00 drainage with junk. The drainage starts abruptly below rock cliff with very little erosion of the brink of the cliff. Cardinals. Beyond drainage bench open with grass in clearings



At this point an extra bench above so on 2nd bench below but main bench that I have followed all along. Cardinals, trail surfaced with grass but soft and develops mud with imprints. Upper benches grassy because they have been cleared in the past. Deer track 76 mm. Good growth of juniper in area because of interference of man of climax forests. Turkey vulture, Red-headed woodpecker. 10:11 second point below at three prong elm group. Red trail leads to top of a roundish knoll with large limestone blocks with pitted surfaces. Tree black veins of lake. 200' west on bench below is a pondlike area of water associated with trail. 3 red-headed woodpeckers. Many juniper on all levels. One juniper of route measured 48" cir. Lower 1/3 of this tree with brownish cones (inflorescence). 2 red-headed woodpeckers

10:25 spring area, water - cross 4" high but sparsely distributed. 10:29



Crossover 10:29, 1 gal per 3 sec. In this drainage the grasses are on the bench and leaves on slopes of drainage slopes.



Some microtines.

2 black-capped Chickadees, Old stump measured 24" diameter. 10:37 flower patch. 10:40 fence and end of grassy bench, beyond forest on bench. 2 red-headed woodpeckers. 10:45 point, old trail up ridge. Trees obscure view of lake. This point named Round Point. Noticeably more wind at this point. 2 red-headed woodpeckers. This first level bench below top is outstanding in forest beauty. 10:50 gooseberry or currant bush growing on a slab of limestone displaced from ledge above. 10:52 fence line, swath of juniper running down slope. 10:56 drainage, turkey vulture, pools of water in this drainage and only trickle of water. Junipers all thru area. Point 11:00 most junipers associated with man-made clearings. 3 turkey vultures. Head major drainage, ^{one} juniper with flowering elements of ^{yellowish} brown on the upper 1/2 of tree which is reverse of one observed earlier. 2 bluejays. 11:11 drainage, 1 gal per 4 sec. 2 red-headed woodpeckers. 11:15 point. 11:18 survey corridor. 11:20 crossover. 1 pt. per 5 sec. 11:23 old rd. 11:24 Great-horned owl left a juniper tree and flew over point to E. 11:25 now into forest at fence most of trees young. Black-capped Chickadee. Second old road, one of 2 ruts maintained as path. 1:27 pond, green vegetation in center, no frogs. 11:29 old E-W survey? corridor, heavy grass to N on bench. 11:31 drainage, good trail on S side. 1 pt per 10 sec. 11:35 spring area and water seepage. 11:36 Point and fence E-W. Rock fence along brink. 11:45 drainage, 1 pt per 20 sec. Hickory 83 inches in circumference. 2 red-headed woodpeckers, turkey vulture, 2 red-headed woodpeckers. 11:48 Point of young oaks. At this point trail down ridge turns to W and E. Continued down ridge to lake arriving at 11:56. Claytonia, white lily and dutchmans breeches common on lower slopes but not on upper benches. Black-capped chickadee, lunch. In bay to W + NW are:

8 pied hill grebes	9 cormorant
8 mallards	40 coot
1800 lesser scaup ducks	5 ruddy ducks together.
6 gadwalls	2 field sparrow at edge of lake.

The trees on slope are about 30 feet from lake. This will vary and shows inaccuracy of surveying. Temp (air) 70°F. 120° in sun. Left 12:40. Deer trails vary from along edge of trees in cut area or just inside forest. Old stump measured 40" diameter. Field sparrow. 12:52 a marker has the following info: NE Cor 2E, Sec 25, T138, R18E. 2 turkey vultures, 1 red-headed woodpecker. Turtle on log in bay. 12:54 first drainage. 1:00 head bay.

As with crossover at all drainages and bay I observe to see if fish are present at the point where clear cool water of the drainage enters the bay but to date have not seen fish using the contact between the two, not even minnows. 1 gal per second flow. Good grasses and microtine last of bay. Corps cylinder tank for outlet barrier here. 1:08 Forester tern. 2 field sparrows.

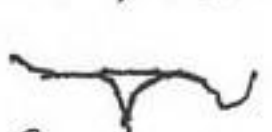


Lake will cover meander before it breaks thru.

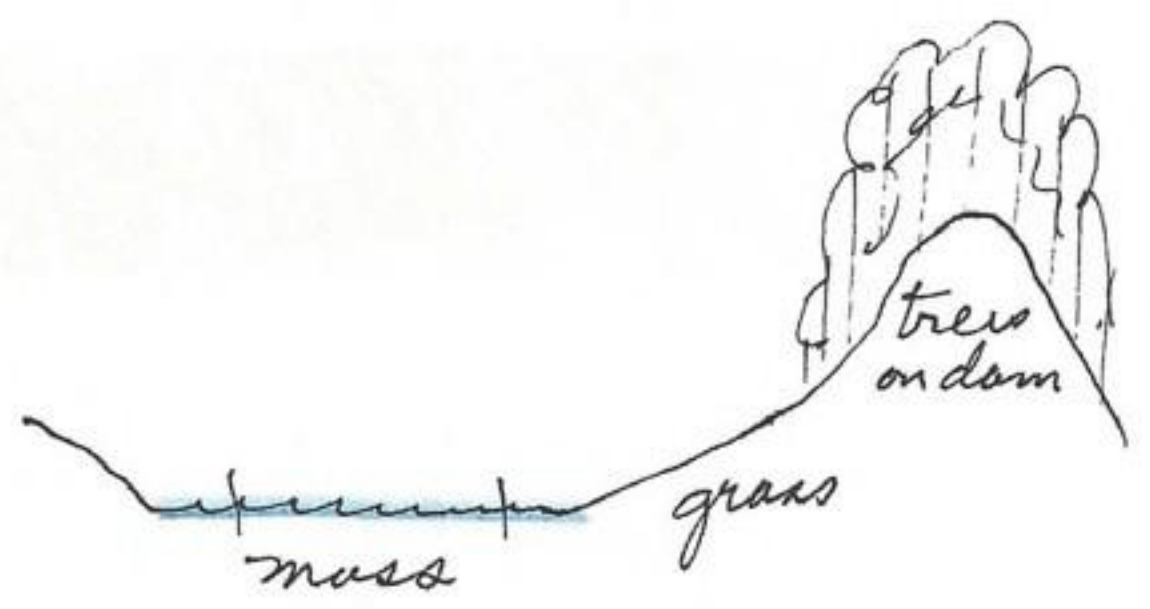
1:10 drainage 1 pt per 10 sec. 1:12 large tractor tire in water. 1:15 another cylinder. This will show circulation of water of lake. It is along this stretch of lake that the water plants that formed the many "islands" in the lake earlier this year have come to rest, some 60' wide and solid plant blanket in the water. Wind has probably brought them in from the NW. (bearing at lunch of Peterson ridge was 333° which with 8° deviation would make it 325° which is about the direction of most of the aquatic plants that formed masses in the lake last year (see former notes for name of plants). The plants along lake are very effective in changing whitecaps to gentle swell. 1:18 Point wave here without vegetation barrier are splashing against bank and throwing water 4 feet landward. More deer tracks in this area than in forest. 1:27 point W of bay. From the last point at 1:28 the small sticks along beach in water are 10-80° cleaned by beaver but no evidence of beaver cutting trees in area. 2 starling. 1:32 SW corner of Chimney Bay at crossover. 1 gal per 4 sec. 1:37 main drainage and now up ridge 1:40 fence. 2 red-headed woodpeckers. 1:45 top, mourning dove. 2:00 car. At dam noticed water level at 870 feet.

South Side Rock Creek Bay, Clinton Reservoir, Douglas Co., Kansas

April 15, 1979

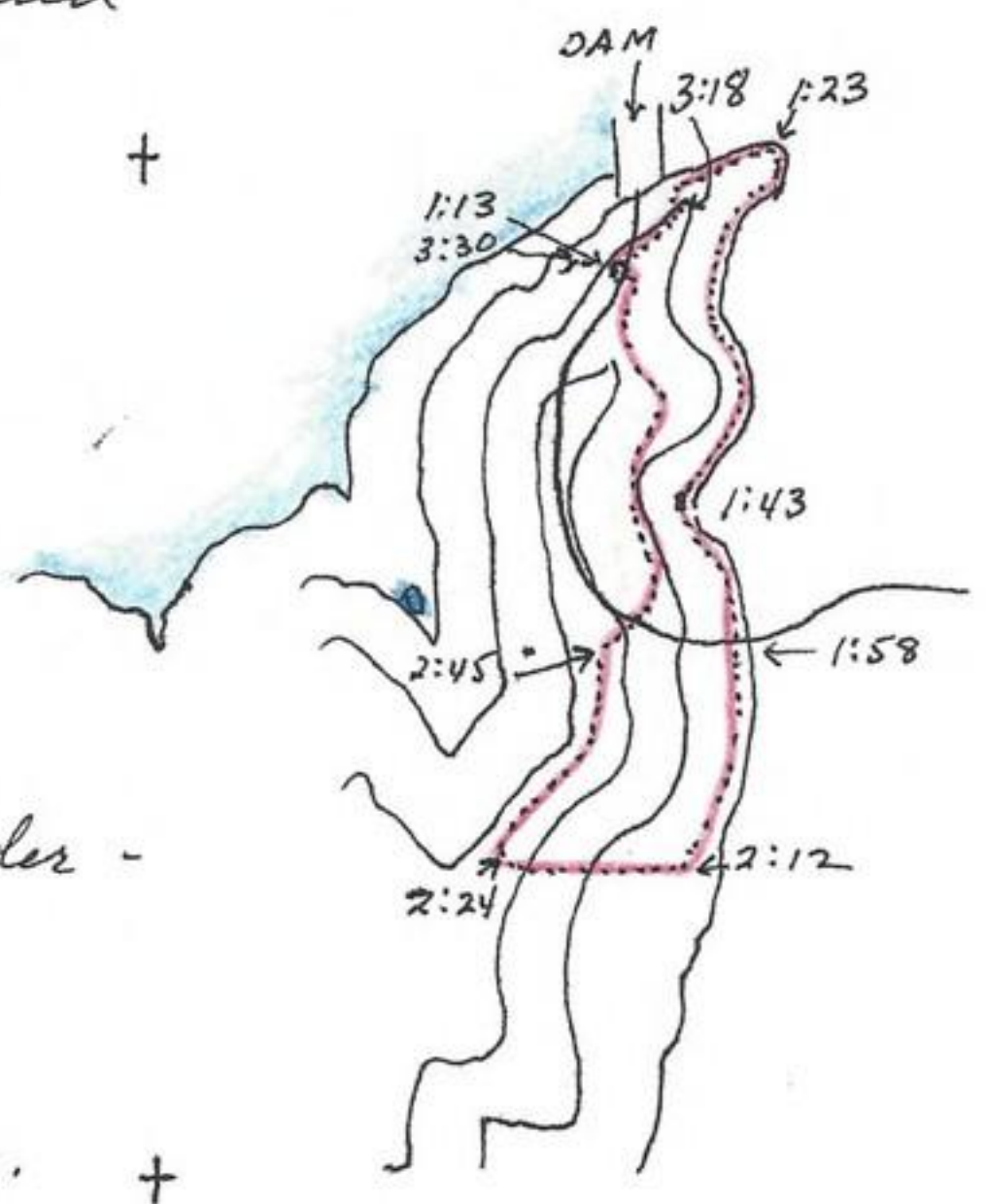
Annette and I made census of deciduous forests on the south side of Rock Creek Bay (see April 13 for map) Left car at 11:50. Raccoon tracks in trail, white-tail deer tracks measured 60 and 76 mm. Mayapple 4" high. Redbud in full blossom. 12:00 rock fence across trail. mole ridges across trail at about 1 per 1/10 mi. Bluejay, red-headed woodpecker, cardinal, red-headed woodpecker. 12:07 rock fence (this fence also extends and surrounds a pioneer family grove (see previous years notes for documentation of these groves). Some mayflower 12" high & Corps marker R1 2-46. Point 12:10. red-headed woodpecker, raccoon ^{tracks} on trail, redheaded woodpecker, mole ridge. 12:15 trail descends to N + we continued E. mourning dove, red-headed woodpecker, red-headed woodpecker, small black and white swallowtail butterfly, also 3 other species have been observed along trail. 12:22 clump 4 trees, red-headed woodpecker. 12:23 drainage, red-headed woodpecker, crow, titmouse. cliffs stepping. The level is the top plateau and the first bench or (see level) is immediately below which (with today's exception) is the one followed in all census in the Rock Creek area. Red-headed woodpecker. Oak 5' in diameter (broad base) at 12:35. Deer droppings in trail, red-headed woodpecker, mole ridge across trail about 1 per 1/10 mi, raccoon tracks wherever soil favorable but generally single. 12:40 now N, more butterflies & turkey vulture, red-headed woodpecker. 12:46 point which is indefinitely defined, red-headed woodpecker. 12:51 now at divergence of trail  on ridge, some elm of young trees (3" in dia.) with leaves 3/4 inches long. 50 coat in lake and generally distributed rather than a group. Arrived lake 1:00 mole to edge of water. 1:05 lunch at lake, ladybugs acct. Left 1:25. 2 scarp in bay only. width of white lily 60 mm. white-breasted nuthatch, red-headed woodpecker, bluejay, red-headed woodpecker, red-headed woodpecker, red-headed woodpecker (where two or more names are listed as the last two red-headed woodpeckers, it means that they were observed at two different places rather than together, which case they would be listed as 2 red-headed woodpecker) 1:45 downy woodpecker 1:53 fence line. ^{2:00} ~~1:55~~ at point are rocks arranged in such a way that they might be an Indian grave. Red-headed woodpecker. 2:00 point red-headed woodpecker 2:05 Pond, frog calling, moss except edge, erosion dropped

pond to low level. 8 wood ducks
 in center of pond among moss. 1:08
 convergence of creek that enters pond
 SE corner lake with bypass creek,
 1 gal per 3 sec. Continued up E
 ridge trail to level trail and on
 way up noted 4 separate red-
 headed woodpeckers. 1:23 drainage, 1 pt per 5 sec, red-
 headed woodpecker. Ash leaves of small sapling 1 1/2" long.
 no leaves on redbud. Arrived car 2:30. It is interesting
 to note that on both April 5 and 13 red-headed woodpeckers
 were in pairs, today almost all singles which indicates nesting.



Ridge S of Dam, Clinton Reservoir, Douglas Co., Kansas
 April 17, 1979

made census of lower level and upper ridge.
 From 402 Yorkshire to here (car) 8.9 mi and
 a 13 minute ride. Left car 3:20.
 Between car and jumper ridge to
 E good microtine & Sigmodon
 trails, one surface nest, 3:18
 juniper & fence, antler tree (young
 juniper). Trees not in leaf, some
 greenish cast from buds, 2.
 mourning doves. The riparian
 forest below in valley show consider-
 able more color (yellow) which is
 lacking in deciduous forests.
 1:23 point. 1:26 tree cut for honey.
 1:28 another man cut tree and
 neotoma nest in cavity. Bluejay.
 1:30 Survey line (clear corridor) 1:31
 drainage, raccoon tracks, cardinal.
 1:32 trench cellar and old wagon.
 Neotoma has built house in wagon, mainly of the ~~le~~ seed pods of the
 locust. Considerable feeding of Neotoma on osage orange, most
 during winter but some recent. 1:35 Osage fence row that
 extends E across field. 1:39 now on level road (old), deer tracks,
 1:40 brown thrasher. 1:42 field gate, 1:43 old barn area, redtail
 circling, 2 tail feathers missing. 1:44 spring area, white-throated

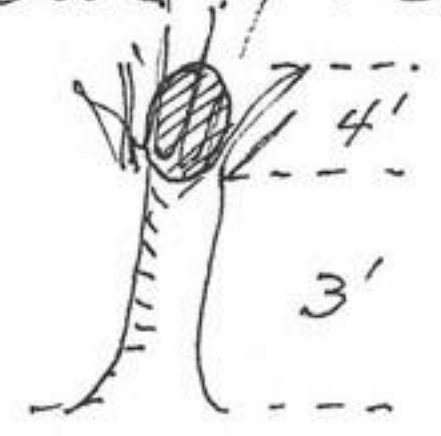


RIDGE 8/10 mi
 BASE 8/10 mi
 Connection
 2/10 mi
 1 8/10 mi
 2 hrs 3 mi in
 field.

1/10 1/2
 SCALE MI
 USGS
 TOPO

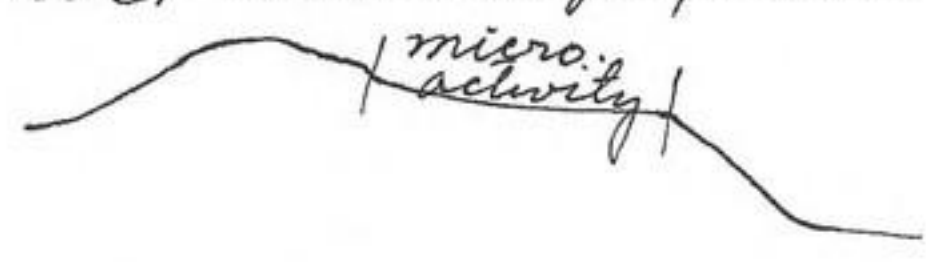
sparrow in brushy pile, 2 cardinals. There are many woodrat houses in this area. 1:55 large wood rat house in ~~the~~ brush pile, yellow butterfly. 1:58 main road, 2 song sparrows. elm in field up to 18 feet. Good grass in field that has been invaded by trees but no microtine runways. 2:12 microtine runways in grass in damp soils. 2:13 clearing (survey corridor) with brush pushed to N. Now up grade. deer tracks 80 and 84 mm. These measurements are intrinsic and never show tracks that have slid forward thereby increasing the length. 2 turkey vultures. 2:24 top ridge. 2 new houses to S. will follow N on ridge top, partly open, cacti and grasses and old road trail still visible. 2 field sparrows, blue-gray gnatcatcher, several good Neotoma houses, 2 cardinals singing in two directions on either side of ridge. 2:36 G.H. Owl. 2:38 2 more large Neotoma nests, one in an osage tree.

Another nest 40' N and 9' high (top nest from ground). Purple phlox. Gooseberry open to expose stamens etc but not ovary



2:45 end forested part of ridge, now onto open ridge at fence line. mallow to 10". microtine on top uncommon but present on bank of ridge to W.

On east side ridge, some microtine activity



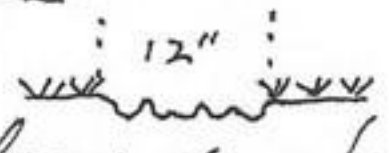
3:12 survey lane. 3:18 red-headed woodpecker. On east slope of ridge juniper 1 per 20' or less

thru forest. 2 field sparrows, 1 red-headed woodpecker. Car 3:30. Enroute home 2 crows.

402 Yorkshire Dr., Lawrence, Douglas Co., Kansas

April 18, 1979

Robin used 1 sq. feet of mud in area planted to lawn grass (up 1/2") to build nest in pine tree. On ground 10 seconds and then on nest for 10 seconds which continued for at least 30 trips. She called each time she approach the ground. ♂ present but did not participate in mud gathering



S side Rock Creek Bay, Clinton Reservoir, Douglas Co., Kansas

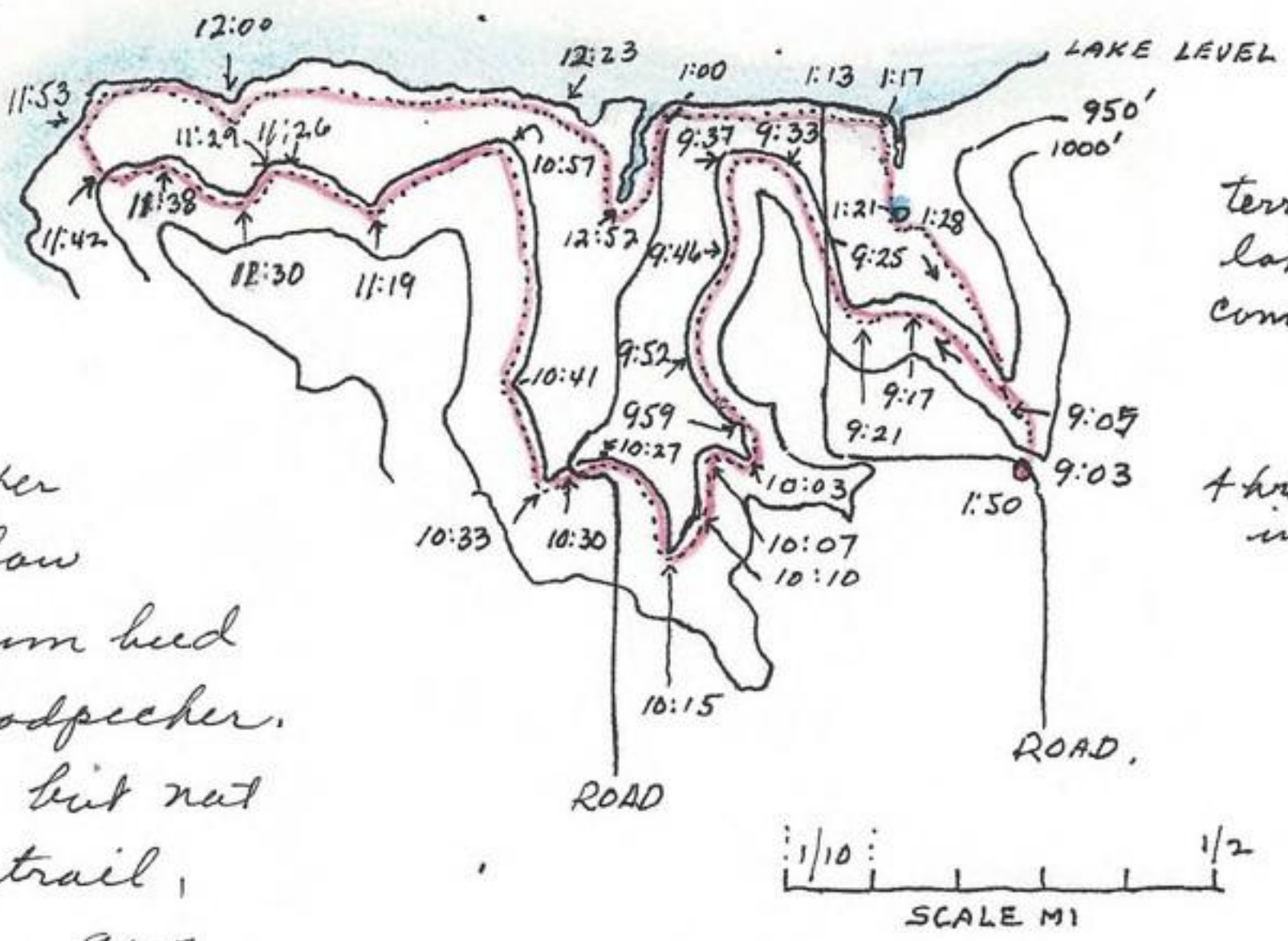
April 18, 1979

made census along E side bay (see map on following page) following the upper (Bee) level. and return via edge lake.

mileage from 402 yorkshire dr in Lawrence to starting point 21.7 miles and a 30 min drive. 30% rain forecast and cloudy, wind from S. Left car 9:00 A.M., 9:05 old road and drainage, 1 pt per 3 sec.

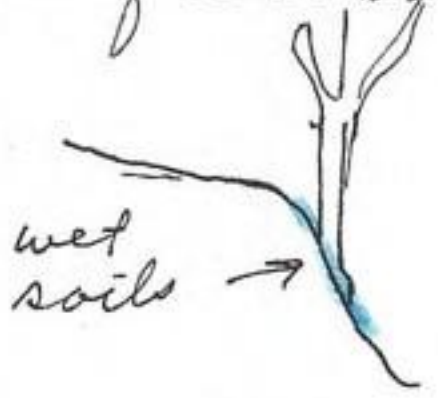
CENSUS MAY 18, 1979


mayapple to 14", mourning dove calling. 9:07 old trail. The floor of the forest is green and the low understory shrubs are also green giving an essentially green color to forest. Upper story just starting to show a faint color of green from bud opening, red-headed woodpecker. Deer trail on this level but not pronounced. 9:12 old trail, red-headed woodpecker. 9:17



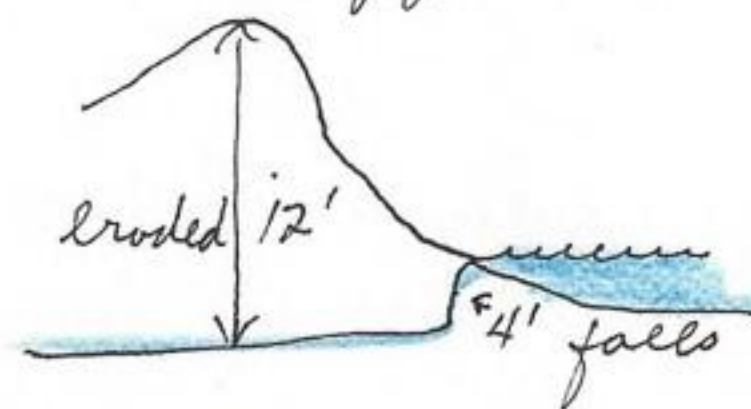
Point Y. area of large trees, crow. 9:18 old trail, 9:21 drainage, dump, no water flowing. old road + trail w side, 9:25 Old Co. Road one rut eroded, one natural surface and both free of vegetation, red-headed woodpecker. The mayapples definitely grow in restricted patches from 6 to 15' or more in area, some however are generally distributed, 2 bluejay. 9:30 debris from old tornado, red-headed woodpecker, 9:32 trail down slope. These trails are used by horses + riders and there is considerable damage of deepening of trail, erosion and creating mud holes. This time of year with wet and soft soils is vulnerable. Horse trails are not feasible for areas to be presented as natural areas. 9:33 Point, bench restricts beyond. 9:35 red-headed woodpecker. 9:37 Perpendicular Rock Point, so named because of upright rock, now S. There are many red bud trees N of point on next bench below. I would estimate 1 empty shot-gun shell on ground per 1/4 mi. some places 2 to 10, together. 9:45 trail. 9:46 drainage, no water. 2 red-headed woodpeckers. 9:50 trail down. 9:51 rock fence, 2 crows, 2 titmice, spring along point. 9:52 point 9:55 good marshy spring, 1 pt per 15 sec. 9:57 red-headed woodpecker, red tail. 9:59 drainage, trickle. 10:03 drainage, 1 pt per 5 sec. 10:07 Point red-headed woodpecker 10:10 drainage + rock fence. moss on bench to S, young dead juniper while elsewhere juniper thriving and advancing. 10:15 drainage, pools but no flow., raccoon tracks 10:17 minor drainage, trickle of water. Bright green mosses on rock in

channel, 10:19 rock fence and Corps Eng. fence, 10:20 trail up & down, 10:21 many *Claytonia* on bench below. Red-headed woodpecker the *Claytonia* extend several hundred feet to rock fence & old road, 10:27 Point. Red-headed woodpecker. 10:30 bend road, both rills eroded, 1 foot W one & $\frac{1}{2}$ ' east one. 10:33 drainage, 1 qt per 4 sec. Green mass on rocks in creek, raccoon tracks. 10:35 wet swale, broad bench. 10:39 trail. 10:40 hairy woodpecker. 10:41 drainage 1 qt per 10 sec. 10:45 rock fence, red-headed woodpecker. Three large trees on brink of bench and below have toppled over because of wet soils. Red-headed woodpecker, 10:50 old road down slope. 3 crows chasing great horned owl. Red-bellied woodpecker. Slight bend in ridge to W. 2 separate red-headed woodpeckers, 10:57 Point (Point 26)

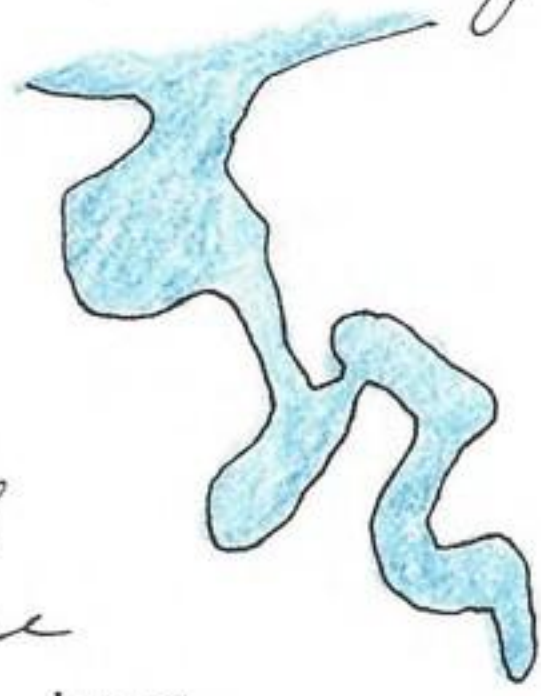


because of the diameter of an old pioneer cut stump with that measurement) Beyond this point are many Dutchman's breeches which continue for at least 300 ft. N exposure always support more flowers. 11:02 cleared corridor thru trees from N to S and 30' wide. This corridor is soil except an isolated weed. Titmouse calling (song up to 4 notes), bench constricted in this area, 11:14 start again. Impressed with increased number of flowers (induricals) on N exposures, 2 crows. 11:18 Ohio or Western Buckeye (*Aesculus glabra*) in leaf (5 inches). 11:19 drainage no water flowing. Just beyond is an invasion of the Western Buckeye from top to almost bottom of sidehill, mainly on benches but also on slopes. This is a localized concentration and one feels as if he is walking into a jungle from trees without leaves to this patch of timber with large green leaves. The yellow flowers are well developed to just starting. They appear to definitely be out of place in such concentration. No other place has this concentration of buckeyes. The trees are about $\frac{1}{2}$ the height of the climax deciduous forests with which they are associated. 11:26 Point. Buckeyes fewer and rare to SW along the bench, Cardinal, 11:29 Point now ~~to~~ SW. 11:30 drainage, damp. Red-headed woodpecker, 2 titmice. Another batch Buckeyes beyond. 11:32 minor drainage, damp. Red-headed woodpecker, 11:34 minor drainage & old road. 3 red-headed woodpeckers one general area, recent deer track, mosquitos out, anglewing butterfly. 11:38 Gooseberry Point from one growing out of rock. A roosting tree 50' W with whitewash ground below. 11:40 cliffs wavy  11:42 Mt. Lion Point (from imprint in stone 40' S of Point) rock with hole placed in imprint. 11:53 now on lake shore, trees in water, deer

trail at base and 1/2 way up slope, raccoon tracks. 11:57 bluejay, red-headed woodpecker, mole ridges across trail 1 per 300', Cardinal, 12:00 40' bay inland, no water from drainage. Heard gun shot to SE on top ridge. Blue flower with 5 petals, mole pile 8" high 12:02 second bay or inlet 100' deep, no water from drainage. 12:05 juniper 6' 4 1/2" circumference. 12:10 bluejay. 12:12 drainage 1 ft per 15 sec. 12:13 drainage, no water, 100 ft inlet, red-headed woodpecker. 12:15 old road up hill, red-headed woodpecker, 2 red-headed woodpeckers. 12:18 corridor, 13 shots from individuals SE. 12:23 mouth Bay at Point, G.B. Liron come into bay then left to E, ^{lunch.} no duck in lake. 12:45 left, 12 shots during lunch at various places as if they were hunting (red-headed woodpeckers?). 12:52 crossover. Field beyond numerous muratus tracks. 3 field sparrows, cardinal. 1:00 NE corner now E. 1:05 hackberry? 8' 6" in circum, debris from last tornado from house to E. 1:07 foundation in trees. 1:09 old house, raised, water to floor. 1:13 old Co. rd, first black & white swallowtail butterfly, some rain in air. NW corner of bog at 1:17, redwing.



1:20 pond (W side). eroded to 4' of bottom of pond. 13 wood ducks on pond in middle 3 frogs on S side lake, 6 frogs on alluvium at mouth of creek. 1:25 same amount of water entering pond as leaving. 1:28 fork of trail up hill SE side, deer track 74 and 80 mm. 1:38 trail onto old road up canyon. Red-headed woodpecker. My pulse at top ridge 96 per minute. Sign (Corps of Eng.) 2.0 SE Sec. 25 T7 316 R 135 R 18 E ? Shooting still in area to W. Temp 74°F. Car at 1:50, shriek on line. In summation, red-headed woodpeckers mainly singles, no vultures, only 1 swallowtail, raccoon & deer tracks generally distributed and some specifically recorded. This may have something to do with high humidity & occasional rain. At Clinton dam noted that there were no whitecaps on lake.



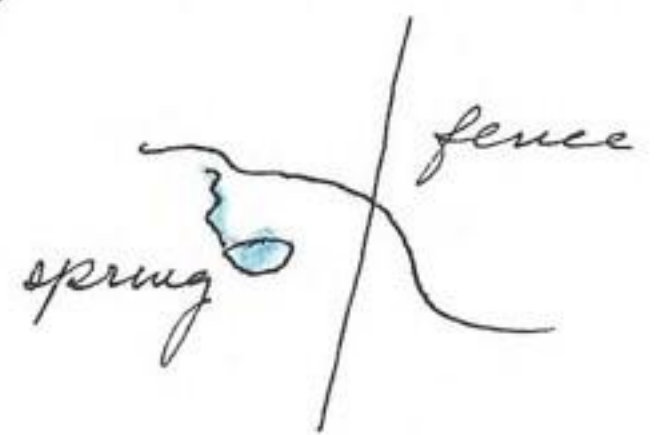
402 Yorkshire Dr, Lawrence, Kansas
 April 19, 1979

Observed and heard house wren for first time this spring. Goldfinch still fed on thistle seed & ♂ saw yellow.

South Side Rock Creek Bay, Clinton Reservoir, Douglas Co., Kansas

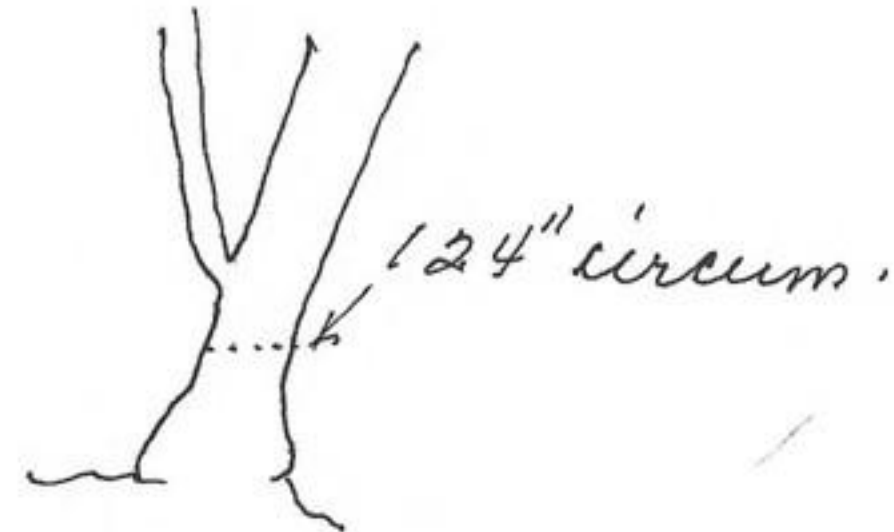
April 20, 1979



made census of deciduous forest on first level below top and along lake. Enroute noted 3 killdeer in wakarusa bottoms 1 mi W highway 59. At Lone Star turnoff (from circuit road around Perry) noted 2 golden eagles circling and moving E to distant ridge on E side Washington Valley, also here noted a scissortail flycatcher. Continued to drop-off place and left car at 9:10 A.M. Crossed fields to start of census on first bench below top at 9:34. 9:40 drainage no flow but pools of water, 9:50 orange approx 50 inches dia. 9:51 old road, good grass & microtus runways beyond, spring 1 pt. per 15 sec. 9:52 rock fence and Corps of Eng. boundary marker more open on bench beyond, 10:00 drainage, pool 1 qt per 6 sec, 2 bluejays. 10:03 fence at point, good grass, 2 mourning doves, hawk nest 35' high and 8 feet from top, high seasonal cliffs in Creek below. 10:08 rock fence, water 1 gal per 3 sec and best Creeks for water volume so far, raccoon tracks. 10:13 pond, 3 frogs, clear water and filled with spirogyra. many orange trees, bench wet all along, 10:18 crossover at convergence, rock fence and increase grade of stream up drainage. 10:20 minor drainage, 1 pt per 10 sec flow. Creek bed wide flat and filled with boulders. 10:24 back to rock fence, this is a big creek bed, 2 black-capped chickadees, 2 reufaus sided towhees, 2 bluejays all together. Red-headed woodpecker. juniper 27" in diameter. 10:35 2 red-headed woodpeckers, 1 red-headed woodpecker, 2 red-headed woodpeckers, Morrell's mushrooms out, 10:40 point, now to S, 2 red-headed woodpeckers concerned over G.H. owl, 4 white tailed deer crossed bench and disappeared over top. 10:45 NE of pond below. 10:46 pond below to W, a stable pond with cattails and some spirogyra around edges. water clear. 3 ♂ redwings on cattail, 2 on top of ridge to E and 2 on top of ridge to W, all singing as if attaining highest position on ridges to attract females. 12 frogs. 10:53 ~~Sub pond~~ crossover, 1 qt per 6 sec. along W side of pond counted 14 frogs, spirogyra at edge. 10:57 back to bench. can see broad overflow as stable flow, deep eroded pit below road, 10:59 at point, road. 11:02 drainage, 1 qt per 5 sec, 2 crows. 11:05 fence, 2 red-headed woodpeckers, red-headed woodpecker, titmouse. 11:07 E point 11:09 fence and boundary, deer select low spot in fence (low wires) for crossing. 11:10 N-S fence, 11:13 point, now S, 11:18 fence, 11:22



12:13 Bay, now S., bluejay. 12:15 12:15 crossover, water 160'
S of fence, 1 gal per 2 sec. 12:17 old road and bridge floor level
with water, titmouse, old road a single trail. 12:20 point between
two drainages, 2 bluejays, 1 red-headed woodpecker, brown
thrasher, red-headed woodpecker, red-headed woodpecker, 12:28
crossover 1 gal per 2 sec, at place where a sycamore on E-bank
has an offshoot branch low on trunk.

Continued on trail to N., red-headed
woodpecker, red-headed woodpecker,
more deer tracks than usual, red-
bellied woodpecker, bluejay, red-
headed woodpecker, 2 red-headed
woodpeckers chase away a red-
bellied woodpecker, turkey vulture.



12:35 fox squirrel. 12:37 top high bluff (eroded by creek) for lunch. Three
large sycamores in water  , limbs with round buds and
alive. Left 1:34, turkey  vulture 1:35 NE side of,
boy. 1:36 ^{up} old trail up ridge. Few western (Ohio) buckeyes 4-8'
high, some 25' in length. 1:47 Mt Lion Point, nice tall juniper
just to S of point (100'), red-headed woodpecker, bluejay, red-headed
woodpecker, red-headed woodpecker, cardinal, deer track 84 mm.
2:00 back to starting point on bench, turkey vulture. Considerable
white crab-apple blossoms at edge of field beyond Mt. Lion Point.
raccoon tracks and considerable foraging near standing water by
forcing vegetation apart and exposing bare ground. Lark sparrow
and eastern bluebird at car at 2:30. Wind from N. Returned to
dam of Clinton Reservoir. From here the deciduous forests and
winterlike with occasional yellowish green tree or group of trees and
with irregular fusion of darker green. Red-bud express them-
selves as purplish color. The riparian forests below dam to E
are brighter ^{and lighter} greenish-yellow and more trees involved. Water in
lake with occasional white-cap and streamers of white foam in
parallel rows (30') apart in axis N.S. 15 cormorant, 5 ring-billed
gulls only birds observed from dam.

Lawrence, Douglas Co., Kansas

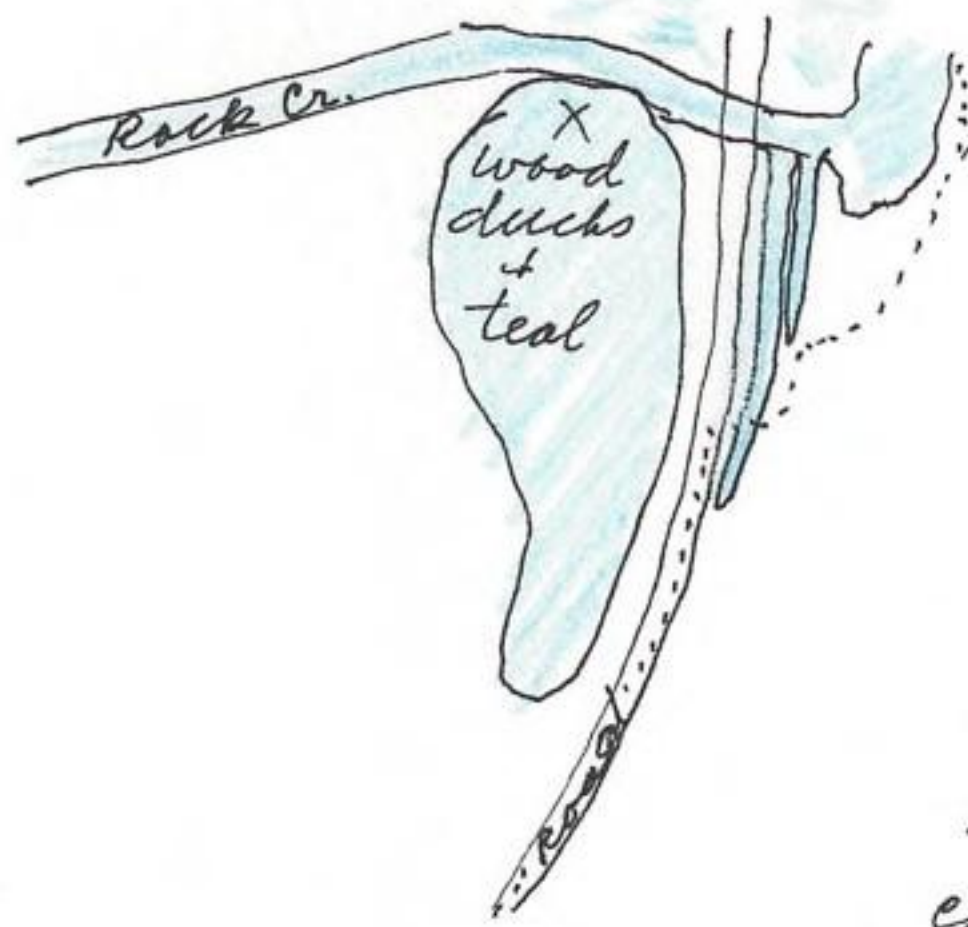
April 20, 1979

Approx 200 chimney swifts circled back and forth in a 2 block
area with The Episcopal Church (downtown Lawrence) as focal point.
The flight was irregular and what appeared to be disorganized.
Time 5:30 P.M.

South Side Rock Creek Bay, Clinton Reservoir, Douglas Co., Kansas

April 23, 1979

made census of deciduous forest on S side of bay (see map of April 20, 1979 for itinerary). Left car at 9:20 A.M., temp. 60°F, fog, wind 5 MPH. Travelled N to where creek comes near road and then reversed direction and followed flooded creek S on W side. Along way measured an sycamore as 13 1/2 feet ~~in~~ circumference. Continued to crossover ^{9:25} at steep bank. (well approx 200 SE). About 100' above crossover 8 mallard ducks were in creek and they noticed me when 200' away. They hid behind bank and allowed me to approach within 20' before they left, area more like place for wood ducks rather than mallards. Raccoon track and deer crossover at head. House wren, bluejay, cardinal, red-headed woodpecker, killdeer. Followed along edge flood creek bottom to where this creek crosses the old Co. road. A cut thru road indicates water has been at least 4' higher than present level. 9:54 now on ^{lateral road to W} old Co. road. The surface is perfect condition and vegetation (weeds and grass cover it in places to 95% while in other places is without weeds its full width, sun in spots for a few minutes, in flood field to W are 5 wood ducks and 4 blue-winged teal. Frogs calling. The un-



undated field is cut into. Left road and now E of inundated area. Coyote track 80 mm long. Titmouse calling. Wood duck. 10:00 opposite old co. bridge now raised, 2 small black and white swallowtails copulating in short grass. Deer track 78 mm. Red-headed woodpecker, 2 wood ducks. Remained in this area until 10:39 and then continued. N. Rock Creek widely flooded on both sides. Titmouse. 10:50 old road now up hill to S, deeply eroded, 1 ft per 8 sec. 10:51 fence, 4 wood ducks. 10:54 fence, cardinal. 10:48 barred owl left tree and flew 100' and alighted again, then left and flew another 100 feet, and remained in tree. 2 white-breasted nuthatches examined the area where the owls had first left. I believe they ^{it} had young and was exhibiting concern. The great horned owl generally leave an area whereas the barred owl will remain and make itself known. Red-headed woodpecker 10:52 2 redtails. Claytonia and a yellow flower completely covering grassy area, mosquitoes present.

cardinal, 2 crows, red-headed woodpecker, fox squirrel, red-headed woodpecker, red-headed woodpecker (again, two consecutive sightings of a species means they were seen in separate areas although 2 different individuals, in other words not together at one point). 11:08

NW Point, steep bank to water edge and too steep to negotiate.

11:10 cross over at steep eroded side of creek. Bluejay, 11:15 old road (old Co. road down off slope), now eroded, & a single trail.

Lake to within 30' of convergence of the two roads. Bluejay, 2 field sparrows (when water covers this last part of open field the field sparrows will disappear, 2 blue-winged teal, 11:23 highest point on road and now S up hill thru forest. Water 200' from road at this point. Just beyond measured old orange tree stump as 36" dia.

11:36 Point at first bench below top. 2 red-headed woodpeckers. 11:37 juniper killed by deer rubbing antlers on trunk (tree 5' high), 2 red-headed woodpeckers, cardinal

11:42 road (same as 10:50 but near top of ridge). 11:48 fence, the wire on lower strand of fence is in the center of the tree.

} wire thru tree.

2 red-headed woodpeckers. The buds of the shagbark hickory have opened and calyx reflexed and leaves just starting to separate.

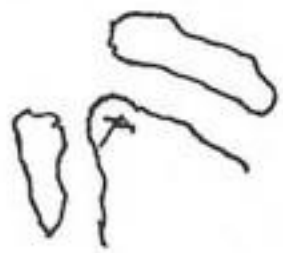
11:47 marker on ground (Corps Eng) A 27. 13-18. Cardinal, several damp to wet areas on bench from springs. Small toad. Brown thrasher singing on top. 11:51 drainage, damp but no water.

This is a double drainage. Last 1/10 mi damp to wet bench.

11:53 old road, pond W below. No vegetation in pond. many orange orange on bench. 11:56 Crossover, spring to E. 1st per 4 sec discharge channel rocky. old cattle trails to pond below eroded 6" deep.

deer track 74 mm. 12:01 crossover, no water but damp.

all bench with good orange orange trees and fruit eaten. 12:01 fence. 12:08 Surrounded Point, because rocks surround point



12:12 Tapered Point of first bench. No cliffs at end but bed rocks exposed in trail. This is the longest and narrowest point examined so far. Bluejay, Red-headed woodpecker, cardinal. 12:15 back to

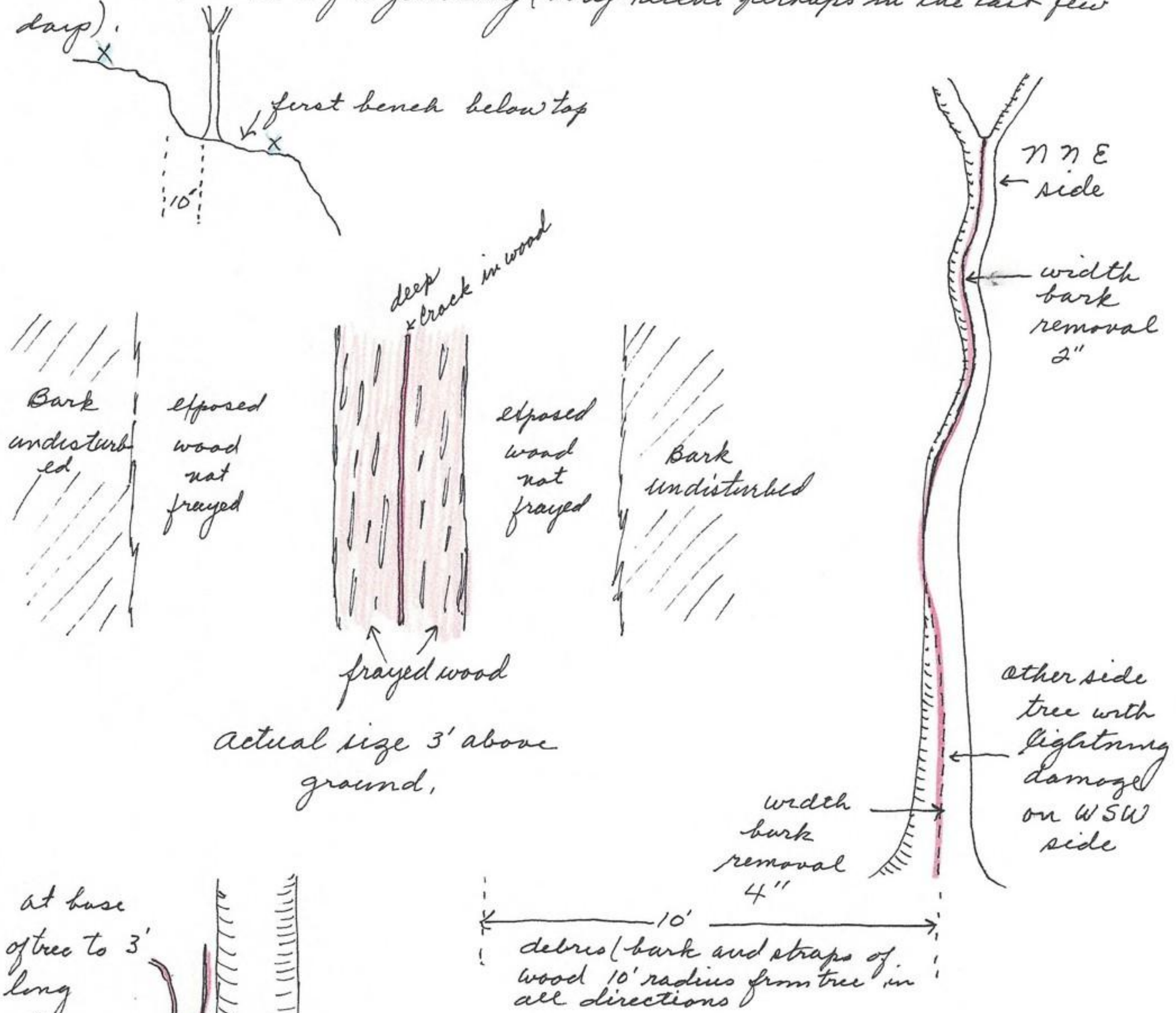
bench below upper point and now S. 12:19 good cliffs to W below brink, 12:21 fence, turkey vulture. 12:23 road. 12:29 2 flat

irons of limestone on a point. An elm 1 in in diameter on N rock of the two. Stopped for lunch. Left 12:55 and while

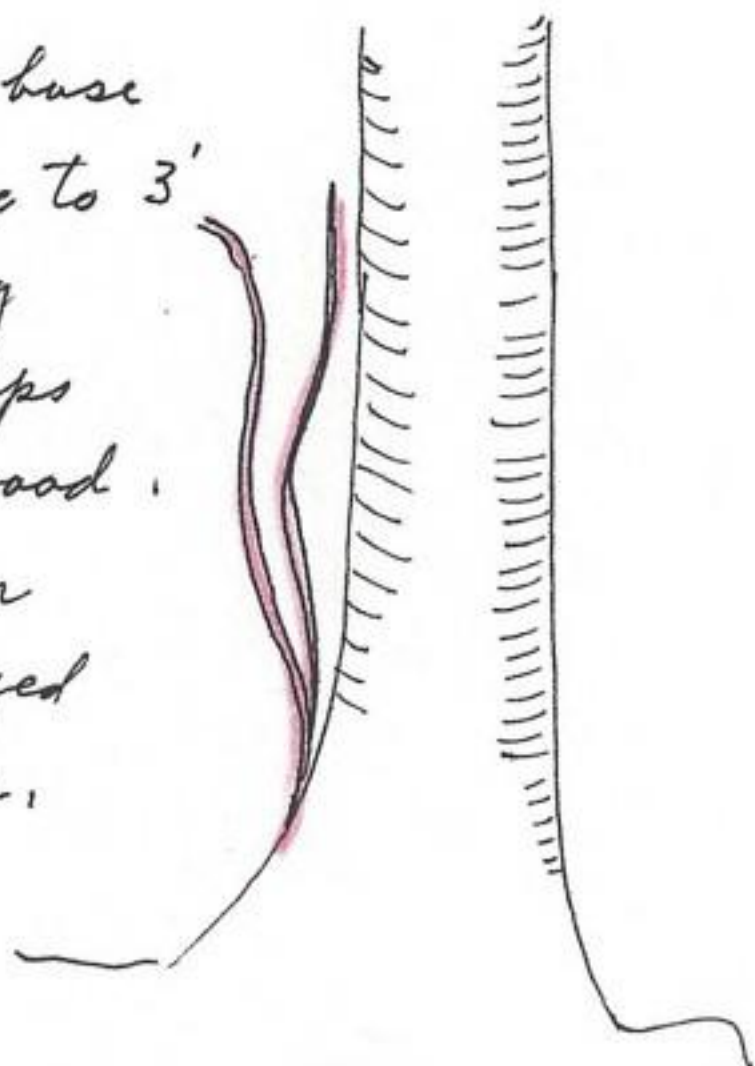
at lunch observed 2 titmice, 1 red-headed woodpecker, cardinal calling on top, crow, most time absolute quiet without sound

or bird calls. 1:00 generally distributed rocks on bench. Red-

headed woodpecker, most large red bud tree in flower but no leaves, small ones have some leaves. 2 red-headed woodpeckers. 2:01 drainage, no water. There is a pile of granite erratics on top of ledge where water normally flows into drainage. Can hear an occasionally drumming by woodpeckers. 1:05 drainage, no water, old road on other side of drainage. Titmouse, cardinal. 1:10 point, red-headed woodpecker. 1:19 minor drainage. and 10 beyond to south a shagbark? Hickory had been struck by lightning (very recent perhaps in the last few days).



at base of tree to 3' long strips of wood from frayed zone.



There were many other trees in area, some higher but this tree seemed to have the thickest branches at the upper level of the tree. Lightning strikes just below a ridge so the best position to avoid being struck is lower on the slope or on top away from the brink of the ^{upper} bench (see x x)

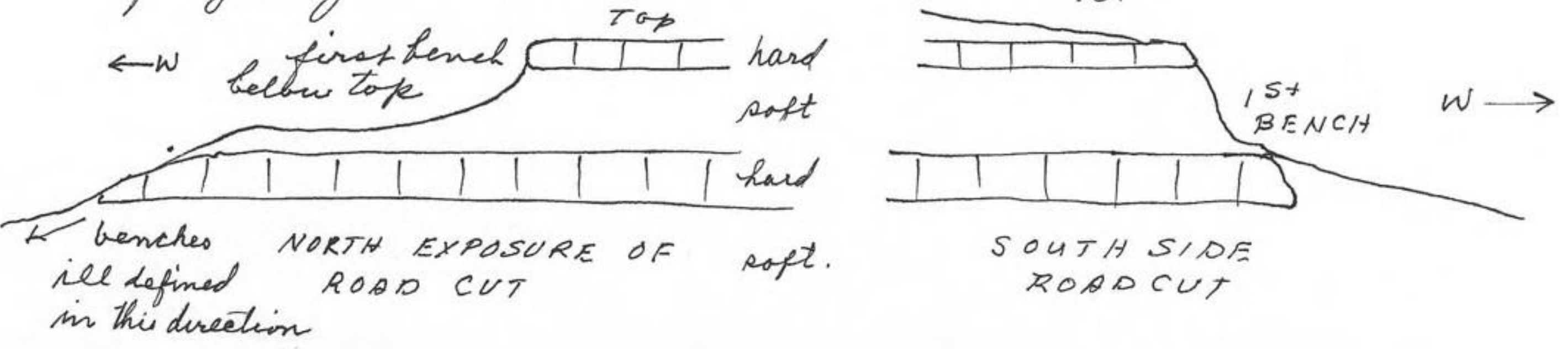
Left 1:25. Turkey vulture. 1:26 Point. 1:27 double drainage no water. 1:29 minor point. minor drainage beyond, no water; cardinal. 1:30 fence and end of climax forest. Turkey vulture. 11:35 old road to rock quarry. In the south part of quarry cottonwood trees to 8' invading from W. at extreme S end elm trees 4'-8' high. 1:40 point. dropped down and arrived car 2:00.

South side Rock Creek Bay, Clinton Reservoir, Douglas Co., Kansas
April 24, 1979

made census of birds & mammals on first bench below top (see April 20, 1979) for map of itinerary. Left car 10:20, fog, no wind, temp. 61°F. Black and white swallowtail butterfly, mourning dove, 2 ♂ redwinged blackbirds, red-headed woodpecker in field 300' from trees. 10:23 well E of car and cross at head of lake level water in creek. Stinging nettle 22 inches, another black and white swallowtail, bluejay. 10:30 road that leads to upper basin on E side in grass and weeds, no erosion, no trees in road. 10:33 upper basin. 2 crows, red-headed woodpecker. 10:36 N end basin, no lakes which is common in abandoned gravel pits. 10:37 on level (Bee level). Crossover at 10:41, pools of water but not running. Levels poorly defined and broad which is a factor of friability of sandstone which might be the reason the quarry was chosen for this area. The first level is the one below the broad upper level. It is not demarcated by cliffs. Titmouse. 10:50 Point (ledge here). an old tree fell with a loud crash about 200 to N, there was no wind. Red-headed woodpecker. 10:54 point, cardinal, 2 mourning doves, bluejay. 10:55 rock fence. red-bellied woodpecker. Squaw bush in yellow flowers and no leaves. Tree frog calling, cardinal, brown thrasher, Titmouse. 11:03 minor drainage, no water. 11:06 drainage 1 pt per 3 sec, 2 crows harassing great horned owl. 11:08 first pile of fence poles, second one with woodrat house. 11:10 3rd pile and 4th one beyond at drainage, no water but damp. 11:11 crossover, green moss on rocks in creek bed, 1 pt per 8 sec. 11:14 grove of red-buds. Box turtle on rock 20' from creek in shrubby forest. many woodrat houses and steep slope to S. 11:22 Point, juniper on upper ledge 1 1/2' dia (estimate). Last 2/10 miles with many woodrat houses and well used pathways, red-headed woodpecker, cardinal. 11:27 cleared area, bare soil

and drainage, no water. 11:32 drainage just before old cement water tank, robin. 11:40 head drainage, 1 pt per 6 sec. red-headed woodpecker. 11:42 Corps Eng peripheral road (main road) redtail circling S of road above trees that are in drainage that is a continuation of the one on N side. From this drainage water 1 gal per 2 sec. 11:50 directly above middle drainage on road above, 2 mourning doves flew E. 11:52 on bench on W side drainage, cottontail unusually tame and may have had young in area. 11:55 point. 11:59 2 chimney swifts flew S. 11:59 Contact with main road again on E side drainage. 12⁰⁰ above drainage on road, 1 gal per 2 sec which is about same as first drainage. 12:01 back on bench. 12:05 Point, trail up down. An elm? growing up thru a juniper and 6' higher at present, bluejay. 12:13 a beautiful bur oak tree. 12:14 drainage, no water. 12:20 Lichen Point, named for this open point with lichen on rocks. 2 cardinals 12:27 road, traverse road slope at bench level drainage 1 gal per 5 sec. 12:32 back onto bench, 12:34 drainage, no water. Leaves on ground from hackberry tree look like snow because of light color, leave off trees. 12:37 Co road. G.H. owl calling to N. 12:38 back on bench on W side road.

The bench is broad and ill defined
 12:40 point, 2 deer beds in young elm.
 a large oak on upper bench. Bench now normal in profile beyond the last point. 1:00 secondary road at base of main road, pond with 10' alluvium from culvert. 1 pt per 5 sec flow into and out of pond. red-headed woodpecker. 1:07 point and continuation of secondary road that now goes down slope. a gazebo house and another makeshift structure on top bench. 1:13 main road. Recognize that stratigraphy in road cut similar if not same as overflow cut E of Clinton dam. If this is true the first bench below the top is continuous from the dam to here which also means that the strata are horizontal. I had wondered if this upper bench was a function of erosion of the side of the valley or continuation of a geological structure.





deer cross below first level.

From bench can see 3 mallards in pond W Rock Creek on S side road. This pond is elevated above present river level. Foundation of old house at 1:35. Continue N along old road. 1:36 road from top hill to E. 1:40 river edge for lunch, Lincoln sparrow here. Maple along water 5" leaves, full seed.

black willow leaves 1" long, Left 2:00, sun out for first time today, red-headed woodpecker, turkey vulture, bluejay. 2:07 drainage, 1 qt per 6 sec., red-headed woodpecker, cardinal. 1/10 mi to N of here at point is an excellent marsh of wet soil and vegetation for *Synaptornis*. Titmouse, 2 field sparrows, average population of microtine trail across field at base of hill. arrived car 2:15 P.M.

Lawrence, 402 Yorkshire Dr., Douglas Co., Kansas (last 2)

Photos 790425-1 to 790425-9 of tulips at home, 2 of them have mallard decoys in pond in the foreground

Lawrence, Kansas

April 26, 1979

Took six color photos of flowering trees in the city at various points, some on K.U. Campus. Nos 790426-1 to 790426-6. This has been a good year for color in spring vegetation.

790426-1 Thomas yard just house S of our place at 402 Yorkshire Dr.

790426-2 Lawrence residential area.

790426-3 *ibid.*

790426-4 *ibid.*

790426-5 tulips in front Hock auditorium, Univ. Kansas, Lawrence.

790426-6 Crab apples, Stauffer Place, Univ. Kansas.

790426-7 " " " " " "

790426-8 " " " " " "

790426-9 Residential area just S Univ. Kansas.

S side Rock Creek Bay, Clinton Reservoir, Douglas Co., Kansas

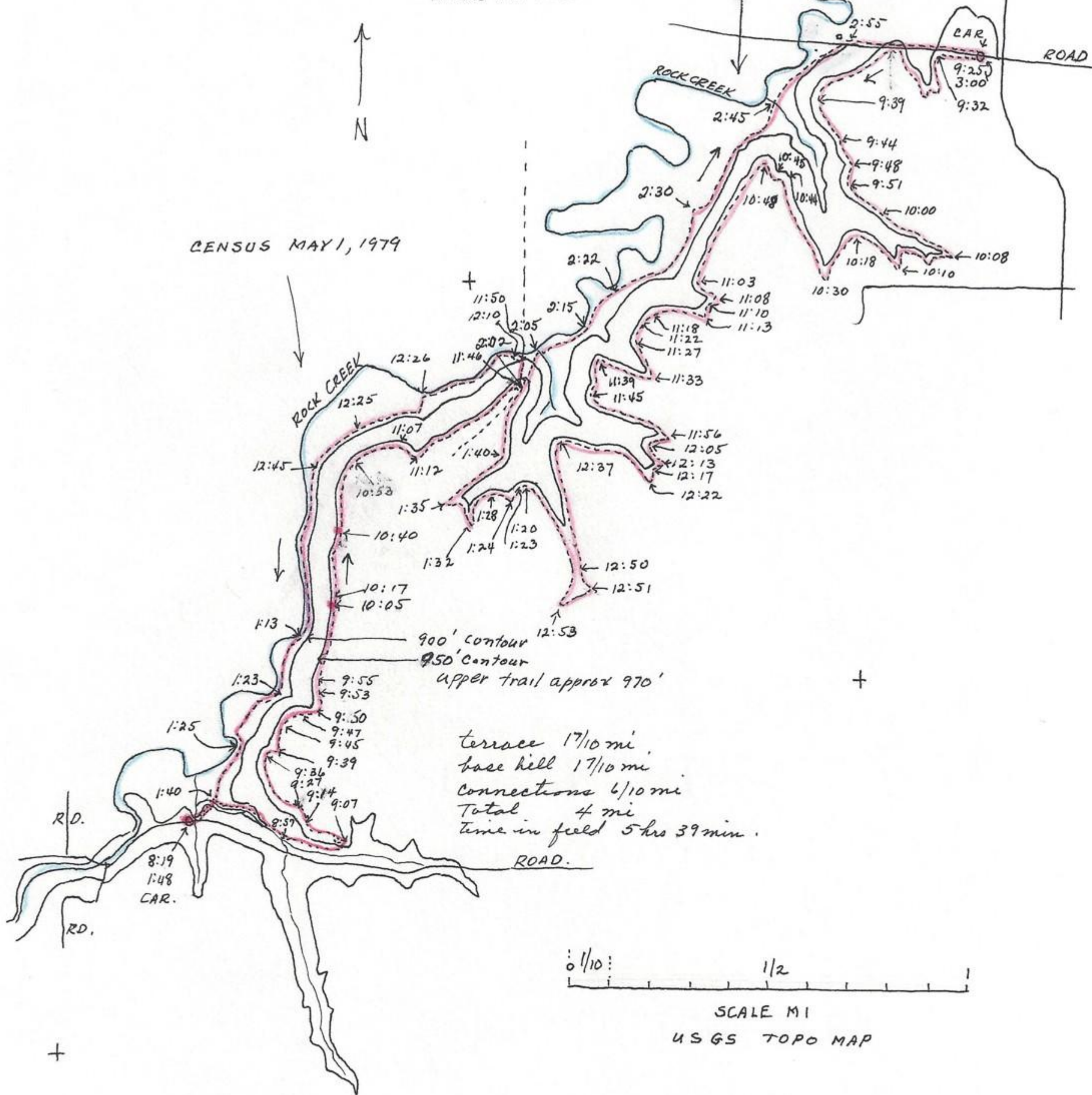
April 27, 1979

Made census of birds and mammals on first level below top of side of valley (see April 27 map next page). At Clinton Res. dam at 9:10 A.M. noted osprey (extra large adult) flying at dam level along W side above contact of water and dam. It flew consistently N until it encountered a fishing boat along shore at which time it deviated its course, raised 40' and flew W out into lake. Forster tern fishing along same route.

Terrace $5\frac{3}{10}$ mi
base hill $1\frac{2}{10}$ mi
Connect $\frac{6}{10}$ mi
Total $7\frac{1}{10}$ mi.
5 hrs 55 min.



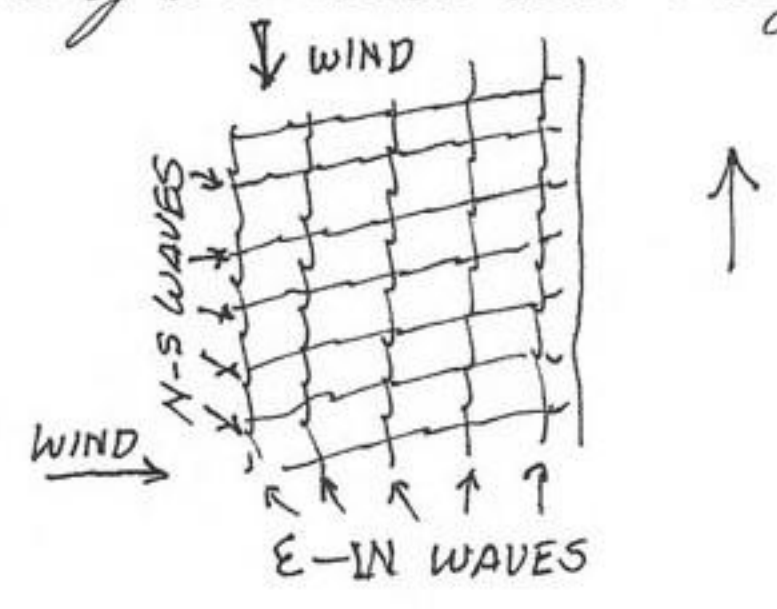
CENSUS MAY 1, 1979



terrace $17\frac{1}{10}$ mi
base hill $17\frac{1}{10}$ mi
connections $\frac{6}{10}$ mi
Total 4 mi
Time in field 5 hrs 39 min.



at this time the wind had just change to the north (from the north) and paralled the dam and there was a set of E-W waves slightly lapping and forming white streams on the lake. At the same time another set of was just slightly smaller in heeght than the N-S wave met at 90° angle.



Continued to starting point (see map) arriving 9:25. Bench below upper rock strata in damp with dense cover of dead weed, and inhabited by *Sigmo* + *Micralius*. Springs from base of shale and soils wet & soft. From all springs water flow 1 pt per 4 sec. The same on N side.

9:32 now on upper level or bench or terrace and begin of census, 9:35 fence, 30' beyond a rock fence. Dead raccoon here.

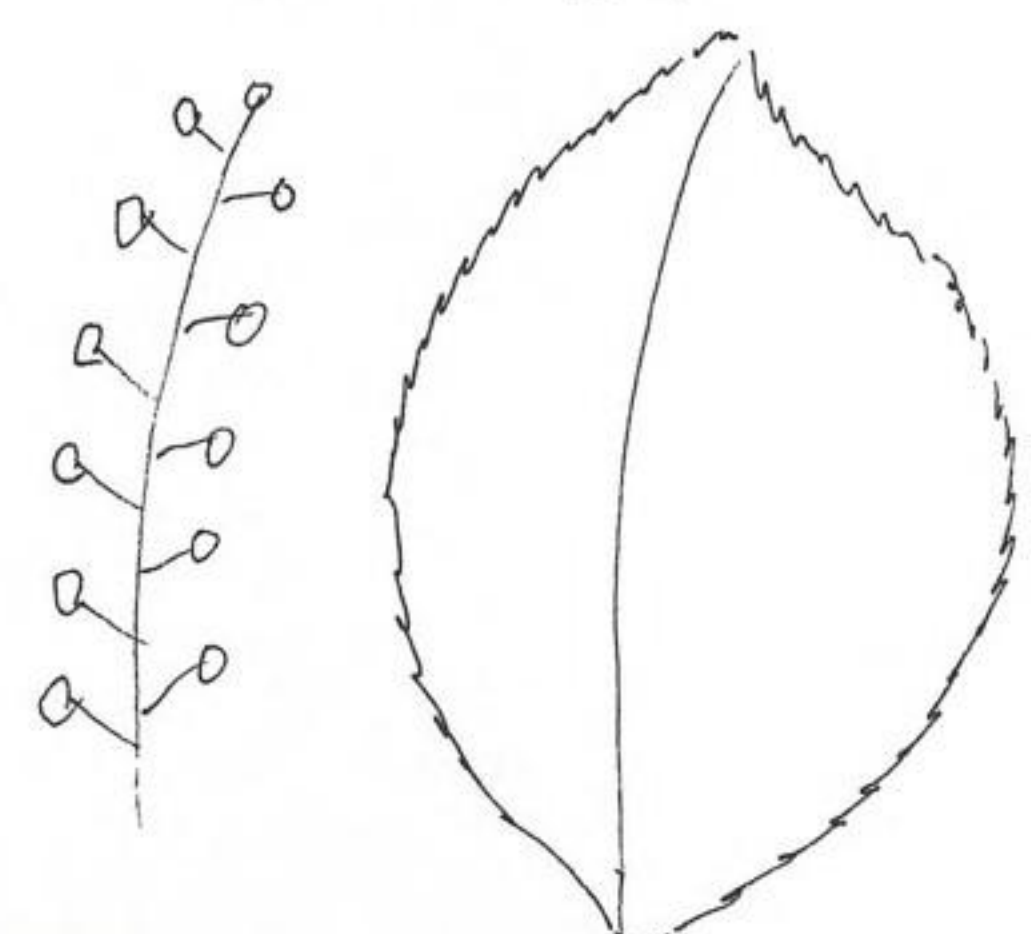
Hackberry in small faded leaves. 9:39 Point, 2 crows. 9:44 drainage, no water, 9:48 drainage, no water, fresh deer tracks ⁱⁿ on running gate, 9:51 Point, 9:53 rock fence.

9:54 rock fence, and corridor of powerline. A marker here is 1974 B 33-13-18, Clinton Lake. Just south is a good patch of may apples averaging 8" diameter of single leaf.

5:59 old oak in ledge above, 10:00 drainage, no water but have been full during floods or heavy rain, 10:01 many hackberries below, ^{last years} leave now off hackberry and cover the ground as a light patch in contrast to other areas of the forest,

10:04 old road. (when reference is made to "old road" it means a pioneer road, generally from top to bottom of hillside and now grown to trees and in some case difficult to distinguish as an old road. These roads were access roads to top fields or bottom lands). Red-headed woodpecker 10:08 Crossover (this means the head of the drainage at the first bench or terrace level. 1 gal per 2 sec. Rocks covered with green mass and *Spiragya* in water, 10:10 drainage, 1 pt per 4 sec, flow, Grove of young trees in early leaf beyond, One tree in blossom (Chokecherry) with flowers not open but round buds alternating on stems, 10:14 rock fence + powerline.

10:16 point. 10:18 drainage. Many patches may apples along route. 10:19 G.H. owl, may apples 1/2 buds closed, muller leaf 16". 10:30 old Co. rd. water 1 qt per 3 sec, 10:32 drainage, trickle water. Red-headed woodpecker,



red-headed woodpecker. A marker here, PL 2 33-13-18, 1974 (Corps Eng),

10:36 drainage, no water. 10:38 a young thick forest of Ohio buckeye to 22' high, forest like summer with buckeyes in leaf, and in contrast to other trees which are just beginning. house wren.

10:41 Corps Eng. marker 3. SE. NW, NW. SE. SE 33-13-18 1974.

10:44 spring area 150' long, standing water, black soaked leaves on ground. 10:45 drainage of small falls, no water, damp.

red-headed woodpecker. 10:48 point, crow, red-headed woodpecker.

10:50 fence. The terrace is all slope and constricted. Red-headed

woodpecker, red-headed woodpecker.

There are many beautiful oaks all along on bench below which is wide and relatively flat. Physiography good for viewing oaks below.

red-headed woodpecker, red-headed woodpecker.

2 red-headed woodpeckers. The increase number of woodpeckers may be a function of better viewing of oaks below. 5:58

a 3' flat overhanging rock at brink of bench. Some red-bud leaves ~~to~~ 1 inch long on smaller trees. red-headed woodpecker.

11:03 red-headed woodpecker, red-headed woodpecker. Some

shagbark hickory leaves 2" long and reflexed between closed bud and leaves reflexed.



Calyx reddish. A marker at point

Corps Eng P15-33-13-18, 1974, SW SE SE SW SW SE

Some small hickory trees with leaves N in smaller trees.

Red bud also. The larger leaves of trees are in small trees (2-5' high). 11:08 drainage. pt per 20 se, old road on N side. 11:10

old Co. rd. 11:13 drainage, trickle, second drainage no water, 3rd drainage, trickle, all associated as expansion of head drainage.

One red-headed woodpecker 2' from ground on tree, most of them are in upper story. 2 red-headed woodpecker, crow. 11:16

fence and marker P1 3 SW NW NW NE 1974 4-14-18.


11:18 Point. 11:22 major brood point, 90% large oaks on benches below dead. red-headed woodpecker, red-headed woodpecker. The

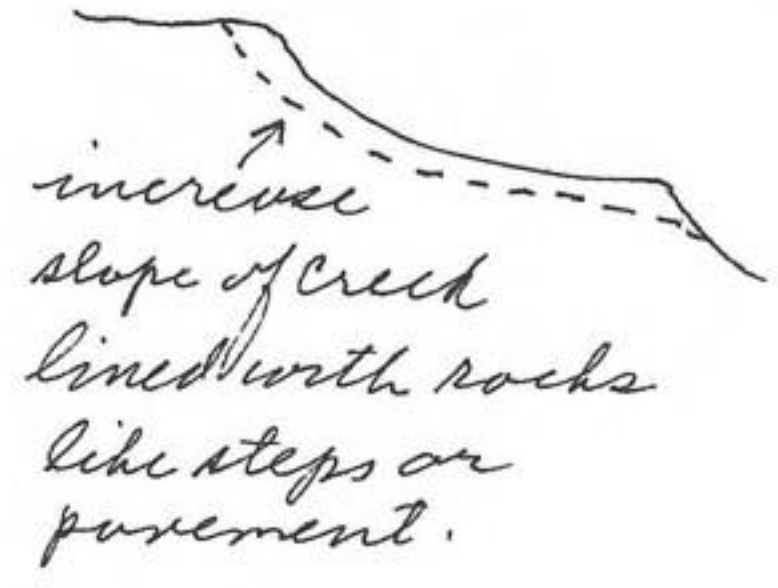
bench (just from top) is broad & almost flat with many mole diggings red-headed woodpecker. 11:27 Point. 11:30 Harris sparrow.

11:31 swale, no water. 11:33 drainage at point where old road crosses. 1 qt per 6 sec. rocks covered with green mass, Spirogyra present in water. Now following this old road on bench, some

young elm in road-way. 11:39 Point, wet ground. red-headed woodpecker, angle-winged butterfly. 11:45 brood point area, rock



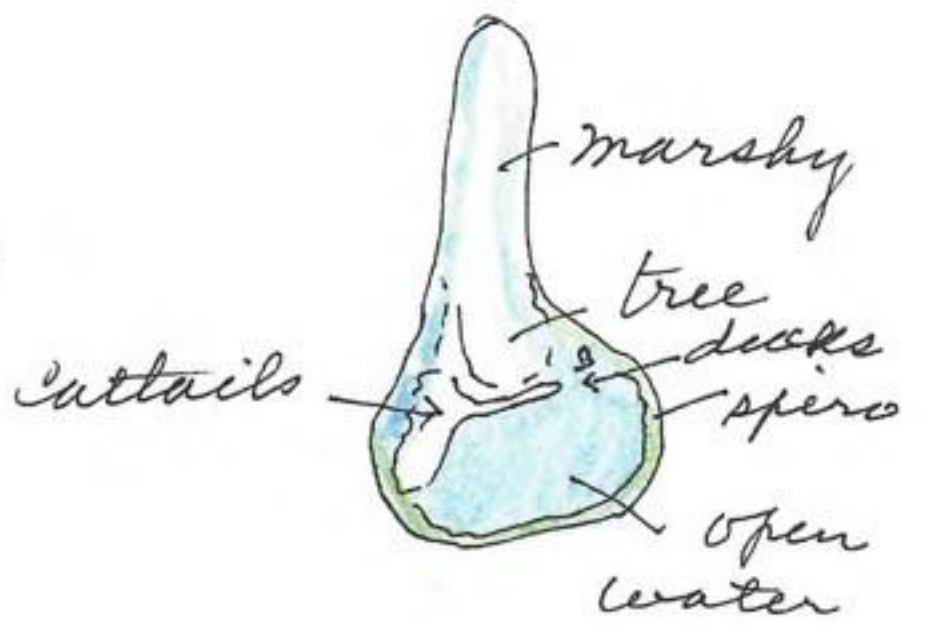
~~the~~ on upper slope are sloping with grade of hill. 
 red-headed woodpecker. 11:51 old, ^{dead} tree in upper
 cliff and securely anchored in rocks (3 1/2' diameter approx.) oak?
 red-headed woodpecker. 11:56 rock fence & wire. there is
 more Symphoricarpos where there are fewer trees, red-headed
 woodpecker. 11:57 Crossover just beyond rock fence, field cleared
 to SE and trees pushed into gully. The flat rock in drainage
 below the rock fence has a fault 35" high, good pool below. 1 gal
 per 6 sec, green moss on rocks, Spirogyra in water. Dec had
 used a 6' high. bur oak for cleaning antlers and tree dead with
 last fall's leaves still on tree. 12:05 Point. 12:10 fence. Cleared
 slope other side valley, ^{dead} trees in gully for erosion control or con-
 venience. 12:13 crossover, E-W fence (red topped stakes),
 1 pt per 10 sec. 12:17 point, fence 100' beyond on bench, turkey
 vulture. 12:22 Crossover, in many cases as is true here the
 creek bed increases grade and widens with rocks in bed step like



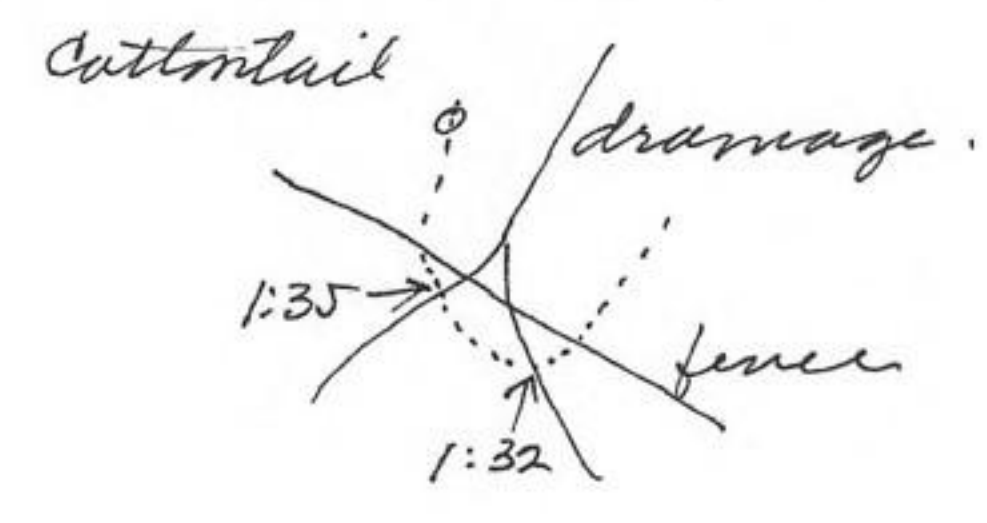
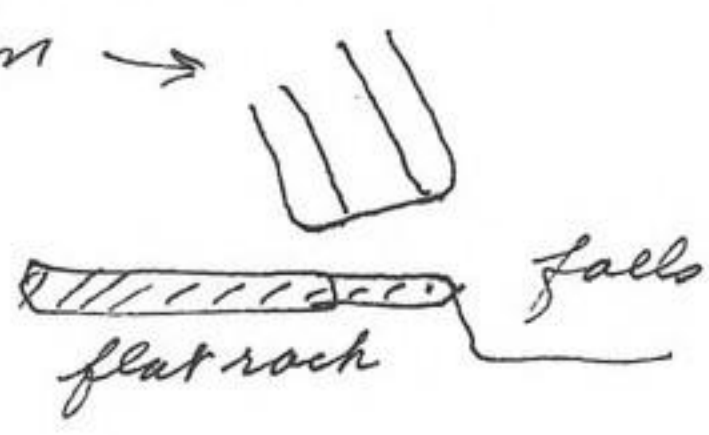
1 pt per 30 sec, 12:24 minor drainage, no
 water, 12:25 recent deep eroded drainage
 no water. 12:27 deep eroded drainage,
 no water, many dead large oaks below.
 red-headed woodpecker. 12:33 drainage
 red-headed woodpecker. 12:35
 Ohio buckeye as a successional stage
 in area of dead oak, 12:36 old road.

12:37 Point, dead oak below since 12:27 above, 11:37
 fence, cardinal, partly open and grassy beyond. Wood rat
 house above been observed all along and not recorded, mostly
 associated with cliffs or orange-orange forests now being reclaimed
 by regular forests. 12:50 may apples wilted severely with
 dropping leaves and curved stems, one in a patch with blossom
 1 1/2" diameter. This appears as a spray poison as at the large
 leafed trees (Ohio buckeye for instance) are also effected. This is
 the first wilting noted. 12:51 drainage, 1 pt per 15 sec,
 12:50 pond, balanced Spirogyra around edges, clear water otherwise,
 cattails end fan, marsh head of pond.

1 gal per 3 sec. below dam, gully
 widely and deeply eroded from
 outlet to 150' or so beyond. 3 blue-winged
 teal on lake, brown thrasher singing
 to E on slope, cattail wood below
 dam just beginning to grow leaves.



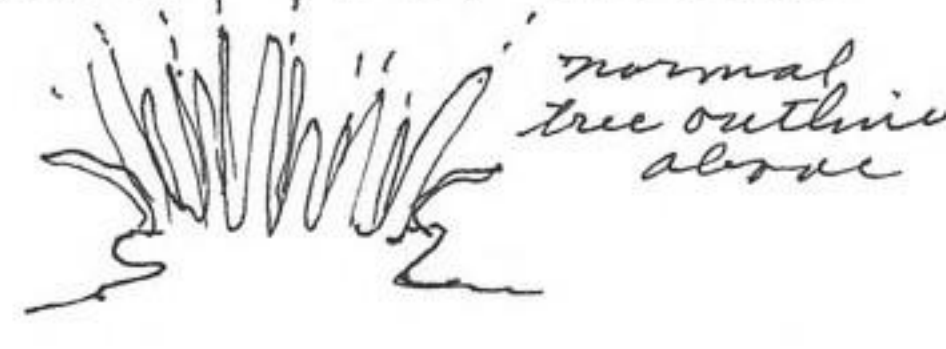
Had lunch here, left 1:10 It is unusual that there are not red-winged blackbirds using the pond area. Turkey vulture, flew over 3 times at close inspection of me. G.B. owl calling to N. May apples still wilted. L. meadow sparrow. 1:14 large tree on top ^{upper} bench Ohio buckeye still wilted. Seed of red-bud still on tree, must tree have no evidence last years seeds, 2 mourning doves. 1:20 Point, 1:23 Point. 1:24 Crossover at flat rock in creek bed & 1 foot falls below. 1 ft per 10 sec. a limestone rock at edge of flat rock has an unusual fracture system →



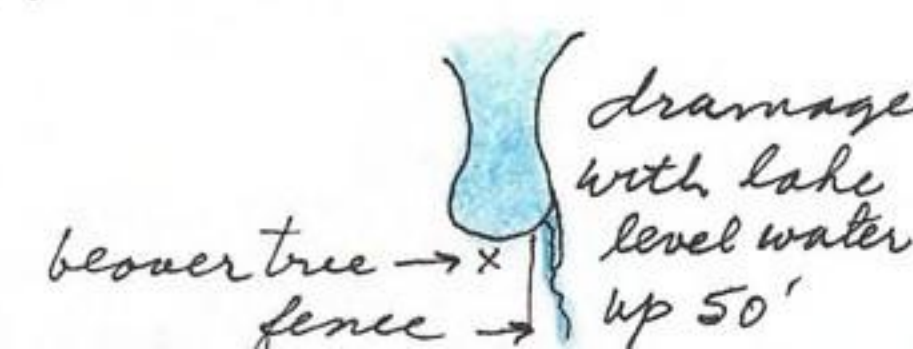
per 20 sec. Just beyond a cottail in forest. Many locust trees beyond as if a successional stage. 2 yellow warblers. 1:40 fence, deer used elm trees (2 feet apart, (1 inch diameter) and killed the trees.

Just beyond the mayapple and Ohio buckeyes are normal but since 12:50 have been effected by spray. One may apple out of a patch of 80 individuals had flower 1 1/2" diameter. 1:45

Drainage, damp, no water. Turkey vulture, crow. 1:59 an oak with 14 limbs out of a 40" base. One Ohio buckeye tree ^{4' high} with leaves 90° eaten to ribs of leaves which were the only part of leaf remaining.



I had not observed any other leaf depredation of other Ohio buckeyes. 12:02 Point which is a narrow point and now leaving the first bench below top and descending to Rock Creek below. 2:05 bottom at deep drainage entering the main creek. There is a good exposure of slate at the mouth of this drainage. Water in Rock Creek good flow with periodic ripples so not at lake level here. Water a murky greenish blue cast. The cumulus clouds of earlier today are now lowering and forming large black clouds and obscuring the sun. Great blue heron left from here, Red-headed woodpecker, bluejay. 2:15 drainage, no water. Lake level water to here. 2:18 the fence is along ^{upper} edge of creek and allows 1 foot passage. 2:22 Large cottonwood girdled 1/2 way around by periodic beaver action, some places healed by scar tissue.



black and white swallowtail butterfly, these seem to vary in numbers from trip to trip. No large yellow & black swallowtails, red-headed woodpecker. 2:30 open field and now to east side at base of hill. good Co. rd leaving field to SE, Cool enough now to need sweatshirt and wind breaker coat, Deer track along this E side of field, one measured .78 mm and one .63 mm. There are 2 or 3 dozen rolls of grass on E side of field at base of forest, each has from 5-12 holes at base or on side and are being used by small mammals, sp? probably *Microtus*, *Sigmodon*. will trap later, at NE end field is a *Neotoma* nest .5' high. 2:45 major drainage with cement crossover. Lake level water to 6' of the platform. An elm tree has fallen over cement and beaver have eaten bark off limbs in water. Water entering 1 gal per 2 sec, Main road 2:55, ^{adult} darnwing needle insect dead on side of road, turkey vulture, fox squirrel. Arrived car 3:00 P.M. Barn swallow flew across road. Measurement of route hiked today 5 5/10 miles by upper bench (just below top) and 1 6/10 mi return plus 1/10 to starting point at beginning, or 7 2/10 miles round trip.

402 Yorkshire Dr., Lawrence, Kansas


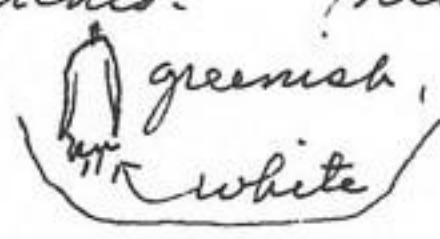
April 30, 1979

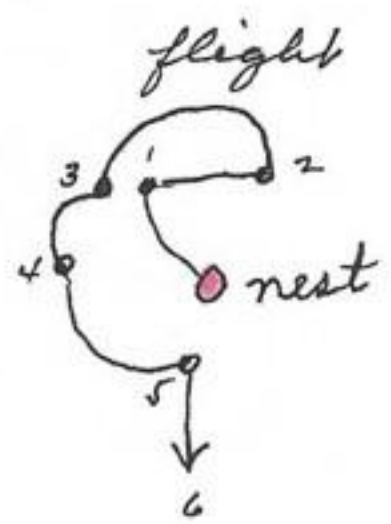
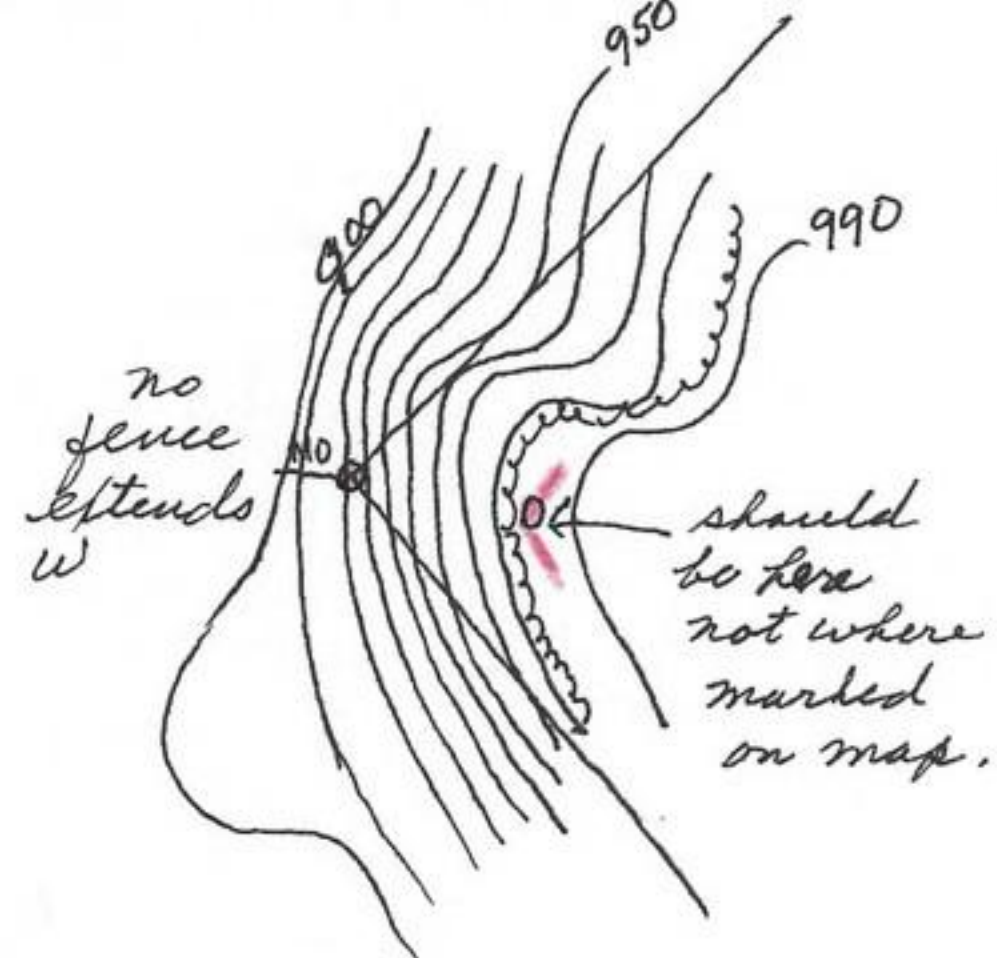
4 male goldfinch and 1 ♀ pine siskin fed at feeder (thistle seeds) at one time. Siskin dominant. Males do not seem to be any more aggressive toward each other than during the winter period. A ♀ goldfinch was definitely more aggressive toward other males than in winter.

S Side Rock Creek Bay, Clinton Reservoir, Douglas Co., Kansas

May 1, 1979

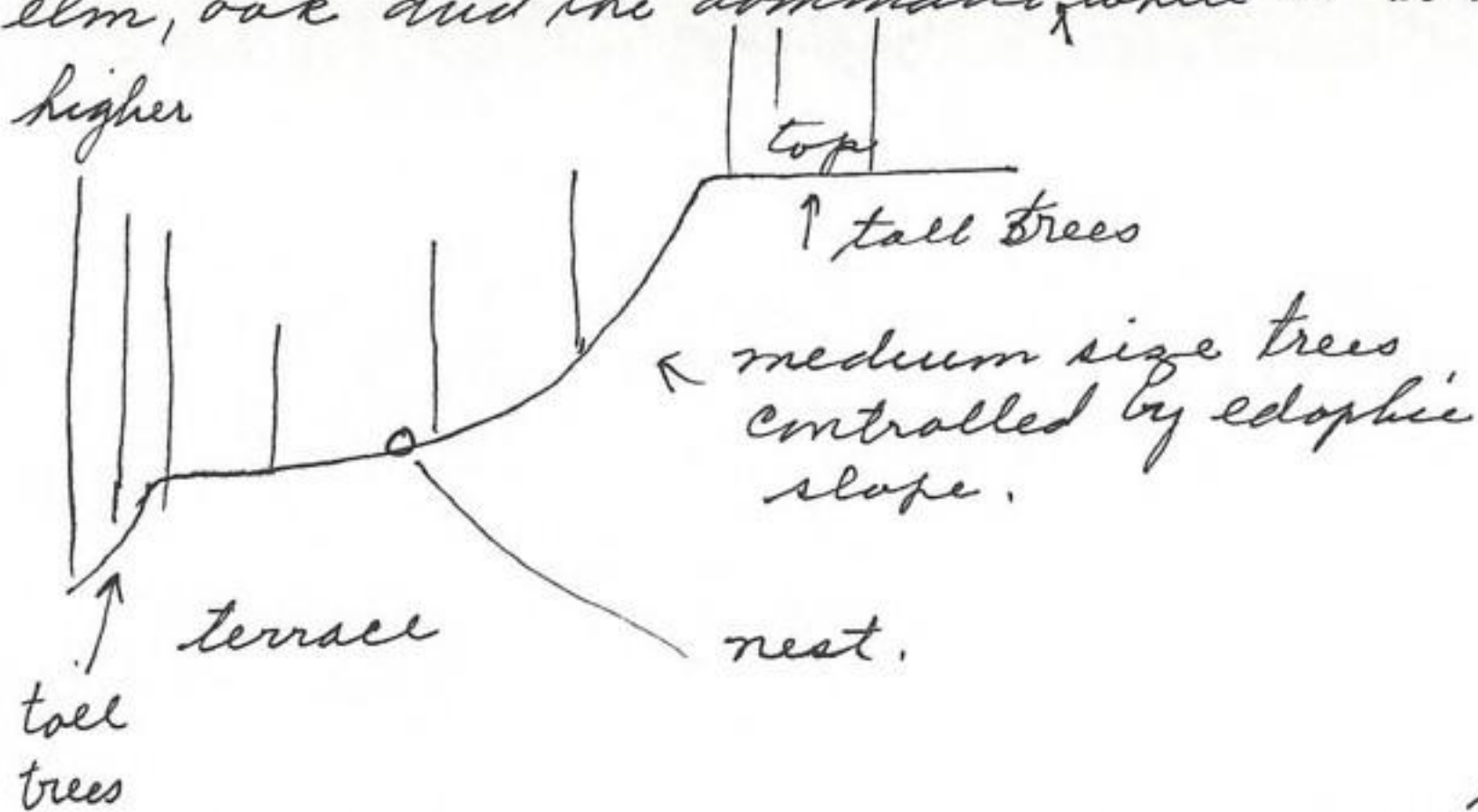
Took census of birds and mammals on first terrace below top (see map April 27, 1979 for itinerary). This area has higher elevation than other areas and there are, in some places, higher terraces but this one examined today is the same level as all the previous ones examined, this season. Left car at 8:19 A.M., Temp. 59°, no wind, sky cloudless. (see map for position of start). Redheaded woodpecker, followed creek bed to E, 1 inch minnows in water which is clear and running 6 gals per sec. myrtle warbler feeding in tops of trees over creek. The white throat

is best field character. The song while feeding and given every 3 to 5 seconds is  Red-headed woodpecker, house wren along edge of creek. Another house wren 100' beyond. 8:57 Convergence of main creek and drainage from S. no water from S. First lizard observed this year. 9:05 now up grade to point where fence separates open field from wooded area and just W of lone tree at point. Point 9:10, house wren. 10:14 corner of Corps Eng. fence. 500' E is several islands of isolated slabs of cliffs on terrace. It would be interesting to know if these slipped down from cliffs above ^{or} are ~~so~~ in situ. Mockingbird. 9:17 a Corps Eng. marker 8-14-18. 1974 9:20 more isolated cliffs on bench. 9:22 Corps fence up over top cliffs. 3 mourning doves sailing in distance. 9:27 drainage, no water. 9:29 minor point, rock islands on bench. 9:31 Corps Eng. fence on top but their map shows it below 950 contour line. Cottontail ran across slope but into forest and rat field, 9:36 Point and old road down slope. Largest elm in roadway 1 inch in diameter. Several others but smaller. Red-headed woodpecker. 9:39 drainage, large capacity but no water. Red-headed woodpecker. 9:44 good red-tail nest but birds not present. 9:45 Point. 9:47 Corps Eng. fence. Red-headed woodpecker. 9:50 drainage with old road bordering to S, largest tree in roadway 3". 9:53 Corp. Eng. fence. 9:55 drainage, no water, 2 bluejays, turkey vulture. 10:00 Corps Eng. fence. E-W. rat on map. Many Bladdernut trees, Staphylea trifolia with soft leaves, green above and grayish below, minutely serrated edges of leaves. Leaves most bark light but some, especially outer branches bright red. ^{Leaves} ~~Fronds~~ 1 to 1 1/2 inches. These bushes dominate understory on slopes. The flower is  greenish. Turkey vulture, 2 bluejays, mourning dove. 10:05 whip-poor-will got up off nest of 2 eggs 10' ahead of me. It flew 20' and sat on log and moved body back and forth of the mannerism of a bird settling on eggs or young. It remained 10 sec. then flew another 20' and repeated the act for 5 sec. thence 30 feet. to ground, then over the brink of ledges on terrace to 10' below, then 30' S, then up to terrace 30' S of nest and then S to undetermined distance. It called when flushed. It never alighted on objects more than 2 feet from the ground. The nest was on the more graded part of terrace and more open directly above than on the brink of the




174
119

terrace or on top. Trees average 30' on terrace and sparse including elm, oak and the dominant ^{bush} while to either side, the trees were much higher



There was no tree or bushes directly above the nest and received full force of sun. Later when leaves are on trees the nest will be partly shaded. Nest on slope of hill half way between flat section and steeper slope

above. Brink of terraces in cliffs. The ground was completely covered with dry oak leaves and very little other ground vegetation. The eggs were on 2 dry oak leaves which had not been compressed by body weight of birds but held curled lines of the dry leaves.

In other words there was not attempt to select a surface or modify the original position of the leaves but the egg were just dropped on the original leaf surface. This bird undoubtably has the least nest building instinct of any bird. Photo ^{and 790501-3} 790501-1 of the eggs of this bird. 790501-2 eggs. The egg with largest blotches of color weighed 6.93^{51} gms, the other 6.50^{93} gms. The first measured 29.0×20.3 mm, the second or heaviest measured 29.1×20.8 mm. In general classifications this area is drier, more protected from wind and more open than the climax forest surrounding it. Left 10:15 2 bluejays have been foraging in general area. 10:17 minor drainage, no water, red-headed woodpecker. 10:22 redtail hawk left nest but did not call. This nest is marked with toilet paper ~~at~~ in branches of above tree and on nest is a piece of cardboard about 8×8 " with a piece of paper attached to cardboard . On bench is a clothes marker SE of tree. At this point the slope of the hillside carries to the 1050 ft contour and there are several terraces above the one I am on. This added height is exceptional along the Rock Creek valley slope. Many Bladdernut trees on slopes and dominate understory brush and small trees. 10:30 dense Bladdernut trees, cardinal. 10:34 deer bed under young trees on bench. At this point is a large shagbarked hickory growing in and at S edge of an island of rocks. a woodrat nest 2' to N of base of tree, 2 bluejays 10:40 another whip-poor-will nest of 1 egg (29.0×20.6) and again no nest but eggs placed at random on dry oak leaves that completely

Cover the ground. This nest is slightly less than 2/10 miles apart. The area was exactly the same as the previous nest (see 10:05 position) in respect to overhead cover, position of nest on grade of slope etc.

flight pattern

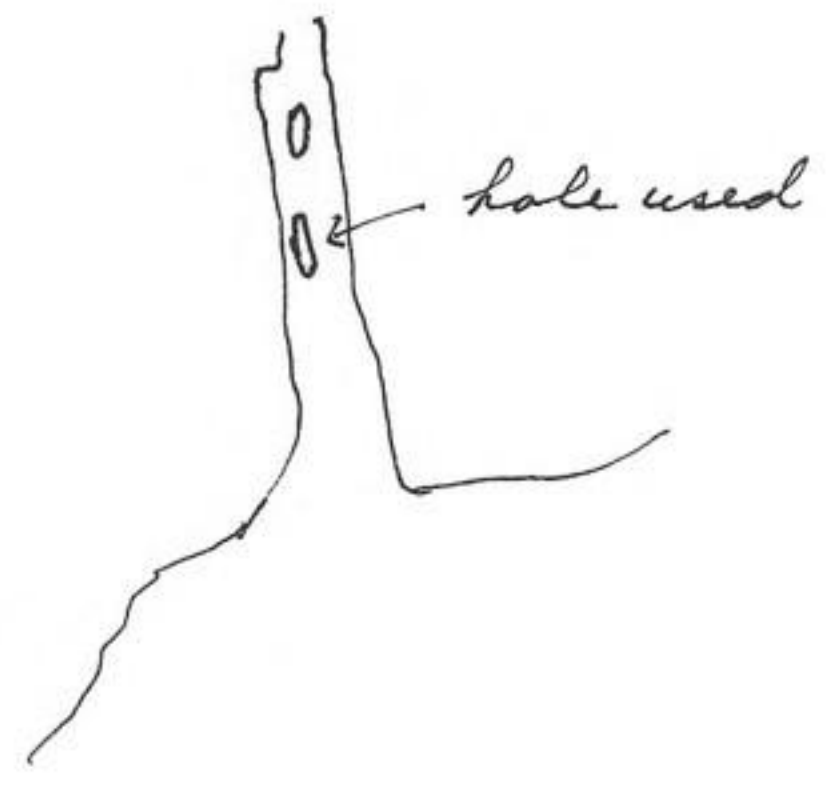


Its diversion method was similar, flushing at 10 feet and flying in a circle of 10 or more feet per stop and again always alighted on the ground or logs.

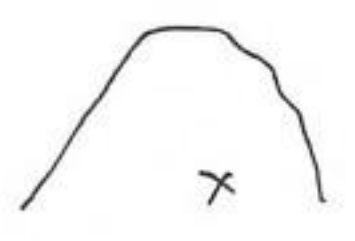
10:50 mourning dove feeding, deer bed on terrace. 10:51 Columbine flower in full blossom. 4% may apples with full opened white flowers. 10:53 Corps Eng corridor cleared tree with fence on N side. Open area planted to grass. Titmouse. 10:57 bur oak 5' high used as antler cleaning by deer (white-tailed), leaves still on tree from last year, tree dead. All other leaves are off last years crop in main forest. May apple plants are wilted from spray. 11:00 Swainson thrush. Slope here are indistinct, many Bladdernut trees on all slopes.

11:07 point, first white & black swallowtail butterfly seen today. 11:12 Crosser, several jack-in-the-pulpit up to 12" high, localized. 11:20 old fence, red-headed woodpecker, red-headed woodpecker. 11:32 first juniper for some time 12' high. 11:35 bee tree in chestnut oak. Approx 20 bee in view at one moment. Redbud trees are either uncommon here or have flowered and are not conspicuous, the few in blossom are parts of the tree. Leaves of this tree, especially small saplings are 1 to 3".

11:38 second juniper 20' high and 4 3/4 inches diameter. 11:40 3 deer antler scrapping trees 1, 1 1/2, 3/8 inches in diameter, all dead. 11:43 3 deer antler rubbing trees 2 ^{are} 3/4 and 1 is 1 inch in diameter and are elm. 20' to E are 2 more 3/4 and 1/2 inches in diameter, 40' beyond 2 are 1 inches each, all rubbing trees dead. 11:46 Point. At this point is hickory tree with two trunks and small scaly bark, leaflets 1 inches long. Seen at point proper (lower edge terrace).



11:50 lunch at top hill slip with Rock Creek directly below. The understory of riparian forests are in green leaves while the Cottonwoods and sycamores are just starting to grow leaves and inflorescence main color and body of tree tops. Cumulus clouds 10% of sky and starting to increase in size and number, still light underneath clouds.



There is an unusual white barked (upper branches) sycamore across the creek on the bank. Left 12:09. 12:10 measured cottonwood tree at base of hill SW from lunch junction as 10' 1" in circumference a marker (Corps Eng.) there is 15' NE SED. 7-R. Beaver cut trees 4 1/2", 3". A sycamore 150' S of the above cottonwood measured 9' 9" circumference, 2 gray-blue gnatcatchers, 18 trees cut or worked on by beaver, the largest 8" in diameter. There are more deer using trails at base of hills than on hills. 2 crows. 12:22 beaver worked on approx 15 trees. All previous sign of beaver and this area at least a year old. 12:26 8 trees worked on by beaver, Rock Cr. now trends west. The old road continues to field and then along E side. Deer have fallowed in this old overgrown road. The area (25') beyond base of hill is wet and fields are not plowed in this area. Measured large cottonwood at base hill at 15' in circumference, raccoon tracks at base of tree. 12:25 point of trees about half way down field. The above cottonwood is approx. 250' N of this point. Turkey vulture. 12:45 Corps Eng fence and trail leads thru forest to edge of river. Swainson thrush. 12:55 beaver activity, 5 trees. 2 bluejays, a good point for a photograph looking S down Rock Cr. Drainage ^{pt.} 15 sec: 2 house wrens 200' apart. Now entering flat area of grove of elm, all (nearly) about same size, no shrubs under trees but good cover of weeds and flowers. 1:05 beginning sidehill trees. There have been 9 black and white swallowtail butterflies since following along base of hill, there are more here than on upper slope of hill on terrace. There are 4 other species that are frequently observed. 1:07 first ripple in creek since the one where I had lunch. The water in shallow areas and on riffles is clear while in deep parts of stream is murky and bluish-green. Trail at this point goes up grade over a ridge. At base fresh coyote diggings around and under dead & decayed logs. It was from this area of coyote diggings that I flushed a chuck-wills-widow. It flew away without concern of the area left. 1:13 creek now leaving hillside. more digging by Coyote. 1:20 creek back. Big sycamore out over creek. Fresh coyote tracks (since yesterday) numerous in area and measured 78 mm. 11:23 drainage just N of high perpendicular bluff; deer track 76 mm. 1:25 top bluff, river now leaves to W. good spot for photo. red-headed woodpecker and titmouse. 1:32 Corps Eng. fence. 11:36 old cottonwood cut years ago and greatest diameter of stump 45", bluejay. 1:40 main drainage that leads to Rock Creek and Corps Eng fence to edge. 1:48 car. Sky now 40% in cumulus clouds. They transform from isolated cloud with light bases to compact + confluent clouds with

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*In grateful appreciation of
thirty-two years of service*

*to the University,
this Certificate is
presented to*

James W. Bee

*Given this day
May 2, 1979 at Lawrence, Kansas*



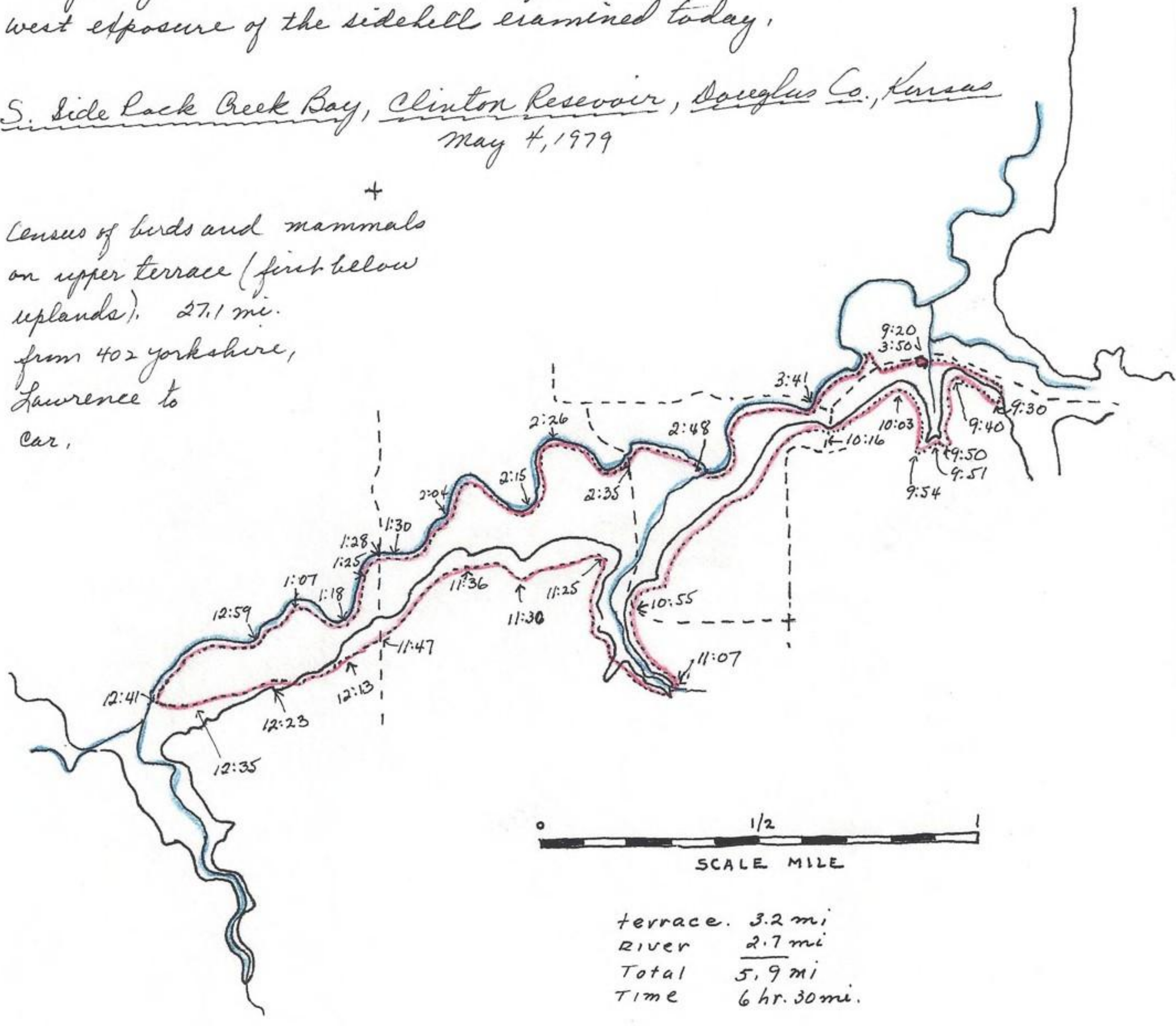
Richard Lykes

Chancellor, The University of Kansas

dark bases. In closed car temp 122°F. In shade 74°F. 1 mi. E on road noted eastern kingbird. From Clinton Reservoir dam noted hills of deciduous forest have nearly lost the winter color of trees and blossomy greenish-yellow (variegated) with about 20% winter color still showing thru. In Lawrence I noticed that the red bud was still in good color but some trees slightly faded. The fact that there were only a few red buds in the area examined today might mean that there are fewer red-buds on the warmer west exposure of the sidehill examined today.

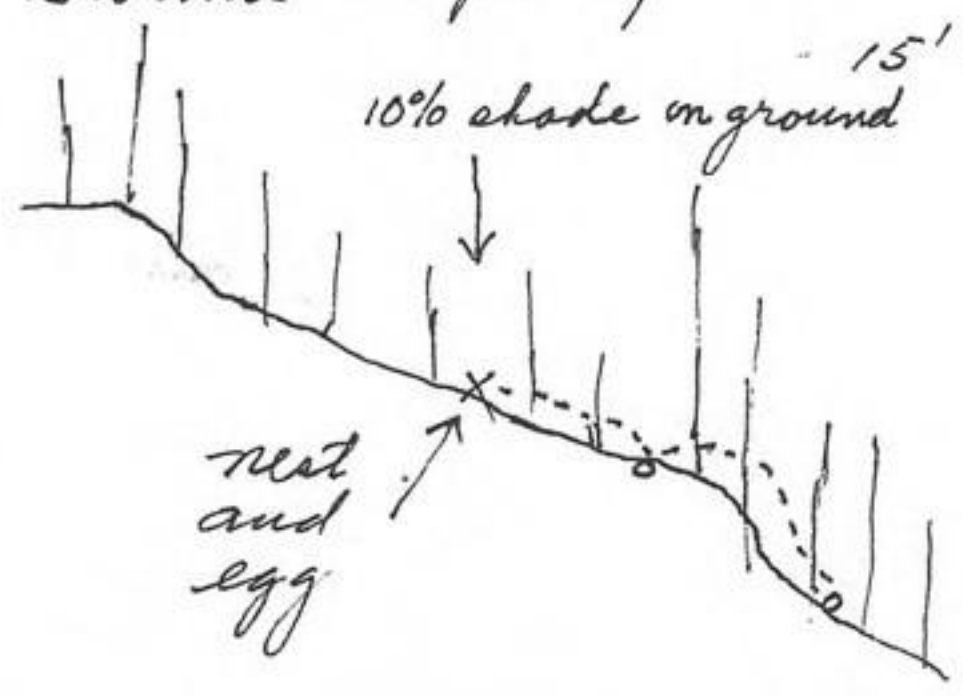
S. Side Lack Creek Bay, Clinton Reservoir, Douglas Co., Kansas
 May 4, 1979

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 Census of birds and mammals on upper terrace (first below uplands), 27.1 mi. from 402 Yorkshire, Lawrence to Car.



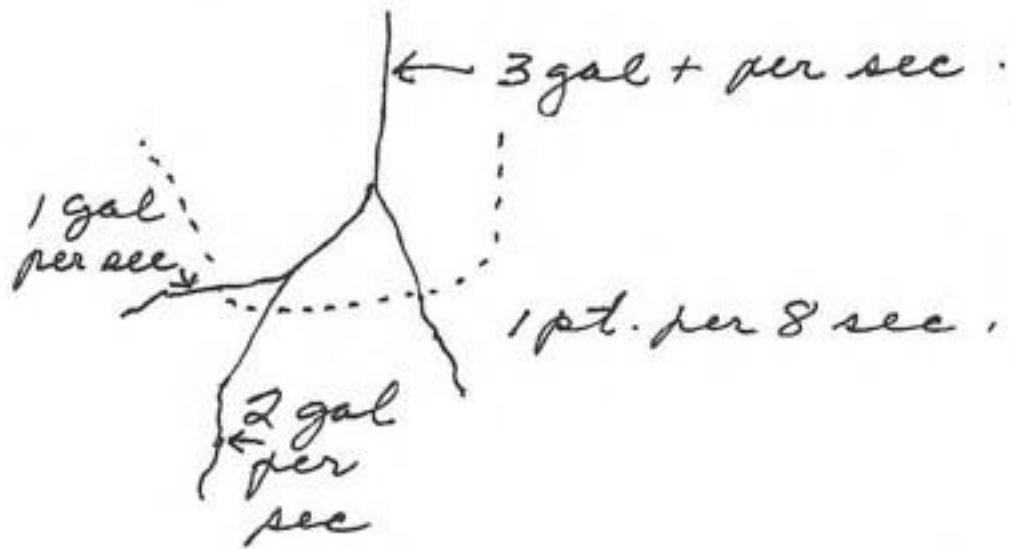
35 minute drive. Temp 49°F. Few high clouds, rain showers predicted this am. clearing this afternoon and temp to be in the 60°F. noted earlier today that on K.U. Campus (first E-W street S of hill, Sunnyside ave) the elm trees that line the N side of street are in nearly full leaf while the sycamores on the south side of the road are just beginning with very small leaves and full inflorescence.

Birds observed enroute are: grackles, redwing, cowbird, bluejay, red-headed woodpecker, turkey vulture, meadowlark, mourning dove, killdeer. There is an increase in numbers of birds in the country from previous trips. Left car (see map this date) at 9:20. Creek 50' E of car. ^{Cottontail} 2 gal per sec. 2 pheasants and nest of young under bridge. Will check this nest at a later date. Mourning dove, cardinal. 9:30 at terrace and begin of census. From east boundary (open clearing beyond, at are many dead trees from spray?). Many Ohio buckeyes moving in. deer bed, virginia creeper leaf 2" long, deer bed. Trees in general just beginning small leaves. 9:40 Point, an old cut stump at point 9" in diameter. 9:47 Chestnut oak with six trunks at base and one dead trunk in center. Woodpecker drumming. 9:45 Corps Eng fence and rock fence, cottontail. Red-headed woodpecker. 9:50 Crossover drainage, unusual amount of silt in drainage bed and on some rocks. 1 pt per 5 sec. no raccoon in silt. 9:51 Point, hairy woodpecker. 9:53 fence. 9:54 drainage 1 gal per 4 sec, less silt than previous. Titmouse. 9:55 fence. Red-headed woodpecker. 9:59 rock fence ends from top, fox squirrel, Titmouse. 10:00 Corps Eng fence. wet areas ^{just} prior to this time 10:03 Point. Old road overgrown with ground vegetation but no trees. 2 turkey vultures. 10:10 red now now single trail. red-headed woodpecker. 10:12 Cottontail, blue-jay. 10:16 county road. Corps Eng marker on W side road A 8-14-18, 1975. Good grove of Bladder Nut trees to W. 10:21 old road, yellow swallowtail (black and white swallowtail) young trees 1" to 4" in road just beyond drainage, no water. 10:23 drainage, standing water, sapling shagbark hickory 5" leaves. 10:30 cross drainage. 1 pt 8 sec. Myrtle warbler. 10:35 fence. one single mayapple plant with 80° undersurface of leaf covered with a bright orange fungus. no other in patch of 80 plants. 10:36 whip-poor-will nest of 1 egg on small oak leaves at base of a small leafless tree, ^{8' high} used by deer to rub antlers. Trees relatively small in immediate area but large above on upland and below at edge of this terrace, creating a partial forest or terrace opening of smaller trees including chestnut oak, Sycamore, elm and Bladder Nut. Ground completely covered with dead leaves. It left at 15' and flew




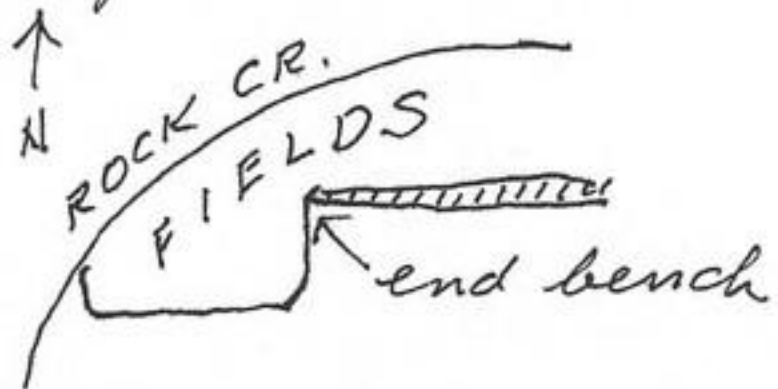
15' and alighted on ground, then 35' over brink of terrace where it alighted on ground and remained there while I was in the area. This terrace is on a north exposure. 10:42 double fence. Bumblebee on inflorescence of Ohio buckeye.

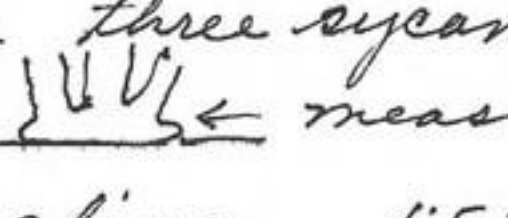
mourning dove, 10:47 rock fence turns 90° on ^{upper} top of bench. Red-headed woodpecker, 10:49 broad point. Tops of trees lean to the NW. Bluejay. 10:50 drainage crossover 1 gal per 2 sec, lead-water drainage being cleared. 10:55 Road 11:00 fence, drainage cleared beyond and covered with lawnlike grasses. 2 titmouse, fox squirrel. Black walnut trees saved. 11:07 Crossover



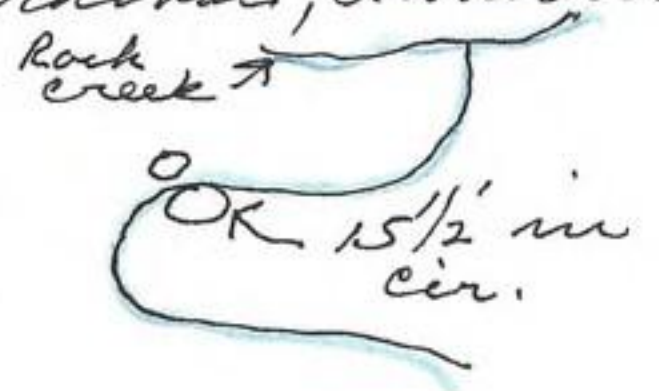
11:15 Corps Eng fence and now entering forest again, red-headed woodpecker, red-headed woodpecker. 11:16 drainage, damp 11:18 a chestnut oak is growing out of rocks with base growing over rocks. This tree leans to the W, cardinal. Trees on this

side of drainage lean to the E (except the oak above). Red-headed woodpecker. 11:22 pond below. red-headed woodpecker. 11:25 paint and rock fence. 11:27 field road up to repland. The field below now comes to base of terrace ^{and beyond} 11:30 drainage. 11:35 fence, clear field below, 11:36 drainage with all the bulldozed trees in gully. These are being burned instead of being salvaged for lumber and firewood. This lack of conservation is in keeping with other harsh management of this cattle ranch. Timber is being replaced for grazing and dollarwise this is good but ecologicalwise is undesirable. 11:39 Coyote run from opening and crossed open clearing to SW, pausing at top of hill. This animal was gray with short hair. Noted 3 separate red-headed woodpeckers across this field. 11:45 extensive area of damp soils, 2 crows. 11:47 road (county), lunch in forest W side. deer track 88 mm. Left 12:07 drainage at road 1 pt per 2 sec, raccoon tracks, red bud in forests faded and 11:10 original flowers. 12:23 drainage between field 1 qt per 2 sec. no deer crossing field as noted in mud along S side of field. 2 red-headed woodpeckers only birds observed in the fields, crow calling. 2 cowbirds ♂ + ♀. wet all along S side of field and where it accumulates and flows N across the field is 1 qt per 3 sec. 12:27 bench above. Tree with pods  before leaves, mourning dove, red-headed woodpeckers, hackberry tree 5'7" circumference leaves 1 to 1 1/2 inches. 12:35 bench dips W and terminates, field now where bench would have continued. 12:38 N-S rock fence along old orange fence row in forest, orange diameter orange 2 feet, mourning dove, bluejay. 12:41 Rock Creek, clear in shallow, murky in deeper water.

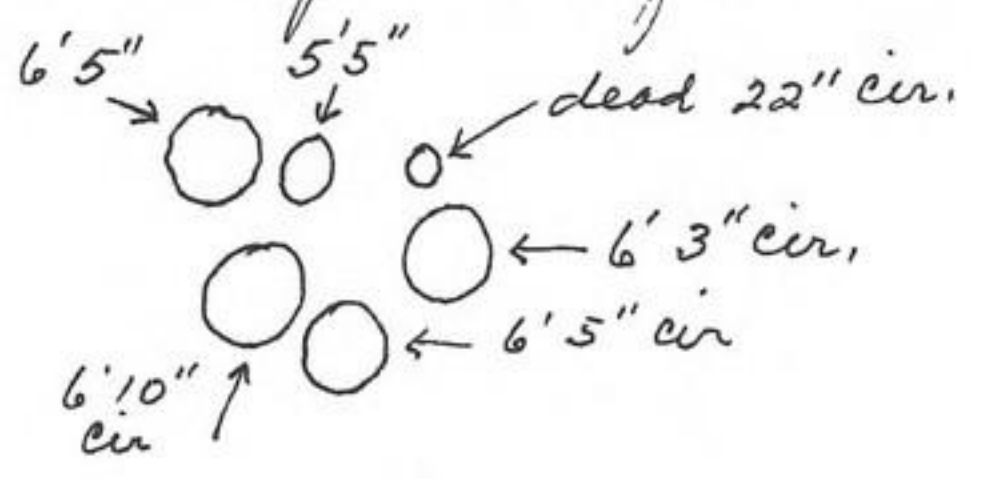


approx 1/10 mi. S is good cascades of creek that enters Rock Creek from the west, bluejay. moles have been observed along most of the route and are common in forest along bank, 2 crows, bluejay, 2 yellow warblers. no deer or raccoon tracks along river. 12:50 first riffle since cascades mentioned above, 3 bluewing teal left creek. 1:52 series riffles to bend and big tree. Stinging nettle 3 feet high. ^{dead.} Cottonwood along river 3'4' diameter, upper branches gone. mourning dove. 12:57 drainage from corn field near green field. 12:59 begin green field & creek to N, high soil bank SE side meander turn, Crow. 1:05 dead cottonwood 12' in cir., house wren. 1:07 N meander, 35' high dirt bank, Hackberry 12' cir. ^{OF} 35' high sycamore. Frogs average 1 per 200', in loves groups of 4-6. 1:08 hillside leading to N, bluejay, red-headed woodpecker. 1:16 drainage just before river to N. titmouse. 1:18 contact with hillside and drainage 1 ft per 3 sec. secondary drainage to E dry, cardinal, deer trails concentrated where creek parallels steep bank, usually up over top of bank. 1:21 highest bank on creek system, some slate collected at bottom of slope. 1:25 field. 1:28 Co. bridge. 1:30 drainage, no water, 2 black & white swallowtail butterflies (zebra), cardinal, 3 song sparrows and 2 Lincoln sparrows in brush pile area, red-headed woodpecker. 1:28 Corps Eng marker A. 7.14-18 E, 1975, cardinal. 1:40 Cottonwood 13'8" cir. (dead), several large oaks and sycamore in field that had been cleared of all smaller trees and now grown to grass, skunk odor, 1:43 drainage from E end of above field (which is a creek bottom), red-headed woodpecker. Sycamore just beyond ^(100ft) 10'3" cir. Corps Eng fence just beyond trends S up hill, red-headed woodpecker. 1:50 bluejay. 1:51 G.B. Heron. 1:52 three sycamore trees from one ^{continuous} base 21 feet circumference.  measurement of base, largest of the three trunks 11' cir., all alive. 1:53 solitary sandpiper left log in creek, flew 50' with a call, alighted on limb of another tree in the water. ^{then in shrubs on bank.} 1:58 white-breasted nuthatch, house wren, crow. There are many large trees on N side of creek on hill, S of creek flat and many young trees mainly elms, cardinal, red-headed woodpecker. 2:04 drainage, no water. Beginning of hill as river goes against bank and turns north. This is another very high bank and eroding ridge, soils gray below and reddish above, redtail called, bluejay. fence at top embankment, deer tracks concentrate as they traverse top bank, turkey vulture. water in Rock Creek a bathtub in 2 seconds. 2:15 drainage, no water, field beyond. 2 red-headed woodpeckers and a ♂ + ♀ Cowbird flew across open cultivated field.

post oak? has bright red leaves 1 inch long. 2:22 beaver (2 cut trees). I am surprised that there is not more evidence of beaver activity. With water encroaching on the forests of the new reservoir there should be new food resources. These trees should be used by beaver until a successional willow stage is attained rather than control of beaver to some a forest association that is made made. Beaver will play havoc with the large trees of all species for several years to come, but eventually ~~as~~ a coaction with produce a natural beaver tree community. Baltimore oriole ♂, calling, 2:26 large creek pool opposite high reddish cliffs, highest yet observed. red-headed woodpecker. 2:30 power line crosses creek, 8 red-winged blackbirds, 6 grackles, 2 cowbirds in one group associated with a old channel pond. 5 bobwhite in one group, house wren. 2:35 County road, bluejay. 2:36 road crosses thru shallow road in creek but passible, Baltimore oriole, 2 bluejay, 1 bob-white, red-headed woodpecker. 2:40 along a E-W stretch (straight) of Rock Creek with an excellent and continuous exposure of shale along N side of creek; at least for 1/10 mi. bluejay, red-headed woodpecker, myrtle warbler, titmouse, turtle dropped off log into water, cardinal, Lincoln sparrow. 2:48 major drainage with two large sycamores on each side of bank. Water 1 gal per sec. will return later and take photo of these trees. In an isolated pond in creek channel 12 frogs left water and edge of pond and jumped into weeds bordering pond rather than escape into the pond, cardinal, red-headed woodpecker, house wren.

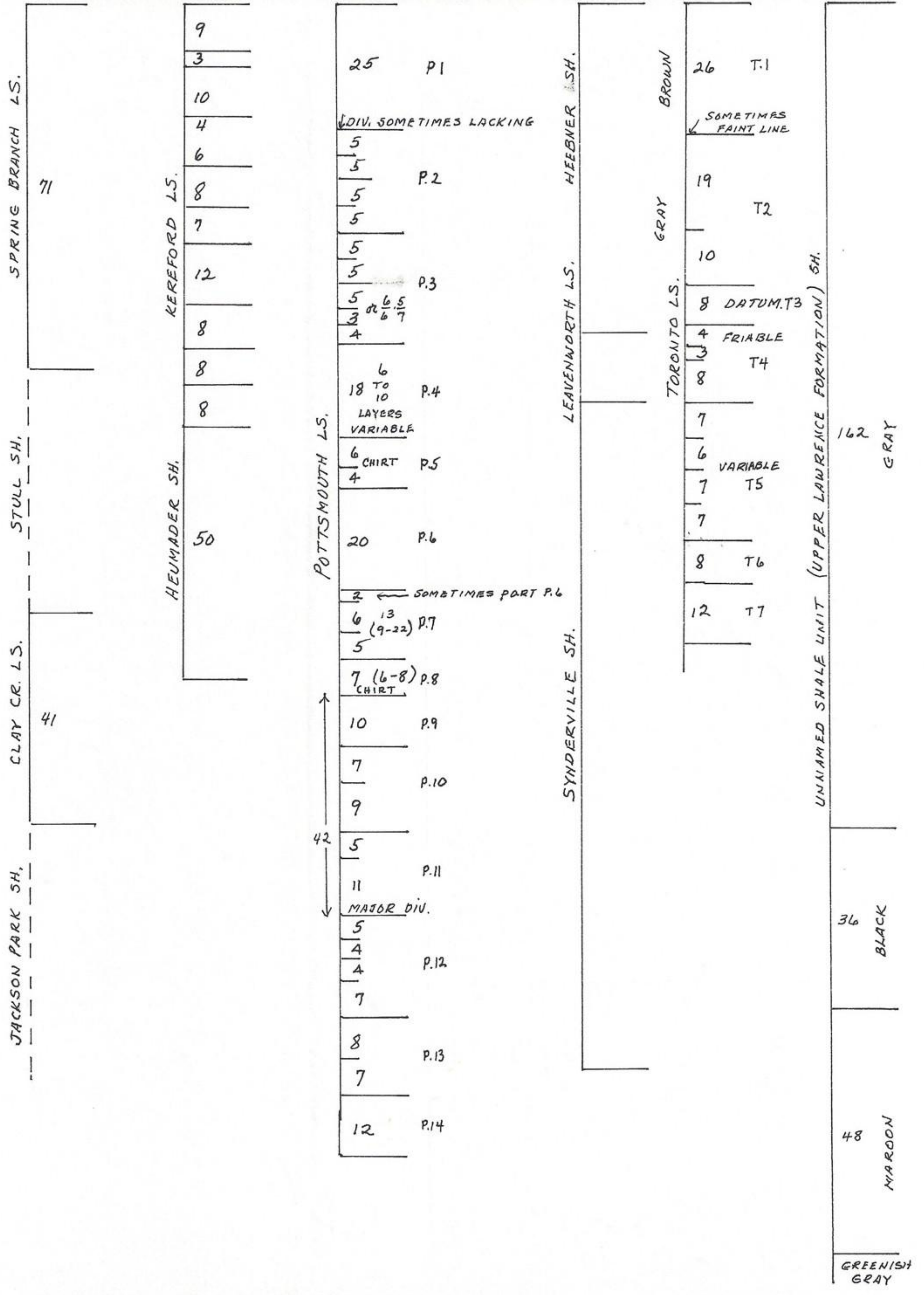


3:07 5 sycamore from common origin. will return and take plots. A large morel mushroom was among these trees. Beyond noted 3 holes in ground 8" wide, another 10" wide and could be badger or coyote. 3:25 another hole. 3:29 2 phoebes at abutement of bridge, no nest on S structure. 3:30 where road crosses creek, elevated but covered in flood waters, white-throated sparrow, red-headed woodpecker. 3:40 creek now trends N, sycamore 37" diameter, leaving edge creek and follow-in road E. 3:41 old house on S side now raised, red-headed woodpecker. This house should have been preserved. 3:42 old shed



STRATIGRAPHY FROM SPRING BRANCH LIMESTONE MEMBER OF LECOMPTON LIMESTONE FORMATION TO THE UNNAMED SHALE MEMBER OF UPPER LAWRENCE SHALE FORMATION, CLINTON RESEVOIR, DOUGLAS Co., KANSAS (ROCK CR. AND WAKARUSA DRAINAGES), COUNTY RD 460.

SCALE
1MM = 1INCH



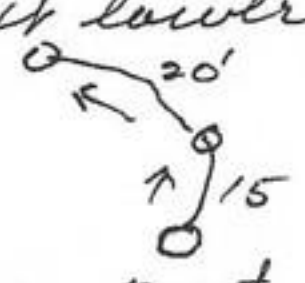
Localities are:

- n side road cut E of Wakarusa bridge; Spring Branch limestone, Still shale, Clay Cr limestone, Jackson Park shale.
- S side road cut E of Wakarusa bridge; Hereford limestone, Neumader shale.
- 1 mile E Rock Creek bridge, road cut S side; upper part of Pottsmouth limestone
- 1 mile E Rock Creek bridge, road cut n side; lower part of Pottsmouth limestone
- n side road cut E Wakarusa bridge; Seebner shale, Leavenworth limestone, Synderville shale.
- S side road cut 2/10 mi E Rock Creek bridge; Toronto limestone.
- n side road cut 2/10 mi. E Rock Creek bridge; unnamed shale unit (upper Lawrence formation).

Photographs:

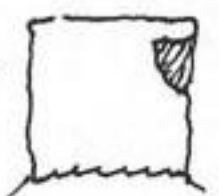
- 7 0507-1 Lower? section of Pottsmouth, n side road cut 1 mi E Rock Creek bridge.
- 7 0507-2 Upper section of Pottsmouth, S side road cut 1 mi. E Rock Creek bridge.
- 7 0507-3 ^{Sequence of Unnamed shale unit (upper Lawrence SH formation), Toronto SS, Seebner SH, Leavenworth LS, Synderville SH, 1 mi n side road cut Pottsmouth LS, or} east of Wakarusa bridge.
- 7 0507-4 n side road cut E Wakarusa bridge. Sequence of Spring Branch LS, Still shale, Clay Creek LS, Jackson Park SH, Hereford LS, Neumader SH, Pottsmouth LS, 1 mi


while in area returned to whip-poor-will nest (see notes may 4, 1979, time interval 10:36) which on may 4 had one egg in nest. Photo 790507-6 of this nest with now 2 eggs. The bird left at 15 feet and flew 20' and alighted on ground at edge of terrace to n and when approached flew 20' and alighted on ^{upper} slope of nest lower terrace where it remained while I was in the area.



The first egg noted may 4 had traces of blood on yolk and measured 21.2 x 28.2 mm, 6.85 gm. nest. Set no 790707-7. The second egg was fresh and measured 20.6 x 29.6 mm, 6.85 gm.

Photo 790507-8 of 2 large sycamores at edge of drainage lateral to Rock Creek (see notes of may 4, 1979 at time interval 2:48 for location). Photo from W shooting E, down drainage. While here an G.H. owl called several times to south, also gray squirrel went into hole in tree. 790507-9 5 trunks from base sycamore

At bridge (see may 4, 1979, where car is parked) examined nest of eastern phoebe attached to wall at top  which held 5

young (3 more than the nest would comfortably hold!). One of the young measured 114 total length, tail 26, wing 55, tarsus 20, wing spread 208, side of mouth , all in millimeters, weight 18.5gms.

A striped ^{skunk} road kill in road noted a week ago and fed on by 2 turkey vultures yesterday was just the skin only today.

Have noticed that the hillside deciduous forests along the Rock Creek area when observed at a distance are now losing the winter effect of dead trees and are now overall green, yellowish green and reddish brown from inflorescence. The general appearance is a subdued fall color of variegated colors rather than the pure dark green of summer color.





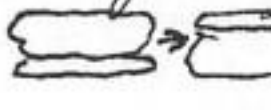
402 Yorkshire Dr., Lawrence, Douglas Co., Kansas

May 8, 1979

This is the first year that the grackles have used the area as permanent individual, feeding and nesting. It is probably because the trees in this relatively new development are large enough to support them. A pair of catbirds have been conspicuous in the area for the last week and 2 days ago favored a bush E of the house. Today they are carrying nesting material into the bush.

Overflow Outlet, N Clinton Reservoir Dam, Douglas Co., Kansas

May 11, 1979

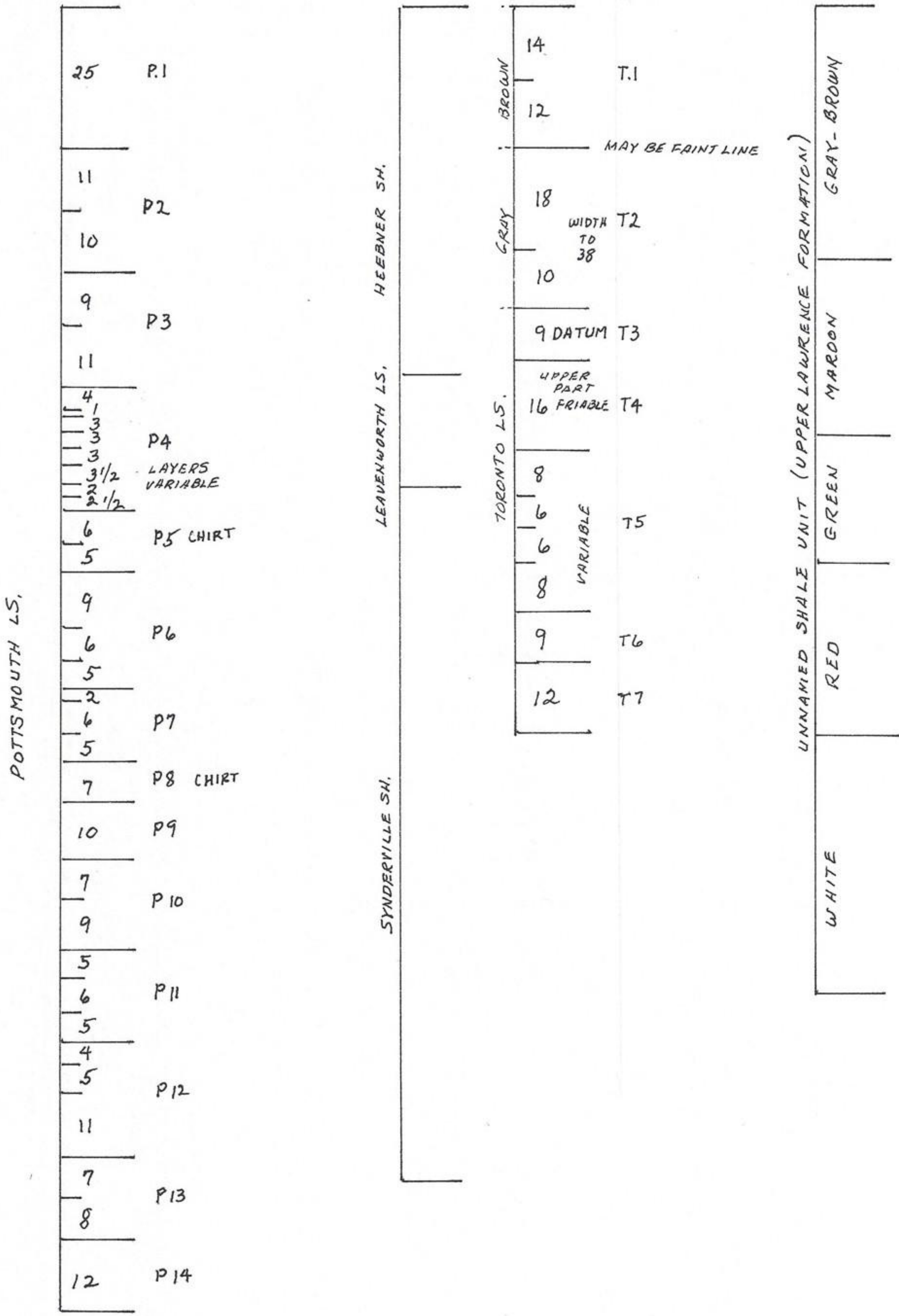
Recorded stratigraphy of W wall of overflow channel N of dam. (see next page). At S end of cut is an earth slip of graded slope of 13' displacement at base of red shale. On top of the Pottsmouth Limestone member is a red shale of the Huemader shale member and extent not easily measureable. The Pottsmouth member has many small solution channels and fracture caves ^{with} reddish soil deposits. It would be interesting to examine the soil of these pockets and determine if there are Pleistocene fauna remnants of mammals. In general view of the Pottsmouth Limestone member there are 3 zones of different intensities of brown from a light brown to the 20' limestone cliff with wavy base, medium color of the 20' cliff and darker brown above the 20' cliff. Some areas that are fragmentary and eroded are solid layers of limestone in other exposures.  Some layers of solid limestone cliffs are regular in width  while other vary in width. Chert layers vary in number of layers within the same unit    Thickness of some friable layers

125,
132

790511-132

STRATIGRAPHY FROM HUENHNER SHALE OF LECOMPTON LIMESTONE FORMATION TO UNNAMED SHALE UNIT OF UPPER LAWRENCE SHALE FORMATION, NORTH SIDE OVERFLOW, E DAM, CLINTON RESEVOIR, DOUGLAS CO., KANSAS,

SCALE
1MM = 1 INCH



vary according to layer morphology and tectonic adjustment.

W side of cut has better face than E side which is more weathered and fragmentary.

Photo 790511-1 of unweathered face (Toronto), marker in center.

Photo 790511-2 of lower half of Toronto, marker at top

Photo 790511-3 top Pottersmouth to N along curvature of cut showing all slopes. Neumader above, Synderville below Pottersmouth, then Leavenworth not visible except extreme right, Heebner, Toronto and lowest shales are unnamed upper Lawrence Formation.

Photo 790511-4 Top-half Pottersmouth limestone, Pl. base of photo.

Photo 790511-5 Lower Toronto below datum.

Photo 790511-6 between chert layers of Pottersmouth L.S.

Measured honey locust (*Gleditsia tricantata*) at east end exposure on top W side as 89" circumference, only few large spines on tree. Deer travel (E side, on top, base and on Toronto level) one imprint 92 mm, others smaller. 2 lark sparrows demonstrating before me with outspread tail feathers making white marks prominent.

7/10 mi. W Baldwin Creek, Lake View Road, Douglas Co., Kansas
May 11, 1979

Photo 790511-7 of Leavenworth limestone and black Heebner shale above. most Leavenworth limestone is obscured with shale talus but this one exceptional.

Lake View, Douglas Co., Kansas
May 11, 1979

measured cottonwood tree on S side lake along road E of summer homes as 19'4" circumference or 6.1 inches in diameter.

402 yorkshire Dr., Lawrence, Kansas
May 13, 1979

Photos 790513-1 to 790513-6 of eggs painted by Annette C. Bee, end of roll; another egg to go to complete set. (sent set of prints to Annette)
[see May 15, 1979 inserted after May 21, 1979]

Petersen Field Research area, Lawrence, Douglas Co., Kansas
May 17, 1979

check Grackle roost, Osage fence and Petersen Creek from Petersen Road to where creek turns N (see Feb. 18, 1979 for description of above areas, which are part of the overall research area.

Grackle Roost produced one robin. Osage Fence the following:

adult neotoma and 4 young (young 206 mm total length, young scattered from disrupted nest, adult ran to tree and showed no concern for young).

black-capped chickadee. 2 families of 2 adults and 5 young each.

bluejay. 1

robin. 2

brown thrasher. 2

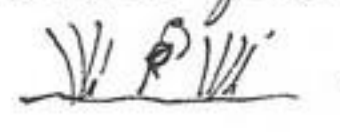
vireo or warbler?

grackles, 2

raccoon tracks

deer, tracks measured 80, 84, 70.

coyote track 80 mm.

nest of brown thrasher 1/4 up Osage Fence area 15' high in ^{ash} elm tree. overall depth of nest 100 mm with some plastic & paper in basal part. It appeared as if built in old robin nest and lined with rootlets and built out beyond. Width cup 100 mm, depth cup 52 mm, wall 22 mm. The ash tree was in center of wide fence row 36' wide with osage-orange trees on outer area . The five eggs of this brown thrasher, 790517-1 measured:

29.0 x 20.5, 6.4 gms all eggs fresh.

29.0 x 20.6, 6.6 gms

28.5 x 20.5, 6.2 gms

29.8 x 20.4, 6.5 gms

28.9 x 20.1, 6.1 gms

At north end of this fence low is an old osage orange that measured 52" in diameter. Most osage-orange trees are large in this fence row. On return picked up old water pump from this fence low near S end. This area had at one time been a pioneer residence as old car fenders, tractor wheels and wagons & shed were in the area (8 years ago but now mostly gone).

Peterson Creek from Peterson Road ^{to} 1/10 mi. N., Lawrence, Douglas Co., Kansas.

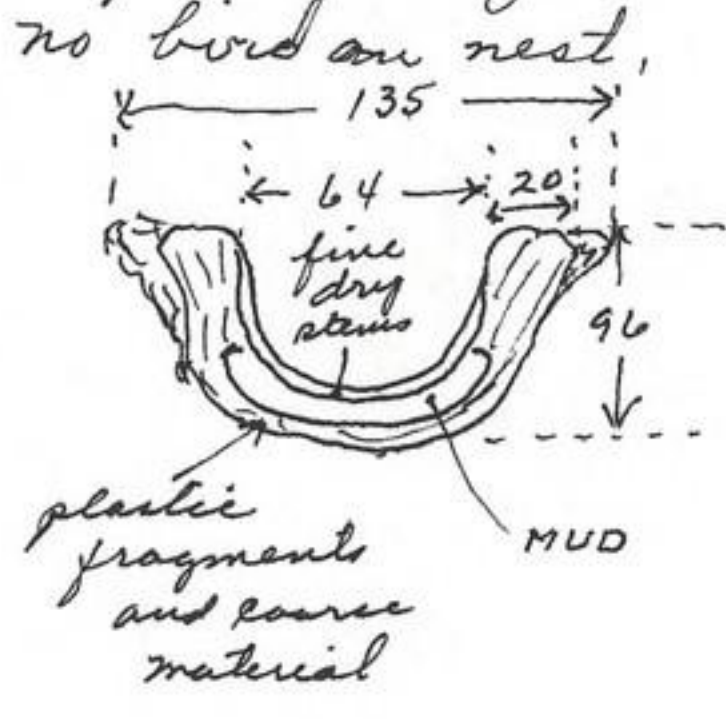
May 18, 1979

checked this area for nesting grackles as I have noticed a decided increase at 402 Yorkshire Dr. They nest along creek in elm and feed and use pond at home. 6 nests in this 1/10 mi area of mainly young elm trees. nest number 790518-1 held 4 eggs. It was placed 12' high in a young elm tree that was one tree in a group of elm trees that lined Peterson Creek the full 1/10 mi. Osage-orange and

and other small trees present. Cup 50 mm wide and lined with 9 mm of fine dry grasses that merged into coarser outer part of nest. wall 30 mm, depth ^{of cup} ~~nest~~ 63 mm. The foundation of lining was mud with fibers mixed in, depth of nest, overall 102 mm, basal part first with plastic of the kind along creek and coarser sticks. As I approached this nest a fox squirrel was on the top of a tree 15' from the nest. It was being physically attacked by 10 other grackles. The eggs of this nest measured: also robin & mourning dove nest in area.

- no. 790518-1
- 29.8 x 21.2, 6.75 gms
 - 26.5 x 19.9, 5.15 gms (runt egg)
 - 30.5 x 21.2, 6.95 gms
 - 28.8 x 21.3, 6.45 gms.
- all eggs with skeletal elements.

A second nest of the Common grackle was placed in an elm tree 12 feet above ground and 10' from top on a lateral limb



no bird on nest, measurements of the five eggs in this nest 790518-2 are:

- 29.0 mm x 20.8 mm, 6.47 gms
 - 29.6 mm x 20.3 mm, 6.5 "
 - 28.8 mm x 20.5 mm, 6.4 "
 - 28.4 mm x 20.4 mm, 6.25 "
 - 30.0 mm x 20.5 mm, 6.55 "
- all fresh.

Peterson - Deerfield ^{Kansas} Drainage Research Area, Lawrence, Douglas Co., Kansas.

May 21, 1979

Made rounds of research area (see Feb. 18, 1979 for designation of route). Peterson Road: Robin nest with 4 young 140 mm total length of one, in mulberry 9' from ground. I touched the tail of the ♀ twice before it left the nest, was aggressive at nest, 20 seconds ♂ appeared. Cardinals come to investigate. Cottontail, robin. Mourning dove nest of 2 eggs (790521-1) in juniper, 5 feet from ground. The eggs measured: 30.5 x 22.6 7.3 gms, 29.6 x 22.1 6.9 gms. Catbird.

Peterson Creek: yellow warbler, catbird, deer track of last night 90 mm length. robin.

Grackle Roost: Bell's vireo, chimney swift flew overhead, robin.

Osage Fence: Great-Crested flycatcher, mourning dove, yellow warbler, brown thrasher, robin, several neotoma nests, deer tracks.

Grass meadow: robin nest of 3 young, one measured 125 mm total length.

2 meadowlarks.

Plowed Field Swale: 2 dead mourning dove, 2 grackles flew by.

Pond Swale: robin, cardinal.

E. Forest Edge: 3 grackles, yellow-shafted flicker, crammed nest of loggerhead shrike on fence line with 4 young, one measured 110 mm total length, in rose-bush 3 1/2 feet from ground. The young reacted with open mouth when hand neared nest and repeatedly so as if they did not recognize the difference between the adult shrike and my hand. A rose bush slump 100' beyond had two old nest of previous years, one superimposed six inches above the lower one.

Brush Way: Indigo bunting, bluejay and goldfinch.

North Forest: 2 titmice, bluejay, cardinal, young great horned owl (size adult but ears 1/2 size of adult). Water in creek 1 gal. per 2 sec. This year one can walk up and down creek on solid base of gravel and sand, previous years has been filled with mud for most of the way, Raccoon trucks in creek also skunk.

nw Forest: Titmouse, young great horned owl, flew 200' in increments of 50' stops, bluejay.

main Forest: vireo, sp?, robin, titmouse.

Kassed Creek: 2 grackles, cardinal, hackberry 9' 10" cir., grackle, titmouse, robin. At the point N of silo where creek turns W observed an unusual behaviorism of the pine vole, Microtus pinetorum. While momentarily pausing on a high erosional bank (approx. 8 feet high) at a bend of the creek, observed a pine vole, Microtus pinetorum at the edge of the water. The creek here is bordered by 3 foot high banks except at the turn where this lower erosional level gives way to the higher level on the east side. The creek flows through deciduous forests with considerable ground cover which at this point grows to the water edge. A dead cottonwood tree lies broken across the erosional terraces down to the edge of the water. A short riffle flows into a deeper pool at the bend. Creek flows 1 gal per 3 sec. The vole utilized 8 ^{linear} feet of the creek bed for five minutes. The most unusual action was circular movement (counterclockwise) whether swimming in deep water or ^{on} the riffles or on the sandbar or along the edge of the creek but most pronounced in deep water. To gain a particular spot it would direct itself by a series of circles tending toward the desired destination. Movement along the edge of the creek and slope of bank was under better directional control. It is an excellent swimmer and the ~~wool~~ fur is water repellent.

The vole finally left the water and worked its way up thru the dead log that rested on the creek bank. Activity of this mammal took place in the only sunny spot along the creek, at least for 200' each direction up or down the creek. (see Feb. 10, 1979 for similar circular pattern of movement on surface of snow approx. 700 feet N of the one observed today.)

Continued along creek and observed 2 grackles, Baltimore Oriole and ♀ rose-breasted grosbeak.

Silo Ridge: fox squirrel.

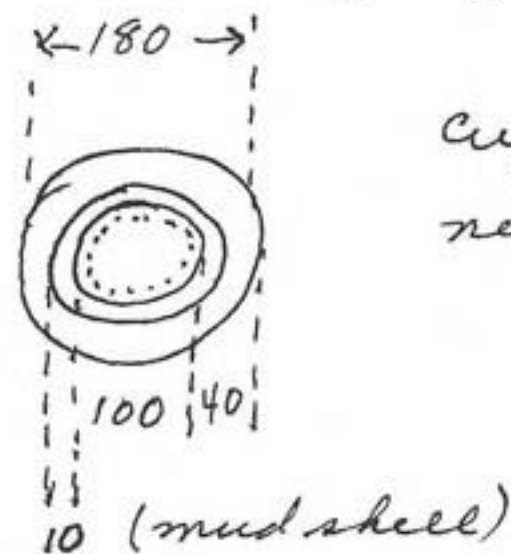
Right of way: no birds.

Deerfield Cr.: titmouse, grackle, downy woodpecker, grackle.

First Forest (and Forest Road): titmouse, 2 grackles, 2 grackles, yellow-warbler, mourning dove, great crested flycatcher, 2 black-capped chickadees, robin.

From end of Forest Road checked area to S to ponds which are about 1/10 mi. N of Peterson Road. nest of the common grackle 790521-2 of 5 eggs. nest in black willow at edge of pond. nest 18' from ground in 25' tree.

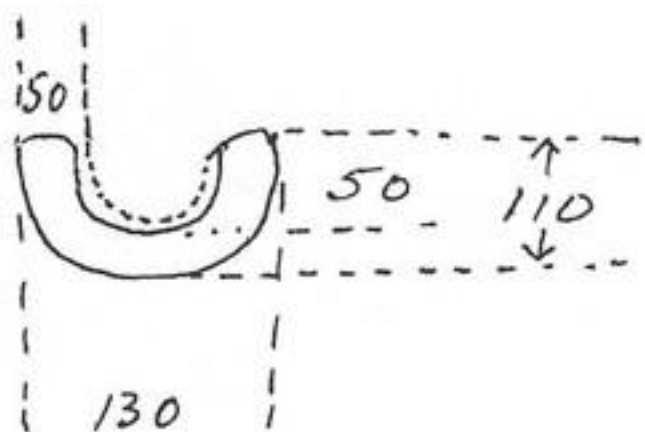
Eggs: (mm)			
28.6 x 22.0	7.0 gm		lined with
28.4 x 21.2	6.5 "		fine stems
29.8 x 21.3	6.1 "		and 10 mm
26.0 x 21.1	6.1 "		thick, resting
28.5 x 21.4	6.7 "		against mud cup.



cup 82 mm deep, nest 120 depth

Returned to regular route.

Field Edge Sewer: Robin nest 790521-3 4 feet from ground in small 7 foot elm tree partially isolated.



2 barn swallows feed in sewer, meadowlark.

Eggs. (mm)		
28.7 x 19.4	5.55 gm	
26.4 x 19.2	5.05 "	
27.2 x 19.4	5.30 "	
27.2 x 18.9	5.10 "	

Pond Fence Row: great-crested flycatcher, robin, 2 grackles, cardinal.

Peterson Field: 2 barn swallows, 2 grackles flew E., meadowlark. Deer tracks followed road across field toward Peterson Road and at that point turned E across Peterson Creek and into plowed field. Deer tracks were observed throughout the census area and seem to be increasing in numbers from previous trips. This year seems to be the year of the common grackle.

Lawrence, Stull, Topeka, Clinton Reservoir, Douglas, Shawnee Cos., Kansas

May 15, 1979 (inserted after May 21, 1979)

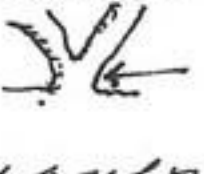
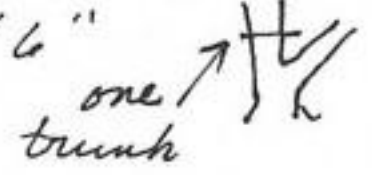
To Topeka and return via S side Clinton Reservoir (only to intersection of the extension of Road W of Peterson area). Will keep complete census of birds along route. 281.7 Kasold and highway 40 at Lawrence, eastern skies clear, western skies dark with nimbus clouds. Temp. 75°F. grackle, starling, grackle, grackle, grackle, barn swallow, crow, cliff swallow, 2 grackles, 2 barn swallows, redwing, barn swallows.

86.5 Stull road turnoff. Elms are green and oaks are yellowish green. 2 mourning doves, barn swallow, 2 meadowlarks. Rain clouds to west. 291.1 Stull, redwing. Large plane from take-off from Forbes airfield moving E toward Clinton Lake in route east. This plane will clear the lake by only a few hundred feet and is objectionable to wildlife, especially water-fowl. The route should be directed around lake to south. There should be a general policy to direct plane around reservoir areas. Redwing.

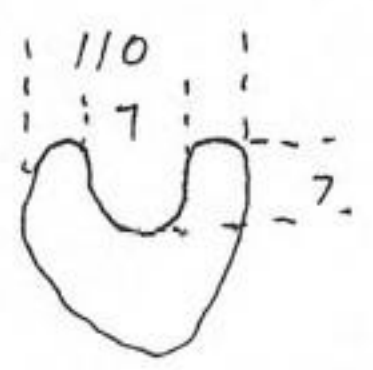
94.4 Shawnee Co. line. Temp. now 62°F. Redwing. 2 grackles, 3 barn swallows, grackle, grackle, 97.4 Shawnee Height Cross roads. 3 redwing blackbirds, 2 grackles. 01.2 Shawnee Lake and end of census on trip over to Topeka. After taking care of business in Topeka returned to Lawrence via the south road around the Clinton reservoir. 30.4 Stull and beginning of census, now south. Trace rain on windshield. 30.8 two turkey vultures feeding on road kill 5 feet from edge of pavement. mourning doves, killdeer in field. 32.5 High mound and junction of road that passes Peterson property and scout camp to east. but continued S. Redwing, 2 mourning doves, barn swallow. At this time the recorder reached end of reel and no further information was recorded. From recollection observed only a very few small birds but those observed about same frequency of those observed elsewhere on some trip. Two redtail hawks were seen at crossing of the Wakarusa bridge and one at the Rock Creek bridge area. It would be of some value to establish observation turnouts at points of interest such as river valley causeway, road cuts showing stratigraphy of the Pennsylvanian rocks, and especially on dam along its entire length where cars could park or even camp to see evening and early morning activity of water fowl or ^{hear} night activity or just for daytime observation with telescope or binoculars. The Corps of Engineers has neglected this important value in the construction of lakes.

Topeka, Atchison Santa Fe Railroad, Lawrence Water Plant to W Curve,
Douglas Co., Kansas.

May 22, 1979

Left Water Plant at 8:35 A.M. Will record birds and mammal. 3 young cottontails 100' N of Park gates, robin, killdeer must have nest in made-made lot W of tracks, Indigo bunting, mourning dove, cardinal, oriole, red-headed woodpecker, fox squirrel. mourning dove nest 790522-1 of 2 eggs in black willow tree. now W up creek for a short distance. Cotton from cottonwoods cover plowed field like snow. measured one cottonwood trees at base  of double trunk as 10' 11" which is 100' below old ford crossover. mourning dove, robin, water in backed up areas covered with cotton. Another cottonwood tree measured 11' 8" and another double trunk cottonwood at 12' 6" . Still another

cottonwood at 11' 4" circumference. Two black-capped chickadees, peach-leaved willow in full blossom whereas black willow next to it was not in blossom, yellow-throated ~~vireo~~ warbler, barn swallow. now back to R.R. bridge over creek and continuing N. 2 grackles, redwing, Baltimore oriole. Turnpike overpass. 50' N of Conduit that goes under turnpike is a beaver dam that impounds water for an unknown distance. dam of willows but no evidence of willows but in the area. 2 redwings, cardinal, 4 barn swallows. At R.R. switch to W left tracks and checked fields to W. measured a sycamore ~~not~~ along drainage at 13' 10" circumference, green heron. nest of red-winged blackbird 790522-2 in cattails. Surrounding area open or grove young trees. General area marshy. One grackle nest of 3 eggs in juniper tree 4' above ground in tree 10' high. Open area around. Will check later. Returned to R.R. and checked cattails in burrow pit between where side track leaves main R.R. route and where R.R. turns westerly. 12 redwing black birds nesting. where cottonwoods are replacing cattails the black birds will nest in trees rather than in cattails below. One nest of ⁷⁹⁰⁵²²⁻³ 4 eggs (skeletal elements) and no. 790522-4 of 4 eggs (skeletal elements) from some general area. Other nests abandon or not get started egg laying, other nests with 1-2-3-4 eggs. At lunch along Kaw River at bend, water high for this time of year. While on bank a soft shelled turtle left ~~the bank~~ a log and swam at least 150' down river. 3 grackles in the deep riparian forests. At park by Water Plant noted a redtail and 2 red-bellied woodpeckers.



measurements of the above eggs; (mm + gm)

790522-1 mourning dove.

28.0 x 21.8 6.7 gms

27.7 x 21.1 6.3 gms

790522-2 red-winged blackbird

23.5 x 17.7 3.65 gms

23.9 x 17.7 3.70 gms

23.9 x 17.6 3.65 gms

24.2 x 17.4 3.65 gms

790522-4 red-winged blackbird

25.0 x 17.6 3.9 gms

25.3 x 17.0 3.6 "

25.5 x 17.1 3.8 "

25.2 x 17.8 3.8 "

790522-3 red-winged blackbird

Wakarusa River and Haskell Avenue, Lawrence, Douglas Co., Kansas

May 23, 1979

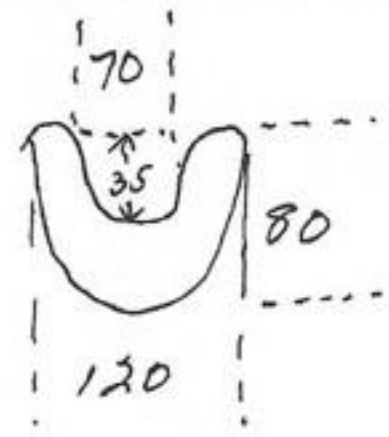
Checked S side of Wakarusa from Haskell Avenue bridge w for approx. a mile. Birds noted: great ~~short~~ crested flycatcher, white-breasted nuthatch, yellow-shafted flicker, black-capped chickadee, cardinal, crow, brown thrasher, red-eyed vireo, Bell's vireo, yellow warbler, titmouse, red-headed woodpecker, ^{red-bellied woodpecker.} grackle. A red-headed woodpecker displaced a w. b. nuthatch. One flock of 95 male grackles in dense woods along Wakarusa river. This aggregate is unusual in that this number should be in flock formation. They may be males of the females nesting in Haskell bottoms or unsuccessful males for females. Measured a cottonwood at 10'1" in circumference. A silver maple measured 11'4" and another at 12'9". Gooseberries in fruit 10mm in diameter. Many paw paws on S side river near bridge. Also a few basswood trees.

NE Haskell Wetlands, Lawrence, Douglas Co., Kansas

May 23, 1979

checked along dike from Haskell bridge to set of outlet gates on dike. This area is growing into forests from its more open conditions of years ago. Checked grackle nest, some 30 m area most in smaller trees separate from larger tree forest. One nest of 3 eggs and one young measuring 48 mm total length. Another nest with mud walls (wet) just finished but no cup lining, some nests with 4 fresh eggs, one with 5 eggs, some with 2 eggs and deserted as were other nests deserted but without eggs. I have seen more common grackles nesting in Lawrence and adjacent areas this year than I have ever observed before.

a nest of the brown thrasher of 4 eggs in rose bush in edge position of forest. nest lined with rootlets. One egg opened and embryo had ^{beginning} feathers.



The eggs measured:

26.3 x 20.5	5.50 gms	
27.2 x 29.9	6.05 "	shell thin,
26.0 x 21.5	5.35 "	
26.2 x 21.5	5.50 "	

Cardinal nest of 4 eggs 790523-2 placed in rose-bush thicket and almost impossible to examine. The eggs measured:

23.8 x 18.0	4.0 gm	
24.3 x 18.1	9.05 "	eggs fresh.
23.6 x 18.2	4.1 "	
24.0 x 18.3	4.15 "	

Red-winged blackbird nest and 4 eggs 790523-3. Placed in young rough-leaved dogwood 6' from ground. Eggs measured:

24.4 x 18.0	4.0 gm	nest 70 mm wide cup.
24.3 x 18.3	4.0 gm	113 overall width
24.0 x 18.0	3.85 "	70 depth of cup.
25.0 x 18.3	4.25 "	140 greatest depth.

Nest of common grackle and 4 eggs 790523.5. Eggs measured: nest in small group of elm trees isolated from main forest.

28.2 x 21.1	6.45 gm
28.8 x 21.4	6.55 "
29.2 x 21.7	7.0 "
28.7 x 21.0	6.6 "

A robin nest of 3 eggs placed in a small isolated elm. The nest was 3 1/2 feet from ground and easily available to coyotes. a mourning dove nest of 2 eggs on top of ^{dead} stump 6' high. nest conspicuous. Observed the morning cloak butterfly for first time this season. One grackle nest held 4 young that filled the nest, another with 2 fresh eggs. The rough-leaved dogwood has blackened leaves as if infested or had been effected by frost earlier in the season. One robin nest with four young, one measured 70 mm total length.

Approx. 19/10 mi. N and 9/10 mi. W Lawrence, (P.O.), Douglas Co., Kansas
May 26, 1979

Check area of wetlands W of stretch of lateral r.r. to commercial area. One brown thrasher nest in osage orange tree

in crotch 5 feet above ground. nest of 2 eggs and 3 young, ^{one} 50 mm total length. Another in an elm tree growing thru a juniper tree. nest of 4 eggs near hatching. One robin nest with 3 eggs, one pipped, in juniper 4' from ground in 10' tree. The grackle nest of 3 eggs observed May 22, 1979 (middle page) now has 1 addled egg, one fresh egg and three young 140 mm total length (one individual). This is unusual that the three eggs of May 22 could have hatched and produced young 140 mm in length in six days. The other two eggs must have been laid since May 22. A nest of 2 eggs in juniper tree examined May 22 were gone today. A mourning dove nest of 1 egg in nest on horizontal limb 8' from ground in a 20' high tree. Robins, cowbirds, grackles, great-crested flycatcher, mourning doves in area. Also a green heron lift marsh area.

Observed a brown thrasher nest and 4 eggs 790526-1 in a osage orange tree 3 1/2 feet from ground (tree 18' high). As this tree is isolated and relatively open is indeed a low lying nest for this species. The eggs measured:

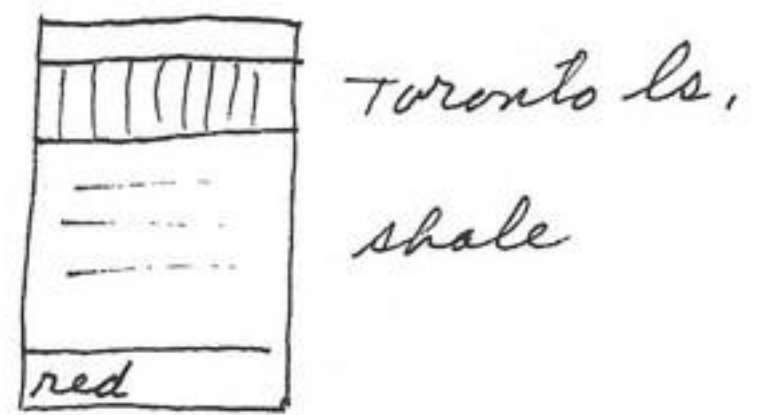
a robin nest of 4 eggs 790526-2 in elm tree 6' from ground at forest edge. The eggs measured;

Baltimore Orioles, bluejays, barn swallows and chimney swifts also in area. Noted a great-crested flycatcher in forest on floor. It flew into upper branches when approached.

Reservoir
Clinton Overflow, n Dam, Douglas Co., Kansas
 May 26, 1979

Took several color photographs (Ektachrome 400) of Corps of Engs. overflow cut. all on W side of cut;

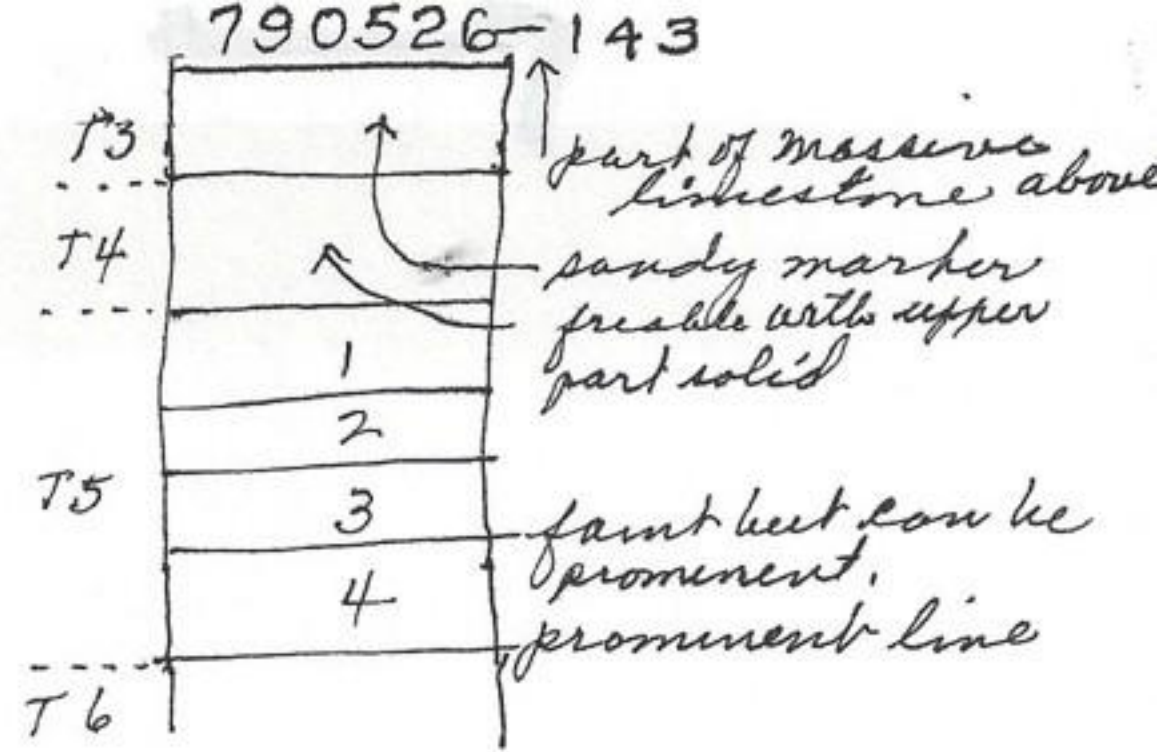
790526-3 of Toronto limestone and Upper Lawrence shale.



790526-4 Pottsmouth limestone and Toronto limestone, photographed from same level on south side of cut.

790526-5

Toronto limestone from East South side of cut. This photo may be underexposed.

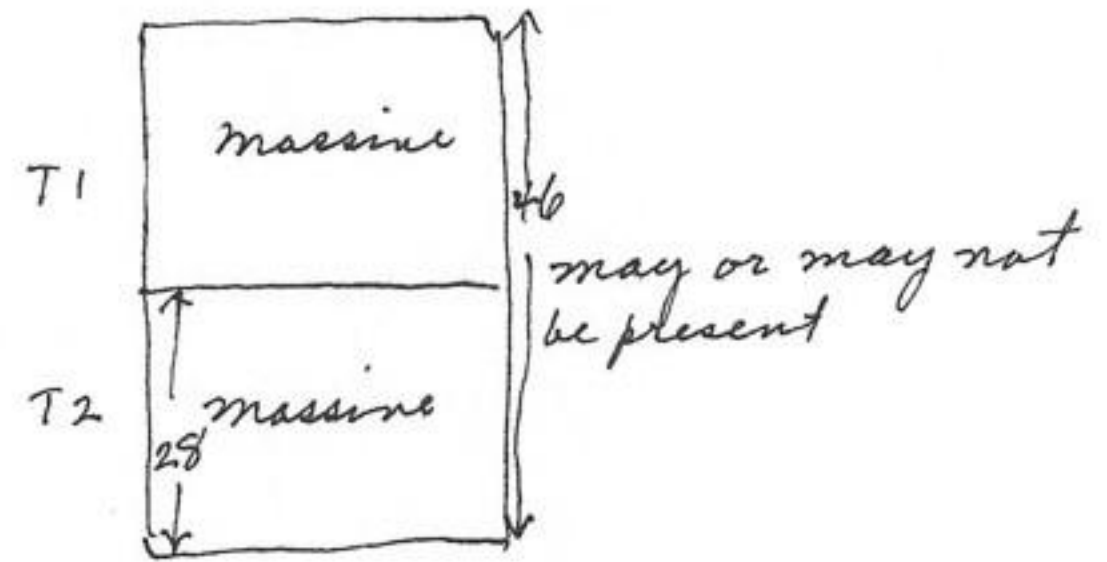


790526-6

Toronto from W side of cut. Same series as above.

790526-7

W side cut of Toronto limestone

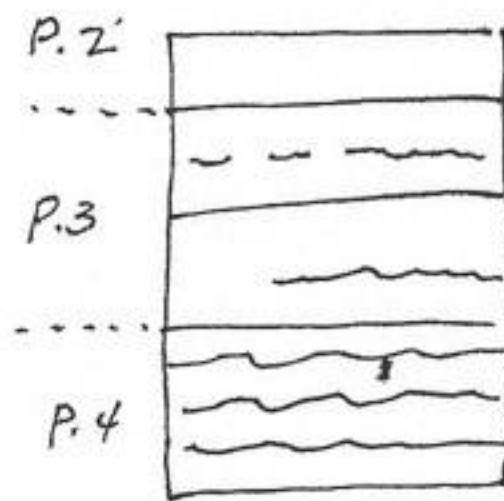


790526-8

Pottermouth on W side of cut showing dip of strata to S. Some strata units show variation in thickness in this structural syncline.

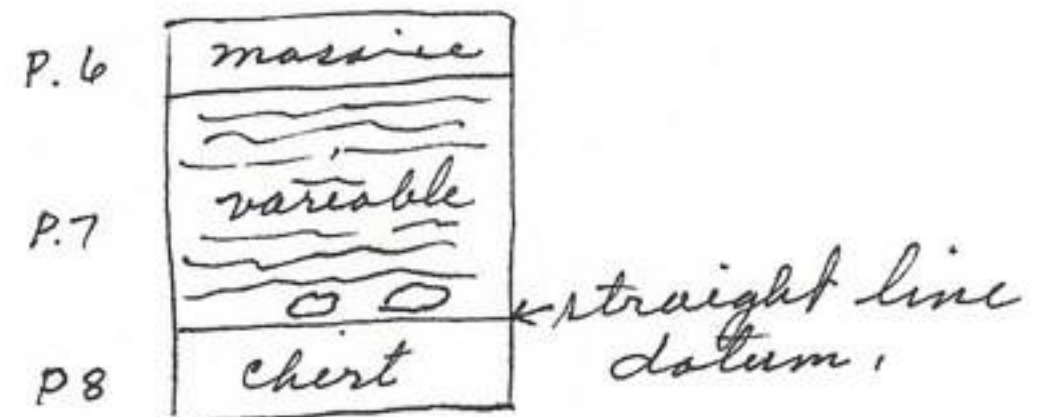
790526-9

W side cut showing Pottermouth



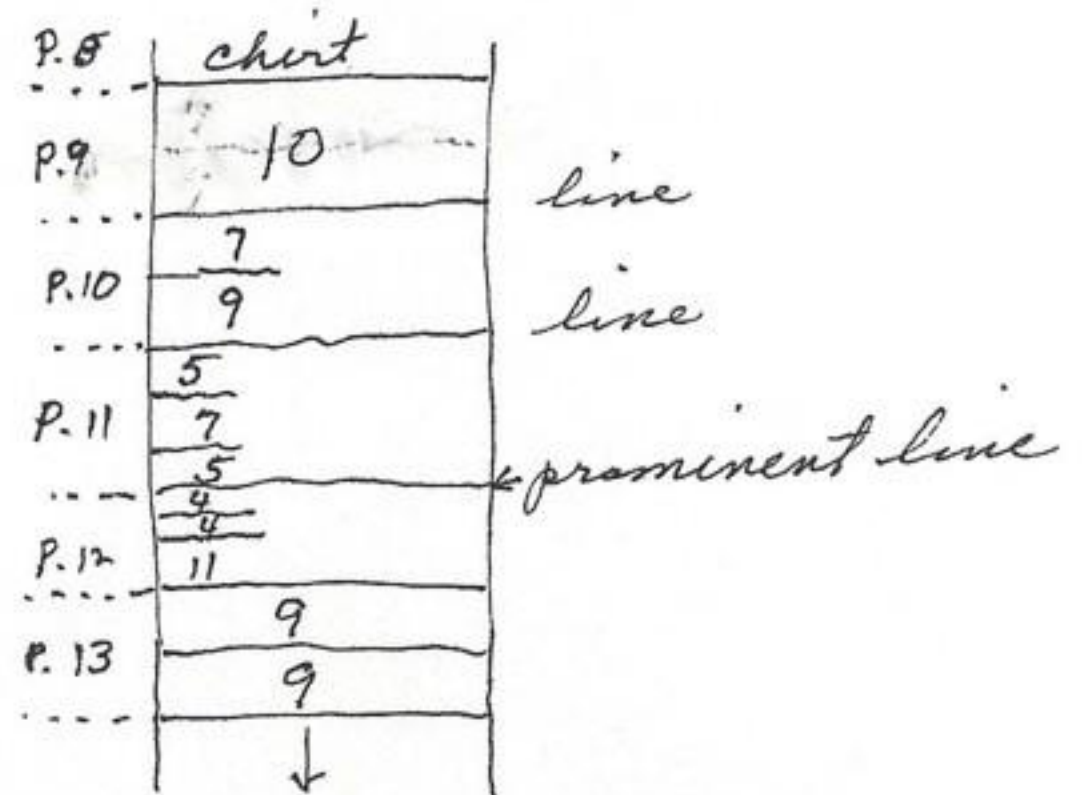
790526-10

W side cut of Pottermouth Limestone



790526-11

W side cut of Pottermouth limestone. Width of layers may vary from Composite chart or table.



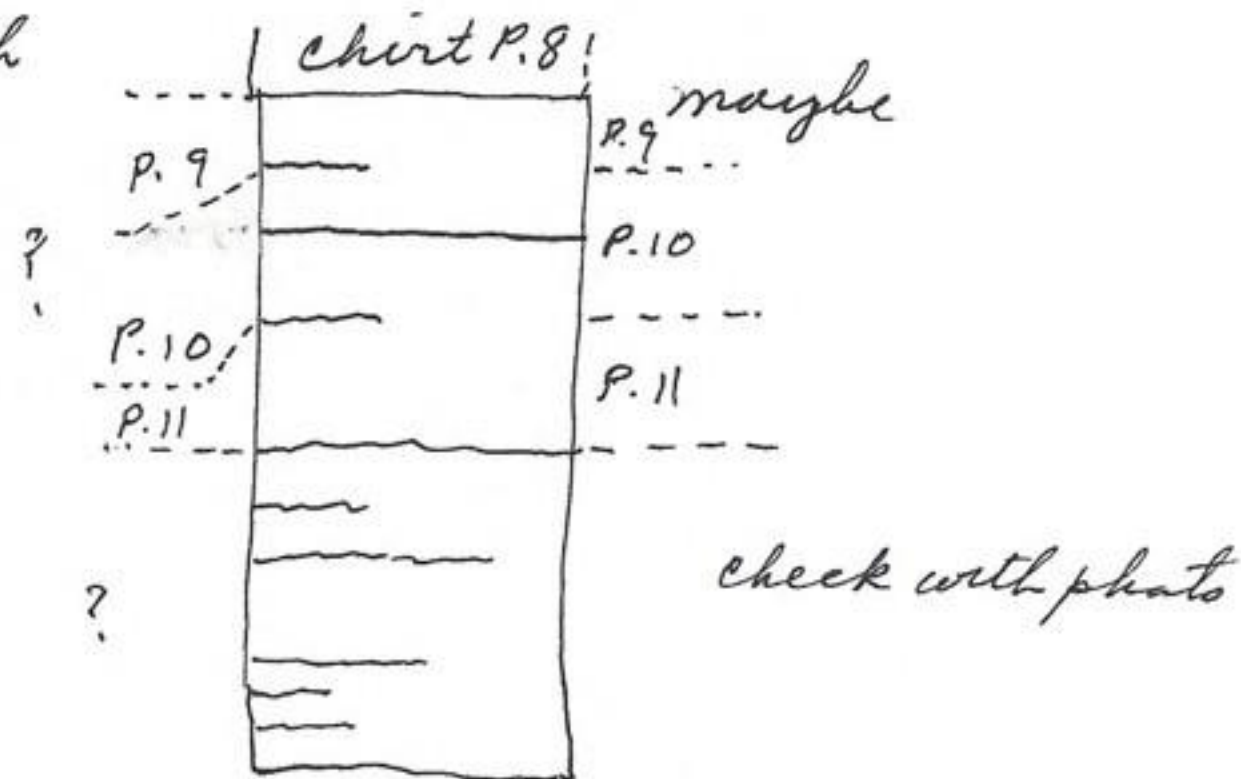
790526-12 w. side of cut.
Pottsmouth ls.

showing units of previous picture but at a side view to north along cut. One can see P. 8 to P. 13 especially P. 9 to P. 13.

790526-13 W side cut of (Pottsmouth)
upper chert layer P. 5

790526-14 W side cut of units of Pottsmouth
below 42 inch level or below
line marker between P. 11 & P. 12.

790526-15 W side of cut of Pottsmouth
limestone below P. 8 or
lower chert stratum



At culvert draining overflow on main road checked barn swallow
nest of 5 eggs no 790526-16. measurement of eggs;

mud part of nest weighed 316 grams, lining 6 grams
On May 23, 1979 this same nest held 2 eggs.

Clinton Reservoir, Rock Creek Drainage at bridge, Douglas Co., Kansas

May 27, 1979

Took 3 photos of stratigraphy at 7/10 mi. E of Rock Creek bridge.

790527-1 upper half of Pottsmouth from S side of road cut.

790527-2 of N side of road cut of upper half of Pottsmouth.

790527-3 of N side of road cut of lower half of Pottsmouth.

790527-4 *ibid*

Drainage of overflow at road, Clinton Reservoir, Douglas Co., Kansas

May 27, 1979

Observed nest of 5 eggs under culvert from Overflow Cut N of dam.
The eggs, 790527-4 measured;

mud part of nest weighed 338 gms, lining of plant fibers and feathers 4 gms.

County Road 438 (SE corner of SW quarter section 16, R19E, T12S),
Douglas Co., Kansas.

May 28, 1979

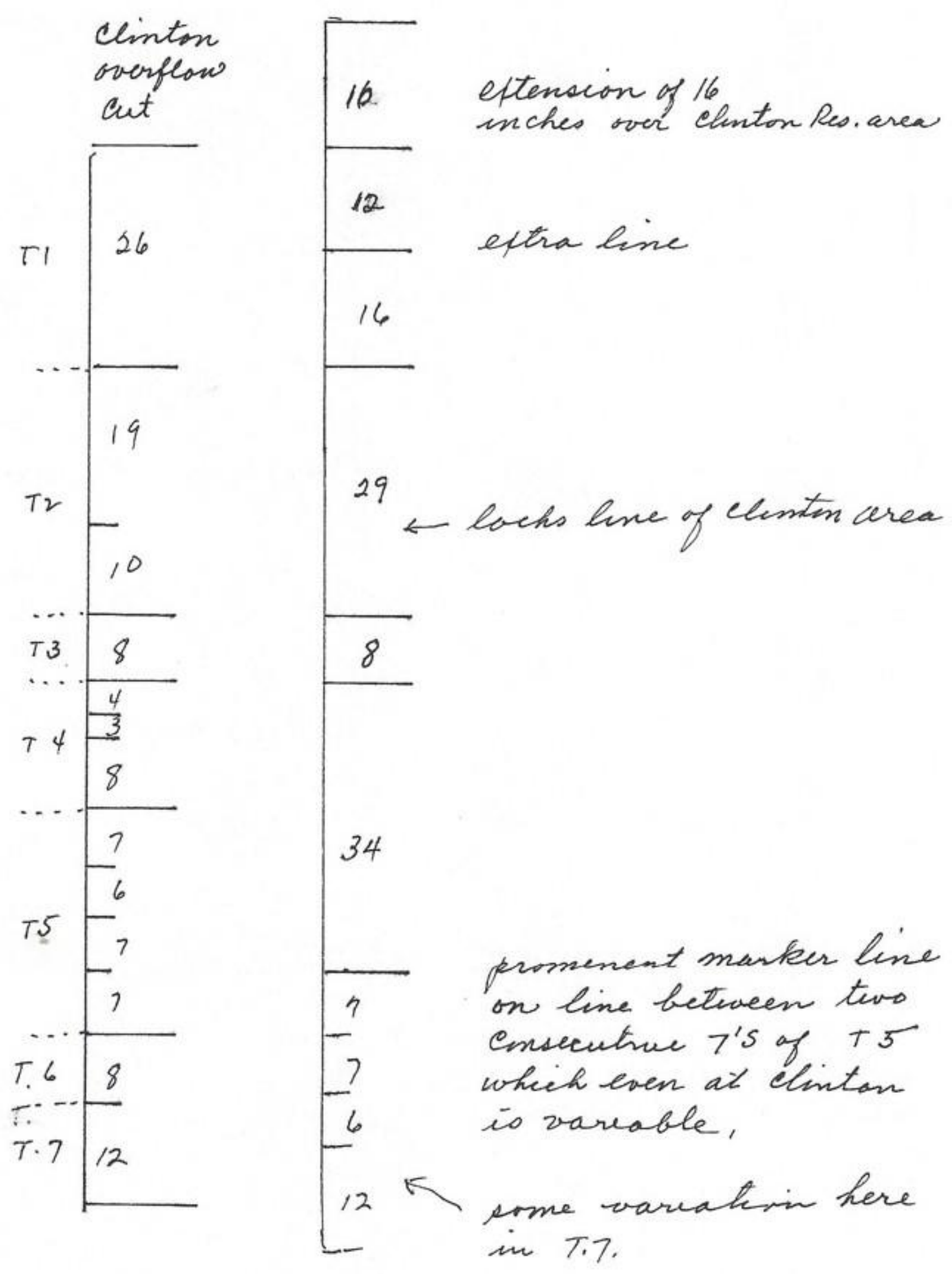
Took 3 photos of road cut stratigraphy.
790528-1 of N side showing Pottsmouth, black Neebner Shale, Leavenworth limestone, Synderville shale, Toronto limestone and some upper part of upper Lawrence formation.

790528-2 photo of slide from Leavenworth limestone down over Toronto limestone onto shoulder of road. Geologists beware!

790528-3 Toronto

790528-4 slide onto shoulder of road of Neebner shale and Leavenworth limestone, having moved over Synderville shale, Toronto ls and upper part of upper Lawrence formation.

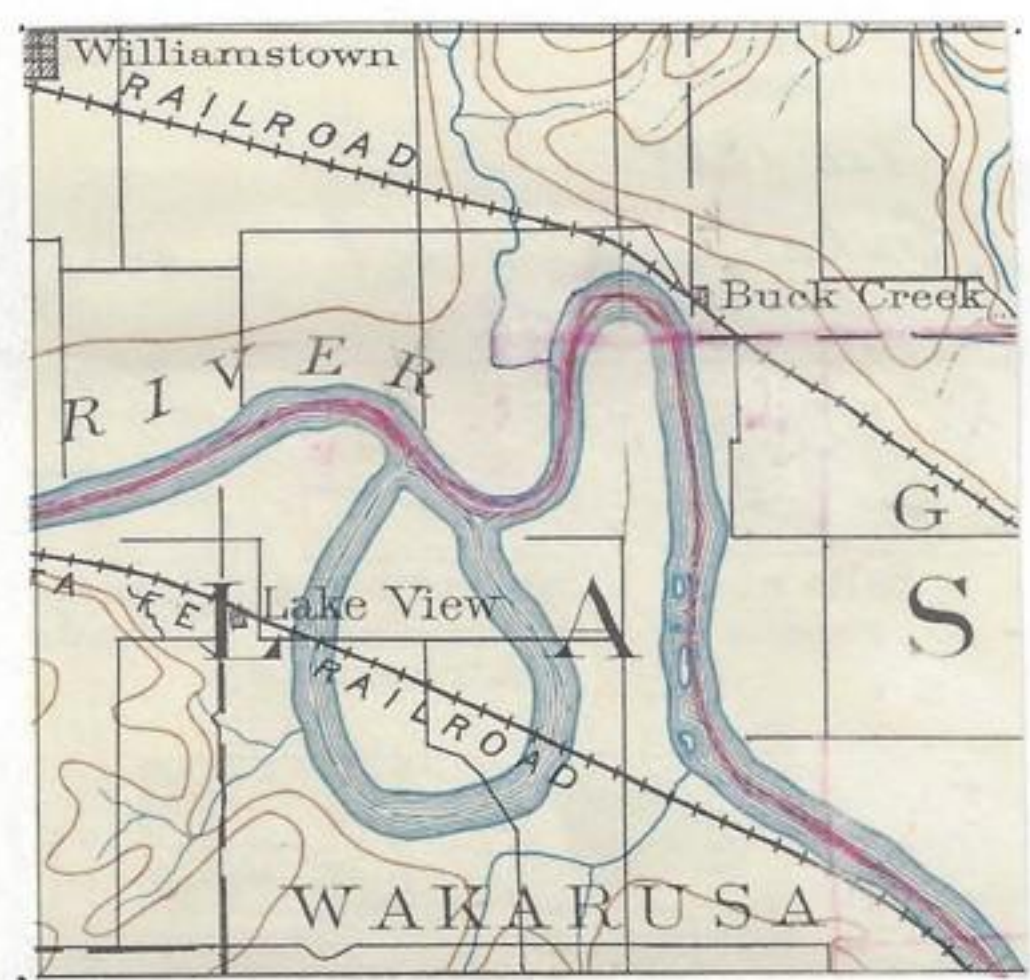
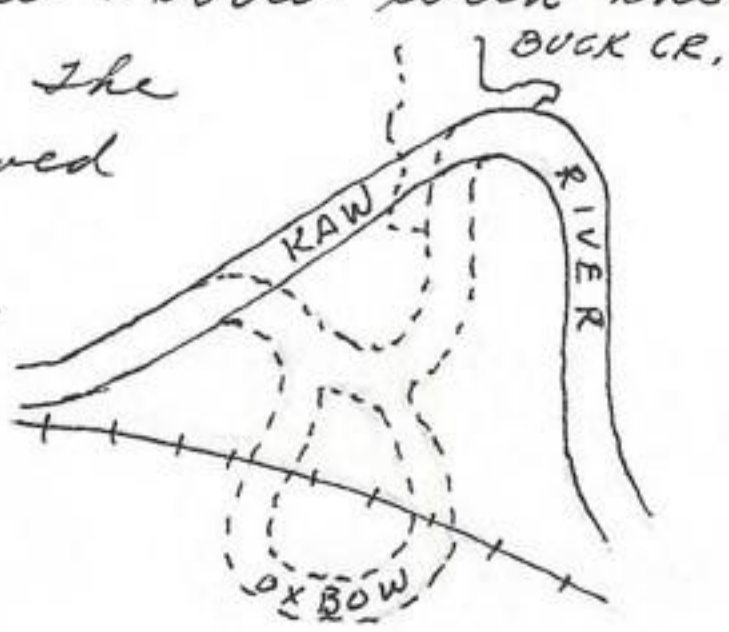
a general survey of Toronto limestone shows some similarities and some variations. The extra 16 inches on top may be a factor of erosion. The variations seem to be at the upper and lower extremes of column.



Lake View, Douglas Co., Kansas

June 2, 1979

Entry of section of USGS topo. map, Oskaloosa sheet, February 1884, showing actual connection of the Lake View obbow with the Kaw River. The Kaw has moved north. note differences in position of Buck Creek.



Lawrence, Douglas Co., Kansas

June 2, 1979

Recorded information given to me by Chris Nye of Newton, Kansas. (a student of mine at K.U.).

Halstead, Harney Co., Kansas, Dec. 29, 1976. There are more jackrabbits this year than in the past two years (*Lepus californicus*). Fox squirrels and prairie chicken when frozen thaw at different rates, the former thaws quicker. Newton, Kansas, March 21, 1977. Crows in large flocks are smaller and dirtier whereas crows in small flocks are cleaner and healthier.

Crows fly lower on windy days and are inactive on stormy days. Crows and grackles are compatible. Newton, Sept. 6, 1977. Crows have not yet arrived from the north. Sand Hills near Newton, Kansas, Nov 2, 1977. Jackrabbits and coyotes are difficult to hunt in sand hills because they run in and out of the hills and swales.

Nov 4, 1977 Noted several snakes in the swamps. when temperatures were 60°-70° F. Quivira Game Refuge, Nov 5, 1977 Coots, mallards, blue wing teal, spoonbills, widgeons, gadwalls, pintails, blue geese, great blue herons in area. Crows a few but not like the numbers of previous year. Jetmore, Hodgermann Co., Kansas, Nov. 7, 1977. At 1 1/2 miles E on highway 196 (300 yards W of large pond) were 84 sandhill cranes. I tried to approach them and they flew with a loud shrill cry. A second group of 60 had some blue geese mixed in with them.

Kansas River, Lawrence, Kansas. Water to within 4' of top of gravel bar below dam. Newton, Kansas, Dec 9, 1977. A friend of mine shot a whistler or Trumpeters swan this last week. He apparently thought it was a blue goose.

Clinton Reservoir, Douglas Co., Kansas

June 3, 1979

noted a long-tailed weasel (road kill) at S end of dam. It measured 15" total length. Fly fished ^{from base of dam} from S end dam to 1/2 distance to outlet gates but no fish. Some green algae along edge of water. Ring-billed gull passes to north.

Peterson - Deerfield - Kasold research area, 71W Lawrence, Douglas Co., Kansas

June 14, 1979

Surveyed above research area (see Feb 18, 1979 for outline of area and route faclamed).

Peterson Pond: redwing, 2 grackles, robin, redwing, grackle, robin, 4 grackles.

Peterson Creek: Brown thrasher, cardinal, 2 grackles, black-capped chickadee, 2 grackles, redwing, black-capped chickadee, grackle, robin, mourning dove, mulberry fruits optimum stage of ripeness, black capped chickadee, robin, robin.

Grackle roost: robin.

Osage-orange fence row: robin, grackle, 2 cardinals with nest of 2 fresh cardinal eggs and one cowbird egg, slightly covered by nest material, bluejay, young wood rat under board, racoon tracks

Grass meadow: barn swallow, grackle, dickcissel, meadow-lark, meadowlark, dickcissel, 2 grackles flew E over field.

Plowed field swale: 3 grackles flew W over field, monarch butterfly (sp.?) 6.

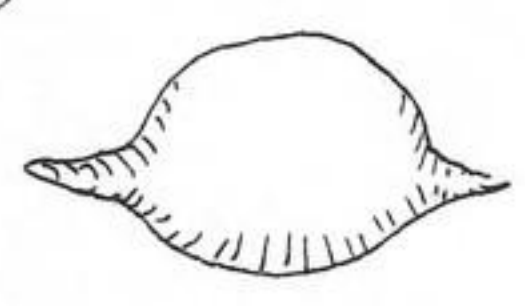
Pond swale: 2 mourning doves.

E. Forest edge: Bluejay, bluejay, 2 yellow-billed cuckos, Not an adult wood rat active (10:30) in shaded area. It was ^{slowly} moving along and investigating the ground.

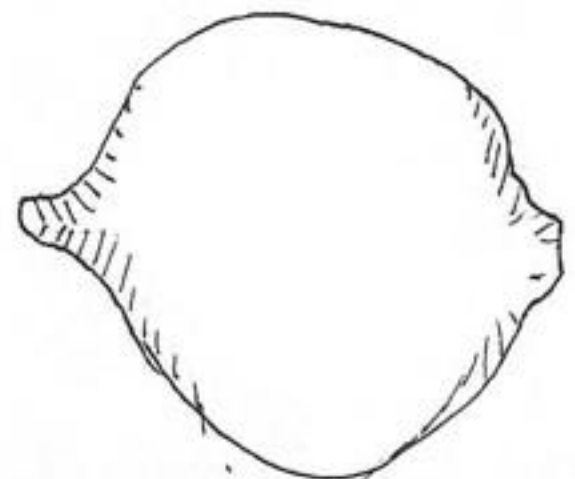
Right-of-way: Bluejay and robin flew over.

N Forest: 2 immature great horned owls, cardinal, robin, bluejay, great crested flycatcher, hind foot racoon track measured 108 mm.

NW Forest: grackle, ^{leaves of} patch of may apples spotty and turning yellow. apple fruit



to



in size

main forest: robins, bluejay, yellow-billed cuckoo

Kusved Creek, 2 grackles, 3 grackles, 2 grackles, 3 grackles, robin, bluejay,

Small section right of way & silo: no birds,

Deerfield Creek: 2 grackles, 25 grackles in one group, Baltimore Oriole, robin, bluejay, 4 grackles,

First Forest: robin, grackle, grackle.

Field edge Swale: 5 individual grackles.

Pond Fence Row: 3 grackles, robin, barn swallow, chipping sparrow.

Peterson Field: robin, 3 meadowlarks.

Iowa and 25th Street, Lawrence, Kansas

June 15, 1979

Flock of approx 800 starling.

Perry Reservoir Dam, Jefferson Co., Kansas

June 16, 1979

Starting at 10:00 A.M. at the west end of dam and fishing with flies to outlet gates (1:00) caught the following: (standard length)

Bluegill 160, 165, 140, 142, 136, 147, 166, 158, 160. mm.

Carp. 430, 330, 510.

The carp are all along the dam and will take a fly (12 hook) if place a foot or so ahead of the carp and if the carp is actually searching the surface. If they are cleaning algae on rock and the fly is placed directly over them they will seldom take the fly. When a carp is running with a fly, other carp will follow the captured fish as if trying to share in the food which is an aggression not usually associated with carp. Level of Lake at outlet gate is 892 ft. 4 grackles only birds along edge of water along dam. Great blue heron experiment about 1 per ever 100 feet along dam, (rocks at edge of water)

Lawrence, Douglas Co., Kansas

June 16, 1979

check nest of 2 cardinal and 1 cowbird eggs (see June 14, 1979, (orange orange fence row area) and found the nest deserted.

Perry Reservoir, Jefferson Co., Kansas

June 19, 1979

Left 402 Yorkshire Dr., Lawrence, Kansas at 8:10 A.M. mileage 17.5, sky clear, no wind. ^{Temp 74°F.} Will keep complete census of birds enroute. 8 purple martins, 2 robins, 2 grackles, grackle,

grackle, redwing, redwing. 19.4 Kasald + Farmers turnpike or Lake View Road, no w. grackle, redwing, dickcissel, redwing, redwing, redwing, grackle, redwing, redwing, redwing, dickcissel, barnswallow, redwing, meadowlark, yellow-billed cuckoo, barnswallow, dickcissel, dickcissel, 2 redwings 3 dickcissels, 25.4 Leecompton Road now N. 3 barnswallows. redwing, redwing, redwing, barnswallow. 28.6 E end Leecompton bridge, yellow shafted flicker, redwing, dickcissel, redwing, dickcissel. 31.5 highway 24, robin, meadowlark. 34.1 SE corner reservoir area, now west 2 meadowlark. 35.0 E end Perry Reservoir dam. meadowlark. 35.6 long tailed weasel ran across road on top of dam from S to N, carrying a *Microtus ochrogaster* in its mouth. The S side is grass, the north side rocks. The N slope of dam would be an ideal habitat for weasels providing there are small mice there. As it is doubtful whether there are mammals as food among the rocks I am suggesting that they live on N side and hunt on south side. The rock slopes are a new and unique habitat in Kansas and research should be done on how they are being used by small or large mammals. It seems to me that marmot, weasels, *Peromyscus* and even pika might be able to exist there although mammals not native to Kansas should not be encouraged to use the area. 35.8 outlet gates. 36.5 west end dam at parking area. End of census.

402 Yorkshire Dr., Lawrence, Douglas Co., Kansas

June 20, 1979

Robin nest of 4 eggs in maple tree (hardwood) blown from nest. nest approx. 3' from top of branches.

June 24, 1979

House wren raised in box at home left nest at 86 mm total length.

July 5, 1979

For last week large flocks of grackles including redwings, starling, robins, have been flying SSE over house at about 1/2 hour before sundown to sundown. Goldfinch still at feeder in yard. They have eaten 2 lbs of thistle seed this winter. 10 hole feeder.

Lawrence, Douglas Co., Kansas

July 21, 1979

Prepared and left on summer vacation to Casper, Seattle and return (see itinerary next page). Doubled checked for car registration, 04627.1 mileage from 402 Yorkshire, Lawrence at 1:50 P.M. Annette and I made trip. 6303.3 2 redtails along turnpike just out of Lawrence. Most pastures in Lawrence area are green as well as all exposures including hillsides and forests which is unusual for this time of year. Some cultivated fields are brown. No evidence of vegetation drying or burning. 650.3 2 redtail hawks. 650.9 redtail hawk. 667.8 redtail hawk. 689.4 redtail more sky pollution to at least the Flint Hills than I have ever seen before, all the way a hazy atmosphere, clear directly above. 690.3 3 turkey vultures. The ^{merky} pollution eliminates detail on ridges. 694.9 Co. line. Haze so bad that distant ridges grade imperceptibly into sky. Flint Hill greener than I have ever seen. 711.7 Turkey vulture 713.4 Clark's Creek. 718.4 Smoky River, almost full. 722.1 Now N on highway 77. 728.3 first crow. 737.2 Madison Creek, an arm of Melford Reservoir. Lake level high. 750.1 1/3 grouse pheasant along side of road, other birds in reservoir are meadowlark (5) not many mourning dove flew across every 3-6 miles, western kingbird (2) so far. 753.4 begin one mile complete census of birds (5:45 P.M.). 2 western kingbirds, ^{duckweed,} western kingbird, end census. 763.8 Republico River, high and muddy. At Clay Center I was informed that the hazy atmosphere was due to high humidity being brought up from the south. Ponds full and muddy. Hazy condition seems to be more in valleys than ridge tops. Up to now car uses 1 gal. per 10 miles (pulling 17' trailer). 782.4 first night hawk today. Most common bird along way is the barn swallows that is most commonly associated with road culverts and as a result the swallows are more generally distributed in the prairie than they would otherwise be. 809.4 yellow-billed Cuckoo along road and at least 1 mile from any tree. Bobwhite, redwing blackbirds thru area. Usual number of mourning doves. 828.9 Glen Elder. Red-headed woodpecker. 845.5 first striped skunk road kill and first sprinkling system used to water crops. As is usual along highway, there is an increase in mourning doves toward evening (1/2 hr before sundown). 852.0 striped skunk road kill. Red-headed woodpecker at Kerwin. arrived at Kerwin Lake Camp site. at 883.6 9:00 P.M. (NE corner lake)

After setting up trailer Annette and I to lake. There were at least 60 Least Terns in an area of an island 50' from shore. Some on island, others flying near by. When they approached the island they hovered above for a few seconds, then dived straight down to surface, some carrying small fish. This tern has black cap, short tail, whitish and black primaries. The black tern are mixed among the least tern (10) and are noticeably darker and larger. 2 sets of deer tracks on beach measuring 2 1/2 inches (63mm) and 2 1/4 inches (57mm), also raccoon tracks. Large Bufo took to water from beach, also small Bufo up to 3/4 inches long. Returned to trailer at late twilight.

Kevin National Wildlife Refuge, Gove Co., Kansas

July 22, 1979

Min. temp last night 70°F, present 76°F at 6:30 A.M. Slight rain in air. Left 6:45 A.M. Thousands of grackles in large flocks toward sun and route reversed of last evening's trend. Roosted in trees along lake. Other birds in area: E. Kingbird, meadowlark, barn swallow, mourning dove, ring-billed gull. For the last 20 miles of Kansas on highway 183 going north, the mourning doves, dickcissels, meadowlarks, E Kingbird, W Kingbird, redwing blackbird, were at least 10 times more numerous than they were 20 miles N of the Kansas border, mainly because of more diversified habitat in Kansas. 998.4 badger road kill on interstate 80, birds rare along interstate 80 (2 per mile, except barn swallows). 004.0 Cozad. 022.1 red-headed woodpecker. 025.5 North Platte river channel near road and 150 cliff swallows. 067.2 yellow-billed cuckoo. 076.7 redtail. 077.1 Keith Co. line. 078.0 mt. tim³ 125.2 junction 80W & 76S at 1:00 P.M. 128.6 first Lark bunting. 147.5 first big whirlwind. 170.4 first horned lark. 196.7 redtail hawk 204.4 prairie dog-town. 229.8 Wyoming State line just before Pine Bluffs at 3:25 P.M. 237.6 redtail 245.6 marsh hawk. Local thundershowers all across western Nebraska and as far as Cheyenne. 274.9 at 4:30 at Little America W of Cheyenne. 280.0 groups of 8 and 4 antelope and first ones observed. 5307.0 arrived at Vedauwoo Camp in Medicine Bow Range at 7:00 P.M. having travelled 376.6 miles today. Camped in regular area in the south part of the camping area. Many ponderosa pine in area.

Vedauwoo Camp, Medicine Bow Range, Laramie Co., Wyoming.

July 23, 1979

min. temp 53°F. at 7:00 AM = 60°F, noted 3 cottontail rabbits and 1 chickaree, chipmunks rare at camp at least this time of day. Previous years they were unusually common. Slate-colored juncos. Last night Annette and I made trip down canyon N just east beyond first ridge of cliffs, thence back S in Campground Canyon. Just before we left noted one Least chipmunk (*Eutamias minimus*) and 2 golden-mantled ground squirrels. Photo 790723-1 of the Vedauwoo landscape at ^{beyond} ^{from highway} camp. Left 7:30 A.M. on 80 west. at divide noted 2 turkey vultures. At mouth of canyon on W side medicine Bow Range two golden eagles circling to S. 332.9 ^{side} road to Laramie Airport. at 11:35 A.M. on way to Snowy Range. 343.1 2 horned larks. (complete census of birds ^{and mammals} from airport to Centennial.) 346.2 horned lark, antelope. 347.4 striped skunk road kill, horned lark. 349.0 some *Citellus* diggings in field (extensive diggings on right 2/10 miles long). 350.2 E end lake, one cormorant only on lake, no ducks etc., ground squirrels in fields, one ring-billed ^{or cliff} gull. 350.6 Jacks Place by lake, barn swallow, barn swallow, *Citellus*. ran across road 352.1 2 *Citellus* road kills. 554.5 killdeer, meadowlark. 353.6 3 *Citellus* ground squirrel road kills, 100' beyond 2 more. 356.2 cottontail rabbit (live). 357.2 3 *Citellus* road kills. 358.0 Centennial, Brewer's blackbird. 358.6 *Citellus* ran across road 365.0 Green Rock Picnic grounds and first patch of snow. 9300 ft elevation. Approx. 368.0 camped at point where road crosses Libby Creek. Set 50 traps ^{at 3:00 P.M.} in climax Engelmann spruce forest at 7/10 mi. E and 1/10 mi. S of W end Hourglass Lake, Snowy Range, approx 10,000 ft., Albany Co., Wyoming. Later Annette and I drove to divide on Libby Flats. Domestic sheep in area. Walked from main road to Libby Lake and Lewis Lake, road closed because of 2 snow bands blocking road. Observed along way, bluebirds, pine siskins, robins, California gull (!) on Libby Lake, marmot. At old pump grounds at Lewis Lake a Canada jay was feeding on a freshly killed fledgling of the purple finch, 4 adult ♀ Canada jays were harassing the bluejay. One vireo was attracted to the site of confusion. no chipmunks observed. Returned to car and drove back to the camp along Libby Creek. There is considerable signs of gopher activity in area especially the winter cores. Can hear white-throated crowned sparrows in willows below. Considerable snow patches to the west. Next page is a continuation of today's activities.

and 1/10 mi. S of W end
7 1/10 mi. E Hourglass Lake, Snowy Range, approx. 10,000 ft., Albany Co., Wyoming.

July 23, 1979 (continuation)

Set 50 traps in climax Engelmann forest S of meadows. Set at 3:00 P.M. Most of floor of forest bare and covered with down timber. most traps set at base of trees on lee side from prevailing rains and under logs, again for protection from rains. This afternoon from 3:30 P.M. to 7:30 P.M. periodic rain and some small hail, checked traps at 7:30 P.M. and caught the following mammals;

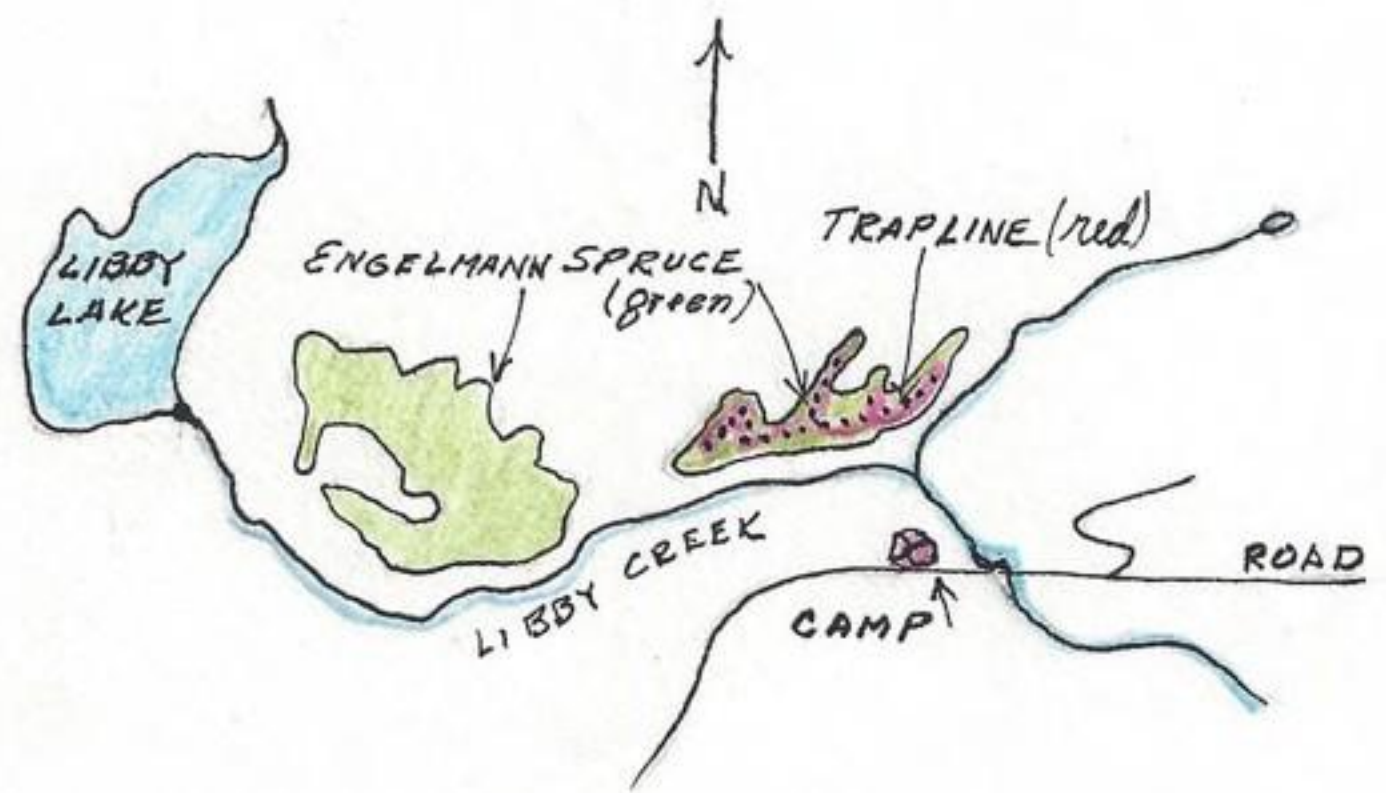
790723-1	<i>Eutamias m. operarius</i>	195-83-29-14-47gms.	♀ ut. normal
790723-2	" " "	202-91-30-14-42gms.	♂ testis 6mm
790723-3	" " "	200-88-29-14-41gms.	♂ testis 6mm
790723-4	" " "	194-91-29-14-39gms.	♂ testis 5mm

Birds observed in forest on trap line were Canada jay and 2 robins. Birds at border of meadows + forests include, Canada jay, robins (dominant), bluebird, pine siskin, slate-colored junco.

July 24, 1979

Checked traps of yesterday's setting. Reset 7:30 P.M., rained most of night. min temp +1°F last night. Captured the following mammals this a.m. and pulled traps:

790724-1	<i>Clethrionomys ^{gapperi} galei</i>	125-38-18-11-20gms	♂ testis 9mm
790724-2	" " "	140-40-18-11-22gms.	♂ testis 10mm
790724-3	" " "	143-41-18-11-24gms	♂ testis 11mm
m. only			
790724-4	" " "	120-35-18-11-18gm	♀ ut. enlarged
m. only			
790724-5	<i>Peromyscus m. nebrascensis</i>	136-58-19-16-13gm	♀ ut normal



Map from USGS Topo of following trapping area (next page). July 24, 25, 26, 1979

Tested trout in Libby Creek below camp with fly pole and 12 size fly. Caught 12 fish ranging from 5 inches to 10 inches, three of the latter prepared for a meal. Must fish in swift waters at head of smooth water or in slower water moving along edge of creek. The water below camp is about the best place for fishing.

6/10 mi. to 7/10 mi. E outlet Libby Lake, 10670 ft., Snowy Range,
 Albany Co., Wyoming.
 [see map at bottom of previous page for exact location.]

790724-155

July 24, 1979 (continuation)

3:00 a.m.
 Set 91 traps on mountain slope N of Libby Creek among Engelmann spruce. Trees mainly on up & down ridges. Many down logs and good overhead protection. On return collected a dead gopher among willows in wet meadows bordering the creek below trap set.

790924-6 *Zapus princeps princeps* 230-135-30-15-33 gms. ♂ testis 8 mm

and reset any trap that had been sprung or needed bait
 Checked trapline 8:00 P.M. and collected two chipmunks

790924-7 *Eutamias m. operarius* 192-80-31-15-50 gms ♀ ut. normal

790724-8 " " " 191-82-30-14-42 gm ♂ testis 6 mm

The Engelmann spruce are best developed on the ridges that run more or less up and down the S exposure of the slope N of Libby Creek. The lower down the slope the larger the trees. This ^{sidehill} condition of spruce extended SE onto more gently sloping terrain but they have been burned off from early fire, no doubt started by miners that built log cabins in the area. The spruce forest reaches its best growth on the N. side of Libby Cr.

July 25, 1979

From trapline set yesterday and checked at 6:30 A.M. Min temp 38°F skies clear.

790725-1 *Peromyscus maniculatus* ^{nebrascensis} 154-69-20-17-21 gm ♂ testis 9 mm

790725-2 " " " 153-66-20-18-16 gms ♂ testis 9 mm

m only 790725-3 " " " 140-60-20-16-13 gms ♂ testis 5 mm

" 790725-4 " " " 142-60-20-17-16 gms ♂ testis 8 mm

" 790725-5 " " " 132-55-20-15-11 gms ♂ testis 6 mm

" 790725-6 " " " 128-57-20-14-9 gms ♀ ut. normal.

790725-7 " " " 172-75-20-17-23 gm ♀ 2x3 emb plac. scars.

790725-8 " " " 158-66-20-18-21 gms ♂ testis 8 mm

790725-9 " " " 162-65-20-18-27 gm ♀ 3x3 emb. 15 mm

790725-10 " " " 154-62-20-16-18 gm ♂ testis 8 mm

790725-11 " " " 156-64-19-16-19 gm ♂ testis 9 mm

790725-12 " " " 149-52-19-16-21 gm ♂ testis 10 mm

790725-13 " " " 166-68-21-16-22 gms ♂ testis 9 mm

790725-14 " " " 171-75-20-17-32 gm ♀ 3x3 emb 30 mm

790725-15 *Clethrionomys gapperi galei* 138-36-18-13-20 gm ♀ ut. enlarged

790725-16 " " " 132-34-17-13-18 gm ♀ testis 12 mm

790725-17 *Eutamias minimus operarius* 203-92-29-14-54 gm ♀ plac. scars, suckling

Trapline check at 12:30 P.M. produced one chipmunk & one gray-headed junco

790725-18 *Eutamias minimus operarius* 190-81-31-15-44 gm ♀ ut. normal

Gray-headed junco, chipmunk, 3 porcupines (dead), 2 rocky mt pine grosbeaks along trapline. Also one great horned owl.

Checked line 7:00 P.M. and caught the following (since 12:30 A.M.)

<u>790725-19</u>	<i>Eutamias minimus operarius</i>	196-90-29-14-43 gm.	♂ Testis 4 mm
<u>790725-20</u>	" " "	194-91-30-14-40 gm	♂ testes 6 mm
<u>790725-21</u>	" " "	195-90-30-14-48 gm	♀ suckling
<u>790725-22</u>	" " "	195-87-30-14-47 gm	♀ suckling

The chipmunk are generally distributed ⁱⁿ the trapping area. The *Peromyscus* seem to be dominant and more common than previous years. This condition is at the detriment of *Phenacomys* as none was captured in areas that in previous years supported 1-6.

July 26, 1979

From trapline 6:30 A.M.

min temp last night 43°F. High wind lost net but clear skies.

Pulled traps. Mammals captured.

<u>790726-1</u>	<i>Peromyscus maniculatus</i>	^{Nebraska} 142-60-20-18-14 gm	♂ testis 4 mm
<u>790726-2</u>	"	160-65-19-16-24 gm	♀ plac. scars.
<u>790726-3</u>	"	155- 41 -19-18-14 gm	♀ wt. normal.

Photo 790726-4 of anticline on N side Libby Creek below trapline.

The geology is very interesting in this area with white ridge of the remnant of the anticlinal core to the W and the broad glacial platform that extends east before it drops down abruptly onto the Larumie Plains. The most extensive glaciated area is to the north from glacial centering on Medicine Bow Peak. The medicine Bow Peak quartzites make up the white cliffs of the Snowy Range axial remnant and look like, at a distance, more like granites than quartzites. They are really glaring in the early morning light. This layer is at least 6,000 feet thick. The lower part of the medicine Bow quartzite is bluish-green. Intrusive bodies are prominent on the east face of the high ridge and are blackish in color. In contrast to granites there are conspicuous bedding in the medicine Peak quartzites. The only granites I know are N at head of cirque area at the SW base of the round topped glaciated mountain which is east of the divide into the cirque to the north. This round topped mountain was probably glaciated but could have been formed by wind action. A gradual approach to top could be made from the east or it can be ascended from the west up fault zones. I would imagine that this mountain top which is flat and broad would have the best examples of arctic tundra of any slopes in the Snowy Range.

Left Libby Creek Camp and went to Silver Lake Camp and set traps this P.M. at 1/2 way down grade from Libby flat to west a marmot rd. kill 635 mm total length.

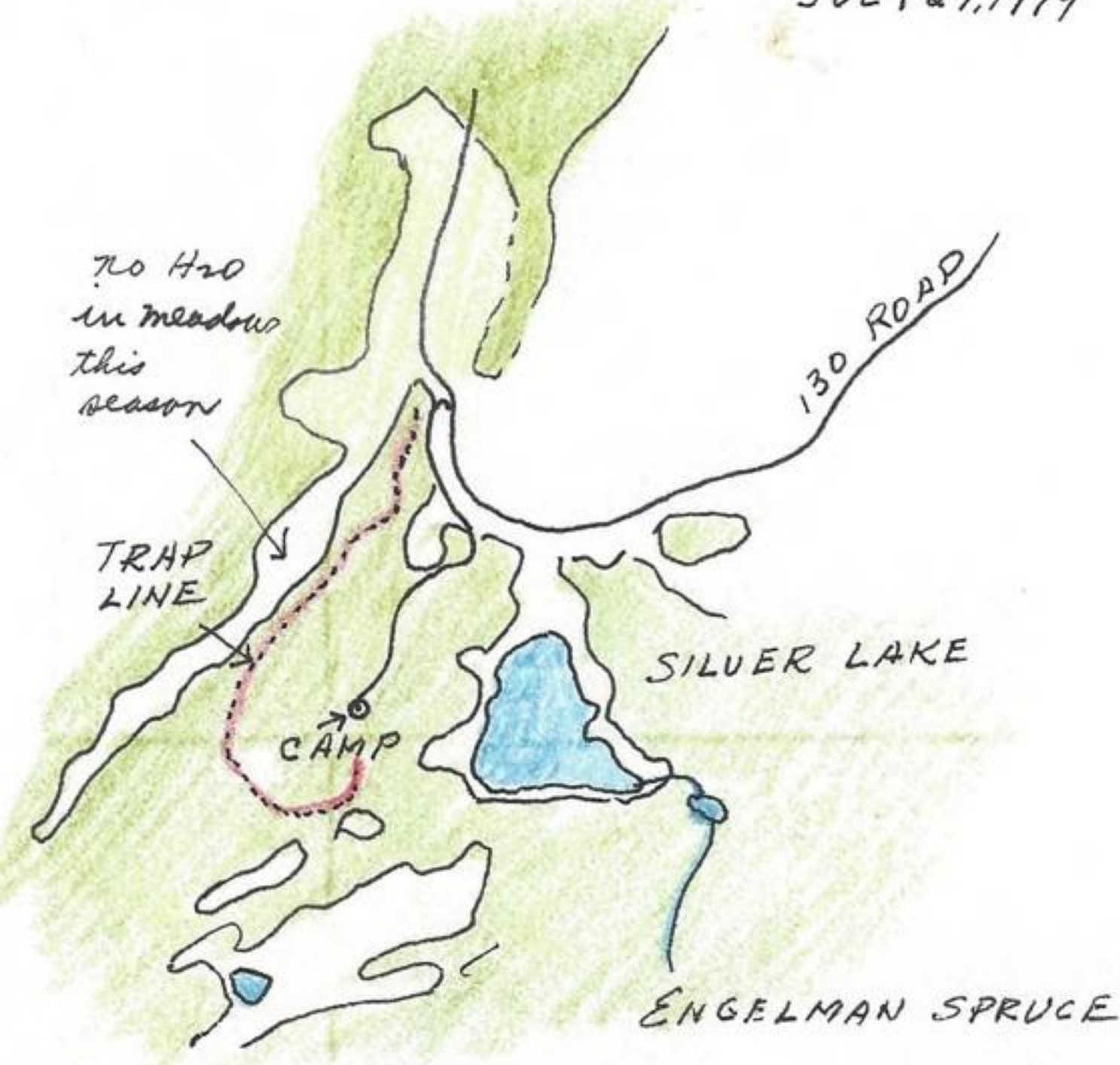
4/10
~~3.5~~ mi. W Silver Lake, Snowy Range, approx 10450 ft., Carbon Co., Wyoming.

last evening (4:00 P.M.) July 27 (see map at bottom this page)
Set 88 traps in Engelmann spruce forest on ridge W of Silver Lake. Climate spruce with bare soils and fallen timber. Forest appears as if degrading from lumber, wind etc. Mammals captured ^{this A.M.} (all traps protected from rain under logs, end fallen trees, overhanging trunks etc.):

790727-1	<i>Eutamias minimus operarius</i>	201-86-30-15-53 gm	♀	suckling
790727-2	"	191-86-30-15-41 gm	♂	testes 5 mm
790727-3	"	193-87-30-15-40 gm	♂	testes 5 mm
790727-4	<i>Clethrionomys gapperi galei</i>	138-40-17-12-21 gm	♂	testes 10 mm
5K.D.N. 790729-5	"	130-36-17-12-20 gms	♂	testes 4 mm
790729-6	"	131-36-17-12-20 gm	♀	ut. normal
790727-7	"	140-39-18-14-24 gm	♂	testes 10 mm
790727-8	"	138-39-18-14-20 gm	♂	testes 8 mm
dest. 790727-9	"	122-31-17-13-13 gm	♀	ut. normal.

no. 790727-9 partly eaten thru back chest cavity 12x5 hole and liver heart, lungs consumed; intestines not eaten. Juv. active 8:15 P.M.
The lack of *Peromyscus* was rather surprising as I judged this area to be better suited for this animal than the spruce forests N of Libby Creek. The greatest difference between the two areas was slope, more gentle above than N of Libby Creek. Number of mammals in general was also unexpected for this trapline. There has been some logging in this area and damage from wind action, especially to W just this side of the open savanna that runs N and S.

TRAPPING AREA OF ABOVE LOCALITY
JULY 27, 1979



The general area is W of Silver Lake and runs and runs for 7/10 of a mile at traps set 40' apart. min. temp. last night 39°F. Camp robber (clarks nutcracker), Canada jay, robin and chipmunk at camp. Watch a snow bank 2'x8' disappear in one day. Along trapline some tops of young trees broken, 30 to 40 small dead branches under large trees, 2 to 4 large branches (2-3 feet long) also under spruce. These branches are result of last winter's snow.

Left Silver Lake at mileage ~~538.7~~ ^{5378.7} at 9:45 A.M. 380.1 collected dominant flowers in meadows at N bend of road. It is easy to collect 12-15 species of flowering plants but to increase to 20 kinds is more time consuming. Placed in plastic bag for Mary at Casper. (Mary P. Bee). This flat in the past has always been grazed to the roots by domestic sheep but is now recovering. Heard first woodpecker drilling on hollow tree. 385.7 robin. 392.3 Brewer blackbird. 392.3 chipmunk near lower end of valley before front range and canyon. no ducks in beaver ponds, generally there are ducks here. Considerable beaver activity and whole valley in willows created by beaver dams. 393.3 striped skunk road kill. 393.6 mouth of canyon (W side range) 394.3 Citellus (line unless indicated). 394.5 2 Citellus. 394.6 6 antelope lying down in grassy field, surrounded by artemisia, all males. They remained while we passed by at 200 feet. 395.2 40 cliff swallows. 395.8 Citellus road kill. 396.0 Citellus 396.2 8 cliff swallows (resting under eulverts) 396.5 Citellus road kill. 397.6 sparrow hawk. 397.8 2 magpies at Citellus road kill. Grass field show rejuvenation and increased care, but water resource still a problem. 399.1 magpie. 399.9 now in area of former cultivated grass fields, now completely grown to a willow succession. 400.5 pond and family mallard ducks. 400.7 sparrow hawk 401.9 north Platte River at 11:00 A.M. (see previous censuses of the area between mouth of canyon and the N. Platte in previous years for comparison of birds and mammals. 20 cliff swallows ^{about} river and river field. 20 more cliffswallows. 402.5 prairie dog town on left but no prairie dogs. 402.9 highway 130, now N. 403.9 prairie dog town on left but no prairie dogs. There have been several small prairie dog towns along the way on 130, there are also rarely a Citellus along the railroad grade where in the past years they were numerous. 405.6 Citellus road kill. The ground squirrels we have been seeing are Spermophilus (Citellus) richardsoni elegans or Richardson's ground squirrel. 405.7 magpie road kill. 407.3 Citellus road kill. 410.6 Saratoga. at 11:30 met some people here that had been hiking in the Snowy Range. They informed me: 1. Coyote at French Creek. 3♂ elk SW of Lehigh Flats in timber. no ptarmigan or pika on The Lehigh Flats but a few marmots. The Forest Service people here informed

me that there was a high mortality of mammals in the Snowy Range because of deep snows last winter. Left Saratoga 412.8 at 3:10 P.M. 420.4 begin jackrabbit road kill census to Walcott Junction. ^{2, 1,} 421.3 .5 antelope, 421.8 4 antelope 421.9 antelope and 3 jackrabbit road kills. 422.6 jackrabbit. 422.8 jackrabbit. 423.4 2 jackrabbit road kills, 2 antelope. 424.0 3 antelope and 2 jackrabbits. 424.9 antelope on slope of highway gravel pile, 2 jackrabbits, another antelope on clear mound among sagebrush. This area being surveyed is all sagebrush. 425.4 3 jackrabbit road kills. 425.7 ² jackrabbit 425.9 2 jackrabbits. 426.3 jackrabbit, 5 antelope. 426.8 2 jackrabbits. 426.9 ⁵ jackrabbit road kill. 427.3 7 antelope 2 jackrabbit road kills. 427.6 3 jackrabbits. 428.0 2 jackrabbit, ³ jackrabbit. 428.3 3 jackrabbits. 428.4 2 jackrabbits. 429.6 ⁴ jackrabbit. 430.0 young jackrabbit. 430.2 ² jackrabbit. 431.1 bridge in gully, 6 antelope and 2 jackrabbits. (the group of 6 antelope at 431.1 had 3 young 1/2 size adults). 431.8 striped skunk road kill, jackrabbit. 432.4 jackrabbit. 433.2 Interstate ^{overpass} at 3:38, Walcott junction In the distance of 12.8 miles from 420.4 to 433.2 of above census there were 57 jackrabbit road kills. (4.4 per mile) and 34 antelope (2.6 per mile). ^(Continued on 30 toward Medicine Bow) 438.8 3 striped skunk road kills together and another one at 438.8 ⁹ (1/10 mi. beyond) This is on route to Medicine Bow. 439.4 striped skunk road kill. and live sage hen. 439.7 striped skunk road kill. 440.2 jackrabbit road kill. 440.6 jack rabbit road kill. 441.7 jackrabbit road kill. 442.3 jack rabbit rd. kill. 3 antelope. 444.3 jackrabbit rd. kill. 444.8 7 antelope, 2 jackrabbit road kills. 445.7 jack rabbit rd. k. 446.4 3 jackrabbit rd kills. 447.7 jackrabbit road kill. Have not seen any ^{except this sage hen} herds, but have been keeping complete census since leaving Silver Lake this AM. 449.3 2 antelope. 449.6 2 antelope in green swale. 450.7 junction 72 453.0 6 antelope 453.2 ⁶ antelope. 454.7 jackrabbit rd. kill, 455.3 jackrabbit rd. kill. 455.6 jackrabbit rd. kill. 456.6 jackrabbit rd. kill. 459.9 ⁴ jackrabbit rd. kills. 460.2 2 jackrabbit rd. kills. 461.2 5 antelope by lake, some ducks, 2 jackrabbit rd. kills. 461.6 jack rabbit rd. kill. 462.4 jack rabbit rd. kill. 462.9 6 antelope and jackrabbit road kill 464.9 jackrabbit rd. kill. 466.7 a large lake to left. 469.0 striped skunk road kill. 469.9 Medicine Bow. On the

basis of 36.7 miles from Walcott-Interstate 80 junction to Medicine
 Bow observed 7 striped skunk road kills (.2 per mile), 26
 jackrabbit road kills (.7 per mile) and 37 antelope or
 1 per mile). Had a meal at the Virginian ~~Hotel~~^{Hotel} and toured the
 famous hotel, and after filling tanks at high school track area,
 continued N. toward Getty Uranium Mine in Shirley Basin where
 we will meet Mary. Left Medicine Bow at 4:40. at 474.4
 bridge over Little Medicine Bow River. Citellus along side of
 road here. 475.0 jackrabbit road kill and antelope. 479.0
 golden eagle flying low of terrain; jackrabbit rd. kill, 2 horned
 larks. 480.3 2 Calif. quills and away from visible water, 2
 jack rabbit road kills, red tail like hawk. 48.2 jackrabbit
 road kill, 2 Citellus along road. 481.7 Citellus; ² jackrabbit rd kill,
 2 horned larks, On lee side of snowdrift fences is green where
 snow retained moisture, beyond grasses are brown. The area now
 is grass rather than sagebrush. 481.9 2 jackrabbit rd. kills.
 485.2 jackrabbit road kill. 485.8 2 jackrabbit rd. kills,
 grasslands (grass) extends E to an indefinite distance. Extreme
 east side of valley looks like sandunes. 488.3 Citellus road kill.
 491.4 2 Citellus rd. kills. 492.7 junction right to Shirley Basin.
 and Getty Uranium mines. 493.3 pond and 8 mallard ducks,
 Kelddeer. 494.7 ³ jackrabbit road kills. 496.1 3 jackrabbit rd. kills
 and as frequently the case, on a road curve. 496.2 jackrabbit
 and Citellus rd. kill. 496.6 pond to right and 13 deeps (sp.?). 497.2
 3 antelope in a green swale, 2 horned larks. 498.6 jackrabbit
 road kill, horned lark. 500.4 striped skunk road kill, 8 antelope.
 502.6 antelope. 504.4 Getty Uranium Mine turnoff (headquarters)
 504.8 6 antelope ~~509.4~~ at base of excavated soils on W side of
 Getty mine area and end of lensur. The numbers of jackrabbits,
 Citellus and antelope from bridge over Little Medicine Bow at Medicine
 Bow to Getty mine (.30.4 miles) is: 7 Citellus (.2 per mile); jackrabbit
 20 (.7 per mile); antelope 19 (.6 per mi). most of the antelope in the last
 1/3 of the distance surveyed. The jackrabbit in this area on the basis
 of geographical distribution should be *Lepus townsendii* but as there
 is also a possibility that it may be *Lepus californicus* I have
 listed rd. kill survey as just jackrabbit.

After picking up daughter Mary at Getty Uranium Headquarters we
 returned to highway, thence S to next turnoff E to and thru the
 processing plant and old uranium pit (to right). Left main road at
 509.4 on crosscountry roads NE to Burnett. Homestead, horned
 lark. 513.6 turnoff left over Little Medicine Bow River bridge

515.2 Horned lark. 517.8 2 horned larks (keeping complete
 from 509.4
 census) 518.5 Intersection road to Douglas and the Cooper-Medicine
 Bow road (old). 519.0 antelope. 519. Albany Co., 2 horned larks.
 520.0 2 horned larks. 521.3 2 horned larks 523.4 bridge
 across one of the tributaries or could be main creek of the Medicine
 Bow Comple^{ment} of creeks, killedeer, ^{River} valley harvested and irrigated
 for grass. 523.9 10 antelope $\frac{2}{10}$ mile from the green fields
 of the valley, redtail hawk. 524.3 Coyote road kill, fresh.
 526.7 3 antelope, and a Citellus (Richardson's ground squirrel), 527.1
 12 antelope 527.6 2 young antelope, 3 antelope 528.1 3
 antelope. 528.5 arrived at ^{6:40} Burnett Homestead and 4 antelope $\frac{2}{10}$ mi S
 of house.

The distance of area surveyed from Getty mine
 area to homestead is 19.1 miles. number of antelope observed is;
 38 ($\frac{2.0}{.5}$ per mile); Citellus 1 ($\frac{.05}{.5}$ per mile); no jackrabbits because of
 nature of road; horned larks 10, nearly all in pairs (.5 per mile).
 Camped approx. 80' SW of barn (starcraft hardtop trailer). Mary
 stayed at the Burnett Homestead this summer and will remain
 here until autumn. She commuted to Getty mine. made general
 survey of area and am impressed of its remoteness, especially as it
 might of been before oil & uranium exploration penetrated the area.
 The Burnett Homestead on the Burnett Ranch is one of three sites
 were the Burnetts reside. This site is no longer used as a residence
 because of the difficulty of access in winter. Mary provides protection
 from vandalism by living there. The house or Homestead is
 located specifically at $42^{\circ}25'10''$ lat., $105^{\circ}59'39''$ long, 7610 ft., Albany
 Co., Wyoming (see copies of USGS Topo maps following). The
 collecting localities are recorded by Township and Range.

The Homestead area is at the eastern edge of the broad Shirley
 Basin and at the ^{western} base of the Medicine Bow Range. It is an
 eroded amphitheater that has carved its blind end valley into
 a long NW-SE ridge that lies between the north fork of the
 Little medicine Bow Creek to the N of the ridge and the South
 Fork of the Little Medicine Bow Creek south of the ridge. The area
 is on the S slope of one of the first major benches or ridges
 between the basin and the mountains.

There are 3 major springs in the
 amphitheater each supporting aspen and willow (w spring willow only)
 with considerable saturated soils, runoff and grassy swale beyond
 each spring. Between the three major springs are secondary
 damp spots. I would judge that in maximum spring water
 production most of the spring level in the amphitheater, especially
 NW, N and E sides support water. The larger spring are

790727-162

4768 1 NE
(SQUAW SPRING)

T. 29 N.
T. 28 N.

4698

4697

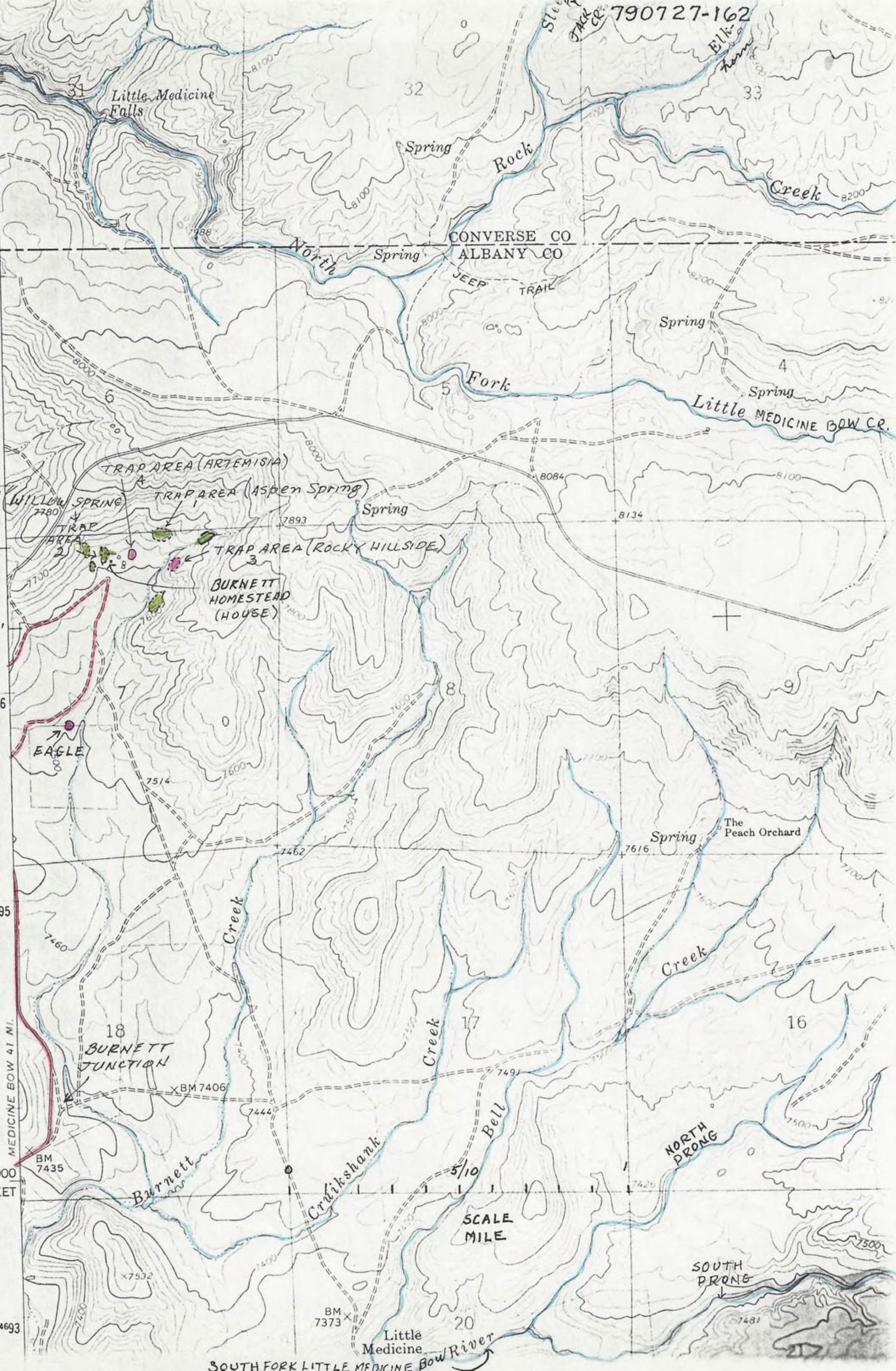
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MEDICINE BOW 41 MI.

18
BURNETT
JUNCTION

BM 7435

x7532

BM 7373

x7481

TRAP AREA (ARTEMISIA)

TRAP AREA (ASPEN SPRING)

TRAP AREA

TRAP AREA (ROCKY HILLSIDE)

BURNETT
HOMESTEAD
(HOUSE)

EAGLE

18
BURNETT
JUNCTION

x BM 7406

BM 7435

x7532

BM 7373

x7481

TRAP AREA (ARTEMISIA)

TRAP AREA (ASPEN SPRING)

TRAP AREA

TRAP AREA (ROCKY HILLSIDE)

BURNETT
HOMESTEAD
(HOUSE)

EAGLE

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JUNCTION

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BM 7435

x7532

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x7481

SOUTH FORK LITTLE MEDICINE BOW RIVER

SCALE
MILE

5/10

20

Little
Medicine
Bow River

CONVERSE CO
ALBANY CO

JEEP TRAIL

5
Fork

Spring

8

17

5/10

20

Little
Medicine
Bow River

Rock

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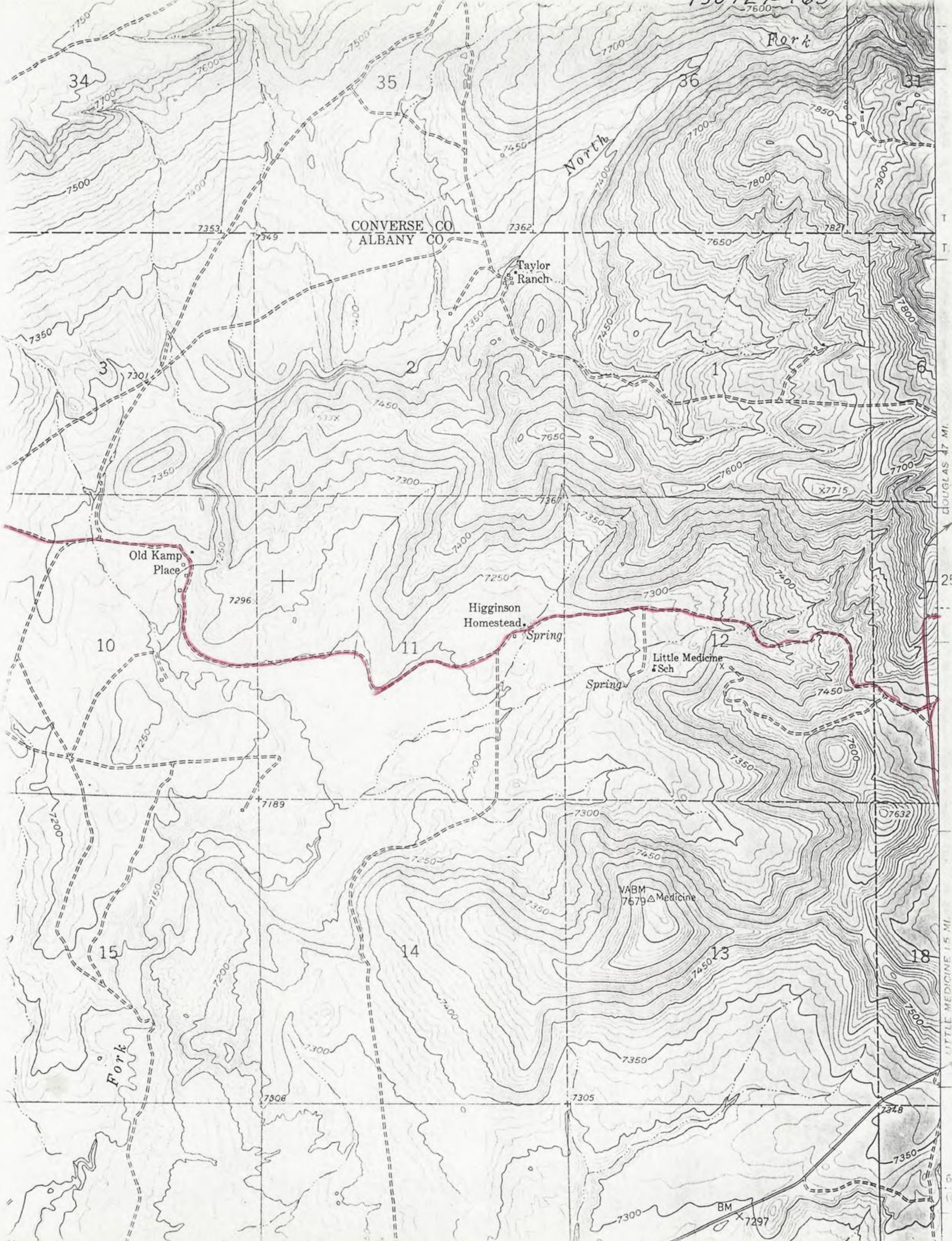
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790727-163



DOUGLAS 47 MI.

25

LITTLE MEDICINE 1.5 MI.

6

productive throughout the year and of the volume to support damp swales to open valley to the south. The spring WNW of the homestead has been tapped for water supply. I would estimate the flow of water from these springs now is 1 qt ^{gallon} per 60 seconds. Beyond the masses of trees around the spring is dry, rocky soils; with a considerable exposure of solid granite surfaces and exposed granite rocks and cliffs. Except for *Pinus flexilis* or limber pine, ^{on} the ^{rocky} hillside N & E, the hillsides are treeless. These springs could extend water to the Little Medicine Bow River under spring removal. There are some erosional channels following old roads but in the main erosion is minimal. Below the amphitheater in valley is a green meadow of grass that is fed by its own springs. It is enclosed partly by a fence. It is in this general area where most of the antelope stay during the day at least (up to 64 at one time today).

After short reconnaissance of area returned to trailer.

Burnett Homestead, 42° 25' 10" lat., 105° 59' 39" long, 7610 ft.,
Albany Co., Wyoming.

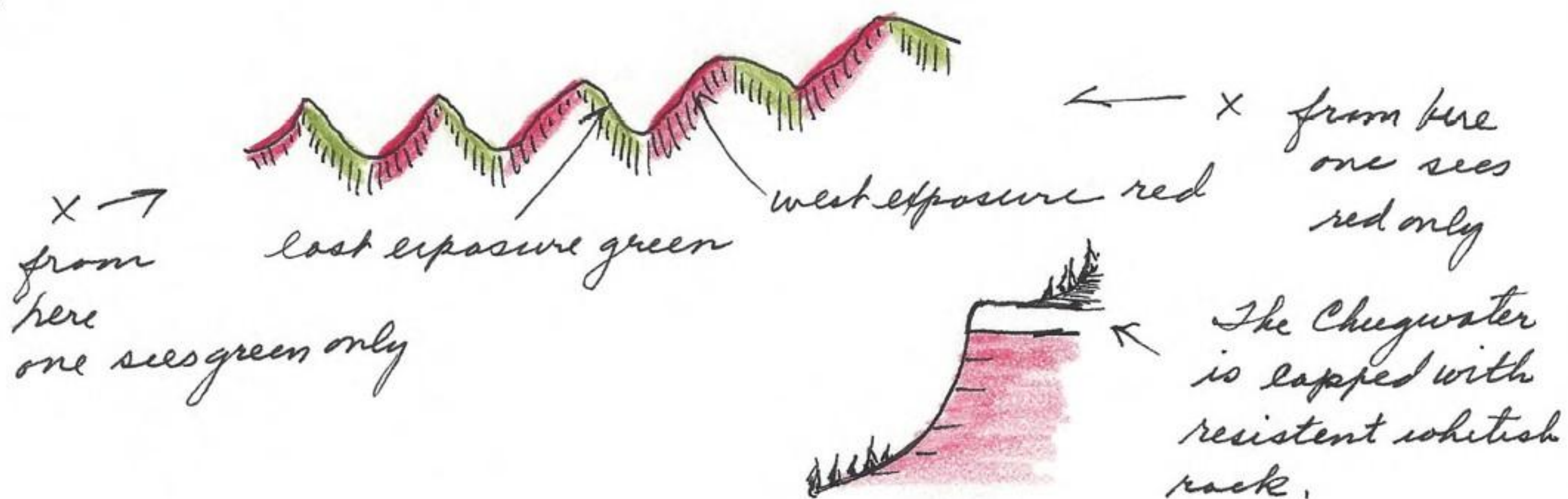
July 28, 1979

We plan to go to Casper this afternoon for a few days and then will return and trap the springs and general area. This A.M. observed the following birds in the general area around the Homestead. The fence posts around the barn produced records of birds that generally are difficult to see among sagebrush. In the early morning after sunrise they come to these ^{posts} fence posts and rails of the ^{corral} corral to sun and preen feathers, and are not at all disturbed by man's presence. Birds are: green-tailed towhee, among sagebrush & trees; red-shafted flicker, around buildings and among trees; house wren, among trees; robin, mainly around spring areas & trees; cliff swallow, 15-20 active at nests at S end of Homestead building under the eaves; Townsend warbler, among aspens; warbling vireo, among trees; magpie, nests only in trees; pine siskin, trees and around house; chipping sparrow, around buildings and in sagebrush; Brewer's sparrow, sagebrush and on corral posts; bluebird, general area, trees & buildings; western phoebe, buildings, nested in school house at homestead and several ^{nest} nests in other buildings; lark sparrow, sagebrush & corral; sagehen ^{im} ♀ and young; meadowlark, swales; mourning dove, general area; vesper sparrow, sage, swales & corral, may be questionable identification. Of the mammals:

Eutamias minimus, bulldozers, trees, rocky slopes; 52 antelope generally valley level from 2.10 mi S Homestead to beyond green pasture beyond, some on hillsides mainly on W slope but tracks also on E slope among cliffs & lumber pine, marmots, rocks; badger diggings; porcupine in trees and general area; *Citellus*, around Homestead and general area; mule deer, aspen & upper slopes to N. of barn at Homestead, 70 years old. Photos 790728-1 and 790728-2

This afternoon at 1:10 we left in Mary's car to drive to Casper on back roads and the old original Medicine Bow-Casper road. We will go W thru Scott Ranch to main road, thence to Casper. Left at mileage 48.0. Will keep complete list, ridge 4 adult and 5 young antelope, 5 antelope. 49.7, 53 antelopes. 51.3 15 antelope, we are ^{still} now over ridge ^W into Scott's Ranch. These large group of antelope are more wary than those in Burnett area and move for great distances, laterally or down valley. At 52.1 at Old Kamp Place where we met Pete Scott who, with his wife and two ranch helpers Louis Senior and Pete is the son of Dr. Oliver K. Scott of Casper and he with his two brothers and manage or have interest in the Scott Ranch. All sons are graduates of Harvard, the youngest is an artist. The Kamp Place is a log cabin and ancillary buildings. The cabin is primitive and partly open but ~~is~~ adequately furnished and a respectable kitchen. Pete was trying flies for the Brook trout that live in the North Fork of the Little Medicine Bow River that flows thru his property. In winter they move out onto the winter range in the valley. Pete Scott informed me: Coyotes are common and more are needed for control of *Citellus*. In 1973 he counted 130 jackrabbits while driving between here and Casper at night. Two years ago there were only 40 counted, and this year 1979 there were 80 so the population is on the increase now. This summer there has been an explosion of *Citellus* (*Spermophilus townsendii*) in the fields. The microtus was at a high population in 1973. He reports that a black bear crossed the Shirley Basin from west to east on June 1, 1979. Because of lack of water resource this year they have not irrigated all the grass fields. His father is an ardent ornithologist and is best qualified to report on the geographical distribution of birds in Wyoming. He conducts week-end field trips for Casper bird watchers. The golden eagle is common and is increasing here. There are good nesting sites in the area.

Left Old Camp Place and continued W. 4 antelope, 8 antelope, 6 antelope, 3 antelope. 55.0 Bar Ranch (Part of Scott Ranch), 2 antelope. Distance covered from Burnett Homestead to here (Bar Ranch) is 7 miles. Breakdown of mammals per mile is: $\frac{105}{7}$ antelope ($\frac{15}{1}$ per mile). From Bar Ranch gained top of benchland and kept record of birds and mammals along brink of benchland to point where it leaves brink and goes N across benchland. This route is approx 3 miles. The greatest concentration of horned larks were on this flat uplands and census was as we travelled along: horned lark, marsh hawk, 2 horned larks, horned lark, 2 horned larks, 2 horned larks, horned lark, 2 horned lark, 2 antelope (one travelled 40 miles per hour along side of car), 2 horned larks, 2 horned larks, 2 horn larks, 8 horned larks in group, horned lark, 2 horned larks, 8 horned larks, horned lark. This number of larks comes to 37 or 12.3 per mile; antelope 1 or .7 per mile. Continued down canyon and across the country along Old Cooper road. At 80.1 first magpies (3). Hagen Ranch 15 robins, 2 magpies. 82.8 5 magpies, 17 robins, 1 magpie and 1 sparrow-hawk. End complete census 84.6. Continued short distance N along main highway and then turned off on Circle Drive. Photos 790728-3₁ and 790728-4 of red Chugwater formation on S side Canyon. It is interesting that the exposure going up canyon is all red but at head of canyon looking back the red disappears and the slopes are green of conifers & other trees & shrubs.



Continued to top of divide, thence N over ridge and down switchback roads to base, thence W across base of mt. along spring and willow area, thence N. at 03.9 4 antelope about 150 from road. At 5.4 first crossroad toward Casper.

835 E 14th, Casper, Wyoming

July 29, 1979

Spent the day at Mary's home and did some work inside and around the house. Had her truck repaired.

July 30, 1979

In Casper looked at furniture for Mary.

July 31, 1979

Left Casper for Burnett Homestead. Will pick ^{up} Mary at Betty's Uranium mine in Shirley Basin. Left at 3:30 P.M. Will keep complete census of antelope from Casper to Betty's mine and then from Betty's mine to the homestead. 25-7-35-4-4-5 or 80 antelope, most of them in one field about 1/2 way to mine, and another major group near Betty's mine. This overage (on the basis of estimated mileage of 60 = 1.33 antelope per mile. Arrived Betty's 5:15 and at 5:30 P.M. picked up Mary and we drove to Burnett Homestead (route shortest but would be difficult to describe without a map. Antelope observed were 10-2-3-3-8-1-6 or 33 antelope total. For some reason the usual number of antelope were not in the lower fields at the Homestead. The group of 8 were in mowed fields. The distance between Betty's mines & the Homestead is 19.1 so the number of antelope per mile is 1.7 compared to 2.0 of a census taken July 27, 1979, a few days ago. At divide into Burnett valley noted 2 young sagehens. Thoughts on antelope; largest groups associated with cultivated grass fields; most grazing, walking, standing or resting on ground, seldom running except when alarmed by man; wary in all situation, even around cultivated fields and man; none is tamed; adjust to cars passing on main highways and interstates, some will feed on right-of-way or along fence lines; some road kills and carcasses never salvaged; many females with 1, 2 or 3 young; males associated in herd formations but many times are singles; some travel 45 MPH and seems incredible how they cross sagebrush or rough terrain; change position throughout the day. This evening set 38 traps (trap area no. 4) among solid stands of artemisia, generally at base of trunks of the sagebrush. Ground free of vegetation. The sagebrush is highest where associated with drainages. Also set 50 traps among aspen that forms an oasis in a flowing spring area ^{on sidehill}. Willows and gooseberry and aspen dominate the vegetation. Soils damp to supersaturated and ground cover follows water courses. Willows form solid stands as understory

Burnett Homestead, $42^{\circ}25'10''$ lat., $105^{\circ}59'39''$ long., 7610 ft., Albany Co., Wyoming.
 [house] [general locality] Aug 1, 1979 min. temp last night 56°F .

From the 38 traps (trap area no. 4) E of Burnett's Homestead among artemisia caught the following mammals (checked at 6:30 A.M.): (the specific locality recorded on mammal tag is: E. Burnett Homestead, 6/10 mi. E and 1/10 mi. S of SW corner Sec. 6, T28N, R76W, 7610 ft., Albany Co., Wyoming.)

790801-1	<i>Peromyscus maniculatus nebrascensis</i>	159-72-20-17-17gms	♀ ut. normal
790801-2	"	158	16 " ♂
790801-3	"	158	15 " ♀
790801-4	"	152	15 " ♀
790801-5	"	165	24 " ♀
790801-6	"	166	25 " ♀
790801-7	"	153	15 " ♂
790801-8	"	145	14 " ♀
790801-9	"	158	15 " ♀
790801-10	"	158	16 " ♂

Prepared only one specimen of the above no. 790801-1, the rest I recorded total length, weight and sex only.

From the 50 traps set last evening (trap area 1) and collected at 6:38 A.M. collected the following mammals: (the specific locality recorded on the mammal tag is: NE Burnett Homestead, 7/10 mi. E of SW corner Sec. 6, T28N, R76W, 7660 ft., Albany Co., Wyoming.)

790801-11	<i>Eutamias m. minimus</i>	203-91-30-15-47gms	♀ ut. normal
790801-12	<i>Peromyscus maniculatus nebrascensis</i>	167-72-20-17-24gms	♂ testis 5mm
790801-13	<i>Microtus l. longicaudus</i>	174-60-21-13-42gm	♀ 1x6 emb. 15mm
790801-14	"	186-62-21-14-45gm	♂ testis 13mm
790801-15	"	154-50-20-13-23gm	♀ ut. normal
SKV 790801-16	<i>Zapus princeps princeps</i>	237-142-32-14-33gm	♀ ut. normal, body fat
790801-17	"	216-130-30-14-19gm	♂ testis 5mm
790801-18	<i>Sorex</i>	102-41-12-7-4.5gm	♀ ut. normal
790801-19	"	109-42-12-7-4.5gm	♂
790801-20	<i>Peromyscus maniculatus nebrascensis</i>	180-76-21-16-23gm	♀ ut. normal
790801-21	"	162-64-19-18-21gm	♀ ut. normal
790801-22	<i>Eutamias m. minimus</i>	188-81-30-15-42gm	♀ ut. normal
790801-23	<i>Peromyscus maniculatus nebrascensis</i>	145-	14 gm ♀
790801-24	"	140	11 gm ♀
790801-25	"	142	14 gm ♀
790801-26	"	146	15 gm ♂
790801-27	"	155	16 gm ♀
790801-28	"	141	10 gm ♂

As 5/10 mi. SSW of Homestead at 4:00 P.M. after a good wind and a local rain shower, noted a golden eagle circling above the fenced grass field ^{to the} S. It lit on fence post. The antelope formed compact group in the immediate area. The eagle left and flew to the west in about 5 minutes. As it left the post a sagehen left the sagebrush in front of it and the eagle gave pursuit for approx 4 seconds then discontinued its pursuit and continued flying to the west over ridge into Scott Ranch territory. When the eagle left the antelope ^{slowly} disperse over field again from their compact grouping. The weather ^{just} prior to the arrival of the eagle was loud thunder in distance, high winds from the west followed by light rain. The wind blew dust from the road on the west side of area to such an extent that it obscured vision of the pasture and landscape beyond to the south. This dust from the road extended clear across the valley. All roads should be minimal in width and stabilized from winds as severe ecological changes may result. 1/2 hour after ~~from~~ ^{the eagle left this area}, an eagle returned from the west and lit on ground in same area of pasture. It was not observed as to when it left. At 6:00 P.M. a ♂ and ♀ Brewer blackbird in camp, also a western kingbird.

790801-29	<i>Peromyscus maniculatus nebrascensis</i>	153	13 gm ♂
790801-30	" " "	147	13 gm ♂
790801-31	" " "	158	14 gm ♂

Specimens 790801-23 to 790801-31 total length, weight and sex only, Inspected the trap line in the artemisia (Trap area 4) at 11:00 A.M. (4 1/2 hrs since checked at 6:30 A.M.) and collected:

<u>790801-32</u>	<i>Eutamias minimus minimus</i>	188-83-30-15-37 gm	♂ testis 4 mm
at 11:20 A.M. also check trap area 1 at NE Burnett Homestead, 7 1/10 mi. E of SW Corner Sec. 6, T28N, R76W, 7660 ft., Albany Co., Wyo. which is the same trapline checked at 6:38 this morning and produced:			
<u>790801-33</u>	<i>miratus longicaudus longicaudus</i>	171-56-20-12-35 gm	♀ 2x2 emb. 13 mm
<u>790801-34</u>	" " "	146-51-20-12-22 gm	♂ testis 4 mm
<u>790801-35</u>	<i>Eutamias m. minimus</i>	200-88-30-13-46 gm	♀ ut. normal
<u>790801-36</u>	" " "	188-85-31-15-37 gm	♂ testis 5 mm
<u>790801-37</u>	" " "	202-90-31-14-44 gm	♀ ut. normal
<u>790801-38</u>	" " "	200-93-31-15-43 gm	♂ testis 4 mm
<u>790801-39</u>	" " "	198-81-31-15-42 gm	♂ testis 4 mm

checked traplines again at 2:45 P.M. From E Burnett Homestead, (see previous exact locality) caught one Brewer sparrow only, from the trapline NE Burnett Homestead (see above for exact locality collected:

<u>790801-40</u>	<i>Eutamias m. minimus</i>	207-84-32-16-51 gm	♀ ut. normal.
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← see opposite page for eagle observation.

Pulled the 38 traps from the artemisia area E of Burnett Homestead (see above for exact locality) at 6:30 P.M. no mammals but a green-tailed towhee. at 7:00 P.M. ^{re-baited} reset the 50 traps in aspen-spring area NE of Burnett Homestead (see exact locality above). From this same trapline took the following (since 2:45 P.M.)

<u>790801-41</u>	<i>Eutamias m. minimus</i>	196-88-30-14-41 gm	♀ ut. normal
<u>790801-42</u>	" " "	202-90-30-14-45 gm	♀ ut. normal
<u>790801-43</u>	" " "	193-86-29-14-42 gm	♂ testis 5 mm
<u>790801-44</u>	" " "	183-76-31-15-42 gm	♂ testis 4 mm

Traps set in grass swales did not produce mammals except where the grasses were tall enough to give overhead protection. The best position in the aspen-spring area was along the edge of moving water where most species in the tree environment pass.

I spring area nw of Homestead (below garden plot) the water level on part of trapline where traps were set on muddy soils the previous evening (yesterday evening) the traps now this A.M. were under 2 inches of water which indicates greater flow of water at night. 7 young and 1 adult sage hen along trapline and leisurely coaxed down grassy swale below willows, young preceding adult. On trap line (nw Homestead), 2 *meratus longicaudus* were caught together in one trap (nos 790802-19 an immature and no. 790802-14 an adult ♀). Add western Kingbird, sparrow hawk, meadowlark, rock wren to bird list for area. At 7:00 P.M. with sky still light to W, poor-wills started to call from all directions. Antelope tracks in all trails in valley and at least 1 per square foot or closer. 63 in area at sundown. Sagehen tracks in all dusty trails or roads. 3 killdeer in lower pasture. Porcupine dens among rocks and cliffs on east hillside. Trees are limber pine and juniper. This evening saw a large white-tailed jackrabbit in swale on hillside ridge SE of the Homestead. It was moving down grade toward pastures below.

Burnett Homestead, 42°25'10" lat., 105°59'39" long., 7610 ft., Albany Co.,

Wyoming,

Aug. 2, 1979

min. temp 48°F last night.

(Trap area no 1) NE Burnett Homestead (see exact locality previous) Puled traps in spring-aspen area (50 traps) at 6:30 A.M. mammals are:

790802-1	Microtus longicaudus longicaudus	163-56-20-12-27gm	♂	testis 10 mm
790802-2	Peromyscus m. nebrascensis	135-56-20-16-15gm	♀	ut. normal
790802-3	" " "	146-63-20-15-18gm	♀	ut. normal
790802-4	Zapus princeps princeps	208-125-30-13-16gm	♀	ut. normal
790802-5	" " "	207-126-29-14-16gm	♀	ut. normal
790802-6	" " "	215-130-30-14-16gm	♂	testis 5mm

NW Burnett Homestead, 1/2 mi E and 1/20 mi S of SW corner Sec. 6, T.28N., R.76W, 7620 ft., Albany Co., Wyoming.

Last night at 7:00 P.M. set 35 traps among willows and wet soils W of house. Trap area no. 2. The above locality is exact for this line NW Burnett Homestead. Checked these this A.M. at 6:30 A.M.:

790802-7	Peromyscus m. nebrascensis	150-61-20-17-17gm	♂	testis 4mm
790802-8	" " "	140-58-20-17-15gm	♂	testis 4mm
790802-9	" " "	168-69-19-18-28gm	♀	plac. scars
790802-10	Peromyscus " "	163-73-21-18-17gm	♂	testis 5mm
790802-11	" " "	156-68-20-17-19gm	♂	testis 4mm
790802-12	Zapus princeps princeps	210-126-30-13-15gm	♂	testis 5mm
790802-13	" " "	227-139-31-14-23gm	♀	ut. normal
790802-14	" " "	226-135-31-15-26gm	♂	testis 7mm
790802-15	Microtus l. longicaudus	146-74-20-11-25gm	♀♂	testis 5mm
790802-16	" " "	180-61-20-12-43gm	♀	2x2 emb. 5mm
790802-17	" " "	158-41-19-11-40gm	♀	3x2 emb. largest 10 smallest 4
SKU 790802-18	" " "	153-48-21-12-23gm	♂	testis 4mm
790802-19	" " "	133-36-19-12-21gm	♀	ut normal

← see opposite page for additional info.

From spring-aspen sample above, saved skull only of; (NE Burnett Homestead, see above for exact locality)

SKU 790802-20	Peromyscus m. nebrascensis	156-65-20-17-19gm	♂	testis 4mm
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NW Burnett Homestead, 1/2 mi. E and 1/20 mi. S of SW corner Sec. 6, T.28N., R.76W, 7620 ft., Albany Co., Wyoming.

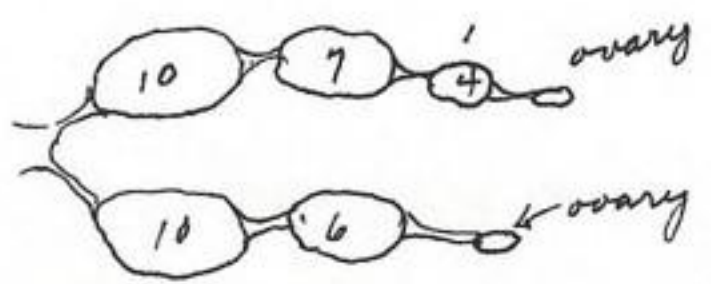
From NW of house set saved Zapus as skull only; (local immediately above)

SKU 790802-21	Zapus princeps princeps	[155]-[58]-30-15-29gm	♀	suckling
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The remaining are measurement only, from NW of house (see above for locality)

790802-22	Peromyscus maniculatus	141-61-21-18-12gm	♀	ut normal
790802-23	" " "	131-54-20-16-12gm	♀	ut normal
790802-24	Microtus l. longicaudus	133-33-18-11-22gm	♀	ut. normal
790802-25	" " "	135-33-19-11-22gm	♀	ut. normal
790802-26	" " "	132-41-20-12-19gm	♀	ut normal
790802-27	" " "	126-33-20-11-18gm	♀	ut normal

Embryos of 790802-17



Pulled all traps NW Burnett Homestead at time they were inspected this A.M.

E Burnett Homestead, 3800 ft E and 1/10 mi. S of SW corner Sec. 6,
T28N, R76W, 7660 ft., Albany Co., Wyoming.

Aug 3, 1979

(exact locality above date)

Last night min temp: 43°F. Last evening set 38 traps on sidehill, among granite rocks and cliffs. Vegetation artemisia, Linus flexilis. Caught the following this A.M. at 6:30 A.M.

790803-1	<i>Eutamias m. minimus</i>	206-91-32-14-44 gms ♀ ut. normal
790803-2	"	198-88-32-14-42 gms ♂ testis 5 mm
790803-3	<i>Peromyscus</i>	158-60-20-17-24 gm ♀ plac. scars
790803-4	"	170-73-20-17-22 gm ♂ testis 5 mm
790803-5	"	157-63-20-17-19 gm ♂ testis 5 mm
790803-6	"	[145]-[51]-20-16-20 gm ♂
790803-7	"	151-58-20-16-15 gm ♂ testis 3 mm
8	"	152-62-20-16-16 gm ♀ ut. normal
9	"	135-52-20-16-14 gm ♀ ut. normal
10	"	135-56-21-16-14 gm ♂ testis 3 mm
11	"	145-58-20-16-13 gm ♀ ut. normal
790803-12	"	108-41-18-14-5 gms ♀ ut. normal

average

Grasshoppers in closely grazed grasses in swales ~~are~~ ¹ per every square yard. At spring SE of Homestead there are 4 magpie nests, 3 at upper end of aspen grove one 5 feet above ground, one 10 feet above ground and 1 18 feet above ground. May represent 3 years use of grove. 2 nests in lower end of aspen-willow grove 10 & 9 feet high from ground. They are being used now by *Nestoma*. 3 1/2 foot high sagebrush has grown up thru an old wagon which must be (the wagon) 60-70 years old. On hillside SE Homestead porcupine have eaten ^{some} bark off many limber pine on the slope. Among sagebrush on slope 1 grasshopper per 30' and most are calling. From the hillside took the following photographs:

Photo 790803-13 3 antelope lying down at edge of clearing around a salt lick about 2/10 mi. S of Homestead. Photo ^{to W} from low elevation at point of lateral ridge ^{on east side}. Sagebrush dominates valley and west slope, highest and thickest along drainages and ^{more} sparse on upper slope of west ridge. Grass and weed swale in lower right corner. Limber pine and lichen covered granite boulders in foreground. a gooseberry grows among the boulders. There are no outcrops of granite boulders on west side of valley on ridge. County road to Douglas runs along top of ridge and it is from these roads that dust blows clear across the valley.

790803-14. Burnett Homestead from same position as previous photo but shooting to N. Homestead to left, school house in middle, barn and corral to right. Willows left of homestead one of the trapping area. The spring is on hillside to left and out of picture. Sagebrush seems to be invading original clearing around buildings. The corral poles were the favorite sunning positions of many of the small birds that inhabit sagebrush. The granite outcrops are beginning to appear on N end of amphitheater. White rocks may be associated with rocks turned over and cementlike material exposed on below ground level. Some tree & granite boulders as in previous photo. Original old road in front of barn. Behind barn is a long shed, also of antiquity. Power lines ^{from house (poles)} are still up across yard to school house & barn. ~~Power lines~~ ^{clothesline} still in position. Antelope rarely come close to buildings. A trail or old wagon road leads straight up the N slope.

790803-15 Fenced pasture (on USGS topo map) ^{1 1/2 mi.} S of Burnett Homestead. Photo taken farther S than 2 previous and higher on hillside. The old road is nearest camera and runs along W side of swale that drains most of the amphitheater. It joins the newer road that leads to Homestead. It is the newer road that has developed erosional gullies on along its route. The old road followed natural profiles and has not eroded. Ordinarily this area supports 50-60 antelopes, especially the grassy pasture. The eagle (see Aug first, alighted on one of the fence poles in center of photo (N line of fence posts). Lumber pine & granite boulders and outcrops in foreground.

790803-14 of Burnett Homestead area from ridge SE and higher and closer than previous photos. The spring that currently supplies the house (white) is on hillside above the spring ground to willows. The two spring areas have separate sources but converge below willows. On left hand side of photo is the garden plot securely fenced from rest of area and formerly used to raise food for the homestead. It could be irrigated. Mary started to develop this area again but could not get water to it so made a small garden just N of house where she successfully grew garden variety of vegetables. The fenced in area has grown to grass and some artemisia is invading. Several active gophers, zapus, microtus & Peromyscus in tall grasses (some 4 1/2 feet high), many grass stem eating platforms there. Burnett claims that the soil in the homestead area of sagebrush would have to be cultivated to produce grass. All buildings can be seen, even the outhouse. Lumber pine filters view.

measured a juniper tree near by at 3 feet diameter. There are some very old limber pine on slope. A turkey vulture flew over at this position.

790803-17 Old dead limber pine on ridge SE Burnett Homestead.

790803-18 Live branch limber pine as above and Chinese like in floral pattern.

790803-19 Photo to W from Burnett Homestead at a point E of where road from homestead joins county road. It is this road that blows dust when winds come from the W. It has a wide graded right-of-way that added extensive surface area for wind to work on. Getty Uranium mine in distance. One can imagine how this whole valley or basin could be completely turned over by mining operation.

790803-20 Photo from NE amphitheater showing Burnett spread below and Getty mines in the Shirley Basin beyond. W of the Homestead is the spring supporting willows, the spring on sidehill beyond that supplies water (dead microtus longicaudus in water here) with drainage W of willow springs and converging with it just below the willow spring and the spring from 2 willow patches directly E of garden plot. It was this spring that raised 2 inches in its ~~flow~~ channel overnight. The aspen spring is in foreground and swales below. The third major spring is out of sight to left. Sagebrush and limber pine on N + E slopes. Granite outcrops in foreground. The road from Homestead to County road is the 3rd or most recent one, at least as it connects with present Co. road. all buildings are visible.

790803-21 three sage hens NE homestead, on extensive flat exposure of granite rocks. The sagebrush beyond is part of the artemisia trapping area where Peromyscus were caught. There are many equipment antiques N of shed in sagebrush.

790803-22 Photo from SW part of Burnett Homestead area showing buildings and general environs. The grass just beyond the fence in foreground is maintained by enclosure of an antelope deer proof fence. High sage brush seems to be confined to low grade slopes or swales (bordering). Another spring with aspen SE of homestead is out of the picture to the right. The present setting of the homestead area is the most likely place for early Indians to have camped and lived. At the time this photo was taken there were 14 antelope resting in sagebrush just below the large tree (limber pine) on ~~is~~ near top of ridge. The only deer (mule) that I saw was just below the ridge on the extreme left. A great horned owl resting in the barn in the day and if disturbed flew to aspen trees at spring beyond.

In the drainage leading from aspen spring area the swale soils in an eroded cross-section showed 1 foot of deposit or build-up over a granite rock bed in creek.

Mr. Walter Burnett, one of the sons of Richard Burnett, the owner of the Burnett Ranch, visited us at the homestead and informed us of the following:

1. Father is Richard Burnett who's sons are Walter and John and who's daughter is Darleen. Walter's wife is Lillian. His grandmother (living or not was not brought out in the conversation) is or was 103 years old and she was living in the area when the Indians inhabited the general area of the ranch in 1870-1880. She was instrumental in starting the Burnett Ranch.
2. Walter did not remember Indians in the area.
3. Barn at Homestead here at least 70 years old and was built by his grandfather.
4. All three children (John, Walter and Eileen = Darleen?) went to school in school house still standing between barn + house, up to 6th grade and then went to school in Medicine Bow. A woman school teacher lived in at the Homestead.
5. The Homestead is snow bound (4' deep) between Jan. 1 and April 1.
6. There ~~is an~~ are 50-100 antelope that spend the summer on the Burnett spread.
7. Last winter 50 antelope died on the winter range in the basin.
8. Coyotes are controlled by helicopter by Federal people. I shoot a few with shot gun from Cessna plane (private plane owned by Walter).
9. Coyotes are a problem.
10. Winter kill did not effect local summer population of antelope.
11. Golden eagles are common.
12. Springs around homestead as fed by snows in mountains to east and some years if snow is not plentiful, the water in springs almost disappears.
13. Summer on ranch are always dry and nights are warm. Winters are cold, especially is this true the last few years.
14. The area is characterized by little wind.
15. The Homestead was closed down because winters were too hard and it was difficult to get in and out of the homestead in winter.
16. There are no rattlesnakes in area.
17. The mule deer were once abundant, then became scarce but now are increasing.
18. Ranchers made \$6000.00 on lease of land for uranium

exploration. It is difficult to keep them off your land.

19. Some land in basin sells for as little as \$400.00 per acre

20. Between here and Getty Uranium mine are circles of rocks (20?) on edge of a ridge used to hold teepees to ground. They are very noticeable from the plane.

Left homestead for Casper at 4:45. Will return to Getty Uranium mine, thence Casper. Sky has been cloudless all day until now with a few small clouds, ^{developing} 5528.5 mileage at homestead, will keep complete list of birds and mammals back to Casper. Left ^{with trailer} by the oldest road because newest too steep, second oldest wet and eroded ^{but} oldest, no problem. On way to fenced pasture noted 1 adult and seven young (3/4 size adult), ^{sagehens,} one adult and 6 young, ^{sagehens,} 16 antelope in one group in lowlands, while most of the antelope favor the pasture area, there are always others in sagebrush or on nearby slopes. Vesper sparrow. I would estimate 70 antelope in entire valley. From pasture to junction of road to Burnett's Lunch (Waltus to east) ⁶⁻⁸⁻⁴⁻²⁻¹⁰⁻³⁻³⁻⁴ noted groups of 4-2-1-4-3 antelope. 530.5 Burnett junction. antelope. Between here and Burnett Homestead (2 miles distance) observed 35 antelope per mile which is the greatest concentration of antelope observed so far per mile in Wyoming. 531.9 6 antelope mixed in with dispersed herd of domestic sheep. There is no objection of antelope competing with sheep for food. Artemisia in some areas sparse and only 3 or 4 inches high, other areas contiguous of normal growth. 532.7 coyote road kill still on road (see previous trip record of same animal. 1/10 mi beyond coyote road kill a jackrabbit road kill and first one observed in this area. It takes ^{mostly} high speed of main roads to kill jackrabbit. 533.6 at bridge of cultivated valley of grasses, considerable water in creek. Horned lark. One antelope mixed in with sheep, 4 horned larks, antelope and horned lark, 3 horned larks, 2 horned larks, 2 horned larks, 3 horned larks. 536.7 junction ^{of} with Douglas road with ~~Old Casper rd.~~ ^{another road}, 3 horned larks. 5 horned larks, 538.3 junction with Old Casper road ~~and~~ ^{and} ~~away~~ west, 2 horned larks, 2 horned larks, 2 horned larks, horned lark, horned lark, horned lark, 3 horned larks, 543.4 creek, horned lark, 2 antelope, big buck antelope, antelope, horned lark, horned lark. 547.6 main highway at 6:08 P.M., now going north on W side Getty Uranium Mine and will keep check of antelope between here and Casper. ^{In summary} From Burnett junction to main road at mine 17.1 miles observed: 12 antelope (.7 per mile); 39 horned larks (2.2 per mile); jackrabbit 1 (.06 per mile).

antelope on Getty property, 4 antelope on Getty property, 2 antelope one of which was lying down on road right-of-way about 30 feet from passing cars, 3 antelope all on Getty property before left turn in road, 3 antelope. Now up grade at bend, 2 sage hens along rd, now dropping down off benchland in Canyon. 15 antelope 1/2 mi down road from divide, 2 magpies at jackrabbit road kill, marsh hawk at 557.3 559.9 junction 77, and 487, 561.2 Natoma Co. at 6:30 P.M., magpie, 6 antelope at 583.2 in cultivated pasture. 584.2 19 antelope in cultivated pasture and these two groups first one observed since mileage head of canyon north of divide on benchland just north of Getty mine area, 588.3 7 antelope. 586.8 end 487. Now to 20 east, first mourning dove today at beginning of narrows, Casper 5606.2. In the 58.6 miles between Getty Uranium mine and Casper noted 58 antelope or 1 ³⁴ per mile, most of them were in two major groups.

835 E 14th, Casper, Wyoming

for Seattle Aug. 4, 1979

Left Marij's home at 11:07 A.M. at mileage 5606.2. Will follow north on Interstate 25, thence 90 across Montana, Idaho, Washington to Seattle. 623.3 16 antelope associated with water, 632.6 cliffs to E resistant layer with scree eroding above the layer, 3 major rocks left on the monolith. at 635.8 650.6 Salt Creek. Bird life rare. 652.6 badger road kill, 660.6 Johnson Co. 664.4 3 antelope, 6 antelope. 672.1 South Fork Powder River, damp braided stream channel only, 675.1 2 antelope. 679.1 prairie dog town, no prairie dogs. 679.9 KC exit, few cliff swallows at culverts along way but otherwise birds rare along way, 695.2 badger road kill. 699.5 Coyote rd kill. 703.2 antelope road kill. 703.5 prairie dog town to east, 2 live dogs only, 703.6 more mounds and seem to be used. Grasslands along Big Horn are sawtooth in profile as they meet the base of the mountains. 733.4 antelope road kill, big reservoir to east of here, porcupine rd. kill, 10 antelope in green cultivated field. 735.9 3 antelope 738.1 Piney Creek, 15 antelope 739.7 may be the real Piney Creek and not previously mentioned one. 742.0 Sheridan Co., porcupine rd. kill. 758.0 15 antelope in green spot in field. 758.7 Turnoff to Sheridan. 767.0 antelope walking along edge of marsh covered with cattails. 770.5 Tongue River. 800.2 Montana border. From Casper to here (194.0 miles) there were 73 antelope or .374 antelope per mile.

This part of Montana has more grass and less sagebrush than in Wyoming across the border to the south. Little Big Horn River about $\frac{1}{3}$ full. 813.8 4 groups of teal in pond. At Crow Indian Reservation stopped in to check in a trading post to buy some authentic merchandise but no store. Visited instead the Indian Hospital. One white man was selling blankets at \$35.00 a piece but they looked more like Navajo type blankets than Crow. He sold out of his van but on the Crow Agency. The nearest shopping town is about 15 miles beyond at Hardin. Big Horn River $\frac{1}{2}$ full, sandbars not exposed. 892.5 Yellowstone River at Billings. 933.0 Bushes associated with ponderosa pine are evenly spaced rather than clumps of bushes. Continued to Columbus and camp just S along the Yellowstone River.

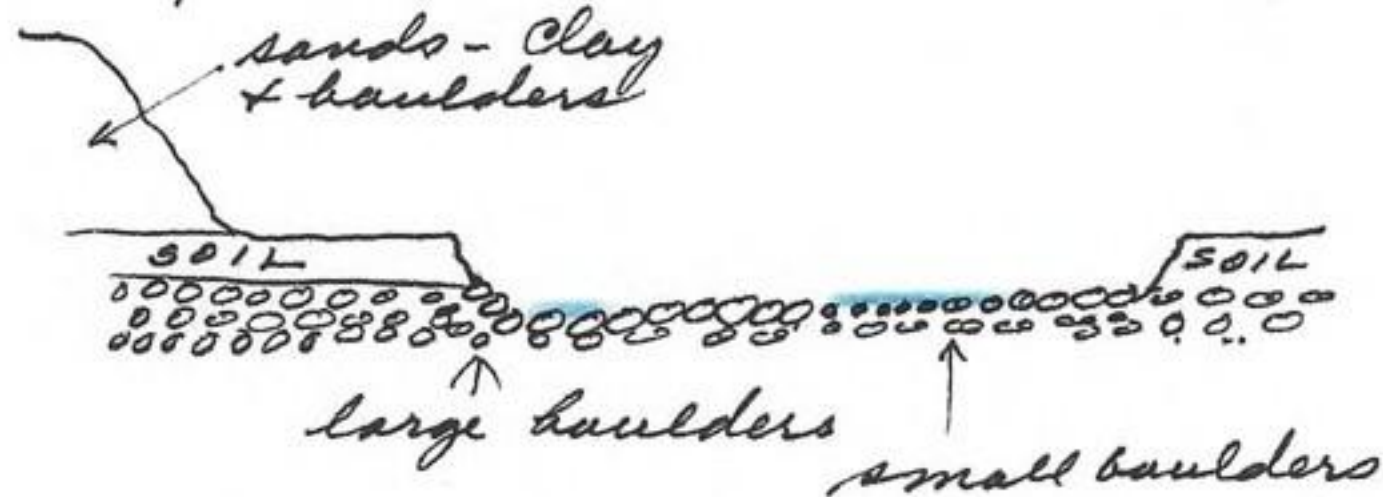
Columbus, Stillwater Co., Montana

Aug. 5, 1979

Left camp at 941.1 at 8:00 A.M. Yellowstone here has a river bed of cobbles ^{up} to 14" diameter and what would be equivalent to sandbars are smaller cobbles, larger toward banks. Three feet (height) of soil on top of river deposits and above present river valley are benches of sands, clay and cobbles. There are some limited spots of sand in river bed. These boulders

are rounded by river action and are ^{light} grayish, ^{fine grained} granite.

Great blue heron flew up river, also in area killdeer, yellow warbler, mallard, and Brewer blackbird. Left area. Starlings in town. This country is characterized by bluffs and ponderosa pine and riparian forests of cottonwood along the river. Mourning dove. Montana so far has had air pollution all along the way from factory pollution etc to forest fire smoke. The haze is continuous and obscures distant mountain ranges, in all directions. Sunset last night a most unusual yellowish brown. 953.4 Yellowstone River. Cottontail road kill. Grass grows right up under ponderosa pine. Many young pines on slopes. 961.0 Sweetgrass Co. 963.4 150 Brewers blackbirds along road. 967.3 Bridger Creek. Have just left the good stands of ponderosa pines and the country now has fewer and smaller pines and the country is much drier. 986.3 First yellow-headed blackbird.



988.3 Citellus, and one a road kill. Have seen several flocks of prairie jays in area, and seem to be out of their habitat, 003.6 mule deer road kill. 007.4 3 Citellus feeding along side of road (3' away). Others have been observed. 019.3 Yellowstone River at Livingston. 056.3 Entire valley of grayish-black cobbles. 061.5 Gallatin River 1/4 full, mourning doves and Brewer blackbird most common birds along way. 070.1 turkey vulture. 075.2 Madison River near Three Forks. 076.6 Jefferson River. 82.3 Jefferson County. 83.6 24 cattle around power pole, three turkey vultures on cross bar directly above them. ~~097.4~~ 115.2 good solid granite in section. 121.5 continental divide, 2 raven, and first raven seen on entire trip. Localized ^{pollution and} heavy haze over Butte. 139.5 young junipers sprouting up on all the hills which are tall and thin and not like the junipers I have seen elsewhere. There is a polluting mill west of here, all valley made up of grayish black pebbles. 166.3 saline pond with greatest concentration of ducks seen so far on trip. 239.6 have seen only 7 crows since entering Montana. 278.3 porcupine road kill. 326.5 Tamiasciurus. 360.5 Idaho at 7:08 P.M. (Pacific time). 639.3.7 Swimming Hole, Pinehurst Creek at about ~~8:00~~^{8:30} P.M. for camp. This is on a road that leads up a creek to S from Pinehurst and we camped along the side of a swimming hole made in creek bottom with diving rocks on W side.

S of Pinehurst, Idaho

Aug. 6, 1979

Left at mileage 6393.7 Continued W to Spokane and then to Seattle, all on 80. 521.4 all wheat has been cut in the Columbia basin and some fields have been plowed. no recent mammal digging in fields. 531.5 whirlwind of unusual configuration. It was long and narrow (350' high and same diameter from base, and all along its full length to top of funnel, are wide at bottom and then narrow } most of them upwards, nor do they seldom reach 350' in height. It was formed from sand and wheat debris. 537.3 marsh hawk. Some digging along road right-of-way. This entire area from Spokane on is clouded with sand and wheat debris from harvesting. One cannot see the distant ridges or knolls because of this air contamination. It is a sandy-blue atmosphere

553.4 First irrigation, corn & wheat. 610.3 Columbia River. This is the first time the atmosphere changed from sandy - foggy - wheat debris to E all across the Columbian Basin to clear blue skies w of the river. 622.3 Pass at 2535 ft and first good view of Rainier. 701.4 porcupine road kill and 3 small crows. Continued up over pass and arrived at Seattle at Annette's home at 6764.9 mileage.

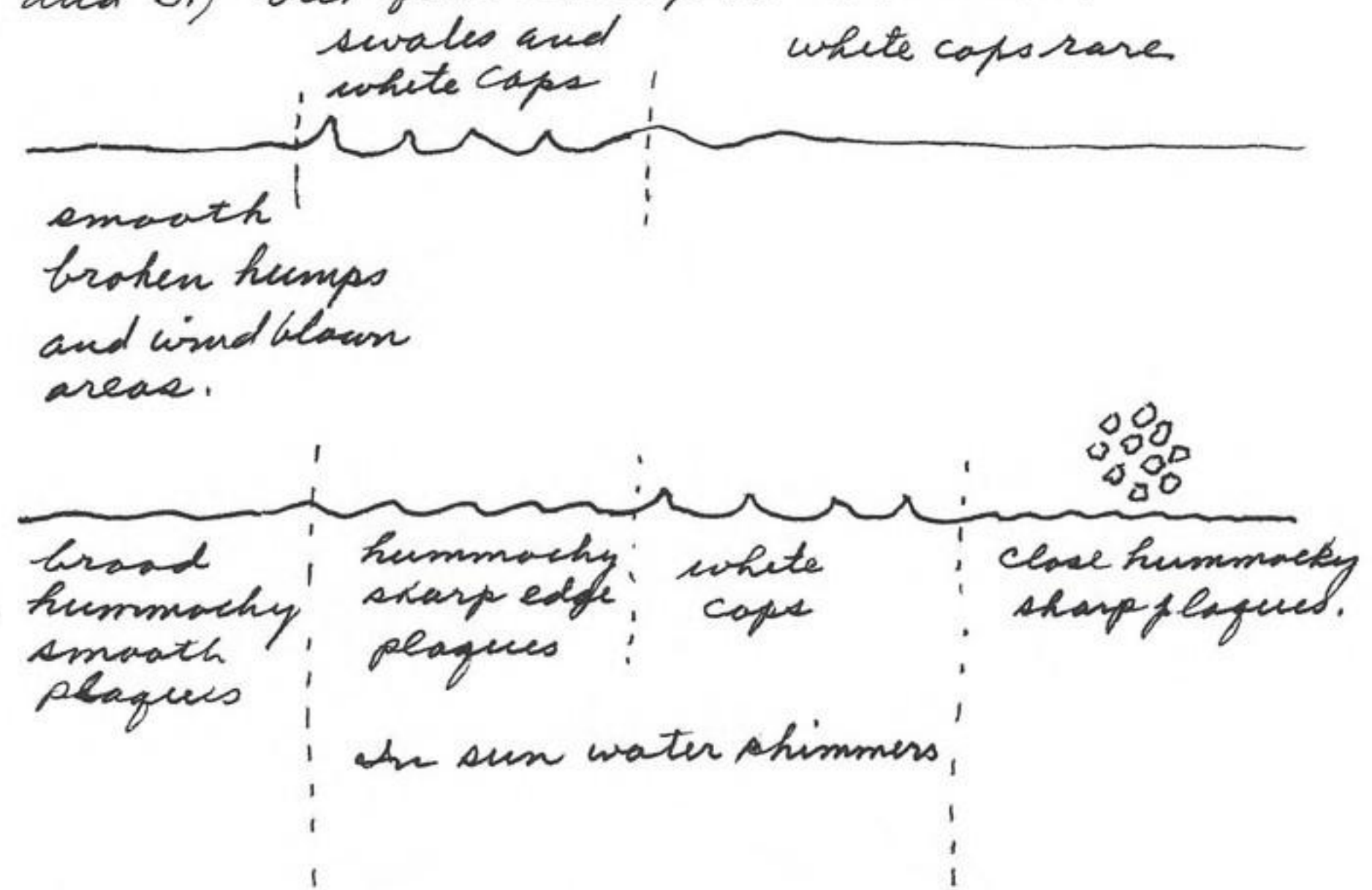
4526 47th NE, Seattle, Washington (Annette C. Bee's home)
 Aug 7, 1979

This afternoon we drove over to Shilshoal and checked sailboats. Talked to one trawler who that regular tie reefing of sails was just as fast as automatic ^{roller} reefing and more defendable!

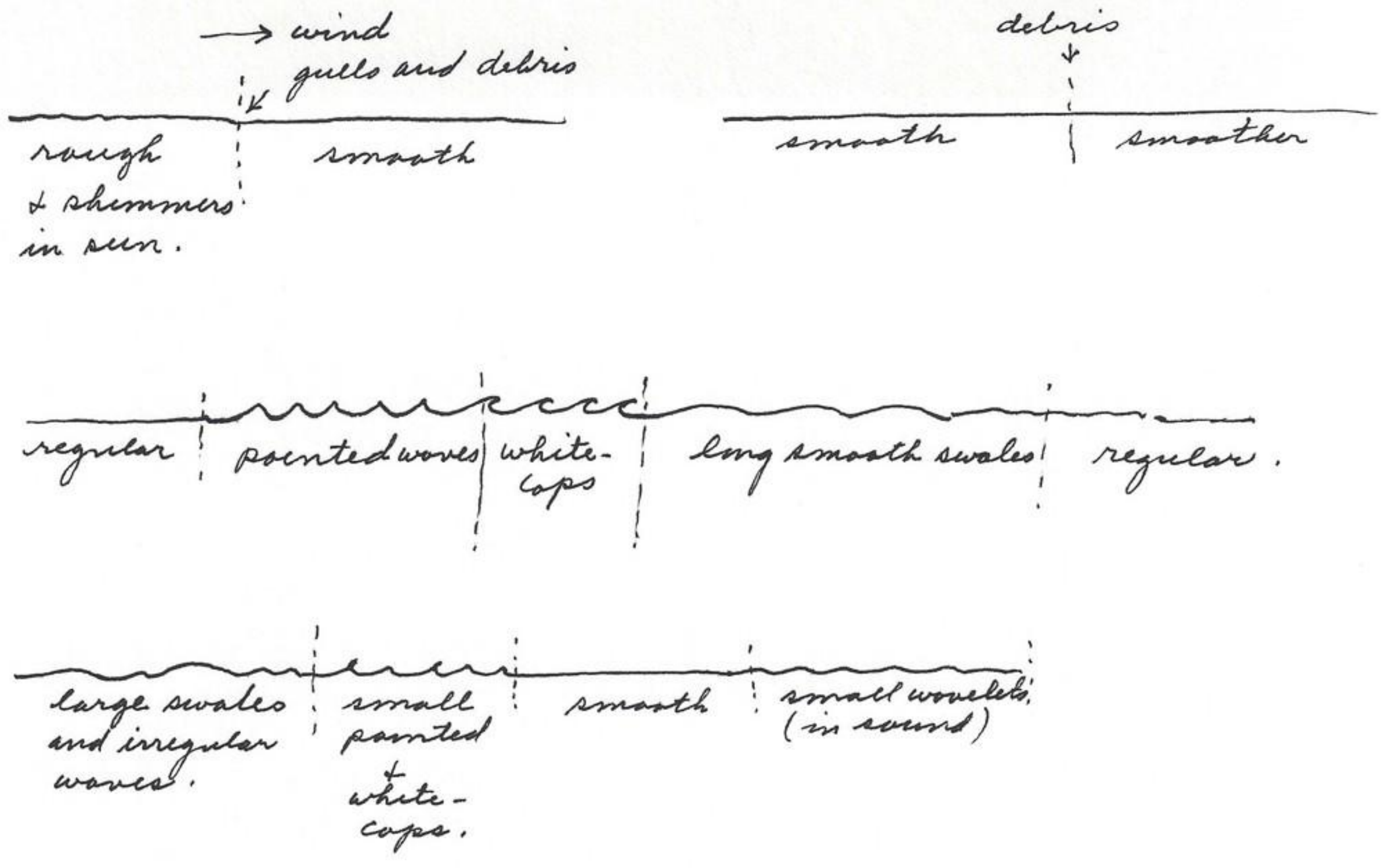
Aug. 8, 1979

Annette P and I took ferry or rather the ship "Marguerita" to Vancouver Island and back. Left docks in Seattle. Boat was overcrowded, immigration 45' long and on return had been misinformed about duty on purchases and had to pay extra. Actually there were not enough chairs or seating facilities for the number of people on board. Food lines still going after arrival. Vancouver has continued to remodel especially on N side of bay and the visitors are well taken care of.

On return trip ^{P.M.} made several observations on water surface characteristics, especially as it relates to incoming and outgoing tides. Here are some profiles: (mainly between Port Townsend and S.) but first examples in straits:



Gull activity in smooth water zone debris is also associated with smooth water. One line almost completely across strait and an indicator of tidal movement.



smooth surface can have fine ripple marks. Continued on to Seattle Port. Ron and Chris picked us up at terminal.

Seattle, Washington.

Aug 9, 1979

Annette and I spent the day down town and along the wharf. also checked the fish market.

Aug 10, 1979

Annette^{P.} and I drove to Edmonds, left car there and took ferry to Port Townsend where we walked up to Moses place, visited, and later had dinner down town before boarding the ferry for Edmonds.

Aug 11, 1979

Chris, Ron and mother and I spent day at Bob Eiler home on beach on peninsula point W of the International Airport SW of Seattle. Bob is employed as a marine specialist on boat hulls etc at Boeing Co. at Renton. His home has a beautiful view of sound to S & W.

Seattle, Washington.

Aug 12, 1979

Left for Lawrence, Kansas at 11:00 A.M. at mileage 6820.0. Followed

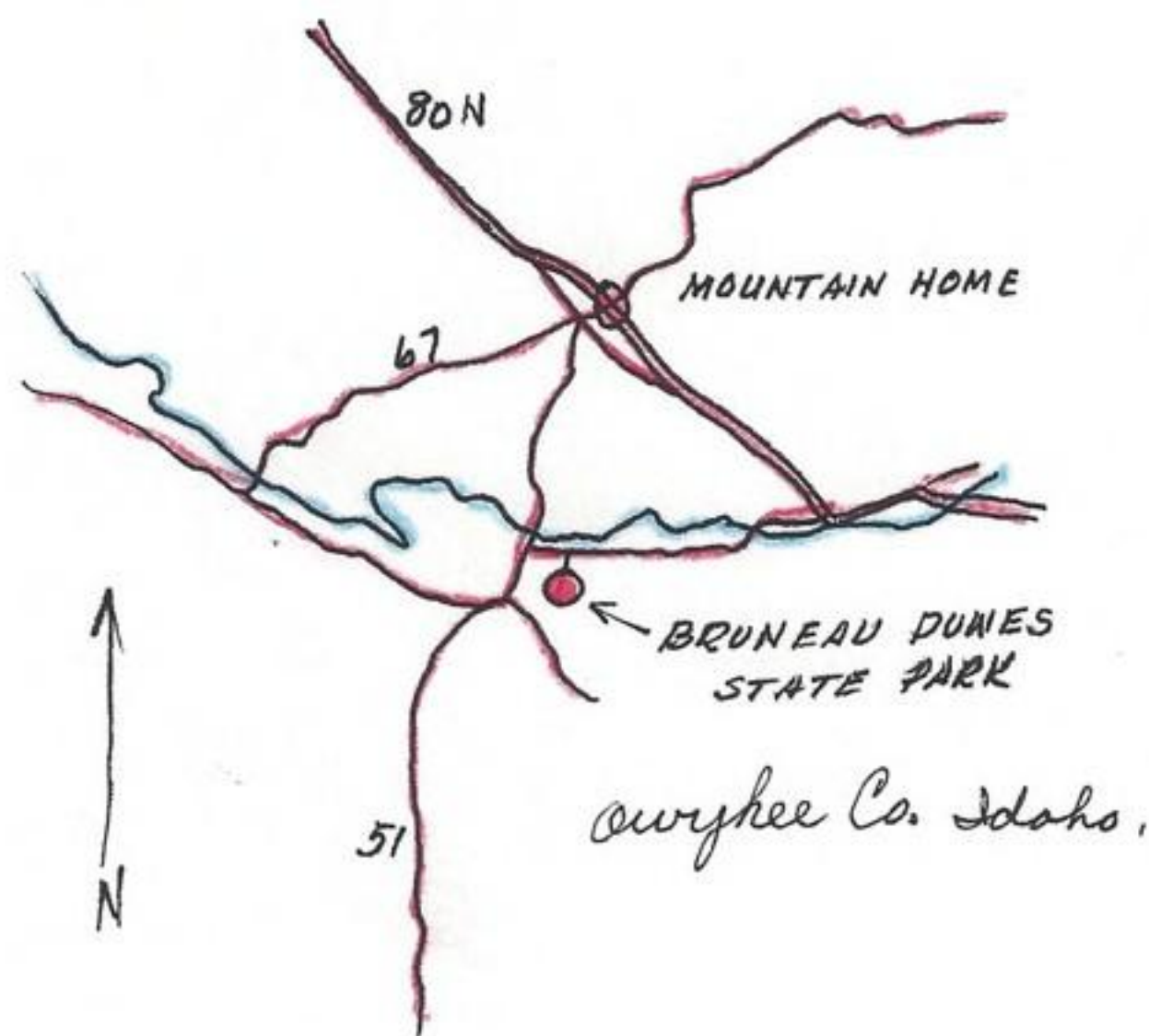
Highway 5. Redtail near Tacoma. Continued to Vancouver, thence E up Columbia River. At Skamania noted 2 Steller's jays and some infestation of tent caterpillars. Turkey vulture at Bonneville dam. Crossed over Bridge of the Gods to Oregon side. Dalles at 7123.6. 40 Canadian geese 1 mile E of the Dalles. Continued on to mouth of Deschutes River and camped in State Park just off main road at mileage 7138.6. In the evening Annette and I walked up canyon for about 1 mile. Beautiful river and good trout fishing. noted mourning doves, kingfisher, sparrow hawk, redwing blackbirds. Set 10 traps in sagebrush E of camp on hillside.

Deschutes River. State Park, Oregon.

Aug. 13, 1979

no results from 10 traps set last night in sagebrush. yesterday evening 85 Canada geese alighted in fields on top of plateau E of camp. Birds in area: Great blue heron, killdeer, western sandpiper, Brewer's blackbird, crow, redtail, turkey vulture, 2 sparrow hawks, robin, kingfisher, Calif. gull and small sparrows. Continued E up Columbia River. at Arlington an osprey circled the bay then left down river. Continued E and on ridge which is the first one before Blue Mountains noted extreme examples of conifer kill from disease or climatic changes. The usual pattern was areas of completely dead trees against stands of healthy stands with mixing of dead and live individual trees. There were not many examples of trees that were partly green or partly dead. This condition continued across the width of this ridge or mountain. Continued S along 780 and at Mountain Home turned S on road that led ^{18 mi.} to Breenau ^{Dunes} State Park. mileage at park 7543.4 Camped in regular camping area. Drove over to main sand dune and took a photo of ripple marks on lee side of dune. Photo 790813-1. Set 20 traps in sagebrush and bitterbush in sandy soils just ^{200'} N of camp. The dunes are unique in several respects, one that they are 470 feet high which is much higher than most dunes and that they are being formed in a amphitheater that is protected from wind on 3 sides, W, S and E. They have formed in an ^{old} meander of the snake river created some 30,000 years ago during the Pleistocene. Its position may account for its height. The source of wind and sand seems to be from the west. The largest dune is stellate as are some of the smaller ones. Barchan and parabolic ^{wind} are also represented. There are also transverse and longitudinal dunes

some of the latter supporting the highest and best stands of artemisia and rabbit brush. The sand is medium in size and consist principally of quartz with lesser amounts of feldspar and even few iron compounds. The slip sides of the dunes are up to 33 degrees from the horizontal. The lakes are of recent formation (since 1952) and are waterable lakes from creation of reservoirs and irrigation near by. Some are 20' deep. This condition has changed the whole ecological condition of the area and may be an important factor in the stabilization of the dunes or at least their unnatural change. Vegetation grows rampant in moist areas and even up on sides of the dunes. These unquestionably will reduce ground level wind velocities. Bullbrush, wiregrass, artemisia, big and little rabbit brush, black locust, cottonwood, Chinese elm and Russian olive in area. Chara, sago pondweed, coontail and water milfoil are growing in water. I observed a coot and small tern in area of the lake. In the evening observed 12 black-tailed jackrabbits, a cottontail, unusual number of Dipodomys tracks, deer tracks, coyote tracks. The jackrabbits are forming regular trails throughout the area. Heard the coyote call later this evening.



Bruneau dunes, Owyhee Co., Idaho

Aug. 14, 1979

min. temp last night 50° F. From trapline set yesterday evening caught the following:

790814-1 Dipodomys

233-123-39-13-56 gms ♀ wt. normal.

790814-2 "

248-133-40-13-59 gms ♀ wt. normal.

Entire dune area inhabited by Dipodomys and soils give way as one

one walks thru the area. They are apparently at a high population this year. Left the dunes at 8:30 at mileage 7543.4. The 8 meadowlarks on the lawn at camp were the first ones seen since Seattle. 7 flickers ^{and 3 robins} also at camp. Just before leaving park on road to east were 80 Canada geese in field, mourning dove and several vesper sparrows. Few meadowlarks alway. 560.4 at sign post 88. marsh hawk, magpie and long-billed dowitcher. 553.0 sparrow hawk. killdeer and mourning doves, chipping sparrow and vesper sparrows. 553.7 sparrow hawk. 555.7 now along the Snake River where unusual lava stands at the mouth of one of the canyons, magpies here. 556.9 Entering Elmore Co. along Snake River. 560.9 now contacting highway 30 at Hammett. 563.3 now on 80N going E. 571.0 Snake River bridge, beyond Glenn Ferry. 579.4 raven. 589.2 meadowlark 627.9 Snake River at Twin Falls. 632.2 bridge over Snake River no 790814-3 down river and 790814-4 photo up river, the latter has ^{old} eroded benchland of lava in foreground. This river ^{valley} should be maintained a natural area rather than used for farming or habitation. 672.0 approx. 2,000 Calif. gulls. 729.3 4 redtails playing in air, 6 mourning doves in one group. 739.1 Utah border at ~~3:30~~ ^{2:30} P.M. Have kept complete census since Bruneau Dunes. 744.8 lone pelican flying SW, 794.6 3,000 white-faced ibis feeding in fields, lesser yellowlegs. At Brigham City, the main road separates habitable area to E and non habitable area of old lake bed to W. This evening arrived Provo and visited with Edith and left some genealogy material for her then went up Provo Canyon to where irrigation canal leave the river and camped for the night, Mary & son in Escape.

Provo Canyon, Utah Co., Utah. Aug 15, 1979

Left 7916.3 at 8:00 A.M. min temp, last night 54°F. 21.0 mile up main canyon from Vivian Park a porcupine rd. kill. 965.4 mule deer rd. kill. ~~975.4~~ 970.0 porcupine road kill. 975.4 1000 Calif gulls along ^{Echo} lake at Coalville. 002.0 out of the canyon and into the intermontane valley, ~~at 10~~ 005.6 2 redtails. 007.7 Wyoming state line, 009.6 2 Turkey vultures, 013.7 Bear River at Evanston 041.0 sparrow hawk. 043.7 jack rabbit road kill, as we approach Fort Bridger. 044.0 Black Fork River, and a sparrow hawk, marsh hawk at Limon, Brewers blackbirds in all the fields, some magpies, few mourning doves. 057.1 Black Fork River, 2 great blue heron and some teal in river. 070.8 first antelope since Wyoming-montana records of previous pass thru earlier on trip, seven of them.

075.8 10 antelope, damp soils from rain brings out green color of rocks and where soils flow over fields as mud.
 080.16 antelope. 081.2 turnoff to Little America at 1:55 P.M.
 083.3 2 antelope. 090.9 Black Fork River. 099.9 Green River (river). 139.4 first bird, a mourning dove since Green River. 151.6 redtail 167.1 20 antelope. 199.3 Continental Divide Road. 204.8 ferruginous roughtleg and three antelope. 210.8 3 antelope, raven. 214.4 Rawlins Carbon Co. 223.8 long shoreline to S and should be checked. 233.9 30 antelope. 240.4 6 antelope just east of Rawlins. Continued on to North Platte River, thence n on w side to Fort Steele. This fort has been burned down, ^{11 buildings} except a few isolated log buildings. ^{fireplace chimney steel standing.} The site of each building is covered with metal remains of what had been in the building such as stoves, safe, etc, including the square nails used in its construction. ^{Rocks from river formed road edges and gutters.} Collected a balance weight and three of the metal nails which are catalogued as nos. 790815-1 (weight), 790815-2 large square nail, 790815-3 large square nail, 790815-4 medium size square nail, which will be returned when the fort is reconstituted which I understand is in the plans. I am surprised that the area has not been fenced off from souvenir hunters. This fort is about 1/2 mile from the N. Platte River. Returned toward 80 highway and at about 1/2 way camped in a gravel pit along side of valley. Set 30 traps in Artemisia on sand ridges in river valley flood plain. Collected ~~an~~ a large ^{femur (distal condyles)} bone from gravel pit no. 790815-6. Gravel deposited high on slope above present flood plain of the North Platte River.

1 mi. S Fort Steele, approx. 6800 ft. Carbon Co., Wyoming.
 Aug. 16, 1979

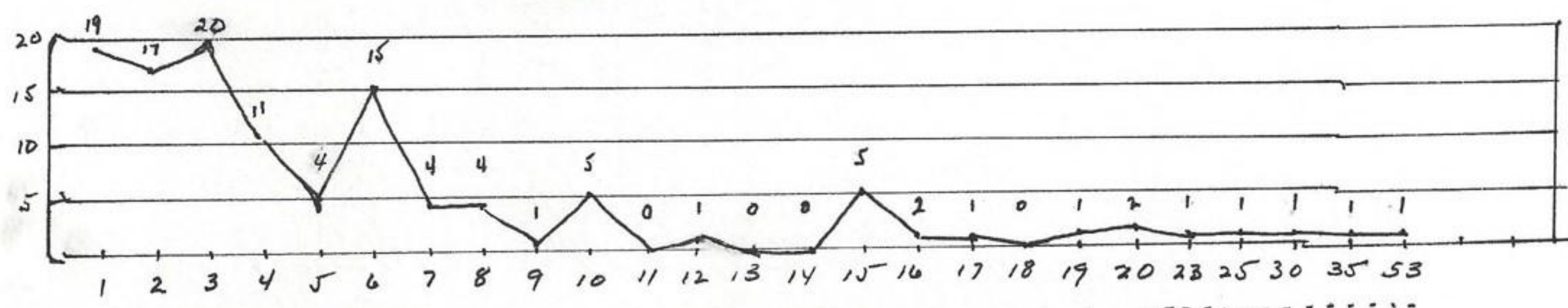
mammals from trapline set last evening:
 790816-1 *Peromyscus maniculatus* 155-64-20-17-20 gm ♂ testis 9 mm
 790816-2 " " 140-56-19-14-13 gm ♀ ut. normal
 790816-3 " " 146-61-19-17-15 gm ♂ Testis 3 mm
 790816-4 " " 152-62-20-17-14 gm ♀ ut. normal
 790816-5 " " 151-61-19-17-17 gm ♀ ut. normal.
 For immature *Peromyscus* discarded.

Along trapline noted 3 dead antelope ranging in size from medium to small. Probably last winter kill. Left at 8247.3 mileage at 9:00 AM after putting up the above mammals. Bluebird at camp and 2 *Eutamias minimus*. also Brewer's blackbirds, mourning dove & killdeer. 249.6 bridge at North Platte River, muddy. 254.6 shrike. 255.9 junction at

Walcott. 6 antelope 5 miles NE of junction, 257.3 15 antelope.
 264.7 4 antelope. 267.3 2 antelope in grassy swale, 269.4 2
 antelope. 270.9 Lake to right, 4 ducks. 274.7 6 antelope,
 antelope road kill. 279.8 Medicine Bow River, clear. Flood
 plain of extensive cottonwoods. E Fork Medicine Bow is 280.4
 282.3 2 antelope. 287.4 redtail hawk. 289.6 2 sparrow hawks.
 289.9 dark phase redtail. 315.7 23 antelope mixed with cattle.
 322.7 17 antelope, 3 antelope, Laramie. Few Cottontails S of
 Laramie. 341.4 2 antelope, 342.1 redtail. 345.2 redtail, 351.4
 20 antelope. 352.2 Tie Siding Post Office. 354.1 turkey vulture.
 354.9 redtail, 360.4 Colorado State Line at 11:45 A.M. From
 first antelope observed in western Wyoming to the Colorado
 State line a distance of 289.6 miles there were 179 antelope
 or .64 per mile. This survey and the other surveys taken
 on this trip are outlined below for the entire part of Wyoming
 visited:

Locality	DATE	MILES	NO. ANTILOPE	PER MI	GROUPS
Mouth Cox - Platte R.	July 27	26.9	6	.22	6
Saratoga - Walcott	" "	12.8	33	2.73	3-4-1-2-3-4-5-7-6
Walcott - Medicine Bow	" "	36.7	37	1.00	3-7-2-2-6-6-5-6
Medicine Bow - Getty	" "	30.4	19	.62	1-3-8-1-6
Getty - Homestead	" "	19.1	38	1.99	1-10-3-12-2-3-3-4
Homestead - Bar Ranch	" 28	7.0	105	15.00	9-5-53-15-4-8-6-3-2
Bar Ranch - Across bench	" "	3.0	2	.66	2
Casper - Getty	" 31	60.0	80	1.33	25-7-35-4-4-5
Getty - Homestead	" 31	19.1	33	1.73	10-2-3-3-8-1-6
Homestead - Burnett g.	Aug. 3	2.0	70	35.00	16-6-8-4-2-10-3-3-4-4-2-1-4-3
B. Junction - Getty	" "	17.1	12	.70	6-1-1-2-1-1
Getty - Casper	" "	58.6	54	.92	1-4-2-3-3-15-6-19-1
Casper - Montana	" 4	194.0	73	.37	16-3-6-2-1-1-10-3-15-15-1
W.E. across Wyoming	" 15-16	289.6	185	.64	7-10-1-2-20-3-3-30-6-6-15-4-2-2-6-1-2-23-3-17-2-20
TOTALS.		776.3	747	4.24	

AVERAGE
 .96 antelope
 per mile



DISTRIBUTION BY GROUPS. (NOTE INCREASE IN GROUP 6)

Continued on from Colorado line 362.0 Virginia Dale Camp grounds.
 Collected cacti E of main road. all slopes in valleys and slopes
 are a greenish-yellow. 499.2 Washington Co. at 4:50 P.M. The
 small yellow sunflower and white daisy are invading artemisia,
 in some places but in others the artemisia is definitely a barrier
 to their invasion. The four-o'clock is most successful of plants
 in invading the sagebrush, especially where sagebrush has been
 partially grazed. 510.5 redtail. 512.3 marsh hawk.
 517.7 redtail, dark. 528.3 Otis, this part of Colorado is like
 western Kansas with regularly placed cities in a dry farming
 environment. ^{has been harvested and land} wheat has been plowed, ~~and~~ some left for pasture.
 537.3 ~~Huma~~ Huma Co. 540.4 2 burrowing owls. 542.0 Huma
 Our route by the way was Ft. Collins E to 85, thence S to 34 and
 thence E. on 34. This area is loaded with stinking Cattle lots.
 548.3 first topographical elevation and surface irregular in an
 otherwise flat country. mainly grazing area and more natural
 complement of plants. no solid rock outcrops. 554.6 Eckley.
 This irregular land continues beyond this point and mainly grazing
 land. or irrigated corn. E of Eckley this *Cnemidopsis* occurs
 as far as they eye can see. no stream in swales and no
 wetlands. Grass high and not grazed to roots as in Kansas.
 some white friable outcrops. 565.4 turkey vulture. 568.2
 marsh hawk. 576.3 Laird, Colorado. Beautiful river valley
 E of Wray. Three Laird. ~~578.1 maybe in Nebraska.~~ 579.3
 Nebraska. Hills of sand. 584.4 ^{are} ~~are~~ River 586.6
 Hoagler, no 5 on 27. 587.6 Kansas line. Continued to St Francis

St. Francis, Cheyenne Co., Kansas
 Aug. 17, 1979

Left 8612.7 at 8:00 A.M. Collected yucca for garden at home. all in
 sandy area. Will keep complete list of birds ^{across Kansas}, mourning dove. 8 red-
 wing, 2 redwing, 10 grackles, meadowlark, 3 mallards, 2 teal, mourning
 dove, 3 mourning doves, mourning dove, mourning dove, 3 mourning doves
 and a red-tail hawk, 8 corvids, meadowlark. Recent rains have flooded
 fields. mourning doves, 8 lark bunting, 2 meadowlarks. 627.4
 small sparrow. Census excludes villages except otherwise indicated.
 mourning dove, lark bunting, meadowlark, 3 lark bunting, mourning
 dove, (45 MPR), mourning dove, sparrow, mourning dove. 630.3 (?)
 McDonald, mourning dove, sparrow, 2 lark bunting, sparrow.
 Flat, irrigated, corn and milo. mourning dove, barn swallow, sparrow
 flock 25 ducks. One drainage slope completely covered with yucca.

644.4 407 junction along 36. 2 barn swallows. 645.4 redtail hawk.
 Yucca common thru this area and occurs in dense growths. Other-
 wise grass prairie land. Country to south, ^{of Beaver River} absolutely flat. N of
 river is undulating. mourning dove, sparrow (some may be dickcissel),
 barn swallow, barn swallow, mourning dove, barn swallow, 2 barn
 swallows. Traffic about 1 car per four miles and wildlife so indicates
 less interference of fauna along roadside in contrast to interstates.
 651.6 redtail, meadowlark, barn swallow, 4 lark bunting, 654.3 Atwood,
 barn swallow. In contrast to Nebraska, the gullies and swales
 in Kansas are eroded. Presence of yucca here in Kansas would indicate
 over-grazing. Yucca, however, has a tendency to follow sandy and
 fine gravel courses of ancient Pleistocene drainage course, some now
 exposed on higher slopes. Yucca also follows the eroded areas caused
 by overgrazing. 3 mourning doves, barn swallow, mourning dove
 2 meadowlarks, mourning dove and western kingbird. 2 sparrows,
 barn swallow, 2 meadowlarks, mourning dove, mourning dove, mourning
 dove, 3 lark bunting, barn swallow. 670.3 burrowing owl, pleasant
 (long-necked), lark bunting, mourning dove, mourning dove. 673.0 marsh
 hawk, western kingbird, mourning dove, 3 barn swallows. 2 mourning
 doves, sparrow, barn swallow, mourning dove, western kingbird, mourning
 dove, mourning dove, mourning dove, mourning dove. 677.1 Traer exit to N,
 mourning dove. Few grasshoppers flying across road. Barn swallows,
 meadowlark, meadowlark, western kingbird. 682.1 Oberlin, mourning
 dove, 3 barn swallows, barn swallows, 3 mourning doves, barn
 swallow, western kingbird, mourning dove, sparrow, mourning dove,
 lark sparrow, lark sparrows, 2 barn swallows. Barn swallows are in
 small groups. 690.1 Kanona turnoff to S. 2 mourning doves, lark
 sparrow, mourning dove, lark bunting, mourning dove, 2 mourning doves
 and barn swallow, 2 dickcissel, mourning dove, 2 mourning doves.
 5 barn swallows, 4 mourning doves, mourning 695.1 Jennings
 turnoff to S., western kingbird, mourning dove, meadowlark, 2 barn
 swallows. 699.1 Lyle turnoff to N., 5 barn swallows. 700.5 Norcatur^{to N}.
 4 western kingbirds, mourning dove and 4 western kingbirds, barn
 swallows. 701.1 Norton Co. line, 2 barn swallows. 705.0 redtail.
 2 western kingbird, Ocellaceous rock exposures, mourning dove, mourning
 dove. Sky clear to N. high cirrus above and to the S, ^{wind from S.} mourning dove
 travelling 45 MPR. 2 dickcissel, mourning dove, western
 kingbird, sparrow. 710.6 383 turnoff to Clayton and Norton
 Wildlife Reservoir, sparrow, 2 meadowlarks 712.7 261 junction
 barn swallow, blue jay first one seen ^{on return trip}, at least in Kansas, sparrow,
 mourning dove. 716.9 Norton junction 283. 719.5 Prairie Dog

creek, mourning dove, 3 barn swallows, 2 barn swallows, 722.8
 Almena turnoff to N, first red-headed woodpecker, mourning dove,
 killdeer, 2 barn swallows, pheasant road kill, barn swallow,
 concentration of yucca, especially in drainages. 5 barn swallows,
 barn swallow. 728.2 60 turnoff to N, directly. Butterfly crossing
 road one per 15 miles, no monarchs, 2 barn swallows, 3 barn
 swallows, 5 barn swallows, 732.4 just beyond Phillip Co, mourning
 dove. 733.1 marmot road kill. 733.9 Deer Creek, raccoon road kill.
 736.3 Long Island Turn-off, great-horned owl road kill, western
 kingbird, mourning dove, 6 barn swallows. 740.7 junction 121,
 striped skunk road kill, 4 barn swallows. 748.7 Phillipsburg junction
 183. Baltimore oriole at Deer Creek, nighthawk, western kingbird.
 754.7 Glade 12:00. now E on 9., 2 barn swallows, western kingbird.
 4 western kingbirds, mourning dove, 2 barn swallows, 3 barn swallows.
 and are associated with culverts or farms buildings, meadowlark, 3
 barn swallows, barn swallow and meadowlark, 3 barn swallows,
 mourning dove, western kingbird, 4 mourning doves and 5 grackles.
 striped skunk road kill, meadow lark, barn swallows, blue jay,
 red-headed woodpecker, barn swallow, mourning dove, mourning
 dove, western kingbird. 768.0 Smith Co. 2 barn swallows, dickcissel.
 769.6 first 13 lined ground squirrel today, 4 barn swallows, western
 kingbird, barn swallow. 770.0 Claudell turnoff, western kingbird.
 barn swallow, western kingbird, 3 barn swallows, 3 lark bunting.
 Cretaceous with good separation between strata (fine lined), barn swallow,
 meadowlark, 2 meadowlarks, western kingbird, 2 meadowlarks.
 774.8 Cedar turnoff - rohn. 776.8 redtail, mourning dove, mourning dove.
 780.1 Daylord, barn swallow, 3 barnswallows, 2 barn swallows,
 meadowlark. 784.7 redtail, 2 barnswallows, 786.3 Hurlan, 3 barn
 swallows, 2 eastern kingbirds, barn swallow, more grasshoppers
 than to W. (maybe time of day). 791.4 Osborn Co. line. 792.5 N Solomon
 River, 4 barn swallows, 2 blue jays, red-headed woodpecker, 2
 barn swallows, 2 meadow lark. 794.6 now ^{beginning} highway 24 E, at
 1:00 P.M. meadowlark, barn swallow, western kingbird, 2 barn swallows.
 797.3 redtail, 2 barnswallows, 9 barn swallows, 3 barn swallow.
 803.5 Downs at 81 junction, barn swallow, 2 mourning doves,
 barn swallow, barn swallow. 806.5 Mitchel Co. line, 3 barn
 swallows. 809.6 Cowher City (middle of town), 3 barn swallows.
 grackle, 2 barn swallows. 812.8 Bronite Creek bridge - now along
 reservoir. 3 barn swallows. No change of species or numbers
 as might be influenced by Wildlife Refuge as we travel along.
 814.0 junction 128, 3 barn swallows, barn swallow, mourning

dove, barn swallow, mourning dove. 816.8 Glen Elder at bridge, mourning dove, 3 barn swallows, meadowlark, barn swallow, 2 barn swallows, eastern kingbird. 823.4 Solomon Rapids turnoff, first recognizable orange-orange. 827.5 turnoff to Beloit. 2:00 P.M. Stopped at Beloit for meal. Left 2:20, 4 barn swallows. Although barn swallows move back and forth over highway in front of cars, there is rarely a road kill, mourning dove, crow, killdeer, meadowlark, barn swallow. 839.7 Cloud county, at 194 junction to Simpson. First redwing blackbird, 4 barn swallows, 846.0 Glasco (middle of town), barn swallow, 2 barn swallows. 850.0 Delphos junction, 2 barn swallows, 852.0 badger road kill, mourning dove. 853.1 Minneapalis turn off to S, still in Cretaceous rock. 855.1 junction 81, western kingbird, 2 barn swallows, 4 barn swallows, western kingbird, western kingbird, 2 mourning doves, 860.1 badger road kill, 2 dickcissels, slopes of grass green, ^{some} ponds full but muddy. 867.2 junction 189 to Miltonvale, 3 barn swallows, 2 barn swallows, 871.4 Clay Co. line. 872.5 great blue heron. barn swallow, barn swallow, barn swallow, 2 barn swallows. barn swallow, 2 barn swallows, 2 eastern kingbirds. 881.9 Republican River. (3:50 P.M.), east kingbird. This valley has many cottonwood trees. Seems like increase in English Sparrows from 20 or 3 per farm to 25 per farm. 883.6 Clay Center. 884.1 overpass of railroad E of town, 5 barn swallows 893.5 Riley Co. line, dickcissel, mourning dove. first swallow-tail butterfly, 2 barn swallows, 4 barn swallows. 896.5 junction 82, 2 barn swallows, 3 barn swallows, turkey vulture (first on in Kansas), 899.0 Leonardville. (900.0 center of town), 2 grackles, western kingbird, 2 mourning doves, 2 mourning doves, 3 swallows. 905.8 junction 24 and 77. striped skunk rd. kill. 905.9 striped skunk rd. kill, killdeer, 3 barn swallows, 3 barn swallows, mourning dove, 2 barn swallows, oaks and orange ^{now} common, more trees in swales. and low shrubs on slopes, barn swallow, 928.0 Kansas River S Manhattan. 933.5 Kearny Co. 934.6 now 70 east, striped skunk ^{road} kill. 936.5 Riley Co. 942.5 ~~Wab~~ Wabauance Co. line 944.4 striped skunk road kill. 949.9 Coyote road kill, barn swallow, mourning dove, 954.0 Mill Creek (5:45 P.M.), barn swallow, dickcissel, barn swallow, 962.6 Eskridge exit 342. opossum road kill. 964.5 striped skunk road kill, 2 barn

swallow. 966.8 Shawnee Co. (first sumac at west end of Melford Reservoir), 2 mourning doves, 2 barn swallows. 971.6 Mission Creek. (6:00 P.M.). First starling in Topeka. 983.6 White Lakes area in Topeka. at 6:20 P.M., temp. 83°F. Shawnee Lake full. 987.0 ^{Passing} entrance to Shawnee Lake, striped skunk, road kill. barn swallow, 3 barn swallows, robin, robin, barn swallow, first fox squirrel, robin. All across Kansas with wind from the south, 4 barn swallows, meadowlark. 995.2 first bend in Douglas Co on Stull Road, robin. 998.2 Stull. at Clinton Reservoir exit. Can hear cascades. The right-of-way of Stull road is becoming scrubby looking, bluejay at 1029 junction detour to W to at 001.2 005.5 Kanwona Corners. 2 crows, Arrived Lawrence at 9,013.0 at 7:00 P.M., Arrived 402 Yorkshire Dr. (home) at 9,015.4 at 7:10 P.M..

Topeka, via highway 40, Douglas - Shawnee Cos., Kansas

Aug. 18, 1979

Census of birds and mammals from city limits of Lawrence to City limits of Topeka & part of return trip, 9031.4
 mileage at home 402, Yorkshire Dr., Lawrence at 9:00 A.M.
 Few high cirrus to ^W ~~S~~, rest of sky clear and slight wind
 from S. Turkey vulture. barn swallows. Kanwaka.
 2 barn swallows. Big Springs. Shawnee Co. line. 48.9
 300 bank swallows in an area 300 feet long and con-
 centrating on insect feeding, no swallows (bank) before
 this concentration of birds. Striped skunk road kill.
 50.2 now at ^{east} curve of road that leads straight into Topeka,
 still in Douglas Co., Tecumseh road. It is surprising
 that there are so few birds in the country and even in
 residential area, approaching Topeka. Shawnee Co. Lake
 turnoff. Topeka City limits. The few birds is
 reminiscence of the few birds we observed in same general
 area on return from vacation. (Aug. 18, 1979).

now returning to Lawrence, on highway 24 at 1:15 P.M.,
 at Soldier Cr. 644. Temp 88°F, 2 barn swallows, 2 cowbird
 barn swallows. At Thompsonville approx. 150 barn
 swallows on sloping side of roof of a home, a very
 localized aggregate. Continued W to road that leads N,
 thence over the top and to W end of Perry dam (2:00
 4:00 P.M.).
 Parked car and fished (fly) between 2:00 and 4:00 P.M.
 Caught 1 carp. 14 inches standard length, 3 striped bass, averaging
 8 inches long, 1 striped bass 11 inches long, 1 Crappie 10
 inches long, 4 bluegills each 6 inches long. No small
 fish. Fished from W end end N along W side of lake.
 In the two hours fishing, noted 1 Kingfisher which flew
 by to the S., 2 groups of Forster Terns (1 of 3 and a second of 6).
 1 ring-billed gull and no other kinds of birds. Return to car
 and continued E across dam. Approx 40 bank swallows
 generally distributed across dam. Mourning dove at E end dam.
 SE crossroads of reservoir property. 4 barn swallows, 2
 barn swallows, mourning dove, mourning dove. No E on
 Farmers, 1 turnpike (parallels regular turnpike E of Tecumseh. 4
 (438 Co. road) barn swallows, 2 mourning doves. Country side green.
 except some fields of cultivated. 2 barn swallows, meadow
 lark, barn swallow, 4 barn swallows, yellow-billed
 cuckoo, barn swallow, meadowlark Kasold + Peterson Rd and
 end of census. In Topeka took the following photos 790818-1 to 790818-13 ^{Capital and} grounds.

Perry Reservoir, Jefferson Co., Kansas

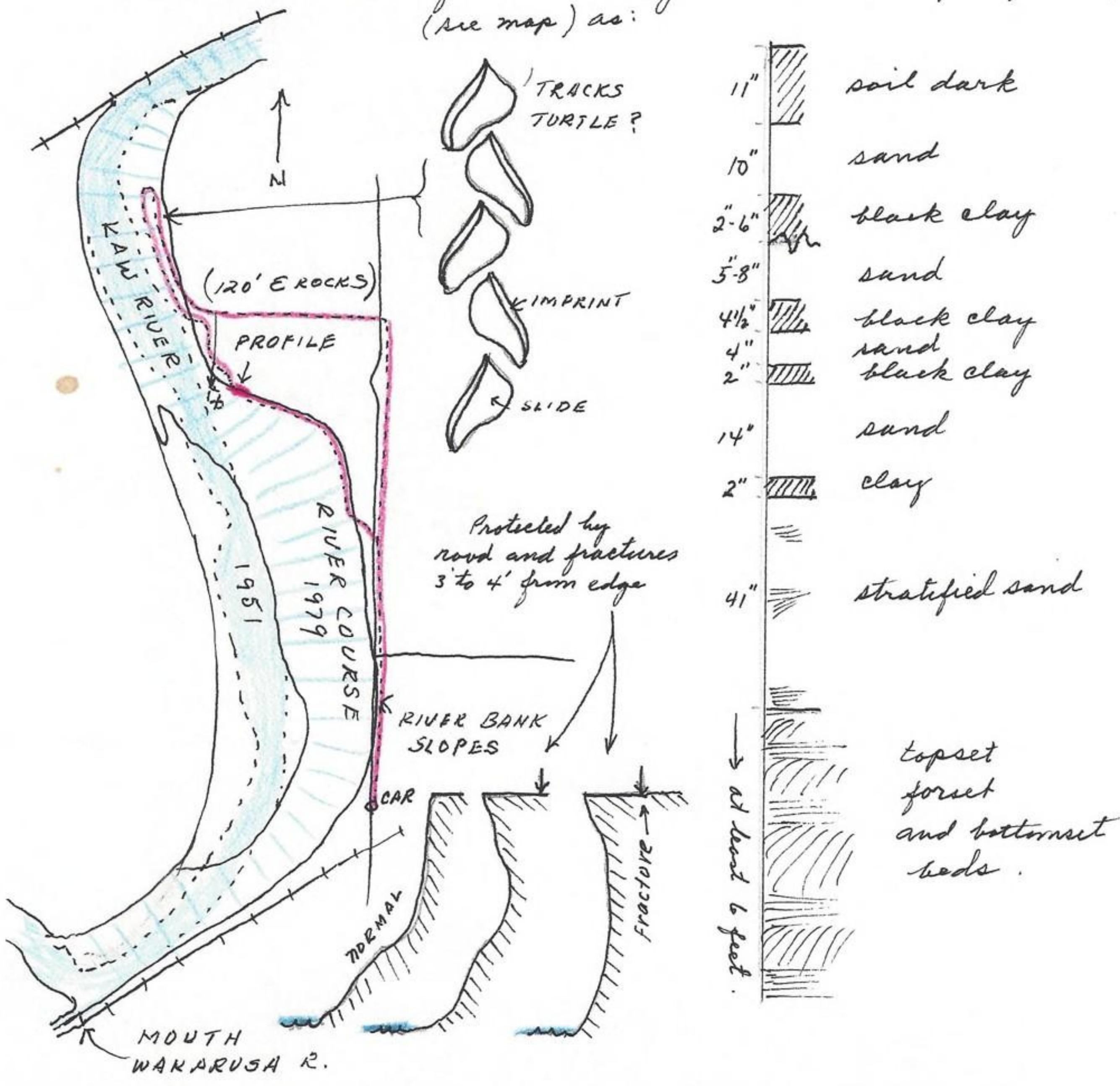
Aug. 27, 1979

Left 402 yorkshire at 9:00 A.M. at mileage 9192.4. Sky overcast. Will keep complete list of birds, and will follow the river road via Lake View. 194.7 Lake View road. 195.5 great blue heron flying SW up Baldwin Creek. 195.7 bridge on causeway over Lake View, ^{no} gulls or waterbirds on lake, ^{nearly} 196.2 mourning dove, ^{all} bottomland fields in corn, some in potatoes and others in grass. 197.2 2 mourning doves, 4 goldfinches. 197.9 16 meadowlarks in one group, 2 mourning doves. 198.1 2 mourning doves. 198.3 2 mourning doves. 199.0 5 mourning doves. 199.3 beginning of hillside road at bridge. 199.8 4 mourning doves. 200.1 bluejay. ^{00.4} ~~00.4~~ mourning dove, fox squirrel, gray squirrel road kill. ^{00.7} ~~00.7~~ 5 mourning doves. ^{00.8} ~~00.8~~ Baltimore Oriole 00.9 2 bluejays 1 Baltimore Oriole. 01.5 Cardinal, cowbird. 02.3 Leecompton Road. 03.0 S end Leecompton bridge. approx. 400 bank swallows fly ^{beyond} at N end bridge. 05.8 highway 24. 08.4 SE end reservoir area. 08.7 meadowlark, 5 barn swallows, 09.4 east end dam, 2 barn swallows. Lake quiet with groups of small fish agitating the otherwise smooth water. Groups of fish every 25-50 feet apart throughout lake, most groups create a definite wake on surface, as if all ^(of one group) moving in a definite direction. The wake continues for some distance, then disappears and further on reappears. 10.8 W end dam. ~~##~~ Parked ^(W side) car and fished for ⁴ ~~##~~ hours (10:00 - 2:00) (fly) and caught 4 fish blue gills measuring. 160, 158, 162, 148 standard length. 2 spotted sandpipers in area along edge water, 2 eastern kingbirds in area the entire time and hunted mainly out over the water from their tree perches along the beach. Many times they touched the water and caused the water to ripple. Except for 2 mourning doves, ^{2 barn swallows, 4 grackles} there were no other birds in area. Carp fed with wake up and down shoreline and stayed mainly about 50' out but occasionally come closer to shore. Many shad along the shore as were many carp that were feeding on algae on rocks but were not moving by swimming steadily, up and down the shore as were those farther out in the lake, although occasionally their backs stuck up above the water. Lake calm. Several different kinds of butterflies along shore, many spiders in forest. Could hear

the red-headed woodpecker in trees to W, one turkey vulture flew by. 13.7 SE end reservoir area. (This locality is frequently given and is the crossroads with E-W road leading to dam or E over the hill, the other main road N & S. Service station on SW corner.) will continue complete census to Lawrence. 20.1 E end Leempton bridge. 20.8 now turning E along river edge road. (2:35 P.M.) 21.1 yellow-billed cuckoo, 22.2 Oakley Creek 22.4 turkey vult. 23.3 bluejay and 2 mourning doves. 23.8 road now on valley floor. 25.3 2 mourning doves. 26.0 western kingbird. Continued to home at 407 Yorkshire Dr., Lawrence.

Kaw River, NE Eudora, Douglas Co., Kansas
 Aug. 28, 1979

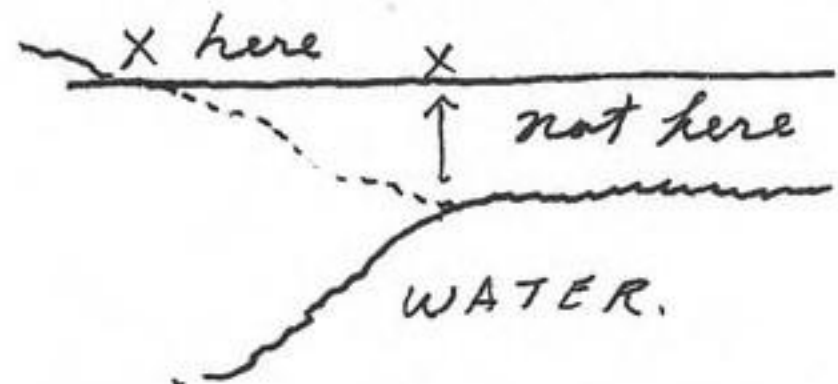
checked weaver? bottoms where Kaw River has eroded a hundred or so acres of river valley. Recorded profile of bank (see map) as:



noted beaver using considerable amounts of barn stalks. One Eastern Kingbird remained on sandbar (driftwood gone perches) the entire time I was there. Only aquatic fowl were 2 post. Small ~~deer~~ tracks in sand. On return home on highway 10 (old highway) at 1/2 mi. S of Wakarusa bridge measured a marmota monax benderi at 585-125-93-18-9 lbs

Perry Reservoir, Jefferson Co., Kansas
Aug. 31, 1979

Left home (402 Yorkshure Dr) at mileage 9339.0 at 9:00 A.M. for Perry Reservoir. Will keep complete census of birds and mammals. 41.1 4 barnswallows. 41.3 Lake View turnoff but continuing W. 41.7 striped skunk, road kill. 42.9 red-headed woodpecker, barn swallow. 44.0 yellow-billed cuckoo. 44.6 3 barn swallows. Ponds full, winds from SW. Slight overcast and hazy. Temp to be in 95° F today. 46.0 2 mourning doves. 47.0 Leecompton Rd. 48.5 mourning dove, 50.2 ^S end Leecompton bridge, 2 turkey vultures at ^N end of bridge. (There may be other references to the Leecompton bridge in notes but if so E end = S end and W end = N end). 3 killdeer. 53.1 highway 24. 55.7 SE corner of reservoir area (at cross-roads). meadowlark. 56.6 E end dam (This has reference to

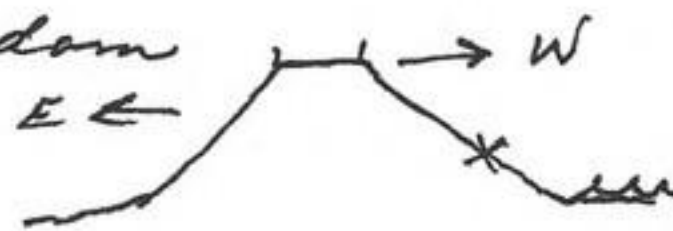


the point where road meets hillside and not where water contacts dam. The guard rails end at the E end of dam. Barn swallow, 5 bank swallows, 8 cliff swallows. 8, cliff swallows (these are groups of swallows that are gliding back and forth over dam. 58.0 W end of dam. Parked car and fly fished from curve at W end of dam to outlet gates to E along the dam. Left car 9:45 A.M. a turkey vulture sailed over lake on N side below level of the dam until it reached dam and then glided to top and then rapidly gained elevation beyond by soaring on updraft winds from S side dam. Many birds include redtails, swainson hawks, sparrow hawks, swallows, etc use these updrafts. Between 9:50 A.M. to 2:00 P.M. caught bluegill 96 mm standard length, bluegill 150, carp 390, bluegills 110-160-172-155-90, 140. at outlet gates caught, bluegills 170-170-160-148-158-160, carp 360, 380, ^{bluegills} 160, 140, 145, 162, 165, 170, 150, 163, 153. Carp will take flies when actively searching surface with mouths at surface or when fish is only slightly under water. Water level at dam 892.2 ft. Returned to car

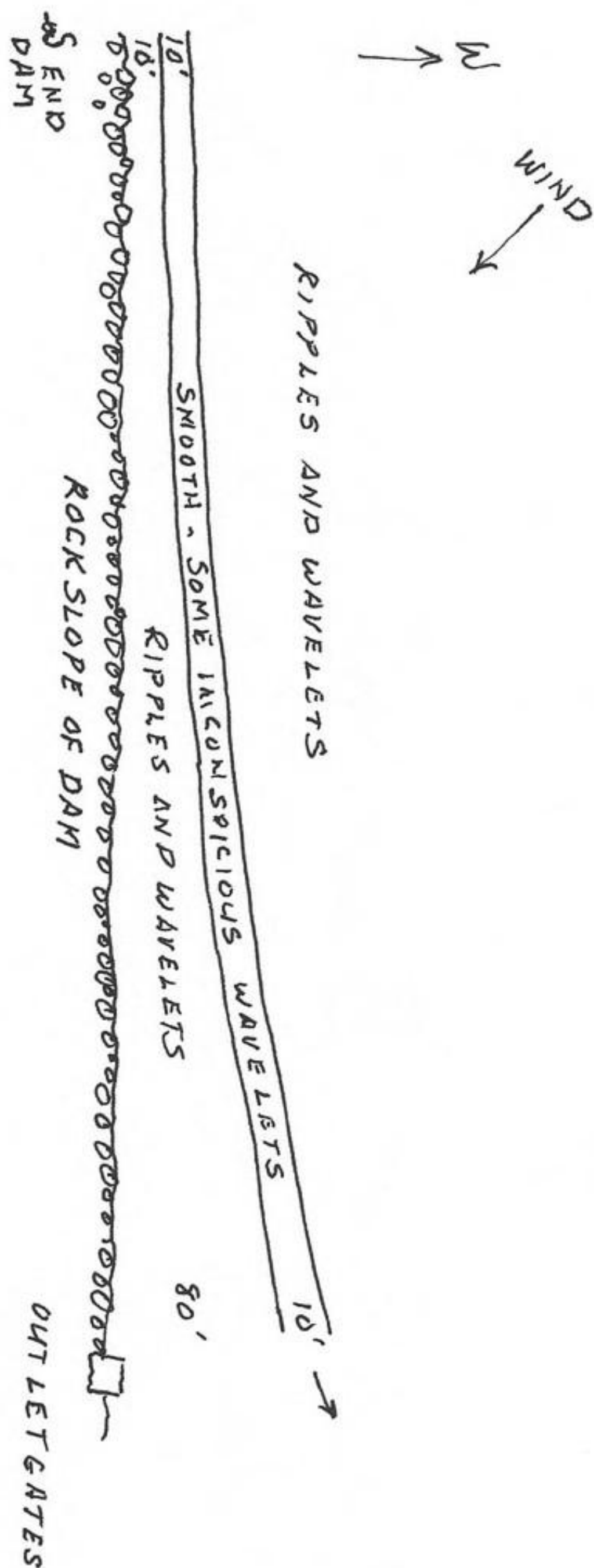
and left 3:00 P.M. at mileage 58.2, 71.8 E Kingbird, barn swallow, 4 barn swallows, mourning dove. 78.5 home in Lawrence.

Clinton Dam, Douglas Co., Kansas
Sept. 4, 1979

Left 10:00 A.M. Will start complete census at Kasald and Peterson Rd. at 638.6 9 grackles one group. 645.5 outlet gates on top dam. Parked car. water level of lake 867.6. sky clear, wind from SSW forming ripples on lake. Dropped down from car to gates at 10:23 and will follow road that traverses dam just above outlet gates. 8 barn swallows flying around gates, no other kinds of birds at outlet gate. As I move S along dam will keep complete list of birds etc. barn swallow, 1 spotted sandpiper on road, spotted sandpiper on road, barn swallow, 10:40. 10:50 2 gray-billed gulls alighted on shore then left to S, barn swallow. 11:00 2 killdeer flying S along dam and calling, killdeer above road in rocks. 11:10 Killdeer, ~~11:20~~ Road on dam with grasshoppers every 5' in optimum areas of weeds (only a few weeds) and scarce or absent where rocks central entire surface of road and surrounding rocks. Few butterflies. The two tree islands in lake S of the Robert Peterson farm are 98% dead. The other 2 per cent is yellowish or greenish, up until the water was raised and even then with root systems in water, the trees were almost all green (see previous notes of this area via canoe). The forests on the side of the lake above water level to top are 50-50 light greens and dark greens. no yellow leaves. Air temp 90°F. 11:20 end dam (W end) and now to point to W. at point no other birds except mourning dove, 3 ring-billed gulls. The aquatic plants that form patches or islands in lake to W are lodged on beach (in water) and are growing. The flowers are purple, no white flower forms. Stayed at point until 12:00 then continued S along beach. This point, by the way, has been the local of an old farm and many artefacts are exposed on the beach. Continued S to first major drainage and bay arriving at 12:08. 2 green heron here. also killdeer, 2 spotted sandpipers, 2 ring-billed gulls. Carp jump every 5 minutes 100' beyond shore. Returned N to S end of dam and continued north across dam via rock to rock rather than by rock road that I followed this A.M. This is excellent exercise for quick decision and walking balance.



along the dam there is a smooth stretch of water that is 10' from shore at S end of dam and gradually moves to 80' out from shore at the position of the outlet gates.



1:00 P.M. clouds now 80° of sky.

1:10 2 ring-billed gulls flew S.

300' W of dam. Spotted sand-piper from rocks on dam. Mass. on rocks along shoreline. Arrived outlet gates 1:35. No swallows at gates or along route return. Continued via rock to rock route to N end of rock facing, gained upper dam road and returned to car parked above gates, arriving at 2:12.

This route is unusual in that it represents a new ecological condition that is not naturally represented in Kansas except where associated with dams and rock facing associated with reservoirs. They are, at least in early stage depauperate of animals and birds as well as plants. A successional development of these slopes would make a worthwhile project. Why have not marmots, weasels and small mammals used these slopes. Killdeer and Spotted sandpipers are the most common birds using the slopes but I have never been able to ascertain why they are present.

Perry Reservoir, Jefferson Co., Kansas

Sept 5, 1979

397.8 mileage at 402 Yorkshire Dr., Lawrence, sky clear. temp to be in mid 90° F. Will keep complete list of birds. 398.0 mourning dove. 399.6 Kasold and Lake View Road. 03.1 striped skunk road kill. 04.4 mourning dove. 05.7 Leecompton Rd. 09.0 S end Leecompton bridge, barn swallow. 11.9 highway 24. 14.0 mourning dove 14.8 E kingbird. ~~15.3~~ ^{15.3} headquarters. fence down road that leads to water edge to W where I parked car. 10:30 A.M.

(fly)
 Will fish from contact of water at dam to outlet gate to W.
 bluegill 120 standard measurement in mm, 9, 100, 98.
 Carp 400, bluegill 132, Carps 410, 405, 360, 270.
 bluegill 140. 1:45 outlet gates. only a few small fish
 here today in contrast to many on a previous trip. Previous
 trip windy, today windless. Level of water 892.8 feet.
 On return to car saw *Thamnophis* and a *Natrix*, no frogs.
 The green skum on rocks below water level is white
 above water level. When a carp is taken by fly it runs
 and is usually followed by other carp, which normally
 occur with predaceous fish but a carp could hardly be
 classified as predaceous. It is true that 2 or 3 carp will
 travel together when fishing or hunting on the surface of the
 water and there is occasionally reaction between the members
 of the group. but while feeding on algae on rocks or rarely sees
 interaction among the group. Returned to car at 2:00 P.M.
 and returned home. 16.6 SE corner reservoir area, mowing done.
 Home in Lawrence 3:25 P.M.

Clinton Reservoir Dam, Douglas Co., Kansas

Sept. 8, 1979

checked birds at Clinton Reservoir Dam. 13 ad. and 1 imm.
 ring-billed gulls on island at end dam. although they
 left in 1-4 groups they returned and maintained the 6-14
 group population. Fly fished (all times no 12 fly) for 1
 hour and caught 2 green sunfish measuring mm standard
 length 80 and 150 respectively. 2 turkey vultures flew S along
 dam. Harter snake at edge of water 1/2 way down dam.
 Received card today from T. P. Aioldi from Lindkohlweg 3,
 3322 Urtenen, Switzerland (born in Delémont). Aioldi
 was at museum (KU) for a year as Fulbright Scholar and worked
 on Microtus ~~pit~~ pinetorum. Help him plan western trips.

Casper - Seattle trip.

Sept. 16, 1979

Dr. James Robert and I left for Casper at 7:30 A.M. from Lawrence, Kansas
 after having purchased all necessary electrical equipment to wire
 Mary Pauline's garage in Casper. Left in James car at mileage
 30988.4 Will follow 80 to Denver - Boulder and will
 keep just selected observations along the way, mainly different
 kinds of birds and unusual observations. Fog being generated

on ponds and then gentle winds blowing fog onto land. no color change in trees or vegetation. mourning dove, crow, meadow lark, barn swallow, grackle, flicker. Some color in shrubs just before Fort Keely. no color change in trees. Continued Junction City. 163.3 Coyote road kill. 382.8.4 Coyote road kill. 391.3 Colorado State line at 3:10 P.M. 489.4 first antelope. Keowa 491.5 antelope and marsh hawk. Arrived Boulder 31595.0 at 7:30 P.M. Travelled 606.7 miles today in 12 hours. Flat areas on mt to W impressive. Except for one large institution at foothills, the mountain is free of commercialization or housing and it should be kept that way. Downtown Boulder has been made into a very attractive center with large cottonwood trees still growing along what was in early days a creek. Slept at apartment of two of the members of the "Swingshift" Band, both individuals formerly with Hausmann Band in Lawrence.

Boulder, Colorado

Sept. 17, 1979

Left for Casper. just north of Virginia Dale on flat country (divide) noted groups of 14, 4 and 2 antelope. On down grade side of ridge toward Laramie noted magpies, crows and Eutamias. Arrived Laramie 31722.0. Continued n to medicine Bow, thence thru Shirley Basin to Casper. ~~arrived~~ 2:30

835 E 14th, Casper, Wyoming, 82601

Sept 18, 1979

At home of Mary S. Bee (above). This A.M. made additional purchases of wire material. also got permits to do wiring of the garage. Spent rest of day wiring garage. This garage was recently build by contract for Mary.

Sept 19, 1979

Continued wiring garage. Annette C Bee arrived by plane from Seattle.

Casper, Wyoming

Sept 20, 1979

Continued wiring and in afternoon, James, Mary, Annette and I went to Betty Kronum mine and thence to Rowles to hear the Swingshift Band (from Boulder). Left Casper 3:00 P.M. no antelope to Junction 220-487. just beyond Junction observed groups of 70, 65 and 12 antelope, 1 mule deer road kill. Also groups of 6 and 5

Between junction 77-487 observed groups of antelope:
 12, 5, 5, 10, 1, 12, 15, 14, 8, 1, at divide into Shirley Basin
 observed 2 golden eagles, a marsh hawk and a group of 3 and
 a single antelope. Continued to Getty mine and Mary took
 us on a short tour of area. Annette had not seen the mine
 before. Left at 5:50 P.M. and continued to Rawlins. Enroute
 observed the following antelope, 2, 28, 2, 16, 45, 13, 8 to
 junction 77. Then between junction 77 and Medicine Bow
 observed 3, 5, 3, 26, 3, 1, 35, 6, 1, 2, 7, 3, 2. Enroute to here
 observed an unusual rainbow (double) and brilliant colors
 of magenta, orange, yellow, green blue purple. green
 turquoise, blue, purple, yellow. Secondary rainbow had
 reverse color in prismatic arrangement. Between Med-
 icine Bow and Walcott noted 15, 2, 2, 6, 8, 6, 23. Arrived
 Walcott at twilight and end of census. Continued W to
 Rawlins. ~~At~~ Tonight all of us slept in motel room
 used by one of the band members - Pete. The motel is the
 one below the cliffs on S side street in W end town. Poor Pete!
 The second time he has been displaced. Heard band play
 across street and down half block or ~~to~~ to W. James, Mary
 and Annette all did some fancy dancing. Census of antelope today
 is from junction 220-487 to Walcott is 460 antelope in 97 miles or 4.7
 antelope per mile.

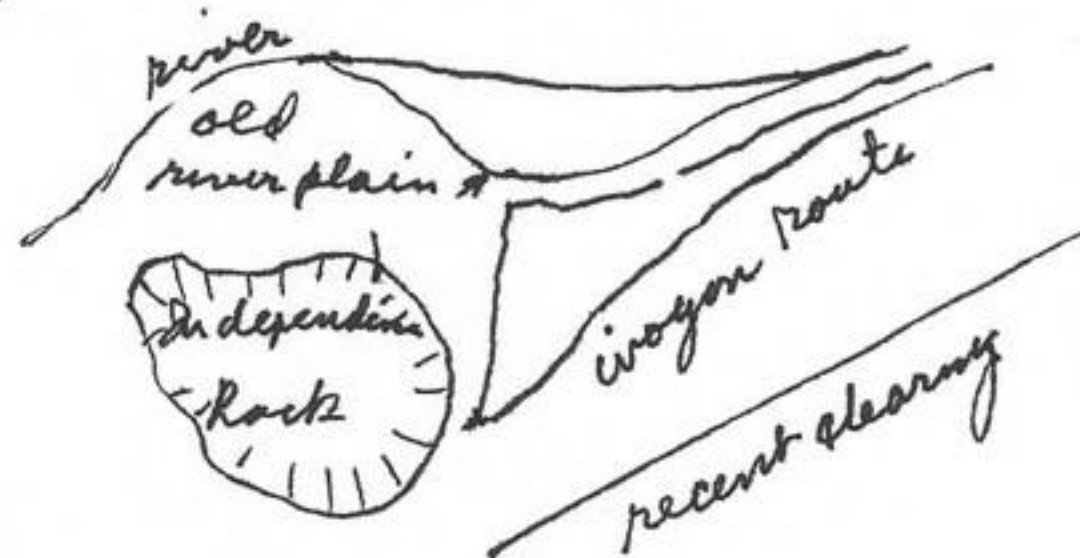
Rawlins, Wyoming

Sept. 21, 1979

Left Rawlins and returned to Casper via highway 789 and 220.
 made count of all antelope enroute. Left Rawlins 11:10
 A.M. In a prairie dog town noted groups of 3-12-18-2
 antelope. Between here + Lamont observed groups of antelope:
 3-2-1-1-2-3 (1 road kill)-9-4-13-10-6-6-18-6-13-16-3.

Beyond Lamont there does not seem to be erosion in the valley.
 Between Lamont and Muddy Gap noted groups of 28-6-5-20.
 Group 6 just beyond Muddy Gap. Continued to Devil Gate.
 prairie dog town just N of gate at ranch. Arrived at Independence
 Rock and made some observations there. From the top of this
 round knoll of granite observed 60 antelope to the N and 92
 to the south of the knoll (8x binoculars).

The wagon tracks are 50" wide. In most
 places erosion across the road is negative.
 Antelope trails across road 6" deep.
 Road comes to within 15' to 40' of old river plain.
 In sandy areas road 2' to 3' deep



picked up some old wire, cans and metal in road bed. This road should be given overhead protection for preservation of a segment of the old trail. Mourning dove, vesper sparrow, rock wren in area. Noted 2 *Eutamias minimus* climb to top of granite knoll. Some brilliant yellows in river beds. Annette documented the area and activity with her camera. Left Independence Rock, which I found extremely interesting and continued N. Between the rock and Alcega noted the following groups of antelope. 2-6-7-3-2-2-6-4-17-2-14. Arrived Alcega 2:30 P.M. 2 miles N a good prairie dog town and many live prairie dogs. Just beyond 26 antelope in one group. Passed junction 487-220. Cottonwood trees

green to yellow along river. Arrived Casper 2:30 P.M. The census of antelope ^{via Getty mine, Mt. Bow & Wickett} comes to 460 ~~360~~ antelope in 97 miles or 4.7 ^(Sept 20) antelope per mile which is considerably higher than ^{other} areas in which I have made censuses. This area was from Rawlins to junction 487 and 220 SW of Casper. Continued wiring garage for the rest of the day. James Robert is to complete the wiring and then return to Lawrence. Tomorrow I will return to Seattle with Annette C. Antelope censuses ^{Sept 21 today} from Rawlins via Lamont to junction 487-220 is 518 antelope in 110 miles at 4.7 antelope per mile.

Casper, Wyoming

Sept. 22, 1979

Spent the A.M. wiring and then left with Annette C for Seattle via Salt Lake City, by plane, arriving after dark.

Seattle, Washington

Sept 23, 1979

Today, Annette, Robert Byer and Bob Eiler ferried from Edmond to Port Townsend where we checked a wooden boat exhibition. While on ferry at Edmond waiting for departure, noted a Steller's Sea Lion swimming about 30' north of boat ferry. It swam for 10-15 minutes in plain view and then climbed out of water onto a cement platform directly below the ferry at the terminal. It remained there in different positions, jumped into the water and later returned. Size is a conspicuous field identification. The captain of the ferry said this animal had been in area the last 10 days but he did not know what kind of seal it was. Annette took several photos of this sea lion (*California Sea Lion, Zalophus californianus*)? or *Eumetopias jubata* northern Sea Lion at Port Townsend tried to get more by phone but he must have been out of town.

The main emphasis on wood boats is the small boat up to 10' and these are of a variety and beautifully built. We got there just as boats left the harbor (New town) for display and a regatta.

Seattle, Washington.

Sept. 24, 1979


Check circumference of Union Lake from Univ. Washington Marina back to starting point. There are several motor-sailors, one made in Finland with double keel for maintaining upright position when tide leaves bay. There are several boats in the 35' range that are satisfactory, some 30' that have room below and would be easy to operate. Walked entire distance from Annetta's home at 4526 47th NE, Seattle. A sailboat magazine called *Sailing* is published by Port Publications Inc, 125 E. Main St., Port Washington, Wisconsin, 53074. Saw a great house northeaster, 30 ft., that had possibilities.

Sept. 25, 1979

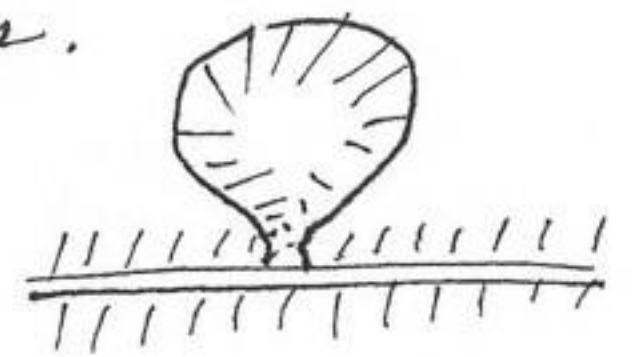
Walked to University of Washington and visited the Natural History Museum (NW corner campus) which is mainly archeological and ethnological. Then checked Benjamin Hall, a geneticist and son of E. Raymond Hall of University of Kansas. He was keenly interested in my anticipated trip to SE Alaska and as he has been working with yeast and other microscopical forms was interested in testing some natural small mammal population. From here saw Dr. Ericson whose main interest is marine mammals. He would like to check with him before going to Alaska as he has spent most of his time in Alaska and was willing to confer with me about problems in SE Alaska. He said that Robert Rausch is on the faculty at the Univ. of Washington. Ericson had prepared an evolutionary chart of the marine mammals and the first word I saw was a misspelling of the eared seals Otariidae instead of Otariidae. As I remember he said the sea lion in Seattle area is the ~~So~~ California Sea Lion, and is infrequently seen in the sound area. This evening Ron and Chris and I ate at a Chinese restaurant where they prepared the food before your eyes and nose. That evening and night had ~~symptoms~~ ^{symptoms} of heart attack with irregular and weak pulse and needless to say sore legs from all the hiking I had done in the Seattle area. One of the symptoms was fatigue.

Seattle, Washington

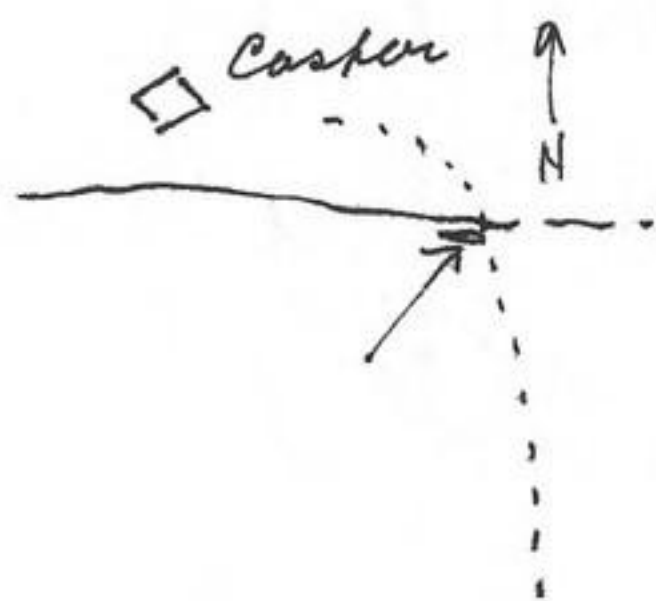
Sept. 26, 1979

Chris drove me to the airport for a plane that was scheduled to leave at 7:00 A.M. Passengers waited on board until 8:05 when compass fault was corrected. At 8:09 the plane was above the clouds with cirrus only above us. What lakes I could see were green. The area to the east was completely sealed with clouds on a horizontal level with cumulus (compact) relief so:  These clouds extended as far as I could see. We passed just ~~east~~^{north} of Kanier with the plain of clouds at about half way up Kanier with some shoulder ridges exposed. The mt was clear and perfectly define. I have never seen such exceptional circumstance of clouds and mountain. It looked more like a picture than the real thing. All mountains stood out in bold relief like Kanier and seemed to closer than I have ever seen them before. They included, St. Helens, Adams, Mt. Hood, Three Sisters, all of them with the continuous base of clouds. Except for the mts, no other ground form was visible. The clouds continued as a solid surface to just east of Adams where clouds started to open up in the forested areas, then farther eastward clouds only in gullies and valleys. The ridges were brown and drainages yellow. at 8:28 A.M. Columbia River. West of river regular dry farming but east of river first circular irrigation patterns.

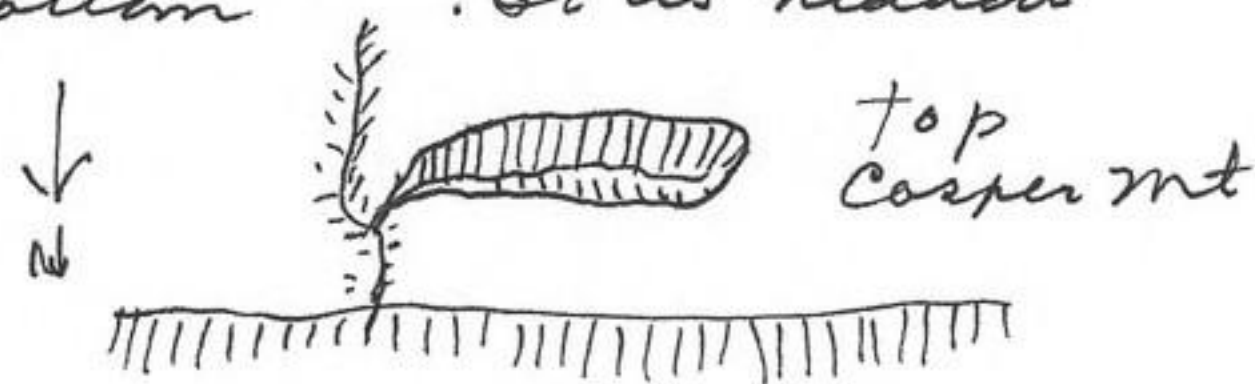
8:34 forest now in gullies. Drainage systems constricted before entering main drainages. Some fog in patches. To east more fog in canyons and basins. 8:39 first low mountains, bare tops and forested below. 8:45 steeper mountains and forests. 8:47 Snake River? There are more gullies on the west side of ridges than elsewhere. 8:55 Snake River?, deep canyons and reservoirs. Fog now continuous and topography controls distribution of fog. To the south toward Great Basin there is less fog but higher cumulus clouds. 9:08 mountains to S and well developed cumulus clouds. 9:10 plane turned to SE. yellow aspen common. 9:15 conspicuous flat topped mountain or ridge. Sky clearing of clouds as we entered the Great Basin. 9:16 Great Salt Lake.



On the N end of Fremont Island or could be peninsula to N is an excellent record of successional shorelines of old Lake Bonneville and this area should be investigated. Red in protected places and along shorelines. Red foliage on Antelope Island. No of railroad across lake is red and south of it is blue. 10:23 over railroad and salt patches. 10:25 over E-W interstate. No fog in basin area. South end of Antelope Island is continuous with land to E. There are good meanders on old lake bed. 1500 pelicans flying below. 9:29 highway from Garfield and turning to N. Set down at airport at 9:23 (10:32 mountain time) Because plane was delayed at Seattle, missed regular plane to Casper so took no. 46 to Denver leaving at 12:15. Baggage misplaced in the change. As we gained altitude over Wasatch Range could see that smog was confined to the crescent of Salt Lake City and valley as far S as I could see but confined to crescent and conformed to E. It did not extend W into the Great Salt Lake Valley. Temp. at Salt Lake 63°F. Farmington Bay 12:51, 13 pelicans. 12:56 top of Wasatch Range just N of Salt Lake City. 1:00 Echo dam. Aspen yellow. 1:15 deep river (Green River?). 1:33 Over high mountain peaks of rough mountains. Arrived Denver airport 1:48 P.M. In field E of approach are many gopher mounds. Arranged to leave Denver 4:13 P.M. Cruised at 22,000 to Casper in contrast to 31,000 ft out of Salt Lake. 4:30 Over Laramie and Snowy Range to W. Cloud cover solid E of front range. made approach to Casper



At arrow point is a unique erosional cirque with steep walls and trees in canyon bottom. It is hidden



from general view except by plane. If it could be acquired it would be a Shangri-la. Arrived Casper 4:49 P.M. and after arranging with Denver ^{telephone Co.} was able to break in on an extended conversation of Mary and one of her friends to let her know I was at the airport. The area E of Casper to airport is unusually flat with a meandering marshy swale running thru it. The dry part is full of ant hills.

Casper, Wyoming

Sept 27, 1979

Because of uneasy heart problems at Marij (last night 1:00 AM - 4:00 AM) decided to try for Kansas City as soon as possible. Symptoms last night were: weak to non-existent pulse, resting on right side produced severe arrhythmia, on back most comfortable; chilled and un-controllable, no pain in chest, periods of stability (pulse 57) then followed by racing of heart followed by slow pace and pulse irregular, urination at first minimal but followed by copious output.

Mary thought it best that she accompany me to Lawrence. We left Casper 7:28 A.M. Excellent view Shirley Basin and Getty uranium mine to right of route. Arrived Denver. Left 11:AM via 804 flight. Across E. Kansas was impressed with amount of forests in drainage consisting of a substantial amount of space on each farm. Arrived Kansas City 12:45. To Lawrence via small plane shuttle arriving 2:00 P.M. where we were met by James R. Went directly to Watkins Hospital for check-up and medication.

Clinton Reservoir, Douglas Co., Kansas

Oct 7, 1979

Annette and I walked 3/4 way along dam (middle road on W side, 8/10 miles) and returned. High cirrus clouds, wind from SW, from 4:00 P.M. to 4:45 P.M. and then swung around to E thereafter, along with increase clouds. This road is on W face of dam and is about the height of the recreational level of the lake. The water is now 867 feet and will rise to road level at about 880'.

24 Sprague pipits flew N along dam (between road and water, some alighting near use. They return along dam about 1/2 hour later. Grasshoppers average ^{1 per} 30 feet, butterflies (small whites and yellows (cabbage)) 1 per 100 feet. Several thousand (4) Franklin gulls at our arrival were moving E above lake some 200' above the water to others nearly out of sight in height. Some dropped to just above 150 ruffbill gulls but they did not stop. All continued E and SE. The flight was in progress at 4:00 and lasted to 4:35 P.M. 2 cormorants fed along base of dam. 3 killdeer on dam proper among boulders. 1 Great blue heron also at base of dam. At N end of dam where lake forms inlets and non dam topography were 15 killdeer generally distributed, a meadowlark and 140 red-wing blackbirds. The blackbirds finally left area and flew E over dam.

Clinton Reservoir, Douglas Co., Kansas

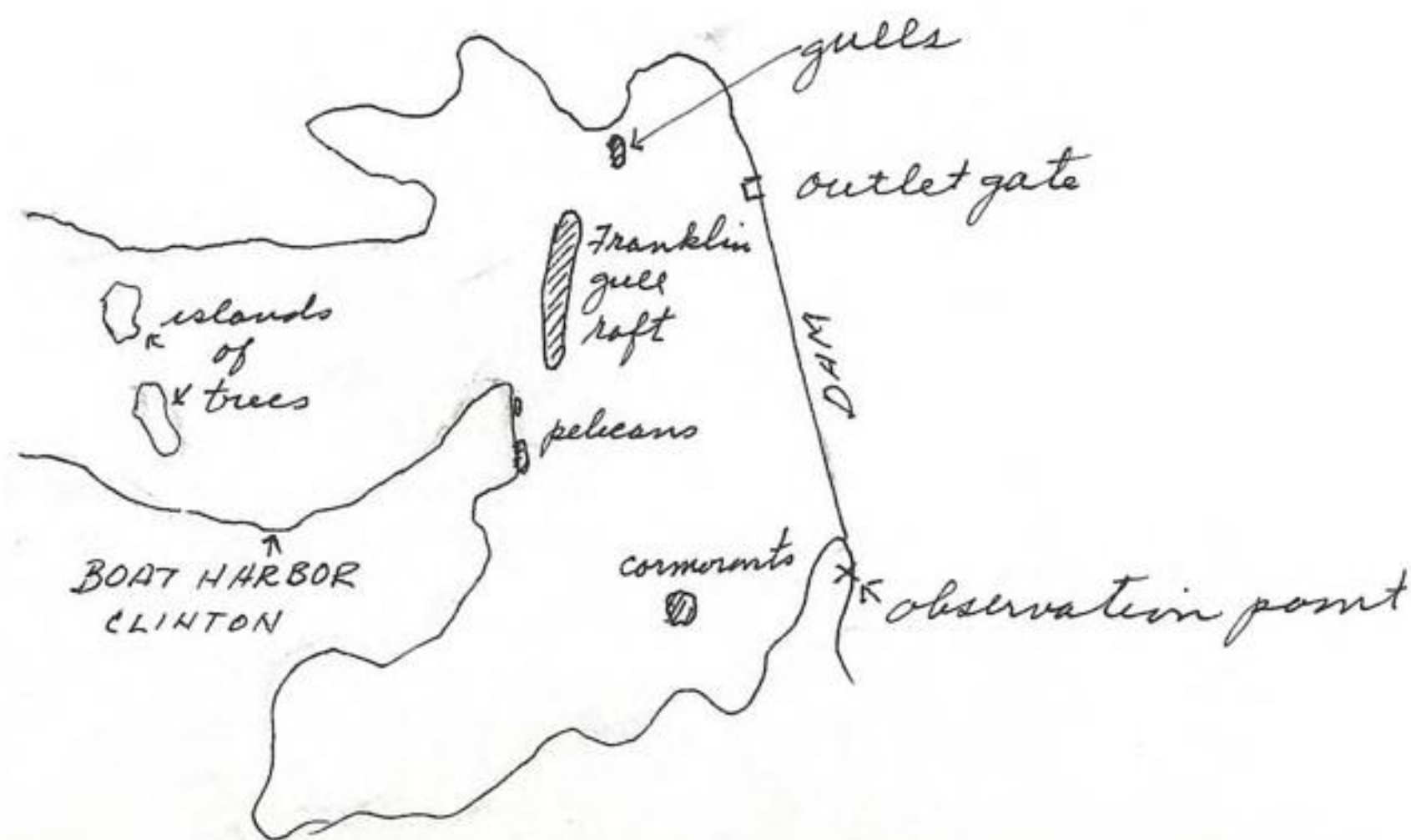
Oct 8, 1979

checked birds from S end dam. approx. 250 ring-billed gulls on emergent road bed NW gate (outlet). Included in group was one imm. Bonaparte gull. An immature ring-billed gull; harassed this small gull. At point to W 270 pelicans, 50 more generally distributed in upper Rock Creek bay. 120 Canada geese circulated in reservoir area. One group of 18 snow and blue geese swam and rested in main body of reservoir W of dam. This group maintained a separation of 5 snow geese (2 adults and three young), and with some interchanging of group composition of 2 adults and 2 imm, one adult and one imm, 3 adults, 1 adult and 3 imm. This group was displaced by a speed boat. They flew in three circles then left E over dam. While in flight the 5 snow geese maintained their segregation and led the flock of 18 the entire time in the air. 1/2 hours later they returned to reservoir and again the snows maintained segregation. One large raft ^{4,000 birds}, generally dispersed included approx 50-50 godwits and baldpate, 30 pintails, 20 mallards, 3 pied-billed grebes, one scaup. 30 cormorants generally distributed. approx 40 great blue herons around edge of reservoir. Red tailed hawk flew E over lake.

Oct 9, 1979

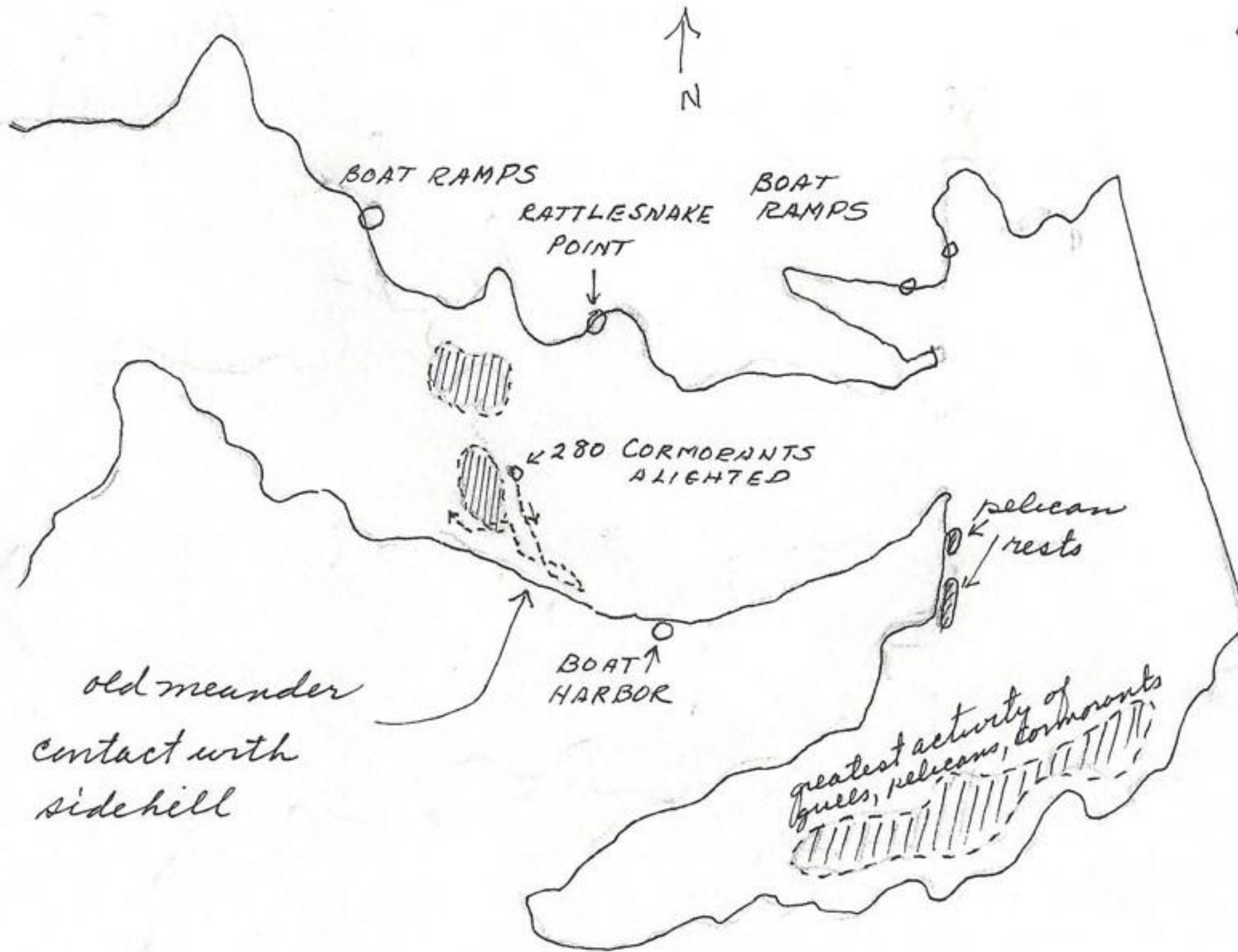
checked birds from S end dam. Today there are approx. 3,000 pelicans in some general area as yesterday, resting on shoreline. Others in Rock Creek bay and main lake to W. The Franklin gulls were in the ~~same~~ general area of lake, ^{to W near emergent vegetation.} and numbered approx. 7000. They formed a long raft and there was little activity except an occasional gull moving N along the raft. At any one movement there would be 2 or 3 gull elevate their wings (per 300 birds). At 9:45 one group of approx 200 gulls left the raft, circled to S and then returned to raft at 10:00 A.M. In the lake are also 250 coot, 3000 pelicans and 35 cormorants. Other birds in bay at head of Rock Creek. 40 ring-bill gulls in area, generally distributed. The ring-bills are the only gulls working the area. At 10:50 wind increased to whitecaps and ring-billed gulls started to feed into wind as they moved N. Approx 90 ring-bills pass across the lake in slow evenly dispersed formation and it took 1/2 hour for them individually to pass by. At 10:55 6000 Franklin gulls left the raft and circled high and finally disappeared. At this

time a turkey vulture sailed S across the reservoir area at great speed and without deviation. at 11:00 all ring-billed gulls were still working N across lake and by now total 150. at 11:16 all Franklin gulls left lake and circled high and did not return. 4 Turkey vultures circled just over S end dam, One group 111 cormorants feeding in Rock Creek Bay and they (12) were feeding with outstretched wings. A boat went thru the W edge of lake (former Franklin gull raft area) and approx. 8000 ducks were displaced. Also in Rock Creek area all cormorants, 80 pelicans, ^{ducks} and some gulls were displaced. The gulls were somewhat tolerant to boat. Left S end dam and checked gulls NW of water outlet gates. These gulls were on partly emergent road getting S from land and a favorite ^{resting} place. The group included ring-billed gulls, Franklins and Bonaparte gulls. It is interesting that all the Franklins in the raft left the area but those resting on the islands did not leave. A comparison of the three species are as follows: Franklin darkest, ring-billed lightest and Bonaparte between but nearer the ring-bills. Ring-bills show 1 to 3 white spots on primaries when resting, Franklins show 3-4 white spots, Bonaparte none. The size is ring-bill, Franklin and Bonaparte in decreasing size. Bonaparte more stubby, larger head and narrower bill than its closest match the Franklin. Ring-bill legs light, Franklin, Bonaparte dark. Franklin with almost full black to black only around eye. Franklin stretches high and maintains position longer than ring-bill. The Bonaparte has distinct spot behind eye. At one time two pied billed grebes approached gulls from the deeper water and moved among the ring-billed gulls in the shallow water. One gull (ring-bill) reacted. In this group of gulls were 82 ring-bills, 7 Franklingulls and 2 Bonaparte gulls.



Clinton Reservoir, Douglas Co., Kansas

Oct 10, 1979



Clinton Reservoir showing some areas of activity referred to in notes. Water level is at 867 and is approx 10 feet below the projected recreation level of the lake.

Checked reservoir from base of Rattlesnake Point. at 9:40 A.M. 280 cormorants alighted in a compact formation on the E side of one of the tree islands. Their immediate reaction was diving with noticeable ^{and splashing of} spray of water. Their arrival was anticipated by the ring-billed gulls and pelicans that immediately zero'd on the fishing cormorant. The accentuated activity of these cormorant was continuous throughout their fishing behavior. In three minutes 28 ring-billed gulls and 16 pelican had joined the cormorants which now were moving SE along the edge of the tree island, splashing, diving and extending the raft forward by swimming and raft-hopping by those birds at the rear of the raft. At 4:45 the cormorant were joined by 35 ring-billed gulls and 30 pelicans each benefiting from the fishing activity of the cormorants. At 9:52 there were 38 gulls and 52 pelicans. By 9:55 the gulls had dropped to 15 gulls + 63 pelicans. The cormorants were still fishing with their original enthusiasm and splashing. I have never seen so probing and persistent behavior. 10:05 cormorants still feeding. At 10:13 there were 46 pelicans and 27 gulls associated closely with the cormorants. At 10:¹⁵~~45~~ 120 more cormorant joined the original 280. At this time the cormorants passed thru a segment of inundated trees and the linear line of pelicans jammed against the tree barrier in a compact

group, which reorganized by swimming out around the trees and joining the cormorants as they continued up the former channel, and out of sight. As far as I could tell they were fishing over the old river channel on the south side of the valley, that is in the deeper part of the reservoir. At 10:30 a group of 48

Cormorants flew w up reservoir but did not join the other cormorants. The forests on S side of reservoir in the area are:

- 80% yellowish green
- 15% dark green
- 5% yellow, bright
- 5% golden yellow.
- reds are from Virginia creeper only.

while at shore of reservoir noted that wave action could be described on ~~that~~ basis of sound level. Left 10:50 and drove to boat ramps this side of Coan Creek area. Only 1 ring-billed gull in area - no ducks, pelicans etc. There was considerable bird activity beyond in the Belvoir area. Left and made quick check at the outlet gates at 11:30. High waves covered usual resting area of gulls but 2 other alternatives showed 63 ring-billed gulls and 6 Franklin gulls. 5 barn swallows passed by.

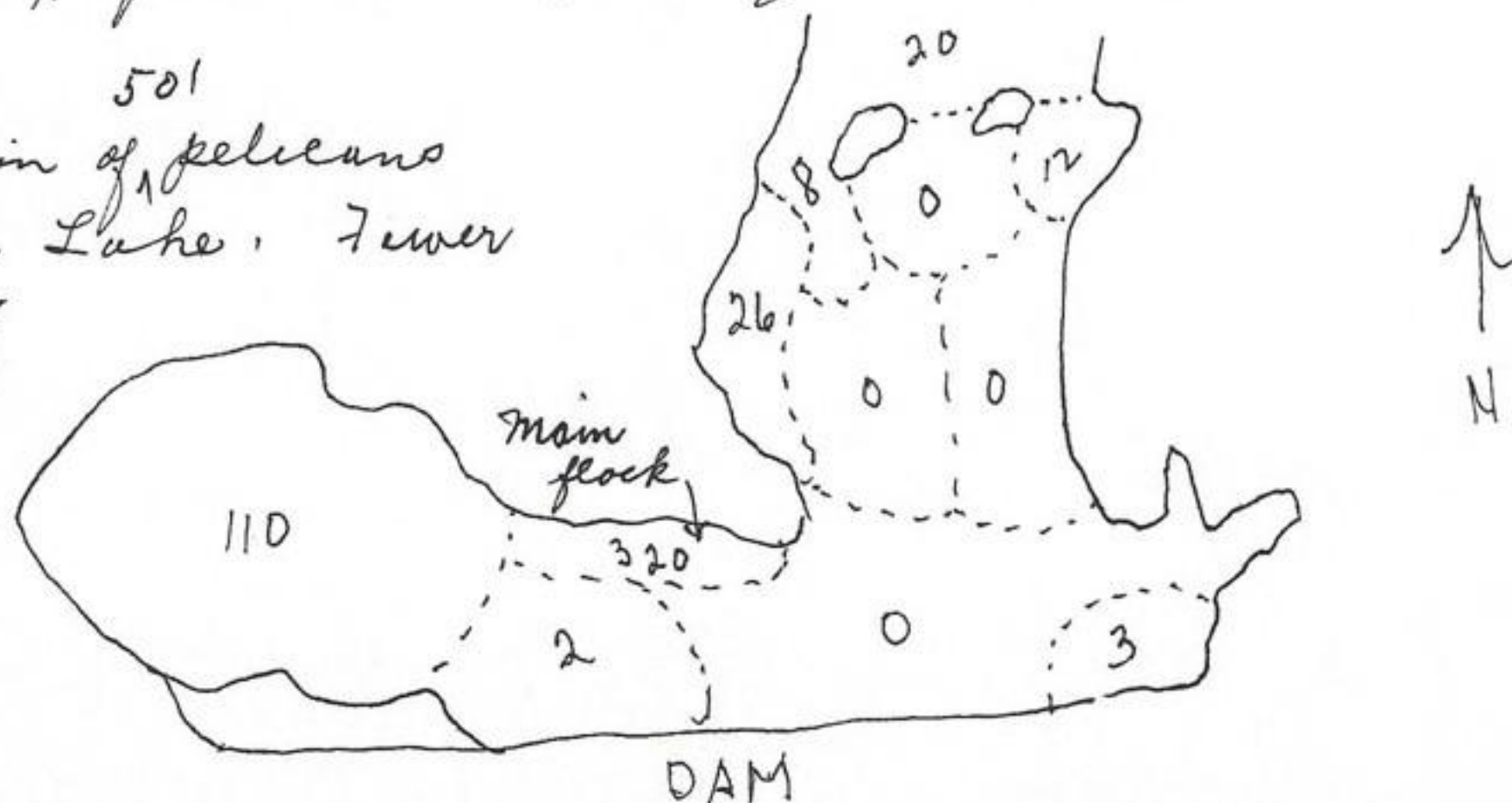
On return home checked Lake View and found ~~not~~ no gulls, ducks or any aquatic bird. Same number of pelicans as of yesterday (3000)

Clinton Reservoir, Douglas Co., Kansas

Oct 11, 1979

Checked birds from S end of dam (near top of hill on road) a flock ⁽²⁶²⁾ of blue and snow geese was w of dam about 7/10 miles and consisted of 130 adult blues (49%), 67 immature blues (25%), 37 adult snows (14%), and 28 immature snows (10%). In the same area but beyond to W were approx. 600 ducks, mainly gadwals (500), redheads (30), 6 ruddy ducks, pintails (23), boldpates (36), spoonbills 4, and several loon.

501
Distribution of pelicans
on Clinton Lake. Fewer
than yesterday



Clinton Reservoir, Douglas Co., Kansas

Oct 12, 1979

Checked birds at Clinton Res. from S end dam. Observed flock of 180 blue-snow geese in open water W of dam. It consisted of: 39 adult snow (21%), 14 imm snow (7%), 90 adult blue (50%) and 37 imm blues (20%). Also 3 pied-billed grebes associated with this flock of geese. These geese formed a compact group. When a plane dislodged them they left and circled twice but returned to same area. When they alighted they appeared as if they would land at a more distant point than they actually landed. They settled down in a long linear pattern $3/4$ greater than the diameter of the original compact group before displaced. They moved immediately into a compact formation. There were approximately 500 pelicans today but they were organized into two groups and there were only a few^{1,2} feeding in the lake. There were 104 snow-blue geese associated with the main group of pelicans. Also associated with the pelican resting reef were 11 great blue herons. Of the gulls on the lake, 80 were ring-billed

gulls and 4 were Bonaparte gulls. There were no Franklin gulls observed. Peterson Research Area, NW Lawrence, Kansas. Oct. 14, 1979
 Pond: 2 tree sparrows, 2 song sparrows, 1 goldfinch. Peterson Creek: g. h. owl, 5 bobwhites, 13 bobwhites, red-bellied woodpecker. Grackle Roost: none. Fence Row: bluejay, 4 tree sparrows. Grass swale, none. Swale: 2 rough-legged hawks
 Lawrence, 402 Yorkshire Dr., Douglas Co., Kansas

Oct 15, 1979

Some trees started to turn red about one week ago. The unusual thing this year is the red oaks are turning red about the same time as maples and other red leaved trees whereas usually they are the last to turn color. Grackles have been in yard the last four days

Clinton Reservoir, Douglas Co., Kansas

Oct 15, 1979

Checked birds from dam. (10:00)^{AM.} approx. 400 coot along edge of dam some in water by shore but most of them resting on rocks at edge. They were along a $3/10$ mile section near the middle of the dam. One group of. On a sand spit NE of outlet gates were 212 ring-billed gulls but no Franklin or Bonaparte gulls. Same number of pelicans, around 500^{most} on W side lake in usual resting area but $1/3$ in upper Rack Creek Bay. Associated with the resting pelicans were 200 ring-billed gulls. A great blue heron displaced these gulls by rushing at them on 3 occasions. No ducks or geese in area.

Perry Reservoir, Jefferson Co., Kansas

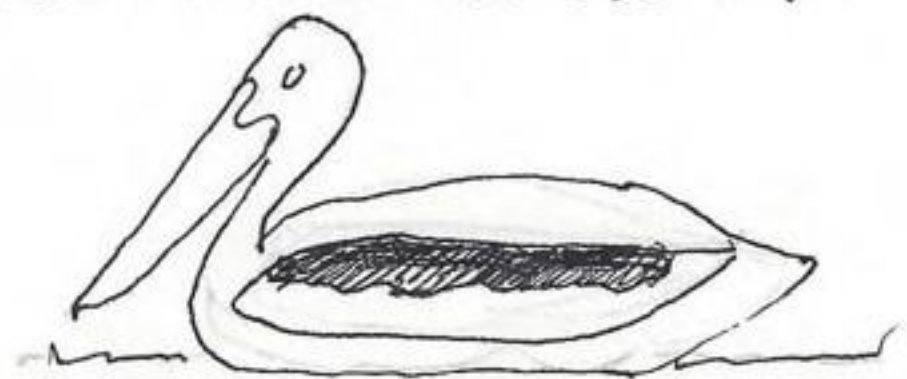
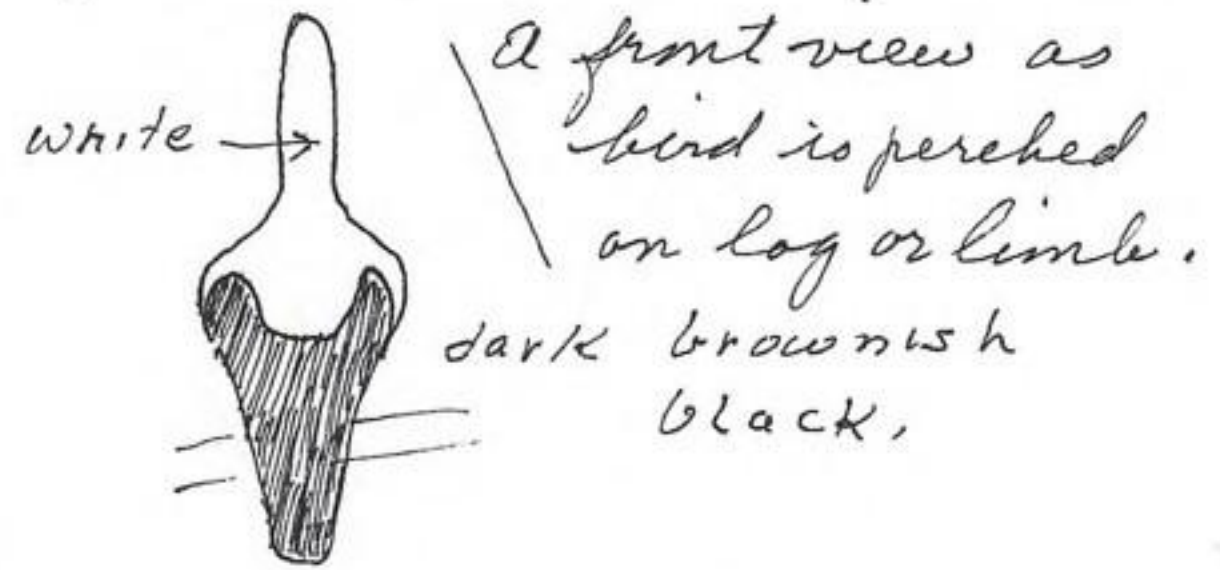
Oct 17, 1979

no wind

Check birds at reservoir. Left 9:20 AM, sky cloudy, temperature 60°F
 mileage 100240.6. Will keep complete census to Perry Reservoir
 and beyond. 50 grackles feeding on lawn at home. (402 Yorkshire
 Dr., Lawrence, robin. 41.0 2 grackles, 8 starling (usually only
 record unusual occurrences of starling. 41.5 meadowlark.
 85% of native deciduous forests have changed and are now in
 equal percentage of colors, even dark reds & maroons. This
 year of plentiful rains early in year and lack of rain in September
 and early October has produced a reversal of color change in
 that oaks started first instead of being last to change.
 most leaves, though in color are still on trees. 42.6 mourning
 dove. 43.0 now n on Lake View Rd. 44.0 bridge on causeway at
 Lake View. no waterfowl or any kind of bird life on lake.
 surface like a mirror. no grackles in fields which is
 surprising in that thousands left the city this AM and flew
 n to river valley direction. 44.8 2 robins. 45.6 48 redwings
 46.2 150 starling in one compact group. Riparian forest (mainly
 cottonwoods) green with occasional yellow leafed cottonwood, some
 show slight indication of yellowish-green. 47.0 2 mourning
 doves, 2 crows, redtail. 47.6 beginning sidehill road ^{at bridge} just beyond
 railroad crossover. Fox squirrel. 47.9 2 cardinals, gray squirrel,
 blue jay. 48.1 fox squirrel. Kaw River low and sandbars 80%
 or more in river valley. 48.7 150 grackles, 40 in trees along
 road, crow. 49.4 3 bluebirds. 49.7 150 grackles in flight.
 50.3 blue jay. 51.3 E end 52.5 cottontail road kill.
 54.3 Delaware River at Perry on old highway 24, low. 55.6
 mourning dove. 56.3 highway 24. 57.6 7 crow. 57.7 Thomson-
 ville. 58.1 sparrow hawk. 58.2 3 sparrow hawks, telephone
 pole distance separating them. 58.4 2 blue jays. 58.5 now
 n upgrade. 59.3 Overlook at SW corner reservoir: B=adult
 blue, b=imm blue, S adult snow, s imm snow); B B B b b
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 210 230 240

60.1 now N at W end dam at gate. nearly all tree, although in color, retain their leaves. Colors are outstanding. Now on peninsula road, 2 coat, 61.7 E end of peninsula, 15 coat 4 gulls in lake, at NE end peninsula. 30 ring-billed gulls on beach and one cormorant in water. 2 dunlin sandpipers feed along beach near gulls, probing mostly among ^{inundated} rocky areas of beach rather than on sandy beach. They are rapid and persistent probers. These two dunlin left with one killdeer 3 killdeers in grassy field of peninsula. 62.2 now back on main road. Dogbane bright yellow in field and stands conspicuously higher than other vegetation in the cut field. 62.4 bluejay. 63.3 at point. Across bay at point are 26 ring-billed gulls, and one adult Herring gull. Of the 26 ring-bills, 8 are immatures showing black bands in tail. 2 blue jays & Crow. 64.1 6 killdeers in field 200' from lake. 64.6 Turned around at base of hill as road was under construction. Will that make census except birds not observed before. Time 11:15 A.M. 65.4 yellow-shafted woodpecker. Observed another instance of ring-billed gulls harassing cormorant when it brought fish to surface. 68.3 W end dam, now east. Water level 890.8. 69.7 E end dam. 38 Coat between outlet gates and E end dam. Three marma, 3 gulls. 72.5 Ferguson Rd at 11:40 A.M. 73.7 Big Slough bridge, 4 gulls (ring-billed) 74.6 4⁰⁰ starting one group. Color have been synchronized this year. ~~77.7~~ red-headed woodpecker. ~~77.7~~ ^{77.7?} beautiful red tree at turnoff ^{to W.} ~~77.8~~ ^{77.8} Little Slough Creek, low. 80.5 4 corners, now west. 81.6 Old Town turnoff, drove around outer limits. At SE corner on peninsula, 8 killdeer on beach in old ~~stone~~ bivalve bay, at SW corner, 28 ^{ring-necked} gulls and 1 pelican. Two Franklin gulls approached resting gulls but turned away and swam 1/10 mile out into lake. 2 killdeer on W side. On causeway 13 barn swallows. ~~for~~ Striped skunk road kill near bridge. 83.8 bridge. no visible sign of ducks are gulls to north except two rafts near Paradise Point. 150 ducks to south of bridge. at west side of bay at ~~emergent~~ road, 8 killdeers along beach, one cormorant in bay to N, no gulls. Returned E to 87.6 at four corners, thence N. (12:45) 91.0 sandy vantage point just before Paradise Park. 2 rafts of birds in bay including geese and ducks but conditions poor for specific identification. Would estimate 4000 ducks, 1200 geese. Rafts widely dispersed. 91.2 gates now continuing W. Areas that

should be open grass meadows are now becoming forests with plantings by Corps of Engineers. The S side of this peninsula should be prairie. SW corner 8 coast only. Grasshoppers active. at 9:35 at NW corner counted 209 double crested cormorants, all resting on emergent logs except 30 which were feeding at random in the bay to W + NW. Some had necks and chests almost white and this varied to those in which the same area was dark brown to nearly black. Even though I drove the car on beach circle road the cormorant did not leave. 1600 loat rested on shore or emergent debris, another 500 feed at random in water beyond. 300 ring-billed gulls ^{in air} fed, or rested on the water while 600 Franklin gulls searched the water from the air. The greatest concentration of waterfowl were farther up the NW channel from the bend of the channel to the eastern limits of its course. From four positions on the north side of the peninsula made the following observations (see following map) of the area. In addition to the gulls noted above were approx 5000 Franklin gulls and 300 ring-billed gulls were resting on and near a spit of sand and mud. The Franklin gulls have noticeably darker backs and wings than the ring-billed or Bonaparte gulls. The posterior edge of wing is bordered by a white zone and the area between the upper surface of wing and black wing tips is white in the Franklin gull. 99% of Franklin gulls have black on heads from complete to bald front to reduction (1% or less) of black only around the eye. The 3 Bonaparte gulls all have a distinct black spot on a pure white head back of the eye. dark legs separate Franklins from ring-billed gulls. 409 white pelicans rested on sands near water. at 1:45 they started to leave and formed long single lines just above the water as they flew down channel and S around point. All but 40 left in about 5 minutes and the remaining, except 3 left between 2:20 and 2:35 P.M. The pelicans flew only 2 or 3 feet above the Franklin gulls which did not react to their (pelicans) presence. as the initial group left one pelican walk thru gulls and swoon out of the area in the same direction taken by the pelicans in flight. One of the three remaining had a dark brownish material on upper edge of wing (when resting on ground. Pelicans have some darkening of this area but never this amount & intensity



at 3:00 P.M. a single pelican arrived and joined the other three. at 3:15 an army helicopter flew over and the pelicans swam out into water and then later return to land in same resting area. The Franklin gulls also left, lurled and returned to same area.

Fourteen Canada geese and 20 white-fronted geese in area but separated by 150 feet. at 3:20 42 arrived from W and alighted in bay near other white-fronts. They swam ashore and joined the others, a 2 note alert call, the notes in rapid succession and higher pitched than Canadian call was given by the white-fronted geese? while on the ground.

The ducks were in upper reaches of channel and bays and consisted of approx 4000 birds including (in order of abundance) gadwals, baldpates, pintails, green-winged teal, ^{and} mallards. There were no redheads or canvas backs. A group of approx. 800 mallards used area nearer the gull resting area. They splashed water and chased each other most of the time. The green-winged teal fed on exposed mud or wet sand bars more than any of the other ducks and were more at home with the killdeer and sandpipers than their own kind (other ducks). The shorebirds within recognizable distances included 24 killdeer, western sandpipers 12, lesser yellowlegs 16, dunlins 8, sanderlings 4, semipalmated sandpipers 3, pectoral sandpipers 18, Baird sandpipers 4 solitary sandpipers 3, 16 great blue herons fed in area mainly around edges of water. 8 red-billed grebes noted at several places, generally with coots. The lesser yellowlegs more than ^{populated} Franklin gull area but did not draw any reaction from the gulls. while observing the water fowl, a red-headed woodpecker flew down to water on beach and drank water. A redtail flew over bay area but did not solicate reaction from waterfowl. 3 Bluejays on land as well as a marsh hawk and 2 flickers (yellow-shafted)

Left area (gates) at 96.4 at 4:05 P.M. 00.8 Little Slough Cr. 06.3 gates to Big Slough Park. fox sq, 4 robin, 07.0 turn to left 8 robins, 2 fox squirrels. 07.7 45 grackles, fox sq, yellow-shafted flicker. 08.0 5 end park on road, great blue heron, bluejay, 100 coot along edge of first bay, fox squirrel, slight ruffle on lake, has been almost windless today. Co. road inundated at bay, ^{lower houses in open shore.} 09.4 Lapoint Boat dock, kingfisher, 1 ring-billed gull only to N, no ducks. 11.0 back to gates. 11.5 line of 400 grackles at top of hill 13.4 Big Slough Bridge. 15.7 SE corner res. area, thence Perry, Leempton, Farmers turnpike. 26.0 and 27.4 striped skunk road kill. 31.5 Kasold & Peterson Rd. Home at 5:00 P.M. 791017-1 to 791017-13 artifacts from 1 mi. E mouth Oakley Cr., Kaw River, Douglas Co., Kansas

The following figures show the way in which the original valley is being filled in with sediment from the Delaware River, and the distribution of the birds on the new landscape. The upper part of the figure A has already filled in and is grown to several successions of willow. The middle part is filling in with sediment and forming jetties along

FIGURE A

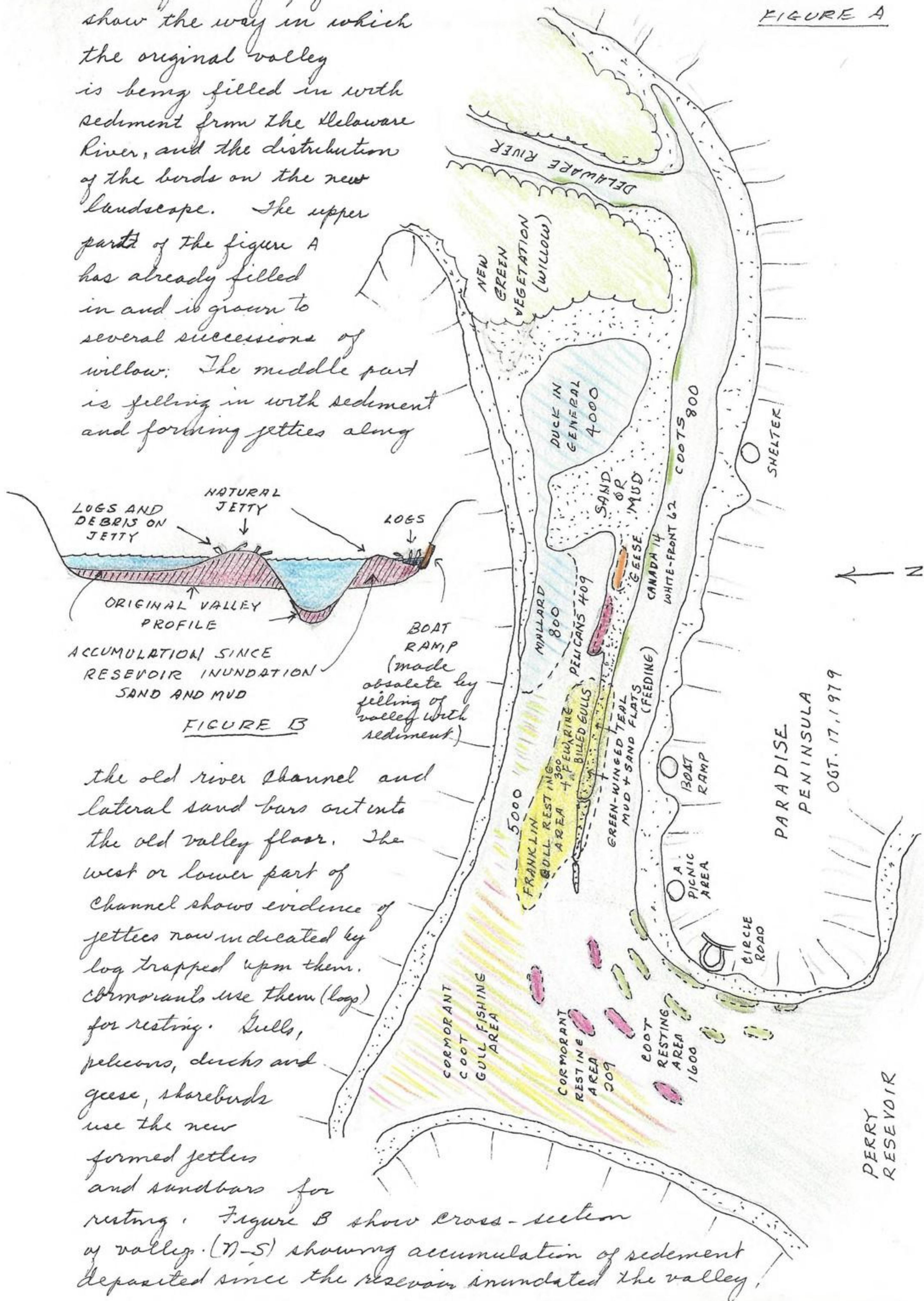


FIGURE B

The old river channel and lateral sand bars out into the old valley floor. The west or lower part of channel shows evidence of jetties now indicated by log trapped upon them. Cormorants use them (logs) for resting. Gulls, pelicans, ducks and geese, shorebirds use the new formed jetties and sandbars for resting. Figure B show cross-section of valley (N-S) showing accumulation of sediment deposited since the reservoir inundated the valley.

Paradise Point, Perry Reservoir, Jefferson Co., Kansas

Oct 18, 1979

Trip to Paradise Point. Left 9:15
clouds just clearing from last
night's thunder storms.

10360.5 mileage, Temp. 62°F

Will go via Oskaloosa,

66.9 midland. 68.0

300 starting in one
group. 68.4

sparrow hawk.

69.1 fresh striped
skunk road kill. 70.8

fresh striped skunk road
kill, bluejay. 71.9 2

robins. 73.7 top hill on

uplands. 74.3 meadowlark.

74.9 beautiful fields of Andropogon,
now red in color, 75.4 2 red-

winged blackbirds. 76.1 7

crows in cut field, flicker.

76.9 pond with 15 scaup. 78.6

peeldeer in spring area at
turnoff to McClouth. 81.0

striped skunk road kill.

83.1 Oskaloosa, middle of
town at 10:00. A.M. 89.8

"4 corners" now north.

sparrow hawk ^{from} 93.2 ^{sandy}
vantage point, _{can see the following in bay to SW;} 2,500

Franklin gulls, 8 corm-
orants, 800 coot, 300

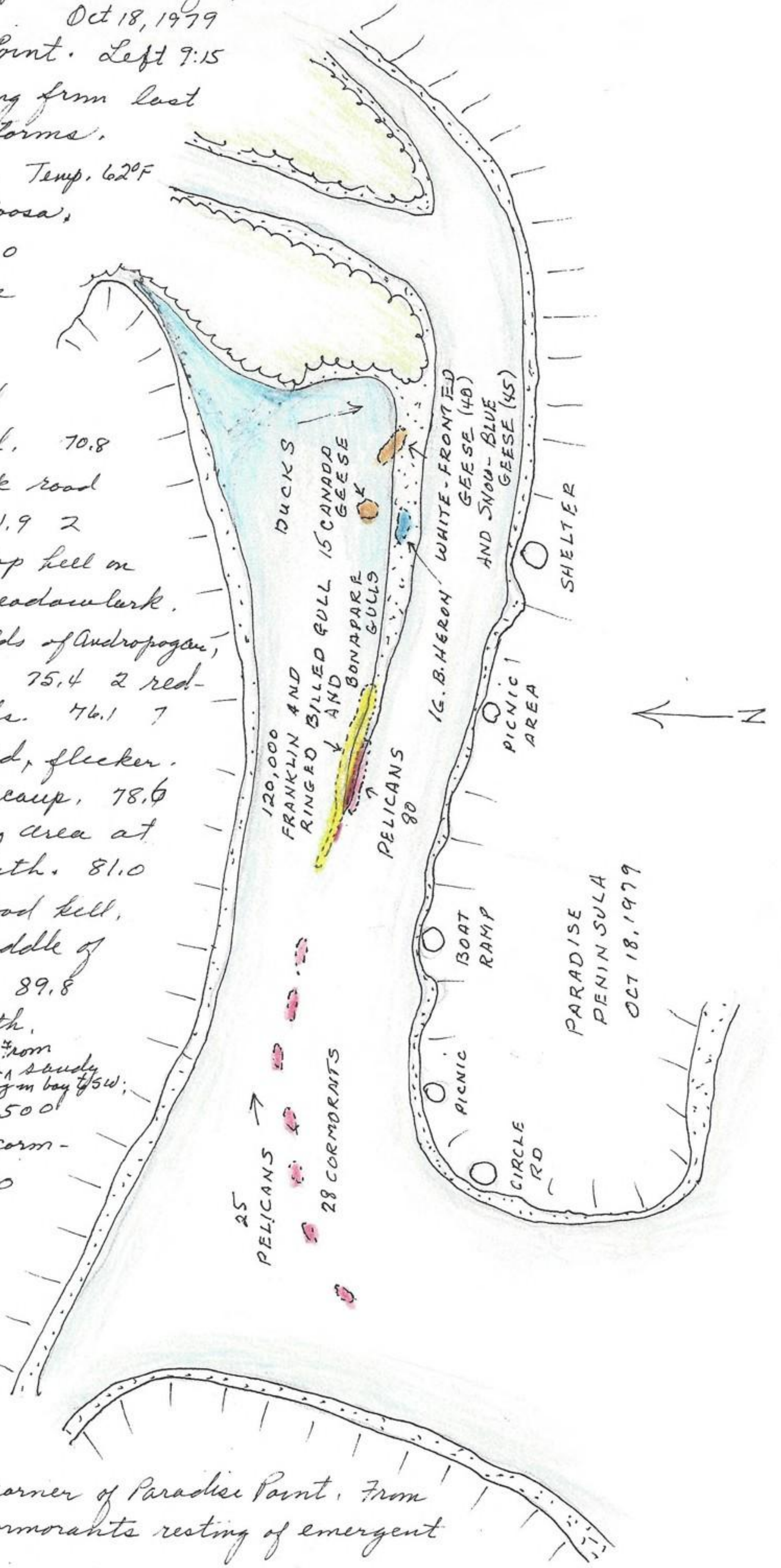
ducks and 500

blackbirds along
edge of lake.

93.4 gates to Paradise
Point, 2 redtails

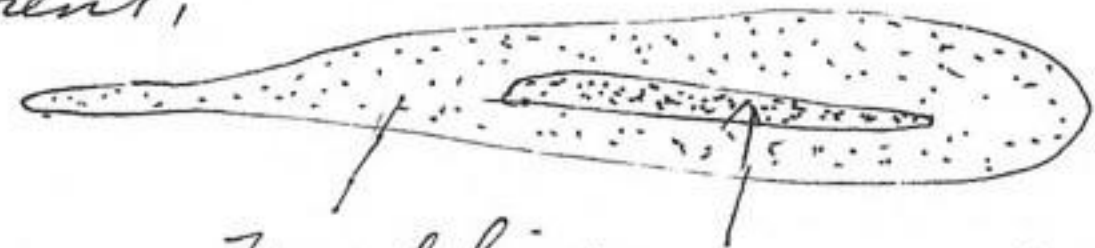
circling above
ridge of Paradise

Point, 95.6 NW corner of Paradise Point. From
here can see 28 cormorants resting of emergent



logs that have been trapped on shallow muds of bay, 80 east either swimming in bay but mostly resting on logs. 8 ring-billed gulls and 25 pelicans. no feeding of waterfowl in NW bay, now to boat ramp where I will check on rest of birds in ^{main} channel. Arrived 10:15 redtail flying over fields S of boat ramp. Including the 25 pelicans mentioned above, there are 105 pelicans in entire channel and these are generally distributed which conforms to distribution of logs on newly forming jetty. no large resting groups. 41 great blue herons generally distributed in cormorant and pelican area which are lower down valley of the channel N of Paradise Point and in upper bay to E. There are approx. 120,000 Franklin gulls at end of sandy bar some standing on submerged bar and others on bar. ^{all faced the sun.} These are in a compact group. When Franklin gulls are displaced by ~~plane~~ ^{plane} or other disturbances the ring-billed gulls generally remain and are easily counted (360). They are within the other gull group and form linear arrangement.

In the area of the boat ramp & to east are approx. 600 east generally in groups. 30 cormorant Franklin's ring-billed gulls are here & to east making 58 in entire channel area. 15 ^{of the 41} great blue herons are resting on mudflat (standing, 2 down) in a noticeable group and at least 100' or more from water. ^{40 snow-blues,} 15 Canada geese, and 40 white-fronted geese. The geese are in same general area but are separated as distinct groups. The water is flowing W in what would be the area of the submerged river and is carrying logs and other floatsam. The rains that have elevated the water level has produced a kill of shad fish. These fish are being consumed by ring-billed gulls, Franklin gulls and east and no doubt pelicans and cormorant. Watch one approx. 3 inch shad passed from one Franklin gull to another, rather one gull would rob the fish from the next gull. This fish was handled by 18 Franklin gulls until a ring-billed gull alighted and aggressively took the shad from the Franklin gull. The ring-bill immediately swallow the shad. The reaction of the ring-bill and Franklin gulls or ringbill with ringbill is aggressive whereas the reaction between Franklin and another Franklin gull is relatively non-aggressive or only mildly so. I watched other Franklin gulls swallow small shad and some others eat parts of dead shad.



Coot also regularly eat shad, as large as ^{One took a shad from a Franklin gull.} they can handle. Pelican fish in shallow water by ~~the~~ turning heads and necks sideways, straight forward, and with mouth open swim forward, sometimes as far as 20' and as long as 15 seconds before pulling head & neck out of the water. The head and upper part of bill can be out of the water. One pelican caught a catfish that I would have judged to be about 14" long. The pelican worked on this fish for 60 minutes ^(1 hour) until I lost track of it. In the process it moved 150' from the general area of feeding. No other bird attempted to take the fish. The lateral spines of the catfish were at least 3 inches wider than the throat of the pelican and formed conical projections outward on the pouch of the pelican. The fish was kept head first in pouch with tail sticking out of the end of the bill. Sometimes the pelican would flip the bill upward and try to force the head of the fish nearer the gullet of the pelican. Sometimes this would result in a reverse position of the fish. Some adjustment was made with bill in water. After twenty minutes the fish occasionally moved vigorously in the bill. ^{at times the pelican carried the fish & bill on support of curved neck.} All ~~this~~ during this time there was a noticeable vibration of bill and pouch as if a sucking motion. Noticed at least 30 Franklin ^{3 cormorant} and 10 ring-billed gulls carry sticks. Approx. 400 ducks in east end of channel and were of the same species as observed yesterday. No shorebirds. High water since yesterday have covered all secondary sandbars and narrow and reduced jelly area by 80%. At 12:04 all Franklin gulls instantaneously left sandbar and 90% of them returned in 4 minutes period, several thousand still remained in channel area and high in sky. It is incredible how fast the Franklin gull can go high altitudes after leaving the resting area. In less than a minute the sky looks like a 'salt & pepper' field and almost obscuring the sky. When they leave the air is one solid flutter of motion and I cannot see how they keep from striking one another. Most Franklin fly up or down channel and are the first to return but those ~~high~~ flying high take longer to return and some ^(high fliers) may be leaving area and soiling to the S. noticed pelicans harassing gulls for fish and vice versa. 12:16 plane passed over and displaced all Franklin gulls but not pelicans or ring-billed gulls. Some immediately settled back, others up and down channel and others gain almost out of sight heights. Of these their movement was not so much ~~strict~~ circular as in a small flock but random movement throughout the sky. Some at certain heights moved South. 12:21 most of the gulls that left at 12:16 have returned and are settling on bar. Some still returning.

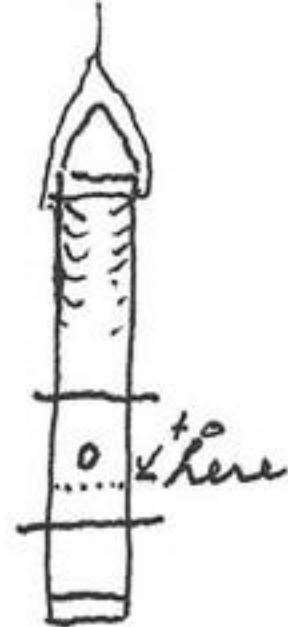
those circling high returned at about 12:23. ^{12:40} Franklin gulls
^{to fly} up again as did the ring-billed gulls but loat and pelicans remained on
 (plane caused all)
 same sandbar. The first to return were the ring-billed gulls but within
 a minute later the Franklins started to return & land on the sand bar.
 First noticeable gust ^{12:45} of wind today, otherwise the day has been
 windless, warm and lazy. Sky in all directions is peppered
 with Franklin gulls as far as one can see. These Franklin and
 ring-billed gulls that had already returned left the sandbar at
 12:43. The wind is the only thing I can see that would have caused
 the gulls to leave the second time (12:43). Sandbar now without a
 single Franklin or ring-billed gull. Coats & Pelicans remained.
 One minute after 12:43 ring-billed gulls returned, then at 12:50 Franklin
 returning, thousands circling above sandbar (50-200 feet) but are
 loathe to drop down onto sandbar. Beyond these gulls immediately
 above sand bar are filling the sky as if clouds of pepper. 12:53
 Franklin gulls now alighting at about 100 per second but still there
 are thousand waiting to land. 12:55 motor boat went ^{slow} up channel
 (boat)
 and returning ^{pass resting gulls} but did not disturb birds except those
 Pelicans all stood up and raised heads high while boat passed.
 in channel. This is against regulations to use boats in this area.
 1:05 The pelicans have been moving in with gulls on sandbar since
 & first arrived and there are now 309 on bar but separate from gulls.
 Franklin gulls are still returning since displaced at 12:40. This
 is a more different pattern than the previous times when the
 Franklin gulls were displaced. The most noticeable difference is
 fewer gulls have returned. 1:10 most Franklins have returned
 but many thousands more to return that are circling high. 12:2
 boat passed boat dock going upstream (100' from car). They are
 picking up insects on surface of water. 1:15 Franklin gulls
 still arriving. 1:17 Franklins about stabilized but others still
 circling high in sky. 1:21 Franklin gulls stabilized but still
 coming in at 5 per second. The Franklins that land in water at
 edge of bar land abruptly and hard in water and immediately
 start to bob, those landing on the sand do so with considerably
 reduced activity. 1:24 still hundreds ^(of Franklin gulls) above. Bonaparte
 gulls occur on basis of 1 per 1000 Franklins and most noticeable
 in flight. They rest with Franklin or feed in channel area. ^{Flight} Movement
 of Franklin gulls back and forth within flock area is about 5
 gulls per second across a given line within the field of the binocular
 when pelican moves thru Franklins, the latter give way or get
 stepped upon. 1:30 for all tense and purposes all Franklin gulls
 have settled. First killdeer flew by today and 3 minutes later

returned the same way. The Franklin gull population is now 110 fewer than previous period after gulls returned. ^{Some gulls} They seem to be leaving the area with each disturbance. At 1:48 Franklin gulls left, some started to return immediately, others up and down the channel and as usual others gained high altitude. 95% back again in about 2 minutes. Temperature 74°F 18 blues and 6 snow geese flew down channel from E but did not stop. 2:02 Franklins left, pelicans became alerted. Franklins started to return in 2 minutes, ^{then left a second time at 2:04} 75% per cent returned but rest high in sky. At this time estimate 50% of Franklins moved South, mostly from high sky. Sky now looks like a swarm of crickets. 2:20 Franklin gulls have been leaving flock in a gradual departure of 5 to 200 birds or so and at 2:20 the flock on the sandbar is about 1/5 the original number (120,000). They circle E at then at a certain altitude sail without much wingbeat to the S. 2:30 Pelicans still resting. Earlier they moved E to resting sand bar and at that time they fished for a period of time. Mud flats with roving bands of coat moving about like antelopes on the Serengeti Plains. 2:40 Franklins still leaving in small groups or individuals. Whatever caused the gulls to leave is influencing the resting pelicans. There is an increase in wing stretching among Franklin gulls, preparing for departure. None of them are going west down channel which has been the usual direction in temporary displacement. of the gulls as has occurred several times earlier. 2:45 definite ^{increase} departure of gulls. This in east show increased pepper effect. Departing at 7-10 per second. At 2:50 approx 8,000 gulls remain. 3:52 all Franklin left except ring-billed gulls. 1600 Franklin have returned from the last complete departure noted above. 240 ring-billed gulls on bar and they have not participated in the activity of the departing Franklin gulls. 3:00 Pelicans are stirring. Wind now from SE to E. The 1600 Franklins are stabilized and only occasional gull is leaving. Sun out for first time, clouds have been high and thin. Left 3:15 Pelicans increasing activity and approx. 1000 Franklin gulls remain, but few still leaving to E then S. 97.7 killdeer in field. 98.3 cannot see roft of gulls in bay S of the Paradise peninsula, ^{sparrow hawk} 99.4 gates. 09.8 robin at big Slough area 68 ring-billed gulls in Big Slough Bay to E. 14.1 SE corner Reservoir area. Will check water level at gates. 891.2 ft. 3 redtail hawks hovering S side dam on up currents. 3 rofts 75 each duck N + NW of gates. Did not keep complete census back to Lawrence.

402 Yorkshire Dr., Lawrence, Kansas

Oct. 19, 1979

Two goldfinch fed at thistle seed feeder. Level down 1 inch since last week and consumption increasing.



Perry Reservoir, Jefferson Co., Kansas

Oct. 21, 1979

Clouds moving in on a clear sky. Temp. 76°F. Considerable wind today as it has been the last two days. 10459.8 mileage. Left 10:22 with Annette. Clouds moving approx. 50 mph from S. Sparrowhawk at Bruner's place N of Lake Usee, also robin. Since three days ago cottonwoods have picked up a yellowish-green, some yellow but most of them green, but leaves look faded. This is also true of deciduous forest (fadedlike). Colors are there but faded. While driving on hillside thru forests of the river road noted up to 1000 grackles, most of them resting in trees. At Leempton bridge cloud shadows travelling 60 mph. 24 Killdeer on sand-bar below bridge. Color gone from S exposures of hills N E of Perry because of loss of leaves ^{from last 2 days winds}. There is a basic reddish brown color. 46.0 SE corner of reservoir area. Wind now ^{from} S.W. whitecaps N dam. 400 coot on rocks at base of dam (E segment) or within 10' of shore. 2 ring-billed gulls and one cormorant in water. 80% ^{water level?} approx 100 snows and 250 blues with many young. Another flock come in of 30 snows and 90 blues. Also 18 Canada geese arrived. (all between 10:55 11:05 A.M. all alighted about 3/10 mi. NNE from outlet water gates in usual area. 6 ruddy ducks and 40 redheads identified in small raft of ducks. Approx. 400 coot w of outlet gates and either on water if on rocks at edge of water. 2 ring-billed gulls. The above geese come into lake and acted more like ducks in habit than geese. Wind 60 mph. On edge of lake N of W end dam, 200 gulls on shore and 3 crows in field. At west gates before hill grade, 200 ring-billed gulls at point at entrance to bay. Marsh hawk at beginning of State Park. Approx. 30 coot in Rock Creek Bay, out of wind. So far have seen 2 pilot black snakes, 1 Thamnophis and one King snake road kills. This is an unusual number. 20 ring-billed gulls and 50 coot near causeway on N side at Agawkie. On N side Paradise Point were approx. 50 pelicans, 10,000 Franklin gulls, 200 ring-billed 1/5 number coot, ducks and geese as of last trip. Got some driftwood & returned home.

Artifacts from opposite (Oct 24, 1979, position
3:00 AM.)

- 1 pot sherd 791024-1
- 2 large skull, elk
- 3 small skull, artiodactyla
- 4 large tibia, (buffalo)
- 5 femur (large)
- 6 vertebra
- 7 small femur (beaver)
- 8 pelvis (artic)
- 9 deer jaw without teeth
- 10 " " with teeth
- 11 ankle bone
- 12 scapula
- 13 antler
- 14 gar
- 15 antler spike
- 16 construction

Kaw River, NE Eudora (110 mi SE 57°30'00" Lat, 39°00'05" Long, or
6/10 mi. E of SW Corner of Sec 33, T12S, R21E), Leavenworth Co., Kansas

Oct 24, 1919

checked river sands for artefacts (see route below).

Sky clear, no wind. Left 11:30 A.M.

11:50 Left car at Union R.R. tracks.

measured two large cottonwood trees on W side river at 13'6" and 12'8". They were approx. 50' apart, the largest to N.

11:55 no birds so far except 1 redtail. Gopher active this A.M. measured three sets of coyote tracks following W side of river near bank; they measured: front 73-74-75, hind feet, 64-65-67. One fox track measured. 59mm.

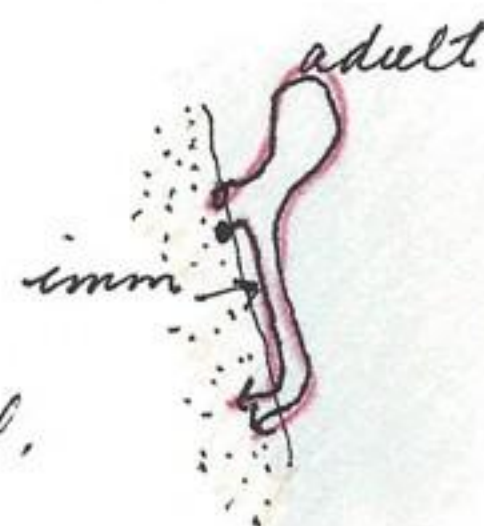
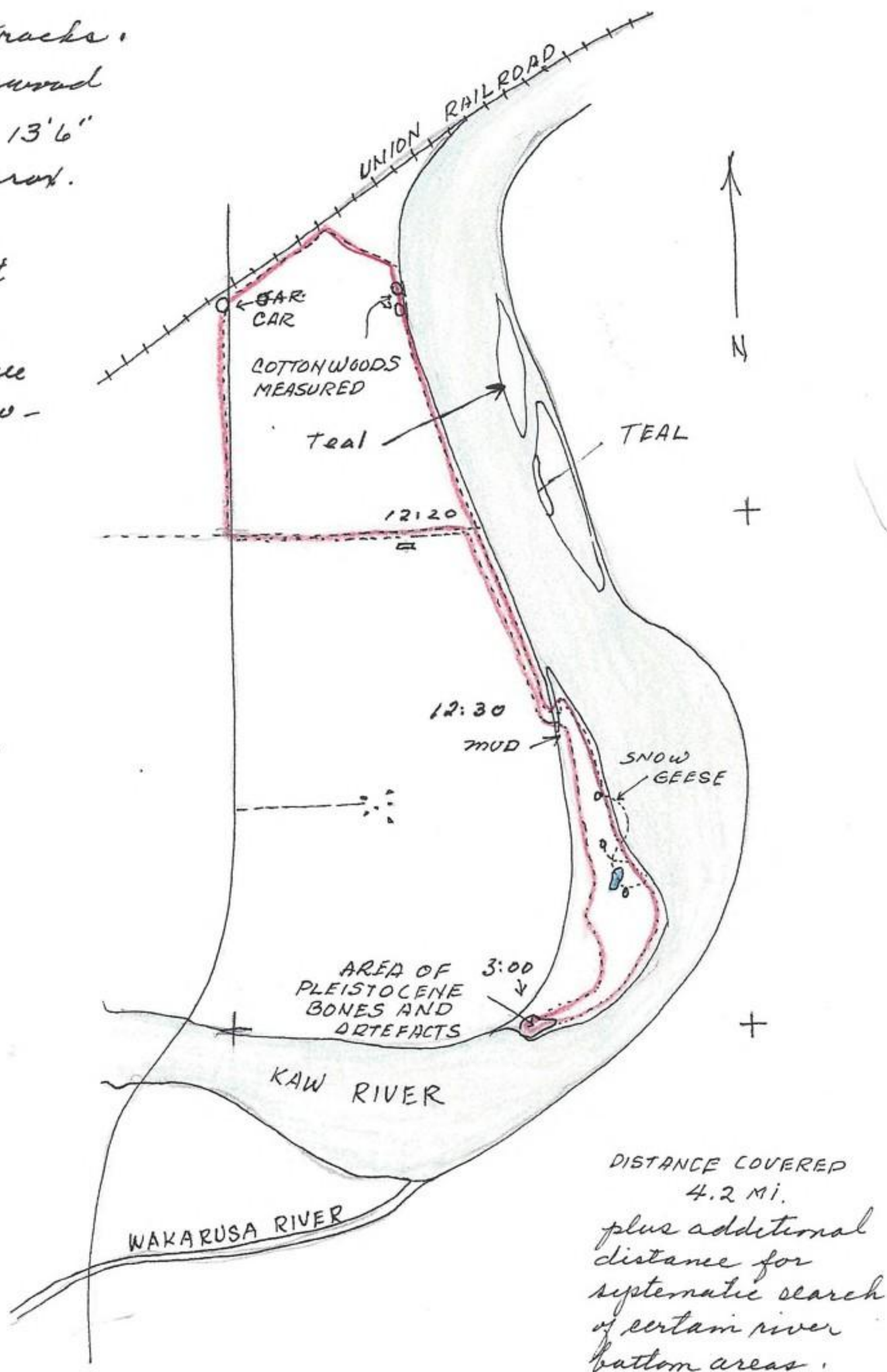
Cottontail rabbit and raccoon tracks also along route. The coyote tracks were in pairs, 2 going N and 2 going south.

On edge of sand bar on E side of river were 50 greenwing teal and 8 blue-winged teal.

Grasshoppers active at 1 per 20'. at one place a deep erosional cleft into bank and extended 20' inland.

12:30 Begin trees and sandbars. 12:40 2 adult and 2 imm. snow geese.

The closer I got the more they called. The adults left first, circled and then went up river about 2/10 mi. Beaver tracks at edge of water, some castor piles. Pulse 64. Collected a few bone artefacts. Crendelled out on sand. On sand fox tracks makes least impression, Coyotes deeper. at mud crossover nearly disappear in deep mud, continued back to car.



Perry Reservoir, Paradise Point, Jefferson Co., Kansas

Oct. 26, 1979

Sky clear, left 84.3 mileage at 9:10 A.M. Temp. 59°F. Will keep list of kinds of birds only to reservoir area. Crow, grackle, bluejay, starling. LeCompton bridge. Wind from E end ripples on river. yellow-shafted flicker. 01.0 SE corner of reservoir area at 10:35. Now Complete census. Will cross dam, thence N to Ozawie, thence E across causeway, thence N to Paradise Point. 02.3 redtail hovering on S side of dam. Wind from SE. 12 ring-billed gulls cruising N of dam. no boat along base of dam. 02.7 outlet gates, elevation of water 892.6. Wind on top of dam 9 miles p.h. West of outlet gates are approx 600 foot bath on rocks at edge of water and in water out to 20'. no geese or ducks. 03.4 W end dam now N. 04.0 ring-bill gull ^{fly} along shore. water unusually blue. 004.3 5 ring-billed gulls, black-capped chickadee. 04.7 now E to peninsula, marsh hawk. red-tailed hawk. 05.1 2 horned larks, few white-caps on lake. 05.2 NE end peninsula, flicker, 3 ring-billed gulls swimming in water beyond point. Bay in ripples, no waves. Great blue heron. 05.7 back to main road. 06.8 bay, no gulls at point on west side or in bay. 10.3 2 bluejays. 10.8 Rock Creek Bridge. 15 ring-billed gulls flying in bay area to N. of bridge. 19.4 Ozawie Bridge. 30 ring-billed gulls cruising in bay to N. 6 cormorant flew S over causeway. 21.4 4 corners, now N. 23.8 yellow-shafted flicker. at 24.8 at sandy point raft ^{in bay} of 8,000 gulls, 2000 ducks and 300 loat along shore and 1 redtail hawk. 25.0 gates at E end Paradise Point. 25.3 redtail, bluejay. 26.7 turnoff to boat ramp. 3 bluebirds and one marshhawk. 26.5 boat ramp. Returned to Byron Walters Lake. Left car on old Co. rd at 1:12 P.M. Between here and lake, down main w drainage observed - bluejay, redheaded woodpecker, titmouse, bluejay, bluejay, redhead woodpecker, redheaded woodpecker and 2 more at W bay of lake. arrived lake 1:30 One active beaver w bay. On W side to dam, redtail, redheaded woodpecker, 3 beaver holes (one active), pied-billed grebe on land, 6 frogs. across dam, 3 beaver digging and trails over dam, redheaded woodpecker, many (86) large mounds, good trail of beaver on E end dam. numerous sticks eaten of bark on shore of dam + in shallow water. On E side lake 4 good beaver trails up slope. redheaded woodpecker. 2:00 N end lake, good beaver trail. 2.07 peninsula and buildings, redtail. Left 2:30 slate-colored junco, 2 redheaded woodpeckers, woodpecker hole in electric line pole on steep part of road. Color leaves green to browns and all faded. 2/3 leaves on trees. 2 redheads, 1 bluejay, 3 juncos. House 3:00 Coyote on old Co rd w house. Car 3:04 Deer tracks 55 + 65 mm, coyote 70 mm

402 Yorkshire Dr., Lawrence, Douglas Co., Kansas

Oct. 28, 1979

Observed flight of blackbirds (grackles, robins, few starlings, few redwings and maybe some redwings) morning sky clear, temp. 33°F. The movement was between Iowa + Yorkshire streets but mainly 1/10 mi E of Yorkshire. Birds started flight at 6:30 A.M. 6:32 masses with birds about 2-3 feet apart and thousands in sky. main movement 6:33 to 6:40. Sun up 7:47 and only a few in air at that time, up to 2 or 3 minutes after sunrise. Approx. 30 grackles and 10 robins in backyard having stopped along the way.

Oct 29, 1979

Temp. 36°F.

Blackbirds began morning flight at 6:27. Some of first flight alighted in backyard, others stopped later. Few flocks to 6:30 then between 6:30 and 6:34 of hundreds of thousands, 6:40 some flocks but fewer individuals. Sun up 7:50. no birds after sunrise. End flight 6:47 A.M.

Oct. 29, 1979

no goldfinches at feeder between September thru October.

Oct. 30, 1979

First group of blackbirds 6:37 A.M. Cloudy, wind 10 MPH. First group 150 birds, then no birds next minute then ^{main mass} birds between 6:38 and 6:49. 6:42 500 in 30 sec. 6:45 1000 in 20 sec. 6:47 sky full and one group. Total birds this A.M. approx 1000,000. Each time on outward flight some birds alight in trees and move into back yard. One bird, ^{grackle} must have been poisoned. It could not fly in predetermined direction and would fly out of tree and land on ground below. It could not balance itself on the ground.

Oct 31, 1979

First goldfinch at feeder (♂ and 2 imm.) and a female. The female fed on feeder but the two young remained on branches 2 feet away, and fluttered their wings. After ♀ fed for 3 minutes it flew to one of the two young and in 4-3 contacts emptied its mouth of thistle seed. The other young did not receive seeds at this visit to feeder. The young displaced Eng. sparrows when the sparrows came too near the feeder. The Blackbirds (grackles and ^{some} robins) are more numerous around the yard than on previous days and reflect the numbers of birds in the general area of Lawrence. 600 in all. Temp. 44. There have been large flocks of grackles on golf course (4:50 P.M.)

402 Yorkshire, Lawrence, Douglas Co., Kansas

Oct. 31, 1979

and farther E.
Early morning flight of blackbirds, mainly over house, from 5 to 11.
90% sky in nimbo-cumulus, temp. 49°F (6:30 A.M.). Rained yesterday,
snow in S. central Kansas. Only fraction of birds of previous
days. 6:46 A.M. 3 single birds, high and followed by flock of
150. 6:47 A.M. several thousand. 6:48 increasing to approx.
4,000. 6:49 interval. 6:50 3 small flocks.

Nov. 1, 1979

Flight of blackbirds. Temp 35°F. no clouds, slight breeze.

6:37 A.M. long line to start.

6:38 A.M. massive flock filling entire sky.

6:39 A.M. long continuous line.

6:40 A.M. massive flock filling entire sky.

6:41 A.M. tapering off to line

6:42 A.M. end of flight. Many alighted in trees this morning.
Today had examination of midwest Cardiovascular Consultants, Inc. (At Duke's)
and used treadmill.

Clinton Reservoir, Douglas Co., Kansas

Nov. 4, 1979

Only one cormorant in lake as seen from S end dam. Water level
at outletgate 867.0 feet.

402 Yorkshire Dr., Lawrence, Douglas Co., Kansas

Nov. 10, 1979

Ice on pond at home. Grackles still in area. Goldfinch at
feeder.

Walters Pond, Perry Reservoir, Jefferson Co., Kansas

Nov. 11, 1979

En route made the following observations. Sparrow hawk at
Lake View at causeway, another at W end lake. 90% cottonwoods
leafless along Kaw River, ^{some understory green} few green; Black willows green.
Hillsides of deciduous trees brown, dead or leafless. River full.
Birds along riverside road are 15 meadowlarks, flicker, bluejay.
On road to Thompsonville just beyond highway 24, approx. 250 adult
and 12 imm ring-billed gulls following plow. From overlook can
see approx 10,000 mallards, 2000 sculp + 600 ring-billed gulls in bay
N of dam. Along W side Perry Reservoir, redtail, bluejay, 2 cormorants
redtail, ♂ marshhawk, crows and ring-billed gulls. Continued to
Ozawie, thence S to Walters. 2 redtails along route.

Parked car on old Co rd. S of house and left to E down main drainage at 2:56. Cottontail, redtail, bluejay, moles active. Arrived dam. 2 redtails, 2 redheaded woodpeckers, N end lake. Crows. Continued to gazebo, redheaded woodpecker, 2 slate-colored juncos, bluejay, downy woodpecker, 3 goldfinch. Deer tracks 78 mm and 67 mm.

Lawrence, Douglas Co., Kansas

Nov. 12, 1979

Clouds cumulus and spaced like summer but lower. Between 12-19 climbed 6,000 ft stairs at home.

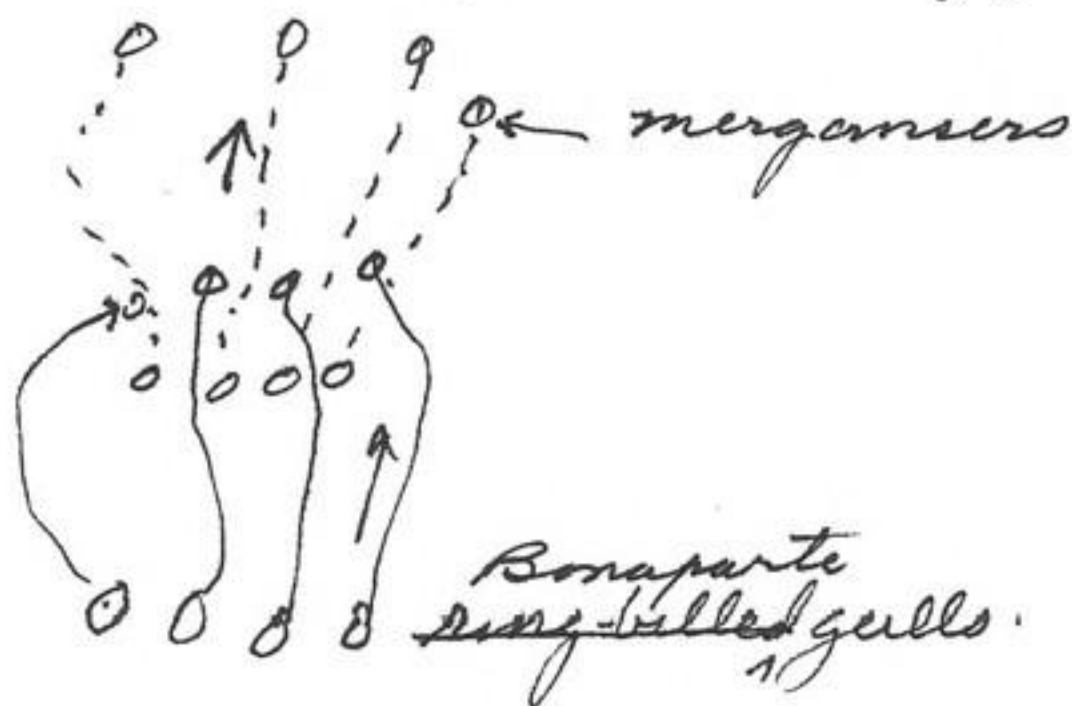
Nov. 16, 1979

Deciduous forest on hillside on Kasald S Peterson Rd. leaves gone, cottonwoods in drainage with leaves gone in middle of tree but leaves yellow on peripheral part of tree. This has been a characteristic of trees this year with leaves remaining on ends of branches and gone in center of trees.

Clinton Reservoir, Douglas Co., Kansas

Nov. 16, 1979

Temp. 50°F at 10:00 A.M. From S end dam can see 28 pelicans, 27 cormorants, 18 Bonaparte gulls, 18 ^{red-breasted} ~~American~~ mergansers fished and were followed by gulls.



mergansers would organize by coming together and then diving. Gulls would leave position behind mergansers and fly beyond where merganser had submerged. Merganser remained under water about 20 seconds and then reappeared

in 40 seconds for the next dive. The Bonaparte gulls ride higher on water than ring-billed gulls. The Bonaparte gulls when diving completely disappear under water, sometimes as long as 4 seconds. 8 more Bonaparte gulls were attracted to area of merganser fishing. Surface of lake like lines of T.V. Elev. water 866.6 feet at dam. NW outlet gates on submerged road in water were 264 Bonaparte gulls. and at least 200 more generally distributed on lake. Killdeer, pied-billed grebe walked thru group of Bonaparte gulls in shallow water without disturbing gulls. Began walk from outlet gates and followed road near base of dam. marked cylinders which are placed 200' apart across the dam just below the road. by placing small roads

on larger rocks in number sequence. Left 12:30⁵⁰ and temperature now 60°^F. sky clear. Coot remained under water for 8 sec. 13 coots ^{in water} between cylinders nos 11 and 12. When coot come to surface they pop-up out of water. 2 yellow-black poles between 15-16 above road. 2 yellow-black poles below cylinder 23. and 3 on top of dam. 28- 3 yellow + black poles separated. 32-33 cylinders between road and 5 yellow-black stepped poles. End main road. Cylinders continue for 3 more S across rock field. Then 200' to end of rocks. Arrived 200. On return coot had moved to between cylinders 22-23. These marked cylinders can be used to associate observations with exact position on dam. At any point in rock field on W side of dam the color of rocks looking S is gray and reddish (against sun) whereas when one looks to 3 with sun on rocks they are grey & reddish with a yellow cast from oxidation by the sun. The yellow is associated with either the reddish or yellowish rocks. Insects rare, spiders 1 per 15 feet. Small grasshoppers only where road is associated with vegetation which in a rock environment is sparse. Watch cormorant leave log by falling instead of diving into water. It immediately submerged. Arrive outlet gates 3:00 P.M. Pulse 60 per minute at end of walk. In area to NW on bars were 30 Bonaparte gulls and 46 ring-billed gulls. Car 3:17.

St. Lukes Hospital, Wornall Rd., Kansas City, Missouri.

Nov. 19, 1979

Admitted to St. Lukes Hospital in preparation for heart surgery.

Nov 20, 1979

Dr. David L. McConahay performed arteriogram this A.M. (see letter) Nov. 21, 1979 (see letter of page 791207-229)

Nov. 23, 1979

Heart surgery today, 2 bypasses. Dr. D.A. Killen surgeon.

Nov. 24, 1979 (see also letter 791207-231)

In and out of bed caused heart to beat slow, 2 normal & then irregular. 10 min. later 84 per minute. Walked 400', pulse 72. 1/2 hr later 78 after rest but with exercise to 70. Angiogram and heart surgery painless.

Dec 3, 1979
Dec. 4, 1979

Left hospital, arrived Lawrence 3:00 P.M. pulse 78. (see letter page 791207-232)

Lawrence, Douglas Co., Kansas

Dec 5, 1979

Walked 3/10 mi. & stairs 3 times

Dec 6, 1979

Walked 2/10 mi and 2 flights stairs. Wrote notes most of morning.

Vinland, Douglas Co., Kansas
Catherine Kelly reported a smooth-billed Ori at Vinland. She approached this bird to within 4 feet.

[INSERT] 791207-229

CARDIOVASCULAR CONSULTANTS, INC.

ADULT AND PEDIATRIC CARDIOVASCULAR DISEASE

JAMES E. CROCKETT, M.D.
BEN D. MCCALLISTER, M.D.
DAVID R. MCCONAHAY, M.D.
ROBERT D. CONN, M.D.
BARRY D. RUTHERFORD, M.D.
WARREN L. JOHNSON, JR., M.D.

410 MEDICAL PLAZA
4320 WORNALL ROAD
KANSAS CITY, MO. 64111
(816) 931-1883

November 21, 1979

Byron W. Walters, M.D.
1030 Avalon Road
Lawrence, Kansas 66044

RE: James W. Bee

Dear Dr. Walters:

Mr. Bee is hospitalized at St. Luke's at the present time. He had his coronary arteriographic study carried out on 11-20-79. The procedure was uneventful.

The catheterization study confirms the presence of rather significant coronary artery disease as anticipated. Mr. Bee has had an old complete occlusion of a dominant right coronary artery with the occlusive process beginning in the first portion of the vessel and extending down to the junction of the middle and distal third. The distal third of the right coronary artery is open and profused by collateral from the left anterior descending. The left main coronary is normal. In the left anterior descending there is a localized area of 60-70% narrowing just proximal to the origin of two rather small diagonal branches. The distal vessel is of good caliber. The circumflex is normal. The left ventricular angiogram reveals a very satisfactory left ventricular contraction with a normal left ventricular end diastolic pressure. The left ventricular angiogram is even slightly hyperkinetic.

In summary then, Mr. Bee has old right coronary occlusion with the distal segment supplied by the left anterior descending and at least a 60% proximal left anterior descending lesion. The left ventricular angiogram is normal. He has mild angina but a significantly abnormal treadmill with 2-2.5 mm ST segment depression post-exercise. In view of the above I have recommended left anterior descending and right coronary artery bypass grafting to him. I am concerned because of the potential impact of occlusion of his left anterior descending. This would deprive him of circulation not only to the anterior wall but also the collateral circulation into the distal right coronary. He is agreeable to consultation and I have asked Dr. Arnold Killen of the Thoracic Surgery Service to see him.

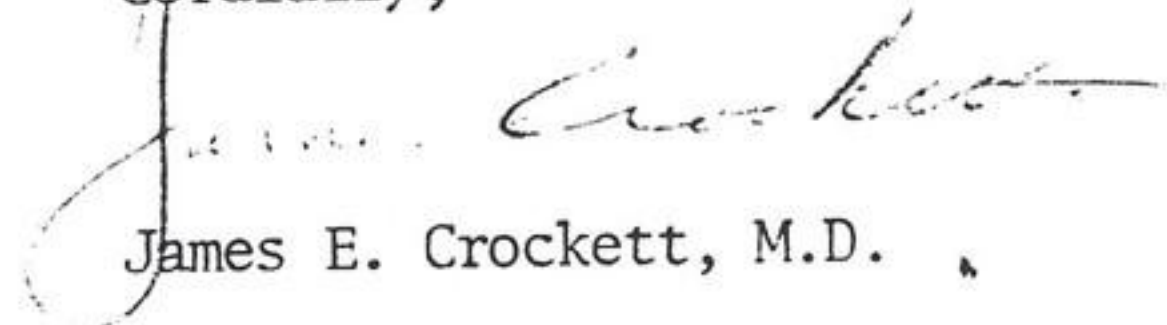
I appreciated your letter of November 16. This information is certainly useful. I think it is obvious from your observations and Mrs. Bee's observations that he does have labile hypertension. I am impressed that his pressure at home has varied from 130-140/70-80. I think his higher pressure while in the office was simply related to the emotional tension of this visit. We were not able to demonstrate any evidence of mitral regurgitation on the left ventricular angiogram and I doubt that he has had any papillary muscle involvement. I would certainly agree that he should be maintained on his present therapeutic program for his hypertension.

Byron W. Walters, M.D.
RE: James W. Bee

Page 2

Mr. Bee has elected to have surgery on Friday, November 23. I hope this meets with your approval. We will keep you informed.

Cordially,

A handwritten signature in cursive script, appearing to read "James E. Crockett". The signature is written in dark ink and is positioned above the typed name.

James E. Crockett, M.D.

JEC:k1

MIDWEST CARDIOVASCULAR CONSULTANTS, INC.

ADULT AND PEDIATRIC
THORACIC AND CARDIOVASCULAR
SURGERY

WILLIAM A. REED, M. D.
DUNCAN A. KILLEN, M. D.
SUCHINT WATHANACHAROEN, M. D.

510 MEDICAL PLAZA BLDG.
4320 WORNALL ROAD
KANSAS CITY, MISSOURI 64111
TEL. 816-931-7743

November 26, 1979

Byron W. Walters, M.D.
1030 Avalon Road
Lawrence, KS 66044


RE James W. Bee

Dear Doctor Walters

We operated on your patient, Mr. James Bee on 11/23/79 and performed saphenous vein bypasses to the anterior descending coronary artery and to the right coronary artery. Mr. Bee tolerated the procedure well.

Thank you very much for referring Mr. Bee to us. We are hopeful that his postoperative course will be smooth and the operation will be of long term benefit to him.

Sincerely yours


D. A. Killen, M.D.

b

CARDIOVASCULAR CONSULTANTS, INC.
ADULT AND PEDIATRIC CARDIOVASCULAR DISEASE

JAMES E. CROCKETT, M.D.
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WARREN L. JOHNSON, JR., M.D.

410 MEDICAL PLAZA
4320 WORNALL ROAD
KANSAS CITY, MO. 64111
(816) 931-1883

December 4, 1979

Byron W. Walters, M.D.
1030 Avalon Road
Lawrence, Kansas 66044

RE: James W. Bee

Dear Doctor Walters:

It was our pleasure to dismiss Mr. Bee from St. Luke's Hospital in Kansas City on December 4, 1979 following his myocardial revascularization. As you know, he had undergone a double aortocoronary saphenous vein bypass graft with one saphenous vein graft to the right coronary artery (50 cc per minute flow) and a second saphenous vein graft to the left anterior descending coronary artery (75 cc per minute flow) by Dr. Arnold Killen on November 23. His maximal SGOT post operatively rose to only 70 MIU/ml and there was no CPK MB isoenzyme present consistent with the absence of intraoperative myocardial necrosis. With the exception of paroxysmal atrial fibrillation responding to digitalization and the addition of Quinidine, his course post operatively was uneventful. We have dismissed him on Lanoxin 0.25 mgs daily and Quinidex 300 mgs qid and would suggest discontinuing these in approximately 4 to 5 weeks since the likelihood of a recurrence of his atrial fibrillation would be greatly lessened by that time and this would eliminate any spurious effect of his Lanoxin on his electrocardiogram with subsequent treadmill stress testing at the time of his followup visit here. We have arranged to see him in six weeks with Dr. Killen for followup evaluation and have outlined a graduated walking program for him in the interim. He has been formally instructed by our dietitians in a 2-gram sodium hypolipid diet and I have enclosed a copy of a post operative electrocardiogram for your records. Mr. Bee weighed 156 pounds at the time of his discharge and it was a great pleasure to be involved in this fine man's care.

Yours truly,

David R. McConahay, M.D.

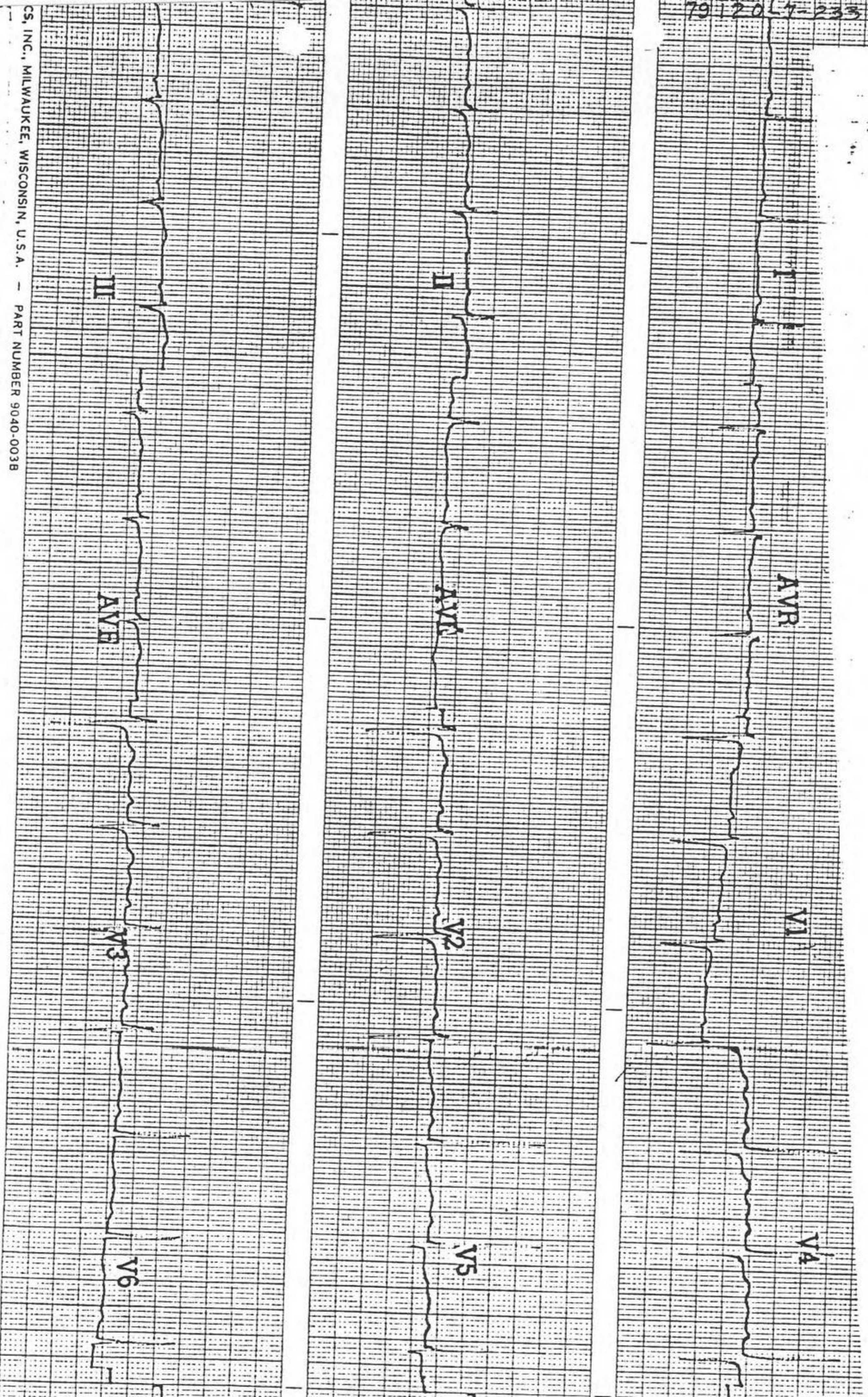
David R. McConahay, M.D.

DRM:vt

791204-233

SIL JAMES
323-311996-3 M 66 5133-2
REED-K-S-H-S 9-25-13

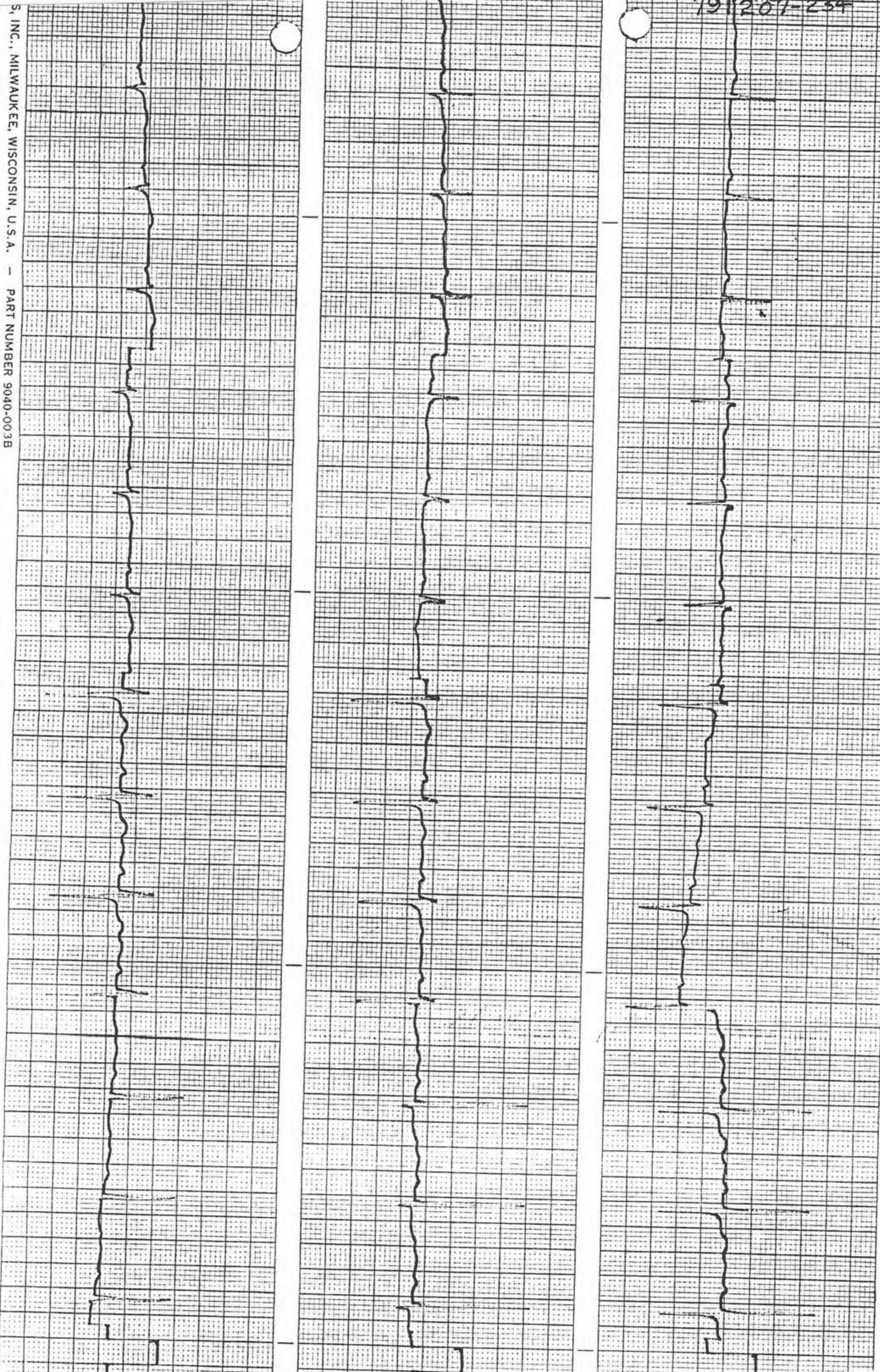
1910



191201-239

TOP

MARQUETTE ELECTRONICS, INC., MILWAUKEE, WISCONSIN, U.S.A. — PART NUMBER 9040-003B



S, INC., MILWAUKEE, WISCONSIN, U.S.A. — PART NUMBER 9040-003B

MIDWEST CARDIOVASCULAR CONSULTANTS, INC.

ADULT AND PEDIATRIC
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510 MEDICAL PLAZA BLDG.
4320 WORNALL ROAD
KANSAS CITY, MISSOURI 64111
TEL. 816-931-7743

December 7, 1979

Byron W Walters, M.D.
1030 Avalon Road
Lawrence, Kansas 66044

RE James W Bee

Dear Doctor Walters

We discharged your patient, Mr. James W Bee, on ⁴12/3/79 on Quinidine 300 mg qid; Lanoxin 0.25 mg qd. His postoperative course was without significant complication. He will be seeing you in two weeks. We would like to see him in six weeks.

Thank you very much for referring him our way. We are hopeful that he will get a good longterm result from his operation.

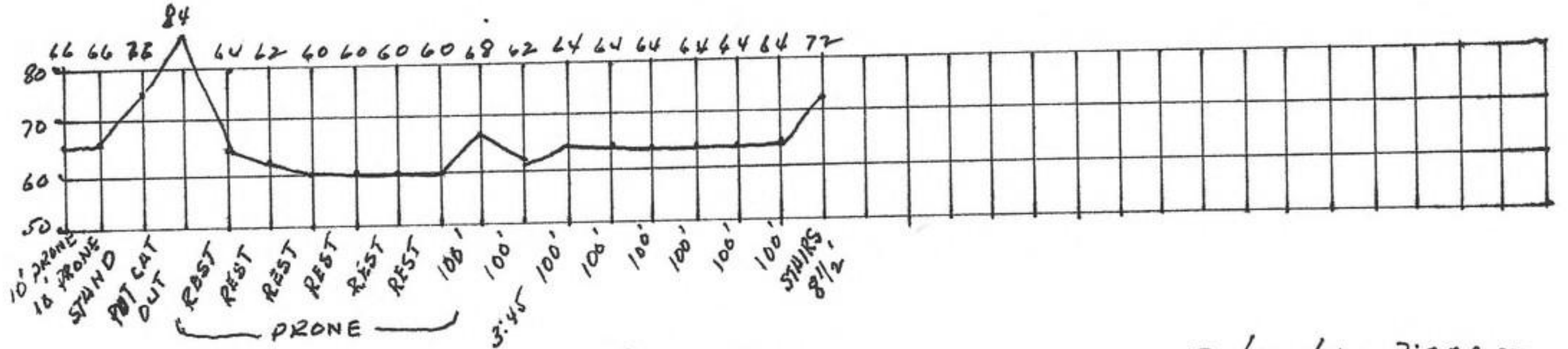
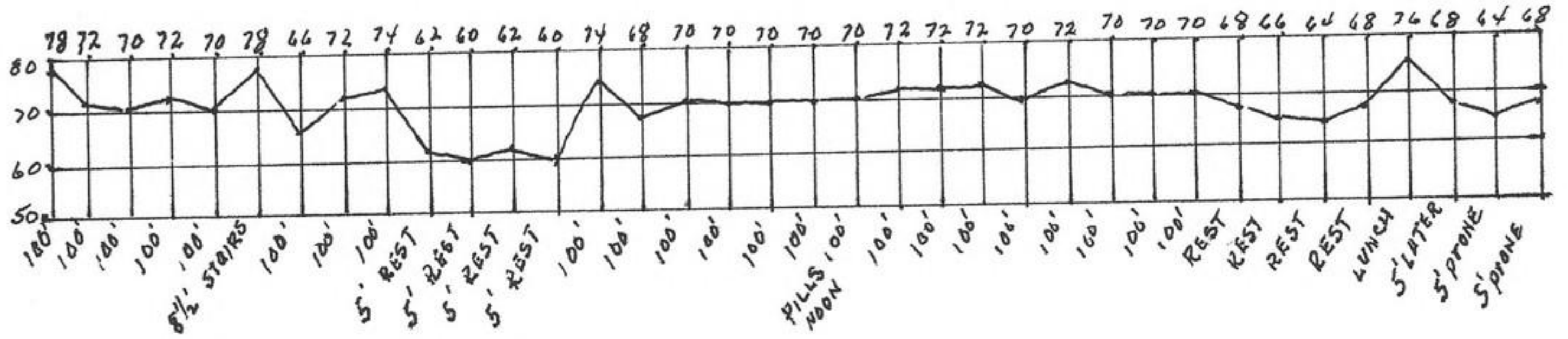
Sincerely yours,

Duncan A. Killen
D.A. Killen, M.D.

DAK:bj

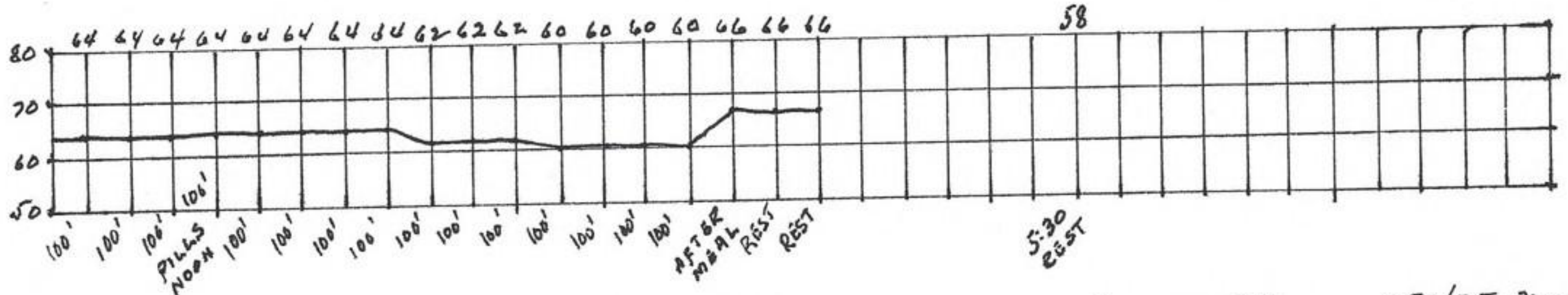
Dec. 7, 1979

Recorded pulse under different stresses as baseline. 120/70 bp. 7:00 A.M.



Dec. 8, 1979

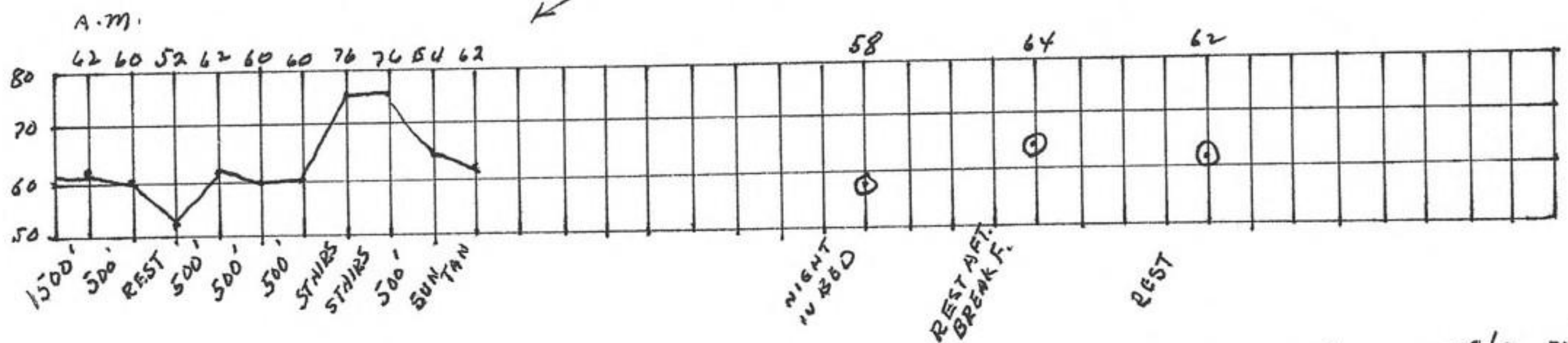
130/70 bp. 7:00 A.M.



Dec. 9, 1979

Dec 10, 1979

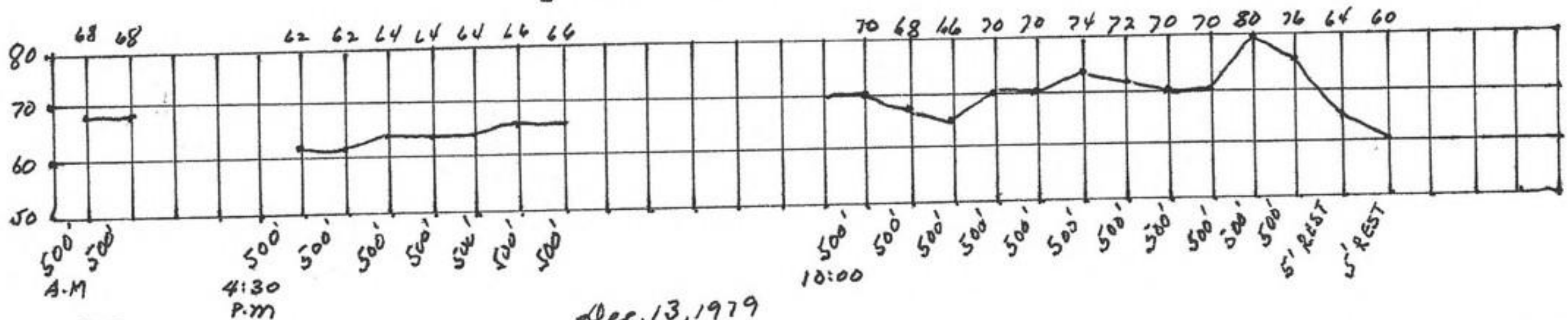
150/75 7:00 A.M.



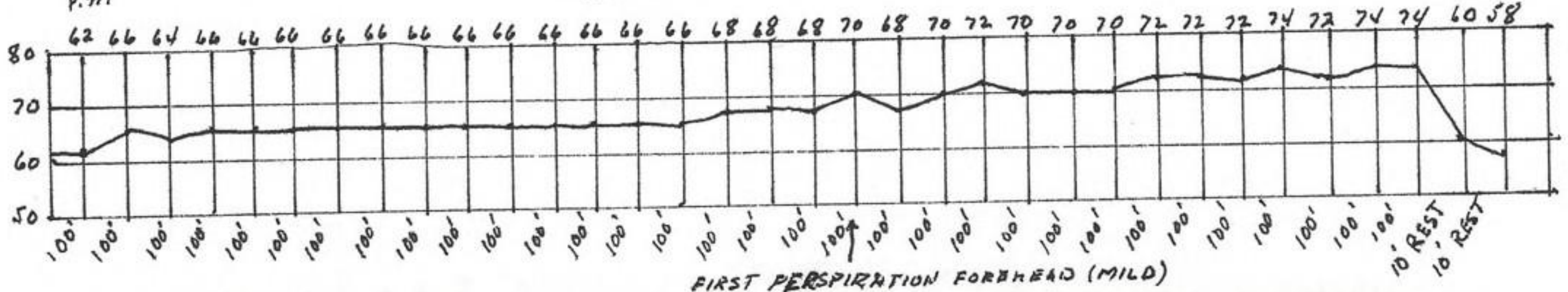
Dec. 11, 1979

Dec. 12, 1979

148/80 7:00 A.M.



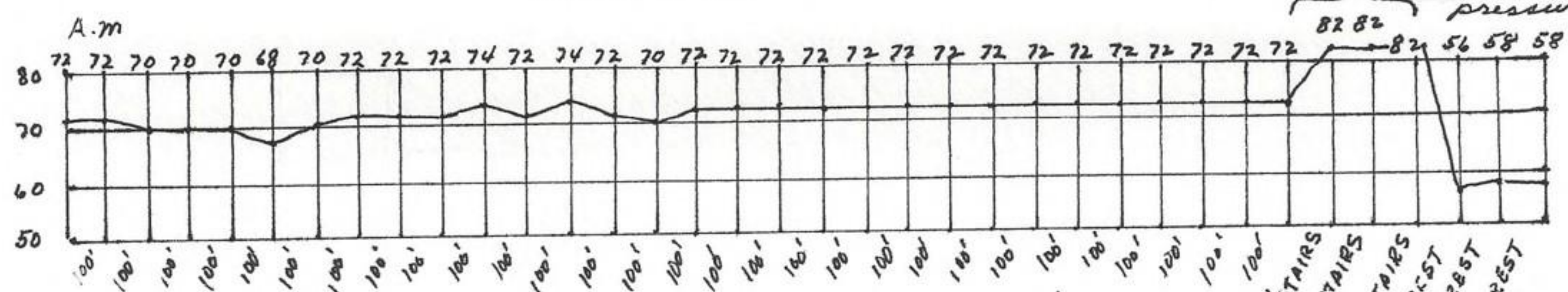
Dec. 13, 1979



FIRST PERSPIRATION FOREHEAD (MILD)

Dec. 14, 1979

791214-237 Chest pressure



BETWEEN 10:30 - 11:45 A.M. (1 mi per trip, 1 min taking pulse + recording)
 Test preceded by 2 glasses orange juice, one banana.

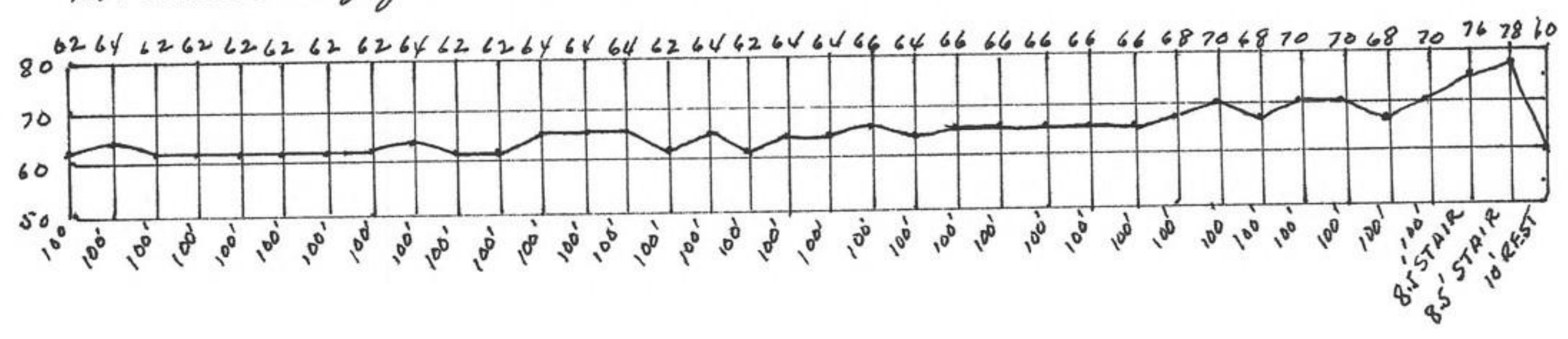
Dec. 15, 1979

Blood pressure 7:00 A.M. = 138/70. Drove Clinton Reservoir and back 15 miles. 120 ring-billed gulls generally distributed and 40 in small groups on peninsular. 300 mallards left lake area + flew E.

Dec 16, 1979

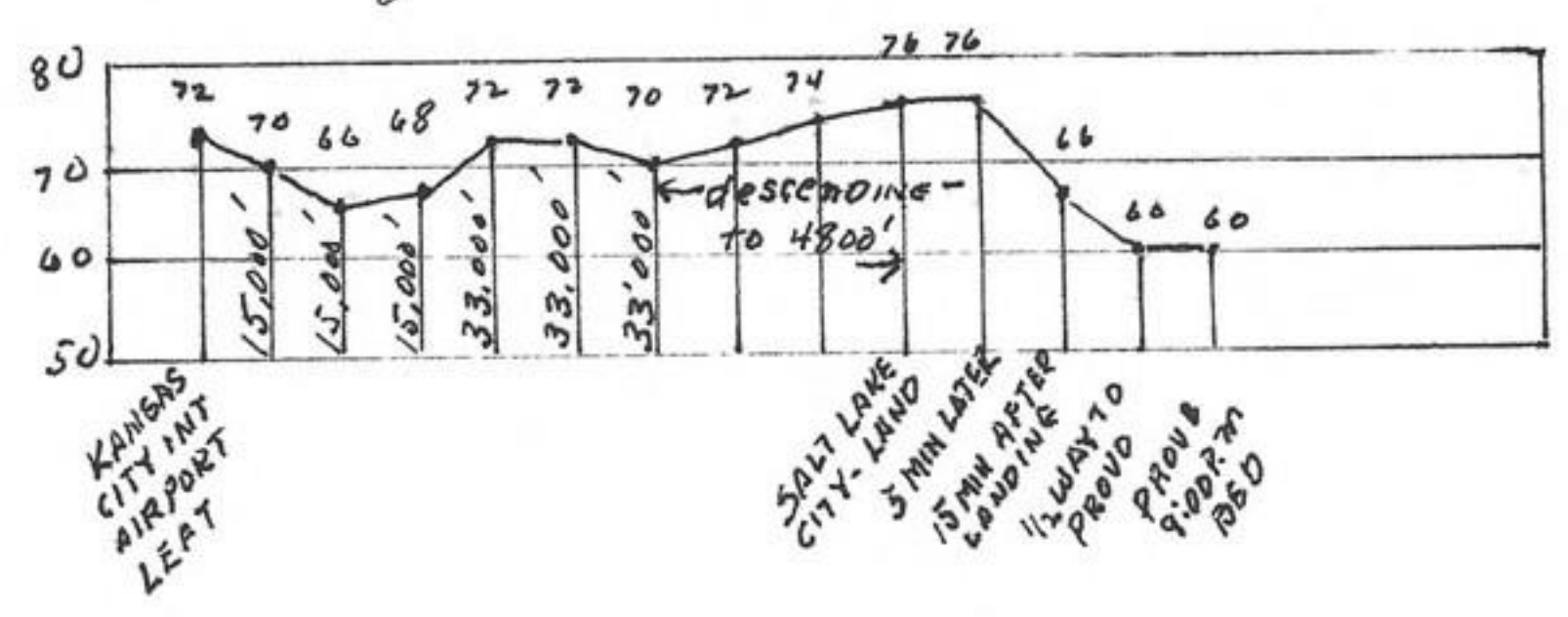
not as much orange juice as Dec 14, 1979 above. 4:00 P.M.

140/80



Lawrence, Douglas Co., Kansas
 Dec 20, 1979

Left 402 yorkshire for airport in Kansas City, thence to Provo, Utah by United Airlines. Left home 8:45 A.M. Pulse 70. 10 mi. E Lawrence on turnpike Coyote Crossed road. noted 3 redtail hawks. Pulse to 68 enroute. 70 at airport gate to plane. 72 on plane. Left 10:35. at 15,000 ft 70 pulse, then to 68. Snow drifts on ridge increasing to solid cover at Denver. Conifers onto plains from mts along edges of drainages. 11:55 Rocky mts, snow in open exposures, conifers hide snow on exposures. 11:57 begin high peaks. 12:00 ski area and large lake. 12:05 beyond timberline mts. 12:08 mainly scrubby hillsides. 12:15



33,000 72; 12:20 72 at 33,000'
 12:25 70 at 33,000 ft, 12:36 descending, 72 (Touch lake, thence north under clouds). 12:45 approach 74. 12:50 land 74. 5 minutes later 76, 10 minutes later 66. Don + Mary picked us up at airport. Point mt, 60. Provo

60. Stayed in Provo at Mary's. 9:00 P.M. bed = 60 pulse and no ill feeling from trip. Pulse increases with descent but not with ascent.

Sundance, mt. Timpanogas, Utah Co., Utah.

Dec. 21, 1979

Spent the day and night in Don's & Mary's Chalet just up slope from Robert Redford's ski resort. Snowed continuously accumulating 5 inches by 11:00 A.M. and 6 inches by 6:00 P.M. Snow straight down and gentle. Pulse during day (inactive) 62. Blood pressure before bed = 136/68. Between 3-5 A.M. ^(Dec 22, 1979) experienced irregular pulse, strong, hard and rapid following off to weak, slow to undetectable. Forehead first flushed and slight sting to later perspiration. Blood pressure 180/90. This summer home is approx. 8,000 ft. elevation.

Dec. 22, 1979

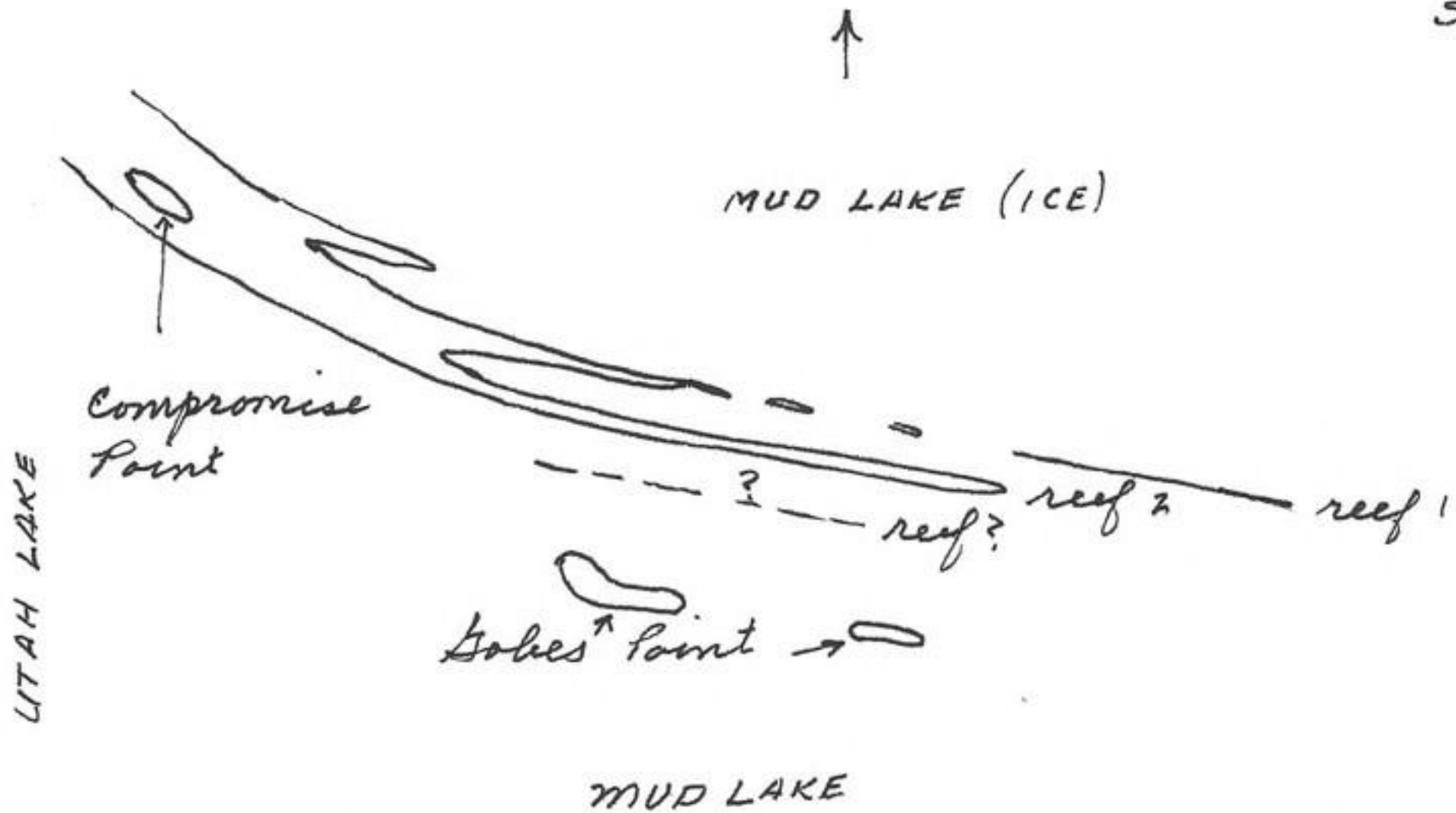
This morning took 10 photos (791222-1 to 791222-12) showing snow on slopes and on trees. no wind since snow. This A.M. after breakfast we drove down to Provo. On arrival at Mary's pulse 64. 10 minutes later 58. Walked 600' and pulse 68. 9:30 P.M. pulse 66. For next two days remained in Provo. Photo 791222-13 to 791222-15 from Sundance of Temp. in clouds on way down town.

Provo, Utah Co., Utah

Dec. 23, 1979

12:00 two photos of table at Mary's (15937, 1450E) nos 791223-1 and 791223-2. 1:10 walked 600ft, pulse 68. Between 1:12-1:30 watched a golden eagle hunting along Wasatch mts from Slide Canyon to beyond ^{n of} Elk Rock Canyon. The elevation was about top of cliffs at top of mt. at one point, above γ on mt. a goshawk? pursued the eagle which sailed straight n across the slope toward Lock Canyon. The goshawk returned after about a 1/10 mi. chase. It did not contact the eagle. Temp at house 35°F, clouds topping mts.

From Mary's home on the Bonneville Terrace S of mouth of Racks Canyon recorded the reefs in Mud Lake for reference. The reef? is a narrow fracture system in the ice. Reef no 2 is wide and grown to rushes and other vegetation. Reef no 1 is barely emergent and discontinuous. noted a miss Kelly Bee who



is a writer on Central Am. States in the magazine mtn. West, Dec 1979 published by Tricorp 1877, 400w, Provo, Utah. Pulse 62 at 5:30 P.M.

Dec. 24, 1979

11:00 600 feet, pulse 68. 5:00 P.M. 1200 ft. pulse 66. Between 2.4 P.M. watch two eagles (golden or bald?, probably the latter) with Celestron 90. They were feeding on ducks in mudlake. The mallards were the only ducks that I could positively identify at this distance. Of these there were 6 flocks of approx. 1500 in each flock. The eagles displaced the ducks by flying over them but they did not attack. Presumably they were feeding on dead or injured birds. Had Christmas meal today. (Edith, Arnold, some Stimpson and family, Mary, Don, Bee family & Ron.

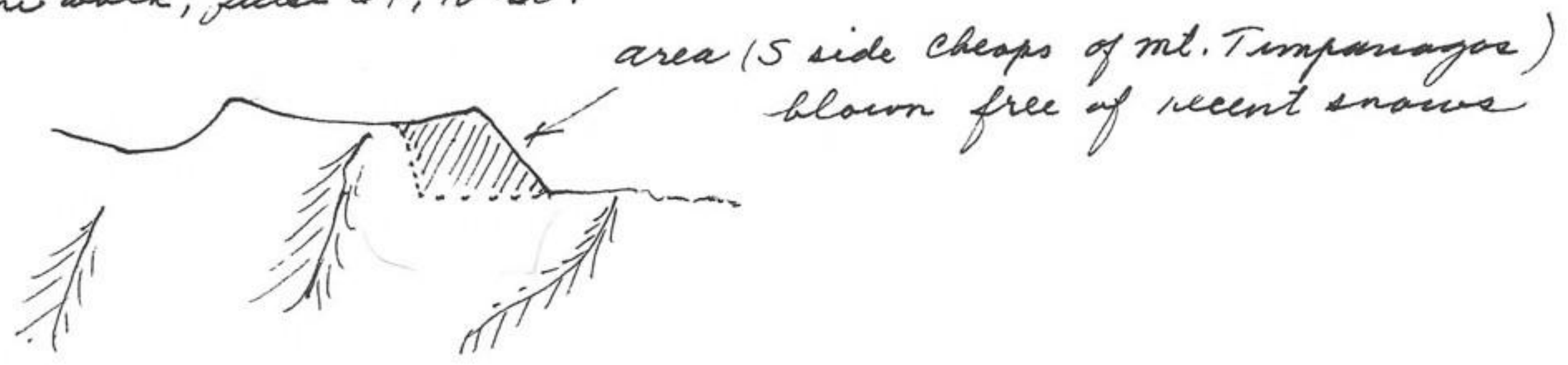
Dundance, mt. Timpanogos, Utah Co., Utah.
Dec. 25, 1979

Spent the day at Mary's & Alons Chalet. 9:00 600' pulse 74 (also after meal). Pulse 62 most of day in inactive state. 3:00 66 after meal of Christmas left-overs.

Provo, Utah Co., Utah

Dec. 26.

3/10 mi walk, pulse 64, 10:30.



area (S side Cheaps of mt. Timpanogos) blown free of recent snows

Dundance, mt. Timpanogos, Utah Co., Utah.
Dec. 27, 1979

Blood pressure 150/80. At Mary's chalet photo icicles and ^{ten} ~~eight~~ shots of Stewarts Cirque from cabin next door to Mary's.

- 791227-1 mt. n side Stewarts Cirque and part of cirque wall
- 791227-2 Cheaps edge, S side Stewarts Cirque.
- 791227-3 Cirque wall and base mt. on n side.
- 791227-4 Cheaps edge.
- 791227-5 Elk Peak, n side Stewarts Cirque.
- 791227-6 Principle mt. n side Stewarts Cirque.
- 791227-7 Stewart Cirque and terraces below
- 791227-8 Stewarts Cirque.
- 791227-9 mt. n side Stewarts Cirque
- 791227-10 Stewarts Cirque + terraces.
- 791227-11 From S window ^{Mary's} Chalet.
- 791227-12 " E " " "

Birdlife has been rare in area. Only mt. chickadee, Tamarascurus and deer tracks seen. Returned to Provo and at 4:50 walked 600' at 66 pulse and another 600' at same pulse.

On this date Mary Pauline, James Robert Bee and Hellary --- were skiing cross country in lower Little Cottonwood Canyon and at 3:30 P.M. (Red Pine Ridge trail) Mary had a skiing accident and pulled 5 ligaments in her right knee. James was able to get Mary to road some 2 miles beyond by pulling her on three skies tied together. She was taken to University of Utah Hospital where Mr Black and Johnson examined her. Dr Aldridge and Dr ^{Ortho surgeon} Mass of the medical Center Division of Orthopedic Surgery took X-rays and put the knee in a plastic cast. Mary then went to Hellary home and next morning returned to Univ. Utah Hospital where additional examinations were made. Because Mary wanted to be near Provo it was arranged that she should go to Payson Mt. View Hospital and have surgery performed by Dr. John P. Mendenhall.

Payson Mt. View Hospital, Payson, Utah

Dec. 28, 1979

Mary went to surgery at 7:30 ^(see diagnosis + surgery report 10:15) and we saw her at ~~7:45~~ 8:45 A.M. in the recovery room after she returned from surgery at 9:45 A.M. ^{my} Pulse under these conditions was 66. Dr. Mendenhall was very pleased the way surgery was accomplished. Dr. Johnson assisted. On return to Provo noted 2500 crows in one flock. meadowlarks, Brews blackbird + pheasant only other birds observed. In Provo, walked 600' at 1:30, pulse 68; 600', pulse 68; 600', pulse 68. at 4:30 walked 600' at 72 pulse, 600' at 68' and 600' at 72 pulse. Returned to Payson to visit with Mary in evening.

Dec. 29, 1979

B.P. this Am 140/84. In Provo at 10:00 A.M. 600' - 74 pulse; 600' at 72 pulse. 5 minute rest 66 pulse; continued 600' - pulse 70; 5 min rest 68. Visited Mary this evening. On return observed 4 meadowlarks, 1 sp. hawk, 2 magpies, 3 crows. In Provo at 7:00 P.M. walked 600' - pulse 64; 600' - 62; 600' - 64; 600' - 64 pulse.

Provo, Utah Co., Utah

Dec. 30, 1979

11:00 A.M. B.P. 140/78 walked 600' - 62 pulse; 600' 64; 600' 64; 600' 66; 600' 66; 600' 66; 600' 66.

Dec 31, 1979

Last night pulse increased, then decreased and then normal in 5 minute period; perspired. Pulse regular beat otherwise. This morning at 10:30 walked (consecutive units)

600' pulse 64	600' pulse 68	600' pulse 68
600' " 68	600' " 68	600' " 68
600' " 68	600' " 68	600' " 70

5 minutes later 60 pulse. This afternoon visited Mary in Payson.