JOURNAL 1986

JAMES W. BEE

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21231 E Lost Lake Rd., Snohomish Co., Washington

Jan. 1, 1986

Left Chris' for La Conner preserve, Thousand Trails, via Snohomish route, highway 9 to Marysville, thence W and up valley to La Conner. Red-tailed hawk near Snohomish, and one SE La Conner. Just 5 east La Conner noted 1100 mew gulls in pasture at edge of temporary flooded lake. all adults and flock, more white than other kinds of gulls. Red-billed grebe in drainage canal. At La Conner Reserve, gull flew west for about an hour before sundown to twilight (late), and all against a strong wind, at 4:25 strong avenues of tide water going E. Tide (current) movement going W in front of our camp (64'),

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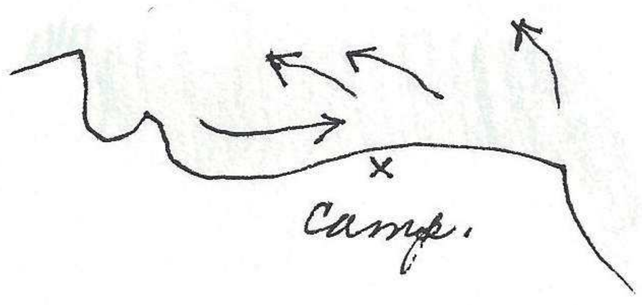


dark-eyed juncos (Oregon race) active at late twilight when characters just discernible, no logs or debris in currents.

La Conner Preserve, Skagit Co., Washington

Jan 2, 1986

First visibility at 7:15 A.M, skies overcast, temp 38°F. no ducks in bay at camp.

7:25 first ducks, 3 common goldeneye ducks. Cannat see writing on paper at this time.

7:30 2 common goldeneye. all moving E along shore at camp.

7:31 writing just discernible.

7:43 belted kingfisher flew low over water to E. wind ripples NE-SW across bay (wind from NW)

7:45 red flashing lights cannot be seen although visible with binoculars.

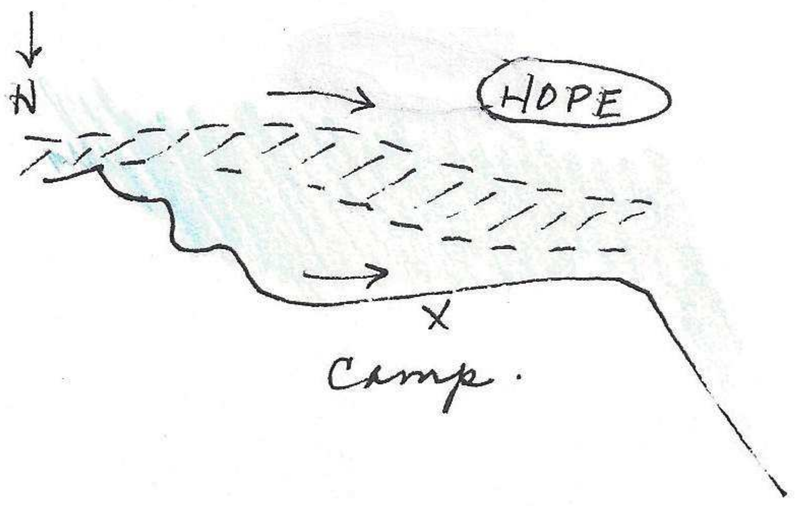
7:51 rufous-sided towhee. also dark-eyed junco and song sparrow. In the last 5 minutes duck 1-5 have been flying to E over area.

7:55 2 horned grebes swimming E.

7:57 western grebe swimming to E., horned grebe to W.

7:58 first crow to feeding area on beach in front of Barth.

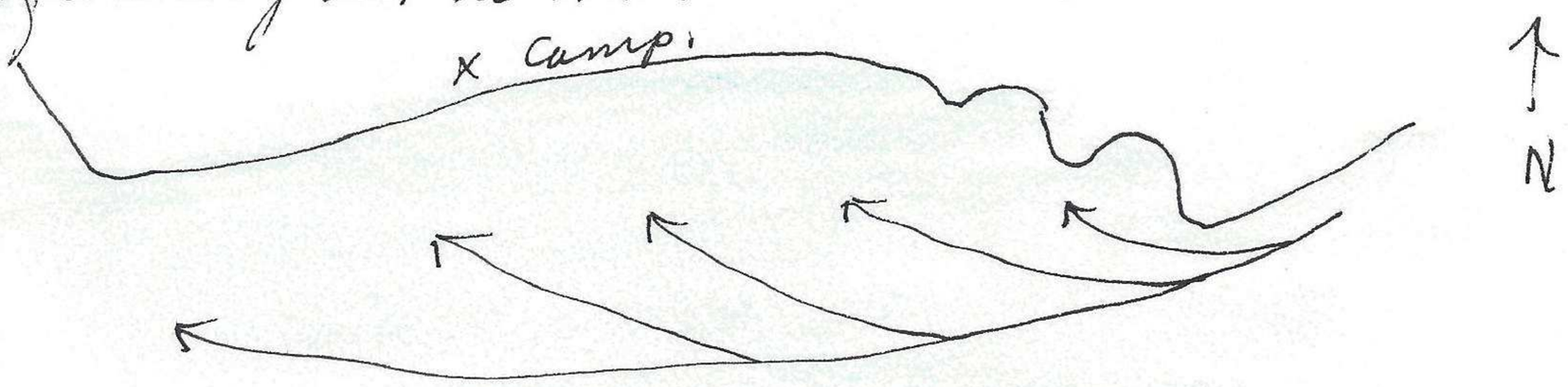
7:58 gull flying to E., one to W.
7:59 3 crows to feeding area
8:00 Crow arrived.
8:01 common loon. gull flying to E.
8:03 now 8 crows at feeding area (bird seeds)
8:05 now 9 crows here.
8:08 gull to E (most of these gulls are glaucous-winged gulls.
8:09 single American widgeon to E (swimming)
8:13 gull to E
8:15 starting measurements of tide (3 foot ruler placed in sand & powders, under water. Numbers are relative and not actual intrinsic heighth. At 8:15 tide waters 10"
8:18 tide 10 1/2".
8:19 common goldeneye swimming W.
8:21 tide 11" Approx. 10 crows feed, leave and return to feeding station.
8:23 tide 11 1/2". 2 cormorants swam E.
8:26 tide 12"
8:28 tide 12 1/2"
8:30 tide 13", gull flew W., bufflehead swans 1 to E.
8:32 tide 13 1/2"
8:35 tide 14"
8:37 tide 14 1/2"
8:40 tide 15"
8:41 Common loon, 1 min 4 secs under water,
8:43 tide 15 1/2", loon above done for 1 min. 2 secs,
8:43 2 red-breasted mergansers.
8:45 tide 16, Common loon under water 1 min, 2 sec,
4 American widgeons, 2 common goldeneye.
8:47 tide 16 1/2"
8:49 tide 17"
8:51 beginning of long 1 log & debris flotsam restricted to a zone approx. 1/2 city acres bay to 1/10 mi. out from camp. Cormarants (double-crested riding on logs). Some logs 40' long and 3' deameter. Other debris all sizes logs and considerable kelp etc.



8:52 tide 17½" currents near shore and elsewhere increasing in velocity. Great blue heron to W.

8:55 tide 18", gull to W. (when cardinal numbers are used it indicates flying from E to W by camp. If swimming, it so indicated)

8:57 18½" tide. major Currents now carrying flotsam by Sneeoosh Point W but secondary currents are now fanning out to NW.



8:59 tide 19".
9:02 tide 19½".
9:05 tide 20"
9:07 tide 20½"
9:05 temporary end of flotsam by Point Sneeoosh.
9.09 tide 21"
9:13 tide 21½ widgeon (Am.) are working surface of flotsam (water associated with same).
9:17 tide 22"
9:19 tide 22"
9:22 tide 22½"
9:26 tide 22 3/4"
9:33 tide 23" major log flotsam has passed but small debris over much of N side of bay.
9:36 tide 23"
9:44 tide 22 3/4"
9:56 tide 22½
9:58 small debris working to shore on N side at camp.
10:02 tide 22½"
10:04 tide 22¼"
10:06 tide 22
10:11 tide 21¼", Common goldeneye, gull flew E, 2 horned grebes.
10:19 tide 20½"
10:21 current ½ way across channel passed length of outlier island E of Hope Island in 30 seconds. (determine speed from map quadrates).

10:28. tide 19 1/2", birds in research area rare. Area in front Barth free flotsam, tide waters gaining & are decreasing in velocity.

10:36 tide 18 1/2"

10:44 tide 16 1/2"

10:49 tide 15 3/4"

10:55 tide 15

11:01 tide 14, common goldeneye dove for 27 secs.

11:06 common goldeneye to W; dives 21 seconds. a log 1/3 way across channel passed outlet of Hope Island in 16 seconds.

11:09 3 Am. widgeons passed to W., great blue heron flew to W.

11:12 tide 12"

11:16 tide 11"

11:24 tide 9 1/2"

11:33 tide 7 3/4", flotsam now moving W in middle of channel between Sneeoosh and Tonkon Island.

11:35 6 3/4 tide; white foam (specks to 1") every 2 feet or so out to 8' along shore. nearly all flotsam out of bay to E (TT) except few patches pushed to head of bay.

11:40 tide 5 3/4"

11:44 tide 5" End of tide record and bird observation except few noteworthy observations. Sky now completely overcast.

11:52 tide waters still moving W.

11:56 Bufflehead submerged for 32 seconds.

12:55 P.M tide 11 1/2 (not correlated consecutively with above) Tide measuring stick in new position.

1:08 tide 8"

1:15 harbor seal 10' out from shore making extremely turbulent waters. Rain & wind arrived from S! Tidal waters moving W.

1:27 first lesser scaup in area.

1:43 common goldeneye 31 min dive.

1:44 5 black oystercatchers arrived.

2:02 "Heron rock" just being exposed.

2:06 now 14 black oystercatchers in area

3:00 currents to W much slower in velocity about 100 feet waterward.

3:15 imm. bald eagle dove at 60° angle at gull. Left

to west and when on E end Hope Island seemed to soar to near top in perpendicular flight. Rested in top of tree.

Bufflehead made the following dives (in seconds) in same area and consecutively: 21, 19, 27, 25, 26, 26, 26, 25, 26, 24, 23, 26, 25, 27.

4:33 maximum slack.

4:48 beginning noticeable flow with currents going E from 100' near shore to middle of channel but currents at shore going W

4:53 approaching twilight.

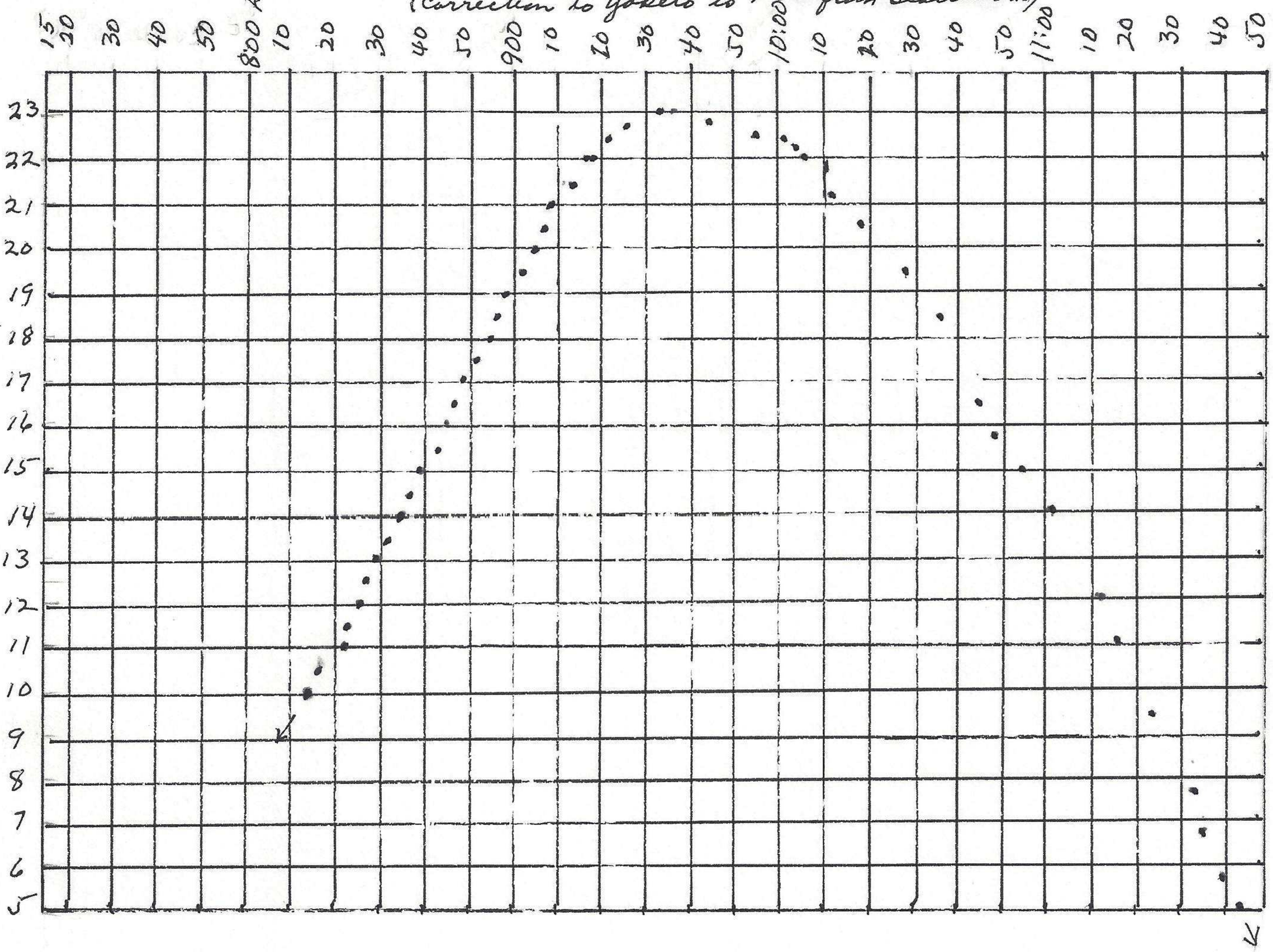
Made short trip to Lone Tree Island or Point. White winged scoter injured and resting in upper ledge of cliff. One king eider in bay to N as well as the usual aquatic birds.

JAN 2, 1986 (first high tide, uppermost 1'3"± of tide)

Site 164

TIDE WATERS (La Conner Preserve, TT, Skagit Co.)

(Correction to yaketo is +26 from Seattle 8:12)



note: straight line flow and curved ebb.
angle of flow and ebb.
time differential between flow and ebb.
lack of straight line slack at top of graph.

860103-6

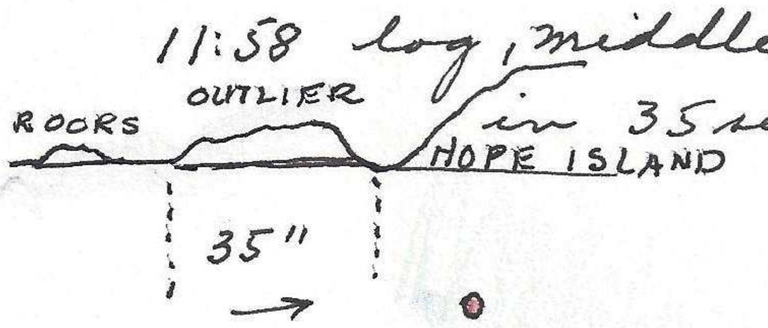
Jan. 3, 1986

Temp. 38°F. Partly cloudy skies. Bald eagle (at 8:45 A.M.) NW to Hope Island alighting in top conifer tree and displaced a red-tailed hawk. 9:00 log by Hope Island outlier (E end) at 38 sec. 10:03 water near mirrorlike, harbor seal surface with head only about 20' from red-breasted merganser. The bird did not react. The seal was using fast currents to move W. 10:27 (high tide)

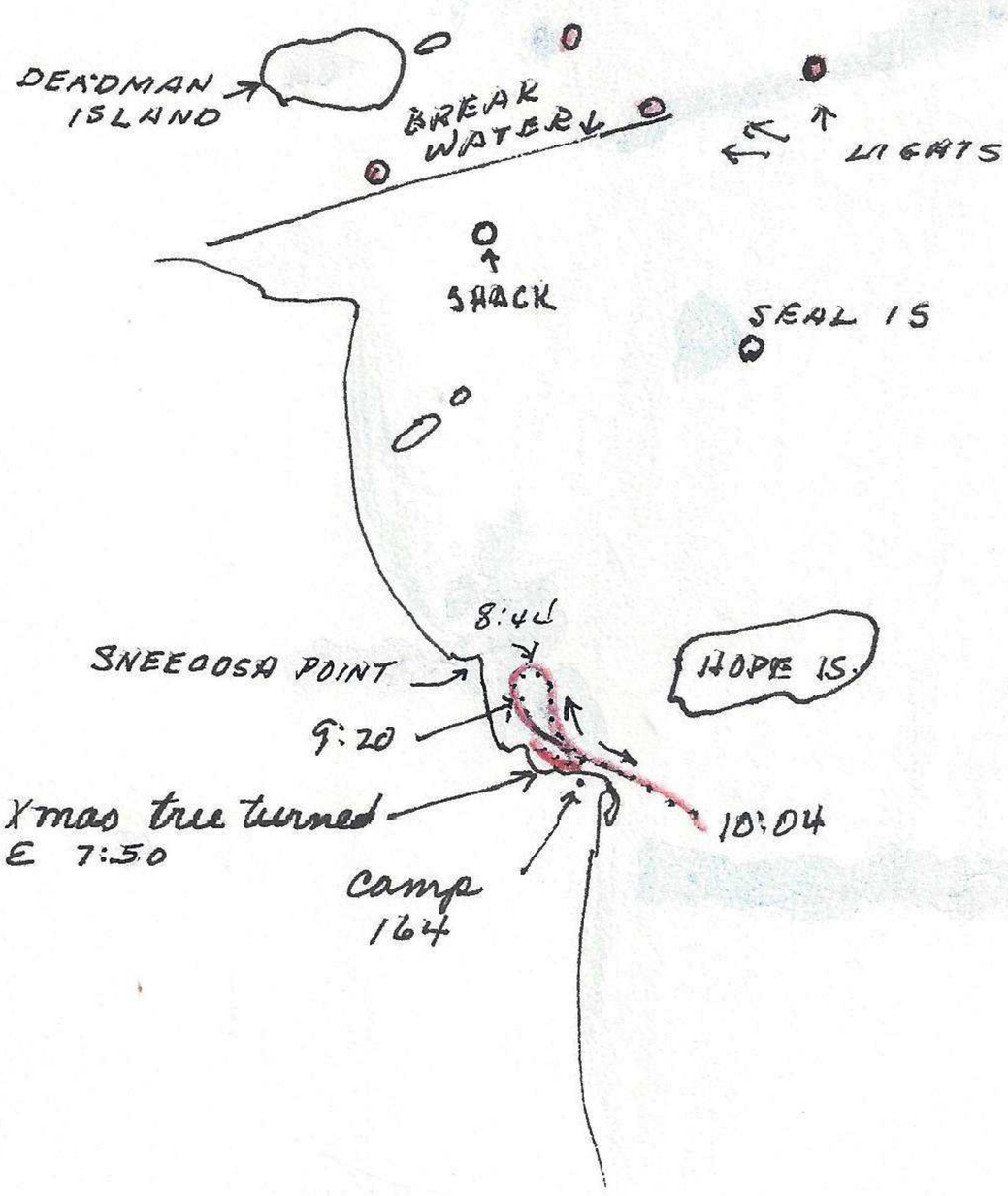
7 floating log passed W in middle of channel with 11 double-crested cormorants equally spaced along log. They rode the log from 1/2 mi E Hope Island to W of Lone Tree Point.

When surf scoter lands on water it moves wings almost perpendicular.

11:58 log, middle channel passed outlier island of Hope Is. in 35 second going W on flow tide.



Jan 4, 1986



Temp. 36 at 7:00 A.M. Beautiful day, clear blue skies and water. Slight ripple on water.

2 adult bald eagle on point from 7:30 to at least 9:00 A.M. Redtail hawk dove at one of the eagles at it was just about to alight on top conifer and the eagle reacted with forceful evading tactics.

Sculpin like fish

Came ashore 9:15. Eagles have left E point of Hope Island. When motor boat passed point.

11:00 A.M. All water between camp (164) and Hope Island moving at a fast velocity to W. no debris being carried.

11:20 water now at flow from maximum slack (approx 11:10 A.M.)
11:30 tide 1 inch below maximum slack.
11:40 tide 2 inches below slack
11:52 tide 3 inches below slack
12:15 tide 7 inches below slack but current moving all to W.

12:50 All currents in Shoget Bay (between Camp 164 and Hope Island moving rapidly to W.

1:15 Currents of ebb tide moving W. or 2 hrs and 48 minutes beyond slack (high) waters. at a time when they should be moving E on ebb tide.

Jan 5, 1986

at camp 164 at La Conner Preserve, Thousand Trails, made photo 860105-1 8:58 A.M of surf from SE winds. Waves break at about 2 from beach but occasional 3 will break at same time. 3 2 1 beach. Wind speed at Navy airfield 71 RPM (last night)

The common and Barrow goldeneye are working waves in usual areas of waters (20'-100') from shore and dive into waves at almost random position on wave. They ride breaking surf with water trailing back off head and body; some dive into wave just before overturn of the larger wave crests. Noted 4 common goldeneye feeding and swimming against tidal current. a fifth one had head on back (turned toward wave, and kept up with other feeding ducks although presumeably sleeping or resting. It apparently paddled at the same rate as the goldeneyes it was accompanying. The ducks moved at about 45° to swells

An American widgeon landed on water in high wind at 0 speed (the speed of the bird.

A common goldeneye left crest of wave without paddling on takeoff. A double-crested cormorant also gain airborne position from top of wave. A red-necked grebe could not become airborne because of wave interference and was forced to drop into water again.

High waves did not interupt the usual numbers or feeding activity of the bird populations I have been observing the last week or so, except there were more common goldeneye in wave area near shore than other kinds of ducks.

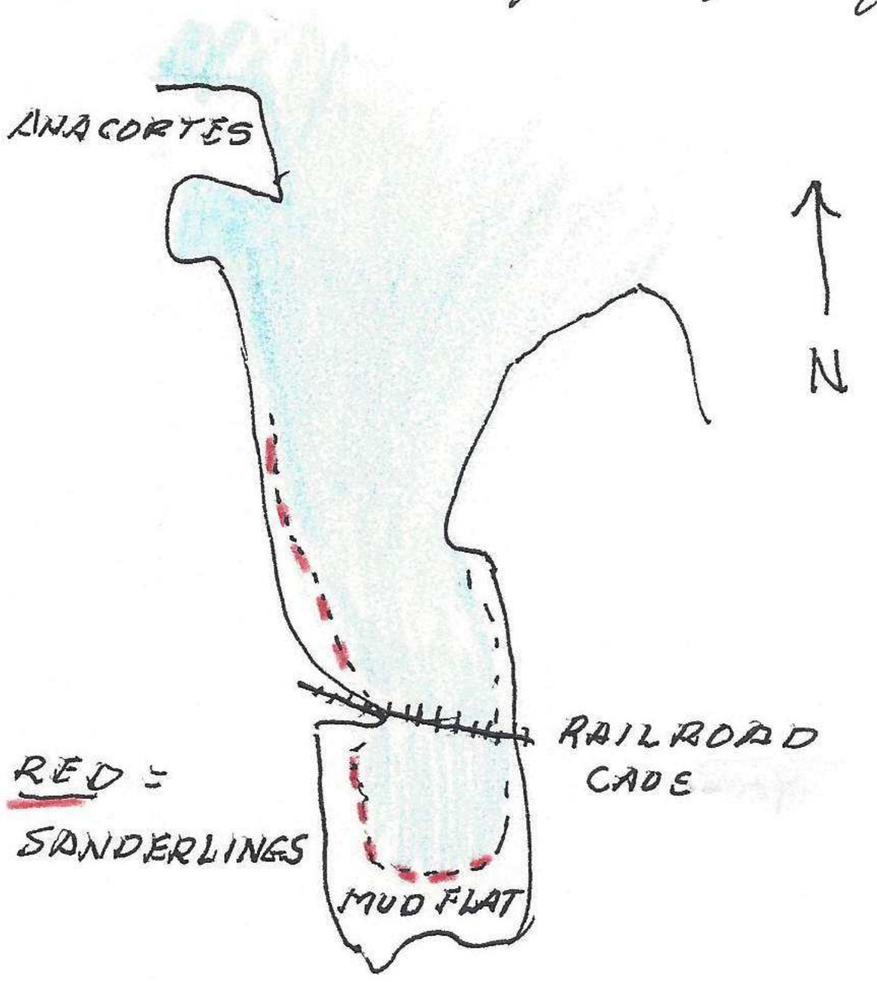
12:00 maximum slack. An increase in wind from SE added approx. 5 inches to heighth of slack.

The appearance of rocks beyond (E) outlier island of Hope Island at slack this am appeared:

1:00 flow waters down 8" from slack.

860105-8

Yesterday (4th) drove to Anacortes. At 5 end of bay E of town noted approx. 3,000 sanderling on recently exposed mud flat of bay. On return noted at least 20x that number or approx. 60,000 sanderling. They were all associated with edge of water-mud flats. Some masses were 50'x20' of almost solid sanderling and appears as if vegetation growth. Masses of sanderling moved on the beach with as much synchronization as in flight, an extraordinary site for sanderling behavior and appearance. No sanderling have been observed as yet at La Conner Preserve.

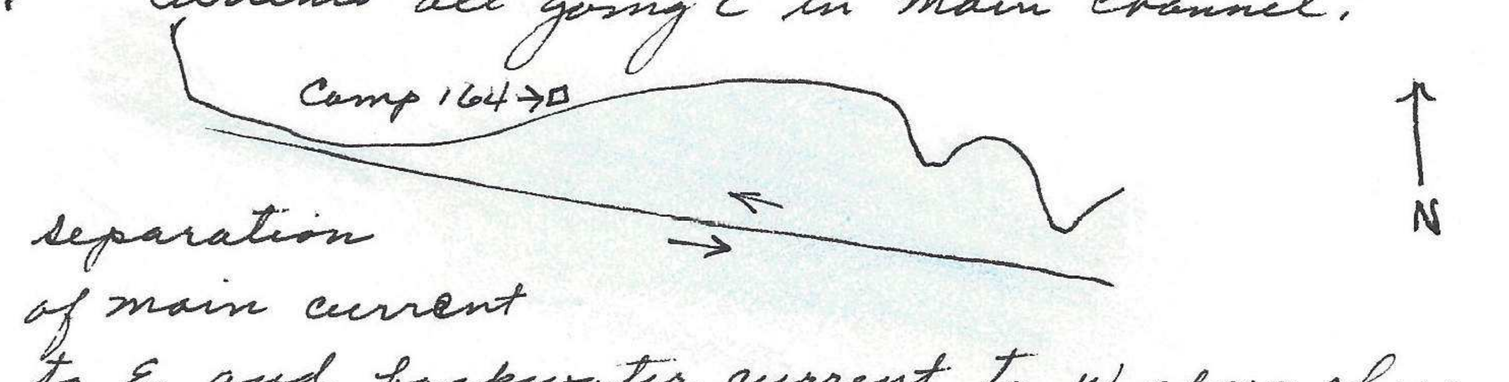


In Anacortes noted 6 robins. Strong wind today and late at night 60MPR. Limbs of Douglas fir on all roads in preserve and roads outside area. 3 large trees fell in preserve area.

Jan. 6, 1986

Tide heighth ("Heron rock, top) between 8:00 A.M and 8:30 A.M. Receded 8:30 A.M, and at 8:40 A.M. completely covered.

8:45 14 oyster catchers flew E to bay, at 9:30 they fed W along beach. This is a constant number in area. Sometimes 10 or so with be in area and later joined by equivalent number to equal 14 birds. Currents all going E in main channel. at 9:00 A.M.



Buffleheads land on web of feet (2-3' glide) and maintain erect body until motion stops.

This afternoon drove to Anacortes. No sanderlings on mud flats.

Jan 7, 1986

Quiet last night but wind developed this A.M from SE.

14 maximum black oystercatchers arrived from W and alighted on beach to E. Slack at 1:00 P.M but high wind kept it there until 2:10 P.M. At 2:30 ebb is already started (down 2")

860107-9

Birds in area from 7:30 A.M to noon. Wind SE, wave average 1 foot:

(1) 3 rufous-sided towhee
(1) 2 song sparrow.
(2) 6 dark-eyed juncos (Oregon race)
1 " " " (pink-sided race)
1 Bewick wren
1 winter wren
(4) 20 common goldeneye
(2) 16 Barrow's goldeneye.
2 great blue heron
14 black oystercatcher
2 mew gull
(4) 50 glaucous-winged gull
(1) 8 pelagic cormorant
(2) 20 double-crested cormorant
1 belted kingfisher
(4) 18 red-breasted merganser
(2) 6 horned grebe
1 red-necked grebe
1 common loon
1 red-throated loon
4 ring-billed gull
2 bald eagle
1 red-tailed hawk.
(1) 6 bufflehead
18 american crow
(6) 35 american widgeon
16 bushtit.
4 white-winged scoter
(12) 20 surf scoter
1 chestnut-backed chickadee
(1) 4 western grebe
1 pigeon guillemot.

Birds on preserve but not observed from site 164

1 wilson snipe
1 killdeer
2 savanna sparrow
2 king eider
6 hooded merganser
20 ruddy duck

the numbers take into consideration those birds that remain in the area and are always present throughout the morning. For instance 2 towhees in area all morning but observed maybe 30 times at feeding area at different times.

The observation area is to 1/2 way across channel and

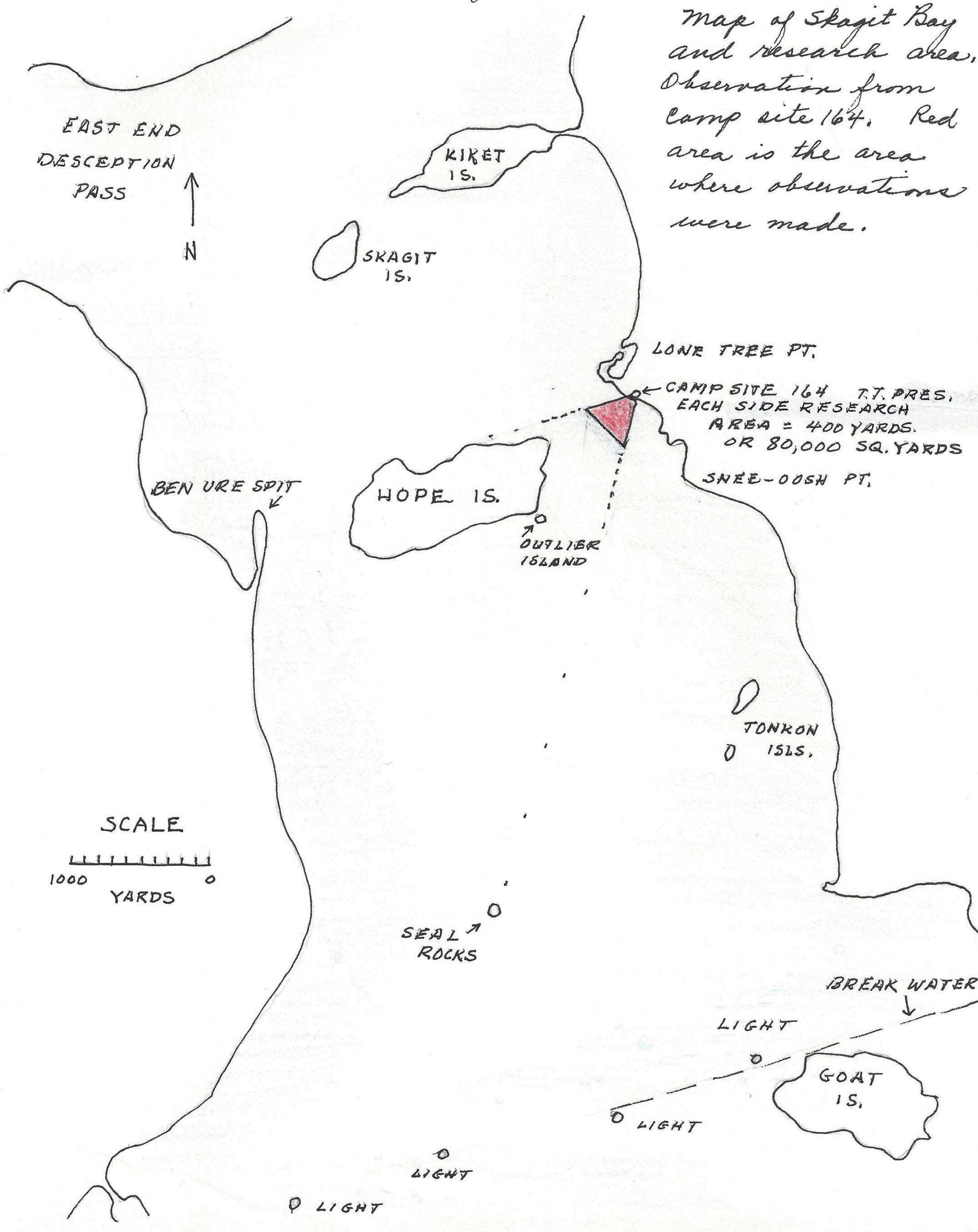
Birds at Anacortes (Quemeo Ferry)
1 black-legged kittiwake
20 sanderling

Bird E of La Conner
1 pied-billed grebe

41 species

860107-10

At 4:50 PM when last sun on clouds left the wind was driving waves (SE) at a rate of 50 waves in 2 min, 10 sec. (interval 2.6 sec) At 5:00 P.M. wind had increased to 50 waves in 1 min, 39 sec. (interval 2.4 sec) at a time when the 6 ton Barth rocked and ventilators increased noise from air friction. In the initial increase of wind the waves become closer together.



Map of Skagit Bay and research area. Observation from camp site 164. Red area is the area where observations were made.

860108 - 11

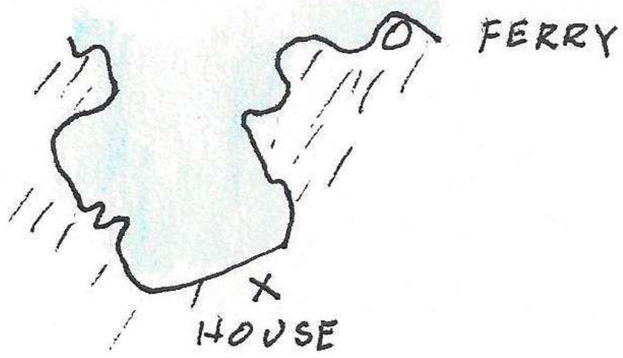
Jan 8, 1986

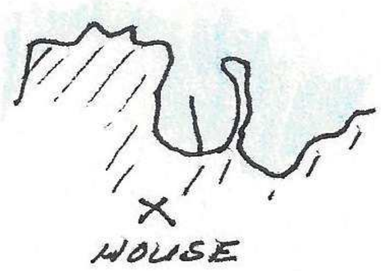
Last night heavy winds, temp 47° this A.M. 7:30 A.M This morning at 3:00 A.M checked waves in front of Barth. Water at high tide level. 50 waves (3 ft high) in 2 min 36 sec. High and forceful on shore. Knocked over rock on beach that I could not move. High wind and waves all night, from SSE. Crests formed spray that moved W. Salt on Barth this A.M. Wind at navy airport W of ook Harbor measured wind gusts to 91 MPH.

At 7:50 A.M 50 waves cresting on beach in 1 min, 47 sec. Waves approx. 4" high, at this time no white caps. Wind direction same all night & this A.M, 3 common goldeneye, 1 horned grebe, no gulls in research area. Complete census from 8:00

8:00 common goldeneye, 2 crows.
8:01 horned grebe, dive 16, 14 sec.
8:01 double-crested cormorant flew by to E.
8:09 " " " flew by going E,
8:14 horned grebe
8:15 " "
8:15 red-breasted merganser
8:16 horned grebe
8:17 red-necked loon
8:21 9 ♂ 2 ♀ Barrow's goldeneye, 7 crows
8:28 double-crested cormorant, one Barrow's golden eye emerged directly under another surface goldeneye which jumped out of water and moved appox 1 foot thru the air.
8:29 pelagic cormorant, horned grebe.
8:29 11 common goldeneyes (common) moving E as water.
8:32 5 double-crested cormorants + 5 black oyster catchers flew to E.
8:34 4 black-oyster catchers flying E, 1 double-crested cormorant flying E,
8:35 4 black oystercatcher flew W past observation point followed by four more.
8:37 horned grebe swimming to W.
8:44 3 crows, common goldeneye and double-crested cormorant, ebb waters flowing slowly E.
8:51 4 common goldeneye to E, double-crested cormorant to E.
8:55 ♂, ♀ red-breasted mergansers to E, (means swimming to E unless indicated by word flying)
9:02 Common goldeneye, 8 crows.
9:03 3 american wedgeons to E
" " " " "
9:05 5 pelagic cormorants to E.

9:05 5 double-crested cormorants chased a 6th which had a large fish in its mouth.
9:07 6 american widgeons to W
9:13 2 " " " "
9:18 2 double-crested cormorants to W.
9:19 2 American widgeons, first gull (glaucous-winged)
The double-crested cormorant is a versatile flyer, especially when assisted by wind. It will sail gracefully and circle for long distances and time, will, gracefully land without foreword movement of body on contact, will leave wave without paddling on water, will rise and drop to water in graceful approaches etc.
9:30 8 black oystercatchers to E, one horned grebe to E and one western grebe to E. Gull passed by. End complete censeus.
Left to Anacortes ferry, thence to Orcas & Shaw islands. Left LaConners Preserve (T.T) at mileage 91.0 at 10:20 A.M, arrive Anacortes 10:35 (15 min trip). Arrived ferry at 10:40 (20 min trip from LaConner Preserve at mileage 05.0 or 9½ miles. Enroute to Orcas noted an adult bald eagle alight on Leo Reef light. met Janet Murry at Orcas. She shows us a house (x blue) on W side of East Sound (Dolphin Bay) and thence to Deer Harbor. Rode on Co. boat to Shaw Island at first bay E of Neck Point. in wooded area. Thence by car to ferry where we were picked up by boat again. At S end Blind Bay inspected an old home.





On Orcas observed 2 bald eagles approaching Deer Harbor as well as 2 deer. Deer are consuming cultivated plants around homes. Noted buffleheads on fresh water lakes.
One pigeon guillemot near McConnell Island. This island owned by the three children of Mr. Thompson, former head of Univ. Washington marine station on San Juan Island, at the time I was at the station in 1949. Returned to Anacortes by ferry. Orcas has a diversity of landscape that is not equaled in other San Juan Islands. Janet lives in the Spring Point area in a very delightful setting and home.

860110 ~ 13

Jan 10, 1986

Temp. 8:00 A.M 50°F, measured some waves at this time as they crested on beach in front of the Barth.

8:05 50 consecutive waves in 2' 19" (2 minutes seconds) or 1 wave every 2.8 second.

50 consecutive waves in 2' 22" or 1 wave every 2.8 sec,
" " " " 2' 23" or 1 " " 2.9 sec.
" " " " 2' 21" or 1 " " 2.8 sec.
" " " " 2' 23" or 1 " " 2.9 sec.

9:10AM

" " " " 2' 11" or 1 " " 2,6 sec
" " " " 2' 14" or 1 " " 2.7 sec.

Occasional white cap wind ESE, wave generated wind from SSE. Logs ride 90° waves with tide and end of log faces wind, but ridge currents at 90°. Wind blowing all Conifers to top of Hope Island at about same intensity.

9:10 horned grebe to E swimming and feeding. muddied waters out to 10' from shore. This will increase in with to 150' with increased wind.

9:50 2 bald eagles soared about 1500 above Hope Island and finally left to N.W.

9:51 a skua chased a glaucous-winged gull in research area.

10:00 50 waves in 2' 12" or 2.6 sec.

10:10 2 bald eagles circled 3 x heighth Hope Island and may be same ones of observed 9:50. Many gull flying high today because of high wind.

Common goldeneye dove for 22 sec. on two consecutive dives horned grebe submerged for 27 sec. Common goldeneye dove for 21 sec.

10:40 Before gusting winds waves 50 in 2'37" or 1 wave per 3.1 sec.

10:45 during a gusty wind, 50 waves in 2'35" or 1 wave 3.1 sec.

10:55 harbor seal; retracted head backwards in water when submerging. Head not as blotched as individual previously observed in area.

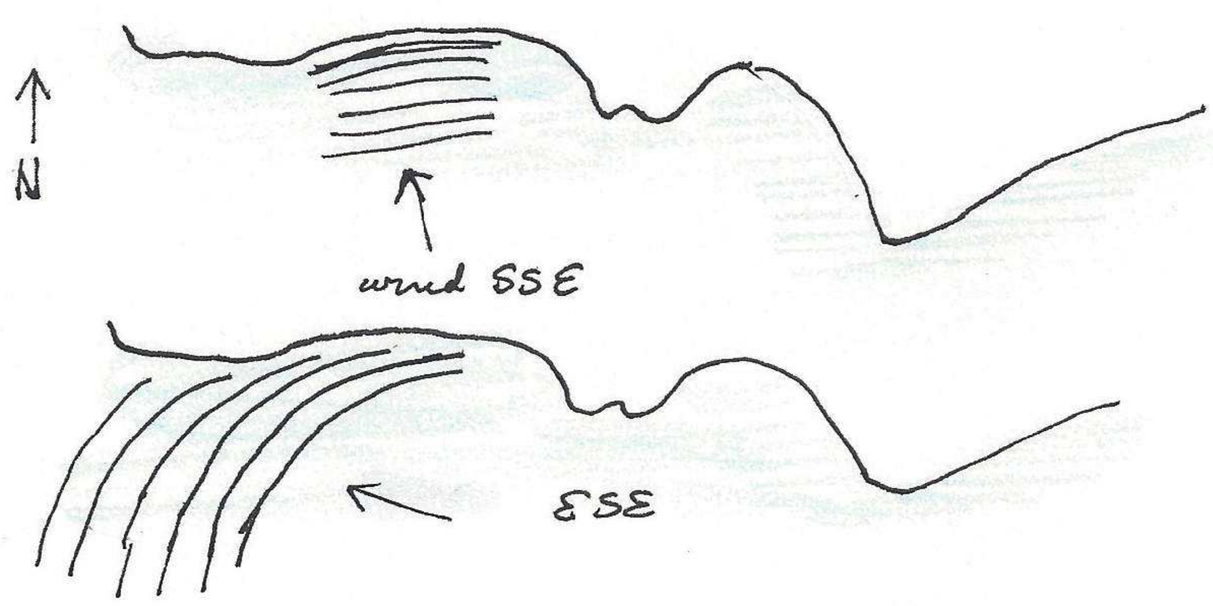
11:00 50 waves in 2'28" or 2.9 sec per wave.

Waves have changed from ↑ ≡≡≡ to //// in research area.

11:05 common goldeneye dove for 14 sec, 25 sec and 20 sec, horned grebe for 27 sec.

11:30 50 waves at 2'48" or 1 wave in 3.3 sec.

12:00 noon 50 waves at 2'31" cresting on beach or 1 wave in 3,1 sec.
50 waves in out research area at 2'48" or 3.3 sec per wave.
12:10 photo 860110-1 of wave action in research area.
Change of waves this A.M.



The was a period when both wave patterns were superimposed and each maintaining their identity.

Observed common goldeneye, 25 feet from beach in apprx 4' of water, make the following dives (periods of submergent).
21, 21, 24, 18, 24, 21, 20, 22, 28, 27, 23, 25.

Observed a Barrow's goldeneye, 15' from beach in apprx 1½-3' feet water make the following submerged dives. 11, 18, 11, 11, 11, 11, 16, 15, 11, 18-14, 16-16-13-20.

1:15 50 waves in 2'30" or 3.0 sec interval of wave.
1:30 " " " 2'36" or 3.1 sec " " " ; Both above of waves breaking on shore. At 1:30 the muddied waters were out 150' from shore. High tide waves break near to shore than in periods of flow or ebb from maximum slack.

Length or interval between waves ranged from 2.6 sec to 3.3, the higher the value number the greater velocity of the wind, for example a 3.3 is equivelant to 3' waves with intervals of

Jan 11, 1986

Temp 38°F at 7:00 A.M. Checked on periods of submergence of birds 9:00-10:00 A.M.

red-breasted merganser 35, 33, 34, 37, 31, 32, 35, 40, 37, 34, 37, 30, 27, 28, 30, 27, 29, 28, 29, 32, 27.
bufflehead: 30, 25, 27, 27, 28, 25.
double-crested cormorant 38, 33
horned grebe: 44, 45, 41, 43, 45, 41, 42, 41, 39, 32, 31, 33, 30, 35, 31, 35, 38, 35, 34, 35, 35, 38.
red-throated loon: 52, 51, 56, 58
red-necked grebe: 23.

common goldeneye: , 24, 20, 24.

11:00 13 pelagic cormorant arrived in one group from W. The double-crested have been here all morning.

Two single black oystercatchers flew E. They generally are in groups of at least 3 to 4.

11:25 a dark phase redtailed hawk circle channel between here and Hope Island for 5 minutes. The first three min. a glaucous-winged gull darted at it continuously coming 3 feet near hawk to 8 feet. Hawk reacted when close encounters.

One lesser scaup swam from center of channel to with 15' off Barth (from shore) and rested for 8 minutes with bill under or on wing.

Methods of diving:

red-breasted merganser. arched neck & body and jumps forward into water.

bufflehead, quick dive and body out or nearly out of water in the forward jump.

horned grebe. quick forward jump with arched neck & body and nearly leaves water.

double-crested cormorant: slow, arched but body always in water.

red-throated loon. gradual forward and downward as if gliding into water.

red-necked grebe. ibid but more vigorously.

La Conner's Preserve, Thousand Trails, Skagit Co., Washington

Jan 12, 1986

7:30 AM = 38°F. Bay smooth water, few clouds but a beautiful day. This morning selective observations.

8:00 imm. bald eagle flew from Hope Island. (E end) to approx. 200 ft N of Snee-oosh Point, alighting in top of a douglas fir tree.

8:30 observed the courtship or defense behavior of the red-breasted merganser. when in groups of males and females the males defend females by performing the follow movements against other males.

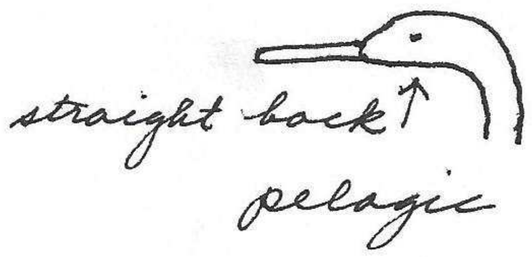
when a ♂ and ♀ are alone the male does not perform this act.
1

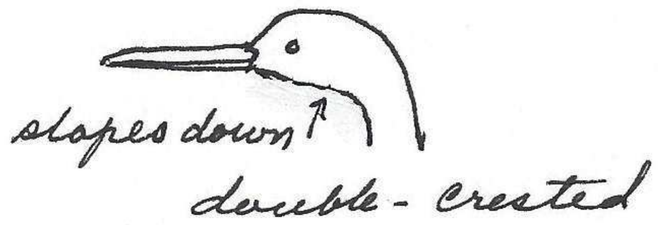
8:45 Common goldeneye submerged 26 sec. Horned grebe 36 and 38 seconds

9:46 imm. bald eagle on SE end Hope Island.

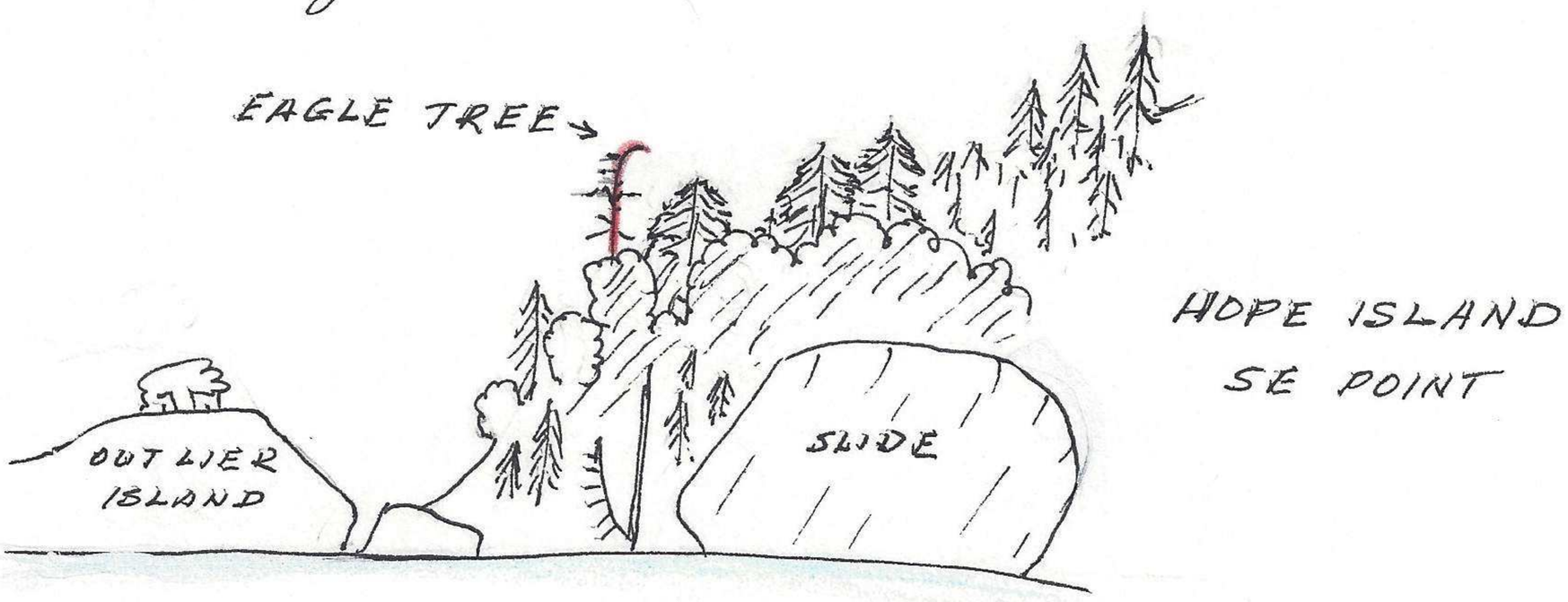
7 large logs (average 12' long) passed W since 8:00 A.M.

The pelagic cormorant has a thinner bill, smaller head and neck which appears longer than the double-crested cormorant.





11:00



An adult bald eagle displaced an immature bald eagle on above eagle tree on SE Point of Hope Island.

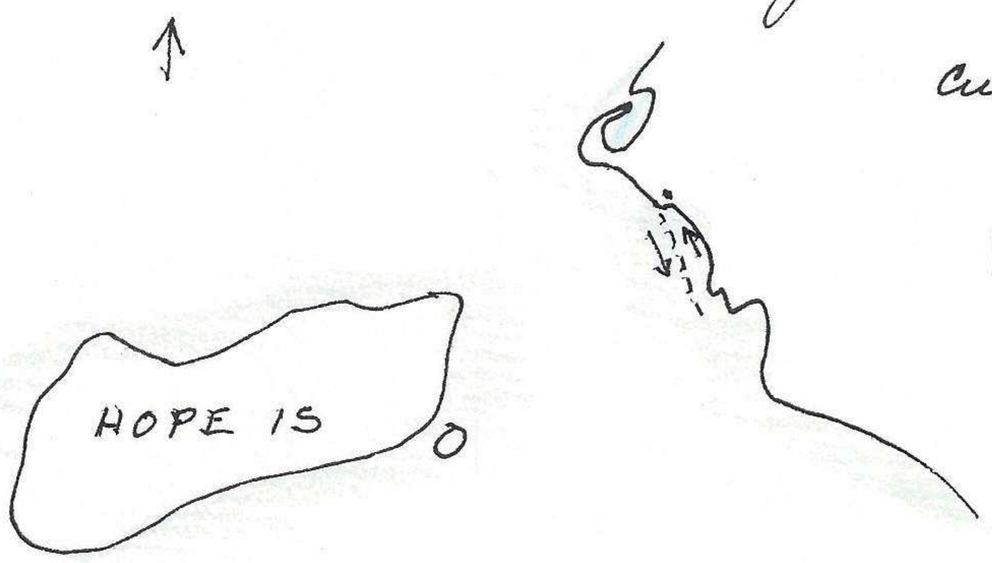
12:30 adult eagle above still on eagle tree.

12:31 logs passing back E but 1/4 distance near center of channel than when they passed W this A.M at 8:00. Same average numbers of logs and some other debris

12:31 Heard Canada geese pass overhead.

Horned grebe submerged (total submergence). 29 sec, 27, 24, 27, 24, 22, 23, 22, 36, 14, 22, 14. The two short periods were those when grebe brought to surface food.

12:40 "Herm Rock" being exposed (just very top) on ebb tide.



current contact - NW N of contact
SE S of contact

12:45 bald eagle left eagle tree on SE Point of Hope Island.
Bufflehead submerged: 23 sec, 26 sec.
black oystercatchers beat wings below horizontal plane.

1:25 logs still moving E at 1 per 1/10 mi.

1:35 5 Barrow's goldeneye swam from channel side of "Heron Rock" to Heron Rock in straight line course. They all made 3 dives to feed on the sides of the rock and then left.

1:40 a Barrow's goldeneye swam to "Heron Rock" and inspected to of rock but did not dive.

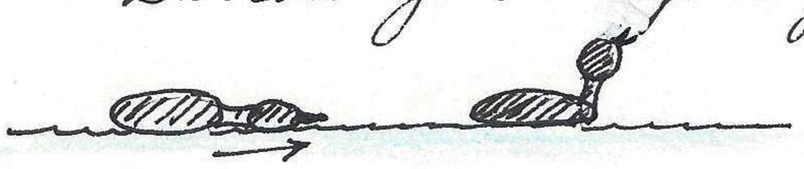
2:10 "Heron Rock just covered by flow tide. The rock was exposed 8 inches during low tide. Currents are E (middle channel), W (shore area) with definite current line between. Logs still going E at approx. 1 per 1/10 mile.

2:15 currents now just moving E along shore, whereas currents in middle channel moving E about 1/2 MPH. or less contact of opposing current less visible.

2:25 kingfisher to W.

2:30 current contact still visible + current middle channel to E.

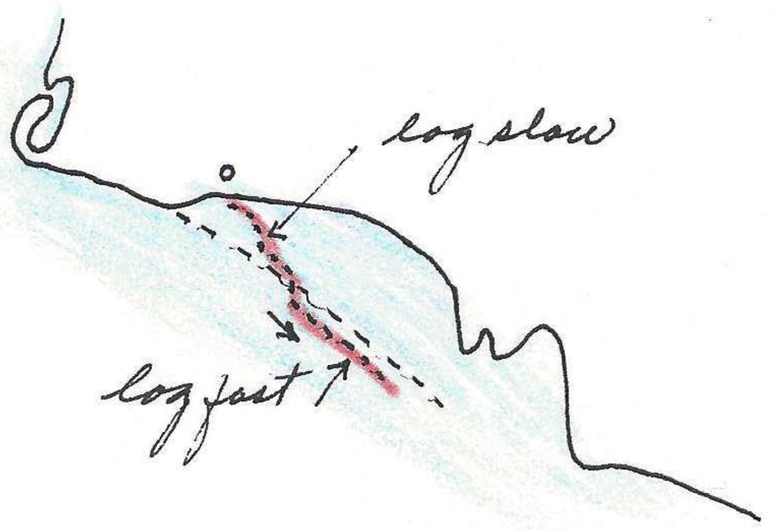
2:46 4 Barrow goldeneye together. Males perform: when male-female paired the male does not perform.



8 dunlin

3:00 shore current very slow, center current to E and fairly good current.

3:15



limb in water at camp 6 traversed the following currents from W to E. After entering main flow travelled rapidly E.

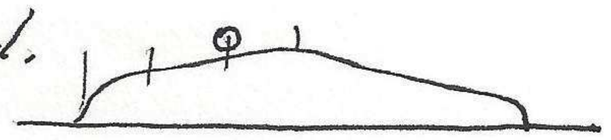
3:55 Current contact indistinct
weather front has been moving in today and cloud bank is on sight over top Hope Island.

3:56 1 immature bald eagle flew W up channel at approx 150' high.

4:00 Contact zone between shore current and main channel current variable from indistinct to distinct.

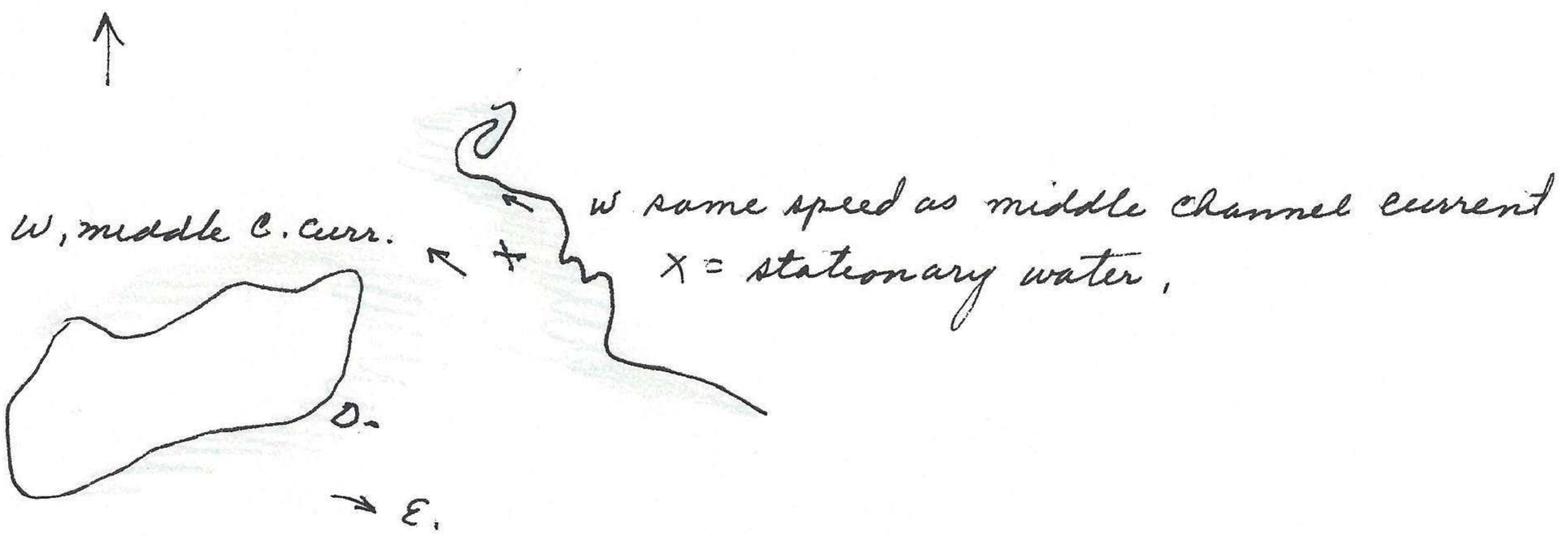
860112-18

4:12 sun to top of trees on top of Hope Island.

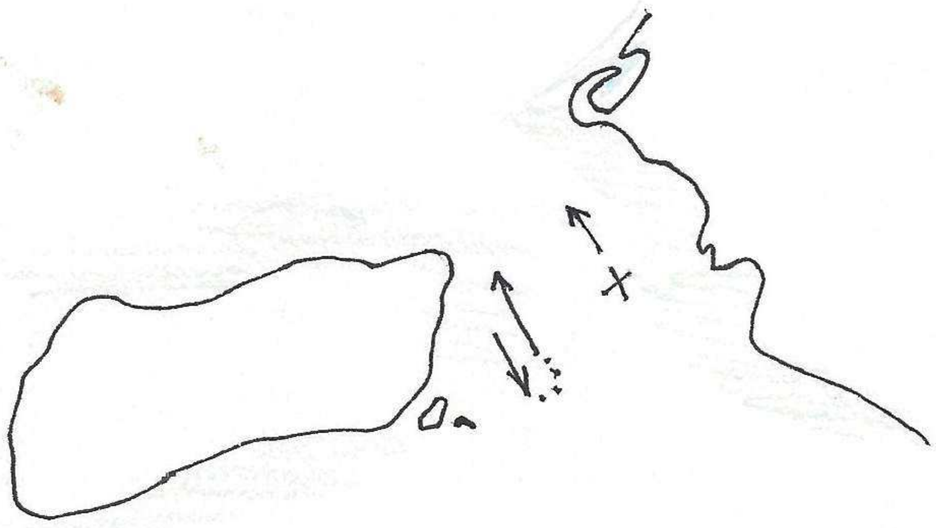


4:20 Logs SW of Hope Island moving E, logs in main channel N of Hope Island moving slowly W.

4:50

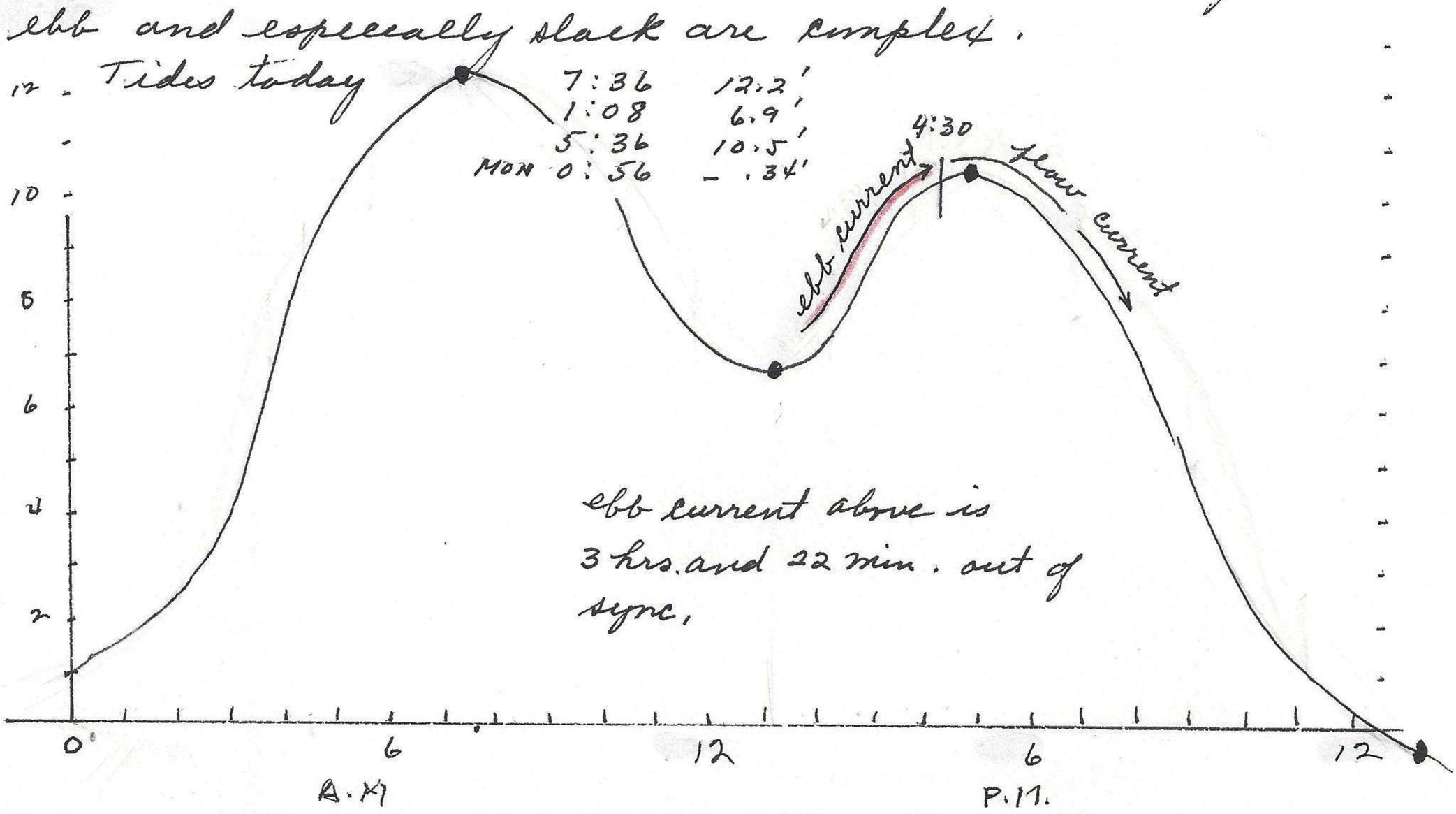


5:15



a log moved slowly E (actually E = SE) and then moved W (NW) at an increase speed. Another log (X) which had (for 20 minutes) been stationary at X started to move W and by 5:50 was opposite the Earth in research area.

All evidence would indicate that current in flow and ebb and especially slack are complex.



860113-19

La Conners Preserve, Thousand Trails, Skagit Co., Washington

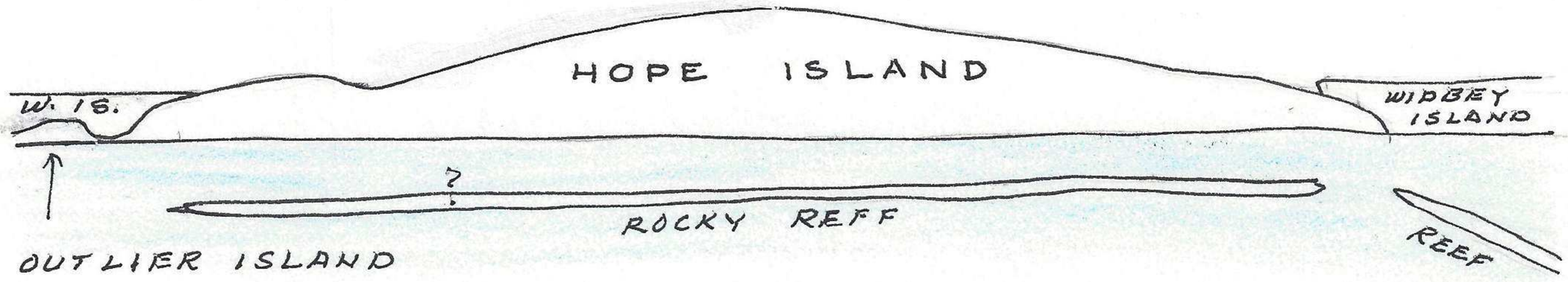
Jan. 13, 1986

8:00 A.m temp 52°F. Waves under white caps (no white caps).
Tides today are: adjusted to Yokeko Point.

12:56 A.m	-1.5
8:13	12.1
2:02	6.2
6:33	8.8

(observation approx 1:00 A.m)

At Low Tide last night, the reefs between Hope Island and Lone Tree Point area were recarded from camp no. 164.



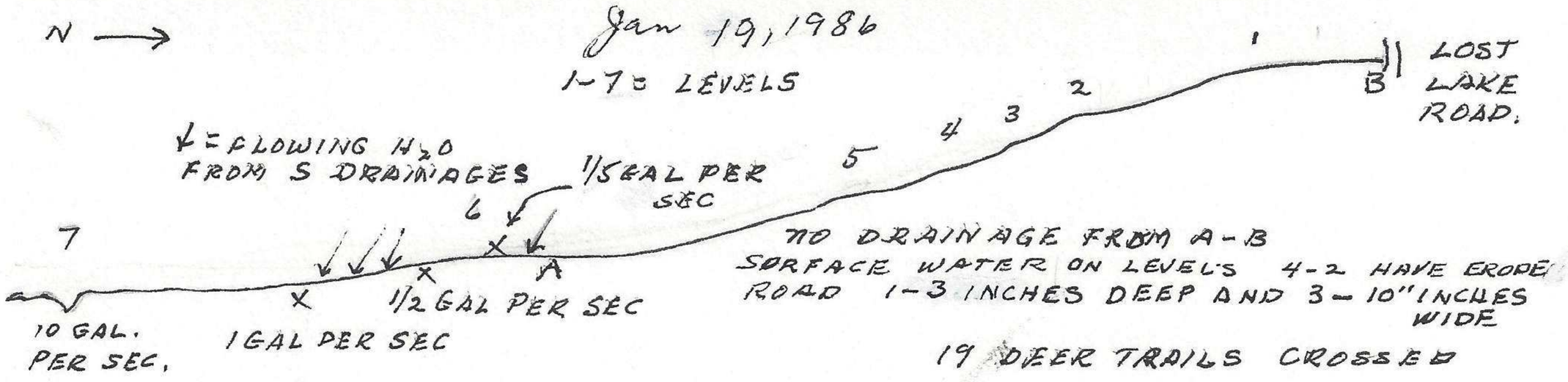
The reefs were not connected but I am told that at some low tides they are connected and one can walk out to the E end of the main NW-EW reef. (12.1')

at high tide today (8:13 A.m) marked a white dot on a boulder (W side), at base of rip-rap in front of 164 camp. at this time the boulder at glaciated point E of camp and the cement retaining wall on the next point E were covered. The rocks E of Outlier Island (E of Hope Island) were almost covered but all points identified (see previous deagram of these rocks). at 9:00 A.m. the lone rock between these rocks and outlier Island was beginning to show. the rock at glaciated point now 4" exposed. Strong flow all across channel.

860119-20

21231 E Lost Lake Road, Snohomish Co., Washington

Jan 19, 1986



19 DEER TRAILS CROSSED ROAD FROM 50' E OF LOST LAKE ROAD TO 100' W OF MAIN VALLEY DRAINAGE AT NO. 7

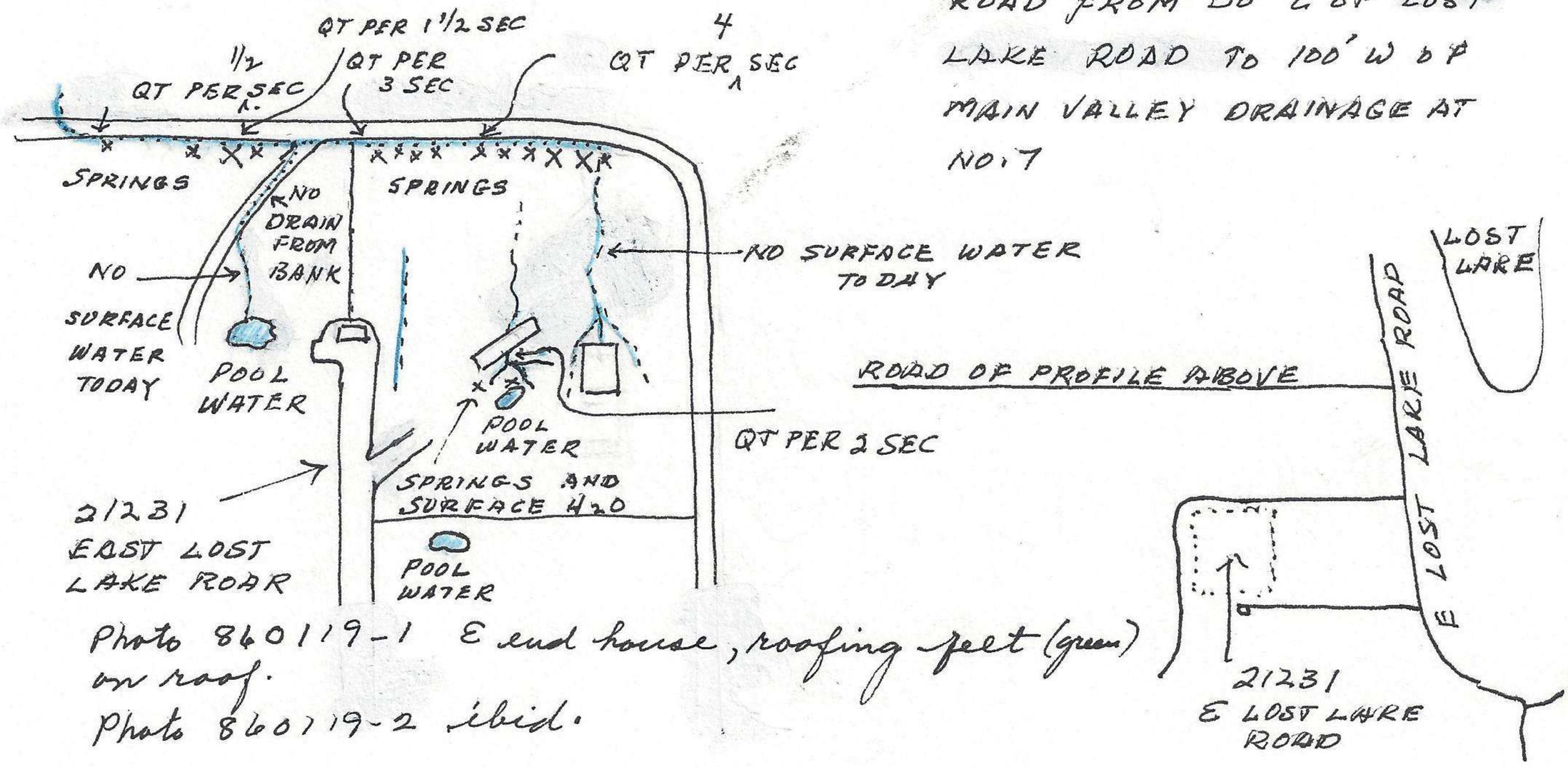


Photo 860119-1 E end house, roofing felt (green) on roof.
Photo 860119-2 ibid.

Rain last two days and nights but not this A.M.

Central for drainage.
A. Through drainage from property to W.
B Central channel for springs from pool to W on upper property.
C. Walk ridge to divert drainage N & S,
D. Walk ridge to Central drainage E-W.
E. Central channel to by-pass meadow to N.
F. Provisional access for large vehicles.

860123-21

21231 E Lost Lake Rd, Snoqualmie, Washington

Jan. 23, 1986

Observed a sharp-shinned hawk fly into a hemlock tree near the house. also a chickaree on property. Greatest concentration of deer seat at top hill. SE corner of Chris' property. × Left Chris' at 1:30 at 5 4743-1 miles. Routes 522, 405, 5 to marysville, thence country road to La Conner. Mileage at La Conner Reserve (Thousand Trails) at mileage 5-4823.8 or 80.7 miles. Here catkins 3 inches long, other trees budding, one tree at camp 163 in white inflorescence.
× Photo 860123-1 5 side house,
Photo 860123-2 roof waterproofed.

La Conner Reserve (Thousand Trails), Skagit Co., Washington

Jan 24, 1986

at 7:15 A.M, temp 37°F, daybreak advanced but could not read newspaper (regular type). at this time, from site no. 163 (next Camp site E of 164 where most observations have been made) there were no birds visible.

7:30 gull and 2 common goldeneye 30' out from shore of camp.
7:45 4 common goldeneye.
8:00

19 birds between S edge kelp beds and Hope Island (main channel between Seal Rocks & Hope Island.
5 birds N of kelp beds to camp 163
2 birds in corridor of outlier Island SE Hope Island and camp site 163

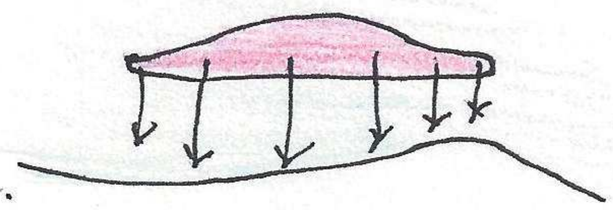
Camp.

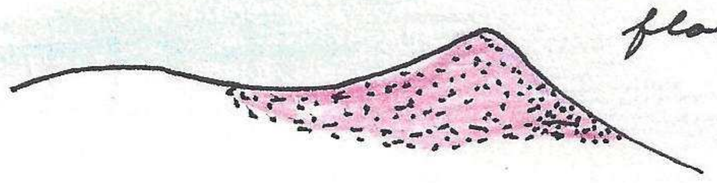
8:30 channel (as above) 18 birds.
N kelp beds (as above) 4 birds
outlier corridor 3 birds

Surf scoter glides on water with wings held 45° above body
at high tide is an unusual line of green sedgelike material, dry rushlike material and small fragments of small limbs and branches (wood fragments) Second high tide of white seedslike material.

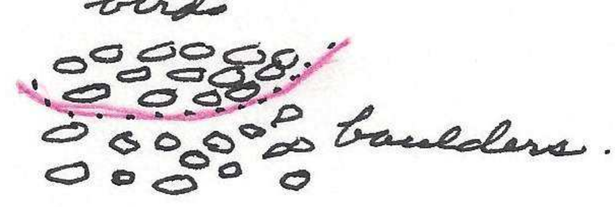
(11:45 AM)
Flock of approx. 3,000 dunlin arrived from N and gyrated for 4 minutes along beach from point (One Tree) to 1/10 mi. E. They formed a close formation with 1"-3" separation of birds. This compact arrangement was maintained and movement was synchronized with perfection.

Except when wheeling the flock formed a mass with thick center and tapering ends. when the mass varied at turns, it would reform into this mass shape. many times the birds would almost land, some would, but the group would continue on with the regular speed for more gyrations. This constant pattern of flight continued until 12:01 P.M when they all alighted on the beach at the Lone Tree Point. They left the typical formation laterally instead from the head of the column movement as many other bird do to distribute the flock evenly on the ground or water

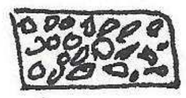




The outline of flight group merely formed the same formation on the beach. The birds were close together 1"-1½" apart and their distribution duplicated the spacing and size of the boulders on the beach. The color of the backs of the birds almost matched the color of the boulders. The white of the underparts and neck of the birds acted as highlights.



On the beach some birds preened feathers but 99% were immobile and all faced the sun. after about 3 minutes on the ground 5 bird started to feed along beach to E but not over 20' away from the main flock which remained inactive and and resting. The outer limit of the flock was abruptly separated from the boulders beyond. The sandpipers remained in this position for 25 minutes when a pigeon hawk arrived from the north and in what I would call a feeble attempt at catching a dunlin attacked and then flew into the top of the douglas fir on Lone Tree Point. The dunlin left the area to the SE.

There are 3 or 4 graves on Lone Tree Island (Point) and may be of greater antiquity than modern Indians. The graves are about 3' x 5', and covered with a single layer of stones.  The others are smaller in area and imperfectly formed.

Birds observed in general area today (Jan. 25, 1986) (TT)

brown creeper

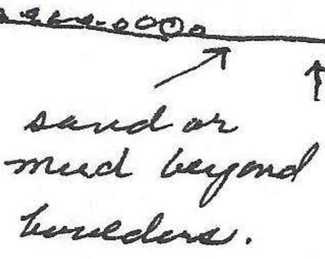
rufous-sided towhee

song sparrow
winter wren
Bewick wren
red-throated loon
bufflehead
king eider
white winged scoter
surf scoter
American widgeon
horned grebe
common goldeneye
Barrows goldeney
great blue heron
belted kingfisher
red-shafted flicker

Pelagic cormorant
double-crested cormorant
red-breasted merganser
black oystercatcher
glaucous-winged gull
common loon
ringed-billed gull
robin
pigeon hawk
dunlin
american crow
dark eyed juncos (Oregon & pink-sided
bald eagle (imm.)
western grebe
downy woodpecker

Jan. 26, 1986

8:00 AM temp 34°F. no wind. Brilliant sunrise. -1.5 tide last night. Beach [redacted]



Common goldeneye flip expanded tail forward when diving

9:20 immature bald eagle alighted in top of dead Douglas fir SE Lodge. It was harassed as it sailed along shore by glaucous-winged gulls and crows. The eagle left in 1 minute but returned and again while in the air was harassed by gulls (3) and Crows (4), It remained in tree for 20 minutes, without being bothered by other birds and then left.

9:45 Immature bald eagle sail N over waters W of Fine Tree Island (Point) about 1 foot from water and for 2/10 Mile, then swerved upward, circled and then returned at 25' above water to N side of Hope Island when it alighted.

The black oystercatcher when associated with the crows is about half way in size between the common crow and the northwestern crow, (body size). Identification of crows is difficult if judge by size only. When the two species are together it is still difficult to judge the species. The northwestern crow is subdominant and gives way to the large crow. The common crow waddles and stands high whereas the northwestern crow crouch with ankles

bent at an extreme angle.

Two mew gulls worked water near shore. They are more active in movement and in searching for food on top of the water.

A glaucous-winged gull alighted in the water, then left and gained 3 feet altitude and then dove straight down into water covering 3/4 of body to emerge with a 5" flat sculpin like fish. It carried it to the beach and consumed part of it.

1:52 "Kern rock pipit emerging.

1:53 Seconds submerged by bufflehead feeding 40' from shore: 21, 15, 26, 22, 25, 25, 24, 23, 27, 23, 24.

This afternoon (2:00 p.m.) made trip to Padilla Bay National Estuarine Sanctuary on E shore Padilla Bay. Checked Interpretive Center In displays Marbled godwit = common snipe, Western sandpeper = sanderling. No view of bay along entire route except at Bay View State Park where we were able to park off the main road.

The map below indicates distribution of ducks and other aquatic birds in the Padilla Bay. Yellow area concentration of ducks. The raft W of the national Estuarine Sanctuary is the most concentrated distribution of birds in the bay.

The group of dunlin is red colored and covers the area where 3 million of them circled and gyrated for 20 minutes sometimes stretching the full mile and a half aerial space

860126-25

The mechanics of synchronized movement in flight of dunlin would make a valuable contribution to bird behavior.

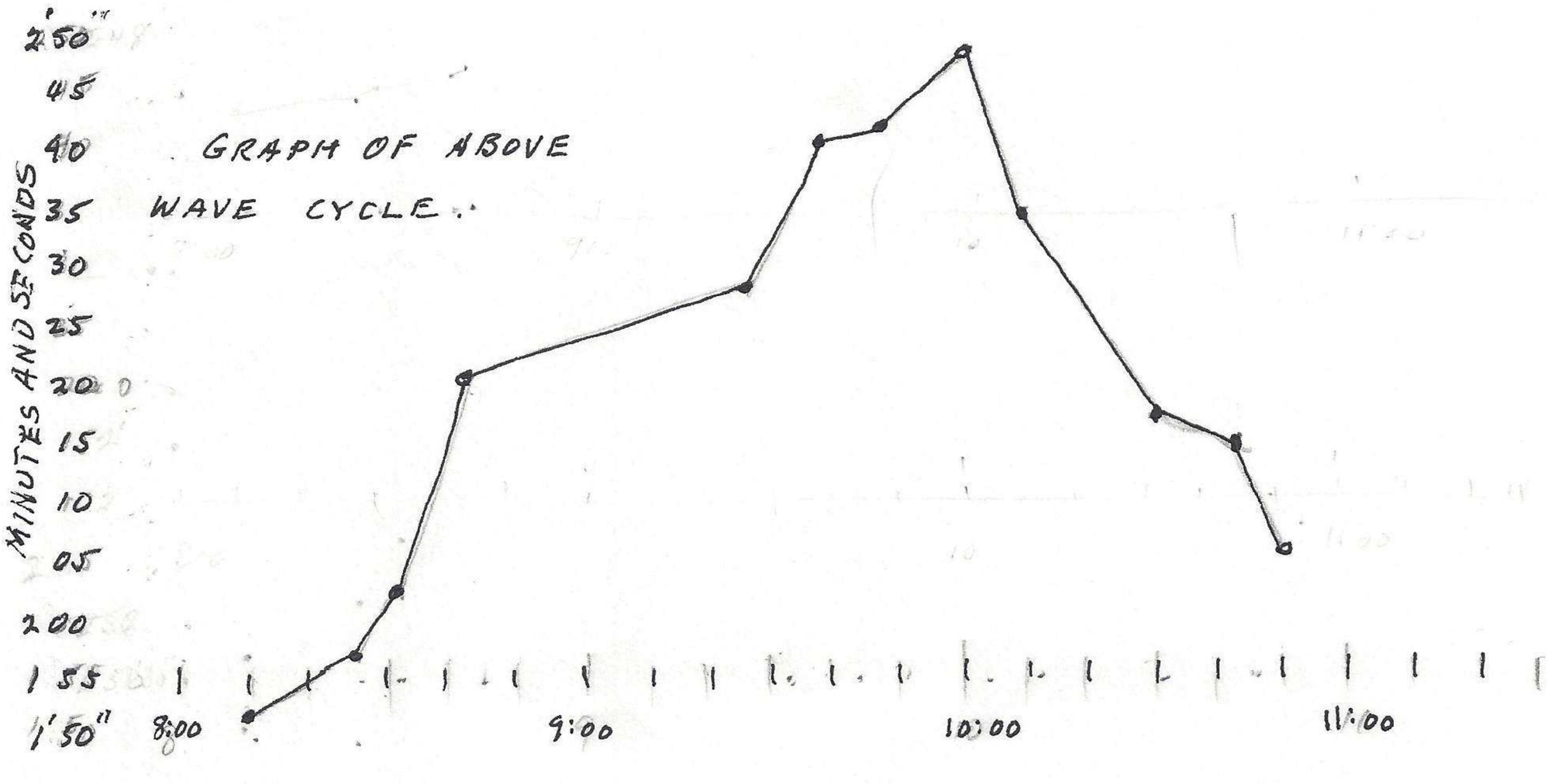
La Conner Preserve (T.T.), Skagit Co., Washington

Jan 27, 1986

This A.M measured periodicity of waves at campsite 164

Wind from SSE: (50 consecutive waves per number of minutes, seconds)

8:10 AM	1'53"	9:52	2'42"
8:28	1'57"	10:03	2'48"
8:32	2'03"	10:12	2'35"
8:46	2'22"	10:31	2'17"
9:33	2'28"	10:47	2'15"
9:45	2'41"	11:45	2'06



At the highest wave period waves were spraying over Glacial Rock and Glacier Point to E of here. Surf spray from beach inland 25-30'.

In light wind the double-crested cormorant stops in midair (1 foot above) with wings extended and gradually descends (straight down) to water in a gentle and gradual contact.

Observed canvasback swimming and feeding around Glacial Rock to E.

1:07 Current to E and strong.

Jan 28, 1986

Temp. 7:30 = 32°F.

Photo 860128-1 of Hope Island, E end with calm waters 8:30 A.M

" 860128-1 " " " " " "

" 860828-2 of Snee-oosh Point to E. "

9:00 immature bald eagle circled 200' above water in channel area between here and Hope Island (E end). One glaucous-winged gull harassed the eagle

9:33 2 adult bald eagles circled 100' above top Hope Island, diving at each other and attempting contact. They continued upward to almost out of sight.

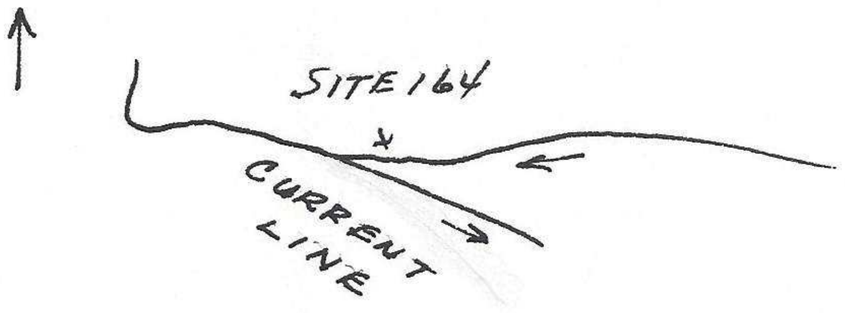
10:45 adult bald eagle flew W and alighted on tree 1/2 way up Hope Island. It was harassed by one glaucous-winged gull.

11:36 48 black turnstones worked partly submerged rocks on shoreline. They fed on barnacles on these rocks

11:51 Heron Rock just emerging.

11:55 Group 6 chestnut-backed chickadees fed on catkins of tree on edge of bank. They were accompanied by a female and male purple finch. 1 Labin fed in area and is seen about once per week. Bees fed on catkins as did the above mentioned birds (exclusive of robin). Chickadees fed on galls and catkins.

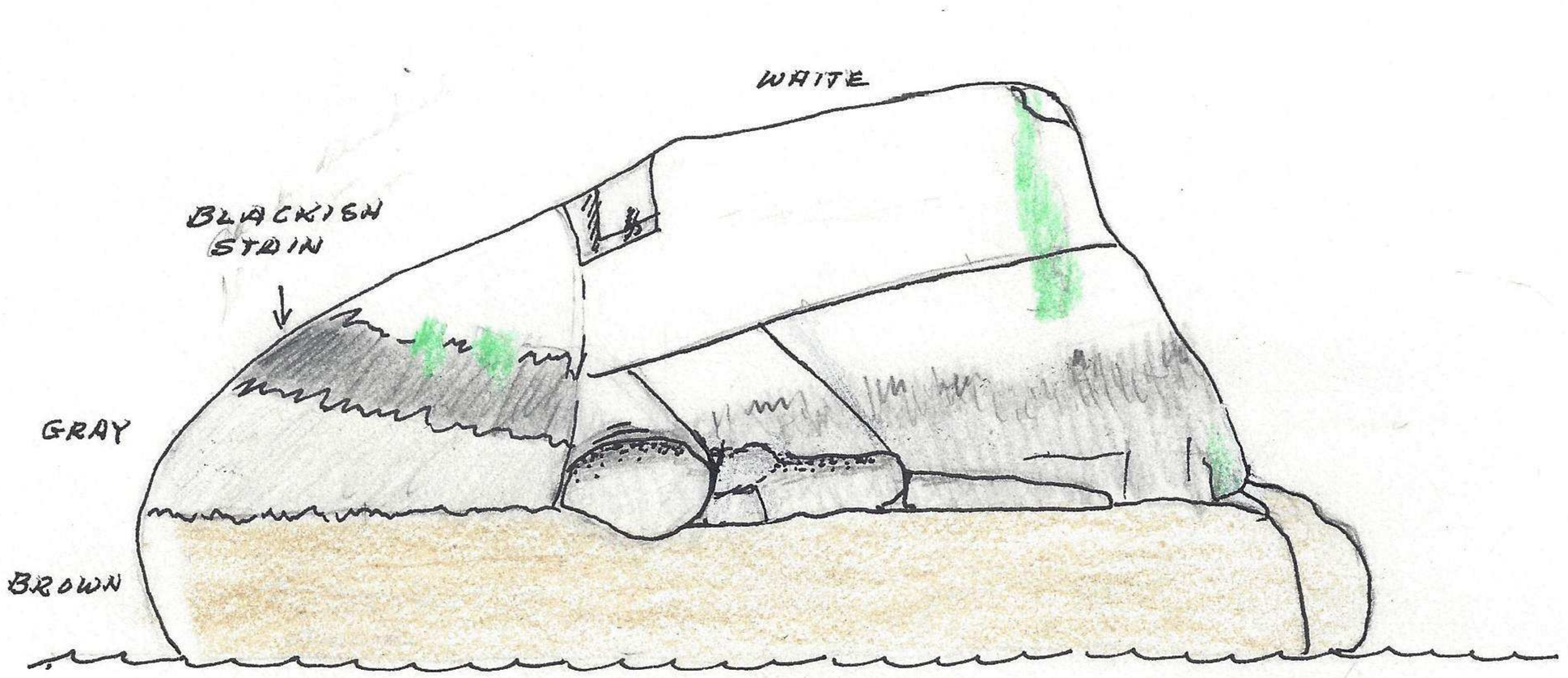
Raven flew W at about 400' high.



Black oystercatchers have fed along beach at 5 different times this A.M.

American crow dropped a mollusc from 20' as if to fracture shell for retracting the body of the shell.

Tide slack (low) but currents rapidly to E.



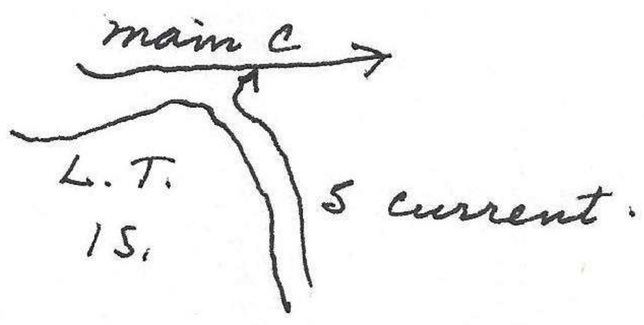
Glacial Rock in Glacial Bay E of campsite 164 showing points of reference for tide levels during upper flow + ebb.

3:02 Heron Rock just covered on flow.
3:36 adult bald eagle in tree E end Hope (Eagle Tree)
3:41 harbor seal, spotted
4:05 bufflehead & horned grebe emerged together and the bufflehead chased the grebe 15' until the grebe disappeared under water. when the grebe surfaced it held head low and then gradually elevated it into its normal stance
4:07 5 Barrows goldeneye feed along shore with heads held under water only.
4:08 red-throated loon and red-necked grebe in bay. In a triangle from middle Hope Island to Seal Rock to my position (Camp site 164) counted 42 birds, nearly all feeding singlely.
5:30 approaching twilight. 3 Barrow's goldeneye and 4 common goldeneye only birds in water and these 20-30 from shore.
5:45 late twilight. no ducks in bay (scanned with binoculars)

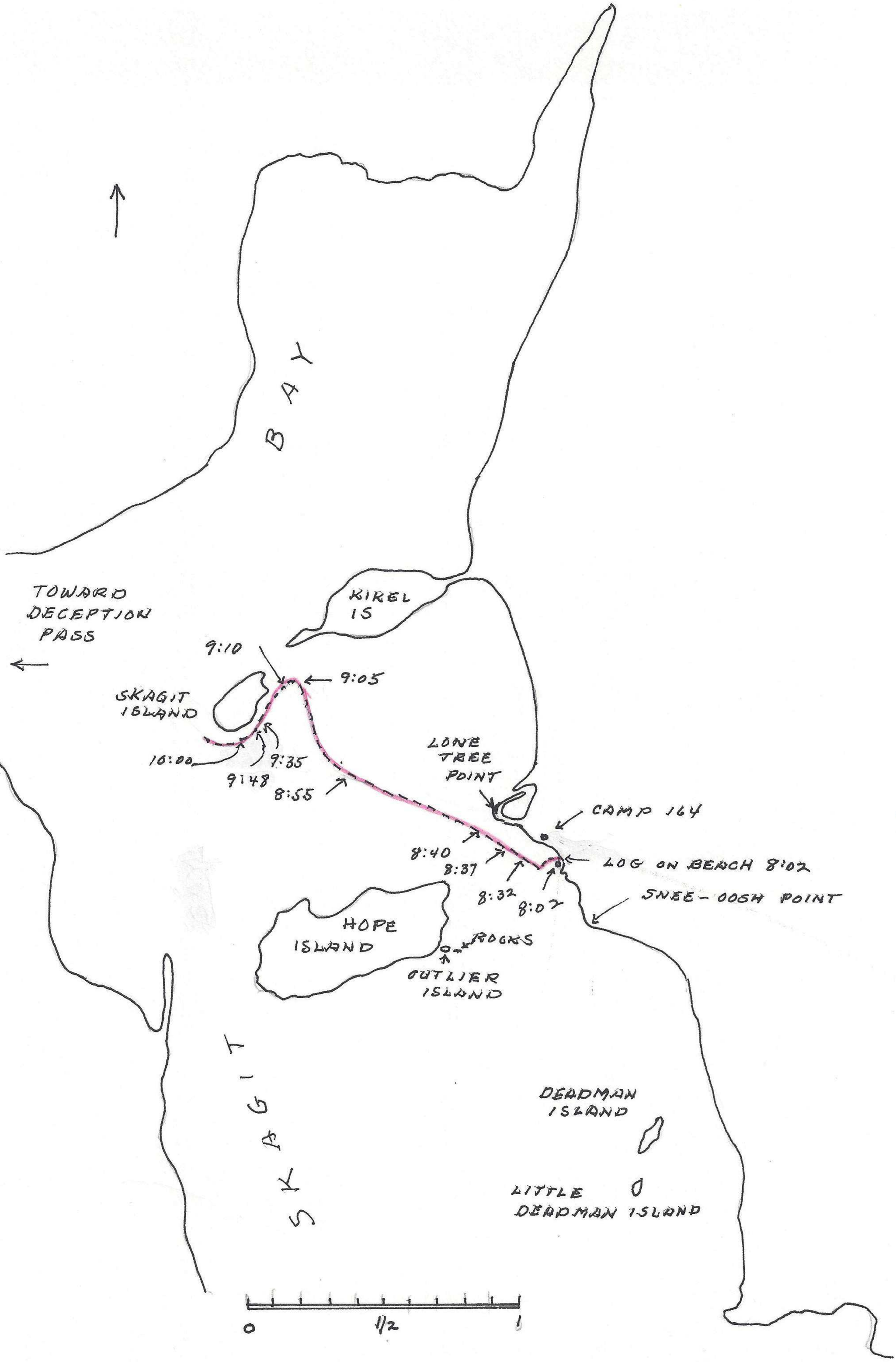
La Conner's Preserve, Thousand Trails, Skagit Co., Washington.

Jan 29, 1986

slack high tide
at 8:02, sky clear, no wind. at this time a log approx 20' long left bank (W side) at E end T.T. boundry and floated S past Glacier Rock until it intercepted main W current at which point it trended west (see diagram next page for direction of this log. all waters moving W this time.
8:32 log passing line between camp 164 and SE end of Hope at V notch between Hope & outlier.
8:37 log passing line between camp 164 and NW end Hope Island
8:40 log passed W 300' out from Lone Tree Island. (middle channel)
8:55 log passed line into S end Skagit Island
9:05 channel N Skagit Island where log reversed direction to S.
9:10 N end Skagit Island
9:35 middle Skagit Island
9:48 1/4 nearer S end Skagit Island
10:00 log just passed S end Skagit Island.
debris at Long Tree Point is moving S to main W current



860129 - 28


BAY
TOWARD DECEPTION PASS
KIREL IS
9:10
9:05
SKAGIT ISLAND
10:00
9:35
9:48
8:55
LONE TREE POINT
CAMP 164
8:40
8:37
8:32
8:02
LOG ON BEACH 8:02
SNEE-OOSH POINT
HOPE ISLAND
ROCKS
OUTLIER ISLAND
SKAGIT
DEADMAN ISLAND
LITTLE DEADMAN ISLAND
0
1/2
1

10:05 at Lone Tree Island noted a double-crested cormorant and glaucous-winged gull. The cormorant had a large fish in bill and the gull was making heavy contact with the cormorant. The cormorant attempted to fly but caught not make forward movement because of the harassing of the gull. The cormorant did not attempt to dive but finally was able to swallow the fish at which time the gull immediately left.

10:10 currents to W

10:15 bald eagle, imm, in Eagle Tree on Hope.

10:45 current to W. Kelp leaves smooth water in direction of current.

11:30 adult bald eagle on top Conifer on outlier Island E of Hope Is. It left at 11:32 and returned 11:41 to dead tree above shoreline SE Hope Island.

11:40 Tide still going down and currents now to E (2 hrs 20 min) W currents after high tide. A log, 18' long, on N side of Hope Island at S edge of current passed by NW corner island (N end profile at 12:02

12:04 Herm Rock being first exposed on ebb.

12:05 Eagle (ad), bald, left perch (see above) & returned 12:10 to Eagle Tree.

12:20 Log, 150' N Hope (NE corner) at 24 sec to pass its length.

12:27 Log at V between Hope Island and Outlier Island (SE).

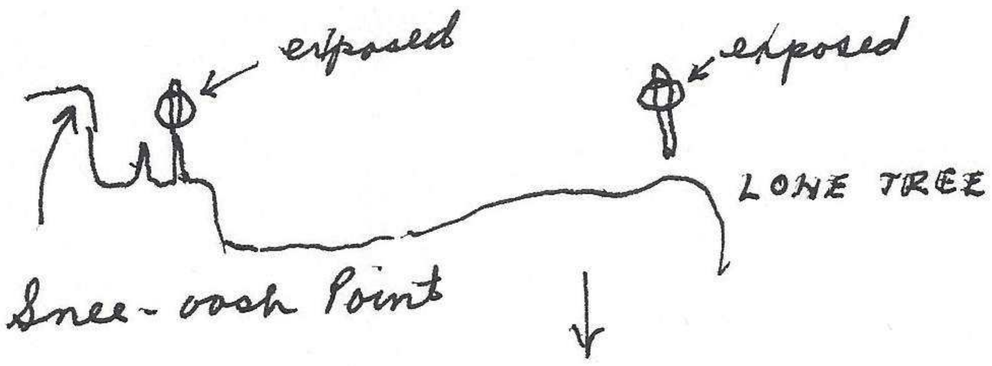
at 47 secs to pass its length. A log in center of main current between Camp 164 & Hope Island is travelling over 2 x speed of log that I am recording nearer the island

12:34 log finally caught on rocks at extreme E end of rocks beyond Outlier Island.

no crows this P.M. They have regular schedule of visitation of areas.

1:51 2 Barrow's goldeneye fed on emergent rock (since 11:30) for 21 minutes as it continued to expose the rock. They fed by submerging head only.

2:05 Highest reefs out of Lone Tree Island and reef to E.



3 prominences E and 1 to W averaging 4-5 inches high. Agitated waters lee (E) of Lone Tree reef and no moving waters on E reefs

2:12 low tide
2:20 tide starting flow from slack. Tide level on Glacial Rock 1½ times lower than diameter of elliptical design.
3:06 reef to W disappeared under water
3:12 last of 3 tops of reefs now covered with water to E.
4:00 currents still to E.
4:10 Heron Rock just covered

Tides today were 8:02 A.M high, 2:12 low during stay at T.T
Summation of bird and mammal distribution in bay.
brown creeper. 1 per 4 days.
ruffons sided towhees. during their feeding periods, especially in morning, around camp for hour or so at a time.
song sparrow. ibid.
winter wren. 1 per 3 days.
Bewick wren 1 per 2 days
red-throated loon. In area of Shoget Bay most of the time, but near camp 3 times a day.
common loon ibid, 2 times a day. all parts of bay but mainly toward center.
bufflehead. Present 80% of time
king eider. once every 2 days.
white-wing scoter. middle of bay but occasion near shore. Present 85% of time.
surf scoter. ibid but 90% of time mostly middle bay
American widgeon. 90% of time, generally near shore but along tidal contacts in open bay.
horned grebe. 100% of time. all bay but near shore a lot of the time
common goldeneye. 100% of time generally near shore.
Barrow's goldeneye 95% of time " " "
great blue heron. 80% of time
belted kingfisher. fly by twice a day from Snee-oosh to Lone Tree area.
red-shafted flicker once a week
double-crested cormorant always present. all bay but mainly center
pelagic cormorant. slightly less by 20%. ibid
red-breasted merganser. 90%. all bay but also near shore
black oystercatcher. Groups 4-16 pass by 3-4 times a day
glaucous winged gull always present.
raven. once a week
osprey hawk. once 2 weeks
sanderlings once every 6 days.

860129-31

western sandpipers. once in a week
American Crow. Feed at various places within 3-4 miles range. May be absent in morning or afternoon but generally in area part of day. 18 is average size of flock.
dark-eyed junco. Most common bird of land birds and 60% of time at feeding station by Barth.
bald. eagle. Some days absent but 50% of time in area. generally in morning and then all morning.
western grebe. 40% of time.
downy woodpecker. Once per week.
Marbled murrelet. once every 4 days. Center bay
pigeon guillemot. once every 6 days. center bay
northwestern crow (identification questionable) but like American crow but 1/3 population.
herring gull. once every 3 days.
killdeer. once every 3 days.
Wilson snipe (common snipe) once every 12 days.
hooded merganser. once every 6 days. near shore
ruddy duck once every 10 days open waters
red-tailed hawk. once every 4 days.
Canvas-back once every 15 days.
ring-billed gull. once every 10 days.
mew gull once a day
savanna sparrow once every 5 days.
Thayer's gull. once every 10 days.
mallard. once every 15 days center bay
black turnstone once every 12 days.
bushtit once every 3 days
chestnut-backed chickadee. once every 3 days
starling. once every 2 days.
golden-crowned kinglet. once every 3 days.
purple finch once every 12 days.
harbor seal. twice a day.
raccoon tracks mud in tidal zone new T.T.
black-tailed deer. Tracks uncommon.
ringed-billed gull. once every 4 days.
dunlin - once a week
western sandpiper - one 2 weeks.

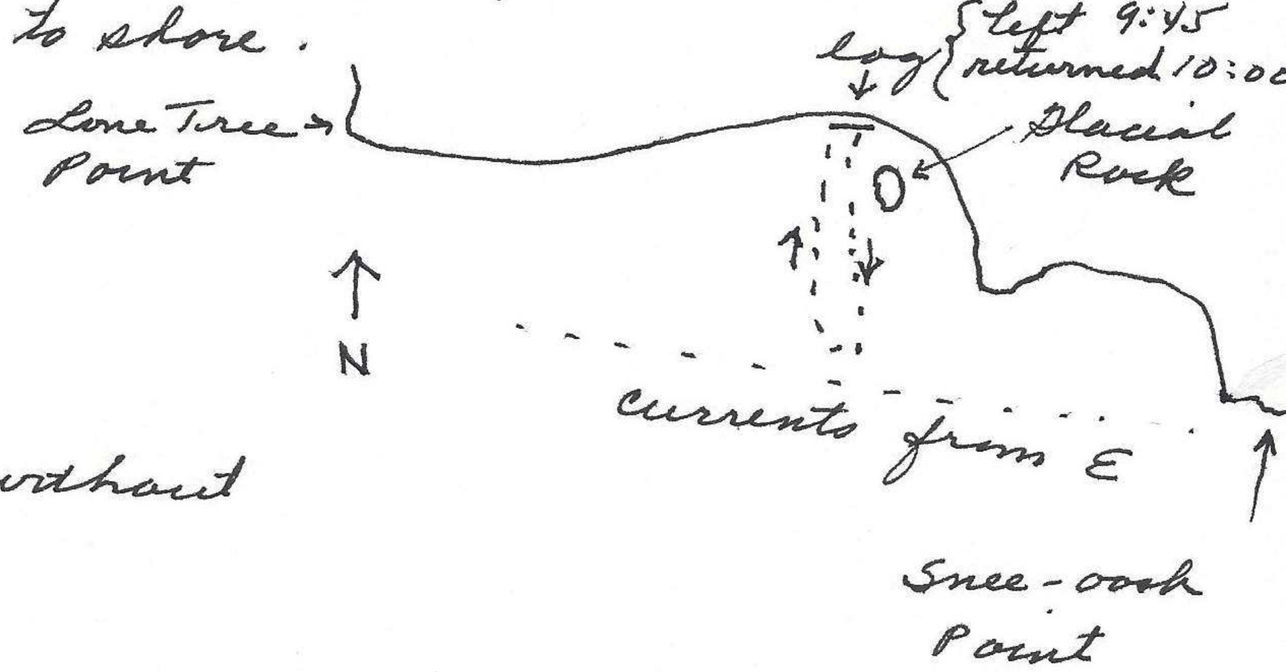
860130-32

La Conner Preserve, (T.T.), Skagit Co., Washington.

Jan. 30, 1986

400 F at 8:00 A.M. no wind, some patches fog to S & W
9:45 a log lifted off shore at E end of T.T. property and slowly moved S, past (W side) Glacial Rock to currents moving W from Snee-oosh Point but; Unlike the previous movement of a log of Jan. 29, 1986, stopped and reversed it direction and returned N to shore.

noted 2 new gulls riding log for 2/10 mi. They left and flew E above water in a direct straight course without deviation.



Left La Conner T.T for Friday Harbor at 10:15 at mileage 97.9. Ferry at 10:40 at 11.6 miles or 13.7 miles from LaConner Preserve in 25 minutes.

Outside Friday Harbor approx. 30 new gulls in a dispersed group. Checked property SE town with Coldwell Bankers. Also visited University of Washington Marine Laboratories. Met Dr. David O Duggins who has done research in Glacier Bay in S.E Alaska and now and worked with a student from K.U., the one who studied small mammals across straits S of Glacier Bay. He said that there are two house on U. Wash. property on SW Shaw., one liveable the other marginal and needs considerable work in refurbishing. Camp just N of Friday Harbor.

Jan. 31, 1986

Checked bay S of Obstrom Head on San Juan Island, thence coast road back to Friday Harbor, thence to Orcas Island. Drove to Deer Harbor to check property. At 900 yards S of Deer Harbor along bay photo:

860131-1 Deer Harbor to SW showing Reef Island right and McConnell Island center San Juan background

860131-2 ibid.

Camped tonight at Moran State Park.

860201-33

Orcas Island, San Juan Islands, San Juan Co., Washington
Feb. 1, 1986

This A.M. to Obstruction Island (with Janet Murray) to check real estate property at Weema Beach. Good tidal channel. On return noted 18 am. widgeons at head of Buck Bay. At head of bay E of East Sound noted adult bald eagle in tree by road. Counted 38 American Crows concentrated on the beach feeding in area of drainage of marsh N beyond bay. 18 glaucous-winged gulls fed on beach (low tide) and generally distributed. Returned to Moran State Park the ranger gave me the following info. for possible contact for research in area. Dick Clefton, Interpretation Chief. Washington State Parks and Recreation Commission. (206) 753-5838. 7150 Clearwater Lane, KY11, Olympia, Wa. 98504-5711.

This afternoon drove to top of Mt. Constitution. Photos
860201-1 to SW showing Blakeley, center, and Orcas and top James Isl.
860201-2 to S showing Orcas, Obstruction, Blakeley, Decatur, Lopez in distant. Trust Island to right near ferry.
860201-3 to S, mt Lake on Orcas, Cypress & Strawberry Isl. Mt. Erie, Blakeley

On top of Mt. Constitution the lodgepole pine is dominant although white pine, sitka spruce, Douglas fir and hemlock were present.

Apparently the lodgepole pine has remained dominant since the ice left the mountain and is there now because of little soils on the glacier scoured rocky terrain which it can tolerate over other species of trees.

This evening noted 12 common mergansers in Cascade Lake also 1 great blue heron and 1 black-tailed deer near lake. Also

10

Drove to Eastsound to purchase groceries. At end of main street to N noted 3 Harlequin ducks.

Orcas Island,
Moran State Park, Cascade Lake, San Juan Co., Washington.
Feb. 2, 1986

Temp 8:00 A.M. = 38° F. Sky partly clear, sun shinning.
Circumnavigated Cascade Lake from Middle Camp ground.
Observed 29 water birds:

4 double-crested cormorant	2 glaucous-winged gulls
18 Crows	deer tracks 2 at both 66 mm
1 Chickaree	migratine trails in marshy areas
13 Common mergansers	no land birds
9 Lesser scaup	

860202-34

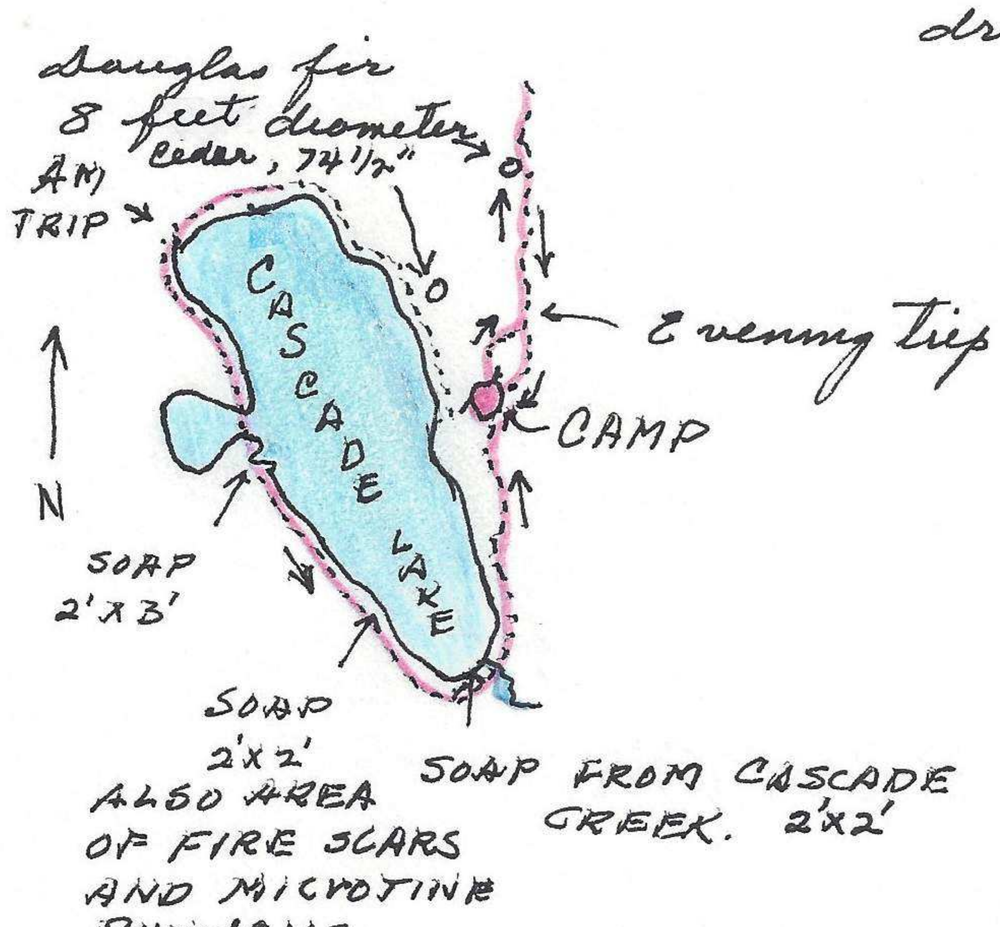
1 great blue heron

Birds moved to opposite part of lake as I followed the lake trail

On all trips noted extensive tree drilling by pileated woodpecker, mostly old sign, of lake

In SW corner, some old fire scars. Bog areas with meandering trails

Fallen branches and conifer fronds should be left in trail. Tree that have fallen over trail if permitting stepping over or walking conveniently under should remain in trail. Tree required to be cut should be removed in such a way that cut ends are not exposed to view.



Large douglas fir monarch at S end lake should be fenced and planted at base in normal community of plants etc. now the tree is being used for recreation purposes and in a few years will be clubbed to death. Already the soil is bare and trampled at the base; a good project for scouts or other community groups.

Douglas fir boughs , 3-10 inches average should be left in trail. The winds of Thanksgiving day plus low temps for a week 10-15°F created a green carpet of boughs wherever wind was effective in removing branches and the small fronds of terminal needles. In some areas the entire ground was covered an inch or so thick. Cedar trees produced their own covering but to less extent than the Douglas fir. In protected areas there was considerable to no damage to the conifer trees and the ground was clear. The E side of lake was more severely damaged than the W side. The great predominance of ground debris is the terminal 5-6 sets of needles but all sizes of branches (5% of cover) are present, some to full grown trees. In 1972 there was a high wind that was even more sever than the Thanksgiving day of 1985. Noted some small flowers

, to 3 inches high in blossom. Buds and willow catkins present. The following graph of 1 sq. meter fallen douglas fir branches.

860202-35

DOUGLAS FIR BRANCHES (diameter at BREAK) FROM WIND OF THANKSGIVING, NOV. 21, 1985

MORAN STATE PARK
ORCAS ISLAND.

SAN JUAN CO.
WASHINGTON

NUMBERS

200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

LIVE BRANCHES WITH NEEDLES

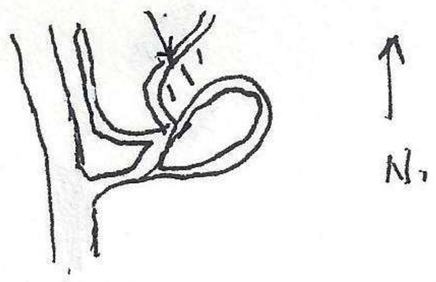
DEAD BRANCHES WITHOUT NEEDLES

1 2 3 4 5 6 7 8 9 10 11 12 13 24 41 56 60

M.M. DIAMETER

860202-36

The square meter of ground was from the second camp site of Campgrounds. (Middle Camp).



at N end of Cascade lake the wind was most effective in blowing branches off conifers. The branches on the ground settles in low spots, behind trees and other places where the branches received less wind. Back beyond edge of lake (50'-75') the ground and ground cover is completely covered with a mat of conifer branches, all green. This is definitely a new ecological niche for mammals and birds and also good for the forest community. Walking on trails is like walking on a thick carpet. The ranger informed me that 1972 was one of the biggest winds on record for the park. Some 360 trees had to be removed from the road system of Moran Park.

As we left camp for ferry made 3 photos of a chinaselike tree on NW corner Cascade Lake. Lighting poor but took photos to show possibilities of this tree for photographing.

Phato 860202-1 Douglas fir tree at edge of lake on cliff.
" 860202-2 ibid
860202-3 ided.

Two patches of soap?, one 4 sq yards at outtake pump near above tree and 1 mouth creek (inflowing) 3 sq. yards that were not observed yesterday while circumnavigating lake. Some white discrete spots ("1/4" to 1") of soap along W shore.

At picnic grounds (Moran State Park) 3 trout (one 11½" long) in mouth of creek up 40'. One could easily capture these trout with net as they returned to the lake. They would be a catch for the otter. A great blue heron uses the picnic area here and the marsh area at S end of lake.

Left Moran State Park for ferry. At shore N of Eastsound observed 2 ♂ & 1 ♀ Harlequin ducks in open water near shore. At first by S of Eastsound on W side sound took photo 860202-4. This is a very picturesque bay and could be a subject of a good photo at some other visit. The East Sound in background.

Left Orcas and at point E of Humphrey Head photo 860202-5 of most of the prominence with the "Dream House" in about the middle of the photo. Lea Rock has a light.

Photo 860202-6 of "Dream House" owned by Nels & Carol Strandberg. Joyce Frailey of Lopez to right.

John W Saul Jr and John W Saul III son 860202-37

86
680202-7 Two neighbors farther to N which can be seen in the previous photo 680202-5.

Photo 86 680202-8 Obstruction Island left, Blakely, Eagle cliffs of Cypress and mt. Baker in background.

Photo 86 680202-9 willow Island, glaucous wing gull.

Photo 86 680202-10 Willow Island from S.

Photo 86 680202-11 mass of glaciated rock just E of willow on Blakely Island. very little evidence of erosion of rock at base.

Phato 86 680202-12

La Conner Preserve, Thousand Trails, Skagit Co., Washington

Feb. 3, 1986

Photo 86 680203-1 Snee-oosh Point early morning lights.

Photo 86 680203-2 NE channel of Skagit Bay with Hope Island. Outlier Island at SE corner of Hope Island. Rock E of outlier Island just exposed. From camp site just W of 144.

Feb. 4, 1986

Temp. 42°F, A.M. wind from the SE.

10:10 waves landing on beach at the rate of 50 in 2 16 secs.

Barrow's goldeneye maintain compact groups averaging 1-1½ feet apart. This is normal for groups that are moving from one area to another. In the feeding phase they become more dispersed but not to the extent of the common goldeneye formation. I have not witnessed the two species feeding as a compact group, however, individuals of the two species will pass each other within 2-3 inches.

One group of 7 ♂ and 2 ♀ fed most of the morning in front of camp.

At 10:20 in viewing area 100 x 200 feet were 10 Barrow's goldeneye, 6 common goldeneye and 2 bufflehead.

An immature bald eagle flew W to the E side of Hope Island and then, without circling or flapping its wings raised itself to the top of the island.

A ♂ Barrow's goldeneye displaced a ♀ red-breasted merganser in a very aggressive manner. The ♀ did not counter attack but was completely evasive.

a kingfisher flew over a group of Barrow's goldeneye approximately 1 foot above. The ducks did not react.

1:10 waves surfing on beach at 50 per 2 min. 20 sec. and wind has been steady since the A.M.

2:10 four hooded mergansers swam by near shore. This is the first time this species has been observed in the viewing area, however, they have been observed elsewhere on the preserve, and at Lopez Island (ferry terms.)

A red-tailed hawk circled Tree Point twice but was then chased back to Hope Island by a glaucous-winged gull.

3 groups of oystercatchers have flown by today with average size approx. 8 in each group. Could be same birds.

Left for Chris' home at Lost Lake.

21231 E Lost Lake Road, Snohomish, Washington.

Feb. 4-10, 1986

At Chris' & Steves' place. Helped with building their new home.

Feb. 11, 1986

Left Chris' this afternoon. At steep road first after leaving on Welch Road observed a black-tailed deer cross road at a walking gait and stopped at base of steep road cut at about slope: after a few seconds it continued up slope at a regular gate without initial momentum. The steps were steady and legs peglike and held perpendicular to ground.

Continued N via Welch Rd, thence Elliot Rd, thence Connelly Rd, thence Kenwanda Rd, thence Springhetti Rd, thence Old Harrison Rd, thence airport Rd, thence Lowell-Sno River Rd, thence to Interstate 5. approx 1/2 way point alon Lowell-Sno River Rd. noted approx. 4,000 mew gulls in field. Mallards and widgeon some of the more common ducks along this route.

La Conner Preserve, Thousand Trails, Skagit Co., Washington

Feb. 12, 1986

At camp site 164 · noted the following birds at feeder at 9:30 A.M.

12 purple finch (3♂, 9♀)

7 dark-eyed juncos (1 slate colored, 2 pink-sided, 4 Oregon)

1 Bewick wren, 1 song sparrow, 2 rufous-sided towhees

Late 12 bushtit fed in willow catkins near feeder as did

2 chestnut-backed chickadees.

860212-39

The order of dominance (displacer):
towhee.
finch
song sparrow (♀ displaces ♂)
junco.

Order of wariness
towhee
song sparrow
junco
finch. (will remain when all other birds leave on alert)

Red-throated loon submerged 32 secs.
12:00 current to moving E., tide going down
At 2:05 ebb, (2:07) maximum high/low. 2:10 flow. The correction factor on Seattle is +34 instead of 38 recorded in the tide book.
At 2:15 26 black turnstones alighted on beach after 4 trees.

Feb 13, 1986

A member of Thousand Trails reported a trumpeters swan on the preserve. On Feb 5th a swan (injuried) apparently was stranded on flow water over the neck of shallow water between Lone Tree Island and the mainland. It had been stranded on a high point after ebb. It was chased into the small bay associated with the inside of island. All day on the 6th it swam in this bay. On the 7th it left the bay and went E up the drainage. On the 8th remained in channel and on the 9th was found almost dead on mud slope at N end of the Lone Tree bay. a wildlife Refuge personal retrieved and placed it in care of Falcon the bird. The wing was broken and the injured bird will probably recover from starvation, (unit in Mt. Vernon)

11:30 A.M Heron Rock just being exposed. Rock W of this rock exposed at 12:30 or 1 hour difference in time on ebb.

Dark-eyed juncos (Oregon race) have albinism in tail feathers 2 or more white (Complete) feathers on one or the other side, perhaps 1 per 15 birds. The other 2 race have not shown this kind of albinism.

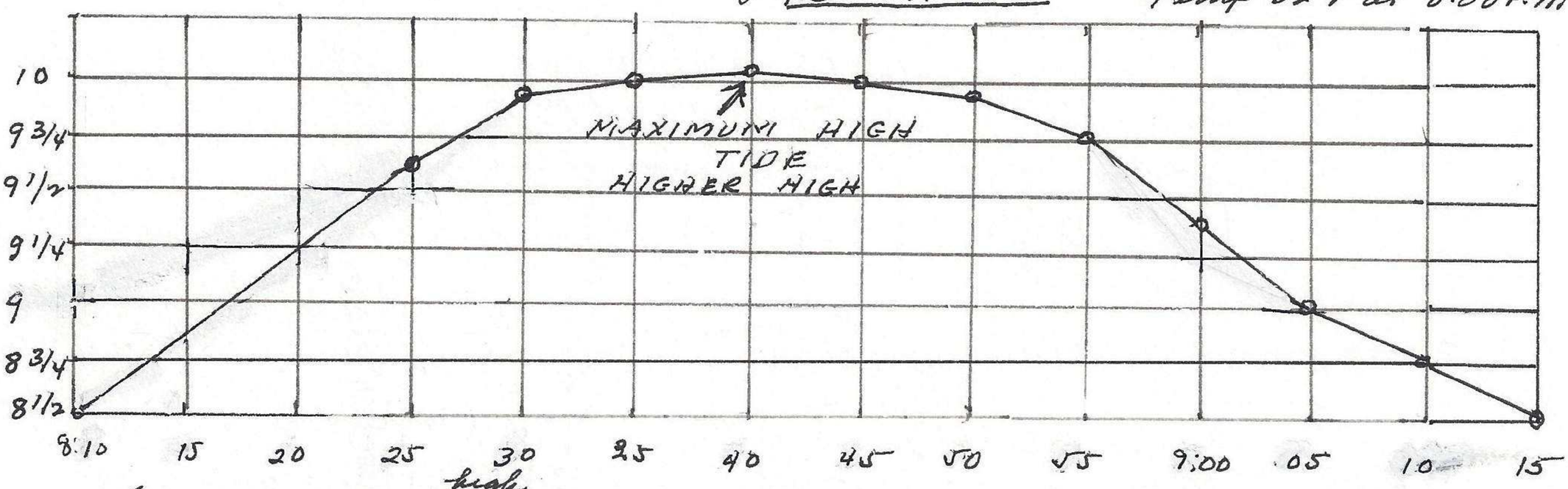
Purple finches form or compact groups on feeder than the juncos. although the same number of birds are on the table the juncos are more dispersed.

At 4:40 P.M (just before sun was going down behind Hope Island noted 16 cormorant that have been resting on emerged island (outer one) 5 from Lone Tree Island. Two were noticeably larger with bigger heads than the rest of the cormorant and I took this to be the Brandt's Cormorant. 5 were smaller, longer thinner necks & small head which were the pelagic cormorant and the remainng of intermediate size were

double-crested cormorants. They have been resting on this reef since first exposed on ebb and are now just leaving the island as flow waters crowd them off the resting area. They move out 1 to 200 feet and feed rather than loafe all at once at a predetermined time. The gradual elimination of resting areas by flow water may govern the scheduled feeding activity of cormorants.

At 4:50 there was just enough emergent reef for 6 cormorant.
At 5:10 sun just setting over Hope Island. (last ray as the sun disappeared behind Island. Cormorants (6) still on reef which has already submerged but still available for contact.
at 5:12 the 6 cormorants left by being forced by rising flows.
4:13 Rock W of Heron Rock just submerged.

Feb. 14, 1986 Temp 32°F at 8:00 P.M.



Graph of high high tide this A.M at site 164 La Conner Preserve. maximum high tide at 8:40 A.M. Seattle reference is 8.19 A.M. or +21 for La Conner Preserve. Subordinate station Yokeko is +26 and La Conner Channel is +27. so Yokeko nearer the time for La Conner Preserve but still +5 minute defference. Current set to W. The correction of higher high tide for La Conner Preserve is +21. The correction of higher low tide is +34, both from Seattle station.

At one moment the following birds were on the picnic table feeder: at side of Barth

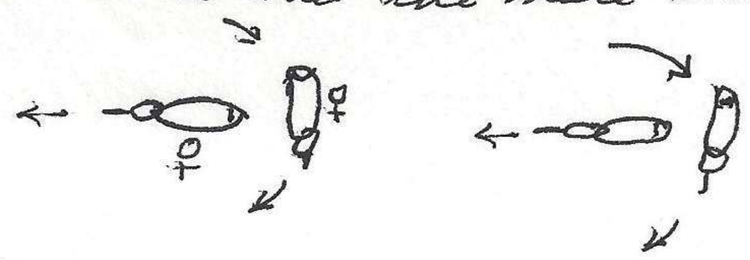
		Greatest number in area →
2 ♂ 9 ♀	purple finch	16 ♀ 3 ♂
6	dark-eyed juncos	13
2	rufous-sided towhee	3
1	song sparrow	3

The Bewick wren (1) chestnut-backed chickadee (8) + bushtit (22) have been observed in nearly willow trees in catkins. Occasionally 1 brown creeper, 1 red-breasted nuthatch, 1 Rarely red-shafted flicker, robin.

2 rufous-sided towhees contacted and flew straight up for 12'

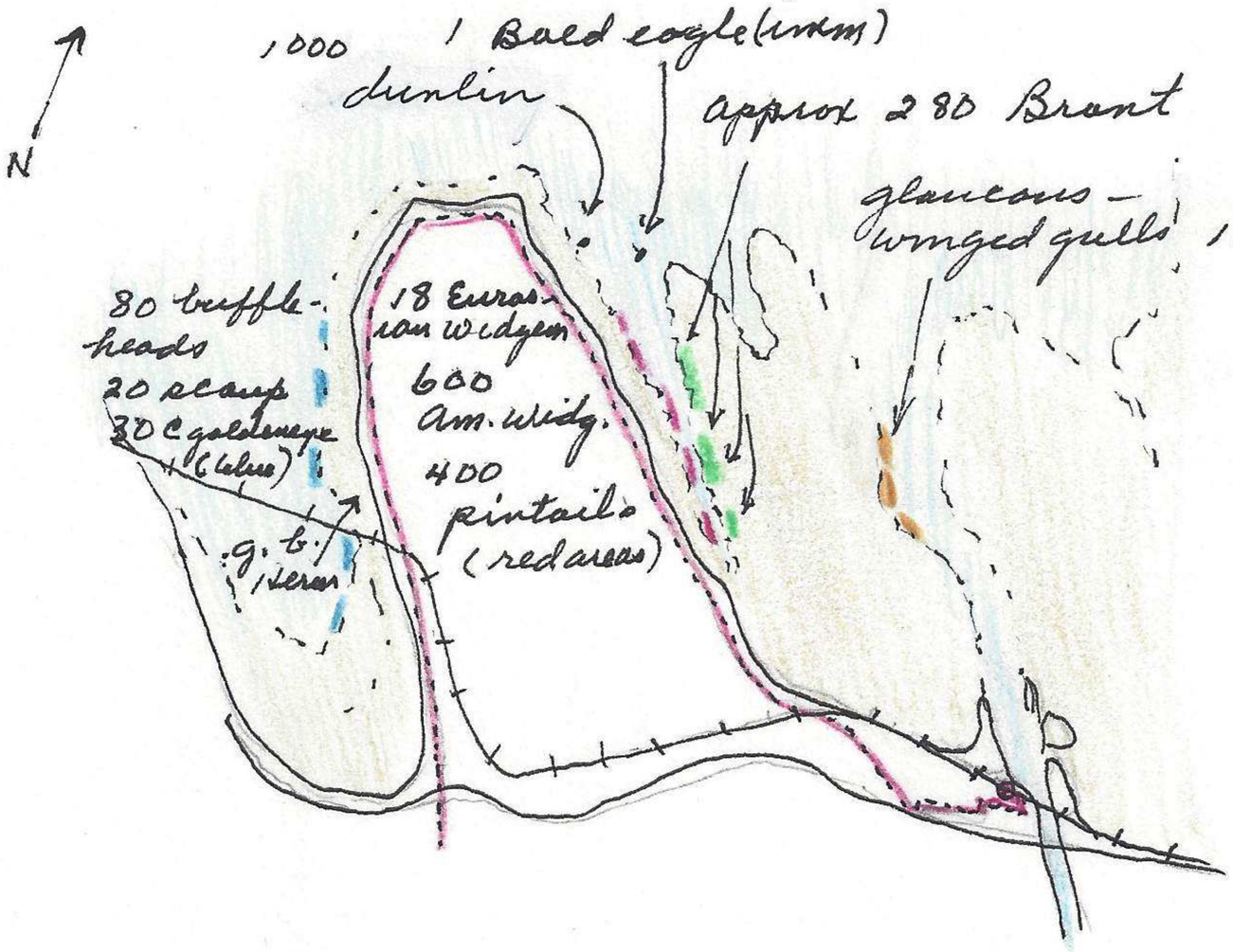
Two red-breasted mergansers ♂♀ swam together for 120'. The male with partly expanded tail and 40° angle, head feathers extended; the female with upright tail 45° angle, neck curved or angled forward with bill touching water.

The female would swim the the male and the male would then swim behind the female. This close association and consecutive swimming pattern continued the full 20' of observation. There were no other head gyrations or body movement given when 2 or more ♂'s are preforming before a female. The female attempted to place herself in front of the ♂.



This afternoon drove to mouth Swinomish Channel (N end) on west side, thence W along S edge Padilla Bay, thence N on west side of Padilla Bay to N end peninsula (oil plants peninsula), thence S to highway 20. There were many more birds in area but were generally dispersed.

Great blue heron evenly distributed around edge of peninsula every 1/4 mile or less.

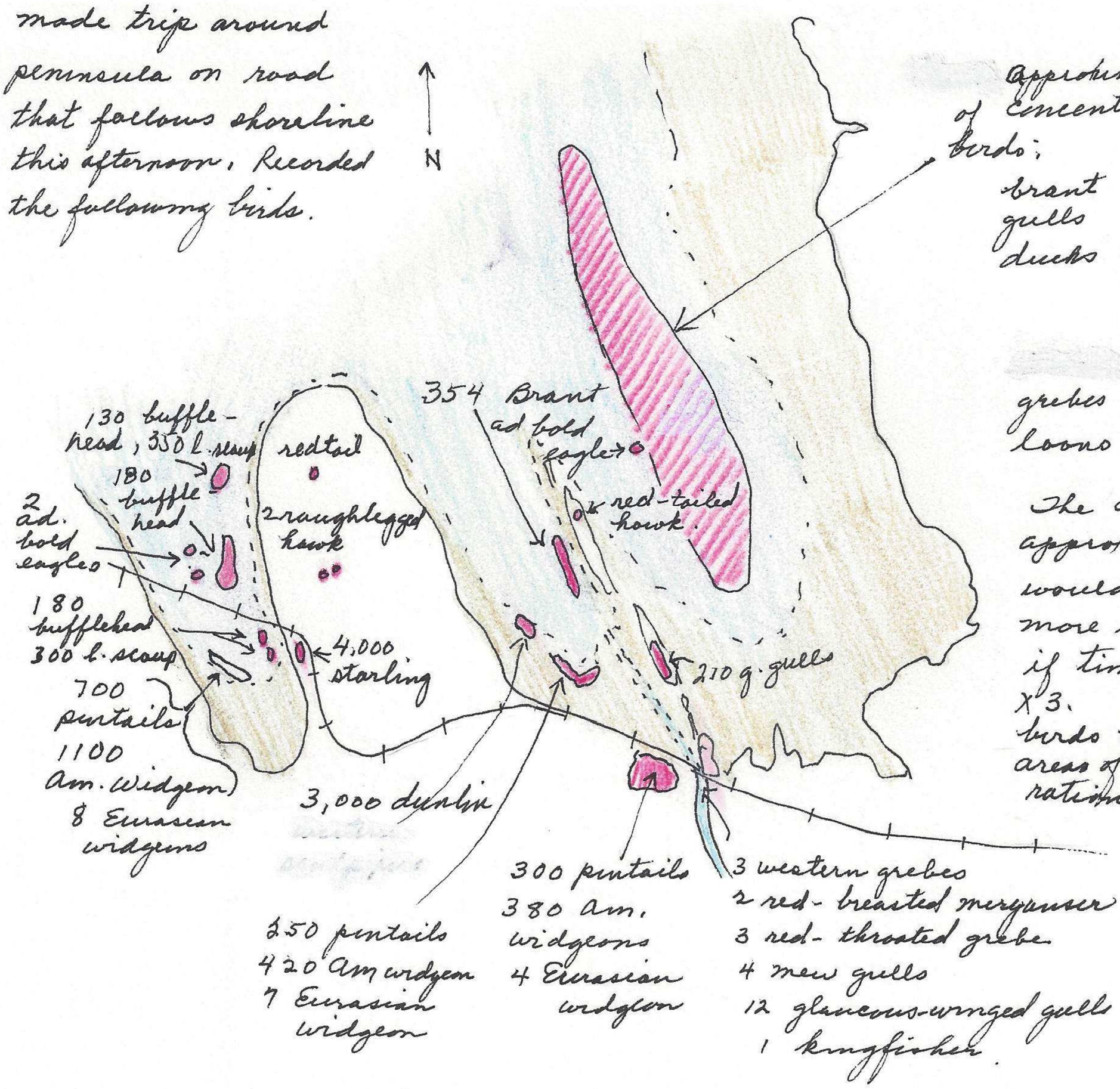


Observed two instances of raptore predation, one an immature bald eagle was perched on top a piling (for at least 20 minutes) when a group of approx. 1000 dunlin alighted on edge of mudflats some 150' from the eagle which left perch and flew straight toward flock making abrupt movements when near contact with dunlin. The second encounter was a pigeon hawk (merlin) which was flying down beach and darted down into a group of approx 200 dunlin. The pursuit was not aggressive but seemed only to harass the dunlin.

Feb. 15, 1986

Temp. 8:00 A.M. 32° F. Snowed last night to approx 1/2". no wind.

made trip around peninsula on road that follows shoreline this afternoon. Recorded the following birds.



Approximation of Concentrated birds:

brant	5,000
gulls	3000
ducks	bufflehead, scaup, pintail, others 15,000
grebes	400
loons	200

The above approximations would be more realistic if timed by x 3. Other birds beyond the areas of concentrations.

At Anacortes (Guemas ferry terminal) observed the following birds:

30♂ 7♀ buffleheads
2 red-necked grebes
6 horned grebe
3 western grebe
5 scaup, lesser?
8 American Crow
2 red-breasted merganser
1 double-crested cormorant
4 mew gulls
1 belted Kingfisher

Observed a glaucous-winged gull dive straight down 10' into and completely submerged in the water. It resurfaced in 2 seconds and had a live crab in its bill.

Earlier this morning noted that the rufous-sided towhee, dark-eyed juneo and song sparrow alight on the edge of the feeding table and inspect the ground surface before feeding. They also frequently stand erect and check surroundings. The purple

finch on the other hand moves right into the middle of the table and remains crouched while feeding. The finch is the last bird to leave the table when the other species leave by disturbing noises. most of the times they remain on the table until the other species return. The finch spaces itself seldom closer than 1 foot distance. whereas the finch can almost touch each other. One ♀ finch remained in area (feeder) all morning and no other finch present during that time.

A Steller's jay passed thru area and first one observed since arrival at La Conner Preserve.

For calculations of tidal formulae:

$+4-(-2) = +4+2=6$

$+4+(-2) = +4-2=2$

$+2+(-4) = +2-4=2$

$+4\times(-5) = -20$

$-4\times(-5) = +20$

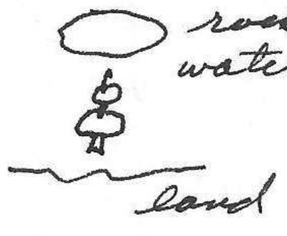
Feb. 16, 1986

Snow. Temp 37°F at 8:00 A.M. Wind from W.

made trip around peninsula as of Feb 14 and not much change in bird population except increase in dunlin.

Feb. 17, 1986

A great blue heron was at fishing alert on N side of "Hemlock" about 1 foot from rock and facing rock when a belted kingfisher alighted from the S on top of rock about 11½ feet from head of heron. The great blue heron immediately reacted by spreading wings and almost crouched in the water. I have observed many instances where great blue heron have been fishing on landward side of rock



They turn head first about 10° to right, then 10° to left as they single eye focus on fish flesh in water below.

8 black oystercatchers alighted on beach at camp (site 164). They all fed on limpets from rocks. They vigorously poked foot of limpet and then pried the foot from the shell.

12 black turnstones fed on barnacles on rocks above tidal waters. while feeding, one turnstone would be replaced by another by being hunted away from the barnacle it was feeding on. The hunt was by head or entire side of body

as many as four displacement occurred before barnacle was finally extracted. On only a few occasions would one turnstone challenge another and then only by open bill. There seemed to be a general respect for this behaviorism without dominance expressed.

The Douglas fir tree on Linc Tree Point is 276 1/2 inches from base of S side of trunk to erosional edge to S. Will measure 10 years frm now and see what the rate of erosion has been.

La Conner Preserve, Thousand Trails, Skagit Co., Washington.
Feb. 18, 1986

Snow to 1 1/2 inches last night up to 10:00 A.M today.

at 10:30 A.M photo. 860218-1 of snow covered bushes with Glacier Rock and Glacier Bay to E.

The purple finch generally displaces finches but one had a long standoff with a dark-eyed junco

at 1:00 P.M, 19 and 3 of purple finches, 4 dark-eyed juncos, 2 rufous-sided towhees, 2 song sparrows on feeder (picnic table top) at one time.

A red-breasted merganser swam 100' in a straight line with head under wing as if sleeping.

Black oystercatchers scratch bill with hind foot placed over (top) of wing instead of underwing.

A glaucous-winged gull pirated a large fish from double-crested cormorant and carried it 400 feet to shore. Almost before the gull could readjust the fish a great blue heron, which anticipated it arrival, flew 100' to the gull and immediately took the fish without little protest from the surprised gull. The heron spread its wing close to body and arched head and neck and carried the fish to water some 50' away where it continued to assume its protective stance for at least 3 minutes. It then placed the fish in the water a immediately speared the top of the head of the fish with a forceful thrust of the bill. The penetration was at times almost thru the head as sometimes it had to shake its head to retract the bill. This continued for at least 6 minutes, always the top of the fishes head as the target. Finally it tried to swallow the fish. It would hold the front end of fish in its mouth for up to 60 seconds without movement as if the heron was relaxing its muscles

for wider gape. Between attempts at swallowing the fish it would spear the head as if softening the rigid head structure. It finally swallowed the fish, dipped its bill into water several times and then rubbed its bill against a rock. The fish, when initially engaged in the heron mouth (to pelvic fins of fish), measured twice the length of the bill.

Two American widgeon swam by with snow on their backs.

8 brant flew by.

Feb. 19, 1986

Temp. 20° F. at 7:30 A.M. Skies Clear. Took the follows photos of snow. Taken between 10:00 A.M and 11:00 A.M.

.860219-1 Snow covered drift stump on beach of Lone Tree Point.

.860219-2 SW part Lone Tree Point at moraine contact.

.860219-3 NW part " " " . Hope Island in background.

.860219-4 Douglas fir tree on Lone Tree Point.

.860219-5 " " " " " " "

.860219-6 N side Lone Tree Point from mainland. Indian house.

.860219-7 " " " " " " " "

.860219-8 E side bay E of Lone Tree Point. This bay of salt water was frozen at a higher tide level and ice dropped down upon shoreline as tide receded. Sand bar in front covered with ice film.

.860219-9 ibid.

.860219-10 ibid

.860219-11 SE corner lodge

.860219-12 From Glacier Bay to W. Barth in site 164.

.860219-13 Barth at sete 164 at edge of drop down to beach below.

.860219-14 Glacier Rock in Glacier Bay.

Varied thrush at feeder at 10:30 A.M. First one observed at La Conners Preserve Observed first by Annette.

Dark-eyed juncos generally do not feed closer the 1 foot from each others but will feed closer to other species.

Feb. 20, 1986

8:00 A.M. temp 32° F Wind developed from SE shortly after 8:00 and then blew all day.

16 black oyster catchers fed on barnacles on rocks. One instance of 5 birds displaced from one particular barnacle.

860221-40

La Conner's Preserve, Thousand Trails, Skagit Co., Washington
Feb 21, 1986

Left La Conners Preserve for Lopez Island. at Anacortes ferry terminal noted 5 pelagic cormorant. near Leo Reef took photo 860221 of 1 adult house on Humphrey Head. Beyond were 8 pelagic cormorant on water. at Lopez terminal 3 pelagic cormorant on piling. A small gulllike bird on piling and about size of black-footed kittiwake. It was not a Bonaparte gull.

At Odlin County Park noted an adult bald eagle on tree. Enroute to Spencer Spit State Park 1 mi. W noted 23 rabinos on one grasp. At Spencer Spit were 3 immature bald eagles perching just to W of spit. At convergence of Center and Hummel Lake roads 2 adult bald eagles. At Lopez Village one adult bald eagle. At Humphrey Head at Strandberg home 3 immature & 1 adult bald eagle flew by at not over 30' away (twice) Mrs. Joyce Fralic (neighbor to N) said that 3 eagles had been perching in trees just E of her home. She also said she feeds 16 gray squirrels and 2 raccoon. Deer eat her roses and other plants.

Hummel Lake frozen except west side (1/10 of lake). 8 bufflehead here. marsh N of lake frozen.

Lake SW of Scraft Bay completly frozen.

At E end Spencer Spit 150 mew gulls and 8 glaucous-winged gulls. There was separation of species.

At first turn of road to W (Stanley Road) at old school house a red-tailed hawk glided down to a microtus, captured it and flew away; all within 20' of our vehicle.

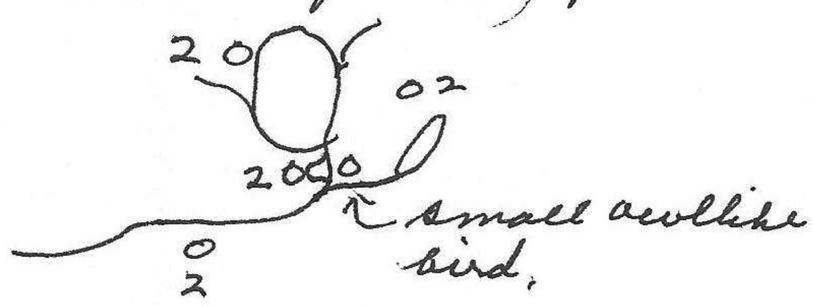
Spencer Spit State Park, Lopez Island, San Juan Co., Washington
Feb. 22, 1986

Temp. 34° F. Rain all night and up to at least 10:45 P.M., A.M.
Checked birds on Spencer Spit at 8:00-10:00

American crow	8	American widgeon	42
black turnstone	9	Eurasian widgeon	1
glaucous-winged gull	39	hooded merganser	8
mew gull	42	bufflehead	46
sanderling	13	belted Kingfisher	1
bald eagle	2 ad.		
great blue heron	1		
pintail	13		

after dark
Returned 1 to Spencer Spit State Park from Lopez Village and counted 4 domestic rabbits (via Hummel Road, Stanley Rd thence Spencer spit.

at State Park (Spencer) observed (after dark) 8 mule deer (black-tailed deer subspecies).



Spencer State Park, Lopez Island, San Juan Co., Washington.
Feb. 23, 1986

(see map of itinerary next page). Enroute noted 6 distinct flocks of American crows of 36-18-52-15-28-62 individuals. These groups were in open pasture fields.

American robins were observed in nearly all pasture fields in small groups averaging 8 birds (3-36).

Two red-tailed hawks perched in trees. One glided down from perch for 200' and fumbled over the top of a wire fence to capture a microtus below. Another glided from perch to capture a microtus and in passing over utility lines hit the wire with one tip of wing.

6 bold eagles were noted
1 ad in top tree
1 imm flying over bay at Fishermans bay.
2 ads in trees along coast of Sperry Peninsula
1 imm in top of tree.

Hughes Bay unique with high cliffs facing sound, with Colville and Castle islands to SE.

Feb. 24, 1986

Checked Spencer Spit this A.M (9:00-10:00 AM). Temp. 50°F

31 Mew gulls
15 Glaucous-winged gulls. Several drank salt water.
48 bufflehead (50-50 sex ratio)
8 lesser scaup
1 great blue heron
2 hooded mergansers
2 adult bold eagles
2 song sparrows.

Noted live angleworm in trail.

860223-48

insert
Feb 23, 1986

LOPEZ ISLAND

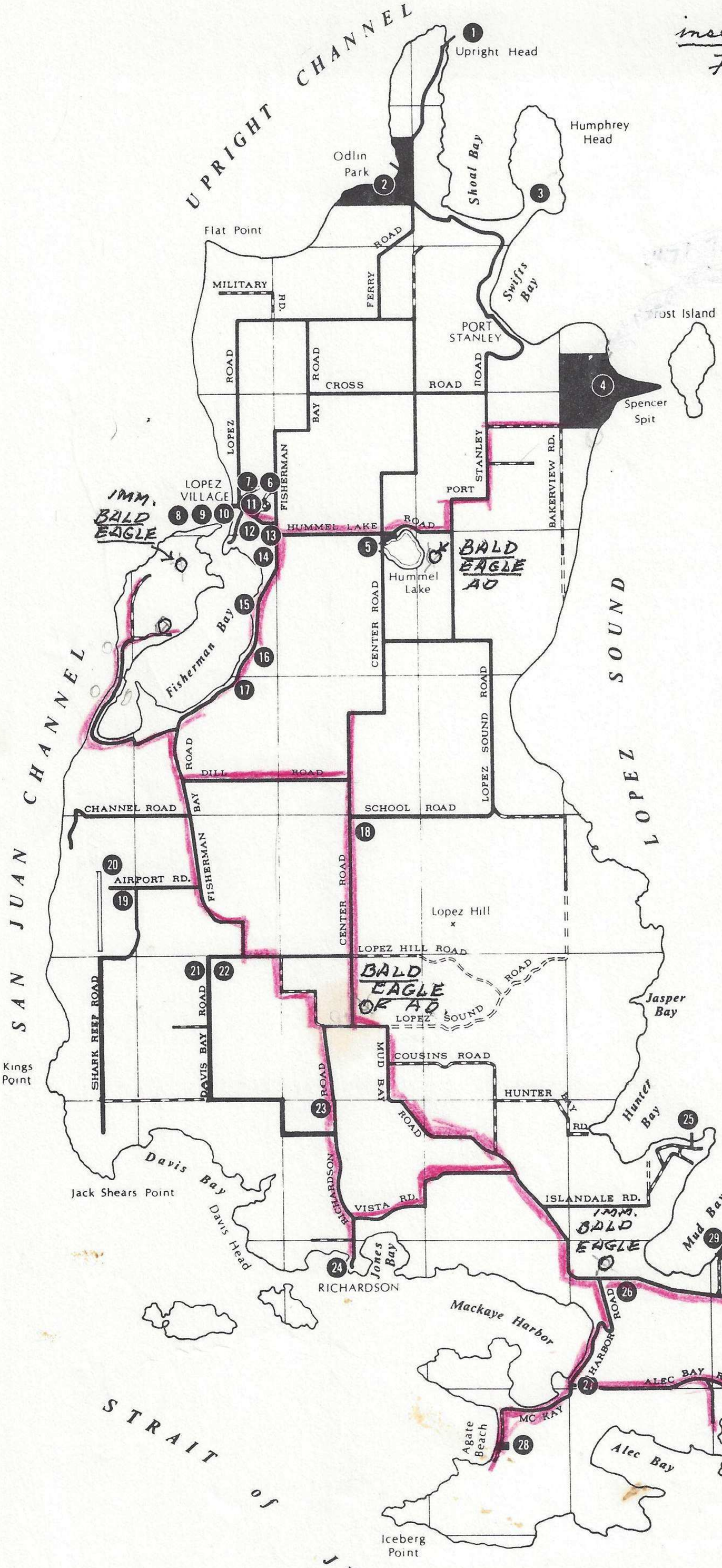
SAN JUAN COUNTY WASHINGTON

0 ½ 1 2
MILES

Island House REALTORS

468 - 3366

1. Ferry Landing
2. Odlin Park
3. Episcopal Church
4. Spencer Spit Park
5. Hummel Lake Access
6. Clinic
7. Bank
8. Museum
9. Post Office
10. Lopez Village Market
11. Island House
12. Community Church
13. Fire Station
14. Lopez Garage
15. Islander Lopez
16. Liquor Store
17. Galley Restaurant
18. School
19. Golf Club
20. Airport
21. Center Church
22. Cemetery
23. Grange Hall
24. Richardson Store
25. County Dock
26. Islandale Service
27. McKay Harbor Inn
28. Agate Beach Park
29. Mud Bay Park
30. Camp Nor'wester



860223-49

In afternoon waves high (50 waves in 2'24"), 52 Glaucous-winged and 35 mew gulls road wave swells to top and before cresting would lift up over crest and reenter slope near top and glide down and up next oncoming wave. They seemed to be riding for pleasure rather than for feeding. Rain started at 5:00 P.M

At Lopez Village noted 5 dark-eyed juncos, and 5 white-crowned sparrows. Returned to Spencer Spit after dark. no robbets but in park 5 mule deer (black-tailed)

Earlier in day noted 4 gadwall ducks, 13 mallards, 4 buffleheads and 4 hooded mergansers in Swift Lake.

Lopez Island, San Juan Co., Washington
Feb. 25, 1986

at 8:00 Am 44°F. Left Lopez Island. Took 5 photos of Humphrey Head.

Photo 860225-1 Our house from ferry as we moved S near Leo Reef.
" 860225-2 " " " " " " " " " " " "
" 860225-3
" 860225-4
" 860225-5
Photo 860225-6 Edge of Willow Island.
" 860225-7 S End of Lopez Island with Olympics in background.

Arrived at Anacortes and at. Fidalgo Bay. NW corner S of R.R causeway noted 1113 red-breasted mergansers fishing feverishly with approx 30 glaucous-winged gulls pirating the mergansers. There was such a high tempered action that Gulls were actually contacting any merganser head & back regardless of whether the merganser had a fish or not. The whole behaviorism appeared uncontrollable

Continued to Lost Lake with short stop at Thousand Trails Preserve. 30 minutes from Everett to Lost Lake via S-405 and 522. 4 hours from Lopez Island to Lost Lake. En route to Chris' (1 mi E of La Conner observed 2 tundra swans flying over highway.

21231 E Lost Lake Rd, Snohomish, Snohomish Co., Washington
Feb 26, 1986

With Chris and Steve. James R, Annette & I drove to Stevens Pass. Jay skied all afternoon to test new equipment. Took Barrier Route to top of ridge to W and made 10 photos of alpine scenery

Photo 860226-1 From Stevens Pass. First ski run to E. Jay tried several times
" 860226-2 Lower slope of above ski run. Jay on a traverse.
" 860226-3 From top Barrier Route run. Mt. to N across valley

860226-50

[Insert

NO. 1
TAUJA PLICATA (52 YEARS OLD)

(CUT) 1985

BARK — 27 — 28 — 29 — 30 — 31 — 32 — 33 — 34 — 35 — 36 — 37 — 38 — 39 — 40 — 41 — 42 — 43 — 44 — 45 — 46 — 47 — 48 — 49 — 50 — 51 — 52 — 53 — CENTER

1958 ← 29
1940 ← 47
1934 ← 53

ANNULATION (ACTUAL SIZE)

1977

1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 20 — 21 — 22 — 23 — 24 — 25 — 26

NO. 2
TAUJA PLICATA (43)

BARK — 25 — 26 — 27 — 28 — 29 — 30 — 31 — 32 — 33 — 34 — 35 — 34 — 37 — 38 — 39 — 40 — 41 — 42 — 43 — 44 — 45 — 46 — 47 — 48 — 49 — 50 — 51 — 52 — 53 — CENTER

1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 20 — 21 — 22 — 23 — 24

NO 3
TAUJA PLICATA (50)

BARK — 36 — 37 — 38 — 39 — 40 — 41 — 42 — 43 — 44 — 45 — 46 — 47 — 48 — 49 — 50 — 51 — CENTER

1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 20 — 21 — 22 — 23 — 24 — 25 — 26 — 27 — 28 — 29 — 30 — 31 — 32 — 33 — 34 — 35

NO 4
DECIDUOUS TREE (Sp.) (45)

(CUT) 1983

BARK — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 20 — 21 — 22 — 23 — 24 — 25 — 26 — 27 — 28 — 29 — 30 — 31 — 32 — 33 — 34 — 35 — 36 — 37 — 38 — 39 — 40 — 41 — 42 — 43 — 44 — 45 — 46 — CENTER

1975

FROM PROPERTY CHRIS BEE - STEVE KENAGY
21231 E LOST LAKE RD, SNOHOMISH, WASH.

- Photo 860226-4 From top Barrier ski slope, Stevens Pass. To N.
- " 860226-5 " " " " " " To NW,
- " 860226-6 " " " " " " To N.
- " 860226-7 " " " " " " To NW note dis. lodged plate.
- " 860226-8 James R. Bee top Barrier ski slope to second station. We had all new ski equipment for this trip.

Gray jay common and confiding.
See ~~next~~ previous page for tree ageing on property of Chris + Steve at Lost Lake.

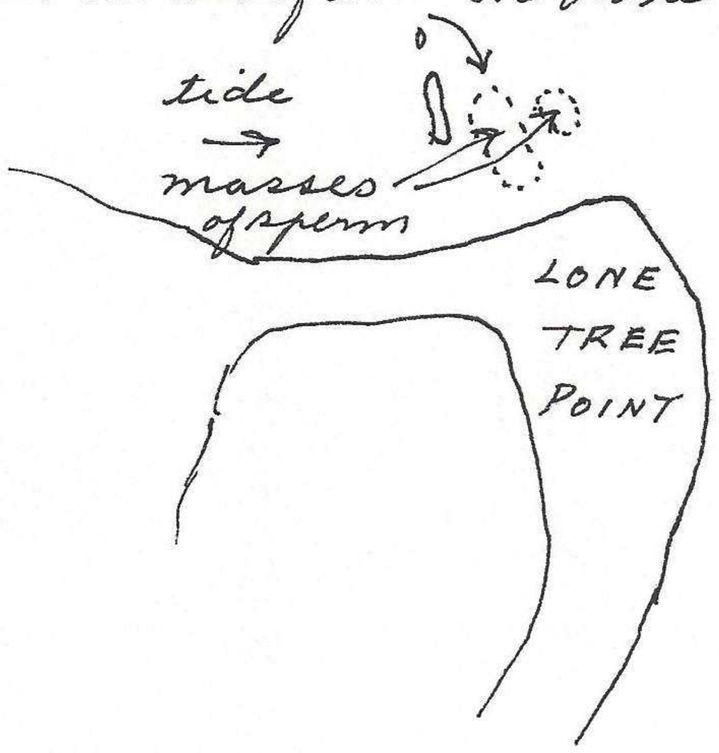
Feb 27, 1986

Left Chris and Steves in P.M. for Thousand Trails Preserve (La Conner). 186 Canada geese NE of Everett.

La Conner Thousand Trails Preserve, Skagit Co; Washington

Feb. 28, 1986

Met a mr. Bobb, an Indian of the area. He deep fishes in area of Lopez and San Juan de Fuca Straits. He pointed out an area of white surface on Lone Tree Point area. This white area represents sperm from the herring fish which enters sound area from the ocean to spawn and then returns to sea. The females lay their eggs on kelp and other submergent grasses where the eggs are fertilized by this mass of milky discharge from the males. They have never caught herring in these waters but only on the ocean. He believes this is one of the first documented sights of this occurrence of inland breeding of the herring. Mr. Bobb was on the council that decided the application of permit to establish Thousand Trail Preserve on this Indian Reservation. He also said that the killer whale will approach a net (filamentous) and turn away from it. Other sea mammals will not recognize the net. The black gravel placed over tidal ridge corridor to Lone Tree Point is being covered (E end) by beach gravels moving in from SE. Mr. Bobb said there were no burials on the Lone Tree Island.



860228-52

Left Anacortes via ferry for Lopez Island. Usual birds including definite identification of the greater scaup. while at Lopez (ferry) recorded periods of submergence of the pigeon guillemots: 1'12", 1'4", 1'9", 1'13", 1'14", & remained on top at 2'27"

Continued to Odlin County Park on Lopez Island for night. From camp at edge of large Douglas fir (just S of boat put-in), observed 16♀ and 4♂ greater scaup. Some of the drank salt water. They came to shore area from middle of channel and fed in close formation in one area and then would swim to another area along near shore (150') without feeding along the way.

Eight bufflehead fed 100 or so feet from shore, generally in pairs.

- Photo 860228-1 sunset from camp.
- Photo 860228-2 " " "
- Photo 860228-3 greater scaup in foreground at 5:51 P.M. Sunset.

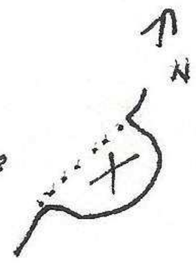
At 6:20 P.M 24 bufflehead in one group out from camp.

Odlin County Park, Lopez Island, San Juan Co., Washington
March 1, 1986

Temp 40°F, foggy. 8:00 A.M 6 crows near camp. 8:50 12 crows (American) at camp. Visibility 1/3 mi.

One group of 12♀ and 6♂ bufflehead.

Census of birds in bay from outer limits to shoreline



3 red-throated loons
4 horned grebes
2 common goldeneye
2 glaucous-winged gulls
1 surf scoter (♀ fed 10'-20' from shore, alone, for 3 hours. Then swam to center of channel)
1 song sparrow
1 belted-kingfisher
1 great blue heron
1 greater scaup

This afternoon arranged with Joyce Fralic for renting of Strandberg home on Humphrey Head on Lopez Island.

Carol Strandberg
1420 18th Ave.
Anacortes, Wa. 98221
293-9460

Nels Strandberg
Everett, Wa.
353-6728 282-1609

7 allowing maps with new names for distribution of plants & fauna

860301-53

ROUND PEAK

BALD BLUFF PEAK

BALD BLUFF FAULT

BALD BLUFF

NORTH THATCHER PEAK

SOUTH THATCHER PEAK

ISLAND
UPRIGHT CHANNEL
Upright Head
Berry
Pile
Shoal Bay
Humphrey Head
Picnic Cove
Indian Cove
Squaw Bay
Canoe Island
Cable Area
Odlin Park
Flat Pt
Rock
Squaw
Natt
Sunken Rock
Kent
Port Stanley
Swifts Bay
Rocks
Leo Reef
Beacon
Flower I
Piling
Spencer Spit
Freeze
Frost Island
Willow Island
Armitage Island
Rock
Lawson Rock
Thatcher Pass
FERRY
Sunken Rock
Bald
Bald Bluff
Thatcher
Blakely Peak
Horseshoe Lake
BLAKELY ISLAND
Spencer Lake
Lopez
Hummel Lake
Fisherman Bay
Red
Cable Area
Shale
Sylvan Cove
San Elmo
DECATUR ISLAND
Beacon
Rocks
Decatur Head
Pile
Trump Island
Cemetery
School
Decatur
Dolphin
Rocks
LOPEZ SOUND
Rock Point
Small Island
Cable Area
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Dot Rock
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Ram Island
Lopez Pass
Triple
Shark Reef
Cemetery
Old
Avenue
Goose I
Deadman I
Davis Bay
Davis Point
Buck Island
Har
Mummy Rocks
Whale Rocks
Plane
Cattle Point
Richardson
Jones Bay
Doc Channel
Beacon
Long Island
Charles Island
Rocks
Secar Rock
Hall Island
Johns Point
Wind
Gravel Pit
Piles
Mackaye Harbor
Barlow Bay
Outer Bay
Iceberg Island
Iceberg Point
Beacon
Rocks
Aleck Bay
Aleck Rocks
Swirl Island
Hunter Bay
Crab Island
Fortress Island
Skull I
Jon
Wreck
Mud Bay
Pile
Shoal Bight
Kellett Ledge
Cape St Mary
Kellett
Telegraph Bay
Chadwick Hill
448
Watmough Bay
Boulder Island
Watmough Head
Ardle
McArdle Bay
Point Colville
Castle Island
Hughes Bay
Rip
Beacon
SAN JUAN CHANNEL
CHANNEL
Fauntle Point
Beacon
Rocks
Cable Area
Cable Area
Cable Area
Lopez Sch
Cemetery
School
Decatur
Rocks
Spar
White Cliff
Dot Rock
Cent
Center Island
Reads Bay
Decatur Island
Plow
Rip
Beacon
Ram Island
Lopez Pass
Triple
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Wind
Mackaye Harbor
Barlow Bay
Johns Point
Hall Island
Secar Rock
Rocks
Long Island
Charles Island
Beacon
Doc Channel
Richardson
Jones Bay
Mummy Rocks
Whale Rocks
Plane
Cattle Point
Davis Bay
Davis Point
Buck Island
Har
Goose I
Deadman I
Avenue
Old
Cemetery
Shark Reef
Outer Bay
Iceberg Island
Iceberg Point
Beacon
Aleck Bay
Aleck Rocks
Swirl Island
Rocks
Hughes Bay
Ardle
McArdle Bay
Point Colville
Castle Island
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Mud Bay
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Fisherman Bay
Lopez
Hummel Lake
Dolphin
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Fin
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Cable Area
Sylvan Cove
Shale
San Elmo
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448
Watmough Bay
Boulder Island
Watmough Head
Ardle
McArdle Bay
Point Colville
Castle Island
Hughes Bay
Rip
Beacon
SAN JUAN CHANNEL
CHANNEL

PRESIDENT CHANNEL

Pt Doughty
North Beach
Pillar
Pt Thompson
Sunken Rocks
Terrill Beach
Rock
Buckhorn Lodge
Camp Orkila
Cemetery
Freeman Island
Buck Mtn
1472
Raccoon Pt
East Sound
Double Hill
Crescent Beach
Paso
Day Lake
Beach Haven
Rocks
Lookout Mtn
VABM 690
Tongue Point
Ship Bay
Fishing Bay
West Beach
Judd Cove
Juniper
Turn Lakes
Mount Constitution
2409
Lookout
Pickett
Slant
Cemetery
Thistle
Hidden Ridge
Cold Spring
MORAN
STATE PARK
Mt Pickett
1765
False Summit
Mountain Lake
Rocks
Quarry
Orcas Knob
1026
Rosario Hill
906
Park Headquarters
Cascade Lake
Rosario
Cascade Creek
Cascade Falls
Barnes Island
Rocks
Ship Peak
House
BM 39
Rosario Point
Precipice
Cascade Bay
Doebay
Cemetery
Doe Bay
Doe Island
Skull Island
Massacre Bay
West Sound
Harbor Rock
Haida Pt
Sheep I
Indian Pt
White Beach Bay
Mt Woolard
1200
Dolphin Bay
Twist
Entrance Mtn
Lard
Olga
Cemetery
Deer Harbor
Victim Island
Diamond Hill
1002
Range
Olga
Twin Rocks
Cable Area
Buck Bay
Buck
Sunken Rock
Oak Island
Double Island
Killebrew Lake
White Beach
Brown Rock
Deer Point
Deer Harbor
Pole Pass
Beacon
Caldwell Point
Rag
Orcas
Mond
Diamond Pt
Cairn 2
Pass
Lydia Shoal

860301-54

860301 - 55

BEE ESTATE

295'

225'

185'

N

GATE CEDAR N.

HOG BACK

WILD ROSE PATCH

DRIVE WAY

UPPER PARKING LOT

LOWER PARKING LOT

DEAD FIR

GATE CEDAR SOUTH

WEST FOREST

SANDY SOIL

DOUBLE FIR

HOUSE TRAIL

OUTCROP FOREST

DEER TRAIL SLOPE

[DEER TRAILS]

BENCH FOREST

WINDY SLOPE

ROCKY SHORELINE

YELLOW RIDGE OTTER COVE

DEER RECLUSE

DEER POINT

BOUNDARY POINT

HOLLOW CEDAR

GROTTO RIDGE

CLIFF MEADOW RIDGE

DOUBLE FIR SWALE

GLACIATED KNOLLS

CLIFF MEADOW

BEE HOUSE

KEYSTONE GROTTO

TIDE POINT (ARROW POINT ROCK)

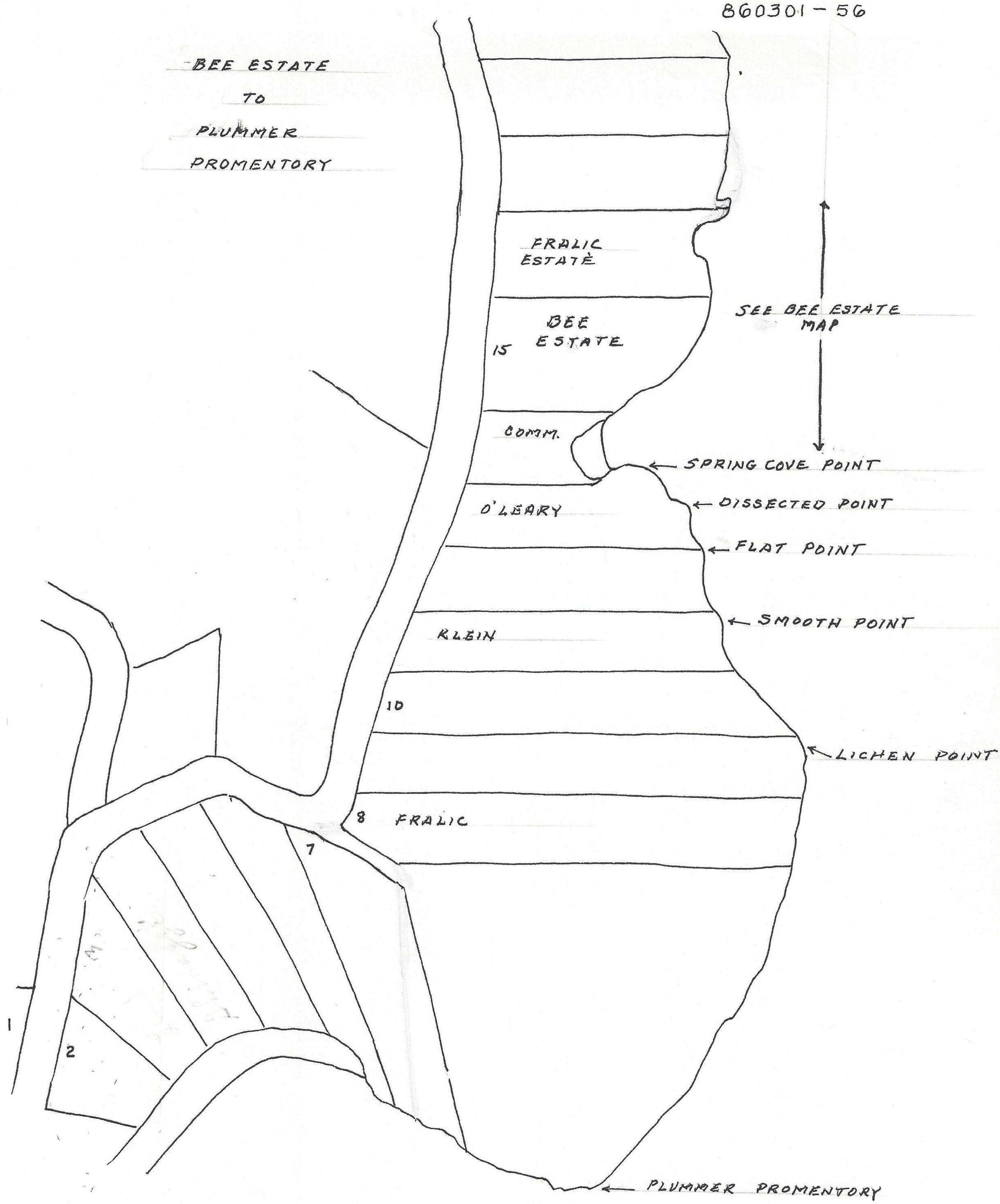
HORIZONTAL TRAIL

SPRING COVE MASSIF

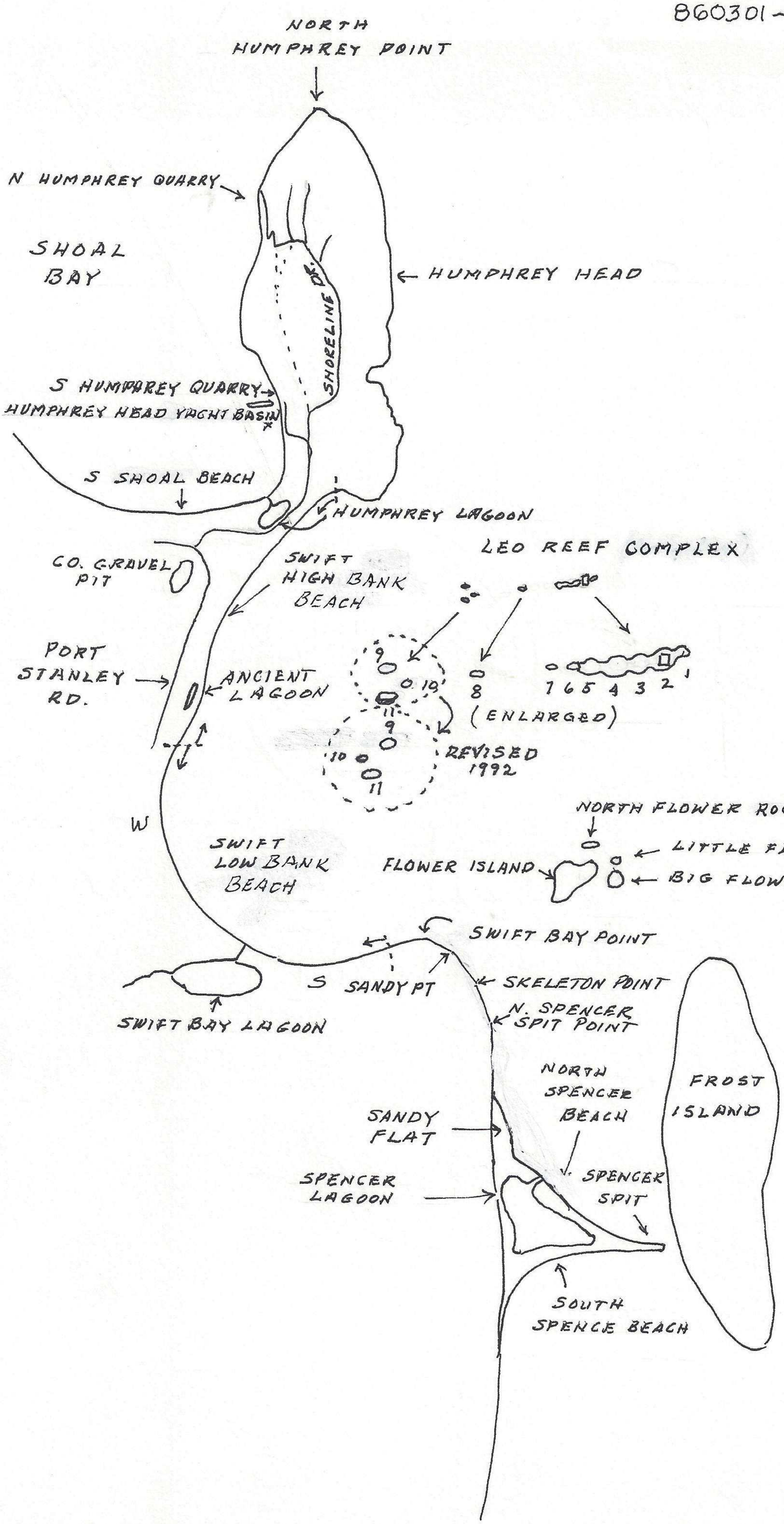
SPRING COVE

MONARCH FIR

860301 - 56


BEE ESTATE
TO
PLUMMER
PROMENTORY
FRALIC ESTATE
BEE ESTATE
15
SEE BEE ESTATE MAP
COMM.
SPRING COVE POINT
O'LEARY
DISSECTED POINT
FLAT POINT
KLEIN
SMOOTH POINT
10
LICHEN POINT
8 FRALIC
7
1
2
PLUMMER PROMENTORY

860301 - 57


NORTH HUMPHREY POINT
N HUMPHREY QUARRY
SHOAL BAY
HUMPHREY HEAD
SHORELINE DR.
S HUMPHREY QUARRY
HUMPHREY HEAD YACHT BASIN
S SHOAL BEACH
HUMPHREY LAGOON
LEO REEF COMPLEX
CO. GRAVEL PIT
SWIFT HIGH BANK BEACH
PORT STANLEY RD.
ANCIENT LAGOON
9
10
11
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(ENLARGED)
REVISED 1992
W
NORTH FLOWER ROCK
LITTLE FLOWER ROCK
FLOWER ISLAND
BIG FLOWER ROCK
SWIFT LOW BANK BEACH
SWIFT BAY POINT
S
SANDY PT
SKELETON POINT
N. SPENCER SPIT POINT
SWIFT BAY LAGOON
NORTH SPENCER BEACH
FROST ISLAND
SANDY FLAT
SPENCER LAGOON
SPENCER SPIT
SOUTH SPENCE BEACH

BG0301-58

Arrow Point Rock (Bee Estate)

Localities of the Humphrey Head area:

Bald Bluff, Blakely
Bald Bluff Fault, Blakely
Bee Estate Peak, Blakely
Bee House
Bench Forest
Blakely Peak, Blakely
Big Flower Rock
Boundary Point
Cliff meadow
Cliff meadow Ridge
County Gravel Pit
Dead Fir
Deer Point
Deer Recluse
Deer Trail Slope
Dissected Point
Double Fir
Double Fir Swale
Driveway
Fisherman Bay Causeway
SW Fisherman Bay Lagoon
Flat Point
Flower Island
Fralic Estate
Frost Island
Gate Cedar North
Gate Cedar South
Glaciated Knolls
Grotto Ridge
Hogback (Bee Estate)
Hollow Cedar
Horizontal Trail (Bee Estate.
Humphrey Lagoon
Humphrey Head
Humphrey Head Yacht Basin
Keystone Grotto
Leo Reef (all of the Leos)
Leo Reef - Rock number 1-11
Leo Reef 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Lichen Point
Little Flower Rock
Lower Parking Lot
North Flower Rock
Humphrey Point
nineteen sixteen School House (1916)
North Humphrey Quarry
North Lopez Island
N. THATCHER PEAK, BLAKELY
North Spencer Beach
Otter Cove
Outcrop Forest
Plummers Promentory
Port Stanley Road
Rocky Shoreline
Round Peak, Blakely
Sandy Soil
San Elmo, Decatur
Shoal Bay

860301-59

Smooth Point
South Humphrey Quarry
South Lopez Island.
South Shabl Beach

South Spencer Beach

Spencer Lagoon

Spencer Spit

Spring Cove

Spring Cove Massif

Spring Cove Point

Swift Bay
Swift Bay Point
Swift High Bank ~~Beach~~

Swift Low Bank ~~Beach~~

Swift Lagoon
Sylvan Cove, Beakely
Thatcher, Beakely

Tide Point ~~upper Parking Lot.~~ Traverse Trail

West Forest

Wild Rose Patch
Willow Island, Beakely
Windy Slope

Yellow Ridge

HUMPHREY HEAD 860301-60

3362
BEE HOUSE

← SPRING COVE

cascade microfilm systems, inc.
208 JAMES ST. • SEATTLE, WASHINGTON 98104 •

Scale 1"=100'

North

Govt Lot 10

Govt Lot 11

R2WWM
R1WWM

TRACT A
PLUMMER

Govt Lot 2

M.C. Found

Spring

Well Site

Southern

Proposed Road

Existing Easement Road

To MC

County Road

Easement Roadway

19-1850980

860302-62

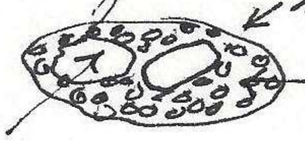
Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

March 2, 1986

Fog lifted 10:00 A.M. Organized house for occupancy.

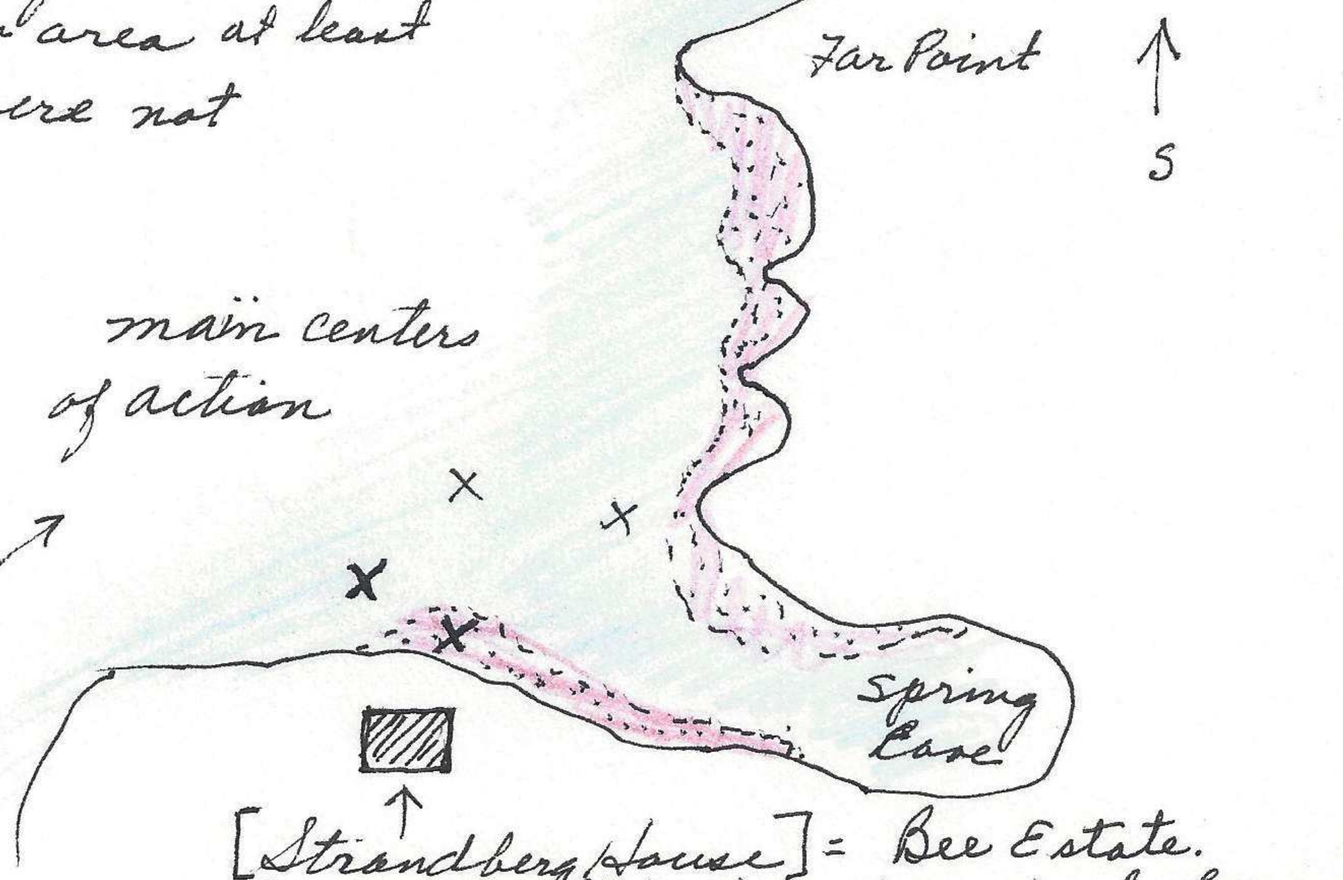
At 5:05 P.M. noted the breeding behavior of a minnow approx. 5-6 inches long, greenish back and reflective silver sides and venter. Body minnowlike, long, slender and forked tail — 1

The main period of action was from 5:05 P.M to 5:35 P.M when there was continuous motion and activity. Areas of approx 10 x 25 feet were boiling with churning fish. Separation was approx 2-3 inches. The fish were turning over at surface, some completely out of water with silver sides reflecting light like a mirrors. My first impression was surface action of a heavy rain downpour. As the fish worked a particular area, bubbles would form with white material or minute bubbles between



my interpretation was that the sperm of the males were organized around the bubbles which the minnows also produced. The currents were southerly but barely moving and as a result the mass finally collected against the east facing shore thus:

These minnows were in area at least the previous day but were not active at the surface.



new gulls attracted to area. 3 or 4 gulls had to pass over and capture fish before the fish would temporarily stop.

near
At sunrise this morning took 2 photos of colors to the E over Blakely Island:

Photo 860302-1
" 860302-2

Birds observed from our house (Strandberg house) on Humphrey Head; (A.M)

6 bald eagles, first one flew by at 7:05 A.M. They pass by at approx. 15-20' and are huge.

8 mew gulls
10 glaucous-winged gulls
1♂ common goldeneye
1♂ ♀ hooded merganser
2 ♀ American mergansers
4 red-throated merganser
18 surf scoters
3 red-necked grebe
1 red-throated loon
6 double-crested cormorant
1 great blue heron
9 dark and 10 light harbor seal on Les Reef.
3 round saucerlike (5") jellyfish.

At Swift Lake observed 3 bufflehead, 7 gadwall, 1 shrike

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington.

March 3, 1986

At 8:40 A.M a double-crested cormorant dove at 35' out from shore below house. It could be seen from my position some 30' above and first descended at about a 45° angle and then like a flash turned course and darted upward at about a 45° angle to capture a "silver-sided" minnow (5" long) and then surface to swallow it. The ascend estimated at 8 feet per second. This is the same area where these "silver-sided" minnows were breeding yesterday 5:05 P.M. Several mew gulls have also concentrated on these waters this A.M.

2 adult bald eagles and 1 immature bald eagle have been perching on dead Douglas fir trees on the Jonet Fralic and John W Saul Jr properties N of here. The same eagle use our area and fly to S around Fitchen Point. When passing by the (our) house they usually fly about 10 feet above tops of tree or house heighth. Occasionally they fly lower to 10 feet below the main floor, so sometimes they fly above or below our observation level. In any case the are within 35-40' when passing and their size is overwhelming.

March 4, 1986

* made ferry trip to Friday Harbor. Enroute observed:

8 double-crested cormorant
6 pelagic cormorant
2 common murre
8 bufflehead
4 pigeon guillemot
1 great blue heron (flying across channel)
18 surf scoter
3 red-throated loon
15 greater scaup.

860305-64

March 5, 1986

3 photos apprx 7:30 AM to E

- 860305-1 sunrise
- 860305-2 sunrise, ferry in fog.

For 5 minutes a dark-eyed junco (Oregon race) held tail fully extended as it moved from branch to branch.

An immature bald eagle travelled from Leo Reef NW to Humphrey Head.

2 red-necked grebe swam by to SW.

First junco to feeder set march 2.

At 1:00 P.M hiked S along cliffs and made photos of:

- 860305-4 From head Spring Cove of our house (to NNE)
- 860305-5 " " " " " " "
- 860305-6 Along shoreline S of Spring Cove (intermediate and
- 860305-7 " " " " " " distant point)
- 860305-8 Point of shoreline S of Spring Cove. Our house to N.
- 860305-9 mosses and lichens on point of shoreline S Spring Cove
- 860305-10 at our house 3362 Humphrey Head showing steep steps to house.

Observed the American merganser (2), rufous-sided towhee (1), song sparrow (2) and robin (2).

Watched 6 mew gulls feeding on the "silver-sided" minnow. They would make one run over feeding fish and if the mew were unsuccessful would continue on, circle out 100' or so and then return at a low slide over the minnows.

Names of people we have met:

Harold and Suzanne Klein. 468-3493, shop 2377.

John W Saul Jr. 468-2623. Neighbor N of Joyce Frolic.

His son is John W Saul III 468-3305 a boater

Steve Dengler. son of Dr. Dengler. Has plane.

Mike Webb, with Orcas Power & Light. Lives just S on Humphrey Head.

Gary Berg. Lopez Auto Freight & storage.

Robert (Buck) Buchanan. Telephone Co installed phone.

Island Airlines 378-5375

Mr. Michelsen (entrance to area from main road.

At 4:00 P.M an adult bald eagle left our area and

Bell and Florence Burke

sailed straight to Leo Reef alighting first on top of marine signal light and loosing footing slapped to plateform below. The 18 harbor seals and 3 glaucous-winged gulls did not react to the eagles arrival. The eagle remained for 12 minutes

March 6, 1986

at 7:20 A.M imm. bald eagle flew N and at 7:35 what appeared to be same individual, flew S.

3 pigeon guillemot in summer plumage in area at 9:00 A.M.

at 1:00 P.M first purple finch at feeder, 4 males 3 females. also one dark-eyed juncos (Oregon race).

March 7, 1986

wind last night from SE which continued most of morning. Waves high on cliffs.

7:15 gulls active

7:30 first bald eagle (imm) circled to N.

During the high wind mew gulls work waves for 1/10 mi and then would flew N with wind to circle back and start all over. Some mew gulls ride swells and crests with wings spread so that the transition over crests of waves was uninterupted. There was also a group of gulls, mainly glaucous-winged gulls that controlled the area from 50' to 200' above water.

At 9:15 2 otter passed observation post along edge of rocks.

9:30 A.M waves lower and occasional sun.

This P.M. went to Lopez Village which measured 4.4 miles along road to Odlin Park, thence Center Road S to first rd W, thence S to Lopez Village.

In evening at the house a great blue heron flew toward rocks below the house but at S side cove it saw me and turned around & flew to Far Point to S.

March 8, 1986

From 3 floor of house first bald eagle (imm.) flew to S past house.

6:05 A.M imm. bald eagle flew N past house.

6:08 first glaucous gull flew S and then average one every 3 minutes (to S).

6:10 imm. eagle flew to S.

6:12 " " " to N.

6:20 bald eagle (ad.) to S

860308-66

6:25 A.m. ad. bald eagle to n.

6:35 A.m. first glaucous-winged gull to n.. 1mm. bald eagle to S.

7:00 sun 3 diameter above ridge Blakely Is.

7:10 11 mew gulls flew n and nat in feeding pattern,

↑his afternoon purchased material for hand rail on steps.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wash.

March 10, 1986

A log in water (6'x12') from at least 8:00 A.M to 10:00 A.m from 6" feet out to contact with shore. It remained in same area +- 10 feet.

11:20 above log moved w 20'. but still along shore.

March 11, 1986

In cattails n of Hummel Lake 5 ♂ red-wing blackbirds on territories. On march 1 only one was present. One individual always observed in same area of cattails, 1 Coot.

At Swift Lake observed 1 shrike (same area for last 4 days; 7 gadwalls,

at marsh SE old school house on Port Stanley Road were 1 marsh hawk, 8 mallards, 6 green-winged teal; 11 pintails, 14 shovellers, 164 american widgeon.

At Hummel Lake were 161 common mergansers at S side of lake, 8 bufflehead general distributed and in pairs,

March 12, 1986

At marsh SE old school house on Stanley Port Road noted 18 mallards, 3 green-winged teal, 18 pintails, 11 shovellers and approx 150 American Idgeons.

March 13, 1986

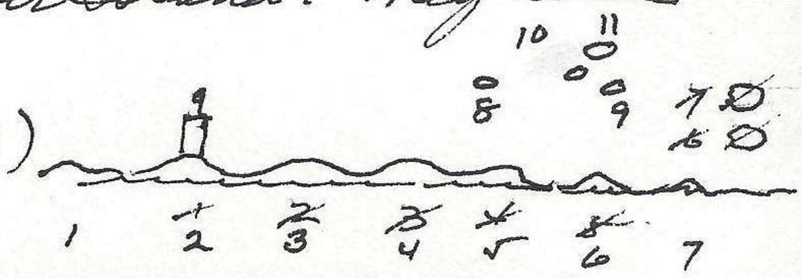
1 mature bald eagle passed Bee Lodge going S at daybreak. Glaucous-winged gull a few minutes (60) after followed by mew gulls approx 1/2 hr. later.

254 surf scoters approx 1/10 mi. SE of Leo Reef.

Adult bald eagle perched on beacon light on Leo Reef from 6:50 A.M to 7:20 A.M.

Counted 153 glaucous-winged gulls on Flower Island. They were generally distributed.

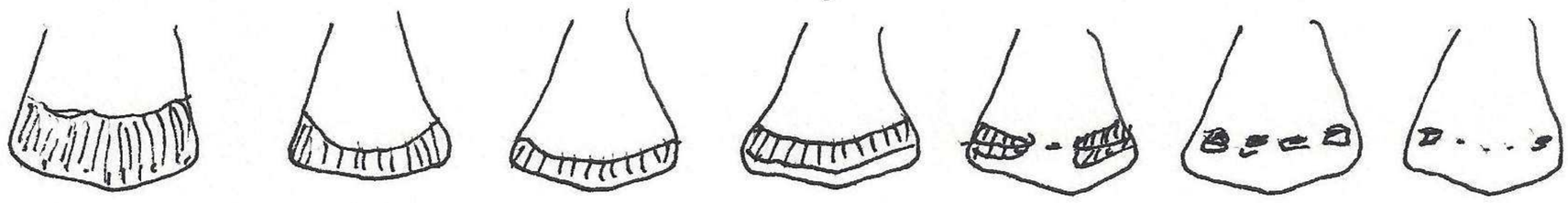
8:10 A.M 2 harbor seals on Leo Reef (No. 3)



1:00 P.M 10♂ and 7♀ purple finch.
4 eastern grey squirrels at porch feeder. bobtail, broken tail, red scapula and normal scapula.

March 14, 1986

Same number of glaucous-winged gulls on Flower Island as observed yesterday, 8:00 A.M.
This A.M 3 adult & 2 imm. bald eagles flew by Bee House.
Observed tail patterns of mew gulls.



Noted a glaucous-winged gull to descend at a 30-40° angle at great speed from approx. 400' to within 20' of water
2 ravens flew high across sound to E, calling.
15 ♂ & 2 ♀ purple finches at porch feeder. When a finch is startled it moves away sideways. Group of finches left 9:20 A.M and returned 9:30 A.M.
On trip to Lopez Village at Swift Bay beach noted:
85 glaucous gulls.
18 mew gulls
2 black oystercatchers
8 buffle heads
4 common goldeneye
3 greater yellowlegs
At Swift Lagoon adjoining bay
3 greater yellowlegs
8 gadwalls.
At Humphrey Lagoon, Humphrey Head noted 8 buffleheads, half males, and one glaucous gull.
measure distance to ferry from Lime 3362 Humphrey Head at 2.3 miles. On ferry to Friday Harbor noted 3 common murres, 4 pigeon guillemots, 13 pelagic cormorants, 15 gulls sp.?, 2 common loons (backs already developing checkerboard pattern.
On return to Lopez Island made trip to Richardson at South End. at Swift Bay noted 18 mew gulls, 1 great blue heron, 19 gulls sp. 4 double-crested cormorants.
At a marsh near Richardson noted:
35 greenwing teal, 10 pintails, 2 mallards.

American Crows distributed in small flocks 9-35 at least in 10 areas of the island traversed.

American robin common in all fields and occurs at an average of one per 200'.

One group 8 ♂ redwings feeding in pasture, others on territories.

Noted one melanistic red-tailed hawk at Emergence Center and Heil roads.

March 15, 1986

Left for Thousand Trails Preserve (La Conners) at camp noted winter wren, adult bold eagle in top of true Lone Tree Point), Bay NW of Lone Tree Point (more birds than previous trips)

120 bufflehead
210 American widgeon
20 pintails
8 gulls.
2 western grebes

21231 E Last Lake Road, Snowkomish Co, Washington

March 16, 1986

Chris & Steve took us to party of Pat Montgomery on Washington Lake (near Kenton) on west side. Brother is Walter and Olivia my is sister. Bob. Bradford a geochemist. at Pat home observed 3 coot, 2 mallards, 1 western grebe

March 16, 1986

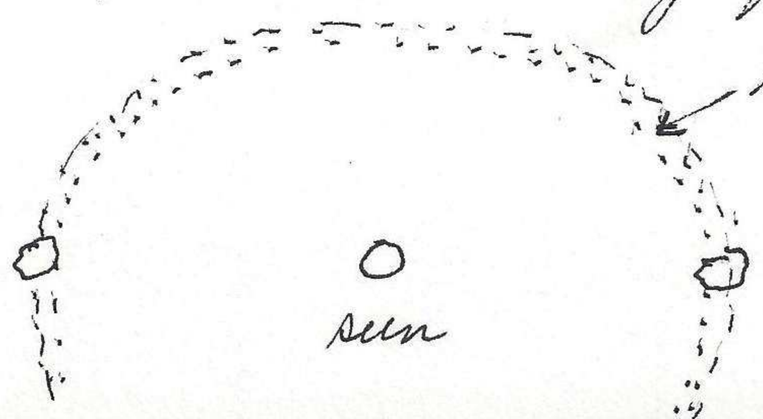
measured water flow in trench for utilities lines, as 150 ml per 5 seconds or 1800 mls per minute or 108,000 mls per hour or 2,592,000 mls per day = 2592 liters per day or 943,488 liters per year.

Checked with Stewart Brune for transport of furniture to Lopez Island. 788-5292 home, 325-2052 shop.

March 19, 1986

Took trailer + Barth to Lopez Island. On ferry from Anacortes noted two sun spots (ice crystals) and then shortly after to a complete ice crystal bow.

This was not associated with rain. Ordinarily only two lateral sun spots are observed but here a complete half-circle.



First glaucous gull 5:36 A.M (arrival census)
" bald eagle 5:57 to S
6:00 A.M sky over Blakely dark maroon to lighter maroon and yellow.
6:02 sky reddish-yellow and more brilliant. wind from ENE.
6:05 sky golden in clouds
6:10 bald eagle flew N
6:15 reds gone now yellow.
6:35 sunrise, high stratus clouds.
8:20 bod-tailed gray squirrel displaced normal-tailed sq.
8:47 first purple finch ♂
8:50 first Oregon (dark-eyed) juncos
8.55 other purple finches arrived.

860320-69

Hummel Lake, Lopez Island, San Juan Co., Washington

March 20, 1986

First n. violet green swallows this year.

←(see opposite page for entry of march 20, 1986)

Bee House, Lopez Island, San Juan Co., Washington

March 20, 1986

Observed first bat, myotis size, fly by window between house and douglas fir trees. It passed 5 times then left. Time dusk.

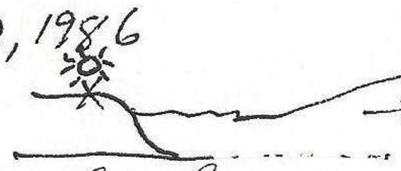
March 21, 1986

Counted 84 glaucous-winged gull perched on top/upper half of Flower Island and generally distributed. There were 76 gulls of the above species on lower half and congregated in one group.

Bald eagle flew by Bee House this A.M.

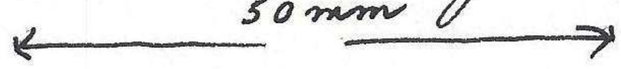
The reddish foliage on inflorescences on Blakely Island (south airpost runnway) is gradually changing to a greenish yellow.

March 22, 1986

Sun up 7:35 A.M. over Blakely 

At 8:00 A.M first robin (2) in tree by house. Also the pine siskin appeared at feeder. Also first golden-crowned kinglet in area. Also first song sparrow at, feeder.

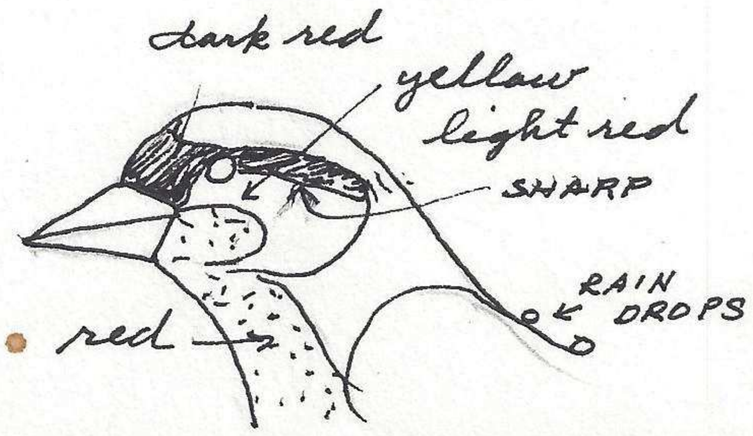
Red-shafted flicker called today. It has called 3 days previously. Bald eagle on douglas fir limb 2 feet from feeder area. Two otter swam by. also 2 harbor seal near shore but with just head above water.

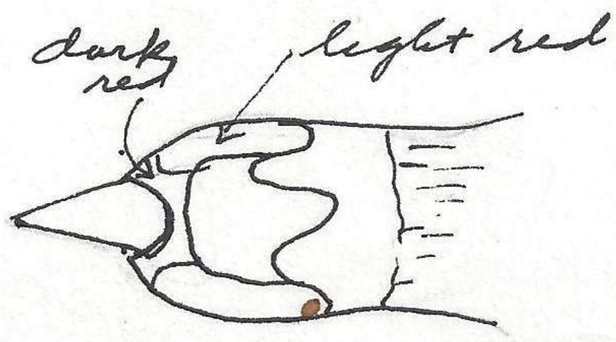
Raft 150' long of 132 white winged scoters just S of Leo Reef.
Hooded mergansers (2-3) in Spring Cove every day last week.
mule deer track 

and fresh at house.

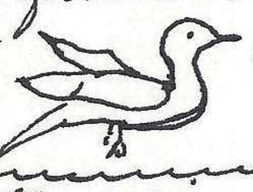
March 23, 1986

First glaucous-winged gull at 5:47 A.M
First mew gulls at 6:27 A.M.
7:10 A.M 2 otter and 2 bald eagles, one had a fish.





House finch

during rain 22 mew gulls and 6 Bonaparte gulls fished for candlefish minnows They strike a dovelike pace when fluttering and moving just above water; head and neck upright 

After rain at 11:30 seals (harbor) left Leo Reef. She destribution reef 2(5), 3(7), 4(9), 5(6).

Townsend chipmunk fed during rain.

"Shanoo" Wn 26395 of Shelter Bay anchored at Leo Reef for 3 hours of diving. Spend 1 hr below.

Immature bald eagle circled Leo Reef (1:30 P.M) and then flew W to tree on point south of Spring Cove.

1:30 P.M 28 mew gulls resting on Leo Reef and same group that fished the waters between house & reef this A.M.

4:30 28 white-winged scoters.

March 24, 1986

worked on driveway

March 25, 1986

mew gulls fished between house and Leo Reef between 7:15 and 8:30 A.M. They will all leave together, then later return.

Oregon junco stood off challenge of house finch.

March 26, 1986

Red-tailed hawk in open field N of Lopez Village.

Rain all afternoon

5:45 P.M otter (Rosa) at 3362 Humphrey Head (Bee Estate) at home, 1. white-caps onto upper bank at house.

6:35 P.M gray squirrel feeding at this late time approaching dusk.

High wind and waves, hard on rocks below

When purple finch and pine siskin leave feeding area at our house they out over water then upward at graduated levels to heighth of ridge rather than up or down water level.

Bee Estate, Humphrey Head, Lopez Island, Washington

March 27, 1986

This afternoon observed one large mule deer (♂?), 2 adult females and 2 young of last year. She fed in deer Trail Slope and then at dusk left via SE side Bee House, across steep rock

slope, passed Cliff meadow to massif Cliff thence head of Spring Cove.

An adult Bald eagle on Leo Reef no. 4 picked up an object which could have been food, jumped up eight times in 3 minutes. 8 mew gulls harassed the eagle.

Glaucous-winged gulls called from Flower Island until late dusk.

The Eastern gray squirrel is the most aggressive feed at the porch station. Finches (purple) are the most aggressive of the birds.

Bee Estate, Humphrey Head, Lopez Island, Wa.

March 28, 1986

Same 5 mule deer at Bee House as of yesterday and at same time of day. The followed the same route do yesterday.

Glaucous-winged gulls called to late dusk from Flower Island. Set Barth motorhome and trailer in lower parking lot.

March 28, 1986

5 mule deer in area.

March 28, 1986

5 mule deer in area

March 29, 1986

8 pine siskin.

32 birds at porch feeder.

11:00 A.M 21 harbor seal on rocks of Leo Reef. (# 3 to # 7 rocks).

12:30 P.M. 32 " " " " " "

12:45 P.M. In addition to seal (see 12:30 PM) are 10 harbor seal on rock # 10, 11 on rock # 11 and 9 on rock no. 9, or a total of 52 harbor seal on part of Leo Reef Complex (Leo Reef varies from all rock submerged (except the beacon) to 11 distinct rock points, the number varying according to stage of tide.

12:45 P.M immature bald eagle on no 3 rock of Leo Reef Complex adult bald eagle on rock no 4 of Leo Reef Complex.

Harbor seal: # 4 = 7 seals, # 5 = 9 seals, # 6 = 7 seals or total of 23 harbor seals. Glaucous-winged gulls call for 1/2 hour after the bald eagle invades their reef & ting area.

Glaucous-winged gulls called until after dusk on Flower Island.

Mr. Strandberg spent part of day at house. No deer in area today.

On trip to Lopez Village (port Stanley Rd, Hummel Rd etc.) observed 6 4 swallows, 9 gadwall ducks, 3 glaucous-winged gulls at Swift Lagoon.

at Hummel Lake, 3 am. Coot, 6 common goldeneye, 3 bufflehead and 1 great blue heron.

First time no Common crows in fields 5 of 1916 School House.

no hooded mergansers in Spring Cove for last 3 days but 2 in Lopez Sound 1/10 mi SE of Bee House.

At Swift Bay noted buffleheads, scaup and gulls.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa.

March 30, 1986

At Bee House, Townsend chipmunks and 1 Eastern gray squirrels vigorously chasing each others own species.

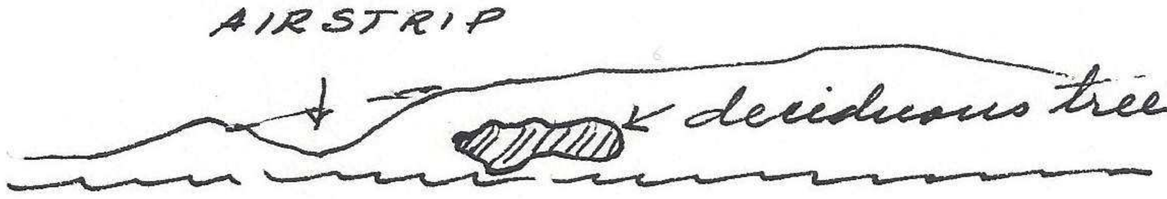
Purple finch clean bills after feeding.

Purple finch flew into glass window. Heart beat 174 per minute. 1 min later died with wings vibrating 3 seconds just before death

10:00 A.M. A Cooper hawk flew over porch feeding area and all birds were displaced. The Eastern gray squirrel moved 3' away from feeder but returned immediately.

4:30 3 purple finch on dead limbs of Douglas fir (top) as last rays of sun disappeared

Deciduous trees on W side Blakely Island just S of airstrip are 90% greenish-yellow being more yellowish than green. The trees are in an area that was at one time cut for conifers but now grown mainly in deciduous trees.



First belted kingfisher on madrona in front of Bee House, also first great blue heron on rocks on shoreline below.

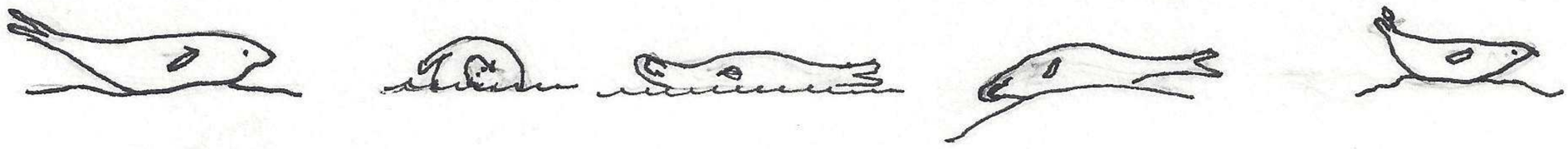
No harbor seal of Leo Reef because of displacement by boats. This Easter morning is crowded with boats along the ferry route.

Has been a beautiful day.

March 31, 1986

Sky clear except long N-S veil clouds 3x height of Blakely above Blakely.

Harbor seals on Leo Reef assume the following characteristic poses.



6:35 A.M. 3 river otter swam N along shoreline 8 feet from shore.
6:35 A.M. The following birds appeared in this order of time: pine siskin, purple finch, dark-eyed junco, Townsend chipmunk.
7:45 Eastern gray squirrel at porch feeder (NE end Bee House) and is identified by right ear with split on edge.

Silver or candlefish active N to 8 feet from shoreline.

no bald eagles or mew gull in scene as yet (7:45 A.M)

9:30 A.M. Marlee from Shelton displaced harbor seals on Leo Reef by approaching too close.

One particular ♀ purple finch displaced all other finches as well as pine siskins. I have not observed this behaviorism todate.

12:45 P.M 15 harbor seal on Leo Reef (rock no. 4 = 7 seal; rock no. 5 = 7 seal and rock no 6 = 4 seal.

Bald eagle flew by low over Leo Reef but did not displace harbor seal.

Both ♂ and ♀ purple finch are fisty. Observed 23 encounters between ♂ purple finch but not directed toward ♀ purple finch, house finches or pinesiskin. Average number of purple finch on porch feeder is 13.

The house finch can be told from purple finch by:

Lack head stripes ♀; lighter head; smaller; smaller bill and red a light red rather than purple red and red more restricted in distribution

4:30 P.M 18 harbor seal on Leo Reef
6:30 P.M. 3 river otter caught candlefish 12' off shoreline below Bee House.

Harbor seal on the following rocks of Leo Reef

6:30 P.M	6:45 P.M	7:00 P.M (late twilight)	7:15 P.M
Rock # 4, 2 seal	Rock # 4, 1	Rock # 4, 0	to dark
" 5, 3 "	" 5, 2	" 5, 2	to
" 6, 3 "	" 6, 2	6, 0	see

7:20 immature bald eagle flew S by Bee House along shoreline
Raccoon to porch feeder after dark.

860401-74

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington
April 1, 1986

7:20 A.M immature eagle flew by Bee House along shoreline 20' above water and continued to S.

8:00 A.M. Ebb tide. Harbor seal on Leo Reef. W. grebe in water near seal.

8:30 A.M. 5 harbor seal on Leo Reef although rock still covered with water. One harbor seal displaced 11 glaucous-winged gulls as it left water and gained top of rock where they were standing, Rock # 5.

9:10 A.M 9 harbor seal on rock of Leo Reef. Also a river otter on number 3 rock eating its catch.

9:20 A.M. 9 harbor seal on rocks of Leo Reef. A glaucous-winged gull stood 1 foot from side of one seal.

9:22 A.M Eastern gray squirrel with split ear arrived at porch feeder.

9:30 A.M 11 harbor seal on Leo Reef (when name Leo Reef is used alone it refers to one or all the rocks 1 to 7.)

10:50 A.M. 14 harbor seal on Leo Reef.

Noted gulls riding on fishing vessels.

Heard call of common crow that is lower in pitch and if one cawed call it, sympathetically in tone.

11:00 A.M immature bald eagle passed Bee House 30' above shoreline and alighted in top Douglas Fir tree above Lichen Point

Pelagic Cormorant have conspicuous white patches on sides of rump.

Observed mew gulls 'walk' on water as they fished in flight, some as far as 5 feet.

11:30 A.M all harbor seal off Leo Reef.

12:00 P.M family of deer at deer feeder.

12:08 P.M House finch ♂ displaces purple finch, ♀ occasionally will displace purple finch.

12:30 P.M harbor seal on Leo Reef and remains although half in water

12:31 36 birds at porch feeder, 5 pine siskin; 2 house finch, 29 purple finch (13 ♂ - 16 ♀). also 2 Townsend chipmunks and 2 eastern gray squirrels.

10:00 P.M. Raccoon at porch feeder for first time.

860402-75

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

April 2, 1986

10:00 A.M 6 harbor seal settling on submerged rocks of Leo Reef.
2 eastern gray squirrels on porch feeder.

11:25 A.M Following harbor seal on rocks of Leo Reef as follows:

Rock #	1	0	Rock #	7	not exposed.
" "	2	6	"	8	" "
"	3	5	"	9	" "
"	4	11	"	10	" "
"	5	0	"	11	0
"	6	not exposed	Two in water near reef.		

12:50 P.M

Rock #	1	not exposed	Rock #	8	submerged rock
	2	9		9	0
	3	6		10	0
	4	13		11	0
	5	1			
	6	0	Total of 29.		
	7	6 just above water			

5:50 P.M tide rising at least by this time.

April 3, 1986

6:15 A.M to 6:25 A.M large fish active in what would be the ferry route E of Bee House. First evidence 2 surface disturbances and increased to appox 150, then to 150 and finally subsided. These are individual fish surfacings. These fish attracted 3 new gulls.

8:06 A.M Leo Reef. Rock # 4, 1 harbor seal; Rock # 5, 1 seal.

10:18 A.M Immature bald eagle flew by Bee House above shoreline (40' above) and left shoreline at Lichen Point.

Crow in last two days called like an old dog with weak vocalization

11:15 AM British War ship passed to S. (no. 264).

11:20 A.M 18 harbor seal on Leo Reef, Rock no. 4. 3 harbor seal in water by rocks. The seals covered 90% of surface at this stage of tide.

12:30 P.M 18 harbor seal on Leo Reef, Rock no 4. and 1 on Rock no 3.

12:31 P.M Townsend chipmunk left Bee House deer feeder and travelled up Gratto Ridge to Lower Parking area, thence across into Joyce Frolic property. I have observed them to follow

this course on several other occasions,

Ordinarily candlefish contact surface, turn and then return but occasionally one will continue on side on surface for 6-10 feet. These are the ones that are easy prey for birds.

Double-crested cormorant spread and lift wings high before begining water run before takeoff. On a windy day they gain airborne status without run on water. They merely lift their body into the air from the water surface.

It would appear that Candlefish come to the surface and remain on side for a fraction of a second and then dash forward and downward. Some activity area of candlefish can be as much as 50'x50'. Silver flashes can be from 8 feet apart to 10 in a square foot of surface.

3:15 P.M no seal of Leo Reef.
5:30 P.M no seal on Leo Reef although at low tide.
6:55 P.M Slack tide.
7:20 flow tide.

Bee House, Humphrey Head, Lopez Island, San Juan Co., Washington

April 4, 1986

7:00 A.M. Hummingbird (rufous?) flew by front Bee House.
8:15 A.M no harbor seal on Leo Reef.
Common loon in spring plumage.
11:20 A.M. No seal of Leo Reef so far today.

April 5, 1986

Fog, no wind.

9:30 A.M 15 common mergansers fed in Sperry Cove. They caught 2 fish there. They rested on shore, in water until 11:00 A.M. 3 rested on top of rocks. all faced out toward sound. Eight instances of fighting among ♀♀s. They all left together and formed a single line, 90° to flight to 1/10 mi into sound.

Crow with steff right leg, bent 90° laterally.

2:30 P.M boat at Leo Reef.

3:30 P.M to 4:00 P.M Scuba divers and boat at Leo Reef. Remained in area until 5:00 P.M. after 1/2 hr diving.

3:35 mule deer tracks at Upper Parking Lot measured 52, 55, 58 and 61 mm.

3:40 2 river otters at front Bee House along shoreline came within 8 feet of me and then immediately dived & remained under water 32 seconds. They surfaced 60' beyond. Before diving they gave

a low growling sound.

5:00 P.M trip to Lopez Village. At Low Bank Swift Beach noted 2 killdeer, 4 bufflehead, 6 scaups and 8 glaucous-winged gulls. At Hummel Lake noted 6 bufflehead, 3 American Coot.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington,

April 6, 1986

8:40 A.M 5 harbor seal swam back and forth along Leo Reef for 15 minutes and then left.

11:30 A.M no harbor seal on Leo Reef.

5:00 PM to 5:30 P.M. 25 band-tailed pigeons fed for 1/2 hour at porch feeder for first time.

5:45 P.M a ♂ & ♀ hooded merganser fed in Spring Cove.

April 7, 1986

7:15 A.M a band-tailed pigeon fed at porch feeder and another joined at 7:30 A.M. and left 1 minute later. The first one fed until 7:45 A.M

no harbor seal on Leo Reef today.

Two ♀ and 2 ♀ red-breasted mergansers fed in Spring Cove.

Two sightings of immature bald eagles today.

5:30 P.M. Band-tailed pigeon at porch feeder. Sun had already left area.

Purple finch alight on feeder with band-tailed pigeon but are wary about the pigeons.

Usual birds and mammals at feeder are: purple finch, house finch, pine siskin, song sparrow, common crow, band-tailed pigeon, Townsend chipmunk, eastern gray squirrel.

6:05 band-tailed pigeons generally leave when disturbed by man. One left feeder this evening on own accord.

Townsend chipmunk fed 2 feet from band-tailed pigeon.

April 8, 1986

♂ house finch at porch feeder with 1/2 x 1/4 sq inches of albinism on upper scapula area.

7:00 A.M A band-tailed pigeon at feeder for 15 minutes. A second pigeon arrived 5 minutes after first one arrived and fed together. Most small birds leave when pigeons arrive.

The following are birds and mammals showing average numbers at porch feeder at any one time and also maximum number occurring at one time.

maximum	average	
5	2	house finch
38	18	purple finch
2	1	dark-eyed junco
14	9	pine siskin
2	1	band-tailed pigeon
3	1	rufous-backed chickadee
1	1	American crow
1	1	glaucous-winged gull
5	2	eastern gray squirrel
2	1	Townsend chipmunk
1	1	eagle (tree above), bald.
2	2	robin (passed by), American.
1	1	Cooper hawk (passed by)
2	1	~~raven~~ common " "

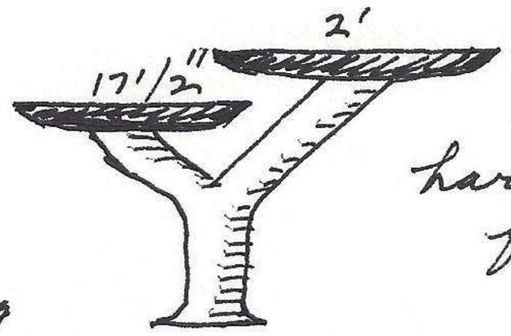
Pine siskin stand off purple finch

1:00 P.M. Birds at porch feeder. 16 ♂, 22 ♀, purple finch; 1 dark-eyed junco; 30 pine siskin, 1 ♂, 1 ♀, house finch.

(The porch feeder consists of a " railing trough 13 feet long and a 2 foot diameter, 2" deep metal harrow disc with a 17½ diameter harrow disc beneith.

Porch feeder has reference to both rail & harrow disc feeders.)

1:10 P.M. 30 birds fed on top disc of harrow disc feeder including 11 pine siskin, 19 purple finch.



harrow disc feeder.

5:00 P.M. Only one single harbor seal on Leo Reef today.

Trip to Lopez Village;

Surft Lagoon.

2 greater yellowlegs
9 gadwalls
2 glaucous gulls
4 goldeneye

1916 School House (marsh to E and SE.)

1 killdeer
2 mallards
2 northern shoveler
19 American crows in field to S.

Hummel Lake.

2 American Coat
8 pairs bufflehead (8♀, 8♂)
swallows, northern violet green

Lopez Village, 1/10 mi. N
1 immature bald eagle from E to W.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington
April 9, 1986

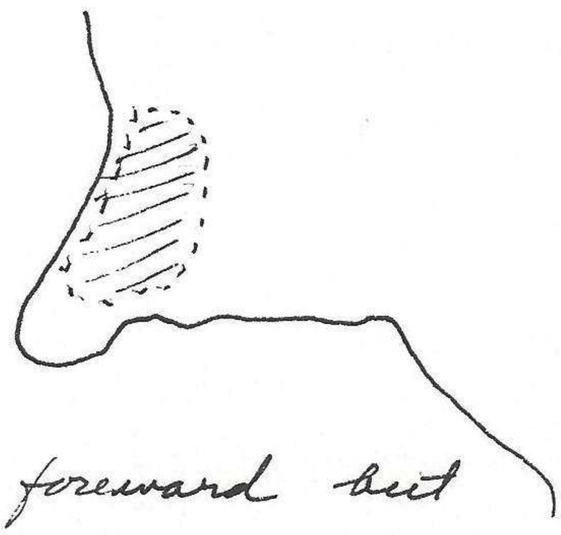
7:30 A.M 2 river otter
7:30 A.M first adult bald eagle
11:00 A.M first harbor seal to climb out onto Leo Reef.
1:30 P.M 2 harbor seal on Leo Reef
1:36 P.M 3 harbor seal on Leo Reef.
1:38 P.M 2 common mergansers diving 30' out from shoreline from Bee House (SE).
5:55 P.M 3 Bonaparte gulls, one followed a fishing boat for 200'

April 10, 1986

Before sunup 1 common loon, 2 double-crested cormorants
After sunup 1 common loon, no gulls.
Day clear but clouds on mainland to E. Water smooth.
4:00 P.M 1916 School House. 2 mallards.
Swift Lagoon. 12 godwalls, 4 buffleheads, 18 glaucous-winged gulls.
Hummel Lake. 8 buffleheads and 18 unidentified ducks.

April 11, 1986

Before sunrise 1 common loon, 1 western grebe.
After sunrise 1 " " , 2 glaucous-winged gulls, 5 Bonaparte gulls.
From sunrise to 10:00 A.M. 11 Bonaparte gulls fed on candlefish out from Spring Cove. Wind blowing and the gulls glided most of the time with wings out + up. They would contact water with feet from gliding position and sometimes hop from wave to wave. Because of wind they moved slow with head up and above a fish would flutter forward but



always above water (2 feet average). They frequently darted to right and left, backward or foreward.

Gray squirrel (eastern) displaces all birds at porch feeder. Birds will remain on rim of disc while chipmunks feed on disc.

10:15 2 band-tailed pigeons at feeder. Small birds feed within 1 foat of pigeons. When birds are startled and leave, the Townsend chipmunk will remain on feeder. An adult bald eagle flew over feeder at 30' high and all birds and mammals left. Gull flying over at 20-30' may or may not displace birds & mammals on the feeder.

10:20 Rufous hummingbird attracted to feeding area.

11:00 A.M temp, 43°F rain & windy.

There has been an injured purple finch and a yellowish red house finch at feeder since we arrived.

5:45 P.M 5 mew gulls today after an absence of 5 days 2 Bonapartes associated with these gulls.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

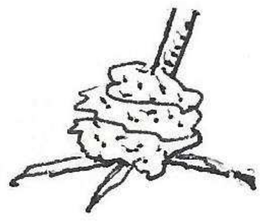
April 12, 1986

7:15 A.M 164 glaucous-winged gulls on Flower Island. Only bird on water a common loon. After sunrise 12 Bonaparte gulls in area SE Bee House.

7:30 A.M 44 purple finch, 28 pine siskin, 5 house finch on porch feer. When I approach feeder all birds leave except 1 or 2 pine siskin that are confeding. Pine siskin stand off house finch. Small birds leave when band-tailed pigeons arrive but the small birds return almost immediately

Pine siskin open sunflower seeds,

A male purple finch had a growth on left foot



April 13, 1986

day break 4:10 A.M.

6:45 A.M. 2 rhinoceras aucklets fished 300' N Leo Reef. In 10 minutes 18 glaucous-winged gulls and 4 Bonaparte gull arrived where aucklets were diving. In 20 minutes later 5 red-necked grebes, 8 Common Mergansers and 6 glaucous-winged gulls arrived. There was Consiederable diving and gull activity above the diving birds. At 7:10 A.M action stopped & gulls left. but mergansers remained and other birds but they did not feed.

Two other rhinoceras aucklets stopped their diving and

feeding activity when an adult bald eagle flew over them at 40'.

7:15 A.M 184 glaucous-wing gulls on Flower Island. at 9:00 A.M 132 were there.

5 sightings of bald eagles today.

a common flicker called. (red-shafted race) from N Forest.

a ♀ house finch vibrated its wings and received food from a male house finch.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

April 14, 1986

7:15 A.M a lone 'bob-tailed' otter swams by Bee House

7:20 A.M male & female (pairs ?) leave feeding area together.

185 glaucous-winged gulls on Flower Island.

Trip to Richardson. At 1 mi. S of High School noted a turkey vulture. 183 american widgeon generally distributed in grass of field.

at Swift Lagoon 10 gadwalls

Shark Reef mule deer tracks measuring 55, 66, 35 mm.

Humphrey Head Lagoon 8 pairs bufflehead.

Hummel Lake. 1 canvas back, 4 prs scaup; 12 pairs bufflehead, 36 northern tree sparrows.

Started humming bird feeder.

7:21 A.M 2 rhinoceros auklets

7:22 A.M immature bald eagle flew W across Lopez Sound to S end of Humphrey Head.

110 glaucous-winged gulls on Flower Island. from shore

7:30 A.M river otter swam S in front Bee House. (out 10')

3:00 P.M Enroute Lopez Village

Swift Lagoon. 9 gadwalls, 1 greater yellowlegs.

3:01 no harbor seal on Leo Reef as of this time.

April 16, 1986

wind all night from SE. Between 6:30 A.M and 7:15 A.M 90% of glaucous-winged gulls sailed S.

7:20 Gray squirrel eastern, and purple finch fed on 24" harrow disc spaced 1' apart. Pine siskin fed closer to squirrels at 8" apart.

5 his A.M to 10:00 A.M 10 sightings of bald eagle, 4 in view at one time.

10:05 one minute after eastern gray squirrel left disc feeder 32 birds came to same feeder, 20 purple finch and 12 pine seskin.

10:15 A.M 45 birds on Narrow dise feeder including; 4 house finch; 16 ♂ purple finch; 6 pine siskin, 19 ♀ purple finch. When birds leave the feeder, one or more pine siskin will remain and can be approached to 3-4 feet. This fearlessness is also common in nature beyond feeding area.

10:18 a male pine siskin fed 15 particles of food to a female, which fluttered its wings the entire time.

10:20 a band-tailed pigeon flew by but did not stop at feeder.

Deciduous trees on S NW side Blakely Island are 50-50 per cent green & yellow. Lower trees on slope more yellowish than those higher on the slope.

6:40 P.M rufous hummingbird on sugar feeder but did not partake.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

April 18, 1986

8:30 A.M. 5 harbor seal on Leo Reef.

Eastern gray squirrel prefers cracked corned to bird seed, whereas birds prefer the bird seeds

April 19, 1986

8:00 A.M 86 glaucous-winged gulls on crest and side of Flower Island. 44 on N rocks of lowland. No signs of pairs of gulls.

April 20, 1986

Both birds and mammals wipe bill or mouth on limbs after they feed.

11 harbor seals on N Flower Rock, no seals on Leo Reef. (When making census of seal, Leo Reef, N Flower Rock, Beg Flower Rock & Little Flower Rock are checked

Rufous hummingbird checked sugar feeder twice but did not feed.

6:45 P.M River otter passed in front of Bee House. It was 4 seconds on surface and 4 seconds below water surface as it passed by, covering equal distance whether on the surface or under the water surface.

April 21, 1986

7:00 A.M 72 glaucous-winged gulls on top of island, 41 on rock outcrop on N lowland of island.

Leo Reef, 128 Bonaparte gulls, 4 glaucous and 2 harbor seal swimming around the reef.

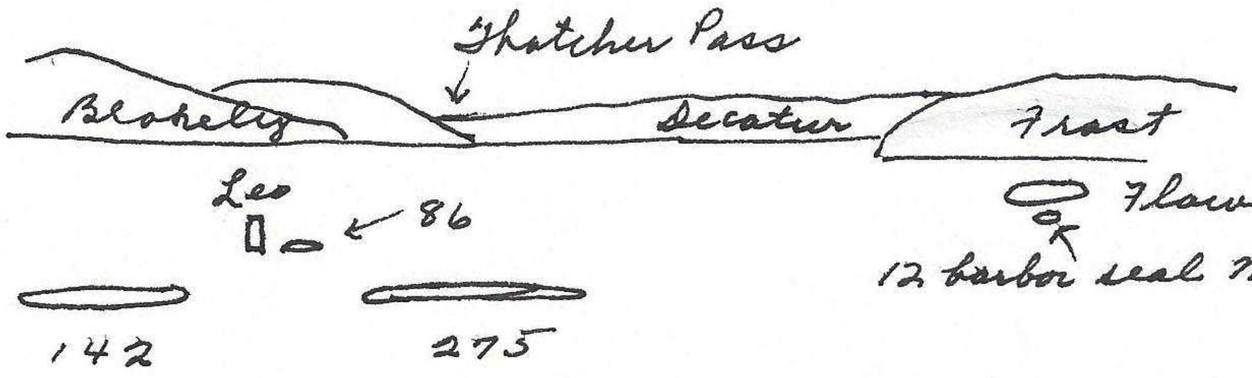
A glaucous - winged gull displaced Bonaparte gulls as it walked thru resting Bonaparte gulls.

There has never been more than 2 eastern gray squirrels on the 24' harrow disc feeder on front porch.

The house finch has relatively smaller head to body than purple finch, stands more erect and hops like an English sparrow

Townsend chipmunk 10 inches from house and purple finches on harrow disc (24" diameter)

2:50 P.M clear and sunny.



95 glaucous - winged gulls on upper slopes of Flower Island, 53 on rock mass on n lowlands of Island.

2 rafts of feeding or resting Bonaparte gulls and on group on Leo Reef. totalling 503 birds

76 white-fronted geese flew S

April 22, 1986

3:30 P.M 120 white-fronted geese flew S.

April 23, 1986

Clear, cumulus clouds to E, dark clouds to N.

5:30 A.M 153 glaucous-winged gulls on upper slopes of Flower Island and 76 on rocks on lowlands N end island.

5:40 A.M 87 Bonaparte gulls and 3 glaucous-winged gulls resting on Leo Reef; one raft NE of Leo Reef of 26 Bonaparte gulls and one raft (long line) of 42 Bonaparte gulls NW Leo Reef. no harbor seal on reef.

5:56 AM sun 20 minutes above mt. tops and lighting tops of cumulus clouds.

6:06 AM 8 Bonaparte gulls on Leo Reef and 48 flying in general area feeding. 2 rhinoceros auklets in area SW of Bee House. They dive with a quick flip as if evading an aerial predator. They also produce a spout of water in the process of diving.

6:45 A.M 160 Bonaparte gulls on Leo Reef and immediate surrounding waters.

860423-84

12:20 P.M 52 glaucous-winged gulls on upper slopes of Flower Island and 30 on rock prominence on N end of island

12:25 P.M 28 harbor seal on N Flower Rock and 4 on Leo Reef.

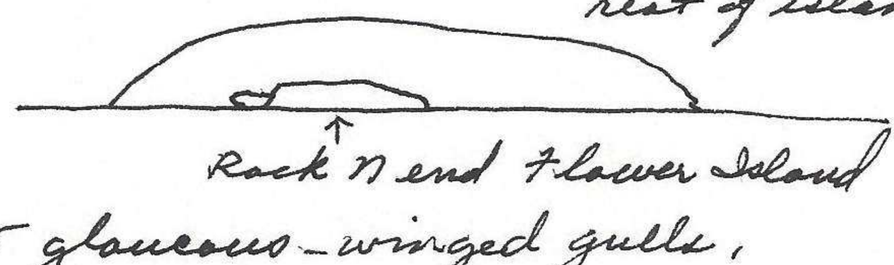
2:30 P.M 86 Bonaparte gulls feeding SW Leo Reef and 82 resting on Leo Reef.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wash.

April 24, 1986

8:05 A.M 36 glaucous-winged gulls top Flower Island, 34 rocks N end Island.

Top or upper slopes = rest of island.



9:10 A.M 2 seal Leo Reef, 5 glaucous-winged gulls.

10:10 A.M Turkey vulture flew over Bee House to N, male house finch fed begging ♀ house finch (could be young?). They flew away together.

10:30 A.M Band-tailed pigeon at feeder. They come every 2 or 3 days.

2:10 P.M waves 24 per minute. 55 glaucous-winged gulls on top Flower Island, 59 on rock N end island. With high wind and cool weather only few rested on top Flower Island.

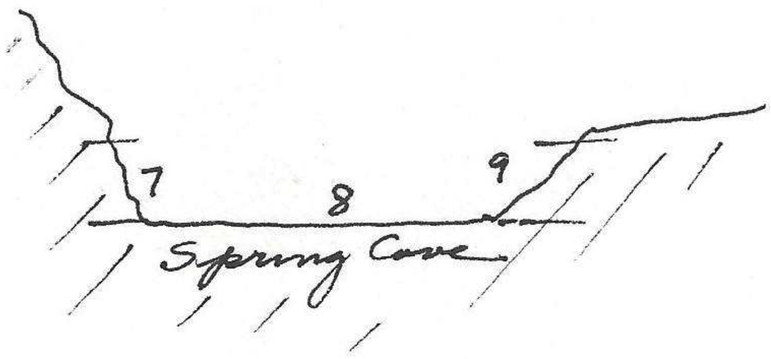
5:40 P.M waves 24 per minute. Wind at 120°.

April 25, 1986

wind all night. Day with some sun but cloudy. Waves changed this AM from 120° to 150°.

10:35 2 eastern gray squirrels feed 8" apart. These squirrels always displace the Townsend Chipmunk.

12:01 P.M. Low tide at this time -2.9' checked number of starfish (Ochre Sea Star, Pisaster ochraceus) on rocky slopes and across Cove of Spring Cove when tide was -2.9'.



There were 7 on N side, 9 on S side and 8 across the cove. Most of the starfish were above low tide. Orange purple dominated. Other color phases present.

6:30 P.M high tide 11.8 ft.

860426-85

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

April 26, 1986

9:07 21 glaucous-winged gulls on top Flower Island, 17 on rocks at lowland N end of island.

9:08 8 harbor seal north Flower Rock, 8 on Leo Reef.

11:15 A.M lowest tide, was at 150°

April 27, 1986

7:06 A.M 2 river otter, swam to S past Bee House 18' from shore.

7:09 A.M 115 glaucous-winged gull Flower Island, 52 at N end on rocks, 4 in air above island. Low tide, -3.' at about 1:20 P.M, at 1:45 already in flow.

1:45 P.M 18 harbor seal on Leo Reef.

1:50 P.M red-winged blacklnd on porch feeder for first time.

4:00 P.M no harbor seal on Leo Reef.

8:00 P.M 3 mule deer at feeder back of house. and first deer in last 5 days.

8:37 P.M. 98 glaucous-winged gulls on Flower Island, 65 on rock prominence at N end of Island, 31 in air above island.

Rufous hummming bird 3 times today.

April 28, 1986

6:30 A.M adult bald eagle flew S along SE side house at about 55' high.

8:00 A.M. 103 glaucous-winged gulls on Flower Island, 43 on rocks at N end of Island, plus 3 pelagic cormorant.

10:00 A.M Townsend Chipmunk packet up 26 seeds in one minute.

11:15 A.M. 15 harbor seals Leo Reef.

11:35 A.M fine scale skin alighted 15 inches from eastern gray squirrel.

Trip to Mud Bay (to Bos residence)

Humphrey Lagoon 2 ♂ and 1 ♀ bufflehead.

William Burke residence, common flicker (red shafted race)

Swift Low Bank Beach

2 mew gulls, 18 glaucous-winged gulls, 12 American Crows.

Swift Lagoon.

3 greater yellow-legs, 13 long-billed dowitcher, 6 gadwalls.

Bos residence (mud Bay Road)

3 turkey vultures

1916 School House (marsh to E.)

4 shovellers
8 baldpate (American widgeon)
2 mallards.
Hummel Lake
2 redwings on territory
Increase in barn swallows & northern violet-green swallows.
goldfinch. (american)

3:35 P.M first time song sparrow at feeder but they have been in general area.

6:40 P.M first pileated woodpecker in Douglas fir on S side Lower Parking Lot, called 3 times, has goshawklike call.

8:56 Lights fading and visibility barely possible, but suffecent to count white gulls (glaucous-winged gulls).

Top Flower Island 115, rocky area N end island 60 and others coming in.

April 29, 1986

Clear, cumulus to E.

5:30 A.M Glaucous-winged gulls on Flower Island;
Top 153; rocks on N end island 76

5:35 AM Leo Reef 87 Bonapartes, no harbor seals.

5:56 AM Sun about 20 min above Blakely Island, and above cumulus clouds.

In last 2 days two flocks of white-fronted geese flew N. one of a flock of 120, the other 76 (3:10 PM).

6:06 AM 8 Bonaparte gulls on Leo Reef; 48 flying in general area.

6:20 A.M 2 rhinoceros auklets dove in front Bee House and each produced spout of water when diving

12:20 P.M. 52 glaucous-winged gulls on Flower Island (top) and 30 on rocks N end.

12:30 28 harbor seal on N Flower Rock.
4 " " " Leo Reef, no gulls.

April 30, 1986

6:52 A.M. 115 glaucous-winged gulls on Flower Island on top, 80 on rocks north end.

10:25 A.M 8 black oystercatchers on Leo Reef.

860506-87

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington.

May 6, 1986

Mary B and Don Jensen arrive Lopez.

May 7, 1986

Mary, Don, Annette to top Mt. Constitution on Orcas. 3 photos from top or near top.

860507-1

860507-2

860507-3

May 8, 1986

Enroute to Lopez Village: 6 deer edge forest 5 Swift Lagoon and 2 between there and Hummel Lake.

2 Cowbirds (brown-headed) at porch feeder for last 3 days.

4 band-tailed pigeons at feeder (one group)

Turkey vulture flew N over Bee House at 150'.

2 adult bald eagles this A.M.

May 9, 1986

Eight photos of Bee House and from the house. 860509-1 to 860509-8

2 eastern gray squirrels on W side Upright Head.

Rufous hummingbird at feeder last 3 days but refused to eat from the improvised feed. 2 new standard feeders installed today and humming bird immediately started to feed, in fact 5 were at the 4 place feeder, 1 at one time. ♂ humming birds dominate over ♀'s.

At porch feeder were 14 pinesiskin, 4 house finch and 8 purple finch.

Song sparrow feeds at porch feeder apprx. once per day.

A small Myotis at Bee House for 1/2 hr last night and searched all sides of the house.

May 11, 1986

10:00 A.M 57 harbor seals on Leo Reef

Mother's Day at Bee House included, James W, Anette M., Anette C, Steve Kenagy, Mathew Kenagy, Mary L, Don, Mary P., David Boles.

2:00 P.M 26 harbor seal Leo Reef.

Photos of flowers grown on Lopez and decorations at Bee House,

860511-1 yellow m[illegible]s

860511-88

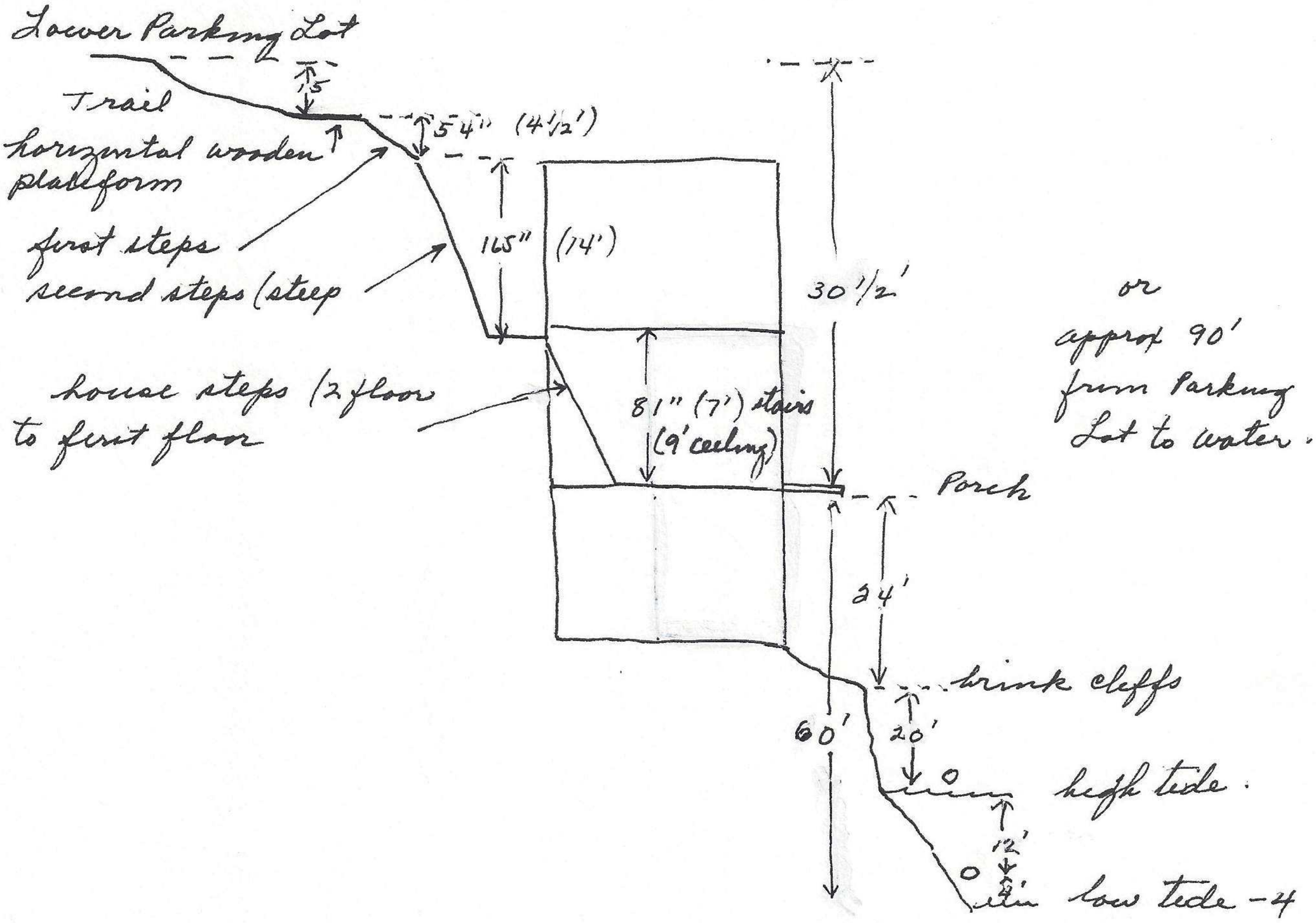
Photo 860511-2 sweet pea

Photo 860511-3 sweet pea

Photo 860511-4 female adult mule deer (black-tailed deer subspecies) and right a female young of last year. Grotto Ridge,

Photo 860511-5 shoreline S of Spring Cone showing. Lichen Point (uppermost point, Round Point, Flat Point and Spring Cone Point (left of end of horizontal log. Calm on Spencer Spit in background. From Grotto Ridge to S on Bee Estate.

measured slope from Lower Parking Lot to high tide.



Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

may 12, 1986

Don and Mary left for ferry. at Lopez Ferry terminal observed 2 crows, 2 vultures, one of which alighted in top of Douglas fir tree and extended wings

One trip back (walking).

Ferry to top of hill - one rufous-backed Chickadee, robin.

Top hill to Odlin Park turnoff - robin - salamander, brown above, orange below.

Odlin Park turnoff to Co. gravel pit - 3 purple finch, 1 brown-headed cowbird, 4 crows, robin.

Humphry Lake. no birds. From here to beach - angle worm trails in mud of road.

Swift High Bank Beach. white-crowned sparrow., ♂♀ brown-headed cowbird, song sparrow, starling.

Plummers Promentory to home - 1 robin.

At Bee House 8 band-tailed pigeons at feeder, 14 brown-headed cowbirds (3♀, 11♂), Courtship, leads up by both sexes.

A pine siskin fluttered before a purple finch but without success.

First seasonal appearance of Cocobirds occurred as singles now and in last 3 days in groups of 8-14.

Townsend Chipmunks are the first and last individuals to feed at feeder.

Originally purple finch dominate pine siskin but on a few occasions rdcently the dominance has been reversed.

Rufous hummming birds ♂'s at feeder at least to 8:55 P.M when time approaching dusk. Some light in west.

May 13, 1986

8:35 A.M 8 harbor seals on Leo Reef.
9:00 A.M 13 " " " " "
Pine siskin 10" from Townsend chipmunk.
10:25 A.M 18 harbor seal Leo Reef.
Purple finch and brown-headed cowbird compatible.
12:15 PM 25 harbor seal on Leo Reef.
5:30 P.M. 15 harbor seal on Leo Reef.
6:45 P.M 7 " " " " "
7:20 P.M 2 " " " " "
7:50 P.M 9 " " " " "
8:00 P.M 98 glaucous-winged gulls on upper part Flower Island, 51 on rock mass at N end of Flower Island.

may 14, 1986

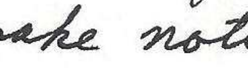
9:00 A.M Second year adult female at feeder and unusually alert and when viewed from kitchen window, ran up trail to Deer Trail Slope and the fed leisurely N.

9:45 A.M. no harbor seal Leo Reef. Tide high.

Since winter populations have left, gulls and duck rare between Bee House and Leo Reef.

10:00 A.M first harbor seal (1/2) arrived Leo Reef today consisting 2 adults and 4 ↑ size seal. Adults had no problem gaining

rocks on reef but four younger seal took 5 minutes to gain rocks and adjust position for resting. Seal selected rocks on lower slope of reef.

11:20 AM 14 harbor seal on Leo Reef. Two seal confronted each other in water for 20 minutes producing mainly cartwheel movements. Hind legs frequently oppose each other or same direction or  . Considerable time spent head to head in same degree as rear feet. In nearly all cases considerable water splashing and water flapping.

11:30 AM ↑ Ship Bateworks of Vancouver, B.C. approached Leo Reef to 50' and only 2 seal left reef.

11:45 AM ↑ at one particular moment census of birds at porch feeder is: 2 rufous-backed chickadee, 6 brown-headed cowbirds, 4 house finch, 2 purple finch, 12 pine siskin, 1 song sparrow, 3 band-tailed pigeon. Three glaucous-winged gulls in air along shoreline.

11:50 AM. ↑ (subsp.) 15 harbor seal on Leo Reef. 4 mule deer (black-tailed deer) walked W to E thru area.

3:00 P.M 2 band-tailed pigeons at porch feeder. When groups of pigeons (3-6) leave trees they make noticeable noise.

a common flicker (red-shafted race) drummed and called from W forest most of the day.

3:15 P.M 9 band-tailed pigeons on porch feeder.

6:20 P.M adult ↑ bald eagle

(Talked to Mary P. Bee who just traversed area of Lake Ozette, Washington. "Dunlin 20-40 birds in group and approx. 3 groups per mile.

Ruddy turnstones, 2-3 in groups.

2 groups (10 and 15) whimbrels. Crows, hundreds of cormorants. Crows everywhere, few great blue herons, many gulls, 2 groups of 10 bufflehead, Harlequin ducks, 2 oystercatchers, red-tailed hawk, 2 mule deer (black-tailed subspecies), one group 4 and one of 2 elk.")

7:00 P.M. 7 harbor seals

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa.
may 16, 1986

6:00 A.M no harbor seal on Leo Reef.

6:05 A.M 76 glaucous-winged gulls on upper Flower Island, 31 on rocks at N end island

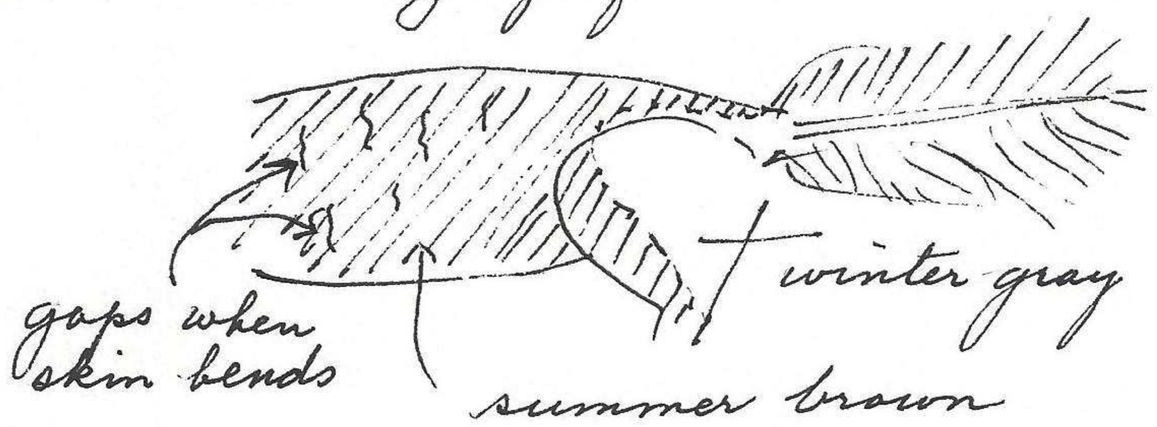
7:00 A.m. one-legged cowbird on porch feeder.
mary Pauline Bee left for Alaska (Fairbanks) at 9:00 P.m.

may 17, 1986

10:10 A.m adult bald eagle flew n along shore in front Bee House.
10:12 A.m. 14 harbor seal of n Flower Rock but none on Leo Reef.
13:20 A.m call from mary Pauline Bee from Fairbanks. Staying at Doug Stems place.
Joyce Thalie said there are only a few humming buds on Humphrey Head at this time but many in open fields of the island.
yesterday and today flotsam out to 200 ft.
3:00 P.m Currents to S
3:30 P.m Currents to N.
2 yound purple finch with yellow in corners of mouth received food from adults. They, the young, are same size as adult. This has been going on for at least the previous week.
8:35 humming birds still on feeder. Brown-headed cowbird had left at 8:10 Am. Rain, cloudy & fog on Blakely Island.
8:45 P.m 2 harbor seal on Leo Reef.
8:51 P.m glaucous-winged gull on porch feeder.
9:00 P.m myotis? active around Bee House.

may 18, 1986

Fog and clouds variable on Blakely Island.
8.50 First 2 seal on no# 3 rack on Leo Reef. 9 others settled on rack no 4, later.
molt on eastern gray squirrel.



Arrangement of birds and mammals on porch feeder according to greatest to least wariness: band-tailed pigeon, Am. crow, sing sparrow, rufous-sided towhee, house finch, purple finch, T. Chipmunk, mule deer, eastern gray squirrel, pine siskin, rufous hummingbird.

860518-92

Request numbers in arrangement, populations of birds and mammals at feeder of this date. All species are not necessary at feeder at one time.

Average highest winter numbers

- purple finch 36
- pine siskin 8
- eastern gray sq. 5
- American crow 1
- mule deer 5
- glaucous-W gull 5
- T. chipmunk 3
- river otter 3
- raccoon 3
- b-tailed pigeon 3
- house finch 3
- harbor seal 3 (front Bee House (1 every 3 days))
- dark eyed juncs 2
- ruf-backed chickadee 2
- song sparrow 1
- rufous sided towhee 1 (per week)

82

Populations May 18, 1986

- pine siskin 15
- brown-headed cowbird 14
- bandtailed pigeon 14
- purple finch 12
- house finch 6
- rufous hummingbird 5
- eastern gray squirrel 5
- Townsend chipmunk 3
- American crow 3
- mule deer 3
- glaucous-winged gull 3
- river otter 3
- harbor seal (front B House every 3 days) 3
- dark-eyed juncs 2
- rufous back chickadee 2
- raccoon
- song sparrow 1
- rufous-sided towhee 1 (per week)

93

10:45 4 more harbor seal no 4 rock Leo Reef.
6 on n Flower Rock.
Brown cowbird 10" from eastern gray squirrel.
Occasional aquatic bird between Leo Reef & Bee House.
1:00 PM no harbor seal Leo Reef.
3 on n Flower Rock.
Eastern gray squirrel displaces band-tailed pigeon
2:30 P.M 2 ♂ rufous hummers at sugar feeder. Males displace females and other males.
B.h. Cowbird displaces house finch.
of brown-headed cowbirds
males (no females) perform in front or near females by first raising head upward with bill pointing upward, then head drawn down, almost between legs and feathers puff out and mouth open, wings and tail autospread. Sometimes the males only point head & bill upward.
Pine siskin feed among b.h. Cowbirds on disc feeder.
male rufous hummingbird Chases females from sugar feeder.

After male alights on a perch on Douglas fir or other kind of tree it momentarily vibrates its wings and adjusts its wings and tail to its body.

7:00 P.M water almost smooth.

7:30 P.M A harbor seal caught 5 candlefish in 5 tries. 40' out from Bee House.

8:45 P.M Pine siskin on porch feeder

Bee Estate, Humphrey Head, Lopez Island, San Juan Island. Wa.

May 19, 1986

This A.M water calm and no difference between color of Islands and their perfect reflection. Spent afternoon at East Sound, Orcas Island.

May 20, 1986

Early this morning perfect reflections of islands. no detail of islands visable at this time, just a dark mass.

Between 9:45 and 10:30 A.M a log moved from Boundary Point, straight across to Lichen Point and then N along shoreline past Spring Cove and finally ended in front of Bee House, on its way to Boundary Point.

10:30 72 glaucous-winged gulls on top Flower Island, 38 on rocks N end of island.

10:15 An adult bald eagle flew past Bee House to first Douglas fir tree on Lichen Point. Remained 35 minutes then flew south into Swift Bay area. While in tree a glaucous-winged gull harassed the eagle 15 times.

4 cormorants of Leo #11 rock.

12:35 P.M 12 band-tailed pigeons at porch feeder. These birds are the most wary of any other bird or mammal in area. a simple lifted finger will alert them and generaly send them away from the area.

A young purple finch begs for food but will also eat independently.

Trip to Lopez Village.

Swift Lagoon. 2 Canadian geese, ad. bald eagle flew from W to E approx 1/10 mi N of Lagoon.

1916 School House, 8 single Brewer's blackbirds in fields In feed to S 13 crows in one group.

4:30 P.M no harbor seal on Leo Reef.

Mr. Shipley says that there is twice as many harbor seals

as in the past.

6:00 P.M. no harbor seal on Leo Reef 6 on Flower Rock.
American Crow called like frog.

6:40 P.M 24 ♂, 6♀ brown-headed cowbirds on disc feeder. 6 pine siskins and 5 purple finch fed in center of the groups of cowbirds. These birds were almost touching each other.

An adult rufous-backed chickadee fed suet and bread crumbs to a young chickadee. 2 young pine siskin feeding from ad.

May 21, 1986

Today took 9 photos durring the day.

Photo 860521-1 young ♀ mule deer (black-tailed subsp.) at Boundary Point. After feeding the family of deer will spend considerable time resting and chewing their cuds.

Photo 860521-2 Douglas fir above Grotto Cove on n side Spring Cove. Basal branch has grown downward from trunk of tree.

Photo 860521-3 Same subject but photo from Spring Cove. Bee House in background on benchland. Tree rests on Conglomerate Jurassic-Cretaceous Contact.

Photo 860521-5 Joyce Fralic House from Ferry. Boundary Point just left. and above dark shadowed recess in shoreline. Windy Slope to left. Otter Cove and yellow Ridge to left of center. Madrona and Douglas firs most Conspicuous trees on sidehill. Roof Bee House just exposed.

Photo 860521-6 Home site on Blakely just S of Willow Island. Almost a perfect setting.

Photo 860521-7 Sunset above Up right Head on approach to Lopez Ferry Terminal. Shaw distant, Lopez (Humphrey Head) left.

Photo 860521-8. deer feeder NW of Bee House. adult ♀, young last year ♀. Part of family group.

Photo 860521-9 adult ♀ deer (Mule deer, black-tailed subspecies) at deer feeder NW Bee House.

860521-10 Thamnophis from roadside of Stanley Road, at William Burke residence. (1 8/10 mi. E and 1 8/10 mi. N Lopez Village P.O., Lopez Island, San Juan Co., Washington.) measurements: total length 485, 25 gms wt.

860522-95

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

May 22, 1986

Clear to SE.

4:25 A.M. Bat (myotis ?) still active. First gull passed.

5:05 A.M first rufous hummming bird active. Venus just faded out and not visible. Also first purple finch and first detail of W slope Blakely Island.

5:30 harbor seal done 5 times in water in front of Bee House, 30' out from shore. It dives, speeds up, then gyrates (either in act of catching fish or confusing fish. This was in area with high population of candlefish.

As sun comes up clouds first dissipate, then increase.

5:45 wind now from S.

May 23, 1986

9:44 A.M raccoon on porch feeder.

9:45 A.M 8 harbor seal on Leo Reef, 12 on Little Flower Rock. Seal rarely rest on Big Flower Rock.

10:06 A.M 60 glaucous-winged gulls top Flower Island, 21 on rocks N end.

11:25 A.M. 5 deer at one time. 2 adults, 1 medium, 2 young of last year.

11:30 A.M a young pine siskin begged for food from a house finch and both a ♂ & ♀ brown-headed cowbird. none of which favored the young pine siskin. The young also solicited from adult pine siskins.

3:30 P.M Trip to Lopez Village. At Swift Lagoon note 2 cinnamon teal

7:30 P.M 29 brown-headed cowbirds on feeder at Bee House and most so far this season. First cowbirds earlier in season came as individuals or small groups of 2-5.

When a rufous hummingbird leaves feeder it alights on a limb, turns around and faces the feeder. One ♂ fed continuously for 6 seconds. (bill engaged in hole of feeder for full 6 seconds. Most hummers insert bill and withdrawn every second or so.

Housefinch displaced rufous-backed Chickadee at suet feeder.

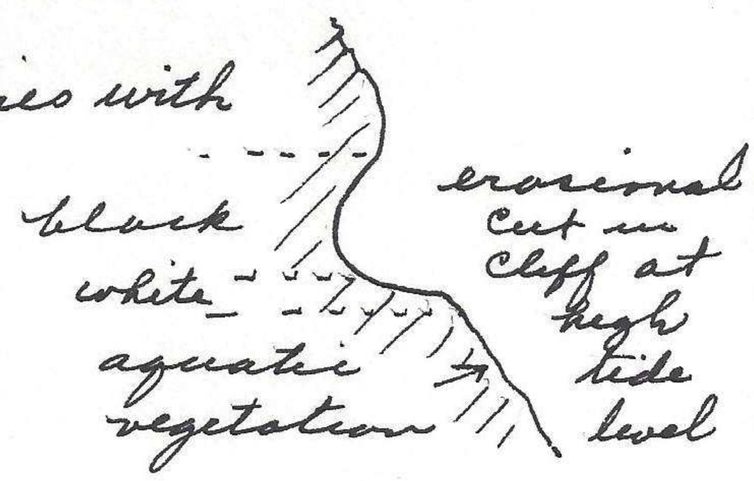
8:45 P.M ♀ rufous hummingbird at feeder.

860524-96

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

May 24, 1986

Enroute to Anacortes noticed several rock shorelines with erosion of cliff at high tide.



May 25, 1986

May 26, 1986

To Chris and Steves. All to festival.

May 27, 1986

Left Chris' for Lopez. Enroute stopped Stewarts (white cabinet, 2 sides, and specimen Cabinet still at Bruins.

At Anacortes Ferry Terminal observed: 2 band-tailed pigeons, 1 rufous hummingbird, 3 cedar waxwing, 6 white-crowned sparrow, 1 American robin, 8 American Crow, 1 barn swallow, 18 glaucous-winged gull.

At 1 6/10 mi N and 9/10 mi. E Lopez Village (P.O) not 8 deer in open field. Have seen them in this same area on several other occasions.

At 1916 School House noted 19 American Crows in pasture to S in one group.

May 28, 1986

No birds in sound between Bee House and Leo Reef.

10:00 A.M 2 marbled murrelets 200' SE Bee House.

10:35 A.M 2 otters swam past Bee House going S. 15' out from shore. These were the first since previously recorded in journal.

10:40 3 mule deer (black-tailed subsp.) at feeder. After 10' feeding went up trail to Deer Trail Slope and remained in area for 45 min.

no hummingbirds so far nor has seagull level changed since yesterday.

Four pine siskins, 1 purple finch, 3 house finch, 3 eastern gray squirrels, 3 T. Chipmunks and 4 brown-headed cowbirds at porch feeder. The numbers are considerably less than one week ago.

860529-97

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

May 29, 1986

Sun up 5:40 A.M. Sunshine intense.

8:30 A.M Recorder following photos, all taken near Bee House.

Photo 860529-1 madrona and Douglas fir tree directly below dining room window of Bee House. Both tree on edge of bank above rocky shoreline below. Submerged vegetation in tidal zone.

Photo 860529-2 Madrona and Douglas fir just to right of above scene. Madrona loosing red bark and gaining a new yellowish green bark.

Photo 860529-3 stonecrop Sedum spathulefolium - From Boundary Point 15' above water.

Photo 860529-4 ibid. Both on Jurassic - Cret conglomerate.

Photo 860529-5 Jurassic - Cretaceous Conglomerate showing movement on slickensides contact and subsequent fracture filled with quartzite. There has not been movement of fault along slickensides since the quartz filled fractures.

Photo 860529-6 Slickensides closeup of right hand side of above photo. Direction is approx. SSW. These 2 photos are directly below Bee house half was between trunk of upper slope and water level. This fracture zone traceable 25-30' each side of photo along an irregular fracture zone.

Photo 860529-7 Stratification Jurassic - Cret. conglomerate E of NE corner Bee House on rocky shoreline, showing bedding plane and slight anticline left side. Fracture systems in every conceivable direction, here mainly 40° dipping to S of bedding plane. Others 70° E etc. noted thinning of some beds.

Photo 860529-8 Closeup of lower right hand side of above photo showing bend in bedding plane and thinning of beds. Certain parts of beds show concentration of conglomerates.

Photo 860529-9 directly below dining room window of Bee House, showing complex fracture system of stratification and dovetailing of bedding.

Photo 860529-10 Same complex of above 2 photos.

Photo 860529-11 Boundary Point showing bedding planes continuing NE and prominent fault running N-S, yellow ridge upper part of photo. Rock surfaces above at at this fault line show glacial striae. Photo taken to N.

Photo 860529-12. From Boundary Point to S, Lucken Pt upper right, Frost Island above & Spencer Spit beyond.

Rounded knalls and sides have glacial striae trending along apis of photo. Prominent fauld left running 80-60 feet.

Photo 860529-13. at Boundary Point showing conglomerate and fracture systems of the Jurassic - Cret bedding. Fractures pass thru boulders but show no movement.

Photo 860529-14 Structure at otter Cove below Joyce Fralic property. Interdegitating fractures of bedding planes. note water and masses associated with these wet areas.

Photo 8605-29-15 Fault in otter Cove, with slickenside present. Bedding plane above and dipping to E.

Photo 860529-16 yeelow ridge as extension N of otter Point. Fungus from gull fecal deposits. In fact these seem to bright green in color. Sides & top glaciated. E side Humphrey Head. Mt Constitution to N. Cascade Lake behind 3 knalls.

Photo 860529-17 ibid. Shot to N.

Photo 8605-29-18 Yellow Ridge to S. Frost Island in background.

Photo 8605-29-19 yellow Ridge, Closeup of fungus

Photo 8605-29-20 yellow Ridge and Otter Cove.

Photo 8605-29-21 Eroded eye in Jurassic - Cretaceous conglomerate directly SE below Bee House on shoreline.

Photo 8605-29-22. Shale below bedding of conglomerate directly below Bee House. Associated with lenticular formation within the bedding plane.

Photo 860529-23 Inflorescence in Cliff meadow on Bee Estate.

Photo 8605-29-24 Top Spring Cove Massif. Bald Bluffs across Lopez Sound. Douglas fir on bank.

Photo 8605-29-25 Pacific Madrona Arbutus menziesii. before bat weather and peeling of red bark. A greenish yellow bark will replace the red bark. This tree is at the S end of Glaciated Knalls.

Photo 860529-26 Top Spring Cove Massif with Spring Cove below.

Photo 860529-27 Conglomerate of Jurassic - Cretaceous contact. Flattened surfaces of pebbles are cause by fracture system, one side removed.

Photo 860529-28. Pacific yew, Taxus brevifolia from 10' S Lower Parking Lot showing annulation, some 150 years old.

Photo 860529-29 nest of orange crowned warbler under fallen

860529-99

douglas fir tree at brink of cliff meadow. nest in center of 1' high clump of shrub & grasses, covered overhead & under protection of prostrate (fallen tree). 3 eggs of warbler and one brown-headed cowbird. Nest of coarse outer grass stems and some small twigs, inner linning of rootlets and some hair. On second day nest same and birds in area. In passing nest while bird was incubating the bird would leave and remain in area of shrubs & trees at about 15'. On one occasion male arrived and joined female,

Photo 86 0529-36 mule deer (black-tailed deer sub species) in Cliff meadow. Douglas fir tree protects nest of the orange-crowned warblers nest.

at 3:00 P.M collected a Thamnophis in Cliff meadow, 20' from nest of orange-crowned warbler. This specimen 860529-38 Thamnophis measured: body 313 mm, tail 91 mm weight 17 grams.

Photo 860529-39 of above specimen of Thamnophis.

3:20 P.M no seal of Leo Reef or rocks of Flower Island (Big & Little Flower Rocks, N Flower Rock).

Last three days have produced considerable flotsom of logs and seaweedlike debris,

3:40 P.M Juvenal dark-eyed junco (Oregon junco race) at porch feeder - no adults in area.

no humming birds today or yesterday.

no bald eagles observed since we arrived.

6:30 P.M On Flower Island; 83 glaucous gull on top island, 41 on rocks at N end of island. Two pairs were copulating.

9:20 P.M An otter passed 5 in front of Bee House to Lichen Point.

Bee House, Humphrey Head, Lopez Island, San Juan Co., Washington
May 30, 1984

Wind from NE,

8605 30-1 Peromyscus maniculatus sonoriensis. From Bee House. 171-77-22-20-30 gms. ♀ emb. 3R, 1L average length of an embryo 9 mm,

9:30 A.M 3 harbor seal Leo Reef.

2:08 P.M first large black & yellow swallow-tailed butterfly.

4:00 P.m. rufous hummingbird at Lower Parking area.

6:05 P.m adult bald eagle on Flower Island to 6:38 P.m. The eagle caused considerable activity on the island. The glaucous-winged gulls were: 90 in water about 2/10 miles W island, 50 remained on island, 33 in air and diving at eagle or a total of 163 gulls. 4 crows (American) also dive-bombed the eagle. Eagle left, circled the island and alighted again and then left at 6:38.

6:41 PM gulls immediately returned to island (148 on the island.)

6:45 P.m 3 harbor seal on Leo Reef.

9:00 P.m wind blowing into Spring Cove and depositing debris and logs up to 15' x 8" dia. Covering approx. 40% of cove. As tide moved out the wind kept debris in Cove and it was gradually deposited on shore as water dropped. In morning tide raised debris and it finally moved out of cove and to the S. Another large mass of debris was located just this seze of traffic lane.

May 31, 1986

Sun up 5:35 A.M.

5:40 A.m 2 Canadian geese flew S.

10:05 A.M. Pontoon plane full length Lopez Sound at 4' above water.

no rufous hummingbirds today. no mule deer last 2 days.

O'leary at their house today. 3 children & 2 dogs played continuously all day on 2 rafts, shoreline, throwing rocks & debris into the water, dog retrieved sticks and target practice in evening. There must be better ways of enjoying the shoreline, instead of using it as a recreational play yard.

6:08 P.m 76 glaucous-winged gulls on Flower Island, 35 on prominent racks on N end of island, 2 pairs gulls copulating.

June 1, 1986

7:00 A.m On Flower Island: 150 glaucous winged gulls on top island, 45 on rocks on N end island, 14 in air above island. Of those on top 13 were in pairs.

17 boats anchored at Spencer Spit.

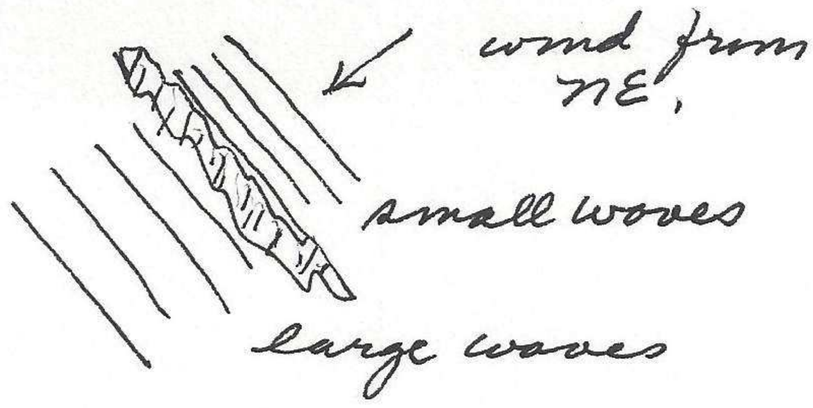
7:15 A.M. An American Crow fed 1 goat from eastern gray squirrel on porch feeder.

10:30 A.m an adult ♀, young ♀, young ♂ at kitchen feeder.

2:10 P.M. adult ♀ at feeder. Orange-Crowned Warbler in tree above.

860601-101

2:15 P.m. wind from NE.



Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa.

June 2, 1984.

Debris moved S by Bee House, including some logs from 2' to 20' by NE winds. Debris seldom moves in from S when winds blow from that direction. Yesterday and most of today debris moved S as a line from Boundary Point to Lichen Point. Wave action on shoreline S of Spring Cove 3'-4' high. Today whitecaps S of Obstruction Island but less so in Lopez Sound.

10:10 A.M. 5 band-tailed pigeons on porch feeder. House finches are 5x as numerous as purple finches; 3 pine siskins; 2 eastern gray squirrels; 2 Townsend chipmunks; no deer; 1 rufous-sided towhee; 1 song sparrow.

Today a zone of foam out 30' from shoreline from Boundary Point to Lichen Point.

1:00 P.M. 6 harbor seal on Les Reef

3:00 P.M. 11 " " " " "

no rufous hummingbirds on porch feeder since last recorded in journal.

3:20 P.M. nest of orange-crowned warbler (see photo 860529-29 of egg and nest of this bird) contained 3 young orange-crowned warblers and 1 cowbird young. When ♀ arrived at nest site, and showed concern, a second ♀ arrived in area.

5:05 P.M. 15 harbor seal on Les Reef.

7:56 P.M. 88 glaucous-winged gulls on top Flower Island, 36 on rock prominence N end island, 6 pairs copulating. One pair copulated at water level N end island, (black zone above high tide level) One pair in which ♂ rode the back of ♀ 5 feet down rock slope, eight cormorants were 8 feet away. An adult bald eagle in treq. flew over Flower Island and alighted on SW corner of island. The glaucous-winged gulls left to E but returned 4 minutes later. One pair immediately started to copulate. 3 crows harassed the eagle. There were 16 pairs of gulls at nesting sites. At 8:35 P.M the bald eagle left its tree perch after 39 minutes on Flower Island

8:48 P.M 11 harbor seal on Leo Reef, 9 glaucous-winged gulls and 4 double-crested cormorants.

8:49 P.M all gulls left Flower Island and flew out over water to the N. Could not see an eagle in area but suspect that there may be one.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington.
June 3, 1986

7:32 A.M 22 harbor seal on north Flower Rock and 3 on Little Flower Rock. At one instance they all left but returned and took position on rocks in 10 minutes on Little Flower Rock. There was considerable defense of resting spots.

10:22 to 10:26 5 mule deer fed at corn feeder, not, however, all at once. adult ♀ drove away other adult ♀ by hitting the second ♀ in rump with front feet. Deer at feeder:

adult ♀, probably mother of rest of deer in group.
adult ♀, slightly smaller and may be 3 generation back.
young ♀, medium size
young ♂, small (last year young) 3/4 high antler buds covered with hair.
young ?, slightly smaller than above. young ♂ and probably sister of ♂ above.

Both Townsend Chipmunk and grey squirrel at deer feeder and waiting their turn.

1:35 P.M Leo Reef 25 harbor seal, 76 cormorants, 21 glaucous-winged gulls. Little Flower Rock 3. Big Flower Rock 1

2:00 P.M measured imprints of mule deer at feeder.
52 mm, 57 mm, 54 mm.

5:45 P.M. Leo Reef # 3, 0 harbor seals, # 5 harbor seals, # 6, 8 harbor seal. All seals on top racks at high tide.

Trip to Lopez Village. Junction Center and Cross Roads. 2 turkey vultures.

5:50 P.M Orange-crowned warbler nest (see previous accounts) disturbed, young gone, overhead grasses separated but nest intact.

8:30 P.M. adult doe (mother) tracks measured 60 mm; young female 45 and 49 mm. young ♂ 52 and 55 mm.

8:35 13 Cowbirds (brown-headed) at porch feeder.

In last four days there have been from 2 to 12 glaucous-winged gulls and 2 to 7 double-crested Cormorant on Leo Reef with harbor seals.

Since last notes on rufous hummingbirds I have observed these birds at feeder (sugar) and elsewhere.

9:00 P.M. 4 Peromyscus maniculatus at corn feeder on NW side Bee House. A myotis ? flew back and forth along house at this same time (first observed). The later in time the more activity of the Peromyscus.

9:15 P.M myotis ? still flying along NW side of house.

June 4, 1986

8:20 A.M 25 harbor seal on Leo Reef,
no mule deer at feeder during night up to 8:20 A.M.
9:00 A.M. 25 harbor seals on Leo Reef.
9:35 A.M " " " " "
10:05 A.M Seal and birds on Leo Reef;

# 2 = 0	harbor seal		
# 3 = 8	"	"	
# 4 = 9	"	"	, 7 glaucous-winged gulls.
# 5 = 5	"	"	, 3 double-crested cormorants
# 6 = 5	"		
# 9 = —	"		
# 10 = 1	"		
# 11 = 0	"		
total 28			

On NW Flower Rock 31 harbor seal
" Little Flower Rock 10
On above rock at 10:05 A.M a total of 69 harbor seal.
On Flower Island;

48 glaucous-winged gulls on upper part of island and 33 on rock prominence NW end island. no copulating gulls.

11:00 A.M a band-tailed pigeon flew into top of red alder tree in Spring Cove and preened feathers for ½ hour.

12:01 3 mule deer at feeder (NW side house). The adult ♀ prints measured 5⅝ front and 6¾ hind foot. Approx. immature and comparison are: length skull 11", length of body 60", hind foot 13½", height at shoulder 28". The young male (¾" antler knob) front foot imprint 5 3", hind foot 4 8", young ♀ 4 7 and 4 3".

A ♀ brown-headed cowbird at porch feeder with a much lighter towny head and underparts than the other ♀'s in the flock.

measurement of a young mule deer killed last year (at head of stairs): hind foot (hoof) 40 mm.

1:30 P.M 2 river otter swimming S, 10' from shoreline to S.
1:35 P.M rufous hummingbirds active.
At dusk noticed 2 adult Rattus norvegicus at deer feeder; 3 young and 1 adult at a brush pile SW corner Bee House. This rats have arrived and were observed for the first time since our arrival. The Lunds at S end Humphrey Head have been bothered by the rats this year.

June 5, 1986

7:30 A.M distribution of seal this time: (when counts of seal are given the survey includes all pupil outs in area).

Little Flower Rock 1
N Flower Rock 52
Leo Reef:

# 3	13
# 4	5
# 6	3
# 10	1
	75 harbor seals total

Intense sparring of harbor seals in water surrounding the rocks.
On upper Flower Island 68 glaucous-winged gulls, 2 copulating.
" rock prominence N end Flower Island. 30 gulls
10:30 rufous humming but at window but not feeder.
12:30 P.M 3 mule deer at feeder. Tracks of adult doe 61-56, young 54-50, small ♀ 49-46 mm. (rear + front feet) There is some error in measuring tracks.
12:45 rufous hummingbird flew across Upper Parking Lot.
4:00 P.M adult ♀ 62-54 track in mm. (rear - front)
young ♂ 50-54 mm.
7:20 P.M 4 ♀, 14 ♂ brown-headed cowbirds at feeder (porch)
Both purple finch and house finch are still active
8:10 P.M. brown-headed cowbird, rufous sided towhee and pine siskin still active at feeder.

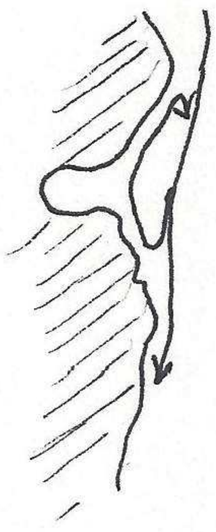
June 6, 1984

Harbor seal on Leo Reef: # 2 = 4, # 7 = 3, # 4 = 0, # 5 = 0, # 6 = 5, at 9 = 0, at 10 = 1, # 11 = 0. or total 17. On north Flower Rock were 45, Little Flower Rock 0, Big Flower Rock 0. I have noticed that the highest and perhaps largest rock of the Flower rock group is rarely used. Total all rocks = 62 harbor seal.

On Flower Island, 70 glaucous-winged gull top, 44 rock n end island.
2 eastern gray squirrels on deer feeder.
10:20 A.M 25 harbor seal on Leo Reef, 31 on north Flower Rock. a bald eagle adult n w shore Flower Island. did not disturb gulls but 3 crows harassed it continuously for 10 mins. some approached to within 6' on rock.
Trip to S end Lopez:
Adult bald eagle over feed E of 1916 School House.
1/2 mi. N 1916 School House 2 groups of goldfinch (3 and 5) 23 American Crows in field S of 1916 School House. 1 mi. N. Richardson one group 35 starling. Robins generally distributed, Brewer's blackbirds localized in 3 places (12 birds), barn swallows in all fields, northern violet-green swallows occasionally, brown-headed cowbirds generally distributed.
7:30 P.M at Bee House, American Crows, Rufous-sided towhee, purple finch, Cowbird active. Have not observed Rufous hummingbird at feed for at least a week (see last record in journal.
9:45 P.M. Leo Reef rock #3 and #4 approx 4" above water is approx 10" above water whereas Big Flower Rock is only 5"-6" above water.

June 7, 1986

8:30 P.M Currents S in front Bee House on ebb tide.



40 harbor seal on N Flower Rock.
no harbor seals on Leo Reef but 18 glaucous-winged gulls.
no mule deer today or last night.
2 brown rats at deer feeder.
First ♀ purple finch at feeder for 4 days. Finches are near 100% of the two species. 2 young house finches begging from ♀ house finch. Plumage of ♀ house finch more faded and torn than new plumage (more brown). Young house finch are larger than adults.
4 band-tailed pigeons at porch feeder.
Rufous-sided towhee displaces house finch.
The band-tailed pigeon cocks its head then focuses on human observer. The slightest movement, even a finger will cause the pigeon to react or to leave porch feeder.
11:00 A.M 38 harbor seal on Leo Reef.
11:37 A.M 47 harbor seal on Leo Reef.

5 pairs of harbor seal (no included in above count) playing in water adjacent to rocks doing backward flips, out of water jumps (less common) and intact rolling in water. Colors are black, white, yellowish white, gray.

12:10 P.M first hummingbird (rufous) at feeder and first since recorded in journal.

Local patch below Bee House of stinging nettle showing yellowing of 1° in basal leaves.

1:30 P.M rufous hummingbird a second time at feeder today.

6:00 P.M 2 river otters to S past Bee House. 20' out from shore.

7:35 P.M Townsend chipmunk retired from activity.

8:00 P.M 2 deer at feeder.

8:20 P.M Sun rays off Frost Island.

8:30 P.M High tide. All rocks covered on Leo Reef except #3

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

June 8, 1986

Annulations of main trunk, compared to the limbs of the same tree (Juniperus), are the same.

Townsend chipmunks store food from local feeder supply and then brown rats move into area and live off the stored food made by chipmunks. This piracy could happen at a critical time in the winter season.

Wave maintain form even when they cross other waves at at different direction

9:00 A.M 26 harbor seals on Leo Reef and 62 on North Flower Rock. Those on N Flower Rock all instantaneously (within 5 seconds) left the rock and disappeared into the water. Only 5 heads appeared and these 150' or so beyond the rock. The glaucous-winged gulls on Flower Island did not react so cause remains undetermined.

10:20 A.M 23 harbor seals on Leo Reef. Also 14 glaucous-winged gulls and 1 double-crested cormorant. No other seal on rocks in area.

12:05 55 harbor seal on Leo Reef, all just above waterline. Also 1 pair of copulating glaucous-winged gulls which actively generally associated with nesting territories on nesting islands, no other seal in area.

12:06 The '3rd' generation female mule deer came running from W, fed 3 minutes at feeder and then ran up trail, across Deer Trail Slope and thence to N across Fralic property.

860608-107

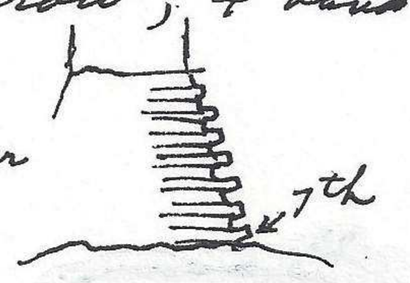
4:30 P.m 3 mule deer fed on leaves of a downed madrone.

4:50 P.m 110 glaucous-winged gulls in upper Flower Island and 52 on prominent rock at N end of island. Although I did not see the bald eagle all gulls left at 4:50 and circled to E then all back and settled at 5:00 P.M. Those on SW end left and returned. at 5:05 P.m the gulls on the prominent rock left to W and alighted on water 1/10 mi beyond. They returned at 5:15 P.M

The rock profile on N end Frost Island is ((algae) Trentepholia) yellow → / black → lichens, blue-green & green algae / white → (barnacles) / water

For the last 4 days there have been few pine seskins and more house finches. Currently at feeder are: 8 house finches, 2 purple finches, 6 brown-headed cowbirds, 2 dark-eyed juncos, 1 song sparrow, 1 american crow, 4 band-tailed pigeon, occasional pine siskin.

Leo Reef beacon rests on 7th cross member



Between 5:05 PM and 5:35 P.M gulls in parts of the Island (Flower) were displaced 5 time. They returned after circling the island once.

Eastern gray squirrels feed in several positions. The most common is sitting on haunches with body slightly bent forward, seemingly head and body horizontal with head continuously on corn or food and alertly, especially when alerted, standing erect (body perpendicular). In cases of 1 and 3 above, food held in forepaws between thumbs.

5:15 P.m Tide just below base of Leo Reef Beacon.

7:30 P.m An adult bald eagle carrying a snake or trailing digestive tract of an animal flew W over John Sauls residence on Humphrey Head. Eagle first observed along shoreline of Blakely Island.

7:31 P.m 48 black-headed cowbirds at feeder (Bee House) 3 of which were females.

One house finch has a yellowish-red plumage instead of the usual red color. It is frequently observed at feeder.

7:15 P.M Townsend chipmunk left deer feeder on NW side of Bee House.

8:10 P.m 43 black-headed cowbirds (4 of which were females at porch feeder.

8:12 P.m 1 adult ♀ mule deer and another group of adult female and 2 young 1/2 size adult, on W side Blakely Island (Bald Bluff

Fault).

8:50 P.M sun off Frost Island.

9:12 P.M High tide.

Bee Estates, Humphrey Head, Lopez Island, San Juan Co., Washington
June 9, 1986

860609-1 Peromyscus maniculatus sollesteri
183-84-24-20-33gms ♀, 3 x 0 plac. scars.
Photo 860609-2 from porch to S along shoreline. Spencer Spit in distance Frost & Flower islands to left. Lichen Point prominent point on right.

Placed a dead Peromyscus maniculatus in deer feed n w Bee House; eastern gray squirrel, Townsend Chipmunk ignored it, mule deer pushed it to one side.

Noted first young eastern gray squirrel, smaller by 1/4 the size of adults and with less brown on back,

9:45 A.M. 44 harbor seal on Leo Reef, no other rocks seal

10:45 A.M 58 " " " " ". 3 of them on rock no. 1 which had never been used before. 98% are on rock no. 1 at just above water level,

11:00 A.M Swallowtail butterfly flew past Bee House.

11:30 A.M 63 harbor seal on Leo Reef. They are generally distributed. To faced away from water, all others facing water or parallel to water edge.

3:00 P.M. no harbor seal in area. In area between Bee House and Leo Reef: 32 glaucous-winged gull, 3 rhinoceros auklets, 1 pelagic cormorant. At a point 1/3 way to Leo Reef from Bee House 2 rhinoceros auklets fished in one local area. Almost immediately (3 minutes) 8 glaucous-winged gulls arrived at point where rhinoceros auklets fed. These were followed by 10 double-crested cormorants at a rate of 1 per 10 seconds and they fed among the gulls but the gulls did not harass the cormorants. Some of the gulls were concerned only with the auklets but other gulls fed independently of the auklets or cormorants. They were feeding on Candlefish. After the initial activity, the cormorants left, then the auklets. 4 minutes later the gulls left after dispersing while on the water.

at Bee House on shoreline (10' out) noted an increase in growth of one of the marine plants

Changed a colored sugar for regular white granulated sugar in hummingbird feeds. The new sugar was more readily accepted than the color sugar that come with the feeder. (1 part sugar, 2 parts water).

3:50 P.M 88 glaucous-winged gulls on top Flower Island, 46 on prominent rocks on N end island.

5:10 P.M an adult eagle alighted on tree 100' N of top of Bald Bluff on Blakely Island.

5:45 P.M. 5 turkey vultures N apprx. 50' above Bee House. They continued to just beyond Boundary Point, then returned to S.

6:10 P.M At Lichen Point a red-tailed hawk dove 5 times at an adult bald eagle which was apprx 150' in air. The hawk caused the eagle to react on each dive. The eagle alighted in a Douglas fir at the point and the red-tailed hawk dove 3 more times, again, causing eagle to react.

The eagle that alighted in tree on Bald Bluff (see 5:10 P.M notation above) was harassed by a red-tailed hawk. The eagle remain in tree from 5:10 PM to 9:06 P.M.

9:06 PM above bald eagle left to N along ridge and sailed straight forward without wing beat. At the position above S end airstrip on N end of Blakely it dove (45°) down and increased speed. Lights fading and could not follow the direction of the eagle beyond this point.

June 10, 1986

860610-1 Peromyscus maniculatus sollisteri, from Bee House
186-84-24-24-31 gms. ♀ 3x3 mm plac. scars.

860610-2 Peromyscus maniculatus sollisteri from Bee House
182-82-23-20-26 gms ♂ testis 11 mm.

9:00 A.M.

Photo 860610-3 from Bee House to S. Les Reef in foreground, Blakely Island and Mt. Erie in distance. Fog bank in Lopez Sound.

Photo 860610-4 ibid in general area. Fishing boat enter-fog bank.

Photo 860610-5 mule deer, young ♀ of family group on Bee Estate.

Photo 860610-6 Lichen Point S Bee House on W shoreline. Spencer Spit in distance.

9:00-10:00 A.M Four mule deer (2ad female, 1 young, & young) arrived from N along slope above shoreline and ate madrona leaves of limbs cut from tree (500 leaf clusters in last 3 days have been consumed by these deer), thence to deer feeder on NW side Bee House, thence N to Boundary Point and beyond.

9:40 A.M 56 harbor seal on Leo Reef.

28 glaucous-winged gulls on top Flower Island, 28 on rock prominence on N end of island. Also 3 double-crested cormorant.

9:50 A.M 51 glaucous-winged gulls on Flower Island, 34 on rock prominence N end of island.

10:00 A.M Boat displaced harbor seal on Leo Reef, some remained in water adjacent (40'-50') reef, others left area to SW

10:07 A.M First harbor seal returned to Leo Reef.

10:09 A.M now 7 harbor seal on Leo Reef.

10:10 A.M Another boat arrived at Leo Reef and displaced seal again. Boat followed seal that went to SW and these disappeared. Most of these boats have the objective of displacing the seal rather than observe them from a distance.

10:18 boat left for Flower Island.

10:23 first seal on Leo Reef.

10:25 small group 10 in water around Leo Reef, rocks NO 9-10-11

10:28 14 harbor seal now on Leo Reef.

10:21 21 " " " " " " , larger seal return first.

11:00 42 harbor seal on Leo Reef.

12:15 P.M 58 " " " " "

2:30 P.M 63 " " " " "

4:20 P.M 4 mule deer (family group on Bee Estate) watch O'Leary dog for 4 minutes then left at a run N across Deer Trail Slope to beyond.

5:20 P.M 2 mule young deer of family group eating shrubs among cliff NW of house and as far out as they could reach.

9:00 P.M Watch 4 mule deer just above shoreline at Bald Bluff Faultline on W side Blakely Island. Also one adult bald eagle.

Have not observed deer on Trust Island.

I have not been able to ascertain where harbor seal go after being forced off reef by high tide. During high tide I see individuals fishing alone shorelines but seldom over two together at one time.

860611-111

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

June 11, 1986

A sum of 40 trap nights (museum specials, Sherman live traps, large wire traps) have not produced Rattus norvegicus. These traps are set after chipmunks & gray squirrels have retired and disengaged in morning before diurnal animals become active. As the brown rat is seen at all hours of the day & conclude that on Lopez Island the rats are diurnal.

5:30 A.M first Townsend chipmunk active.

8:45 A.M The Viking Star tour boat from Fishermans Bay displaced 21 harbor seal on Leo Reef.

Trip to Eastsound on Orcas Island between 12:40 PM and 6:25 PM.

Photo 860611-1 of Mt. Baker, N end Blakely Island, Peavine Pass (used by ferrys when waves from N-S winds are high.) from Lopez ferry terminal

Photo 860611-2 California poppy and snapdragon from Eastsound, W entrance to village.

Photo 860611-3 Scotch bloom, Orcas Ferry, an introduced sp.

Photo 860611-5 Scotch bloom and swallowtail butterfly. Orcas ferry terminal.

860611-6 swallowtail butterfly specimen from Orcas ferry terminal (specimen in photo above).

While on Orcas did not see mule deer or rabbits. However observed, among other birds, 1 raven, 4 white-crowned sparrows and 2 song sparrows.

Returned Lopez Island this evening. From Bee House noted an adult bald eagle in tree top (conifer) 3/4 way from base of tree on SW corner of Frost Island. It remained there until dark. (at least).

June 12, 1986

8:00 A.M. Two river otter swimming to S at 15' from shore below Bee House, no harbor seal on any lowlout islands or rocks.

8:10 A.M 9 harbor seal on N Flower Rock.

Brood-leaved stonecrop (Sedum spathulifolium) earlier a bright yellow, now a brownish yellow. Last three days the leaves of madron have been fallowing from trees from increase heat of sun, 6 or 7 per sq. yard on ground under some trees and especially noticeable in trails.

10:10 A.M 24 harbor seal on North Flower Rock.

Photo 860612-1 of glove wearing when hand cut with axe, 3 internal and 3 external stitches!
Photo 860612-2 young second year old female and one of a family group on Bee Estate.
Photo 860612-3 adult female and mother of 2 and possebly 4 family group on Bee Estate. at feeder on ne side of Bee House.
Photo 860612-4 ibid
Photo 860612-5 ibid.

Above photos taken at 10:15 A.M. This group consists of adult ♀ mother, 3 year old adult ♀ and daughter of above mother and a ♀ and ♂ young of last year.

newspaper reported may 31 (gray whale), may 23 (killer whale), June 1 (Minke whale), June 8 (Dall porpoise)

10:20 A.M 31 harbor seal on N Flower Rock.

12:20 P.M The family of deer have predetermined routes they use in passing thru the Bee Estate and when encountered they go around me and continue on.

2:45 P.M 26 harbor seal, 16 glaucous winged gulls, 1 black-oyster catcher, 1 double-crested cormorant on Leo Reef. The oystercatcher is rarely seen.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington
June 13, 1986

Daybreak 4:20A.M 7:30 A.M raccoon at porch feeder. The raccoon generally come 3 or 4 times a week and always in evening.

7:45 AM 2 river otter to S. First chestnut-backed chickadee at porch feeder for about a week.

9:10 A.M 26 glaucous-winged gulls (one pair copulating) on upper part of Flower Island and 15 on rocky prominence on north end of the island. Also 2 double-crested cormorant. On Leo Reef are 26 harbor seal and 13 glaucous-winged gulls.

1:00 P.M. Collected swallowtailed butterfly no. 860613-1 from junction of Sperry and Cape Mary rds on Lopez Island.

1:45 P.M at 1mi. N of Richardson noted a red-tailed hawk.

This afternoon made the following photos:

860613-5 N side Spring Cove of rocky cliffs and cliff meadows above. Madrona and Douglas fir principal trees in forest above.

860613-6 Bee House and cliff exposures on S side of house. Wind Slope to right Grotto Ridge to left.

860613-7 Open forest on Grotto Ridge looking S.

860613-8 E shoreline of Humphrey Head below Joyce Fralic residence. Cove hidden in foreground. Kyak ferry passing to W. mt. Constitution in background.

860613-9 To south across Windy Slope from Boundary Point. Frost Island to left. Lichen Point, Round Point, Flat Point and Dissected Point along shoreline from left to right.

June 14, 1986

First colorful sunrise in 2-3 weeks, followed by thunder and rain

8:15 A.M 5 harbor seal on Big Flower Rock and only rocks to support harbor seal in the rain.

8:16 A.M Eastern gray squirrel copulating.

8:20 A.M 15 sail and motor boats at Spencer Reef State Park.

12:00 P.M Still raining. 52 glaucous-winged gulls on upper Flower Island and 26 on prominent rock mass on N end of island. 2 gulls (glaucous-winged gull) Copulating. The designation of upper part of Flower Island refers to the main island and the lower part of Flower Island refers to the prominent rock mass on N end of island. The names main island and prominent rock mass on N end of island will be the designation of these two parts of the island in the future.

1:00 P.M 4 harbor seal on Leo Reef and only rocks with seal.

3:30 P.M. 18 " " " " " " " " " "

4:00 P.M. Photo 860614-1 Boat in water just S of Bee House. Lichen Point on right. Several people have stopped to see Klein Lookout.

Photo 860614-2 SE of Bee House showing Leo Reef, Blakely to left, Decatur to right and Mt Erie in center. Bold cloud masses in sky. These clouds followed the rain of this morning. Temp. cool.

7:00 P.M 61 glaucous gulls on main Flower Island, 41 on prominent rock mass on N end of Island, and 2 common crows. All facing toward the sun. There are 27 nesting sites with 1 or 2 birds at each site. No harbor seal on any rocks or lookouts.

June 15, 1986

9:15 A.M. 31 harbor seal on Leo Reef. 3 on Big Flower Rocks To Friday Harbor. 2 pigeon guillemots at Shaw Ferry terminal, turkey vulture on S end Orcas Island E of ferry terminal.

860615-114

On Bee Estate Photo 860615-1 of madrona and Douglas fir SW of Bee House and 860615-2 from same place but showing Spring Cove below. Madrona's bordering.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington.

June 16, 1986

7:25 A.M. 11 harbor seal on Leo Reef (no 5 rock)

Trip to Friday Harbor with John Saul Jr. Enroute 2 pigeon guillemot, 1 marbeled murrelet.

Took the following photos

860616-1 adult ♀ and the mother of the local group of 5 deer. A 2 inch + pendulous strap hung from belly. This ♀ is pregnant and foetus movement is visible from the outside of the ♀'s abdomen.

860616-2 ibid

860616-3 ibid. Deer fled and then returned a short distance (in this case head of trail and 25' from feeder)

860616-4 young ♀ from last years progeny. This ♀ is not as healthy or as large as its brother (young ♂).

860616-5 adult female as above

860616-6 adult ♀, same animal as above (from top Grotto Ridge.

860616-7 young ♀ of above adult ♀ progeny.

860616-8 3 pileolated finch, 2 ad ♂ + 1 ♀, on porch feeder of Bee House.

June 17, 1986

9:00 A.M. 48 harbor seal, 17 of them whitish in pelage, on Leo Reef.

10:05 A.M a western long-eared bat from bed room of Bee House. It was flying between two rooms and seemed to ignore the windows no. 860617-1 Plecotus townsendii townsendii 111-46-9.5-36-9 gms ♂ testis 6 mm., wing spread 313 mm. Several photo's of this bat: Photo 860617-2 from front, note original condition of ears compared with mounted specimen (6 mm shrinkage)

Photo 860617-3 same bat as above from frontal angle.

Photo 860617-4 same bat as above with wings spread (313 mm)

From Bee House of last night captured the following mice:

860617-8 Peromyscus maniculatus hollisteri, 168-81-22-20-17 gms ♀, ut normal.

860617-9 Peromyscus maniculatus hollisteri, [129]-[37],-23-18-20 gms, ♀ uterus normal.

860617-1140

1:00 P.M. 44 harbor seal on Leo Reef.

2:00 P.M. 23 harbor seal on Leo Reef. [when Leo Reef is listed without assaceated rock number the reference is intended for rocks associated with the beacon or, rocks 2-6 and 1 and 7 if efposed at any low tide.

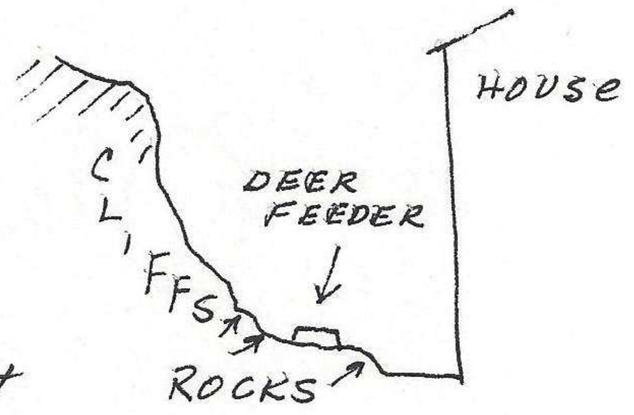
Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

June 18, 1986

8:45 A.M. 17 harbor seal on Leo Reef. Low tide and seal at water level only.

10:00 A.M 2 harbor seal on Leo Reef. Seal (2) swimming 5-20' from reef are behaving in such a stereotype way of courtship etc that I presume they are mating rather than in some kind of random play.

5:15 P.M. 2 adult and 3 young brown rats (Rattus norvegicus) at feeder on NW side of Bee House. (A.M cloudy, sun at 5:15 P.M.) They were unusually confiding for rats, especially adult. The young would run back into rocks after only a second or two feeding in open situation. A large adult rat charged the three rats and caused them to immediately return to the rocks where they had developed or taken over chipmunk burrows. The four rats went underground and did not return. This behaviorism suggested a warning by the large adult rat to warn the other 3 of pending danger.



At 5:30 P.M. an adult rat carefully evaded a live trap which was not to be set until 8:00 P.M after activity of chipmunks ceased for the day. This rat then moved 40 feet to NE side of Bee House and fed on cracked corn placed for birds at the porch feeder. One eastern gray squirrel approached the rat to with 8 feet but neither retreated. I stepped out onto the porch some 25' away and the rat leisurely descended from the railing feeder and gain the floor where it investigated several places for retreat but found none. I remained in my position and the rat came to the restricted part of the porch and passed by only 4' away. I jumped at it and it ran down the 4 steps leading from the porch (rather stumbled down at an uncontrolled jump and ran to opening at NE side of house. No other rats returned above ground that evening.

Set 6 live trap at 8:00 P.M.

860618-115

Rufous hummingbirds have been vigorously active all day, sometimes 5 at a 4 hole feeder. male ♂ displace females. Females displace other females with somewhat faked contact but not as aggressive as males. One ♀ dominated 3 other females at a feeder by a continuous defense. Females spread tails when confronted with other females; generally just before confrontation or immediately after repelling the invader. Yesterday a ♂ completely controlled a female but today less so with 4 other females competing.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Washington

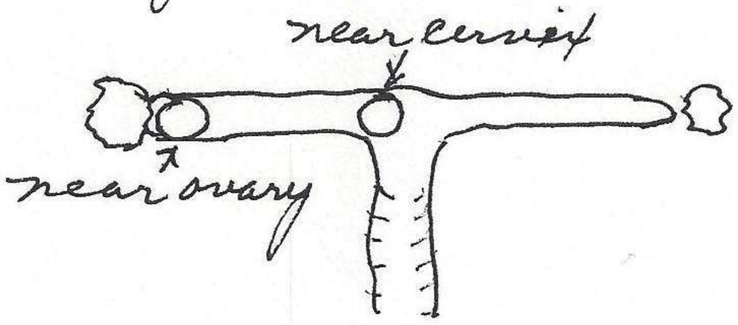
June 19, 1986

Daybreak 3:00 A.M. Stars (except planets) disappeard by 3:30 A.M, Sun up 5:20A.M,

Leo Reef 8:20 AM		11:00 AM =
Leo Rock 2 to 5	47 harbor seal	51 harbor seal
" " 7	4	0 " "
at Little Flower Rock	at 8:20 AM =	11:00 AM =
	13 harbor seal	15 harbor seal
at N Flower Rock	at 8:20 AM =	11:00 A.M
	13 harbor seal	14 harbor seal
	or	
	77 observed at 8:20AM and	80 at 11:00 A.M,

Rufous hummming bird consume 1 cup sugar per feeder per day.

In six traps set last night caught one this A.M at 6:30A.M no other rats in 5 other live traps last night. These rats are diurnal from evidence so far. This rat captured is: 860619-1 Rattus norvegicees 343-58-42-19-193 gms ♀ embryos 6x6 measuring 6 mm each. weight 1.5 gms.



Brown rat active at 12:15 P.M Spent most of time with head just outside entrance of hole under rock. Eastern gray squirrel fed 3' away.

1:00 P.M 51 harbor seal on Leo Reef (rocks no. 2-6) no other seal on other rocks in area.

860620-116

June 20, 1986

8:00 A.M Harbor seal in area:

31 north Flower Rock.
0 Little " "
1 Big " "
6 Leo Reef # 2-6 rocks
0 " " # 8, also 8 glaucous-winged gulls.
1 " " " 9

Left for Chris' home at East Lake, Washington at 10:30 A.M. day clear, coal wind from S. young female mule deer in pper Parking Lot on Bee Estate. Ocean spray on Humphrey Head at its best inflorescence which has been developing as fuel flames in last 1½ weeks. Two mule deer at Grace Church. Remained at Chris' June 21, 22, 23

June 24, 1986

Returned to Lopez Island. Red-tailed hawk at junction 532 and 405. 51 glaucous-winged gulls at Lopez ferry terminal. Highest tide at 12.7 today and Leo Reef rock no. 3 just visible. At Bee House daylight: Total length 95 mm.
860624-1 Sorex
tail 41 mm. Skull only.

June 25, 1986

7:30 A.M		8:30 A.M
Leo Reef rock no. 3 =	5 harbor seal	5 seal
" " " " 4 =	17 " "	20 "
" " " " 5 =	8 " "	8 "
	30 total	33 total

all seal on top of rocks (high tide) Boat wave dislodged 4 of them. Three other seal in water, 2 of them playing.

This A.M fed 3 raccoon by hand, each 2 pieces bread.

9:20 A.M all seal gone except 10 on Leo Rock no. 6. Seven swimming in water near reef. A boat "Kettatas" came near Leo Reef and displaced 5 of the 10 on Rock no 6 by wave action.

2:25 P.M photo 860625-1 of shoreline at Dessected Point 2:25 P.M low tide, 2:35 P.M flow tide.

Photo 860625-2 of tidal surface below Bee House. Free floating algae shows rather rapid rate of growth with increase of temperature.

2:40 p.m. passed a mule deer bedded among conifers 30' N of Boundary Point. I walked 20' from deer and did not displace it. On the return trip 1/2 later it left at 40', as I passed by on trail. There are approx 11 bedding places on this shelf above the shoreline. The area is seldom disturbed.

Rufous hummingbird at sugar feeder.

3:15 a boat (Viking Star) displaced 10 of 28 harbor seal on Leo Reef because of too close an approach.

Plant specimen 860625-4 specimen of grass from cliff meadow above (N) Spring Cove. Open field, damp soils from spring drainage

860625-5 plant specimen Ocean spray (Holodiscus discolor) From ecotone between damp open meadow and Douglas fir forest. Average time for best flower growth. There is some fading of inflorescence but still brilliant.

5:00 P.M Brown rat still active.

-Ruby- crowned kinglet in deciduous trees in Spring Cove.

Photo 860625-6 of orange-crowned warbler, found dead in open at Boundary Point. It measured 122 mm T.L., 60 mm wing, 8 exposed culmen.

860625-7 plant specimen, purple flower, Windy Slope.
860625-8 " " , grass, " "
860625-9 " " , grass, " "
860625-10 " " , " , " "
860625-11 " " , " , " "
860625-12 " " , " , " "
860625-13 " " , " , " "
860625-14 " " , nodding onion, " "
860625-15 " " , regular moss, " "
860625-16 " " , lilylike flower, " "
860625-17 " " , larch ? , " "

Photo 860625-18 of trail below Lower Parking Lot.

June 26, 1986

Between 6:00 and 8:00 A.M current past Boundary Point (trending S) at 1 foot per carrying logs (up to 3' long and debris). From Boundary Point it moved S past Lichen Point. The greatest velocity was passing the points.

James Rabel Bee and I to Lopez Village, thence Sperry Causeway, thence return to Richardson and then Center Road to Humphrey Head. At Richardson noted a turkey

vulture. Barn swallows and northern violet swallows common along entire route.

9:00 P.M Rufous hummingbird still active.

no mule deer observed today except one at Grace Church on Humphrey Head.

June 27, 1986

young ♂ and young ♀ mule deer at feeder this afternoon.

Ade raccoon on NE porch feeder at 9:05 P.M. and begged for food.

June 28, 1986

Male (young) mule deer (antler approx. 1" high) grazed in yard as I stood 15' away. After eating some shrubs it left unafraid.

6 rufous hummingbirds at NE porch feeder. They consume 8 oz. of sugar solution per day.

Jack Haul said Lund feeds rufous hummingbirds (24 of them) at a rate of 18 oz. per hour.

1:15 31 glaucous winged gulls on Flower main island and 23 at rock prominence on N end of island. 26 of the gulls are on nests (either singles or pairs).

There are fewer gulls on Flower Island than on the 26th of June

Great numbers of madrone leaves now on ground (have been falling in last 2-3 weeks) and is considered unusual according to local informants.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co. Wa.

June 29, 1986

5:20 A.M. Rufous hummingbird at feeder

5:30 A.M ad. bald eagle left Leo Reef, flew directly to Bee House, then abruptly turn and flew N along shoreline at 60' heighth

5:45 A.M. adult bald eagle from direction of Leo Reef flew to Bee House, thence to Spring Cove and thence S along shoreline at approx. 40' high

areas of 6'x10' of soaplike foam on water approx. 180' S Bee House and moving S. One 200' W Leo Reef and moving N. These spots maintain themselves and do not diffuse.

11:00 A.M ad. bald eagle to Bee House from E thence S along shoreline at approx. 50' high.

An adult female and young (2nd year) at Bee House in evening.

860630-119

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa

June 30, 1986

James R, Annette and I to Friday Harbor. River otter swam under ferry landing at Lopez Island. Left Lopez Island, at Shaw Island ferry terminal, glaucous-winged on nest on top piling (dolphin). Continued to Friday Harbor and returned.

Deer at Bee House ♂, ♀ at feeder averaging 4 times per day.

June 31, 1986

3:00 P.M. 25 harbor seal on Leo Reef.

4:05 P.M Shark Reef. Specimen 860631-1 Thamnophis, 481 mm body, 137 mm tail, 95 gms. From S end 50' inland among shoreline trees in open space. Specimen 860631-2 Thamnophis E side Swift Lagoon on Lopez Island. Body 554 mm, tail 152 mm, weight 134 gms. Snakes that are resident on Lopez Island are:

Thamnophis sirtalis Puget Sound red-sided garter snake.
" elegans Wandering garter snake.
" ordinoides North Western garter snake
Charina bottae Pacific rubber boa ?.

2 double-crested cormorant and one black oystercatcher on Deadmans Island.

E end military Road, one mule deer with antlers 8".

2 ♂ mule deer in open field S Swift Lagoon, antlers 7" and 8" height (spikes)

8:40 A.M. Humphrey Lagoon, 3 belted kingfishers.

From top NW Quarry on Humphrey Head 1 ad. bald eagle flew N below top (1/3 way down cliff).

July 1, 1986

10:05 A.M Townsend chipmunk copulating,

♂ Townsend Chipmunk chased another chipmunk, sex ?, for 150'

♂ dark eyed junco fed brown-headed cowbird 4 times it's size.

all young of species observed so far beg for food by extending head and neck foreward and flutter their wings. The ♂ junco left the area and young cowbird followed. 4:30 P.M 2 different Townsend chipmunks copulated with 2 other chipmunks in area.

Rain most of day and no mule deer at feeder. A young cowbird fed on cracked corn 10" from eastern gray squirrel. Dark-eyed junco and rufous hummingbird active at 10:05 P.M. Ane hummingbird active 9:15 P.M when light had faded on top Blakely Island. Only one hummingbird active at 9:20 P.M whereas 3-6 are active during day.

860701-120

9:30 P.M. 52 glaucous-winged gulls on territories on top of Flower Island, 51 on nesting area at NW shoreline. 23 on Leo Reef. Lights fading into late twilight.

July 2, 1986

Daybreak 3:20 A.M. at 5:30 A.M in Lopez Sound calm with Blakely Island perfectly reflected. One meander current meandered S past Leo Reef, later one log past S Bee House to Lichen Point, thence N and then S again.

5:40 A.M 7 harbor seal Leo Reef, 7 on north Flower Rock and 1 on Little Flower Rock.

5:41 A.M first rufous hummingbird at Bee House feeder.

5:50 A.M 5 rufous hummingbirds at Bee House feeder

8:00 A.M on top of Flower Island, as viewed from Bee House; 9 glaucous-winged gulls on nests, 9 standing near by. At base of Flower Island for upper on rocky shoreline NW were 7 nesting gulls and 5 standing near the 7 nests and were mates of the nesting gulls.

4 pigeon guillemots walking on slopes of Flower Island.

8:00 A.M. 30 harbor seal on N Flower Rock, 29 on Leo Reef of which were white and one yellowish.

To report molestation of birds & mammals call 526-6133, National marine Fisheries Enforcement Division

This afternoon to Friday Harbor for car license.

July 3, 1986

10:45 311 harbor seal Leo Reef, 31 N Flower Is.
10:50 6 rufous hummingbirds Bee House feeder
no ♂ in last 3 days.
Brown rats despise Townsend chipmunks.

8:00 A.M 9 mule deer at feeder.

Townsend chipmunks feed 12' from head of deer, sometimes to 1' or even nibble on hooves of mule deer.

9:20 A.M River otter swam N past Bee House.

11:00 A.M 28 pleasure boats at one moment in traffic lane in N Lopez Sound. Preparing for 4th July vacation.

11:10 A.M 4 harbor seal on Leo Reef. no other seal on haulout rocks.

860703-1 Peromyscus m. rhallsteri 165-77-24-19-18 gms ♂ testis 7 mm. From Bee House

July 4, 1986

This morning opened wall between bedroom and vaulted ceiling of living room for more circulation of air and psycological space. Will develop into balcony.

Pleasure boats of all kinds in travel lane in N Lopez Sound. They pass at approx 1 per minute and for 10 hours = 600 boats. most all of them going N, all day

Brown rats in feeding area (chicken scratch food) at Bee House active all day averaging sitting every 10 minutes

they have made runways under rocks, three dead tree stumps and in fracture systems of cliffs.

7:15 P.M. The following active: Townsend chipmunk, eastern gray squirrel, rufous-sided towhee, dark-eyed junco, song sparrow, and band-tailed pigeon. all birds except band-tailed pigeon, have for at least the last 2 weeks, fed their young at the feeder.

7:20 P.M. a bee remained at hummingbird feader as 6 hummingbirds fed from same feeder.

July 5, 1986

9:30 A.M 1 harbor seal Rock no 9 of Leo Reef; 8 harbor seal Rock no 10 of Leo Reef; 9 harbor seal on Lettle Flower Rock; 42 harbor seal on N. Flower Rock. also 42 glaucous-winged gulls on Leo Reef and 25 on upper Flower Island and 19 on base (NW) Flower Island.

10:00 A.M The tour boat Bonita displaced all the harbor seal on Leo Reef and rock outliers of Flower Island by clapping hands, yelling They continued S thru Spencer Spit channel. Came within 30' of pullouts.

10:30 A.M no harbor seals returned to Leo Reef or Little Flower Rock but 23 individuals returned to N Flower Island.

10:31 A.M, a last year mule deer young fed at Bee feeder for 1 minute. A ♂ of last year young arrived and fed for 1½ minutes. They met, licked each others nose and mouth and face. They were not with a doe which now has a fawn. There is more and more temporary separation of last years young and their mothers. male of last year with antlers 1" high. young of last year eating dried leaves of madrona that have fallen from trees.

12:20 P.M There are 1 cabin cruiser, one sailboat and 1 row boat fishing within 50' of Leo Reef. all mammals and birds displaced,

3:50 P.M. 2 people in dingy (from Spencer Spit) N 1 to within a few feet of reef, for ½ hour.

8 rufous hummingbirds at Bee feeder,

4:05 P.M. a ♂ and ♀ of last years young fed at Bee feeder, ♂ fed three minutes, left, returned and fed another minute, then left.

4:30 P.M. a minute after a mule deer left the Bee feeding box (cracked corn) a chipmunk jumped to elevated edge of feeder. at that moment a brown rate came to within 1 foot of Townsend Chipmunk and the chipmunk dropped into feeder followed by the brown rat which jumped into the box, charged the chipmunk which left.

While a mule deer was feeding at the Bee feeder, a rat appeared at an underground corridor some 3' away. It reappeared 5 times and on each appearance the deer stopped feeding and watched the rat for 5-20 seconds.

6:30 P.M 37 boats anchored or on buoys at Spencer Spit. They are mostly sailboats. 23 people on the pet at one time.

July 6, 1986

Chris and mat to Lopez for the day. We returned to Anacortes with them on the ferry on their way home.

July 7, 1986

10:55 A.M. 41 harbor seal on Leo Reefs on Rocks 3, 4, 5, 6. (Rocks are the minor divisions of Leo Reef, no 1, 2, 3, 4, 5, 6, 7 are high points on the main reef. Rock 8 is half way between the main or beacon reef and the 3 outlier rocks to W nos. 9, 10, 11.)

12:25 A.M. 49 harbor seal on Leo Reef. no other seal on pinnacles in the area.

12:30 A.M Placed 2 new hummingbird feeder at Bee House.

From Bee House (Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa.,) Collected the following:

860707-1 *Peromyscus maniculatus* (*hoffesteri*) 181-88-22-20-29 gms ♂

July 8, 1986

4:40 A.M. Bald eagle flew S past Bee House.
4:52 A.M 2 bats flew by Bee House water side.
4:57 A.M bat flew by
5:00 A.M. bat flew by Bee House and as above on water side. First rufous hummingbird at feeder. Dark-eyed juncos and young brown-headed cowbird, glaucous-winged gull and rufous-sided towhee.
5:04 A.M. bat flew by.
5:24 A.M dark-eyed juncos. all above except bats at feeder.
5:29 A.M. eastern gray squirrel.
5:46 A.M. band-tailed pigeon
11:10 A.M Recorded measurements of harbor seal of those with longitudinal axis 90° to veew and with ↑ of those in proper axis alignment. Used mm ocular micrometer in Celestron scope with poroprism. These measurements need to be calibrated by known measurement on the Leo Reef beacon. Length: 10, 14, 12, 14, 10, 14, 13, 9, 13, 14, 14, 10, 10, 12, 8, 8 mm. Width 3, 4, 4, 3, 4, The ocular micrometer is devided into 10 units, each unit with 10 subunits, so all told 100 units.

860708-123

One harbor seal fell 2 feet onto another seal. All seal on reef jumped in reaction but none entered the water. They immediately settled down again.

This morning there was a lack of birds and mammals at feeder at Bee House. Temp at 11:50 A.M. 68°F, slight breeze from S, sky 40% clouds.

The first occurrence of the brown rat at Bee House was preceded by absence of these rats. They arrived (16 of them) as if by a joint endevor and established themselves outside the Bee House in the area of the feeder at base of cliffs on N.E. side of house (in front of kitchen window). They prompted the Townsend chipmunk corridors and other points of refugia where they enlarged, extended and maintained the protective tunnels. They became more aggressive and foraged all hours of the daylight. I seldomed observed them more than 50' from home base at the feeder. The area has been used so completely and extensively that the odor of rats has built up to an objectionable level when passing by. The brown rat has displaced the Townsend chipmunk and to some extent the eastern gray squirrel, both the latter however, feed in the area. The rat displaces the chipmunk at the feeder and will retreat at 4' but the gray squirrel with challenge the rat and unless there are 2 or 3 of the rats will stand its ground. Chipmunks will not now enter the corridors (underground). One rat ran across the cliff 6' from a mule deer feeding at the feeder. The deer jumped from feeder and ran 35'. Unless startled the deer remain at feeder and rats seldom approach nearer than 3'.

Trip to Fishermans Bay on Lopez Island, theme Richardson. In channel of marsh beyond outlet Gunnel Bay 2 American Coot and 6 young mallards 1/2 grown.

Adult bald eagle 1/10 mi. N Lopez Village.

2 turkey vultures in new cut grass field preboeling.

High tide 9:00 P.M and at 8:00 A.M water base of arrow marker below Bee House.

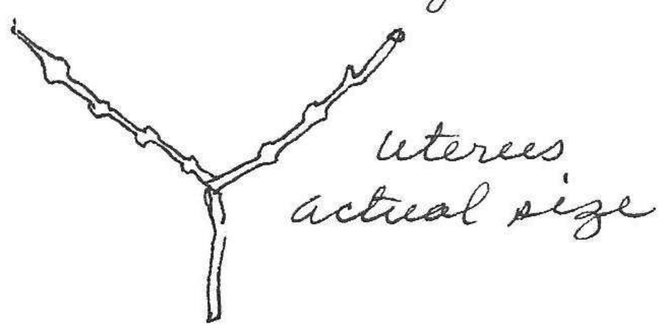
Collected a wood boring beetle from Bee Estate on Lopez Island: 860708-1 wood boring beetle from ground among forest of Douglas fir and madrona.

860709-124

July 9, 1986

5:30 A.M. A boat stopped at Leo Reef and displaced 4 harbor seals.

Last night at 8:00 P.M after chipmunks & gray squerrel had ceased their activity set 5 rat traps at hole where rats had used the holes only 1 hr. previously. Next morning at 5:25 A.M checked traps but caught only 1 Peromyscus maniculatus from a hole used by the brown rat yesterday afternoon. The specimen is: 860709-1 Peromyscus maniculatus hallsteri 191-90-23-20-34gms ♀ 4x4 placental scars, suckling.



6:45 A.M. 2 river otter swim N past Bee House. They were approx 4' from shore.

6:45 A.M. 6 harbor seal on Leo Reef measuring (ocular micrometer, 14, 9, 9, 11, 10, 9. The one measuring 11 was playing with another seal before it

8:30 A.M adult doe mule deer ate cracked corn for 2 min.

8:40 A.M " ♂ " " " " " " 1½ min.

8:45 A.M. Raccoon ate 4 slices of bread fed by hand.

8:46 A.M 20 harbor seals and 17 glaucous-winged gulls on Leo Reef.

8:55 A.M Townsend Chipmunk feed within 3" of feet of mule deer. Fast movement of Townsend Chipmunk cause deer to fast attention or move but slow movement causes curiosity only.

9:00 A.M. no brown rats active so far this A.M.

10:10 A.M First active brown rat.

10:35 A.M. 40 harbor seal on Leo Reef.

4:00 P.M 8 greater yellowlegs and 1 long billed dowitcher at Swift Bay.

7:45 P.M. The smallest of ♀ mule deer fed at feeder at Bee House and Klein's dog, approx 400' S barked. The young immediately left and ran up trail to top of slope where it stopped and faced the direction of the dog for at least 3 minutes. Mule deer of all sizes react to sound which governes their reaction and direction to move, sometimes in the direction of the sound in face of visual evidence to the contrary. I have opened the door to stairway and the deer have moved in my direction until they see me then change their direction, so sound first, then vision record.

July 10, 1986

Collected the following specimen:

860710-1 Rattus rattus norvegicus 362-175-41-21-240gm wt. ♀ 4x4 plac. scars.

This animal selectively caught with peg trap at 10:00 A.m. at Bee House.

July 10, 1986 (cont.)

25 harbor seal on Leo Reef, those measured with 100 unit ocular meeromeeter are: 17, 12, 16, 17, 14, 14, 11, 10, 7. On Little Flower Rock 4 harbor seal.

1:30 P.m House finish at Bee feeder and first one since last recorded in journal.

List of serial number camera lens for Nikon:

Auto zoom lens, Soligar no. 17630287,

micro-nikkor. P auto 1:3,5 F=55 mm no 608245

SB10 Nikon flash 352822

6:45 P.m 2 adult bald eagles (* cont. below.)

8:00 P.m. A brown rat feeding on porch (15' to ground) and when approached jumped off porch to douglas fir branch below, thence awkwardly descended down main trunk of tree to ground. Returned 10 minutes later and when approached left as above. at 8:30 P.m returned and made exit some manner as above. no activity after 8:30 P.m. The brown rat has reversed its day-night cycle by being active during the day and inactive at night. On the mainland in cities the reverse is true. whether the natural behaviorism is a diurnal one and since changed with invading civilized areas or the diurnal habit is the natural one is a question.

* These 2 adult bald eagles hunted on Flower Island, circling 20'-30' apart some 10' above the island. and when a nest of glaucous-winged gulls was sighted they would both descend and alight approx 3' from nest. normally when eagles approach the island, all gulls leave and circle above the island or move out 1/10 mi. and raft on water, some remain and harass the eagles. On this occasion, gulls nearest the eagles dove at the invader clearing by 1' to 1½' feet. when eagles are at the nest they show less concern from the harassment of the eagles than when the eagle first arrive at the island. Each of the eagles spent approx 4-5 min. at each nest visited which was 2 each that I observed. The eagle stood in one position and moved head up & down in flesh tearing motion. at no time did the eagles carry food from nest to other parts of the island or elsewhere. The American crow, which spends considerable time on the island, feeding between territories or at a gull nest, also harassed the eagles.

July 11, 1986

This A.m at 4:00 o'clock to 5:00 two raccoons fed on cracked corn on bird feeder on porch. I hand fed them 6 whole pieces of bread from doorway, which

which they approached without fear.

9 young of last year showing reddish hair of summer pelage on rump.

9:45 A.M. 17 harbor seal on Leo Reef measuring (nose-hind legs): 15, 15, 13, 12, 15, 13, 13, 12, Width: 5, 5, 4.

From Bee House on Bee Estate Collected: no. 860711-1 Peromyscus maniculatus kalleteri 166-85-22-19-2 1gms ♂ testes 10 mm.

10:50 Log rafting moving S has 28 glaucous-winged gull

11:00 P.M 35 harbor seal Leo Reef: 4 on Rock 3, 5 on Rock 4, 6 on Rock 5 and 10 on Rock 7. measurements in units of length (nose to posterior end hind legs) 15, 13, 17, 17, 11, 10. Width 4, 5, 4, 4, 5.

11:05 A.M. Single 9 young mule deer on Deer Trail meadows, no seal on any other haulouts (such as Flower Island)

11:40 a boat WA 8911 B displaced harbor seal on Leo Reef. Passed by on regular route 150' away.

11:55 30 harbor seal now back on Leo Reef. Degree of harassment determines time of return of seals.

12:45 P.M 31 seal on Leo Reef, none elsewhere.

6:30 P.M. Brown rat selected alternate escape route from porch. Rather than climbing down tree, retracted his course across porch, past me and down 3 steps to ground. Across porch slow and deliberate, down steps one at a time with hesitation on each step. One brown rat climbed a 1" diameter inclined (15°) Douglas fir tree to 9 feet high then returned to ground. Each step was slow and deliberate and footing tested. Last 3 lower feet fell to ground. Procedure awkward

July 12, 1986

5:00 A.M. first hummingbird (rufous)

5:30 A.M 3 band-tailed pigeons

9:00 A.M Viking Star a tourist boat displaced 6 of 12 harbor seal on Leo Reef. Ordinarily this boat displaces all seal.

10:00 A.M. 15 harbor seal on Leo Reef. 2 measured (overall length) 15 and 16 units in ocular micrometer. As soon as a can determine an exact measurement of any part of Leo Reef beacon I can determine lengths in mm of these measurements. 6 glaucous-winged gulls and 3 double crested cormorant also on reef.

Orange-crowned warbler in madrona front Bee House.

10:20 A.M 12 harbor seal Leo Reef, 7 glaucous-winged gulls and 2 double-crested cormorants. Seal measured (length) 12, 10, 10, 9, 10.

10:21 A.M. Band-tail pigeons in back of house at deer feeder for first time.

860712-127

The (bob-tailed) eastern gray squirrel at feeder for first time in 2 weeks.

"Christian", a large boat from Anacortes and the "whim-brel) a sail boat both displaced harbor seal on Leo Reef.

12:20 P.M. young ♂ & ♀ mule deer groomed each other neck for 20'.

12:30 P.M 31 seal on Leo Reef. the measurements of some are: 10, 18, 15, 17. Width 4, 5 1/2.

12:45 P.M. young rufous-sided towhee momentarily pecked at bill of song sparrow.

1:10 P.M ♂ adult and ♂ & ♀ young mule deer feed at feeder, the adult for 8 minutes, the ♂ 1 1/2, ♀ young 2 min. when the left the adult went E the young went W. Later this family joined in deer Trail meadow.

1:15 P.M 38 harbor seal on Leo Reef, one measured 10 units in ocular micrometer.

3:25 P.M. 37 harbor seal on Leo Reef, 2 glaucous-winged gulls and 1 double-crested cormorant.

6:00 Pm ♀ mule deer fed 8 min. at feeder.

7:20 P.M brown rats active.

Young of dark-eyed junco, song sparrow, rufous-sided towhee and brown-headed cowbird fed independently.

8:40 P.M. 60 glaucous-winged gulls on upper slopes Flower Island, 28 at base, most NW part of island. Of these 13 nesting (nests) upper and 7 lower, at 10:00 A.M. one nest of glaucous-winged gull approx 1 foot from water. (Highest tide will occurr at 10:25 A.M at 7.9 feet.

Only one active brown rat at Bee House between 5:00-8:00 P.M. Earlier observed 2 rats active between 9:00 AM - 12:00 PM.

8:20 P.M. Water green from algae bloom below Bee House and in Spring Cove.

July 13, 1986

8:30 A.M 8 harbor seal on Leo Reef. also 18 glaucous-winged gulls.

Photos of stairs leading down to Bee House:

860713-1

860713-2

860713-2a

12:10 P.M 11 harbor seals on Leo Reef and only ones on N Lopez Sound Outliers. Of these seal only one could be measured and it was 14 units of ocular micrometer.

Photos of rufous hummingbirds at feeder on Bee House.

860713-3

860713-4

860713-5

860712-128

A rufous hummingbird entered through open window of Bee House and the following photos of this captive bird inside against the window 1

860713-7

860713-8

860713-9

A low but audible call was repeated given when flying against the window.

4:20 P.M 6 harbor seal on Leo Reef. 2 of them measured 20 units each on the ocular micrometer. These were the only seal in haulouts in the area.

4:25 P.M An eastern gray squirrel consumed a peice of chicken fat (1" X 3/4 X 2") in 10 minutes. It was adept in rotating and handling the fat. It ate small pieces which were pulled from edge of fat by moving front hands away from the mouth in 4-5 jerks with its mouth anchored into the edge of the tissue. It finished and Continued feeding on corn

9:00 P.M. And Flower Island out of 80 glaucous-winged gulls on upper reaches of island 9 were setting on nests. Of 49 at base of island 7 were setting on nests.

9:15 A.M 2 young people from Spencer Spit. They rowed around island but did not go ashore or disturb the gulls. If harbor seal had been on rocks of outliers the seal would be displaced.

9:15 A.M The bald eagle that alighted on a dead tree on top of Bald Bluff on Blakely Island at 8:30 A.M, left.

Rufous hummingbirds 88% have not been observed at Bee feeder in 2 week. Large females are in contrast to smaller young.

July 14, 1986

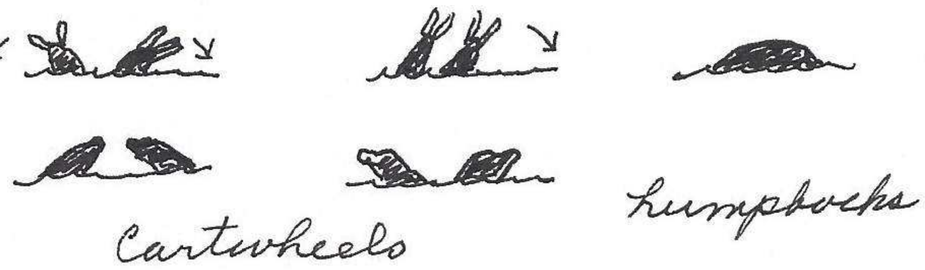
8:20 A.M, adult doe and buck mule deer at feeder. Fed apples and grapes by hand.

9:35 A.m. Large Conrad-Crown pulling Crown Forest no. 61, railroad boxcarlike "three" n Lopez Sound, 41 glaucous-winged gull riding on top,

9:40 AM, On Leo Reef 16 harbor seal, 21 glaucous-winged gulls and 3 double-crested cormorants. The cormorant were within 2½' of seal.

10:30 A.M, 13 harbor seal on Leo Reef, 6 glaucous-winged gulls and 5 double-crested cormorants, Sailboat Kestrel and Wimbrel displaced the resting birds and mammals,

Some water activity that occurrs generally near the reef are cartwheels (opposing or in unison) and hump back maneuvers Cartwheels last as long as 30 second



10:55 On Leo Reef are 16 harbor seal, 8 double-crested cormorants and 3 glaucous-winged gulls.

11:25 A.M. On Leo Reef 16 harbor seal, 7 double-crested cormorant and 4 glaucous-winged gulls. Three of the seal measured 13, 10, 17 micrometer units in total length (nose end hind feet).

12:35 P.M On Leo Reef, 27 harbor seal, 8 double-crested cormorants and 12 glaucous-winged gulls.

Avage number boat in traffic zone 30 per hour (20-45).

1:25 P.M. 2 Townsend chipmunks rolating copulation acts.

1:40 P.M Left Bee House to check Humphrey Head. mule deer at Simmons entrance also American robin. Continued to turnoff road to float, at base of NW Quarry. adult ♂ mule deer and 1 American robin here. now down road to W. 150 beyond 2 american robins. 200' beyond last entry 2 young robins. Road now switchback to no, thence left to bottom at flat of quarry.

Photo 860714-1 From S to N showing profile of cliffs

" 860714-2 " " " " " " " " "

2 turkey vultures passed S at mid heighth of cliffs.

3 pigeon guillemots in Shoal Bay along shoreline opposite flat area.

Photo 860714-4 Douglas fir growing out of cliffs, yellow flowers associated. 4 turkey vultures used N side ridge to gain top of Humphrey Head by circling upward. violet-green swallows passed 1 per 3 minutes. darning needles along shoreline, 3 crows flew N top quarry. Douglas fir invading flat from N edge quarry. High water has placed windrows of drift wood on flats except N end. 1 robin. Left and followed road trail back to road thence N & W to top of NW Quarry. From top recorded 9 photos of environs of the quarry on NE Humphry Head.

860714-5 To N showing lower slopes of quarry

860714-6 " " " upper slopes " " Shaw & Orcas islands beyond

860714-7 " " " " " " " " and ferry in background

860714-8 " " " " "

860714-9 " " " " "

860714-10 " " showing point

860714-12 Top to S

860714-13 " to N

860714-14 " " N,

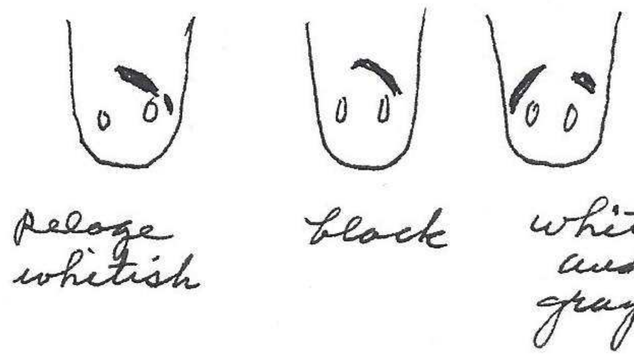
An osprey flew S at same level as turkey vulture. A redtailed hawk circled 2 minutes at N point without movement except for maintaining balance, then moved S.

Returned to Bee House at 7:00 P.M.

860714-130

7:30 A.m 12 harbor seal on Leo Reef. 6 of them left because of rising tide

8:06 A.m 5 harbor seal on Leo Reef and these on top of reef, above advancing tide. Of these 5, 3 were injured: wounds were recent and carried blood stains on pelage These three measured 14 units on the ocular micrometer, the remaining 2 were 15 units. One of the two matched perfectly the background color of the reef.



One of the injured seal left at 8:24 A.m, another 2 at 8:27 A.M, and the last injured one at 8:34 A.m. In each case as wave struck the head of the injured seal, it left abruptly as if the salt water irritated the open wound. The last 2 left at 8:50 as an obligatory movement because of rising tide and in a deliberate movement in contast to the injured seal.

Adult ♀ mule deer at feeder this afternoon.

July 15, 1986

At 5:20 A.M, at low tide observed the following harbor seal. On Leo Reef on Lock no. 1 were 5; Rock 7 - 1. On Big Flower Rock, 4 seal; on Little Flower Rock 2; on N Flower Rock, 1.

At 8:35 A.m on Leo Reef Rock no 2 - 4 seal; on Rock 7 - 4 seal. on N Flower Rock, 15 seal; Little Flower Rock, 4 seal; all on low tide level.

At 9:30 A.M. 11 harbor seal on Leo Reef. One hauled out from water and moved thru 3 protesting seal on its way to top of island. Ordinarily seal are found low or high on rocks depending on tide level, except in instances as above where they move to top because of lack of available space at lower level.

11:20 A.m a women photographer with a leg limp and from Spencer Spit entered Flower island for 1½ hr to photograph the gulls. She displaced 19 harbor seal on N. Flower Rock.

6:00 P.M. Collected and preserved a brown rat from Bee House, Lopez Island 860715-1 Rattus rattus norvegicus 200-92-32-18-43 gms, ♂ Testes 6 mm.

7:30 P.m 8 glaucous-winged gulls on Leo Reef between beacon and Rock 4. also one harbor seal. 9 rhinoceras aucklets feeding 50' beyond. In one area appx 200' E Lieber Point appx 100 glaucous-winged gulls in fishing formation and in an almost body to body column dove into water and created a complete splash of diving and wing flapping. This continued at same intinsity for 3 minutes. One harbor seal and 8 rhinoceras

auklet.

8:45 P.M Viking Star to Leo Reef and displaced 3 harbor seal. on Little Flower Rock, 5 seal; N Flower Rock 13 harbor seal,

July 16, 1986

Two adult and 3 young brown rats fed all morning at Bee House feeder

Trip to Lopez Village. One adult ♂ mule deer fed at edge of forest back of pharmacy building. 2 Turkey vultures circled over village. no birds in Swift Lozood. In Humphrey Head Lagoon 1 great blee heron. Fawn and doe mule deer at Grace's Church on Humphrey Head Joyce Fralic our neighbor to N observed one fawn about 3 days ago.

July 17, 1986

9:40 A.M 21 harbor seal on Leo Reef, 22 on N Flower Rock and 5 on Little Flower Rock

Last night caught a Peromyscus from Bee House. testes 8 mm
860718-1 Peromyscus maniculatus hollisteri 160-71-22-20-19 gms ♂
All museum traps are set inside basement of Bee House. Basement open to outside on one side (unfinished).

July 18, 1986

(12:15 P.M harbor seal on Leo Reef dispersed. Fog all morning to about 11:30 P.M. Fog came into Lopez Sound via Thatcher Pass.)

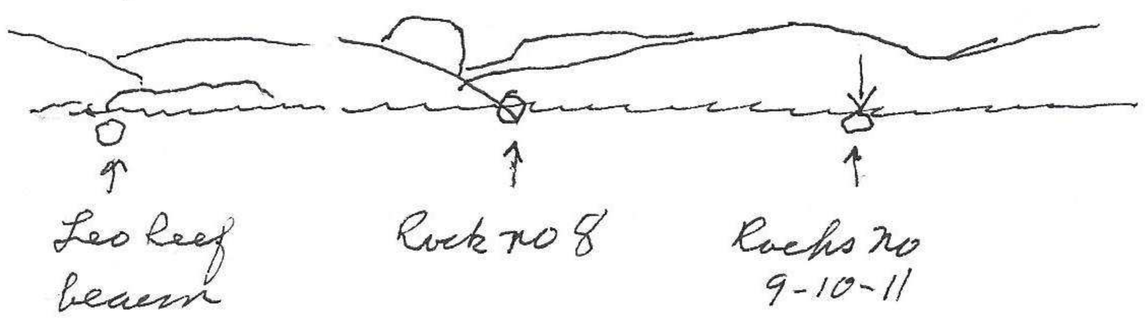
9:00 A.M. a ♂ adult, ♀ adult and young ♀ feeding at Bee House. annette took photos of feeding deer.

July 19, 1986

8:00 A.M ♀ adult at feeder.

configuration of exposed rocks directly below Bee House at −2.8 tide at 8:41 A.M.

Rock no 8 on Leo Reef complex is in direct line with end of Blakely Island (from Bee House). Leo Reef beacon in line with N end Willow Island and Rocks # 9-10-11 N slope of first pass on Decatur Island.



9:00 A.m sailboat arrived at Leo Reef with nine divers, By 10.50 A.m they were in water, all birds and seals displaced. They surfaced periodically and 11:00 A.m lowered diving flag and by 11:20 left the reef on. 2 hours and 15 minutes at reef. No harbor seals or birds on reef during that period of time.

Only one at at 6:30 P.m today.

40 boats moored or anchored at Spencer Spit, At night is like a city with lights on.

July 20, 1986

7:30 A.m bob-tailed eastern grey squirrel at feeder at Bee House.

8:30 A.m 42 harbor seal on Leo Reef, 1 on Little Flower Island.

Trapped a Peromyscus in open basement Bee House:

860720-1 Peromyscus m. sallisteri 142-65-21-18-14 gms. ♀ ut. normal.

8:50 A.m. Intermediate reef of Leo Reef Rock no. 8 is now 2 inches above water. This rock is seldom seen.

9:15 A.m ♀ mule deer at feeder. In contrast to local herd it spooked and ran to deer Trail meadow. It left via upper left part of meadow. The local ♀ is confiding and allow close approach to touching.

Photos of small deer in deer Trail Meadows on Bee Estate.

860720-1 young mule deer

860720-2 " " "

Took several photos (mise) on Bee Estate at 9:30 A.m at low tide - 3.3.

860720-4 ochre star

860720-5 " "

860720-6 Coelenderata

860720-7 Conglomerate (Jurassic-Cret contact) below Bee House. Fracture system

860720-8 " " " " "

860720-9 " " " " "

860720-10 Low tide below Bee House

860720-11 " " " " " Annette.

860720-12 Spring Cove shoreline, panoramic 1

860720-13 " " " " 2

860720-14 Low tide below Bee House

860720-15 " " " " "

Placed a granite boulder on shoreline at -3.3 foot level. Spring Cove Point yellow-jackets increasing at hummingbird feeder at Bee House. 4-5 not uncommon at one time.

10:30 A.m ♂ house finch at feeder at Bee House, uncommon.

Trapped Peromyscus at Bee House from open basement.

860720-20 Peromyscus maniculatus sallisteri 130-55-21-18-9 gms ♀, ut normal. skull only.

860720-133

12:00 P.M. All harbor seal displaced by boat on Leo Reef.

When dark-eyed juneas fly from feeder, eastern gray squirrels react by stopping feeding, becoming alert or leave feeder.

2 young mule of last year groom each others head & neck for as long as 20 minutes. (6:30 P.M). At end of period certain places were dark from dampness of grooming.

2 adult females at feeder, one remained when approach by me, the other spooked and left area.

July 21, 1986

9:00 A.M. all 4 ♀ adult mule deer at feeder, one of which is the original matriarical deer of local herd. A new one with high scar on cannon-bone, front.

9:30 A.M. 45 harbor seal Leo Reef, Rock #3-6,
7 " " N Flower Island.
1 " " Leo Reef Rock #10.

One harbor seal climbed up 45° slope.

Rock #8 (intervening rock) just being exposed.

10:50 A.M. 44 harbor seal Leo Reef, Rocks #3-7.
8 North Flower Island.
1 Leo Reef Rock #10.

Tide current, leaving to N.

11:27 A.M low tide -3.3.

Photos 860721-1 Klein boat (above Round Pt S of Spring Cove on Lopez Island at Humphrey Head.

860721-2 Traverse mechanism to winch boat up shoreline. which is against Humphrey Head bilaws.

860721-3 ibid.

860721-4 ibid.

1:40 P.M. northern red-shafted flicker along shoreline in front Bee House

1:45 P.M 32 harbor seal on Leo Reef, Rocks #3-6, no seal elsewhere.

a ♀ mule deer arrived at feeding bringing several Diptera.

Captured a ♀ brown rat at Bee House. All live traps set at Bee House feeder.

860721-12 Rattus rattus norvegicus 232-102-34-19-58 gms ♀ ut. normal,

7:30 P.M. ♀ mo female mule deer fed at feeder at Bee House. She had 2 scars on upper lateral neck below ear and one at junction elbow. She approached feeder cautously and at feeder held right rear leg a foot farther back than left one. If movement was detected in our kitchen, she ran up hill for 20'-30', turned around

and after 2-3 min. returned to feed. Toward last she accepted my presence in the kitchen but only if I remained motionless. She finally left up trail to Deer Trail meadow, groomed herself, fed over to Boundary Point and left into bench timber to N. This ♀ is slightly smaller than other adult ♀♀'s and has been with us for the last 2 months. She is probably one of the 2 ♀ adults oregionally present when we moved here. She is easily spooked but shares more and more confidence in us.

8:05 P.M. Harold Klein's large dog was in Deer Trail meadow and was barking. We chased it back toward Klein's property.

8:30 P.M. great blue heron flew S past Bee House and alighted in douglas fir at Lichen Point.

There are 5 location of mule deer bones (partial skeletons), all small early first year deer. One on shoreline E of O'Leary property and 4 on Bee Estate between top of stairs and Lower Parking Lot.

mule deer do not react to moving brown rats at feeder providing the rats are in line of vision. If they move or run behind deer, they (deer) will jump.

A small ♀ mule deer tried to gain access to feeder by crawling thru hind legs of an adult ♂ deer. Finally the ♂ jumped into air to extricate the impass. The hind foot of mule deer is used to scratch head, neck and even inside ear.

Townsend chipmunks are displaced by brown rats but the eastern gray squirrel is dominant. One squirrel inadvertently jumped upon a young rat which immediately ran away. The squirrel, however jumped up & down 3 times before it realized the rat had changed position. Something on the order of a human when unknowingly encountering a rattlesnake at which time the invader puts on a high step dance.

8:56 P.M. 2 band-tailed pigeons at feeder. Rufous hummingbirds still active.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa.

July 22, 1986.

9:00 A.M. 32 harbor seal Leo Reef Rocks ± 2-6, 1 on Rock ± 10

Brown-headed cowbirds have not been observed at Bee House since last recorded in journal.

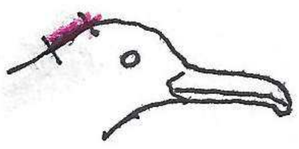
Band-tailed pigeon regular daily visitor, however, some days absent. Crows (American) daily. Song sparrows generally 1 or 2 at feeder but today 5 at feeder at same time.

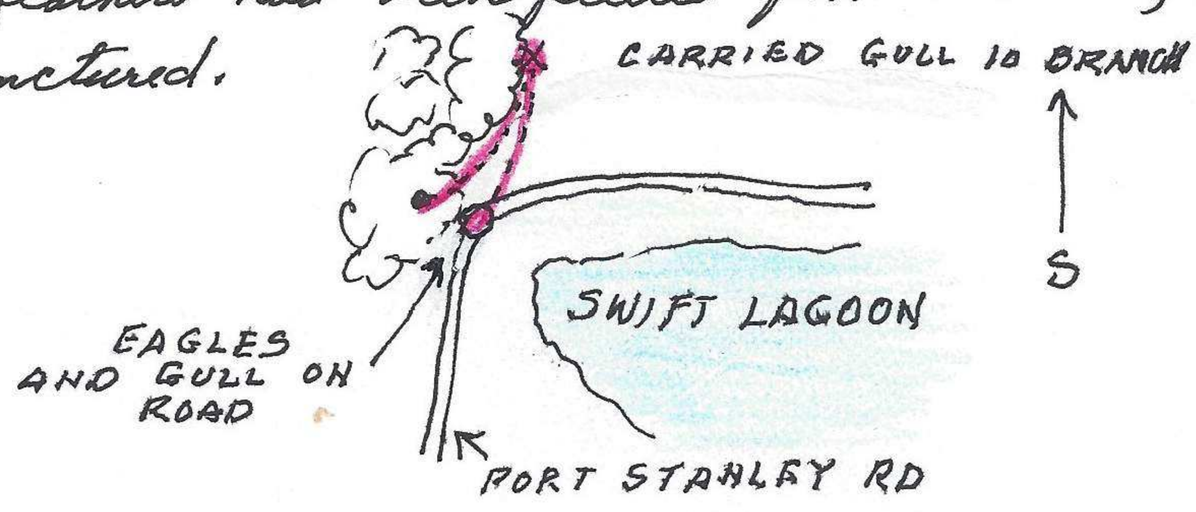
9:05 A.M. ♂ adult mule deer (scar on Cannon bone) took 20 min.

to approach feeder and while at feeder kept rear right leg out-stretch to ground behind. Any movement in kitchen window caused the deer to leave but would return.

9:15 A.M. - Increased vegetation debris near shore as tide ebbs to a low -3.2 today at 12:10 P.M. Sometimes Spring Cove full of debris at high tide and following low tide clear of debris. When wind is frm E or SE more debris accumulates in Cove and less debris moves out.

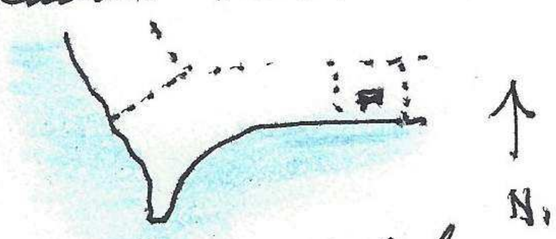
10:20 A.M while driving S along E side Swift Lagoon noticed 2 ad. bald eagles feeding on an adult glaucous-winged gull at the bend of the road that runs along the S side of Swift Lagoon. The gull was at the edge of the road (Port Stanley Rd.) and the eagles were pulling feathers (10 in number) frm the gull. As we approached one of the eagles picked up the gull and laboriously flew S 250' along edge of conifer trees, landing with the gull on a branch 8' above ground on a Douglas fir. The second eagle followed closely. As I walked toward the tree they left the gull on the branch and flew back to bend of road and alighted in a Douglas fir above the bend. As they returned to the bend of the road, they offered a call every 4 seconds. a domestic goose in Swift Lagoon called continuously while the eagles were in the area. I recovered the gull from the branch and brought it back home for photos & measurements. Photo 860722-1 of this glaucous-winged gull. It measured: 623 mm total length, 420 mm wing, 84 mm gape, 866 grams wt, 2333 wing spread. There was no external injury except 2 sq inches of skin at back of skull where feathers had been pulled frm the head, but skin not punctured.





2:06 P.M. 47 Harbor seal on Lee Reef.

Drove to Joe Niederman, Rt 1, Box 2335, Shark Reef Road. He is building on 8 acres of the 50 acres he at once owned. He sold to a chemist frum Switzerland who came to Univ. Wash marine Laboratories for research. The property is the point S of Shark Reef. 6 Calif. sea lions rested on rocks of Mummy Island.



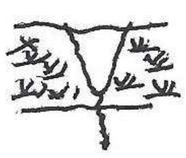
8:16 P.M. Sorex vagrans, wandering shrew, active at deer feeder: base of cliff, NW side Bee House. It ran frm one rock to another and moving all the time. Came to feeder (corn at base) and each time picked up

a fragment of corn, ran to protechnic rocks to consume the corn and then left the area. Lights fading.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa.

July 23, 1986

6:57 A.M Townsend Chipmunk first active at Bee House.
Collected Peromyscus maniculatus hollisteri from Bee House;
860723-2 Peromyscus m. h. 157-75-22-18-18 gms, ♂ testes 6 mm long.
8:45 A.M 17 harbor seal Leo Reef.
9:25 A.M Left for Orcas to check with bank. At bank in East-sound photographed flowers;
860723-1 (insert before 860723-2, a Peromyscus) Shasta daisy from Orcas, at Eastsound. Photo took prize for Island Neighbors magazine
Photo 860723-3 ibid. Shasta daisy.
Photo 860723-4 locality as above and rose.
Photo 860723-5 general view of flowers.
The caretaker of bank property said that mule deer do not eat Shasta daisies or poppies. Control of salal by trimming or pulling by roots.
Photo 860723-5 from n end of Orcas Sound at Eastsound showing bay, island and dingy being carried to water. At low tide this island is connected to the mainland. 64 glaucous-winged gulls, 2 American crows and 2 belted kingfisher in area. Fresh water entering sound inhibits green vegetation on flats



At E entrance channel N Shaw in 30° of view across channel are 13 Bonaparte gulls.
In front of Bee House I have noticed new gulls flying S for the last 5 days.
Killdeer at Swift Lagoon.

July 24, 1986

From Bee House on Humphrey Head on Lopez Island:
860724-1 Peromyscus maniculatus hollisteri, 156-70-22-18-13 gms ♀, ut. normal.

860724-2 Peromyscus maniculatus hollisteri, 151-72-22-18-15 gms ♀, ut. normal.

Adult bald eagle flew to S past Bee House at 6:30 A.M at 70' high and 100' from shore.
Reflections of Blakely in N Lopez Sound with perfect reflection of mt. and trees. At intervals to wind streaks, then return to perfect reflection.

6:30 A.M harbor seal swimming and then diving approx. 200' SE Bee House.

10:00 A.M 31 harbor seal Leo Reef and only ones in area.

4:30 P.M no harbor seal on any resting outliers in N Lopez Sound.

From Bee House at 4:35 P.M;

860724-3 Rattus rattus norvegicus, 240-110-35-18-62gms, ♀, wt. normal.

860724-4 " " " 225-110-34-18-50gms, ♂ testis 7mm.

8:30 P.M. New ♀ mule deer at Bee House feeder, but not associated with main group. 4 other ♀ mule deer arrived later.

Photo 860724-5 from Bee House showing 5 people of 2 families on shoreline between Spring Cove and Lekeen Point.

July 25, 1986

9:05 a ♀ mule deer, a fawn, a ♀ and second year young ♂ arrived at Bee feeder in single file. The adult ♀ forced young ♂ aside by forceful thrusts of front feet and then the young female and in so doing displaced the fawn. This ♀ was definetely dominant. Heighth at shoulders of three of the deer are: ad ♀, 27" or 675 mm, ♂ 24 3/4" or 619 mm, young ♀ 22" or 550 mm. After the ♂ had her fawn (see dates in journal) the young ♀ and ♂ which were always associated with the ♀ before giving birth to young are now independent of ♀ but as the fawn becomes older the former members of the family return to their mother.

9:30 A.M. 20 harbor seal Leo Reef, one young measured 9 1/2 mm on scope ocular, when calibrated on a known measurement on the beacon will give intrinsic total length of young. Reef just being visually exposed from fog that has been on the reef all morning. 5 harbor seal on N. Flower Rock.

Dark-eyed juncos with 2 outer white tail feathers out 60° from axis of body.

1:35 P.M. 27 harbor seal on Leo Reef.

3:45 P.M The following mammal from Bee House.

860725-1 Rattus rattus norvegicus. 208-102-33-19-46gms ♂ testis 8mm.

Photo 860725-2 and 860725-3 of ♀ad and her fawn at Bee House.

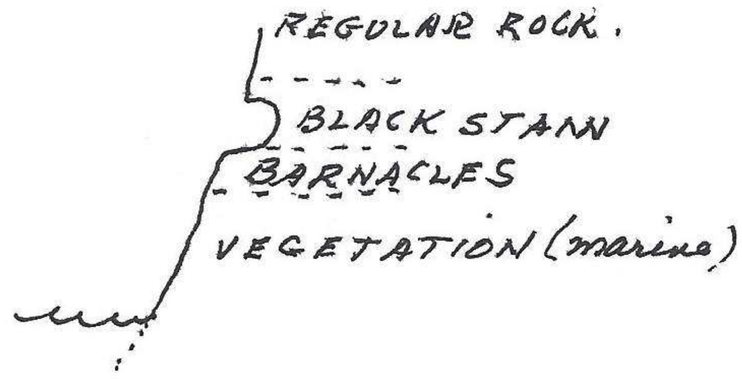
July 26, 1986

8:15 A.M. A female mule deer and her fawn arrived at Bee feeder and fed on cracked corn for 8 minutes, then left N to house terrace where I fed the female 8 slices of apples by hand. The fawn remained 20' away but finally joined mother 8' away. At 8:30 they left NNE on beachland to Boundary Point. at 8:33 the adult female

moved to deer Trail Slope and thence to top of cliffs above feeder NW of Bee House. More feed was placed in feeder and the ♀ came down and fed 10 minutes and without her fawn. During that time I checked Boundary Point to see if fawn was there but unsuccessfully. I returned to Bee House. At 8:45 the ♀ started up slope of deer Trail Slope where she was met by fawn coming from the NNE beyond Boundary Point. The fawn approched the mother head-on, enter underneath the female threw her front legs and within reach of nipples faced the posterior of mother, fed for 3 minutes with continuous jabs at the udder every 2 seconds. Mother stood still but finally moved forward along trail to N on trail above forested bench. The young fed on ground shrubs and 100' behind mother. The fawn while grazing urinated once and defecated twice then joined its mother. Separation is generally 8-20 feet, but this morning up to 150'.

10:10 A.M. 13 harbor seal Leo Reef. No others elsewhere.

Trip Friday Harbor on ferry. Shoreline on E side Shaw thus:



Bald eagle SE end Shaw Island and only one observed. Across San Juan Channel: 13 rhinoceros auklets, 11 pigeon guillemots, 150 Bonaparte gulls, generally distributed, 5 marbled murrelets. Returned later to Lopez Island.

July 27, 1986

8:10 A.M. young ♂ & ♀ mule deer at Bee feeder.

9:19 A.M ad. ♀ mule deer

9:33 A.M above ♀ left feeder walked up trail & then N eating dried madrona leave on the ground and herbs & shrubs along the trail.

9:54 A.M. a 3" spike mule deer arrived from S and passed E across deer Trail Slope. A ♀ mule deer watched the entire time. Ordinarily when deer pass thru they stop and feed.

9:57 A.M a ♀ mule deer moved into bench forest at Boundary Point and remained 38 minutes without her fawn.

10:15 A.M largest harbor seal on Leo Reef 21 mm on scope ocular. 7 seal on north Flower Rock.

4:15 P.M. Boats on ferry route between W Thatcher Pass & E of Bee House (11 sail, 10 motor) at any one time.

4:45 P.M. 20 boats (11 sail, 6 motor) between W Thatcher Pass and E of Bee House, 9 going SE, 11 going N.W.

9:00 P.M. 4 ♂ mule deer at Bee House.

10:05 a female mule deer and her fawn we aggressively displaced by a bent spike male. They circled and then retierned. Heighth of these 3 deer at shaulders: doe 26½", fawn 17½", buck 31".

July 28 and 29, 1984

Spent 2 days in Mt. Vernon.

July 30, 1986

Returned Lopez Island. Enroute on ferry observed, 3 pigeon guillemots, 1 common murre, 5 marbled murrelets.

At Swift Bay, Low Bank, 43 Bonaparte gulls, 2 greater yellowlegs.

At Bee House the food in feeder was gone and replaced at 4:30 P.m. 20 minutes later 2 Townsend Chipmunks and 1 eastern gray squirrel were at feeder. 5:35 P.m young female at feeder. 10:30 P.m. 2 raccoons at porch feeder.

July 31, 1986

12:00 P.m 12 harbor seal Leo Reef on Rocks 2-6, 11 on N Flower Rock.

12:10 P.m all harbor seals on Leo Reef left instantaneously with no boats in area.

4:00 P.m, 15 band-tailed pigeons at disk feeder Disk 17½" in diameter and 23½" in diameter, harrow disks used in tilling soil

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa.

Aug 1, 1984.

6:40 A.m. young ♀ mule deer at feeder.

8:15 A.m. 9 harbor seal Little Flower Rock, 14 seal on N Flower Rock, 19 seal on Rocks # 2 and #5, Leo Reef.

8:20 A.m. 2 young mule deer at feeder.

8:40 A.m adult ♀ mule deer at feeder.

10:00 A.m. no rufous hummingbird at porch feeder. A week ago 6-10 hummingbirds at feeder but none today.

Brown. headed cowbirds have nat been seen to feed here.

Townsend chipmunk same numbers.

1:00 P.m. Specimen no. 860801-1 and 860801-2 Basilarch lorquini a butterfly from front porch.

1:05 P.m. ad. ♀ mule deer at feeder for 11 minutes,

6:00 P.m. ad ♀ mule deer at feeder.

Bonaparte gulls increasing. most of them 85%, flying slowly 1 foot or so above water. 15 per cent resting on shore on sands.

860802-140

Aug. 2, 1986

8:00 A.M 24 harbor seal on Leo Reef, 8 on N Flower Rock, 8 on Little Flower Rock.

2:00 P.M, 17 glaucous-winged gulls on upper ridge of N Flower Island, 7 on lower rocks NW end of island.

2:10 P.M 80 Bonaparte gulls and 1 greater yellowlegs on Swift Lagoon.

92 glaucous-winged gulls and 24 Bonaparte gulls on Swift Bay (low beach).

At Hummel Lake 63 glaucous-winged gulls bathing on water.

4:00 P.M. ad. ♀ mule deer at feeder Bee House.

7:25 P.M 59 glaucous-winged gulls on upper Flower Island 33 on lower slopes at edgewater, numbers normal. A dozen or so were on nests.

Aug. 3, 1986

8:45 A.M ad. ♀ mule deer at Bee feeder.

10:50 A.M 34 harbor seal Leo Reef Rocks #2 and #5, 33 on N Flower Island Rock. For the rest of the day the great number of boats on the ferry highway caused seal to leave areas.

2:00 P.M young ♂ mule deer at Bee feeder.

4:00 P.M ad. ♀ mule deer at Bee feeder.

5:45 P.M 46 glaucous-winged gulls on upper slope Flower Island 32 on rock at NW end island.

Aug. 4, 1986

8:00 A.M. ad. ♀ and young (this years) and last year ♀ mule deer fed together. The ad. ♀ and fawn remained after displacing the other ♀ deer.

8:30 A.M. an ad ♀ of last year not a member of the local group came to feed at Bee feeder with other deer. A young approached the non-member and when it touched the nose jumped back 3 feet.

2:00 P.M 18 harbor seal on north Flower Rock, no others in area.

no mule deer in area of Bee House this afternoon or evening.

Fawns mule deer scratch corn in feeder 70% of the time. The only other mule deer that scratches at its food is a last year ♀. When feeding on ground deer only rarely scratch the corn. Fawns will feed 100' from females mothers. Fawns are rejected at feeding from mothers milk glands.

Degree of confidence of man by mule deer from greatest to least are: young ♂ of last year, young female of last year, adult female, fawns, ad. ♀ from another herd. The greatest incompatibility is the local herd and invader from other herd. The ad. female fed at feeder for

3 days without her fawn.

860804-1 *Peromyscus maniculatus hollisteri* 185-84-23-18-27gms ♀ at. normal- skull only. From Bee House.

Aug. 5, 1986

Organized for trip to Vancouver, Canada for Efpasition. On way to ferry terminal on Lopez Island stopped at Lopez Village. at 11:30 A.M 2 turley vultures soared 150' above ground 1/10 mi. N of Lopez Village P.O. English sparrow in village. Fog banks in several directions, some almost block, others brown, gray or white. On trip to Anacortes along ferry route observed approx 200 glaucous-winged gulls generally distributed on Pointer Island. checked mt Vernon then continued N on highway 5 to mt. Vernon Thousand Trails. for overnite camping.

Aug 6, 1986

Chris Bee Kenagy and matthew from Last Lake (Snohomish Co.) arrived and we all left in Barth for Vancouver to N. Camp at Fraser River Park, at E end of skyway overhead train which we used to communicate between camp & exposition. mat at stage of perpetual motion at expo.

Aug. 7, 1986

Full day at exposition.

Aug. 8, 1986

Expo. part of day then to mt. Vernon Thousand Trails Camp.

Aug 9, 1986

Left TT for Chris' at Lost Lake.

Aug 10, 1986

Left Chris' for Lopez Island arriving at 7:00 P.M.

Aug. 11, 1986

8:20 A.M. Bimbam and Little Sister both mule deer at feeder at Bee House. and fed for 8 minutes.

10:05 A.M. 15 harbor seal on Leo Reef, 2 in water in circular chasing activity, 1 seal on N Flower Rock.

2:10 P.M Bimbam and Little Sister fed at feeder at Bee House for 6 minutes, then left.

2:20 P.M above 2 mule deer returned to feeder and fed for 3 minutes. Dark-eyed juneo most common visitor to Bee House feeder. There have been fewer Townsend chipmunks and eastern gray squirrel than previous week.

4:35 P.M. Two mule deer, Bimbam and Little Sister at feeder for seven minutes. 3 brown rats, Rattus norvegicus active at feeder from 4:00 P.M to 6:00 P.M. but not later than 6:00 P.M. Townsend chipmunk active at 6:34 P.M.

860811-1 Townsend chipmunk 250-111-36-20-9 gms, ♀ ut. normal. Taken at Bee House. Prepared as specimen.

8:00 P.M 138 Bonaparte gulls from a loose raft of generally distributed from 1/3 distance from Perrine Pass to Spencer Spit on NW side of Leo Reef. 1/3 were pairs but separated up to 15'. One or two fleet along this raft. They moved along tidal surface channels.

Aug. 12, 1986

8:30 A.M. Bimbam and Little Sister, mule deer, at Bee House feeder.

10:20 A.M. An adult mule deer and her fawn at feeder

11:30 A.M Neighbor O'Leary took boat to Leo Reef and displaced harbor seal on N. Flower Rock.

4:10 P.M An adult ♀ mule deer and fawn remained in area for 3/4 hrs.

4:30 P.M Lone fawn mule deer at feeder.

4:40 P.M ♀ mule deer of last year at feeder.

6:35 P.M ad. ♀ mule deer and fawn at Bee feeder. Fawn groomed mothers neck.

Collected 860812-1 yellow jacket, all at Bee House.

860812-2 Diptera

860812-3 small bee of different habits than common bee in area.

Aug 13, 1986

8:35 A.M Bimbam and Little Sister, mule deer, at Bee feeder.

8:30 A.M 22 glaucous-winged gulls on upper & lower slopes Flower Island. 3 harbor seal Leo Reef, 3 on N Flower Rock.

9:50 A.M. 16 harbor seal Leo Reef, no others in area.

9:52 A.M. 18 glaucous-winged gull upper slope Flower Island, 14 on lower slope.

11:00 A.M. Ad. ♀ mule deer at Bee feeder.

4:00 P.M. Ad ♀ mule deer and fawn at Bee feeder, each separated by 40' at times.

Aug. 15, 1986

8:05 A.M ♂ mule deer at feeder.

4:00 P.m. Collected Rattus norvegicus at Bee House.

860815-1 R. norveg. 281-36-38-20-103 gms. ♀, ut. normal.

6:30 P.m young ♂ mule deer at feeder.

Joyce Fralic, our neighbor to N. said a fawn called like a kitten from under her porch (open) and started to go to an adult ♀ mule deer. The adult gave a grunt and the fawn returned to under the porch. Joyce also said 2 raccoon joined the usual group of 3 last night. The newcomers are marked by one with an injured ear and the other with a lopped ear.

Weekend boats continually displace harbor seal on Leo Reef, especially tour boats.

2 marbled murrelets and a glaucous-winged gull floated tide for 2/10 miles.

Young last year ♀ alone in Upper Parking Lot 1/2 hr. after dark.

Aug. 17, 1996

Chris, Steve and matt came in yesterday evening and left today at 2:00 P.m. All deer of area at Bee House, and remained as a close group for 45 minutes.

Prepared six slices of apple for mule deer. The yellow-jackets were so numerous that I could not hold the slices nor would the deer accept them with yellow-jackets on them. Only when there were no hornets on the apples would they accept them. One deer ran away from me because of the presence of hornets.

Photo 860818-1 of young female mule deer at Bee House.

Photo 860818-2 of young male mule deer at Bee House

Photo 860818-3 of fawn mule deer at Bee House. These deer moved rapidly from place to place according to concentration of yellow-jackets. They would shake their head & ears vigorously.

Fawn mule deer was rejected by mother when attempting to suckle.

Second year ♂ mule deer struck at fawn with fright feet.

4 young river otter (1/2 grown) play on rocks in front of Bee House.

Checked fresh excavated hole made by pileated woodpecker at upper parking Lot of Bee Estate. Holes averaged 2"x 3" ▯ and were 6' above ground on a cedar tree.

Observed ad. ♂ mule deer on trail above Shoal Bay Marina on W side Humphrey Head.

10:30 A.m 32 harbor seal Leo Reef, 26 on N Flower Rock.

2 common raven called 4 times W side Bee Estate

After some period of absence, 6 band-tailed pigeons have been observed at feeder in last week.

Rufous hummingbirds have not been observed in last 5 days (see last recorded entry in journal), and sugar feeders full.

Dark-eyed juncos present at feeders most all the time and some still being fed by adults.

860818-6 Perornyeus maniculatus Rollisteri. 155-71-22-17-14 gms, ♀, wt normal.

Chestnut-backed chickadee visits feed 3-5 times a day. absent late spring and summer at Bee House

Leo Reef at high tide is 6" from top ⁋ 2 Rock.

6:30 P.m Band-tailed pigeon at porch feeder Bee House.

Aug. 20, 1986

860820-1 Peromyscus maniculatus b. 162-75-22-19-18 gms ♀ wt. normal. From Bee House.

860820-2 Peromyscus maniculatus Rollisteri 163-81-23-20-17 gms ♀ wt. normal. From Bee House.

10:00 A.m last year ♀ mule deer at feeder.

4:00 P.m ♂ & ♀ young mule deer at feeder, last years young.

10:30 P.m moonlight beam across Leo Reef and 63 silhouettes of gulls every 3-5 inches

Today is the first day House finches (2) at Bee feeder this summer (see last observed in journal).

Aug. 21, 1986

9:30 A.m. A lone mule deer fawn at feeder.

9:45 A.m Fawn returned to feeder. no other deer this A.m at feeder.

860821-1 Hymenoptera specimen from Bee House

9:50 A.m. Fawn mule deer fed twice and then between feeding bedded down at feeder. The noise of a brown rat 6' away caused the fawn to rise

10:00 A.m purple finch at feeder.

10:30 A.m mule deer of last year ♀, at feeder.

11:00 A.m mule deer of last year ♂ at feeder.

4:00 P.m adult ♀ and fawn mule deer at feeder

4:50 P.m adult ♂ mule deer at feeder

4:45 P.m. adult ♂ " " " "

Townsend Chipmunk fed 2' from ♂ mule deer after being displaced by deer. The chipmunk reacts to brown rat by running away and then returning to repeat the act if rat moves. Intern,

behave like chipmunks in that when they have near encounters the rat will abruptly leave if the chipmunk makes a quick movement, chipmunks feed to within contact of hooves of deer. Chipmunks and rats have closest foraging when among rock or other kinds of barriers. The brown rat develops many new holes in dead stumps, among and under rocks and soil. I have never observed them digging or manipulating soils so a presume they are made and maintained by use of runways. Rats may be absent on some days and when feeding are of different numbers and age individuals of the same local groups. Full compliment of mule deer this evening. Last Townsend Chipmunk and brown rat left feeder at 8:01 P.M The insular rats are diurnal and not nocturnal as found on mainland. I have never observed a brown rat after dark nor have I trapped one at that time. Chipmunks are strictly diurnal.

Aug 23, 1986

8:55 A.M. Viking Star to Leo Reef and displaced all harbor seal.

9:00 - 9:30 A.M. All four mule deer in one group.

10:30 A.M. New adult mule deer ♀ arrived and weary, scar on top shoulder. Smelled fawn at 1½' distance.

11:00 A.M. 7 mule deer at feeder Bee House.

Aug. 24, 1986

Pine siskin struck window.

Pileated woodpecker at property S Lund residence on Humphrey Head.

12:45 P.M. 42 glaucous-winged gulls Leo Reef included were 3 immatures. Last two week, at least, the glaucous-winged gulls have used Leo Reef as resting place both day and night.

12:45 P.M 12 glaucous-winged gulls on upper slope Flower Island, 7 on lower slopes. The numbers on Flower Island are decreasing and more use Leo Reef.

For last 3 weeks 10-50 shorebirds in Surft Lagoon including (today) 6 long-billed dowitcher, 4 lesser yellowlegs, 40 western sandpipers. These were proceeded 2 weeks by Bonaparte gulls.

860824-1 hornet from Bee House.

Aug. 25, 1986

At daybreak and earlier, Constellation Leo perfectly reflected star by star in sound SE of Bee House. Blakely black well after daybreak. no clouds. First morning winds after daybreak and show effect first on E side sound near Blakely. Fish most act-

tive after daybreak and before sunrise.

Aug. 26, 1986

10:30 P.M. ♂ & ♀ young of last year at feeder.

2:20 P.M. ad ♀ and fawn at feeder.

madrona leaves falling since first warm part of summer a month or so ago Below these trees ground and trails 80-90 per cent covered with leaves, some places 100 per cent. Today and for last week, large fragments of red madrona bark has fallen onto ground in trails and elsewhere. One piece of bark measured 1 sq. foot. new bark on trees is green.

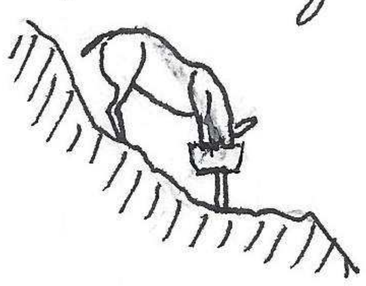
Aug. 29, 1986

7:45 A.M. young ♀ mule deer at Bee feeder

11:05 A.M. ad. ♀, her fawn and a ♂ and ♀ young at feeder at me time. The adult has grease mark (5") between shoulders and back legs.

11:15 A.M young ♂ + a fawn at feeder. The ♂ displaced fawn.

a fawn mule deer for fawn to stand on rock to reach feeder, now 5 days later stands on slope with both feet in the feeder.



An eastern gray squirrel attacked a brown (medium size) rat, seven time on community feeding grounds at Bee House. no bodily contact.

a Townsend chipmunk in an escape from a challenging brown rat collided with another brown rat resulting in a fraction of a second contact. Brown rats continually chase chipmunks from feeder but chipmunks return for further encounters. Rats definitely interfer with normal chipmunk activity. The brown rats did not enter wire traps or snares.

Aug 30-31, 1986

At Chris' at Last Lake Snohomish Co. Wash.

Sept. 1, 1986

Left Chris' for Lopez. At Anacortes met James R. Bee and his friends from Duval, Wa. Stewart, Peggy, & Eli Brunn. Enroute to Lopez Island from Anacortes observed a common tern. Stewart Brun reports: 2 cub black bears at his home in Duval, Wa. also a bobcat. He thinks dry weather forced them down from mountains. At Lopez Island on Bee House feeding area observed fawn with spots and mother mule deer.

860902-147

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa.

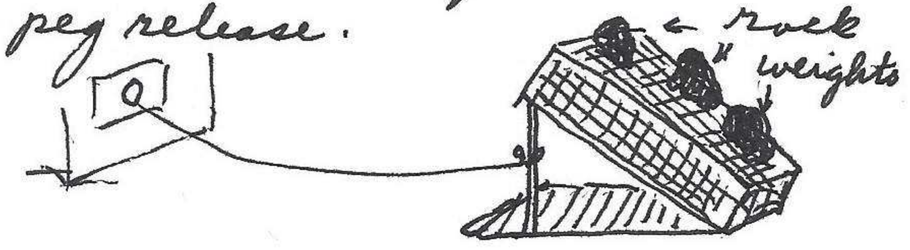
Sept. 2, 1986

8:00 A.M. 18 harbor seal Lee Reef, 32 on N. Flower Rock.
2 mule deer and 2 young of last year at Bee feeder.
11:00 A.M. From base Douglas fir at Bee House collected:

860902-1 Coleoptera
860902-2
860902-3
860902-4 arachnid
1 young female mule deer at Bee feeder.

Sept. 3, 1986

8:45 A.M young male mule deer at feeder, no other deer in area.
11:10 A.M. Captured the following brown rats at feeder at Bee House, with wire mesh trap and wooden peg release. This allows for selective trapping and is controlled by string peg release from in side our house.



860903-1	Rattus norvegicus	"	330-[140]-40-20-23 gms ♂ testis 20 mm.
860903-2	"	"	238-112-35-19-64 gms ♂ testis 9 mm
860903-3	"	"	211-102-32-17-43 gms ♀ ut. normal
860903-4	"	"	202-98-32-18-48 gms ♀ ut. normal.
860903-5	"	"	221-111-34-20-56 gms ♂ testis 6 mm
860903-6	Peromyscus maniculatus hollisteri		179-83-23-18-20 gms. ♀ ut. normal. skull only.

A young ♂ and a fawn feed at feeder this A.M but at different times. A young ♀ (meaning last years young) came to feeder at 4:30 P.M.

In regard to above brown rats, they were 5 caught out of seven feeding in area. They were easily captured (mainly sub-adults) and fed unafraid at feeder. They fed from 3'-5' from deer. A quick movement of either the deer or rats would cause a response by either running to escape holes or in the case of the deer, come to attention. Greatest activity of brown rats from 10-12 AM and 2-5 P.M.

Sept. 4, 1986

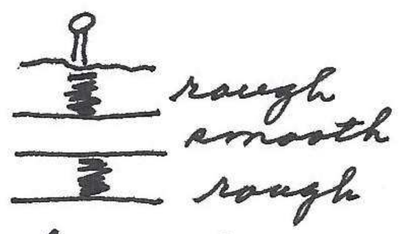
5:00 A.M. Daybreak begins. Orion and big "G" 45° to E.
5:10 A.M Daybreak Obvious
5:20 A.M High magnetude stars becoming faint.
5:30 A.M Small stars obscure
5:40 A.M Low magnitude stars in big "G" faint
5:50 A.M Stars in Orion belt gone, large stars in Orion and big "G"

faint.

5:58 all stars obscure.

Fish in N Lopez Sound active as, at least, as soon after daybreak as they can be seen to at least 7:00 A.M.

Reflection of stars on different water surfaces: 5
o water smooth, ≀ reflection with mild agitation of water, ≀≀ from wave reflection
Leo Reef reflection:



This AM collected the following mammal from Bee House;
860904-1 Peromyscus maniculatus hollisteri 170-83-23-20-22gms, ♂ testes 1mm
The missing hair on left side is not from hair slipping.

8:15 A.M. American crow and eastern gray squirrel feeding 2 feet apart.

8:15 A.M. Chipmunk (Townsend) and eastern gray squirrel feeding 1' apart.

9:05 A.M. Ad. ♀ mule deer fed for 10 minutes. The entire time one fly constantly harassed the deer. The deer reacted by constantly thrusting ears forward (to beyond eyes), jerking skin and wagging of tail. The fly focused on area posterior edge of eye and quick thrusting of the head by the deer was the only way to dislodge the fly.

young deer had displaced hair on sides of rear quarters.

7:47 P.M. Flying ants started to leave holes in dead Douglas fir tree standing against SE side Bee House. 56 left in approx. 3 minutes. They flew upward and then dispersed randomly. Other winged ants flew around Bee House. Collected one from this flight of ants from tree:
860905-1 Flying ant. From Bee House.

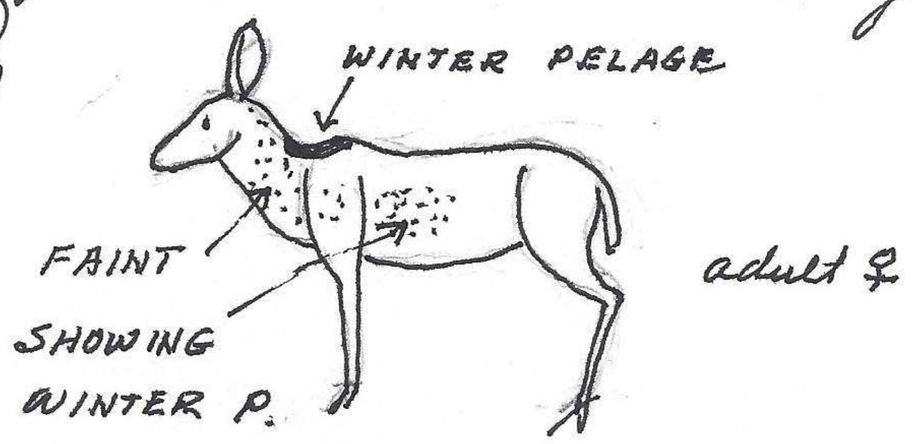
7:50 P.M. 25 glaucous-winged gulls on upper slopes and 10 on lower slopes (NW) of Flower Island.

Observed another pileated woodpecker from residence S of Lund's place on Humphrey Head.

Sept. 7, 1986

9:50 A.M Pileated woodpecker flew N from Lichen Point to Boundary Point in front of Bee House (over water)

An adult mule deer with completed winter pelage on lower neck and shoulders, other areas show thru old summer pelage.



adult ♀

young ♀ mule deer not yet starting winter pelage. Stray ♀ gray all over. All deer in local herd at Bee feeder this A.M. young ♂ (last years young) displaced fawn.

5:05 P.M. Collected 2 brown rats at feeder at same time.

860907-1 Rattus norvegicus 407-170-43-21-251 gms ♂ testis 18 mm

860907-2 " " 235-112-35-18-74 gms ♂ testis 9 mm

Except for two adult brown rats (dark brown adult and another normal colored) this is the full complement (16) of rats that arrived at Bee feeder July 8, 1986.

Sept. 12, 1986

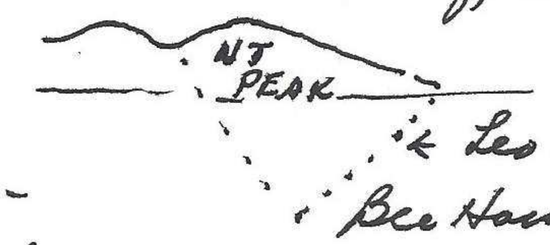
Captured brown rat at Bee House.

860912-1 Rattus rattus norvegicus 353-174-44-20-229 gms. ♂ testis 16 mm. This rat is the next to the last of rats at Bee House area. The last rat, a large deeply brown colored rat was not observed during the rest of the day and may have left the area.

Sept. 14, 1986.

11:00 A.M. 5 harbor seal Little Flower Lake, 28 on Leo Reef. Fishing boat circled Leo Reef and displaced all seal.

In a area of N. Lopez Sound between Leo Reef, Bee House and including N Thatcher Peak.



at 2:10 P.M. observed 8 dispersed Bonapart guels.

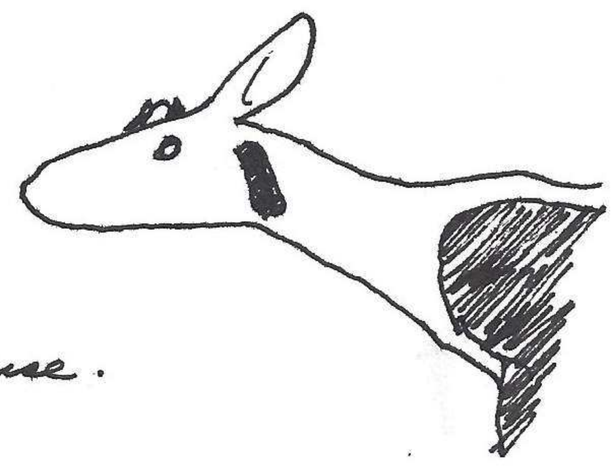
7:20 P.M. out of 16 glaucous-winged guels, seven were immatures.

6:30 P.M. ad ♀, young ♂, young ♀ and fawn mule deer at Bee House feeder. Fawn attempt twice to suckle adult ♀ but unsuccessfully.

860914-1 Peromyscus maniculatus hollesteri. 175-83-23-20-22 gms. ♂ testis 5.5 mm. From Bee House.

Sept. 15, 1986

Young ♂ mule deer with gray winter pelage on head except reddish-yellow of summer pelage on antler buds and and patch below ear. Rest body summer pelage.



Sept. 16, 1986

8:00 A.M. 2 River otter swimming S part Bee House.

ad ♀ mule deer 29" high at shoulders.

♀ young 27" high at shoulders

fawn 23½" high at shoulders.

8:30 A.M. 18 harbor seals Leo Reef, 6 on Little Flower Rock, 6 N. Flower Rock, 12 Big Flower Rock.

10:30 A.M. 19 harbor seal Leo Reef, 15 Flower Rock, 6 Little Flower Rock, 9 Big Flower Rock

Red-breasted nuthatch at Bee House.

12:00 P.M House finch occasionally observed at Bee House feeder as singles or 2 or 3 but today 8 fed; all with relatively light plumage.

Sept. 17, 1986

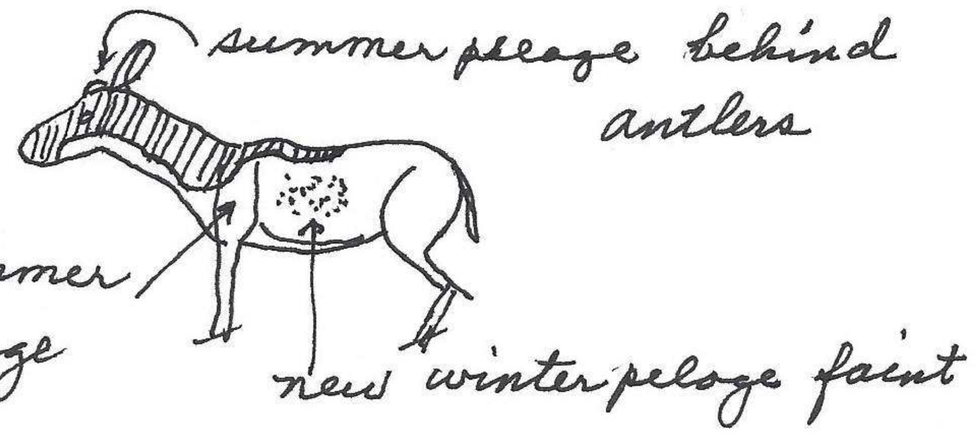
6:30 A.M all mule deer except ad ♀ and her fawn. 4 river otter in front Bee House at edge water. In an ad. ♀ pelage darker on neck and stripe above shoulders than on sides. Young ♂ light hair around antler-buds now gone. Lone ♀ adult mule deer in full winter pelage.

3:30 P.M. Osprey circled Hummel Lake. approx. 100' above water.

Turkey vulture 1/2 mi. N E Sunset Hardware on Center Road.

molt of ♂ mule deer (young)

A young ♂ mule deer noticeably grayer showing winter pelage and more abrupt than any other day to day change.



A young ♂ mule deer groomed fawn. Fawn groomed ad ♀.

Lone deer at feeder between dark and daybreak.

3:35 P.M ♂ house finch at feeder.

A young ♀ mule deer shows no sign of winter pelage except few darker hairs on head.

18 glaucous-winged gulls on Hummel Lake and bathing.

Sept. 18, 1986

All mule deer in local herd at feeder at Bee House, including a ♀ adult straggler. (could be a third ad. ♀ of local group.)

young ♂ mule deer new winter hair head and neck, except hair on antler stubbs and 2 square inches below ear. Shoulders and sides continuous at upper scapular area and also over ileum of one side to the other. no change in young ♀ except new hair starting on nose. Fawn same. Ad. ♀ like ♂ young.

Common Raven call on an average every 3rd day. but at times as infrequently as 5 days. Today heard raven call at three different times. These calls come from high on the ridge or in flying over area.

There are 18 Bonaparte gulls, generally distributed in an area north of Leo Reef to Bee House and 5 of a point directly E of Bee House. Sometimes 8-15 Bonaparte gulls will participate in local fishing area controlled by (in this case) 4 glaucous-winged gulls, 2 double-crested cormorant, 4 common murres and others.

It takes 11 minutes for medium size ferry boat to travel between W Thatcher Pass and beacon light W of N end Blakely Island.

From Bee House observed 3 common murres, 3 glaucous-winged gulls and 5 Bonaparte gulls. At other times I have observed pigeon guillemot, rhinoceros auklet, marbled murrelet

Trip to Anacortes and LaConner. Some maples changing red on Fidalgo Island and on W side Blakely Island. Greatest congregation of birds E of Thatcher Pass. Returned to Lopez Island.

10 harbor seal S side Leo Reef. Ad. ♀ and young ♀, on E side Humphrey (Head) Lagoon

At Bee House, fawns mule deer run down trail to feeder whereas others in herd walk. 1 also fawn more agile in ascending trail. Last 4 days masses on open slope turned green and are conspicuous.

Early morning skies colored last week, seldom in summer.

Sept 19, 1986

Last night at 4:08 A.M. moon and stars mirror image. Water absolutely smooth.

Toddy to Mt. Vernon and Everett and return Lopez Island.
SE Humphrey Lagoon in clearing E of road 3 adult female mule deer. Winter wren in cliffs SW of Bee House.

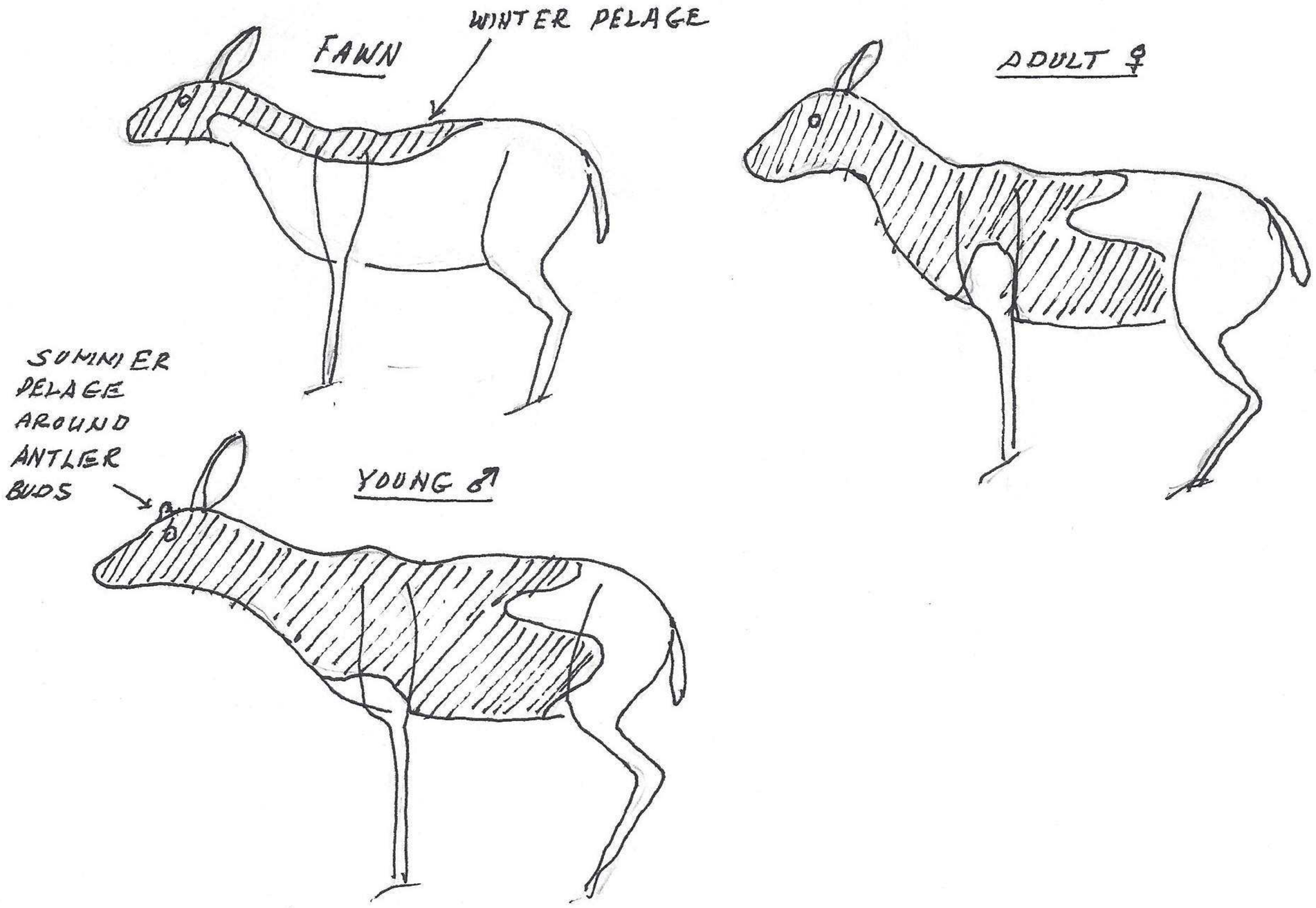
Sept 20, 1986

All local mule deer standing around deer feeder at Bee House. Placed 850 gms corn in feeder. A young ♀ and ♂ remained 3 feet away, adult ♀ and fawn moved 20' away while grain was placed in feeder. They fed 16 minutes and at 8:01 ♂ left, 803 ad ♀ left, 8:04 young ♀ left, 8:06 fawn left. All remained slope above feeder and groomed each other for 10 minutes then young ♂ & ♀ left area and ad. ♀ + fawn bedded down on Boundary Point. The fawn returned 9:20 A.M & fed 4 minutes, ad ♀ arrived 1 minute later and fed for 4 minutes

Sept 21, 1986

The young ♀ of above had new winter pelage on nose, between eyes, between ears and 6" stripe between shoulder blades.

860921-152



A stray ♀ mule deer in area of Bee House all new winter pelage except sides on rump bordering tail and on lower limbs. The female struck feeder instead of the young ♂. The two smelled noses before the despleacement, The stray ♀ and adult ♀ feed amicable The stray fed more nervously and forceful than the regular herd.

Informant on Lopez island said deer & rabbits periodically die from disease.

Sept. 23, 1996

Rain and high wind all day. whitecaps over entire sound and forceful action on shoreline but no salt spray on house 40' above. Partial clearing in evening and some blue sky.

At 5:55 P.M a raccoon arrived at deer feeder at Bee House at 6:00 P.M. 4 mule deer (♂, ♀ young, ad. ♀ and fawn) came running down trail above house and as they approached the feeder the raccoon moved 3 feet away and the watchful deer moved immediately to feed. the raccoon remained from 3-6' from feeder and its movement caused the deer to react by jumping in ranking degree of concern of deer about raccoon from greatest to least: fawn, young ♀, adult ♀, and young ♂ Raccoon went up trail 12' and inhibited deer from leaving feeding area.

The ad ♀ and young ♂ deer approached within 3' of raccoon, stopped, looked and then returned to feeder. At 6:14 P.M the deer stopped feeding and the raccoon in the meantime moved back to within 3' of the feeder at which time the deer left.

Earlier today 5 band-tailed pigeon fed at the deer feeder. The eastern gray squirrels fed in rain all day, the Townsend chipmunk less than the squirrels.

31 Bonaparte gulls generally distributed E & SE of Bee House.

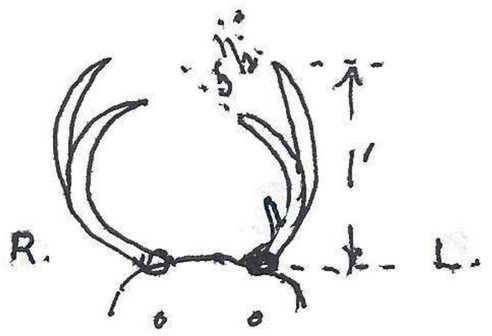
Pelage of young ♂ mule deer has advanced more rapidly than adult female. The ♂ has new hair on upper sides of rump whereas ♀ still has old hair showing.

The apillary and lower sides have longer hair than rest of body in both sexes.

Fawn making more pelage progress than young ♀.

7:29 P.M ♂ mule deer came to deer feeder. Turned porch light on and he remained. Antlers
Eye tine 1" long on left side only.

Mary & Don Jensen arrived from Utah for family reunion.



Sept. 24, 1986

Lightning to S for 1/2 hr. Yesterday first full fall storm and rain.

Sept 25, 1986

Mary, annette and I to Friday Harbor for my birthday. At Bee House on Lopez Island at 11:00 A.M a pileated woodpecker flew across lower drive way. Also at 100' W 1916 School House a pileated woodpecker worked on a fence past 3' from ground.

Sept 26, 1986

Freida and Ray Culbertson of Kansas arrived today. Also Chris, Steve and Mat from Last Lake, Wa and son James Robert Bee from Lawrence, Kansas.

Sept. 27, 1986

Mat & Philip Bee, Mary Ann & Jim Endicott from Bothell area arrived as did David & Brent Bee from Portland area.

Sept 28. 1986

Donnie, Chris, Shelley and Tracy arrived from El Toro, Calif.

860928-154

Reunion today at Bee House included (and birthday for me and Donnie)

mary Bee Jensen & Don Jensen
Freida and Ray Culbertson
max & Phillip Bee
mary Ann & Jim Eckdeath
David & Brent Bee
Donnie, Chris, Shelley, Tracy Jensen
James Robert Bee
Annette and L
Chris, Steve, Mat Kenagy

While at Lopez Island Jensens, Culbertsons, Donnies family Annette & L Chuck Shaw Island for homestead of Aunt Mildred Wakefield's homestead. Mary recognized the house and Ray & Freida documented the place with VRC (of which we will receive a copy).

Oct 1, 1986

James Robert, annette & L to Expo. in Vancouver, B.C. for 2 days.

Oct 3, 1986

James Robert left for Lawrence, Kansas.

Oct 4, 1992

8:00 A.M. On Leo Reef: 21 cormorants, 23 harbor seal, 8 glaucous-winged gulls.

1:20 P.M. a big skate, Raja binoculata approx 4' wide swam past Bee House to S. It was approx 6" below surface and continued S across mouth Spring Cove and on toward Lieken Point. It followed the shoreline out 6' except the bipass across the cove. Time at low tide.

1:30 P.M Bonaparte gulls pass Bee House (both ways) every 2 minutes and were feeding on candlefish. 5 Arctic tern in same area.

Pair common murre in sound between Leo Reef & Bee House at least once a day.

One to 3 house finch, mainly ♂, at feeder during sometime during the day.

Winter wren once in every four days.

2 rufous-sided towhee regular feeder at feeder.

no brown rats since last one caught.

no mule deer except one male (single left eye tine) and then only at night.

Dark-eyed junco most common bird in area of Bee House and here all seasons.

8:00 P.M. ♂ 2 point mule deer (left eye tine only)

8:30 P.M a raccoon at feeder.

no mule deer at feeder since Oct. 2,

Oct. 5, 1986

8:20 A.M. 2 adult eastern gray squirrels and 2 young (3/4 size adults. This is the first time we have observed young of the year.

Have not observed young of Townsend chipmunk.

The young eastern gray squirrels investigate their environment more than adults who spend all their time feeding. The young move all the time and search out areas never investigated by adults. The are curious about what is on the other side of the house window and are always searching every corner of the window. They are more confident of Mans presence. They consum more natural food such as buds of, leaflets of trees including conifers, madrona, ocean spray. Adults forcefully chase the young from the feeder and only after adults have left feeder do the young have access to the feeder. The bobtailed gray squirrel dominates at the feeder.

2:35 P.M, 5 river otter swam S past Bee House and into Spring Cove. A kyak approached Cove and all five otter disappeared under water and did not resurface in the general area

2:50 P.M. 32 double-crested cormorant and 31 harbor seal on Leo Reef. 2 glaucous-winged gulls attempted to land on reef but cormorants rejected them because of lack of space.

861005-1 collected winged termite outside Bee House at 7:00 P.M. These winged termites have been observed flying outside house for at least 2 weeks or since the last recorded specimen taken. The are individual termites and are not part of a flight.

861005-2 Collected a termite from inside log on ground. This decaying log was full of termites.

861005-3 ibid.

no mule deer except (left tine only) ♂ 3 pointer ♀ L. and this one at night.

Oct 6, 1991

7:30 A.M young ♀ and ♂ mule deer at Bee feeder and first deer observed since last recorded except ♂ with one left tine observed night before last and last night.

young mule deer ♂ new pelage except legs. young ♀ new hair halfway down back and old hair on rump and axillary

region and legs.

3 common murres on water SE Bee House. The head and neck is held low and forward . Young fed from adults.

arctic tern fly as if by surging thrusts.

861006-1 Hermit thrush, measurements only. Flew into window of Bee House. L. 178, wt 28 gms, wing spread 275 mm. Rusty tail (see below) and greenish gray back but chest & eye ring like Swainsons thrush.

Adult eastern gray squirrel ate continuously all day. Young spent half time climbing trees and checking places seldomed checked by adults. They jump more from high places from tree to tree than adults.

Eastern gray squirrel left feeder at 6:45 P.M, Tounsend chipmunk at 7:05 P.M.

The hermit thrush above (861006-1) has lower 1/3 of primaries and secondaries is light and shows a conspicuous band when wings are spread, disappearing when wings are closed. May be for confusing predators or used in courtship display.

Oct 7, 1986

9:20 A. Entire local deer at feeder. fawn, young ♀ and ♂ and adult.

Cooper hawk left Cliff meadow on Bee Estate and flew S across Cove.

Recommendations for natural shorelines:

1. no permanent structures, boat ramps, stairs, tables, chairs, hammocks, barbeque stands, fire pits buoys, storage of small boats, rafts etc.

2. no man made contrivances from driftwood or collection of driftwood.

3. Do not throw rocks into water as they cover marine communities.

4. Do not walk on vegetation or marine communities. use single path to vantage point.

5 Establish vantage point for view inside tree line or beyond shoreline,

6. no loud talk or music.
   no crabing or fishing
   no dogs
   no guns, flippers etc.
   no sailing boards.

7. Educate to passively enjoy waterfront but do not used for recreational purposes.

(old hair)

Pelage changes: ad. ♂ hind quarters, legs, behind eye (incase of ♂ new hair on antler bases), abillary. Rest body and head new winter pelage. new hair showing three old hair of hind quarters. young ♂ complete winter pelage. Fawn new hair throughout, best on sides, rump but some old hair, legs old hair.

861007-1 Peromyscus maniculatus hollisteri. 156-68-21-18-16 gms, ♀ wt. normal. From Bee House.

861007-2 Hermit thrust (m. only), 158 mm T.L, wing 87 mm, wing spread 266 mm, wt. 24 gms. Bird flew into Bee House window.

861007-3 Fox sparrow, (m. only). ♂ T.L. 165 mm.

Aug. 9, 1986

all mule deer of local family at feeder at 7:30 P.M. after feeding they remained on open slope above for 1½ hrs. Ad. ♀ rejected young male.

Aug. 10, 1986

young ♀, fawn and adult ♀ at feeder at 6:10 P.M for first time today.

861010-1 winged termite captured 4:45 P.M. entering pre established hole in dead Douglas fir. Single winged termites in air from 4:30 P.M to at least 5:30 P.M. They alighted on Douglas fir bark searching for holes or fissures that led to beneath the bark where they entered and did not leave. One termite on a plastic board that travelled 3" along a straight printed line, while cutting a downed horizontal Douglas fir tree, a termite systematicktly search a sq. foot area adjoining my hand saw noise and vibration.

♂ mule deer, one eye tine (circled) at feeder 7:40 P.M which is usual time for this buck.

Aug. 11, 1986

861011-1 Cross-section Douglas fir tree (dead) 8' SW of contact of porch with Bee House.

Aug 12, 1986

861012-1 12' cross section from Douglas fir 8' SW corner porch of Bee House.

8:00 A.M 4 mule deer at feeder.

10:35 A.M. 5 river otter in one group swimming N in front Bee House.

4:26 P.M 2 common raven call from SW of Bee House.

5:15 P.M 5 mule deer at feeder.

5:30 P.M. a northern fulmar (Fulmarus glacialis) chased glaucous-winged gulls between Leo Reef & Bee House. I have observed this species twice in the last 2 weeks.

Oct 13, 1986

adult ♂ mule deer (one eye tine) (2) after dark. It consumes twice as much as an ad. ♀.

morning clear and no wind.

5:00 P.M imm. bald eagle flew N past Bee House. Out 100' and 40' above water.

5:10 P.M Greatest bird activity in sound between Leo Reef and Bee House.

northern bird arrived 2 weeks ago but greatest numbers today In summer birds between Bee House & Leo Reef 1-4, 2,3 times a day but today: 31 cormorants and 16 harbor seal (Lo Reef), 8 cormorants on water, 2 red-breasted mergansers, 2 pigeon guillemots, 4 common murres, 13 Bonaparte gulls (all day), glaucous-winged gulls 1 per 20 minutes, 4 Arctic tern, 1 kingfisher, 1 great blue heron, 1 western grebe, 8 greater scaups; 4 common tern.

at Swift Lagoon: 23♀, 1♂ northern pintail ducks, 8 killdeer.

at beach Swift Bay along road area, 6 killdeer. Green marine plants in windrows upper part of beach.

Redtailed hawk 1/10 mi W 917 School House carrying snake approx. 10" long

Redtailed hawk flying 2/10 mi W Dill-Center Rd junction.

Mule deer feed at Bee House usually 8:00 A.M and 5:00 P.M.

Male mule deer 31" high at shoulders fed after dark at Bee feeder.

This evening on relatively smooth water, moon reflection a single mass 2 sq. yards. Waves from boats 3-5 separate reflections. any current or wind produces continuous mass reflection. The apron of light from ferry this evening is equal to length of boat, sometimes apron of light extends to shore below Bee House.

Oct. 14, 1986

Low tide 8:58 A.M, 9:00 A.M great blue heron captured 2 candlefish in 2 minutes. morning for 80' visibility.

At Bee House all mule deer of herd at feeder 9:05 A.M.

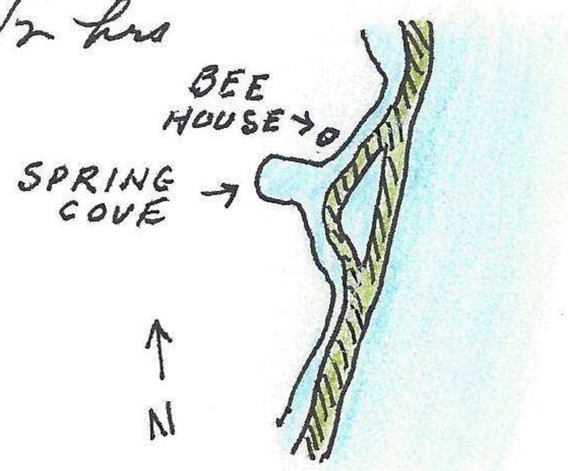
at Saint Marys Peninsula 24 mallards.

(Outer Bay).
Agate Beach: 1 northern flicker, 1 great blue heron, 1 red-necked grebe, 2 common raven, 8 glaucous-winged gulls, 4 American crows.
Mockaye Harbor (S part): 8 cormorant, 48 glaucous-winged gulls, 1 kingfisher, 8 female greater scaup,
Swift Lagoon: 2♀, 1♂ northern pintail.
Humphrey Lagoon: 9 hooded mergansers (7♀, 2♂).

This evening at twilight the regular herd of mule deer had finished eating at feeder at Bee House and were on open slope above resting and grooming. a ♂ mule deer arrived and finish remaining corn and when we approached the feeder to replenish the corn the buck ran uphill 85' and stopped. The herd returned to feeder and 5 minutes later the buck returned to feeder and replaced the herd. Young deer will give way to buck when buck comes as close as 15'.

This evening a raft of green lettucelike marine plant came from S and passed N with tide approx 100' E of Lichen Point. The vegetation moved N, split and recombined and continued N. It took approx 1 1/2 hrs to pass Bee House.

7:00 P.M. 4 raccoons came to porch at Bee House. One took bread from hand, 2 by its mouth and 1 with its front feet and one too shy to come.



One of the raccoons shared a slice of bread with another one without protest.

7:00 P.M. moon almost full. Water smoother than last night with moon confined to 1 sq. yard of reflective surface and single planets lik Pleides, neither as concentrated a reflection as an almost perfect duplication of moon or planet.

Oct. 15, 1986

To Chris and Steve at Lost Lake, Snohomish Co. Striped skunk road kill 1 mi N marysville on highway 5.
at 532 Welch Road (river road) approx 1000 Crows in one flock.

Oct 19, 1986

Left Lost Lake and returned to Thousand Trails Preserver (La Conner) at settling basins NE Everett and highway 5 (in S basin), The glaucous-winged gulls were generally destributed in an are 2/10 x 2/10 sq. miles at

approx a bird every 8-10 feet apart.
Camped La Conner Thousand Trails Preserve.

Oct. 20, 1986

Left La Conner TT and returned Lopez via ferry from Anacortes ferry terminal. made complete bird census as noted:
Left 9:35 A.M. cormorant, 9:38 A.M 2 glaucous-winged gulls, 1 double-crested cormorant, 2 glaucous-winged gulls. 9:39 A.M 2 glaucous-winged gulls, 2 marbled murrelets. 9:40 A.M. cormorant 1 American crow, 2 glaucous-winged gulls. 9:41 3 glaucous-winged gulls. 9:42 3 western grebes, 1 marbled murrelet, 4 marbled murrelets. 9:43 glaucous-winged gull. 9:46 13 pigeon guillemots. 9:48 glaucous-winged gulls, 1 marbled murrelet, 1 glaucous-winged gull. 9:49 3 glaucous-winged gulls. Fog now 50' and ferry slower. 9:56 2 single glaucous-winged gulls. 9:58 cormorant 10:00 glaucous-winged gull, Beacon (red light) SW Blakely Island, cormorant, horned grebe, glaucous-winged gull. 10:01 cormorant, mew gull. 10:06 Willow Island. 10:08 2 single glaucous-winged gulls, 10:08 2 single cormorants. 10:09 2 cormorants. 10:12 cormorant. 10:16 cormorant, 10:17 2 glaucous-winged gulls, 10:18 glaucous-winged gull, cormorant. 10:19 cormorant. 10:21 pigeon guillemot. 10:24 coming into Lopez terminal. Entire census in fog and birds within 200' of boat.

At 4:50 P.M at Bee House, 4 Harlequin ducks on rocks below house and resting.

At 6:30 P.M, at dusk, young ♂ mule deer arrived feeder at Bee House and first one observed since 11:00 A.M after, (wl) having been gone for 5 days. Trails (deer) are being developed on many slopes that at one time had only one or two cross-country trails.

From traps at Bee House captured three white-footed mice:
861020-1 Peromyscus maniculatus hollisteri. 165-73-22-19-18 gms ♂ testes 4 mm.
861020-2 Peromyscus maniculatus hollisteri 167-72-21.5-19-19 gms ♂ testes 4 mm.
861020-3 Peromyscus maniculatus hollisteri 165-72-22-18-17 gms ♀ ut. normal.

7:30 P.M a young male mule deer returned to feeder and after finishing walked up trail to N and at top turned around and ran in leaps down trail past feeder and to the S. Could not see what caused (cause) this behaviorism. Hunting season is on at Lopez Island.

861021-161

Oct 21, 1984

8:15 A.m family of 4 mule deer at feeder. Each deer, especially adult females thrust heads laterally and upward to make room of limited head room in feeder box. Young female 24" high at shoulders.

Foggy this A.M.

Common loon called several times at 12:30 P.M.

An average of 4 Bonaparte gulls 6(3-10), fed in front Bee House from 9:00 AM to at least 1:00 P.M on sandlefish. The glaucous-winged gulls averaged 2 (1-3).

12:05 AM 4 river otter swam N past Bee House, at 12' from shore.

Pigeon guillemot averaged 2 (1-3) in front Bee House, double-crested cormorant averaged 2 (1-3), red-necked grebe 1 and all above from 9:00 AM - 1:00 P.M. Visibility in fog from 50'-150' at above times.

4 red-breasted mergansers flew N past Bee House.

1:25 P.M. ♀ Harlequin duck fed by diving.

The dark-eyed juncs has been most regular bird at Bee feeder.

5:00 P.M. Golden-crowned kinglet hit E window and revived in 20 minutes. Total length 93 mm, ♂. 2 brown creepers on trunk douglas fir at Bee House.

2 American crows at feeder.

On trip to S end Lopez Island did not see crows in fields or elsewhere.

Swift Lagoon: 6 northern pintails, 11 ♂ 22 ♀ bufflehead in Swift Bay

Pond Cross-Stanley Rd junction, 8 mallards and 18 godwalls.

Red-tailed hawk Sunset Hardware, Lopez Island.

Winter wren in woodpile Bee House.

Oct 22, 1996

Fog to shore in N Lopez Sound at least.

no mule deer to feeder to at least 2:00 P.M.

Birds in front Bee House: Bonaparte gulls, 4-8, feeding in front all morning. 1 mew gull. One group 5 horned grebes, 4 singles.

1 glaucous-winged gull to 20 Bonaparte gulls. Both pelagic and double-crested cormorant. Common loon called, one fed 50' out from shore, a nasal call like geese from fog area. 2 ♀ common mergansers.

Trip to Lopez Village. no birds on Humphrey or Swift lagoons.

Pond at junction Cross + Stanley roads; 89 mallards, 6 ♂ and 8 ♀ northern pintails. no crows in fields enroute.

2:30 P.M. 35 harbor seals on Leo Reef.

7 ♀ common mergansers front Bee House.

7:10 P.M adult ♀ mule deer, a stray, fed at feeder and only one all day. The regular unit remains away during high windy or foggy days. This ♀ measured 27" high at

Howard Cole of 5 Lopez Island reported 50 mule deer in his field. Deer are most serious problems in farming whether it is grains, fruit or vegetables. In this year, 1986, the deer are in larger numbers than usual.

Fawn of this year measured 23" high at shoulders.

Oct. 23, 1986

All local family group at feeder at 7.30 A.M

8:00 A.M. stray ♀ mule deer arrived & fed at feeder.

8:15 A.M ♂ mule deer (single eye tine (◡)) and chased stray away. Buck displaces family group & feeder.

8:45 A.M. Family group mule deer and stray fed at feeder. The single eye tine ♂ arrived and followed stray. His nose in air and then head lowered almost to ground in a charge of the stray. The stray evaded each time the charge was made (4 times). The ♂ chased ♀ out of area twice & then ♂ returned and later ♀ returned. The ♂ rested on ground, chewed cud, adjusted position, grazed for 15 feet or tested antlers. ♂ definetely tuned to breeding but ♀ (stray) not. Did not see ♂ approach ♀ of family unit.

11:30 A.M. ♂ mule deer rested 20' from ♀ of family. Photo 861023-1 showing ♂ single eye tine standing behind madrona, rear and head effaced. From here grazed 5' for 4 minutes, brushed antlers on deer high juniper, grazed, then left area. The ♀ ad. of family group remained in standing position for 45 min. The young ♂ investigated the nose and neck of stray female with compatebility as if former member of group.

Probable relationship:

adult ♀, young ♀, young ♂, fawn current family group. Stray ♀ and buck progeny of adult family group of 3 years ago; The stray female having set up another territory but frequently visiting old territory. ad. single eye tine ♂ a brother of stray and member of family (local). An adult ♂ without eye tines occasionally visits area and could be part of family group or not. (◡)

There is more activity of mule deer in morning than in afternoon.

861023-2 Peromyscus maniculatus hollisteri. 201 94-23-18-33 gms. ♀ 4 x 3 placental scars.

Between 1:00 P.M. and 2:15 P.M. the ad. ♂ mule deer without eye tines and stray ♀ in area. At pedeled feeder ♀ stood feeding on one side and ♂ on other side some 3' away. The male did not feed but looked at ♀ with head turned 45° sideways, then at intervals abruptly swing head forward and move a few inches forward, raising first one front foot and then the other and each time forcefully thrust foot back onto the ground. Finally at 2' apart the female left and climbed cliffs above feeder. Male left feeder area, walked up graded approach to top of cliffs and preformed the same courtship ritual, almost falling off Cliff 2 times. The ♀ left and passed under the hillside stairway from Bee House. The ♂ followed but trail under stairs to Confining (height) and he remained on N side of stairs. The ritual continued for ½ hr, the ♂ on one side stairs, the ♀ on opposite side of stairs. The female finally left to Grotto Ridge & thence across Grotto Swale. The ♂ climbed hill to top of stairs and soon was following 20' behind ♀. ♂ salivated. Tail held 45° and twitched 1 per second. Along route it rubbed juniper tree (deer height) 3 different times and then joined ♀ again.

When mule deer rise from ground they throw tail up over and onto back where it rests for a few second.

Common raven called twice today from ridge to W.

Oct. 24, 1986

7:20 A.M. small bat (myotis) flew out, around and back to ♂ cornice top of house 8 times then returned on 9th time and remained in roosting area.

9:10 A.M. Observed following birds in N. Lopez Sound E of Bee House and to as far as Leo Reef: 8 Bonaparte gulls, 4 glaucous-winged gulls, 13 ♀ red-breasted merganser, 4 common mergansers, 4 horned grebes, 28 American crows, 8 pelagic cormorant, 1 mew gull, 4 common tern. 1½ hours before no birds in area.

Stray ♀ mule deer 27" high at shoulders.

10:30 A.M. The stray ♀ mule deer at Bee House feeder and a large ♂ mule deer 3 prongs (R) stood top of cliffs above feeder while ♀ fed at feeder for 12 minutes. The buck then moved to conifer growth (brushlike) at top of Deer Trail Slope and remained out of view until ♀ left feeder at 10:50 and moved up main trail across Deer Trail Slope when buck emerged from conifers and followed her.

Took 4 photos of these 2 deer nos 861024-1, 861024-2, 861024-3 and 861024-4. The stray fed along trail and the buck followed. They left the area. no other deer in area.

11:05 A.M. The stray and buck returned to feeder. Photo 861024-5, 861024-6 and 861024-7. on trail above feeder. (nick in left ear lower edge). Stray fed 12 min, buck remained top cliffs. Buck came down approach trail to feeder 2/3 way (6' from ♀) and ♀ left by ascending cliffs. Buck tried to follow on cliffs but returned to feeder and gained top of cliffs via angled trail to right and took position 5' above ♀ Photo 861024-8 of buck on top cliffs. The ♀ then left across cliffs and went to Windy Slope and the buck followed her. They remain in brush for 10 minutes then the ♀ left and ran up slope to top of Deer Trail Slope with buck 15' in the rear of ♀. Both then left to N. Photos 861024-9 and 861024-10 of buck resting in trail while ♀ fed at feeder at last visit to feeder of above.

12:00 P.M. Threw 3 carcasses of *Peromyscus m. hollistari* in water below Bee House to see reaction of Bonaparte gulls. One gull immediately alighted near one carcass and gave a single call that sounds like a destant call of a dog barking thru a pipe (muffled.) 4 other Bonaparte gulls arrived but only one picked up the body with its bill and then dropped it into the water. all left but in 5 minutes the mice bodies had disappeared.

A belted kingfisher dove 50' down to water at a steep angle and attacked or harassed another kingfisher at the water level, It rattled all the way down.

3:19 P.M 9 common murres in a line in water at almost exactly 5' intervals. Only 3 Bonaparte gulls in Lee Triangle (Bee House, Lichen Point to Lee Reef & Outliers).

6:30 P.M. The young ♀, fawn, and adult mule deer at feeding area. A buck (left eye tine only (3)) approached feeder they all left, remained nearby until buck left feeder, then returned only to be displaced again by buck. While I was placing corn in the feeder the adult female came down trail to feeder wheck she always does when replacing food. The above buck came charging down the trail after her and stopped 6' away from me without noticing me, when he finally saw me he retreated 18' but was still more concerned with the ♀ than with me. At another time when I was at window in Ketchen the buck chased the female past at a blur. I would not want to be a third party of this deer courtship of semi-tame mule deer.

The young ♀ fed 20 seconds with buck (⟨) at feeder. when buck abruptly raised head the ♀ immediately left. Finally after 1/2 hours in feeding area the buck left to pursue the stray ♀.

The fawn and young female mule deer fed at feeder and a raccoon walked by at 5'. Both deer raised heads from feeder and then followed the raccoon for 10'. Raccoons frequently fed 2-3 feet from deer.

861024-10 Deptera from outside Bee House.

Oct 25, 1986

Rain last night, cloudy this morning.

7:45 A.M. Following deer at feeder: young ♀ and ♂, fawn and ad. ♀. Stray ♀ pursued by buck (⟨). The buck remains at top of cliffs when all other deer are feeding. when the buck approaches the feeder the other deer leave but return when buck leaves. At one time the buck approached the feeder will all other deer feeding and the ad. ♀ left feeder but buck was not concerned. The stray ♀ left and the buck pursued it. As the buck pursues the stray ♀ he approaches within 4'-5' and the ♀ runs ahead for 10'-15' followed by the ♂ after a minute or two wait. This was repeated 8 times as the crossed deer Trail Slope and beyond to N. In 20 minutes they returned and ♀ went to feeder and ♂ followed her and displaced her at the feeder. The ♂ followed 1/2 way up cliffs then returned to base, past feeder and up regular trail to top of cliffs. at neither of the 2 times the buck past the feeder did it concern himself with food. The entire family of deer left Bee House area and crossed Lower Parking Area to lawn on Joyce Fralies home. The last to arrive was the buck who was pursuing the ♀ and continued beyond Fralies place. The other deer remained on the lawn and groomed standing up.

Deer trails on the Bee Estate, and elsewhere, in summer, made and maintained by family groups are narrow and covered with trampled vegetation. In fall when large and heavy bucks are sexually active and the females are being pursued the trails are wide & depressed with sharp edges and dark pulverized soils.

SUMMER

FALL

861025-166

Trip to Anacortes, day cloudy and cool, thence to Chris + Steves at Lost Lake, Snohomish Co. Enroute to Anacortes estimated that there are 90% more birds in bays in fall and winter then in summer. Bird observed today from ferry are: 350 surf scoters in one flock, 36 common murres in one group, 6 common loons, 40 Bonaparte gulls generally distributed, 20 glaucous-winged gulls generally distributed, 14 pigeon guillemots in small groups, Cormorants 18. Not as many birds in Rosario Straits then west of James Island to Lopez.

Adult bald eagle top ridge Flower Island.

Arrive Chris and Steves for few days.

Oct 25, 1986, Oct 26, 1986, Oct 28, 1986, Oct 29, 1986 (see Oct 30, 1986 for Peromyscus trapped these dates)

Oct 30, 1986

Returned to Lopez from Lost Lake. Enroute highway 9 to Mt Vernon + thence 20 W. 3 striped skunks, 1 rd. kills on this route. 2 turkey vulture in Skagit Valley on highway 20. Arrived Lopez Island. In our absence traps caught 4 Peromyscus m. h. at Bee House and on basis of their condition placed the dates as follows: (all skulls only!)

861025-1 Peromyscus maniculatus hollisteri 138-85-23-19-(no wt.), ♂, testis 3 mm.

861026-1 Peromyscus maniculatus hollisteri 168-80-21-18 (no wt.) ♀, ut. normal.

861028-1 Peromyscus maniculatus hollisteri 178-80-22-18-21 gms, ♂, testes 5 mm.

861029-1 Peromyscus maniculatus hollisteri 180-82-23-20-19 gms ♂ testis 3 mm.

The locality for above is Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa.

Oct 31, 1986

High winds from N all day.

Nov 1, 1986

Small bat (myotis?) to roost at 7:29 A.M (standard time)

Low clouds last night. Sunrise clouds over Blakely dark but as they moved S off mts they became transparent. High clouds cleared to blue sky as they moved S.

From Bee House captured:

861101-1 Peromyscus maniculatus hollisteri 168-77-22-17-20gms ♂, testes 3 mm.

861101-167

2:00 PM a fishing group of birds approx. 200' SE Bee House in n Lopez Sound consisted of:

9 arctic loon , 2 horned grebe, 5 Bonaparte gulls, 2 glaucous-winged gulls, 4 cormorant, 2 pigeon guillemot, 3 ♀ hooded mergansers, 1 ♂ hooded merganser, 3 western grebes, 12 common murres. 2 of the cormorant arrived after the gulls left before cessation of hunting activity of diving birds

2 horned grebes 20' from shore below Bee House!

2 (♀♂) hooded mergansers and 1 ♀ common merganser drove fish toward shore on 3 separate occasions.

Glaucous-winged gulls associated with diving cormorant capture minnow displaced by cormorant or take minnow from bill of cormorant.

48 American crows at feeder at Bee House.

Winter wren confiding and observed every day, most commonly at wood pile.

The rufous-sided towhee occurs on an average of once every 5 days.

No band-tailed pigeons in last month.

Dark-eyed juncs most common land bird at Bee House.

Golden-crowned kinglet fed thru tops of madrona trees in front of Bee House.

no mule deer today, 2 raccoon last night.

Young ♂ mule deer fed at 2 different times last night. Tracks measured 60 mm.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa
Nov. 2, 1986

Collected following specimen from Bee House last night.

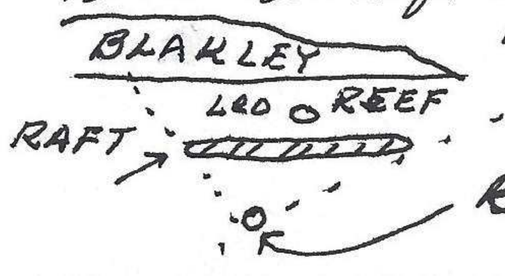
861102-1 Plesiopeltis maculatus hallisteri 148-67-21-18-16 gms, ♂, wt. normal.

11:30 A.M 2 belted kingfishers along shoreline in front Bee House.

2♀, 1♂ hooded merganser and 2 double-crested cormorants 10' out from shore below Bee House, both species feeding on candlefish.

12:00 P.M 2 ravens called from top of douglas fir n of Bee Estate. Most calls come from ridge top to SW.

12:10 a raft of 207 Arctic loons in triangle SE Bee House 1/3 distance from Le Reef to Bee House.



Associated with arctic loon were groups of 21, 6, 3 common murres 18 pelagic cormorants, 6 double-crested cormorants, 21 glaucous-winged gulls generally distributed, 6 Bonaparte gulls, 2 marbled murrelets, groups 5, 3 pigeon guillemots. 6 of the Arctic loon had good whitish heads and necks, some chin-straps but mostly mottled bands.

35 harbor seal Leo Reef. also 56 pelagic cormorants, no gulls. The call from Pacific loon sounds geeselike.

12:45 1 California gull on shoreline rocks below Bee House.

Collected the following two insects from near Bee House.

861102-2 Formicid

861102-3 Diptera

5:00 P.M. Young ♀ 26" high at shoulders; hind foot 5-7 mm, front foot 5 3". (from new measuring panel)

2 ravens called at least 6 times this afternoon from ridge to SW Bee House. The call is several guttural "rip", followed by a high pitched click.

Fossil no. 861102-4 in a conglomerate crystal rock from quarry S of Humphrey Lagoon.

Track of mule deer measured 82 mm long.

Young ♀ mule deer at feeder 6:20 P.M.

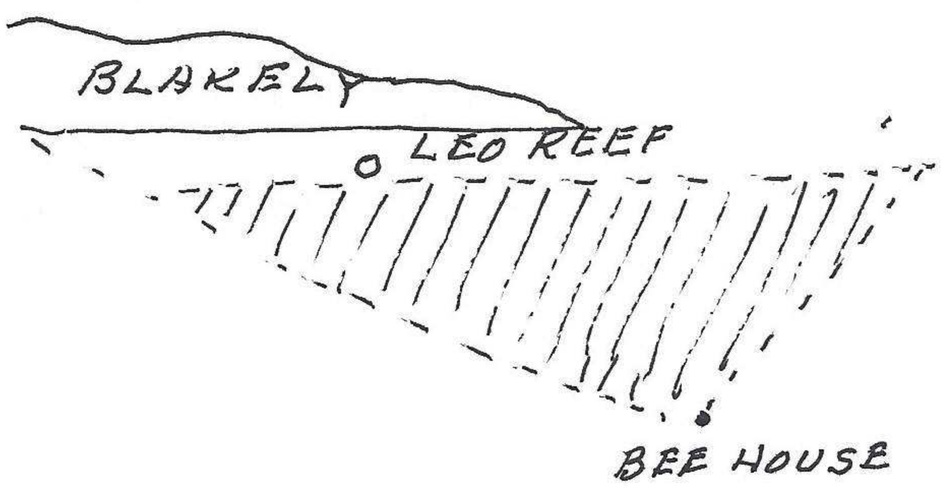
Nov. 3, 1986

Collected the following from Bee House (last night)

861103-1 Peromyscus maniculatus hollisteri 164-78-22-19-18 gms ♂, testis 2 mm.

7:30 A.M Ad. ♀ mule deer and fawn at feeder. ♀ foot measured 80 mm. Day cloudy.

10:30 A.M. Bird in triangle from 1/5 distance in to n Leo Reef to West Cove, Blakely Island to Frost Island to Bee House.



95 Arctic loons
14 Cormorant
12 common murres
3 western grebes
2 horned grebes
2 pigeon guillemots
13 glaucous-winged gulls

On Leo Reef. 31 cormorants, 15 harbor seal.

From Leo Reef to E end Spencer Spit borders with Bee House 15 Arctic loon, 34 surf scoters and 15 unidentified birds.

12:00 A.M. Arctic loon have expanded in all directions from compact organization and are generally distributed every 20'-30' apart.

12:05 A.M. 21 harbor seal and 32 cormorants on Leo Reef.

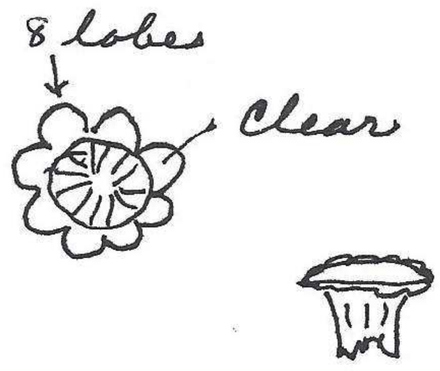
Adult ♀ mule deer & fawn and young ♀ fed after dark.

Water surface in sound SE Bee House mirrorlike all day.

Nov. 4, 1986

Water calm and distance hazy.

7:00 A.M. a jelly fish approx 10" diameter part by Bee House 10' at from shore.



Clear center like color of rotten reddish wood. The jellyfish repeatedly turned over slowly every minute and rode the (to n) n tide at approx 1 foot per second. This jellyfish is Cyanea capillata, Lion's mane.

no birds in sound SE Bee House (to Leo Reef) before 7:00 A.M but move in later. At 9:00 A.M 2 pelagic cormorant, 2 Bonaparte gulls, 1 glaucous-winged gull in front Bee House.

22 surf scoters flew W in single line about 1 foot above water.

4 eastern grey squirrel and 4 Townsend Chipmunks on porch feeder.

Deer tracks (mule deer) at feeder last night measuring 55 mm and 63 mm.

Arctic loon active in sound.

Harbor seal 20' off shore below Bee House.

5 river otter at Richardson Store at S end Lopez Island.

At Swift Bay Low Bank 32 buffleheads.

at E side causeway at S Fisherman Bay Lagoon: 38♂, 34♀ bufflehead ducks, two ♂ fought like roosters, 46 starling in grass E shore, 113 red-breasted mergansers, flock 220 dunlin, 8 black-bellied plover. Dunlin can fly straight, especially in channels but mostly wheeling movement, Thayer gull swam with crab (crab carapace 3½" wide). On W side causeway: 6 ♀ surf scoters, 3 great blue heron,

at Davis and Fisherman road junction; northern harrier in field to NE

at Richardson: 6 horned grebes, 7 bufflehead ducks.

1/10 mi. N Richardson, 18 canada geese.

Hummel Lake: 22♀ and 2♂ hooded mergansers, 2 bufflehead, 1 American widgeon

Pond SE junction Cross and Stanley roads,

861105-170

nov. 5, 1986

6:30 A.M. first faint color on clouds at daybreak. Heavy rain last night. Clouds moving S and dissipating. deer (mule) at feeder last night, tracks 50 and 74 mm. Tide this A.M 12.7 On Oct 28, 1992 a cut log 10"x10' floated N and into Spring Cove. On this date nov. 5, 1986 it left Cove and followed S along shoreline to Lichen Point.

Following caught at Bee House:

861105-1 Peromyscus maniculatus hollisteri 158-71-23-18-18 gms ♀ 3x2 placental scars.

At 10:55 A.M log mentioned above now 20' S of Bee House and moving NE at a barely perceptable rate.

Collected bark beetle no:

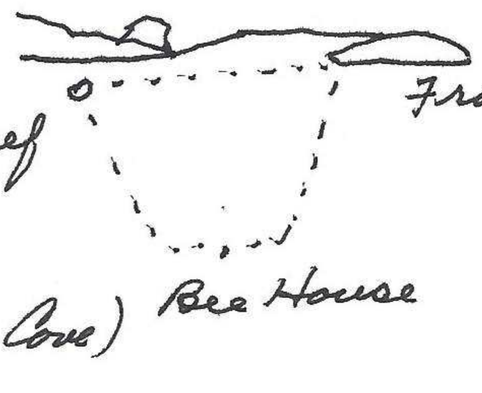
861105-2 Flat bark beetle from log N of Bee House.

10:50 A.M Cut log now E of Bee House out 120' and moving S.

11:15 A.M Cut log now 1/4 way between Bee House and Leo Reef, moving S.

11:20 A.M no Arctic loon in area at least to this time.

Birds in Leo Reef triangle:



18 common murres.

36 surf scoters

18 ♀ red-breasted mergansers.

(40' out from Bee House to Spring Cove)

8 double-crested cormorant.

5 Bonaparte gulls, 8 glaucous-winged gulls,

On Leo Reef 13 harbor seal occupying most of available space and 12 double-crested cormorant vieing for footing.

1:35 P.M. Group 12 glaucous-winged gulls and 4 Bonaparte gulls fishing local area directly E Bee House out 1/5 way of sound. Seconds later (20 sec.) 62 arctic loon, 8 cormorants, 1 common murres arrived from S. The cormorants came from Leo Reef. The cormorants entered water with head and wings upright. The Arctic loon glide in like pontoons for 3-7 feet with wings steff and neck and head stretched forward and with splash of water.

5:30 P.M. All family of deer at feeder including stray ♀ (29" high at shoulders), hind food of stray 65 mm. Tracks measuring 55 and 50 mm could respectively be the young of ♂ ♀.

Nov. 6, 1986

Clouds formed in clear sky and moved to S.

861106-171

Collected 2 mammals from Bee House last night

861106-1 Peromyscus maniculatus hollisteri 156-67-21.5-17-17gms ♂ testes 5mm.

861106-2 Peromyscus maniculatus hollisteri 163-74-22-18-19 gms ♂ testis 3mm

young ♀ mule deer 26" high at shoulders.

fawn ♀ " " 24½" high at shoulders.

4:45 all members of current family group of mule deer at feeder. Stray ♀ came later. While at feeder the stray struck the young ♂ & young ♀ but the young ♂ challenged the stray ♀ with feet thrusting and head up. The stray left feeder.

House finch at feeder for first time since last recorded in journal.

Nov. 7, 1986

High wind and whitecaps. One mule deer at feeder last night.

Collected following mammal from Bee House:

861108-1 Peromyscus maniculatus hollisteri 181-82-22-18-23gms ♂ testis 5 mm.

10:30 A.M ♂ house finch at feeder.

Have not observed band-tailed pigeon since last recorded in journal about 2 months ago.

Glaucous-winged gull feeding on debris S end Glacial Knoll, Bee Estate.

Mary Pauline Bee, our daughter called from her cabin at Kantishna Lodge, Denali Natl Park, Alaska. She reports: Gray wolf tracks in area (Canis lupus tundrarum). Barren-ground caribou, (Rangifer arcticus stonei) increasing. Doug arrived and they are setting up a computer program for Don Asterbrook now at Kantishna Lodge. Winter arriving late this year. River not frozen over. 1 hour daylight.

6:00 P.M. Local family of deer at feeder. All ate 2 pieces of bread each. 2 raccoon on porch each ate 1 slice of bread.

At feeder a raccoon passed 2' from a mule deer. The young ♀ deer recognized the raccoon by putting head low and toward the raccoon and then gave way but immediately returned to feeder

Wind calm tonight and temp 40° F.

Nov. 9, 1986

7:00 A.M, temp 36° F. Wind from NE. Waves in front Bee House 19 per minute. Sky above clear, some clouds in southern horizon. Glaucous-winged gulls flying N 1 every 2 minutes on the average.

10:30 A.m at highest velocity of wind took several photos showing aspect of wave action, all in front Bee House.

10:30 Highest velocity of NE winds and made the following photos to show character of waves:

861109-1
861109-2
861109-3
861109-4
861109-5
861109-6
861109-7
861109-8
861109-9
861109-10
861109-11
861109-12

Wave struck Lee Reef beacon and water splashed 2 feet above upper level of light and then sprayed out over the full extent of the reef. Wind sprayed water that was channelized on E side Willow Island blew out across Channel to a point between Frost and Decatur Island. The area on lee side of Blakely was not as severe as farther out in the sound to W. and SW. Ferries used Peavine Pass today so as to cross Rosario Strait at a 45° angle rather than parallell waves on the usual route E from Thatcher Pass. Dr. Mengler was on ferry this AM and reports winds of 65 MPR and waves 30' wide (crest interval) and 10' high. Birds difficult to see from Bee House but concentrations about usual in spite of wind. At Boundary Point & Bee House, the winds so strong that it was almost impossible to stand upright and it was cold.

Trip to Lopez Village. Road on Humphrey Head with Douglas fir branches averaging 8" long (2" to 2'). at interval of 1 branch every 5 feet.

At Humphrey Lagoon: 3 lesser yellowlegs (waded) American Crow but not other ducks, 1♀, 13♂ hooded mergansers, 2 glaucous-winged gulls, 1♂ goldeneye (common) duck and 1 great blue heron. At Low Bank Swift Bay: In 250' of shoreline 530 mew gulls and 12 glaucous-winged gulls hovering above waves. Another 1/5 that number were riding the waves and feeding out to 90' from shore. Water muddy and completely full of a green lettuce-like plant. These green plants and other debris was continuous with ~~a~~ solid mat of

to at least 15' landward of cresting waves on shore edge. The new gull alighted on water and plant moss for a fraction of second and then left up again to 3-4' to continue their food search. At Swift Lagoon: 2 mallards, 8 northern pintail. On pond SE junction Cross & Port Stanley roads: 9 mallards, 6 northern pintails, 3 American widgeon. Hummel Lake: 3 trumpeter swans feeding SE part of lake. Also but not associated with swans are: 4 mallards, 8 American widgeon, 12 greater scaup and approx. 20 other unidentified ducks. On E side of causeway in S Fisherman Bay Lagoon: 43 bufflehead, 1 great blue heron. On W side causeway: 12 bufflehead, 1 surf scoters. On N side Hummel Lake a dead road kill raccoon.

Nov. 10, 1986

Mule deer at feeder last night.

On Leo Reef with Rocks 1-6 exposed and only 8 cormorant on reef. There were 12 harbor seal. 1 harbor seal on north Flower Rock, Sky overcast, water calm.

1 eared grebe and 2 common merganser in water in front of Bee House.

4 Eastern gray squirrel at feeder.

Stray ♀ mule deer 28 1/2" high at shoulders.

From Bee House collected:

861110-1 Peromyscus maniculatus hollisteri 178-82-24-19-20gms ♀, Wt. normal.

Nov. 11, 1986

Adult bald eagle flew N past Bee House at 10:35 AM.

Collected following mammals from Bee House last night.

861111-1 Peromyscus maniculatus hollisteri 187-84-23-19-28gms, ♀ 4x1 placental scars.

861111-2 Sorex vagrans. [80]-[11]-13-7-41.6 gms.

Nov. 12, 1986.

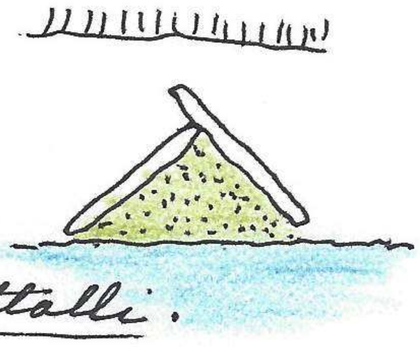
6:45 light insufficient to accurately count harbor seal on Leo Reef. By 7:10 A.M enough light to see seal and the count is 10.

7:30 A.M bald eagle to S.

At Odlin Park 143 birds in upright Channel E 1/2 of channel: cormorant, surf scoter, common tern, marbled murrelet, pigeon guillemot, glaucous-winged gulls (6), 2 bufflehead ducks.

861112-174

Lion's mane (jelly fish) on beach with several dozen purple jelly fish Dia. of mane 13". Raccoon, mule deer tracks on beach. On one section of beach two converging lage protected beach and green algae covered sand. Elsewhere no algae on beach.



From beach collected shells:

861112-1 Nuttalls cockle, Clinocardium nuttalli.
861112-2 ibid.
861112-3 ibid
861112-4 White sand macoma, macoma secta
861112-5 Common Pacific littleneck, Protothaca staminea
861112-6 Pacific white Venus, Amiantis callosa.
861112-7 ibid
861112-8 Rock specimen.

One mass of kelp 3' x 25'

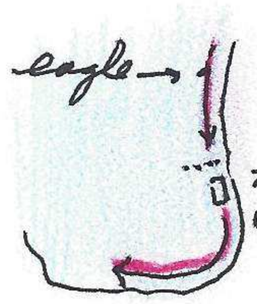
2 mule tracks on beach measured 79 and 59 mm.

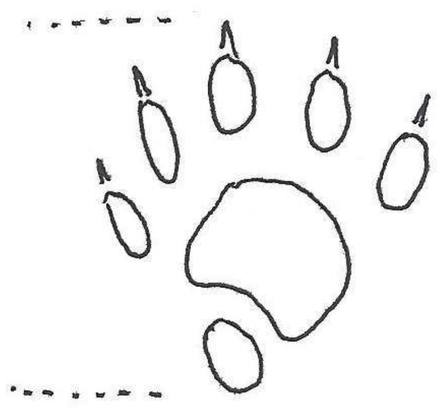
River otter tracks in a 50' linear section of beach. The hind foot shows more powerful movement than forfoot.

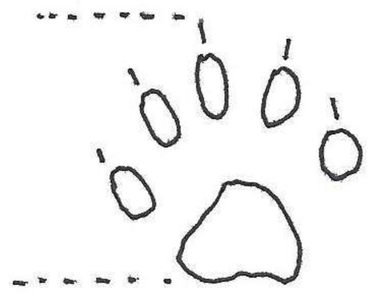
Humphrey Lagoon: 12 double-crested cormorant, 15 mew gulls, 5 northern pintail, 7 ♂, 17 ♀ bufflehead ducks.

At SE Shoal Bay: 6 ♂, 10 ♀ Common mergansers, 10 ♀ 12 ♂ bufflehead

At Shoal Bay marina an adult bald eagle flew S along shoreline (over marina) and at that point selected calls from 4 great blue herons resting in tops of douglas fir trees on hillside. The eagle continued S and then W along shoreline.







861113-175

Nov. 13, 1986

Adult bald eagle flew S in front Bee House at 7:22 A.M.

8mm. bald eagle flew S in front Bee House at 7:35 A.M Bath at apprxt. 50' above water and 40' from shore.

8:20 AM. adult ♀ mule deer and fawn (25½ inches high at shoulders)

9:05 A.M. On Leo Reef, 38 double-crested cormorant, 12 harbor seal and 2 glaucous-winged gulls.

9:55 A.M. young ♂ mule deer at Bee House 28" high at shoulders. Rain this A.M and deer wet. Three chestnut-backed Chickadees, 2 brown creepers and 2 orange-crowned warblers.

1:20 P.M 3 pigeon guillemot and 2 marbled murrelets feeding as one group. 1 red-necked grebe 200' away.

1:30 P.M a harbor seal fished for candlefish 40' out from shore below Bee House. On the consecutive dives it was successful in capturing candlefish.

Nov. 14, 1986

11:00 A.M. 51 double crested cormorants and 18 harbor seal on Leo Reef. no bird between Leo Reef & Bee House except 2 glaucous-winged gulls flying by.

Nov. 14, 1986

Wind from E to S this A.M. Red-tailed hawk circling S of Bee House.

2:10 A.M. Ad. bald eagle flying N at 250' high past Bee House.

Waves 32 per minute.

At dusk stray deer arrived at feeder and then left across Deer Trail Slope to N. 5 min. later adult female and fawn arrived at feeder, then young adult, then young ♂.

Rest of day rain and wind from S.

Nov. 15, 1986

Rain last night and this A.M.

9:00 A.M young ♀ at feeder by 10:00 A.M & no other mule deer in area.

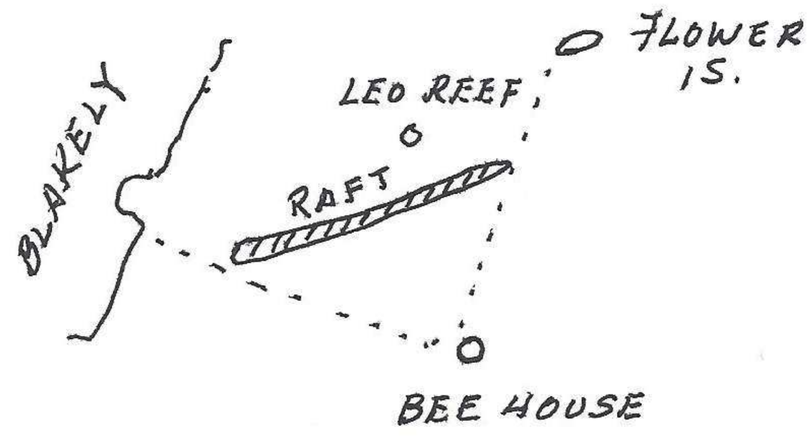
11:30 A.M mule deer ♂ (2) at feeder with young ♀ and they are compatible

11:35 AM adult female and fawn & young ♂ mule deer at feeder. Young ♂ measured 28" high at shoulders.

12:10 P.M. 10 double-crested cormorant in fishing formation (about)

from 3' to 15' from shore in front Bee House. Red-necked grebe and pigeon guillemot in area.

12:20 P.M. 639 ↑ Arctic loon in raft 50' wide and from Flower Island to high cliffs of Bald Bluff on Blakely at 2/3 distance from Bee House to Leo Reef. Also associated with the above loon were: 35 double-crested cormorant, 14 common murres, 6 pegeon guillemot, 5 mew gulls, 2 glaucous-winged gulls, 2 western grebes, 1 rhinoceros auklet. The 35 double-crested cormorant that joined the raft left Leo Reef and flew S into wind leave water and then wheeled around and flew NW to raft alighting with the wind.



2 house sparrows at feeder Bee House. In the last week only 1 house finch came to feeder.

1:30 P.M. Harbor seal swam NE past Bee House 50' from shore.

Nov. 17, 1986

Wind from SE, low clouds from S.

134 double-crested cormorant flew N between Leo Reef and Bee House in groups (single file) of 4-16. It took 5 minutes to pass They flew just above water with wing tips from 3"-6" above water.

8:30 A.M. Approx 300 Arctic loon passed N as did the double-crested cormorant at least, as far as I cared see, beyond Boundary Point. Flight lasted 8 minutes in loose groups. On the average the loon fly higher above water than cormorants. 12 glaucous-winged gulls followed.

8:35 A.M. Adult ♀ mule deer, fawn, young ♀ at feeder. The adult female & young ♀ left feeder and moved to Deer Trail Slope where they groomed each other. Fawn remained at feeder for 10 minutes. Adult ♀ = 29½" high at shoulders.

12 dark-eyed juncos at feeder and numbers are increasing. The rufous-sided towhee and purple finch at feeder for first time this season.

8:55 A.M. 2 adult bald eagles on Leo Reef beacon plateform, no other birds on Leo Reef. One eagle left 9:28 A.M & flew to tree at Lichen Point. The other left 9:32 A.M, flew straight to Bee House, thence N along shoreline at 50' above water and 150' from shore. While eagles were on Leo Reef a double-crested cormorant approached Leo Reef, circled and then left. After eagles

left (10 mins after) cormorant began returning to reef and in 20 minutes 18 had arrived.

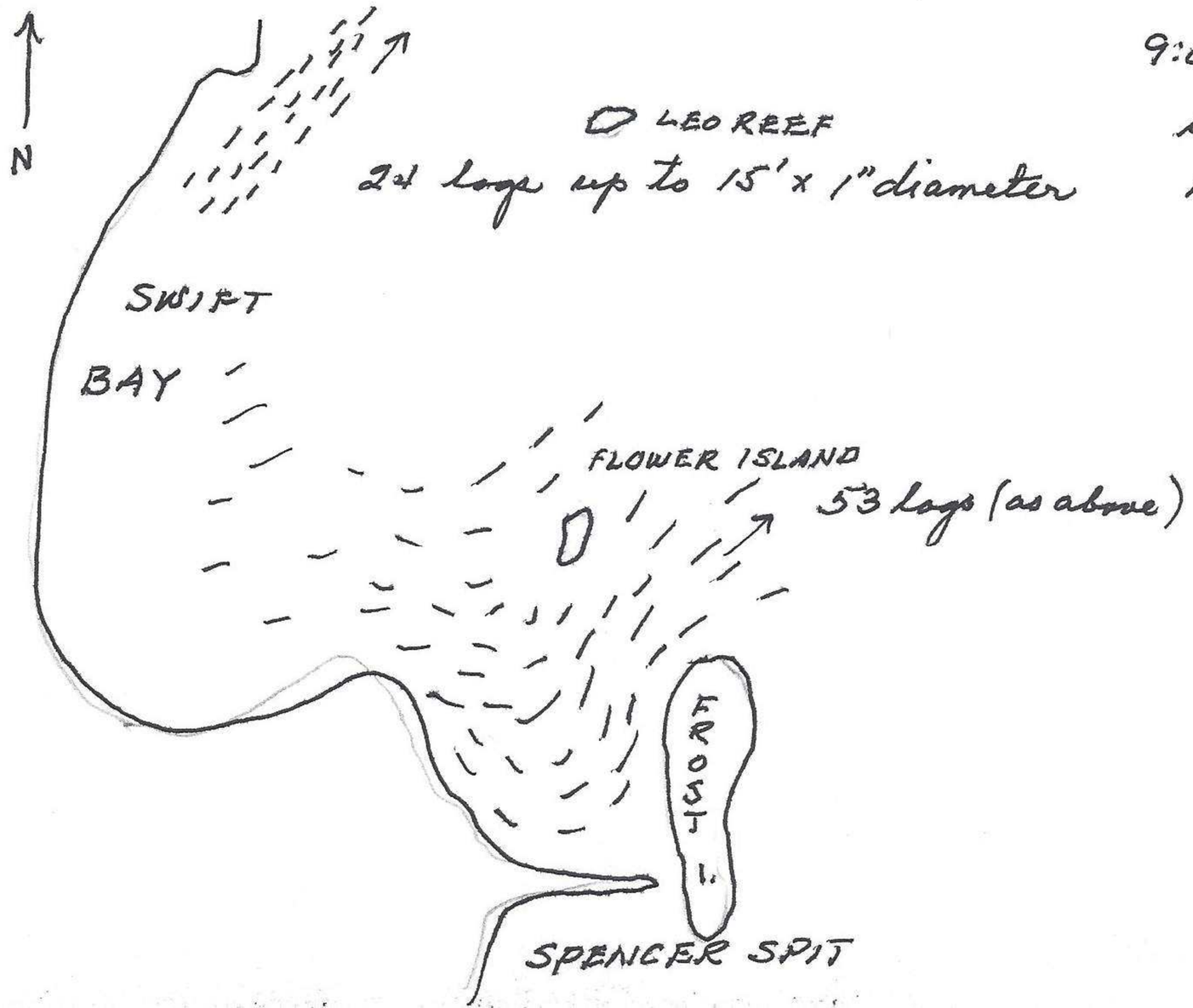
11:30 an adult bald eagle on Leo Reef. no cormorants but 10 harbor seal. Incoming cormorants (double-crested) circled but did not land. At 11:48 eagle left Leo Reef, flew directly to and over Bee House at appror 60' above house. 11:50 A.M 3 double-crested cormorants on Leo Reef, 11:52 A.M 14 cormorant on Leo Reef. 11:59 20 cormorant on Leo Reef all same species 12:11 P.M 31 cormorant on Leo Reef. 12:25 41 cormorant on Leo Reef. 2:50 P.M cormorants now occupying all available space on Leo Reef (almost touching) (approaching high tide). Some cormorants standing next to harbor seal but not disturbing seal. Wave from ferry displaced 25 into water. They swam to W. As tide excluded cormorant, more moved to platform of Leo Reef beacon. 3 harbor seal came to reef but no space available & they left. Some cormorant arrived and tried to land, some above backs of seal, but could not or did not land. 4:00 P.M 71 cormorant (double-crested) and 2 harbor seal Leo Reef.

4:05 P.M. A single Arctic loon on water in front Bee House.

Nov. 18, 1986

Strong wind and surf from S-SSE. High tide 7:24 A.M and was 8.1 feet and highest we have had for some time.

At 7:06 A.M. approx 10 gulls flew slowly S along shoreline at about 80' high. 10 minutes later same number sailed straight N at 100' high and at extreme high velocity.



9:00 A.M 77 logs floating in current in Swift Bay. Followed current lines.

Collect Sorex vagrans from rock slope above Bee House on Bee Estate
Humphrey Head, Lopez Island, San Juan Co., Washington.

861118-1 Sorex vagrans vagrans 107-46-12-7-6 gms, ♂ testis 1 mm length.
861118-2 " " " 106-43-13 8 6.3 gms ♂ " 1.5 mm " dark.

9:05 A.M adult ♀ mule deer and fawn at feeder.

11:35 A.M. no glaucous-winged gulls or cormorants on Flower Island. Leo Reef inundated most of A.M and cormorants on beacon or swimming above rocks of inundated reef. at this time 28 individuals).

3:00 P.M. Waves at shore in front Bee House, 32, 32, 30, 31 per minute. Waves 30' out from shore, 30, 29, 31, 34, 33. average 31.5 and 31.4 respectively.

Largest group of dark-eyed junco since records from here. They arrive in groups in intervals of 1 or 2 birds every 4 seconds instead of all members of the group at one time.

3:35 P.M. 2 arctic loon 1cd 15' in front of Bee House. They dove and resurfaced 100' soundward.

6:00 P.M. When older mule deer fawn pelage wet from rain spots along back become visible young male mule deer not observed at feeder today. Rain all day.

4:25 18 cormorant flew S in single file 1' above water and joined 13 cormorant on Leo Reef. Some rocks barely visible.

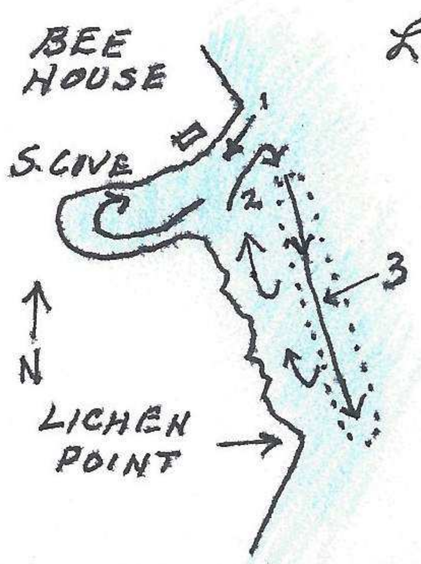
Nov. 19, 1986

7:22 A.M. Immature bald eagle flew S by Bee House at 40' high and 30' from shore. Continued to Lichen Point then S along shore.

8:15 A.M adult ♀ mule deer alone on SE side Bee House. when corn was placed in feeder of NW side Bee House the deer came to opposite side of house to feed for 10 minutes at the feeder.

8:20 A.M. A harbor seal continuously cruised 3 times in front Bee House, most of time just beneith surface at approx. 25' from shore. at one time it swam rapidly for 35' on its back with RAF body cutting surface, made a quick turn a captured the fish, a candle fish at surface of water, turn over and with head just above water consumed the fish. At other time a seal will chase a candlefish for 10'-15'.

8:25 A.M. Currents S Bee House.



Later no. 1 reverse direction
12 logs in dotted area no. 3.

adult bald eagle flew W over Leo Reef and alighted in large Douglas fir on Lichen Point.

8:30 A.M. Fawn at feeder Bee House.

8:35 A.M. Birds in sound between Bee House and Leo Reef: 1 common murre, 1 pigeon guillemot, 1 pelagic cormorant.

8:45 A.M. Wind just beginning from SE and waves 56 per minute. No glaucous-winged gulls on Flower Island.

9:00 A.M. Waves 40 per minute.

9:30 A.M. Pigeon guillemots in front of Bee House dove at following submarine times. 1"2 sec; 1"6 sec; 1 min; 1 min 6 sec; 1 min. 8 sec. all dove in area 30'x30'. Head moved laterally to pick up surface debris, necks held 45° ~~out~~.

10:30 A.M. 32 waves in 1 min

11:30 A.M. Waves from SE, foam layer 20' out from bank and 4' wide, 30 waves per minute, some whitecaps

11:31 A.M rhinoceros auklet diving in front Bee House.

12:00 P.M 6 glaucous-winged gulls feeding on candlefish. An adult bald eagle dropped to feeding gulls, displaced gulls, picked up a candlefish and flew to tree above Dissected Point. It left again and flew to gull activity, circled and then left area. 30 seconds later 6 double-crested cormorants flew to same area and captured 4 candlefish.

12:40 P.M. 29 waves per minute. Wave increasing since A.M.

1:05 Approx. 150 Arctic loon, 21 double crested cormorants, 8 pelagic cormorants and 12 glaucous-winged gulls in loose raft 1/10 mi. N Leo Reef.

3:30 P.M 25 waves per minute. Glaucous-winged gulls have been flying past Bee House nearly all day, one or two every minute, taking advantage of wind from SE.

Nov. 19, 1986

8:30 A.M. Adult bald eagle flew S along shoreline with prey in talons with glaucous-winged gull in close pursuit. The eagle lit in Douglas fir tree above Spring Cove.

Collected from Bee House:

<u>861119-1</u> <u>Peromyscus maniculatus rubidiveri</u> 164-69-22-19-25 gms, ♂, testis 9 mm length.

Nov. 20, 1986

Collected following insects from area of Bee House:

861120-2 beetle,

861120-3 beetle

861120-4 beetle

861120-5 yellow jacket wasp.

during high winds of last 3 days. approx 20 glaucous-winged gulls in air over N Lopez Sound from 20' to 200'

First song sparrow at deer feeder this season. young mule ♂ deer, rain all day. This deer is 28 1/4" high.

Nov. 21, 1986

40 waves per minute at 9:50 A.M. Sun and blue sky.

Nov. 22, 1986

9:00 A.M Crow called top tree NE Bee House. It sounded like a low-pitched call of a dog talking into a can.

Collected the following from Bee House:

861122-1 *Peromyscus maniculatus rubidus* 182-82-22-20-25 gms, ♂ testis 9mm.

11:45 A.M. fawn at feeder, measured 25" high at shoulder.

2:40 A.M An adult bald eagle flew over Leo Reef to Lichen Point and then N along crest of ridge.

4:00 P.M. 51 cormorants, 10 harbor seal on Leo Reef. no gulls on Flower Island nor have I seen them there today.

4:10 P.M 200' SE Bee House 8 double-crested cormorants, 2 arctic loon and 2 common murres in feeding group.

Nov. 23, 1986

Rain and wind from SE all night

7:00 A.M young ♂ mule deer at feeder

8:00 A.M adult ♀, fawn and young ♀ mule deer at feeder, rain dripping from bodies.

From Bee House collected:

861123-1 Peromyscus maniculatus rubidus 179-86-23-19-25 gms. ♀ ut normal, not vascularized or enlarged, no plac. scars.

9:10 A.M. Adult bald eagle flew S past Bee House at 40' from shore and 25' above water.

Gulls that are sailing and hunting in high winds are glaucous-winged gulls. They concentrate near shore SW of Bee House when winds drive waves to NW or N.

All mule deer (family) have fed twice at feeder this A.M.

2:00 P.M dark-eyed juncos fed all day in rain at feeder.

2:44 P.M adult bald eagle flew S along shore of Bee House.

It flew 60' high to Lichen Point then turned SW along shore. Raining.

2:50 P.M ♂ mule deer 31" high at shoulder (Q). Left eye tine only

2:58 P.M Approx 200 arctic loons, 80 pelagic cormorants between Leo Reef and Bee House.

Nov. 24, 1986

Dark-eyed juncs and rufous sided towhee at feeder Bee House, just after daybreak.

8:35 A.M Adult bald eagle flew S past Bee House to Lichen Point and beyond.

8:29 A.M Eastern gray squirrel arrived at Bee feeder.

8:50 A.M Imm. bald eagle flew N past Bee House.

yesterday high tide put a log on rocks on shore and today the high tide took it off.

11:35 A.M. mule deer fawn at Bee feeder. The deer measured 25½" high at shoulders.

Have not observed Bonaparte or new gulls since last recorded in journal.

Mammals from Bee House:

861124-1 Peromyscus maniculatus halleteri 162-74-23-20-18 gms. wt. normal.

3:05 P.M. 58 cormorants on the 3 exposed rocks of Leo Reef. Also 8 glaucous-winged gulls. One group of 17 pelagic cormorants, 1 arctic loon and 8 glaucous-winged gull in fishing formation. A 2 foot wave passed thru group and the arctic loon dove while the gulls and cormorants rode the waves.

3:25 P.M Imm bald eagle flew 100' high over water past Bee House and went beyond Lichen Point. 2 marbled murrelets swam ½ hour without diving

4:30 P.M. A young ♂ mule deer 28" at shoulders at Bee feeder.

Nov. 25, 1986

9:10 A.M Waves 25 per minute. Harbor seal in waves 20' from shore

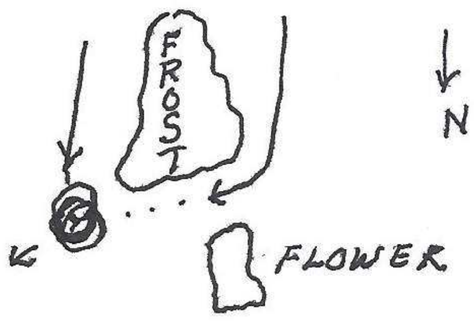
10:50 A.M. Waves 23 per minute.

Collected from Bee House:

861125-1 Peromyscus maniculatus halleteri 170-82-23-18-19 gms. ♂ testis 6 mm.

10:55 A.M. Photos of wave action on shore in front Bee House: 861125-2 to 861125-12. Wind from SE and waves 26 per minute. Wind going E thru Channel between Flower Island and Frost Island

created waterspray columns twice the height of Flower Island. , as these columns contact winds blowing to N and passing NE end Frost Island, they develop into cohirl-winds that spiral upward to 60-70'. .



1:30 P.M. Adult bald eagle flew S past Bee House at approx. 1 foot per second. Into wind at 60' high. Wind strong all day so far. 29 waves per minute. Even though high winds and rough water, birds fed uninterruptedly and in normal pattern.

3:30 P.M wind now 20° to W and near S direction.

Nov. 26, 1992

4:30 P.M. Wind from E. An adult and immature bald eagle soared 300 or so feet above Leo Reef and moved slowly in circles to N.

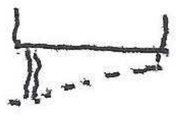
Nov. 27, 1992

7:30 A.M adult and immature bald eagle hunting in sound in Leo Reef area.

9:10 A.M 46 cormorants, 3 glaucous-winged gulls, 9 harbor seal on Leo Reef, 8 of the cormorants on beacon platefarm or railing.

Nov. 28, 1992

Following mammal from Bee House (all specimens indicated as Bee House are from open area under house, part of which is partitioned as an open room.)



861128-1 Peromyscus m. hollisteri 165-75-23-19-21gms. testis 7mm

4:00 P.M 85 harbor seal on Leo Reef. also 1 glaucous-winged gull.

4:30 P.M. harbor seal 100' out from shore beyond Bee House.

Nov. 29, 1992

Five photos from Bee House showing wave action below.

861129-1
861129-2
861129-3
861129-4
861129-5

861130-183

Nov. 30, 1986

Mammal from Bee House:

861130-1 Peromyscus m. hollisteri. 176-85-23-19-20 gms. ♀ 2×3 plac. scars.

Photos 861130-2 boots of Klein and O'Leary in Spring Cove.

" 861130-3 " " " " " " " "

" 861130-4 " " " " " " " "

Taken from Bee House at 10:40 A.M.

Bee Estate, Humphrey Head, Lopez Island, San Juan Co., Wa

Dec. 1, 1986

8:20 A.M. (unless time to minutes is critical, time in journal is usually to nearest 5 minute intervals as observed from clock). An immature bald eagle past S in front of Bee House along shoreline to Lichen Point thence S to a tree at about 1/2 heights of Frost Island.

11:30 A.M. 4 harbor seal were displaced by a boat passing Leo Reef. Cormorants in front of seal either moved aside or flew away to evade the seals movement.

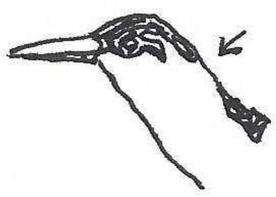
Mammals from Bee House:

861201-1 Peromyscus m. hollisteri 181-86-23-19-24 gms ♀, uterus enlarged.

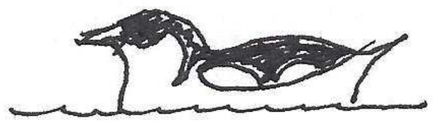
861201-2 Peromyscus m. hollisteri 186-90-23-19-24 gms ♂, testes 7 mm.

861201-3 Peromyscus m. hollisteri 177-80-23-19-25 gms. ♀, ut. enlarged.

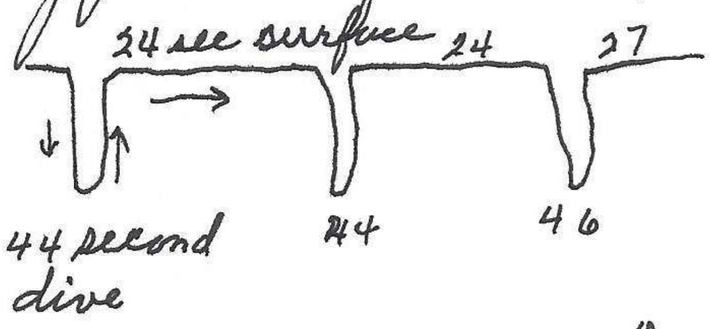
A common loon with white extending completely around neck.



marbled murrets characterized by two white spots on wing-side.



Diving pattern of red-necked grebe:



Dec. 2, 1986

Wind from N and white caps. Temp. 42° F. Townsend chipmunks have not been at feeder for last 6 days. Prior to that for a period of 7 days they were decreasing in numbers. Thru summer and autumn they occurred in regular numbers.

Birds not observed in period of last week are: horned grebes,

Bonaparte gull, new gulls. Pacific loons not as common as previously recorded. Common murres generally 1-3 but observed every day. Marbled murrelets always present but only 1-4 individuals. Cormorants sp? (but including pelagic & double-crested), and occupying all available surface of exposed Leo Reef. Fewer harbor seals. Young mule deer more common than adult female and rarely miss a day at the Bee feeder. Bald eagles observed on the overge of 2 (4-1) per day, immatures 3 (5-1) per day. Rhinoceros auklet twice a month. Dark-eyed juncos 6-12 every day and most always some at feeder. Rufous-sided towhee once a day. Finches irregular and 1-3 every day. Eastern gray squirrel every day and always at feeder. Raccoons every 4 days. Winter wren once or twice everyday in autumn & winter.

This evening all deer (4) at feeder.

mammal captured following mammal from Bee House.

861202-1 Peromyscus maniculatus hollisteri 173-81-23-19-22 gms. ♂, testis 6 mm.

Dec. 3, 1986

12:30 P.M. 4 glaucous-winged gulls chased another gull of same species for approx. 5 minutes covering 3/10 mi. before the harassed gull released the food in its bill. all over water.

12:45 P.M 1 ♂ and 2 ♀ common mergansers swam past Bee House for 2/10 mi without diving.

Horned grebe swam near shore front Bee House.

2 immature bald eagle sightings this A.M.

The "shy" deer (mule), ad. ♀, yerling ♀, young ♂ and fawn at Bee feeder this evening.

Dec. 4, 1986

mammal from Bee House:

861204-1 Peromyscus maniculatus hollisteri 188-88-23-20-29 gms. ♂ testis 7 mm. A cyst, purulent, green and 6 mm long O on left side rectum beneath skin.

Between 7:30 A.M and 2:00 P.M 21 sightings of bald eagles consisting of 7 adults and 2 immature. One bald eagle, adult, alighted on beacon of Leo Reef at 10:01 A.M and left at 12:02 P.M. no other birds came to reef except 12 black turnstones. This A.M an adult bald eagle and 1 immature eagle dove at a glaucous-winged gull to pirate food held by the gull.

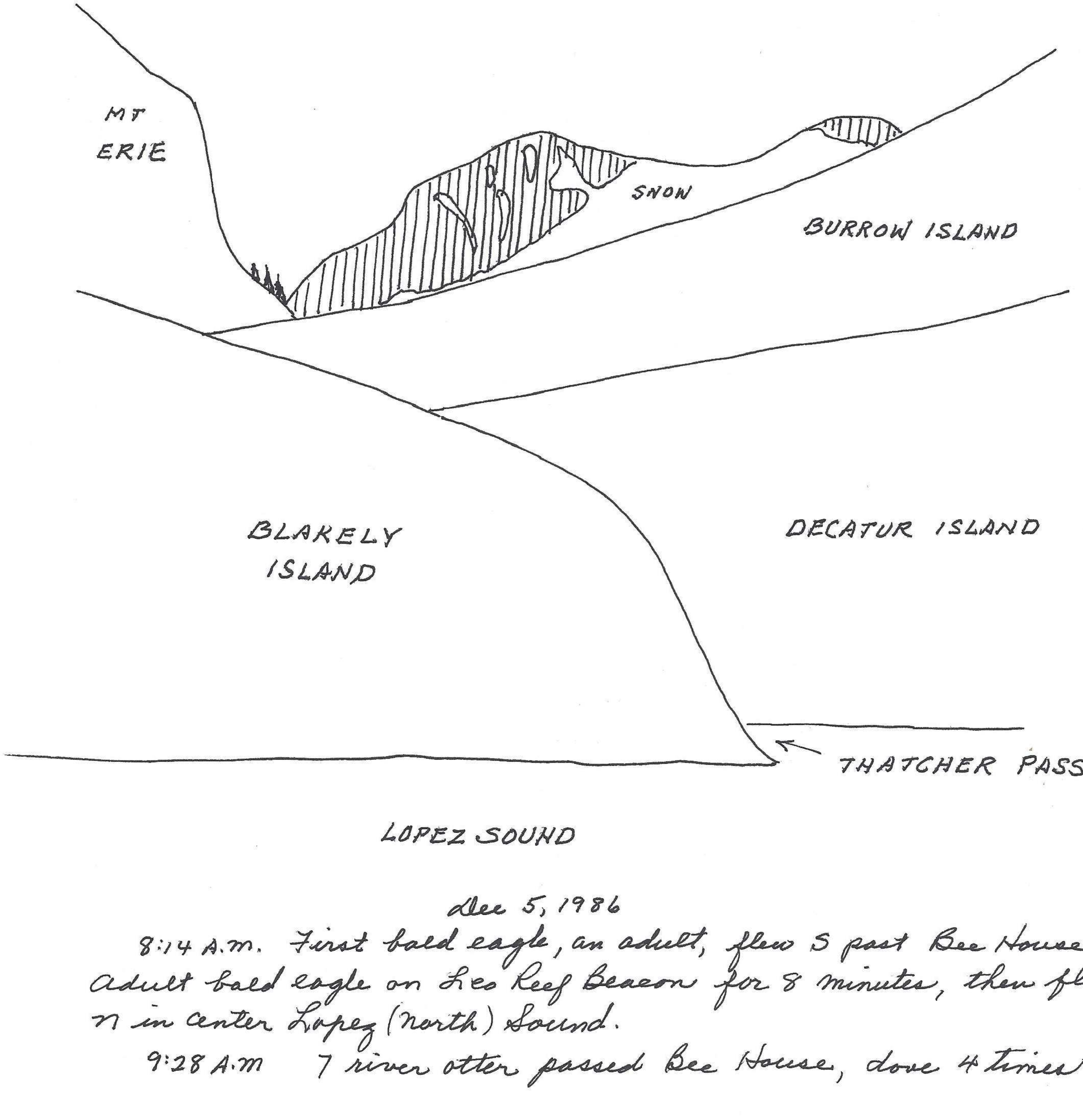
This took place in front Bee House.

3:00 P.M 3 golden-crowned kinglets in trees near Bee House.

marine birds most active between 8:30 A.M and 1:00 P.M. Birds observed at one moment: 18 double-crested cormorants, 1 western grebe, 2 red-necked grebes, 14 arctic loon, 9 common murres, 3 common mergansers, 8 mew gulls, 12 glaucous-winged gulls, 2 horned grebes

5:10 P.M. All mule deer at Bee feeder except young ♂. adult ♂ with right eye tine, 34" high at shoulder; fawn 25"; adult ♀ 30 1/4"; adult ♀ 26"; Shy ♀.

Recorded a Cascade peak as observed from Bee House. This peak is only observed when atmospheric conditions are favorable in Skagit Valley and along W side Cascades.

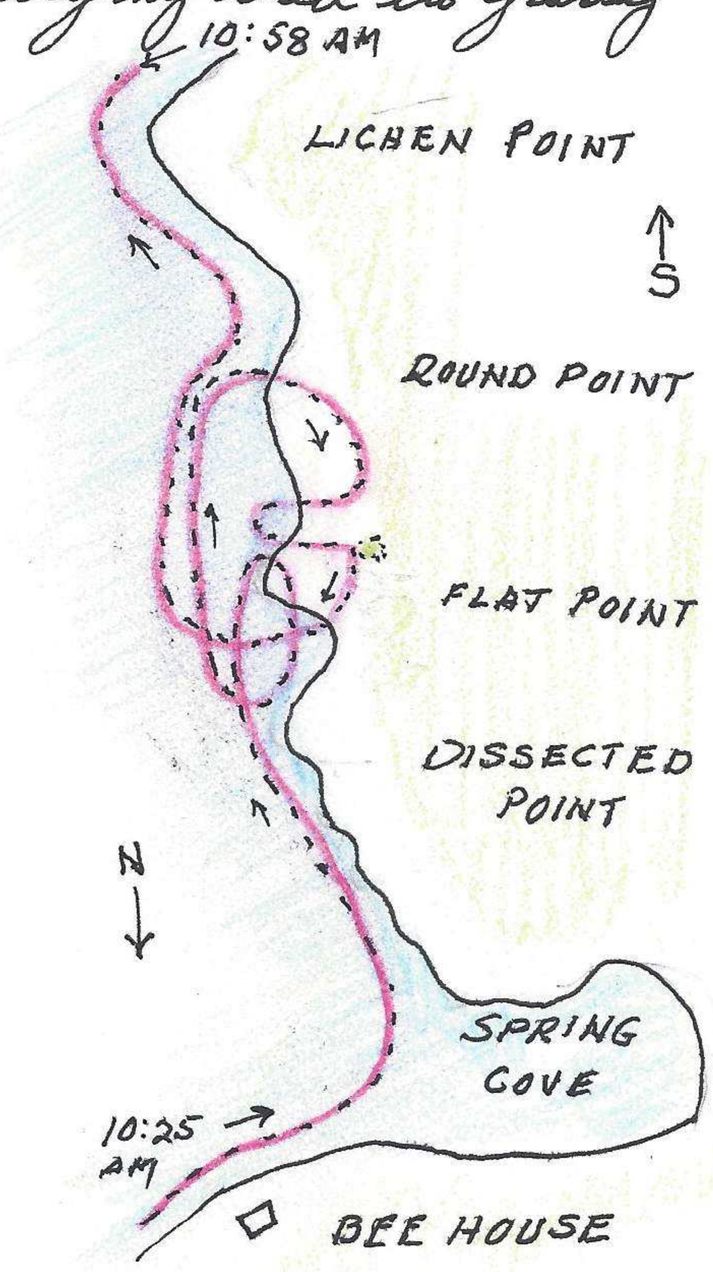


Dec 5, 1986

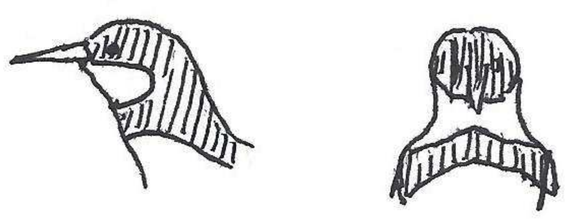
8:14 A.M. First bald eagle, an adult, flew S past Bee House. Adult bald eagle on Leo Reef Beacon for 8 minutes, then flew N in center Lopez (north) Sound.

9:28 A.M 7 river otter passed Bee House, dove 4 times in

immediate area in front Bee House out 4' to 12'. all otter captured candlefish. Continued fishing across entrance Spring Cove, remaining in close group, to Flat Point via cove, to N. where they put out for 25" then returned to water. Continued to Round Point, all but one put out, climbed to top of exposed rock, rested 20 seconds and then descended between Round and Flat points, thence fished in this cove and then put out on Flat Point to upper edge rocks to old sunning and drying area in grassy spot and after cleaning fur and marked territory left into cove between Flat and Dissected points and thence S. at times all seven almost contact, other times dispersed but within 10' diameter. Success in capturing food 80 per cent. Whatever material used for food was chewed for from 10" to 60". No sign of aggressive action among otter. Diving from perfect or instantaneous to irregular Saw no separation of adult and young interaction. The tide was high and 1' to 1½' below flat part of Flat Point.



2:35 P.m. Common murre this date



Townsend chipmunk has not been observed since last recorded in journal.

No mule deer up to at least 4:20 P.m.

5:25 Adult female mule deer and her fawn, 26" high at shoulders at Bee feeder.

5:30 P.m. Large mule deer with right eye tine missing, fed at feeder then left and gained to cleffs and stopped. young ♂ came down trail, past buck and went to feeder and fed for 3 minutes, then large buck came back to feeder and at 8' from young the young left area. After buck left feeder it stopped top of cleffs for 2-3 min, thence center of deer Trail Slope, thence along trail to N.

Ad. ♀ mule deer and her fawn and young ♀ come to feeder. For some reason the adult ♀ deer left at great speed followed by young ♀ and then fawn.

Deer (mule) come to feeder in winter later (light-wise) than

in summer.

Dec. 6, 1986

8:10 A.m. young mule deer ♀ 26" high at shoulders, at feeder
8:15 A.m. Adult ♀ mule deer, 29½" high at shoulders and her fawn 24½" high arrived at Bee feeder.
8:24 A.m When they left the fawn was last to leave.

Dec. 7, 1986

7:30 A.m. Immature bald eagle S of Bee House.
11:30 A.m 2 immature bald eagles alighted in top of douglas fir tree on Lichen Point. One left but returned at 11:45 A.m. 12:15 P.m both above eagles in tree at Lichen Point. The direction of turning of heads not sychronized except about once every 30 seconds.

A common merganser and a hooded merganser (♀) swam together from Lichen Point to Boundary Point. The common merganser had an object in mouth (bill open ¼") for full distance. It tried to force the object out of mouth by shaking head. The hooded merganser did not attempt to get the object.

2:30 P.m a female hooded merganser swam from Boundary Point to Lichen Point then return to Boundary Point. no white showing in wing pattern when swimming.

Red-necked grebe jumps clear of water in diving.

mammal from Bee House:
861207-1 Peromyscus maniculatus rolfsteri 163-73-22.5-18-22 gms ♂ testis 8 mm.

After dark fawn mule deer arrived feeder and waited. Food was placed in feeder while fawn remained 6' away. The mother arrived and fed with fawn. Then young ♂ and ♀ arrived and all fed at feeder. After 4 minutes the buck (right eye tine missing) arrived via same trail and displaced them all except fawn not by aggression but by presence only. The buck and fawn fed together until buck forced the fawn to leave, otherwise no aggression at any other time. After the food (chicken scratch - cracked corn and wheat) was consumed the buck left to top of cliff and with a stray ♀ both returned to feeder and fed side-to-side until grain was consumed then left area to ↑ via Deer Trail Slope. Because of compatebelity and behavior it indicated breeding season over and that the female showed family tie with large buck.

The relationships of this group of deer is as follows:
adult female progeny:
1986 fawn
1985 young ♀ and young ♂
1984 large buck (right eye tine missing) and stray adult female.

Dec. 8, 1986

8:45 A.m most water currents NS but this A.m some E-W. Currents variable in pattern from day to day.

8:50 A.m red-necked grebe in water 100' SE Bee House. This species is mostly solitary but occasionally 2 will be seen together in contrast to Arctic loon which predominantly is gregarious

Dec 9, 1986

To Mt. Vernon and stayed at Thousand Trails Preserve.

Dec. 10, 1986

At Thousand Trails Preserve at La Conner from camp site 164 (facing S), observed 6 common goldeneyes, 1 great blue heron, 5 mew gulls, 6 double-crested cormorants, 5 American crows, 4 horned grebes.

Left for Anacortes ferry terminal. In bay to SW counted 309 crab traps. Also 4 horned grebes, 4 western grebes, 16 buffleheads, 1 common merganser, 4 glaucous-winged gulls, 2 double-crested cormorants. Left on ferry and noted an adult bald eagle on nest (tree top bends to W) and on on tree adjacent to nest on top Humphrey Head W of Skerrits home.

Arrived Lopez. On way to see Mary & Don place noted at Swifts Bay approx 120 ducks and other marine birds. At Swifts Lagoon 8 mallards, Humphrey Lagoon, 3 greater yellow legs, 6 buffleheads, 4 mallards and 3 glaucous-winged gulls

Dec. 11, 1986

Last weeks temperatures below freezing, lowest 24°F, others 27°, 28°, 30°F. Today is first rain for some time.

2 sightings of bald eagles to S this A.m.

2 hooded mergansers, group 8 and 11 common mergansers and also other birds in front Bee House.

1 river otter peet out on rocks below Bee House.

no Towsend Chipmunk since last recorder.

Eastern gray squirrel present. 32 american crows came straight from Swift Bay beach to Bee House feeder.

At Bee House: Towhee (rufous-sided), chestnut-sided chickadee, dark-eyed junco, song sparrow, winter wren

Dec. 12, 1986

To mary and Dons (Babcock Place, approx 1.5 mi. S Spencer Spit). On beach below their rental home observed the purple jellyfish Pelagica nocteluca at approx. 5 per 100' of beach-water contact. Another moon jellyfish Aurelia aurita, largest 13 inches in diameter and 5" smallest along beach and another white jellyfish. a winter wren in same area as observed a week ago. Also horned grebe, 4 glaucous-winged gulls only other birds in bay.

From level of beach counted 301 crab traps (11:00 a.m looking N), from 200' out from shore to almost 1/2 way across Lopez Sound. Water calm. When on top of bank approx 48' high looking down could only see about 20 crab-trap buoys. The different angle of vision and slight disturbance of the previously smooth water made the difference.

On return home noted 34 mallards, 2 baldpates in Swift Lagoon. Red-tailed hawk 1/2 mi. N Sunset Hardware on Center Rd.

Mary and Don reported 1 buck mule deer, one doe and 3 young about 20" high at shoulders on Clearing W of their house. (Babcock Place).

Dec 13, 1986

26 dark-eyed juncos at Bee feeder (Oregon race) and most I have observed at one time.

mammal collected from Bee House:

861213-1 Sorex vagrans vagrans 101-41-12-7-3.4 gms ♂

In last 5 days flock of crows 18 to 33 have arrived from Swift Bay and feed on chicken scratch of cracked corn and white at both Bee & Fralic homes. When feeding at Bee House and disturbed by our presence, the fly out over water at about 80' high and 200-300' out and then circle and return to general area of house. The same technique is used to gain altitude to reach Fralic home above use on ridge. This A.M one crow left flock at one of these maneuvers and flew straight to Blakely Island.

dark-eyed juncos (Oregon race) arrive at Bee feeder at daybreak and leave at late dusk.

Wind with whitecaps from SE.

28 Pacific loons (Arctic loon of previous notes) flew S 1/10 mi N of Leo Reef and 6' above water. They are white as gulls when flying.

2:00 P.M. 61 Pacific loons flew N approx 1/4 way between Humphrey Head and Blakely Island.

To Lopez Village: At Swift Lagoon, 3:45 P.M., 33 ♂ mallards, 41 ♀ mallards, 6 pintails ♂ & ♀, 4 gadwalls, 3♂ and 3♀ hooded mergansers, 6 greater yellowlegs. At Humphrey Lagoon: 6♂ 6♀ buffleheads, 8 american crows, 1 glaucous-winged gull.

Ad. bald eagle circled over trees bordering Swift Lagoon at A frame. One circled approx. 400' above Plummers home on Humphrey Head.

young mule deer at junction Nitchuck and Shoreland drive roads.

Adult bald eagle N end Hummel Lake on utility pole, left and circled lake and hillside.

Dec. 14, 1986

10:55 A.M. waves 24 per minute, some streamers and spray to top of bank at Bee House.

3:30 P.M Pelagic Cormorant dove 6' out from shore below Bee House.

no raccoons since last recorded.

This A.M. all local herd of mule deer at Bee feeder. At noon only young ♂ and young ♀. In afternoon all deer at feeder.

In A.M to Fishermans Bay. at causeway W side SW Fishermans Bay Lagoon observed the following in lagoon from causeway: 10 glaucous-winged gulls, 38 red-breasted mergansers, 18 bufflehead, 2 common goldeneye, 1 belted kingfisher, 20 surfscoters. On W side of causeway in San Juan Channel, 9 horned grebes, 4 glaucous-winged gulls, 4 buffleheads. at Swift Lagoon; belted kingfisher, 1 northern shrike, 33 mallards, 13 baldpates, 4 pintails At Humphrey Lagoon: only 2 buffleheads.

11:08 5 river otter swam N past Bee House, one got out on rocks for 15 seconds.

At approx. middle N Lopez Sound in direction of fault N of Bald Bluff 274 Pacific loons, 13 double-crested cormorants and 32 glaucous-winged gulls.

Dec. 15, 1986

Prepared to leave for Chris'. 3 of the young mule deer at Bee feeder. Visited with Chris and Steve then back to Thousand Trails Preserve.

Dec. 16, 1986

At Thousand Trail Preserve at La Conner observed: 7:55 A.M 2 Barrow goldeneyes, 1 surf scoter, 2 glaucous-winged gulls, 1 pelagic cormorant, 2 horned grebe, 6 American Crows, 2 common goldeneye, 2 double-crested cormorants.

Dec. 19, 1986

Observed 793 snow geese in field 1 mi. E of La Conner.

Dec 20, 1986

5 bald eagle sightings from Bee House this A.M.

Photos:

861220-1 color in clouds at and before sunrise from Bee House
861220-2
861220-3
861220-4
861220-5 Tug boat reclaiming logs in Spring Cove. Raft escapes.
861220-6 ibid
861220-7 ibid
861220-8 ibid

Mammals from Bee House:

861220-12 Peromyscus maniculatus hollisteri 182-88-23-19-24 gms ♂ testis 6 mm.

At Bee House 4:20 P.M: young ♂ mule deer 28½" high at shoulders; adult female 29"; fawn 26".

6 house finches at feeder and first since last recorded in journal.

Dec 21, 1986

Wind all night and at 8:30 A.M. whitecaps and some spray streamers. Waves 25 per minute.

From Bee House:

861221-1 Peromyscus maniculatus hollisteri 148-61-23-18-19 gms ♀, ut. normal.

6 house finches at feeder.

1 pelagic cormorant 1 foot from shore below Bee House.

At Richardson, S end Lopez, 8 surf scoters.

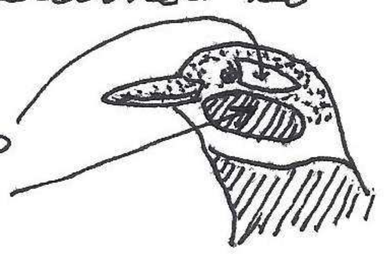
Last 3 days windy and gulls, mainly glaucous-winged and particularly from daybreak on into A.M, sailed against the wind.

At causeway SW Fishermans Bay, on W side of SW Fishermans Bay Lagoon observed 4 black-bellied plover in Salicornia rubra and other salt grass. Also 15 bufflehead, On W side Causeway 9 black-bellied plover on beach at edge water and 12 dowitchers. Toward S end causeway 1 belted kingfisher.

At Swift Lagoon: 57 mallards. Immature bald eagle flew over Lagoon flying E. Wind all day.

Dec 23, 1986

Calm today. Old squaw duck ♀ at 10:05 fed in front Bee House in an area 20' x 50' for 10 minutes. Average dive 44 seconds; Then swam E to approx 200', thence returned to Bee House and fed in same area until 10:30 A.M.



Mammal from Bee House:

861223-1 Peromyscus maniculatus hollisteri 182-83-23-19-24 gms ♂ testis 6 mm.

Dec. 24, 1986

9:12 A.M. first harbor seal observed to contact rocky shore below Bee House. It crawled up on rock 1/2 length of body, and then backed down again and submerged with head disappearing last.

Mammal from Bee House.

861224-1 Peromyscus maniculatus hollisteri 173-86-22-19-24 gms. ♂ testis 5 mm.

Left Lopez Island for Chris' at Lost Lake in Snohomish Co.. at 2:20 P.M.

Dec. 25, 1986

At Chris' home at Lost Lake.

Dec. 26, 1986

For 2 Peromyscus captured this date from Bee House on Lopez Island but prepared at a later date on return from Lost Lake:

861226-1 Peromyscus maniculatus hollisteri 172-81-22-18-23 gms ♂ testis 6 mm.

861226-2 Peromyscus maniculatus hollisteri 171-77-23-18-20 gms, ♀ ut. normal.

861227-193

Dec. 27, 1986

At 21231 E Last Lake Road, Snohomish Co., Washington, collected 3 mammals:
861227-1 Peromyscus maniculatus austerus 168-90-21-17-12 gms. ♂, testis 4 mm.
861227-2 Peromyscus maniculatus austerus 202-100-21-17-22 gms ♀, uterus vascular.
861227-3 Peromyscus maniculatus austerus 185-94-22-17-17 gms ♂, testis 5 mm.
These 3 above specimens were from 50 museum special traps set 10' apart in conifer-deciduous forest, second growth. 3 inches dried leaves on floor of forest.

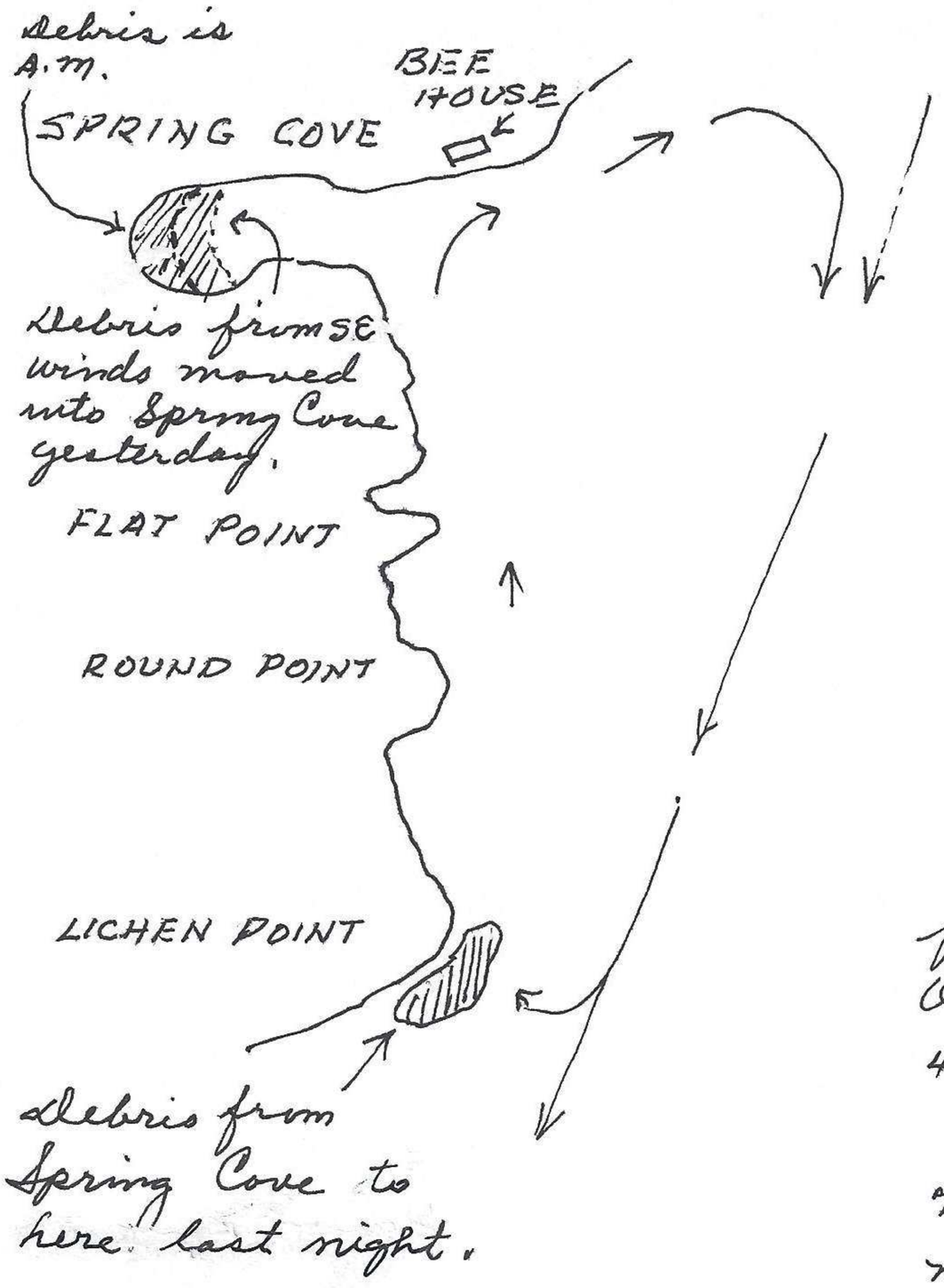
Left Last Lake and travelled river road (Welch, Elliot and Lowell roads) to Everet, thence N Interstate 5 to Conway, thence W on highway (Fir Island Rd) to W. At 1 mi. W Conway first red-tailed hawk observed today. within 2/10 miles. destance observed 3 red-tailed hawks at junction Whitney-La Conner Road and highway 20.

Dec 28, 1986

Prepared skull only of Sorex Cinereus or vagrans presented to me by mary P. Bee (her number 86210-1) collected at Kantishna, Denali National Park Preserve, Alaska. Mary collected it in Bucia Cabin where she is in residence.
861228-1 Sorex 100-37-12-7-4.5 gms, ♀, wt. normal skull only. Collected and frozen Dec. 10, 1986.
Waves below Bee House 25 per minute.
Fawn fed at feeder this A.M. no other deer in area,
Eastern gray squirrel at feeder.
Pelagic cormorant in rough and irregular wave action along shore below Bee House.
Early this AM in dim lights, 2 bald eagles circled in winds 1,200-400' above Bee House

Dec 29, 1986

7:30 A.M Below Bee House waves 22 per minutes.
10:08 A.M. Single male goldeneye fed 15' from shore below Bee House.
Heavy winds all day. At 8:00 A.M 44 glaucous-winged gulls visible either on or in water the full length of Blakely Island. from Peavine Pass to Thatcher Pass.



High tides lifted driftwood and debris of upper limits of beaches and floated it throughout sound.

11:35 A.M. Single red-necked grebe fed for 2 hours from 30' to 150' from shore below Bee House.

5:00 P.M. adult bald eagle chased an immature bald eagle.

Dec. 30, 1986

Old squaw duck at 12:55 P.M fed in same area as Dec. 23, 1986. On 2 dives recorded 44 and 45 seconds submergence

10 bald eagle sightings between 7:50 - 8:30 P.M. A sighting is note necessary different individuals.