

SUMMERING BIRDS OF THE CAPE ARAGO REGION
COOS COUNTY, OREGON

by

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A THESIS

submitted to

OREGON STATE COLLEGE

in partial fulfillment of
the requirements for the
degree of

MASTER OF SCIENCE

June 1952

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Date thesis is presented March 17, 1952

Typed by Dorothy A. Bratz

ACKNOWLEDGMENTS

A number of persons have contributed to the preparation of this paper to whom the author is very grateful.

First and foremost is the author's major professor, Dr. Robert M. Storm, who, besides suggesting the problem, was always willing to take time to discuss any questions that arose.

Dr. Ivan Pratt suggested dividing the region into the five study areas.

My fellow students at the Institute of Marine Biology were very helpful, especially Dick Darby who spent many hours with me in field observations and helped identify many of the birds. Dick Eddy and Bill MacConnell took the photographs of the region after my camera failed.

The U. S. Coastguard assisted by making available their weather files and gave permission to use the lighthouse rocks for an area of observation.

Last, but not least, I wish to thank my fellow graduate students in Natural History for their suggestions and discussions concerning the preparation of this paper.

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SUMMERING BIRDS OF THE CAPE ARAGO REGION
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INTRODUCTION

Observations of the summering birds in the Cape Arago Region, Coos County, Oregon were made from June 18 to and including August 12, 1951. During that time, fifty-one days were devoted in part to field observation.

The purpose of these observations was to satisfy the need for more detailed information on the avifauna in the vicinity of the Oregon Institute of Marine Biology, Charleston, Coos County, Oregon. Students who spend part of their summer there have, heretofore, had no specific guide to indicate what birds might commonly be seen in the locality around the Institute and in the public areas south of there.

A secondary purpose is that this paper may stimulate further work on the birds of Coos County.

Prior to the publication of Ira N. Gabrielson and Stanley G. Jewett's book "Birds of Oregon" in 1940, very little had been published concerning Coos County birds, and as far as could be determined from available literature, nothing has been published since then.

In 1917, Irene Barnekoff noted the gulls around Bandon, about thirty miles south of the Cape Arago Region. She also mentioned the value of the offshore rocks as ideal nesting sites and resting places for many of the sea birds (5, p.226).

In 1925, Ira N. Gabrielson, while at Bandon, noted the large numbers of unidentifiable offshore scoters with White-winged Scoters being predominant close to land (6, p.61).

Oliver Barber, in 1934, found a Screech Owl (Otus asio), in an open milk can at his home near Marshfield (now Coos Bay), Coos County, which is about ten miles northeast of the study area (4, pp.364-365).

Any records published in 1940 by Ira N. Gabrielson and Stanley G. Jewett in "Birds of Oregon" will be noted in the species accounts of this thesis.

DESCRIPTION OF THE CAPE ARAGO REGION

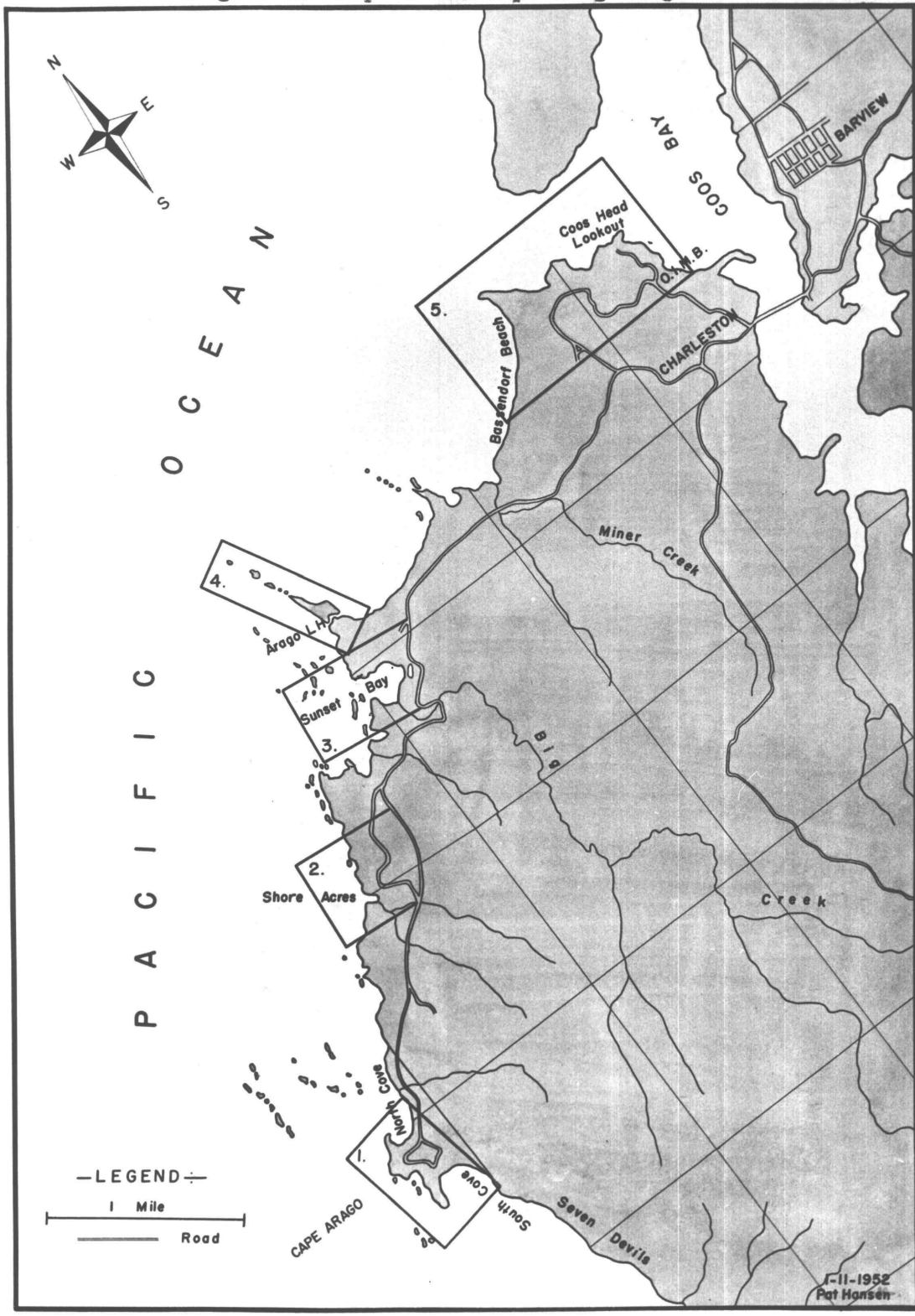
The Cape Arago Region is here described as that area of land beginning at the entrance of Coos Bay and extending south to South Cove of Cape Arago State Park. The western boundary was limited to the visibility afforded by the weather and a pair of 8 x 32 binoculars. The eastern boundary was chosen to be the public road extending from Charleston south to Cape Arago State Park where it terminates. See map, Figure 1, page 4.

The elevation of the area ranges from sea level to about 150 feet. The soil for the most part is sandy with a twelve to eighteen inch layer of organic litter and duff in the vegetated localities of the upper elevations, and sandy beaches at the lower elevations merging into a sandstone rocky coast line.

The climate in this region remains fairly constant throughout the year. The yearly precipitation is approximately 64 inches, with 16 inches during the period from April 1 to September 30 and 48 inches from October 1 to March 31. The average date of the last killing frost in spring is March 30 and of the first killing frost in the fall is November 20. This leaves approximately 240 frost free days during the year. Temperatures average from 44° F. in January to 60° F. in July (10, pp.1082-1085).

The weather during the summer of 1951 remained almost constant, with precipitation below the established average. There was less than one inch of rainfall during the entire period of study compared

Figure 1. Map of the Cape Arago Region



with an average of about three inches. There were no summer storms and barometric readings, taken from the coastguard files during the period of observations, did not show any abrupt changes, but showed only gradual rises and falls.

Five specific study areas were taken from the region in order to have adequate representation of the various types of coast line and vegetation that were present. The following descriptions refer to these five areas.

Area 1. Cape Arago State Park

Within this area are many diverse types of habitat. The entire coast line is a protected rocky outer coast with two protected coves, one with a southern entrance, the other with a northern entrance. The coast line protection is due to a visible reef about 500 yards out (see Plate 2 a and b).

South Cove is bounded on the west by sheer sandstone cliffs that have sparse vegetation extending to the beach. The upper reaches of these cliffs are covered with bare snags and a dense shrub layer about three feet high, the result of an old burn (see Plate 1 a and b). On the south facing slope the rise is not so abrupt in spots, allowing easy descent to South Cove. The draws are densely vegetated with many shrubs, including gooseberry (Grossularia sp.), salmon berry (Rubus spectabilis), salal (Gaultheria shallon), and black twin-berry (Lonicera involucrata). The scattered trees are lodgepole pine (Pinus contorta), western hemlock (Tsuga heterophylla), Douglas fir

(Pseudotsuga taxifolia), and a few Oregon alder (Alnus oregona), the last species occurring in a moist spot on the northwest side of the cove. Herbaceous plants are sword fern (Polystichum munitum), horsetail (Equisetum sp.), strawberry (Fragaria chiloensis), cow parsnip (Heracleum lanatum), balsam root (Balsamorhiza deltoidea), Canada thistle (Cirsium arvense) and many grasses.

The cove itself offered excellent protection from the almost constant northwest winds, while the rocks in the cove were resting sites for many sea birds, notably Harlequin Ducks, scoters, Western Gulls and California Murres.

The west facing slope of Cape Arago State Park for the most part had very little vegetation due to the steep cliffs and a rocky shore line (Plate 4 a). There is a dense stand of lodgepole pine (Pinus contorta) and Sitka spruce (Picea sitchensis) at the southern end of the west facing slope. There are in the shrub layer gooseberry, salmon berry, thimble berry (Rubus parviflorus), salal and twin-berry, while the herbs are mainly strawberry and grasses.

The rocks of the ocean frontage, covered with mussel beds (Mytilus californicus), were feeding sites for the sandpipers and Wandering Tattlers as well as the Western Gulls.

North Cove, bounded on the northwest by a series of rock outcroppings, which are connected with the mainland at low tide, is shallow and protected from all except very strong winds. This cove afforded a good food supply for diving ducks, mainly Harlequin Ducks, White-winged Scoters and Surf Scoters. The Great Blue Heron

and Black Brant were also seen here. To the west of North Cove are sheer cliffs of sandstone that have no vegetation on their slopes. The slopes to the south rise gradually and are densely vegetated in the areas of seepage from springs. These springs are best noted by the dense stands of horsetail, sedges (Cyperaceae sp.) and rushes (Juncaceae sp.). Sword fern is also prevalent on these slopes. Lodgepole pine and Sitka spruce make up the tree layer, while the shrubs are thimble berry, evergreen blackberry (Rubus laciniatus), salal, evergreen huckleberry (Vaccinium ovatum) and twin-berry (Plate 3 a and b).

The park proper is, for the most part, lawns of cut grass and strawberry plants. A new growth of lodgepole pine and Sitka spruce occurs in the center, with an undergrowth of western bracken (Pteridium aquilinum) and western azalea (Rhododendron occidentale), along with uncut grasses and Canada thistle. This is a desirable habitat for finches and sparrows, as well as other passerine birds (Plate 4 b).

A list of the birds from this area and the days they were seen will be found in Table I.

PLATE 1

a. The east cliffs of South Cove show evidence of an old burn on their upper slopes.

b. South Cove proper with the offshore rocks well shown. Gulls are evidenced by the white specks behind the fishing boat.



PLATE 2

a. Rocky west face of the area with the reef appearing in the background.

b. Another view of the offshore reef rocks. The rock in the center was a nesting site for Western Gulls.

9A

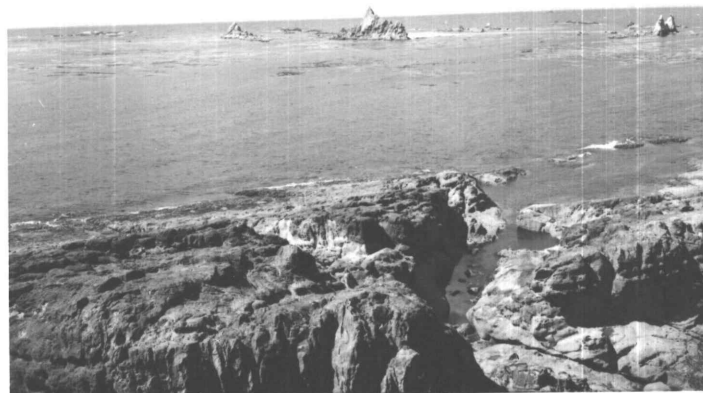


PLATE 3

a. A general view of the north facing slope of North Cove, with horsetail, sedges and rushes shown in the foreground.

b. This shows the vegetated slopes extending to the beach of North Cove.



PLATE 4

a. North Cove proper; note the shallow water which indicates the beginning of a low tide.

b. The central portion of the park showing the Sitka spruce and herbaceous growth.

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TABLE I.

Area 1. Cape Arago State Park

	June							July												Aug.		
	18	20	21	23	25	28	30	1	2	5	6	8	11	12	16	21	25	30	2	9	12	
PACIFIC LOON	X		X			X	X		X	X	X	X	X	X	X	X	X	X		X	X	
COMMON LOON	X	X		X																		
HOLBOELL'S GREBE	X				X																	
WESTERN GREBE	X									X		X										
SOOTY SHEARWATER	X																					
BROWN PELICAN							X						X				X					
BRANDT'S CORMORANT							X	X	X			X			X			X		X	X	
BAIRD'S CORMORANT	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
GREAT BLUE HERON	X						X															
BLACK BRANT	X	X		X			X		X													
HARLEQUIN DUCK		X	X		X				X													
WHITE-WINGED SCOTER							X		X			X			X	X		X	X		X	
SURF SCOTER		X			X	X	X		X	X		X		X		X						
TURKEY VULTURE	X	X		X																	X	
OSPREY																		X				
RING-NECKED PHEASANT															X							
WANDERING TATTLER																				X		
GLAUCOUS-WINGED GULL	X	X		X		X	X	X			X	X										
WESTERN GULL	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	
CALIFORNIA GULL							X															
HEERMANN'S GULL							X		X			X		X	X	X					X	
CALIFORNIA MURRE		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PIGEON GUILLEMOT		X					X	X	X			X			X	X		X	X	X	X	
RUFIOUS HUMMINGBIRD	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
RED-SHAFTED FLICKER										X	X	X	X		X	X			X	X		
ROUGH-WINGED SWALLOW																					X	
BARN SWALLOW																		X				
CHESTNUT-BACKED CHICKADEE											X	X										
BUSH-TIT									X			X	X	X								
WREN-TIT			X				X					X	X	X		X		X				
ROBIN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
RUSSET-BACKED THRUSH		X				X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	
GOLDEN-CROWNED KINGLET				X																		
CEDAR WAXWING				X																X	X	
ORANGE-CROWNED WARBLER							X		X		X	X				X	X		X	X	X	
AUDUBON'S WARBLER	X		X			X	X	X	X		X	X			X	X	X	X	X	X	X	
PILEOLATED WARBLER							X													X		
PURPLE FINCH				X			X		X		X	X	X			X				X	X	
PINE SISKIN		X				X	X	X	X		X			X	X	X	X			X	X	
GOLDFINCH	X	X	X	X			X		X		X	X	X	X		X	X	X	X	X	X	
WHITE-CROWNED SPARROW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SONG SPARROW	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Total Field Hours Approximately 36½

Area 2. Shore Acres State Park

This area has well-tended lawns, bordered by planted trees and shrubs. The forested edging of lodgepole pine, Sitka spruce, and a few scattered western red cedar (Thuja plicata) has no definite shrub layer (see Plate 5 a and b). The herbaceous plants are predominantly sword fern, western bracken and false lily-of-the-valley (Maianthemum bifolium). The public road entering the park is bordered on the north by both evergreen blackberry and wild blackberry (Rubus vitifolius), and on the south by a western red cedar hedge.

The coast line is exposed to violent wave action and is for the most part sheer sandstone cliffs. The sandstone is of varying degrees of hardness which can be readily seen in the weathering (Plate 6 a and b). The rocks that are subjected to the wave action have a covering of the palm alga (Postelsia palmaeformis) and mussel beds (Mytilus californianus), both of which harbor a host of invertebrate animals that shore birds seek for food.

Few sea birds rested on the water here, and for the most part were seen flying by or resting on the rocks near shore. Kinglets and the Pine Siskin inhabit the heavy wooded areas, while Robins, Finches and Sparrows were seen most frequently around the lawn (note Table II).

PLATE 5

a. Lodgepole pine that has no shrub layer. False lily-of-the-valley can be seen in the foreground.

b. A similar scene, but showing the beginning of a shrub layer and also a western red cedar in the center.



PLATE 6

a. A view southward along the rocky coast showing the cliffs of ocean frontage at Shore Acres State Park.

b. A similar view to above, but looking northward and showing more closely the sandstone formation.

15A



TABLE II.

Area 2. Shore Acres State Park

	June			July			Aug.	
	20	21	28	2	20	26	3	12
PACIFIC LOON		X		X	X	X		
SOOTY SHEARWATER				X				
BRANDT'S CORMORANT						X	X	
BAIRD'S CORMORANT	X	X		X		X	X	
HARLEQUIN DUCK							X	
WHITE-WINGED SCOTER				X	X	X		
SURF SCOTER						X	X	
TURKEY VULTURE								X
WANDERING TATTLER						X	X	X
GLAUCOUS-WINGED GULL		X						
WESTERN GULL	X	X	X	X	X	X	X	X
HEERMANN'S GULL				X		X	X	
CALIFORNIA MURRE				X	X	X	X	
PIGEON GUILLEMOT		X	X	X	X	X	X	
BAND-TAILED PIGEON						X		
RUFIOUS HUMMINGBIRD	X			X	X	X	X	
RED-SHAFED FLICKER					X	X	X	X
BARN SWALLOW	X					X		
CHESTNUT-BACKED CHICKADEE				X	X	X	X	
BUSH-TIT					X	X		
WREN-TIT				X				
ROBIN	X	X	X	X	X	X	X	X
RUSSET-BACKED THRUSH		X	X	X	X	X	X	X
GOLDEN-CROWNED KINGLET		X	X	X	X	X		X
CEDAR WAXWING					X		X	X
ORANGE-CROWNED WARBLER					X			
AUDUBON'S WARBLER						X	X	
PILEOLATED WARBLER				X			X	
PURPLE FINCH	X						X	
PINE SISKIN		X	X	X	X	X	X	
GOLDFINCH	X	X				X	X	
WHITE-CROWNED SPARROW	X	X	X	X	X	X	X	X
SONG SPARROW				X	X	X	X	X

Total hours in the field approximately $10\frac{1}{4}$

Area 3. Sunset Bay

Sunset Bay is a good example of a well protected bay. The wave action is almost nil here since just beyond the entrance is a rock reef that breaks the waves before they enter the bay. The bay itself is an ideal spot for vacationists, since the bay has a sandy beach at the east end and the bottom slopes gradually toward the ocean. This makes swimming a safe sport for youngsters (Plate 7 a and b).

The south side of the bay is a sheer cliff topped with a dense growth of blackberry and salal and a few lodgepole pine. On the south are also cliffs but these slope toward the east, allowing easy access to the top. The vegetation here is also dense, but is crisscrossed with many paths. The trees are lodgepole pine, Sitka spruce and some western red cedar. The shrub layer is gooseberry, thimble berry, wild blackberry, evergreen blackberry, western azalea, salal, evergreen huckleberry and red huckleberry (Vaccinium parvifolium). The herb layer is composed of a variety of grasses, sword fern, western bracken, horsetail, tiger lily (Lilium pardalium), cat's ear lily (Calochortus sp.), cow parsnip and Indian paintbrush (Castilleja sp.) (Plate 8 a and b).

The bay was the only area where an Osprey could be frequently seen fishing. It also proved to be a resting site for Pacific Loons, on occasion Surf Scoters and frequently California Murres. The cliff on the north side facing the ocean was a nesting site for a

small colony of Baird's Cormorants. The Wren-tit could be easily attracted from the shrubs on top of the north slope at almost any time, and also in this locality were Flickers, Bush-tits and Warblers. Around the vicinity of the beach, when it was not crowded with people, could be seen numerous Swallows and Sparrows, and at the beginning of the summer Brewer's Blackbird was there (note Table III).

PLATE 7

a. The north facing cliff of Sunset Bay with its vegetation well shown. Bathers are typical of this area, and an idea of the water depth may be noted.

b. Looking into the bay proper; the reef seems to block any direct opening into the ocean.

19A



PLATE 8

a. This will give some idea as to the density of the vegetation on the south facing slope of Sunset Bay.

b. On this sloping hill at the northeast end of the bay is the path to the top where most of the observations were made.

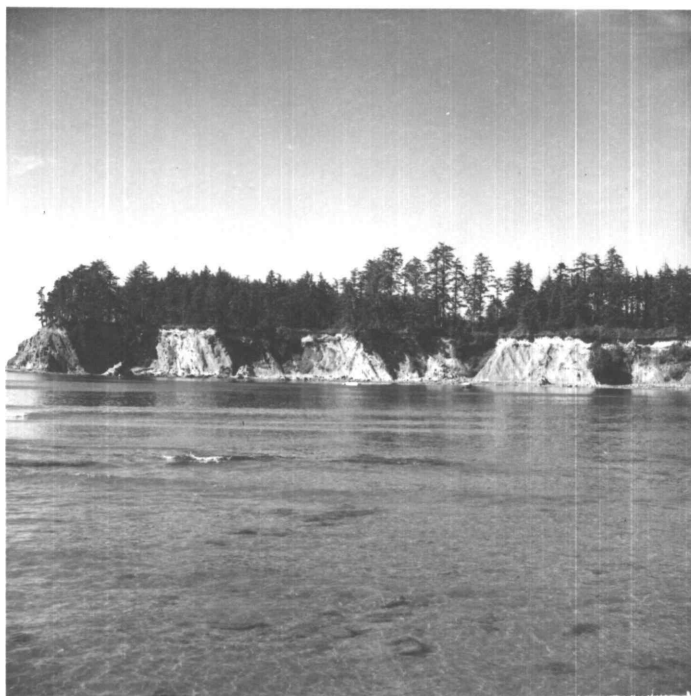


TABLE III.

Area 3. Sunset Bay

	June					July								Aug.	
	18	20	22	24	28	7	9	10	13	19	24	28	10	12	
PACIFIC LOON			X	X		X	X				X	X	X	X	
COMMON LOON				X											
WESTERN GREBE					X										
BRANDT'S CORMORANT													X		
BAIRD'S CORMORANT		X	X		X	X	X	X	X	X	X	X	X	X	
GREAT BLUE HERON										X					
WHITE-WINGED SCOTER			X			X		X	X			X	X	X	
SURF SCOTER							X	X					X		
TURKEY VULTURE				X		X			X			X			
OSPREY			X	X		X	X		X		X	X	X	X	
BLACK OYSTER-CATCHER			X							X					
WANDERING TATTLER												X	X		
GLAUCOUS GULL										X					
GLAUCOUS-WINGED GULL	X	X			X										
WESTERN GULL	X	X	X	X	X		X	X	X	X	X	X	X	X	
HEERMANN'S GULL							X					X			
CALIFORNIA MURRE			X	X	X	X	X		X	X	X	X	X	X	
PIGEON GUILLEMOT	X		X							X			X	X	
MARBLED MURRELET		X													
RUFOUS HUMMINGBIRD		X						X	X	X	X	X			
BELTED KINGFISHER												X	X		
RED-SHAFED FLICKER								X		X	X	X	X	X	
WESTERN WOOD PEWEE		X													
OLIVE-SIDED FLYCATCHER									X			X			
BANK SWALLOW												X	X		
ROUGH-WINGED SWALLOW			X	X											
BARN SWALLOW			X	X		X	X			X	X		X	X	

TABLE III. (Continued)

	June					July					Aug.			
	18	20	22	24	28	7	9	10	13	19	24	28	10	12
CLIFF SWALLOW							X							
CROW			X											
CHESTNUT-BACKED CHICKADEE								X		X	X		X	
BUSH-TIT			X							X	X			X
WREN-TIT		X	X			X	X	X	X	X	X	X		X
ROBIN						X		X	X	X	X	X	X	X
RUSSET-BACKED THRUSH						X		X	X	X	X			X
GOLDEN-CROWNED KINGLET		X	X										X	
CEDAR WAXWING													X	
ORANGE-CROWNED WARBLER		X										X	X	
AUDUBON'S WARBLER		X							X		X	X	X	X
PILEOLATED WARBLER										X				X
BREWER'S BLACKBIRD			X	X			X							
PINE SISKIN											X	X		
GOLDFINCH						X			X	X	X	X		X
WHITE-CROWNED SPARROW		X	X			X	X		X	X	X	X	X	
SONG SPARROW					X	X	X	X		X	X			

Total hours in the field approximately 24½

Area 4. Cape Arago Lighthouse Rocks

The lighthouse rocks are completely separated from the mainland by a shallow strip of water, and are accessible only by the coastguard footbridge. The rocks are further divided at their northwest end into two small islands of sandstone rock. Several attempts were made to go out onto these separated rocks at low tide, and it was found that a boat would be needed, even at the very low tides, to get on them. It was for this reason that observations were made from the main rock or island, which was readily accessible by way of the footbridge.

The sides of the rocks are steep and devoid of vegetation, but were the nesting site for Baird's Cormorants. A small island-like projection immediately northeast of the lighthouse rock was the nesting site for Pigeon Guillemots.

The vegetation on top of the rocks was an herbaceous layer of grasses, strawberry, cow parsnip and Canada thistle; while around the lighthouse there is a well tended lawn and exotic flowers. The House Finch was seen only around this lawn and presumed to have nested in the immediate locality (Plate 9 a and b).

The rocks to the south of the lighthouse rocks are Squaw Island, which had no land birds although it was vegetated, and a chain of un-named islands or rocks on which there were nesting colonies of Baird's Cormorants (see Plate 10 a and b). Black Oyster-catchers were also seen in this area.

The northwest extension of the lighthouse rocks was a resting place for numerous gulls and the Tufted Puffins (Plate 11 a). To the northeast are flat rocks, generally awash at high tide and well exposed at low tide, which offered close observations of such shore birds as Black Oyster-catchers, sandpipers, Wandering Tattlers and Greater Yellow-legs; in addition, gulls, murres and Pigeon Guillemots were commonly seen here (Plate 11 b).

In the bay to the north could be seen rafts of sea birds at almost any time, these being comprised mostly of loons, an occasional grebe, scoters, murres and guillemots. The Rhinoceros Auklet was also seen in this area.

In the herbaceous layer on top of the rocks were found the Rufous Hummingbird, Red-shafted Flicker, Purple Finch, Goldfinch, White-crowned Sparrow and Song Sparrow.

A nest of Barn Swallows was located under the bridge crossing from the mainland to the lighthouse, in addition to a nest of Violet-green Swallows in the coastguard pump house on the mainland.

The other land birds seen in this area were in the vicinity of the parking lot, which was a northward extension of the north side of Sunset Bay (see Table IV).

PLATE 9

a. The footbridge which allows easy crossing to the lighthouse rocks.

b. The trees, lodgepole pine, in the center of the picture indicate where the Pigeon Guillemots nested.

24A

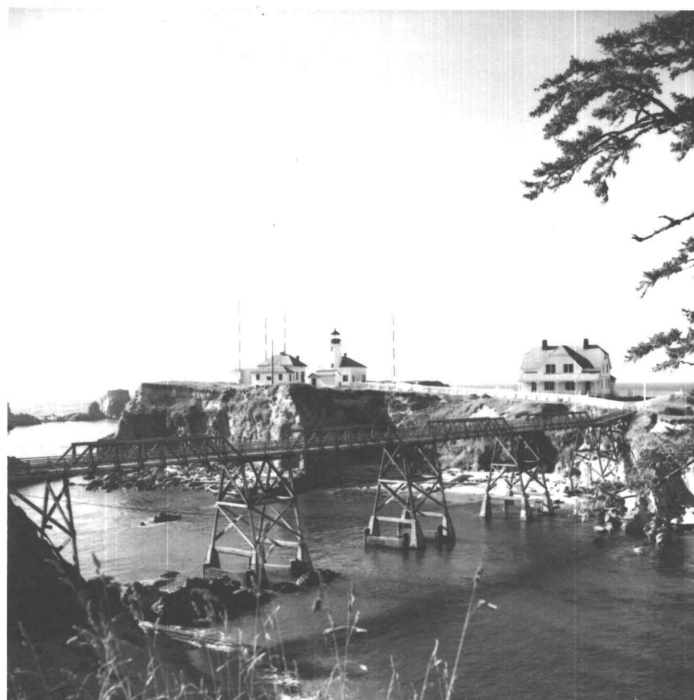


PLATE 10

a. Looking southward across the entrance of Sunset Bay. The island to the right is Squaw Island which is joined to the mainland by an arm of sand at low tides.

b. The rock islands where a large colony of Baird's Cormorants were nesting. Their fecal droppings may be noted by the white areas on the face of the rock furthest to the right.

25A

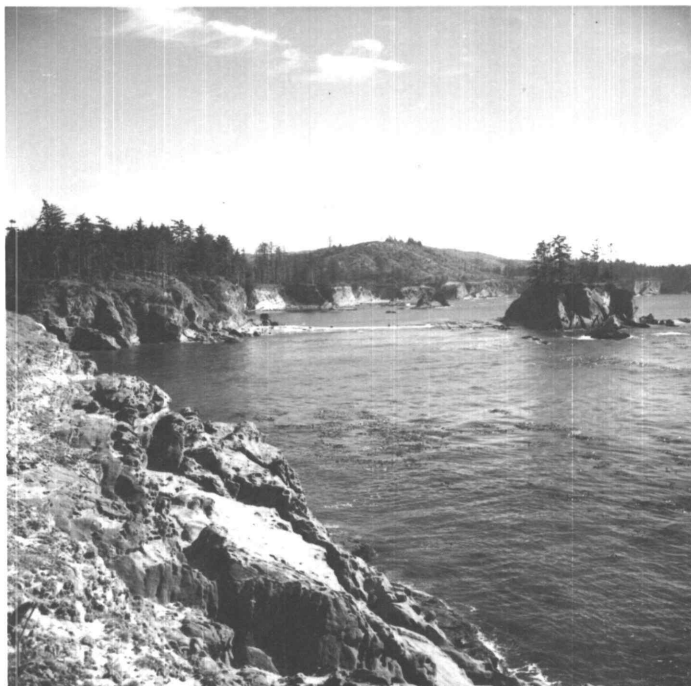


PLATE 11

a. The inaccessible rocks of the lighthouse chain where the Tufted Puffin was most commonly seen.

b. These flat rocks were favorite resting spots for sea and shore birds. The water in the center of the picture was one of the areas of concentrations of the sea birds.

26A

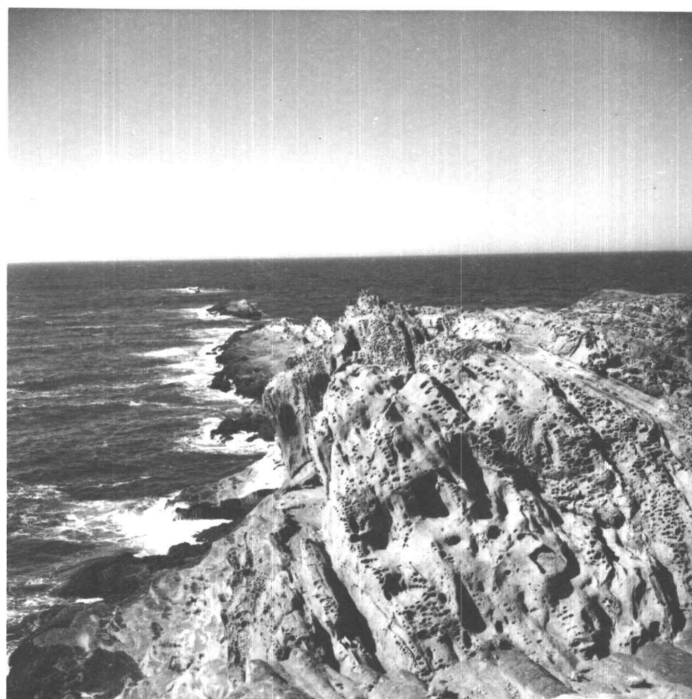


TABLE IV.

Area 4. Lighthouse Rocks

	June			July									Aug.	
	25	27	29	1	4	5	6	10	14	17	23	27	7	12
PACIFIC LOON		X	X			X	X	X	X	X	X	X	X	X
HORNED GREBE					X									
WESTERN GREBE						X	X					X		
SOOTY SHEARWATER			X			X		X	X					
PINK-FOOTED SHEARWATER						X								
BROWN PELICAN												X		
DOUBLE-CRESTED CORMORANT		X												
BRANDT'S CORMORANT					X	X	X	X	X	X	X	X	X	X
BAIRD'S CORMORANT	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HARLEQUIN DUCK					X									
WHITE-WINGED SCOTER		X	X		X	X		X	X	X	X	X	X	X
SURF SCOTER		X	X							X	X	X		
TURKEY VULTURE												X	X	
OSPREY														X
BLACK OYSTERCATCHER		X						X		X		X		
WANDERING TATTLER											X	X		X
GREATER YELLOW-LEGS									X					
GLAUCOUS-WINGED GULL		X	X	X	X	X	X		X					
WESTERN GULL	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CALIFORNIA GULL												X		
HEERMANN'S GULL			X		X	X	X	X	X	X		X	X	
CALIFORNIA MURRE	X	X	X		X	X	X	X	X	X	X		X	X
PIGEON GUILLEMOT	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MARBLED MURRELET		X									X		X	
RHINOCEROS AUKLET			X		X	X			X					
TUFTED PUFFIN		X	X		X	X	X	X	X	X	X	X		
BAND-TAILED PIGEON												X		

TABLE IV. (Continued)

	June			July										Aug.	
	25	27	29	1	4	5	6	10	14	17	23	27		7	12
RUFIOUS HUMMINGBIRD						X		X	X	X	X	X			X
BELTED KINGFISHER												X			X
RED-SHAFED FLICKER		X			X	X			X	X		X			
DOWNY WOODPECKER					X										
WESTERN WOOD PEWEE												X			
VIOLET-GREEN SWALLOW			X	X	X	X	X	X	X	X	X	X	X	X	X
BARN SWALLOW	X		X		X		X					X			X
CROW				X						X					
WREN-TIT							X			X					
ROBIN	X	X	X	X	X		X		X	X		X			
RUSSET-BACKED THRUSH						X	X		X	X		X			
CEDAR WAXWING														X	
AUDUBON'S WARBLER		X	X									X			
PILEOLATED WARBLER												X			
PURPLE FINCH									X						
HOUSE FINCH	X	X		X	X	X	X	X	X	X	X	X	X		
PINE SISKIN									X	X		X	X		
GOLDFINCH	X	X	X		X		X	X	X	X	X	X	X	X	X
WHITE-CROWNED SPARROW	X	X	X	X	X	X	X	X	X	X	X	X			X
SONG SPARROW		X	X		X	X	X	X	X	X		X	X	X	X

Total hours in the field approximately 20-3/4

Area 5. Bassendorf Beach

This is a typical sandy beach that has a constant wave action. It extends in a north and south direction for about one-half mile. It is faced on the north by the entrance to Coos Bay and on the east by high cliffs, except in the central eastern part where there is a low section bordered by the road. The sand is being held in place by driftwood and beach grass (Ammophila arenaria), and in some marshy spots, horsetail intermixed with Shasta daisy (Chrysanthemum maximum) (see Plates 12 a and b, and 13 a and b).

The northern limit of the area is bounded by the south jetty, marking the entrance to Coos Bay. This was a favorite picnic and fishing spot for both tourists and residents of the region (Plate 14 a and b).

The birds resting in this locality were observed, as well as those which inhabited the forested land from Bassendorf Beach to the Oregon Institute of Marine Biology.

The trees in this area are lodgepole pine, western hemlock, Sitka spruce, western red cedar and at the Institute grounds Oregon alder (Plate 15 a). The shrubs are gooseberry, salmon berry, thimble berry, wild and evergreen blackberry, western azalea, salal, evergreen and red huckleberry and orange honeysuckle (Lonicera ciliosa). The herbs are sword fern, western bracken, horsetail and fire-weed (Epilobium angustifolium).

The birds of the beach were limited to shorebirds, gulls, Goldfinch, White-crowned Sparrow and Song Sparrow. Birds of the

bay were Baird's Cormorant (there was a small nesting colony of these below the coastguard lookout tower), gulls, murres and guillemots. Scoters were rarely seen here.

The birds of the forested part of the area were woodpeckers, Bush-tit, Wren-tit, thrushes, warblers and Pine Siskin (see Table V).

PLATE 12

a. A general view of Bassendorf Beach looking north; this shows the cliffs on the eastern side sloping toward the central part of the area.

b. The beach grass invasion and driftwood found at the southern end of the study area.

30A



PLATE 13

a. A close-up shot of the clumps of beach grass showing how they become established on the sand.

b. Equisetum and Shasta daisies were found together in a moist spot at the southern end of the area.

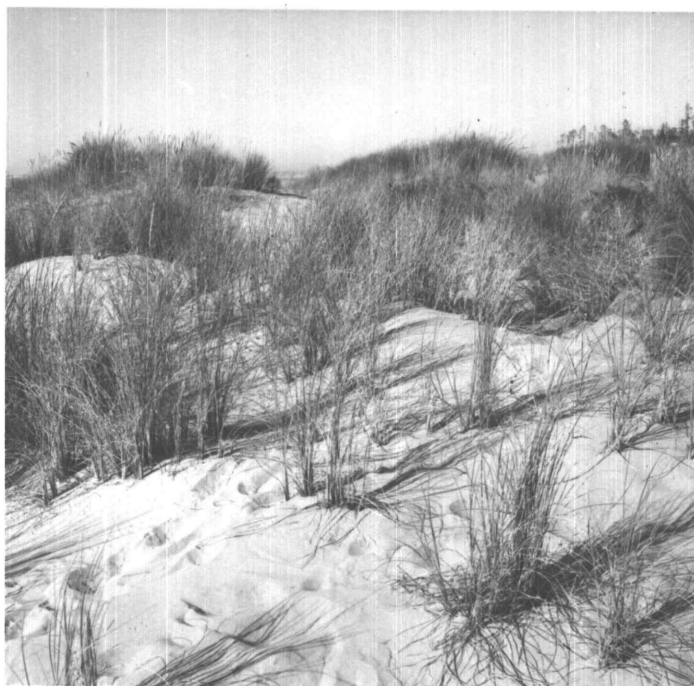


PLATE 14

a. Looking down on the south jetty and part of the entrance to Coos Bay. This was the northern limit of the study region.

b. North jetty across Coos Bay entrance was generally covered with gulls, but they were too far to make positive identification.

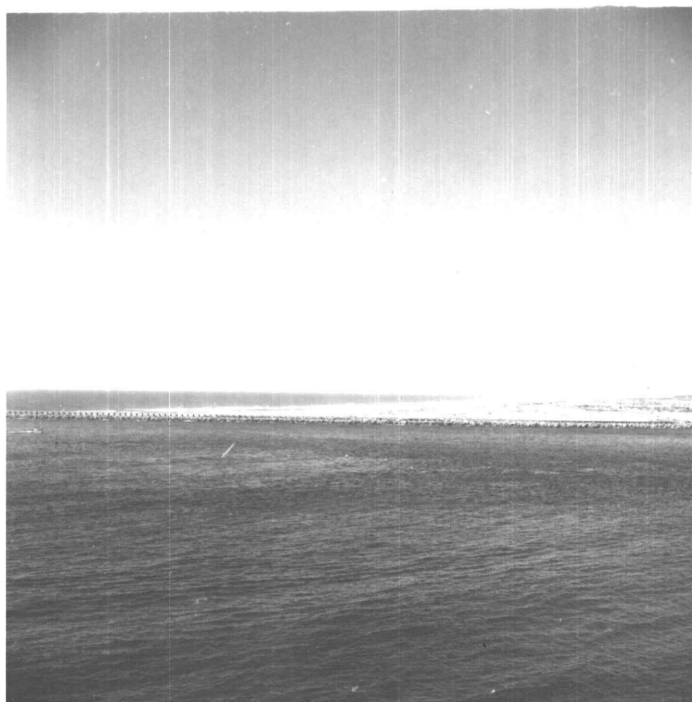


PLATE 15

a. This shows the tree layering by the road at the Institute grounds. Oregon alder are in the foreground.

b. One of the hundreds of oil soaked murrees that were seen after a ship collision at sea about midnight June 28, 1951.



TABLE V.

Area 5. Bassendorf Beach - I.M.B.

	June				July								Aug.				
	18	19	26	30	1	3	6	12	13	15	18	22	24	1	4	5	12
PACIFIC LOON																	X
BROWN PELICAN				X	X												
BRANDT'S CORMORANT							X								X	X	
BAIRD'S CORMORANT		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
GREAT BLUE HERON						X				X							
BLACK BRANT		X															
WHITE-WINGED SCOTER						X											
SURF SCOTER			X				X										
TURKEY VULTURE					X		X										
COOPER'S HAWK					X												
OSPREY					X									X			
SNOWY PLOVER						X											
HUDSONIAN CURLEW														X			
WANDERING TATTLER														X	X		X
NORTHERN PHALAROPE																	X
GLAUCOUS-WINGED GULL	X		X	X	X												
WESTERN GULL		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CALIFORNIA GULL												X		X			
HEERMANN'S GULL			X	X	X	X	X	X	X	X	X	X	X	X		X	X
CALIFORNIA MURRE	X	X	X	X	X	X	X	X		X	X		X	X	X		X
PIGEON GUILLEMOT		X	X	X		X	X	X	X	X	X	X		X	X		X
BAND-TAILED PIGEON												X					
NIGHTHAWK			X					X	X	X	X	X	X	X			
RUFOUS HUMMINGBIRD	X		X		X	X	X		X	X	X	X	X	X	X	X	
RED-SHAFTED FLICKER					X						X			X			
PILEATED WOODPECKER																	X
HAIRY WOODPECKER					X												
DOWNY WOODPECKER											X						

TABLE V. (Continued)

	June				July								Aug.				
	18	19	26	30	1	3	6	12	13	15	18	22	24	1	4	5	12
WESTERN WOOD PEWEE											X						
OLIVE-SIDED FLYCATCHER					X												
BARN SWALLOW			X														
CLIFF SWALLOW								X									
CROW					X						X						
CHESTNUT-BACKED CHICKADEE			X								X					X	
BLACK-CAPPED CHICKADEE					X												
BUSH-TIT	X		X		X	X					X	X		X		X	
WREN-TIT	X				X						X	X					X
ROBIN		X	X			X	X	X	X	X	X		X	X	X	X	
RUSSET-BACKED THRUSH	X		X	X	X	X	X			X	X	X	X	X	X	X	X
CEDAR WAXWING														X			X
ORANGE-CROWNED WARBLER					X						X					X	
AUDUBON'S WARBLER														X		X	
PILEOLATED WARBLER		X	X		X						X			X		X	
BREWER'S BLACKBIRD			X														
PURPLE FINCH					X	X											
PINE SISKIN					X	X						X				X	
GOLDFINCH	X		X	X	X	X	X	X	X		X	X		X	X	X	
WHITE-CROWNED SPARROW	X	X	X			X	X	X	X	X	X	X	X	X		X	X
SONG SPARROW				X	X	X	X	X	X	X	X	X	X	X		X	X

Total hours in the field approximately 30 $\frac{1}{4}$

SPECIES ACCOUNTS

The species accounts which follow indicate the number of days each species was recorded in relation to the fifty-one days actually spent in the field. This will result in giving an abundance status to the bird under consideration, and leads to the use of certain terms which are defined as follows:

Abundant - if recorded on more than 80% of the days
in the field.

Common - if recorded on 20 to 79% of the days in
the field.

Rare - if recorded on less than 20% of the days
in the field.

Migrant - if known to be traveling to summering
or wintering areas.

These terms are arbitrary and are not meant to give an accurate idea of the actual numbers of the birds. If a given species appeared as one bird or a raft of several hundred, it was simply noted as being seen that day.

Actual percentages are not given, but the proportion of days seen, in relation to the days in the field, is listed for each species.

Also stated in the species account will be the areas (by number) where the bird was recorded, and if restricted to a specific habitat, this will be noted. Lastly, the records of occurrence from the Coos Bay area as stated by Ira N. Gabrielson and Stanley G. Jewett

in "Birds of Oregon" will also be noted.

For a complete list of each day the species mentioned was recorded see Table VI.

The scientific nomenclature has been taken from the American Ornithologists Union's "Checklist of North American Birds" (1931), and the supplements from the Auk (3).

Common Loon. Gavia immer (Brunnich). 4/51: migrant, areas 1 and 3. This species was found in the protected coves and bay. It was last recorded on June 24, and Gabrielson and Jewett's latest spring record is May 5. They also record it on October 29 from Coos County (8, p.64).

Pacific Loon. Gavia arctica (Lawrence). 34/51: common, all five areas. These were generally seen on the quieter water of the region. It was not uncommonly seen in rafts and one raft of over 110 was seen on July 17 just north of the lighthouse rocks.

Holboell's Grebe. Colymbus grisegena (Reinhardt). 2/51: migrant, area 1. Was seen only on the water in South Cove.

Horned Grebe. Colymbus auritus Linnaeus. 1/51: migrant, area 4. One was seen just off the north side of the lighthouse rocks on July 4. The latest spring date listed by Gabrielson and Jewett is May 5, and they also have other records from Coos County (8, p.72).

Western Grebe. Aechmophorus occidentalis (Lawrence). 6/51: rare, areas 1, 3 and 4. These were seen singly or rarely as pairs on the quiet bay water. Gabrielson and Jewett list this species

as a wintering bird in bays of Coos County, but give no specific locality records (8, p.75).

Sooty Shearwater. Puffinus griseus (Gmelin). 6/51: rare, areas 1, 2 and 4. These were always seen flying along the coast line. Great numbers were seen flying north on July 10, northwest of the lighthouse rocks. Generally they flew too far out to identify.

Pink-footed Shearwater. Puffinus creatopus Coues. 1/51: rare, area 4. Several individuals were seen flying off the west tip of the lighthouse rocks on July 5. They were in company with many Sooty Shearwaters.

Brown Pelican. Pelecanus occidentalis Ridgway. 5/51: migrant, areas 1, 4 and 5. They were generally seen resting on the rocks in coves and open water. They were not observed fishing in the areas where they were seen.

Double-crested Cormorant. Phalacrocorax auritus (Lesson). 1/51: migrant, area 4. Only one was noted on June 27 as it passed close enough to easily see the buff throat patch.

Brandt's Cormorant. Phalacrocorax penicillatus (Brandt). 22/51: common, all five areas. All cormorants that did not have a white flank patch were recorded as Brandt's during the first few days in the field. It was soon noted that this was not a reliable method of determination, so the early records were omitted in order to avoid possible error.

Baird's Cormorant. Phalacrocorax pelagicus Audubon. 49/51: abundant, all five areas. This was the most common of the cormorants,

and were most often seen along the coast. There were nesting colonies in areas 3, 4 and 5. These are shot by the townspeople and coast-guardsmen of the region, since they are classed by them as fish predators.

Great Blue Heron. Ardea herodias Linnaeus. 5/51: rare, areas 1, 3 and 5. These were seen on the rocks of the bays and in shallow water catching small fish. Although they are not commonly seen in the Cape Arago Region, there was a nesting colony about three miles east of there. They have been recorded by Gabrielson and Jewett from Coos County (8, p.105).

Black Brant. Branta bernicla (Lawrence). 6/51: migrant, areas 1 and 5. This species was found in the bays and near rocky shores. One flock of 13 was seen on July 2 in South Cove of Cape Arago State Park. The latest date previously recorded from Oregon was May 2, and this record was also from Coos County (8, p.129).

Harlequin Duck. Histrionicus histrionicus (Linnaeus). 6/51: rare, areas 1, 2 and 4. These were generally seen sitting on the rocks in protected coves, or feeding near them. The flocks were from ten to sixteen, and from the first of the season until July 4, seemed to be composed of only males. On August 3, a group of three was seen, and two of them appeared to be females.

White-winged Scoter. Melanitta fusca (Linnaeus). 25/51: common, all five areas. These seemed to prefer the breakwaters along the coast, or were flying in almost constant flocks up and down the coast line. This was the species previously mentioned as being

seen near the coast at Bandon (6, p.61).

Surf Scoter. Melanitta perspicillata (Linnaeus). 22/51: common, all five areas. This species was generally seen in small groups of five to seven birds. They were in the bays and on the open coastal water. Occasionally they were seen in flying groups of 20 or more just off the north end of the lighthouse rocks.

Turkey Vulture. Cathartes aura Wied. 12/51: common, all five areas. This species was seldom seen resting in any of the areas, and when it did land on any tree to rest it was on the highest dead ones. They were frequently seen circling in the air above the regions.

Cooper's Hawk. Accipiter cooperii (Bonaparte). 1/51: rare, area 5. This species was only seen once, in the wooded area between Bassendorf Beach and the Institute.

Osprey. Pandion haliaetus (Gmelin). 12/51: common, areas 1, 3, 4 and 5. These were most frequently observed in area 3, where they were noted on clear days catching fish in approximately twenty-minute intervals. They were never seen perching in the region, and were not nesting there.

Ring-necked Pheasant. Phasianus colchicus Gmelin. 1/51: rare, area 1. One hen was seen near a clump of grass by the side of the road on July 16. There were no young seen with her, nor could a nest be found in the vicinity.

Black Oyster-catcher. Haematopus bachmani Audubon. 6/51: rare, areas 3 and 4. Generally these were seen on rocks where there were

mussel beds. One group of three was seen on the rocks just west of Squaw Island (area 3) on June 22, otherwise they were noted only two at a time, and it was felt by the observer that they were nesting on the offshore rocks.

Snowy Plover. Charadrius alexandrinus Linnaeus. 1/51; rare, area 5. One bird was seen on July 3 running along the sandy beach near water. It did not appear easily frightened, and would allow observers to approach within ten feet before running ahead. It made no attempt to fly while the observer was there.

Hudsonian Curlew. Phaeopus hudsonicus (Latham). 1/51; migrant, area 5. One group of seven birds was recorded on August 1.

Wandering Tattler. Heteroscelus incanus (Gmelin). 10/51; migrant, all five areas. They were first seen and recorded on July 23 when a small group of five was seen on the flat rocks north of the lighthouse rocks. They were most frequently seen on the rocks which were covered with mussel beds. Gabrielson and Jewett have also recorded this species from Coos County (8, p.256).

Greater Yellow-legs. Totanus melanoleucus (Gmelin). 1/51; migrant, area 4. One flock of 20 to 30 birds was noted on July 14. They were flying low, rested briefly on the flat rocks to the north of the lighthouse rocks, then left.

Northern Phalarope. Lobipes lobatus (Linnaeus). 1/51; migrant, area 5. One only, seen August 5 on the north side of south jetty; often came to within six feet of the observer.

Glaucous Gull. Larus hyperboreus Gunnerus. 1/51: migrant, area 3. One only was observed for almost an hour as it was flying above the bay and below the observer who was standing on the hill at the north side of the bay. It was the largest gull noted in the region and resembled the Glaucous-winged Gull except for the size.

Glaucous-winged Gull. Larus glaucescens Naumann. 15/51: common, all five areas. They were seen flying along the coast and resting on the bay waters until July 14. It has been recorded from Coos County by Gabrielson and Jewett (8, p.280).

Western Gull. Larus occidentalis Audubon. 50/51: abundant, all five areas. This species could be seen at almost any time or any place in the Cape Arago Region. They were either flying over or were resting on the bays, rocks and open water of the region. One nesting spot was noted from area 1, on the rocks to the northwest of North Cove.

California Gull. Larus californicus Lawrence. 4/51: rare, areas 1, 4 and 5. They were generally in company with Western Gulls, where the difference was quickly noted. They were generally seen flying over, or resting on the rocks and bay water.

Heermann's Gull. Larus heermanni Cassin. 30/51: common, all five areas. These could commonly be seen on Bassendorf Beach and in the bay north of there. These gulls could be seen in groups of three to 50 or more birds.

California Murre. Uria aalge (Bryant). 47/51: abundant, all five areas. Next to the gulls, this was the most common and abundant of all the sea birds in the region, although no known breeding colonies were in the vicinity. This species was the one which suffered the most from the floating oil lost from a loaded oil tanker, after its collision with a freighter at sea about midnight June 28. The California Murres were found on the beaches and rocks near shore by the hundreds on July 4. They were unable to fly for protection or dive for food, and ultimately died from starvation or were mercifully killed by persons visiting the beaches at that time (Plate 15 b).

Pigeon Guillemot. Cepphus columba Pallas. 41/51: abundant, all five areas. These could be seen on any type of coastal water, and were known to have nested on the northeast side of the lighthouse rocks, as well as on the mainland just east of there. They have previously been recorded from Coos County (8, p.313).

Marbled Murrelet. Brachyramphus marmoratus (Gmelin). 4/51: rare, areas 3 and 4. This species occurred only on the more open ocean water south of the lighthouse rocks. It was noted that they could easily be confused with the immature California Murres when these made their appearance in the region the latter part of July.

Rhinoceros Auklet. Cerorhinca monocerata (Pallas). 4/51: migrant, area 4. Although at first thought to be a Paroquet Auklet, this species finally came close enough for the observer to note the specific differences and properly record it. They were

noted until July 14 from the northwest end of the lighthouse rocks and on the water to the north of there. Six birds were counted at one time and the species was presumed to be trying to nest there. However, this idea was discarded when they were no longer seen after July 14.

Tufted Puffin. Lunda cirrhata (Pallas). 10/51: rare, area 4. This species was seen only in this area throughout the summer, either resting on the northwest end of the rocks or the water to the north of there. C. B. M. Harris of the U. S. Coastguard and in charge of the lighthouse told the observer that this species used to nest on the lighthouse rocks, until the Crows, Ravens and human intrusion drove them away.

Band-tailed Pigeon. Columba fasciata Say. 3/51: rare, areas 2, 4, and 5. These were seen in small flocks flying over, and one time perching in the trees just south of the Institute. They were not known to nest in the study region, or in the near vicinity of it.

Nighthawk. Chordeiles minor (Forster). 8/51: rare, area 5. This species was seen only in this area at early evening. They were noted flying from the cliffs to the ocean, and were apparently feeding on the insects in the air.

Rufous Hummingbird. Selasphorus rufus (Gmelin). 41/51: abundant, all five areas. These were most commonly seen in the vicinity of flowering shrubs, or dense shrub and low tree habitats. This was the only species of hummingbird noted and it could be seen at almost any time of the day. They were often caught in the

Invertebrate Zoology laboratory at the Institute, after being attracted to the door by two red fuchsia plants (Zauschneria sp.), which were in constant bloom. This species has been recorded from Coos County as early as February 16 (8, p.364).

Belted Kingfisher. Megaceryle alcyon (Linnaeus). 4/51: rare, areas 3 and 4. They were not noted until July 27, when they appeared as a family of five. They were usually seen in the vicinity of bay water; however, it is noteworthy that they never seemed to be fishing and were never seen diving into salt water.

Red-shafted Flicker. Colaptes cafer Vigors. 25/51: common, all five areas. This species was most commonly seen in the wooded parts of all the study areas. It was also seen on the side of the lighthouse rocks.

Pileated Woodpecker. Hylatomus pileatus (Linnaeus). 1/51: rare, area 5. One of this species was seen on a dead snag in the forested section west of the Institute. It was heard a number of times, but was seen only once.

Hairy Woodpecker. Dendrocopos villosus (Linnaeus). 1/51: rare, area 5. One bird of this species was seen July 1 in the wooded area on the north side of the road, about one-fourth of a mile west of the Institute.

Downy Woodpecker. Dendrocopos pubescens (Linnaeus). 2/51: rare, areas 4 and 5. This species was recorded only from the wooded sections of these two areas.

Western Wood Pewee. Myiochanes richardsoni (Swainson). 3/51: rare, areas 3, 4 and 5. Although often heard, this species was rarely seen. It seemed to prefer the most densely wooded parts of the areas from which it was recorded. It should be noted here that a bird was not recorded unless it was actually seen.

Olive-sided Flycatcher. Nuttallornis borealis (Swainson). 3/51: rare, areas 3 and 5. This species was also heard more frequently than it was seen. They seemed to prefer areas where Sitka spruce was present.

Violet-green Swallow. Tachycineta thalassina Mearns. 12/51: common, area 4. As previously stated, this species nested in the coastguard pump house, which is at the southeast end of the foot-bridge going to the lighthouse. Four young were noted to have left the nesting site.

Bank Swallow. Riparia riparia (Linnaeus). 2/51: rare, area 3. This species was seen only in the latter part of July and the first of August, and may have been influenced by the human element.

Rough-winged Swallow. Stelgidopteryx ruficollis (Audubon). 3/51: rare, areas 1 and 3. This species was seen perching on the dead twigs of trees or on telephone lines.

Barn Swallow. Hirundo rustica Linnaeus. 17/51: common, all five areas. This species was seen flying over most of the region, although, as previously mentioned, one pair nested under the foot-bridge in area 4.

Cliff Swallow. Petrochelidon pyrrhonota (Vieillot). 2/51: rare, areas 3 and 5. These were seen flying along the cliffs and alighting on the ground near fresh water.

Crow. Corvus brachyrhynchos Brehm. 4/51: rare, areas 3, 4 and 5. This species always remained in the wooded sections of the areas, and did not exceed five in number at any one time.

Chestnut-backed Chickadee. Parus rufescens Townsend. 13/51: common, areas 1, 2, 3 and 5. These were most commonly seen in the shrub layer of the coniferous forest.

Black-capped Chickadee. Parus atricapillus Linnaeus. 1/51: rare, area 5. This species was seen only once in the alders near the road at the Institute. They have been previously recorded from Coos County (8, p.434).

Bush-tit. Psaltiriparus minimus (Townsend). 18/51: common, areas 1, 2, 3 and 5. These were commonly seen in the shrubs along the forested parts of the region. They were generally in groups of six or seven; often more. Other records of Coos County have been published (8, p.440).

Wren-tit. Chamaea fasciata (Gambel). 24/51: common, all five areas. This species was an inhabitant of the dense shrub layers of the region. It was one of the species that was more often heard than seen, however it could easily be attracted from the shrubs by clicking the tongue or kissing the back of the hand. It has been previously recorded from Coos County (8, p.450).

Robin. Turdus migratorius Linnaeus. 45/51: abundant, all five areas. These could be seen in all terrestrial habitats, and not infrequently along the rocky coast line above the spray zone.

Russet-backed Thrush. Hylocichla ustulata (Nuttall). 38/51: common, all five areas. They could be heard anytime during the daylight hours. They were not seen as commonly as the Robin, since they seemed to prefer the wooded sections of the region.

Golden-crowned Kinglet. Regulus satrapa Lichtenstein. 10/51: rare, areas 1, 2 and 3. These were seen in the coniferous forest sections of the areas where recorded. Although the small tree top birds were seen more frequently, they could not be positively identified.

Cedar Waxwing. Bombycilla cedrorum Vieillot. 8/51: rare, all five areas. This species was generally seen in the roadside trees and shrubs, and in the open wooded sections of the region.

Orange-crowned Warbler. Vermivora celata Say. 15/51: common, areas 1, 2, 3 and 5. These were seen only in the shrubs and low trees of the region.

Audubon's Warbler. Dendroica auduboni (Townsend). 27/51: common, all five areas. This species was seen most frequently in the shrub layer and low trees. It was the most common of the warblers in the region.

Pileolated Warbler. Wilsonia pusilla (Wilson). 13/51: common, all five areas. This species was generally seen in the alder thickets and shrub layer, although it was occasionally seen in the

Sitka spruce near the center of Cape Arago State Park. The earliest record from Coos County is May 5 (8, p.516).

Brewer's Blackbird. Euphagus cyanocephalus (Wagler). 4/51: rare, areas 3 and 5. They were found in the more open land or low shrubs. One adult was seen in area 3, June 24, feeding two young.

Purple Finch. Carpodacus purpureus (Gmelin). 14/51: common, areas 1, 2, 4 and 5. They were generally seen in the coniferous forests and shrub layers of the region.

House Finch. Carpodacus mexicanus (Say). 13/51: common, area 4. This species was seen only around the buildings on the lighthouse rocks. Apparently there was one nesting pair there, and undoubtedly it will become more widely distributed in the region.

Pine Siskin. Spinus pinus (Wilson). 25/51: common, all five areas. These were generally found in localities where Douglas fir or lodgepole pine was common, although it was occasionally found in the shrubs bordering the coniferous forest.

Goldfinch. Spinus tristis (Linnaeus). 41/51: abundant, all five areas. This species was commonly associated with the lawns, grassy strips, and the shrubs bordering them. They could be seen in any of the state parks at any time of the day.

White-crowned Sparrow. Zonotrichia leucophrys (Forster). 48/51: abundant, all five areas. This species and the Goldfinch were found in close association, since they were also commonly

found on the lawns and in the shrubs bordering them. They seemed to prefer areas of sunlight when such were available. It was the most common sparrow in the region.

Song Sparrow. Melospiza melodia (Wilson). 42/51: abundant, all five areas. These were most commonly found in the shrubs bordering the coniferous forests and lawns. It was seldom seen on the lawns, but quite often in the tall grass.

ADDENDA TO THE SPECIES ACCOUNTS

The following were noted, but could not be positively identified to species and, therefore, will not be given the status they may warrant.

Petrel. In all probability a Beal's Petrel (Oceanodroma leucorhea). This small, very dark petrel was seen just west of the lighthouse rocks (area 4) just at dusk, July 5.

Sandpipers. Large flocks of small sandpipers were noted from area 2 on July 26, and from area 4 on July 27. Identification is impossible for these unless they are in hand, and they are, therefore, omitted from the species accounts.

"Empidonax" Flycatchers. These small flycatchers were noted June 18, July 2, 21 and 30 from area 1, and August 12 in area 2. These also need to be in hand for positive identification, so their records of occurrence are not included in the species accounts.

DISCUSSION

Sea birds are the most confusing group as a whole insofar as habitat preferences were concerned. Some, such as the cormorants, White-winged Scoters, California Murres and Pigeon Guillemots, seem to prefer the more open water of the region and especially the areas where there were cliffs and exposed rocky outer coast line. Others, as loons (to a certain extent), grebes, Black Brant and Harlequin Ducks, seem to prefer the bays and coves. These preferences are probably influenced directly by the source of food as it varies with the type of coast line and water depth.

The Osprey was never seen catching fish in the open ocean, nor in the bays when the surface of the water was ruffled. It is believed that the Osprey could not see the fish on those days when the water surface was not relatively calm. It is doubtful that this bird could contend with the waves of the ocean in catching its prey. This is based on the fact that there is a slight pause after catching a fish before the Osprey rises into the air. This pause would be sufficiently long enough in the ocean for a wave to inundate the bird and prohibit it from rising into the air, probably proving fatal to a bird normally considered a land form.

The shore birds, with exceptions, are drawn to the rocks of the shore line covered with mussel beds. This is undoubtedly due to the fact that these mussel beds harbor a host of invertebrate animals on which the shore birds feed.

Flocks of sea birds are for the most part very homogeneous, notable exceptions being the murres that were always seen in flocks of scoters, and the mixed groups of gulls. This seems to indicate that most species of sea birds are not tolerant of other species, especially when flying in flocks.

Woodpeckers may have been limited in the area due to the lack of dead trees, and because there is an abundance of these just outside the region of study.

The Raven was not recorded from the region. This may have been due to the lack of nesting sea birds or to the constant use of firearms by some residents of the region.

The weather greatly influenced the number and types of sea birds seen during the period of study. If there had been a summer storm, it would have undoubtedly driven many of the sea birds closer to land, and in all probability a number of the oceanic birds would have been recorded.

Human influence also has a great deal to do with the birds of the region. The nesting cormorants are shot by residents of the region. Land is being purchased and houses built, thus reducing the natural habitats and proving to be one of the limiting factors for nesting land birds.

Oil lost accidentally or released at sea is taking a heavy toll of sea birds. One species has been previously mentioned, and the observer feels that offshore forms are possibly suffering equally heavy losses.

A few additional forms have been reported or might be expected in the region of study. It should be remembered, however, that the work was based only on sight records and the frequency of occurrence would be greatly altered if sound records had been included. This difference would show most in the flycatchers and thrushes.

SUMMARY

1. Observations of the summering birds of the Cape Arago Region, Coos County, Oregon, were made from June 18 to and including August 12, 1951.

2. The purpose of the observations was twofold; first to obtain a definite list of the birds commonly occurring in the vicinity of the Oregon Institute of Marine Biology, and second to stimulate further work on the avifauna of Coos County, Oregon.

3. The Cape Arago Region was described and its topography and climate discussed.

4. The region was subdivided into five study areas to obtain representation of the various habitats. These have been described in part.

5. The species accounts give a summer status to each of the 70 species of birds observed in the region.

6. The 70 species of birds were classified, according to observability, as follows: 12 were classed as migrants, 9 as abundant summer residents, 21 as common summer residents and 29 as rare summer residents.

7. A number of conclusions were made relative to some of the factors possibly influencing occurrence of birds in the region.

X - Seen and recorded for that day from one area
O - Seen and recorded from more than one area the same day

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