

Catalog of Washington Seabird Colonies



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CATALOG OF WASHINGTON SEABIRD COLONIES

by

Steven M. Speich
4817 Sucia Drive
Ferndale, WA 98248

and

Terence R. Wahl
3041 Eldridge
Bellingham, WA 98225

Research Library
U. S. Department of the Interior
National Biological Survey
Southern Science Center
700 Cajundome Boulevard
Lafayette, Louisiana 70506-3150

Project Officer
Jay F. Watson
U.S. Fish and Wildlife Service
Lloyd 500 Building, Suite 1692
500 N.E. Multnomah Street
Portland, OR 97232

Produced in cooperation with
Minerals Management Service
Pacific Outer Continental Shell Region
1340 West 6th Street, Suite 244
Los Angeles, CA 90017

U.S. Department of the Interior
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PREFACE

This catalog is a summary of the location, size, and species composition of seabird colonies along the coast and interior marine waters of Washington. Eighteen species are discussed in more than 440 nesting sites with an estimated total population of about 300,000 birds.

The catalog is one of 10 catalogs or regional atlases published in the U.S. Fish and Wildlife Service's Biological Report Program and contains detailed information on the natural history, distribution, and abundance of seabirds. It will be useful to planning, management, and regulatory agencies closely connected to resource decisionmaking that impacts seabirds (e.g., oil and gas leasing, coastal ecosystems and Outer Continental Shelf development).

ACKNOWLEDGMENTS

Many persons have contributed to this catalog, both as observers and collectors. They are listed in alphabetical order in the Reference section. To a large extent, the sum of their efforts makes this catalog possible and gives it historical and area-wide depth.

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We also acknowledge the past and continuing efforts of the collectors, assistants, managers, and curators of the collections listed below. We appreciate and thank them for devoting the time and resources required to respond

to our requests for pertinent data on eggs, specimens, and field notes on marine birds breeding in Washington. The information provided to us of specimens, eggs, and field notes held and maintained at great cost by museums has given this catalog a completeness and value otherwise not possible. Certain individuals were particularly helpful in assisting us, and they are listed parenthetically following the names of their respective museums. The museums are: Academy of Natural Sciences, Philadelphia (M. B. Robbins); American Museum of Natural History, New York (M. LeCroy; unidentified assistant); Bird and Mammal Collection, Department of Biology, University of California, Los Angeles (J. R. Northern); British Museum, Natural History, Tring (I. C. J. Galbraith, M. Walters); Thomas Burke Memorial Washington State Museum, University of Washington, Seattle (D. R. Paulson, J. Rodzilsky); Carnegie Museum of Natural History, Pittsburgh (J. M. Loughlin); Conner Museum, Washington State University, Pullman (R. E. Johnson); Delaware Museum of Natural History, Greenville (D. M. Niles); Denver Museum of Natural History, Denver (D. C. Lowell); Field Museum of Natural History, Chicago (D. Willard); Pacific Lutheran University Museum, Tacoma; Museum of Comparative Zoology, Harvard University, Cambridge (R. A. Paynter, Jr.; G. B. Cabe); Museum of Natural History, Oregon State

University, Corvallis; Museum of Natural History, University of Puget Sound, Tacoma (G. D. Alcorn); Bird Collection, Department of Biology, Western Washington University, Bellingham; Museum of Vertebrate Zoology, University of California, Berkeley (S. F. Bailey); Museum of Zoology, Louisiana State University, Baton Rouge (J. V. Remsen); National Museum of Natural History (Smithsonian Institution), Washington, D. C. (M. R. Browning, M. S. Foster); Natural History Museum of Los Angeles County, Los Angeles (K. L. Garrett); Natural History Museum, San Diego Society of Natural History, San Diego (S. Liston); Peabody Museum of Natural History, Yale University, New Haven (E. H. Stickney); Western Foundation of Vertebrate Zoology, Los Angeles (L. L. Kiff); and Whatcom Museum of History and Art, Bellingham (J. Burghoffer).

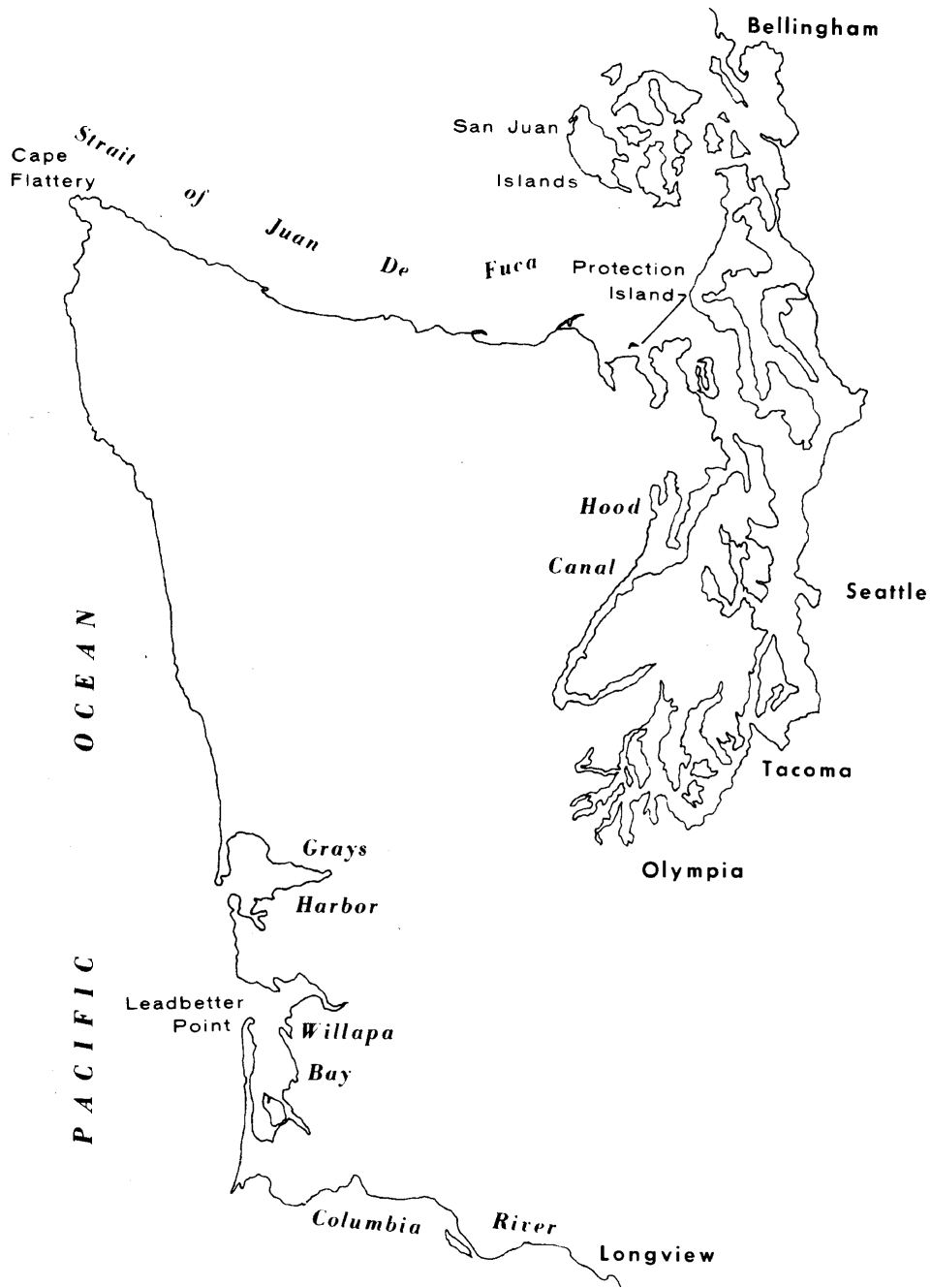
We thank the staffs of the Washington State Library, Olympia, and the Suzallo Library, University of Washington, Seattle, for their help in our review of literature. The assistance given us in finding historical documents by Washington State Library personnel is especially appreciated, as was further assistance given by the staff of the Map Library, Huxley College of Environmental Sciences, and the Archives Department, Wilson Library, at Western Washington University, Bellingham.

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We thank W.B. Hesselbart, Refuge Manager, Nisqually National Wildlife Refuge, for making available to us the records of colony surveys by refuge personnel. We also acknowledge his issuance to us of Special Use Permits for surveys of refuge islands during past studies, which provided data for this catalog. Joe Welch, Refuge Manager, Willapa National Wildlife Refuge, also made records of past surveys available to us. Ulrich Wilson, biologist, Willapa National Wildlife Refuge, has been very helpful in providing us with the results of his thorough and careful surveys of coastal islands.

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Marine shoreline, study area of western Washington.

INTRODUCTION

This catalog is one of a series describing the seabird colonies of the marine shorelines of the United States. The Pacific Coast of North America has been divided into areas following State boundaries. Seabird colonies in Alaska have been documented by Sowls et al. (1978) and in California by Sowls et al. (1980). A catalog of colony sites in Oregon is now in preparation and, with this catalog of Washington colonies, will appear in the Biological Report series (formerly FWS/OBS series), published by the U.S. Fish and Wildlife Service. A similar catalog of British Columbia, Canada, colony sites has been published (Drent and Guiguet 1961) by the British Columbia Provincial Museum, Victoria, and is currently being updated. Thus an inventory of all reported seabird colonies of the Pacific Coast of North America north of Mexico will be available soon. These catalogs establish a historical baseline description of a valuable and interesting marine resource--the breeding seabirds of the eastern North Pacific ocean. A list of published catalogs and atlases is included as Appendix E.

There are several important reasons why the preparation of this catalog was undertaken. First, as mentioned above, it brings together in one source all the most recent information on breeding species, their numbers, and breeding sites in Washington and establishes a baseline in time. In this catalog the baseline period includes the years 1978 through 1982, as a complete census of all sites in the State in 1 or 2 years has never been undertaken. Also, 1978 marked the

beginning of intensive efforts to census all colony sites in the State, in part in conjunction with a study of seasonal populations of all marine birds of the northern inland marine waters of Washington (Manuwal et al. 1979; Wahl et al. 1981).

The second objective of this catalog is to present the best possible reconstruction of the history of all breeding marine birds at all known sites in Washington. This includes all historical breeding sites. Original data-points in this catalog span the period from May 1792 through the summer of 1982: 191 nesting seasons.

Third, this catalog is intended as a source document for administrators, regulatory agency personnel, wildlife biologists, researchers, bird-watchers, and others interested in nature. Thus we have documented the source and present location of every reference in this catalog. We have also included an appendix which gives viewpoints from which a number of colonies can be observed without causing disturbance to the birds (Appendix B).

It is our hope that the catalog will aid in the understanding and conservation of this resource, this element of Washington's marine ecosystem. Future study, censusing, and long-term monitoring can be undertaken with a better understanding of the recent and past status of all species and sites. Changes in numbers and sites and species can be understood and placed in a better perspective.

From its beginning, this catalog was destined to be incomplete by

the very nature of its purposes. Without doubt we have overlooked some references, museum holdings of specimens, eggs, field notes, correspondence, historical files and archives, photographs, agency files, observations of innumerable persons, and many other possible sources of information. In a few cases we were unable to track down sources or elicit response from observers in time for publication. Please bring other errors to our attention.

This catalog documents more than 440 nesting areas of 16 species, with a total of more than 300,000 birds within the marine shoreline habitats of Washington. Two more species are also included: one which recently nested in Washington but presumably does not now, and one which does presently nest there but in very small numbers. There are two species of storm-petrels (Fork-tailed and Leach's), three cormorants (Double-crested, Brandt's, and Pelagic), one shorebird (American Black Oystercatcher), three gulls (Western, Glaucous-winged, and Ring-billed), two terns (Arctic and Caspian), and seven alcids (Common Murre, Pigeon Guillemot, Marbled Murrelet, Ancient Murrelet, Cassin's Auklet, Rhinoceros Auklet, and Tufted Puffin). In addition to population information in the maps and tables, species accounts discuss aspects of the natural history of these species, emphasizing status within Washington. Species accounts were modified after Sowls et al. Catalog of California Seabird Colonies (1980), which this catalog parallels.

We point out that this report only documents nesting sites, and only of these species. Large

numbers of nonbreeding birds of these species also reside year-round in marine habitats. There are other species not considered "seabirds" which are also resident and which are regularly, significantly involved with the marine ecosystem in Washington. These include Great Blue Heron (Ardea herodias), Bald Eagle (Haliaeetus leucocephalus), Belted Kingfisher (Ceryle alcyon), and American/"Northwestern" Crow (Corvus caurinus).

In addition to these residents, large numbers of non-nesting birds migrate through coastal Washington in spring and fall and many more birds of many species winter along the coast and in protected waters. These include shearwaters from as far away as Tasmania, New Zealand, and Chile; many species of loons; shorebirds and waterfowl from arctic Alaska and Canada; gulls from the Arctic and from Mexico; and inland-nesting species of grebes and gulls. Oil spills and other disturbances could severely affect populations of many species that constitute an international resource and must be managed and protected as such.

METHODS

This catalog summarizes the results of the efforts of numerous investigators and observers over many years. It is not the result of a specifically designed survey project which ultimately led to this report.

Data used in this catalog were obtained from many sources. A nearly complete survey was made of the major ornithological journals as well as regional journals, particularly The Murrelet.

Relevant regional books, monographs, dissertations, and theses were sought out and reviewed. Unpublished manuscripts, field notes, correspondence, surveys, etc., were searched for in several Washington museums, libraries, archives, State and Federal files, and private libraries. Field notes were also obtained from other museums.

Letters of inquiry were sent to most major museums in North America requesting information on specimens and eggs of breeding birds, details of notes on breeding from specimen labels and egg cards, and for field notes from Washington. Correspondence was carried out with the British Museum of Natural History for specimens and notes from the voyage of Vancouver in 1972 to Puget Sound.

Considerable effort was devoted to correspondence with various observers, requesting details of their observations, etc. All sources obtained were checked for other references, both for additional observers and collections, and also for literature citations. Every effort was made to follow any leads which developed.

Data presented in this catalog were acquired through a wide range of survey techniques. Methods of obtaining numbers of breeding birds vary among sites, species, observers, and period of collection. We have judged all the data presented here to be reasonable in that numbers of each species reported breeding at a given site probably did indeed do so. Ultimately it is up to the

user of this report to decide whether any given data set is usable for any given project.

In reviewing data collected we eliminated data sets where (1) it was indeterminable whether numbers of a given species were nesting at a reported site, (2) the site was not reported, (3) the site could not be distinguished from others (as in islands reported as a group), (4) the date of the data could not be determined, or (5) there were other problems with the data set which raised serious doubts as to its validity.

Specimen records were assumed to represent birds nesting at the site of collection if this seemed reasonable to us on the basis of knowledge of the species and the site. This was strengthened if there was a history of the species using that site. In some cases, breeding information on specimen tags clarified nesting status. In our request to museums for information we asked that specimen label and egg card comments be sent to us. In many cases this was done, but in others a lack of museum personnel prevented this.

We attempted to reference completely all citations in the catalog, whether from the literature, correspondence, field notes, reports, or museums. We have identified the present location of all data sources as well as possible. For specimens and eggs, the museum holding the specimen(s) is indicated. Literature citations are standard. The present location of correspondence, field notes, and reports is indicated. Several reports and personal communications from various observers are presented

here for the first time, and are otherwise contained only in our personal files, as indicated.

For many sites, species data are outlined in a "box" at the head of the site listing. Data in these boxes represent the best data, usually the latest, for each species at the site, collected from 1978 through 1982. Sites lacking species data outlined in a box have not to our knowledge been censused during this period.

The user of this catalog should be aware that the totals given for burrowing species, especially those entering and leaving burrows nocturnally, are not usually the result of direct counts. These totals are often the result of grid samples extrapolated to cover the entire suitable habitat at the site. This procedure in itself introduces tremendous potential variance in reported totals. In addition, burrow samples signify different things to different investigators, or even the same investigator at different times or locations. In some cases the estimated total of nocturnal, burrowing species may represent all burrows observed. In other cases it may represent active burrows, burrows with eggs, burrows with chicks, or even just burrows that produce young. Some serious users of this catalog will undoubtedly want to review personally the original source documents.

THE NATURE OF SEABIRDS

Seabirds have relatively long lifespans, low adult mortality rates, relatively late sexual maturity, and small clutch sizes.

Lifespans of seabirds are imperfectly known, but they are certainly long in comparison to most terrestrial birds. There are records of several species of seabirds reaching 20 and even 30 years of age in the wild. Glaucous-winged Gulls banded as chicks in the San Juan Islands in Washington have been seen on the nesting colonies up to 25 years later (T. Wahl, unpubl. obs.). Long lifespans in a species imply a low annual rate of adult mortality, and annual mortality rates below 20% are common in seabirds (Ashmole 1971; Henny 1972). Some albatrosses may have annual mortality rates of as low as 3% (Lack 1954) whereas many passerines, at the other extreme, have annual mortality rates from 40 to 70% (Lack 1954; Henny 1972). If mortality rates remain constant with increasing age, large seabirds with very low annual mortality rates may attain a breeding life of 50 years or more (Ashmole 1971). In addition, recruitment of birds into the breeding population is often slow and delayed. Before attaining maturity, many seabirds spend at least 2 years, and more commonly 3-5, and up to 9 years as non-breeders (Ashmole 1971; Speich and Manuwal 1974). Long breeding lives, low recruitment rates, and delayed maturity could delay the detection of effects on successive breeding populations for several years.

The clutch size of seabirds is usually low. Storm-petrels and other Procellariiformes lay one egg, alcids lay one or two eggs, and pelicans and gulls lay one to three eggs. Cormorants may lay up to seven eggs, though clutches of four or five are more common. By contrast, species of land birds

lay from 7 to 15 eggs per clutch, and many produce two or more broods each year.

Because seabirds reproduce at a slow rate but over a long lifetime, the effects of an oil spill or other disaster and the potentially more dangerous effects of long-term, chronic pollution, habitat loss, and other disturbances demand careful and frequent monitoring of seabird populations.

Seabirds tend to be of two types: those which spend most of their time near shore and usually roost on shore (including cormorants, pelicans, and gulls), and those which come to land only during the breeding season or sometimes intermittently during other times of the year (including storm-petrels and alcid). Of the truly pelagic seabirds, several are nocturnal on the breeding grounds, entering or leaving colonies only at night. In Washington the storm-petrels, Marbled Murrelet, Cassin's and Rhinoceros auklets are nocturnal in their visits to nest sites.

The colony site is a very critical habitat for seabirds because reproduction and thus continuation of species depend on these sites. Here the population will reach its annual low, just before young are hatched, and its annual high, just after hatching. At other times of the year, seabirds may be able to avoid problems, such as disruption of food supplies and perhaps even large oil spills, simply by flying somewhere else, but for successful reproduction they are limited to the area around the colony.

In following sections, we point out some of the problems which

face seabirds. We hope an awareness of these will alert coastal planners and, indeed, all others to the kinds of problems that may be encountered.

THREATS TO SEABIRDS

DISTURBANCE

In Washington, especially in the areas east of Cape Flattery, in Puget Sound and the San Juan Islands, disturbance-induced stress and mortality are probably the most important long-term factors affecting marine bird populations. The effects of disturbance are often subtle and easily overlooked by the casual observer, but are often devastating to the birds. Impacts range from slight disruption of courtship behavior, incubation, and feeding of nestlings by adults, to outright mortality of nestlings from exposure to heat or cold, and induced predation by conspecific adults or by other species.

The effects of a disturbance event depend on many factors, including the species involved, stage of nesting, type and time of disturbance and its duration and intensity. The long-term summation of all disturbance events is of great concern. Although individual events may appear innocuous separately, together they may be sufficient to lower the mean success of the species' population in the area. Each species is vulnerable in different ways, and each species has its own tolerance to disturbance events below a level significantly affecting its reproduction. Our view is that

the continued existence, especially of many of the birds nesting in Puget Sound and the San Juan Islands, is already being seriously jeopardized by disturbance.

Major forms of disturbance and their potentially detrimental effects on breeding marine birds in Washington include the following:

Recreation

Boating. The spring and summer are popular boating periods which, of course, coincide with the greatest nesting activity and vulnerability to disturbance of nesting seabirds. Our observations indicate that most disturbance occurs indirectly with water recreation and is unintentional and unknown to the persons involved. Only when boats are taken near colony sites is disturbance likely to result. Many boaters usually stay far from rocks, islands, and shorelines, but others seek out such areas as a matter of curiosity or as a place to spend the day or night. The waters immediately adjacent to colonies are often good fishing spots. These close visits near colonies constitute the problem with boating. Often, even when islands are posted as U.S. Fish and Wildlife Refuges, persons land on colonies, walk about, sunbathe, picnic, or run dogs. These activities can be extremely detrimental to nesting birds, disrupting their breeding biology.

The presence of humans or dogs in colonies causes adult birds to leave nests, exposing eggs and young to the weather and predatory species. Boats and their

occupants brought close to colonies can also result in adults leaving their nests unprotected. Exposed eggs and small young are often eaten whole by gulls which boldly approach unprotected nests during disturbances. Crows can break and carry off eggs and remove small young. Eggs and young left unprotected may expire from exposure to the sun's heat or chill on cold days. When young are larger and able to move about, disturbance can cause young birds to leave nest sites or territories in panic. Young gulls may be killed by neighboring adults or fall off cliffs into the water and be unable to return to the nest. Young cormorants may be eaten by gulls and crows or be frightened into the water prematurely.

The problems of disturbance are not unique to Washington and are recognized from many other areas; e.g., Baja California, Mexico (Anderson and Keith 1980); and California colonies (S. Speich pers. obs.).

Boating in foraging areas, although perhaps less disturbing to marine birds, can affect nesting birds by reducing foraging opportunities and efficiency. This is thus far undocumented for Washington, but it may prove to be significant in the future, particularly in inland marine waters.

Scuba Diving. Diving is an increasingly popular sport in Washington's inland marine waters. Dive boats operating in the San Juan Islands often anchor near seabird colonies. The proximity of the boat, its occupants, and their activities cause cormorants especially to desert nests, leaving young or eggs unattended. Tufted Puffins are also easily

disturbed. Activity near the colony for long periods can be fatal to eggs and young birds due to exposure or predation. Divers often leave the water and land on the islands, compounding the disturbance and its effects.

Search and Rescue

Although there is no question as to the need for search and rescue operations by United States and Canadian Coast Guard units in Washington, these nevertheless can affect seabirds. These operations often bring vessels, air-cushion craft, and helicopters very near colonies. Helicopters and air-cushion craft are noisy and scare large numbers of birds from nests. Night operations combine noise with powerful searchlights that sweep the colonies, causing great confusion and panic among adults and nestlings. Adults frightened from colonies may not return for hours. Conventional Coast Guard search-and-rescue vessels pose similar disturbance threats as pleasure craft do during daylight hours. The potential impacts on seabird colonies of searchlights at night, especially when employed by air-cushion vessels and helicopters, can be extreme.

Military Operations

Several islands along the outer coast of Washington, as well as islands in Rosario Strait, have been used as bombing targets in the past. Fortunately these activities have been halted in the inland marine waters and are very limited on the outer coast.

Another source of disturbance is close overflights of seabird colonies by a variety of military

aircraft. Sudden loud noise panics nesting birds from nest sites: Common Murres often figuratively explode from the cliffs and loss of eggs (held between the legs of incubating birds) may be extremely high.

The use of strobe lights and high-powered searchlights on or near nesting colonies accompanied by engine noise and the firing of cannon constitutes another disturbance hazard to nesting seabirds.

Cormorants, Common Murres, and Tufted Puffins are the species probably most affected by these activities.

Domestic Animals

The introduction of domestic animals into a nesting colony can be disastrous. Dogs especially are extremely disruptive of nesting birds. They not only disrupt nesting activities, but a single dog can easily kill many nestlings and even adult nocturnal birds such as the Rhinoceros Auklet (see Manuwal 1978).

The Pigeon Guillemot is now probably being excluded from many beach areas because of the presence of free-running dogs. Guillemot nests under beach logs and other objects are easily found by dogs.

Many intertidal areas are important foraging areas for gulls, crows, and herons at lower tide stages. Dogs can effectively eliminate these areas from use by foraging nesting birds, as we have observed on numerous occasions. This pressure may be effective in

essentially eliminating foraging areas in heavily populated regions or at recreation sites.

LOSS OF HABITAT

Loss of habitat can take many forms. Some have already been noted above, as where habitat is rendered unsuitable due to disturbance. When discussing nesting marine birds, we tend to think generally of only the actual nesting site and give little attention to the birds' habitat requirements throughout the year and their life cycles.

Nesting Sites

It is of course critical that nesting sites be preserved. In Washington nearly all colony sites are now in public ownership, and there is presently little threat of loss due to development. However, as discussed above, disturbance has the potential to render sites unusable for some species of birds. Pigeon Guillemots and Glaucous-winged Gulls are now probably excluded from some shoreline areas due to disturbance from people and dogs. Marbled Murrelets, if they indeed nest exclusively in trees in Washington, may now have less nesting habitat available than in pre-logging days, but we have no way to evaluate historical population changes or current levels.

Foraging Areas

It is important that foraging areas be preserved and prey species populations maintained at levels which will in turn support marine bird populations (see

Commercial Fishing). Each species has habitat preferences, and individuals within species have favored localities in which they tend to forage. The outright alteration of these habitats can eliminate or reduce the support capability, the "carrying capacity," of the habitat. The filling of inter-tidal areas and destruction of bottom and infaunal communities through dredging, filling, and pollution are examples of drastic alteration. And, of course, constant disturbance from people, boating traffic, and domestic animals can also effectively eliminate a site as a foraging area.

Roosting Sites

All birds require sites to rest, and different species have different site requirements. Some species use upland sites to roost while others use water sites, or both. Roosting sites are important for resting and preening. For cormorants, roost sites, both during daytime and nighttime hours, are critically important for the essential drying of the birds' plumage.

Roost sites, like nesting and foraging areas, must be free from disturbance and secure from predators or perceived predators such as domestic dogs. These sites are important throughout the year.

During winter storms, periods of high stress and energy consumption, secure roosting sites become even more important as places of safety and shelter. Breeding seabirds must be considered on an annual basis: survival requirements must be met throughout the year.

Wintering Areas

There are very few data on the actual wintering areas of marine birds that breed in Washington, though some general patterns are known. These wintering areas need to be identified and preserved where necessary. Storm-petrels remain at sea during the winter. Tufted Puffins disperse over the North Pacific at this time, with young birds remaining there until old enough to breed. Presumably cormorants breeding in Washington stay in Washington waters; at least, many individuals of each species are present in winter. American Black Oystercatchers probably remain in Washington and are often found in large flocks. Rhinoceros Auklets appear to go south along the coast to winter off California. Cassin's Auklets are present offshore from Washington during the winter, but most birds may go farther south; we simply do not know. Large numbers of Marbled Murrelets are present during the winter, but we have no information on their origin. At least some Common Murres breeding in Washington may leave the outer coastal waters and enter the inland marine waters during the winter. Although young Glaucous-winged Gulls may disperse up and down the Pacific Coast, adults probably stay in the area during the winter. Caspian Terns probably move south to the waters off Central and South America.

It is essential for the survival of the breeding populations that wintering areas continue to be adequate. Many of the birds breeding in Washington probably leave and winter at sea or along the coasts of Oregon, California, and farther south, but more definite evidence on winter areas

is needed. Within Washington we can only directly ensure that winter habitats for roosting and foraging are maintained for local wintering birds.

COMMERCIAL FISHING

There are two major ways that commercial fishing operations can affect marine birds. First, and the most obvious, is the direct mortality of birds caught in fishing nets. In Washington mortality occurs primarily during gill net operations. This mortality from gill nets is poorly documented, but observations and reports from fishermen indicate it occurs locally and in some cases involves many birds. Much gill-netting is done in the shallower bays and estuaries where bird densities are usually highest. Western Grebes (*Aechmophorus occidentalis*) are the chief victims observed; however, Common Murres and Marbled Murrelets are also reported to be frequently drowned in nets. A large gill net fishery is in the middle of the Strait of Juan de Fuca, and its impact on the annual large influx of Common Murres in late summer should be investigated. Gill nets staked across rivers may also kill numbers of birds. Lost gill nets have killed large numbers of seabirds on the high seas (see DeGange and Newby 1980), but the mortality from lost nets in Washington is unknown. Gill-netting occurs primarily at night, and the elimination of seabird mortality appears very difficult under many circumstances.

Purse-seining is the other primary type of commercial fishing which affects bird populations. It is conducted during daylight

and, as it can be considered an "active" type of netting which attempts to select fish schools, would appear to catch fewer birds. However, we have observed Western Grebes and Common Murres caught in nets, and numbers of dead birds are occasionally seen floating or beached near locations where purse-seining is extensive. Our observations lead to the suggestion that mortality from purse-seining may be reduced by modifications of net design or fishing strategy.

A second way fishing may affect bird populations is in overfishing or reducing fish to a level where stocks of predators, including seabirds and mammals, may also be reduced. Some bird species may not be able to switch to alternative prey items because of specializations in behavior or diet requirements. In Washington, overfishing could happen, particularly in the case of herring-roe fisheries or other extremely localized and intensive fisheries. Overfishing is a concern for both summer breeding populations and populations of marine birds wintering in Washington.

OIL POLLUTION

There are several ways that petroleum (e.g., solvents, gasoline, fuel oil, lubricating oils, bunker oil, and crude oil) arrives in the marine environment. These include at one extreme massive oil spills, such as when an oil tanker is wrecked. Less catastrophic petroleum events include small local spills such as occur at fuel docks, both commercial and recreational, during fueling of vessels. Fuel may be spilled during transfer

between barges or vessels and shore facilities. Crude oil may be spilled during transfer at refineries, by accidents within refineries, or through damage or failure of oil pipelines. Small quantities of petroleum products are lost daily through bilge pumping, small spills at fuel docks, and other accidents. And of significance in the large urban areas are petroleum products, i.e., various oils and greases, which are flushed into storm drains from roadways and into marine waters during rains.

In Washington, it is fortunate that no large oil spills, such as an oil tanker wreck, have occurred to date. The wreck of the freighter Seagate on the outer coast of Washington on September 6, 1956, released fuel that led to the death of several thousand White-winged Scoters (Melanitta fusca) and Common Murres (Richardson 1956). There is a potential, however, for large oil spills in Washington. There is regular and frequent tanker traffic offshore along the outer coast between Alaska and California and ports in Central America. There is traffic also in the Strait of Juan de Fuca and through Rosario Strait to major refineries at Cherry Point in Whatcom County and March Point in Skagit County. These tanker routes pass almost all the major seabird colonies in the State, with ships passing particularly close to several colonies in Rosario Strait.

Chronic, low-level introduction of petroleum products into the marine environment is a serious concern. However, to date, little evidence indicates significant impact on marine bird populations

in Washington. Surveys of beaches in areas east of Cape Flattery in 1978 and 1979 revealed few dead birds that were obviously marked with oil (Speich and Wahl 1986). Nevertheless, the potential effects of chronic low-level oil pollution should not be underestimated. Only a small fraction of actual numbers of dead birds, oiled or unoiled, may reach shore (Hope Jones et al. 1970), leading to underestimates of mortality.

Oil in the marine environment can affect marine birds in several ways and at varying magnitudes. Marine oil spills leave the most obvious effects, easily visible in the form of oiled birds. Because of the habits particular to each species, such as sites and methods of roosting, feeding, and nesting, different species are affected differently. Generally the species most severely impacted are those divers that spend nearly all their time, including hours of darkness, on the water surface. After oil spills in other areas, species of loons, grebes, and alcids occur at high rates on beaches, often heavily oiled and beyond rescue (Smail et al. 1972; Powers and Ramage 1978; Mead and Baillie 1981). These swimming birds are more likely to encounter and be fouled by oil and to be more heavily oiled than species that fly more frequently or roost ashore at night (Powers and Ramage 1978). Gulls observed after the Argo Merchant oil spill tended to have less surface area oiled than did alcids (Powers and Ramage 1978; see also Levy 1980).

Crude oil and crude oil derivatives can affect birds several ways. The most direct is through oiling of feathers which

reduces the buoyancy and insulation of the plumage. This increases body heat loss and decreases the swimming and foraging efficiency of affected birds, leading to a greater energy demand and decreased ability to meet that demand. This combination can be fatal, particularly during times of environmental stress. Gulls that were oiled only slightly following the wreck of the Argo Merchant apparently died from being weakened due to oiling and to environmental stress (Levy 1980). Clearly birds that are extensively oiled, especially in cases where oil-matted feathers allow direct contact of the body surface with cold water, have very much reduced chances of survival.

When oil adheres to feathers of a bird, its reaction is to preen and restore the feathers to their natural state. The process of preening can result in the ingestion of oil. Oil can also enter the digestive system by ingestion of contaminated food items. Oil fractions are differentially absorbed within the bird and can cause severe, even fatal physiological disruptions (Hartung and Hunt 1966; Powers and Ramage 1978; see also Stickel and Dieter 1979). Hemolytic anemia in marine birds is a primary toxic effect of the ingestion of crude oil (Leighton et al. 1983).

Ingestion of oil, especially during critical periods of egg formation, can cause depression of laying and rates of hatching, as shown in studies of Cassin's Auklet (Ainley et al. 1981; see also Stickel and Dieter 1979). This can reduce the reproductive efficiency of the population as late nesting birds are less likely

to be successful in fledging their young than birds reproducing on a normal schedule. If birds produce infertile eggs due to physiological disruption caused by ingestion of oil, results on the population may be severe. Birds attempting to incubate eggs that fail to hatch may be effectively eliminated from reproducing that season.

Oil on the feathers of adult birds can be a threat not only to them, but in the case of nesting birds, to their eggs and young. Laboratory studies which simulated the oiling of eggs by oiled parents returning to a nest showed marked decreases in hatching and fledging rates. Treatment of the eggs of nesting Great Black-backed Gulls (Larus marinus) confirmed this in the field. Free-ranging, incubating Laughing Gulls (L. atricilla) were captured and 2.5 ml of No. 2 fuel oil was applied to their feathers around the brood patch. After 5 days of incubation, embryo death was significantly greater in the experimental groups (Stickel and Dieter 1979). These experiments demonstrate that even small amounts of oil on a bird's plumage can seriously reduce productivity. Chronic low-level petroleum pollution of the marine environment potentially can, and may be already, reducing reproductive output. In the long-term, chronic low-level pollution by petroleum products may be more significant in impacting populations than less frequent and yet more obvious and dramatic pollution events like major spills.

Several species of alcids nest in Washington in large numbers; included are two important colonies of Rhinoceros Auklets.

In the event of a major spill in foraging or staging areas, especially during the summer breeding period, there could be very high mortality. During late summer there are perhaps as many as one-quarter million Common Murres, including flightless adults and chicks, in the Strait of Juan de Fuca moving from nesting sites in Washington, Oregon, and perhaps northern California to wintering areas in inland marine waters of the State. An oil spill then and there could result in the loss of huge numbers of birds.

There is little information on the response in general of birds to the presence of oil in foraging areas. Some species are more easily oiled than others. But it is not known with certainty whether birds will effectively shift to new foraging areas free from oil (and unexploited by other populations or species). Observations of oiled birds suggest that in at least some cases habitat or location shifts do not occur. However, following the IXTOC I spill along the Texas coastline, part of the shorebird populations left polluted beaches and returned only after the oil was gone (Getter et al. 1981).

TOXIC SUBSTANCES

There has been a general perception by the public that the waters of Washington, including Puget Sound, are "clean." Huge quantities of marine organisms are taken annually for human consumption within the region. However, recent studies of Puget Sound revealed that heavy metals, aromatic hydrocarbons, and synthetic organic compounds occur

throughout the area. Highest concentrations were recorded in samples of marine organisms and sediments from bays near urban areas. These areas include the bays and waterways of the industrial areas of Seattle and Tacoma, particularly, and Bremerton and Bellingham. These findings have led the U.S. Environmental Protection Agency to include the nearshore and tidelflat areas of Commencement Bay (Tacoma) within the list of the top ten priority toxic waste dump sites in the country requiring remedial action.

Contaminants recently found in high concentrations include chlorobiphenyls (PCB's), chlorobutadienes (CBD's), various aromatic hydrocarbons, and metals such as mercury, lead, arsenic, and cadmium (see Long 1982 for a review of recent findings).

Recent studies have shown that certain sites within Puget Sound are significantly contaminated (Long 1982; Malins et al. 1982). Apparently areas outside of Puget Sound are relatively "clean"; however, none of the parts of Puget Sound studied thus far have been found to be contaminant free (Malins et al. 1982). Parts of the outer coast of Washington are the most removed from sources of contamination, but there are apparently few or no data available from the area for comparisons with other regions.

There are several examples of the effects of metals and man-made chemicals on the survival of adult birds and their ability to reproduce successfully. Effects include physiological disorders and egg-shell thinning (Peakall 1970 and 1975; Hays and Riseborough 1972) that have been observed in several species. The

pattern of reproductive failure and its apparent reversal in the case of the Brown Pelican (Pelecanus occidentalis) in California is well known and documented (Gress et al. 1973; Anderson et al. 1975). Double-crested Cormorants also experienced depressed reproductive success during the same period (Gress et al. 1973). The thinning of eggshells of the Ashy Storm-Petrel (Oceanodroma homochroa) and Common Murre on the Farallon Islands has been linked to contaminants (Coulter and Riseborough 1973; Gress et al. 1973), as was the case of the Western Gull in southern California (Hunt and Hunt 1973). For a discussion of egg-shell thinning patterns in Oregon seabirds, see Henny et al. (1982).

Samples of birds collected in 1982 from the Seattle and Tacoma marine water areas contained metals and high concentrations of PCB's (Riley et al. 1983). Birds tend to accumulate mercury and organic contaminants, but not others. The egg of one Pigeon Guillemot contained PCB concentrations at a level known to be lethal to chicken embryos, but apparently little is known of the interactive pathways of PCB's. Samples away from Tacoma and Seattle contained lower levels of pollutants. Although there are high levels of contaminants near these cities, few marine birds breed in the area. Fewer than 1% of the total of all marine birds nesting in Washington breed in the inland waters south of Admiralty Inlet. However, this apparent remoteness of major breeding populations does not necessarily mean remoteness of these birds from contaminants. Birds breeding in relatively clean areas may winter in contaminated areas, as

in the case of Common Murres wintering in Puget Sound. A Fork-tailed Storm-Petrel egg collected in coastal Oregon contained high levels of DDE and PCB's (Henny et al. 1982). This species generally feeds offshore, over deep water. Birds can pick up contaminants at any time of the year at any location. But we must point out that we do not yet have any evidence that Puget Sound marine birds are suffering from exposure to or the uptake of contaminants.

LIMITATIONS OF THE DATA BASE

There are many variables that limit the accuracy and reliability of the data that are available and presented in this catalog of the breeding marine birds of Washington. These limits are of two kinds and must be considered when using data from the catalog. There are, first, the reliability and accuracy of the data available from the viewpoint of observer shortcomings in collecting and recording the data. Second, intrinsic in the nesting habits of each species is great variability in the species' observability and the researcher's ability to obtain a number that reflects the actual number of individuals of a species nesting at any given site.

RELIABILITY AND ACCURACY OF DATA

All data presented are affected by the reliability and accuracy of the observer. Factors range from the observer's ability to identify a species accurately and determine whether it is nesting, to the recording of observations in a clear, complete, and concise format. Other important factors

include the observer's competence in knowing and recording the exact location of observation.

Unfortunately, most recorded observations are incomplete and a considerable number cannot be used because of ambiguity or lack of data on location, species identification, or species nesting status. Insufficient documentation and recording of observations has occurred since the first explorations of this region in the 1780's and 1790's, and continues to this day. It is distressing to consider the amount of time and resources spent by numerous individuals, various agency personnel, persons associated with colleges and universities, etc., and the poor quality of recorded observations that have often resulted from their efforts. And, in almost all cases, apparently little thought was given and little effort expended to insure the availability of recorded observations to later workers. There is an almost universal lack of recording of observations in formal field notes in the format of or even vaguely similar to that of the late Joseph Grinnell of the Museum of Vertebrate Zoology (Herman 1980). Most recorded data are fragmentary, often on scraps of paper, in letters, recorded in tables without comments, or contained in the literature in brief form. A lack of maps depicting locations of observations has been particularly limiting in many cases.

Specimens and egg sets are known from many colony sites in Washington. In using these specimens, it is necessary to "trust" the accuracy of the collectors, particularly in regard

to locations. With egg sets it is virtually certain the species was nesting. However, unless specimens are of pre-fledgling young, we can only assume the individual was nesting at the site of collection. This assumption is reinforced if there is a recorded history of nesting at the site by the species, or if the collector has made notes on the tag indicating the specimen or species was nesting.

SPECIES-SPECIFIC PROBLEMS IN COLLECTING DATA

Although species treated in this catalog are breeding marine birds, their natural history, including their manner of nesting, varies considerably. Because of this, different methods must be used to determine numbers nesting of each species, and even for the same species at different sites (i.e., see Nettleship 1976). The confidence a user can put in the numbers recorded as nesting is thus varied. This is in part reflected in the Data Quality codes, a code system based upon the proportion of actual nests counted. But the Data Quality code is thus limited, as it may be possible to obtain a very accurate determination by counting, for example, the individual birds at a site.

NUMBERS OF BREEDING WASHINGTON SEABIRDS--SUMMARY

Eighteen species of marine birds, with minimum total populations of about 303,000 breeding birds, are discussed in this catalog. It is likely that all major colonies within the

State are presently known, though the actual sizes of populations of some species using these colonies are very imperfectly known. Although most minor colonies or nest sites are also likely known, there are almost certainly many more locations where species that nest as single pairs, particularly hole-nesters, are breeding. Species accounts (below) give totals for these species breeding along the marine shorelines of the State, but do not include populations of any which might breed on fresh water, particularly east of the Cascade Mountains. Ring-billed Gulls and California Gulls (Larus californicus), in particular, nest in colonies in eastern Washington. The species accounts point out which species population totals are believed to be accurate. For those species that we consider existing data to be inadequate, we include estimates of actual numbers breeding in the marine habitats. We feel these estimates are reasonable and realistically conservative, and consequently we estimate a total of about 423,000 marine birds may be nesting within the area covered by this catalog.

The species accounts also indicate that the lack of sufficient historical data for virtually all species precludes any assessment of long-term population changes within the State. Only in the cases of relatively late-arriving species such as Ring-billed Gull and Caspian Tern is there information to show changes, though informed speculation can be made on populations of a number of other species.

Seven species constitute 81% of the breeding marine birds covered in this catalog. Cassin's and

Rhinoceros auklets, Leach's Storm-Petrel, Glaucous-winged and Western gulls (numbers combined--see species accounts), Common Murre and Tufted Puffin make up this group (Figure 1). This proportion is not uniform, however, throughout the various regions of the State. Four of these species breed predominantly on the outer coast, often in a few large colonies, and these species are absent or scarce east of Cape Flattery; therefore, a number of the remaining nine species become relatively much more important as nesting birds in the inland marine waters.

Figure 2 indicates where colonies of the more populous species are concentrated. Over 72% of the total estimated birds breed along the outer coast north from about Point Grenville to Seal and Sail Rocks near Neah Bay.

There are a number of colonies throughout the area generally known as the San Juan Islands and adjacent waters, and in total these form an important nesting area and are, indeed for several species, the primary known nesting area within the State.

The major nesting site in the inland waters is Protection Island, where 16% of all birds in the catalog area nest. The importance of this site (species totals are shown separately in Species Accounts Figures and in Figure 3) is evident in species accounts and the site descriptions below.

The shoreline south of Point Grenville on the outer coast has limited nesting habitat available except for accreted sand islands

in Grays Harbor and Willapa Bay and the rock cliff face at the mouth of the Columbia River.

The inland waters south of Admiralty Inlet, including Puget Sound and Hood Canal, have relatively few breeding marine birds, and these are concentrated in a few sites which were unintentionally provided as a result of human activities. Nest sites, except for Pigeon Guillemots, are limited here, though factors of marine productivity and disturbance may also explain low numbers of nesting seabirds in this most highly developed and densely populated part of the State.

Although a number of species essentially nest throughout the State in suitable habitats, several species are confined to the outer coast exclusively, and this gives the State a "split personality" as far as its marine birds are concerned. Seven species breed along the coast but not in inland habitats, while none breed exclusively in the inland waters area. Some species are likely restricted to outer coast sites because suitable nesting habitat is unavailable elsewhere, but some also likely require nest sites near pelagic foraging areas.

Six species, including the least abundant species breeding in the area, Ring-billed Gull, and the most abundant nesting bird, Cassin's Auklet, are known to nest at fewer than ten locations. Fork-tailed Storm-Petrel, Brandt's Cormorant, Caspian Tern, and Rhinoceros Auklet (the second-most abundant species) are also restricted to very few nesting sites. At the other extreme, the Pigeon Guillemot is the most

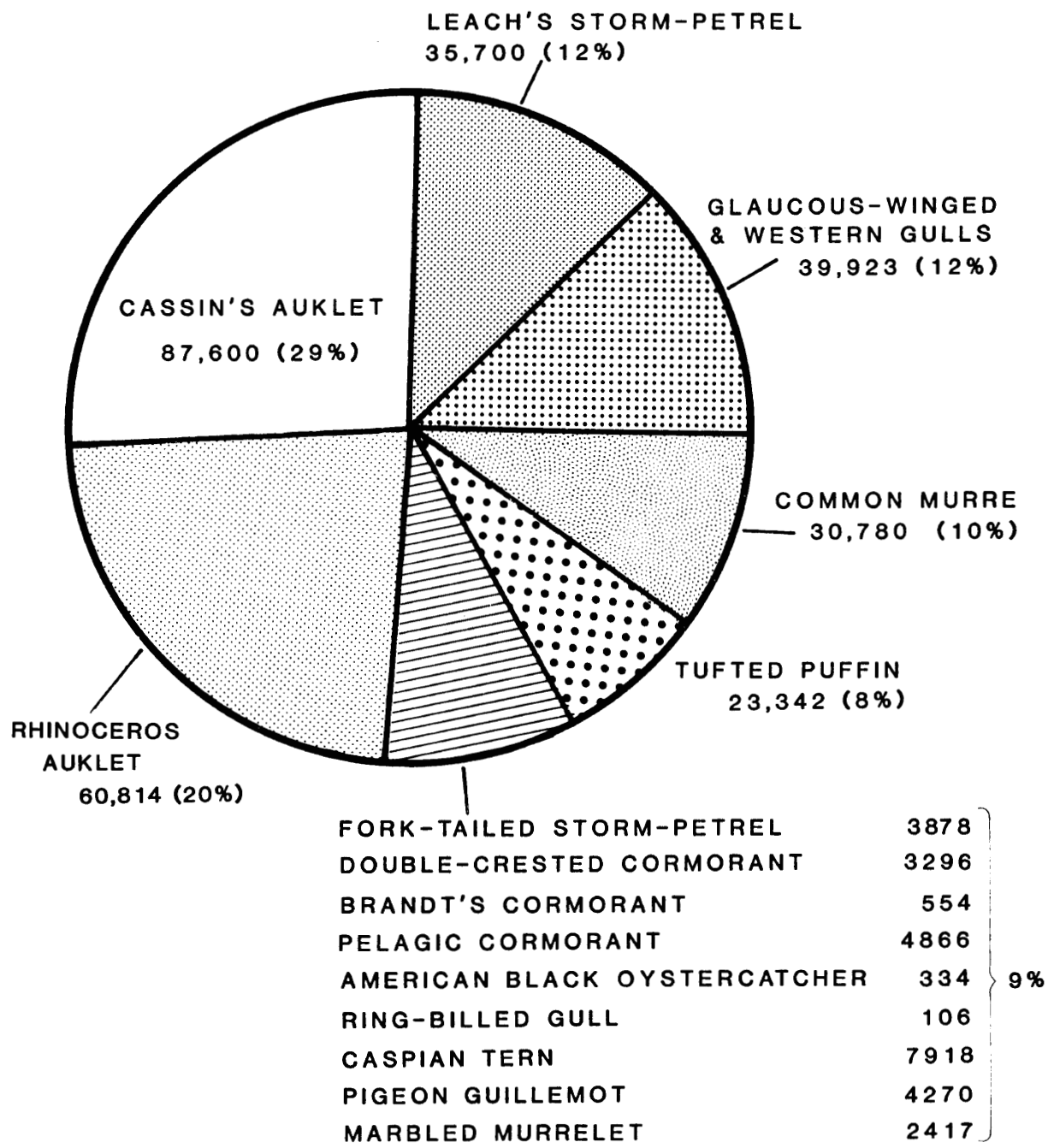


Figure 1. Populations of breeding seabirds and percentages of total aggregate population in Washington.

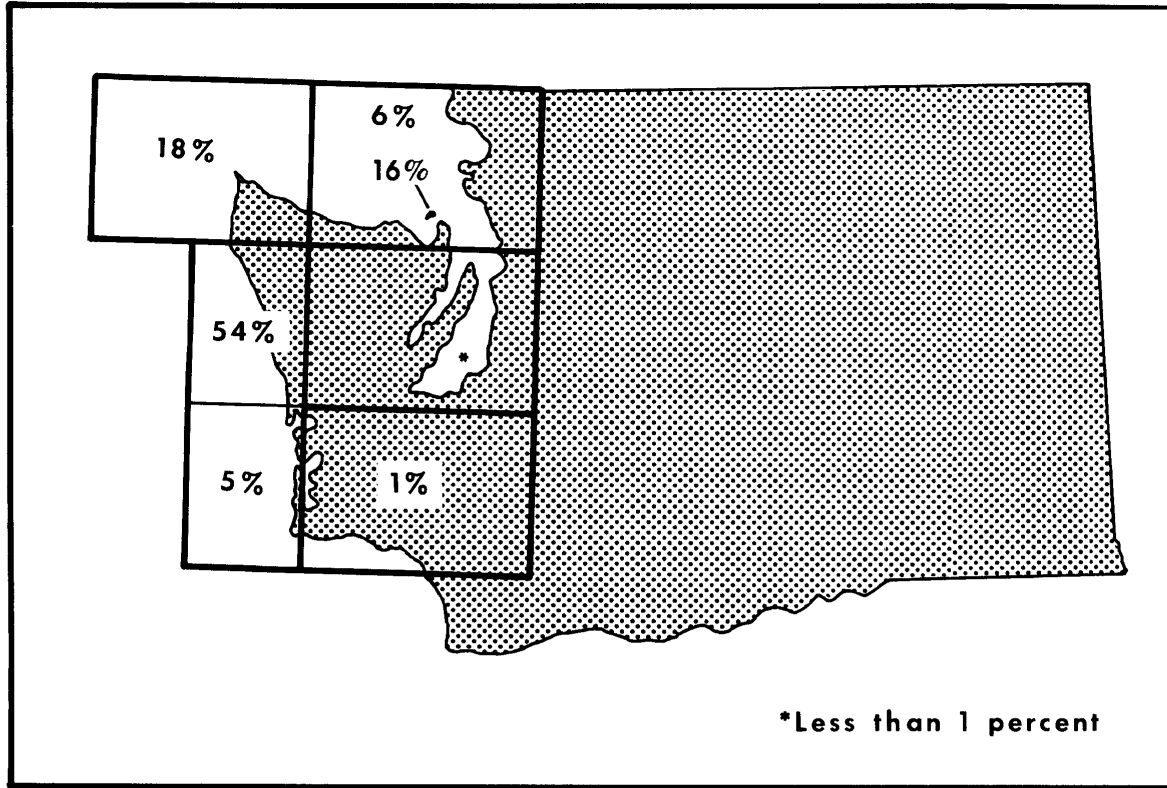


Figure 2. Percentage of breeding seabirds along the marine shorelines of Washington.

widespread nesting species, being recorded here in 148 locations but possibly actually nesting in 200 or more. Other relatively widespread species are Pelagic Cormorant, American Black Oystercatcher (with one of the lowest total nesting populations in the State for the species considered in this study), Glaucous-winged and Western gulls, and presumably, Marbled Murrelet.

If Glaucous-winged and Western gulls are considered one species or closely related species (see species account), and exceptions are made for Ring-billed Gull

(essentially an inland-nesting species) and Caspian Tern (of southern origin), species breeding in Washington's marine habitats also nest along the Pacific coast of North America from approximately northern California to Alaska. This species composition reflects similarities in climate and habitats within this long stretch of coastline.

Although breeding distribution of different species of seabirds has been related to oceanography and biological productivity in various parts of the world (e.g., Souls et al. 1980), little attention has

been given to these relationships in Washington. The associations between great variations in breeding success and variations in oceanographic and climatic conditions also have to date received little attention in Washington.

Thus far, most long-term changes in breeding seabird populations in Washington have been attributed to factors such as land use and human activity patterns and waste disposal. The species accounts below will suggest some possible associations. Additionally, studies are required on effects of pollution and fishing activities on seabird populations and implications for bird reproduction in the State.

Although historical data are minimal, there is evidence that a number of nesting sites in Washington have changed in vegetative cover over time, likely affecting nesting birds. Burrow-nesting birds can accelerate soil erosion and make a site unsuitable over time. Removal or loss of trees or shrub cover can eliminate soil by erosion and thus make an island unusable by burrow-nesting species while possibly benefiting species which nest on bare rock. Fire, whether from lightning

strikes or human-caused accidents, can transform nesting habitat within a brief period of time. Erosion by the sea itself is continually occurring, and a number of islands used by nesting birds in Washington have shown significant changes during recent years.

Knowledge of nesting marine bird populations in Washington, particularly in any areas other than nest sites and species composition, is in early stages and there is much to learn. However, with many of the nesting sites in the State now under State or Federal ownership and management, with public interest in protecting and preserving our natural heritage highly evident, and with enforcement of regulations regarding shoreline use and discharge of pollutants, there is reason for optimism regarding the future of marine birds here. With proper concern and public education and judicious use of other resources that the birds may also require, we can meet the basic needs of the birds for food and foraging areas, sufficient nesting and roosting habitat, freedom from disturbance, and a clean environment. Populations of breeding seabirds can thus be maintained.

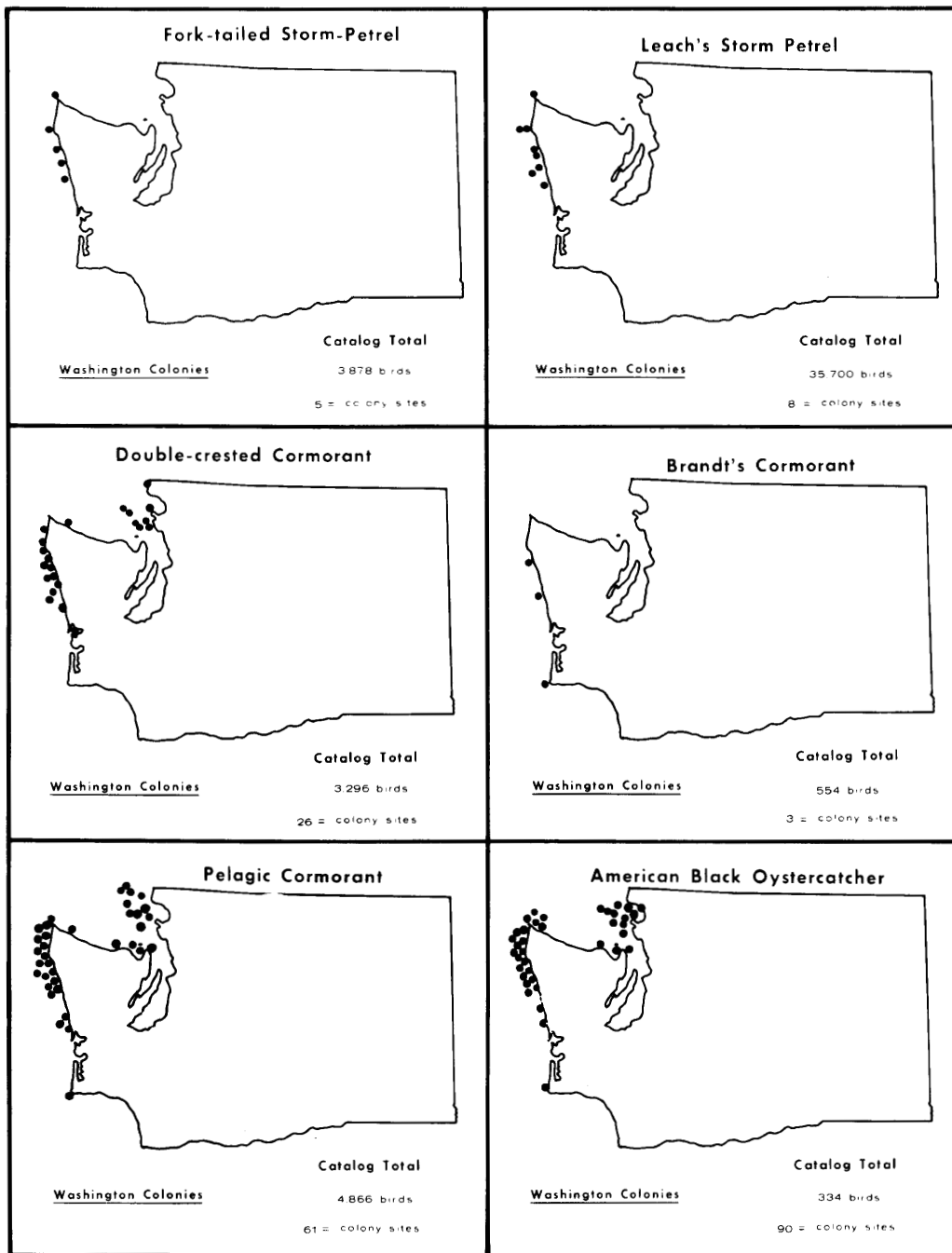


Figure 3. Distribution of nesting sites of the Washington species of seabirds.

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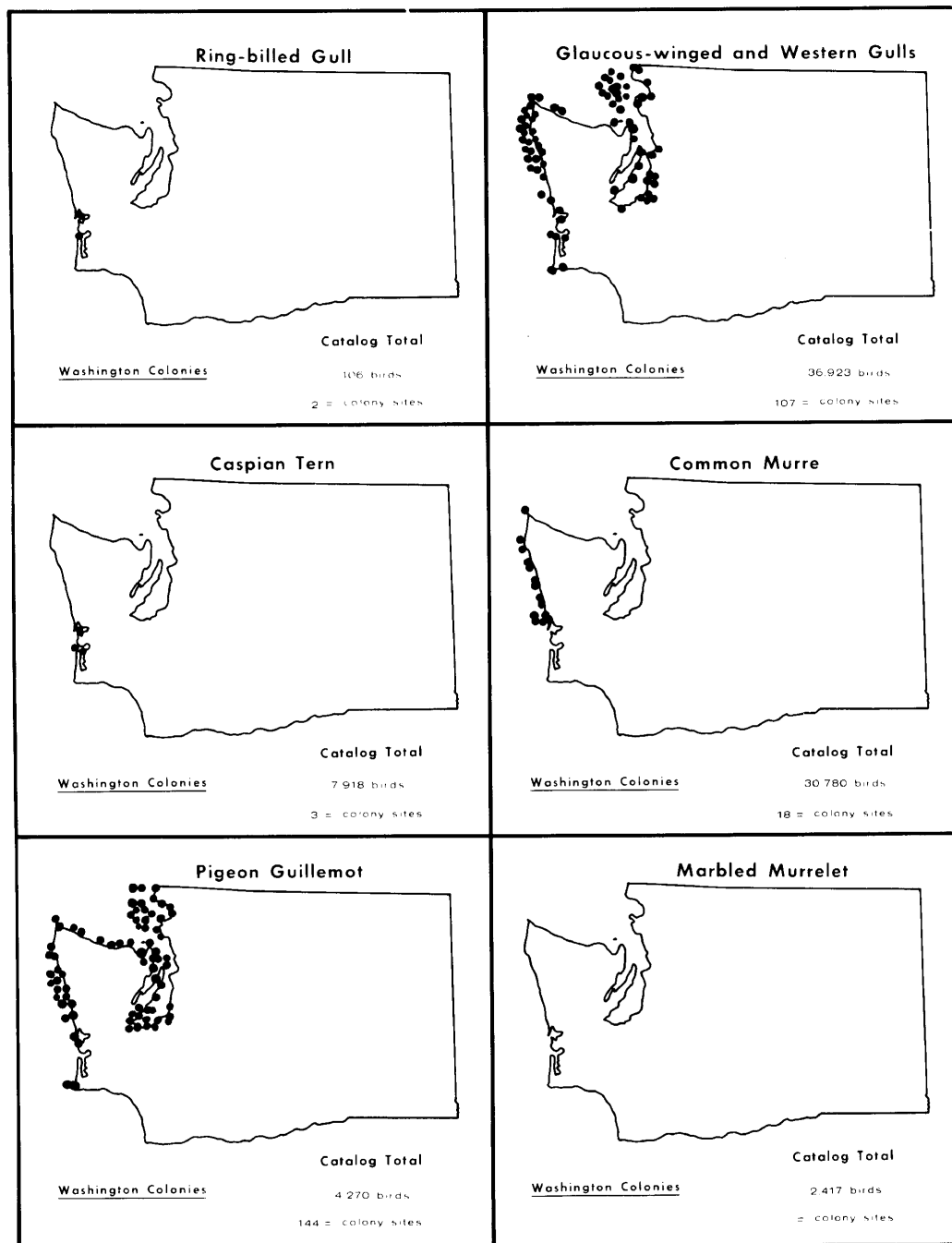


Figure 3. (Continued)

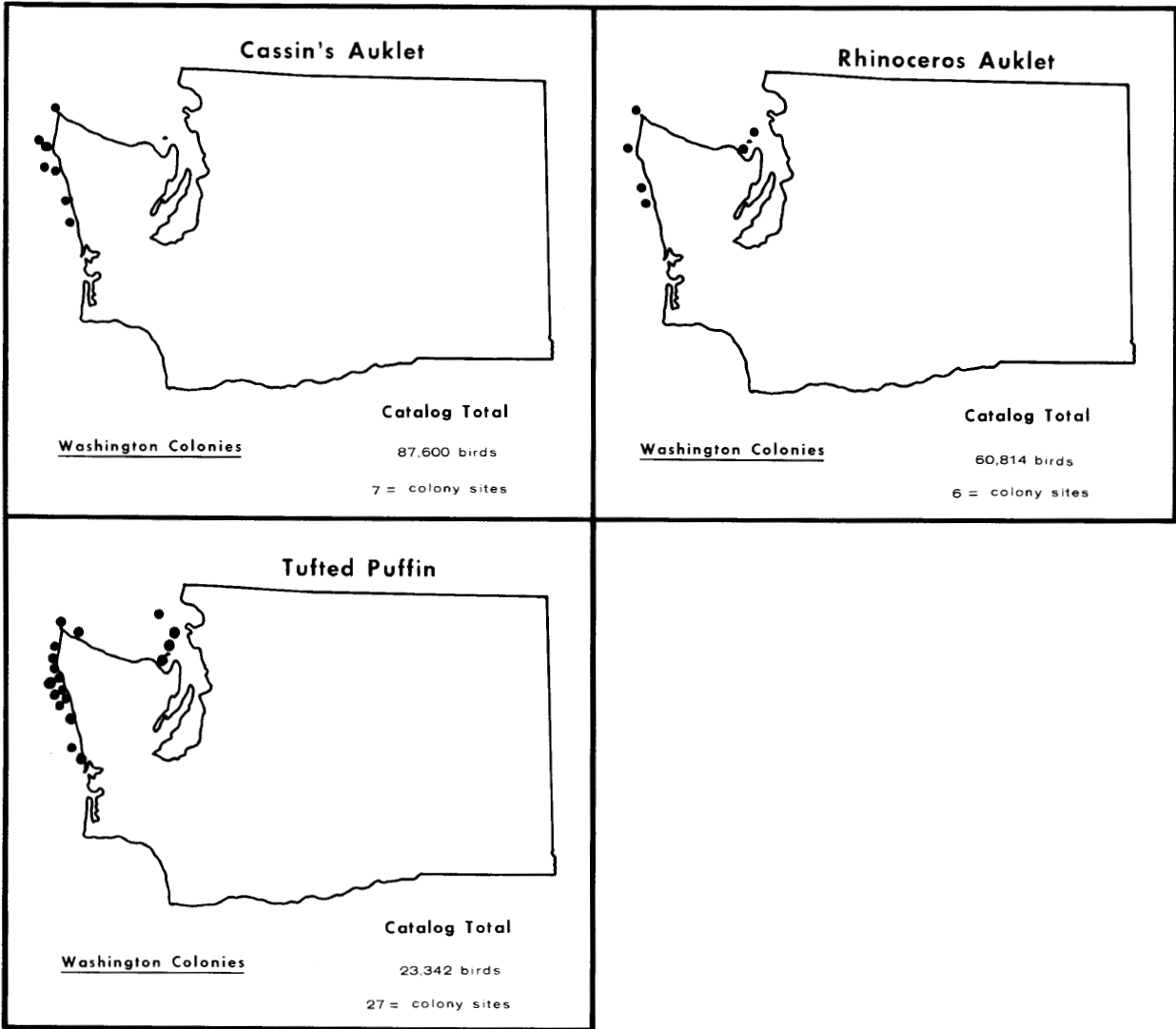
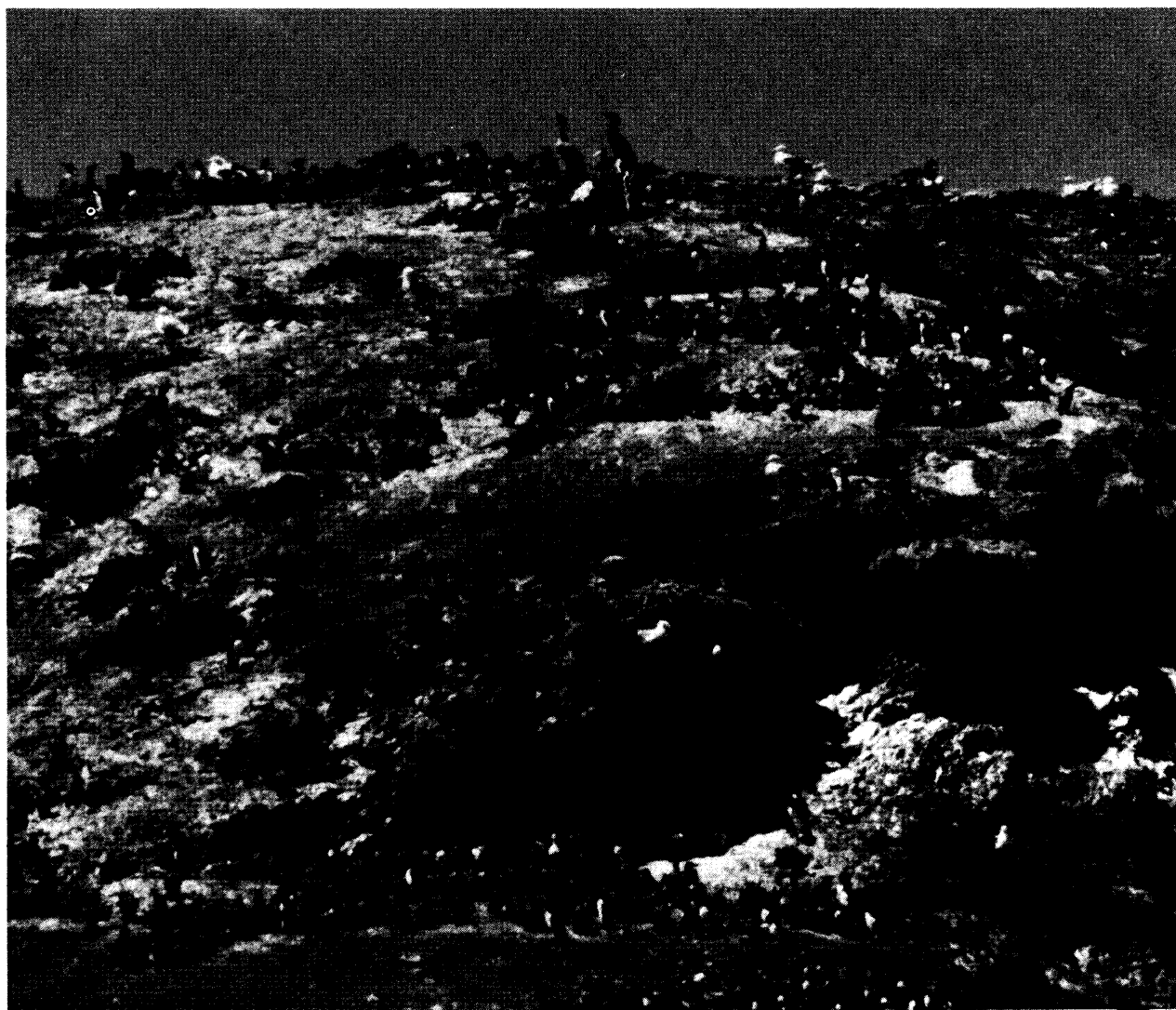


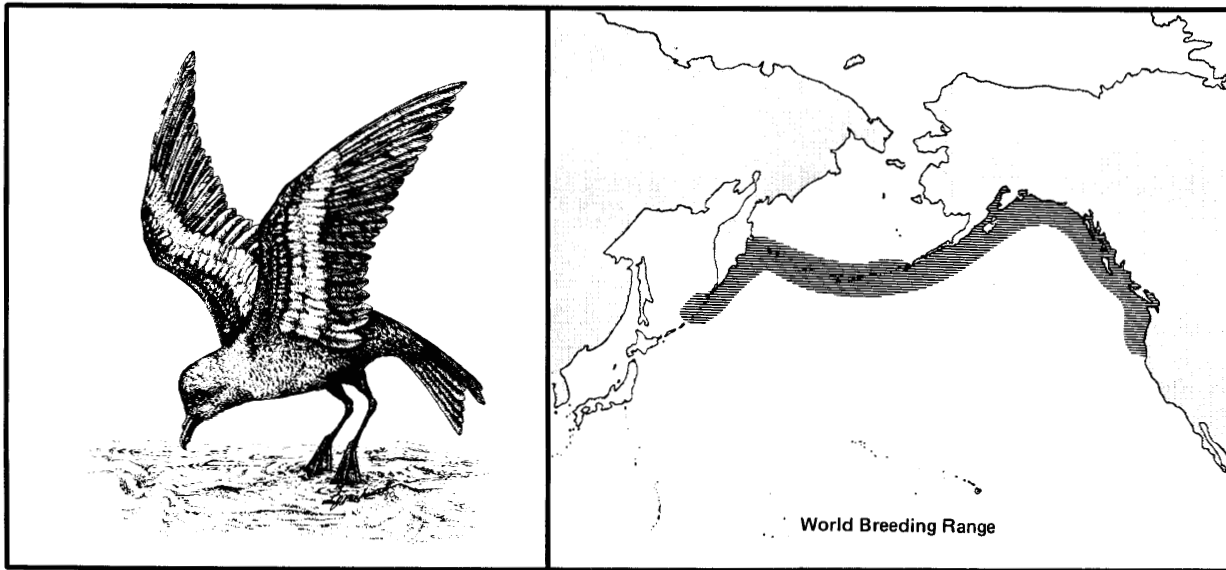
Figure 3. (Concluded)

SPECIES ACCOUNTS



Willoughby Rock (174017) 19 June 1979 S.M. Speich.

Fork-tailed Storm-Petrel (*Oceanodroma furcata*)



Fork-tailed Storm-Petrels are among the smallest seabirds, yet they range far from land over the mid-ocean waters. They usually feed on surface plankton, but they follow fishing vessels and forage on oil and offal when the opportunity arises. They are abundant over large areas of the cooler waters of the North Pacific and are frequently seen over the outer continental shelf waters of Washington and pelagic waters farther offshore.

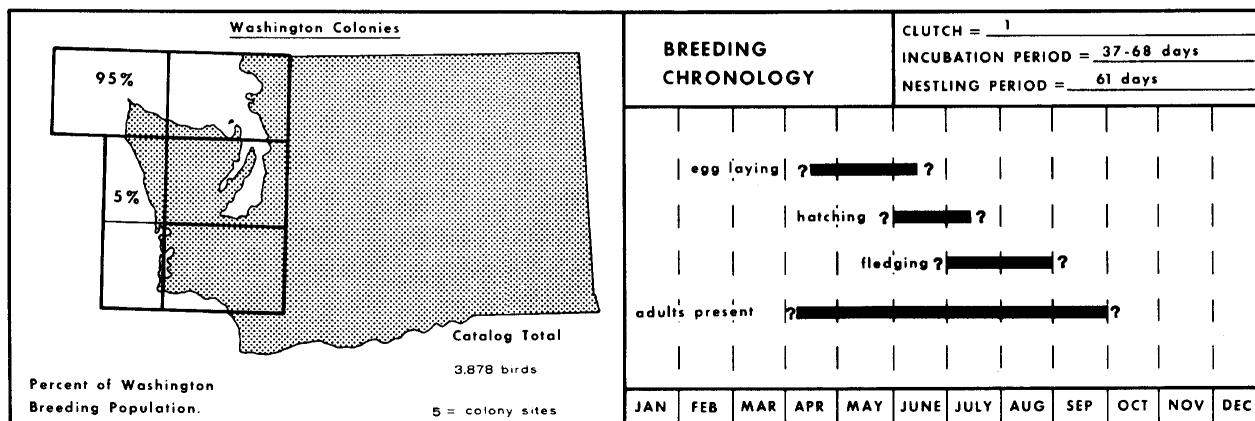
Fork-tailed Storm-Petrels breed on offshore islands where they are secure from land-based predators. Throughout their range they nest in both rocky crevices and, to a lesser extent, in burrows in soil.

To avoid diurnal predators, colony activity occurs during the darkest hours of the night. Adults mate, exchange incubation and brooding duties, and feed

chicks only during the night, remaining in the burrow or returning offshore by day. For this reason, storm-petrels are seldom seen near breeding colonies during the day. Their nocturnal habits make detection of colonies difficult and estimation of populations imprecise.

WASHINGTON COLONIES

Fork-tailed Storm-Petrels have been found breeding at five sites in Washington, all of them along the outer coast. It is possible the species is breeding at other sites, but confirmation of this is lacking because of the difficulty of surveying nesting sites on Washington's outer coast and the difficulty of finding all nests of burrowing species in general. The largest known colony is on Carroll Island where about 1,600 birds are estimated to be nesting in burrows



under grassy slopes. An estimated 1,900 breed on two of the Bodeliteh Island group, and about 200 breed on both Alexander and Tatoosh Islands. On the Bodelitehs the birds nest extensively under deciduous shrub cover on north-facing slopes.

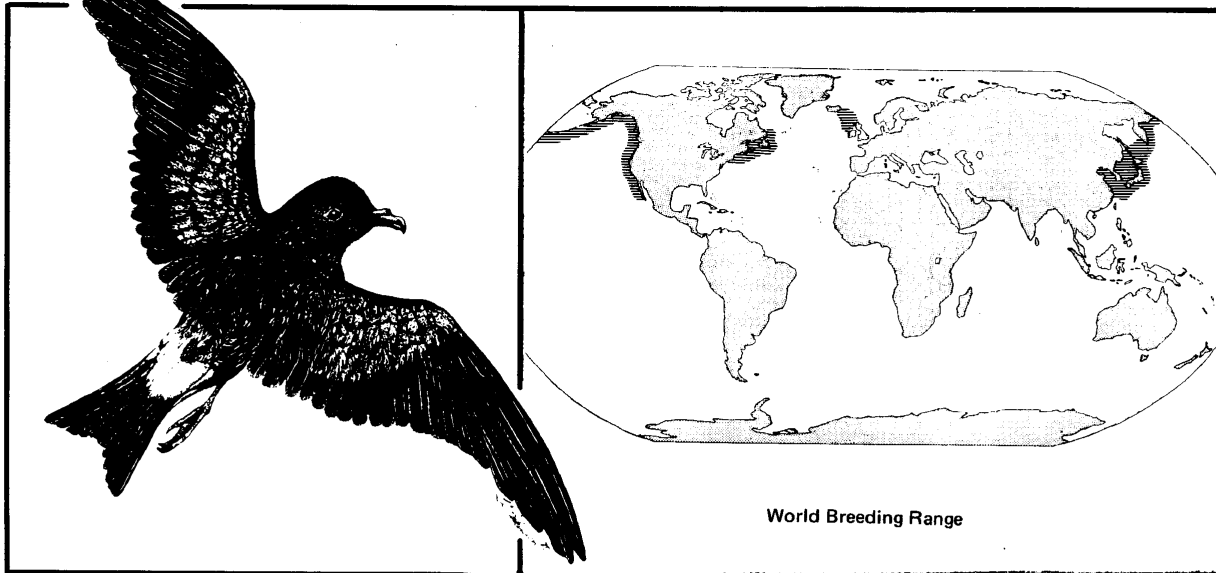
HISTORICAL STATUS AND VULNERABILITY

Virtually nothing is known of historical trends in populations of Fork-tailed Storm-Petrels nesting in Washington. Many of the seabird colonies, especially those along the outer coast in particular, have been entered only a few times during the known history of the State (some rocks with nesting colonies apparently have never been landed upon by seabird biologists), and fragmentary reports and casual estimates make meaningful comparisons impossible. However, based on recent field work surveying available habitat, we feel it is unlikely that there could be more than 3,000 additional Fork-tailed Storm-Petrels nesting in Washington.

Fork-tailed Storm-Petrels readily desert their nests if disturbed by humans during incubation or while parents are brooding recently hatched chicks. Evidence from studies of an Alaskan population shows that extremely unfavorable weather conditions or insufficient food supplies will cause parents to temporarily abandon eggs and chicks (Boersma et al. 1980). Such temporary abandonment of nests reduces viability of eggs, causes death among chicks, and lengthens the breeding season (Boersma and Wheelright 1979; Boersma et al. 1980).

These storm-petrels are most vulnerable to oil pollution during the summer months when the birds are distributed close to continents due to breeding activities (Lensink et al. 1978; Weins et al. 1978). They could be severely impacted by pollution of marine food webs at this time when they are "tied" to colony sites, though loss of prey species could have severe effects at other times. They are also vulnerable to predation at colonies by animals like river otters (*Lutra canadensis*) when colonies are close to the mainland (Speich and Pitman 1984).

Leach's Storm-Petrel (*Oceanodroma leucorhoa*)



Leach's Storm-Petrels are an abundant species with an extensive breeding range around the perimeter of the North Pacific Ocean. They range widely at sea during the nonbreeding season, with birds ranging south to tropical waters in both the Pacific and Atlantic Oceans (Palmer 1962). Although they are a numerous nesting bird on Washington's outer coastal off-shore islands, this species is infrequently seen away from the colonies during daylight hours.

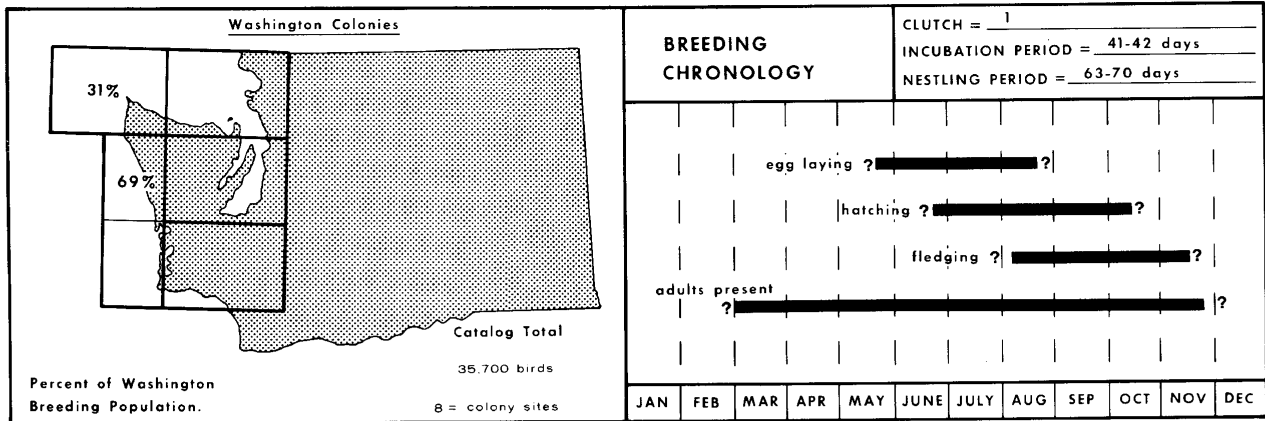
Like all storm-petrels, Leach's Storm-Petrels are nocturnal on the breeding colonies, an adaptation which reduces their susceptibility to diurnal predators such as gulls. Nests are usually located in burrows or, less frequently, in rock crevices (Palmer 1962). Like other species of the Procellariiformes, this one has a well-developed olfactory system (Bang 1966; Stager 1967), and

Grubb (1973, 1974) has suggested that these birds, which sometimes nest in forests, may locate their burrows by odor.

Like most seabirds, Leach's Storm-Petrels exhibit relatively long lifespans and low mortality rates for their size. Individuals that survive the hazardous first year of life can live up to 24 years and possibly longer (Graham 1980). Additional references on this well-studied species include Gross (1935), Ainslie and Atkinson (1937), Huntington (1963), Wilbur (1969), Harris (1974), Threlfall (1974), Ainley et al. (1974, 1976) and Morse and Buchheister (1979).

WASHINGTON COLONIES

While Leach's Storm-Petrels are known to nest in 11 colonies in Washington, there may be as many as 20 or 25 locations where nesting takes place. They burrow



under tussocks on grassy slopes, and this habitat exists where surveys have not yet been adequate or even attempted off Washington. The largest known colonies are 20,000 birds on Jagged Island and 10,000 on Carroll Island. Dhuoyautzachtahl (Petrel Rock) is estimated to have 2,600 birds nesting, Alexander Island 2,000, and while Kohchaa(uh) is listed as having "hundreds," olfactory impressions to observers approaching but unable to land on this island suggested that possibly thousands may nest there. Likewise, Cake and Rounded Islands may have thousands of nests. It is possible there may be 50,000 or more Leach's Storm-Petrels nesting in Washington.

HISTORICAL STATUS AND VULNERABILITY

As in the case of the Fork-tailed Storm-Petrel and other burrowing species, infrequent and incomplete surveys and inconsistent censusing methods make assessment of historical trends of this species difficult if not impossible. Furthermore, while they are obviously more abundant

as nesting birds, Leach's Storm-Petrels are seen much less frequently than Fork-tailed Storm-Petrels on boat trips off the coast during the nesting season, presumably because their preferred foraging habitat is far offshore and possibly because the species is more nocturnal in habits. This virtual lack of nearshore at-sea data offers no help in locating colonies or in making historical comparisons.

Leach's Storm-Petrels appear to forage farther offshore and over warmer waters than Fork-tailed Storm-Petrels (Wahl 1975). Their later nesting season in Washington is apparently a response to seasonal oceanographic conditions: the warm waters of the West Wind Drift come closest to the continent during July and August when young birds are hatching and being fed by adults.

Predators such as river otters can impact storm-petrel colonies along the Washington coast (Speich and Pitman 1984). Like other seabirds, Leach's Storm-Petrels are vulnerable to contamination by oil. While they may forage far

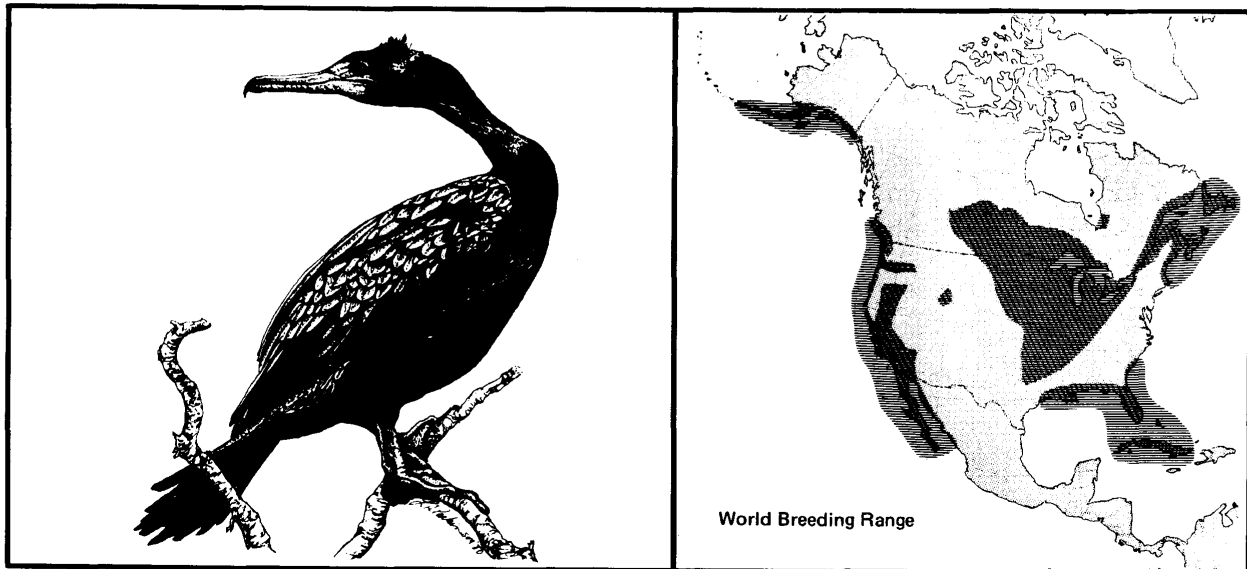
offshore during the nesting season, their use of the coastal waters is only partially known (waters near nesting colonies have not been adequately sampled), and nocturnal foraging habits would

make present sampling methods inadequate in any case. They appear to be absent from Washington waters in winter, the season of greatest storms and hazards to shipping.

FIELD NOTES

The authors would appreciate copies of your field notes for updates

Double-crested Cormorant (*Phalacrocorax auritus*)

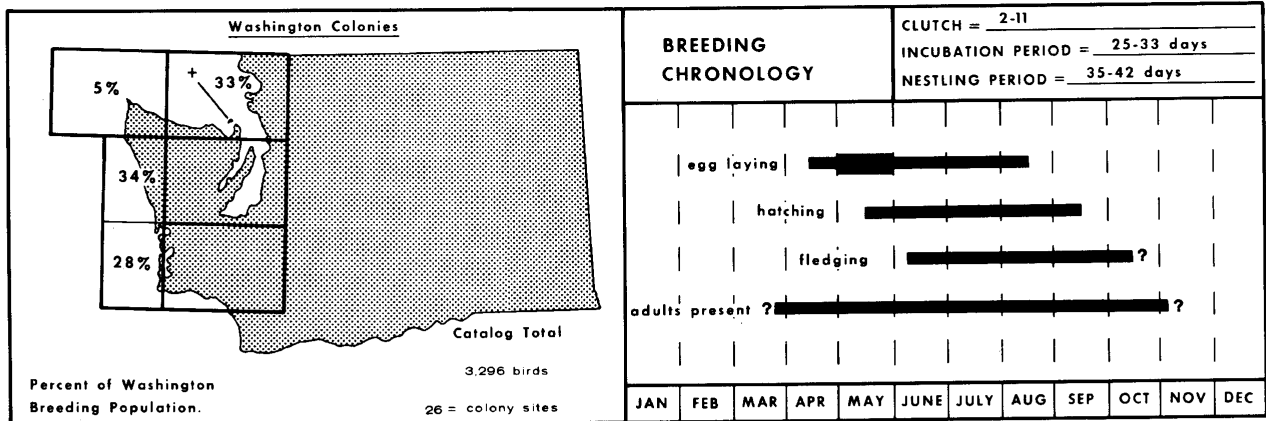


Double-crested Cormorants are the most widespread of North American cormorants. They are the only species in the United States and Canada regularly found in freshwater habitats. In Washington, Double-crested Cormorants are found breeding in limited numbers inland (Jewett et al. 1953), but by far the largest numbers breed in marine habitats near and around the San Juan Islands, along the outer coast, and in Grays Harbor.

Double-crested Cormorants nest in a variety of habitats. Along the coast they nest on the exposed tops of offshore rocks, in Grays Harbor on low sand islands around the periphery of dune grass areas, and in some areas, though not in coastal Washington, occasionally in dead trees. Those nesting inland nest in trees or snags or on islands in

lakes. This species constructs nests of sticks, with inland-nesting birds also using matted vegetation gathered near the colony.

Double-crested Cormorants are sleek and strong swimmers that prey on shallow-water fish (Robertson 1974). After their fishing sessions, they are frequently seen perched on logs or rocks, extending their wings to dry. Cormorant feathers become completely saturated during underwater swimming and require periodic drying (Rijke 1968). Many Double-crested Cormorants which nest on coastal rocks and islands feed in nearby bays and rivers on the mainland. There are impressive flights of cormorants between colonies and roosts in the San Juans and the estuaries of the Skagit and other rivers in Washington (Wahl et al. 1981).



WASHINGTON COLONIES

Double-crested Cormorants nest at about 30 locations in Washington. The marine population of about 3,300 breeding birds is concentrated in three regions. About 900 nest in Grays Harbor on Goose Island. Approximately 1,100 nest along the northern outer coast at 14 locations. Another 1,100 nest in the northern inland waters at nine locations, though three colonies at the southern end of Rosario Strait--Colville Island and its adjacent "annex," Bird Rocks, and Williamson Rocks--account for almost all the nesting population. The estimate of total nesting population size is probably reasonably accurate, though shifts in colony locations can make errors possible.

HISTORICAL STATUS AND VULNERABILITY

Cormorants are well known for moving nesting colonies from one location to another, and this is also true in Washington's marine waters. There are some locations where Double-crested and Pelagic cormorants are present each year,

but others may have large numbers for a few years and none for another period of time. Cormorants also may shift colony sites in the middle of a nesting season. The reasons for this are unknown but could relate to human disturbance in some cases.

Numbers of nesting Double-crested Cormorants in Washington appear to be increasing. However, lack of consistent censusing over time and the shifts of cormorant colonies mean that caution is required in interpreting census numbers, even in the case of large, conspicuous birds like cormorants. Changes in availability of prey due to variations in oceanographic conditions from year to year have been suggested as explanations for very large variations in nesting numbers (Ainley 1976) in California and similar cycles undoubtedly occur in Washington.

While eggshell thinning due to pesticide contamination decreased reproductive success of cormorants in California (Gress et al. 1973), this threat has not been documented in Washington. Until recent decades, cormorants were

officially persecuted as suspected predators on commercial fishes and, while policies have long been changed to protection, a bomb set off in 1980 on Bird Rocks which killed a number of Double-crested Cormorants suggests that old attitudes die hard. Since the few colonies in inland marine waters are concentrated within a very few square kilometers and are easily accessible by small boat, this type of persecution, along with disturbance due to boating, fishing, and diving, poses a potentially real danger to the birds nesting there. Human disturbance of Double-crested Cormorant colonies can be very

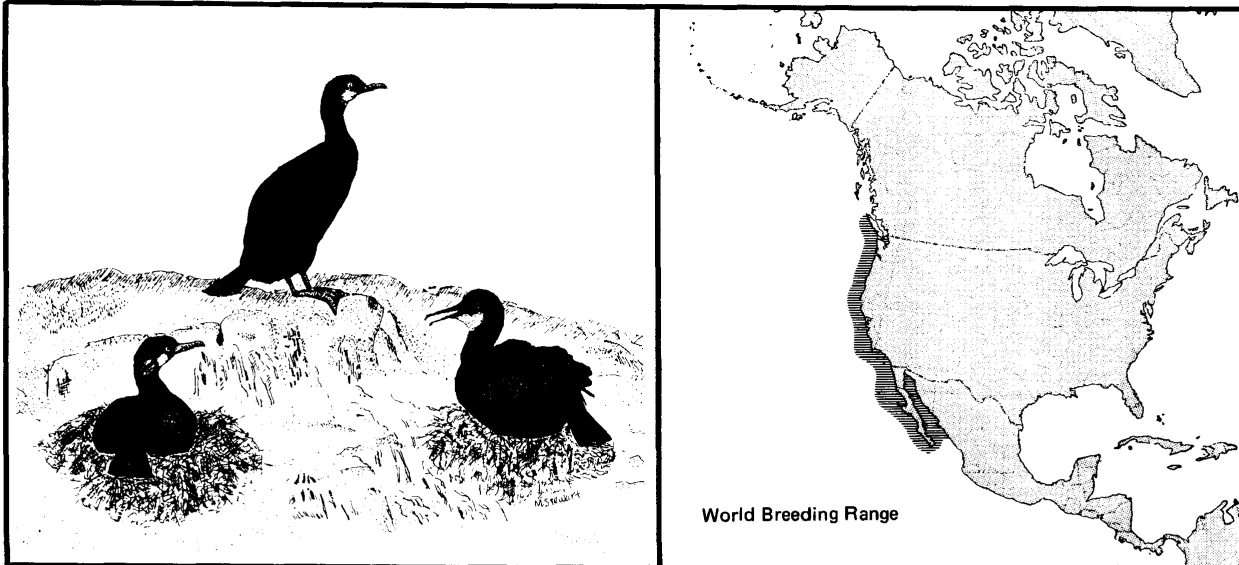
destructive (Ayers 1975). Cormorant eggs and chicks are vulnerable to gull predation when adults are frightened off their nests by human intrusion (Kury and Gochfeld 1975).

Little is known of the vulnerability of cormorants to oil, but few oiled birds have been found after spills in California (Smail et al. 1972). Cormorants are mobile, and it is likely they can avoid oil spills to some degree. Unlike many other seabirds, cormorants spend large amounts of time out of the water and would thus be less exposed to oil.

FIELD NOTES

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Brandt's Cormorant (*Phalacrocorax penicillatus*)

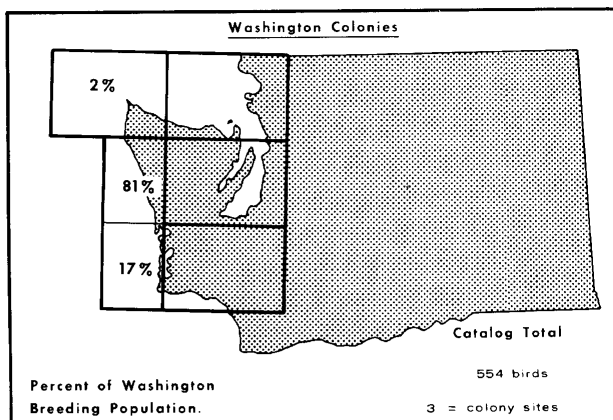


Brandt's Cormorants are among the most conspicuous seabirds in Washington waters during most of the year, but this species is one of the least numerous breeding birds in the State. Large numbers breed along the Pacific coast of Baja California, California, and Oregon. The northernmost sizeable colonies in the species' range are found on the western side of Vancouver Island, British Columbia (Hatler et al. 1978). There has been a small colony at Prince William Sound, Alaska, since 1972 (Kessell and Gibson 1978). Birds from these colonies apparently winter in the coastal waters and the deeper channels and passages of the protected waters of Washington. A few nonbreeders are found locally during the summer in the State, roosting and foraging in traditional cormorant habitats (Wahl et al. 1981).

Brandt's Cormorants usually nest on offshore islands or, less

frequently, on inaccessible mainland bluffs and wide cliff ledges near the water above the splash zone. During the breeding season, these cormorants present a striking appearance with their bright blue throat pouches and white feather plumes on the sides of their heads. At colonies, Brandt's Cormorants are opportunistic gatherers of nesting material (Hunt et al. 1979). They collect nearby herbaceous plants and pluck seaweeds from close tidal rocks. Once nests are constructed, continual additions are made, often with material stolen from neighboring nests (Palmer 1962).

Young Brandt's Cormorants are born without feathers but soon are covered with coal-black down. Nestlings feed by inserting their heads down the throats of their parents and removing partly digested fish remains.



BREEDING CHRONOLOGY		CLUTCH = 3-6									
		INCUBATION PERIOD = 28-32 days									
		NESTLING PERIOD = 40-42 days									
egg laying	? [] ?										
hatching	? [] ?										
fledging	? [] ?										
adults present	? [] ?										
JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC

Strong swimmers and divers, Brandt's Cormorants prey on various species of fish (Hubbs et al. 1970; Scott 1973; Baltz and Morejohn 1977). Clay (1911) reported Brandt's Cormorants caught in fishing nets at depths as great as 70 meters. These cormorants often feed in large flocks in deep waters with strong tidal currents and frequently feed with loons, gulls, murre, and other alcids (Wahl et al. 1981).

WASHINGTON COLONIES

While Brandt's Cormorants often form large colonies elsewhere, they nest in small numbers in Washington. There are only four sites recently used for nesting by this species in Washington, all on the outer coast. These include the cliffs at Cape Disappointment, Paahwoke-it, Willoughby Island, and Split Rock. The estimated total number of Brandt's Cormorants nesting in Washington is probably reasonably accurate.

HISTORICAL STATUS AND VULNERABILITY

This species apparently has never been numerous or widespread

as a breeding bird in Washington. Historically, there are reports of birds nesting at Paawoke-it and Grenville Arch and Sea Lion Rock in 1906/1907 (Dawson 1908) in small numbers.

Brandt's Cormorants are believed to have suffered reproductive failure from thin eggshells caused by accumulation of pesticide residues (Hunt et al. 1979), though whether the same situation may have occurred in Washington is unknown. Cormorants in North America have generally been affected by human disturbance, especially during the nesting season. Adults flush from their nests readily when approached by boats, low flying aircraft, or humans on foot. Once parents are away from the nests, gulls are able to prey upon eggs and chicks. Repeated disturbance can cause permanent colony desertion.

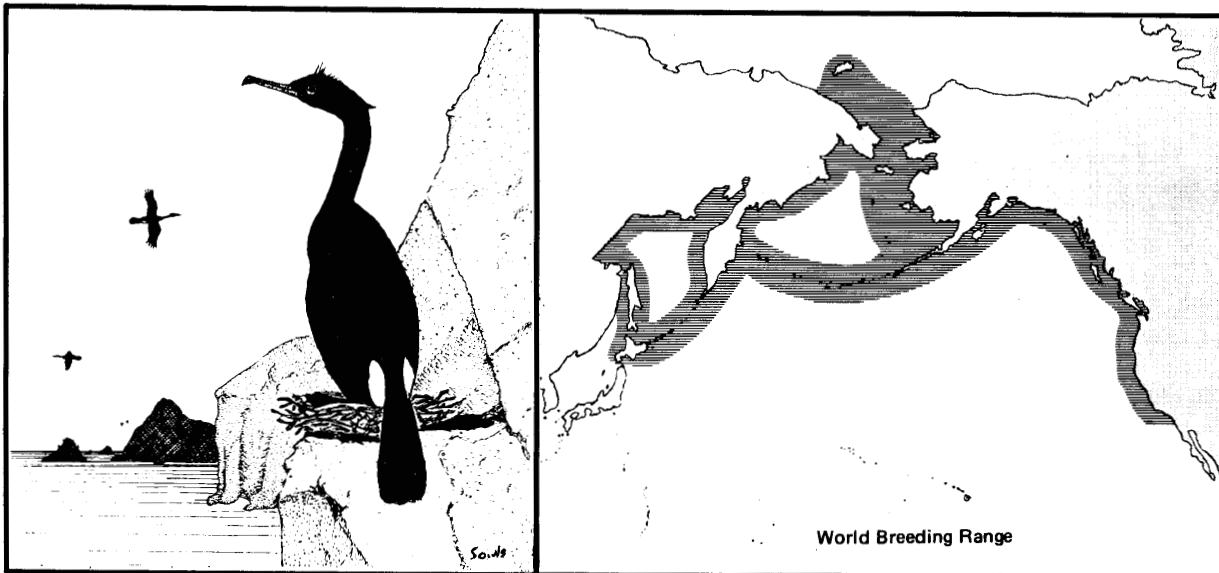
Observed cormorant deaths from oil spills are not frequent (Wahl et al. 1981), and it may be that cormorants, which spend proportionately more time out of the water than other diving birds, avoid oil spills more easily. However, the relatively low numbers of oiled cormorants found

on beaches could be due to a greater tendency of cormorants to sink because they lack the waterproof plumage of other seabirds.

FIELD NOTES

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Pelagic Cormorant (*Phalacrocorax pelagicus*)



Pelagic Cormorants are the most widespread nesting cormorants in Washington and, while they are seldom seen in large flocks like Brandt's Cormorants or Double-crested Cormorants, they are commonly seen foraging in many areas along the outer coast and inland marine waters of Washington. These small cormorants can be seen at any season along rocky shorelines around kelp beds and tidal channels where they propel themselves underwater with their strong webbed feet in pursuit of fish and shrimp (Robertson 1974; Hatler et al. 1978). Clay (1911) reported that Pelagic Cormorants are capable of diving to depths of up to 140 meters.

Pelagic Cormorants nest in solitary pairs, scattered groups, and colonies of up to hundreds. While some sites appear to be traditional and are occupied each year, the locations of others may

shift from one year to the next (Benz and Garrett 1978; Nysewander and Barbour 1979). With nests anywhere from hundreds of feet above the ocean to just within the spray zone, Pelagic Cormorants raise their young in platform nests of seaweed built on small outcrops and ledges. These cliffside colonies stand out because of the summer whitewash they receive and can be seen for great distances. In Washington, Pelagic Cormorants also nest inside sea caves on narrow ledges, on vertical cliff faces, on top of dolphins (at Port Angeles), on abandoned piers, and on an off-shore navigation marker tower.

Pelagic Cormorants are often found nesting near other cormorants. In these locations, direct competition is apparently reduced by staggered nesting chronologies, by differences in nest site selection, behavior, and

gulls on such occasions, they may prey on young cormorants.

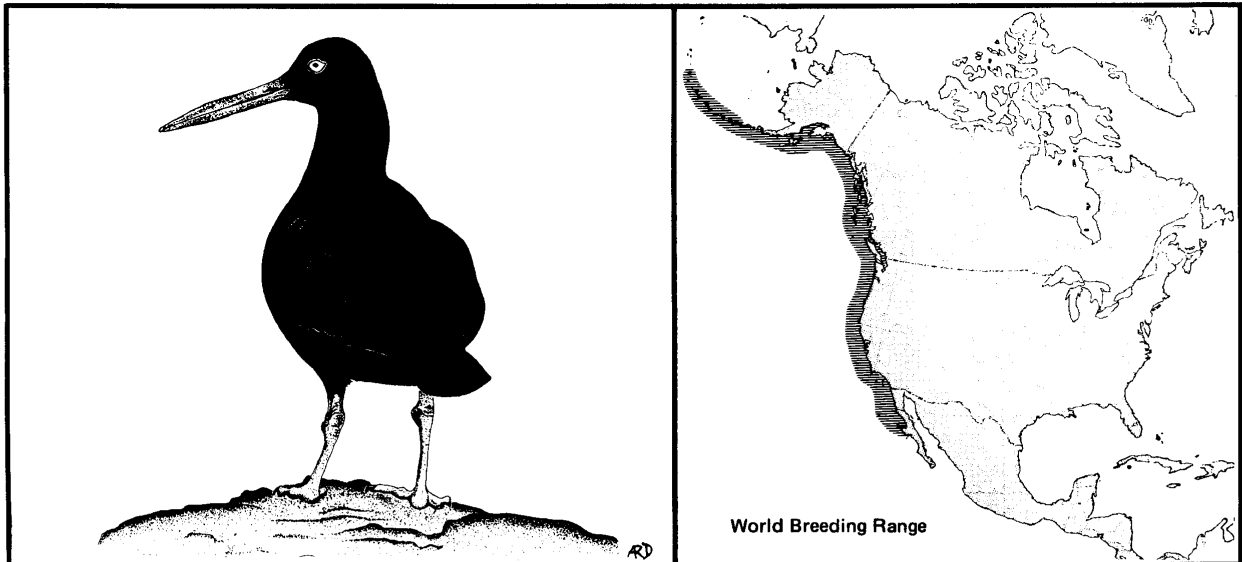
Pelagic Cormorants, like other members of the order Pelecaniformes, may be vulnerable to pesticide pollution. The eggshell thinning, egg breakage, and subsequent nesting failure and population declines experienced by other species in California (Gress et al. 1973) have not been documented for this species (Hunt et al. 1979).

Oil spills have resulted in few known cormorant deaths to date in Washington (Richardson 1956). Because of their widespread distribution and ability to shift colony sites, Pelagic Cormorant populations may be relatively resistant to localized oil slicks. Their habit of spending nights and much of the day roosting out of the water may reduce vulnerability to oil pollution (Smail et al. 1972).

FIELD NOTES

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Black Oystercatcher (*Haematopus bachmani*)



Black Oystercatchers are distinctive shorebirds inhabiting the rocky shorelines of the coast from Baja California to the western Aleutian Islands. Adults establish breeding territories on offshore rocks and islands and occasionally on mainland rocky beaches. An oystercatcher nest, composed of a scrape lined with pebbles and shell fragments, is difficult to find. One to three cryptically-colored eggs are placed directly on the pebbles.

The young oystercatchers are precocial and may leave the nest within hours of hatching. Although they remain near the nest the first few days, chicks later follow adults to intertidal foraging areas. The food consists of mussels (Hunt et al. 1979), limpets, and chitons; chicks may be fed crabs (Hartwick 1976; Helbing 1977).

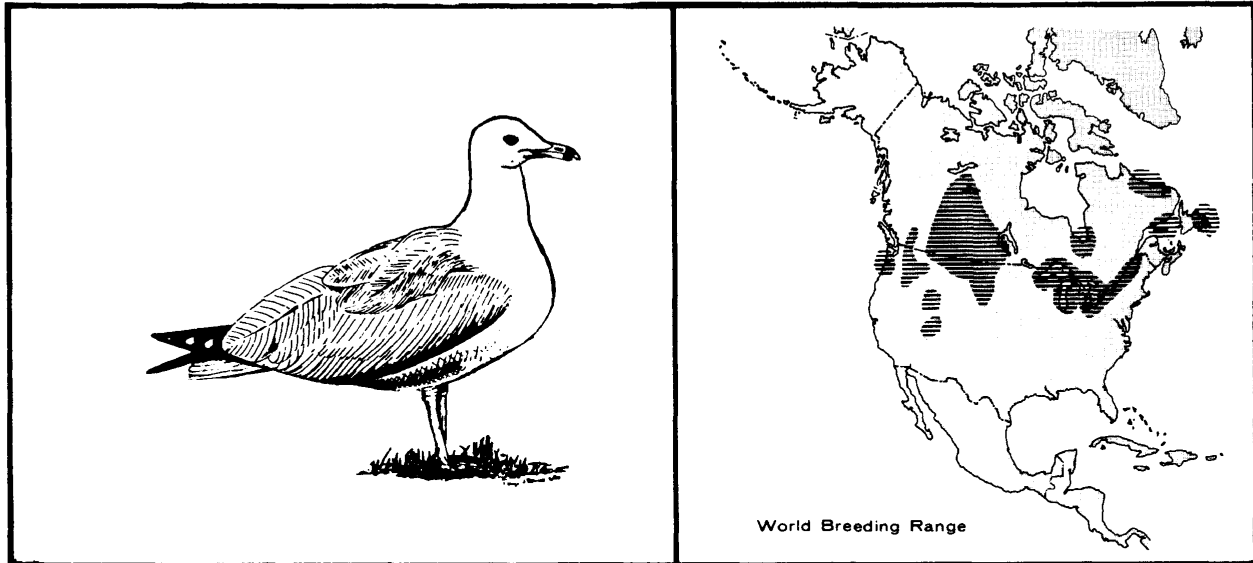
Mortality among eggs and chicks is apparently high. Hartwick (1974) lists gull predation as an important cause of mortality. In addition, chicks and eggs are frequently "washed overboard" from nests by storm waves.

During the winter, oystercatchers are gregarious (Wahl et al. 1981), and flocks may be found roosting in some localities. In the San Juan Islands, the entire population may gather into three or four such flocks (Wahl et al. 1981). With their strange, vermillion-colored bills, pale pink feet, and loud, distinctive calls, the crow-sized black oystercatchers are a characteristic species of exposed rocky shorelines in Washington.

WASHINGTON COLONIES

Black Oystercatchers are a non-colonial nesting species nesting

Ring-billed Gull (*Larus delawarensis*)

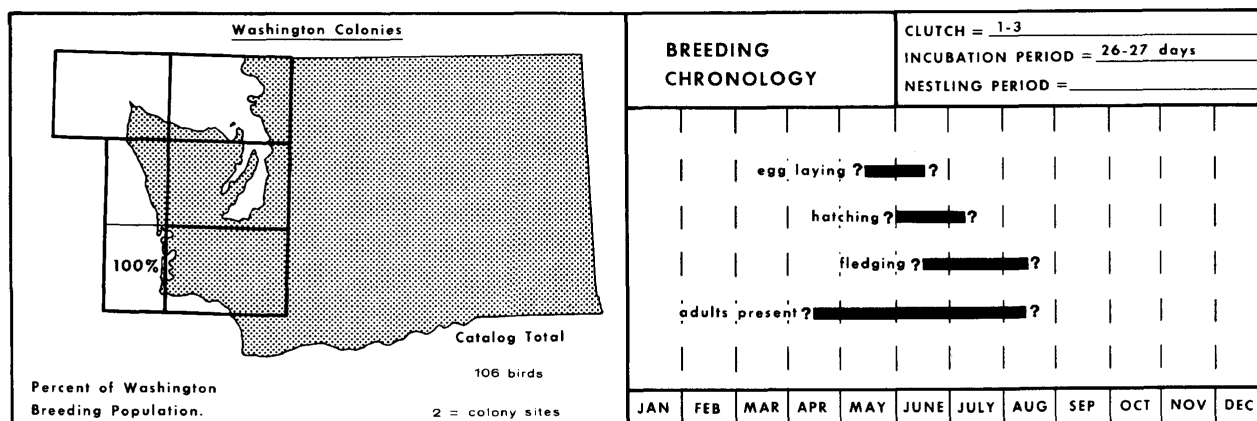


Ring-billed Gulls nest throughout much of inland North America, but they are a relatively recent addition to the list of seabirds nesting in marine habitats in Washington. They nested in the Columbia Basin areas in central Washington as early as 1930 (see Jewett et al. 1953) but have been recorded nesting in Willapa Bay only since 1976 (Penland and Jeffries 1977). This light-mantled, black wingtipped gull with yellow legs is a relatively common migrant in inland marine waters in Washington. Ring-billed Gulls nest colonially offshore on low-lying sandy islands that are relatively secure from land-based predators and disturbance. They have shown less adaptability in nest site selection than Glaucous-winged and Western Gulls and are much more restricted in breeding range in Washington.

Like other gulls, Ring-billed Gulls feed on almost anything, including fish and other aquatic organisms, and insects and grubs foraged in plowed fields, sewage, and garbage. They may land in trees to eat fruit. This species is more often seen in fields during the winter in western Washington than in marine habitats.

WASHINGTON COLONIES

Ring-billed Gulls on Gunpowder Island nest in a densely packed group in the middle of the Glaucous-winged Gull colony near Caspian Terns. Penland and Jeffries (1977) noted birds nesting in the tern colony itself on Ellen Sands. The existing colony is somewhat precarious as are all those on the exposed, low-lying sandy islands in Willapa Bay



and Grays Harbor, which may be altered or destroyed by winter storms. The estimate of numbers of breeding birds in western Washington is likely quite accurate at the time of the most recent survey. The species may also nest at Sand Island, though their recent status there is unknown.

HISTORICAL STATUS AND VULNERABILITY

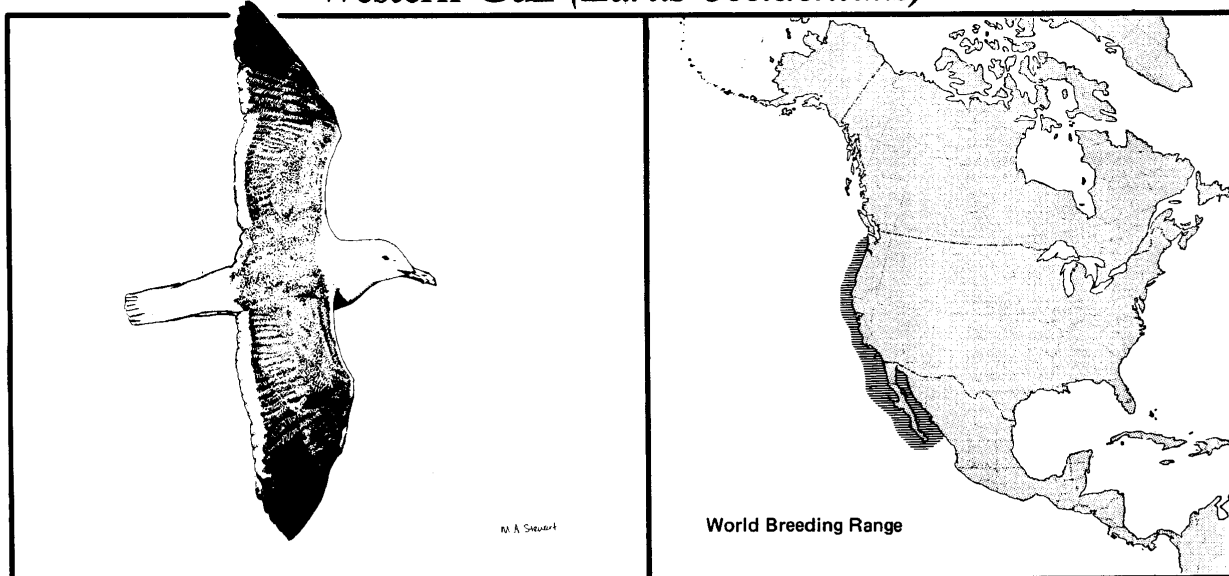
Like other species of "large" gulls, Ring-billed Gulls are gregarious, adaptable, and opportunistic. They have increased in numbers as garbage and sewage from human populations have increased, and have exploited new food supplies resulting from agricultural operations and the

prey populations of insects and other animals provided by massive irrigation projects in what were deserts prior to the 1930's.

Ring-billed Gulls are sensitive to disturbance on nesting sites, though these sites at present are generally secure in western Washington because of relative inaccessibility to humans. Like other species using the accreted sand and gravel spits, they can be severely impacted during nesting by storm waves flooding nests or even obliterating nesting islands.

While studies to date have not determined the extent of competition for nest sites with larger Glaucous-winged and Western Gulls, this may limit the population growth of this species in western Washington.

Western Gull (*Larus occidentalis*)



Western Gulls reach the northern edge of their breeding range on the outer coast of Washington at about Destruction Island. However, Glaucous-winged Gulls are sympatric with Western Gulls, and hybrids of the two are found well to the north and into the inland marine waters of the State (see Hoffman et al. 1978).

Western Gulls nest in a variety of habitats, but in Washington the most frequently used nest sites are on offshore rocks and islands, and on several accreted, low, sandy islands in Grays Harbor and Willapa Bay. Birds nesting on the mainland select areas, such as steep slopes and cliff faces, inaccessible to predators. The nests are substantial and usually made from vegetation collected nearby. The normal clutch is three eggs.

Like most of the large gulls, Western Gulls feed on a variety of

prey, including fish, euphausiids and other plankton, and fishing discards and offal. They are opportunistic feeders, of course, and forage readily at garbage dumps and fish-processing plants.

WASHINGTON COLONIES

Western Gulls are concentrated at colonies along the southern Washington coast. However, we have not separated Western Gulls from Glaucous-winged Gulls in population estimates, and thus numbers given for the latter species include a large proportion of Western Gulls, at least in the colonies from Destruction Island south to the Columbia River. This is due to the fact that, though Dawson (1908b) recognized that different forms were present, few observers since then have differentiated between the two, perhaps because the extent of hybridization (see Hoffman et al.

1978) makes identification of many individuals difficult. Observer variability and differences in what are considered "pure" forms and "hybrid" forms further add to the confusion of field determinations. This subject is discussed at length by Hoffman et al. (1978), and K. Richter (pers. comm.) gives additional ideas of proportions of the two species or forms at the colony at East Sand Island. The population of large gulls nesting from Destruction Island south, about 12,000 birds, might include about 6,000 to 8,000 Western Gulls.

HISTORICAL STATUS AND VULNERABILITY

Western Gulls and Glaucous-winged Gulls are probably the least likely of Washington seabirds to suffer population declines as a result of human activities. Their populations have grown substantially over recorded history (Thoreson and Galusha 1971); and while changes in human garbage and sewage disposal methods may limit these food sources, gull populations remain at a high level and may still be increasing. Increases in numbers of large gulls may cause safety problems around airports, and gull predation and competition may reduce populations of other seabirds.

Increases in the size of several populations of large gulls have been attributed to the availability of human food wastes and sewage (Vermeer 1963; Kadlec and Drury 1968; Drury 1979). Both Herring Gulls (Larus argentatus) and Great Black-backed Gulls (Larus marinus) in eastern North America have increased in number

and caused substantial damage to tern and Atlantic Puffin (Fratercula arctica) colonies by usurping optimal nesting habitat, stealing food, and eating eggs and chicks (Nettleship 1972; Nisbet 1973).

Populations of Western Gulls in Washington appear to have increased during the past 100 years, but there are no data to support this from the early explorations on.

The effects of gull populations on other seabirds are difficult to assess. Western Gulls are the most important predators on storm-petrels and Cassin's Auklets on the Farallon Islands in California (Manuwal 1974b; Ainley et al. 1974), and the situation in Washington is likely similar. Large gulls kleptoparasitize cormorants, Rhinoceros Auklets, and probably Tufted Puffins. Rates of incidence are unknown, but are probably higher and effects on other seabird populations more severe at present than in the past when gulls were less abundant.

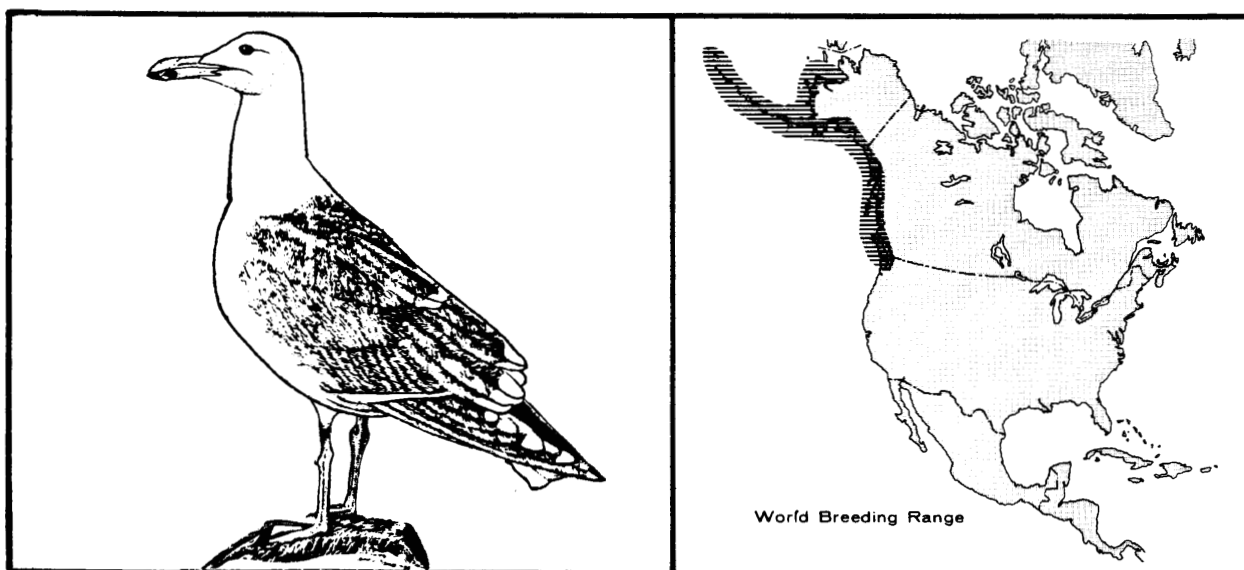
Large gulls are probably less vulnerable to oil spills than other seabird species nesting in Washington. They are highly mobile and frequently return to land to rest and roost. They are susceptible, like other surface-nesting birds, to disturbances while nesting. Disturbance in a particularly dense colony may result in intraspecific pirating of eggs and cannibalism. Chicks frightened from their territories may be killed by neighboring gulls or become lost and starve. However, with many nesting sites either in refuge status or inaccessible, populations of the large gulls nesting in Washington will probably continue at high

levels. Because of their ability to feed on a wide variety
relatively high reproductive of prey, the large gulls would
potential, an excess of likely make a rapid recovery from
nonbreeding adults, and their any decline.

FIELD NOTES

The authors would appreciate copies of your field notes for updates

Glaucous-winged Gull (*Larus glaucescens*)

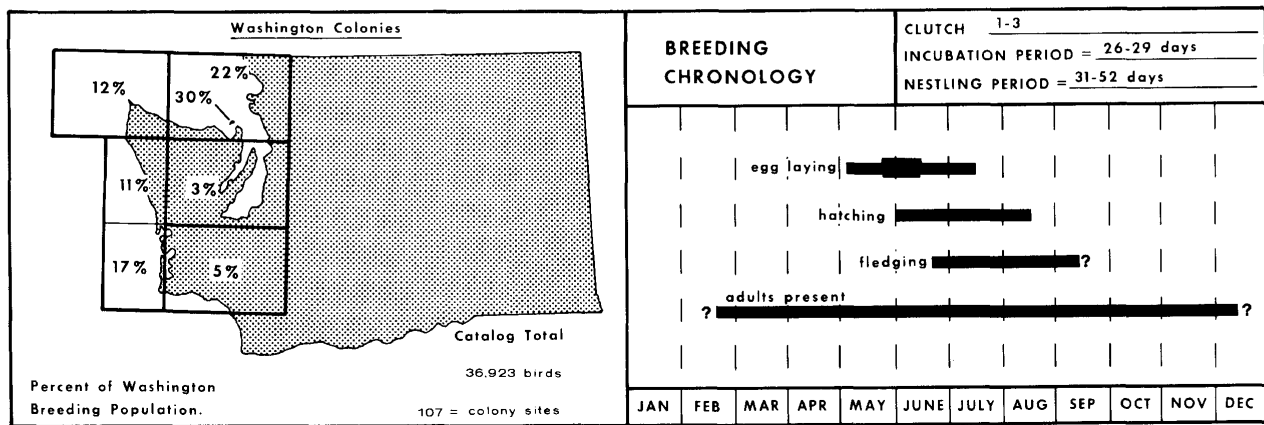


The Glaucous-winged Gulls nest around the perimeter of the North Pacific Ocean, from the area of Destruction Island off Washington to northern Japan. They are the most abundant and widespread gull nesting in Washington and the one most familiar to most people. Glaucous-winged Gulls and Western Gulls hybridize, and the varied plumage characteristic of many large gulls hatched in Washington display this to the confusion of many observers.

Like Western Gulls, Glaucous-winged Gulls nest in many different habitats and situations, from rocky islands off the coast to accreted gravel spits, roofs of downtown buildings in Seattle, abandoned piers, inaccessible dolphins at ferry docks, and log piles at sorting yards. Some of the largest seabird colonies in Washington are those of the Glaucous-winged Gull. The

combined colonies of this species and the Western Gull total up to more sites than any species except the Pigeon Guillemot.

Glaucous-winged Gulls are omnivorous in their feeding habits and range from open-ocean diets of fish and other natural foods to fishing vessel discards, anchovies, and intertidal organisms like starfish, crabs, and clams. They have become accustomed to foraging at garbage dumps, sewage ponds, and outfalls and to following plows for grubs and other organisms. Glaucous-winged Gulls commonly feed on earthworms that come to the surface in farm fields and athletic fields saturated by winter precipitation. They have become closely associated with humans in many situations and boldly approach picnic tables, fishing piers, and bird feeders in many places in western Washington.



WASHINGTON COLONIES

Glaucous-winged Gulls breed at virtually any suitable location along the shoreline of the State. They are essentially absent as nesting birds along the exposed sand beaches from North Head, near the Columbia River, to Point Grenville where the coastline becomes suitable. They do not nest along the Strait of Juan de Fuca between Seal and Sail Rocks and Dungeness. And, while there are colonies on piers and other waterfront situations in Seattle, Tacoma, Olympia, and Shelton, there are very few nesting in Puget Sound in "natural" situations south of Colvos Rock at the entrance to Hood Canal. The largest colonies in the State, a number of which include Western Gulls and intergrades between the two species, are at Protection, Gunpowder, Tatoosh, East Sand, Colville, Smith and Minor, Carroll, and Destruction Islands.

HISTORICAL STATUS AND VULNERABILITY

Glaucous-winged Gulls steal food from other seabirds, particularly

birds nesting nearby. They also prey on young birds of many species, including alcids and Black Oystercatchers. Consequently, they have probably suppressed populations of other species as Western Gulls have in California (Sowls et al. 1980) and large gulls have in eastern North America (Nettleship 1972; Nisbet 1973).

Like the closely related Western Gull, this species has increased in numbers in recorded time, taking advantage of increased food availability in the form of garbage, waste and discards from fisheries activity and sewage, and also through protection from shooting, feather collecting, eggging, automation of lighthouses, and establishment of refuges for maintenance of nesting areas. While population data are limited, increases in nesting populations at several inland Washington colonies are documented (Thoreson and Galusha 1971), and qualitative observations by many observers indicate the trend has been area-wide.

Glaucous-winged Gulls appear to be less vulnerable to effects of

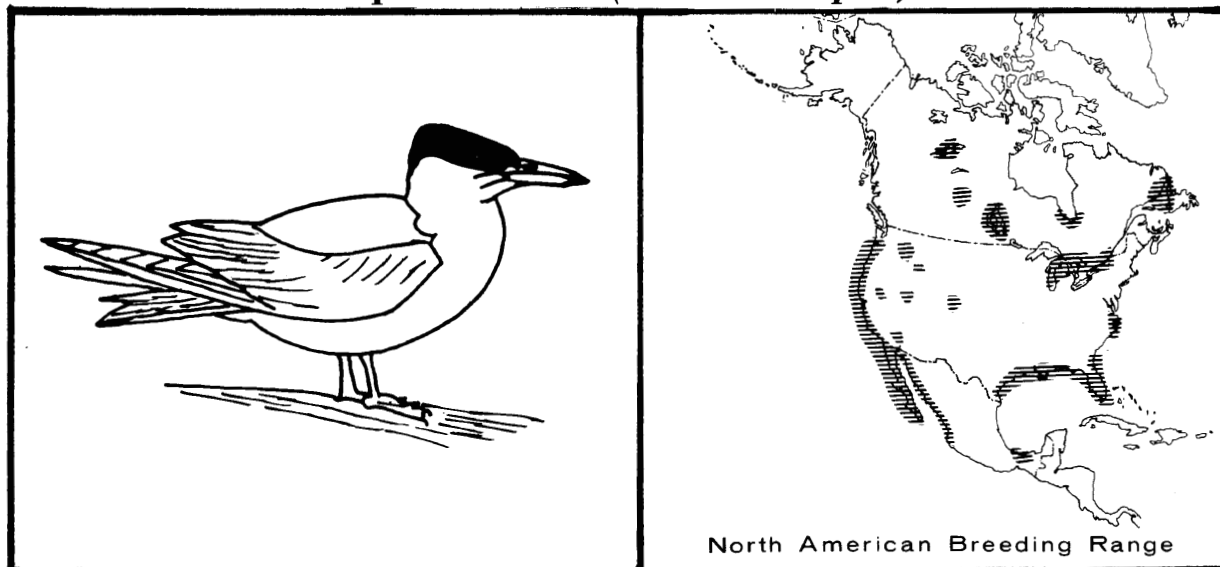
oil spills than other, more specialized marine birds, which spend more of their lives in the water, which dive for prey, and are less adaptable to changing conditions. However, the species, like all surface-nesting birds, is vulnerable to disturbance while nesting; and high mortality may result from entry of humans and dogs into colonies during times when there are chicks in the nests. Disturbance at this time

can easily result in chilling of eggs or chicks, chicks leaving home territories and being killed by neighboring gulls, and eggs being stolen by crows. For the most part, however, since large gulls are adaptable, opportunistic, and aggressive, populations of large gulls in Washington appear likely to be maintained at current levels, at least for the foreseeable future.

FIELD NOTES

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Caspian Tern (*Sterna caspia*)



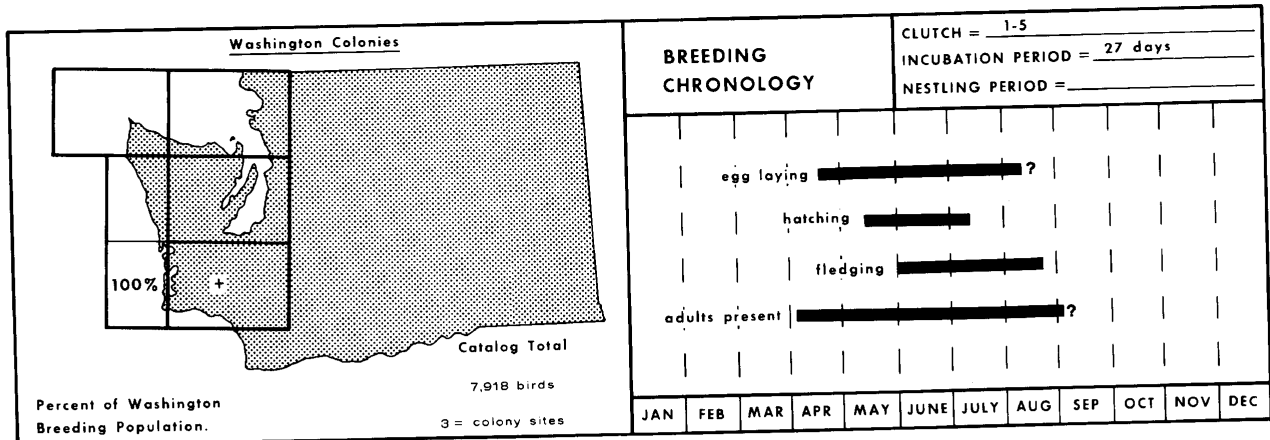
Caspian Terns are one of the largest and most widespread species of terns in the world. They are found in both the temperate Northern and Southern hemispheres. On the west coast of North America they nest as far north as Grays Harbor in Washington and inland as far north as Great Slave Lake in Canada. The nesting population in Washington is now by far the largest on the west coast north of Mexico, with only a few hundred birds recorded breeding in California (Sowls et al. 1980).

The species was recorded nesting in central Washington near Moses Lake in 1930 (see Jewett et al. 1953). About 1957 it was found nesting in Grays Harbor (Alcorn 1958) and has become established as one of the most abundant nesting marine birds in Willapa Bay and Grays Harbor since then. The spread of this species has been remarkable, both as a nesting

bird and as nonbreeders and post-breeding dispersants. Godfrey (1966), for example, felt it unusual in British Columbia; in recent years, however, adult-plumaged birds are numerous in spring and early summer in many locations in western Washington and British Columbia.

Caspian Terns nest on low sand or gravel islands accreted by wave action and usually with a minimum of vegetative cover. Two to four eggs are laid in a small depression in the sand lined with bits of vegetation. Like other terns and gulls, this species is a colonial nester, and it nests near gulls in many situations.

This large tern apparently feeds almost exclusively on fish, which it catches by plunging from several meters above the surface, frequently submerging in order to secure the prey. Smith and Mudd (1978) found Caspian Terns had



delivered small perch, chum salmon, staghorn sculpin, and other fishes to nestlings in Grays Harbor in May and June. The birds probably also feed on species like anchovies which are extremely abundant at other seasons in the area.

WASHINGTON COLONIES

Since the discovery of nesting Caspian Terns in Washington, the species has shifted colony sites, likely due to changes in available nest site habitat. Goose Island, site of the first known colony, Sand and Whitcomb Islands in Grays Harbor, and Gunpowder Island in Willapa Bay have all been occupied, but the terns recently (1982) nested only on Sand and Gunpowder Islands. It is possible the species nested earlier in western Washington as it has been recorded for many years (Jewett et al. 1953) during the summer in marine habitats.

HISTORICAL STATUS AND VULNERABILITY

The Caspian Tern is present in relatively large numbers in

western Washington during the nesting season. Its harsh cries and the begging call of chicks following adults are now among the most conspicuous seabird sounds in Grays Harbor and Willapa Bay during the summer and into September. However, while Caspian Terns have increased at rates probably greater than Glaucous-winged or Western Gulls in recent years, they are much more precarious in their existence as nesting birds in Washington. This is due to their being much more vulnerable to disturbance on the nesting colonies, to habitat loss, and to disruption of food webs. Most colony sites are protected, but entry by boaters, fishermen, sightseers, and researchers unfamiliar with biology and behavior of terns are potential threats. The islands used for nesting are vulnerable to ravages of winter storm waves which have created, moved, and eliminated the sites over time. Caspian Tern colonies, even during their relatively brief history in Washington, have relocated several times, sometimes inexplicably. The first known colony on Goose Island peaked in numbers in 1970, and no birds were found there after 1976. Whitcomb Island

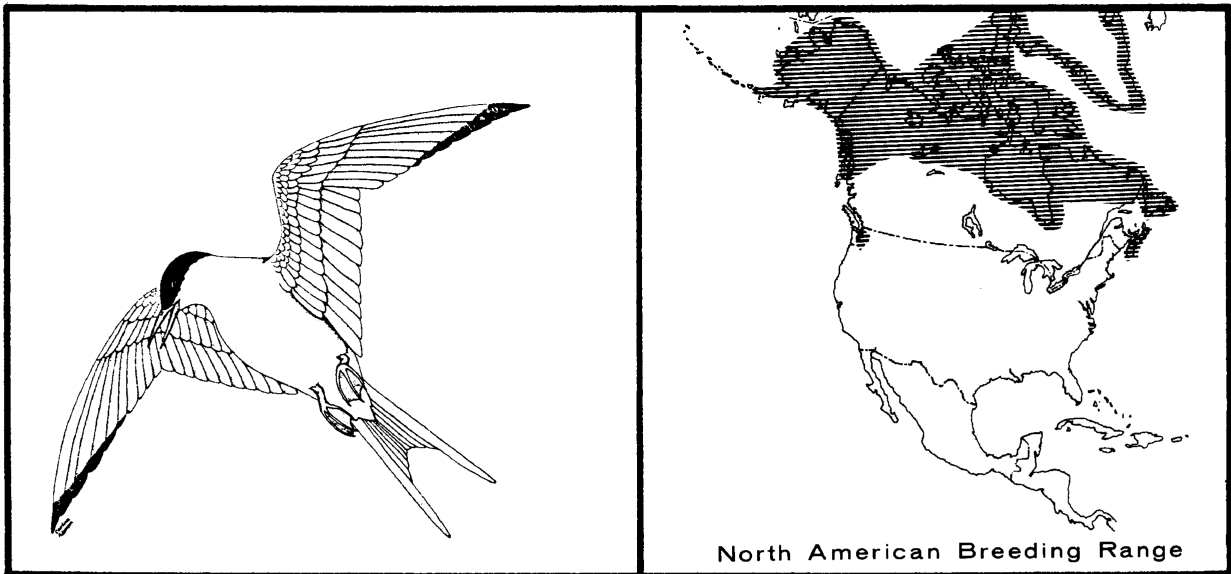
presumably received the Goose Island population starting in 1974, with numbers building to 2,000 by 1976, but by 1981 the terns were gone from there. Sand Island was chosen in 1976, with large numbers present in 1982, when 3,000 birds were also

found on Gunpowder Island in Willapa Bay. While food resources appear to be adequate and stable for this species, disruption or contamination of these could have profound effects on the status and abundance of nesting populations using Washington's marine waters.

FIELD NOTES

The authors would appreciate copies of your field notes for updates

Arctic Tern (*Sterna paradisaea*)



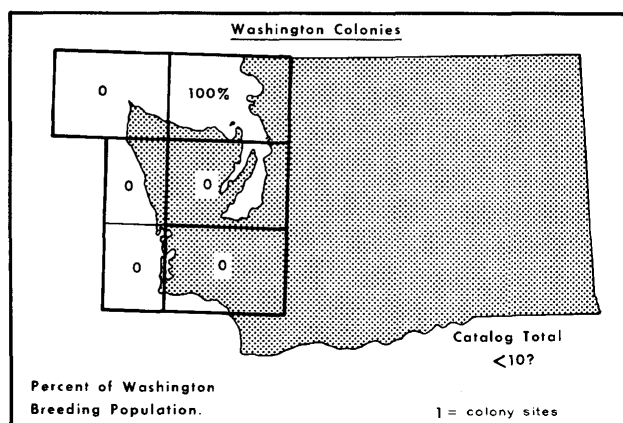
Arctic Terns generally nest in western North America in Alaska and northern Canada and migrate at sea to winter in the Southern Hemisphere. They appear on the list of birds nesting in Washington's marine habitats due to an extremely unusual nesting occurrence in 1977 and 1978 (Manuwal et al. 1979a). It appears that the species does not nest in the State at the present time.

Arctic Terns are small terns, generally gregarious in nesting habits and in foraging behavior and migration. They nest in open areas on tundra, sand and gravel shorelines, or islands, laying two eggs in a scrape. They are aggressive in nest defense and attempt to drive off suspected predators with harsh calls and diving attacks, sometimes striking vigorously.

Like other similar small terns, this species seeks its prey of small fish and planktonic organisms by searching above the sea surface, hovering and plunging to strike below the surface, and emerging quickly to take flight again. Unlike gulls, terns (even pelagic species like this one) seldom are seen resting on the water. During their migration at sea, Arctic Terns may be seen resting on floating logs and debris.

WASHINGTON COLONIES

A small group of Arctic Terns nesting at the gull colony on Jetty Island, a dredge-spoil island off Everett harbor, in 1977-1978 represented the southern-most known colony of this species in western North America (Manuwal et al. 1979a).



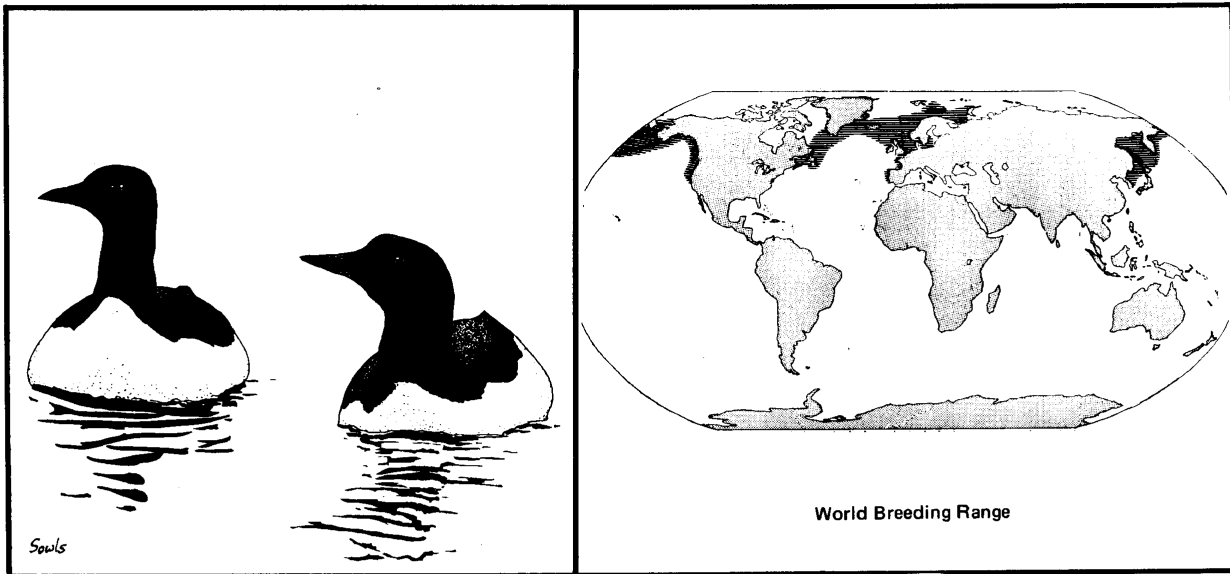
HISTORICAL STATUS AND VULNERABILITY

Checks of the Jetty Island colony site subsequent to 1978 (Richter, pers. comm.) have failed to find Arctic Terns there, and it is doubtful the species is

nesting in Washington presently. Whether or not Arctic Terns reoccupy this site may depend on its preservation in suitable form.

Terns are extremely vulnerable to disturbance on nest sites, and wholesale flights and colony abandonment are recorded, resulting from what might be minimal disturbance to other species like gulls. It is unknown whether disturbance from recreation caused abandonment of the one Washington colony or whether this small outlier colony, far outside the species' normal range, was simply abandoned. Because terns feed principally on small fish and other marine organisms and apparently do not shift to other foods, they are much more vulnerable to perturbations in food supply or to contamination of food webs.

Common Murre (*Uria aalge*)



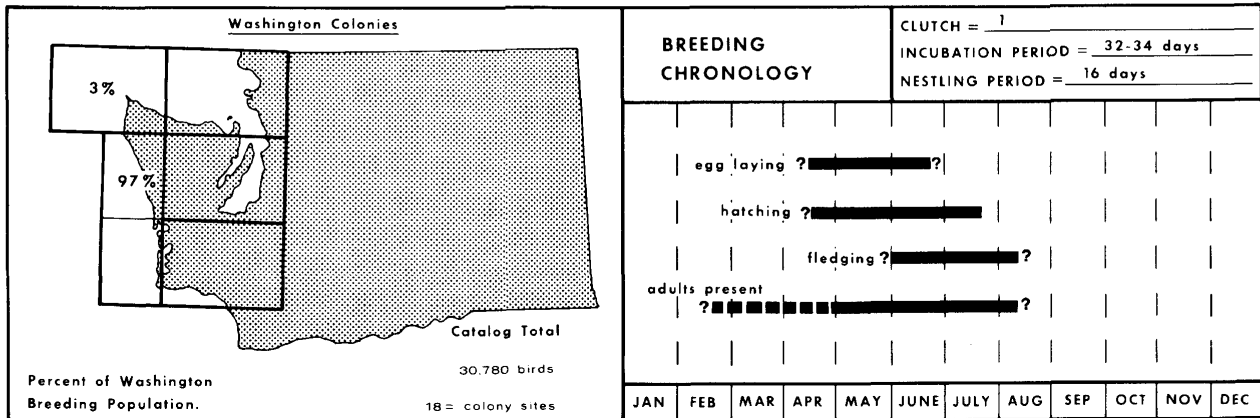
Common Murres are among the most highly colonial of seabirds. Their colonies, usually on rocky offshore islands, are often densely packed with noisy birds, nesting just out of the pecking range of neighbors. Common Murres occur in both the North Pacific and North Atlantic Oceans and are among the most numerous seabirds in the northern hemisphere.

Common Murres prefer to nest on wide, flat cliff ledges and the tops of islands, but they also nest on narrow ledges of vertical cliffs. A large, single egg is laid on bare rock or soil. It is narrowly pointed on one end and broad and rounded on the other. Murre eggs vary greatly in color, ranging from white to buff, brown, reddish, blue, or green. They are almost always marked with dark dots, blotches, or intricate scribbling (Harrison 1978). The unique pattern of each egg

probably aids individual recognition by adults (Johnson 1941).

Murre chicks are fed by both parents and jump from the colonies to the waters below when only partly grown (Tschanz 1968). They are accompanied at sea by only one parent, usually the male (Varoujean in Sowls et al. 1980), swimming from the nesting area to wintering grounds. Observations suggest this may be from colonies along the Oregon coast to Puget Sound in Washington.

Common Murres are strong fliers and are capable of foraging long distances from their colonies. They dive to considerable depths and include fish, crustaceans, and cephalopods in their diet (Ogi and Tsujita 1973, 1977). Common Murres may be seen along the outer coast of Washington during all months of the year. Larger numbers are present from fall



through winter when numbers also are present in the deeper habitats of the inland marine waters.

WASHINGTON COLONIES

Common Murres nest at 18 locations along Washington's outer coast from Erin's Bride north to Tatoosh Island at the entrance to the Strait of Juan de Fuca. The largest numbers are found at Willoughby Rock (5,300), Split Rock (10,400), Grenville Arch (5,000), and Rounded Island (2,200). While these larger colonies are probably used each year, murres also appear to shift nesting colony sites; assessments of populations require monitoring of all possible locations.

Colonies of murres are easy to find but are difficult to census. Variables such as time of year, time of day, and the unknown breeding status of many individuals complicate the task. The estimates of murre numbers presented in this catalog represent the number actually counted and make no allowance for members of breeding pairs that may

be away from the colony. Ainley (1976) estimated that two-thirds of the total number of birds actually nesting may be away during some censuses. Thus our estimated totals may be somewhat low. We feel, however, that all sizeable nesting sites have been found. The Common Murre is much less numerous, perhaps as a function of availability of suitable nesting habitat, as a breeding bird in Washington than it is in California, Oregon, British Columbia, or Alaska.

HISTORICAL STATUS AND VULNERABILITY

Due to very infrequent surveys until recent years, trends in populations of nesting Common Murres in Washington are not known. Differences in census methods and incomplete coverage of the coastline by many observers make comparisons impossible. While in the case of Tatoosh Island there is less human presence due to automation of the light station, the murre population there is relatively small in comparison with the larger colonies elsewhere. The

amount of eggging carried out on murre colonies in the past is unknown, but this could have depressed populations in the State as it did elsewhere.

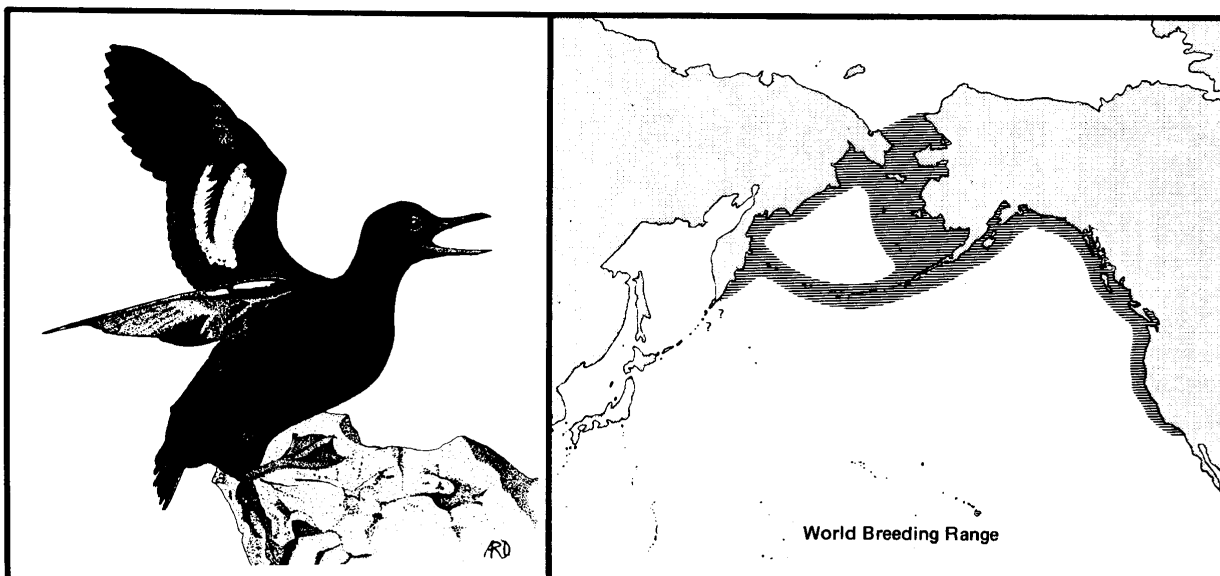
Nesting Common Murres are very sensitive to disturbance by boats, low-flying aircraft, and humans on foot. When disturbed, adults flush from the colonies and may knock eggs and chicks from nest sites. The remaining chicks and eggs are subject to increased predation from gulls, ravens, and crows. Common Murres are highly vulnerable to oil contamination and were some of the most frequently oiled birds in the 1971

San Francisco oil spill (Smail et al. 1972). They are common in outer coastal waters off Washington throughout the year and in inside waters in winter. Since they spend virtually all their nonbreeding lives in the water, forage by diving, and congregate both around colonies on the water and in flocks during the rest of the year, they are among the most vulnerable of marine birds to oil spills. Murres also have suffered heavy mortality in gill nets (see DeGange and Newby 1980). Net mortality to murres has been observed in Washington, but the magnitude and impact on local nesting populations is unknown.

FIELD NOTES

The authors would appreciate copies of your field notes for updates

Pigeon Guillemot (*Cepphus columba*)

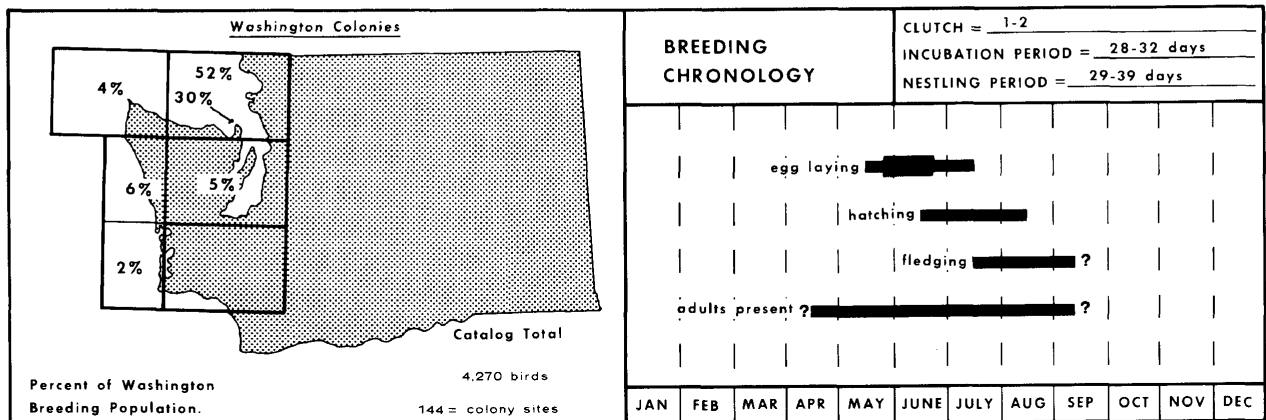


Pigeon Guillemots inhabit the relatively shallow nearshore zone and are usually found along stretches of rocky shoreline. They are most easily observed in the early morning, before the egg laying season, when both members of each pair frequent waters adjacent to their colonies.

This species usually nests in natural rock crevices, talus, and boulder beaches (Thoreson and Booth 1958; Drent 1965). In the inland marine waters of Washington, birds also frequently nest under drift logs on beaches that are relatively undisturbed and free from land predators. They also use burrows dug into loose conglomerate bluffs and artificial structures such as wharf timbers and drain pipes. On one island formerly used for practice bombing, they have nested in spent bomb casings.

The Pigeon Guillemot is one of the few alcids which regularly lays two eggs (Bent 1946; Thoreson and Booth 1958; Drent 1965). Eggs are laid on bare rock, soil, or sometimes on a bed of pebbles and shell fragments. Guillemots usually feed close to shore, and the proximity of the feeding grounds to the colonies may explain their ability to sometimes raise two chicks. Pigeon Guillemots, like all members of the family Alcidae, dive for food by using their wings for propulsion. Fish are the principal food of guillemots.

Following breeding, Pigeon Guillemots apparently move away from some areas where they are common during the summer. Winter distribution is presently uncertainly known, and determination of the seasonal range of this important breeding species is highly desirable.



WASHINGTON COLONIES

In Washington, Pigeon Guillemots are perhaps the most widespread nesting seabird. While they are absent from shallow estuaries and sandy beaches, they are opportunistic and take advantage of suitable nesting possibilities like crevices in the jetties at the Grays Harbor entrance. While there are sizeable breeding "colonies" or aggregations at well-known sites like Protection Island and Sucia Island, many guillemots nest in scattered locations and often in small numbers. Delimiting concentrations for much of Washington's coastline is difficult; while we have described this species' sub-surface nesting locations as precisely as possible, we have also given breeding-season population size and location by subregions (bays or stretches of coastline) without reference to precise nesting locations in order to show relative abundance and estimate total breeding populations (see Appendix C for estimates derived from two surveys conducted in inland waters).

The catalog total for this species in Washington is 4,270.

While given censuses or subregion totals may be high or low, we feel the overall total is conservative because of birds missed during censusing. Censusing Pigeon Guillemots is an inexact science at best and is complicated by many factors (see Methods). We have used the best recent estimates here, though we feel there may be about 33% more nesting in the inland waters, particularly in the San Juan's and adjacent areas, and perhaps 50%-75% more nesting along the outer coast than are listed here. There may be about 6,000 Pigeon Guillemots breeding in Washington.

HISTORICAL STATUS AND VULNERABILITY

While there are many records for many sites over many years describing Pigeon Guillemot breeding populations--the first nesting observations date to May 1792 (Menzies 1792)--it is difficult to determine actual population trends because of problems involved in field censusing, timing, geographic coverage, and access.

Compared to other seabirds such as murre and cormorants, Pigeon

Guillemot populations are not highly prone to disturbance, primarily because of their comparatively low nesting densities and inaccessible nest sites. However, individual pairs will readily desert their nests if disturbed during nesting or brooding.

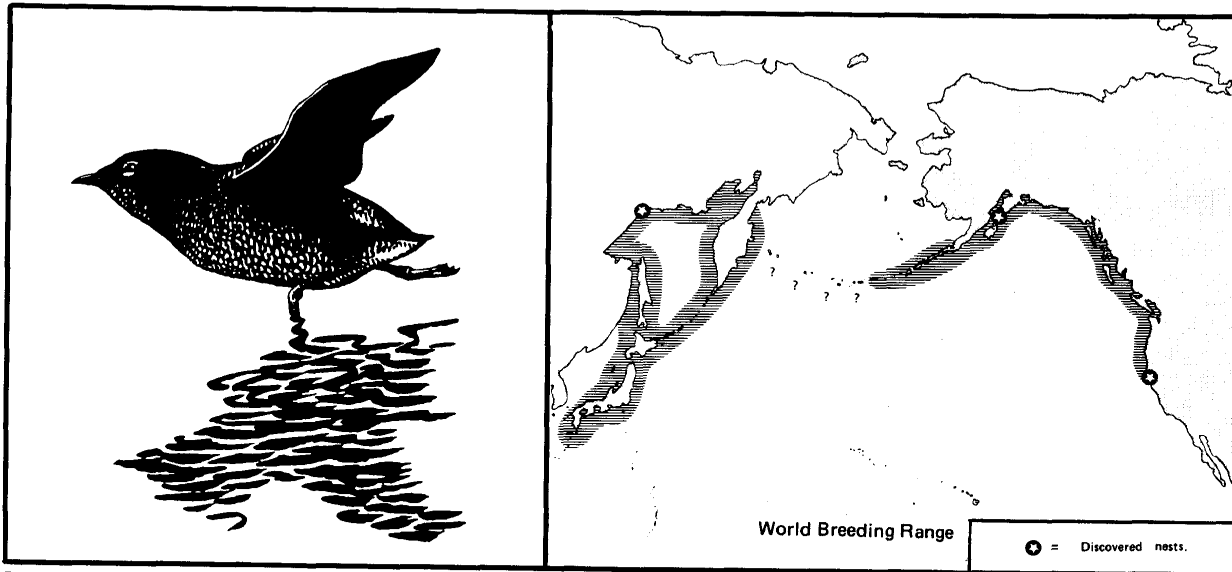
Like murre and other alcids, Pigeon Guillemots are very

vulnerable to oil pollution. Guillemots spend large amounts of time on the water, usually close to shorelines and in shallow waters where oil development, transfer, and processing take place. While local populations could be severely impacted, the wide distribution of the species would likely mean impacts would be less than in the case of some other species.

FIELD NOTES

The authors would appreciate copies of your field notes for updates

Marbled Murrelet (*Brachyramphus marmoratus*)



Drawing by Allan Brooks, compliments of *The Murrelet*, A Journal of Northwest Ornithology and Mammalogy.

NOTE

On January 15, 1988, the U.S. Fish and Wildlife Service received a petition from the National Audubon Society to add the Marbled Murrelet in California, Oregon, and Washington to the List of Endangered and Threatened Wildlife and Plants. A preliminary finding that the petitioned action may be warranted was published in the *Federal Register* on October 17, 1988. Further review is pending.

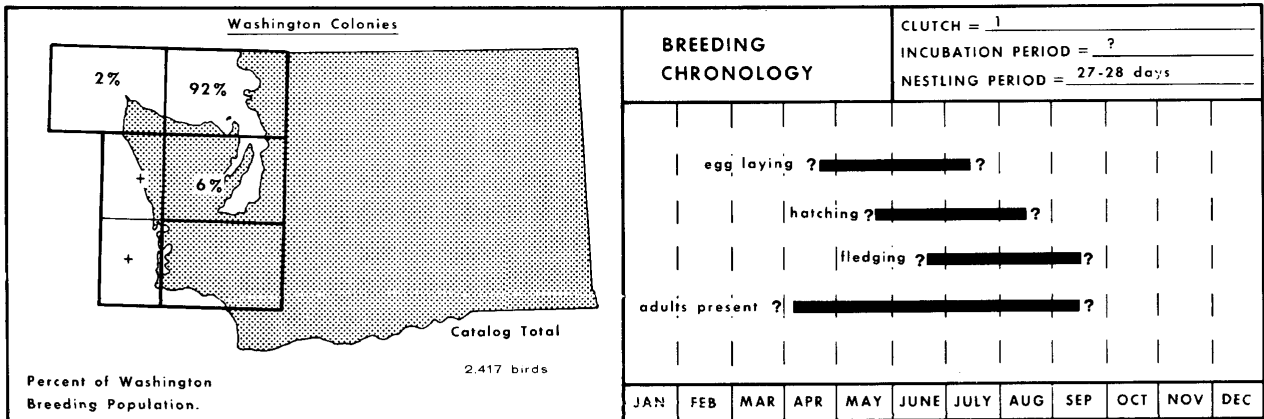
For additional information on this species, consult the following:

Marshall, D.B. 1988. Status of the Marbled Murrelet in North America: with special emphasis on populations in California, Oregon, and Washington. U.S. Fish and Wildlife Service Biological Report 88(30). 19 pp.

Copies of the publication may be obtained from the Publications Unit, U.S. Fish and Wildlife Service, Washington, DC 20240, or may be purchased from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161.

Marbled Murrelets are the least known, as to their breeding habits, of all the birds nesting in Washington. One of the earliest clues of their nesting habitat resulted from an egg found in Whatcom County, Washington (see Kiff 1981), but they remain for

all intents and purposes "mystery birds" in the State. Only four nests have been found throughout the species' wide range around the perimeter of the North Pacific. One was found in Siberia (Kuzyakin 1963), one in California (Binford et al. 1975; Singer and Verardo



1975), and two in the Barren Islands in Alaska (Simon 1980; Hirsch et al. 1981). Kiff (1981) recently reviewed the known eggs and nests of this species.

Of the four nests, both the Siberian and California nests were found in trees, but the Alaskan nests were found on the tundra of a treeless island. The Siberian nest was found in the upper branch of a larch (*Larix dehurica*) 6.8 meters above the ground (Kuzyakin 1963). The California nest was found 45 meters above the ground on a moss-covered limb of a douglas-fir (*Pseudotsuga menziesii*) in northern California (Binford et al. 1975). This nest contained a Marbled Murrelet chick sitting in a small depression encircled by droppings.

Binford et al. (1975) theorized that the pale green egg, the cinnamon brown breeding plumage of the adult, and the light brown nestling are cryptic adaptations for nesting in trees. The entire breeding population of this species in California is suspected to nest in trees; and while this is likely also for Washington, the

use of talus slopes or other ground sites cannot be ruled out.

Marbled Murrelets seen offshore are almost always in pairs and within about one kilometer of the shoreline. This is true all year, though they aggregate in foraging areas during the summer and in winter have been seen in large flocks, including one of over 5,000 birds passing Point Roberts, Washington (Wahl et al. 1981). Breeding birds return to their nests in the evening and depart at dawn (Sowls et al. 1980), and flights of calling birds over inland coastal forests in California are similar to reports in Washington (e.g., Dawson and Bowles 1909).

Marbled Murrelets, like all other alcids, spend a large percentage of the time on the water. They feed on fish and less frequently on crustaceans (Sealy 1975).

WASHINGTON POPULATION

Marbled Murrelets are present during the breeding season along almost all of Washington's marine

shoreline, but they are concentrated in certain areas. These concentrations likely are related to foraging opportunities, but the locations are also frequently near forested areas relatively undisturbed by humans. These include the Olympia Peninsula, particularly near Tongue Point and Voice of America, the south shore of Lopez Island, the southwestern shoreline of Lummi Island, and Obstruction/Peavine Passes between Orcas and Blakely Islands in the San Juan's. Marbled Murrelets also gather in loose but sizeable aggregations where fish runs appear to be heavy, as in Hale Pass, Whatcom County, during the season when Pacific herring (Clupea harengus) are spawning near Cherry Point.

Estimating numbers of Marbled Murrelets in Washington present at any season, including the breeding season, is difficult, considerably more so than in the case of the Pigeon Guillemot. We have treated it here similarly to that species and have estimated numbers by geographic subregion (see Appendix C). Numbers are likely underestimated as censusing was often done from fast-moving small boats or aircraft, and Marbled Murrelets in breeding plumage are inconspicuous under many conditions of observation. Data are almost completely lacking for areas along the outer coast of Washington, small concentrations along the northern section of the coast (Speich, pers. obs.), and numbers often are observed along the shoreline near Ocean Shores and in the Grays Harbor channel during the breeding season (Wahl, pers. obs.). The estimates presented here are intended to aid further

investigations into the biology of this species. These estimates are based on our systematic censuses only, and many reports from other sources are useful in specific investigations of this little-known species. While the catalog total estimate is 2,417 breeding birds, insufficient coverage and difficulties of censusing lead us to believe as many as 5,000 Marbled Murrelets may nest in Washington.

HISTORICAL STATUS AND VULNERABILITY

There is virtually no information on the historical status of Marbled Murrelet breeding populations in Washington, though birds in breeding condition were collected in Puget Sound in the 1850's.

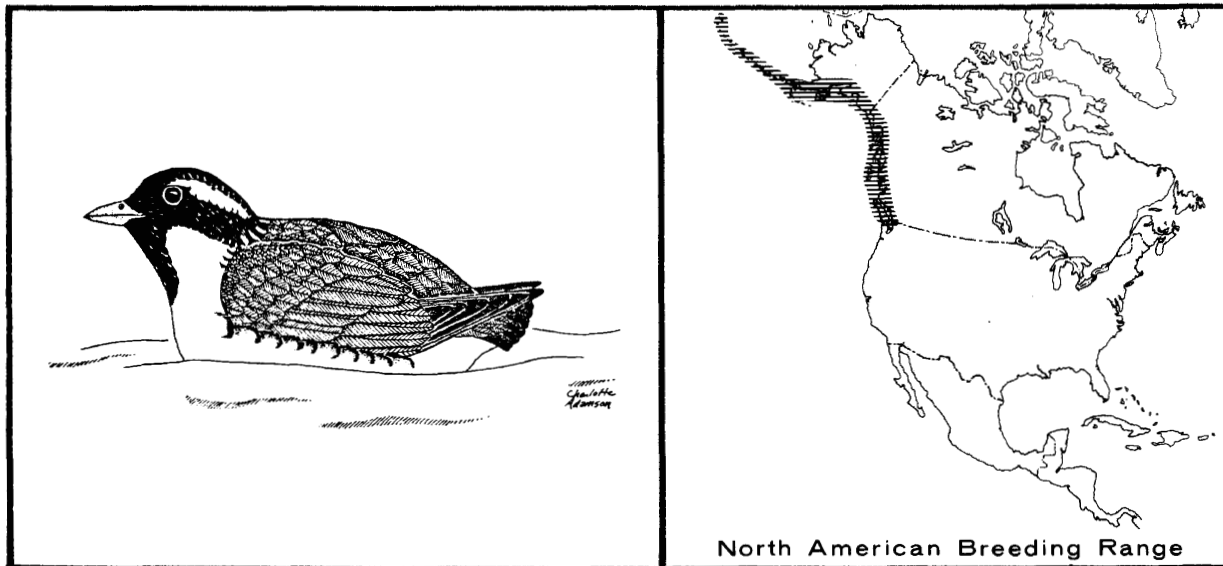
Disturbance to nesting birds probably has been and will continue to be primarily through the destruction of nesting habitat, particularly if, as strongly suspected, they nest in trees. Populations may have been reduced by the reduction of old-growth coastal forests. We suspect Marbled Murrelets may have formerly been more abundant than they are today.

Marbled Murrelets are vulnerable to oil contamination since they are often found very close inshore, feeding in tidal fronts and other places where their prey concentrates. This impact can be considered in perspective by referring to subregion estimates which indicate areas of concentration.

FIELD NOTES

The authors would appreciate copies of your field notes for updates

Ancient Murrelet (*Synthliboramphus antiquus*)



The Ancient Murrelets are an abundant and widespread species breeding north from the Queen Charlotte Islands, British Columbia around the northern North Pacific Ocean. They are numerous in offshore habitats in Washington during the winter, but they may be the rarest breeding seabird in the State, if indeed they nest here at all.

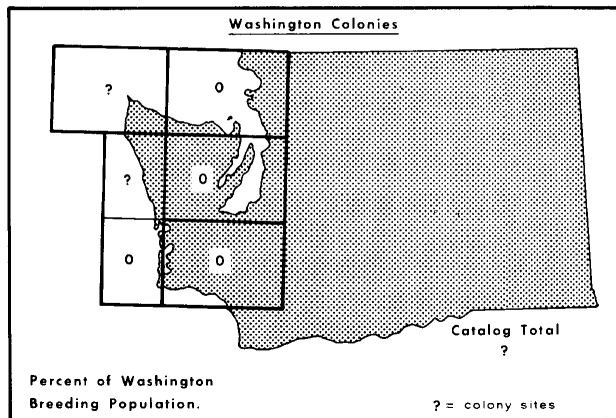
This cleanly marked species nests in colonies on coastal islands, in burrows or crevices, beneath stones, roots, or fallen logs on grassy or wooded slopes. Clutch size is usually two eggs, often elongate in shape and large for the size of the bird, variable in color from bluish-white through cream or buff, marked with different shades of brown and bluish-grays. Young birds leave the nest when very small, unlike many other alcids, perhaps when only one to two days old and

follow the calls from adults leading them to water at night.

Ancient Murrelets are more pelagic than Marbled Murrelets, being found farther at sea, and are more gregarious, with flocks of up to 30 birds not uncommon in winter in Washington. Birds often plunge directly from flight to pursue prey underwater in areas of tidal fronts and strong currents. Like other alcids, Ancient Murrelets feed on small fish and marine invertebrates.

WASHINGTON COLONIES

The breeding distribution of this species in Washington has apparently always been limited. It was breeding 9 May 1924 on Carroll Island (Hoffman 1924), and this represents the only certain record. In 1978, 12 adults were observed near LaPush,



that small numbers of Ancient Murrelets may nest in Washington.

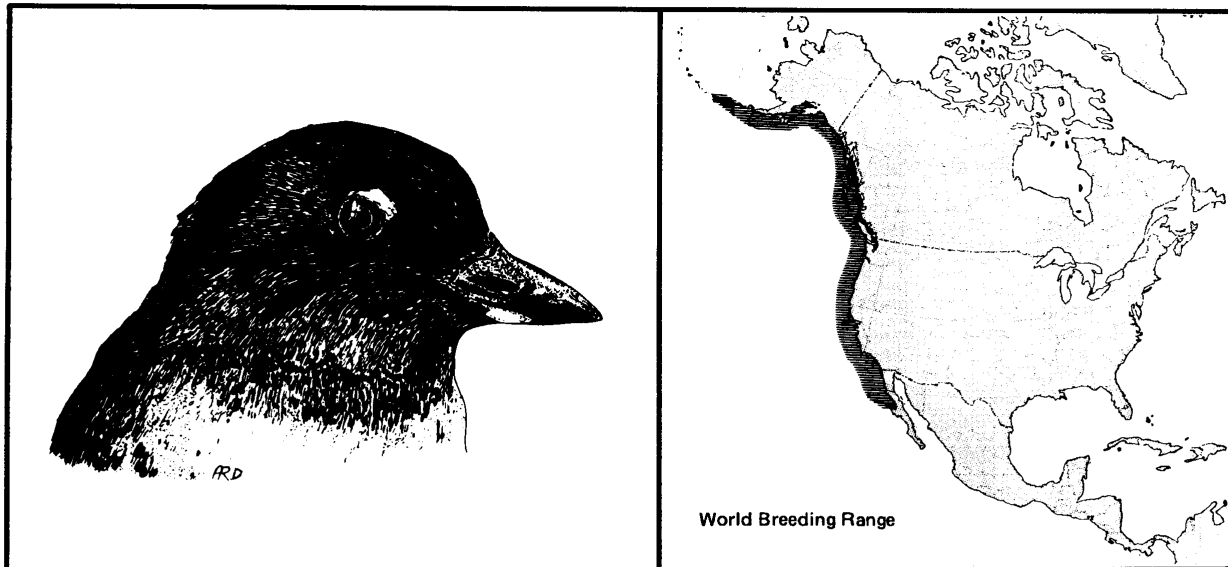
HISTORICAL STATUS AND VULNERABILITY

There is no certain breeding record for Ancient Murrelets in Washington since 1924. Sightings of birds during the breeding season are few enough that the breeding population would have to be very localized, small, and difficult to locate.

and a fledgling was seen near Alexander Island (Speich and Pitman, pers. obs.). There are sightings of birds off the Washington coast during the summer from at least the area of Grays Canyon (Wahl, pers. obs.) north, though these could be stragglers from colonies much farther north. However, the evidence suggests

Like many marine birds, Ancient Murrelets are vulnerable to loss of breeding habitat, contamination by oiling, and disruption of food webs. Oiling would seem to be a greater hazard during winter when the environmental stress is greater, but the population of Ancient Murrelets wintering in Washington undoubtedly consists of birds breeding elsewhere.

Cassin's Auklet (*Ptychoramphus aleuticus*)



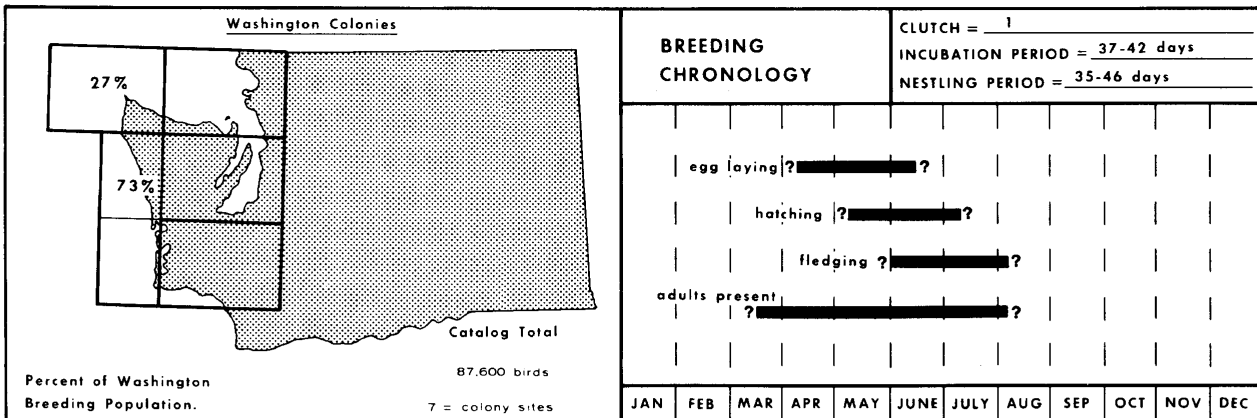
The Cassin's Auklet is one of the most widespread members of the family Alcidae in the North Pacific. Cassin's Auklets build their nests in burrows on offshore islands that have a sufficient mantle of soil. These tiny alcids are nocturnal at their breeding colonies and are likely to be among the most pelagic of alcids at that season when they are found well offshore at the outer edge of the continental shelf and the shelf edge (Wahl 1975).

Throughout their range, Cassin's Auklets usually nest in burrows but may also use rock crevices, debris piles, cracks under buildings, and large caves (Thoreson 1964). In Washington they are known to nest in burrows under trees and open salal and salmonberry shrub areas. Each female lays a single, creamy-white egg, but may lay a second egg if the first is destroyed (Manuwal

1974a). Adult Cassin's Auklets develop two incubation patches on the body, one beneath each wing (Manuwal 1974a). These incubation patches are found only among several species of alcids, including Xantus' Murrelets, Rhinoceros Auklets, and Tufted Puffins. Cassin's Auklets also develop a gular pouch used to store food for young that are fed by regurgitation at night (Speich and Manuwal 1974). Small fish and pelagic crustaceans form the mainstay of the diet of Cassin's Auklets (Manuwal 1974a; Hunt et al. 1979).

WASHINGTON COLONIES

Cassin's Auklets are the most numerous breeding seabirds in Washington, though they are seldom seen near shore because they visit colonies nocturnally and forage well offshore. The species nests



in just eight known locations, though some additional sites are likely. The largest colony is on Alexander Island where approximately 55,000 are estimated to nest. Jagged Island, Carroll Island, and the Bodeltehs have large colonies which make up most of the rest of the known population. We feel it is possible that as many as 20,000 additional birds could be nesting in Washington on other sites.

HISTORICAL STATUS AND VULNERABILITY

This species was recorded at several sites in 1906 and 1907 (Dawson 1908b), including Alexander and Carroll Islands and was apparently as common on those colonies as it is today. It is not known if Cassin's Auklets were nesting on Tatoosh Island in 1906-07, but it is now.

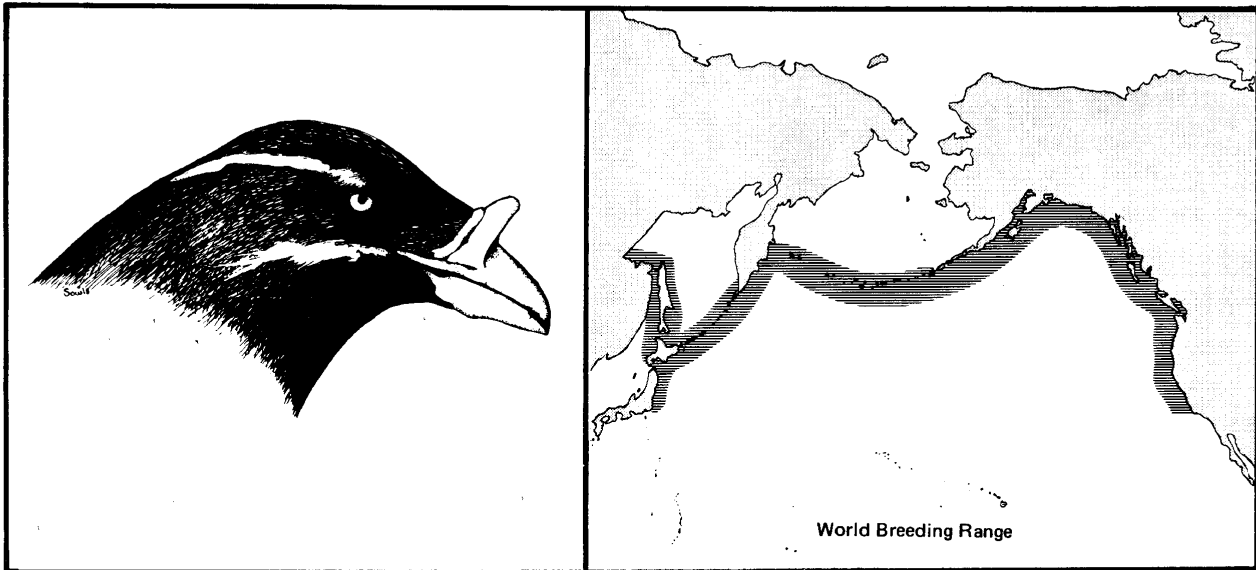
In California, Western Gulls prey heavily on Cassin's Auklets

at colony sites (Thoreson 1964). Chicks are pulled from shallow burrows by gulls, and adults are killed at night when they unfortunately land at the feet of roosting gulls (Thoreson 1964).

Cassin's Auklets are vulnerable to disturbance and to the depredations of introduced predators like cats. Cassin's Auklets may desert their nests if disturbed during incubation, and their burrows can easily be caved in by unwary visitors to their colonies. Fortunately, Washington colonies are protected by refuge status.

Cassin's Auklets feed from the ocean surface in flocks, concentrating in areas where their food is abundant but where they are susceptible to contamination by oil (Hunt et al. 1979). In Washington, Cassin's Auklets are vulnerable especially near nesting colonies and on foraging areas over the outer continental shelf.

Rhinoceros Auklet (*Cerorhinca monocerata*)

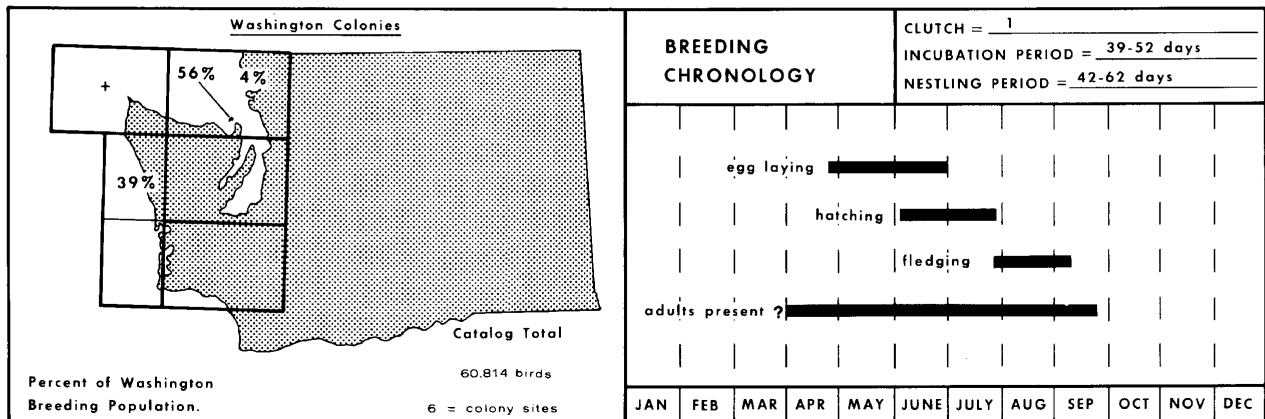


Rhinoceros Auklets are one of the most abundant seabirds breeding in Washington, where their southernmost large colonies in the eastern North Pacific are located. While the species breeds from California north around the rim of the Pacific from the Aleutians to northern Japan, it is abundant only around a few large colonies in Washington, British Columbia, southeastern Alaska, and Kamchatka, Siberia, and Hokkaido, Japan (Udvardy 1963).

The species derives its name from the keratinous "horn" found on its bill during the breeding season. Although this species' common name implies it is an auklet, it is more closely related to the puffins. Rhinoceros Auklets are excellent divers and feed on small fish and cephalopods (Heath 1915; Richardson 1961; Leschner 1976).

Rhinoceros Auklets nest primarily in burrows dug into the ground in both forested and unforested islands. Burrows may be up to six meters in length and often fork two or three times before ending in a nesting cavity (Heath 1915; Willett 1915). The recent discovery of Rhinoceros Auklets at Sea Lion Caves, Oregon (Scott et al. 1974; Varoujean and Pitman 1979), and at caves in the conglomerate cliffs at Point Arguello, California (Sowls et al. 1980), indicates that this species may also nest in rocky mainland habitats.

Rhinoceros Auklets almost always enter and leave colonies at night when feeding chicks. This predominantly nocturnal behavior may have evolved as a means of reducing kleptoparasitism by gulls. In California and Oregon, Rhinoceros Auklets may often be observed on or near colonies



during the day; but north of Washington they appear to be strictly nocturnal in visits to colonies, although some birds may be seen foraging near the colonies. This difference remains unexplained but may be related to the availability of food and its proximity to the colonies.

WASHINGTON COLONIES

Rhinoceros Auklets nest at three main sites in Washington: Protection Island (34,216), Destruction Island (23,600), and Smith Island (2,588). In addition, small numbers nest at Tatoosh Island, Alexander Island, and East Bodelteh. Reports of small colonies in other parts of the inland waters, particularly southern Puget Sound, have not been verified in recent field surveys (Wahl and Speich 1984). While a few more pairs nest in the State in limited suitable habitat, the total estimated nesting population is relatively accurate.

HISTORICAL STATUS AND VULNERABILITY

Rhinoceros Auklets are conspicuous in inland marine

waters of Washington near the Protection Island colony in particular and have been mentioned from the early days of field ornithology in Washington. Suckley and Cooper (1860) reported the species was nesting on Protection Island in 1854. However, little data are available as to population size in most sites and, while local residents state that the colony on Protection Island is larger than in the past, no census data exist prior to about 1956 (Richardson 1961). Certainly there have been variations in population size due to natural and human factors alike.

Rhinoceros Auklets are very sensitive to disturbance during the nesting period. Adults will readily desert their nests if disturbed during incubation or brooding. Their burrows are often near the surface of the ground and are easily collapsed.

This species has suffered in the past from ground predators introduced onto nesting colonies. Dogs brought by lighthouse personnel killed many birds (see Manuwal 1978), and while automated light stations have changed this

situation, potential introduction of dogs and other predators into Washington colonies is a serious concern.

Like all alcids, Rhinoceros Auklets are extremely vulnerable to oil spills. During the breeding season they concentrate around colonies at night, and they tend to forage in large flocks in areas of strong tidal currents, particularly in inshore waters where oil spills are perhaps of greater likelihood. During the winter, when Rhinoceros Auklets are present only in low numbers in Washington waters, large numbers

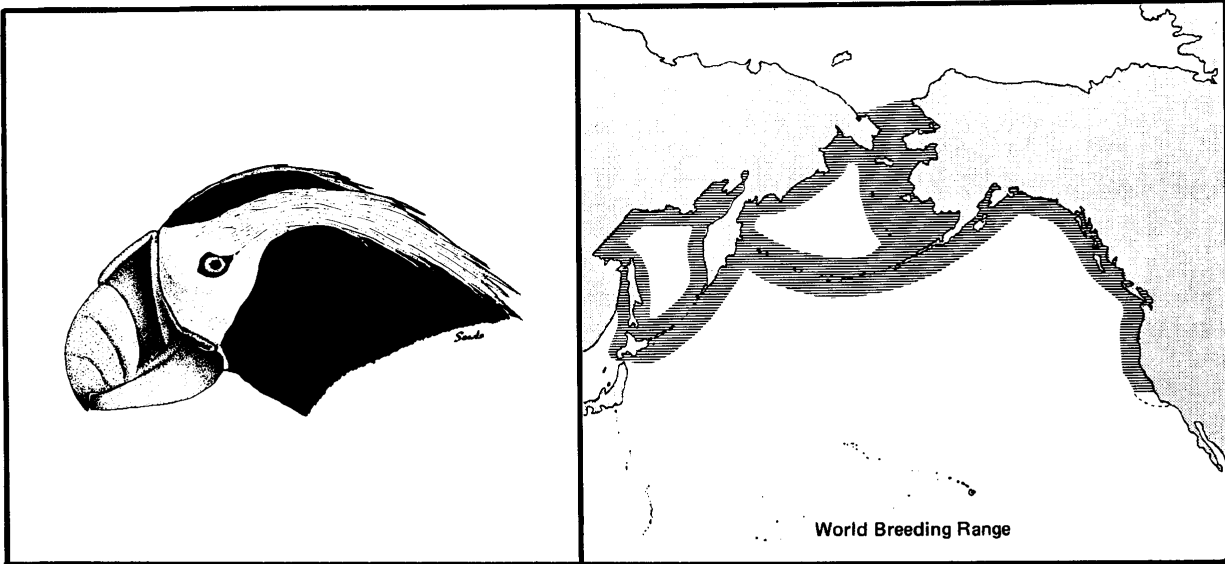
of this species, presumably many from Washington colonies, are present along the California coastline (Speich, pers. obs.).

While there are indications this species is increasing along the west coast of North America (see SOWLS et al. 1980), and while it may be that more Rhinoceros Auklets nest on Protection Island now than in 1956, there is no evidence in Washington that there have been any significant new colonies established. Populations in Washington may be reaching the limit of available nesting habitat.

FIELD NOTES

The authors would appreciate copies of your field notes for updates

Tufted Puffin (*Lunda cirrhata*)



Tufted Puffins are among the most abundant and conspicuous seabirds nesting around the North Pacific rim, with the center of abundance apparently in the western Gulf of Alaska and the Aleutian Islands (Sowls et al. 1980). Their spectacular appearance and their as yet unexplained habit of circling and investigating vessels at sea helps make the "sea parrots" among the most well known of seabirds. At colonies they can often be seen standing in front of their nesting burrows.

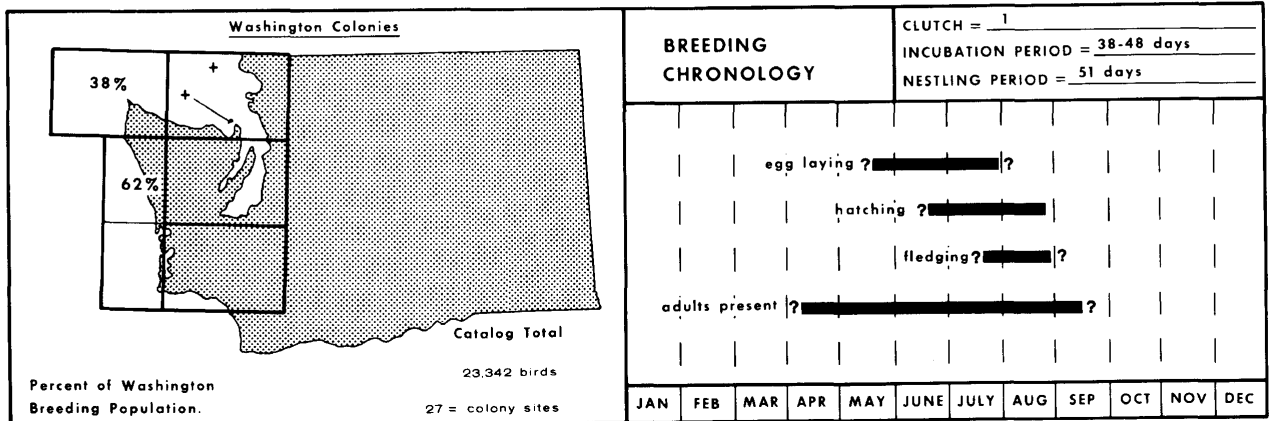
Tufted Puffins usually nest in earth burrows at the edges of cliffs or on the grassy slopes of islands. In Washington they nest on open, grassy slopes and near the top of vertical cliffs where edges erode. Habitat is limited or unavailable on many islands suitable for other species; consequently, in inland waters in

particular, puffins have probably always been restricted in nesting distribution in Washington.

Tufted Puffins can sometimes be observed carrying fish (up to 12 or more) crosswise in their bills to their chicks at colonies. Preferred foods include small fish, cephalopods, and crustaceans (Hatch et al. 1979). Although Tufted Puffins are diurnal, fledglings apparently leave their burrows and go to sea under cover of darkness. In fall, adult puffins lose their brightly colored bill sheathes. Both fledglings and adults head far offshore to winter in mid-ocean and during winters are only occasionally seen near land.

WASHINGTON COLONIES

Although Tufted Puffins are among the least-frequently noted



seabirds breeding in Washington, this attractive species is actually one of the most abundant. Few nest in the inland marine areas where most boating takes place, but on the outer coast there are large colonies. All told, the species breeds at 29 known locations with all but five of these along the outer coast from Tatoosh Island to the Point Grenville area. The largest colonies are on Jagged Island where 7,800 breeding birds are estimated and Alexander Island where 4,000 nest. In the inland waters the species nests only at Seal and Sail Rocks, Protection Island, Smith Island, and at Colville and Bare Islands. Because of inaccessibility of many sites where puffins nest along the outer coast and the fact that, though birds may be seen from a boat circling colony sites, standing outside burrows numbers seen compared with numbers actually present or foraging away from the islands may be at considerable variance. We feel actual numbers of nesting puffins in Washington may be 50% or more larger than the total estimated populations given here.

HISTORICAL STATUS AND VULNERABILITY

Tufted Puffins, like many other diving seabirds with specialized diets, are vulnerable to oiling and to contamination of food webs. Human disturbance on nesting colonies is another potential threat. Most of the colonies occupied by puffins in Washington are protected as wildlife refuges, and those on the outer coast are relatively inaccessible. The colony sites in the inland waters are much more vulnerable to disturbance by boaters, sightseers, and birdwatchers approaching too closely.

Tufted Puffins, like puffins elsewhere (Nettleship 1972; Nisbet 1973), may have decreased in numbers in Washington as populations of large gulls have increased over recorded time. Gulls prey on chicks at burrow entrances, steal fish from adults approaching the burrows, and can severely reduce the reproductive success of puffins. As late as the 1940's, puffins apparently nested at several locations (e.g., Viti Rocks) where they no longer

do. However, there have been a few more sightings in recent years near some old sites and, particularly since refuge status

protects islands in the San Juan Islands, small numbers of Tufted Puffins may reestablish themselves as nesting birds there.

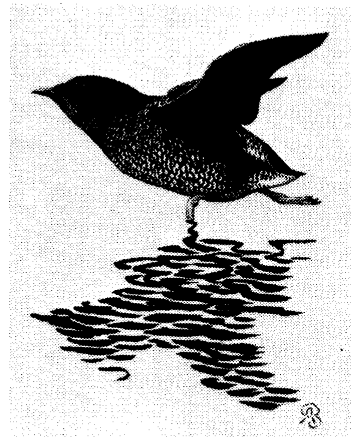


Sand Island (174024) 1977 Caspian Tern chick and egg. S.G. Herman

Catalog of Washington

Seabird Colonies

**MAPS
AND
TABLES**



HOW TO USE MAPS AND TABLES

The tables in this catalog are all standardized, using the same format and codes throughout. With only a few minor differences they are the same as the tables and codes used in the Catalog of California Seabird Colonies (Sowls et al. 1980). The codes and fields as used in this catalog are explained and terms are defined below.

Map Area

The Map Areas used in this catalog are based upon the United States Geological Survey (USGS) National Topographic map series, scale 1:250,000. The maps have been numbered by the U.S. Fish and Wildlife Service and cover the United States. Each standard Map Area is normally one degree latitude high and two degrees longitude wide. In Washington there are five such Map Areas that cover all the marine shoreline of the State. The general geographic location of the Map Areas in Washington and Map Area Numbers appear on the Map Index page (below).

Map Area Numbers

These are the numbers that have been assigned to each Map Area. This number appears at the top of each page in the Maps and Tables section.

Map Area Names

These are the names that appear on the USGS 1:250,000 topographic maps; they appear on the top of each page in the Maps and Tables

section, immediately after the Map Area Number.

Colony Numbers

Each site of breeding, potential breeding, or past breeding by marine birds in Washington is given a Colony Number. Many of the Colony Numbers used in this catalog were first assigned by Varoujean (1979). If his numbers are not used, explanation is given. We assigned Colony Numbers in each Map Area to appropriate sites by using numbers coming immediately after those assigned by Varoujean (1979). He did not assign numbers in all Map Areas.

The Colony Number is made up of two parts. The first three digits correspond to the Map Area number of the Map Area in which the colony site is found. The last three digits are numbers assigned in consecutive order by, in some cases, Varoujean (1979) and, in the remainder, by us to each site in the Map Area. In the tables the number in the circle is the Site Number within the Map Area number that appears at the top of each page. The Site Numbers also appear in the circles labeling sites on the maps on the right hand pages of the Maps and Tables section.

Colony Names

Each site is given a Colony Name. Many site names were assigned by Varoujean (1979), and they are retained. Other site names were assigned by us. The Colony Name immediately follows the Colony Number on the top of the tables. Colony Names that are not in quotation marks are derived

from the names found on standard USGS topographic maps, generally 1:24,000 series maps. Names that appear in quotation marks do not appear on these maps for the referred-to sites and locations. Lower case sites and location name description modifiers also do not appear on these maps. Names in quotation marks are derived from (1) National Oceanic and Atmospheric Administration, National Ocean Survey, Nautical Charts; (2) local use; (3) the literature; (4) previous investigators; or (5) assignment by the authors. Several sites have the same Colony Name, and we have made no attempt to eliminate duplications, as names are generally derived from the USGS topographic maps. An alphabetical listing of sites is contained in Appendix A, Gazetteer of Localities.

Latitude-Longitudes

The latitude and longitude were determined for every site in this catalog, and coordinates previously determined by Varoujean (1979) were redone. Since it is difficult to make determinations of latitude and longitude from the USGS topographic maps, all determinations were made from NOAA Nautical Charts using the largest scale chart available for every site. Determinations were made with calipers as best as possible within the limits of the size of the site and the scale of the nautical charts.

Species Names

There are 18 species of "marine birds" that are breeding or have bred in marine habitats in Washington, and they are documented by this catalog. Species names follow those found

in the Thirty-fourth Supplement to the American Ornithologists' Union Check-list of North American Birds (1982), with one exception: the American Black Oystercatcher is called Black Oystercatcher here to save space in the tables.

Number of Breeding Birds

This field in the tables contains the probable number of breeding individuals of each species at each Colony Site on each survey. (See Data Quality below for comments on the accuracy of these figures.) Other symbols also appear in this field combined with numbers of individuals or alone. The definitions of these symbols as they are used here follow:

X = Definitely present and breeding, but numbers breeding are not available or cannot be determined from the data available.

P = Present and probably nesting, but status cannot be definitely determined, either in the field or from the information in the source document.

B = Indicates that the number of adults present, such as Ring-billed Gulls or Glaucous-winged Gulls, was estimated from the number of young pre-fledgling birds banded at the ratio of 1.5 banded young equal two adult breeding birds.

? = The breeding status of the birds present cannot be determined, either in the field or in source documents.

N = Birds may be present, but in any case the species probably is not breeding at the site. This code is generally not used except in special cases; i.e., where there is particular reason to document the breeding absence of the species at the site. This is generally used for species with small populations in the State to document their absence from previous, suspected, or potential sites of breeding.

When a species' data line in a colony table is in reference to specimens or eggs (see Survey Type field), the numbers in this field refer, in the case of eggs, to the number of sets collected with two adults being recorded for each egg set. For specimens, the number refers to the actual number of specimens collected.

Sources

This field identifies the sources from which the data of breeding birds for the sites were obtained. There is a large range of data sources used in this catalog. Sources that include a date in the field refer to publications of various types. Names without dates refer to a variety of sources that include collectors, agencies, field notes of investigators, and personal communications. Full details of each source are found in the Reference section of the catalog. The Reference Numbers at the far right of the tables correspond to the sources that appear in the Source field and help to specifically identify each source in the Reference section.

Where possible, we have identified where reference material can be found when not in standard journals or government documents. Thus reference to collectors of eggs and specimens are identified the museum holding the referred-to specimens at the time of our survey. Other sources are identified as the library or museum holding material such as field notes and correspondence.

Survey Date

The survey date is when observations of the referred-to species were made. For specimens this is the date of collection, and for banding, the date the banding took place. In many cases, it is not possible to determine the exact date of observations, collecting, banding, etc., and we have then made the best determination possible. Thus, many dates include a date range: several days, the month or months, the time of year, the year alone, or a range of years. Our accuracy for determining dates is limited by the accuracy of the observers in the recording of their data in their notes, on specimen labels, or in published articles.

Survey Type

The code in this column describes the platform of observation and method employed in acquiring the data given in estimates of numbers of birds present. This designation reflects the Data Quality below.

A = Aerial. Survey conducted from an airplane or helicopter.

B = Boat. Survey conducted from a boat, ranging in

size from Washington State Ferries to a small Zodiac.

M = Mainland. Survey made of the site from the mainland or another nearby island.

L = Land. Survey made of the site on foot.

S = Specimen. This code indicates that one or more specimens were collected. See the number of Breeding Birds field for the number of specimens collected.

E = Egg. This code indicates that a one or more egg sets were collected. See Number of Breeding Birds field for the number of sets collected; two adult birds were recorded for each egg set taken.

Data Quality

This field's codes quality the data collected, specifically the number of each species determined to be nesting at the site. The codes all relate to the observing of nests and the proportion of the actual total number of nests that were observed. The code definitions are as follows:

I = The numbers represent a total count of all nests of the subject species; no nests were omitted from the survey.

II = Some nests were missed in the survey or misidentified; the error in numbers is small.

III = Only a small sample of nests was obtained, and

the nesting individuals were extrapolated from the sample over the area of appropriate habitat at the site. Most estimates of the number of burrowing birds were obtained in this manner, usually through a small number of grid samples in the colony. Nocturnal burrowing species were estimated in this manner at several sites. For diurnal burrowing species, such as the Tufted Puffin, birds were sometimes counted in front of their burrows on the colony slopes.

For species such as the Glaucous-winged Gull, many entries of breeding numbers are coded "III" even though all birds on the site were counted. The Data Quality codes refer to nests only and are used here to allow conformity with the seabird catalogs for California and Oregon.

- = There were no data available.

? = The accuracy of the observations could not be determined.

Reference Number

This number is assigned to the source of data used to obtain the species status on the respective lines of the table. Use of these numbers allows for more precise determination of the reference source (investigator) in the Reference section of the catalog.

THE CATALOG MAPS

Area Maps

At the front of every Map Area section, an index map of the Map Area appears. All active sites, those with nesting birds reported from the period 1978 through 1982, are located on this map. The Site Numbers of each of the respective colonies appear in a circle, the circle size reflecting the total number of birds nesting at the site indicated.

Site Maps

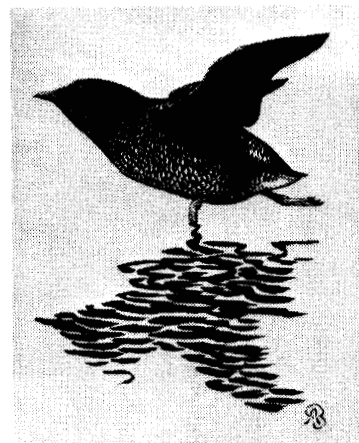
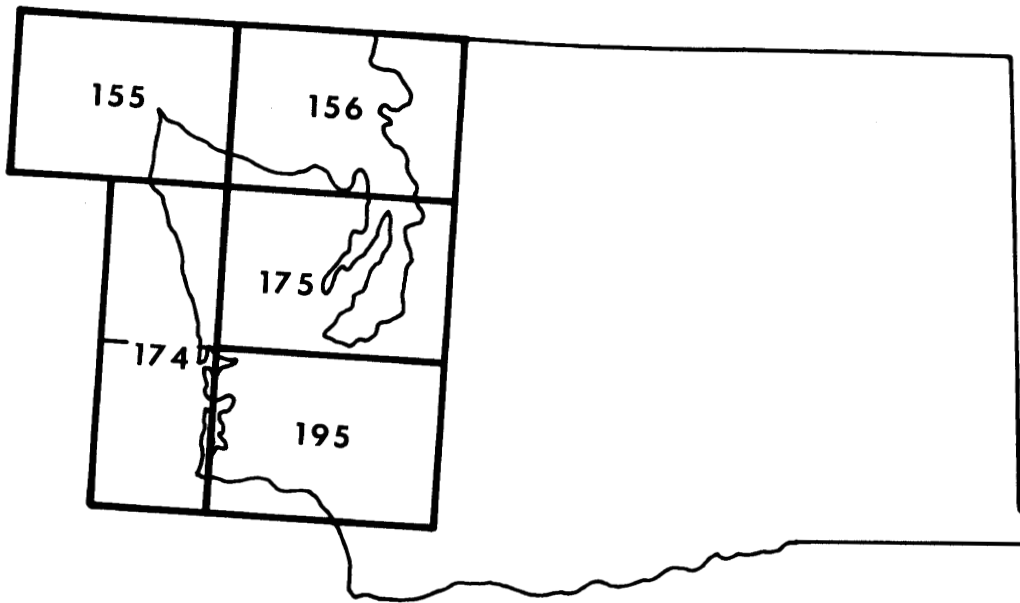
Within the Maps and Tables section of the catalog, the tables

and corresponding Site Maps appear. All tables start on the left-hand-facing page, and the corresponding Site Maps appear on the right-hand-facing page. These maps are cut from the USGS topographic maps, generally 1:24,000 scale series. The Site Numbers appear in circles, and the actual size is indicated by a pointer, bracket, or boundary drawn on the map pieces. The Map Name the map cut-out was taken from appears in the box within the map cut-out.

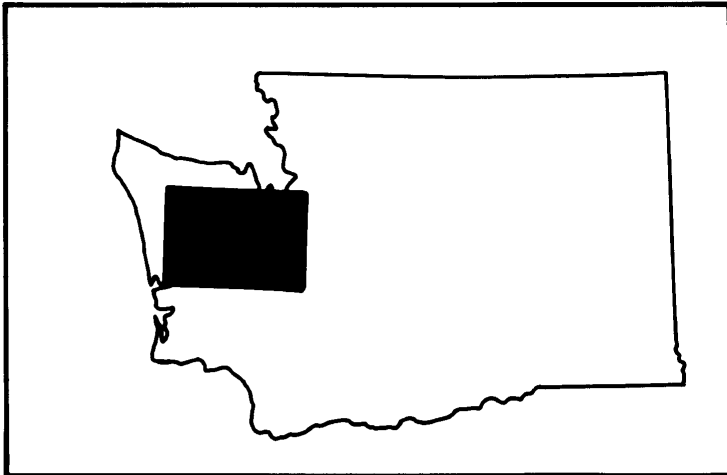
SITE NUMBER	COLONY NAME	LAT.-LONG.				
(191)	PORT WILLIAMS	48° 07' 00", 123° 03' 00" W				
PIGEON GUILLEMOT	34	SPEICH	05/23/79	B III	255	
PIGEON GUILLEMOT	33	SPEICH	05/26/78	B III	255	
SPECIES NAME	NUMBER BREEDING BIRDS	SOURCE	SURVEY DATE	SURVEY TYPE	REFERENCE DATA QUALITY	

Box gives the most recent or the best estimates available.

MAP INDEX:



AREA 175, Seattle (cont'd.)



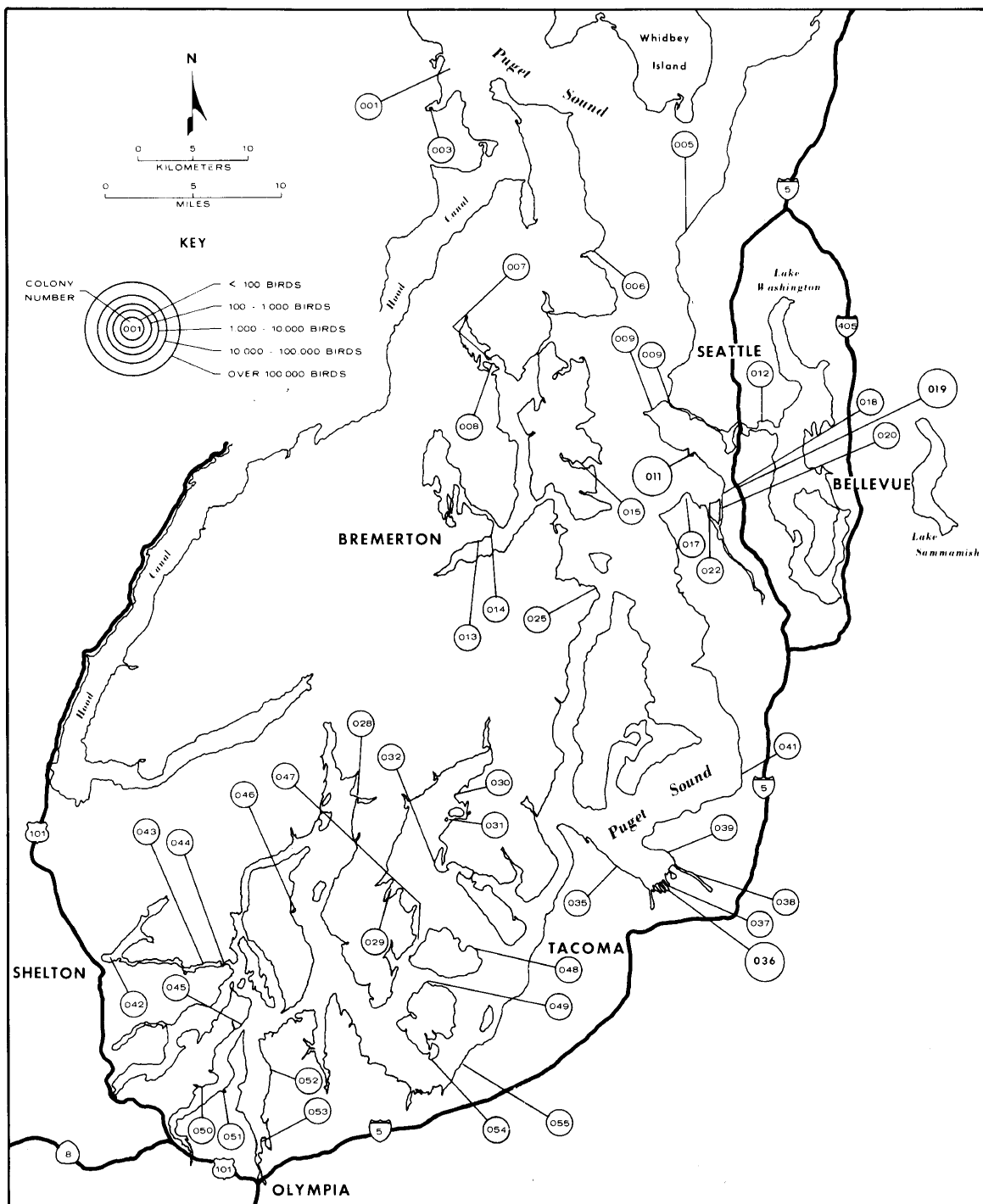
175
Seattle

The map on the facing page is an index to the locations of colonies within map 175, Seattle. On the pages following this map, all colonies are listed sequentially and a detailed map of each is provided.

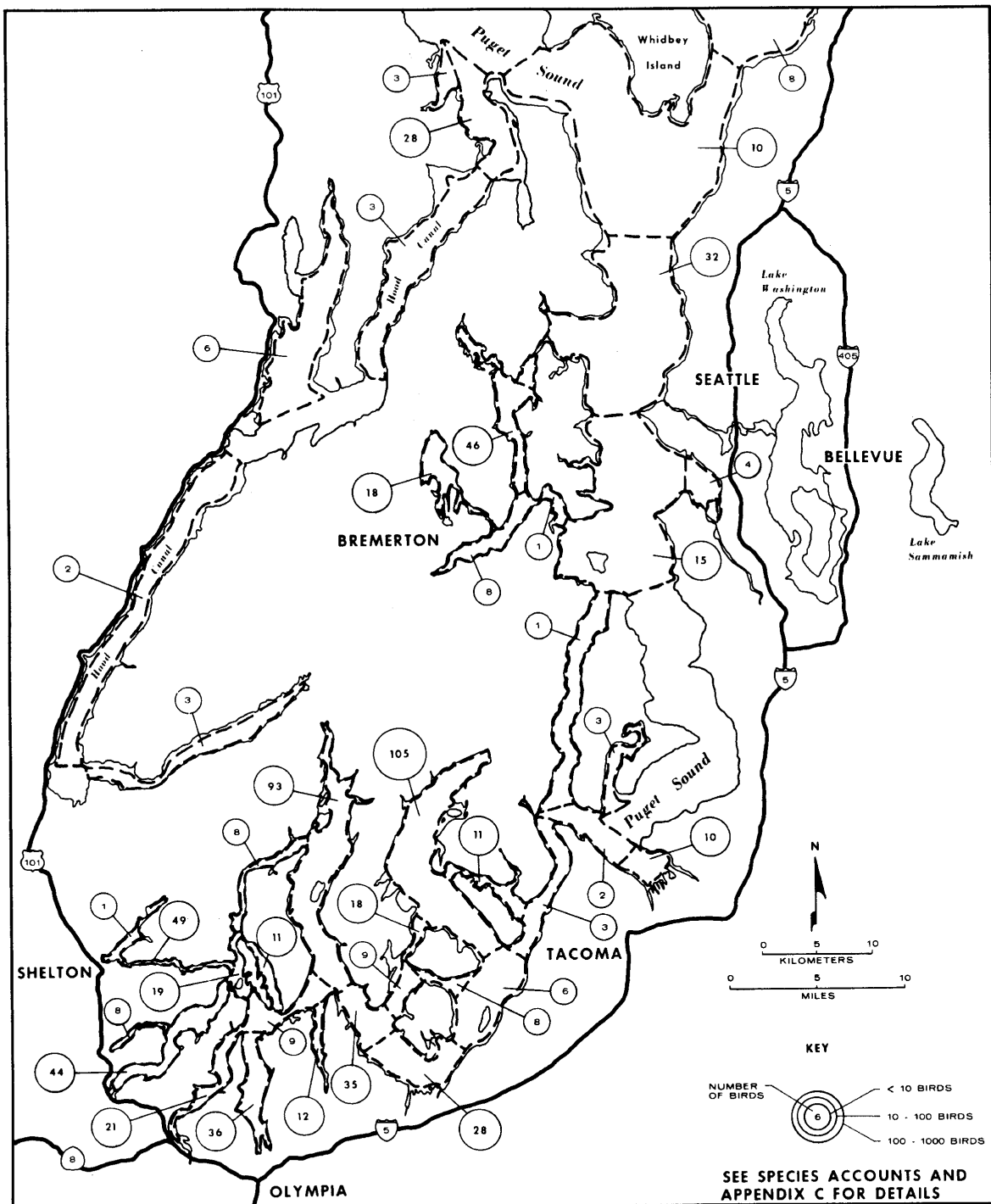
Numbers of breeding seabirds will vary from year to year. Below are the approximate numbers of breeding seabirds within this region.

Glaucous-winged and Western gulls	1,100
Pigeon Guillemot	220
Marbled Murrelet	150

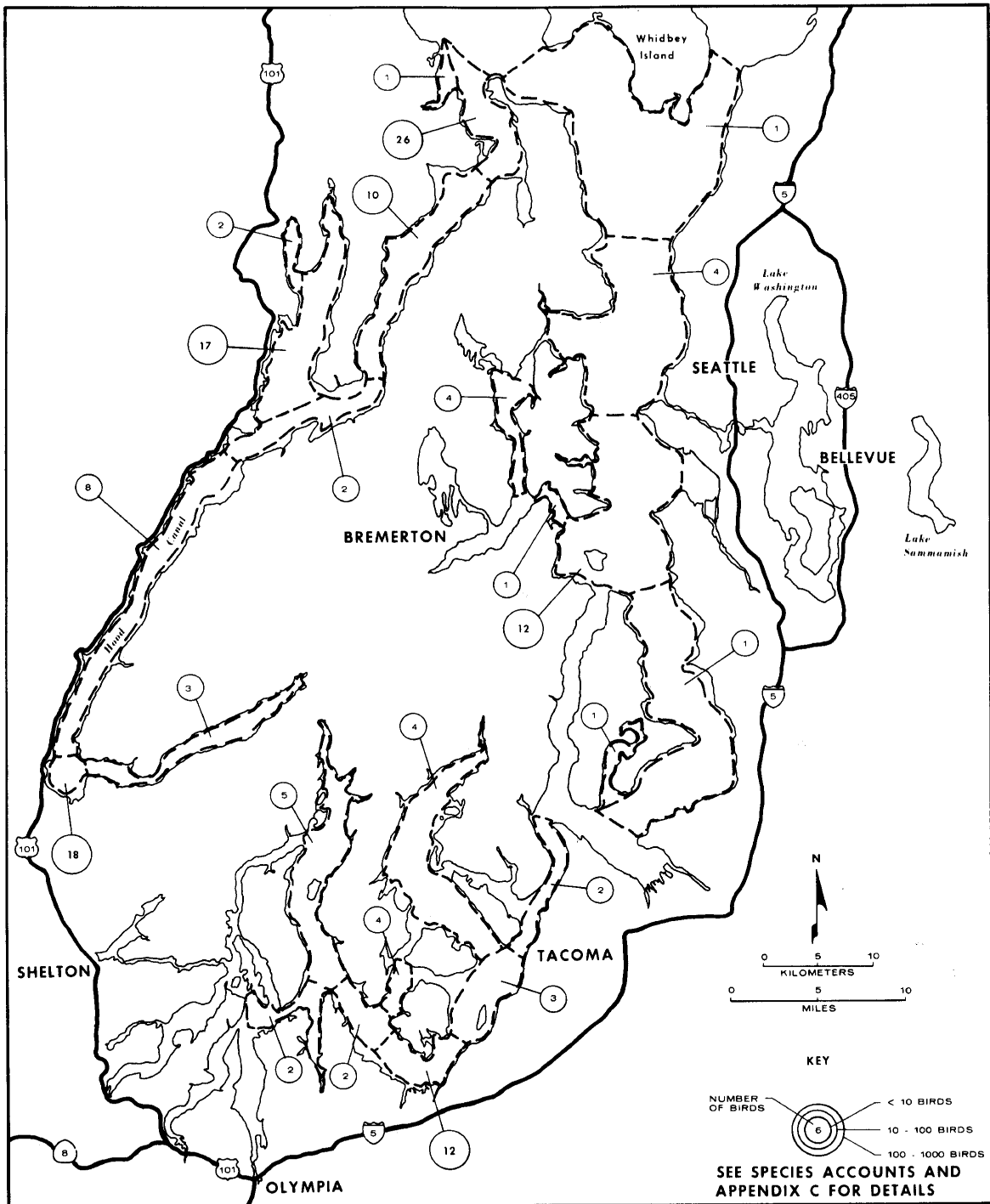
175 SEATTLE



Relative distribution for Pigeon Guillemots in map area 175, Seattle.



Relative distribution for Marbled Murrelets in map area 175, Seattle.



AREA 175, Seattle (cont'd.)

SITE NUMBER	COLONY NAME	LAT.-LONG.				
191	PORT WILLIAMS	48° 07' 00", 123° 03' 00" W				
PIGEON GUILLEMOT	34	SPEICH	05/23/79	B III	255	
PIGEON GUILLEMOT	33	SPEICH	05/26/78	B III	255	
SPECIES NAME	NUMBER BREEDING BIRDS	SOURCE	SURVEY DATE	SURVEY TYPE	REFERENCE DATA QUALITY	

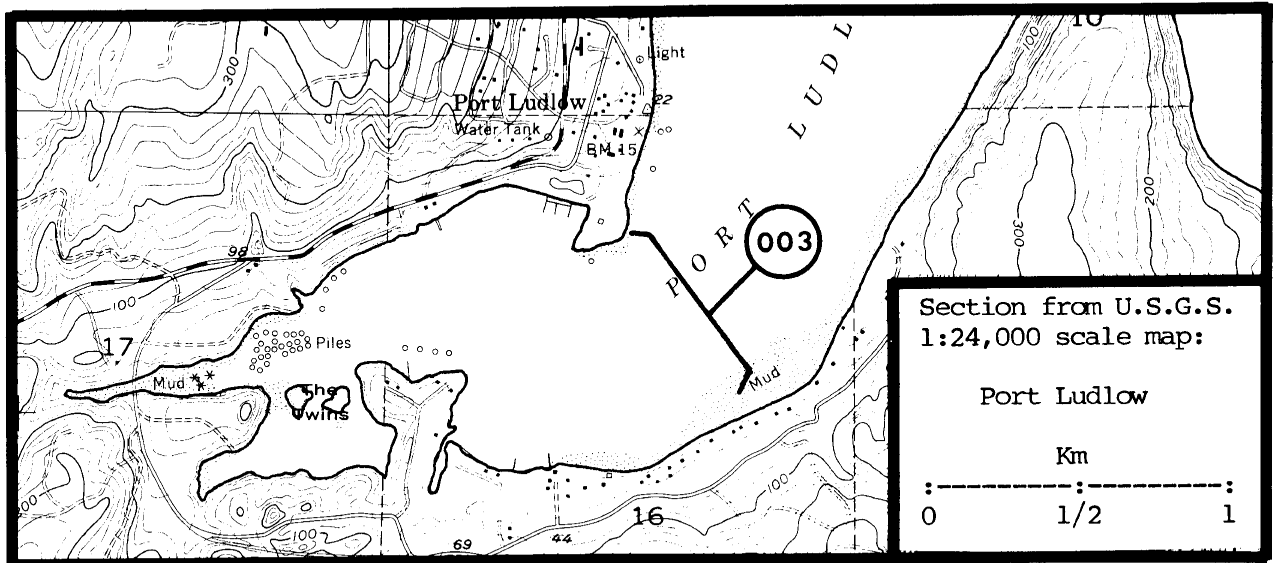
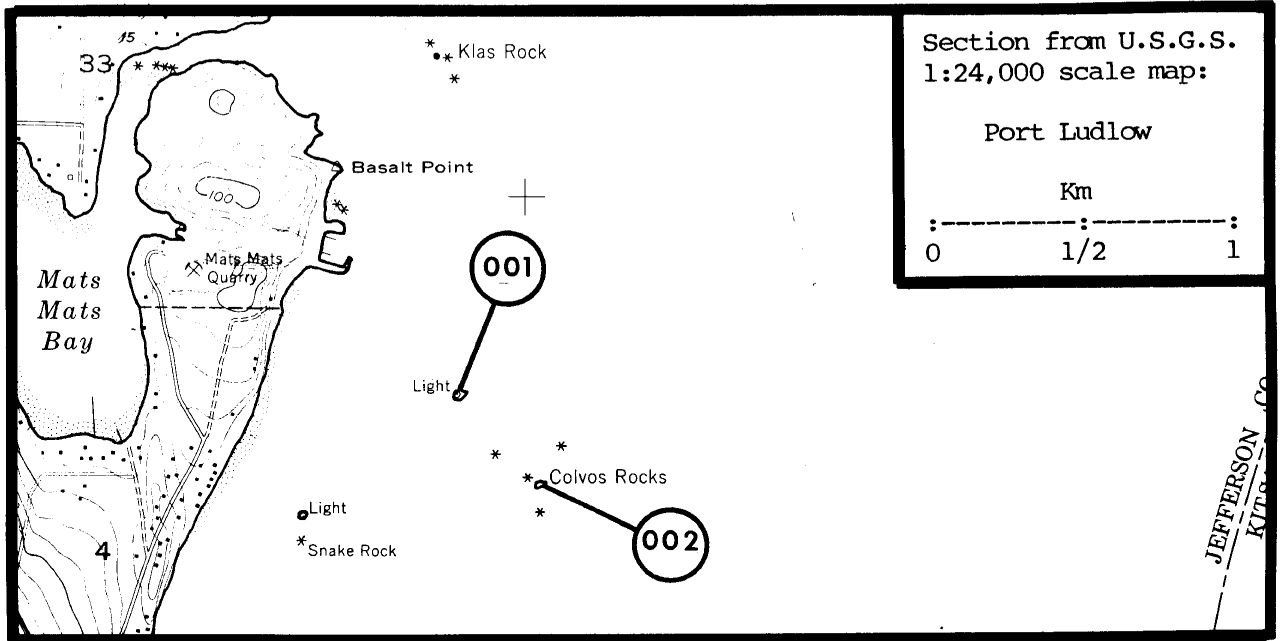
Box gives the most recent or the best estimates available.

001 Colvos Rock, north 47°57'06"N, 122°40'10"W
 Glaucous-winged Gull 44 Speich & Wahl 06/24/82 B I 257

002 Colvos Rock, south 47°56'55"N, 122°39'56"W
 No Nesting Observed 0 Speich & Wahl 06/29/82 B III 257

003 Port Ludlow 47°55'09"N, 122°41'06"W

Pigeon Guillemot	24	Speich & Wahl	06/29/82	B III	257
Pigeon Guillemot	2	Sluss	Summer/80	B III	249
Pigeon Guillemot	2	Sluss	Summer/81	B III	249
Pigeon Guillemot	2	Sluss	Summer/82	B III	249



AREA 175, Seattle (cont'd.)

④ Point No Point¹ 47°54'55"N, 122°31'30"W

No Nesting Observed	0	Speich & Wahl	07/06/82	A III 257
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Double-crested Cormorant	24-40	Schultz	?/ ?/58	? ? 243
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¹Insufficient data to show exact map location.

⑤ Edmonds, ferry dock 47°48'50"N, 122°23'09"W

Glaucous-winged Gull	2	Paulson	?/ ?/82	B I 208
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Glaucous-winged Gull	2	Speich	07/11/79	B I 255
Glaucous-winged Gull	2	Sagehorn	06/29/80	B I 238
Pigeon Guillemot	2	Paulson	06/06/80	B I 207

⑥ Kingston, ferry dock 47°47'39"N, 122°29'40"W

Glaucous-winged Gull	2	Speich & Wahl	06/27/82	B I 257
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Glaucous-winged Gull	2	Hunn et al.	?/ ?/80	B I 152
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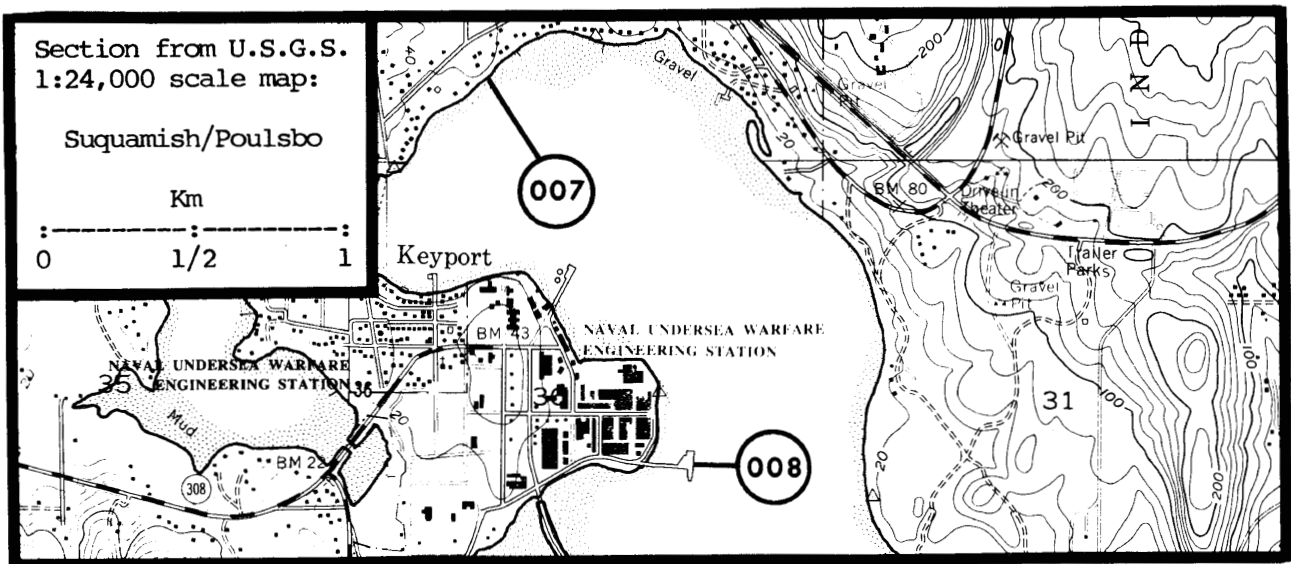
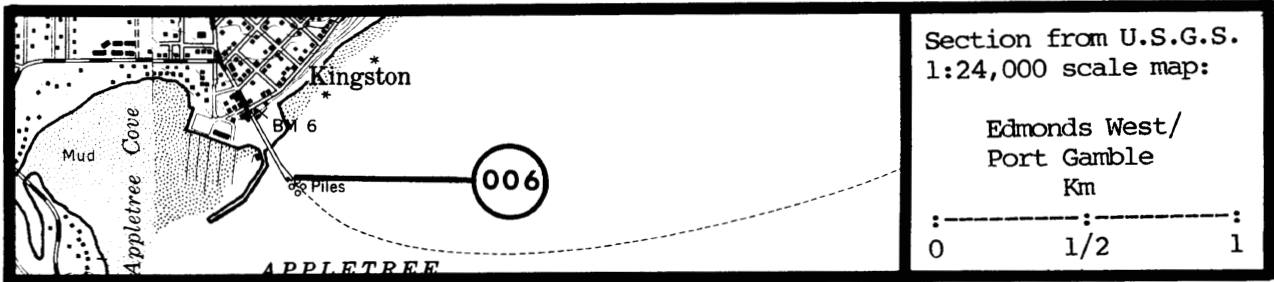
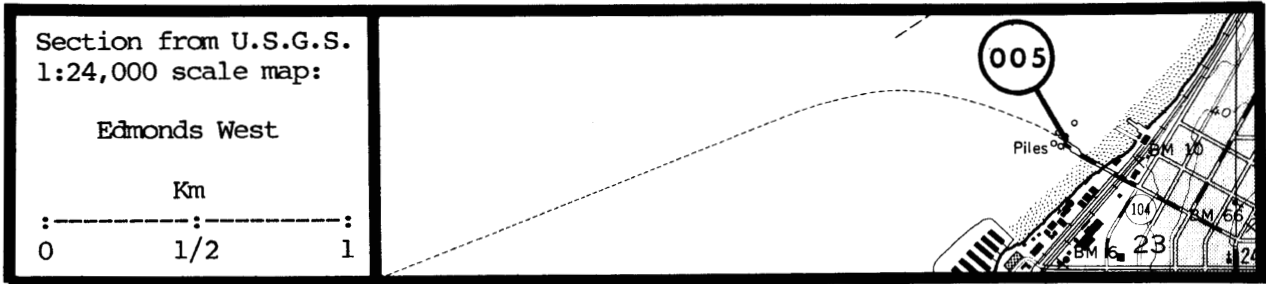
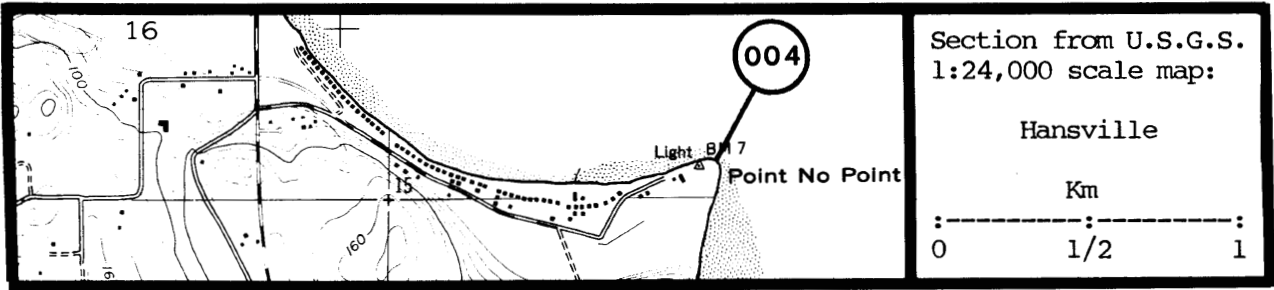
⑦ Lemolo (Port Orchard/Liberty Bay)¹ 47°42'40"N, 122°37'00"W

Pigeon Guillemot	2	Balmer	05/30/26	E - 21
Pigeon Guillemot	2	Balmer	05/30/26	E - 20
Pigeon Guillemot	6	Brown	06/12/26	E - 44
Pigeon Guillemot	2	Brown	06/13/26	E - 44

¹Insufficient data to show exact map location.

⑧ Keyport pier 47°42'00"N, 122°36'45"W

Pigeon Guillemot	10	Speich & Wahl	06/28/82	B III 257
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AREA 175, Seattle (cont'd.)

(009) Salmon Bay 47°40'30"N, 122°24'36"W

Glaucous-winged Gull	2	Goodge 1949	08/26/49	L III 114
Glaucous-winged Gull	2	Eddy	Summer/51	B II 95
Glaucous-winged Gull	2	Eddy	Summer/52	B II 95
Glaucous-winged Gull	2	Eddy	Summer/53	B II 95
Glaucous-winged Gull	2	Eddy	Summer/54	B II 95
Glaucous-winged Gull	2	Eddy	Summer/55	B II 95
Glaucous-winged Gull	0	Eddy	05/19/56	B III 95

(010) West Point (including Discovery Park and Magnolia Bluff)¹

47°39'15"N, 122°25'14"W

Pigeon Guillemot	X	Hunn	08/07/80	L III 151
Pigeon Guillemot	2	Gormley	06/22/1883	E - 117
Pigeon Guillemot	7+	Balmer 1924	Summer/24	L III 19
Pigeon Guillemot	2	Eddy	07/22/50	L II 95
Pigeon Guillemot	4	Brunner	06/26-07/23/74	L III 49
Pigeon Guillemot	X	Frandsen	Summer/74	L III 107
Pigeon Guillemot	2	Anonymous	05/29/75	L III 14

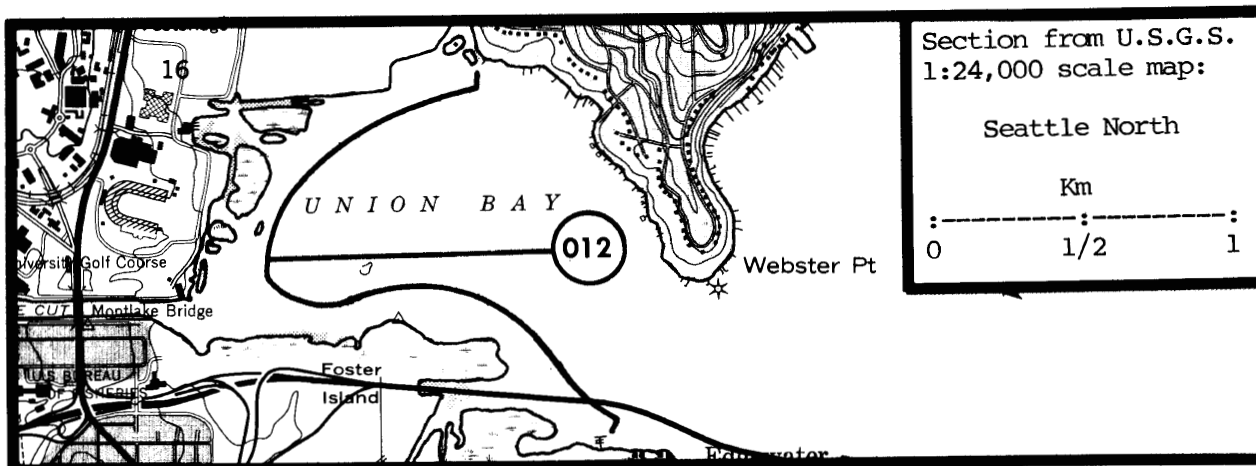
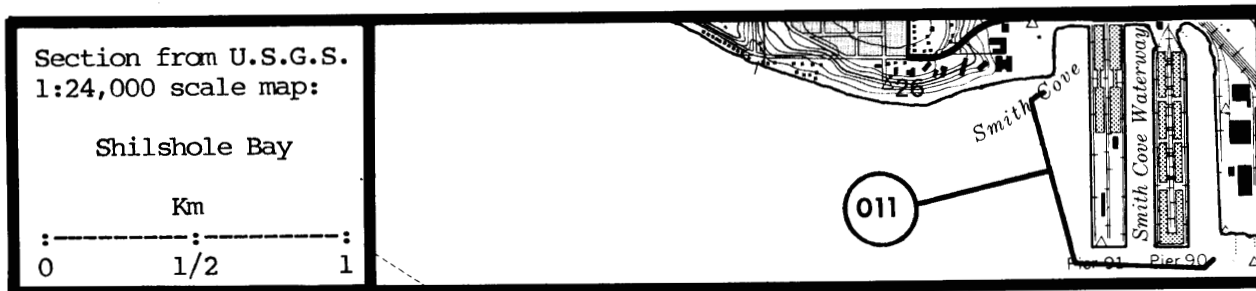
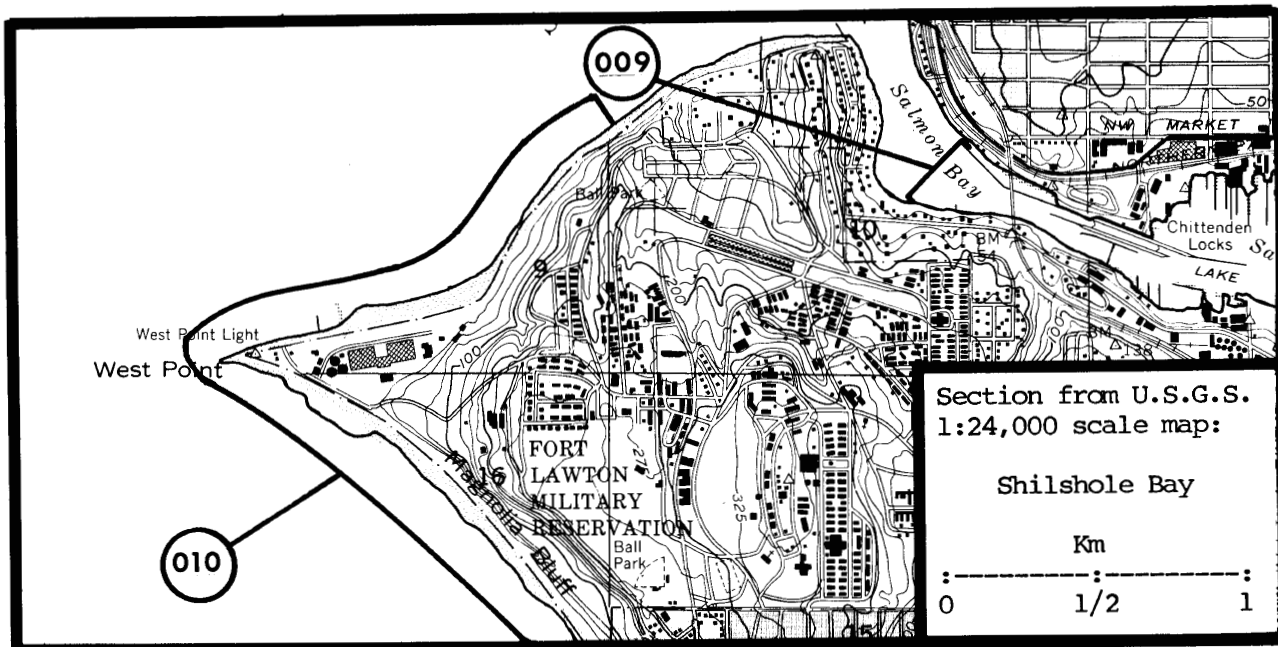
¹Insufficient data to show exact map location.

(011) Smith Cove, piers 47°37'45"N, 122°22'48"W

Glaucous-winged Gull	240	Eddy	Summer/81	L II 95
Glaucous-winged Gull	X	Eddy	Summer/71	L III 95
Glaucous-winged Gull	X	Eddy	Summer/72	L III 95
Glaucous-winged Gull	X	Eddy	Summer/73	L III 95
Glaucous-winged Gull	X	Eddy	Summer/74	L III 95
Glaucous-winged Gull	X	Eddy	Summer/75	L III 95
Glaucous-winged Gull	X	Eddy	Summer/76	L III 95
Glaucous-winged Gull	X	Eddy	Summer/77	L III 95
Glaucous-winged Gull	154	Eddy	Summer/78	L III 95

(012) Union Bay (Lake Washington) 47°39'00"N 122°17'30"W

Glaucous-winged Gull	2	Knight	06/05/77	M I 172
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AREA 175, Seattle (cont'd.) .

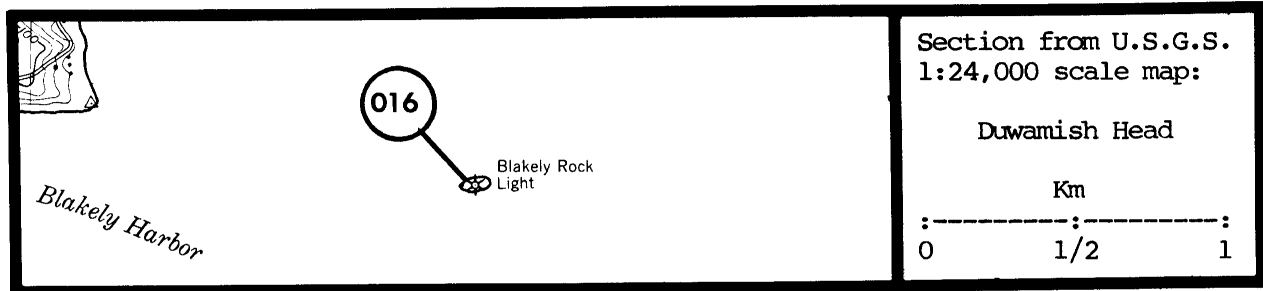
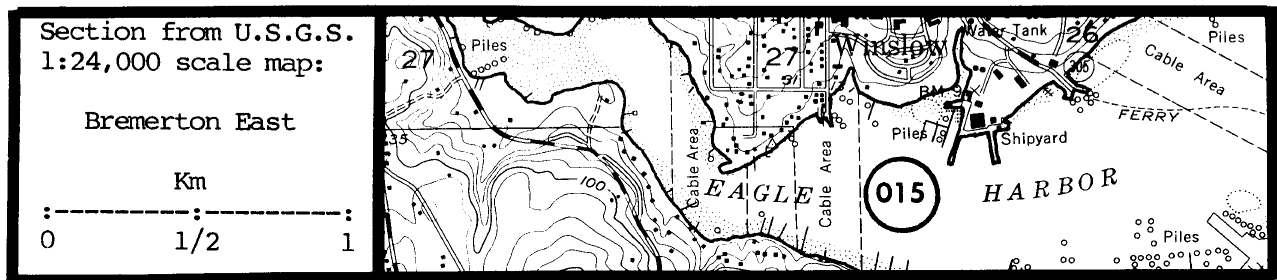
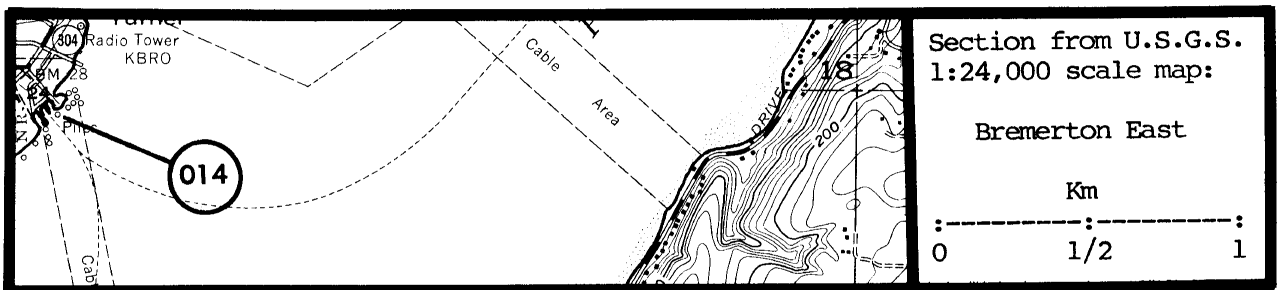
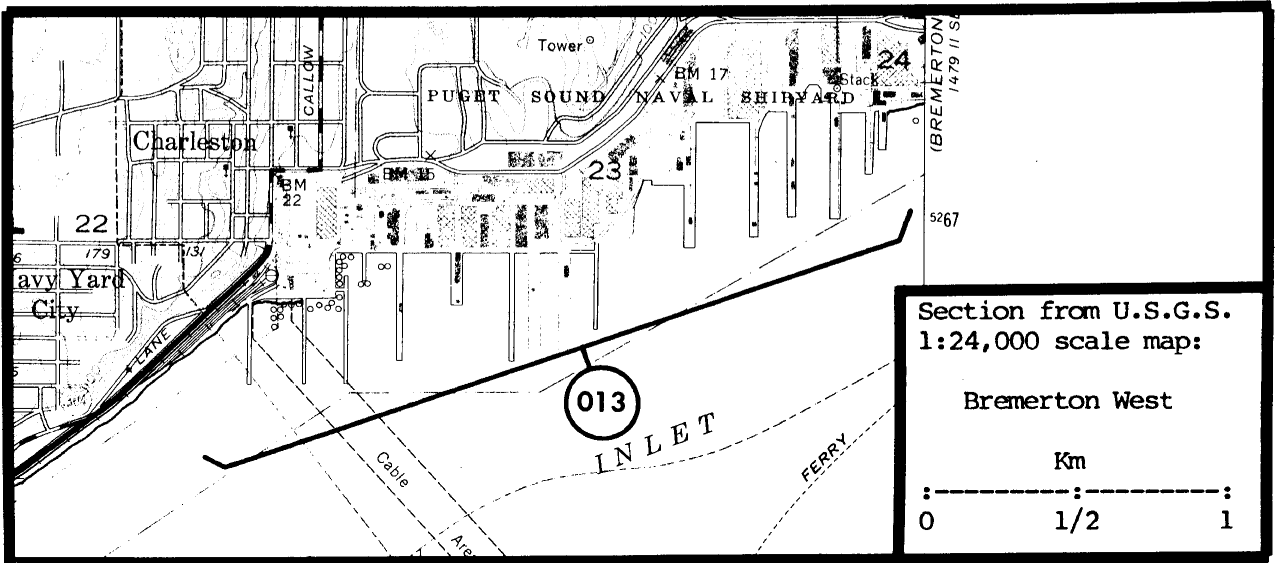
(013) Bremerton, shipyard 47°33'15"N, 122°38'30"W
Pigeon Guillemot 5 Speich & Wahl 06/28/82 B III 257

(014) Bremerton, ferry dock 47°33'45"N, 122°37'20"W
Glaucous-winged Gull 2 Anonymous 05/28/81 B III 14

(015) Eagle Harbor¹ 47°37'15"N, 122°30'30"W
Pigeon Guillemot 1 Unknown 06/08/16 S - 16

¹Insufficient data to show exact map location.

(016) Blakely Rock 47°35'40"N, 122°28'48"W
No Nesting Observed 0 Speich & Wahl 07/06/82 A III 257



AREA 175, Seattle (cont'd.)

(017) Duwamish Head, waterfront 47°35'40"N, 122°23'15"W

Glaucous-winged Gull 2 Speich & Wahl 06/28/82 B I 257

(018) Seattle, waterfront (Pier 36 to Pier 71) 47°36'20"N, 122°21'00"

Glaucous-winged Gull	60+	Eddy	Summer/82	L III 95
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Glaucous-winged Gull 2 Hirschi 06/17/77 L III 134

Glaucous-winged Gull 2 Speich & Wahl 06/28/82 B III 257

(019) Seattle, downtown 47°36'30"N, 122°20'00"W

Glaucous-winged Gull	100	Eddy	Summer/82	L III 95
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Glaucous-winged Gull 20 Eddy Summer/46 L III 95

Glaucous-winged Gull X Eddy Summer/47 L III 95

Glaucous-winged Gull X Eddy Summer/48 L III 95

Glaucous-winged Gull X Eddy Summer/49 L III 95

Glaucous-winged Gull X Eddy Summer/50 L III 95

Glaucous-winged Gull X Eddy Summer/51 L III 95

Glaucous-winged Gull X Eddy Summer/52 L III 95

Glaucous-winged Gull X Eddy Summer/53 L III 95

Glaucous-winged Gull X Eddy Summer/54 L III 95

Glaucous-winged Gull X Eddy Summer/55 L III 95

Glaucous-winged Gull X Eddy Summer/56 L III 95

Glaucous-winged Gull X Eddy Summer/57 L III 95

Glaucous-winged Gull X Eddy Summer/58 L III 95

Glaucous-winged Gull X Eddy Summer/59 L III 95

Glaucous-winged Gull X Eddy Summer/60 L III 95

Glaucous-winged Gull X Eddy Summer/61 L III 95

Glaucous-winged Gull X Eddy Summer/62 L III 95

Glaucous-winged Gull X Eddy Summer/63 L III 95

Glaucous-winged Gull X Eddy Summer/64 L III 95

Glaucous-winged Gull X Eddy Summer/65 L III 95

Glaucous-winged Gull 34 Eddy Summer/66 L III 95

Glaucous-winged Gull X Eddy Summer/67 L III 95

Glaucous-winged Gull X Eddy Summer/68 L III 95

Glaucous-winged Gull X Eddy Summer/69 L III 95

Glaucous-winged Gull X Eddy Summer/70 L III 95

Glaucous-winged Gull 52 Eddy Summer/71 L III 95

Glaucous-winged Gull X Eddy Summer/72 L III 95

Glaucous-winged Gull X Eddy Summer/73 L III 95

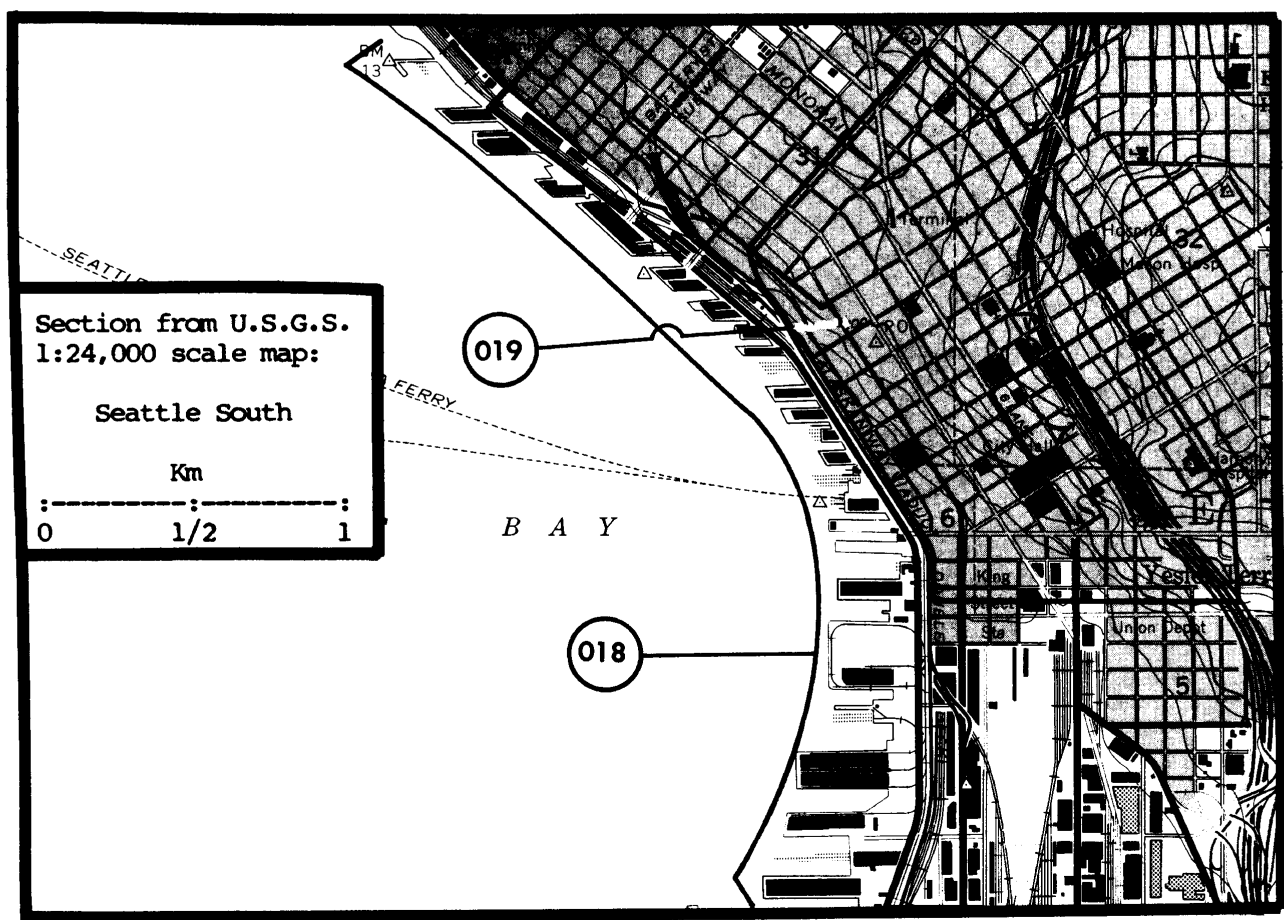
Glaucous-winged Gull X Eddy Summer/74 L III 95

Glaucous-winged Gull X Eddy Summer/75 L III 95

Glaucous-winged Gull X Eddy Summer/76 L III 95

Glaucous-winged Gull X Eddy Summer/77 L III 95

Glaucous-winged Gull	X	Eddy	Summer/78	L III	95
Glaucous-winged Gull	X	Eddy	Summer/79	L III	95
Glaucous-winged Gull	X	Eddy	Summer/80	L III	95
Glaucous-winged Gull	X	Eddy	Summer/81	L III	95



AREA 175, Seattle (cont'd.)

②① Seattle, East Waterway 47°35'00"N, 122°21'06"W

Glaucous-winged Gull	20-24	Speich & Wahl	06/28/82	B II 257
Glaucous-winged Gull	X	Eddy	Summer/78	L III 95
Glaucous-winged Gull	X	Eddy	Summer/79	L III 95
Glaucous-winged Gull	X	Eddy	Summer/80	L III 95
Glaucous-winged Gull	226	Eddy	Summer/81	L III 95

②① Harbor Island, north waterfront 47°35'20"N, 122°21'00"W

No Nesting Observed 0 Speich & Wahl 06/28/82 B III 257

②② Seattle, West Waterway/Harbor Island Reach 47°34'45"N, 122°21'30"W

Glaucous-winged Gull	2	Speich & Wahl	06/28/82	B III 257
Pigeon Guillemot	$\frac{1}{3}$	Speich & Wahl	06/28/82	B III 257
Total	$\frac{1}{3}$			

②③ Georgetown Reach, north 47°33'50"N, 122°20'45"W

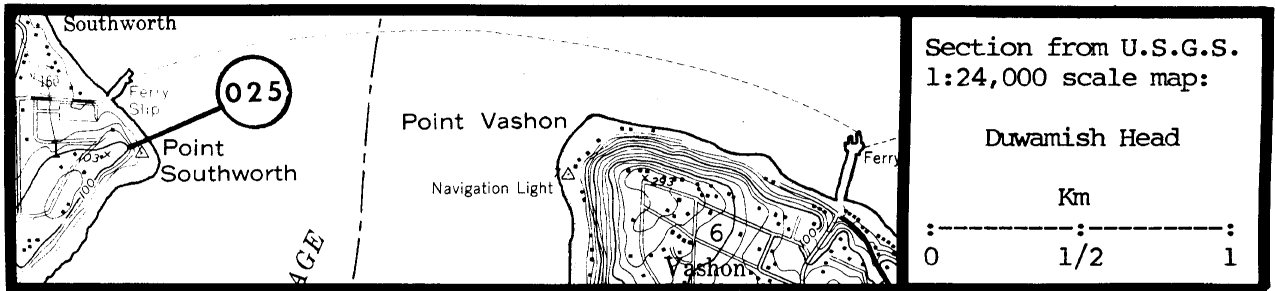
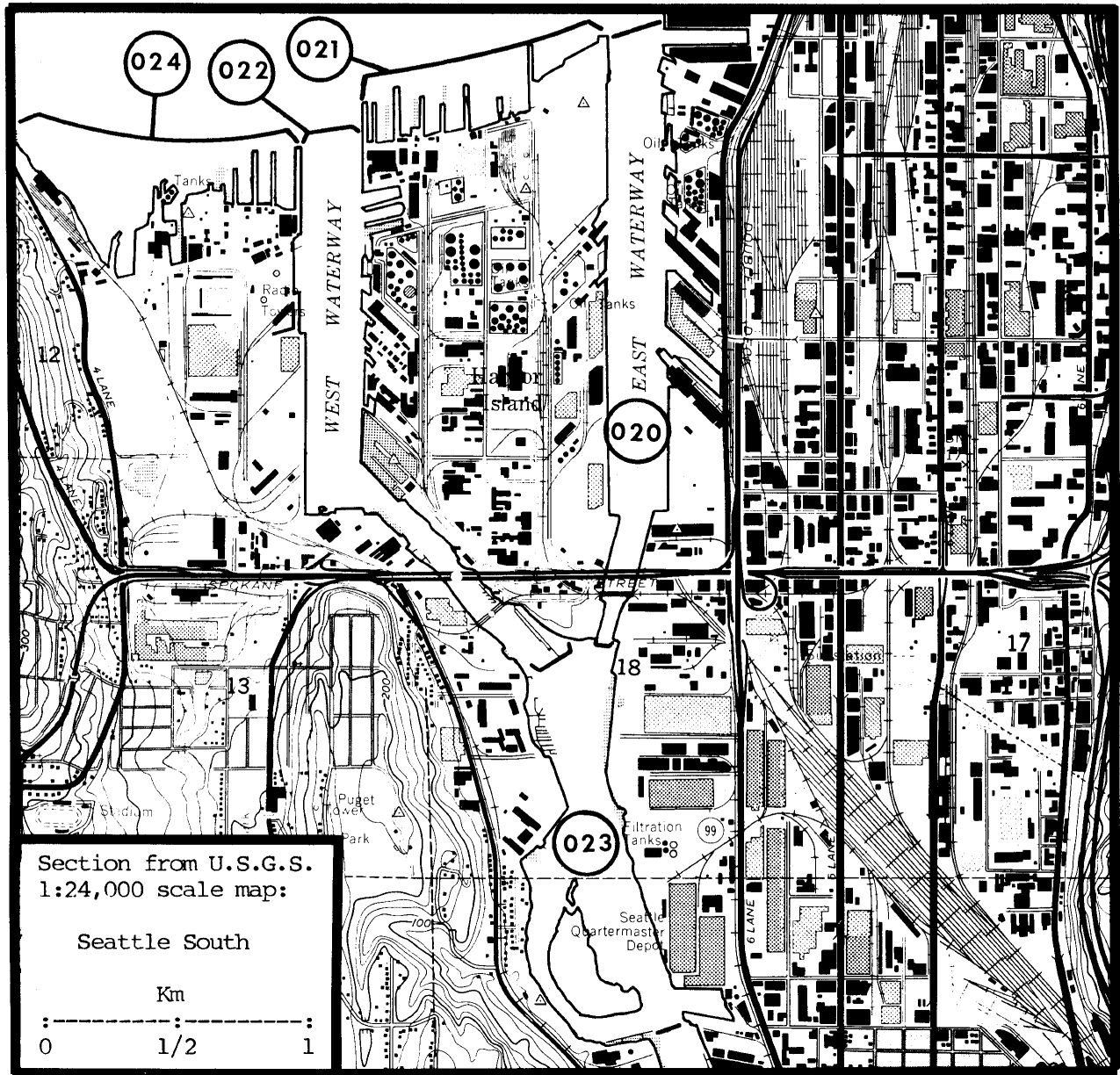
No Nesting Observed 0 Speich & Wahl 06/28/82 B III 257

②④ Seattle, west waterfront 47°35'00"N, 122°22'15"W

No Nesting Observed 0 Speich & Wahl 06/28/82 B III 257

②⑤ Point Southworth 47°30'36"N, 122°29'40"W

Pigeon Guillemot X Throckmorton 1970's ? III 265



AREA 175, Seattle (cont'd.)

②26 Vashon Island¹ 47°25'00"N, 122°29'00"W
Pigeon Guillemot 2 Kitchin 06/13/26 E - 169

¹Insufficient data to show exact map location. Not shown on map.

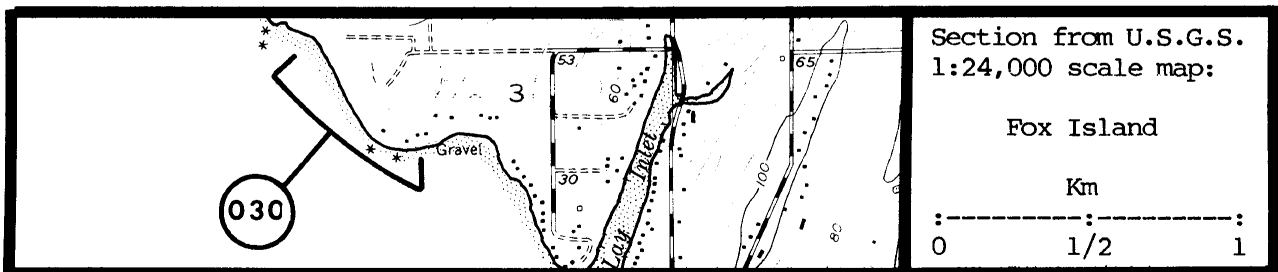
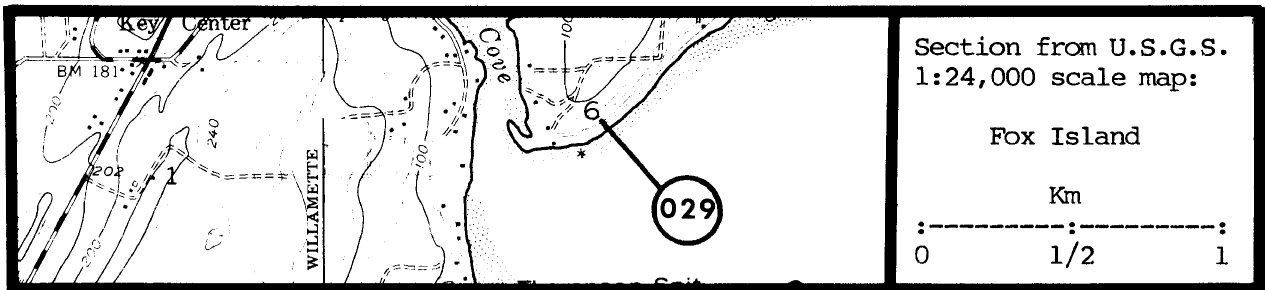
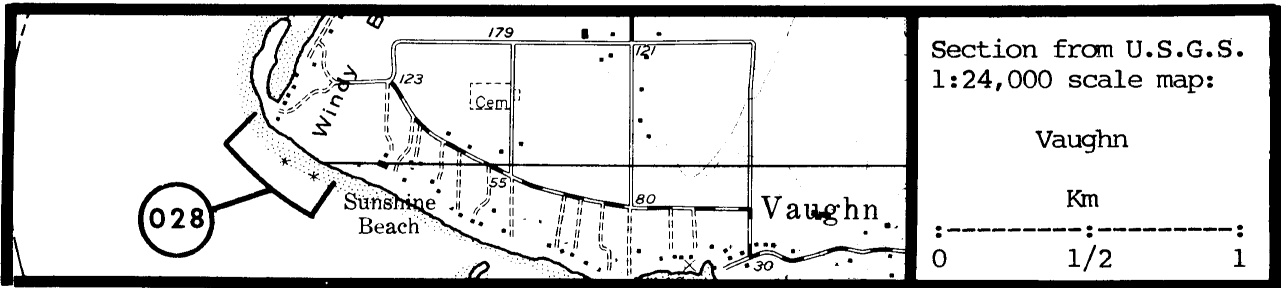
②27 Maury Island¹ 47°23'00"N, 122°26'00"W
Pigeon Guillemot 2 Kitchin 06/06/25 E - 169

¹Insufficient data to show exact map location. Not shown on map.

②28 Windy Bluff 47°20'45"N, 122°47'40"W
Pigeon Guillemot 9 Speich & Wahl 06/23/82 B III 257

②29 Glen Cove, cliff N of 47°20'22"N, 122°43'25"W
Pigeon Guillemot 10 Speich & Wahl 06/22/82 B III 257

②30 Allen Point, SE cliffs 47°20'25"N, 122°39'50"W
Pigeon Guillemot 18 Speich & Wahl 06/22/82 B III 257



AREA 175, Seattle (cont'd.)

③③① Cutts Island 47°19'15"N, 122°41'09"W

Pigeon Guillemot	24-30	Speich & Wahl	06/22/82	B III 257
Pigeon Guillemot	X	Menzies	05/21/1792	L III 195
Pigeon Guillemot	2+	Sluss	Summer/80	B III 249
Pigeon Guillemot	2+	Sluss	Summer/81	B III 249
Pigeon Guillemot	2+	Sluss	Summer/82	B III 249

③③② Green Point 47°16'52"N, 122°41'26"W

No Nesting Observed	0	Speich & Wahl	06/22/82	B III 257
Pigeon Guillemot	X	Menzies	05/21/1792	B III 195

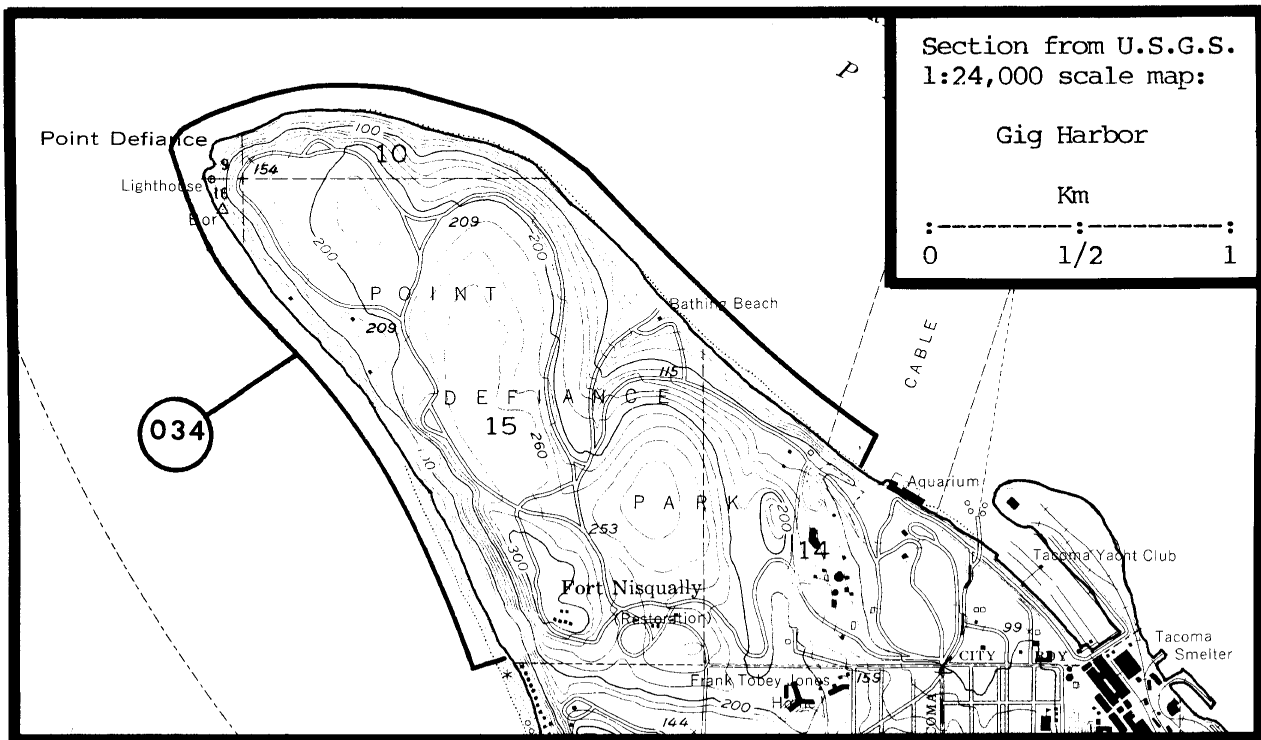
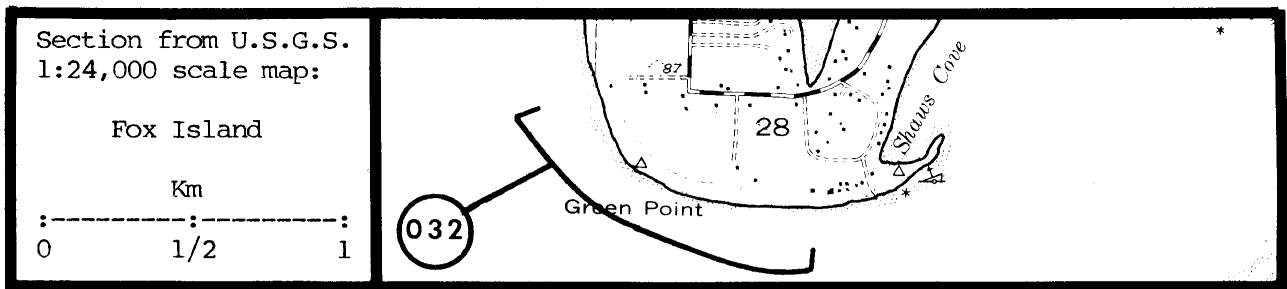
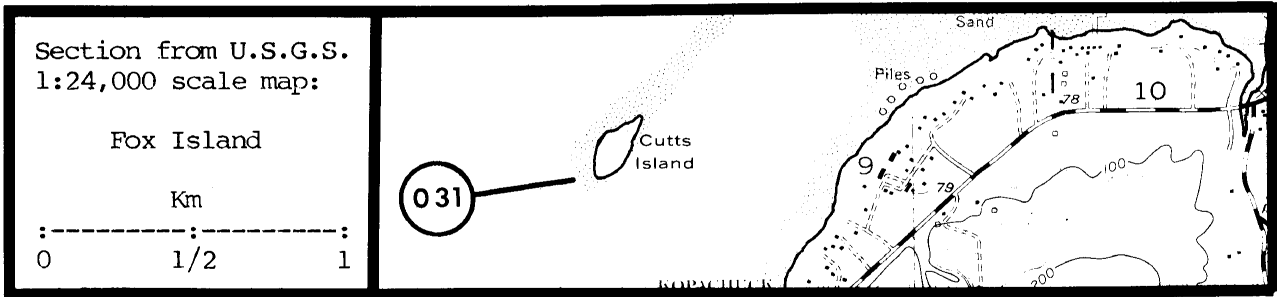
③③③ Fox Island¹ 47°15'00"N, 122°37'30"W

Pigeon Guillemot	2	Bowles	06/05/1897	E - 41
Pigeon Guillemot	2	Kitchin	06/12/34	E - 169

¹Insufficient data to show exact map location. Not shown on map.

③③④ Point Defiance 47°18'42"N, 122°32'00"W

No Nesting Observed	0	Speich & Wahl	06/24/82	B III 257
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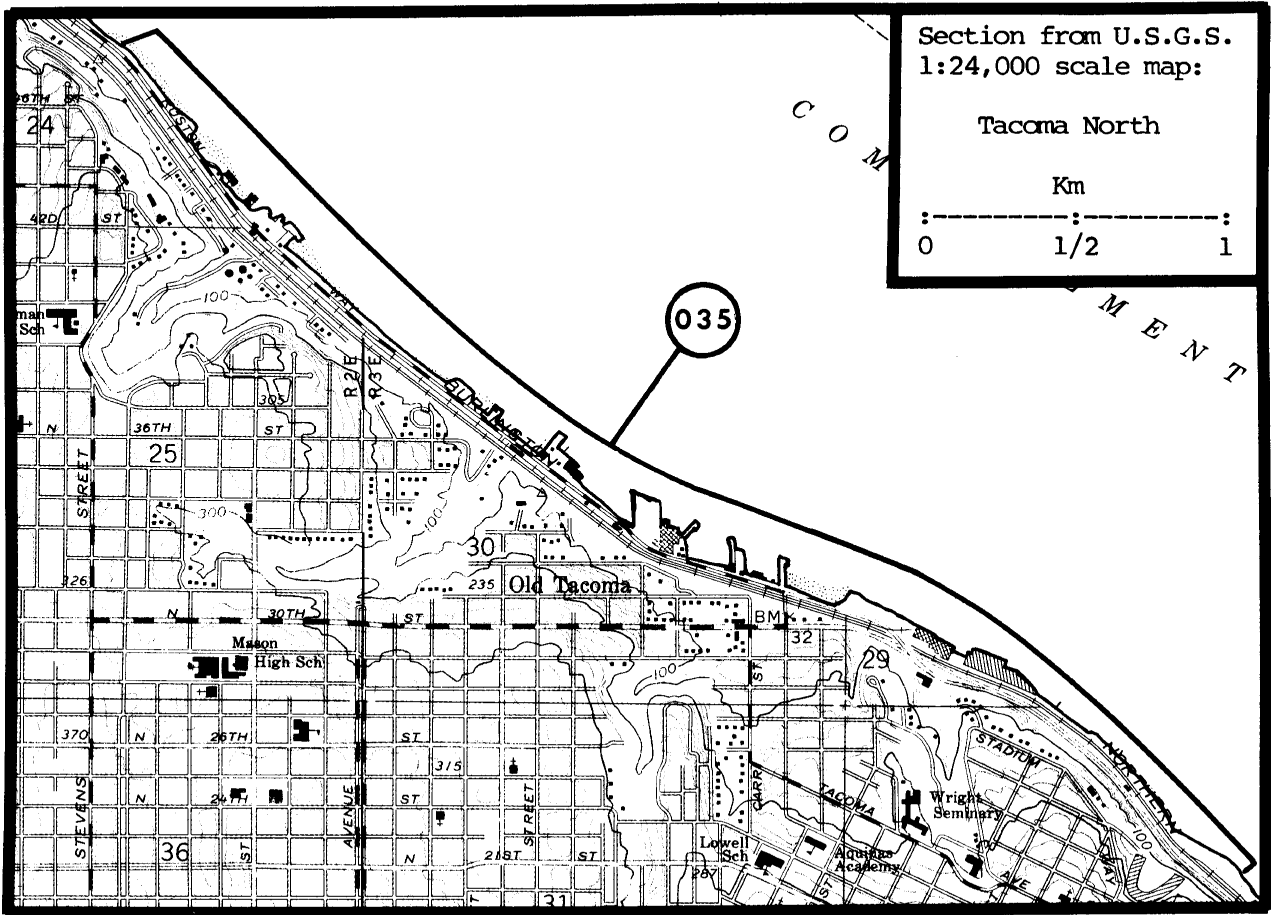


AREA 175, Seattle (cont'd.)

035

Commencement Bay, SW shore 47°16'33"N, 122°27'40"W

Glaucous-winged Gull	4	Speich & Wahl	06/24/82	B I 257
Glaucous-winged Gull	X	Chappell	05/ ?/76	? III 58

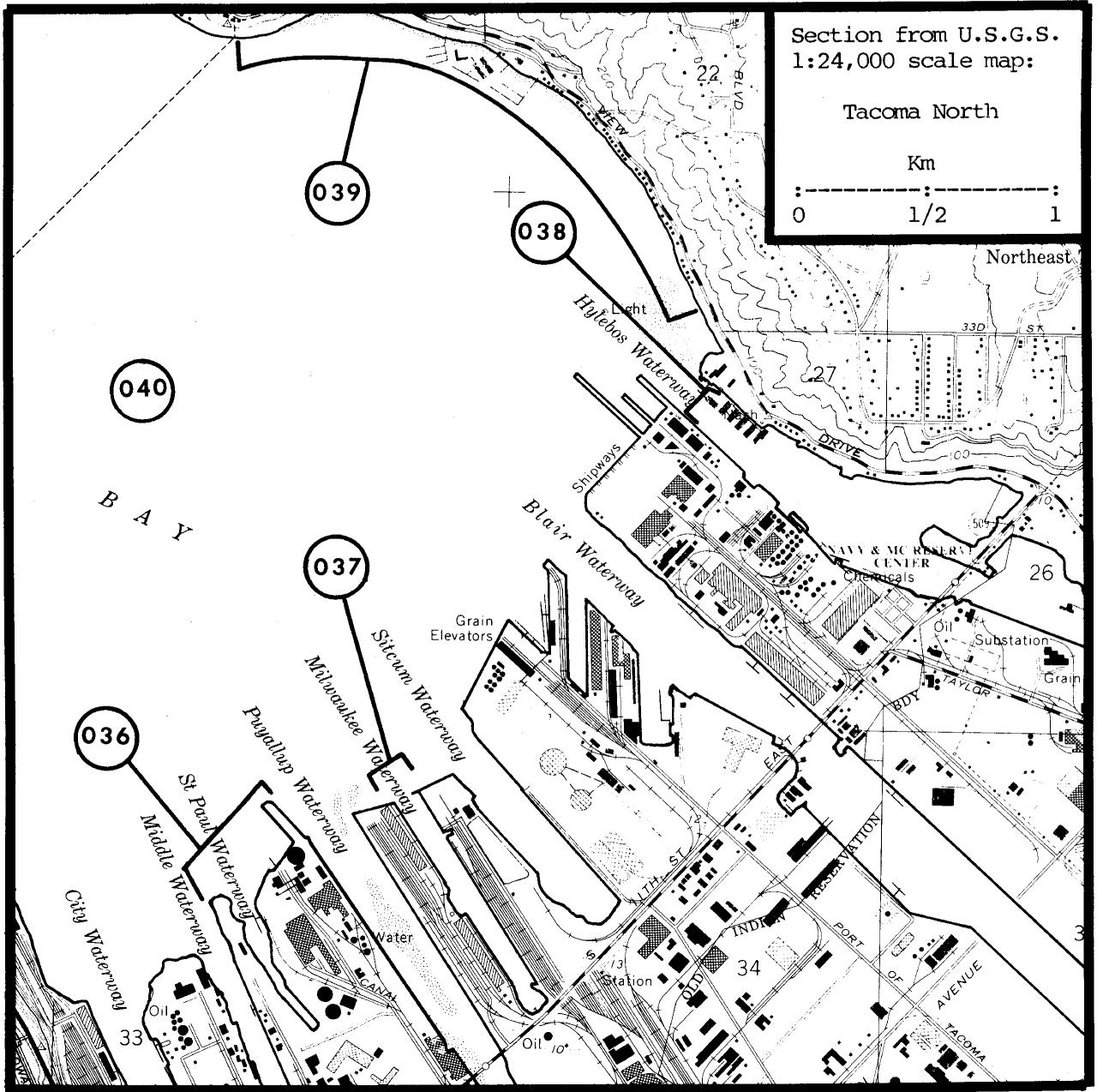


AREA 175, Seattle (cont'd.)

036

Commencement Bay, St. Paul Waterway 47°15'57"N, 122°25'48"W

Glaucous-winged Gull	520	Speich & Wahl	06/24/82	B II 257
Glaucous-winged Gull	20	Alcorn 1949	?/ ?/48	L III 2
Glaucous-winged Gull	10	Alcorn 1949	06/29/49	L III 2
Glaucous-winged Gull	4	Alcorn	06/29/49	E - 8
Glaucous-winged Gull	X	Alcorn	02/06/50	E - 8
Glaucous-winged Gull	2	Alcorn	06/19/50	E - 8



AREA 175, Seattle (cont'd.)

③37 Commencement Bay, Milwaukee Waterway 47°16'07"N, 122°25'15"W

Pigeon Guillemot 2 Speich & Wahl 06/24/82 B II 257

③38 Commencement Bay, Hylebos Waterway 47°17'00"N, 122°24'12"W

Glaucous-winged Gull	4	Speich & Wahl	06/24/82	B II 257
Pigeon Guillemot	3	Speich & Wahl	06/24/82	B II 257
Total	7			

Glaucous-winged Gull 24 Bock 07/11/82 L II 30

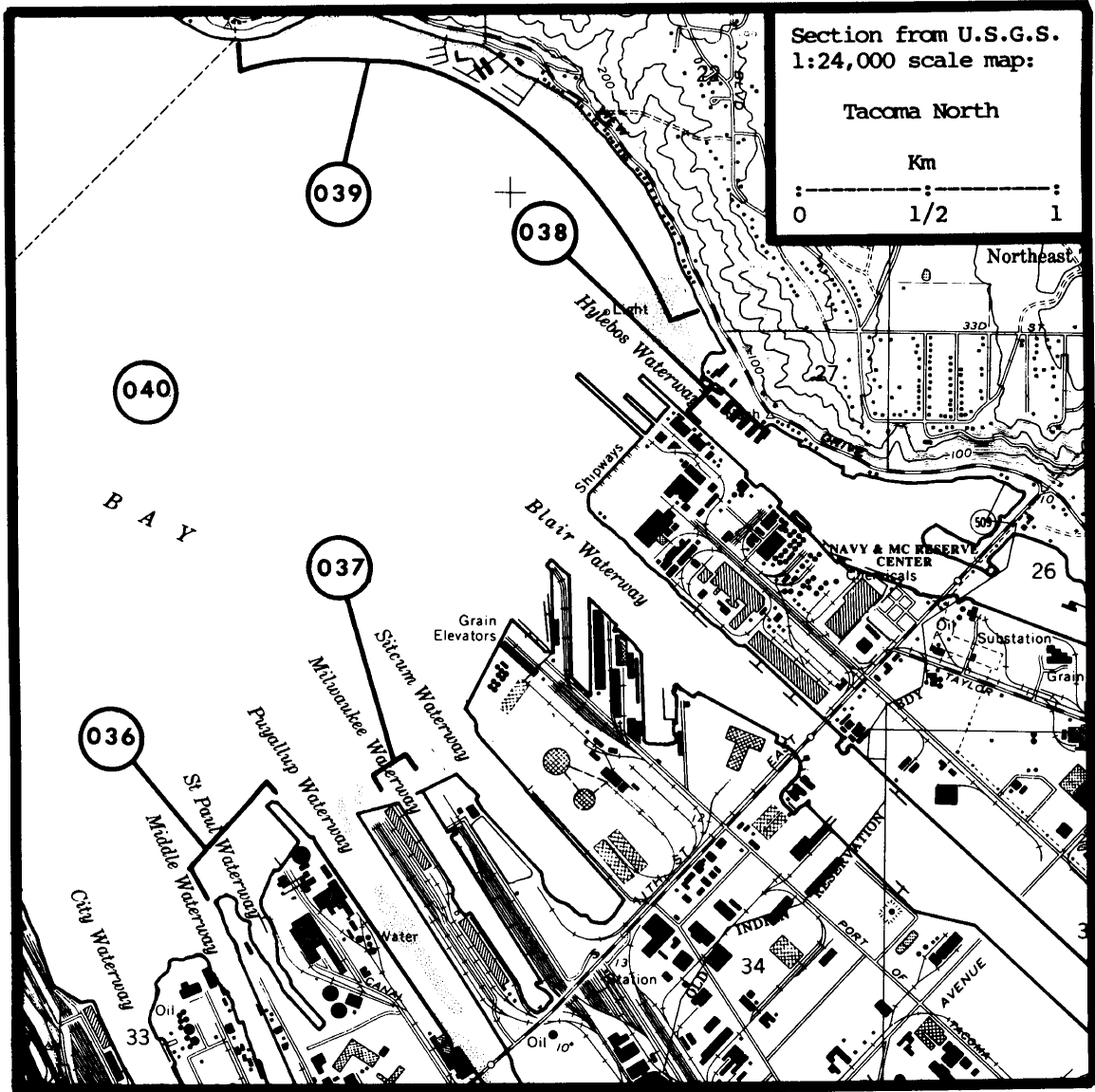
③39 Commencement Bay, NE shore 47°17'50"N, 122°25'08"W

Glaucous-winged Gull 4 Speich & Wahl 06/24/82 B I 257

③40 Tacoma/Commencement Bay¹ 47°17'00"N, 122°26'30"W

Glaucous-winged Gull 1 Kitchin 05/05/28 S - 168
 Pigeon Guillemot 1 Bowles 05/02/05 S - 40
 Pigeon Guillemot 1 Cantwell 06/03/12 S - 53

¹Insufficient data to show exact map location.



AREA 175, Seattle (cont'd.)

④041 Poverty Bay (Saltwater State Park) 47°22'30"N, 122°19'20"W

Pigeon Guillemot	7	Carson	05-07/ ?/82	L III	54
Pigeon Guillemot	4+	Carson	07/23/78	L III	54
Pigeon Guillemot	10	Carson	07-08/ ?/78	L III	54
Pigeon Guillemot	10	Carson	04-05/ ?/79	L III	54
Pigeon Guillemot	4	Carson	05/ ?/80	L III	54

④042 Shelton, waterfront 47°12'10"N, 122°58'06"W

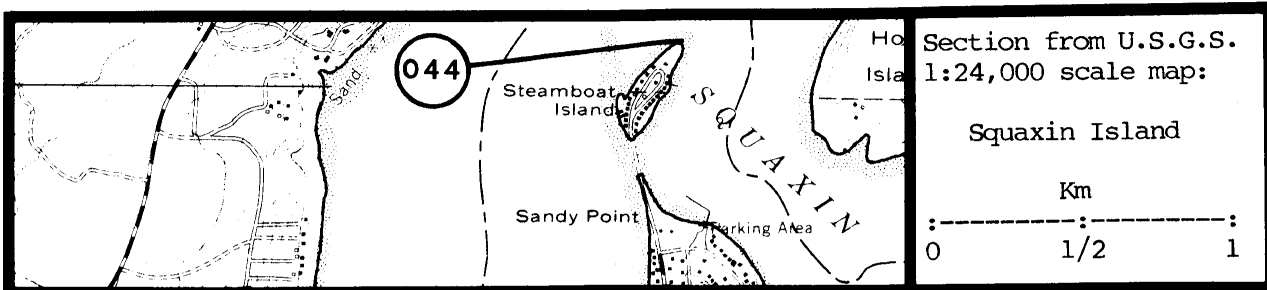
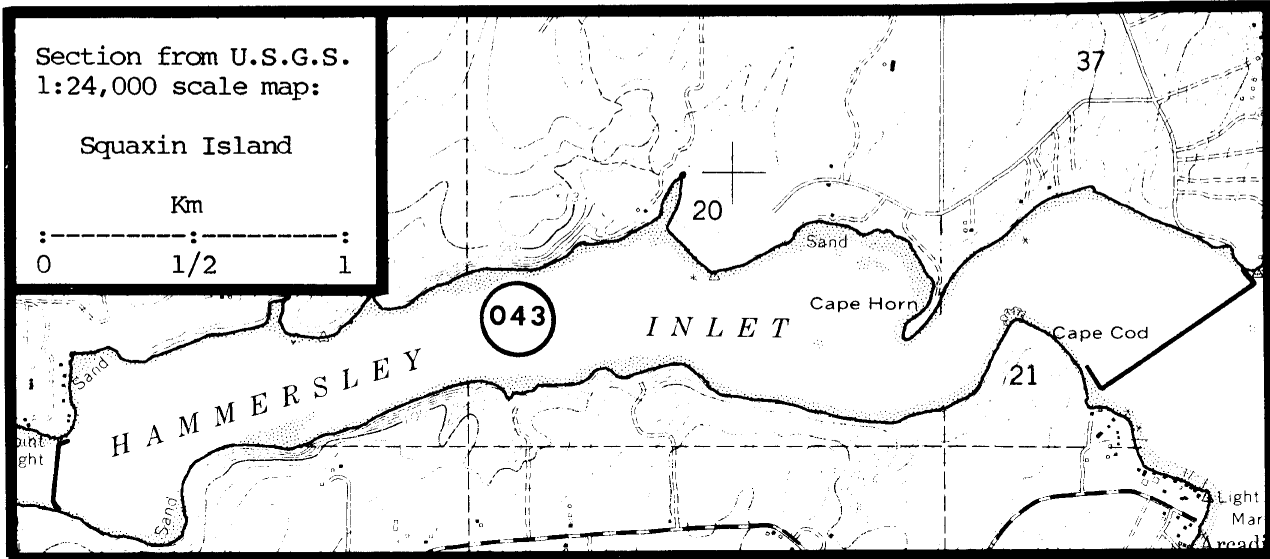
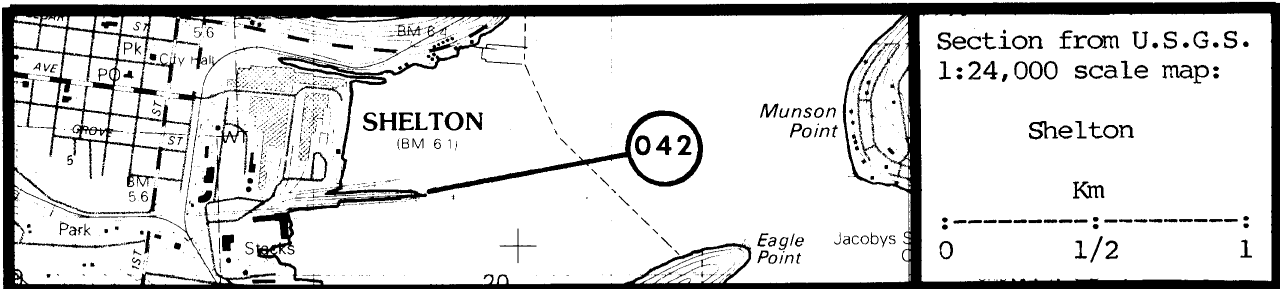
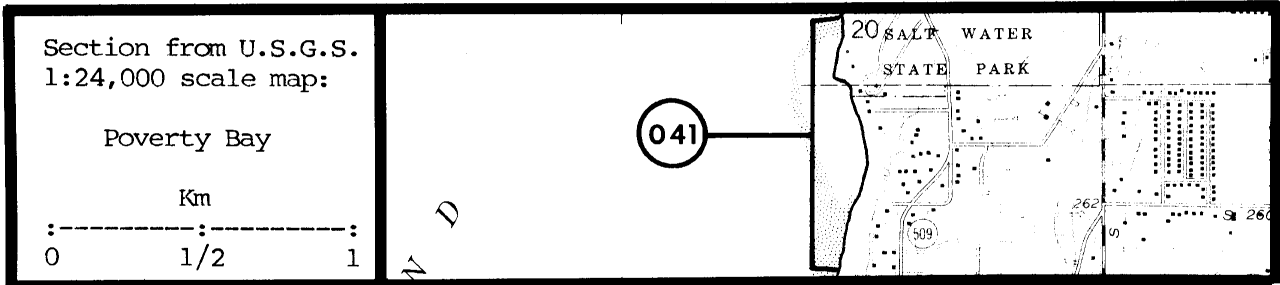
Glaucous-winged Gull	48	Speich	06/08/82	M II	255
Glaucous-winged Gull	40	Speich	05/31/82	M II	255
Pigeon Guillemot	1	Speich	05/31/82	M II	255

④043 Hammersley Inlet, eastern third 47°12'10"N, 122°58'06"W

Pigeon Guillemot	49	Speich & Wahl	06/23/82	B III	257
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④044 Steamboat Island 47°11'08"N, 122°56'25"N

Pigeon Guillemot	2	Roderick	06/21/82	L III	236
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AREA 175, Seattle (cont'd.)

(045) Sanderson Harbor, cliff NE of 47°09'00"N, 122°55'56"W

Pigeon Guillemot 6-12 McAllister 06/ ?/74 B III 192

(046) McMicken Island 47°14'57"N, 122°51'40"W

Pigeon Guillemot 6 Speich & Wahl 06/23/82 B III 257

(047) Pitt Island 47°13'25"N, 122°42'55"W

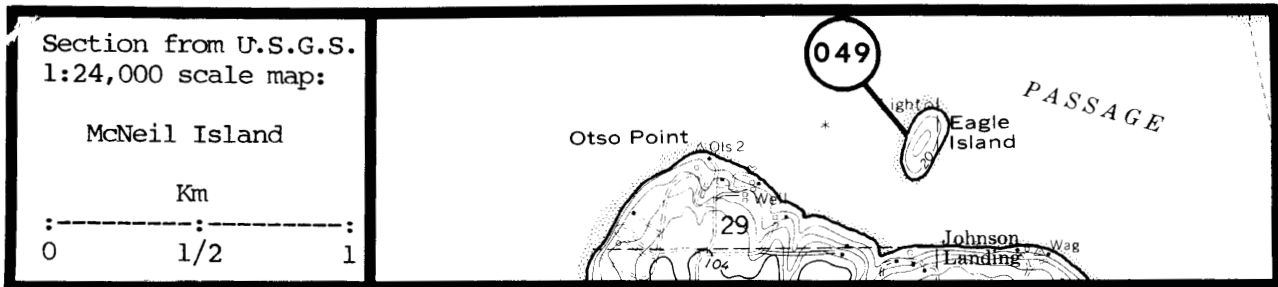
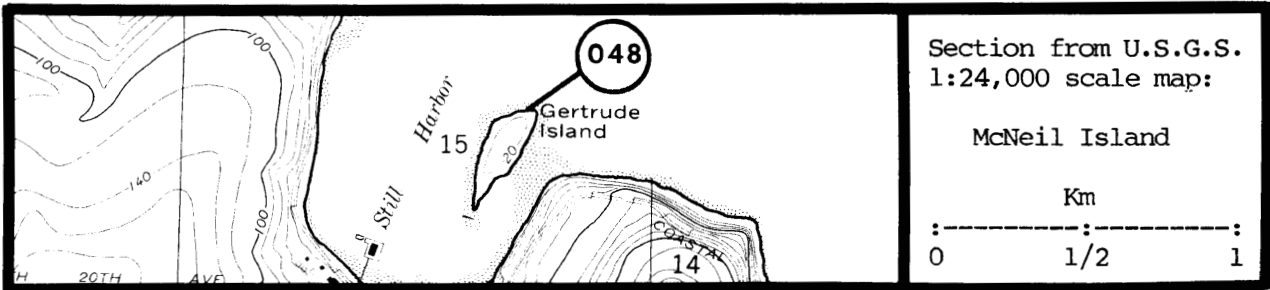
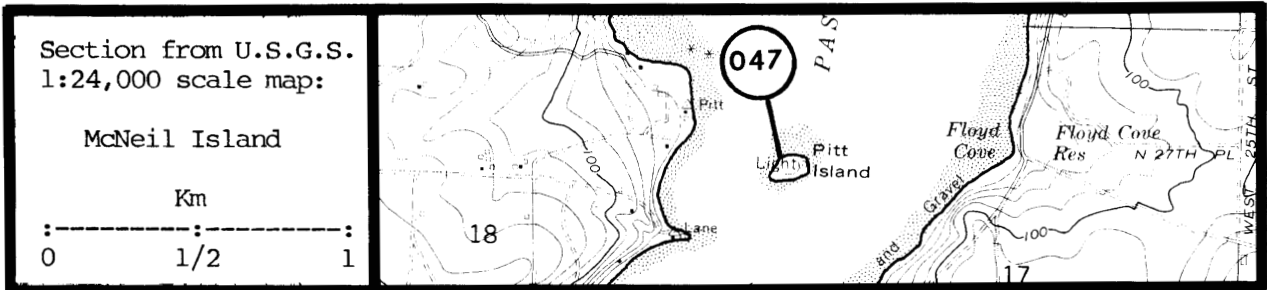
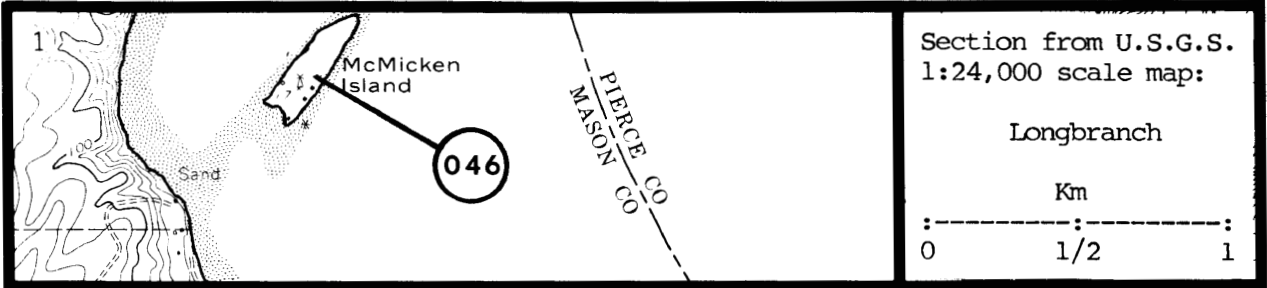
Pigeon Guillemot 7 Speich & Wahl 06/23/82 B III 257

(048) Gertrude Island 47°13'04"N, 122°39'30"W

Pigeon Guillemot 4 Speich & Wahl 06/23/82 B III 257

(049) Eagle Island 47°11'17"N, 122°41'40"W

No Nesting Observed	0	Speich & Wahl	06/22/82	B III 257
Pigeon Guillemot	2	Sluss	Summer/80	B III 249
Pigeon Guillemot	2	Sluss	Summer/81	B III 249
Pigeon Guillemot	2	Sluss	Summer/82	B III 249



AREA 175, Seattle (cont'd.)

050 Young Cove, bank E of 47°09'00"N, 122°56'00"W

Pigeon Guillemot	6-10	McAllister	Summer/82	B III 192
Pigeon Guillemot	6-10	McAllister	Summer/81	B III 192

051 Green Cove, bank NE of 47°06'10"N, 122°56'38"W

Pigeon Guillemot	X	McAllister	Late 1960's	B III 192
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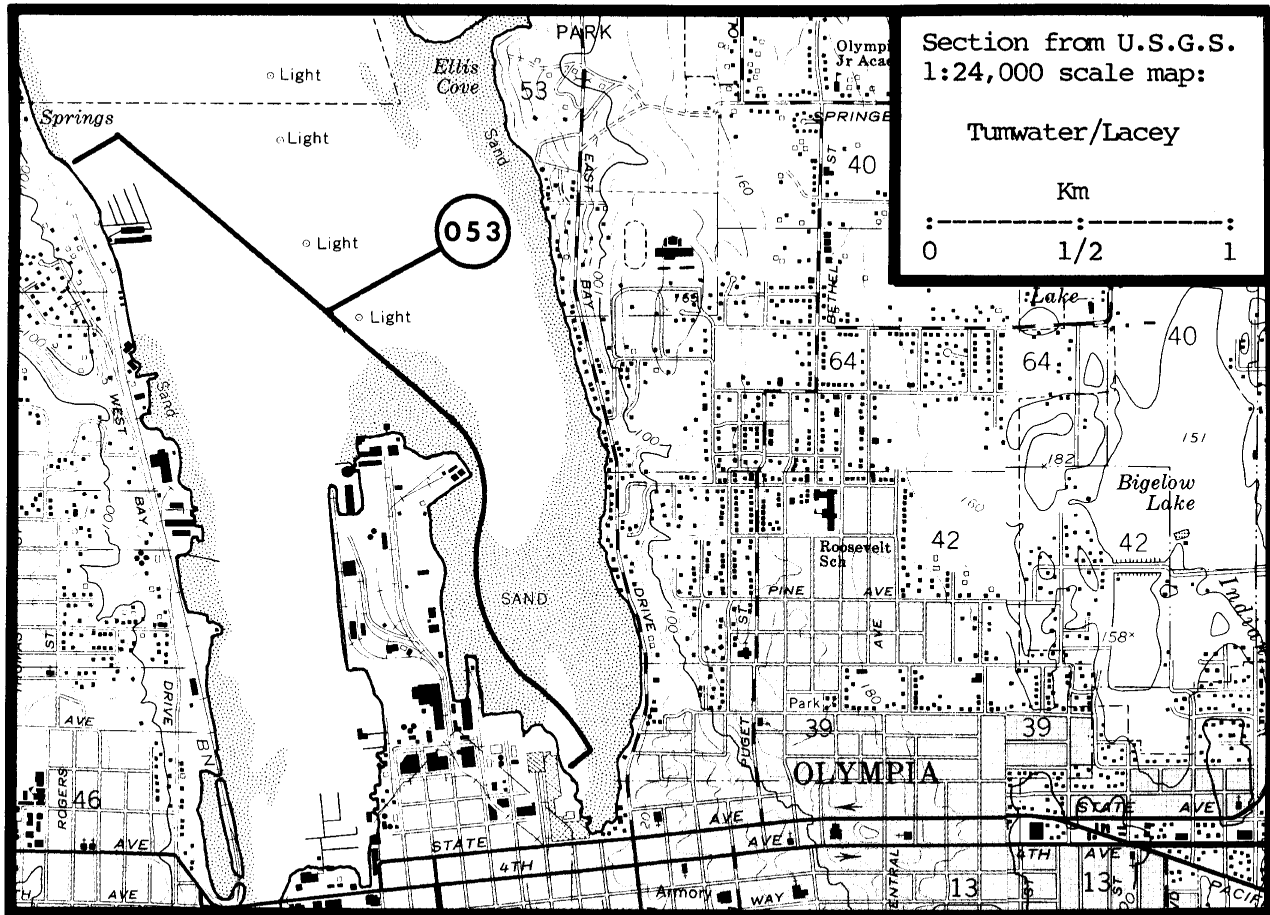
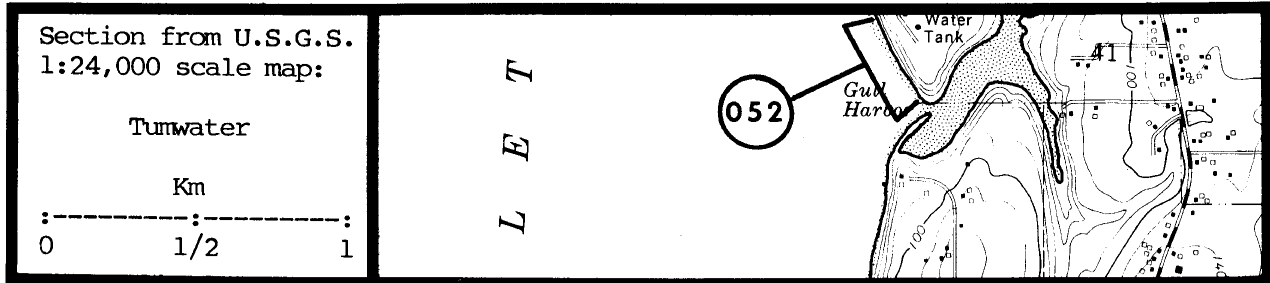
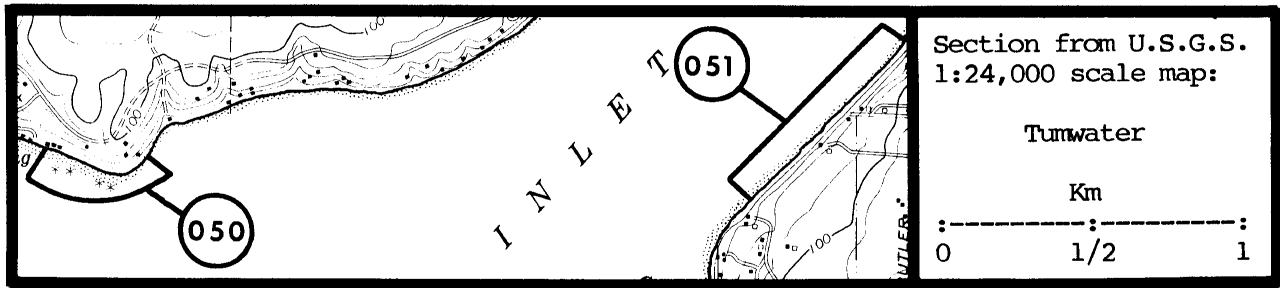
052 Gull Harbor, cliff 47°06'50"N, 122°53'27"W

Pigeon Guillemot	11	Speich & Wahl	06/21/82	B III 257
Pigeon Guillemot	3	Harrington-Tweit	04/28/77	L III 124
Pigeon Guillemot	X	Sluss	Summer/80	B III 249
Pigeon Guillemot	X	Sluss	Summer/81	B III 249
Pigeon Guillemot	X	Sluss	Summer/82	B III 249

053 Olympia, waterfront 47°03'30"N, 122°54'30"W

Glaucous-winged Gull	30	Speich & Wahl	06/21/82	B II 257
Pigeon Guillemot	<u>12</u>	Speich & Wahl	06/21/82	B III 257
Total	42			

Glaucous-winged Gull	18	Harrington-Tweit	06/15-07/12/76	L II 124
Glaucous-winged Gull	30-40	Knight	08/15/78	L III 171
Glaucous-winged Gull	8	Knight	08/25/78	L III 171
Glaucous-winged Gull	20-24	Knight	08/08/79	L III 171
Glaucous-winged Gull	4	Harrington-Tweit	08/06/81	L III 124
Pigeon Guillemot	2	Reed	06/11/49	E - 225
Pigeon Guillemot	X	Sluss	Summer/80	B III 249
Pigeon Guillemot	35	Harrington-Tweit	05/16/81	L III 124
Pigeon Guillemot	X	Sluss	Summer/81	B III 249
Pigeon Guillemot	X	Sluss	Summer/82	B III 249



AREA 175, Seattle (cont'd.)

①054 Anderson Island, south end 47°07'30"N, 122°42'00"W

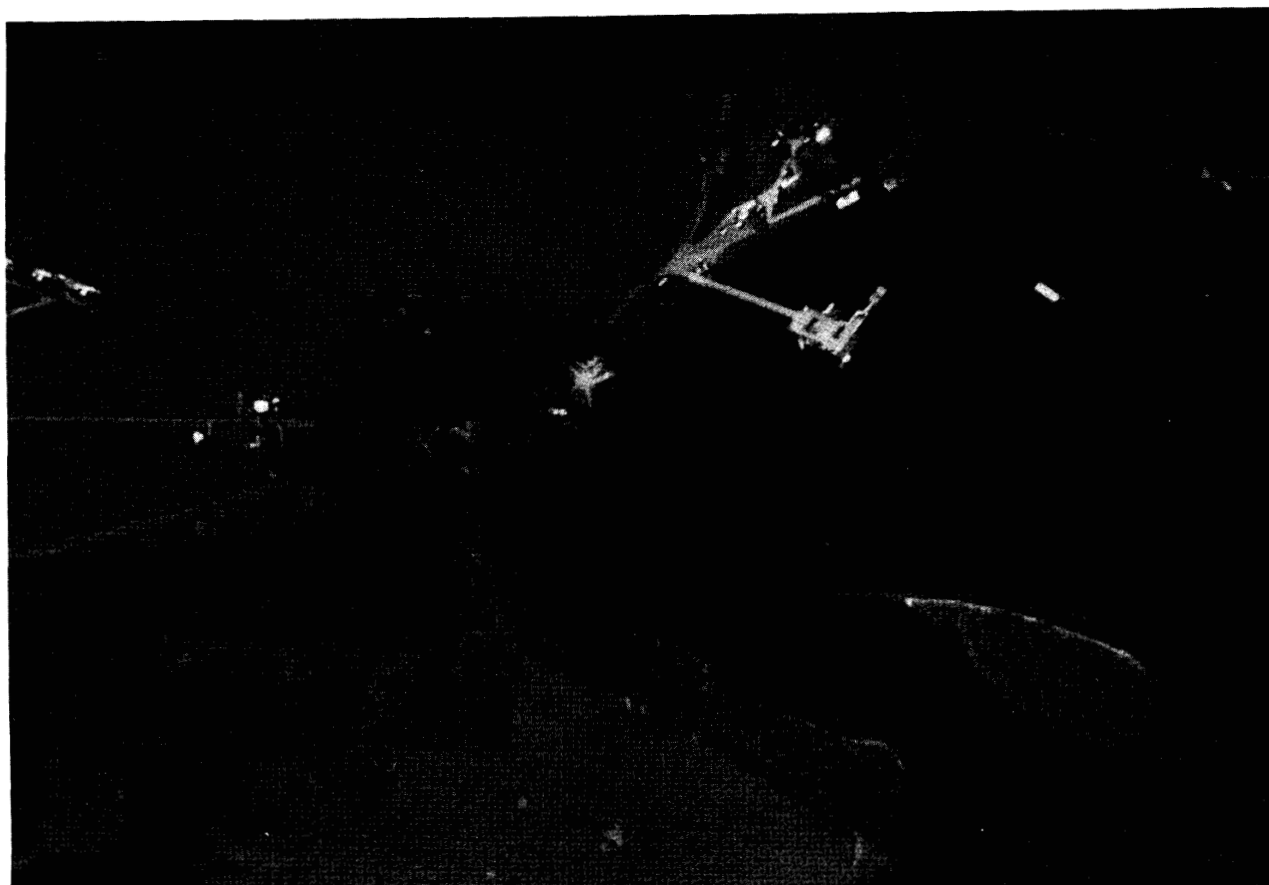
Pigeon Guillemot 10-20 Beecher 07/27/80 L III 24

①055 Nisqually Reach, east shoreline 47°06'50"N, 122°40'06"W

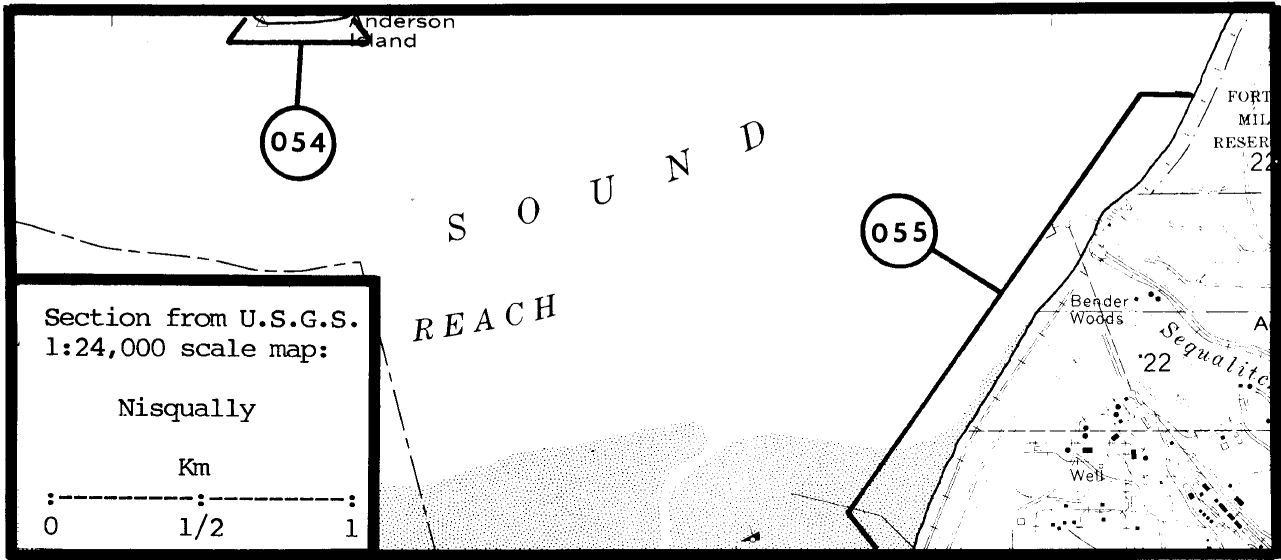
Pigeon Guillemot	2	Harrington-Tweit	06/25/81	L III 124
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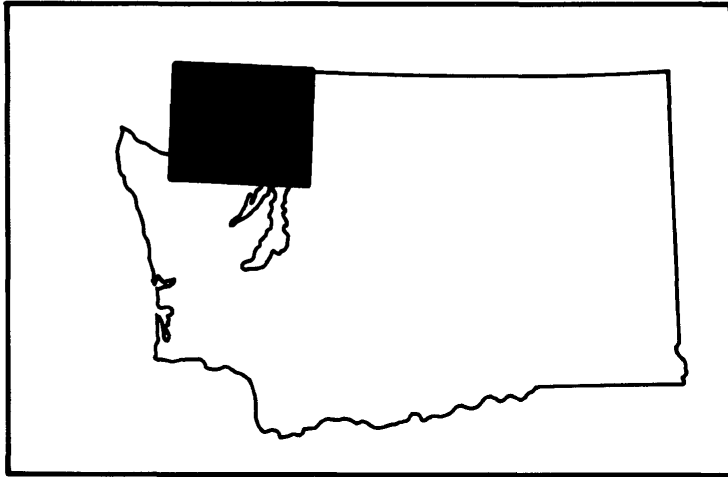
Pigeon Guillemot	1	Suckley ¹	?/ ?/1855	S - 259
Pigeon Guillemot	1	Suckley ¹	?/ ?/1856?	S - 259
Pigeon Guillemot	2	Suckley ¹	08/08/1856	S - 259

¹Insufficient data to show exact map location.



Gertrude Island (175048) 1978 S.G. Herman





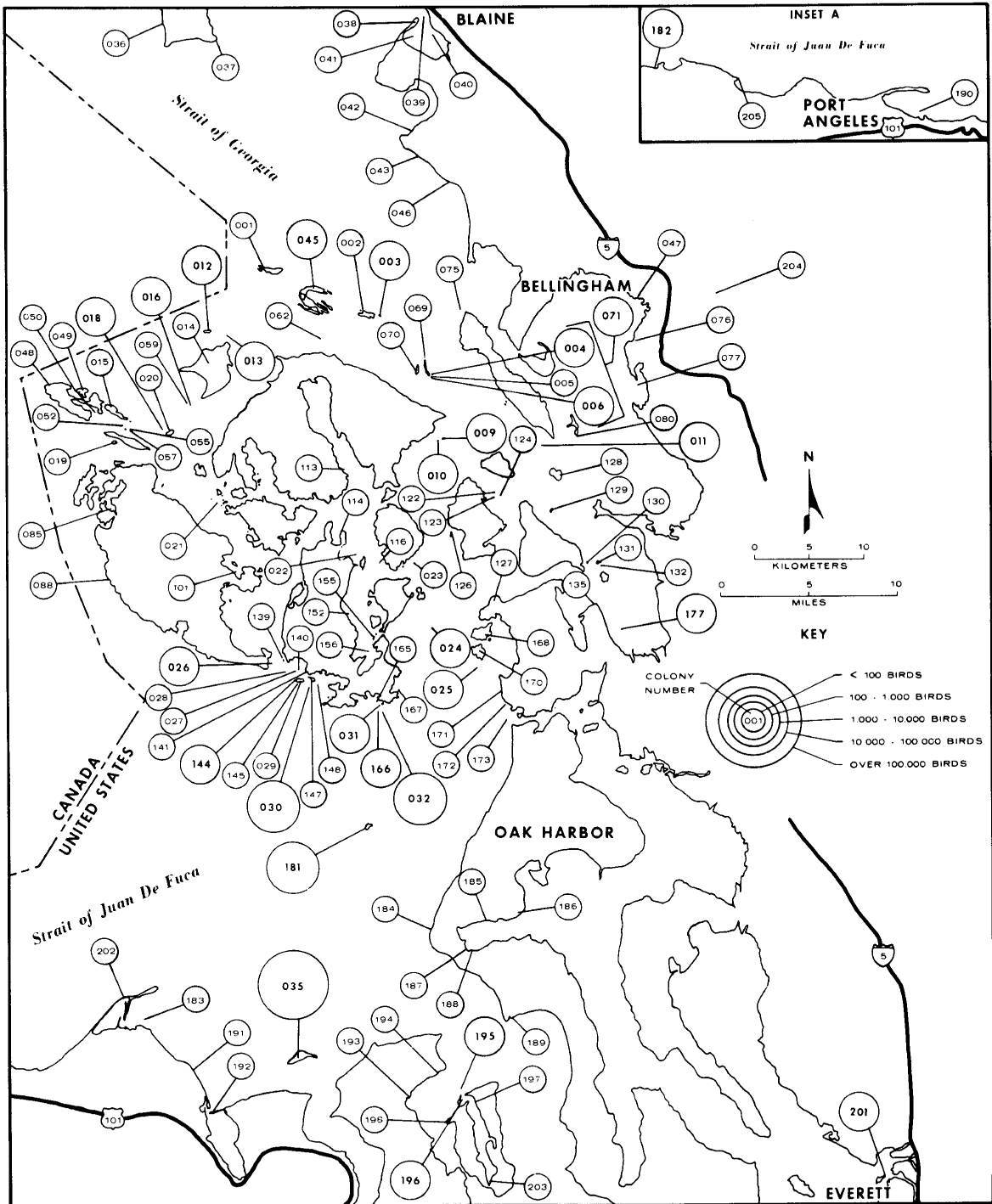
156
Victoria

The map on the facing page is an index to the locations of colonies within map 156, Victoria. Note that all colonies on the map are not numbered consecutively from north to south, or west to east, since many previously unreported sites have been added since initial colony numbers were assigned by Varoujean (1979). On the pages following this map, all colonies are listed sequentially and a detailed map of each is provided.

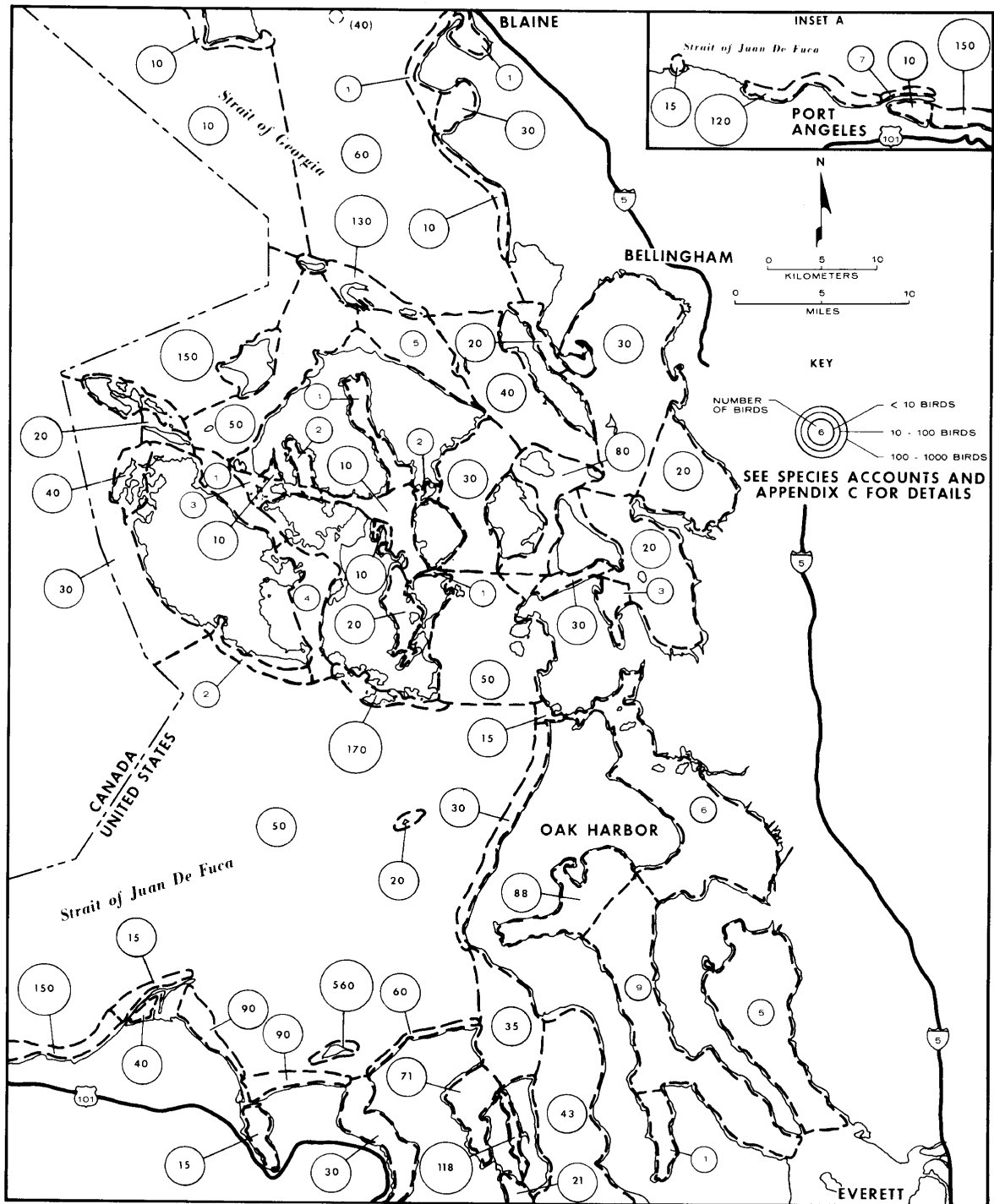
Numbers of breeding seabirds vary from year to year. Below are the approximate numbers of breeding seabirds within this region.

Double-crested Cormorant	1,100
Pelagic Cormorant	2,200
American Black Oystercatcher	120
Glaucous-winged and Western gulls	19,000
Pigeon Guillemot	3,500
Marbled Murrelet	2,200
Rhinoceros Auklet	37,000
Tufted Puffin	60

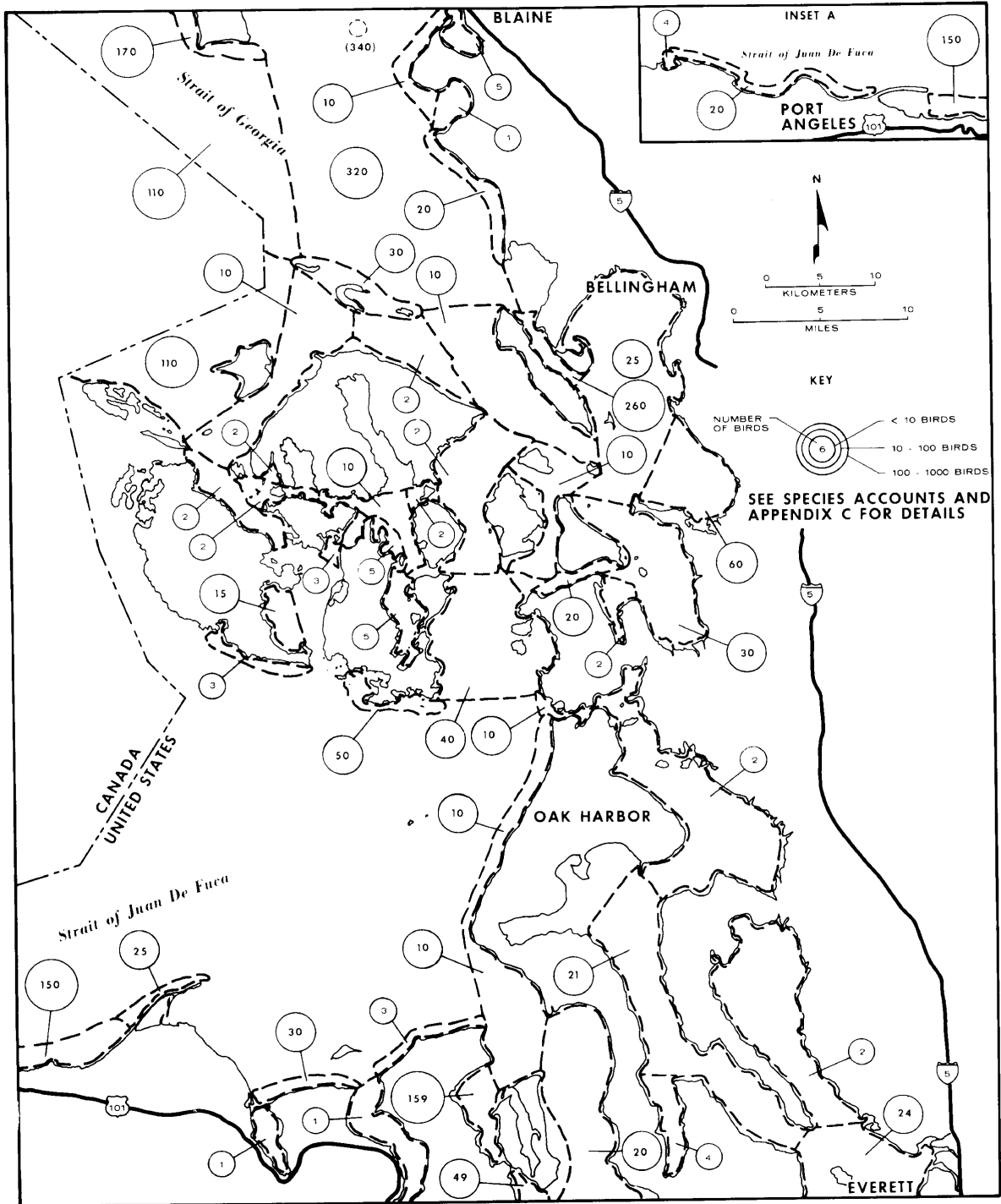
156 VICTORIA



Relative distribution for Pigeon Guillemots in map area 156, Victoria.



Relative distribution for Marbled Murrelets in map area 156, Victoria.



AREA 156, Victoria (cont'd.)

SITE NUMBER	COLONY NAME	LAT.-LONG.				
191	PORT WILLIAMS	48° 07' 00", 123° 03' 00" W				
PIGEON GUILLEMOT	34	SPEICH	05/23/79	B III	255	
PIGEON GUILLEMOT	33	SPEICH	05/26/78	B III	255	
SPECIES NAME	NUMBER BREEDING BIRDS	SOURCE	SURVEY DATE	SURVEY TYPE	REFERENCE DATA QUALITY	

Box gives the most recent or the best estimates available.

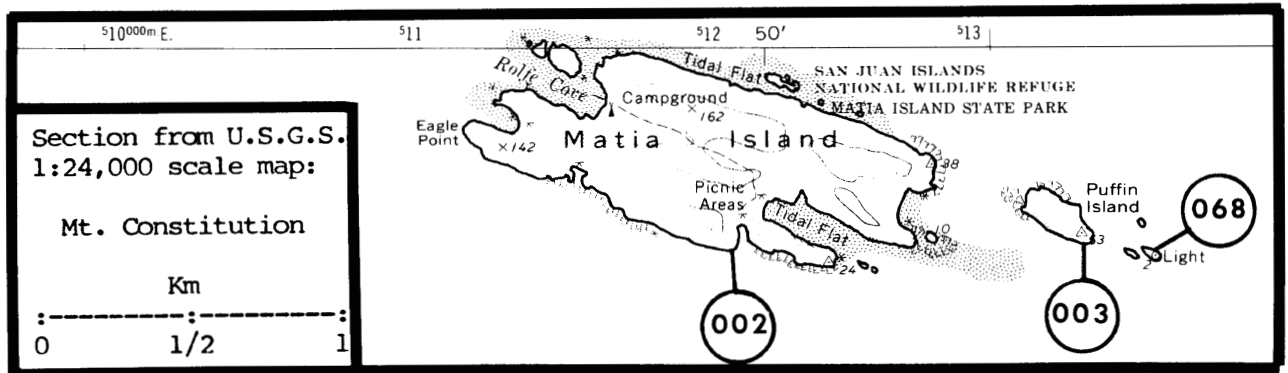
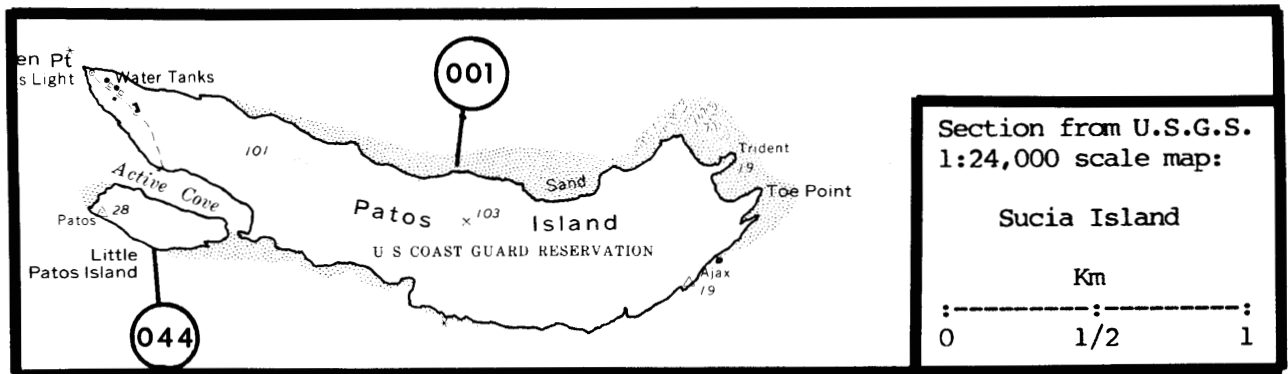
001 Patos Island 48°47'05"N, 122°57'10"W

Glaucous-winged Gull	40	Speich & Wahl	06/05/78	B III	257
Pigeon Guillemot	9	Paulson; Wahl	06/07/79	A III	207;269
Total	49				

Glaucous-winged Gull	40	Manuwal 1973	05/27/73	L II	186
Pigeon Guillemot	2	Forbush	06/11/1888	S -	106
Pigeon Guillemot	1	Jewett	07/08/48	S -	157
Pigeon Guillemot	100	Manuwal 1973	05/27/73	L III	186
Pigeon Guillemot	X	Speich & Wahl	06/05/78	B III	257

002 Matia Island 48°44'50"N, 122°50'00"W

Pigeon Guillemot	9	Paulson; Wahl	06/07/79	A III	207;269
Black Oystercatcher	2	Forbush	06/09/1888	S -	106
Black Oystercatcher	2	Forbush	06/29/1888	S -	106
Brandt's Cormorant	X	Jewett	07/06/40	L III	154
Brandt's Cormorant	P	Jewett	pre-1953	? ?	155
Pelagic Cormorant	P	Jewett 1937	05/23/37	L ?	156
Glaucous-winged Gull	X	Jewett 1937	05/23/37	L ?	156
Pigeon Guillemot	X	Jewett 1937	05/23/37	L ?	156
Pigeon Guillemot	40	Jewett	07/06/40	L III	154
Pigeon Guillemot	X	Jewett 1937	07/07/40	? ?	155
Pigeon Guillemot	100	Nisqually NWR	06/08/63	L III	202
Pigeon Guillemot	100	Marshall	?/ ?/63	? ?	191
Pigeon Guillemot	25	Nisqually NWR	06/20/67	L III	154



Patos Island (156001) US Coast Guard

AREA 156, Victoria (cont'd.)

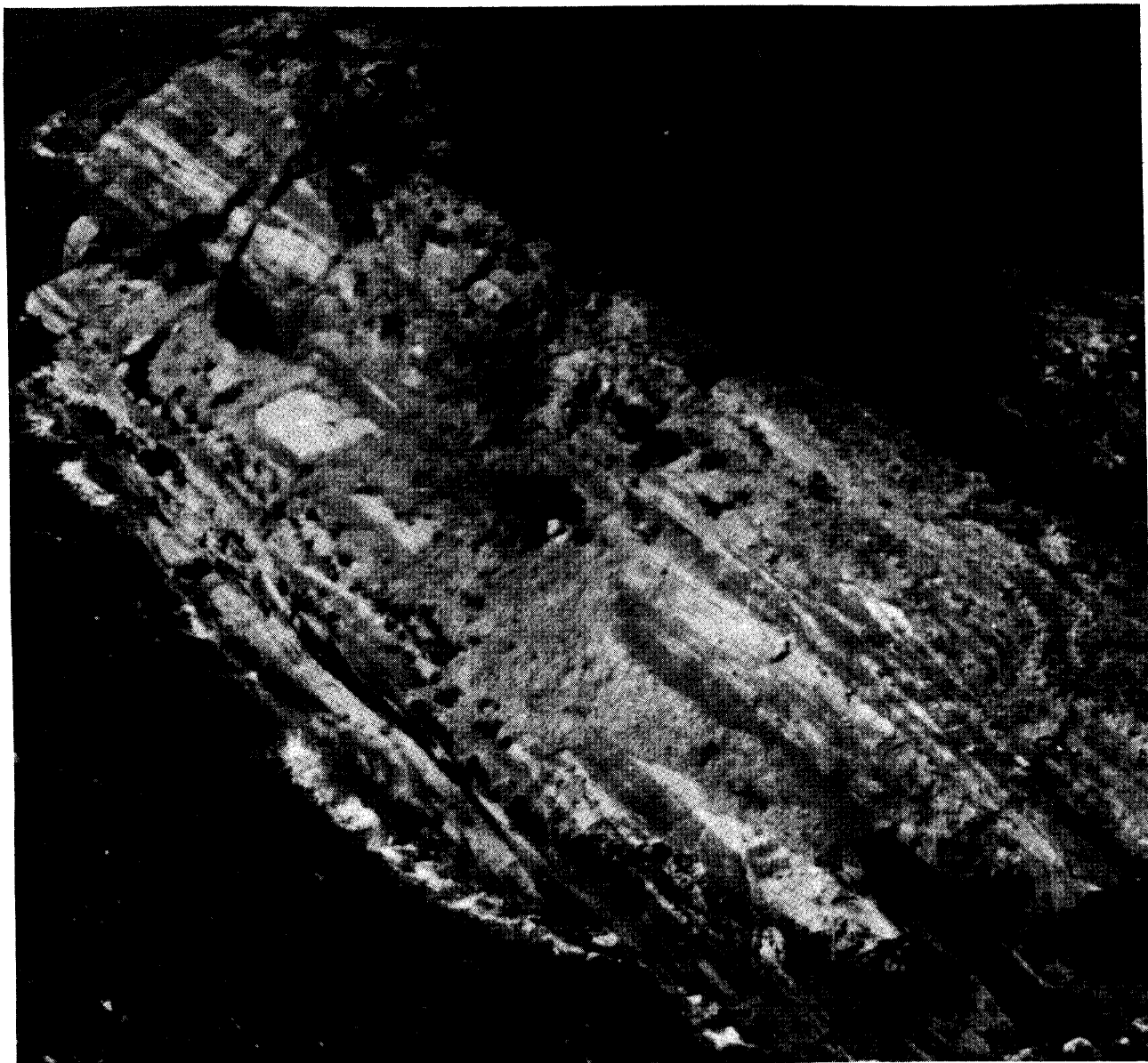
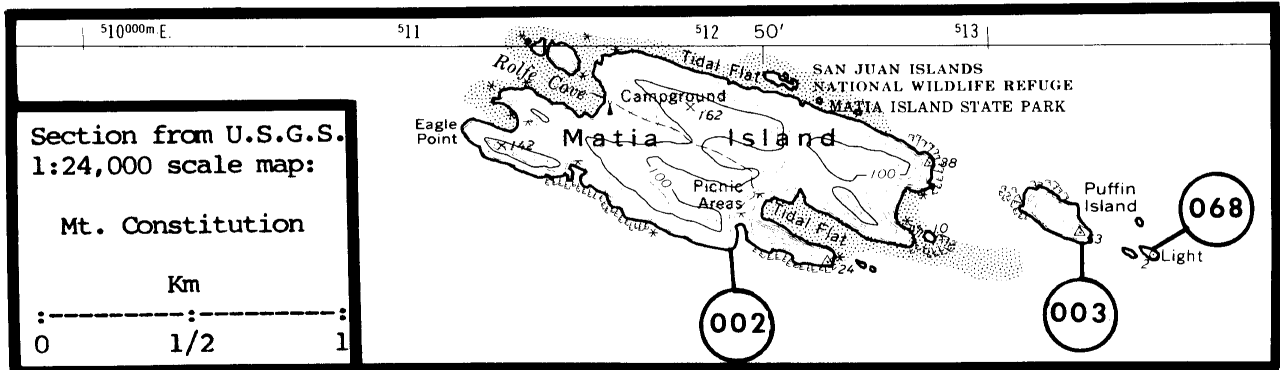
Pigeon Guillemot	10	Nisqually NWR	08/21-23/67	L III 202
Pigeon Guillemot	25	Nisqually NWR	07/13-16/68	L III 202
Pigeon Guillemot	P	Manuwal 1973	05/26-27/73	L III 186
Pigeon Guillemot	8	Wahl; Harrington- Tweit	05/24/78	A III 269; 124
Pigeon Guillemot	100	Speich & Wahl	06/05/78	B III 257

003

Puffin Island 48°44'42"N, 122°49'12"W

Black Oystercatcher	2	Speich & Wahl	06/05/78	B III 257
Glaucous-winged Gull	700	Speich & Wahl	06/05/78	B III 257
Pigeon Guillemot	280	Speich & Wahl	06/05/78	B III 257
Total	982			

Cormorant sp.	200	Nisqually NWR	06/06/62	B ? 202
Double-crested Cormorant	16	Eddy	06/01/57	L I 95
Pelagic Cormorant	12+	Eddy	06/01/57	L III 95
Pelagic Cormorant	80	Nisqually NWR	06/18/63	L III 202
Pelagic Cormorant	30	Hauser & Monson 1963	07/16-17/63	B ? 145
Black Oystercatcher	2	Nisqually NWR	06/18/63	L III 202
Black Oystercatcher	2	Hauser & Monson 1963	07/16-17/63	B ? 145
Black Oystercatcher	2P	Manuwal 1973	05/26/73	L III 186
Black Oystercatcher	2	Eddy	06/09/74	L I 95
Glaucous-winged Gull	X	Jewett 1937	05/23/37	L ? 156
Glaucous-winged Gull	2	Ray	06/21/38	E - 224
Glaucous-winged Gull	X	Jewett	07/06/40	L III 154
Glaucous-winged Gull	80B	Schultz	?/ ?/49	L III 245
Glaucous-winged Gull	800+	Eddy	06/01/57	L III 95
Glaucous-winged Gull	1200	Nisqually NWR	06/06/62	B ? 202
Glaucous-winged Gull	2000	Nisqually NWR	06/18/63	L III 202
Glaucous-winged Gull	600	Hauser & Monson 1963	07/16-17/63	B ? 145
Glaucous-winged Gull	600-700	Manuwal 1973; Manuwal	05/26/73	L III 186;188
Glaucous-winged Gull	310	Eddy	06/09/74	L II 95
Glaucous-winged Gull	-250	Wahl	07/19/82	A III 269
Pigeon Guillemot	8+	Eddy	06/01/57	L III 95
Pigeon Guillemot	25	Nisqually NWR	06/18/63	L III 202
Pigeon Guillemot	50	Hauser & Monson 1963	07/16-17/63	B III 145
Pigeon Guillemot	30	Manuwal 1973	05/26/73	L III 186
Pigeon Guillemot	36	Nisqually NWR	08/06/80	B III 202
Tufted Puffin	2	Ray	06/21/38	E - 224
Tufted Puffin	4	Richardson	06/01/57	L III 229
Tufted Puffin	8+	Eddy	06/01/57	L III 95
Tufted Puffin	2	Nisqually NWR	06/18/63	L III 202
Tufted Puffin	7	Hauser & Monson 1963	07/16-17/63	B ? 145



Puffin Island (156003) 19 July 1982 T.R. Wahl

AREA 156; Victoria (cont'd.)

004

Lone Tree Island (Sister Island, north) 48°41'41"N, 122°45'22"W

Black Oystercatcher	4	Speich & Wahl	06/05/78	B III 257
Glaucous-winged Gull	820	Speich & Wahl	06/05/78	B III 257
Pigeon Guillemot	6	Speich & Wahl	06/05/78	B III 257
Total	830			

Pelagic Cormorant	26+	Eddy	06/01/57	L III 95
Black Oystercatcher	2	Eddy	06/01/57	L I 95
Black Oystercatcher	2	Richardson	06/02/57	L I 229
Black Oystercatcher	2	Eddy 1975	06/13/75	L I 94
Black Oystercatcher	2-4	Nysewander	06/13/75	L III 205
Glaucous-winged Gull	584	Eddy	06/01/57	L II 95
Glaucous-winged Gull	824	Eddy 1975	06/13/75	L II 94
Pigeon Guillemot	15+	Eddy	06/01/57	L III 95
Pigeon Guillemot	12	Eddy 1975	06/13/75	L II 94

005

Sister Island, middle 48°41'33"N, 122°45'28"W

Black Oystercatcher	2	Speich & Wahl	06/05/78	B III 257
Glaucous-winged Gull	40	Speich & Wahl	06/05/78	B III 257
Total	42			

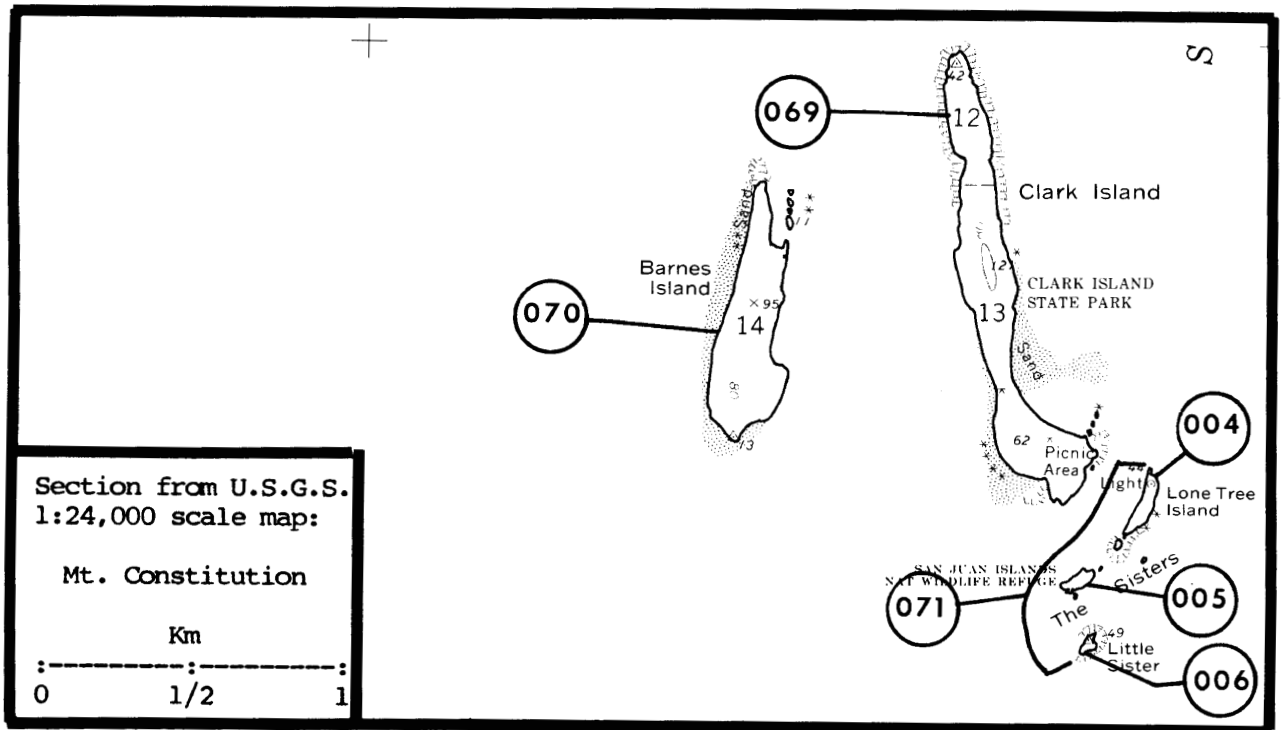
Black Oystercatcher	2?	Eddy	06/01/57	L III 95
Black Oystercatcher	2	Eddy 1975; Nysewander	06/13/75	L I 94;205
Glaucous-winged Gull	X	Jewett 1937	05/26/37	L III 156
Glaucous-winged Gull	36	Eddy	06/01/57	L II 95
Glaucous-winged Gull	44	Eddy 1975	06/13/75	L II 94
Pigeon Guillemot	50	Jewett 1937	05/26/37	L III 156
Pigeon Guillemot	?	Eddy	06/01/57	L III 95

006

Sister, Little (Sister Island, south) 48°41'23"N, 122°45'30"W

Double-crested Cormorant	4	Speich & Wahl	06/05/78	B I 257
Pelagic Cormorant	22	Speich & Wahl	06/05/78	B I 257
Black Oystercatcher	2	Speich & Wahl	06/05/78	B III 257
Glaucous-winged Gull	260	Speich & Wahl	06/05/78	B III 257
Total	288			

Double-crested Cormorant	4	Eddy 1975	06/13/75	L I 94
Pelagic Cormorant	18	Eddy	06/01/57	L I 95
Black Oystercatcher	2	Eddy	06/01/57	L III 95
Black Oystercatcher	2	Eddy 1975; Nysewander	06/13/75	L I 94;205
Glaucous-winged Gull	X	Jewett 1937	05/26/37	B III 156
Glaucous-winged Gull	94	Eddy	06/01/57	L II 95
Glaucous-winged Gull	262	Eddy 1975	06/13/75	L II 94



Sister, Little (156006)(right) Lone Tree Island (156004)(left) Sister Island, Middle (156005) USF&WS

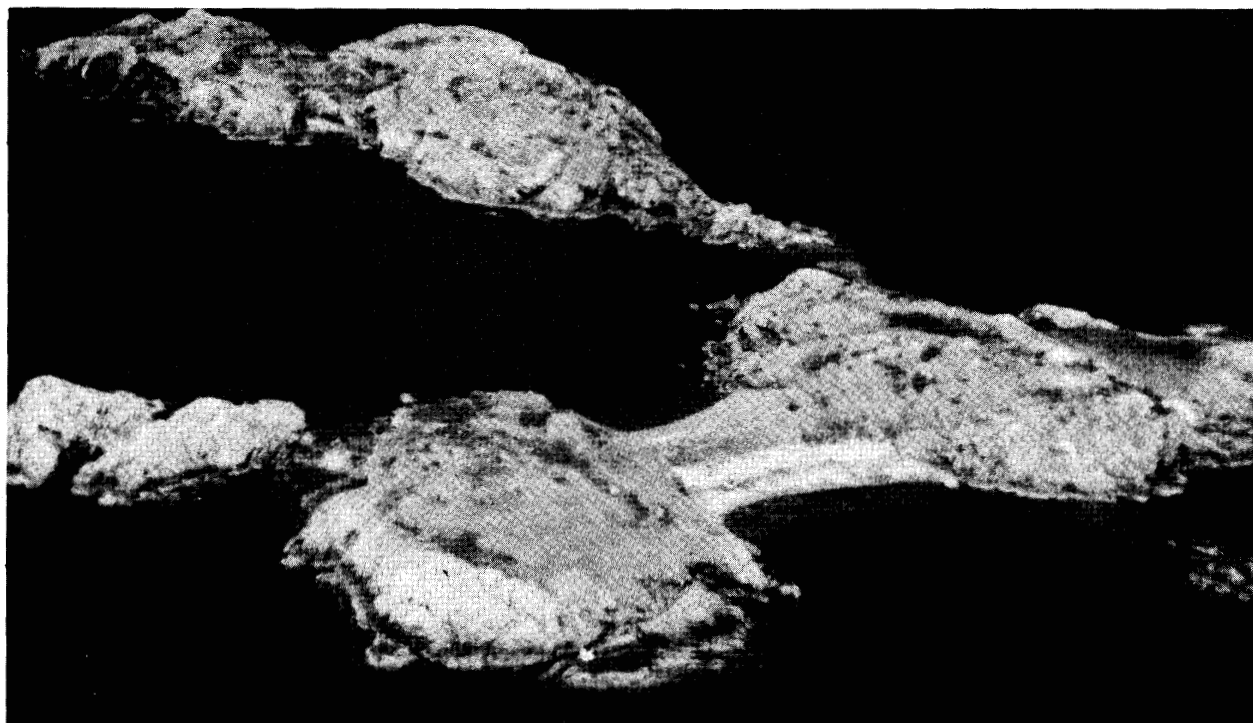
AREA 156, Victoria (cont'd.)

007 Lummi Rocks 48°40'15"N, 122°40'00"W

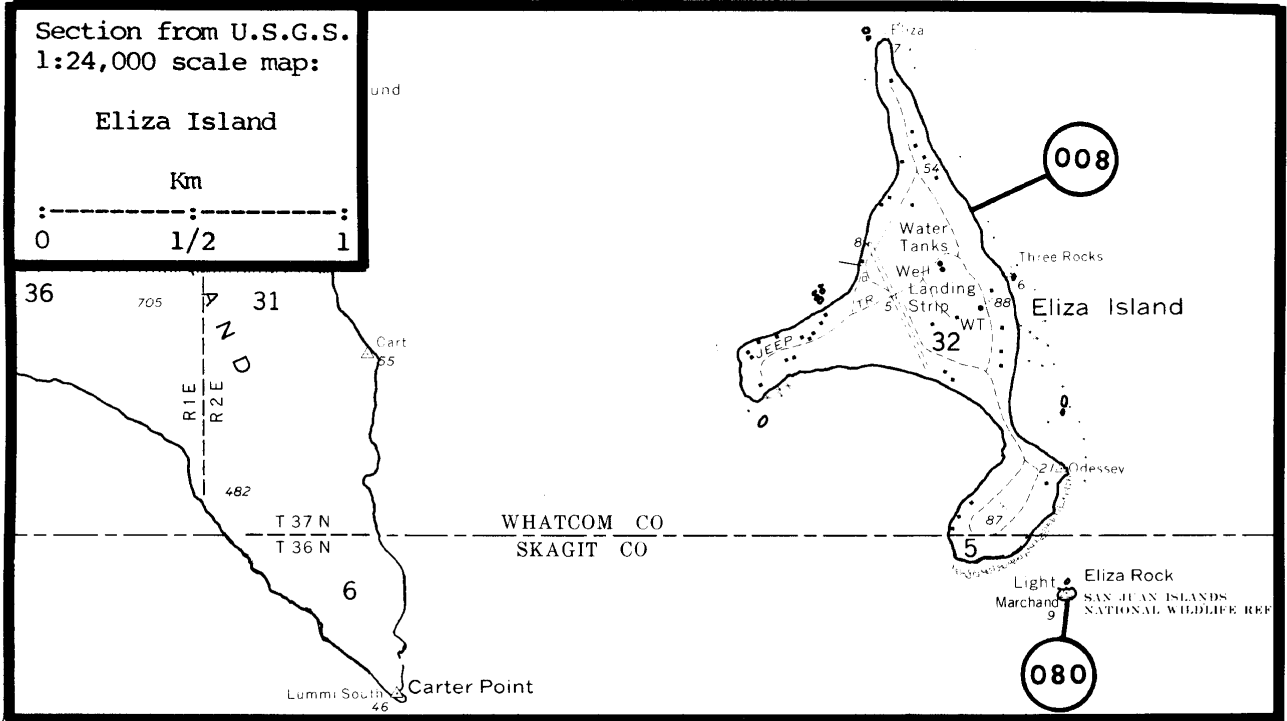
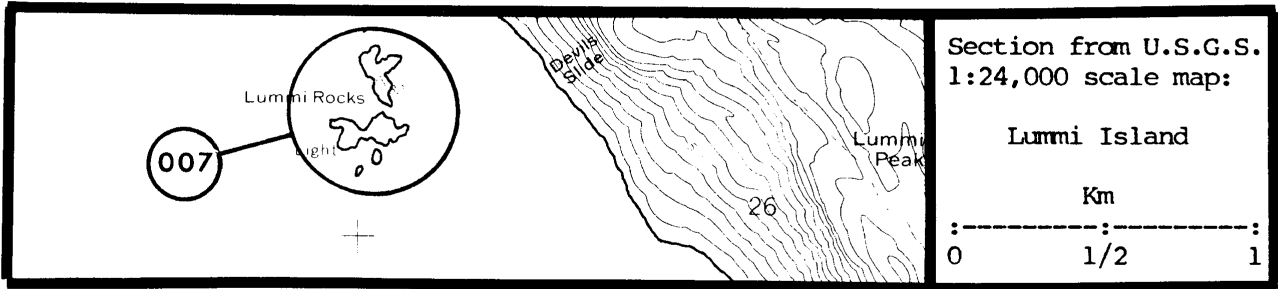
No Nesting Observed	0	Wahl	07/19/82	A III 269
No Nesting Observed	0	Cassidy	Summer/79	B III 56
No Nesting Observed	0	Garlick	05/21/81	? ? 113
Glaucous-winged Gull	12	Eddy 1975	06/13/75	L I 94
Glaucous-winged Gull	20	Speich & Wahl	06/05/78	B III 257
Pigeon Guillemot	1	Speich & Wahl	06/05/78	B III 257

008 Eliza Island 48°39'54"N, 122°35'00"W

No Nesting Observed	0	Speich & Wahl	06/05/78	B III 257
Pelagic Cormorant	2	Salter	05/06/48	S - 239
Pelagic Cormorant	1	Hudson	06/24/49	S - 149
Glaucous-winged Gull	1	Salter	07/25/48	S - 239
Glaucous-winged Gull	6	Manuwal 1977	?/ ?/73-75	L I 187
Glaucous-winged Gull	6P	Eddy 1975	06/13/75	B III 94
Pigeon Guillemot	1	Hoffman	06/30/49	S - 136
Pigeon Guillemot	1	Hudson	07/25/49	S - 149
Pigeon Guillemot	2	Manuwal 1977	?/ ?/73-75	L III 187



Lummi Rocks (156007) 19 July 1982 T.R. Wahl



AREA 156, Victoria (cont'd.)

009

Peapod, North (North Peapod) 48°38'32"N, 122°44'37"W

Black Oystercatcher	2	Pitman	06/21/78	B III 217
Glaucous-winged Gull	211	Wahl	06/15/79	B III 269
Pigeon Guillemot	5	Wahl	06/15/79	B III 269
Total	218			

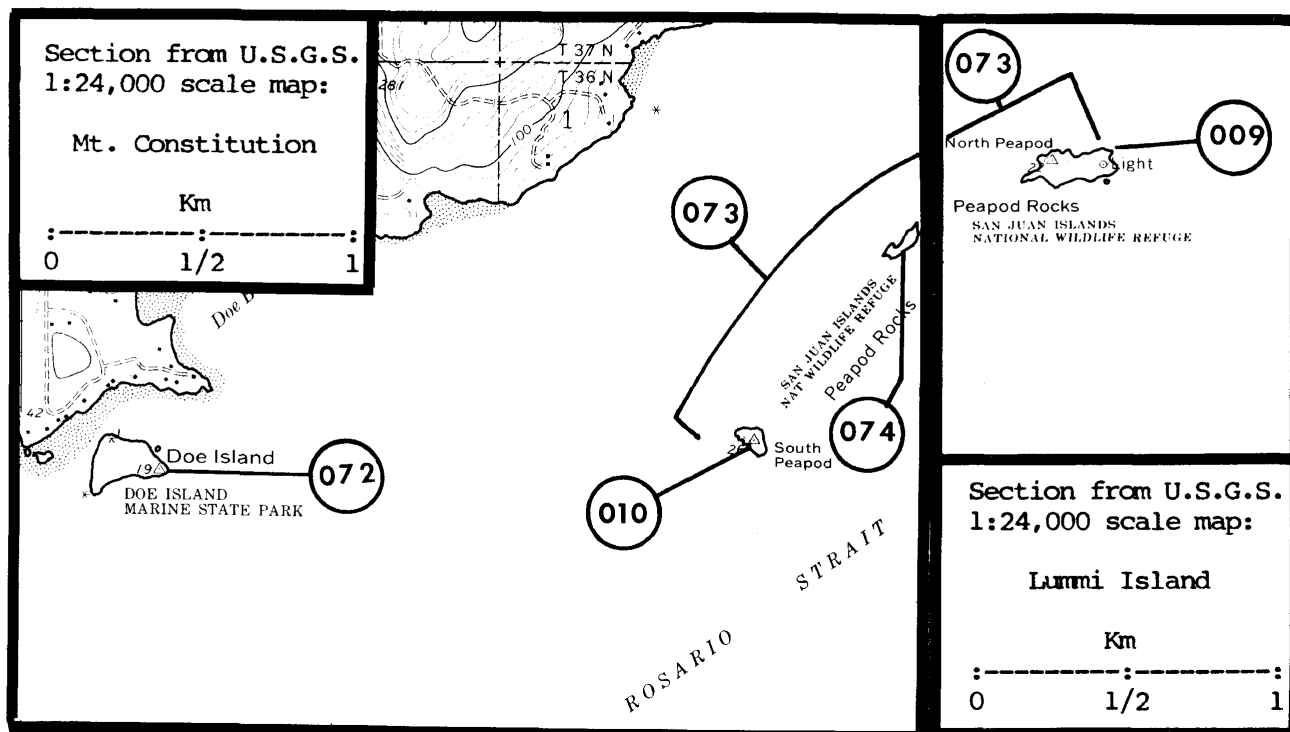
No Nesting Observed	0	Jewett 1937	05/25/37	B ? 156
Pelagic Cormorant	12	Eddy	06/02/57	L I 95
Black Oystercatcher	4	Nisqually NWR	06/20/63	B III 202
Black Oystercatcher	X	Washington Dept. Game	?/ ?/70	? ? 203
Black Oystercatcher	2	Manuwal 1977	?/ ?/73-75	L I 187
Black Oystercatcher	4	Eddy	06/07/74	L I 95
Black Oystercatcher	2	Nysewander	06/13/75	L I 205
Glaucous-winged Gull	X	Hudson	06/18-07/01/49	? III 148
Glaucous-winged Gull	280	Eddy	06/02/57	L II 95
Glaucous-winged Gull	400	Nisqually NWR	06/20/63	B III 202
Glaucous-winged Gull	440	Manuwal 1977	?/ ?/73-75	L III 187
Glaucous-winged Gull	540	Eddy	06/07/74	L III 95
Glaucous-winged Gull	200	Pitman	06/21/78	B III 217
Glaucous-winged Gull	<250	Wahl	07/19/82	A III 269
Pigeon Guillemot	X	Hudson	06/18-07/01/49	? III 148
Pigeon Guillemot	10+	Eddy	06/02/57	L III 95
Pigeon Guillemot	4	Nisqually NWR	06/20/63	B III 202
Pigeon Guillemot	4	Manuwal	?/ ?/73-75	L III 187
Pigeon Guillemot	4	Eddy	06/07/74	L III 95
Pigeon Guillemot	6	Pitman	06/21/78	B III 217
Pigeon Guillemot	1	Wahl; Paulson	07/06/78	A III 269;207
Tufted Puffin	?	Hudson	06/18-07/01/49	? III 148

010

Peapod, South (South Peapod) 48°38'03"N, 122°45'27"W

Glaucous-winged Gull	261	Wahl	06/15/79	B III 269
Pigeon Guillemot	15	Wahl	06/15/79	B III 269
Total	276			

Cormorant sp.	P	Jewett 1937	05/25/37	L III 156
Pelagic Cormorant	X	Hudson	06/18-07/01/49	? III 148
Black Oystercatcher	3?	Hudson	06/18-07/01/49	? III 148
Black Oystercatcher	2	Schultz	06/02/57	L I 244
Black Oystercatcher	2	Nisqually NWR	06/20/63	B ? 202
Black Oystercatcher	2	Manuwal 1977	?/ ?/73-75	L I 187
Black Oystercatcher	2	Eddy	06/07/74	L I 95
Black Oystercatcher	2	Nysewander	06/13/75	L III 205
Glaucous-winged Gull	300	Jewett 1937	05/25/37	L III 156
Glaucous-winged Gull	X	Hudson	06/18-07/01/49	? III 148
Glaucous-winged Gull	320	Eddy	06/02/57	L II 95
Glaucous-winged Gull	400	Nisqually NWR	06/20/63	B ? 202
Glaucous-winged Gull	150	Manuwal 1977	?/ ?/73-75	L II 187



Glaucous-winged Gull	390	Eddy	06/07/74	L II	95
Glaucous-winged Gull	170	Pitman	06/21/78	B III	217
Glaucous-winged Gull	<200	Wahl	07/19/82	A III	269
Pigeon Guillemot	P	Jewett 1937	05/25/37	L III	156
Pigeon Guillemot	X	Hudson	06/18-07/01/49	? III	148
Pigeon Guillemot	20+	Eddy	06/02/57	L III	95
Pigeon Guillemot	2	Nisqually NWR	06/20/63	B ?	202
Pigeon Guillemot	4	Eddy	06/07/74	L III	95
Pigeon Guillemot	4	Manuwal 1977	?/ ?/73-75	L III	187
Pigeon Guillemot	2	Pitman	06/21/78	B III	217
Tufted Puffin	X	Hudson	06/18-07/01/49	? III	148

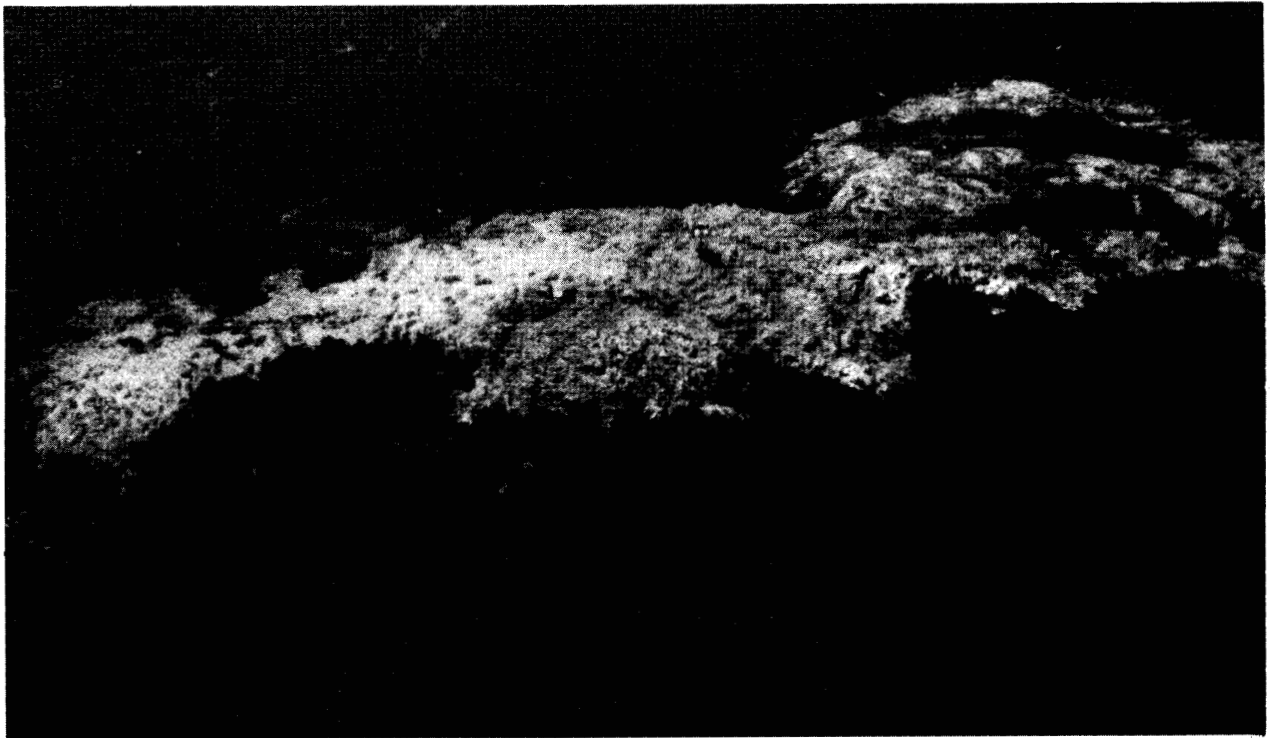
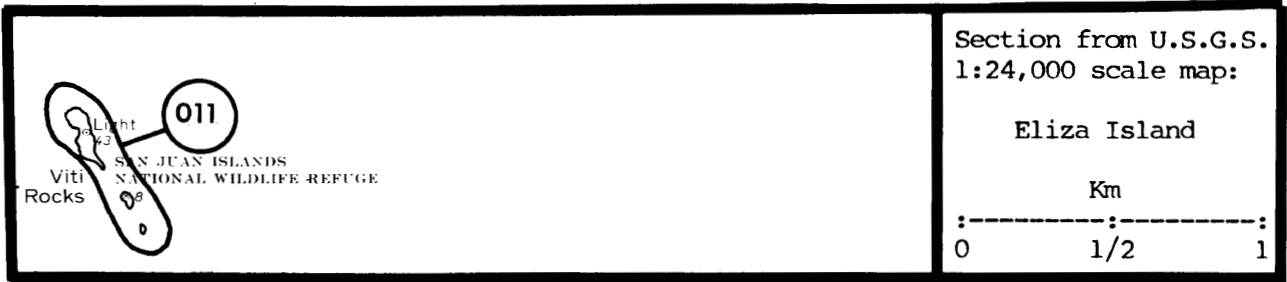
AREA 156, Victoria (cont'd.)

(011)

Viti Rocks 48°38'00"N, 122°37'17"W

Glaucous-winged Gull	280	Wahl	06/15/79	B III 269
Pigeon Guillemot	22	Wahl	06/15/79	B III 269
Total	302			

Double-crested Cormorant	4	Hudson	06/20/49	E - 149
Double-crested Cormorant	40-50	Hudson	06/21/49	L III 148
Double-crested Cormorant	2	Hudson	06/26/49	S - 149
Double-crested Cormorant	58	Eddy 1975	06/13/75	L I 94
Pelagic Cormorant	1	Booth	06/26/27	S - 34
Pelagic Cormorant	1	Booth	06/26/27	S - 35
Pelagic Cormorant	2	Booth	06/26/27	E - 34
Pelagic Cormorant	2	Booth	06/21/31	E - 38
Pelagic Cormorant	X	Hudson	06/21/49	L III 148
Pelagic Cormorant	2	Hudson	06/23/49	E - 149
Pelagic Cormorant	1	Hudson	06/25/49	S - 149
Pelagic Cormorant	160	Eddy 1975	06/13/75	L II 94
Pelagic Cormorant	22	Speich & Wahl	06/05/78	B I 257
Pelagic Cormorant	?	Wahl	07/19/82	A III 269
Black Oystercatcher	1	Hudson	06/21/49	L III 148
Black Oystercatcher	1	Hudson	06/25/49	S - 149
Black Oystercatcher	2	Wick 1958	?/ ?/58	? ? 279
Black Oystercatcher	5	Eddy 1975; Nysewander	06/13/75	L II 94;205
Black Oystercatcher	2	Speich & Wahl	06/05/78	B III 257
Black Oystercatcher	0	Garlick	05/21/81	B III 113
Glaucous-winged Gull	2	Booth	06/19/27	E - 36
Glaucous-winged Gull	6	Booth	06/19/27	E - 38
Glaucous-winged Gull	16	Booth	06/19/27	E - 34
Glaucous-winged Gull	12	Booth	06/15/30	E - 38
Glaucous-winged Gull	16	Booth	06/21/31	E - 38
Glaucous-winged Gull	1	Hudson	06/20/49	E - 149
Glaucous-winged Gull	X	Hudson	06/20/49	L III 148
Glaucous-winged Gull	530B	Schultz	?/ ?/53	L III 245
Glaucous-winged Gull	2B	Schultz	07/18/61	L III 245
Glaucous-winged Gull	2B	Schultz	07/17/63	L III 245
Glaucous-winged Gull	774	Eddy 1975	06/13/75	L II 94
Glaucous-winged Gull	400	Speich & Wahl	06/05/78	B III 257
Glaucous-winged Gull	560	Wahl	06/15/78	B III 269
Glaucous-winged Gull	100's	Wahl	07/19/82	A III 269
Pigeon Guillemot	2	Booth	06/26/27	E - 34
Pigeon Guillemot	2	Booth	06/15/30	E - 38
Pigeon Guillemot	X	Hudson	06/20/49	L III 148
Pigeon Guillemot	2	Hudson	06/23/49	E - 149
Pigeon Guillemot	2	Eddy 1975	06/13/75	L III 94
Pigeon Guillemot	2	Speich & Wahl	06/05/78	B III 257
Pigeon Guillemot	22	Wahl	06/15/78	B III 269
Pigeon Guillemot	1	Wahl; Paulson	07/06/78	A III 269;207
Tufted Puffin	1	[Booth]	06/26/27	S - 35
Tufted Puffin	4?	Hudson	06/20/49	L III 148
Tufted Puffin	0	Eddy 1975	06/13/75	
			(Pre-1975)	L III 94
			Four old burrows found.	



Viti Rocks (156011) 19 July 1982 T.R. Wahl

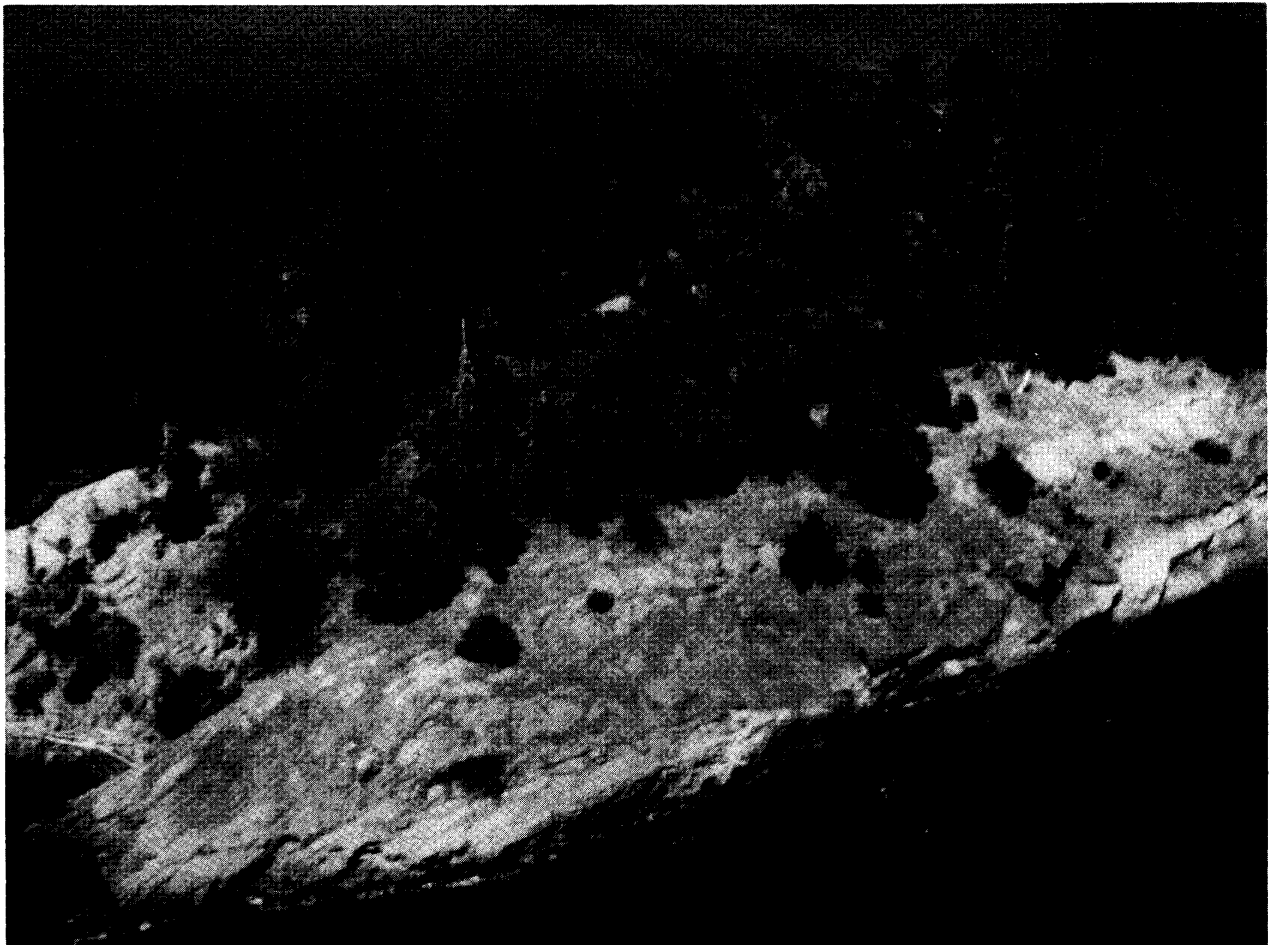
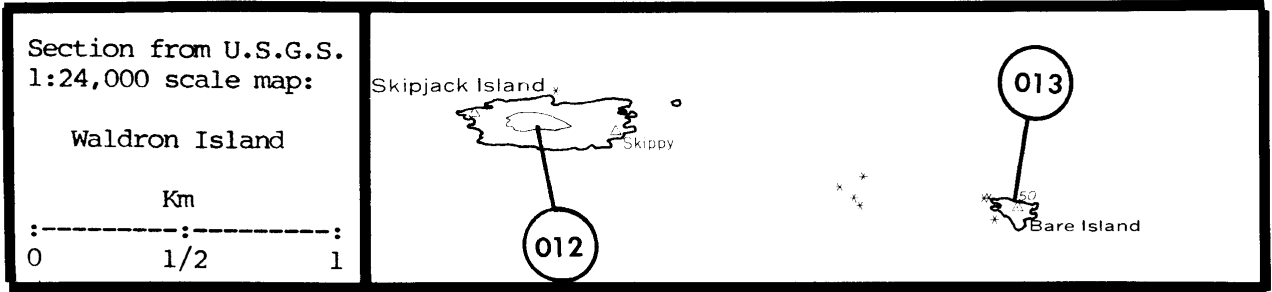
AREA 156, Victoria (cont'd.)

012

Skipjack Island 48°43'56"N, 123°02'00"W

Pelagic Cormorant	112	Wahl	07/19/82	A I 269
Glaucous-winged Gull	55	Paulson; Wahl	06/07/79	A III 207;269
Pigeon Guillemot	14	Paulson; Wahl	06/07/79	A III 207;269
Total	181			

Cormorant sp.	P	Edson 1929	06/22/05	L III 98
Pelagic Cormorant	1	Forbush	06/29/1888	S - 106
Pelagic Cormorant	P	Lumley 1934	?/ ?/33	
		(pre-1933)		L? ? 184
Pelagic Cormorant	0	Lumley 1934	?/ ?/34	? ? 184
Pelagic Cormorant	20	Eddy	08/11/62	B I 95
Glaucous-winged Gull	60-80	Edson 1929	06/22/05	L III 98
Glaucous-winged Gull	X	Lumley 1934	?/ ?/33	L? ? 184
Glaucous-winged gull	X	Lumley 1934	?/ ?/34	? ? 184
Glaucous-winged Gull	200	Jewett 1937	05/26/37	L III 156
Glaucous-winged Gull	64B	Schultz	?/ ?/47	L III 245
Glaucous-winged Gull	1	Schultz	08/06/47	S - 246
Glaucous-winged Gull	X	Schultz 1951	06/16/48	L III 240
Glaucous-winged Gull	55B	Schultz	?/ ?/49	L III 245
Glaucous-winged Gull	4	Schultz	08/06/49	S - 246
Glaucous-winged Gull	X	Eddy	05/31/57	B III 95
Glaucous-winged Gull	X	Eddy	08/11/62	B III 95
Glaucous-winged Gull	150	Manuwal 1977	?/ ?/73-75	L III 187
Glaucous-winged Gull	202	Eddy	06/09/74	L II 95
Glaucous-winged Gull	150	Speich & Wahl	06/05/78	B III 257
Pigeon Guillemot	1	Colt	04/26/1894	S - 61
Pigeon Guillemot	P	Edson 1929	06/22/05	L III 98
Pigeon Guillemot	X	Bakus 1965	07/05-12/59	? ? 18
Pigeon Guillemot	125	Eddy	08/11/62	B III 95
Pigeon Guillemot	40	Manuwal 1977	?/ ?/73-75	L III 187
Pigeon Guillemot	40	Eddy	06/09/74	L III 95
Pigeon Guillemot	40	Speich & Wahl	06/05/78	B III 257
Pigeon Guillemot	24	Wahl; Paulson	07/06/78	A III 269;207
Tufted Puffin	P	Edson 1929	06/22/05	L III 98
Tufted Puffin	X	Miller et al. 1935	?/ ?/33-35	? ? 199



Skipjack Island (156012) 19 July 1982 T.R. Wahl

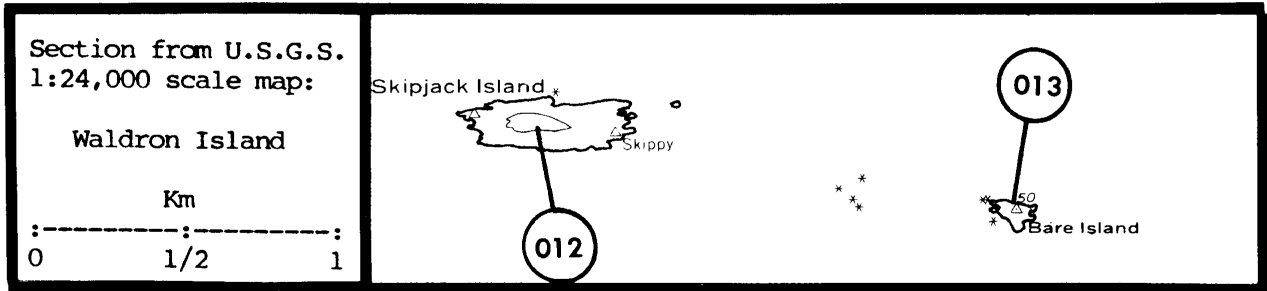
AREA 156, Victoria (cont'd.)

013

Bare Island 48°43'48"N, 123°00'47"W

Pelagic Cormorant	100	Speich & Wahl	06/05/78	B III 257
Black Oystercatcher	2	Speich & Wahl	06/05/78	B III 257
Glaucous-winged Gull	240	Speich & Wahl	06/05/78	B II 257
Tufted Puffin	4	Speich & Wahl	06/05/78	B II 257
Total	346			

Cormorant sp.	20	Nisqually NWR	06/06/62	B ? 202
Cormorant sp.	5P	Nisqually NWR	05/05/67	B ? 202
Cormorant sp.	200P	Nisqually NWR	07/13-16/68	B ? 202
Double-crested Cormorant	N	Hudson	07/08/49	L III 148
Double-crested Cormorant	10	Manuwal 1973	05/27/73	L I 186
Pelagic Cormorant	50P	Edson 1929	06/27/05	L III 98
Pelagic Cormorant	1	McMannama	08/12/48	S - 193
Pelagic Cormorant	1	McMannama	08/19/48	S - 193
Pelagic Cormorant	X	Hudson	07/08/49	L III 148
Pelagic Cormorant	30-40	Bakus 1965	07/12&17/59	L III 18
Pelagic Cormorant	22	Eddy	08/11/62	B I 95
Pelagic Cormorant	40	Nisqually NWR	06/20/63	L III 202
Pelagic Cormorant	9	Hauser & Monson 1963	07/16-17/63	B ? 145
Pelagic Cormorant	14	Nisqually NWR	08/21-23/67	L II 202
Pelagic Cormorant	100	Manuwal 1977	?/ ?/73-75	L III 187
Pelagic Cormorant	48	Manuwal	05/27/73	L I 188
Pelagic Cormorant	75	Manuwal 1973	05/27/73	L I 186
Pelagic Cormorant	100	Eddy	06/10/74	L III 95
Pelagic Cormorant	26+	Wahl	07/19/82	A III 269
Black Oystercatcher	2	Nisqually NWR	06/06/62	L III 202
Black Oystercatcher	3	Hauser & Monson 1963	07/16-17/63	B ? 145
Black Oystercatcher	2	Manuwal 1977	?/ ?/73-75	L I 187
Black Oystercatcher	1	Manuwal	05/27/73	L III 188
Black Oystercatcher	2	Manuwal 1973	05/27/73	L I 186
Black Oystercatcher	2	Eddy	06/10/74	L II 95
Black Oystercatcher	2	Nysewander	06/14/75	L I 205
Glaucous-winged Gull	16	Edson 1929	06/27/05	L I 98
Glaucous-winged Gull	X	Miller et al. 1935	07/13/35	L ? 199
Glaucous-winged Gull	>200	Jewett 1937	05/26/37	L III 156
Glaucous-winged Gull	X	Schultz 1951	06/15/48	L III 240
Glaucous-winged Gull	30B	Schultz	?/ ?/48	L ? 245
Glaucous-winged Gull	2	Goodge	08/12/48	S - 116
Glaucous-winged Gull	2	McMannama	08/12/48	S - 193
Glaucous-winged Gull	240B	Schultz	?/ ?/49	L ? 245
Glaucous-winged Gull	100's	Hudson	07/08/49	L III 148
Glaucous-winged Gull	10+	Richardson	08/11/56	? ? 229
Glaucous-winged Gull	X	Dickerman 1960	07/12/59	L ? 88
Glaucous-winged Gull	600	Nisqually NWR	06/06/62	L III 202
Glaucous-winged Gull	400	Eddy	08/11/62	B III 95
Glaucous-winged Gull	400	Nisqually NWR	06/20/63	L III 202
Glaucous-winged Gull	300	Hauser & Monson 1963	07/16-17/63	B ? 145
Glaucous-winged Gull	X	Wahl	08/11/66	? ? 269
Glaucous-winged Gull	300	Nisqually NWR	05/05/67	B ? 202



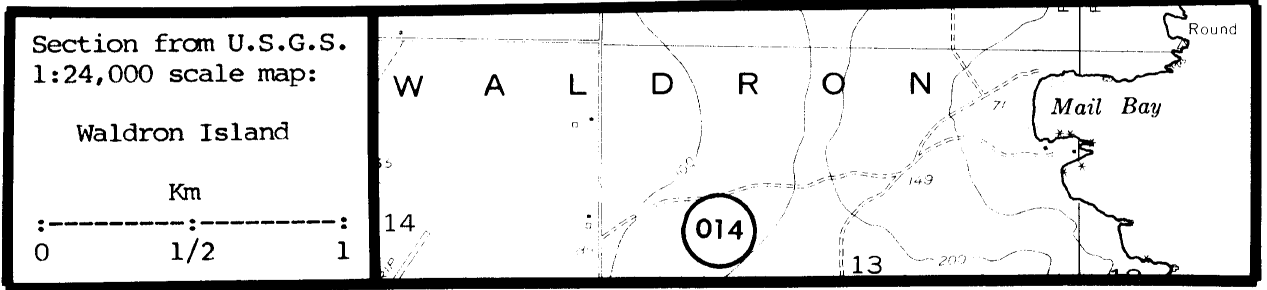
Glaucous-winged Gull	800	Nisqually NWR	08/21-23/67	L III 202
Glaucous-winged Gull	800	Nisqually NWR	07/13-16/68	L III 202
Glaucous-winged Gull	240	Manuwal 1977	?/ ?/73-75	L II 187
Glaucous-winged Gull	220	Manuwal 1973; Manuwal	05/27/73	L II 186;188
Glaucous-winged Gull	314	Eddy	06/10/74	L II 95
Glaucous-winged Gull	250±	Wahl	07/19/82	A III 269
Pigeon Guillemot	X	Hudson	07/08/49	L III 148
Pigeon Guillemot	10	Nisqually NWR	06/06/62	L III 202
Pigeon Guillemot	6	Eddy	08/11/62	B III 95
Pigeon Guillemot	4	Nisqually NWR	06/20/63	L III 202
Pigeon Guillemot	2	Hauser & Monson 1963	07/16-17/63	B ? 145
Pigeon Guillemot	10	Nisqually NWR	08/21-23/67	L III 202
Pigeon Guillemot	P	Manuwal 1977	?/ ?/73-75	L III 187
Pigeon Guillemot	40	Manuwal 1973	05/27/73	L II 186
Pigeon Guillemot	X	Eddy	06/10/74	L III 95
Tufted Puffin	2	Edson	06/27/03	E - 100
Tufted Puffin	40	Edson 1929	06/27/05	L I 98
Tufted Puffin	X	Miller et al. 1935	?/ ?/33-35	L ? 199
Tufted Puffin	100	Jewett 1937	05/26/37	L III 156
Tufted Puffin	16	Hudson	07/08/49	L III 148
Tufted Puffin	P	Eddy	05/31/57	B III 95
Tufted Puffin	X	Bakus 1965	07/12-17/59	L III 18
Tufted Puffin	<40	Dickerman 1960	07/12/59	L ? 88
Tufted Puffin	20	Nisqually NWR	06/06/62	L III 202
Tufted Puffin	14	Eddy	08/11/62	B III 95
Tufted Puffin	2	Nisqually NWR	06/20/63	L III 202
Tufted Puffin	1	Hauser & Monson 1963	07/16-17/63	B ? 145
Tufted Puffin	4	Manuwal 1977	?/ ?/73-75	L II 187
Tufted Puffin	18	Manuwal 1973; Manuwal	05/27/73	L II 186;188
Tufted Puffin	3	Eddy	06/10/74	L III 95
Tufted Puffin	P	Games	07/ ?/76	? ? 112

AREA 156, Victoria (cont'd.)

014 Waldron Island¹ 48°42'05"N, 123°01'48"W

Pigeon Guillemot	23	Wahl; Paulson	06/07/79	A III 269;207
No Nesting Observed	0	Eddy 1975	06/14/75	B III 94
Double-crested Cormorant	12-16	Schultz	?/ ?/47	B III 243
Double-crested Cormorant	12-16	Schultz	?/ ?/48	B III 243
Double-crested Cormorant	12-16	Schultz	?/ ?/49	B III 243
Double-crested Cormorant	X	Hudson	07/08/49	? III 148
Double-crested Cormorant	>32	Eddy & Richardson; Eddy	05/31/57	? ? 97;95
Double-crested Cormorant	10P	Eddy	08/11/62	B III 95
Pelagic Cormorant	X	Lumley 1934	?/ ?/33	? ? 184
Pelagic Cormorant	38	Lumley 1934	07/04/34	L ? 184
Pelagic Cormorant	X	Hudson	07/08/49	? III 148
Pelagic Cormorant	100+	Eddy	05/31/57	B III 95
Pelagic Cormorant	2?	Eddy	08/11/62	B III 95
Black Oystercatcher	X	Edson 1929	06/24/05	L ? 98
Glaucous-winged Gull	X	Edson 1929	06/20/05	L ? 98
Glaucous-winged Gull	X	Lumley 1934	?/ ?/33	? ? 184
Glaucous-winged Gull	X	Lumley 1934	07/04/34	L ? 184
Glaucous-winged Gull	100's	Hudson	07/08/49	? III 148
Glaucous-winged Gull	X	Eddy	05/31/57	B III 95
Pigeon Guillemot	X	Hudson	07/08/49	? III 148
Pigeon Guillemot	8	Eddy	08/11/62	B III 95
Pigeon Guillemot	4	Manuwal 1977	?/ ?/73-75	L II 187
Pigeon Guillemot	4	Speich & Wahl	06/05/78	B III 257
Pigeon Guillemot	16	Wahl; Paulson	07/06/78	A III 269;207
Tufted Puffin	1	Edson	06/20/1895	S - 101
Tufted Puffin	2	Hudson	07/08/49	S - 149

¹Most records refer to Point Disney.



Bare Island (156013) USF&WS

AREA 156, Victoria (cont'd.)

015 Johns Island 48°40'00"N, 123°09'00"W

Black Oystercatcher	1	Frazer 1973	07/16/73	B III 108
Black Oystercatcher	2	Eddy 1975; Nysewander	06/14/75	B III 94;205

016 White Rock 48°40'04"N, 123°04'14"W

Double-crested Cormorant	X	Richardson	?/ ?/78	? ? 228
Glaucous-winged Gull	311	Wahl	06/14/79	B III 269
Pigeon Guillemot	10	Wahl	06/14/79	B III 269
Total	321			

Double-crested Cormorant	150P	Jewett 1937	05/26/37	L ? 156
Double-crested Cormorant	10	Nisqually NWR	06/20/63	B ? 202
Double-crested Cormorant	4P	Hauser & Monson 1963	07/16-17/63	B ? 145
Double-crested Cormorant	100	Nisqually NWR	08/21-23/67	B ? 202
Double-crested Cormorant	X	Richardson	?/ ?/76	? ? 228
Pelagic Cormorant	X	Eddy	05/31/57	B III 95
Pelagic Cormorant	112	Eddy	08/11/62	B II 95
Pelagic Cormorant	15	Nisqually NWR	06/20/63	B ? 202
Pelagic Cormorant	24P	Hauser & Monson 1963	07/16-17/63	B ? 145
Pelagic Cormorant	40	Nisqually NWR	07/13-16/68	L III 202
Black Oystercatcher	2	Eddy	05/31/57	B III 95
Black Oystercatcher	6	Nisqually NWR	06/20/63	B ? 202
Black Oystercatcher	2	Hauser & Monson 1963	07/16-17/63	B ? 145
Black Oystercatcher	10	Nisqually NWR	08/21-23/67	B III 202
Black Oystercatcher	P	Manuwal 1977	?/ ?/73-75	L III 187
Glaucous-winged Gull	>2	Graves et al.	06/20/19	E III 118
Glaucous-winged Gull	X	Jewett 1937	05/26/37	L III 156
Glaucous-winged Gull	275B	Schultz	?/ ?/47	L III 245
Glaucous-winged Gull	130B	Schultz	?/ ?/48	L III 245
Glaucous-winged Gull	100's	Hudson	07/08/49	? III 148
Glaucous-winged Gull	200	Eddy	05/31/57	B III 95
Glaucous-winged Gull	550P	Hauser & Monson 1963	07/16-17/63	B ? 145
Glaucous-winged Gull	1200P	Nisqually NWR	08/21-23/67	B ? 202
Glaucous-winged Gull	1000	Nisqually NWR	07/13-16/68	L III 202
Glaucous-winged Gull	X	Nisqually NWR	07/27/70	B III 202
Glaucous-winged Gull	250	Manuwal 1977	?/ ?/73-75	L III 187
Glaucous-winged Gull	388	Eddy	06/09/74	L II 95
Glaucous-winged Gull	250±	Wahl	07/19/82	A III 269
Glaucous-winged Gull	130	Pitman	06/22/78	B III 217
Pigeon Guillemot	X	Hudson	07/08/49	? III 148
Pigeon Guillemot	10±	Eddy	05/31/57	B III 95
Pigeon Guillemot	8	Nisqually NWR	06/20/63	B ? 202
Pigeon Guillemot	10	Nisqually NWR	07/13-16/68	L III 202
Pigeon Guillemot	26	Manuwal 1977	?/ ?/73-75	L II 187
Pigeon Guillemot	26	Eddy	06/09/74	L III 95
Pigeon Guillemot	50	Pitman	06/22/78	B III 217
Pigeon Guillemot	15	Wahl; Paulson	06/07/79	A III 269;207

AREA 156, Victoria (cont'd.)

017

Cactus Islands¹ 48°39'00"N, 123°07'50"W

Black Oystercatcher

0

Nysewander

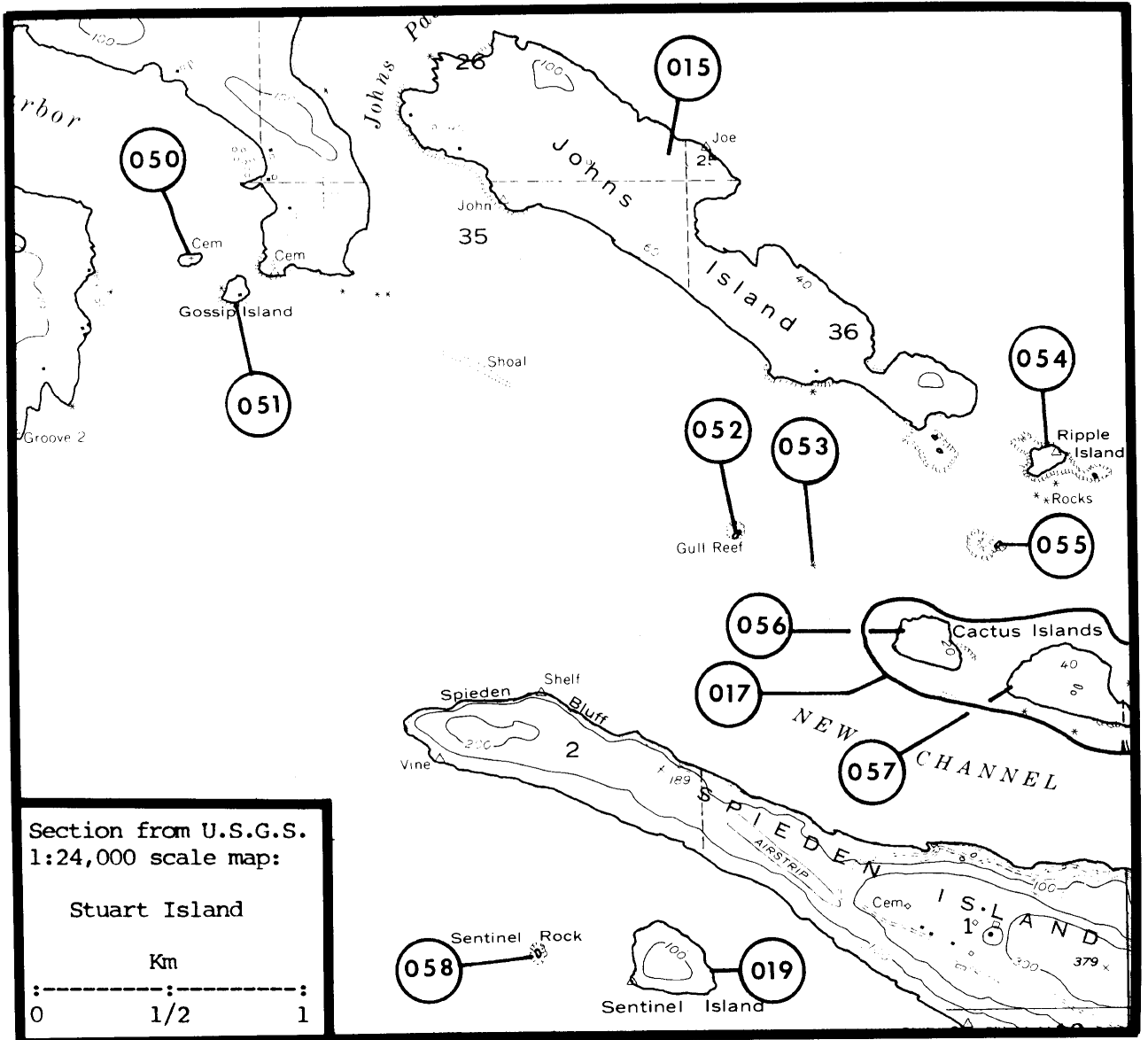
06/14/75

L III 205

¹The Cactus Islands were previously assigned this catalog number. The individual islands are here recognized, and data are assigned to them, (Cactus Island, west) 156056 and (Cactus Island, east) 156057, as appropriate.



White Rock (156016) 19 July 1982 T.R. Wahl



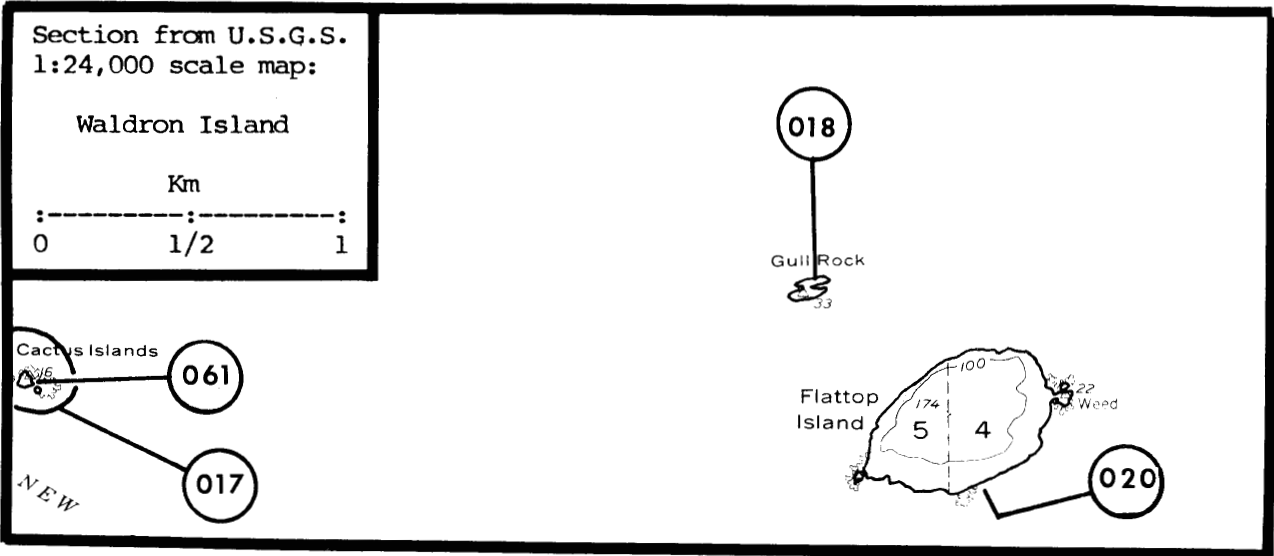
AREA 156, Victoria (cont'd.)

(018)

Gull Rock 48°39'04"N, 123°05'18"W

Double-crested Cormorant	X	Richardson	?/ ?/78	? ? 228
Pelagic Cormorant	15?	Wahl	07/19/82	A III 269
Glaucous-winged Gull	170	Wahl	06/14/79	B III 269
Pigeon Guillemot	1	Wahl	06/14/79	B III 269
Total	186			

Double-crested Cormorant	X	Richardson	?/ ?/76	? ? 228
Pelagic Cormorant	4P	Nisqually NWR	06/20/63	B ? 202
Pelagic Cormorant	27P	Hauser & Monson 1963	07/16-17/63	B ? 145
Pelagic Cormorant	75	Nisqually NWR	07/13-16/68	L III 202
Black Oystercatcher	2P	Eddy	05/31/57	L III 95
Black Oystercatcher	2	Bakus 1965	07/05/59	L II 240
Black Oystercatcher	2P	Nisqually NWR	06/20/63	B ? 202
Black Oystercatcher	X	Manuwal 1977	?/ ?/73-75	L I 187
Black Oystercatcher	2	Manuwal	06/23/76	L I 188
Glaucous-winged Gull	2	Warburton	06/25/27	E - 275
Glaucous-winged Gull	15	Edson 1929	06/26/05	L II 98
Glaucous-winged Gull	X	Finley	07/29/24	L III 104
Glaucous-winged Gull	>4	Warburton	06/25/27	E - 273
Glaucous-winged Gull	90+	Rathbun	06/11/28	L III 223
Glaucous-winged Gull	200B	Schultz	?/ ?/47	L III 245
Glaucous-winged Gull	3	Goodge	07/14/48	S - 116
Glaucous-winged Gull	X	Schultz 1951	?/ ?/48	L III 240
Glaucous-winged Gull	300B	Schultz	?/ ?/48	L III 245
Glaucous-winged Gull	330B	Schultz	?/ ?/49	L III 245
Glaucous-winged Gull	2	Hudson	07/08/49	S - 149
Glaucous-winged Gull	X	Hudson	07/08/49	L III 148
Glaucous-winged Gull	418	Eddy	05/31/57	L II 95
Glaucous-winged Gull	X	Bakus 1965	07/05/59	L III 240
Glaucous-winged Gull	150B	Schultz	?/ ?/60	L III 245
Glaucous-winged Gull	400+	Eddy	08/11/62	B III 95
Glaucous-winged Gull	500P	Nisqually NWR	06/20/63	B ? 202
Glaucous-winged Gull	500P	Hauser & Monson 1963	07/16-17/63	B ? 145
Glaucous-winged Gull	300	Nisqually NWR	07/13-16/68	L III 202
Glaucous-winged Gull	X	Nisqually NWR	07/27/70	L III 202
Glaucous-winged Gull	250	Manuwal 1977	?/ ?/73-75	L II 187
Glaucous-winged Gull	392	Manuwal 1973; Manuwal	05/27/73	L II 186;188
Glaucous-winged Gull	376	Eddy	06/08/74	L II 95
Glaucous-winged Gull	X	Manuwal	06/23/76	L III 188
Glaucous-winged Gull	200	Pitman	06/22/78	B III 217
Glaucous-winged Gull	30	Wahl	07/19/82	A III 269
Pigeon Guillemot	0	Edson 1924	06/26/05	L III 98
Pigeon Guillemot	2	Warburton	06/25/27	E - 273
Pigeon Guillemot	X	Hudson	07/08/49	L III 148
Pigeon Guillemot	12+	Eddy	05/31/57	L III 95
Pigeon Guillemot	X	Bakus 1965	07/05/59	L III 240
Pigeon Guillemot	10	Eddy	08/11/62	B III 95
Pigeon Guillemot	14	Manuwal 1977	?/ ?/73-75	L III 187
Pigeon Guillemot	2P	Manuwal 1973; Manuwal	05/27/73	L III 186;188
Pigeon Guillemot	15	Eddy	06/08/74	L III 95
Tufted Puffin	1?	Hudson	07/08/49	L III 148



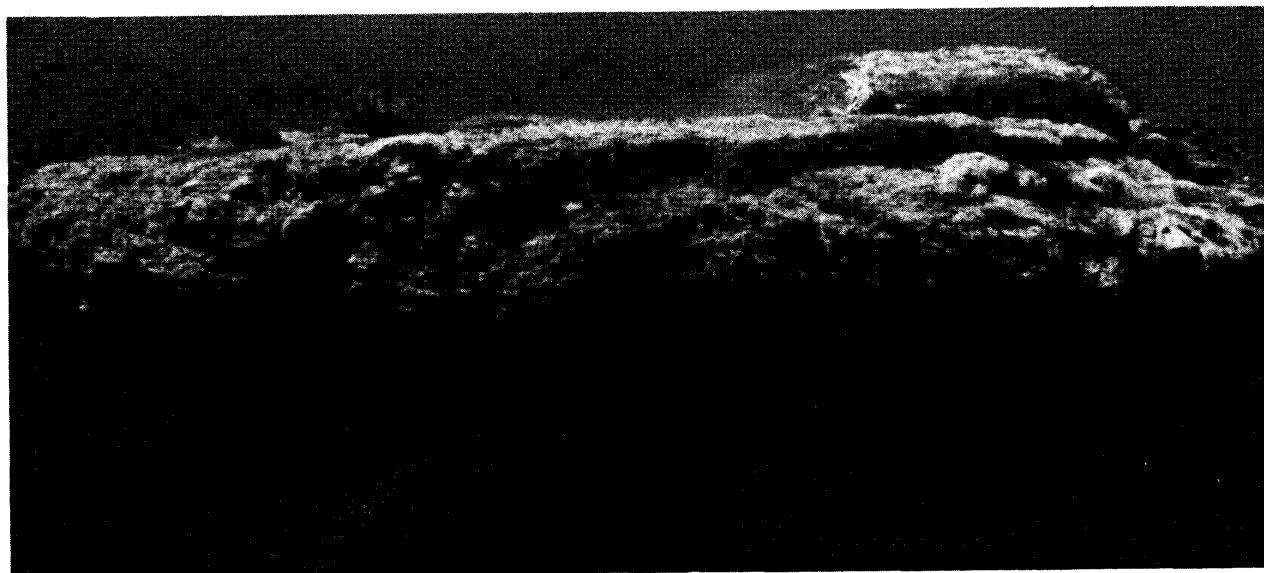
Gull Rock (156018) 19 July 1982 T.R. Wahl

AREA 156, Victoria (cont'd.)

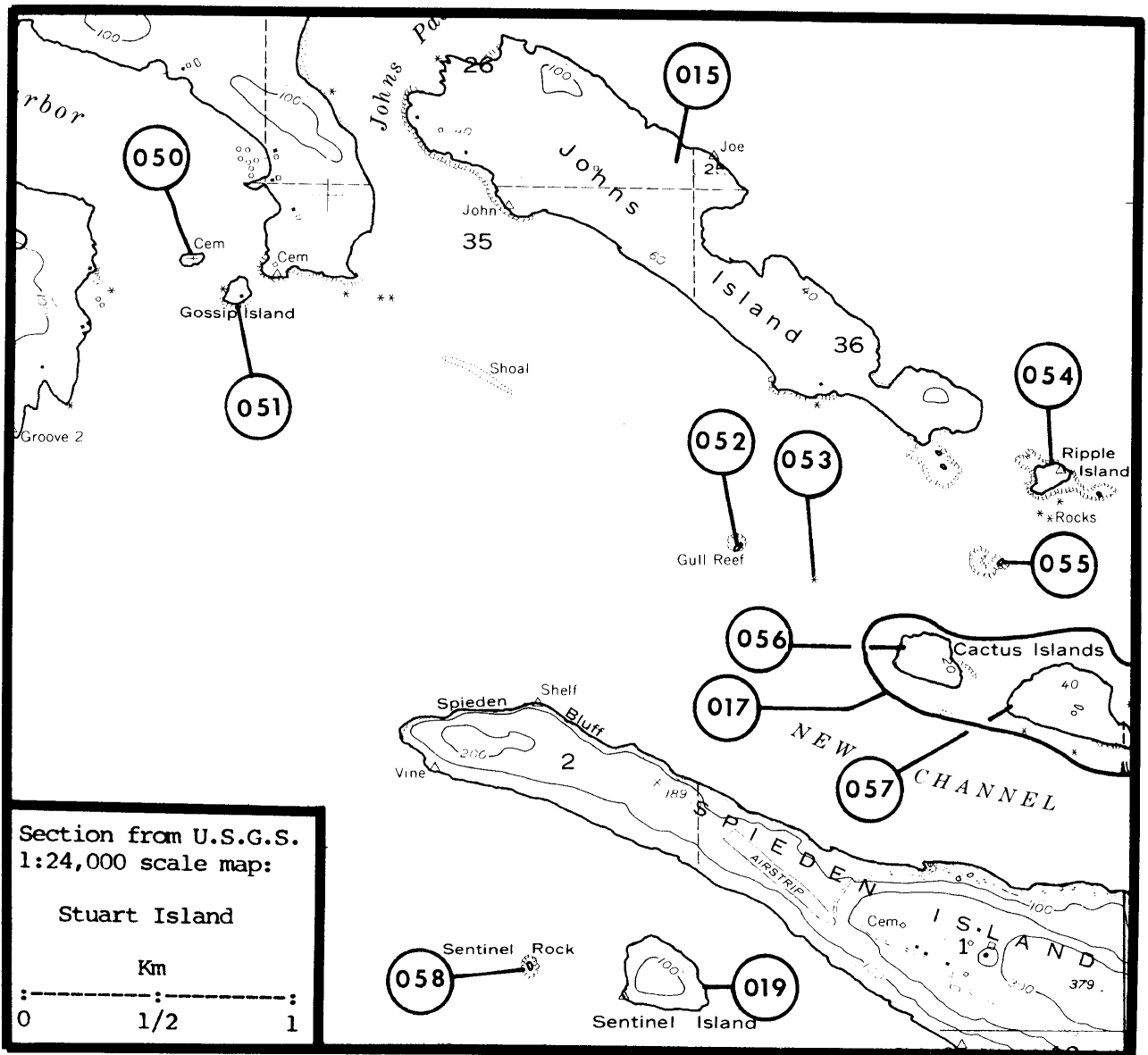
019

Sentinel Island 48°38'24"N, 123°08'57"W

Pigeon Guillemot	13	Wahl	06/14/79	B III 269
No Nesting Observed	0	Eddy	05/31-06/02/57	B III 95
Black Oystercatcher	2	Eddy 1975	06/14/75	L II 94
Black Oystercatcher	3	Nysewander	06/14/75	L II 205
Pigeon Guillemot	20	Frazer 1973	07/16/73	B III 108
Pigeon Guillemot	40	Pitman	06/22/78	B III 217



Flower Island (156022) 19 July 1982 T.R. Wahl



AREA 156, Victoria (cont'd.)

020

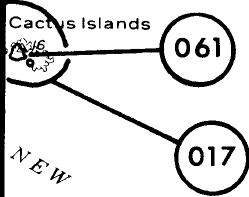
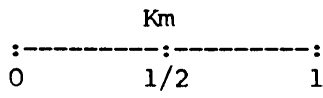
Flattop Island 48°38'51"N, 123°04'52"W

Black Oystercatcher	2	Washington Dep. Game	? / ? / 79	? ?	203
Pigeon Guillemot	40	Pitman	06/22/78	B III	217
Total	42				

Double-crested Cormorant	N	Hudson	07/08/49	? III	148
Double-crested Cormorant	56	Nisqually NWR	07/27/70	L II	202
Brandt's Cormorant	X	Rathbun	06/12/28	B III	223
Pelagic Cormorant	32-36	Edson 1929	06/20&24/05	L II	98
Pelagic Cormorant	X	Lumley 1934	? / ? / 33	? ?	184
Pelagic Cormorant	X	Lumley 1934	? / ? / 34	? ?	184
Pelagic Cormorant	X	Hudson	07/08/49	? III	148
Pelagic Cormorant	2	Eddy	05/31/57	B I	95
Pelagic Cormorant	82	Nisqually NWR	07/27/70	L II	202
Black Oystercatcher	2	Eddy	05/31/57	B III	95
Black Oystercatcher	P	Nisqually NWR	07/27/70	L III	202
Black Oystercatcher	2	Nysewander 1977; Eddy	06/09/74	L I	204; 205
Black Oystercatcher	2	Pitman	06/22/78	B I	217
Glaucous-winged Gull	4	Dennison	06/12/1898	E -	86
Glaucous-winged Gull	2	MacKay	06/22/04	S -	185
Glaucous-winged Gull	X	Edson 1929	06/20/05	L III	98
Glaucous-winged Gull	30-40	Edson 1929	06/24/05	L III	98
Glaucous-winged Gull	2	Decker	06/18/19	E -	81
Glaucous-winged Gull	2	Decker	06/18/19	E -	82
Glaucous-winged Gull	80±	Decker	06/18/19	L III	80
Glaucous-winged Gull	X	Rathbun	06/11-12/28	L III	223
Glaucous-winged Gull	X	Lumley 1934	? / ? / 33	? ?	184
Glaucous-winged Gull	X	Lumley 1934	? / ? / 34	? ?	184
Glaucous-winged Gull	95B	Schultz	? / ? / 47	L III	245
Glaucous-winged Gull	30B	Schultz	? / ? / 48	L III	245
Glaucous-winged Gull	30B	Schultz	? / ? / 49	L III	245
Glaucous-winged Gull	100's	Hudson	07/08/49	? III	148
Glaucous-winged Gull	200+	Eddy	05/31/57	B III	95
Glaucous-winged Gull	X	Bakus 1965	07/03-12/59	? ?	240
Glaucous-winged Gull	350	Nisqually NWR	07/27/70	L III	202
Glaucous-winged Gull	15P	Frazer	07/16/73	B III	108
Glaucous-winged Gull	18	Eddy	06/09/74	L III	95
Pigeon Guillemot	3	MacKay	06/22/04	S -	185
Pigeon Guillemot	P	Edson 1929	06/20/05	L III	98
Pigeon Guillemot	2	Edson 1929	06/24/05	L II	98
Pigeon Guillemot	>2	Kitchin	06/14/34	E -	169
Pigeon Guillemot	X	Hudson	07/08/49	? III	148
Pigeon Guillemot	20	Eddy	05/31/57	B III	95
Pigeon Guillemot	>38	Nisqually NWR	07/27/70	L III	202
Pigeon Guillemot	P	Manuwal 1977	? / ? / 73-75	L III	187
Pigeon Guillemot	4+	Eddy	06/09/74	L III	95
Tufted Puffin	1	MacKay	06/22/04	S -	185
Tufted Puffin	4-6	Edson 1929	06/20/05	L II	98
Tufted Puffin	2	Edson 1929	06/24/05	L II	98
Tufted Puffin	1	Hudson	07/08/49	S -	149

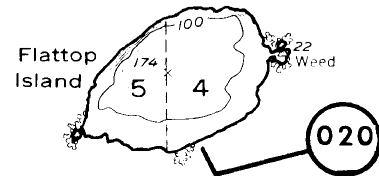
Section from U.S.G.S.
1:24,000 scale map:

Waldron Island



018

Gull Rock
33



Pointer Island (156023) 19 July 1982 T.R. Wahl

AREA 156, Victoria (cont'd.)

021

Low Island 48°35'22"N, 123°01'27"W

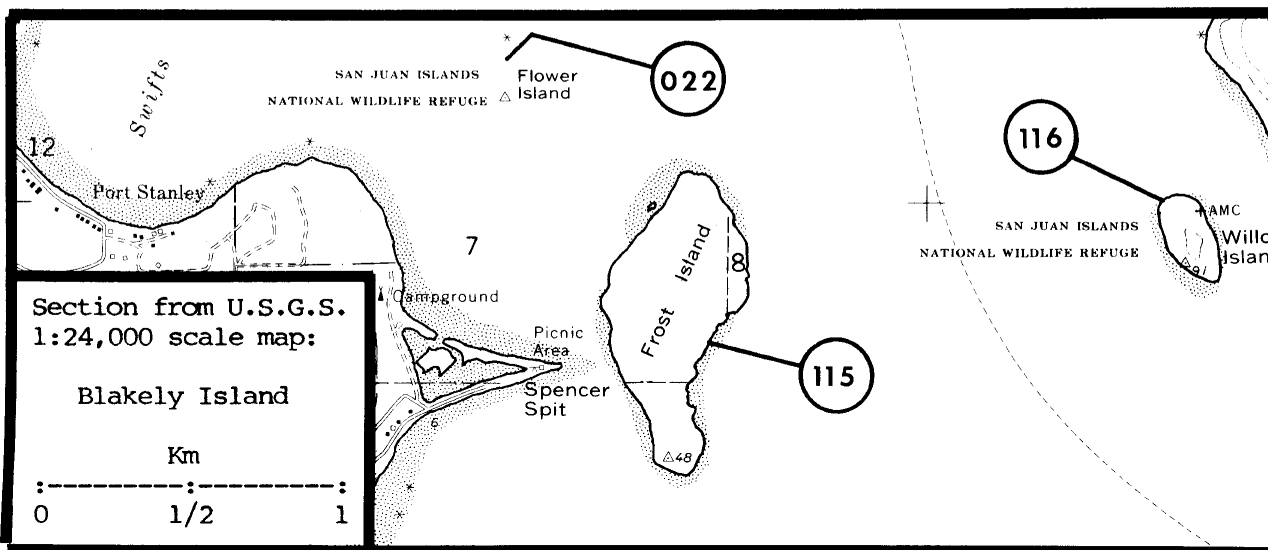
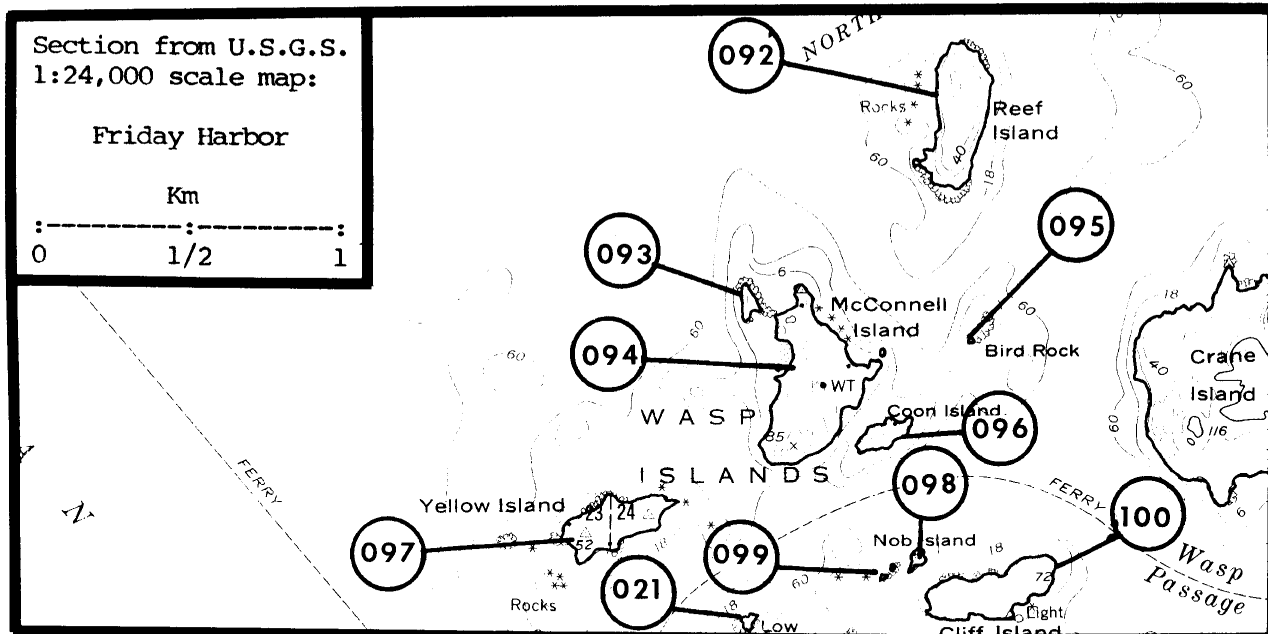
Pigeon Guillemot	4P	Pitman	06/24/78	B III 217
No Nesting Observed	0	Eddy 1975	06/14/75	B III 94
Black Oystercatcher	2	Manuwal 1977	?/ ?/73-75	L I 187
Black Oystercatcher	2P	Manuwal 1973	05/26/73	L III 186
Black Oystercatcher	2	Nysewander	06/ ?/73	L I 205
Glaucous-winged Gull	X	Schultz 1952	?/?/51?	L III 241
Glaucous-winged Gull	1	Schultz	06/30/53	S - 246
Glaucous-winged Gull	X	Bakus 1965	07/03-12/59	? ? 240
Glaucous-winged Gull	20B	Schultz	?/ ?/60	L III 245
Glaucous-winged Gull	125	Hauser & Monson 1963	07/16-17/63	B III 145
Glaucous-winged Gull	150	Manuwal 1977	?/ ?/73-75	L II 187
Glaucous-winged Gull	136	Manuwal 1973; Manuwal	05/26/73	L I 186;188
Glaucous-winged Gull	54+	Manuwal	06/23/76	L III 188
Pigeon Guillemot	34	Manuwal 1977	?/ ?/73-75	L III 187
Pigeon Guillemot	35	Manuwal 1973; Manuwal	05/26/73	L III 186;188
Pigeon Guillemot	13	Manuwal	06/23/76	L III 188

022

Flower Island 48°32'43"N, 122°51'12"W

Glaucous-winged Gull	66	Pitman	06/21/78	B III 217
Pigeon Guillemot	20	Pitman	06/21/78	B III 217
Total	86			

Pelagic Cormorant	8	Thoresen & Galusha 1971	06/07/63	L I 264
Pelagic Cormorant	4	Thoresen & Galusha 1971	06-07/ ?/70	L I 264
Pelagic Cormorant	34	Manuwal 1977	?/ ?/73-75	L I 187
Pelagic Cormorant	35	Frazer 1973	07/17/73	L I 108
Pelagic Cormorant	12	Eddy	06/07/74	L I 95
Black Oystercatcher	2	Eddy	06/07/74	L I 95
Black Oystercatcher	2	Nysewander 1977; Nysewander	06/ ?/75	L I 204;205
Black Oystercatcher	2	Eddy 1975	06/15/75	L I 94
Glaucous-winged Gull	175B	Schultz	?/ ?/48	L III 245
Glaucous-winged Gull	170B	Schultz	?/ ?/49	L III 245
Glaucous-winged Gull	X	Schultz 1951	06/21/50	L III 240
Glaucous-winged Gull	1	Schultz	05/21/51	S - 246
Glaucous-winged Gull	4	Schultz	06/05/54	S - 246
Glaucous-winged Gull	1	Schultz	08/07/54	S - 246
Glaucous-winged Gull	110B	Schultz	?/ ?/55	L III 245
Glaucous-winged Gull	20B	Schultz	?/ ?/57	L III 245
Glaucous-winged Gull	350	Thoresen & Galusha 1971	06-07/ ?/63	L III 264
Glaucous-winged Gull	270	Thoresen & Galusha 1971	06-07/ ?/70	L III 264
Glaucous-winged Gull	180	Manuwal 1977	?/ ?/73-75	L III 187
Glaucous-winged Gull	180	Frazer 1973	07/17/73	L III 108



Glaucous-winged Gull	180	Eddy	06/07/74	L III	95
Glaucous-winged Gull	160	Eddy 1975	06/15/75	L II	94
Glaucous-winged Gull	<200	Wahl	07/19/82	A III	269
Pigeon Guillemot	12	Thoresen & Galusha 1971	06-07/ ?/63	L III	264
Pigeon Guillemot	16	Thoresen & Galusha 1971	06-07/ ?/70	L III	264
Pigeon Guillemot	8	Frazer 1973	07/17/73	L III	108
Pigeon Guillemot	41	Eddy 1975	06/15/75	L III	94

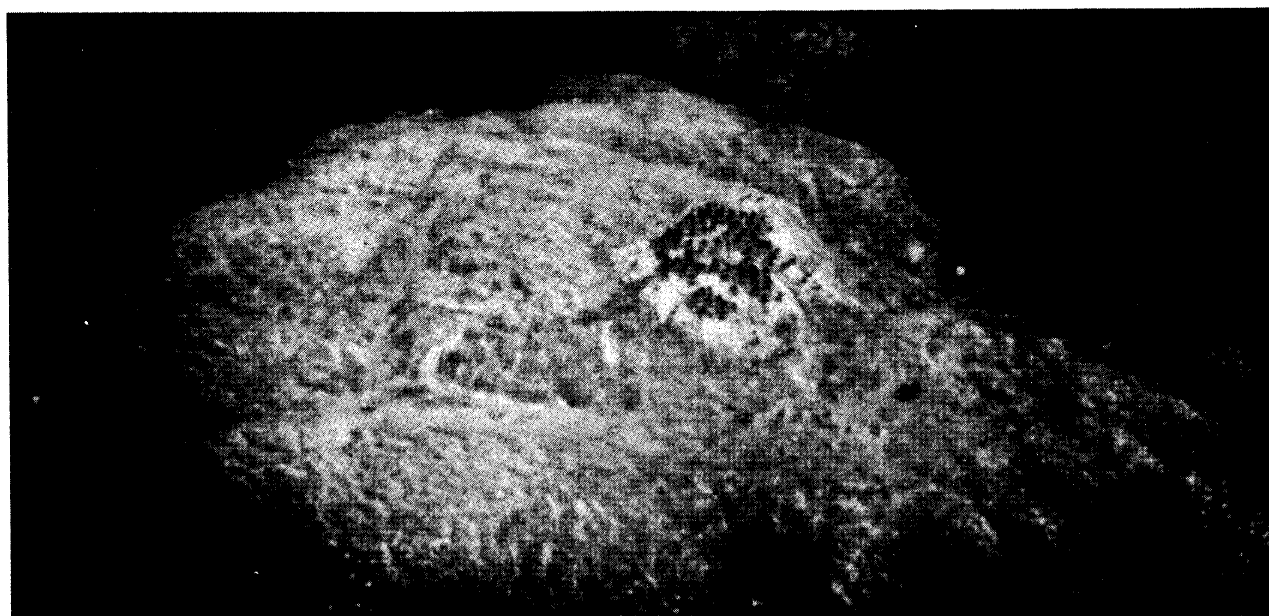
AREA 156, Victoria (cont'd.)

(023)

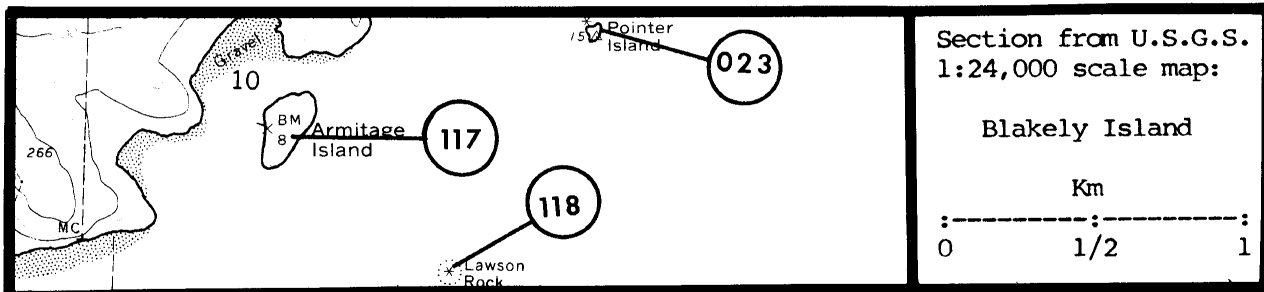
Pointer Island 48°32'20"N, 122°46'50"W

Black Oystercatcher	2	Pitman	06/21/78	B III 217
Glaucous-winged Gull	80	Wahl	06/15/79	B II 269
Pigeon Guillemot	8	Wahl	05/15/79	B II 269
Total	90			

Black Oystercatcher	2	Thoresen & Galusha 1971	06-07/ ?/63	L I 264
Black Oystercatcher	2	Nisqually NWR	06/20/63	B II 202
Black Oystercatcher	2	Thoresen & Galusha 1971	06-07/ ?/70	L I 264
Black Oystercatcher	2-4	Nysewander	06/ ?/75	L III 205
Glaucous-winged Gull	136	Thoresen & Galusha 1971	06-07/ ?/63	L II 264
Glaucous-winged Gull	100	Nisqually NWR	06/20/63	B II 202
Glaucous-winged Gull	64	Thoresen & Galusha 1971	06-07/ ?/70	L II 264
Glaucous-winged Gull	116	Eddy 1975	06/15/75	L II 94
Glaucous-winged Gull	40	Pitman	06/21/78	B II 217
Glaucous-winged Gull	<100	Wahl	07/19/82	A III 269
Pigeon Guillemot	4	Thoresen & Galusha 1971	06-07/ ?/63	L III 264
Pigeon Guillemot	4	Nisqually NWR	06/20/63	B III 202
Pigeon Guillemot	4	Thoresen & Galusha 1971	06-07/ ?/70	L III 264
Pigeon Guillemot	5	Eddy 1975	06/15/75	L III 94
Pigeon Guillemot	7	Pitman	06/21/78	B III 217



Bird Rocks (156024) 19 July 1982 T.R. Wahl



Bird Rocks (156024) USF&WS

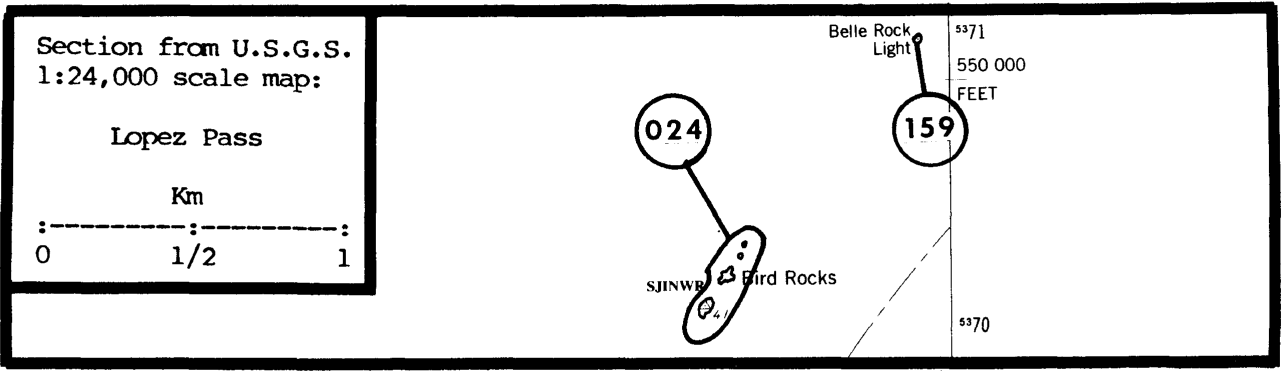
AREA 156, Victoria (cont'd.)

024

Bird Rocks 48°29'08"N, 122°45'43"W

Double-crested Cormorant	190	Wahl	06/15/79	B II	269
Pelagic Cormorant	30	Wahl	06/15/79	B II	269
Black Oystercatcher	2	Wahl	06/15/79	B III	269
Glaucous-winged Gull	500	Wahl	06/15/79	B III	269
Pigeon Guillemot	15	Wahl	06/15/79	B III	269
Total	737				

Double-crested Cormorant	75	Jewett 1937	05/25/37	B II	156
Double-crested Cormorant	0	Thoresen & Galusha 1971	06-07/ ?/63	L III	264
Double-crested Cormorant	10	Nisqually NWR	08/21-23/67	B ?	202
Double-crested Cormorant	16	Thoresen & Galusha 1971	06-07/ ?/70	L I	264
Double-crested Cormorant	60	Frazer 1973	07/17/73	B II	108
Double-crested Cormorant	120-200	Eddy 1975	06/15/75	B III	94
Double-crested Cormorant	X	Manuwal	06/26/76	L III	188
Double-crested Cormorant	182	Pitman	06/21/78	B III	217
Double-crested Cormorant	150	Nisqually NWR	?/ ?/80	L II	202
Double-crested Cormorant	212	Wahl	07/19/82	A II	269
Pelagic Cormorant	8-10	Eddy	06/02/57	B III	95
Pelagic Cormorant	38	Eddy 1975	06/15/75	B I	94
Pelagic Cormorant	60	Pitman	06/21/78	B I	217
Black Oystercatcher	2	Edson 1929	06/15-16/05	L II	98
Black Oystercatcher	X	Brown	?/ ?/18	? ?	42
Black Oystercatcher	1	Brown	06/20/19	S -	43
Black Oystercatcher	1	Eddy	06/02/57	B III	95
Black Oystercatcher	2	Thoreson & Galusha 1971	06-07/ ?/63	L I	264
Black Oystercatcher	P	Nisqually NWR	08/21-23/67	B ?	202
Black Oystercatcher	0	Thoresen & Galusha 1971	06-07/ ?/70	L III	264
Black Oystercatcher	1	Eddy 1975	06/15/75	B III	94
Black Oystercatcher	2	Nysewander	06/ ?/75	B III	205
Black Oystercatcher	2	Manuwal	06/26/76	L I	188
Black Oystercatcher	2	Pitman	06/21/78	B III	217
Glaucous-winged Gull	19	Edson 1929	06/15-16/05	L I	98
Glaucous-winged Gull	2	Decker	06/20/19	E -	82
Glaucous-winged Gull	4	Graves et al.	06/20/19	E -	118
Glaucous-winged Gull	2	Warburton	06/20/19	E -	274
Glaucous-winged Gull	2	Warburton	06/20/19	E -	273
Glaucous-winged Gull	2	Brown et al.	06/20/19	E -	48
Glaucous-winged Gull	2	Brown et al.	06/20/19	E -	46
Glaucous-winged Gull	2	Brown et al.	06/20/19	E -	47
Glaucous-winged Gull	2	Booth	06/10/28	E -	33
Glaucous-winged Gull	400-500	Jewett 1937	05/25/37	B III	156
Glaucous-winged Gull	300+	Eddy	06/02/57	B III	95
Glaucous-winged Gull	600	Nisqually NWR	06/05-06/62	L III	202
Glaucous-winged Gull	788	Thoresen & Galusha 1971	06-07/ ?/63	L II	264
Glaucous-winged Gull	800	Nisqually NWR	06/20/63	B III	202
Glaucous-winged Gull	500	Hauser & Monson 1963	07/16-17/63	B III	145
Glaucous-winged Gull	X	Nisqually NWR	08/21-23/67	B III	202
Glaucous-winged Gull	X	Nisqually NWR	07/13-16/68	L III	202



Glaucous-winged Gull	1150	Thoresen & Galusha 1971	06-07/ ?/70	L III	264
Glaucous-winged Gull	640	Frazer 1973	07/17/73	B III	108
Glaucous-winged Gull	288	Manuwal	06/26/76	L II	188
Glaucous-winged Gull	490	Pitman	06/21/78	B III	217
Glaucous-winged Gull	X	Wahl	03/14/79	B III	269
Glaucous-winged Gull	X	Nisqually NWR	?/ ?/80	L III	202
Glaucous-winged Gull	X	Wahl	07/19/82	A III	269
Pigeon Guillemot	4	Edson 1929	06/15-16/05	L III	98
Pigeon Guillemot	1	Eddy	06/02/57	B III	95
Pigeon Guillemot	4	Galusha 1970	?/ ?/63	L III	110
Pigeon Guillemot	6	Hauser & Monson 1963	07/16-17/63	B III	145
Pigeon Guillemot	P	Nisqually NWR	07/13-16/68	L III	202
Pigeon Guillemot	4	Galusha 1970	?/ ?/70	L III	110
Pigeon Guillemot	5P	Frazer 1973	07/17/73	B III	108
Pigeon Guillemot	10	Manuwal	06/26/76	L III	188
Pigeon Guillemot	1	Pitman	06/21/78	B III	217
Pigeon Guillemot	P	Wahl	03/14/79	B III	269
Tufted Puffin	6	Edson 1929	06/15-16/05	L I	98
Tufted Puffin	2	Jewett 1937	05/25/37	B II	156
Tufted Puffin	1	Bushnell	08/16/42	E -	50


AREA 156, Victoria (cont'd.)

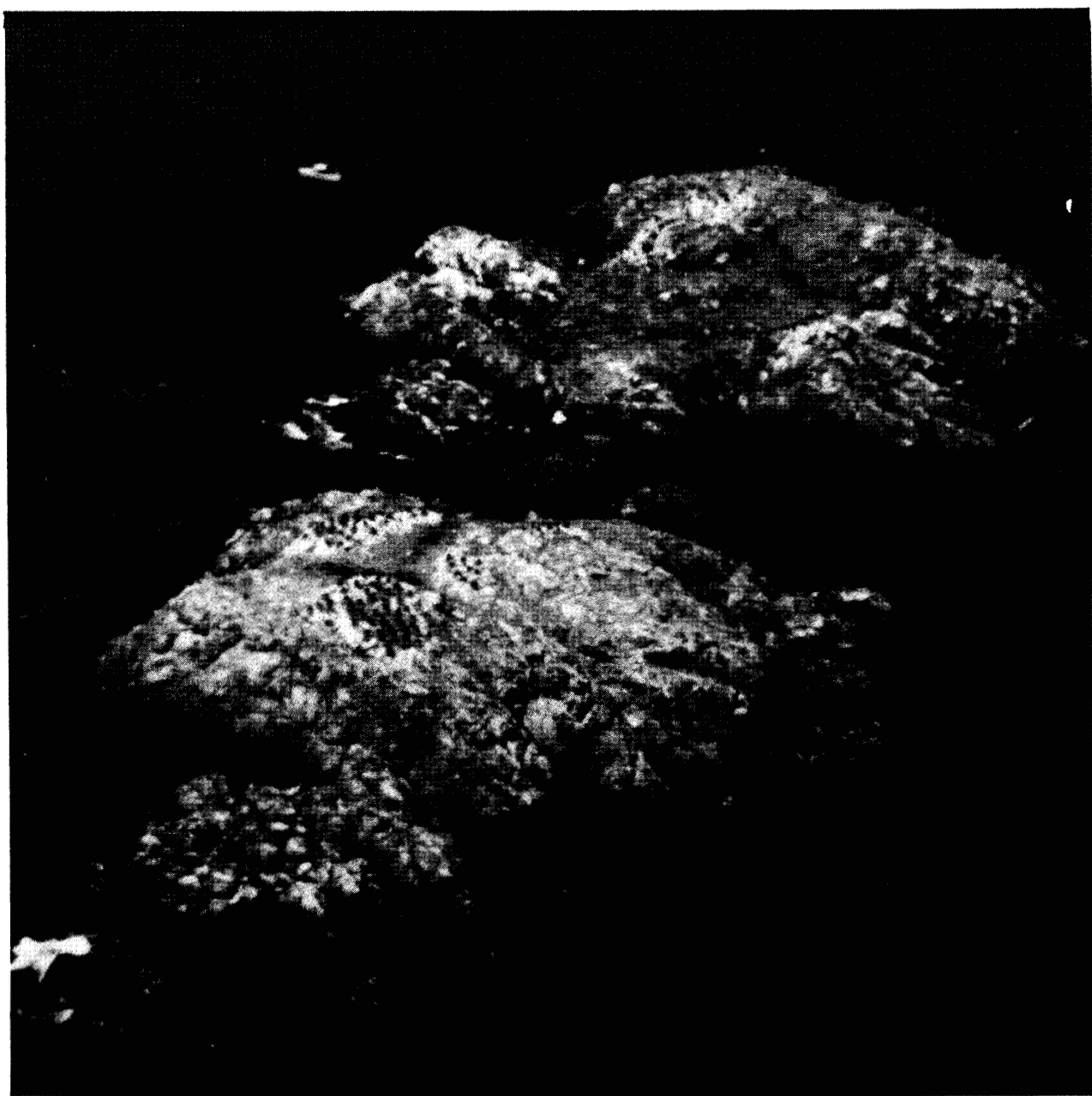
025

Williamson Rocks 48°27'03"N, 122°42'17"W

Double-crested Cormorant	146	Wahl	06/14/79	B I	269
Pelagic Cormorant	62	Wahl	06/14/79	B I	269
Glaucous-winged Gull	230	Wahl	06/14/79	B III	269
Pigeon Guillemot	26	Wahl	06/14/79	B III	269
Total	464				

Double-crested Cormorant	200?	Nisqually NWR	06/05-06/62	B ?	202
Double-crested Cormorant	4P	Hauser & Monson 1963	07/16-17/63	B III	145
Double-crested Cormorant	20P	Nisqually NWR	08/21-23/67	L III	202
Double-crested Cormorant	20	Pitman	06/21/78	B I	217
Double-crested Cormorant	262	Wahl	07/19/82	A II	269
Pelagic Cormorant	2	Howsley	06/19/37	E -	147
Pelagic Cormorant	12	Thoresen & Booth 1958	06-09/ ?/57	L I	263
Pelagic Cormorant	6?	Nisqually NWR	07/13-16/68	B ?	202
Pelagic Cormorant	134	Eddy 1975	06/15/75	L I	94
Pelagic Cormorant	51	Manuwal	06/26/76	L III	188
Pelagic Cormorant	126	Pitman	06/21/78	B I	217
Black Oystercatcher	2	Edson 1929	06/14-15/05	L I	98
Black Oystercatcher	2	Thoresen & Booth 1958	06-09/ ?/57	L I	263
Black Oystercatcher	2	Thoresen & Galusha 1971	06-07/ ?/63	L I	264
Black Oystercatcher	4P	Nisqually NWR	07/13-16/68	B ?	202
Black Oystercatcher	0	Thoresen & Galusha 1971	06-07/ ?/70	L III	264
Black Oystercatcher	2	Eddy 1975; Nysewander	06/15/75	L I	94;205
Glaucous-winged Gull	88	Edson 1929	06/14-15/05	L I	98
Glaucous-winged Gull	240	Dawson	06/14-22/05	L III	76
Glaucous-winged Gull	X	Dawson	07/12/05	L III	76
Glaucous-winged Gull	2	Hepburn	05/31/12	E -	131
Glaucous-winged Gull	2	Hepburn	[05/31/12]	E -	131
Glaucous-winged Gull	2	Booth	05/30/30	E -	38
Glaucous-winged Gull	10	Booth	06/08/30	E -	38
Glaucous-winged Gull	10	Howsley	06/19/37	E -	147
Glaucous-winged Gull	X	Schultz	?/ ?/54	L III	245
Glaucous-winged Gull	X	Booth	08/ ?/54	L III	39
Glaucous-winged Gull	100's	Thoresen & Booth 1958	06-09/ ?/57	L III	263
Glaucous-winged Gull	800P	Nisqually NWR	06/05-06/62	B III	202
Glaucous-winged Gull	500	Thoresen & Galusha 1971	06-07/ ?/63	L III	264
Glaucous-winged Gull	450	Hauser & Monson 1963	07/16-17/63	B III	145
Glaucous-winged Gull	X	Nisqually NWR	08/21-23/67	L III	202
Glaucous-winged Gull	700	Nisqually NWR	07/13-16/68	B ?	202
Glaucous-winged Gull	602	Thoresen & Galusha 1971	06-07/ ?/70	L II	264
Glaucous-winged Gull	692	Eddy 1975	06/15/75	L II	94
Glaucous-winged Gull	>60	Manuwal	06/26/76	L III	188
Glaucous-winged Gull	P	Thoresen 1980	06/23-08/03/77	B III	261
Glaucous-winged Gull	120+P	Harrington-Tweit	04/02/78	M III	124
Glaucous-winged Gull	400	Pitman	06/21/78	B III	217
Glaucous-winged Gull	X	Wahl	03/13/79	B III	269
Glaucous-winged Gull	X	Wahl	07/19/82	A III	269
Pigeon Guillemot	2	Edson	06/15/03	E -	100
Pigeon Guillemot	12	Edson 1929	06/14-15/05	L III	98

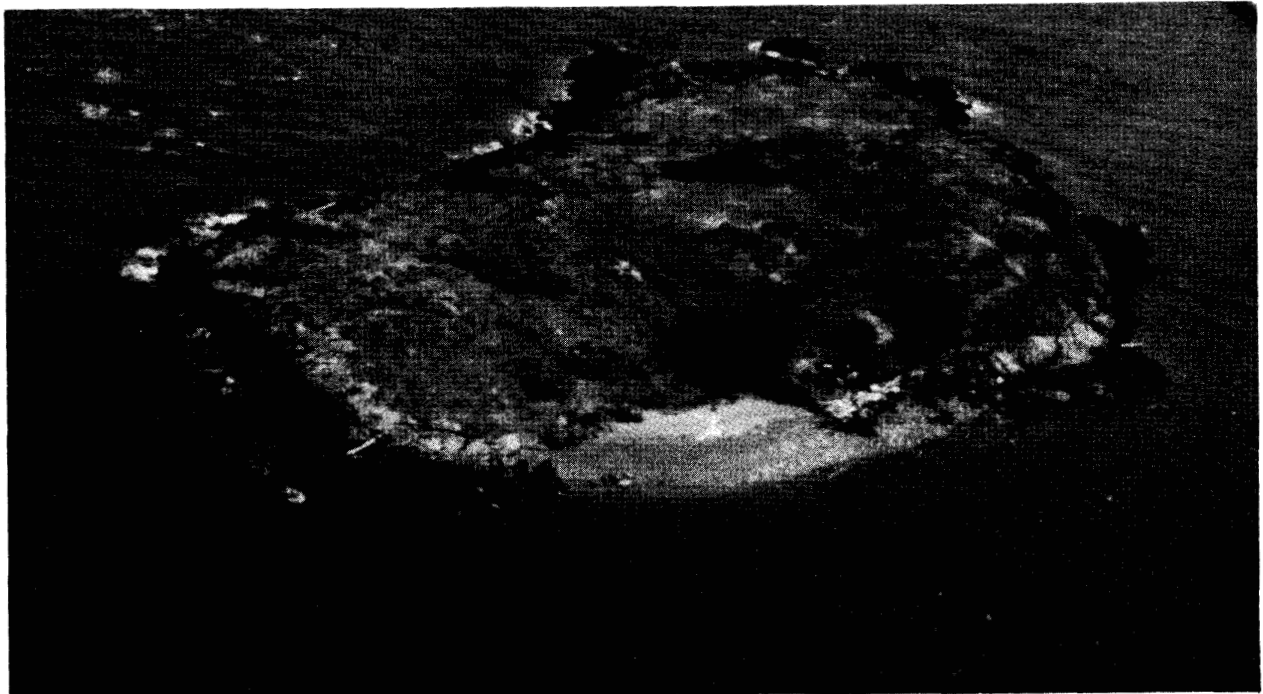
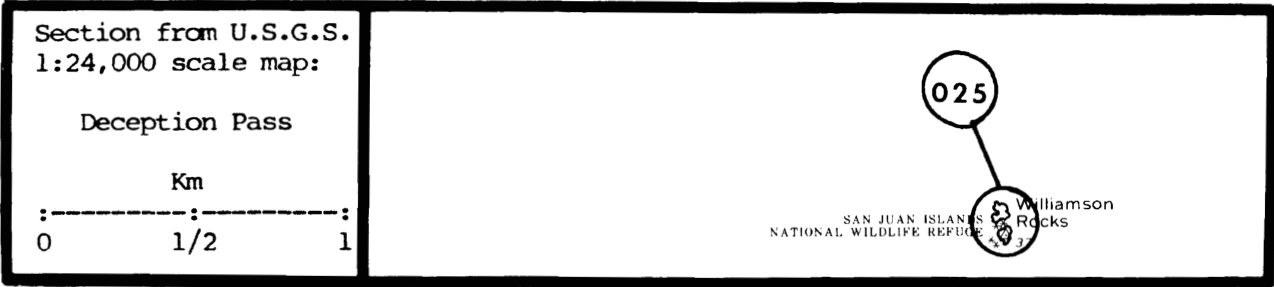
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Williamson Rocks (156025) 19 July 1982 T.R. Wahl

AREA 156, Victoria (cont'd.)

Pigeon Guillemot	4	Howsley	06/19/37	E -	147
Pigeon Guillemot	X	Thoresen & Booth 1958	06-09/ ?/57	L III	263
Pigeon Guillemot	20P	Nisqually NWR	06/05-06/62	B III	202
Pigeon Guillemot	8	Thoresen & Galusha 1971	06-07/ ?/63	L II	264
Pigeon Guillemot	37	Hauser & Monson 1963	07/16-17/63	B III	145
Pigeon Guillemot	25	Nisqually NWR	06/21/67	? III	202
Pigeon Guillemot	15	Nisqually NWR	08/21-23/67	L III	202
Pigeon Guillemot	50	Nisqually NWR	07/13-16/68	B ?	202
Pigeon Guillemot	0	Thoresen & Galusha 1971	06-07/ ?/70	L III	264
Pigeon Guillemot	4	Eddy 1975	06/15/75	L II	94
Pigeon Guillemot	12	Manuwal	06/26/76	L III	188
Pigeon Guillemot	P	Thoresen 1980	06/23-08/03/77	B III	261
Pigeon Guillemot	50	Pitman	06/21/78	B III	217
Rhinoceros Auklet	1?	Thoresen 1980	06/23-08/03/77	B III	261
Tufted Puffin	12	Edson 1929	06/14-15/05	L II	98
Tufted Puffin	4	Booth	06/10/28	E -	38
Tufted Puffin	Several	Booth	06/10/28	L III	32
Tufted Puffin	2	Booth	06/08/30	E -	38
Tufted Puffin	Several	Booth	06/08/30	L III	32
Tufted Puffin	16	Thoresen & Booth 1958	06-09/ ?/57	L II	263
Tufted Puffin	X	Thoresen 1981	?/ ?/57	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/58	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/59	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/60	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/61	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/62	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/63	? III	262
Tufted Puffin	8	Thoresen & Galusha 1971	06-07/ ?/63	L I	264
Tufted Puffin	1	Hauser & Monson 1963	07/16-17/63	B II	145
Tufted Puffin	X	Thoresen 1981	?/ ?/64	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/65	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/66	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/67	? III	262
Tufted Puffin	5P	Nisqually NWR	06/21/67	? III	202
Tufted Puffin	X	Thoresen 1981	?/ ?/68	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/69	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/70	? III	262
Tufted Puffin	0	Thoresen & Galusha 1971	06-07/ ?/70	B III	264
Tufted Puffin	X	Thoresen 1981	?/ ?/71	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/72	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/73	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/74	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/75	? III	262
Tufted Puffin	X	Thoresen 1981	?/ ?/76	? III	262
Tufted Puffin	6+	Thoresen 1981	07/24/77	? III	262
Tufted Puffin	P	Thoresen 1980	06/23-08/03/77	B III	261
Tufted Puffin	1	Eddy 1975	06/15/75	L III	94



Goose Island (156026) 19 July 1982 T.R. Wahl

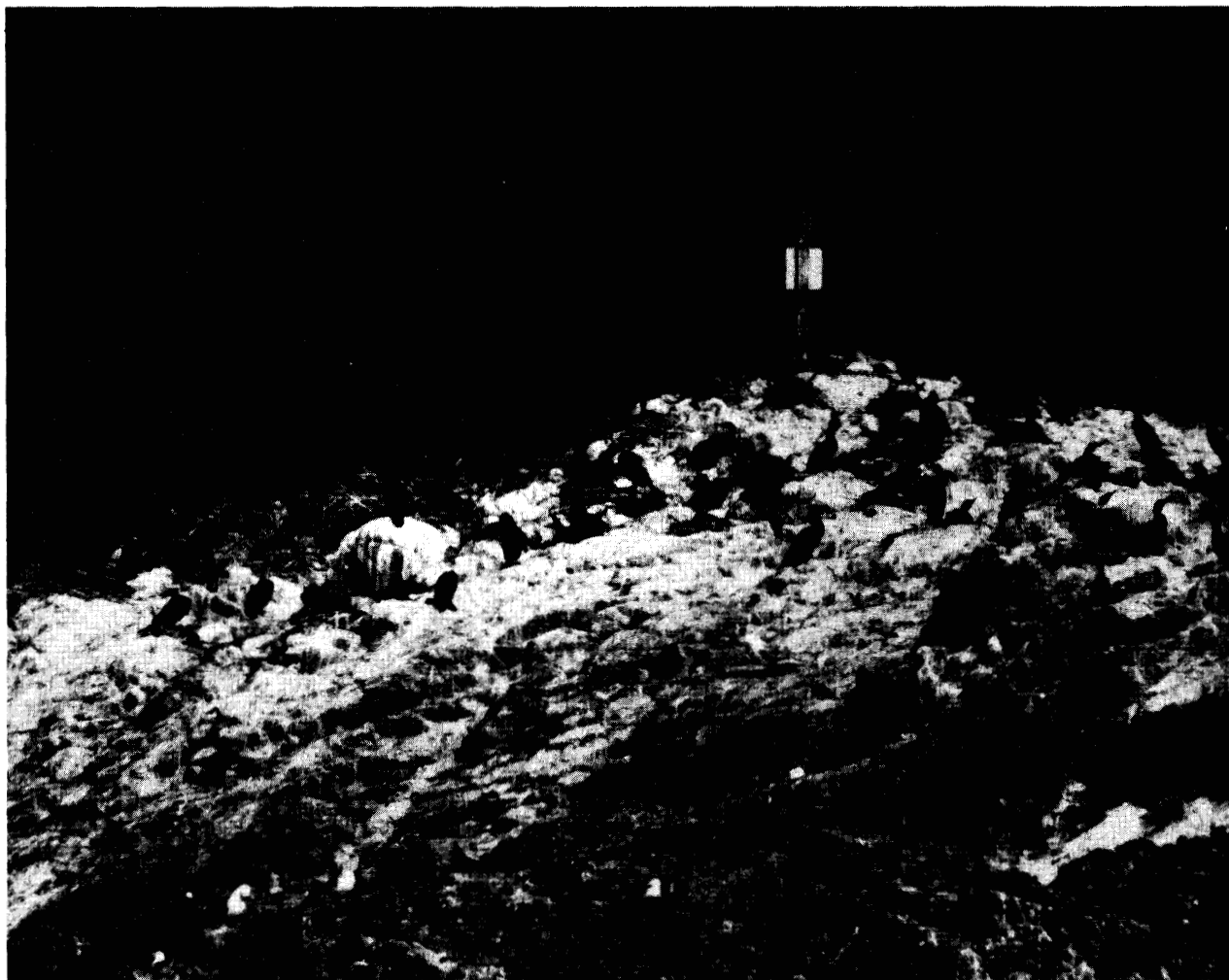
AREA 156, Victoria (cont'd.)

026

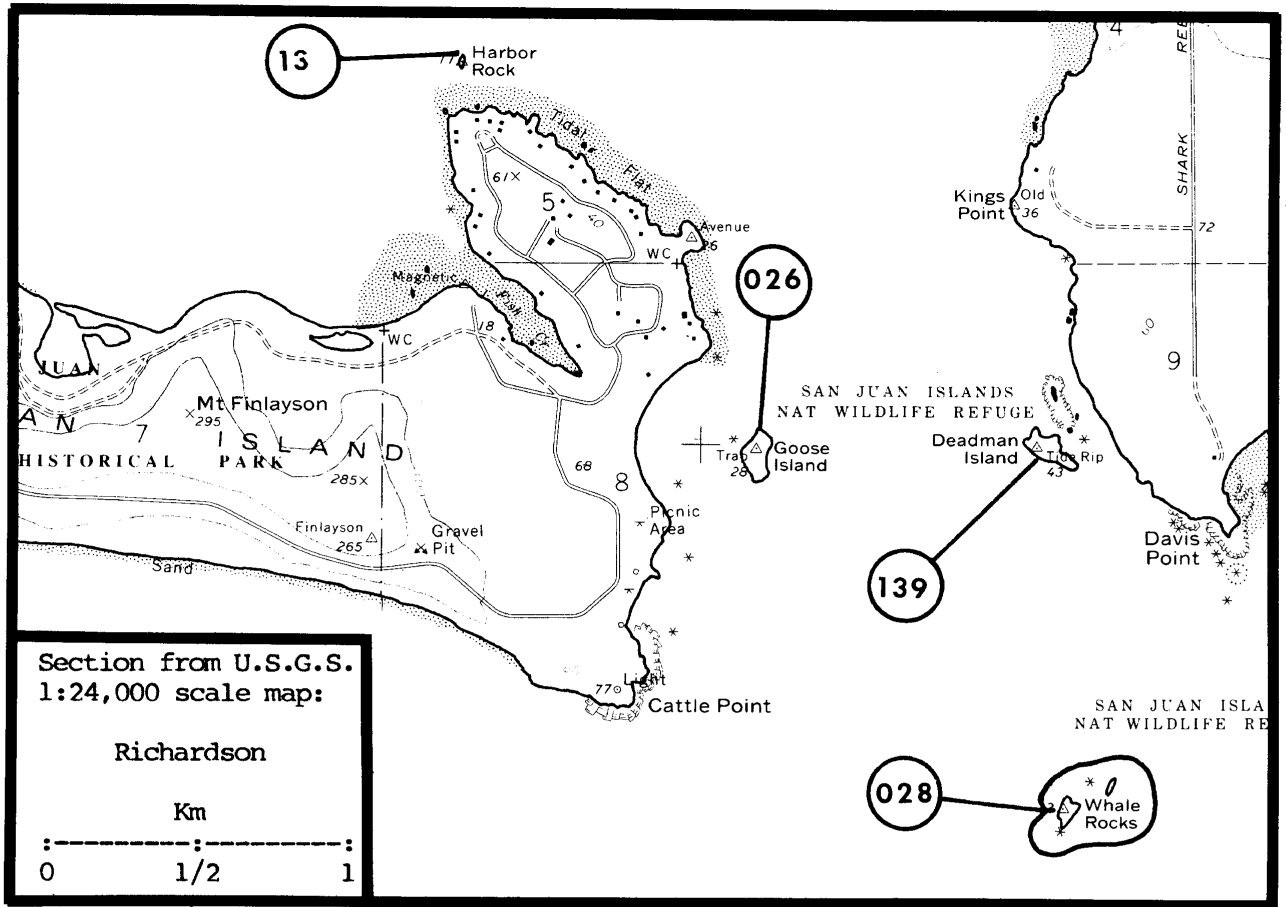
Goose Island 48°27'30"N, 122°57'18"W

Black Oystercatcher	4	Eaton 1980	06/ ?/78	L I 93
Glaucous-winged Gull	102	Eaton 1980	06/ ?/78	L II 93
Total	106			

No Nesting Observed	0	Jewett 1937	05/27/37	B III 156
Black Oystercatcher	1	Richardson	08/15/57	S - 230
Black Oystercatcher	4	Eddy	06/08/74	L I 95
Black Oystercatcher	4	Eaton 1980	?/ ?/74	L I 93
Black Oystercatcher	4	Eaton 1980	06-07/ ?/77	L I 93
Glaucous-winged Gull	120	Frazer 1973	07/17/73	B III 108
Glaucous-winged Gull	108	Eddy	06/08/74	L I 95
Glaucous-winged Gull	66	Eaton 1980	06-07/ ?/77	L I 93
Glaucous-winged Gull	<100	Wahl	07/19/82	A III 269



Bird Rocks, south (156024) 21 June 1978, R.L. Pitman Double-crested Cormorants



AREA 156, Victoria (cont'd.)

027 Mummy Rocks 48°26'54"N, 122°55'40"W

Black Oystercatcher	1	Pitman	06/20/78	B III 217
Glaucous-winged Gull	50	Pitman	06/20/78	B III 217
Total	<u>51</u>			

Black Oystercatcher	5	Eddy	07/03/61	B III 95
Black Oystercatcher	2	Hauser & Monson 1963	07/16-17/63	B III 145
Glaucous-winged Gull	100+	Eddy	07/03/61	B III 95
Glaucous-winged Gull	60	Hauser & Monson 1963	07/16-17/63	B III 145
Glaucous-winged Gull	110	Frazer 1973	07/17/73	B III 108
Glaucous-winged Gull	35?	Wahl	07/19/82	A III 269

028 Whale Rocks 48°26'51"N, 122°56'26"W

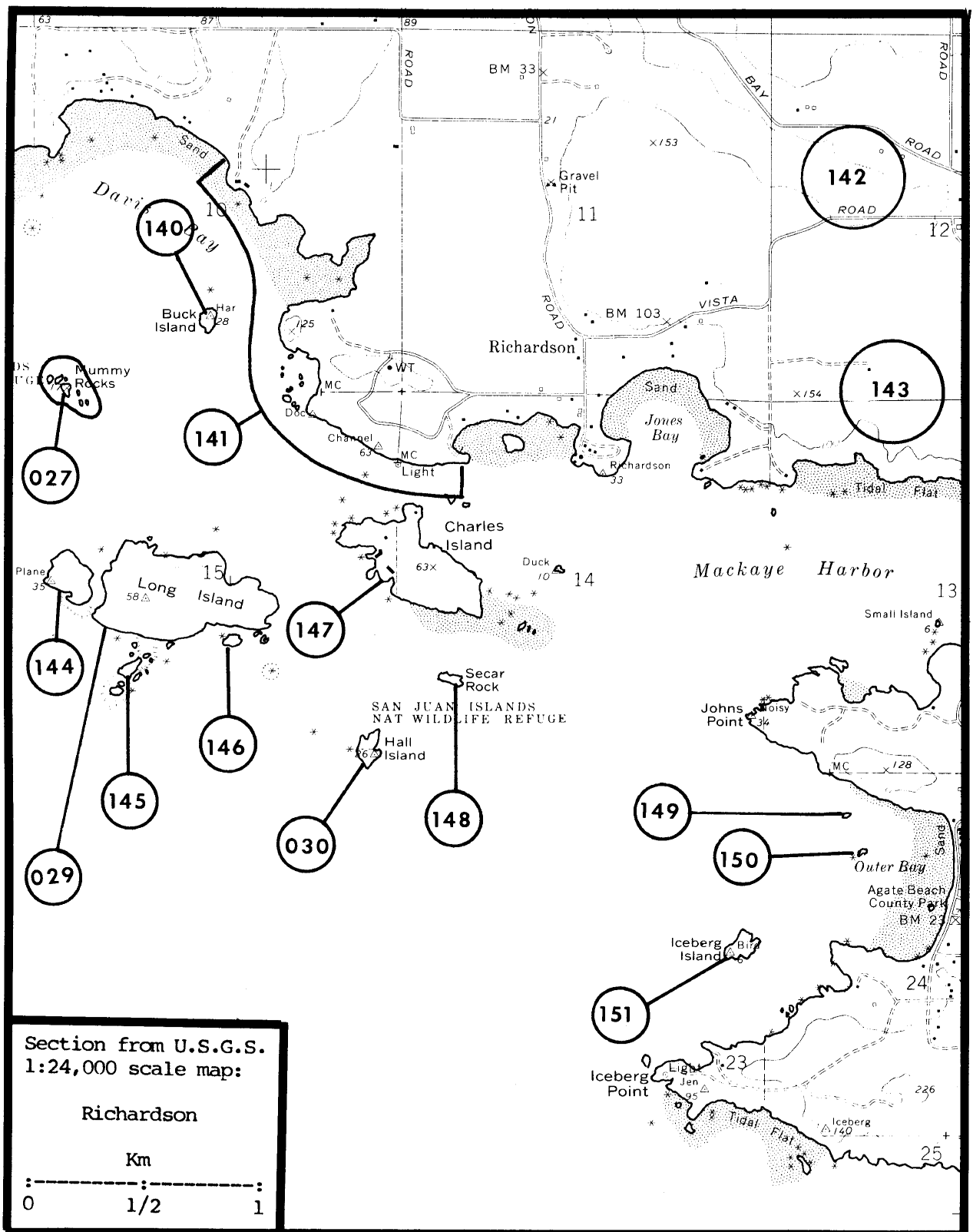
Black Oystercatcher	2	Pitman	06/20/78	B II 217
Glaucous-winged Gull	5	Pitman	06/20/78	B II 217
Total	<u>7</u>			

Black Oystercatcher	2	Manuwal 1977	?/ ?/73-75	L I 187
Black Oystercatcher	2	Nysewander	06-07/ ?/73	B III 205
Glaucous-winged Gull	25?	Nisqually NWR	06/20/63	B ? 202
Glaucous-winged Gull	89	Frazer 1973	07/17/73	B III 108

029 Long Island 48°26'32"N, 122°55'20"W

Black Oystercatcher	2	Pitman	06/20/78	B II 217
Glaucous-winged Gull	20	Pitman	06/20/78	B II 217
Total	<u>22</u>			

Black Oystercatcher	9	Frazer 1973	07/17/73	B II 108
Black Oystercatcher	10	Nysewander	06-07/ ?/73	B III 205
Black Oystercatcher	12?	Nysewander	03/22/74	B III 205
Black Oystercatcher	8	Eddy	06/08/74	L II 95
Glaucous-winged Gull	125	Frazer 1973	07/17/73	B III 108
Glaucous-winged Gull	274	Eddy	06/08/74	L II 95
Pigeon Guillemot	1	Wahl	05/19/78	B III 269

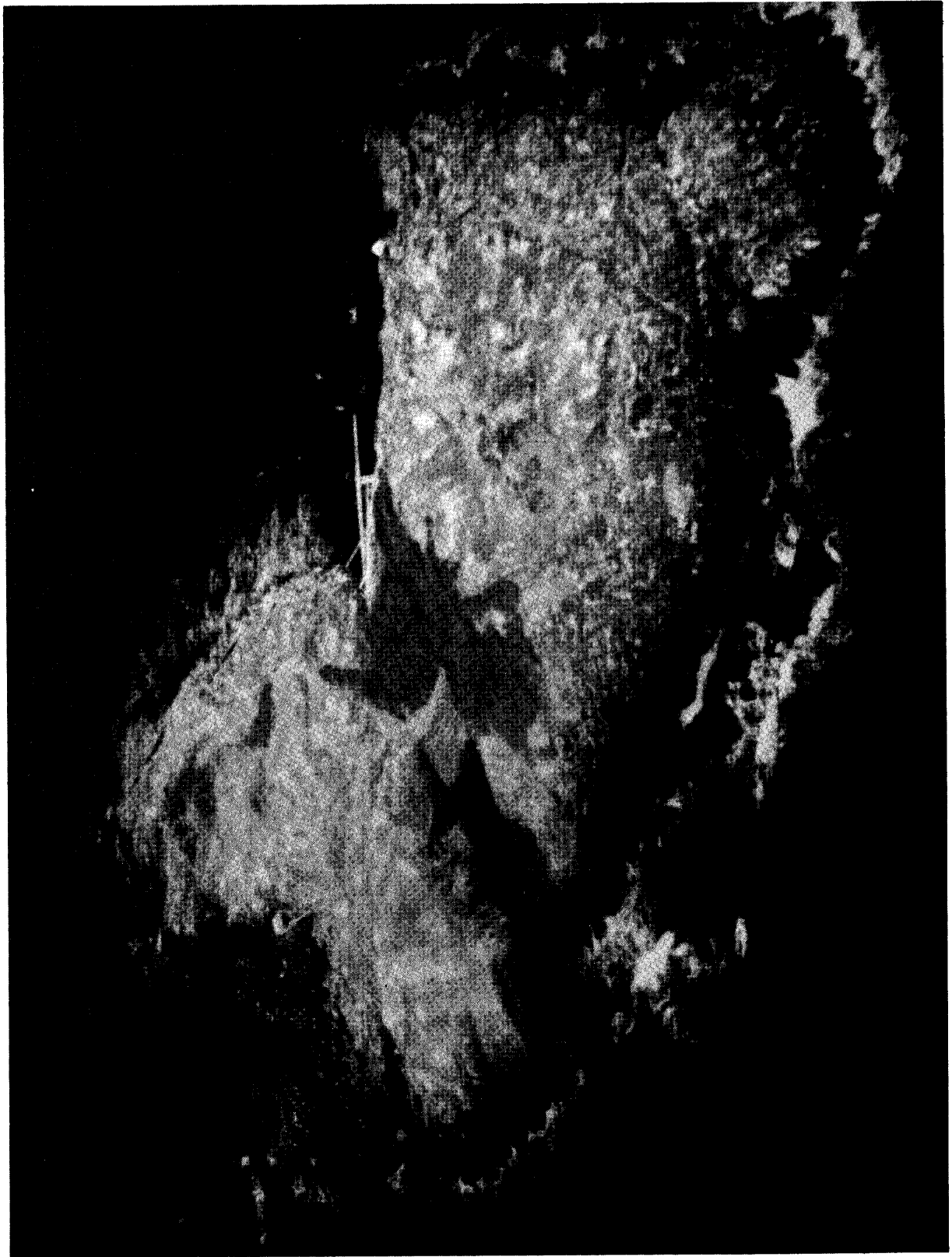


AREA 156, Victoria (cont'd.)

030 Hall Island 48°26'06"N, 122°54'37"W

Pelagic Cormorant	24	Pitman	06/20/78	B I	217
Black Oystercatcher	1	Pitman	06/20/78	B III	217
Glaucous-winged Gull	500	Pitman	06/20/78	B III	217
Pigeon Guillemot	6	Pitman	06/20/78	B II	217
Total	531				

Cormorant sp.	100?	Devan	04/28/71	? III	87
Double-crested Cormorant	X	Stopps	07/16-17/66	? III	258
Pelagic Cormorant	10P	Nisqually NWR	06/20/63	B ?	202
Pelagic Cormorant	18	Hauser & Monson	07/16-17/63	B II	145
Pelagic Cormorant	X	Stopps	07/16-17 66	? III	258
Pelagic Cormorant	25	Nisqually NWR	06/13-16/68	L II	202
Pelagic Cormorant	30N	Frazer 1973	07/17/73	B ?	108
Black Oystercatcher	2	Eddy	07/03/61	L I	95
Black Oystercatcher	8P	Schultz	07/18/64	L III	242
Black Oystercatcher	2P	Nysewander 1977	?/ ?/73-74	L III	204
Black Oystercatcher	2	Nysewander	06/ ?/73	L I	205
Black Oystercatcher	2	Manuwal	06/26/76	L I	188
Glaucous-winged Gull	X	Schultz 1952	07/21/48-51?	L III	241
Glaucous-winged Gull	400B	Schultz	?/ ?/48	L III	245
Glaucous-winged Gull	400B	Schultz	?/ ?/49	L III	245
Glaucous-winged Gull	X	Schultz 1952	?/ ?/51?	L III	241
Glaucous-winged Gull	310B	Schultz	?/ ?/55	L III	245
Glaucous-winged Gull	325B	Schultz	?/ ?/60	L III	245
Glaucous-winged Gull	100's	Eddy	07/03/61	L III	95
Glaucous-winged Gull	260B	Schultz	?/ ?/63	L III	245
Glaucous-winged Gull	1000	Nisqually NWR	06/20/63	B III	202
Glaucous-winged Gull	600	Hauser & Monson 1963	07/16-17/63	B III	145
Glaucous-winged Gull	X	Schultz	07/18/64	L III	242
Glaucous-winged Gull	X	Schultz	?/ ?/65	L III	245
Glaucous-winged Gull	1000	Nisqually NWR	07/13-16/68	L III	202
Glaucous-winged Gull	750	Devan	04/28/71	? III	87
Glaucous-winged Gull	530B	Wahl	07/10/71	L III	269
Glaucous-winged Gull	340B	Wahl	07/09/72	L III	269
Glaucous-winged Gull	410B	Wahl	07/08/73	L III	269
Glaucous-winged Gull	480	Frazer 1973	07/17/73	B ?	108
Glaucous-winged Gull	X	Manuwal	06/26/76	L III	188
Glaucous-winged Gull	X	Wahl	03/13/79	B III	269
Glaucous-winged Gull	700	Wahl	06/14/79	B III	145
Glaucous-winged Gull	<1000	Wahl	07/19/82	A III	269
Pigeon Guillemot	2	Hauser & Monson	07/16-17/63	B III	145
Pigeon Guillemot	P	Nisqually NWR	07/13-16/68	L III	202
Pigeon Guillemot	5P	Frazer 1973	07/17/73	L III	108
Pigeon Guillemot	2	Manuwal	06/26/76	L III	188
Pigeon Guillemot	6	Wahl	05/19/78	B III	269



Hall Island (156030) 19 July 1982 T.R. Wahl

AREA 156, Victoria (cont'd.)

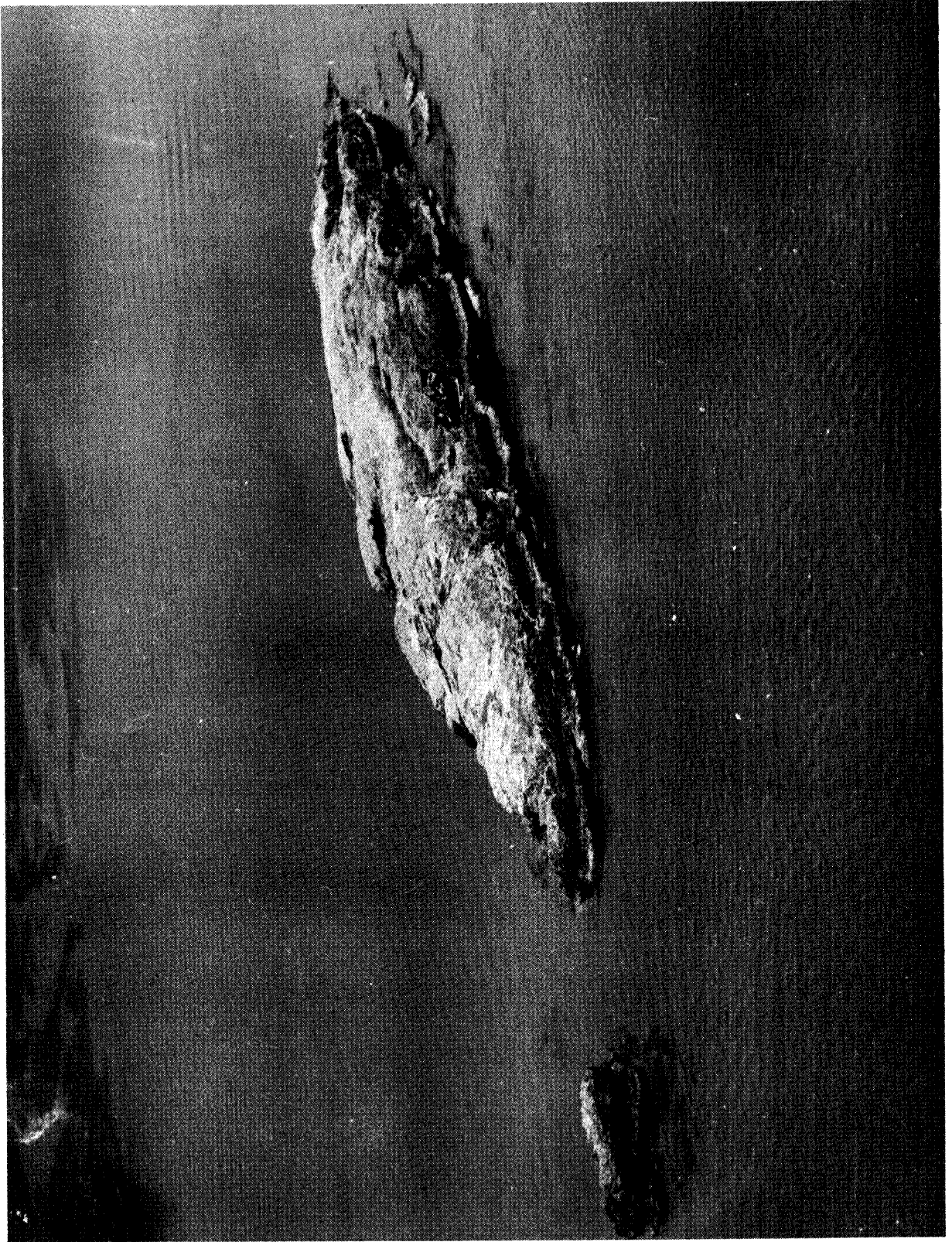
(031) Castle Island 48°25'20"N, 122°49'13"W

Pelagic Cormorant	190	Wahl	07/19/82	A II 269
Pigeon Guillemot	130	Wahl	06/14/79	B III 269
Total	320			

No Nesting Observed	0	Eddy	07/03/61	B III 95
Cormorant sp.	X	Jewett 1937	05/25/37	B III 156
Double-crested Cormorant	28	Frazer 1973	07/17/73	B I 108
Pelagic Cormorant	100-200	Wahl	06/09/74	B II 269
Glaucous-winged Gull	0	Wahl	07/19/82	A III 269
Pigeon Guillemot	200±	Rathbun	06/11/28	B III 223
Pigeon Guillemot	X	Jewett 1937	05/25/37	B III 156
Pigeon Guillemot	45	Frazer 1973	07/17/73	B III 108
Pigeon Guillemot	8+	Manuwal	06/26/76	B III 188
Pigeon Guillemot	167	Wahl	05/19/78	B III 269
Pigeon Guillemot	60	Pitman	06/20/78	B III 217



Castle Island (156031) 9 June 1974 T.R. Wahl



Colville Island (156032)(right) Unnamed Rock ("Colville Annex")(156166) USF&WS

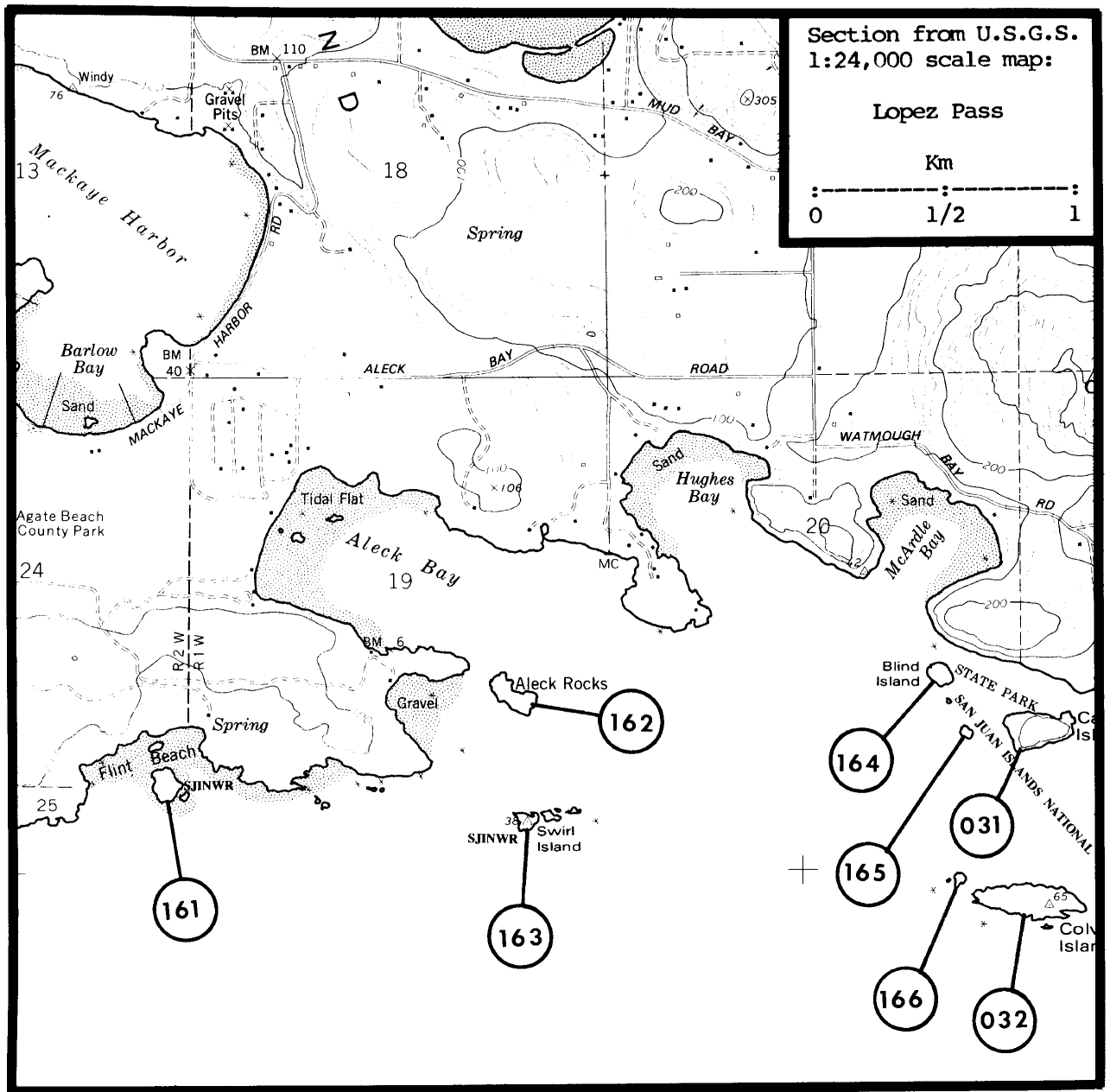
AREA 156, Victoria (cont'd.)

032

Colville Island 48°24'58"N, 122°49'17"W

Double-crested Cormorant	62	Wahl	06/14/79	B II 269
Pelagic Cormorant	230	Wahl	06/14/79	B II 269
Black Oystercatcher	2	Pitman	06/20/78	B III 217
Glaucous-winged Gull	1000-2000	Wahl	07/19/82	A III 269
Pigeon Guillemot	22	Wahl	06/14/79	B III 269
Tufted Puffin	5P	Wahl	06/14/79	B III 269
Total				1321-2321

No nesting observed	0	Edson 1929	06/17/05	L III 98
Cormorant sp.	50	Nisqually NWR	06/05-06/62	B III 202
Cormorant sp.	P	Nisqually NWR	06/20/63	B III 202
Cormorant sp.	175	Devan	04/28/71	? III 87
Double-crested Cormorant	0	Drent & Guiguet 1961	pre-1905	- - 89
Double-crested Cormorant	100-140	Schultz	pre-1948	L ? 243
Double-crested Cormorant	400	Goodge 1950	pre-1948	? ? 115
Double-crested Cormorant	0	Schultz	?/ ?/ 48	L III 243
Double-crested Cormorant	0	Goodge 1950	?/ ?/ 48	? III 115
Double-crested Cormorant	50-100	Schultz	?/ ?/ 57	L III 243
Double-crested Cormorant	52+	Eddy & Richardson;		
		Eddy	08/04/57	? ? 97;95
Double-crested Cormorant	34	Eddy	07/03/61	L I 95
Double-crested Cormorant	28	Thoresen & Galusha 1971	06-07/ ?/63	L I 264
Double-crested Cormorant	22	Hauser & Monson 1963	07/16-17/63	B II 145
Double-crested Cormorant	0	Schultz	07/19/64	L III 242
Double-crested Cormorant	X	Stopps	07/16-17/66	L III 258
Double-crested Cormorant	X	Wahl	07/13-14/68	L III 269
Double-crested Cormorant	24	Thoresen & Galusha 1971	06-07/ ?/70	L I 264
Double-crested Cormorant	49	Richardson	?/ ?/73	? ? 228
Double-crested Cormorant	0	Wahl	?/ ?/74	L III 270
Double-crested Cormorant	92	Pitman	06/20/78	B I 217
Double-crested Cormorant	534	Wahl	07/19/82	A II 269
Brandt's Cormorant	18	Eddy	08/04/57	B II 95
Pelagic Cormorant	X	Jewett 1937	05/25/37	B III 156
Pelagic Cormorant	160	Eddy	08/04/57	B II 95
Pelagic Cormorant	60	Eddy	07/03/61	L I 95
Pelagic Cormorant	100	Thoresen & Galusha 1971	06-07/ ?/63	L I 264
Pelagic Cormorant	2	Schultz	07/19/64	L ? 242
Pelagic Cormorant	X	Wahl	07/17/65	L III 269
Pelagic Cormorant	X	Stopps	07/16-17/66	? III 258
Pelagic Cormorant	40P	Nisqually NWR	06/21/67	? III 202
Pelagic Cormorant	X	Wahl	07/13-14/68	L III 269
Pelagic Cormorant	88	Thoresen & Galusha 1971	06-07/ ?/70	L I 264
Pelagic Cormorant	X	Wahl	07/09/72	L III 269
Pelagic Cormorant	69	Frazer 1973	07/17/73	B III 108
Pelagic Cormorant	180	Wahl	06/02/74	L II 269
Pelagic Cormorant	X	Hayward et al. 1975	06/15&08/15/74	? III 128



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Pelagic Cormorant	100	Manuwal	06/23/76	L III 188
Pelagic Cormorant	92	Pitman	06/20/78	B I 217
Pelagic Cormorant	X	Wahl	07/19/82	A III 269
Black Oystercatcher	2	Eddy	07/03/61	L I 95
Black Oystercatcher	4	Nisqually NWR	06/05/62	B III 202
Black Oystercatcher	4	Thoresen & Galusha 1971	06-07/ ?/63	L I 264
Black Oystercatcher	1	Nisqually NWR	06/20/63	B III 202
Black Oystercatcher	2	Hansen & Monson 1963	07/16-17/63	B III 145
Black Oystercatcher	X	Wahl	07/17/65	L III 269
Black Oystercatcher	X	Wahl	07/09/67	L III 269
Black Oystercatcher	X	Wahl	07/13-14/68	L III 269
Black Oystercatcher	2	Thoresen & Galusha 1971	06-07/ ?/70	L I 264
Black Oystercatcher	2	Wahl	07/11-12/70	L I 269
Black Oystercatcher	X	Wahl	07/09/72	L III 269
Black Oystercatcher	2	Nysewander	06 ?/73	B III 205
Black Oystercatcher	1	Frazer 1973	07/17/73	B III 108
Black Oystercatcher	4	Wahl	06/02/74	L II 269
Black Oystercatcher	X	Hayward et al. 1975	06/15&08/15/74	? III 128
Black Oystercatcher	4-6	Manuwal	06/23/76	L III 188
Glaucous-winged Gull	400+	Rathbun	06/11/28	L III 223
Glaucous-winged Gull	3,000	Jewett 1937	05/25/37	B III 156
Glaucous-winged Gull	30	Howsley	06/20/37	E - 147
Glaucous-winged Gull	XB	Schultz	?/ ?/40	L III 245
Glaucous-winged Gull	1	Goodge	07/28/49	S - 116
Glaucous-winged Gull	530B	Schultz	?/ ?/48	L III 245
Glaucous-winged Gull	1	McMannama	07/28/48	S - 193
Glaucous-winged Gull	630B	Schultz	?/ ?/49	L III 245
Glaucous-winged Gull	2	McMannama	07/09/49	S - 193
Glaucous-winged Gull	X	Schultz 1951	06/14-19/51	L III 240
Glaucous-winged Gull	4	Schultz	06/16/51	S - 246
Glaucous-winged Gull	740B	Schultz	?/ ?/55	L III 245
Glaucous-winged Gull	3	Schultz	07/27/55	S - 246
Glaucous-winged Gull	840B	Schultz	?/ ?/57	L III 245
Glaucous-winged Gull	100's	Eddy	08/04/57	B III 95
Glaucous-winged Gull	1400B	Schultz	?/ ?/58	L III 245
Glaucous-winged Gull	1020B	Schultz	?/ ?/61	L III 245
Glaucous-winged Gull	500+	Eddy	07/03/61	L III 95
Glaucous-winged Gull	1420B	Schultz	?/ ?/62	L III 245
Glaucous-winged Gull	X	Nisqually NWR	06/05/62	B III 202
Glaucous-winged Gull	670B	Schultz	?/ ?/63	L III 245
Glaucous-winged Gull	2454	Thoresen & Galusha 1971	06-07/ ?/63	L II 264
Glaucous-winged Gull	2000	Nisqually NWR	06/20/63	B III 202
Glaucous-winged Gull	3000	Hansen & Monson 1963	07/16-17/63	B III 145
Glaucous-winged Gull	170B	Schultz	?/ ?/64	L III 245
Glaucous-winged Gull	1980B	Wahl	07/17/65	L III 269
Glaucous-winged Gull	2470B	Wahl	07/17/66	L III 269
Glaucous-winged Gull	1000	Nisqually NWR	06/21/67	? III 202
Glaucous-winged Gull	800B	Wahl	07/09/67	L III 269
Glaucous-winged Gull	1200	Nisqually NWR	08/21-23/67	L III 202
Glaucous-winged Gull	X	Wahl	07/13-14/68	L III 269
Glaucous-winged Gull	5000	Nisqually NWR	07/13-16/68	L III 202
Glaucous-winged Gull	1640B	Wahl	07/13/68	L III 269
Glaucous-winged Gull	2854	Thoresen & Galusha 1971	06-07/ ?/70	L III 264
Glaucous-winged Gull	1880B	Wahl	07/11-12/70	L III 269

Glaucous-winged Gull	2500	Devan	04/28/71	? III	87
Glaucous-winged Gull	1250B	Wahl	07/11/71	L III	269
Glaucous-winged Gull	670B	Wahl	07/09/72	L III	269
Glaucous-winged Gull	1330B	Wahl	07/08/73	L III	269
Glaucous-winged Gull	1300	Frazer 1973	07/17/73	B III	108
Glaucous-winged Gull	3000	Hayward et al. 1975	06/15&08/15/74	? III	128
Glaucous-winged Gull	2970	Amlaner et al. 1977	07/ ?/74	L II	10
Glaucous-winged Gull	3616	Amlaner et al. 1977	06/ ?/75	L II	10
Glaucous-winged Gull	100+	Manuwal	06/23/76	L III	188
Glaucous-winged Gull	1000-2000	Pitman	06/20/78	B III	217
Glaucous-winged Gull	X	Wahl	03/13/79	B III	269
Glaucous-winged Gull	800	Wahl	06/14/79	B III	269
Pigeon Guillemot	X	Jewett 1937	05/25/37	B III	156
Pigeon Guillemot	4	Eddy	07/03/61	L III	95
Pigeon Guillemot	6	Thoresen & Galusha 1971	06-07/ ?/63	L II	264
Pigeon Guillemot	9	Hansen & Monson 1963	07/16-17/63	B III	145
Pigeon Guillemot	X	Wahl	07/17/65	L III	269
Pigeon Guillemot	25	Nisqually NWR	06/21/67	? III	202
Pigeon Guillemot	X	Wahl	07/19/67	L III	269
Pigeon Guillemot	X	Wahl	07/13-14/68	L III	269
Pigeon Guillemot	50P	Nisqually NWR	07/13-16/68	L III	202
Pigeon Guillemot	0	Thoresen & Galusha 1971	06-07/ ?/70	L III	264
Pigeon Guillemot	P	Devan	04/28/71	? ?	87
Pigeon Guillemot	X	Wahl	07/11/71	L I	269
Pigeon Guillemot	X	Wahl	07/09/72	L I	269
Pigeon Guillemot	X	Hayward et al. 1975	06/15&08/15/74	? III	128
Pigeon Guillemot	22	Manuwal	06/23/76	L III	188
Pigeon Guillemot	25	Wahl	05/19/78	B III	269
Pigeon Guillemot	60	Pitman	06/20/78	B II	217
Pigeon Guillemot	50	Wahl	03/13/79	B III	269
Tufted Puffin	6+	Eddy	08/04/57	B III	95
Tufted Puffin	2	Eddy	07/03/61	L III	95
Tufted Puffin	6	Nisqually NWR	06/05/62	B III	202
Tufted Puffin	0	Wahl	07/09/67	L III	269
Tufted Puffin	X	Wahl	07/13-14/68	L I	269
Tufted Puffin	0	Wahl	07/11-12/70	L III	269
Tufted Puffin	20-30X	Pitman	06/20/78	B II	269

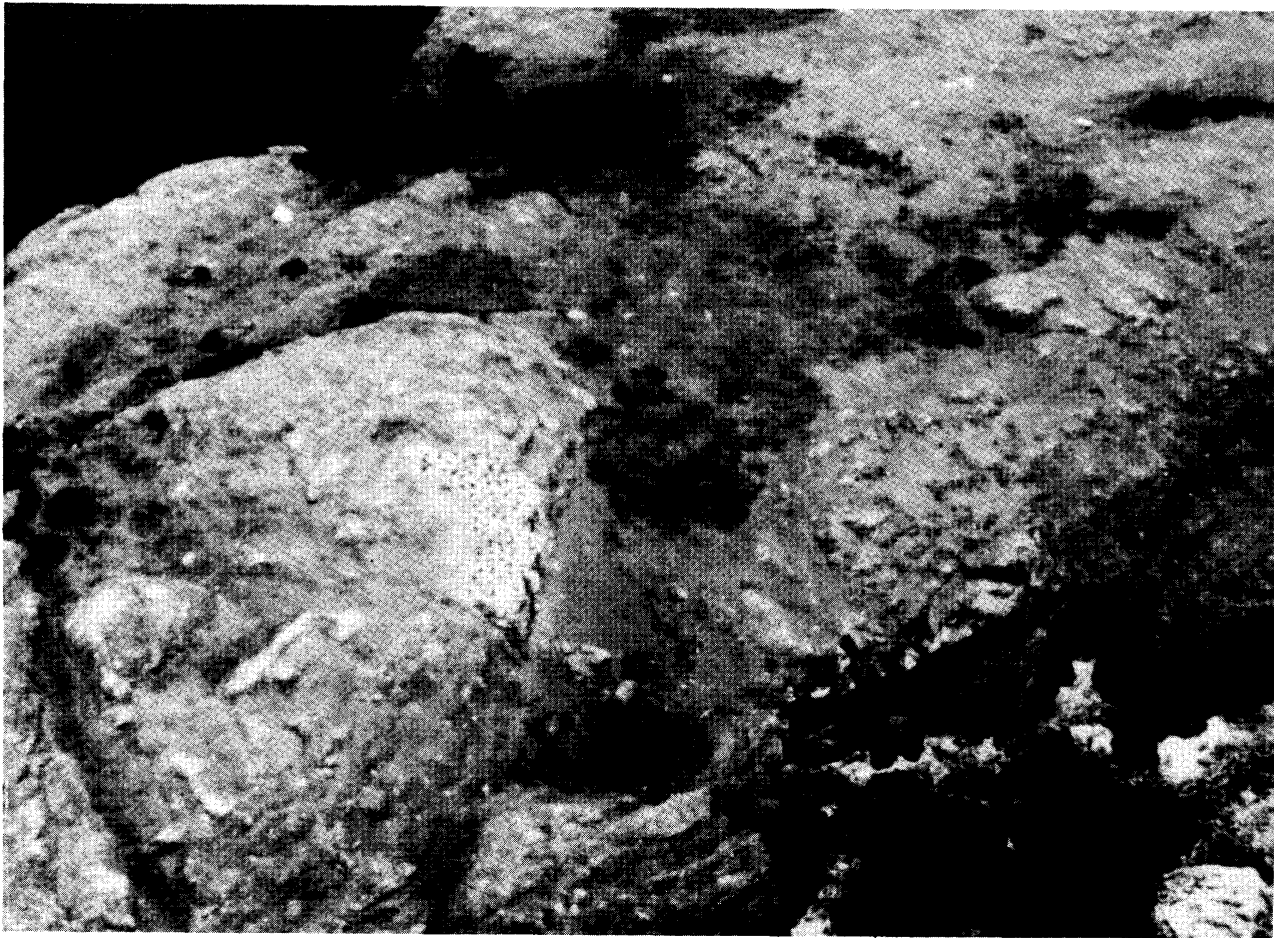
AREA 156, Victoria (cont'd.)

033 Minor Island 48°19'28"N, 122°49'06"W

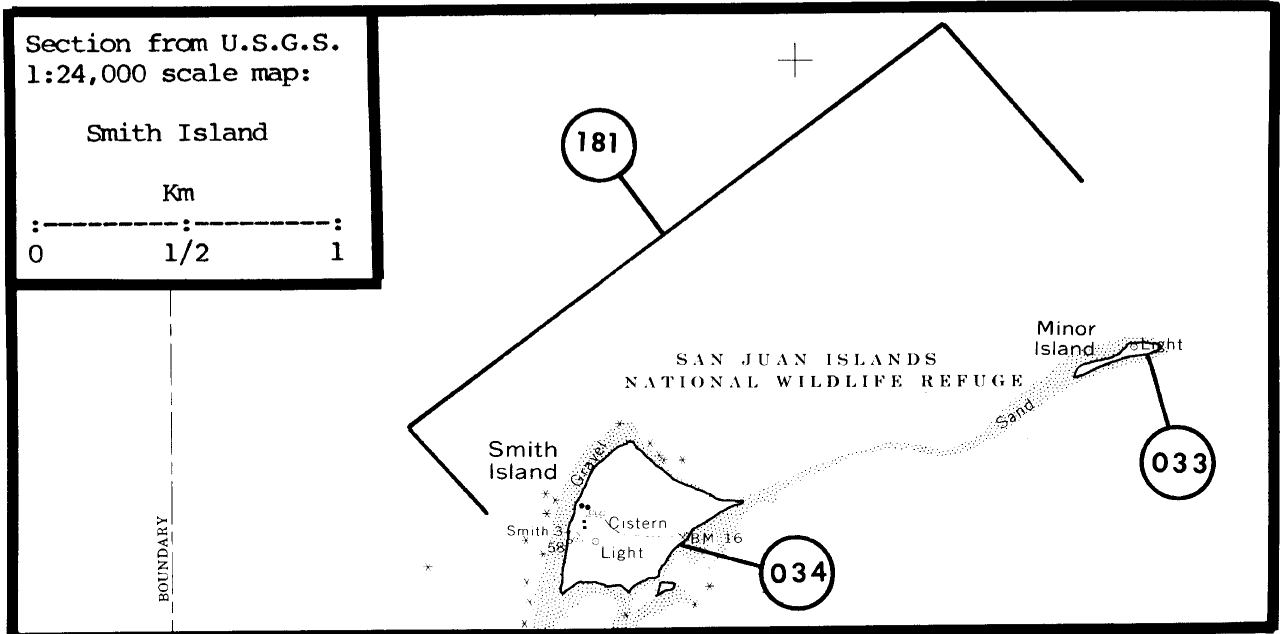
Glaucoous-winged Gull	X	Wahl	07/19/82	A III 269
Glaucoous-winged Gull	80±	Eddy	08/28/55	L III 95
Glaucoous-winged Gull	200	Nisqually NWR	08/21-23/67	L III 202
Glaucoous-winged Gull	1000±	Newby	07/20/72	? III 201
Glaucoous-winged Gull	278	Manuwal	05/27/73	L II 188
Glaucoous-winged Gull	175	Manuwal 1973	05/27/73	L II 186

034 Smith Island¹ 48°19'08"N, 122°50'32"W

¹Observations for Smith Island (156034) are contained in the accounts of Smith and Minor islands (156181). The data are such that it is usually not possible to separate the observations made on Smith Island and Minor Island.



Colville Island (156032) 19 July 1982 T.R. Wahl Double-crested Cormorants



Protection Island, west spit (156035) 19 July 1982 T.R. Wahl

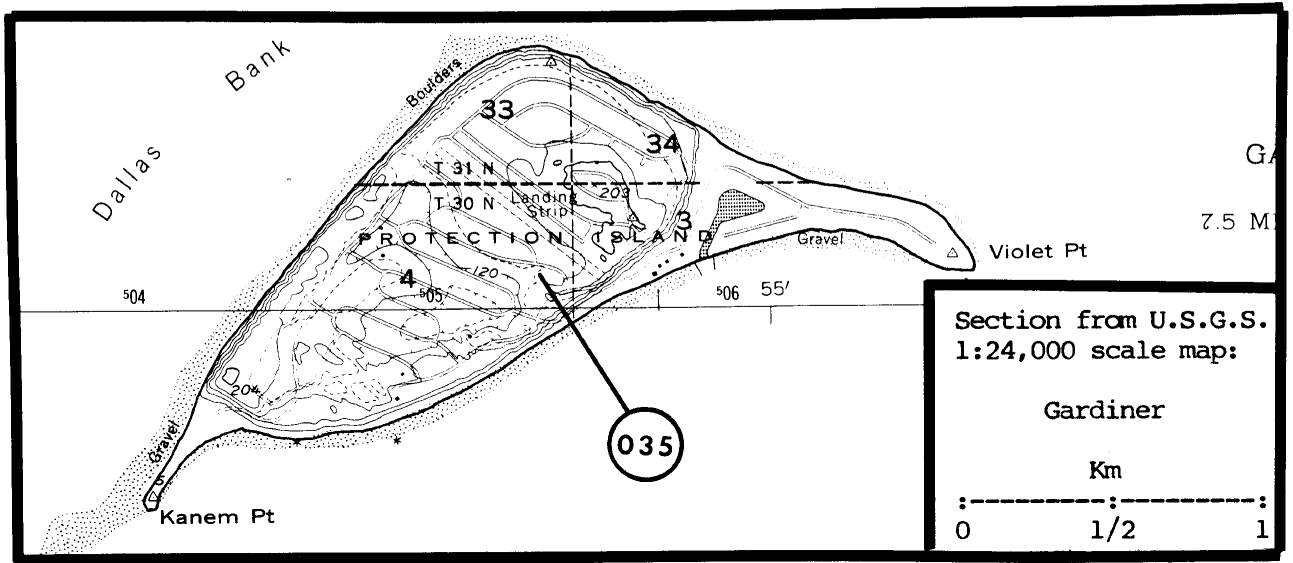
AREA 156, Victoria (cont'd.)

035

Protection Island 48°07'40"N, 122°55'50"W

Pelagic Cormorant	860	Galusha 1982	Summer/82	L I 111
Black Oystercatcher	20	Galusha 1982	Summer/82	L I 111
Glaucous-winged Gull	11100	Galusha 1982	Summer/82	L III 111
Pigeon Guillemot	1300	Galusha 1982	Summer/82	L III 111
Tufted Puffin	45	Galusha 1982	Summer/82	L II 111
Rhinoceros Auklet	34000 ¹	Hirsch 1981	Summer/80	L III 133
Total	47325			

Double-crested Cormorant	?	Wick 1958	?/ ?/39-42	L III 279
Double-crested Cormorant	0	Richardson & Eddy	?/ ?/56	? III 231
Double-crested Cormorant	0	Richardson & Eddy	?/ ?/57	? III 231
Double-crested Cormorant	0	Richardson & Eddy	?/ ?/58	? III 231
Double-crested Cormorant	6-8	Richardson & Eddy	?/ ?/59	? II 231
Double-crested Cormorant	24	Richardson & Eddy	?/ ?/60	? II 231
Double-crested Cormorant	?	Wahl	07/10/66	L II 269
Double-crested Cormorant	6	Frazer 1973	06/16&07/11/73	L I 108
Double-crested Cormorant	0	Wilson 1977	Summer/75	L III 285
Double-crested Cormorant	0	Wilson 1977	Summer/76	L III 285
Double-crested Cormorant	0	Pitman	06/13/78	L III 217
Double-crested Cormorant	0	Speich	08/07/79	B III 255
Double-crested Cormorant	16	Hirsch 1981	Summer/80	L I 133
Pelagic Cormorant	X	Wick 1958	?/ ?/39-42	L III 279
Pelagic Cormorant	140	Eddy	06/09-10/55	L II 95
Pelagic Cormorant	200	Richardson	09/08/56	L III 229
Pelagic Cormorant	P	Wahl	07/11/65	L III 269
Pelagic Cormorant	P	Wahl	07/10/66	L III 269
Pelagic Cormorant	218	Frazer 1973	06/16&07/11/73	L I 108
Pelagic Cormorant	388	Wilson 1977	Summer/75	L II 285
Pelagic Cormorant	388	Wilson 1977	Summer/76	L II 285
Pelagic Cormorant	>100	Harrington-Tweit	05/25/78	? III 124
Pelagic Cormorant	590	Pitman	06/13/78	L I 217
Pelagic Cormorant	400+	Ragan	06/24/79	? III 220
Pelagic Cormorant	584	Speich	08/07/79	B I 255
Pelagic Cormorant	590	Hirsch 1981	Summer/80	L I 133
Pelagic Cormorant	664	Galusha 1982	Summer/80	L I 111
Black Oystercatcher	4	Wahl	07/11/65	L III 269
Black Oystercatcher	0?	Wahl	07/21/68	L III 269
Black Oystercatcher	P	Wahl	07/18/71	L III 269
Black Oystercatcher	2	Wahl	07/25/71	L III 269
Black Oystercatcher	2	Frazer 1973	06/16&07/11/73	L III 108
Black Oystercatcher	12	Wilson 1977	Summer/75	L III 285
Black Oystercatcher	12	Wilson 1977	Summer/76	L III 285
Black Oystercatcher	4-8	Pitman	06/13/78	L III 217
Black Oystercatcher	21	Ragan	06/24/79	? III 220
Black Oystercatcher	2	Speich	08/07/79	B III 255
Black Oystercatcher	26	Hirsch 1981	Summer/80	L I 133
Black Oystercatcher	35	Galusha 1982	Summer/80	L III 111
Glaucous-winged Gull	X	Wick 1958	?/ ?/39-42	L III 279
Glaucous-winged Gull	1200+	Eddy	06/05/55	L III 95



Protection Island, east spit (156035) 19 November 1979 S.M. Speich

AREA 156, Victoria (cont'd.)

Glaucous-winged Gull	1500+	Eddy	06/09-10/55	L III	95
Glaucous-winged Gull	2	Eddy	07/10/55	S -	96
Glaucous-winged Gull	X	Richardson 1961	Summer/56	L III	227
Glaucous-winged Gull	X	Richardson 1961	Summer/57	L III	227
Glaucous-winged Gull	100's	Richardson	05/19/57	L III	229
Glaucous-winged Gull	1180B	Schultz; B.B.L.	07/ ?/57	L III	245;28
Glaucous-winged Gull	X	Richardson 1961	Summer/58	L III	227
Glaucous-winged Gull	1	Schultz	05/04/58	S -	246
Glaucous-winged Gull	120B	Schultz; B.B.L.	07/ ?/58	L III	245;28
Glaucous-winged Gull	X	Richardson 1961	Summer/59	L III	227
Glaucous-winged Gull	1520B	Schultz; B.B.L.	07/ ?/60	L III	245;28
Glaucous-winged Gull	X	Schultz	?/ ?/61	? ?	245
Glaucous-winged Gull	2	Anderson	05/17/63	E -	12
Glaucous-winged Gull	100's	Anderson	05/17/63	L III	11
Glaucous-winged Gull	1430B	B.B.L.; Schultz	07/ ?/64	L III	28;245
Glaucous-winged Gull	2090B	B.B.L.; Schultz	07/11/65	L III	28;269;245
Glaucous-winged Gull	2450B	B.B.L.; Wahl; Schultz	07/10/66	L III	28;269;245
Glaucous-winged Gull	1870B	B.B.L.; Wahl	07/16/67	L III	28;269
Glaucous-winged Gull	3030B	B.B.L.; Wahl	07/21/68	L III	28;269
Glaucous-winged Gull	4060B	B.B.L.; Wahl	07/20&27/69	L III	28;269
Glaucous-winged Gull	4070B	B.B.L.; Wahl	07/19&26/70	L III	28;269
Glaucous-winged Gull	3690B	B.B.L.; Wahl	07/18&25/71	L III	28;269
Glaucous-winged Gull	2360B	B.B.L.; Wahl	07/15/72	L III	28;269
Glaucous-winged Gull	3300	Frazer 1973	06/16&07/11/73	L III	108
Glaucous-winged Gull	1570B	B.B.L.; Wahl	07/ ?/73	L III	28;269
Glaucous-winged Gull	1600B	B.B.L.; Wahl	07/14/74	L III	28;269
Glaucous-winged Gull	8600	Wilson 1977	Summer/75	L III	285
Glaucous-winged Gull	1830B	B.B.L.; Wahl	07/13/75	L III	28;269
Glaucous-winged Gull	8600	Wilson 1977	Summer/76	L III	285
Glaucous-winged Gull	2060B	B.B.L.; Wahl	07/11/76	L III	28;269
Glaucous-winged Gull	2600-3000	Pitman	06/13/78	L III	217
Glaucous-winged Gull	1210B	B.B.L.; Wahl	07/07/78	L III	28;269
Glaucous-winged Gull	>1880	Speich	08/07/79	B III	255
Glaucous-winged Gull	1860B	Wahl	07/13/80	L III	269
Glaucous-winged Gull	9488	Hirsch 1981	Summer/80	L III	133
Glaucous-winged Gull	9960	Galusha 1982	Summer/80	L III	111
Glaucous-winged Gull	1600B	Wahl	07/12/81	L III	269
Pigeon Guillemot	X	Suckley	Summer/1854	? III	260
Pigeon Guillemot	60-70	Pennington	06/16/23	L III	215
Pigeon Guillemot	P	Wick 1958	?/ ?/39-42	L III	279
Pigeon Guillemot	200±	Eddy	06/09-10/55	L III	95
Pigeon Guillemot	X	Richardson 1961	Summer 56-59	L III	227
Pigeon Guillemot	2	Pemberton	06/16/56	E -	210
Pigeon Guillemot	2B	B.B.L.	07/ ?/60	L III	28
Pigeon Guillemot	X	Wahl	07/11/65	L III	269
Pigeon Guillemot	X	Wahl	07/10/66	L III	269
Pigeon Guillemot	X	Wahl	07/21/68	L III	269
Pigeon Guillemot	2B	B.B.L.	06/ ?/72	L III	28
Pigeon Guillemot	50-60	Frazer 1973	06/16&07/11/73	L III	108
Pigeon Guillemot	360	Wilson 1977	Summer 75-76	L III	285
Pigeon Guillemot	526	Harrington-Tweit; Hills	05/25/78	A III	124;132
Pigeon Guillemot	285	Pitman	06/13/78	L III	217

Pigeon Guillemot	605	Speich	05/23/79	B III	255
Pigeon Guillemot	162	Speich & Wahl	06/25/79	A III	257
Pigeon Guillemot	652	Speich	08/07/79	B III	255
Pigeon Guillemot	608	Hirsch 1981	Summer/80	L III	133
Pigeon Guillemot	635	Galusha 1982	Summer/80	L III	111
Rhinoceros Auklet	X	Suckley	Summer/1854	? III	260
Rhinoceros Auklet	X	Pennington	06/16/23	L III	215
Rhinoceros Auklet	X	Wick 1958	?/ ?/39-42	L III	279
Rhinoceros Auklet	2000+	Eddy	06/09-10/55	L III	95
Rhinoceros Auklet	1	Hudson	06/17/56	S -	149
Rhinoceros Auklet	4	Goodge	07/09/55	S -	116
Rhinoceros Auklet	2	[Eddy]	07/10/55	S -	96
Rhinoceros Auklet	6000-8000	Richardson 1961	Summer/56-59	L III	227
Rhinoceros Auklet	2	Richardson	04/01/56	S -	230
Rhinoceros Auklet	2	Miller	06/17/56	S -	197
Rhinoceros Auklet	XB	B.B.L.	04-08/ ?/57	L III	28
Rhinoceros Auklet	XB	B.B.L.	04-08/ ?/58	L III	28
Rhinoceros Auklet	1	[Eddy]	05/04/58	S -	96
Rhinoceros Auklet	XB	B.B.L.	07/ ?/59	L III	28
Rhinoceros Auklet	10	Griffiee	05/17/63	E -	121
Rhinoceros Auklet	2	Anderson	05/17/63	E -	12
Rhinoceros Auklet	XB	B.B.L.	06/ ?/63	L III	28
Rhinoceros Auklet	2	Bédard	06/29/65	S -	23
Rhinoceros Auklet	X	Wahl	07/11/65	L III	269
Rhinoceros Auklet	X	Wahl	07/10/66	L III	269
Rhinoceros Auklet	X	Wahl	07/16/67	L III	269
Rhinoceros Auklet	X	Wahl	07/21/68	L III	269
Rhinoceros Auklet	XB	B.B.L.	06-07/ ?/72	L III	28
Rhinoceros Auklet	XB	B.B.L.	08/ ?/73	L III	28
Rhinoceros Auklet	18400	Frazer 1973	06/16&07/11/73	L III	108
Rhinoceros Auklet	25000	Robel 1973	07/01-07/73	L III	234
Rhinoceros Auklet	2	Robel	07/05/73	E -	235
Rhinoceros Auklet	XB	B.B.L.	06-08/ ?/75	L III	28
Rhinoceros Auklet	34216	Wilson 1977	Summer/76	L III	285
Rhinoceros Auklet	XB	B.B.L.	08/ ?/76	L III	28
Rhinoceros Auklet	1000's	Pitman	06/13/78	L III	217
Rhinoceros Auklet	XB	B.B.L.	07/ ?/78	L III	28
Rhinoceros Auklet	12	Alcorn	07/14/81	E -	8
Tufted Puffin	80-100	Pennington	06/16/23	L III	215
Tufted Puffin	140	Eddy	06/09-10/55	L III	95
Tufted Puffin	X	Richardson 1961	Summer/56-59	L III	227
Tufted Puffin	X	Wahl	07/10/66	L III	269
Tufted Puffin	X	Wahl	07/16/67	L III	269
Tufted Puffin	X	Wahl	07/21/68	L III	269
Tufted Puffin	0	Wahl	07/25/71	L III	269
Tufted Puffin	60-70	Frazer 1973	06/16-07/11/73	L III	108
Tufted Puffin	66	Wilson 1977	Summer/75-76	L III	285
Tufted Puffin	70-100	Pitman	06/13/78	L III	217
Tufted Puffin	40	Speich	08/07/79	B III	255
Tufted Puffin	76	Hirsch 1981	Summer/80	L I	133
Tufted Puffin	32	Galusha 1982	Summer/80	L I	111

¹Numbers from Wilson 1977.

AREA 156, Victoria (cont'd.)

036 Point Roberts, west 48°59'02"N, 123°05'04"W

Pigeon Guillemot	2	Wahl	06/04/79	L III 269
Pigeon Guillemot	1	Wahl	06/12/78	L III 269

037 Point Roberts, southeast 48°58'30"N, 123°01'30"W

Pigeon Guillemot	1	Wahl	06/04/79	L III 269
Pigeon Guillemot	4	Wahl	05/30/78	L III 269

038 Semiahmoo Spit 48°59'27"N, 122°46'08"W

Pigeon Guillemot	2	Wahl	04/19/80	L III 269
Glaucous-winged Gull	2	Kline	06/31-07/10/64	L I 170
Pigeon Guillemot	1	Wahl	06/01/79	L III 269

039 Blaine 48°59'18"N, 122°45'19"W

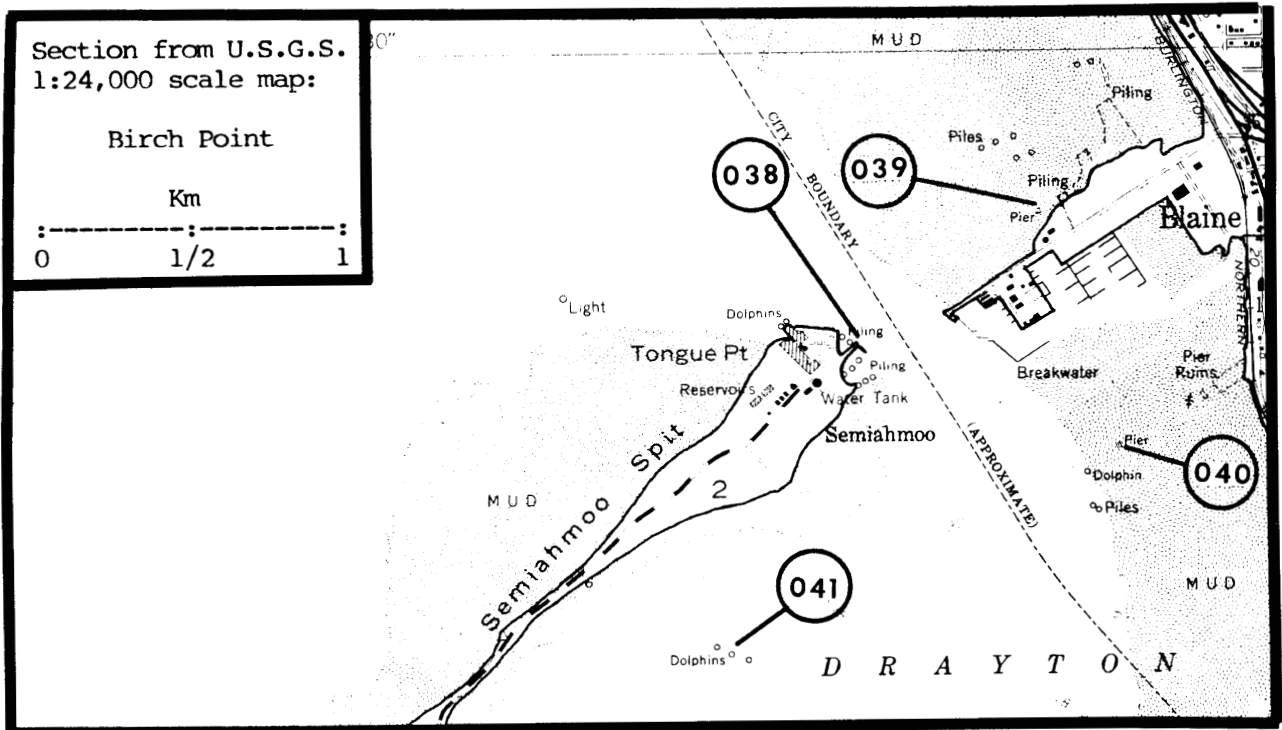
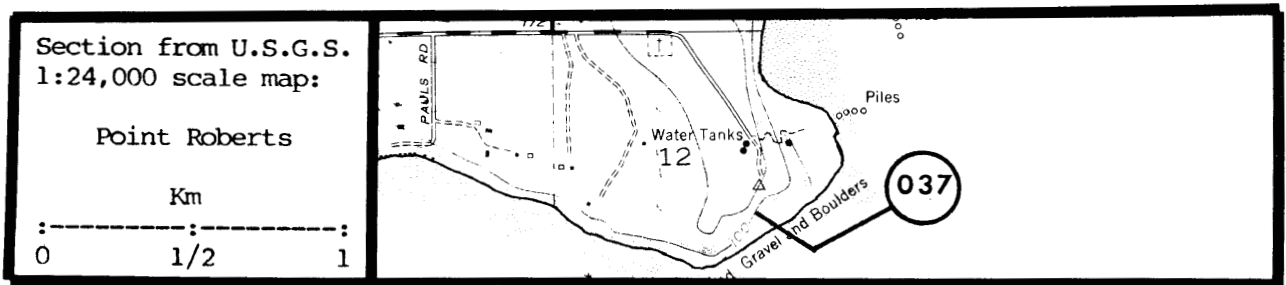
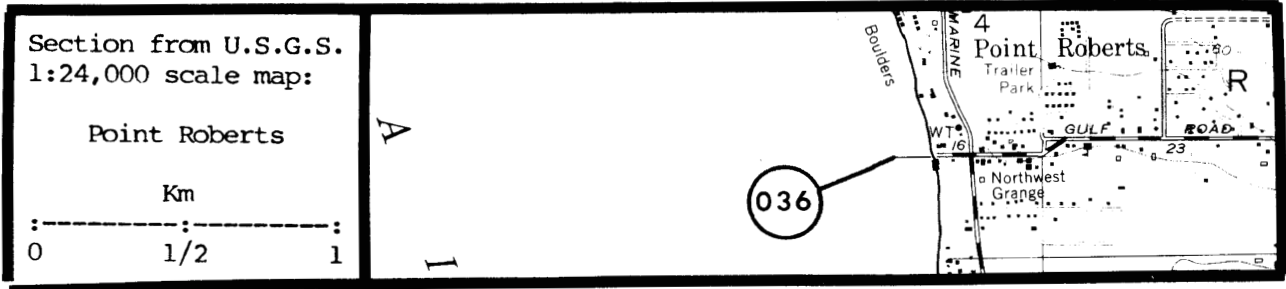
Glaucous-winged Gull	2	Wahl	06/13/67	M I 269
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040 Drayton Harbor, northeast 48°59'45"N, 122°45'36"W

Glaucous-winged Gull	2	Wahl	07/16/82	M II 269
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041 Drayton Harbor, southwest 48°58'50"N, 122°46'25"W

Double-crested Cormorant	6-8	Wahl	07/16/82	M I 269
Double-crested Cormorant	0	Wahl	Summer/78	M III 269
Double-crested Cormorant	0	Wahl	Summer/79	M III 269



AREA 156, Victoria (cont'd.)

④042 Point Whitehorn, north 48°53'40"N, 122°47'00"W

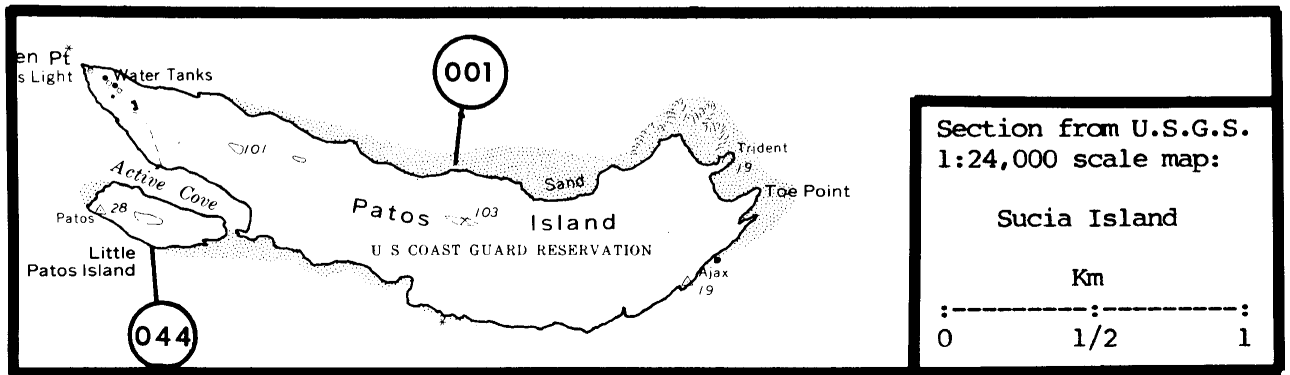
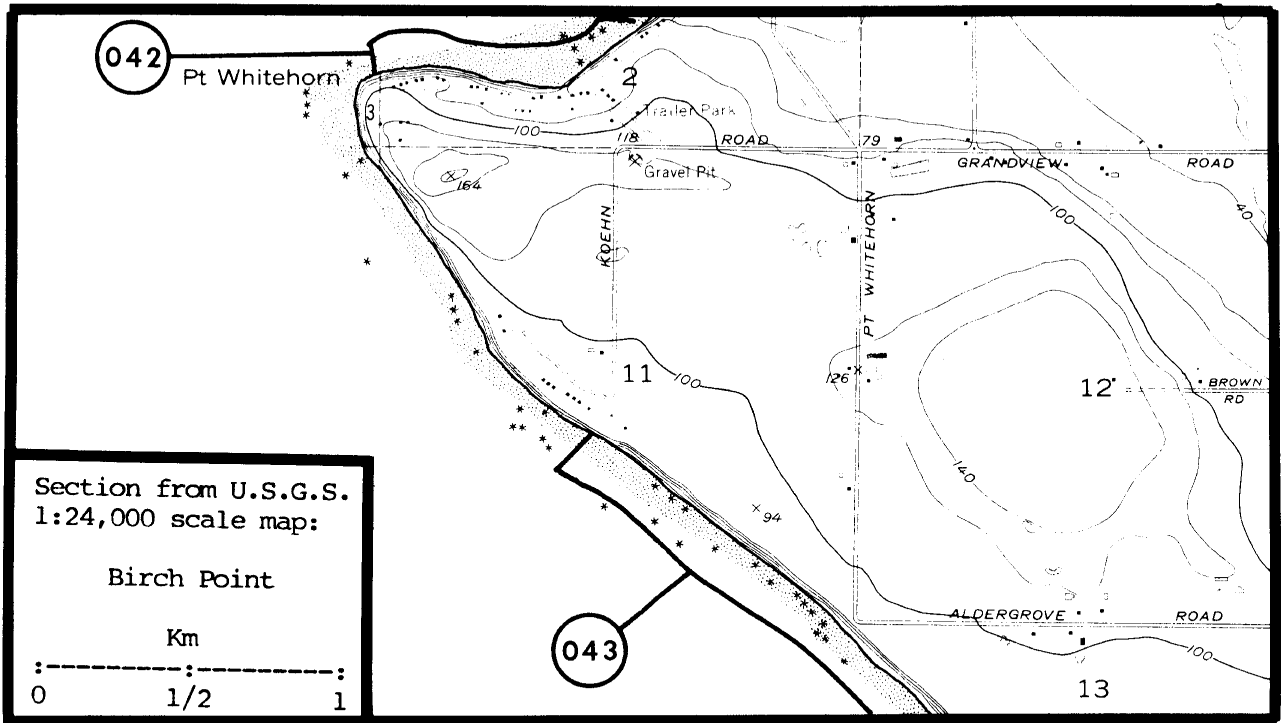
Pigeon Guillemot	4	Wahl	04/19/80	M III 269
Pigeon Guillemot	16	Wahl	06/01/79	M III 269

④043 Point Whitehorn, south 48°53'00"N, 122°46'30"W

Pigeon Guillemot	1	Wahl	06/08/78	L III 269
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④044 Patos Island, Little 48°47'06"N, 122°58'00"W

No Nesting Observed	0	Speich & Wahl	06/05/78	B III 257
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AREA 156, Victoria (cont'd.)

045

Sucia Island, complex 48°45'30"N, 122°54'00"W

Pigeon Guillemot	620	Speich & Wahl	06/05/78 ¹	B III 257
Black Oystercatcher	4	Randolph	06/08/1886	E - 222
Glaucous-winged Gull	2	Randolph	06/08/1886	E - 222
Tufted Puffin	2	Randolph	06/08/1886	E - 222
Tufted Puffin	2	Johnson	06/08/1886	E - 160

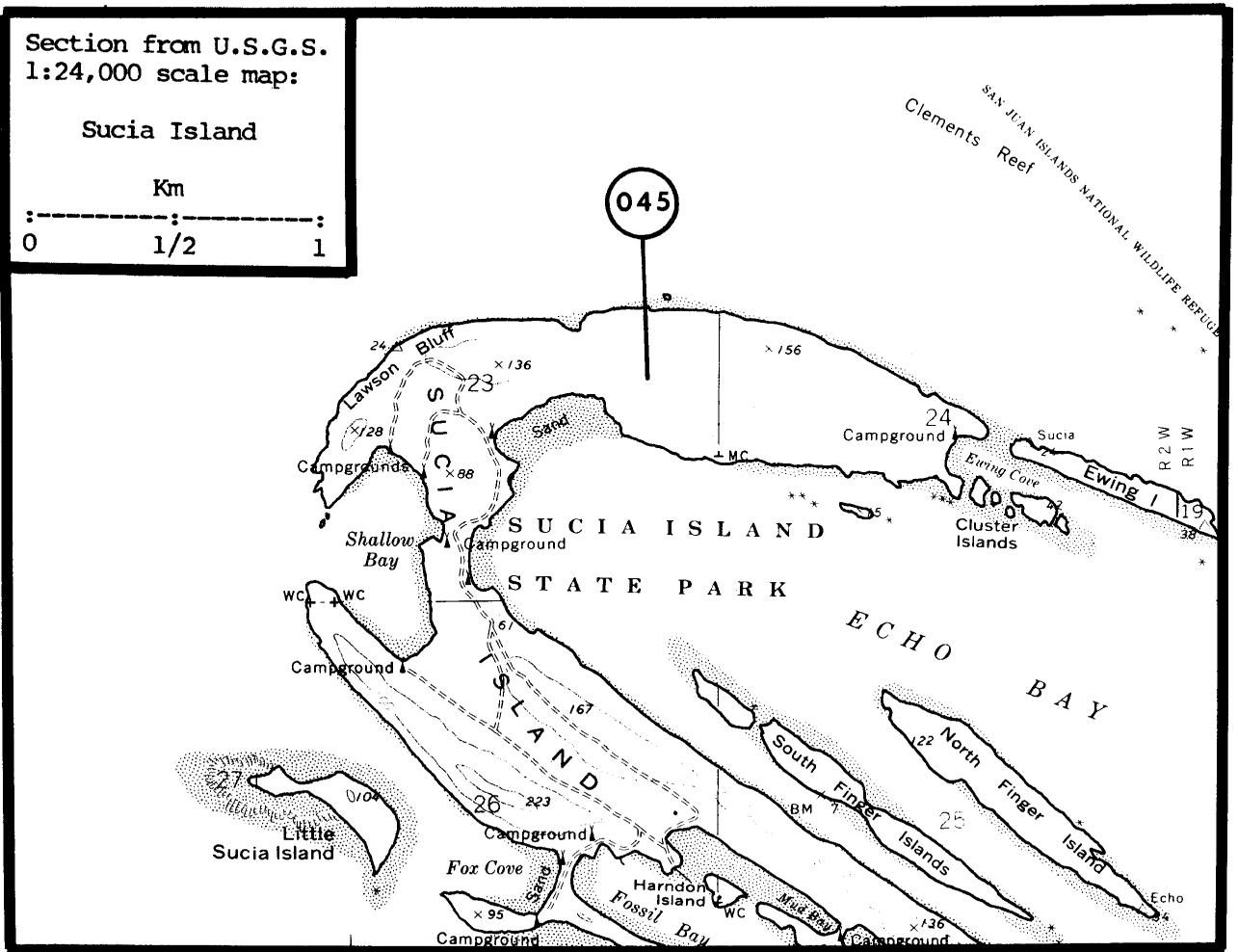
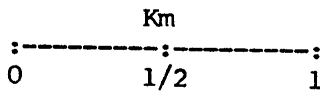
¹Total shoreline and nearshore survey of Sucia Island complex.



Protection Island (156035) 19 November 1979 S.M. Speich

Section from U.S.G.S.
1:24,000 scale map:

Sucia Island

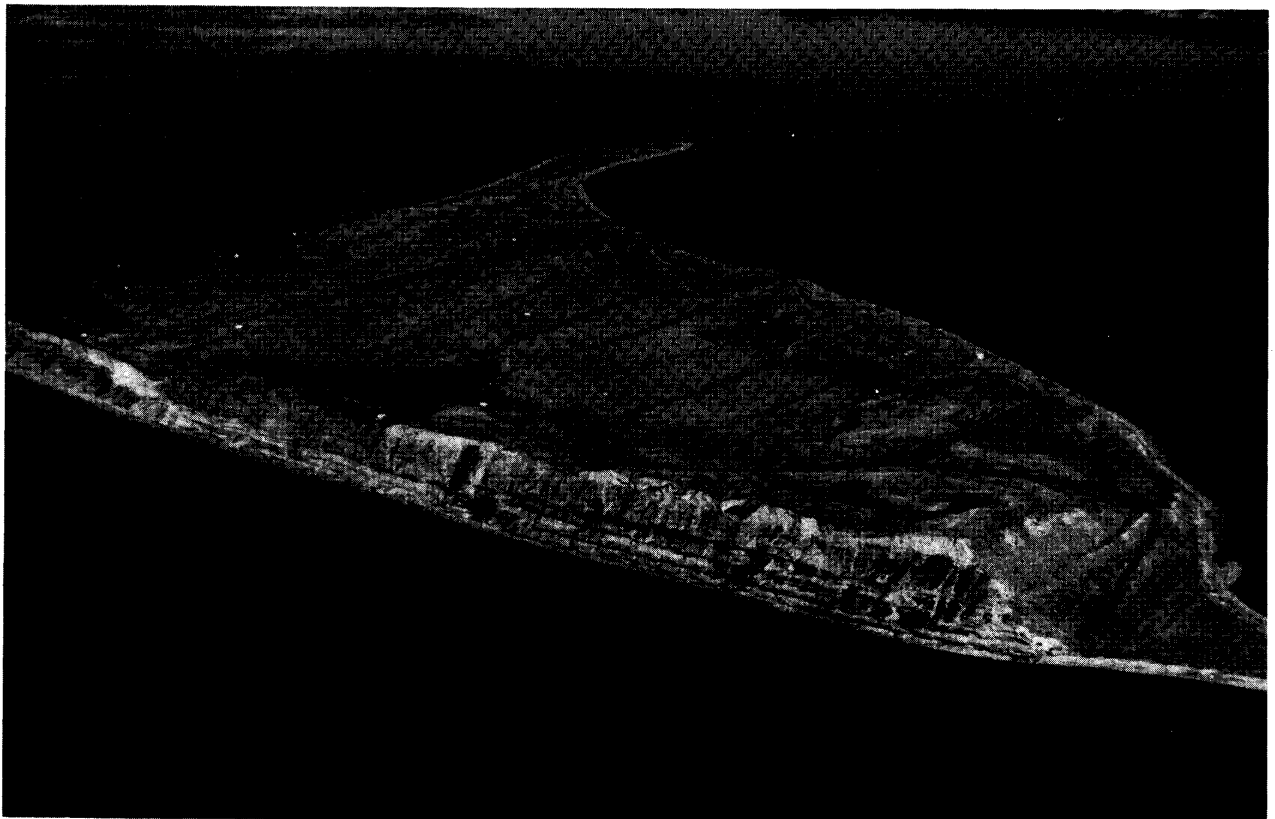


AREA 156, Victoria (cont'd.)

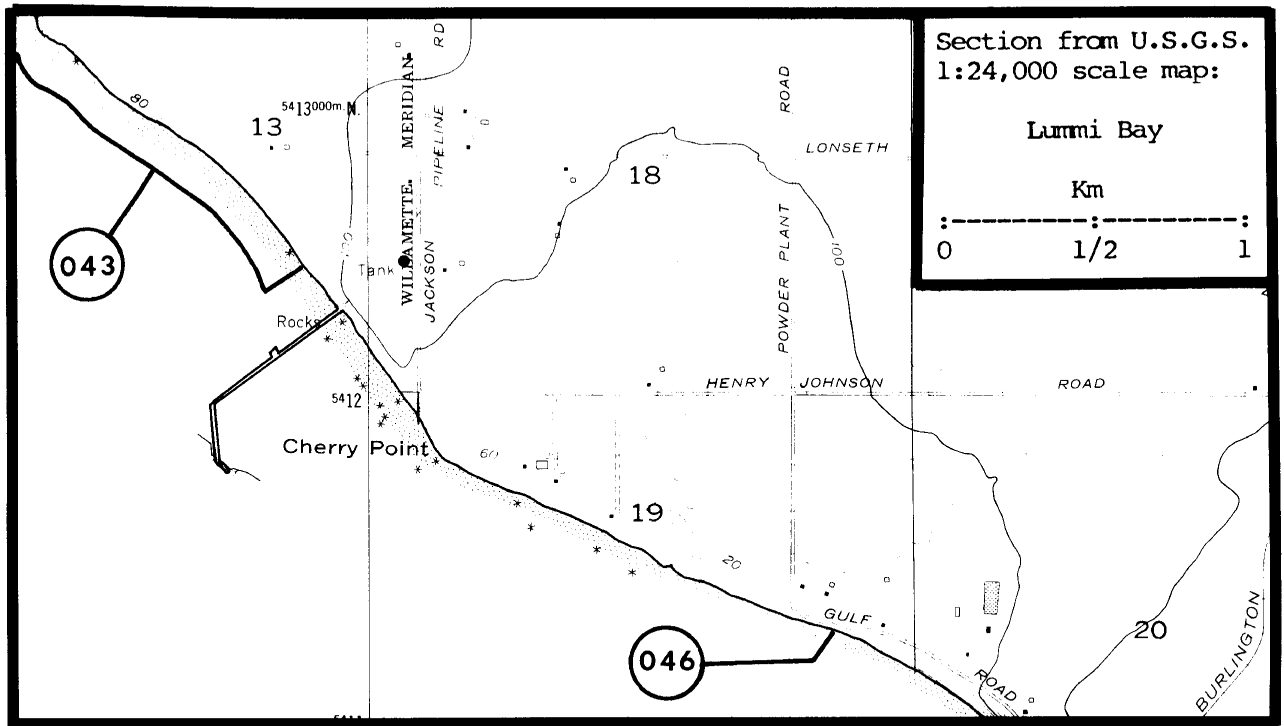
046

Cherry Point 48°51'24"N, 122°43'53"W

Pigeon Guillemot	4	Wahl	04/19/80	L II 269
Pigeon Guillemot	1	Wahl	06/01/79	L III 269



Protection Island (156035) 19 November 1979 S.M. Speich



AREA 156, Victoria (cont'd.)

(047)

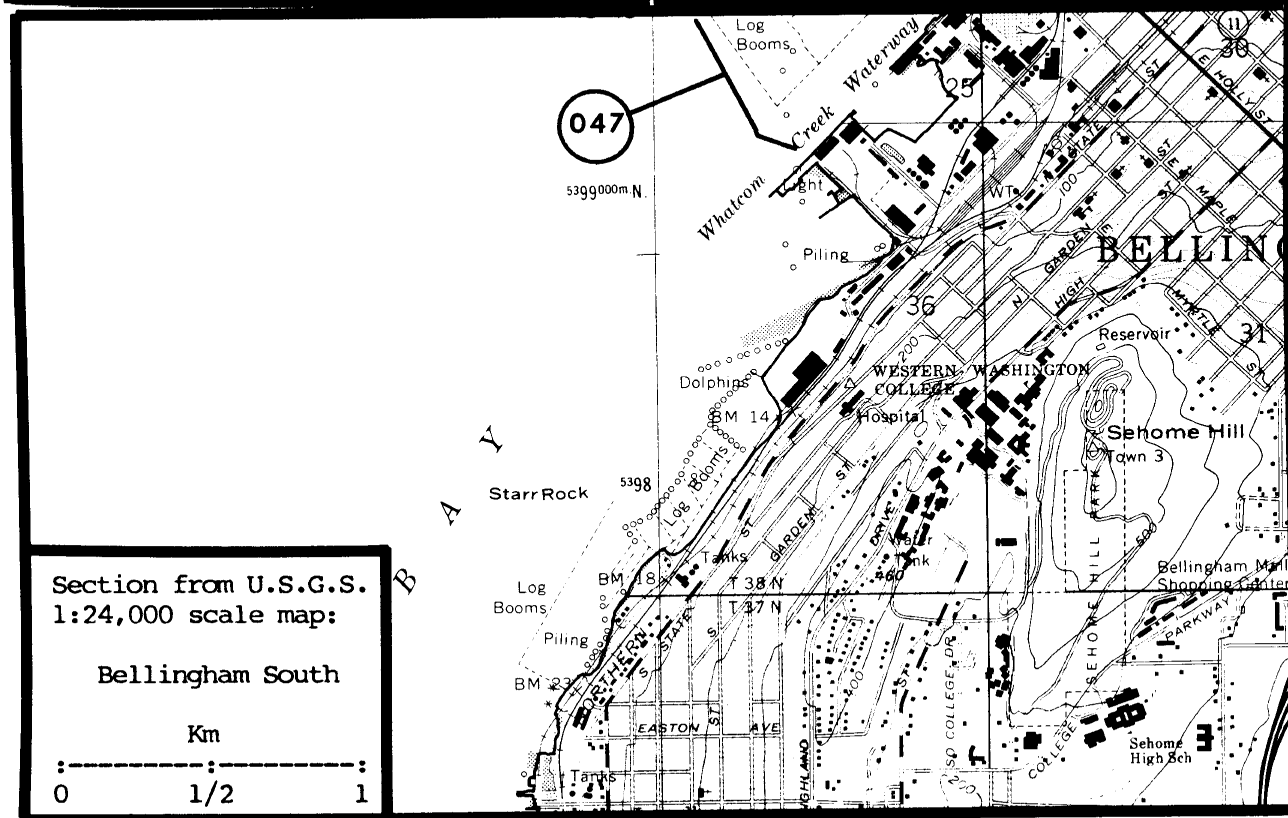
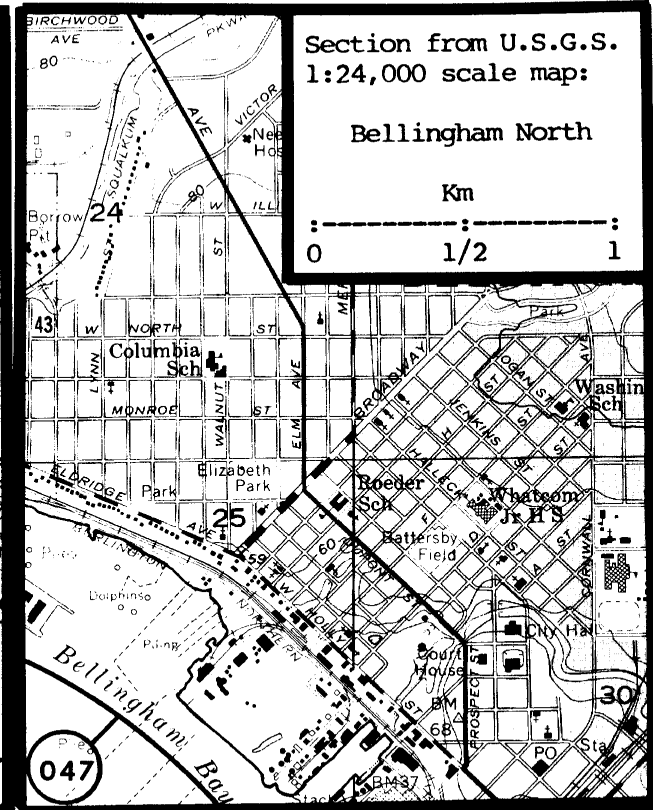
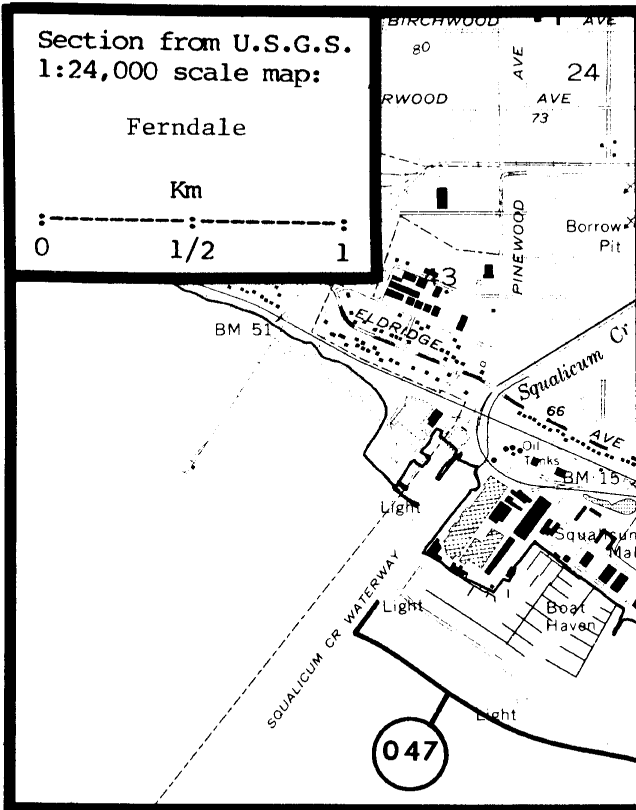
Bellingham Bay, waterfront north 48°45'20"N, 122°30'00"W

Glaucous-winged Gull	34+	Walker; Wahl	07/16/82	L III 272;269
Glaucous-winged Gull	2	Wahl	07/05/65	L III 269
Glaucous-winged Gull	X	Wahl	07/21/71	L III 269
Glaucous-winged Gull	100-150	Wahl	07/26/72	L III 269
Pigeon Guillemot	2	Booth ¹	06/14/22	E - 36

¹Exact location unknown.



Protection Island (156035) 19 November 1979 S.M. Speich



AREA 156, Victoria (cont'd.)

④48 Stuart Island, Turn Point 48°41'20"N, 123°14'18"W

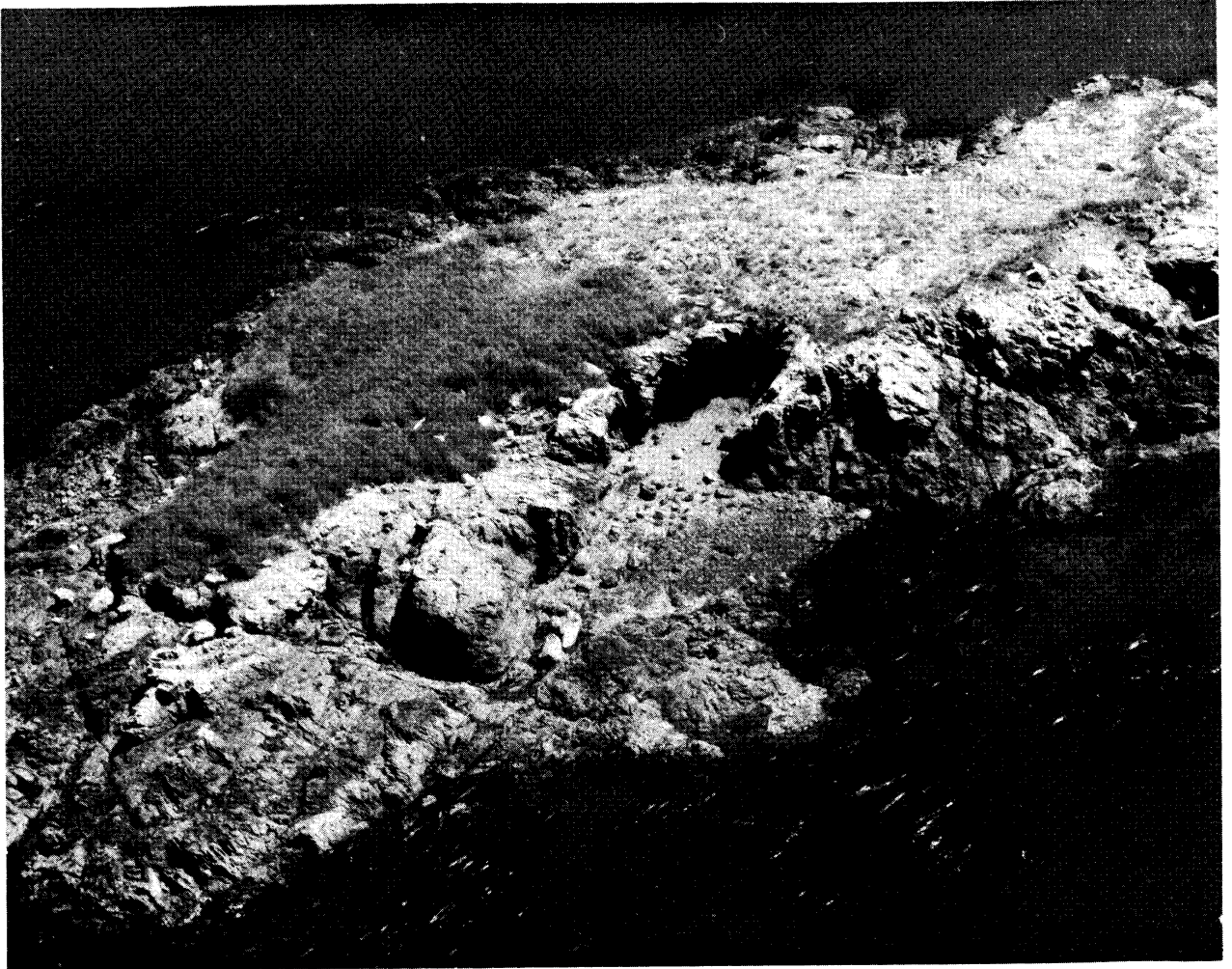
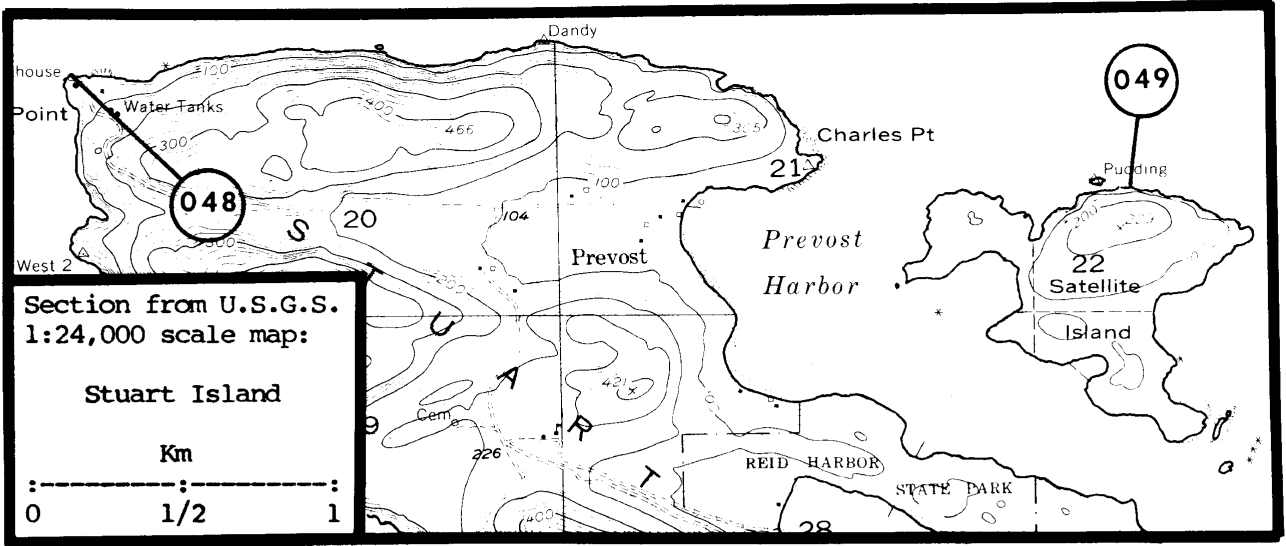
Black Oystercatcher	1	Pitman	06/22/78	B III 217
Pelagic Cormorant	8-12	Drent	08/27/60	B III 92
Glaucous-winged Gull	2-12	Drent	08/27/60	B III 92
Pigeon Guillemot	25	Drent	05/07/60	B III 92
Pigeon Guillemot	50	Drent	08/27/60	B III 92

④49 Satellite Island 48°41'00"N, 123°11'20"W

Pigeon Guillemot	4	Pitman	06/22/78	B III 217
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Peapod, North (156009) USF&WS



Peapod, South (156010) USFWS

AREA 156, Victoria (cont'd.)

(050) "Unnamed Rock" 48°39'54"N, 123°10'24"W

Black Oystercatcher	2	Pitman	06/22/78	B III 217
Pigeon Guillemot	5	Pitman	06/22/78	B III 217
Total	7			

(051) Gossip Island 48°39'47"N, 123°10'17"W

No Nesting Observed	0	Pitman	06/22/78	B III 217
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(052) Gull Reef, west 48°39'17"N, 123°08'44"W

Black Oystercatcher	2	Pitman	06/22/78	B III 217
No Nesting Observed	0	Manuwal 1977	?/ ?/73-75	B III 187

(053) "Unnamed Rock" 48°39'13"N, 123°08'31"W

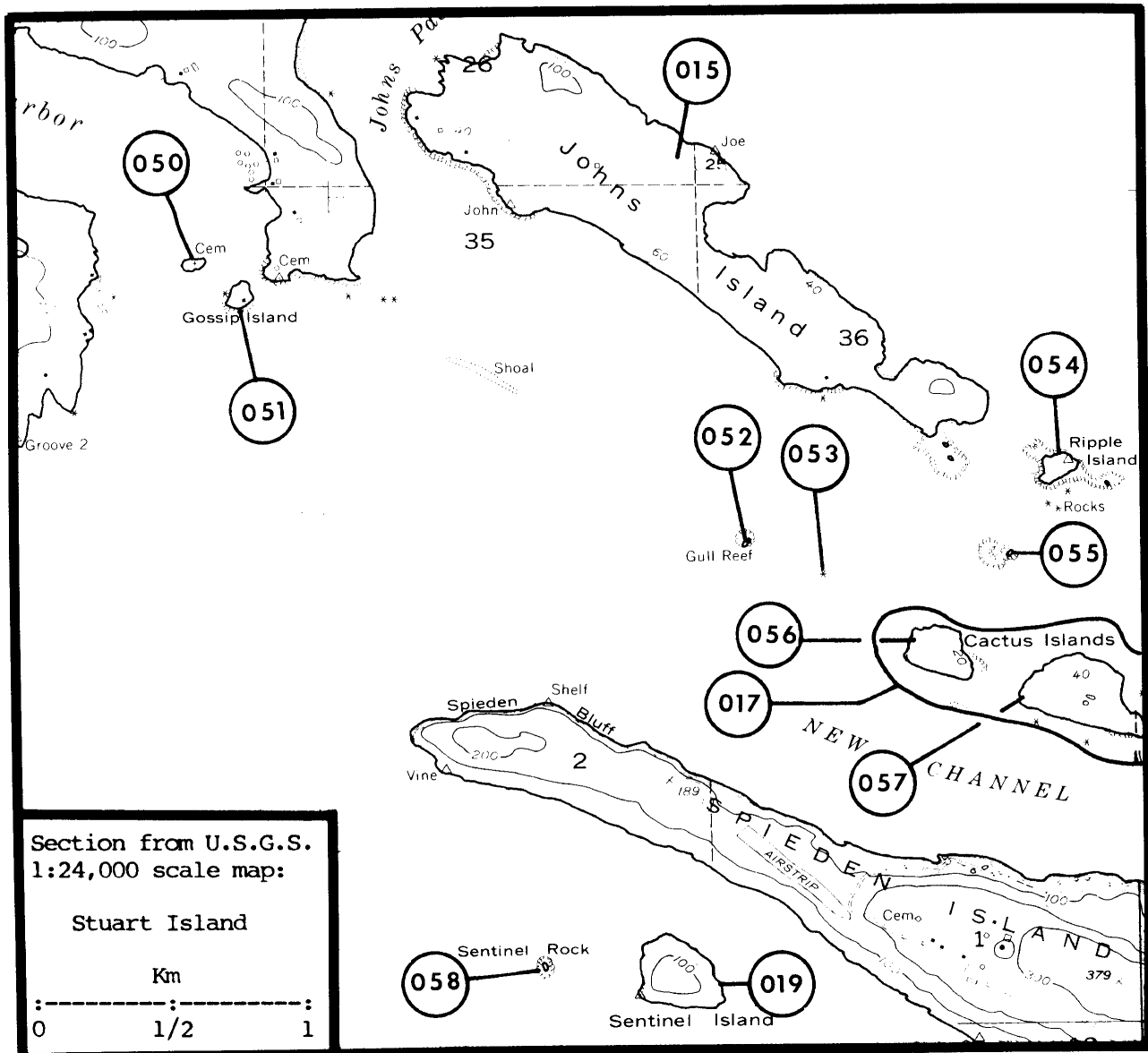
No Nesting Observed	0	Pitman	06/22/78	B III 217
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(054) Ripple Island 48°39'26"N, 123°07'47"W

No Nesting Observed	0	Pitman	06/22/78	B III 217
Black Oystercatcher	1	Eddy 1975	06/14/75	L III 94
Black Oystercatcher	N	Nysewander	06/14/75	L III 205

(055) "Unnamed Rock" 48°39'15"N, 123°07'55"W

Black Oystercatcher	2	Pitman	06/22/78	B III 217
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AREA 156, Victoria (cont'd.)

056 Cactus Island, west 48°39'04"N, 123°08'10"W

No Nesting Observed	0	Pitman	06/22/78	B III 217
Pigeon Guillemot	3	Wahl; Harrington-Tweit	05/24/78	A III 269;124

057 Cactus Island, east 48°39'07"N, 123°07'43"W

Pigeon Guillemot	30	Pitman	06/22/78	B III 217
Black Oystercatcher	1	Frazer 1973	07/16/73	B III 108
Pigeon Guillemot	15P	Frazer 1973	07/16/73	B III 108
No Nesting Observed	0	Eddy 1975	06/14/75	B III 94

058 Sentinel Rock 48°38'25"N, 123°09'22"W

No Nesting Observed	0	Pitman	06/22/78	B III 217
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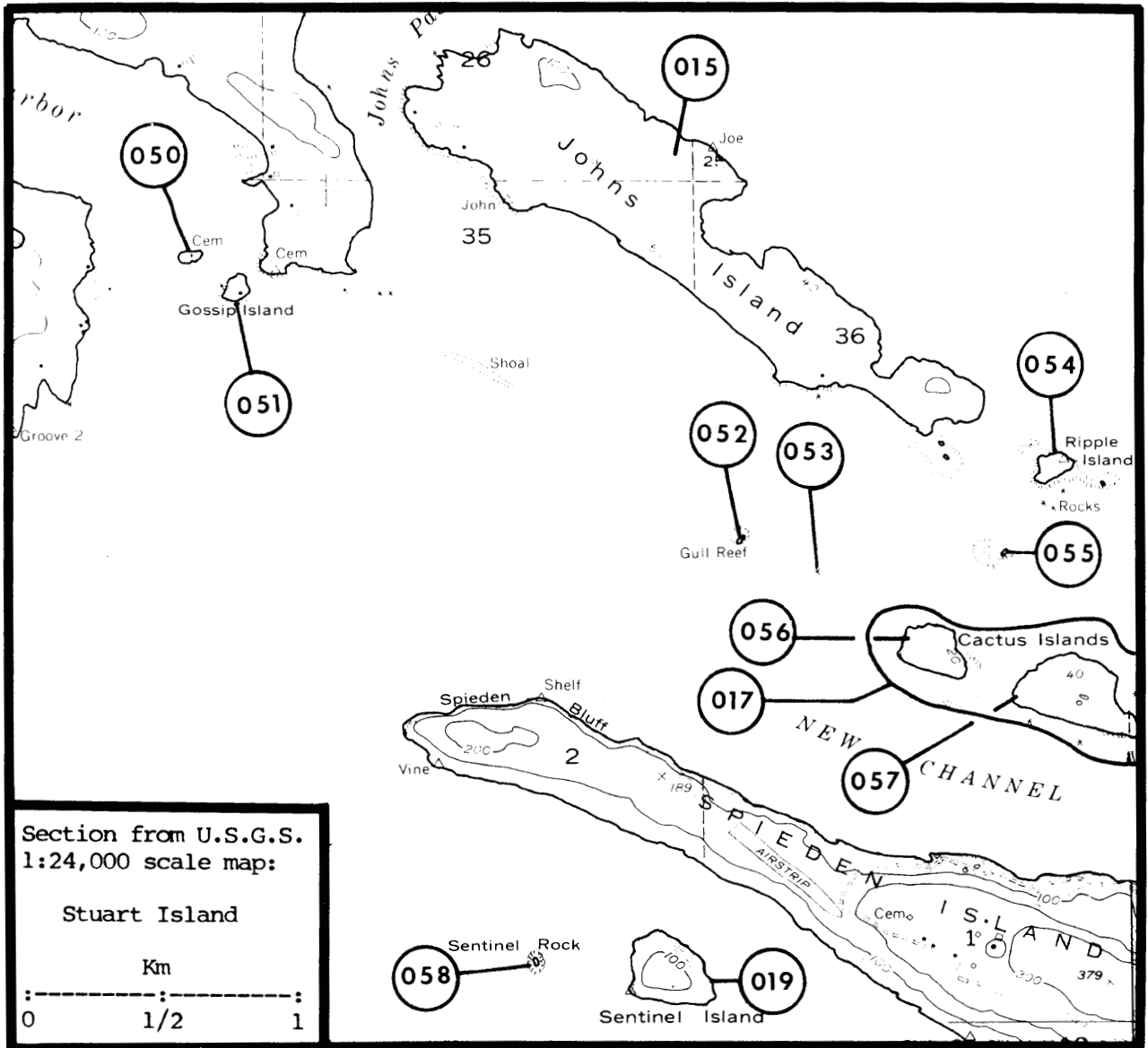
059 "Unnamed Rock" 48°40'10"N, 123°04'15"W

Glaucous-winged Gull	20	Pitman	06/22/78	B III 217
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060 Danger Rocks¹ 48°39'51"N, 123°04'00"W

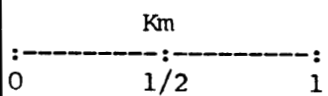
Glaucous-winged Gull	X	Nisqually NWR	06/27/70	B III 202
Black Oystercatcher	P	Edson 1929	06/20/05	L III 98
Black Oystercatcher	2	Edson 1929	06/24/05	L III 98
Black Oystercatcher	2	Edson 1929	06/26/05	L III 98
Glaucous-winged Gull	4	Edson 1929	06/24/05	L III 98
Glaucous-winged Gull	250	Manuwal 1973; Manuwal	05/27/73	B III 186;188
Pigeon Guillemot	X	Edson 1929	06/24/05	L III 98
Pigeon Guillemot	14	Manuwal 1973; Manuwal	05/27/73	B III 186;188
Tufted Puffin	?	Edson 1929	06/24/05	L III 98

¹This site regularly goes under water with high tide. It appears there has been some confusion regarding this site.



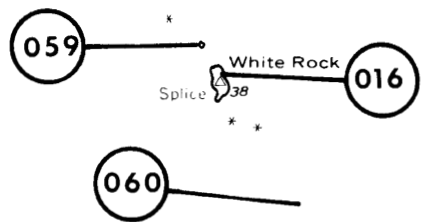
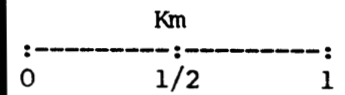
Section from U.S.G.S.
1:24,000 scale map:

Stuart Island



Section from U.S.G.S.
1:24,000 scale map:

Waldron Island



AREA 156, Victoria (cont'd.)

① "Unnamed Rock" 48°38'52"N, 123°07'34"W
No Nesting Observed 0 Wahl; Paulson 06/06/79 A III 269;207

② Parker Reef¹ 48°43'40"N, 122°53'42"W
Black Oystercatcher 2? Nisqually NWR 08/06/80 B III 202

¹This site regularly goes under water with high tide. Nesting is questionable.

③ Freeman Island 48°41'55"N, 122°57'00"W
No Nesting Observed 0 Wahl; Paulson 06/06/79 A III 269;207

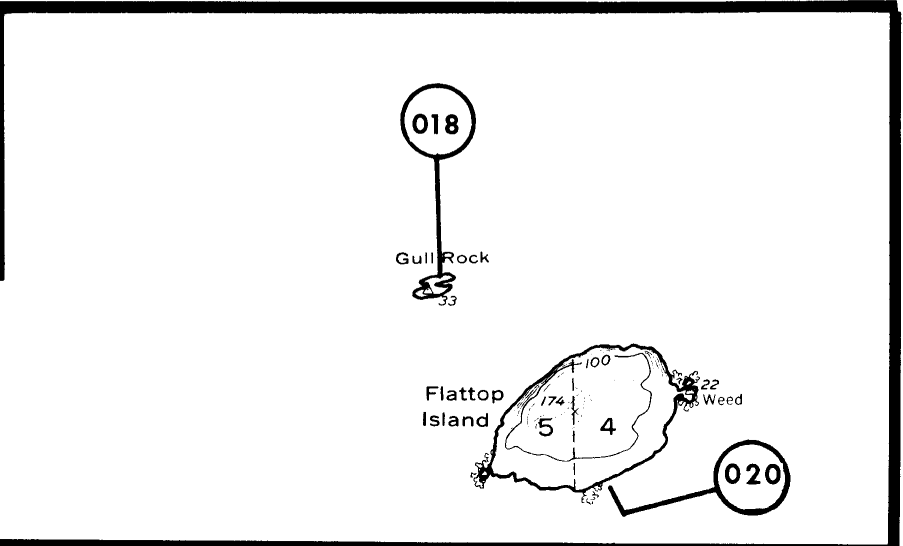
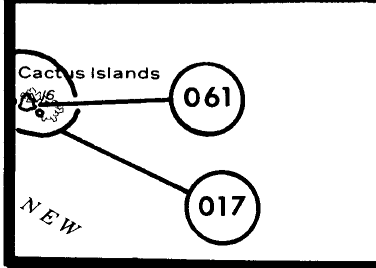
④ "Unnamed Rock" 48°41'40"N, 122°54'23"W
No Nesting Observed 0 Wahl 06/02/79 M III 269

Section from U.S.G.S.
1:24,000 scale map:

Waldron Island

Km

0 1/2 1

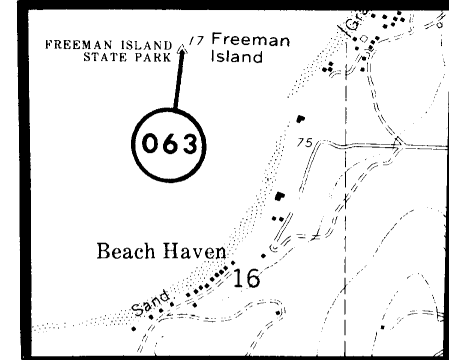
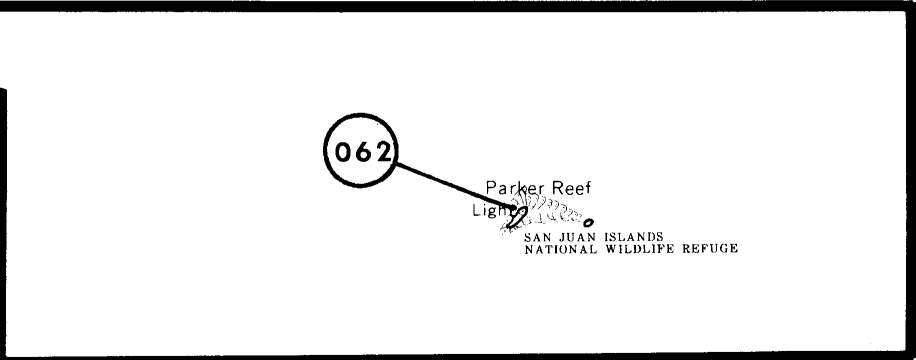


Section from U.S.G.S.
1:24,000 scale map:

Eastsound

Km

0 1/2 1

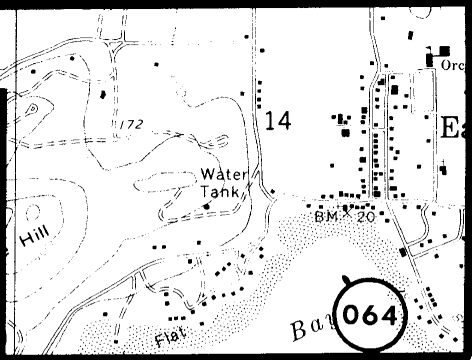


Section from U.S.G.S.
1:24,000 scale map:

Eastsound

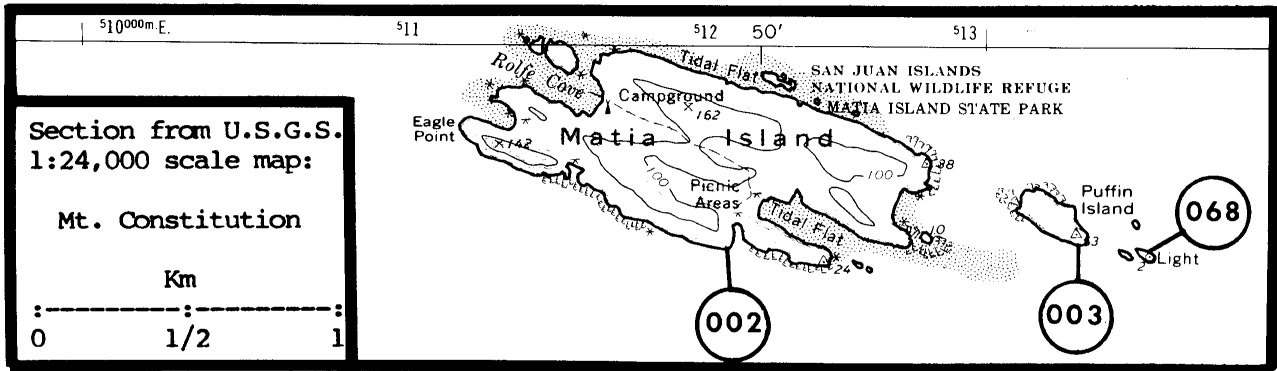
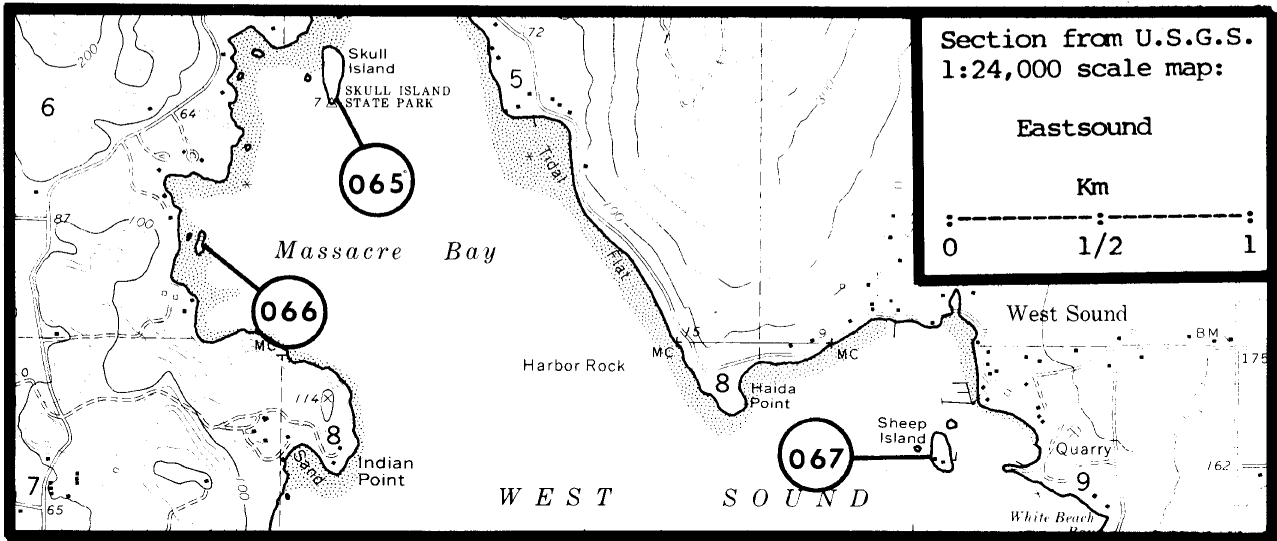
Km

0 1/2 1



AREA 156, Victoria (cont'd.)

065	Skull Island	48°38'22"N, 122°59'07"W			
No Nesting Observed	0	Pitman	06/24/78	B III 217	
066	"Unnamed Rock"	48°38'02"N, 122°59'28"W			
No Nesting Observed	0	Wahl	06/02/79	M III 269	
067	Sheep Island	48°37'19"N, 122°57'25"W			
No Nesting Observed	0	Pitman	06/24/78	B III 217	
068	"Unnamed Rock"	48°44'36"N, 122°48'53"W			
No Nesting Observed	0	Wahl; Paulson	06/06/79	A III 269;207	



AREA 156, Victoria (cont'd.)

(069) Clark Island 48°42'08"N, 122°45'48"W

Pigeon Guillemot 13 Wahl; Paulson 07/06/78 A III 269;207

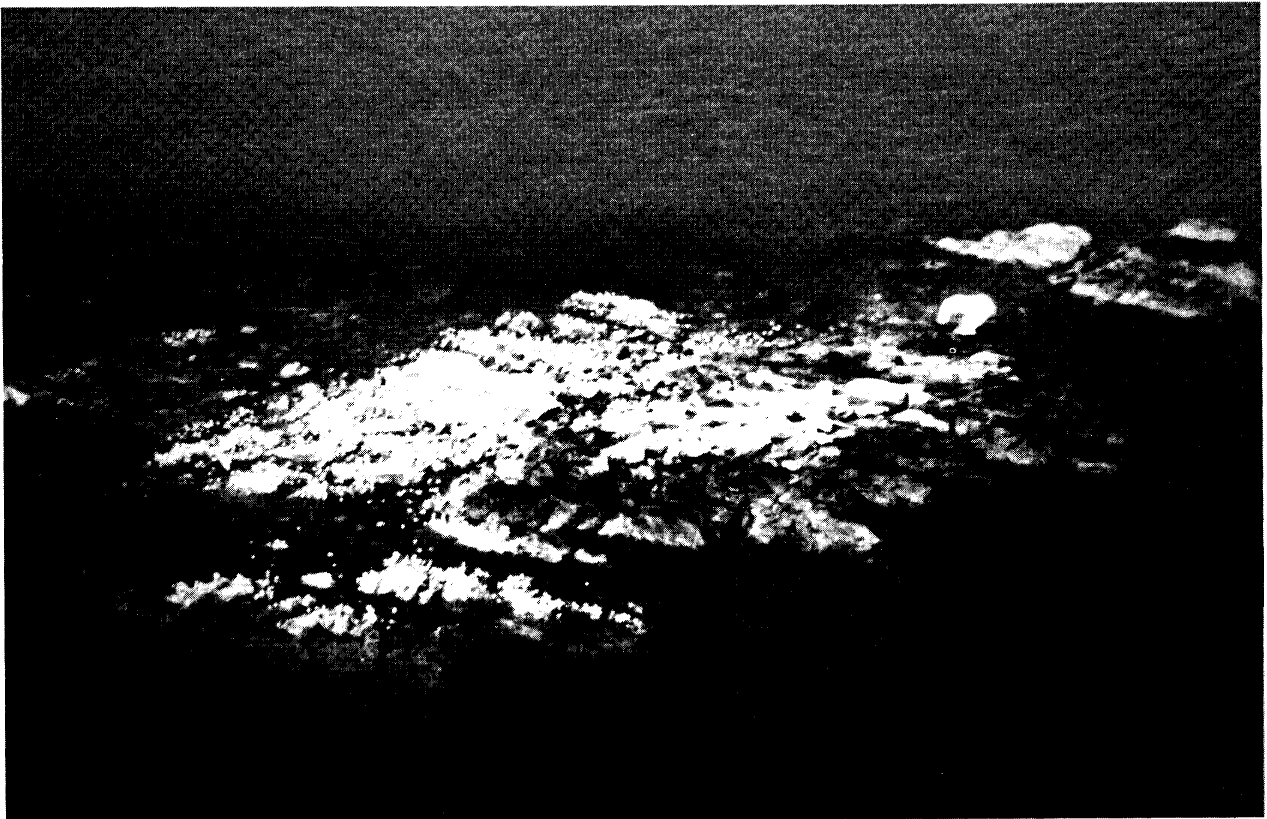
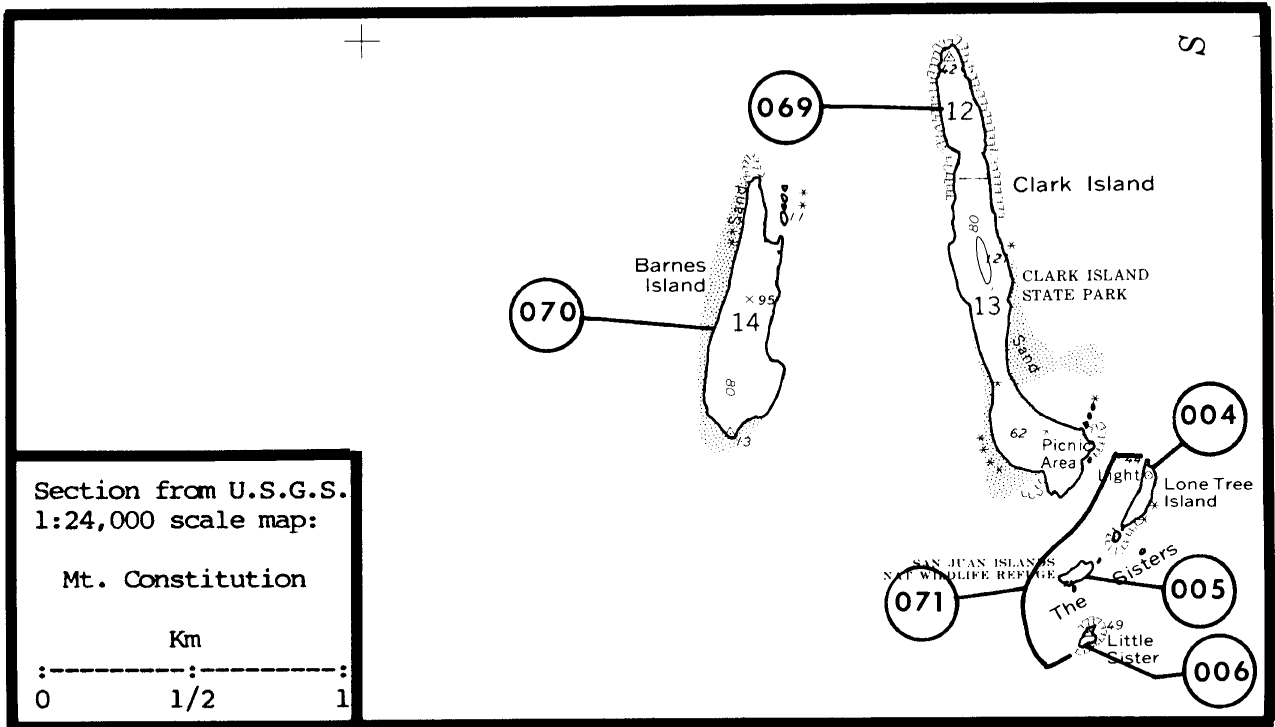
(070) Barnes Island 48°42'00"N, 122°46'24"W

Pigeon Guillemot 14 Wahl; Paulson 07/06/78 A III 269;207

(071) Sisters, The 48°41'02"N, 122°45'30"W

Black Oystercatcher	2	Nisqually NWR	08/06/80	B III 202
Glaucous-winged Gull	X	Wahl	03/14/79	B III 269
Pigeon Guillemot	3	Wahl; Paulson	07/06/78	A III 269;207
Total	5			

Pelagic Cormorant	4	Nisqually NWR	06/20/63	B II 202
Pelagic Cormorant	19P	Hauser & Monson 1963	07/16-17/63	B III 145
Pelagic Cormorant	4	Washington Dep. Game	?/ ?/63	? ? 203
Black Oystercatcher	2	Nisqually NWR	06/20/63	B III 202
Black Oystercatcher	3	Hauser & Monson 1963	07/16-17/63	B III 145
Glaucous-winged Gull	300	Jewett 1937	05/26/37	B III 156
Glaucous-winged Gull	800	Nisqually NWR	06/20/63	B III 202
Glaucous-winged Gull	1600	Hauser & Monson 1963	07/16-17/63	B III 145
Pigeon Guillemot	60	Jewett 1937	05/26/37	B III 156
Pigeon Guillemot	2	Richardson	06/02/57	L III 229
Pigeon Guillemot	4	Nisqually NWR	06/20/63	B III 202
Pigeon Guillemot	14	Hauser & Monson 1963	07/16-17/63	B III 145
Tufted Puffin	2	Hauser & Monson 1963	07/16-17/63	B III 145



Peapod, Middle (156074) 19 July 1982 T.R. Wahl

AREA 156, Victoria (cont'd.)

(072) Doe Island 48°38'00"N, 122°47'12"W

No Nesting Observed 0 Pitman 06/21/78 B III 217

(073) Peapod Rocks¹ 48°38'21"N, 122°45'00"W

Glaucous-winged Gull	X	Wahl	03/14/79	B III 269
Black Oystercatcher	6	Hauser & Monson 1963	07/16-17/63	B III 145
Black Oystercatcher	4	Nysewander	06/13/75	B III 205
Glaucous-winged Gull	2	Booth	06/21/24	E - 37
Glaucous-winged Gull	2	Booth	06/17/23	E - 38
Glaucous-winged Gull	700	Hauser & Monson 1963	07/16-17/63	B III 145

¹Insufficient data to determine exact location. For additional records see Peapod, Middle (156074), Peapod, North (156009), and Peapod, South (156010).

(074) Peapod, Middle¹ 48°38'24"N, 122°45'01"W

No Nesting Observed	0	Wahl	07/19/82	A III 269
No Nesting Observed	0	Jewett 1937	05/25/37	B III 156
No Nesting Observed	0	Pitman	06/21/78	B III 217
No Nesting Observed	0	Wahl	06/15/79	B III 269

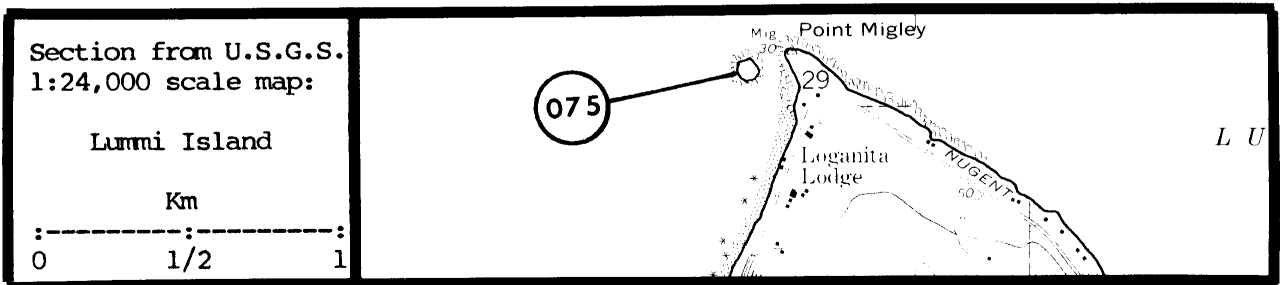
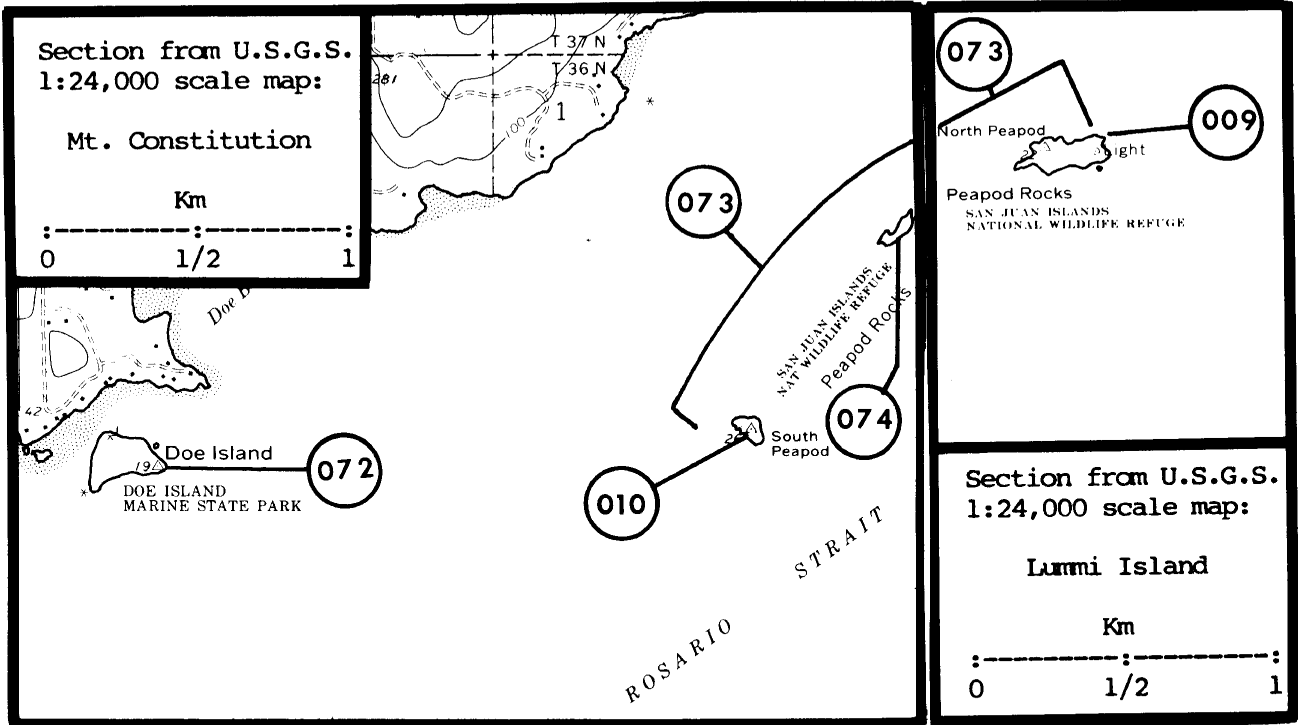
¹Rock awash at high tide stages.

(075) "Migley Rocks" 48°44'54"N, 122°43'00"W

Pigeon Guillemot 1 Speich & Wahl 06/05/78 B III 257

(076) Bellingham Bay, waterfront south 48°43'40"N, 122°30'40"W

Pigeon Guillemot	3	Batchelor	07/13/79	L III 22
Pigeon Guillemot	3	Wahl	05/31/78	L III 269
Pigeon Guillemot	5	Hemphill	06/27/78	L III 129
Pigeon Guillemot	5	Wahl	05/23/79	L III 269



AREA 156, Victoria (cont'd.)

(077) Chuckanut Rock 48°41'05"N, 122°30'05"W

Black Oystercatcher	2	Benedict	06/25/82	B II 26
Glaucous-winged Gull	40	Benedict	06/25/82	B II 26
Pigeon Guillemot	20	Benedict	06/25/82	B II 26
Total	<u>62</u>			

Black Oystercatcher	2	Garlick	06/ ?/81	B II 113
Black Oystercatcher	2	Garlick	06/29/82	L I 113
Glaucous-winged Gull	X	Garlick	06/ ?/81	B III 113
Pigeon Guillemot	1	Edson	06/20/1893	S - 101
Pigeon Guillemot	10	Edson 1929	06/13/05	L III 98
Pigeon Guillemot	37	Garlick	07/28/78	L III 113
Pigeon Guillemot	18	Garlick	06/25/79	B III 113

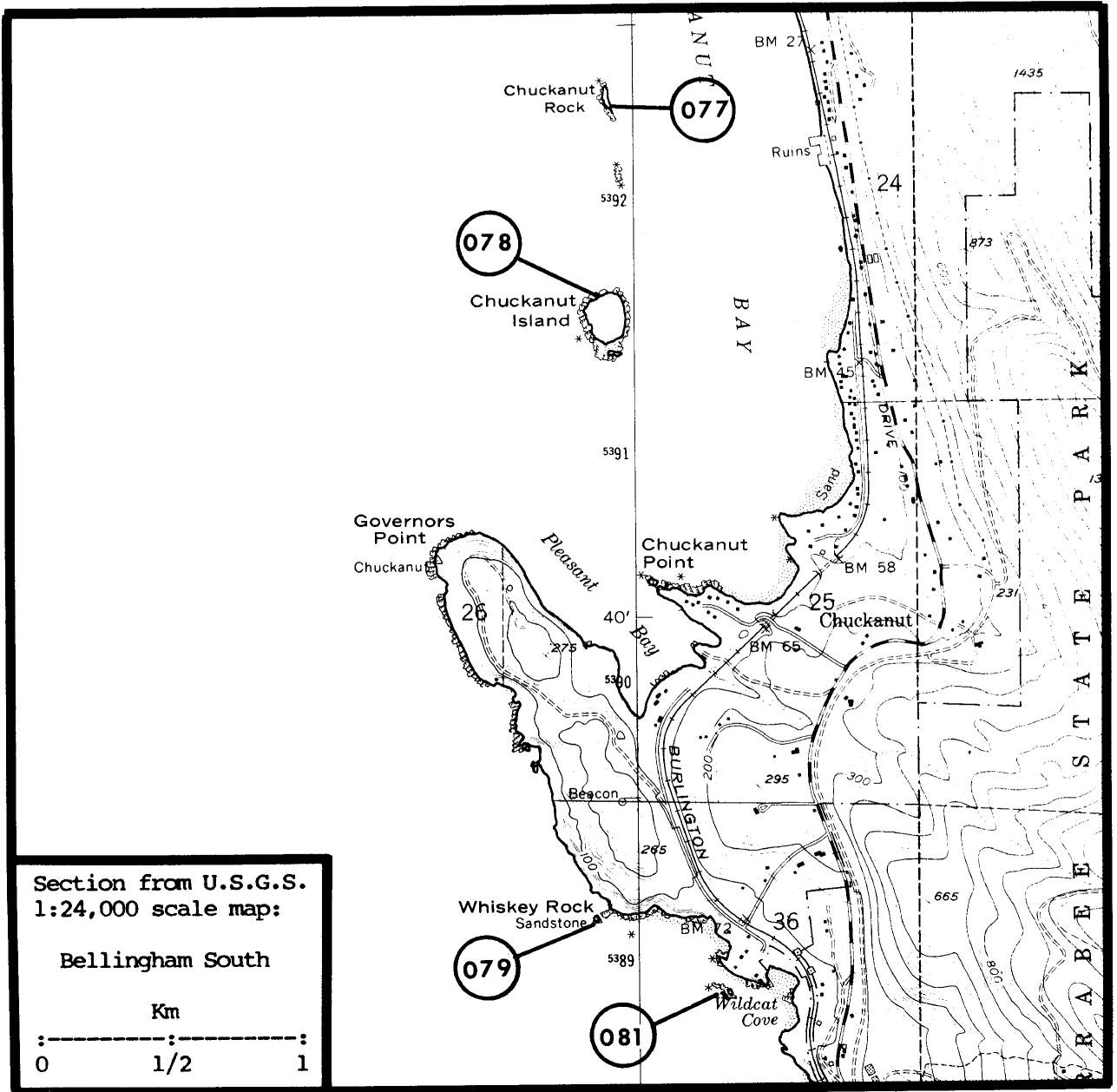
(078) Chuckanut Island 48°40'38"N, 122°30'05"W

No Nesting Observed	0	Garlick	06/25/79	B III 113
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No Nesting Observed	0	Garlick	07/28/78	B III 113
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(079) Whiskey Rock 48°39'38"N, 122°30'08"W

No Nesting Observed	0	Garlick	Summer/79	B III 113
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AREA 156, Victoria (cont'd.)

080 Eliza Rock 48°38'23"N, 122°34'35"W

Black Oystercatcher	6	Speich & Wahl	06/05/78	B III 257
Pigeon Guillemot	2	Speich & Wahl	06/05/78	B III 257
Total	8			

No Nesting Observed	0	Eddy 1975	06/13/75	B III 94
Glaucous-winged Gull	2	Manuwal 1977	?/ ?/73-75	L I 187
Pigeon Guillemot	X	Hudson	06/18-07/01/49	? III 148

081 "Gargoyle Rock" 48°39'12"N, 122°29'43"W

No Nesting Observed	0	Garlick	Summer/79	B III 113
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082 Battleship Island 48°37'30"N, 123°11'03"W

No Nesting Observed	0	Pitman	06/22/78	B III 217
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No Nesting Observed	0	Eddy	05/31-06/02/57	B III 95
No Nesting Observed	0	Frazer 1973	07/16/73	B III 108
No Nesting Observed	0	Eddy 1975	06/14/75	B III 94
Pigeon Guillemot	3	Wahl; Paulson	07/06/78	A III 269;207

083 Posey Island 48°37'07"N, 123°10'00"W

No Nesting Observed	0	Pitman	06/22/78	B III 217
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Pigeon Guillemot	1?	Speich & Wahl	05/19/78	B III 257
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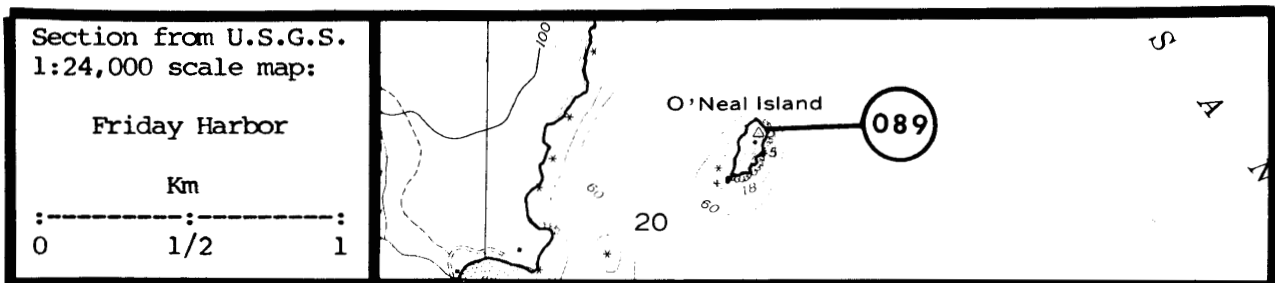
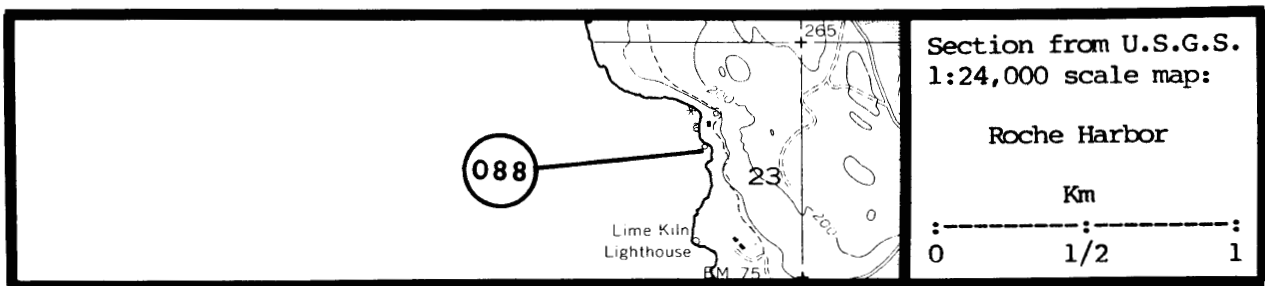
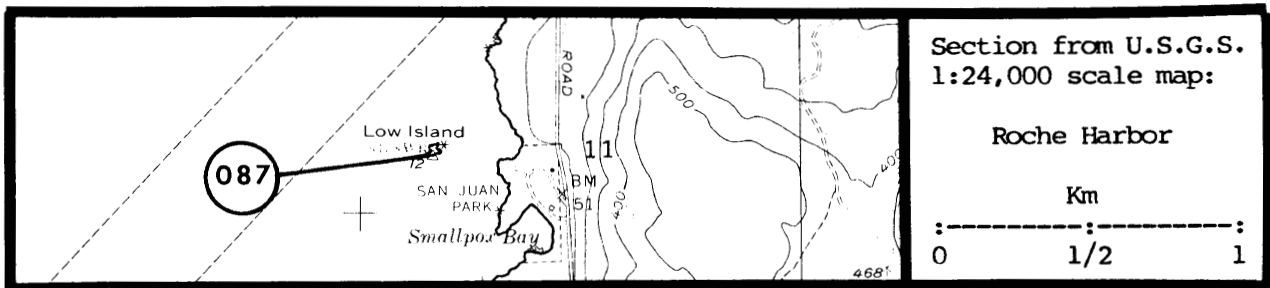
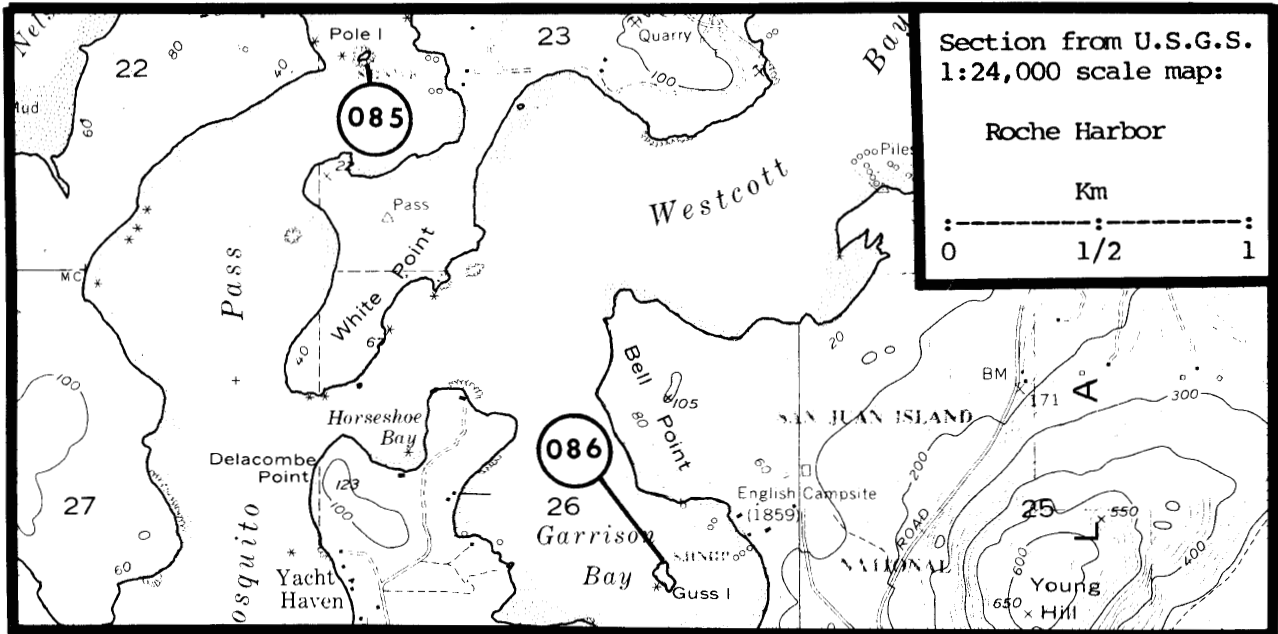
084 Barren Island 48°37'22"N, 123°09'34"W

No Nesting Observed	0	Wahl	06/14/79	B III 269
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No Nesting Observed	0	Eddy	05/31-06/02/57	B III 95
No Nesting Observed	0	Frazer 1973	07/16/73	B III 108
No Nesting Observed	0	Eddy 1975	06/14/75	B III 94
No Nesting Observed	0	Pitman	06/22/78	B III 217

AREA 156, Victoria (cont'd.)

(085)	Pole Island	48°36'04"N, 123°10'00"W		
No Nesting Observed	0	Wahl	06/13/79	B III 269
(086)	Guss Island	48°35'04"N, 123°09'11"W		
Pigeon Guillemot	7	Wahl	06/14/79	B III 269
(087)	Low Island	48°32'37"N, 123°09'47"W		
No Nesting Observed	0	Wahl; Paulson	06/07/79	A III 269;207
No Nesting Observed	0	Wahl	05/24/78	A III 269
(088)	Lime Kiln Bay	48°31'12"N, 123°09'03"W		
Pigeon Guillemot	5	Wahl	06/18/79	L III 269
(089)	O'Neal Island	48°36'14"N, 123°05'28"W		
No Nesting Observed	0	Pitman	06/24/78	B III 217
No Nesting Observed	0	Manuwal 1977	?/ ?/73-75	B III 187

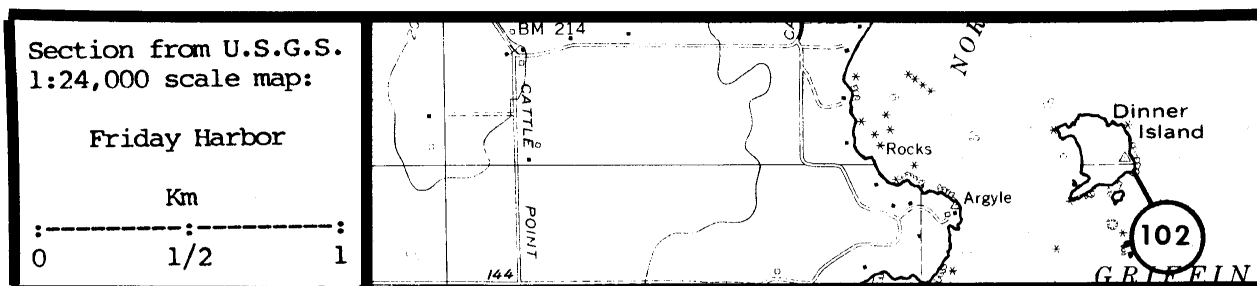
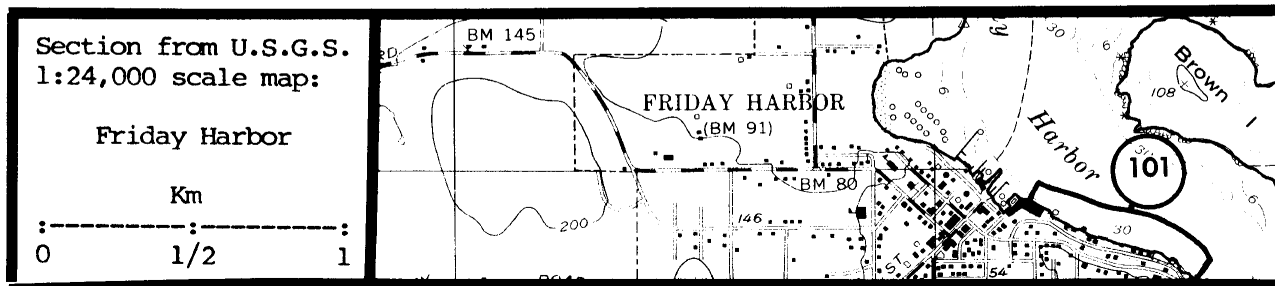
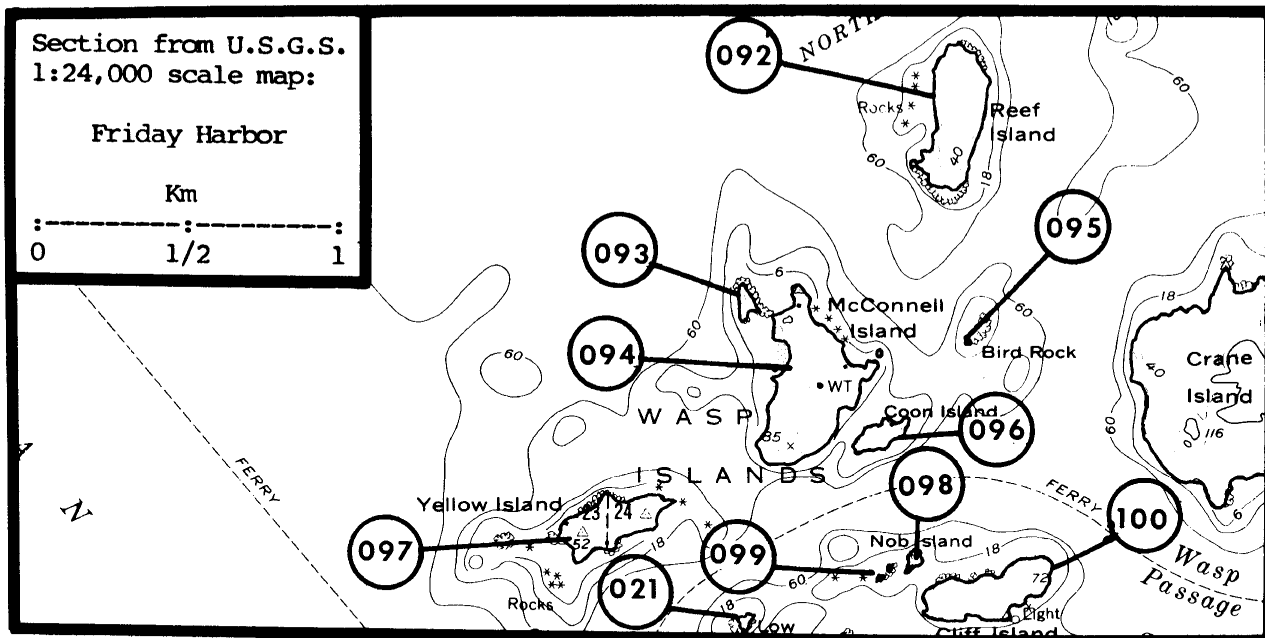


AREA 156, Victoria (cont'd.)

<p>(090) Jones Island 48°36'53"N, 123°02'42"W</p>				
No Nesting Observed	0	Pitman	06/24/78	B III 217
Pigeon Guillemot	?	Jewett	05/23-24/37	L III 156
Pigeon Guillemot	?	Nisqually NWR	06/20/67	B III 202
<p>(091) Fawn Island 48°36'50"N, 123°00'20"W</p>				
No Nesting Observed	0	Pitman	06/24/78	B III 217
<p>(092) Reef Island 48°36'18"N, 123°00'52"W</p>				
No Nesting Observed	0	Pitman	06/24/78	B III 217
<p>(093) "Unnamed Island" 48°35'57"N, 123°01'27"W</p>				
No Nesting Observed	0	Wahl	06/13/79	B III 269
<p>(094) McConnell Island 48°35'46"N, 123°01'17"W</p>				
No Nesting Observed	0	Pitman	06/24/78	B III 217
<p>(095) Bird Rock 48°35'54"N, 123°00'49"W</p>				
No Nesting Observed	0	Wahl	06/13/79	B III 269
<p>(096) Coon Island 48°35'43"N, 123°01'04"W</p>				
No Nesting Observed	0	Pitman	06/24/78	B III 217

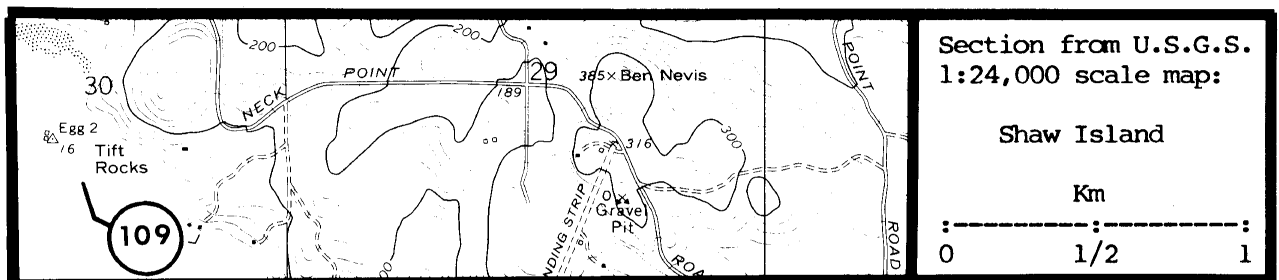
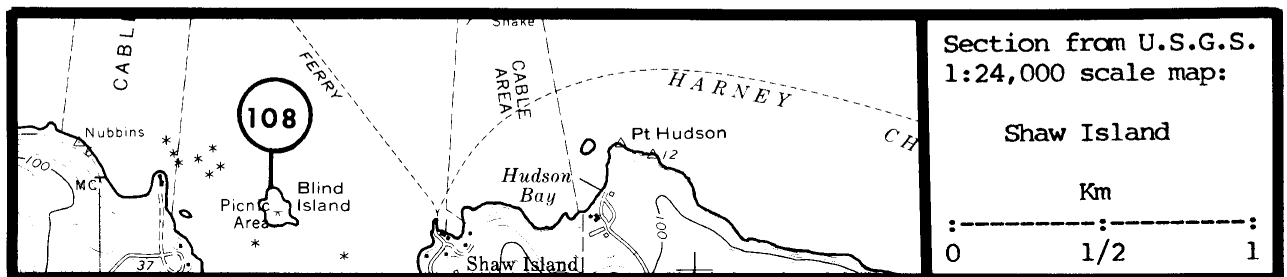
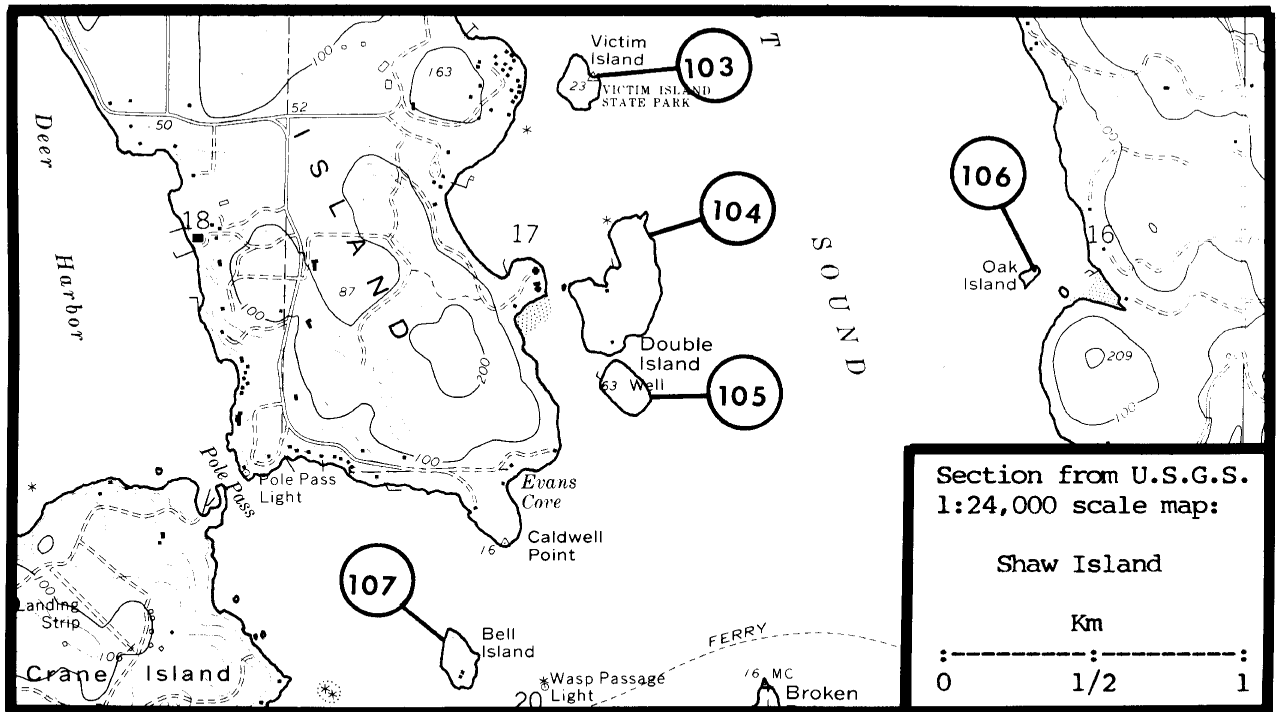
AREA 156, Victoria (cont'd.)

(097)	Yellow Island	48°35'33"N, 123°01'50"W		
No Nesting Observed	0	Pitman	06/24/78	B III 217
Black Oystercatcher	?	Manuwal 1973; Manuwal	05/26/73	B III 186;188
(098)	Nob Island	48°35'28"N, 123°01'00"W		
No Nesting Observed	0	Pitman	06/24/78	B III 217
(099)	"Unnamed Rock"	48°35'27"N, 123°01'05"W		
No Nesting Observed	0	Pitman	06/24/78	B III 217
(100)	Cliff Island	48°35'24"N, 123°00'13"W		
No Nesting Observed	0	Pitman	06/24/78	B III 217
(101)	Friday Harbor	48°32'00"N, 123°00'20"W		
Pigeon Guillemot	2	Miller et al. 1935	?/ ?/33-35	L III 199
(102)	Dinner Island	48°30'26"N, 123°00'30"W		
No Nesting Observed	0	Pitman	06/22/78	M III 217



AREA 156, Victoria (cont'd.)

(103)	Victum Island	48°36'48"N, 122°58'24"W			
No Nesting Observed	0	Pitman	06/24/78	B III	217
(104)	Double Island, north	48°36'24"N, 122°58'21"W			
No Nesting Observed	0	Pitman	06/24/78	B III	217
(105)	Double Island, south	48°36'16"N, 122°58'21"W			
No Nesting Observed	0	Pitman	06/24/78	B III	217
(106)	Oak Island	48°36'22"N, 122°57'09"W			
No Nesting Observed	0	Pitman	06/24/78	B III	217
(107)	Bell Island	48°35'46"N, 122°58'46"W			
No Nesting Observed	0	Pitman	06/24/78	B III	217
(108)	Blind Island	48°35'06"N, 122°56'15"W			
No Nesting Observed	0	Pitman	06/24/78	B III	217
(109)	Tift Rocks/Egg Rock	48°34'42"N, 122°59'10"W			
No Nesting Observed	0	Wahl	06/17/79	B III	269



AREA 156, Victoria (cont'd.)

(110) "Unnamed Rock" 48°33'45"N, 122°55'16"W
 No Nesting Observed 0 Wahl 06/17/79 B III 269

(111) Turn Island 48°32'00"N, 122°58'12"W

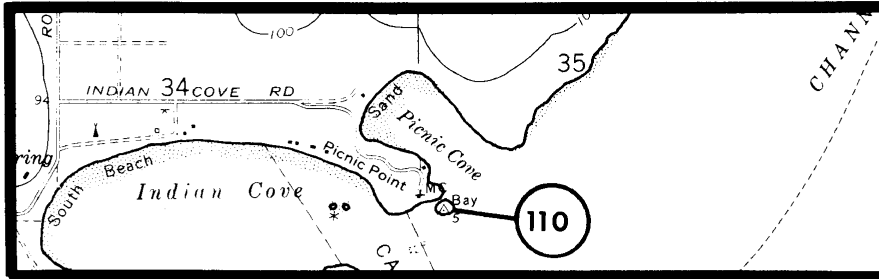
No Nesting Observed	0	Wahl	06/14/79	B III 269
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 Pigeon Guillemot 1 Wahl 05/19/78 B III 269
 Tufted Puffin 1 Anonymous 07/24/39 S - 15

(112) "Unnamed Rock" 48°31'42"N, 122°58'10"W
 No Nesting Observed 0 Wahl 06/13/79 B III 269

(113) Twin Rocks 48°36'57"N, 122°51'50"W
 Glaucous-winged Gull 2 Wahl 06/15/79 B III 269

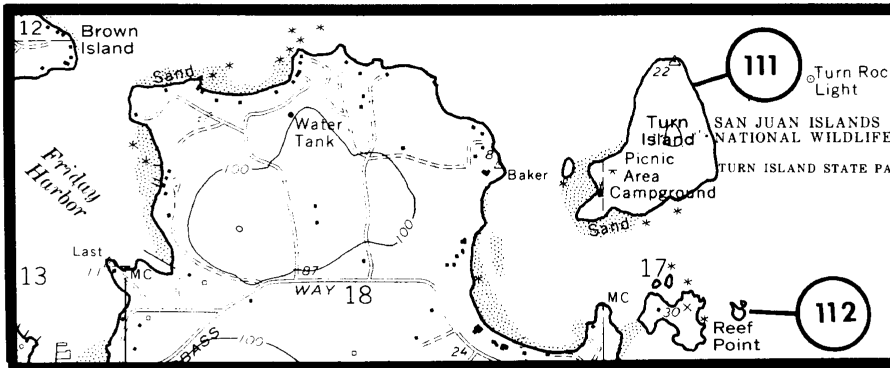
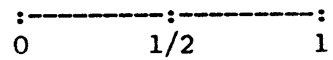
(114) Humphrey Head 48°33'45"N, 122°52'14"W
 Pigeon Guillemot 6 Wahl 06/17/79 B II 269



Section from U.S.G.S.
1:24,000 scale map:

Shaw Island

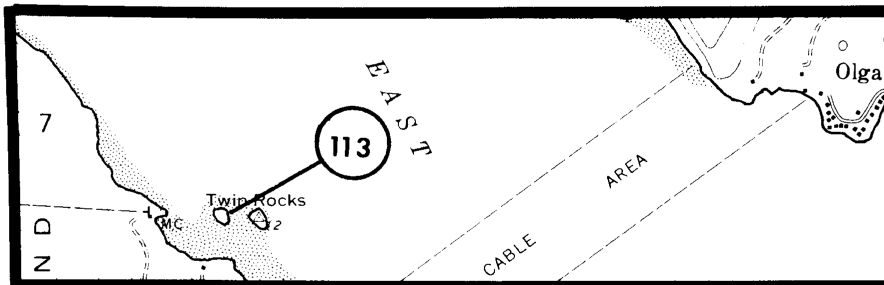
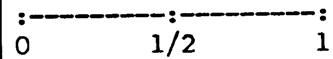
Km



Section from U.S.G.S.
1:24,000 scale map:

Shaw Island

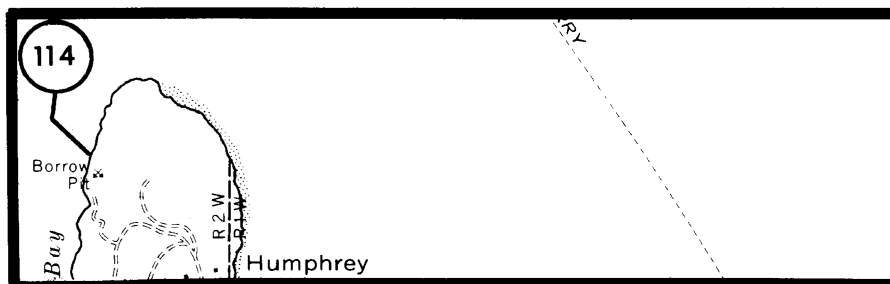
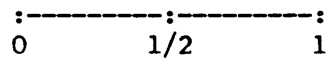
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Section from U.S.G.S.
1:24,000 scale map:

Blakely Island

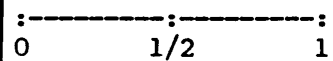
Km



Section from U.S.G.S.
1:24,000 scale map:

Blakely Island

Km



AREA 156, Victoria (cont'd.)

(115) Frost Island 48°32'18"N, 122°50'42"W

No Nesting Observed 0 Pitman 06/21/78 B III 217

(116) Willow Island 48°32'26"N, 122°49'20"W

Pigeon Guillemot	7	Wahl	06/17/79	B III 269
Pigeon Guillemot	10	Wahl	05/28/78	B III 269
Pigeon Guillemot	8	Pitman	06/21/78	B III 217
Pigeon Guillemot	5	Wahl	06/15/79	B III 269

(117) Armitage Island 48°32'09"N, 122°47'42"W

No Nesting Observed	0	Pitman	06/21/78	B III 217
Glaucous-winged Gull	150?	Hauser & Monson 1963	07/16-17/63	B III 145

(118) Lawson Rock¹ 48°31'50"N, 122°47'15"W

Black Oystercatcher 2? Nisqually NWR 08/03/80 B III 202

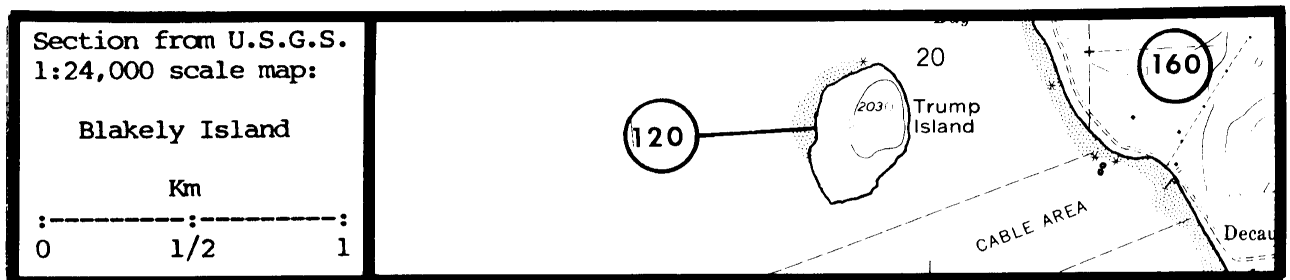
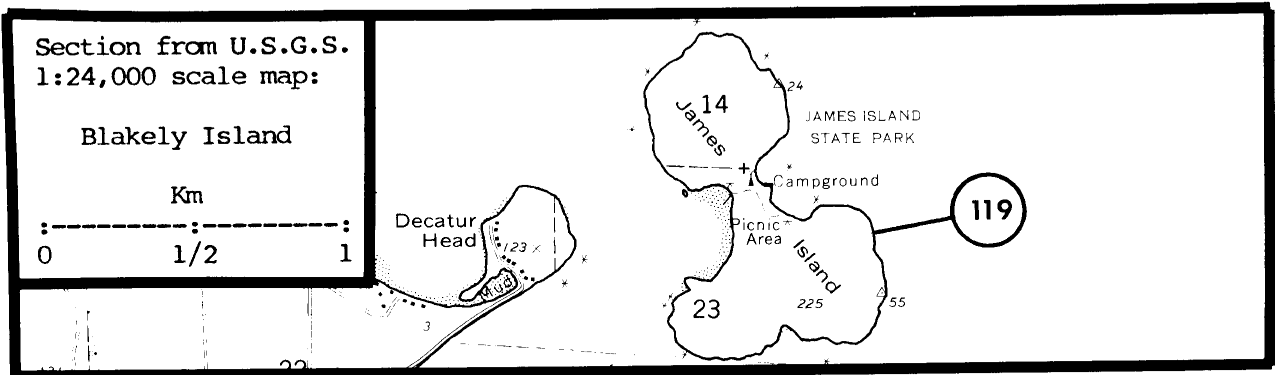
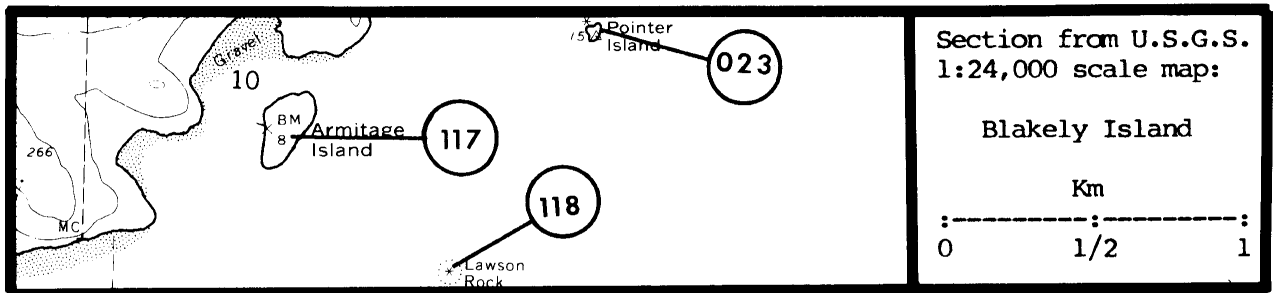
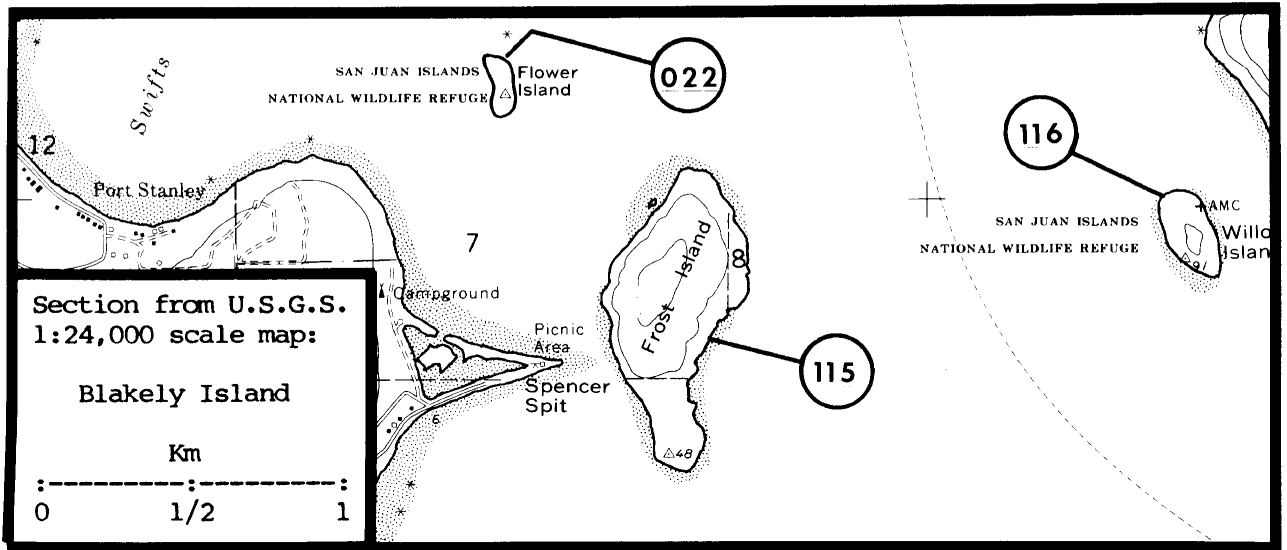
¹This rock regularly goes under water with high tide.

(119) James Island 48°30'45"N, 122°46'26"W

No Nesting Observed 0 Pitman 06/21/78 B III 217

(120) Trump Island 48°30'16"N, 122°50'09"W

No Nesting Observed 0 Pitman 06/21/78 B III 217



AREA 156, Victoria (cont'd.)

(121) Towhead Island 48°36'48"N, 122°42'43"W

No Nesting Observed 0 Pitman 06/21/78 B III 217

(122) Cone Island, north 48°35'40"N, 122°40'56"W

Pigeon Guillemot	3	Wahl; Paulson	07/06/78	A III 269;207
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Pigeon Guillemot 3? Pitman 06/21/78 B III 217

(123) Cone Island, south 48°35'35"N, 122°40'56"W

Pigeon Guillemot	4	Wahl; Paulson	07/06/78	A III 269;207
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No Nesting Observed 0 Pitman 06/21/78 B III 217

(124) Cone Island, east 48°35'31"N, 122°40'22"W

Pigeon Guillemot	2	Wahl; Paulson	06/07/79	A III 269;207
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Pigeon Guillemot 4 Pitman 06/21/78 B III 217

Pigeon Guillemot 2 Wahl; Paulson 07/06/78 A III 269;207

(125) Cypress Island¹ 48°34'20"N, 122°42'30"W

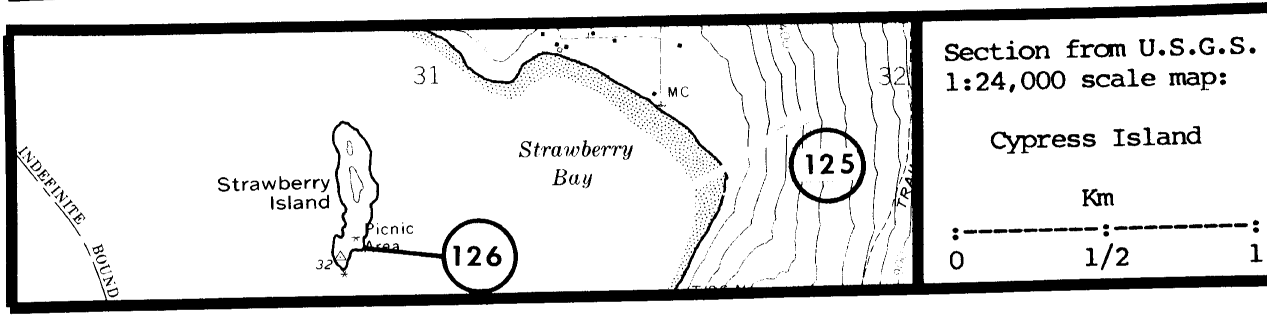
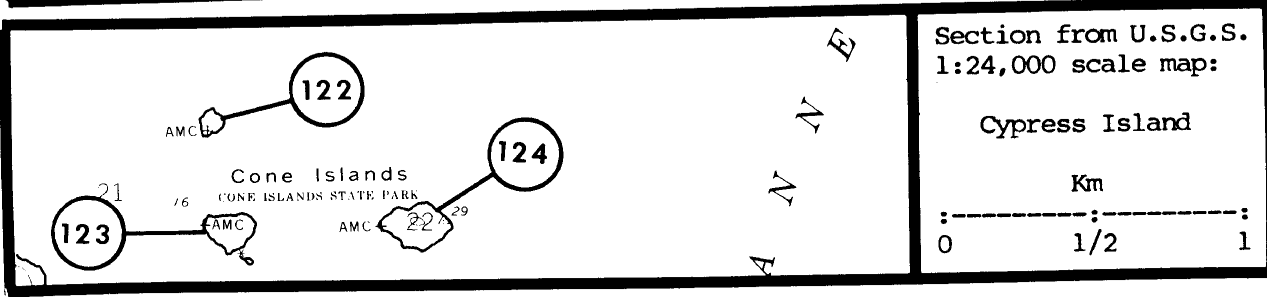
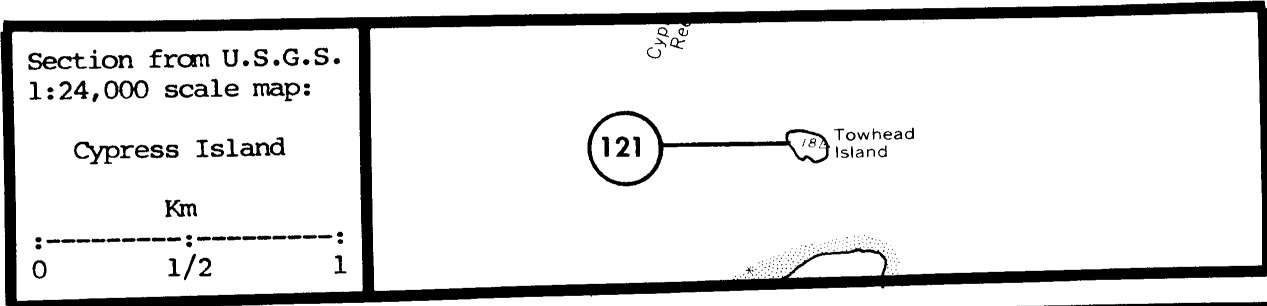
Pigeon Guillemot 15 Manuwal 1973 05/25-26/73 L III 186

¹Insufficient data to show exact location.

(126) Strawberry Island 48°33'42"N, 122°44'03"W

Pigeon Guillemot	6	Wahl; Paulson	06/07/79	A III 269;207
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Pigeon Guillemot 4 Pitman 06/21/78 B III 217



AREA 156, Victoria (cont'd.)

(127) Shannon Point 48°30'30"N, 122°41'15"W

Pigeon Guillemot X Thoresen & Booth 1958 06-09/ ?/57 L III 263

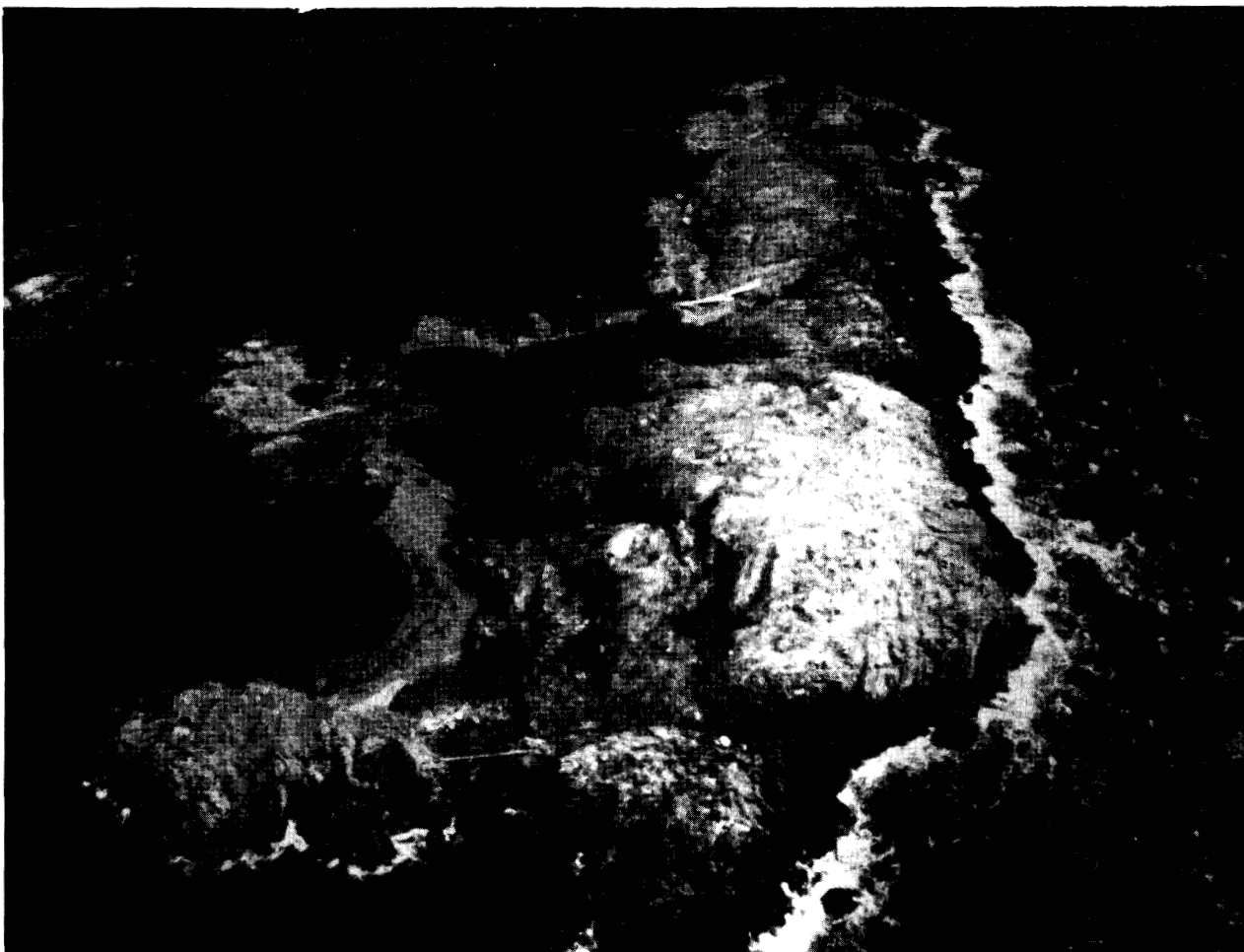
(128) Vendovi Island 48°36'37"N, 122°36'22"W

Pigeon Guillemot	12	Wahl; Paulson	06/07/79	A III 269;207
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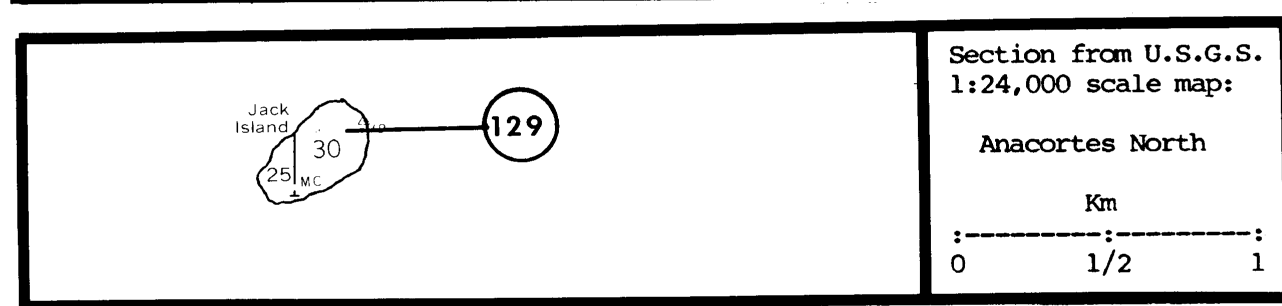
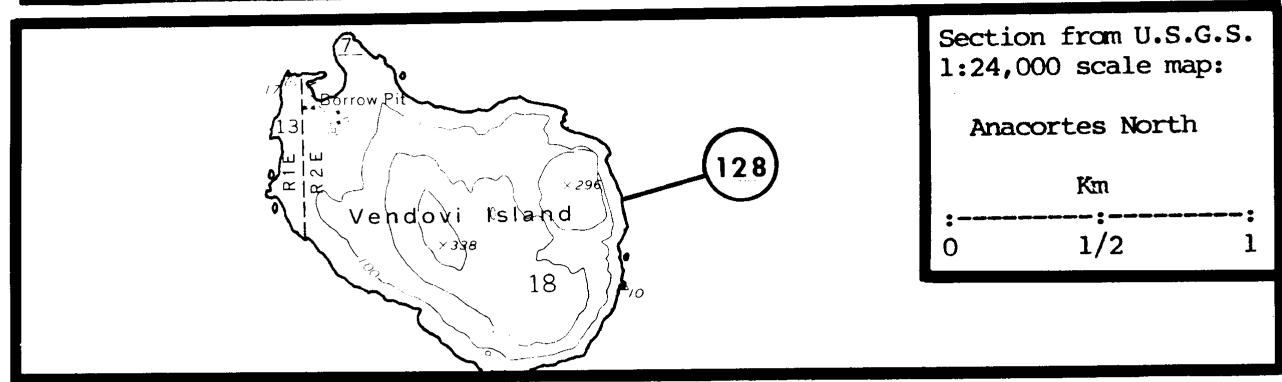
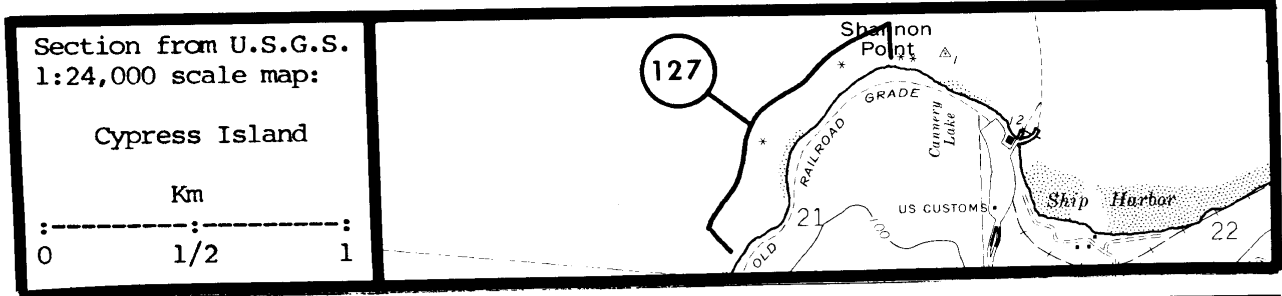
Pigeon Guillemot	8	Wahl; Paulson	07/06/78	A III 269;207
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(129) Jack Island 48°34'52"N, 122°36'48"W

Pigeon Guillemot 1 Pitman 06/21/78 B III 217



Deadman Island (156139) 19 July 1982 T.R. Wahl



AREA 156, Victoria (cont'd.)

(130) Huckleberry Island 48°32'10"N, 122°34'06"W

Pigeon Guillemot	1	Pitman	06/21/78	B III 217
No Nesting Observed	0	Eddy 1975	06/13/75	B III 94
Pigeon Guillemot	6	Eddy	06/13/75	B III 95

(131) Saddlebag Island 48°32'09"N, 122°33'21"W

Pigeon Guillemot	4	Pitman	06/21/78	B III 217
No Nesting Observed	0	Eddy 1975	06/13/75	B III 94

(132) Dot Island 48°31'58"N, 122°33'06"W

Pigeon Guillemot	7	Pitman	06/21/78	B III 217
Black Oystercatcher	1?	Wahl	06/27/74	? ? 269
No Nesting Observed	0	Eddy 1975	06/13/75	B III 94

(133) Hat Island 48°31'28"N, 122°32'48"W

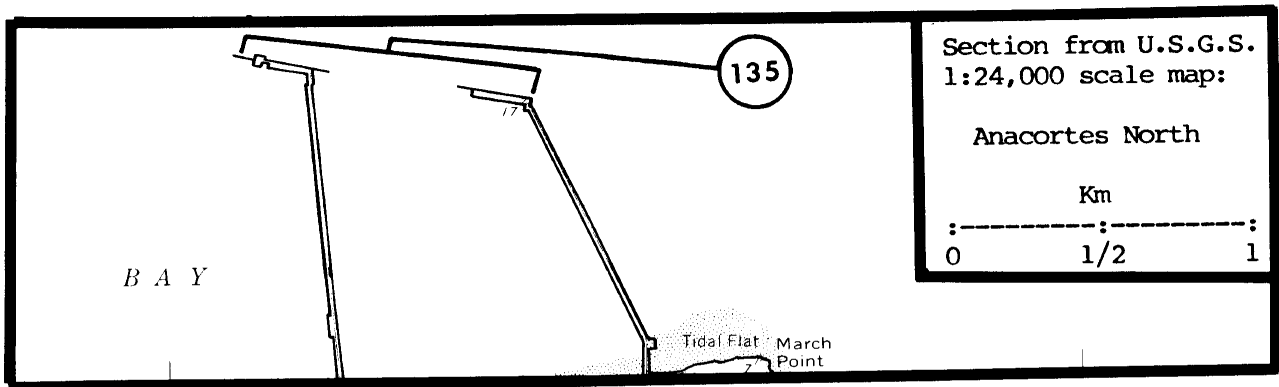
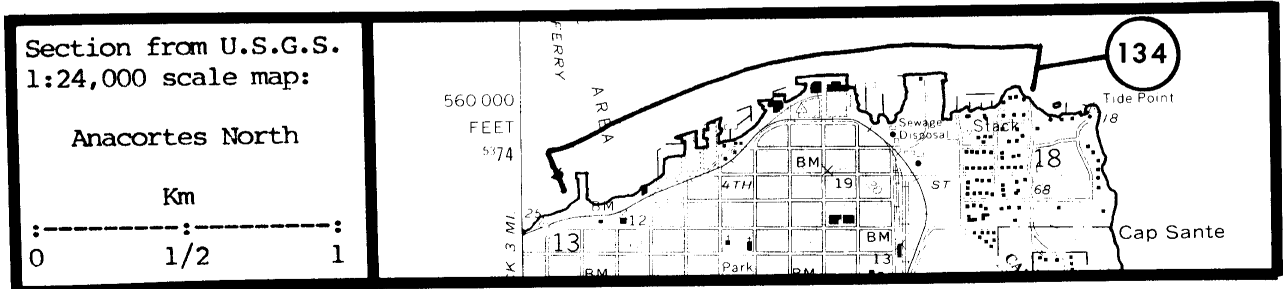
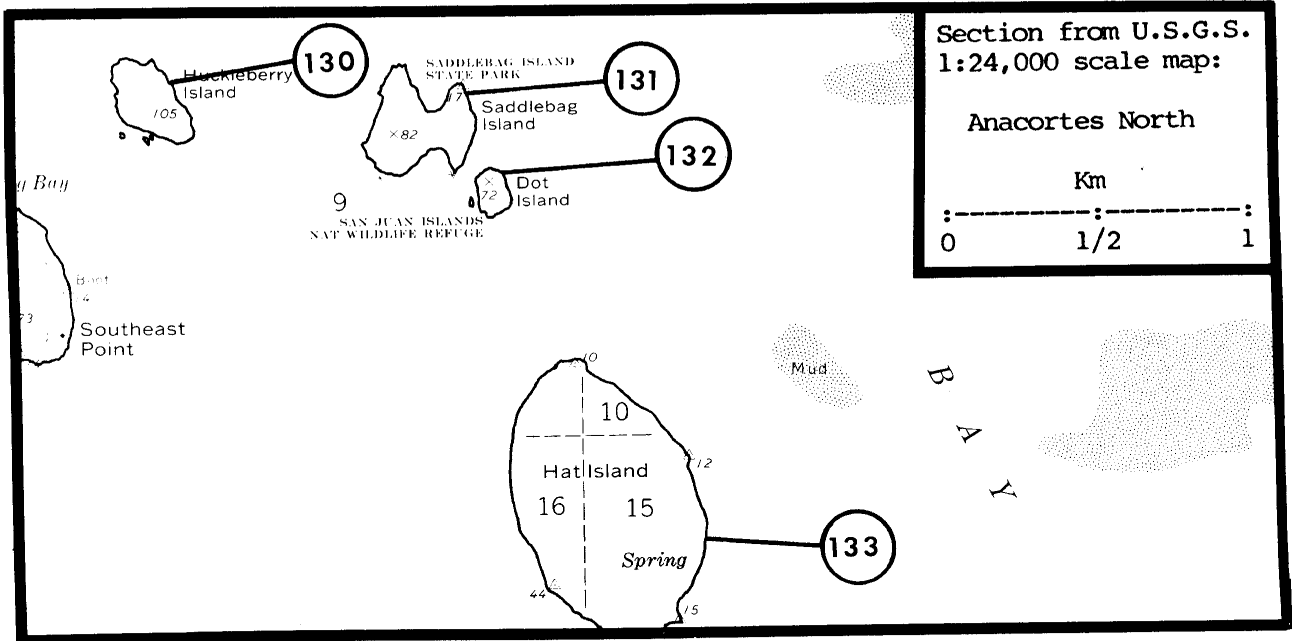
No Nesting Observed	0	Eddy 1975	06/13/75	B III 94
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(134) Anacortes, waterfront 48°31'24"N, 122°36'20"W

Pigeon Guillemot	6?	Wahl	06/14/79	B III 269
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(135) March Point, piers 48°30'32"N, 122°34'21"W

Pigeon Guillemot	15	Wahl	06/27/79	L III 269
Pigeon Guillemot	1	Wahl	05/24/79	L III 269
Pigeon Guillemot	4	Wahl	06/08/79	L III 269



AREA 156, Victoria (cont'd.)

(136) "Unnamed Rock" 48°29'24"N, 123°06'30"W

No Nesting Observed 0 Wahl; Paulson 06/06/79 A III 269;207

(137) "Unnamed Rock" 48°28'58"N, 123°05'00"W

No Nesting Observed 0 Wahl; Paulson 06/06/79 A III 269;207

(138) Harbor Rock 48°28'13"N, 122°58'12"W

No Nesting Observed	0	Wahl & Speich	06/14/79	B III 271
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No Nesting Observed 0 Manuwal 1977 ?/ ?/73-75 B III 187

Glaucous-winged Gull 2? Wahl & Speich 05/19/78 B III 271

(139) Deadman Island 48°27'30"N, 122°56'36"W

No Nesting Observed	0	Pitman	06/20/78	B III 217
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Black Oystercatcher 2 Eaton 1980 ?/ ?/76 L I 93

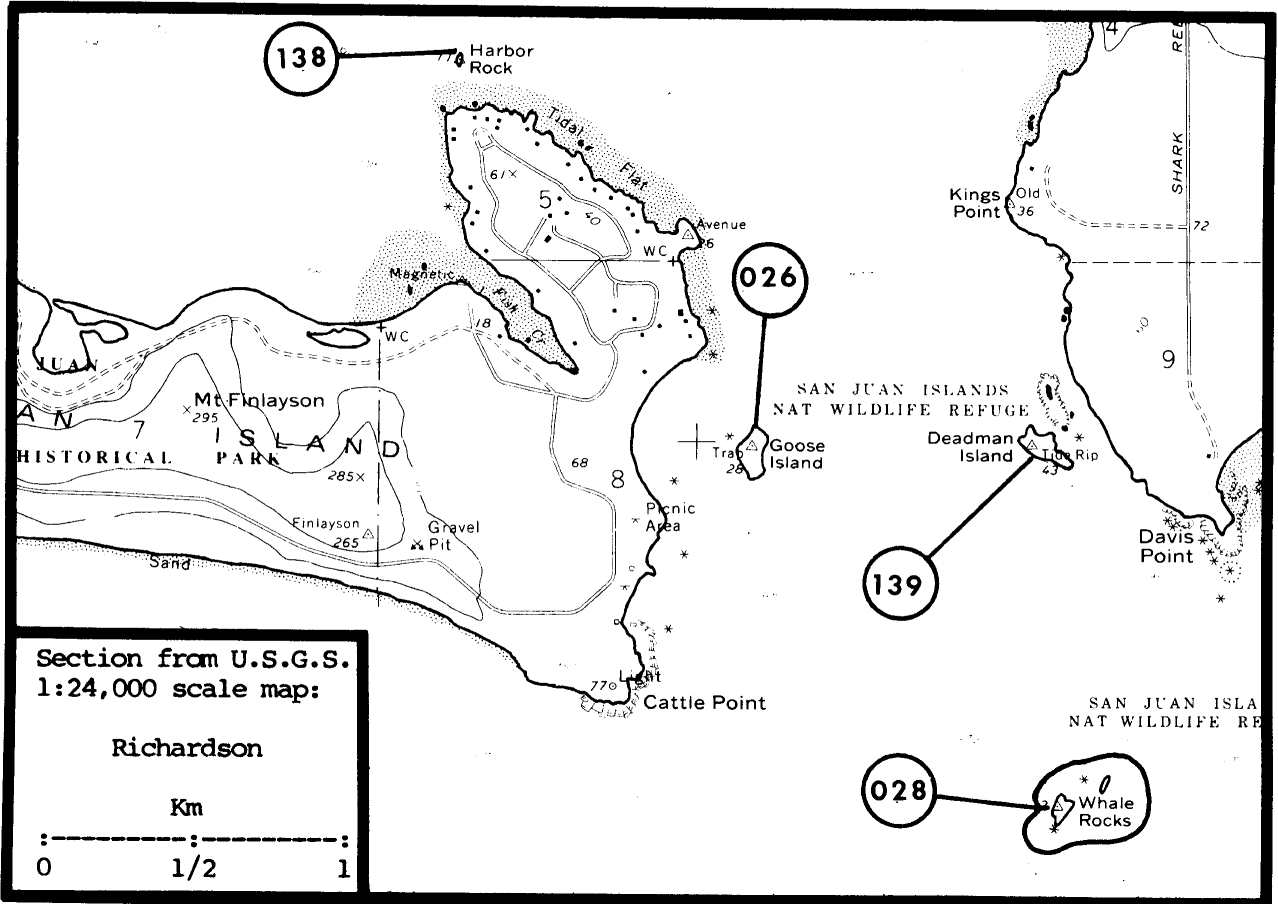
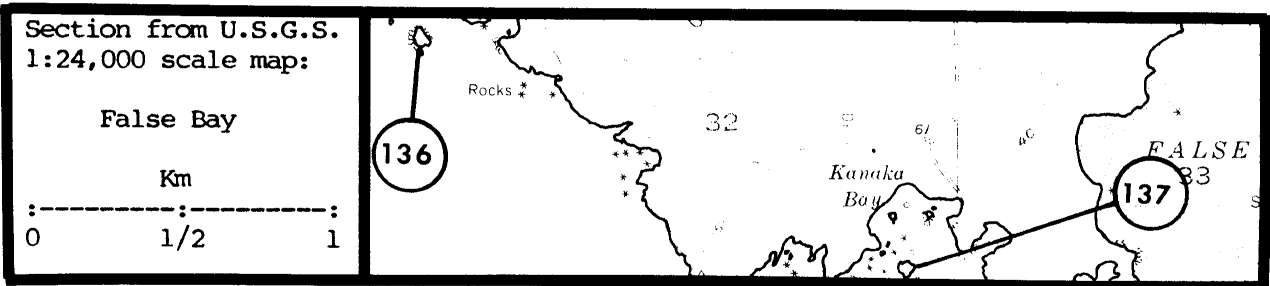
Black Oystercatcher 2 Eaton 1980 ?/ ?/77 L I 93

Black Oystercatcher 0 Eaton 1980 ?/ ?/78 L III 93

Glaucous-winged Gull P Eaton 1980 ?/ ?/77 L III 93

Glaucous-winged Gull 4 Eaton 1980 ?/ ?/78 L I 93

Glaucous-winged Gull 35±? Wahl 07/19/82 A III 269



AREA 156, Victoria (cont'd.)

(140) Buck Island 48°27'09"N, 122°55'15"W

Black Oystercatcher	2	Pitman	06/20/78	B III 217
Pelagic Cormorant	15?	Nisqually NWR	08/21-23/67	B III 202
Black Oystercatcher	2	Nisqually NWR	06/20/63	B II 202
Black Oystercatcher	2	Nisqually NWR	07/13-16/68	L III 202
Glaucous-winged Gull	160B	Schultz	?/ ?/47	L III 245
Glaucous-winged Gull	160B	Schultz	?/ ?/49	L III 245
Glaucous-winged Gull	270	Schultz 1951	06-08/ ?/49	L II 240
Glaucous-winged Gull	1	Schultz	06/17/49	S - 246
Glaucous-winged Gull	X	Schultz 1952	07/07-08/51	L III 241
Glaucous-winged Gull	75B	Schultz	?/ ?/55	L III 245
Glaucous-winged Gull	2	Schultz	07/23/55	S - 246
Glaucous-winged Gull	3	Schultz	09/04-06/55	S - 246
Glaucous-winged Gull	2	Schultz	10/06/55	S - 246
Glaucous-winged Gull	85B	Schultz	?/ ?/60	L III 245
Glaucous-winged Gull	40+	Eddy	07/03/61	B III 95
Glaucous-winged Gull	200	Nisqually NWR	06/20/63	B III 202
Glaucous-winged Gull	200	Hauser & Monson 1963	07/16-17/63	B III 145
Glaucous-winged Gull	100	Nisqually NWR	08/21-23/67	L III 202
Glaucous-winged Gull	300	Nisqually NWR	07/13-16/68	L III 202
Glaucous-winged Gull	15±?	Wahl	07/19/82	A III 269
Pigeon Guillemot	2	Nisqually NWR	06/20/63	B III 202
Pigeon Guillemot	13	Hauser & Monson 1963	07/16-17/63	B III 145
Pigeon Guillemot	25	Nisqually NWR	07/13-16/68	L III 202

(141) Davis Bay, cliffs 48°27'10"N, 122°55'00"W

Pigeon Guillemot	10	Pitman	06/20/78	B III 217
Pelagic Cormorant	200	Edson 1929	06/17/05	M III 98
Pelagic Cormorant	80+	Eddy	07/03/61	B III 95

(142) Lopez Island¹ 48°28'30"N, 122°53'00"W

Brandt's Cormorant	X	Cantwell	pre-1953	? III 52
Tufted Puffin	1	Anonymous	06/28/55	? III 15

¹Insufficient data to show exact map location.

AREA 156, Victoria (cont'd.)

①④③ Lopez Island, south shore¹ 48°26'00"N, 122°52'30"W

Pelagic Cormorant	1	Edson	06/09/05	S - 271
Pelagic Cormorant	X	Edson 1929	06/17/05	L III 98
Pelagic Cormorant	3	McMannama	06/24/49	S - 193
Black Oystercatcher	2	Nysewander 1977;		
		Nysewander	06/ ?/73	B III 204;205
Glaucous-winged Gull	52	Galusha 1970	?/ ?/63	L II 110
Glaucous-winged Gull	4	Thoresen &		
		Galusha 1971	06-07/ ?/70	L I 264
Pigeon Guillemot	1	McMannama	08/03/49	S - 193
Pigeon Guillemot	6	Galusha 1970	?/ ?/63	L II 110
Pigeon Guillemot	0	Thoresen &		
		Galusha 1971	06-07/ ?/70	L II 264

¹Insufficient data to show exact map location.

①④④ "Unnamed Island" 48°26'32"N, 122°55'45"W

Glaucous-winged Gull	200	Pitman	06/20/78	B III 217
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①④⑤ "Unnamed Rock" 48°26'18"N, 122°55'30"W

Black Oystercatcher	1	Pitman	06/20/78	B III 217
Glaucous-winged Gull	40	Pitman	06/20/78	B III 217
Total	41			

①④⑥ "Unnamed Rock" 48°26'22"N, 122°55'07"W

No Nesting Observed	0	Wahl	06/13/79	B III 269
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①④⑦ Charles Island 48°26'30"N, 122°54'30"W

No Nesting Observed	0	Pitman	06/20/78	B III 217
Black Oystercatcher	1	Nysewander	06/ ?/73	B III 205

AREA 156, Victoria (cont'd.)

(148) Secar Rock 48°26'17"N, 122°54'22"W

No Nesting Observed	0	Wahl	07/19/82	A III 269
Black Oystercatcher	2	Nisqually NWR	06/20/63	B III 202
Black Oystercatcher	1	Hauser & Monson 1963	07/16-17/63	B III 145
Black Oystercatcher	6	Nisqually NWR	07/13-16/68	L II 202
Black Oystercatcher	1?	Pitman	06/20/78	B III 217

(149) "Unnamed Rock" 48°25'57"N, 122°52'58"W

No Nesting Observed	0	Pitman	06/20/78	B III 217
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(150) "Unnamed Rock" 48°25'52"N, 122°52'51"W

No Nesting Observed	0	Pitman	06/20/78	B III 217
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(151) Iceberg Island 48°25'37"N, 122°53'18"W

No Nesting Observed	0	Wahl	07/19/82	A III 269
No Nesting Observed	0	Eddy	07/03/61	B III 95
No Nesting Observed	0	Nisqually NWR	06/20/63	B III 202
No Nesting Observed	0	Frazer 1973	07/17/73	B III 108
Black Oystercatcher	1?	Pitman	06/20/78	B III 217

AREA 156, Victoria (cont'd.)

152 Small Island 48°29'44"N, 122°51'42"W

Glaucous-winged Gull	41	Wahl	06/15/79	B III 269
Pigeon Guillemot	1	Wahl	06/15/79	B III 269
Total	42			

Glaucous-winged Gull	70	Pitman	06/21/78	B III 217
Glaucous-winged Gull	X	Wahl	07/19/82	A III 269

153 Rim Island 48°28'55"N, 122°49'35"W

No Nesting Observed	0	Pitman	06/21/78	B III 217
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154 Rum Island 48°28'48"N, 122°49'41"W

No Nesting Observed	0	Pitman	06/21/78	B III 217
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155 Ram Island 48°28'35"N, 122°49'50"W

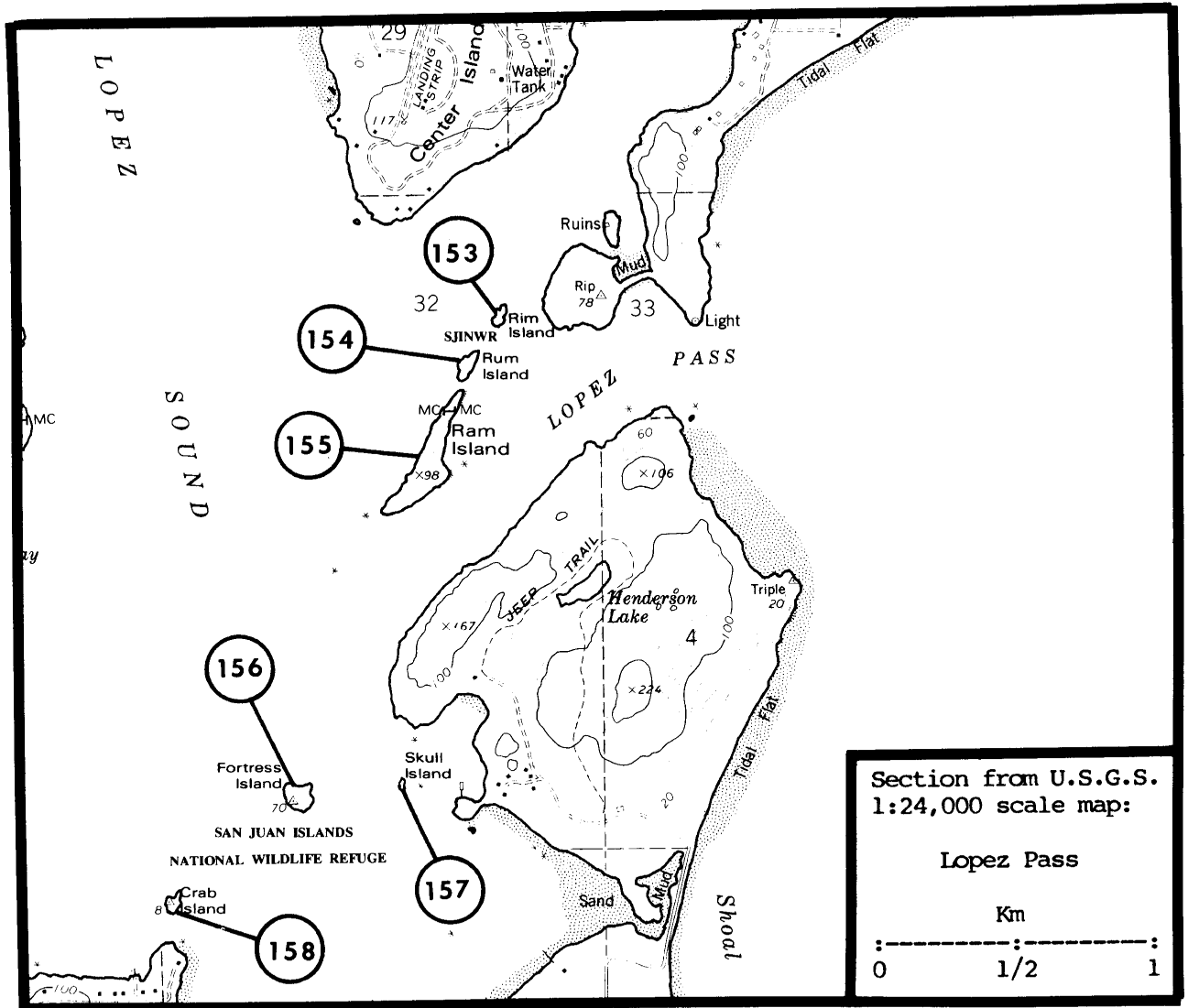
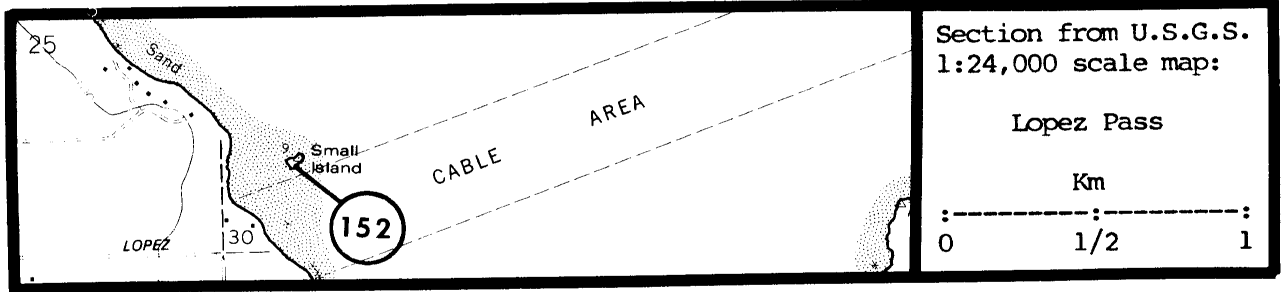
Pigeon Guillemot	20P	Pitman	06/21/78	B III 217
Total	20P			

Pigeon Guillemot	52	Thoresen & Galusha 1971	06-07/ ?/63	B III 264
Pigeon Guillemot	0	Thoresen & Galusha 1971	06-07/ ?/70	B III 264

156 Fortress Island 48°27'56"N, 122°50'13"W

No Nesting Observed	0	Pitman	06/21/78	B III 217
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Glaucous-winged Gull	30-60	Eddy	08/04/57	L III 95
Glaucous-winged Gull	54	Thoresen & Galusha 1971	06-07/ ?/63	L I 264
Glaucous-winged Gull	4	Galusha 1970	?/ ?/70	L I 110
Pigeon Guillemot	6	Thoresen & Galusha 1971	06-07/ ?/63	L III 264
Pigeon Guillemot	0	Galusha 1970	?/ ?/70	L III 110



AREA 156, Victoria (cont'd.)

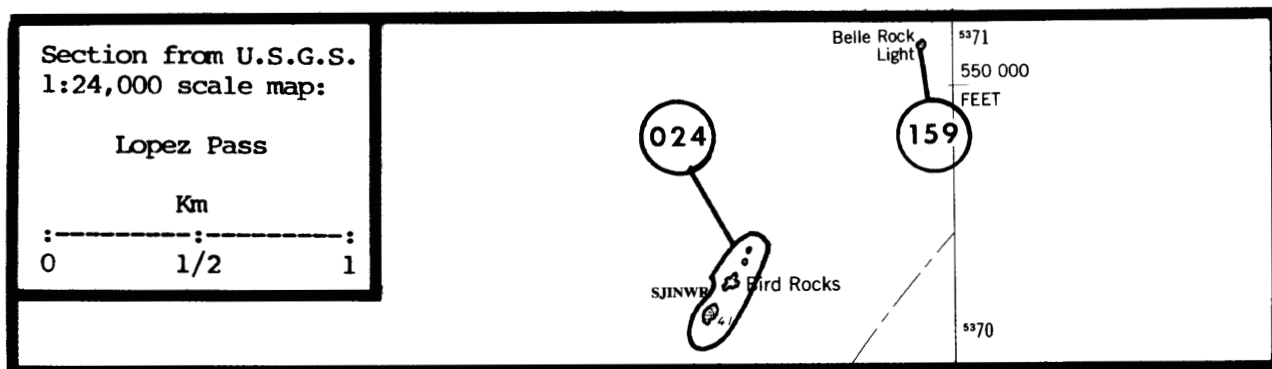
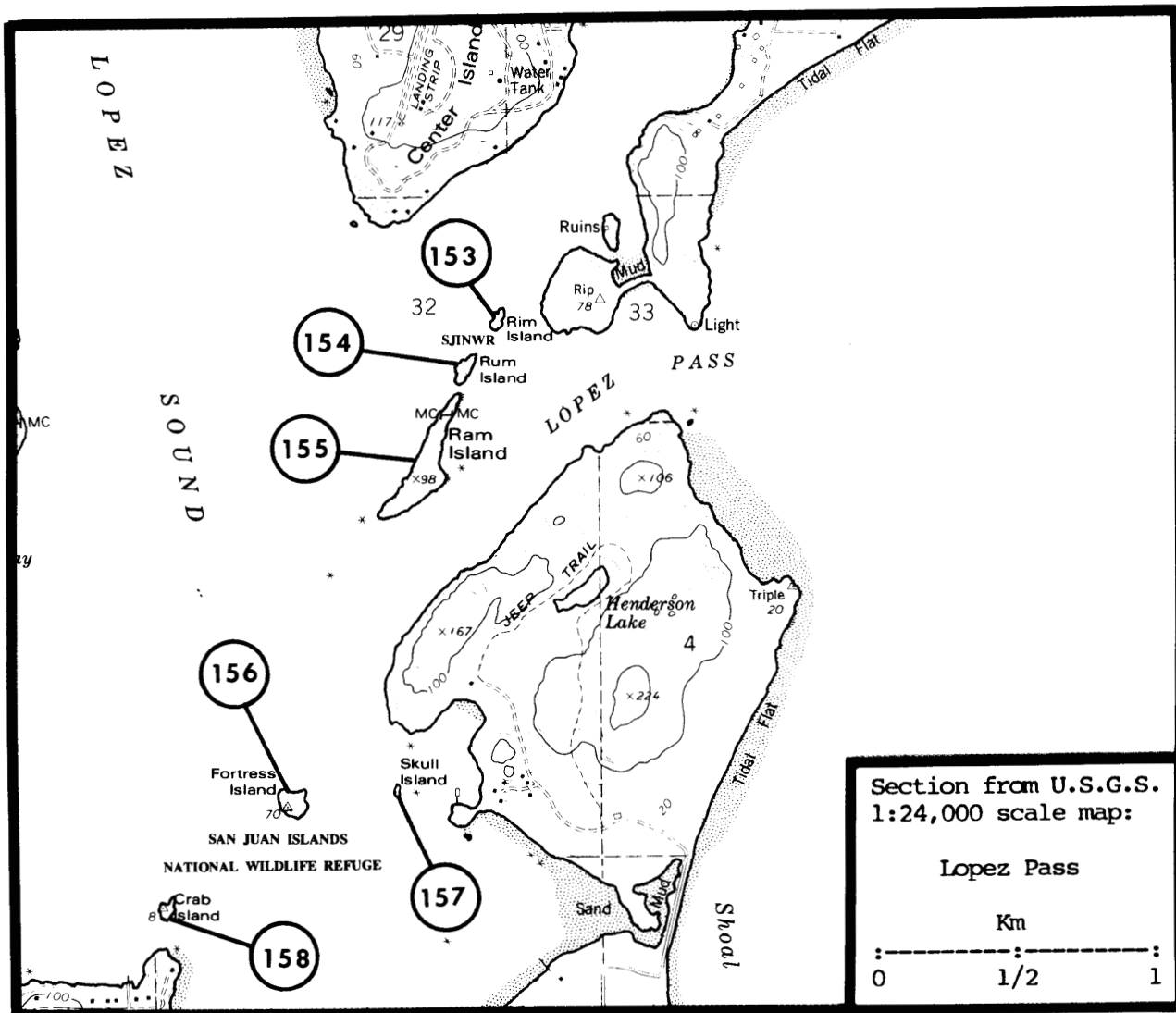
(157)	Skull Island	48°27'57"N, 122°49'55"W				
No Nesting Observed	0	Pitman	06/21/78	B III	217	
(158)	Crab Island	48°27'44"N, 122°50'36"W				
No Nesting Observed	0	Pitman	06/21/78	B III	217	
(159)	Belle Rocks ¹	48°29'35"N, 122°45'12"W				
Unknown Species ²	P	Einarsen 1925	early 1920's	?	? 103	

¹At present these rocks are submerged during most tide stages.

²Reported as used for nesting by unspecified species of marine birds.



Buck Island (156140) 19 July 1982 T.R. Wahl



AREA 156, Victoria (cont'd.)

(160) Decatur Island¹ 48°30'35"N, 122°48'30"W

No Nesting Observed 0 Frazer 1973 07/17/73 B III 108

¹Insufficient data to show exact map location.

(161) "Flint Beach Island" 48°25'12"N, 122°52'00"W

No Nesting Observed	0	Pitman	06/20/78	B III 217
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No Nesting Observed	0	Eddy	06/03/61	B III 95
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(162) Aleck Rocks 48°25'23"N, 122°50'48"W

No Nesting Observed	0	Pitman	06/20/78	B III 217
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No Nesting Observed	0	Eddy	06/03/61	B III 95
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(163) Swirl Island 48°25'07"N, 122°50'51"W

No Nesting Observed	0	Wahl	07/19/82	A III 269
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No Nesting Observed	0	Eddy	06/03/61	B III 95
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No Nesting Observed	0	Pitman	06/20/78	B III 217
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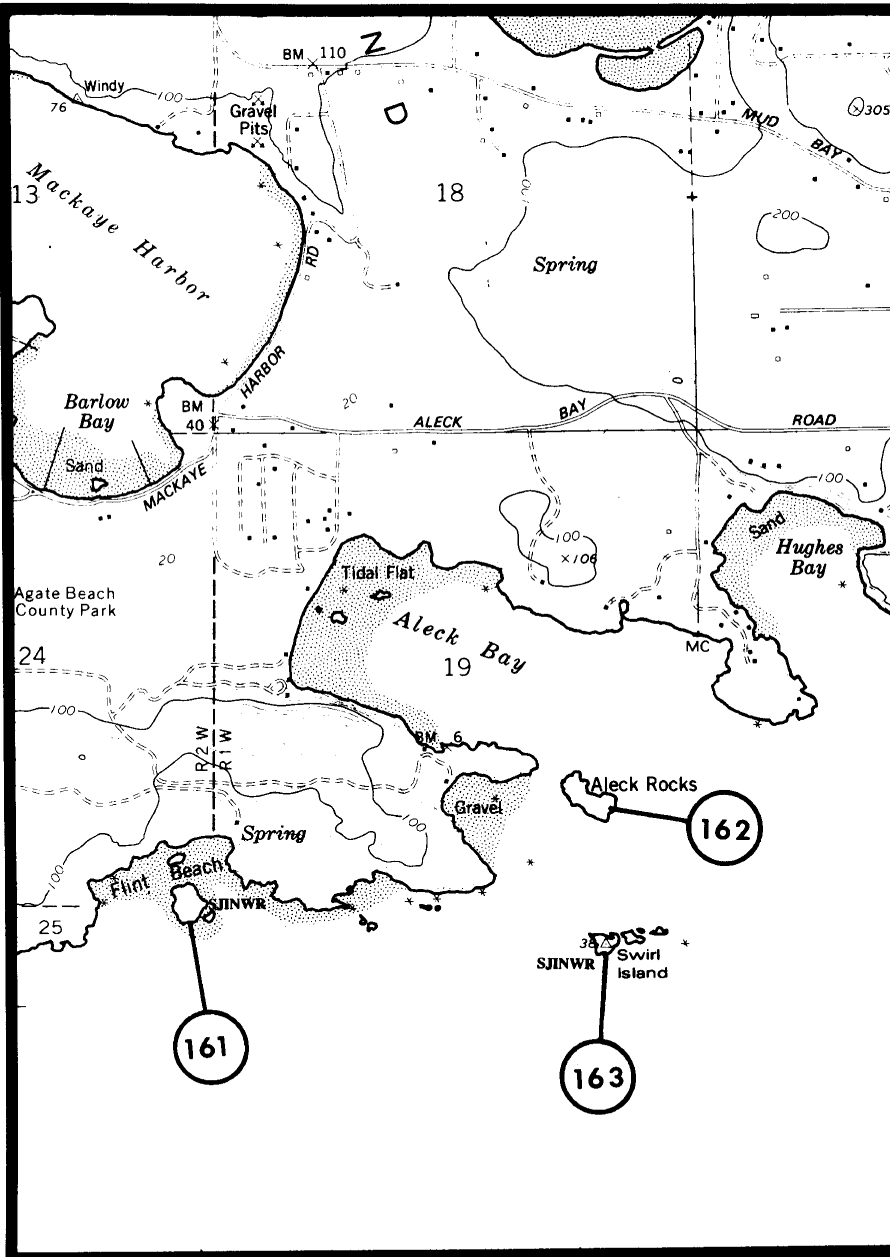
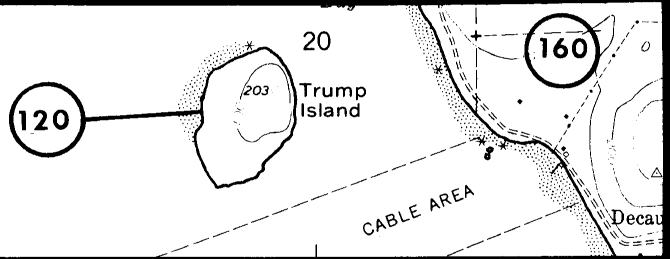
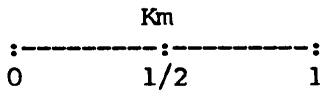
(164) Blind Island 48°25'27"N, 122°49'34"W

No Nesting Observed	0	Pitman	06/26/78	B III 217
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No Nesting Observed	0	Eddy	06/03/61	B III 95
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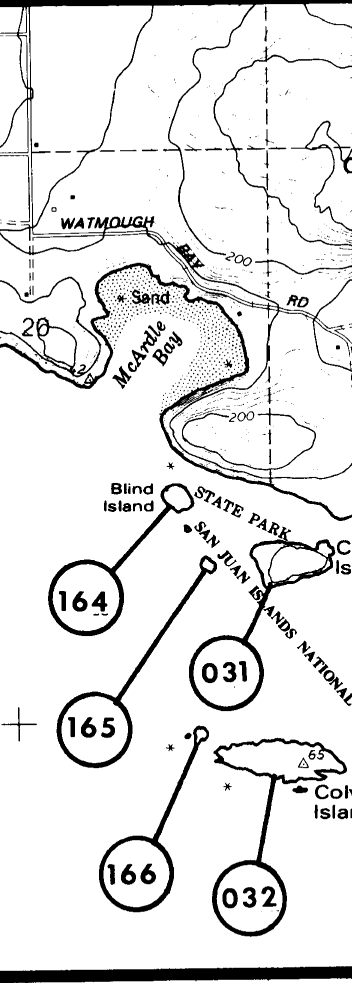
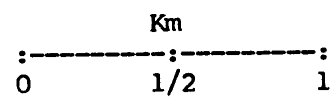
Section from U.S.G.S.
1:24,000 scale map:

Blakely Island



Section from U.S.G.S.
1:24,000 scale map:

Lopez Pass



AREA 156, Victoria (cont'd.)

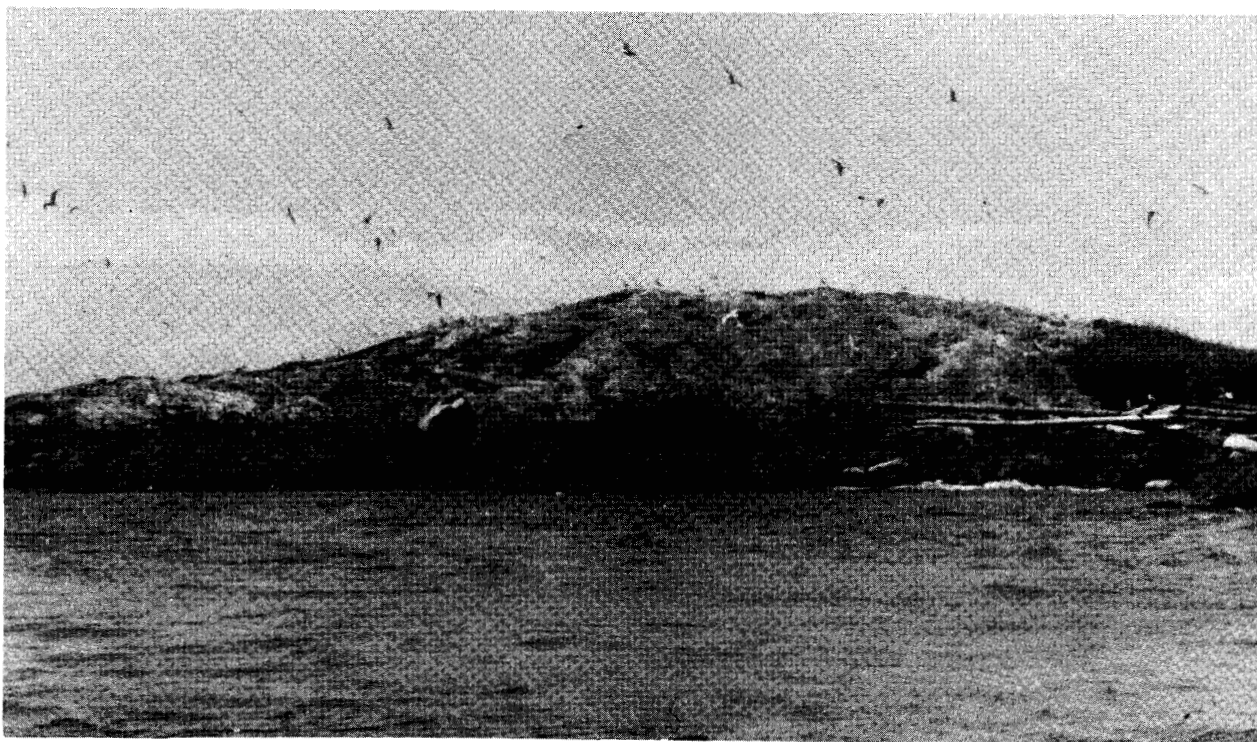
(165) "Unnamed Rock" 48°25'18"N, 122°49'29"W

No Nesting Observed	0	Pitman	06/20/78	B III 217
Glaucous-winged Gull	12+	Eddy	07/03/61	B III 95

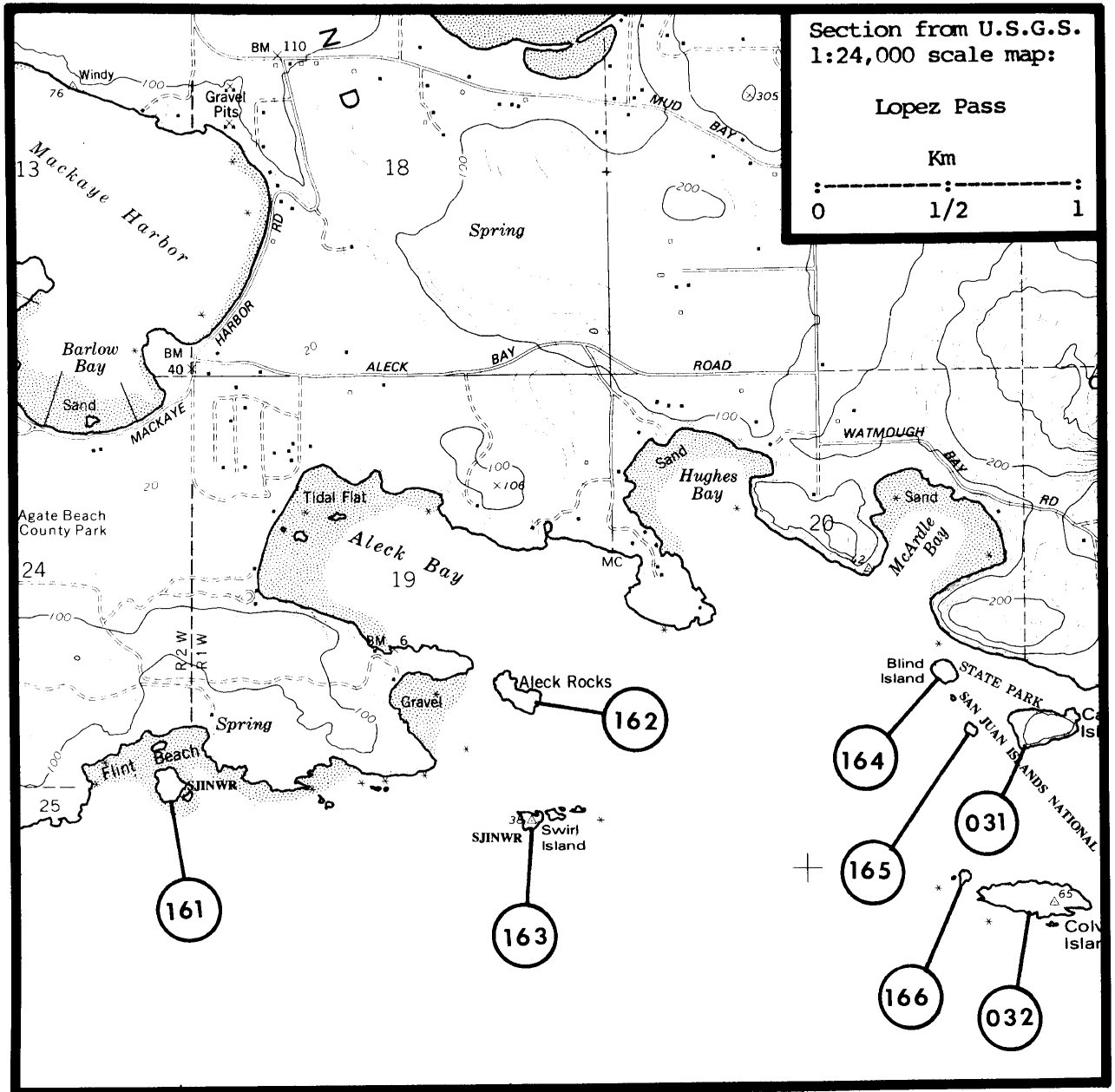
(166) "Unnamed Rock" (Colville Annex) 48°25'00"N, 122°49'32"W

Double-crested Cormorant	60	Wahl	07/19/82	A II 269
Glaucous-winged Gull	150	Wahl	07/19/82	A III 269
Pigeon Guillemot	2	Pitman	06/20/78	B III 217
Total	212			

Glaucous-winged Gull	52	Thoresen & Galusha 1971	06-07/ ?/63	L I 264
Glaucous-winged Gull	118	Thoresen & Galusha 1971	06-07/ ?/70	L I 264
Glaucous-winged Gull	80	Pitman	06/20/78	B II 217



Secar Rock (156148) USF&WS



AREA 156, Victoria (cont'd.)

(167) Boulder Island 48°25'58"N, 122°48'02"W

Pigeon Guillemot	2	Wahl	04/30/79	B III 269
No Nesting Observed	0	Pitman	06/20/78	B III 217
No Nesting Observed	0	Wahl	07/19/82	A III 269
Glaucous-winged Gull	4P	Eddy	07/03/61	L III 95
Pigeon Guillemot	11	Wahl	05/19/78	B III 269

(168) Burrows Island 48°28'48"N, 122°42'06"W

Pigeon Guillemot	12	Wahl	06/14/79	B III 269
Pigeon Guillemot	3	Wahl	05/19/78	B III 269

(169) Young Island 48°28'32"N, 122°41'22"W

No Nesting Observed	0	Pitman	06/21/78	B III 217
No Nesting Observed	0	Eddy 1975	06/15/75	B III 94

(170) Allan Island 48°27'55"N, 122°42'12"W

Pigeon Guillemot	2	Wahl	06/14/79	B III 269
Pigeon Guillemot	1	Edson 1929	06/13/05	L III 98
Pigeon Guillemot	4	Wahl	05/19/78	B III 269

AREA 156, Victoria (cont'd.)

(171) Sares Head 48°26'00"N, 122°40'30"W

Pigeon Guillemot X Thoresen & Booth 1958 06-09/ ?/57 L III 263

(172) Northwest Island 48°25'09"N, 122°40'06"W

Pelagic Cormorant	10	Wahl	05/17/79	B II 269
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Pigeon Guillemot 2 Thoresen & Booth 1958 06-09/ ?/57 L I 263

(173) Deception Island 48°24'27"N, 122°40'05"W

Pigeon Guillemot 36 Thoresen & Booth 1958 06-09/ ?/57 L II 263

(174) Pass Island 48°24'25"N, 122°38'33"W

No Nesting Observed	0	Wahl	06/14/79	B III 269
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No Nesting Observed	0	Wahl	Summer/78	B III 269
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(175) Strawberry Island 48°24'26"N, 122°37'50"W

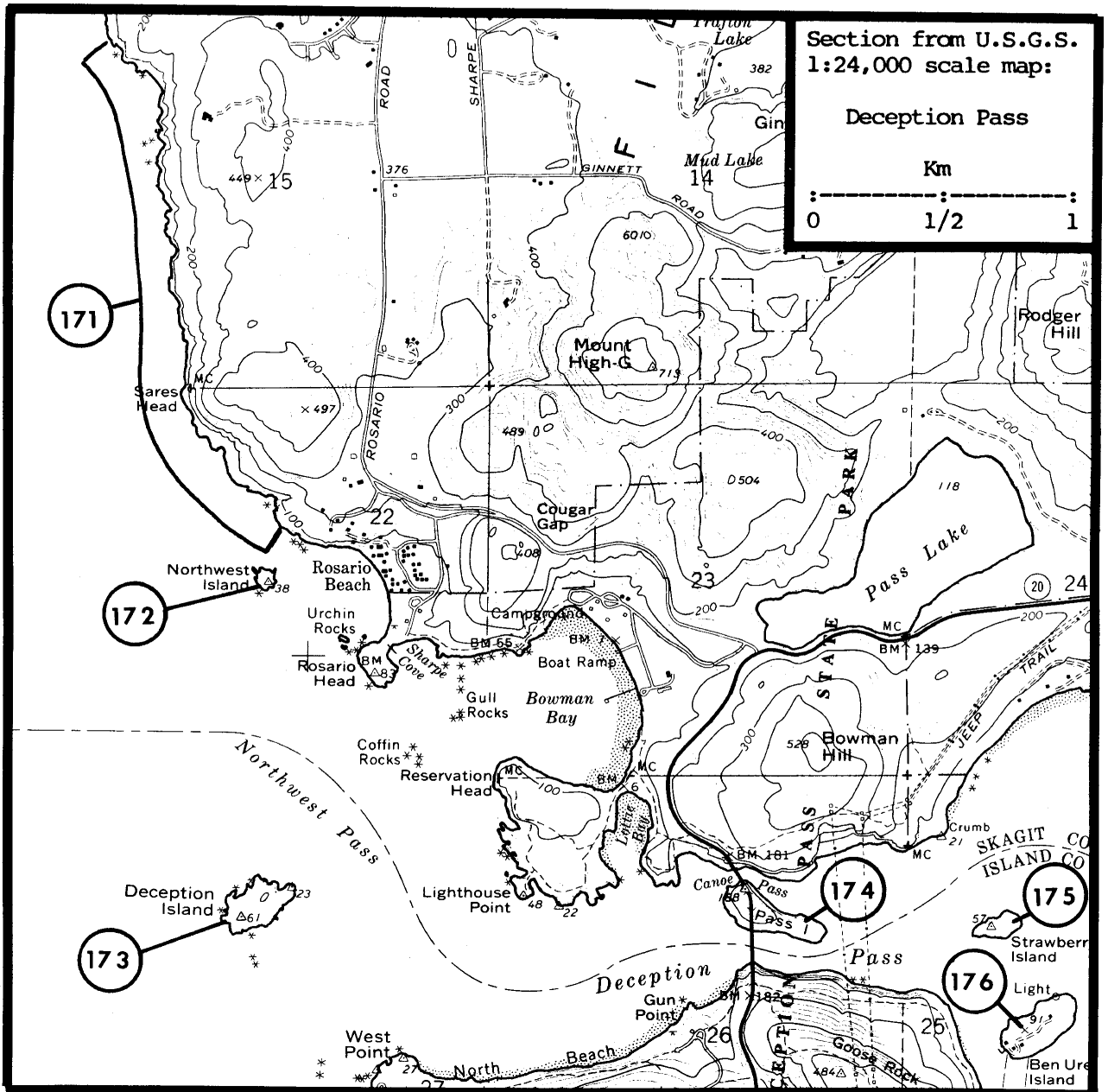
No Nesting Observed	0	Wahl	06/07/79	A III 269
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No Nesting Observed 0 Wahl 05/24/78 A III 269

No Nesting Observed 0 Wahl 06/07/78 A III 269

(176) Ben-Ure Island 48°24'12"N, 122°37'43"W

No Nesting Observed 0 Speich & Wahl 07/06/82 A III 257



AREA 156, Victoria (cont'd.)

(177)

Swinomish Islands, west 48°28'15"N, 122°31'27"W

Glaucous-winged Gull	~400	Speich & Wahl	07/06/82	A III 257
Glaucous-winged Gull	270B	Wahl	07/19/69	L III 269
Glaucous-winged Gull	360B	Wahl	07/18/70	L III 269
Glaucous-winged Gull	500B	Wahl	07/17/71	L III 269
Glaucous-winged Gull	1000B	Wahl	07/10/73	L III 269
Glaucous-winged Gull	520B	Wahl	07/06/74	L III 269
Glaucous-winged Gull	560B	Wahl	07/09/75	L III 269
Glaucous-winged Gull	1070B	Wahl	07/09/76	L III 269
Glaucous-winged Gull	1286	Wahl	06/06/77	L II 269
Glaucous-winged Gull	600B	Wahl	07/12/77	L III 269
Glaucous-winged Gull	X	Harrington-Tweit	03/04/78	M III 124
Glaucous-winged Gull	410B	Wahl	07/13/78	L III 269
Glaucous-winged Gull	X	Speich & Wahl	Summer/79	M III 257
Glaucous-winged Gull	X	Speich & Wahl	Summer/80	M III 257
Glaucous-winged Gull	X	Wahl	07/03/81	M III 269

(178)

Swinomish Islands, east 48°27'40"N, 122°30'38"W

No Nesting Observed	0	Speich & Wahl	07/06/82	A III 257
No Nesting Observed	0	Wahl	07/19/69	M III 269
No Nesting Observed	0	Wahl	07/18/70	M III 269
No Nesting Observed	0	Wahl	07/17/71	M III 269
No Nesting Observed	0	Wahl	07/10/73	M III 269
No Nesting Observed	0	Wahl	07/06/74	M III 269
No Nesting Observed	0	Wahl	07/09/75	M III 269
No Nesting Observed	0	Wahl	07/09/76	M III 269
No Nesting Observed	0	Wahl	06/06/77	M III 269
No Nesting Observed	0	Wahl	07/12/77	M III 269
No Nesting Observed	0	Wahl	07/13/78	M III 269
No Nesting Observed	0	Speich & Wahl	Summer/79	M III 257
No Nesting Observed	0	Speich & Wahl	Summer/80	M III 257
No Nesting Observed	0	Wahl	07/03/81	M III 269

(179)

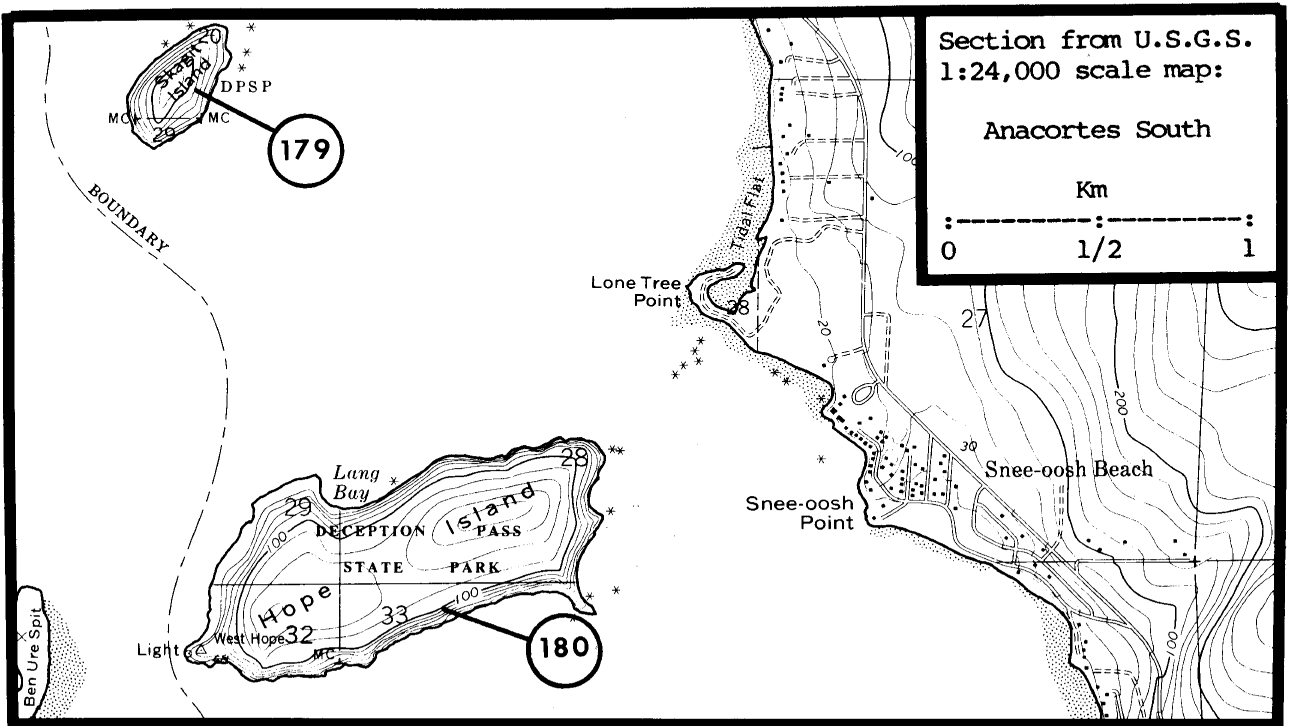
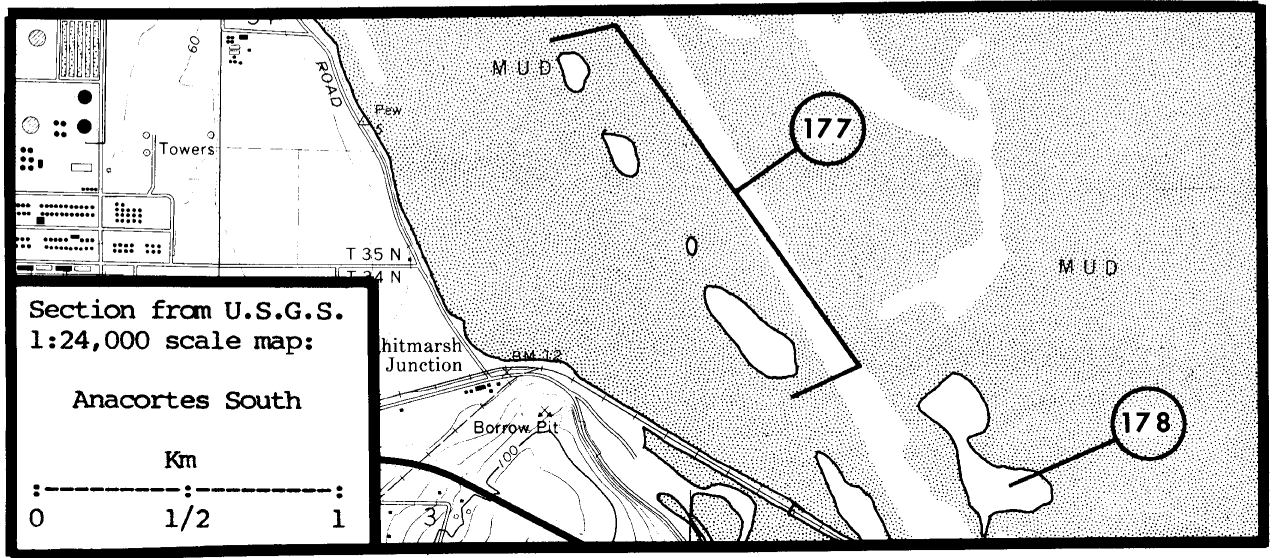
Skagit Island 48°24'48"N, 122°34'42"W

No Nesting Observed	0	Speich & Wahl	07/06/82	A III 257
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(180)

Hope Island 48°23'54"N, 122°34'06"W

No Nesting Observed	0	Speich & Wahl	07/06/82	A III 257
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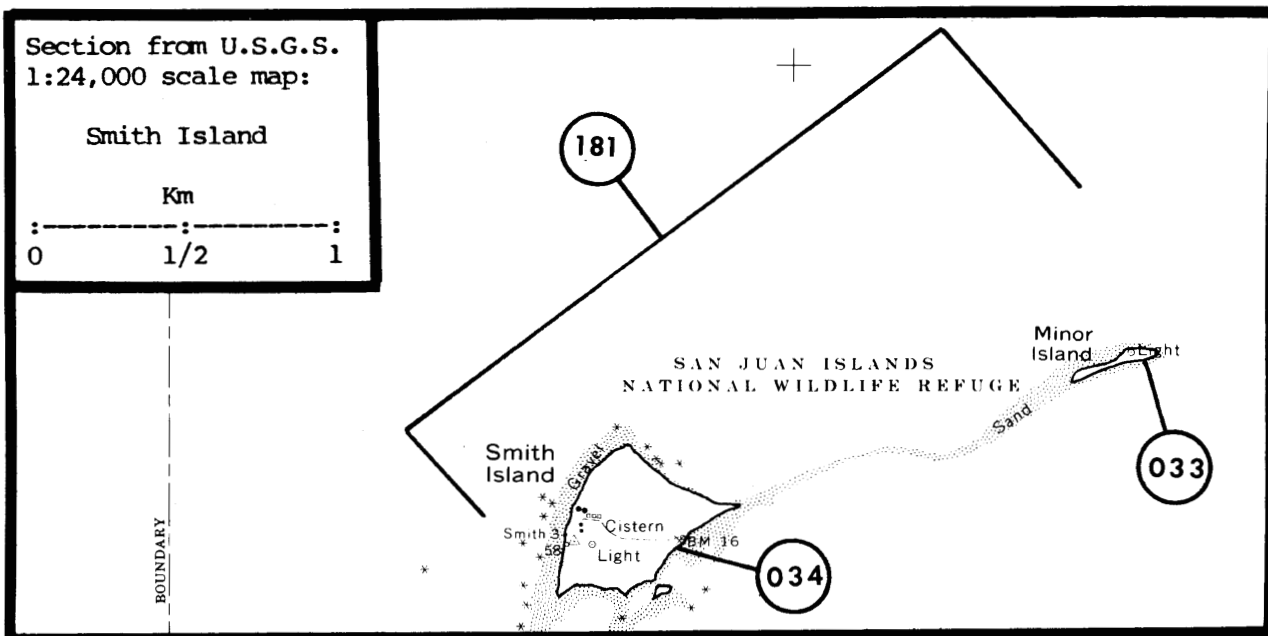
AREA 156, Victoria (cont'd.)

181

Smith and Minor Islands 48°19'16"N, 122°49'47"W

Pelagic Cormorant ¹	440	Nisqually NWR	06/15-17/82	L II 202
Black Oystercatcher	40	Nisqually NWR	06/15-17/82	L II 202
Glaucous-winged Gull	1060	Nisqually NWR	06/15-17/82	L III 202
Pigeon Guillemot	102	Nisqually NWR	06/15-17/82	L II 202
Rhinoceros Auklet ¹	2588	Nisqually NWR	06/15-17/82	L III 202
Tufted Puffin ¹	8	Nisqually NWR	06/15-17/82	L I 202
Total	4238			

Double-crested Cormorant ¹	20?	Newby	07/20/72	L III 201
Pelagic Cormorant ¹	70	Hauser & Monson 1963	07/16-17/63	B III 145
Pelagic Cormorant ¹	14	Newby	07/20/72	L I 201
Pelagic Cormorant ¹	28	Manuwal 1973; Manuwal	05/27-28/73	L I 202;188
Pelagic Cormorant ¹	282	Nisqually NWR	06/25/79	L I 202
Black Oystercatcher	several X	Menzies 1792	06/06/1792	? ? 195
Black Oystercatcher	6	Nisqually NWR	08/21-23/67	L II 202
Black Oystercatcher	12	Manuwal 1973; Manuwal	05/27-28/73	L I 186;188
Black Oystercatcher	24	Nisqually NWR	06/25/79	L III 202
Glaucous-winged Gull	300	Hauser & Monson 1963	07/16-17/63	B III 145
Glaucous-winged Gull	500	Nisqually NWR	08/21-23/67	L III 202
Glaucous-winged Gull	10	Manuwal 1973; Manuwal	05/27-28/73	L III 186;188
Glaucous-winged Gull	220	Nisqually NWR	06/25/79	L II 202
Glaucous-winged Gull	X	Wahl	07/19/82	A III 269
Pigeon Guillemot	2	Dennison	04/21/1894	E - 84
Pigeon Guillemot	2	Jewett et al. 1953	05/09/1894	E - 158
Pigeon Guillemot	2	Dennison	05/09/1894	E - 85
Pigeon Guillemot	2	Dennison	04/29/1895	E - 84
Pigeon Guillemot	100	Cantwell	09/14/14	L III 51
Pigeon Guillemot	X	Cantwell	06/ ?/16	? ? 52
Pigeon Guillemot	200	Cantwell	06/06-08/16	L III 51
Pigeon Guillemot	50	Cantwell	04/17-21/17	L III 51
Pigeon Guillemot	10	Hauser & Monson 1963	07/16-17/63	B III 145
Pigeon Guillemot	100+	Manuwal 1973; Manuwal	05/27-28/73	L III 186;188
Pigeon Guillemot	8	Wahl; Paulson	07/05/78	A III 269;207
Pigeon Guillemot	117	Nisqually NWR	06/25/79	L III 202
Pigeon Guillemot	18	Wahl & Speich	06/25/79	A III 271
Rhinoceros Auklet ¹	X	Hepburn	pre-1884	? III 130
Rhinoceros Auklet ¹	2	Dennison	05/10/1894	E - 83
Rhinoceros Auklet ¹	6	Dennison	04/21/1895	E - 85
Rhinoceros Auklet ¹	2	Dennison	04/23/1895	E - 85
Rhinoceros Auklet ¹	2	Dennison	04/21,22&24/1895	E - 83
Rhinoceros Auklet ¹	2	Dennison	04/29/1895	E - 86
Rhinoceros Auklet ¹	2	Dennison	04/25/1899	E - 86
Rhinoceros Auklet ¹	2	Dennison	04/26/1899	E - 86
Rhinoceros Auklet ¹	2	Dennison	04/29/1899	E - 86
Rhinoceros Auklet ¹	2	Dennison	05/08/1899	E - 86
Rhinoceros Auklet ¹	2	Dennison	06/03/1899	E - 86
Rhinoceros Auklet ¹	X	Nisqually NWR	08/21-23/67	L III 202
Rhinoceros Auklet ¹	742	Manuwal 1973; Manuwal	05/27-28/73	L III 186;188



Rhinoceros Auklet ¹	1200	Manuwal 1977	05-06/ ?/74	L III 187
Rhinoceros Auklet ¹	2388	Nisqually NWR	06/25/79	L III 202
Tufted Puffin ¹	X	Cantwell	09/06/14	L III 51
Tufted Puffin ¹	500	Cantwell	09/14/14	L III 51
Tufted Puffin ¹	~150	Cantwell	Summer/15?	L III 51
Tufted Puffin ¹	150	Cantwell	06/06-08/16	L III 51
Tufted Puffin ¹	150?	Cantwell	Summer/17?	L III 51
Tufted Puffin ¹	1P	Manuwal 1973; Manuwal	05/27-28/73	L III 186;188
Tufted Puffin ¹	44	Nisqually NWR	06/25/79	L III 202

¹Nesting on Smith Island only.

AREA 156, Victoria (cont'd.)

182

Agate Bay 48°09'30"N, 123°44'00"W

Pigeon Guillemot

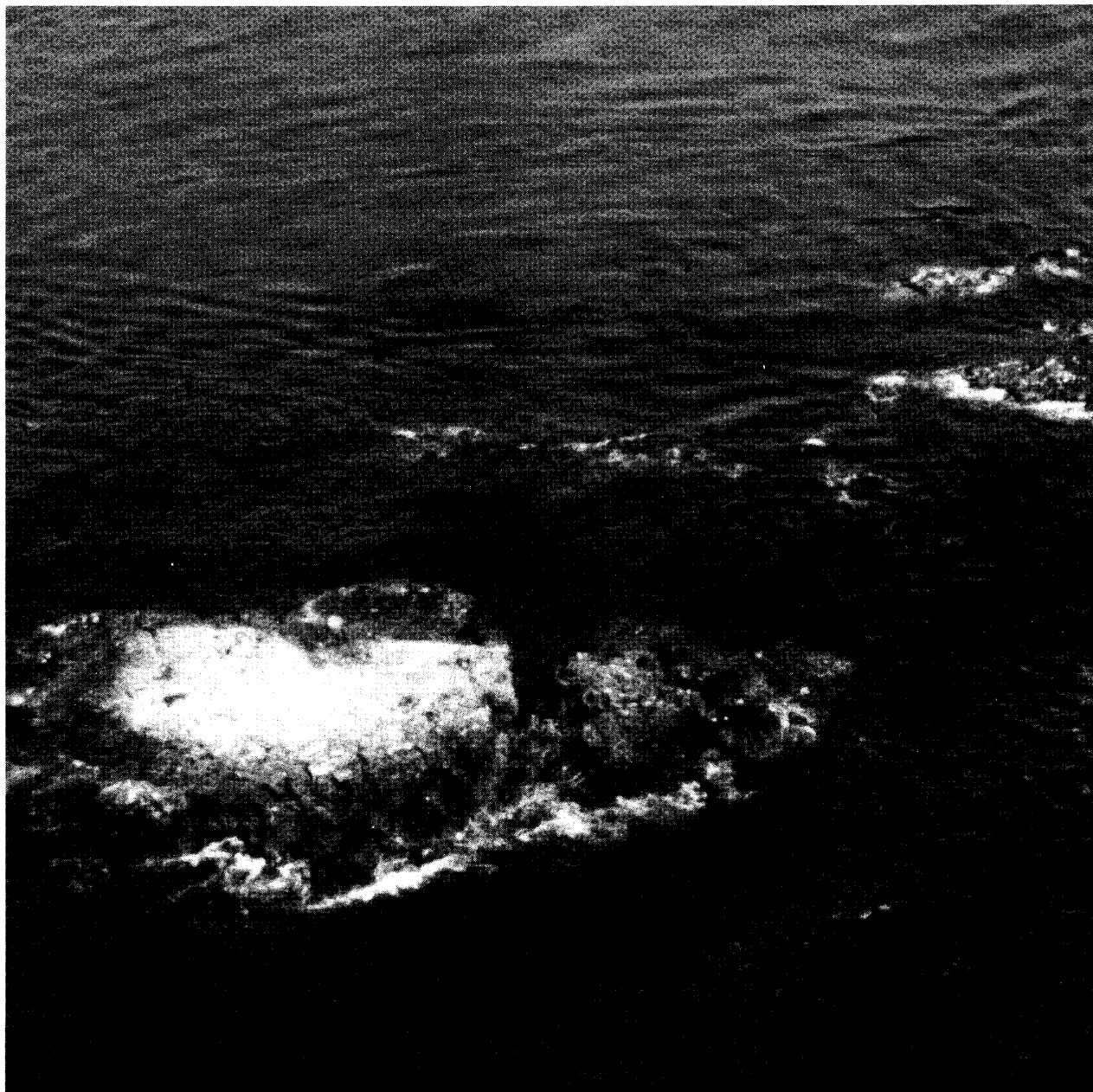
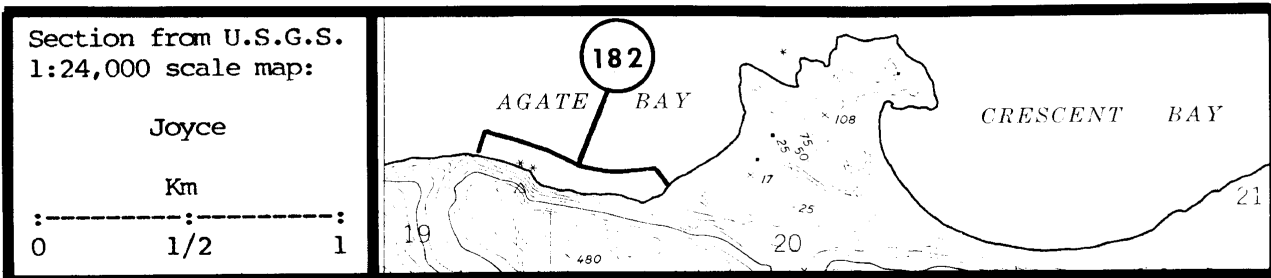
117 Speich

05/31/78

M III 255



Iceburg Island (156151) 19 July 1982 T.R. Wahl



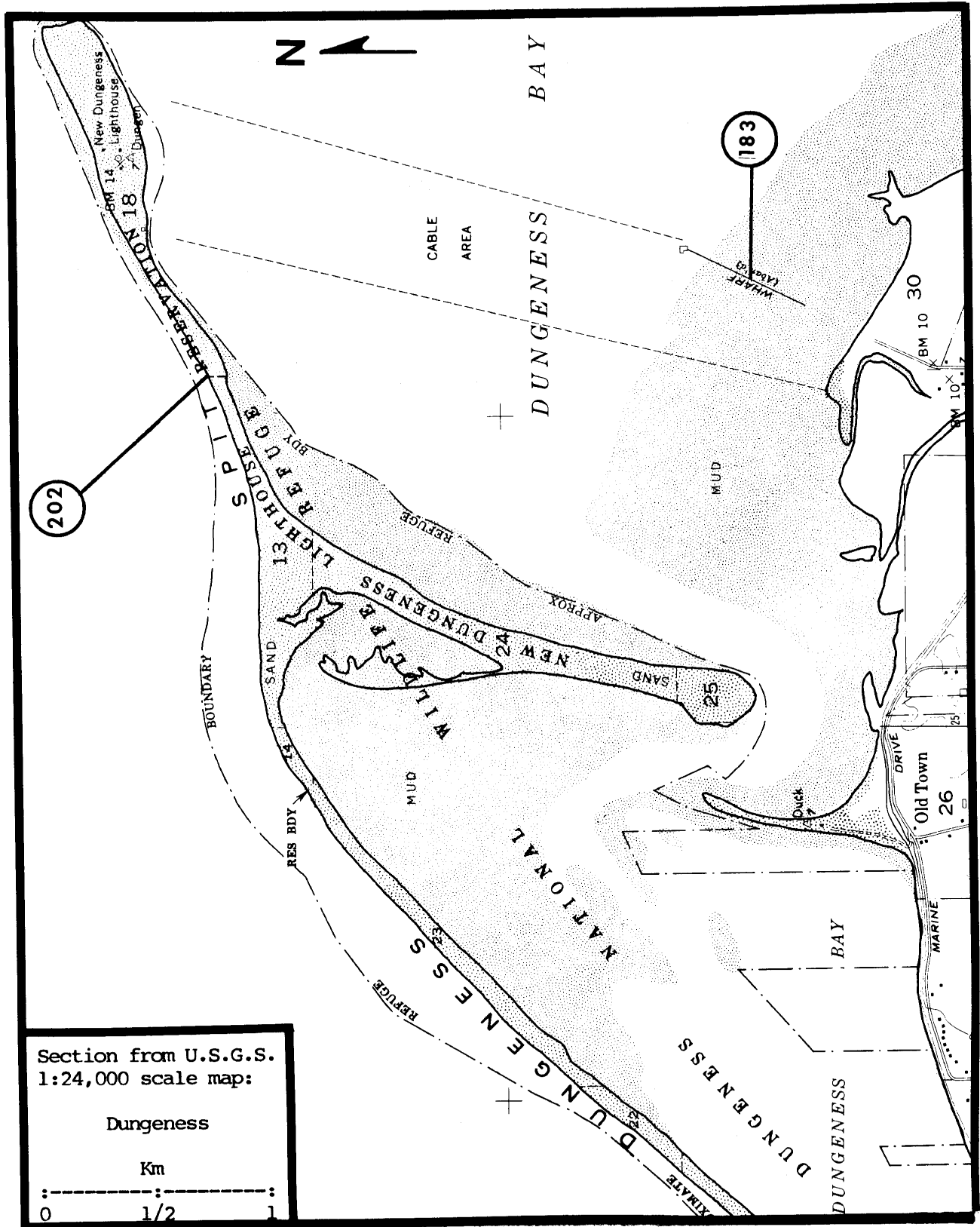
Unnamed Rock ("Colville Annex")(156166) 19 July 1982 T.R. Wahl

AREA 156, Victoria (cont'd.)

(183)	Dungeness, wharf	48°09'30"N, 123°06'54"W			
Pelagic Cormorant	44	Speich	08/07/79	B	II 255
Glaucous-winged Gull	20	Speich	08/07/79	B	II 255
Total	<u>64</u>				



Pass Island (156174)(bridge) Northwest Island (156172) (upper right) Deception Island (156173)(left) 1978 S.G. Herman



Section from U.S.G.S.
1:24,000 scale map:

Dungeness

Km

0 1/2 1

AREA 156, Victoria (cont'd.)

①84 Point Partridge 48°13'51"N, 122°46'00"W

Pigeon Guillemot	20	Wahl	07/17/82	L III 269
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Pigeon Guillemot	6	Wahl	06/13/79	L III 269
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①85 Penn Cove, north shore 48°14'22"N, 122°41'45"W

Pigeon Guillemot	50	Wahl	07/12/82	L III 259
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①86 Blowers Bluff 48°14'30"N, 122°39'40"W

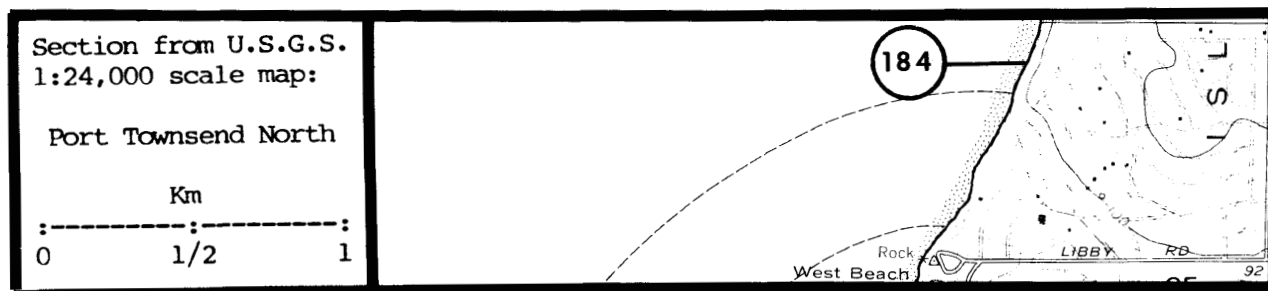
Pigeon Guillemot	11	Wahl	07/12/78	L III 269
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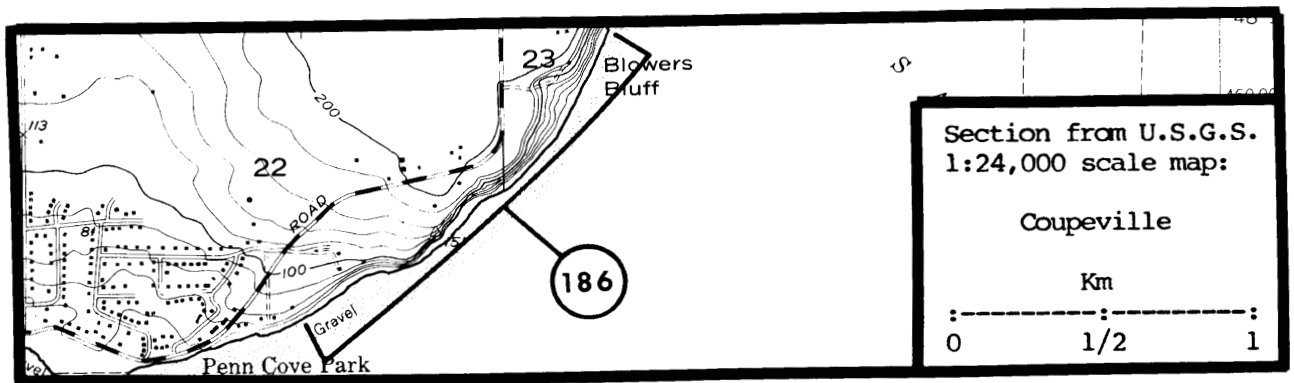
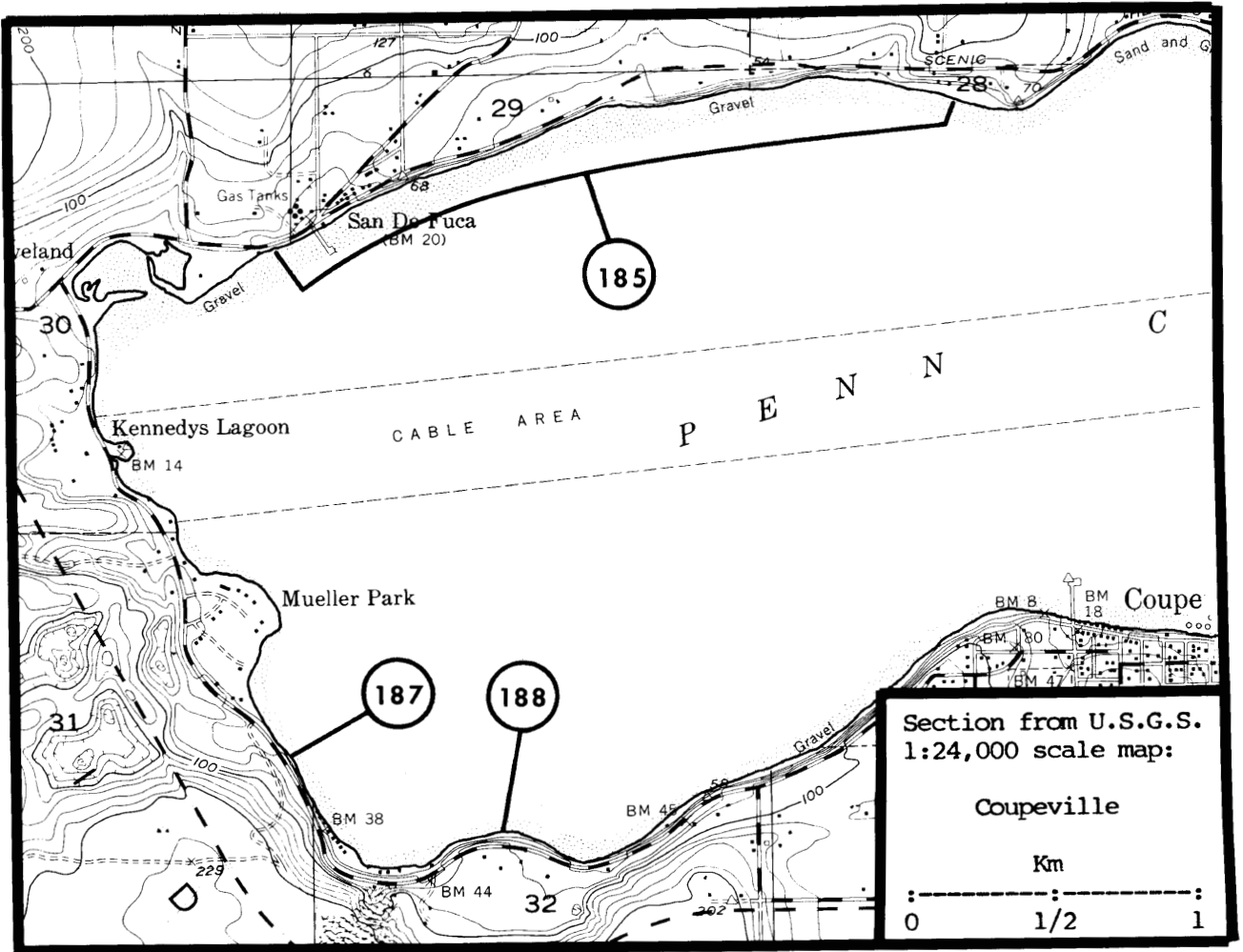
①87 Penn Cove, southwest shore 48°13'00"N, 122°43'25"W

Pigeon Guillemot	16	Wahl	07/12/78	L III 269
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①88 Penn Cove, south shore 48°12'52"N, 122°43'00"W

Pigeon Guillemot	5	Wahl	07/12/78	L III 269
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AREA 156, Victoria (cont'd.)

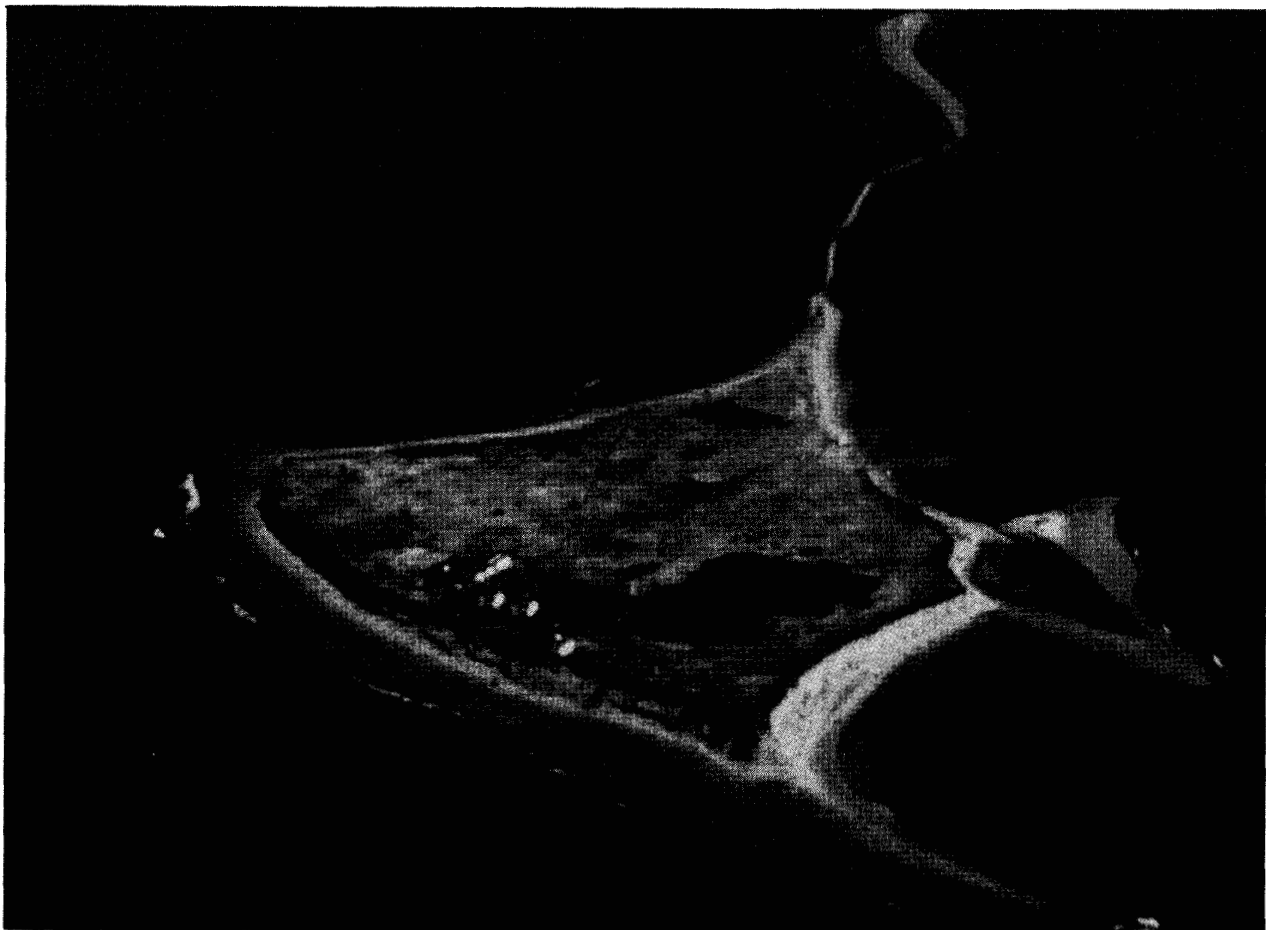
(189) Keystone, wharf 48°09'28"N, 122°40'09"W

Pigeon Guillemot 6 Wahl 07/17/82 L III 269

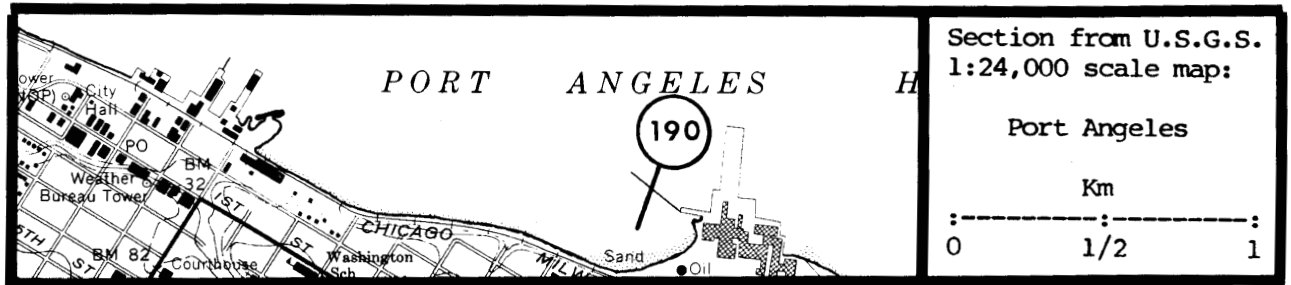
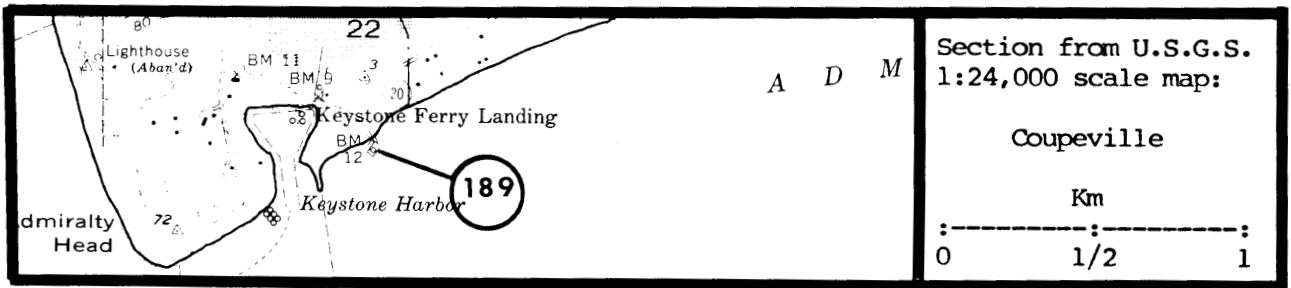
(190) Port Angeles 48°07'02"N, 123°24'38"W

Pelagic Cormorant	58	Harrington-Tweit	08/15/78	M I 124
Pigeon Guillemot	P	Harrington-Tweit	08/15/78	L III 124
Total	58			

Pelagic Cormorant	30	Harrington-Tweit	04/08/78	M I 124
Pelagic Cormorant	62	Harrington-Tweit	05/05/78	M I 124
Pelagic Cormorant	76	Speich	05/31/78	M I 255
Pelagic Cormorant	X	Speich	08/22/78	M III 255



Smith and Minor Islands (156181) USF&WS



Dungeness, wharf (156183) 1979 S.M. Speich Pelagic Cormorants and Glaucous-winged Gulls

AREA 156, Victoria (cont'd.)

①91 Port Williams 48°07'00"N, 123°03'00"W

Pigeon Guillemot	34	Speich	05/23/79	B III 255
Pigeon Guillemot	33	Speich	05/26/78	B III 255

①92 Travis Spit 48°04'50"N, 123°02'00"W

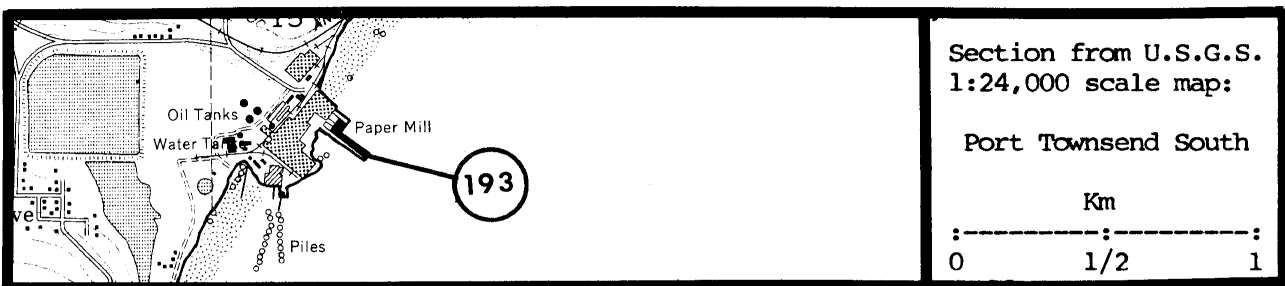
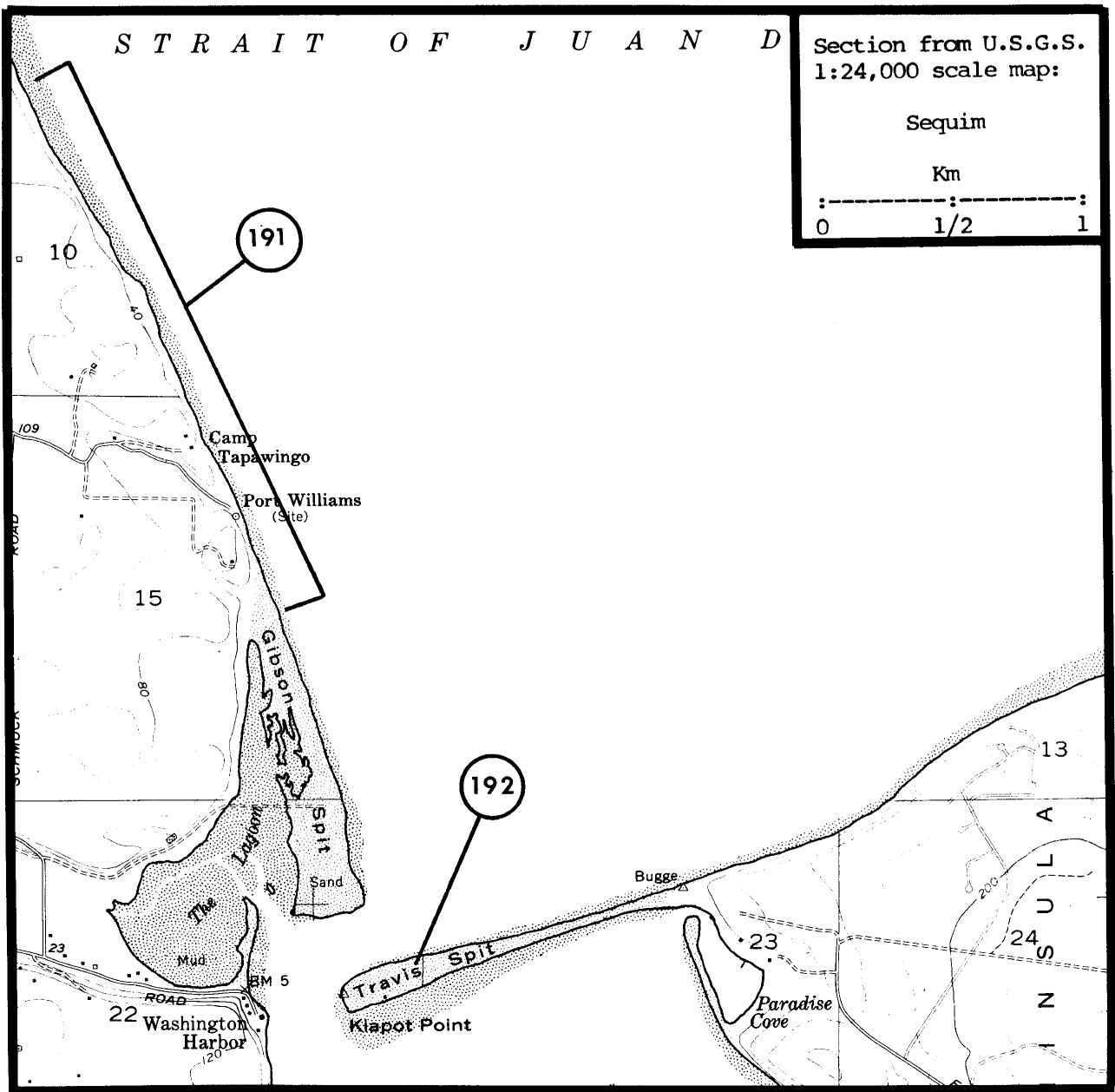
Pigeon Guillemot	22	Speich	05/23/79	B III 255
Pigeon Guillemot	P	Speich	03/21/78	B III 255
Pigeon Guillemot	16	Speich	04/28/78	B III 255

①93 Port Townsend, mill dock 48°05'34"N, 122°47'28"W

Pigeon Guillemot	4	Speich & Wahl	06/29/82	B III 257
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Port Angeles (156190) 1979 S.M. Speich Pelagic Cormorants



AREA 156, Victoria (cont'd.)

(194) Port Townsend, bluffs 48°06'38"N, 122°45'46"W

Pigeon Guillemot	10	Speich & Wahl	06/29/82	B III 257
Pigeon Guillemot	X	Speich	Summer/78	L III 255
Pigeon Guillemot	X	Speich	Summer/79	L III 255

(195) Port Townsend, tower 48°05'36"N, 122°44'00"W

Pelagic Cormorant	130±	Wahl	07/19/82	A II 269
Pelagic Cormorant	100±	Eddy	08/28/55	B III 95
Pelagic Cormorant	60	Speich	07/11/79	B II 255
Pelagic Cormorant	80+	Speich & Wahl	06/29/82	B III 257
Pelagic Cormorant	110-120	Speich & Wahl	07/06/82	A II 269

(196) Indian Island, bar 48°05'23"N, 122°44'00"W

Black Oystercatcher	3	Speich & Wahl	06/29/82	L III 257
Glaucous-winged Gull	100	Speich & Wahl	06/29/82	L III 257
Total	<u>103</u>			

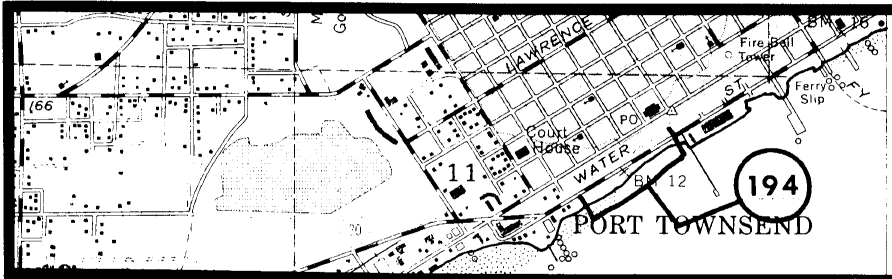
Glaucous-winged Gull 0 Eddy 08/26-28/55 B III 95

(197) Killisut Harbor, north bluff 48°05'36"N, 122°43'20"W

Pigeon Guillemot 33 Speich & Wahl 06/29/82 B III 257

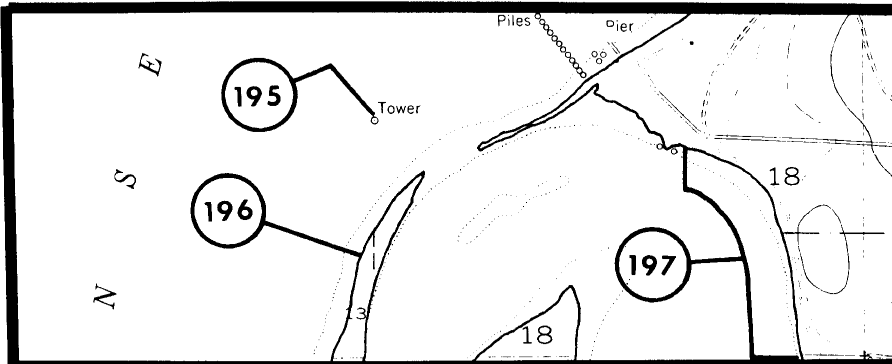
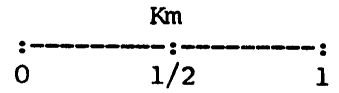
(198) Indian Island, navy dock 48°03'05"N, 122°44'30"W

Pigeon Guillemot 9 Speich & Wahl 06/29/82 B III 257



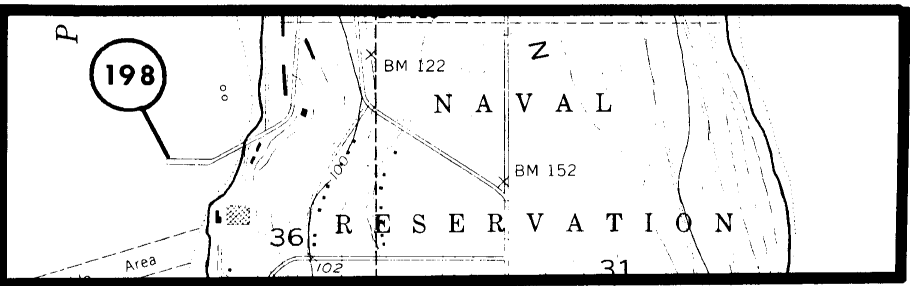
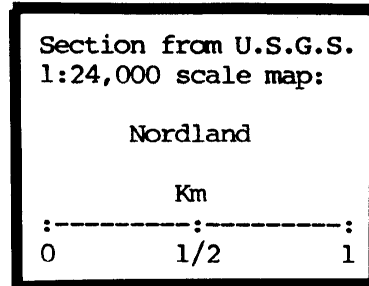
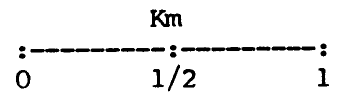
Section from U.S.G.S.
1:24,000 scale map:

Port Townsend South



Section from U.S.G.S.
1:24,000 scale map:

Nordland



AREA 156, Victoria (cont'd.)

(199) Whidbey Island¹ 48°10'00"N, 122°40'00"W

Pigeon Guillemot	2	Booth	05/12/17	E -	38
Pigeon Guillemot	8	Booth	06/12/27	E -	34
Pigeon Guillemot	2	Booth	06/10/28	E -	34
Pigeon Guillemot	4	Booth	06/07/31	E -	38
Rhinoceros Auklet	X	Dennison	04/22,24,&25/1895	E -	83
Rhinoceros Auklet	2	Dennison	04/22/1895	E -	85
Rhinoceros Auklet	4	Dennison	04/24/1895	E -	85
Rhinoceros Auklet	6	Dennison	04/25/1895	E -	85

¹Insufficient data to show exact map location.

(200) Oak Harbor¹ 48°16'30"N, 122°39'00"W

Pigeon Guillemot	12	Booth	06/09/30	E -	38
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¹Insufficient data to show exact map location.

AREA 156, Victoria (cont'd.)

(201)

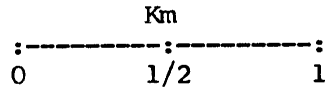
Jetty Island 48°00'35"N, 122°13'37"W

Glaucous-winged Gull	120+	Wahl	07/19/82	A III 269
Arctic Tern	0	Richter	06/19/82	L III 232
Total	<u>120+</u>			

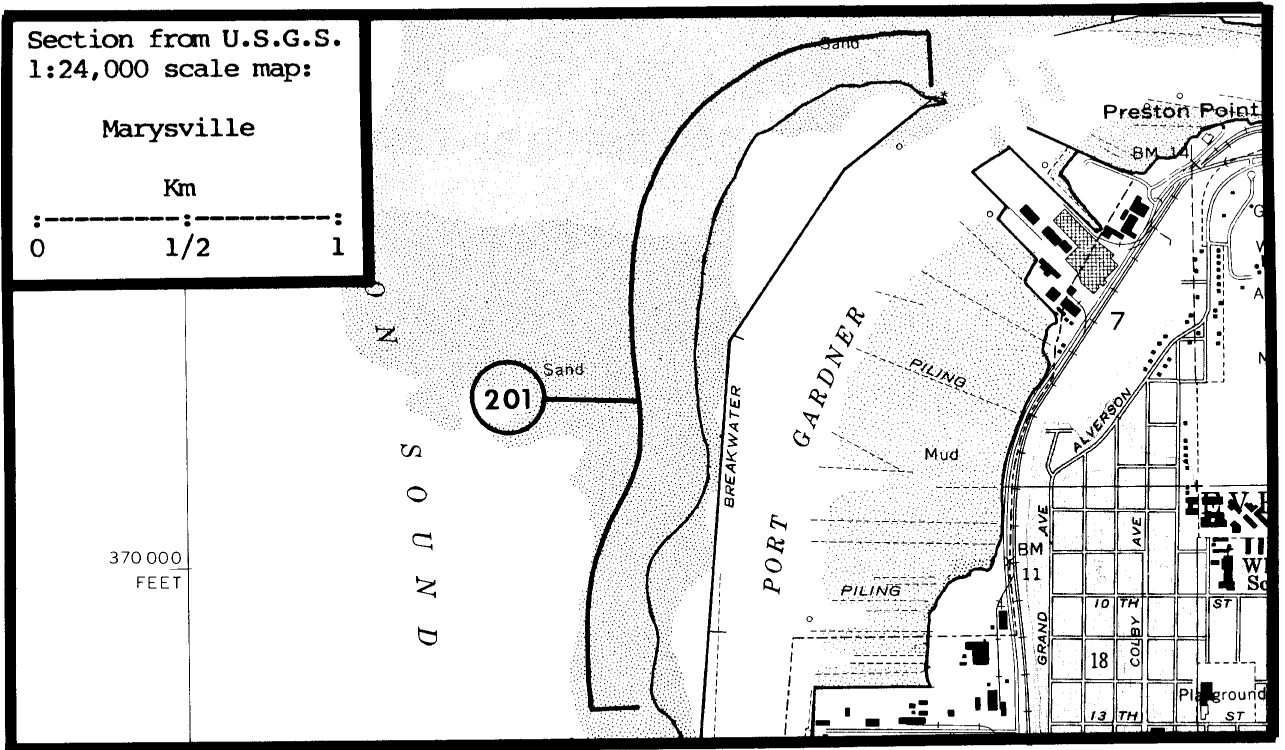
Glaucous-winged Gull	200±	Manuwal et al. 1979	06/09-08/30/77	L III 190
Glaucous-winged Gull	120+	Speich	05/17/78	L III 255
Glaucous-winged Gull	200±	Manuwal et al. 1979	05/27-07/15/78	L III 216
Glaucous-winged Gull	X	Richter	04/21/79	L III 232
Glaucous-winged Gull	X	Richter	06/08/80	L III 232
Glaucous-winged Gull	X	Richter	05/17/81	L III 232
Glaucous-winged Gull	X	Richter	06/19/82	L III 232
Arctic Tern	14±	Manuwal et al. 1979	06/09/77	L III 190
Arctic Tern	14±	Manuwal et al. 1979	07/21/77	L III 190
Arctic Tern	14±	Manuwal et al. 1979	08/30/77	L III 190
Arctic Tern	8	Speich	05/17/78	L III 255
Arctic Tern	20±	Manuwal et al. 1979	05/27/78	L III 190
Arctic Tern	20±	Manuwal et al. 1979	06/10/78	L III 190
Arctic Tern	4	Richter	06/21/78	L III 232
Arctic Tern	8	Richter	06/24/78	L III 232
Arctic Tern	20±	Manuwal et al. 1979	06/28/78	L III 190
Arctic Tern	20±	Manuwal et al. 1979	07/03/78	L III 190
Arctic Tern	20±	Manuwal et al. 1979	07/07/78	L III 190
Arctic Tern	20±	Manuwal et al. 1979	07/13/78	L III 190
Arctic Tern	X	Richter	07/15/78	L III 232
Arctic Tern	20±	Manuwal et al. 1979	07/15/78	L III 190
Arctic Tern	0	Richter	04/21/79	L III 232
Arctic Tern	0	Richter	06/08/80	L III 232
Arctic Tern	0	Richter	05/17/81	L III 232

Section from U.S.G.S.
1:24,000 scale map:

Marysville



370 000
FEET



AREA 156, Victoria (cont'd.)

202

Dungeness Spit 48°10'00"N, 123°09'00"W

Black Oystercatcher	3	Krause	07/06/80	L II 173
Pigeon Guillemot	45	Greubel	07/01/80	L III 120
Total	48			

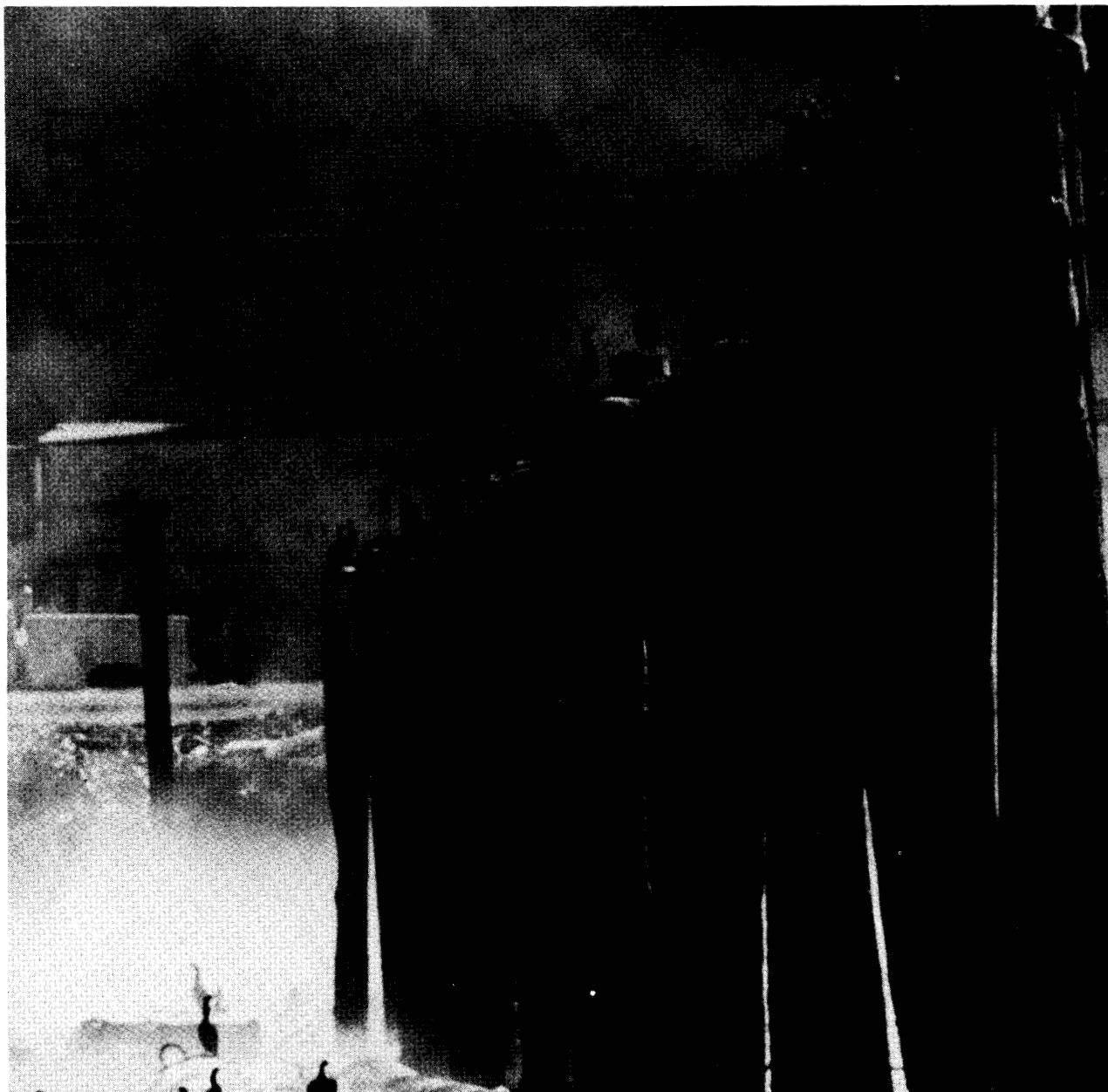
Black Oystercatcher	4	Greubel	06/ ?/77	L III 120
Black Oystercatcher	3	Greubel	05/01/79	L III 120
Black Oystercatcher	7	Greubel	07/01/79	L III 120
Black Oystercatcher	5	Greubel	05/02/80	L III 120
Black Oystercatcher	8	Greubel	07/01/80	L III 120
Pigeon Guillemot	6	Smith	07/05/76	L III 250
Pigeon Guillemot	43	Speich; Manuwal	05/26/78	B III 255;188
Pigeon Guillemot	64	Smith	06/22/78	M III 251
Pigeon Guillemot	47	Greubel	05/01/79	L III 120
Pigeon Guillemot	36	Miller	06/29/79	M III 198
Pigeon Guillemot	57	Greubel	06/02/80	L III 120

AREA 156, Victoria (cont'd.)

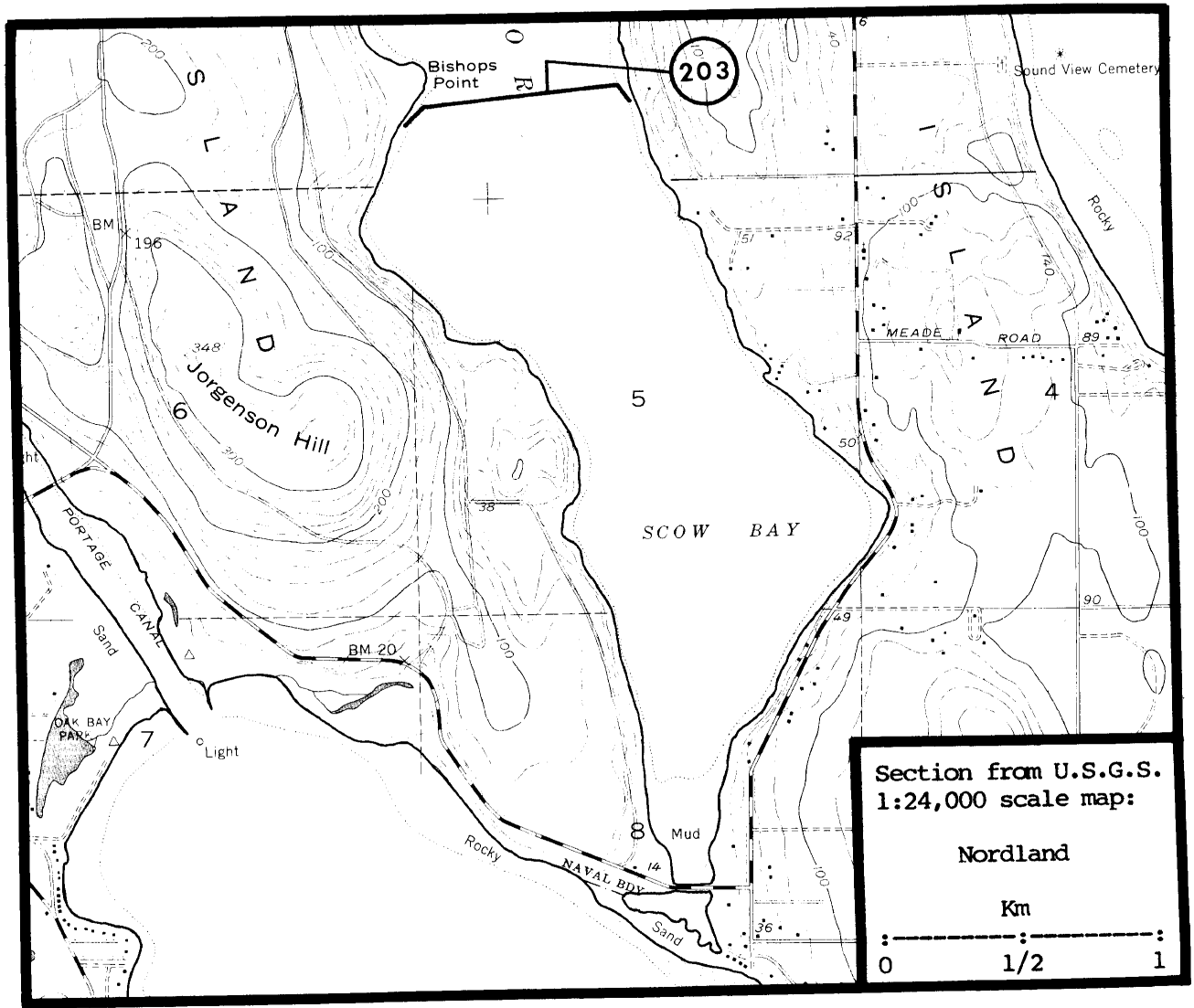
203

Scow Bay 48°01'52"N, 122°41'48"W

Pigeon Guillemot	29	Speich & Wahl	06/29/82	B III 257
Pigeon Guillemot	4	Meyer	05/30/31	E - 196



Port Angeles (156190) 1979 S.M. Speich Pelagic Cormorants



AREA 156, Victoria (cont'd.)

(204) Lake Whatcom 48°45'40"N, 122°24'00"W

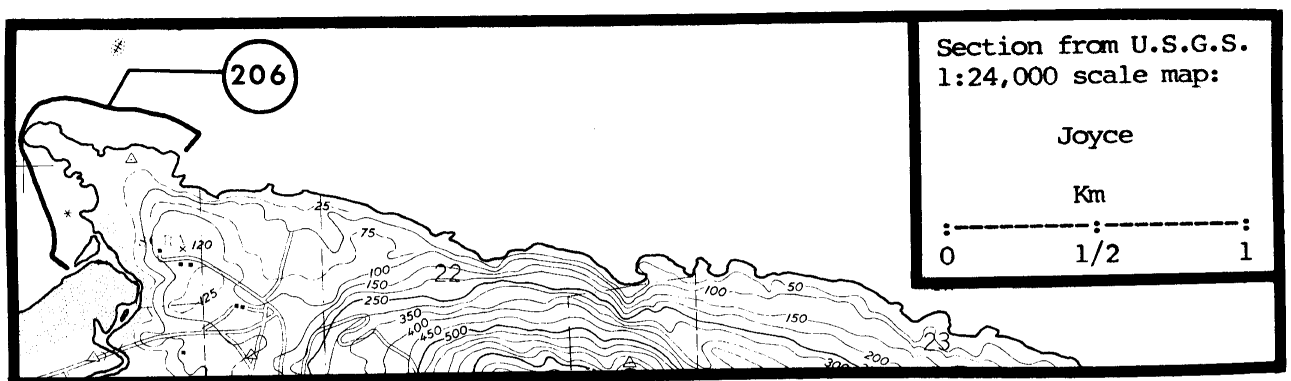
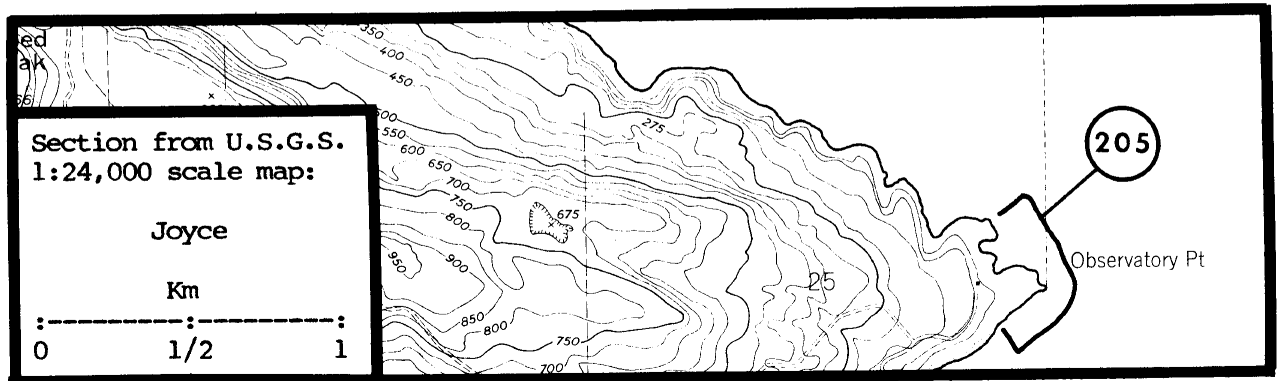
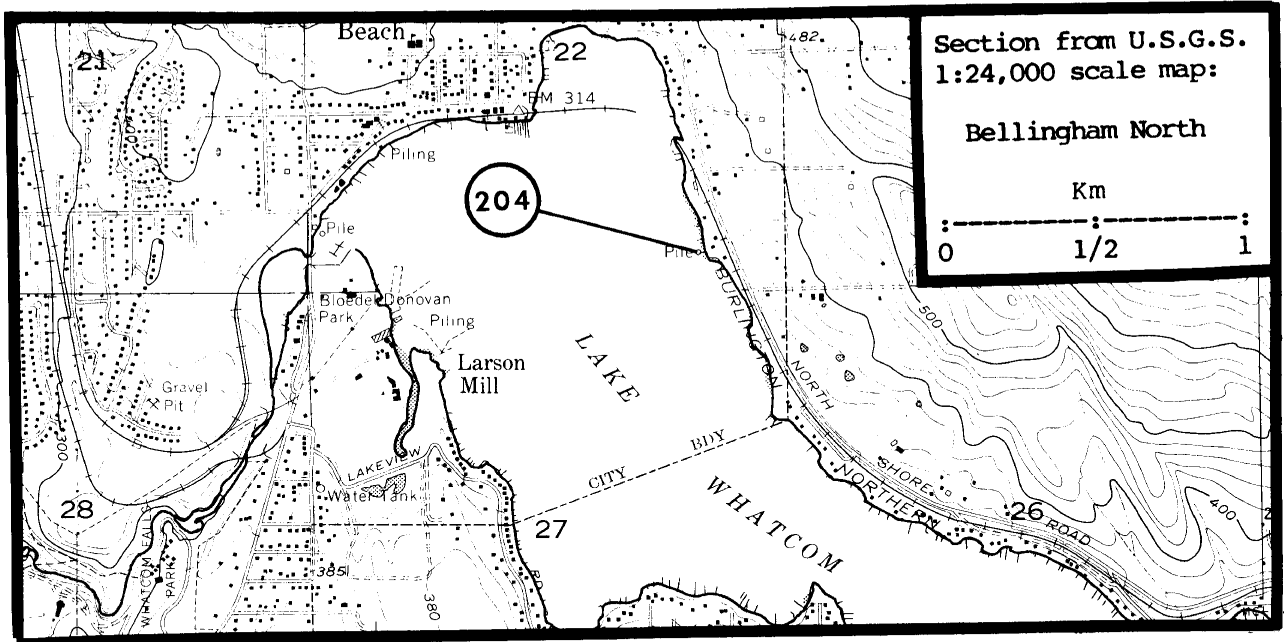
No Nesting Observed	0	Wahl	Summer/80	M III 269
No Nesting Observed	0	Wahl	Summer/72	M III 268
No Nesting Observed	0	Wahl	Summer/80	M III 269
Glaucous-winged Gull	2	Wahl	08/11/71	M I 268

(205) Observatory Point 48°09'02"N, 123°38'18"W

Pigeon Guillemot	2	McAllister	06/ ?/82	L III 192
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(206) Tongue Point 48°10'00"N, 123°42'05"W

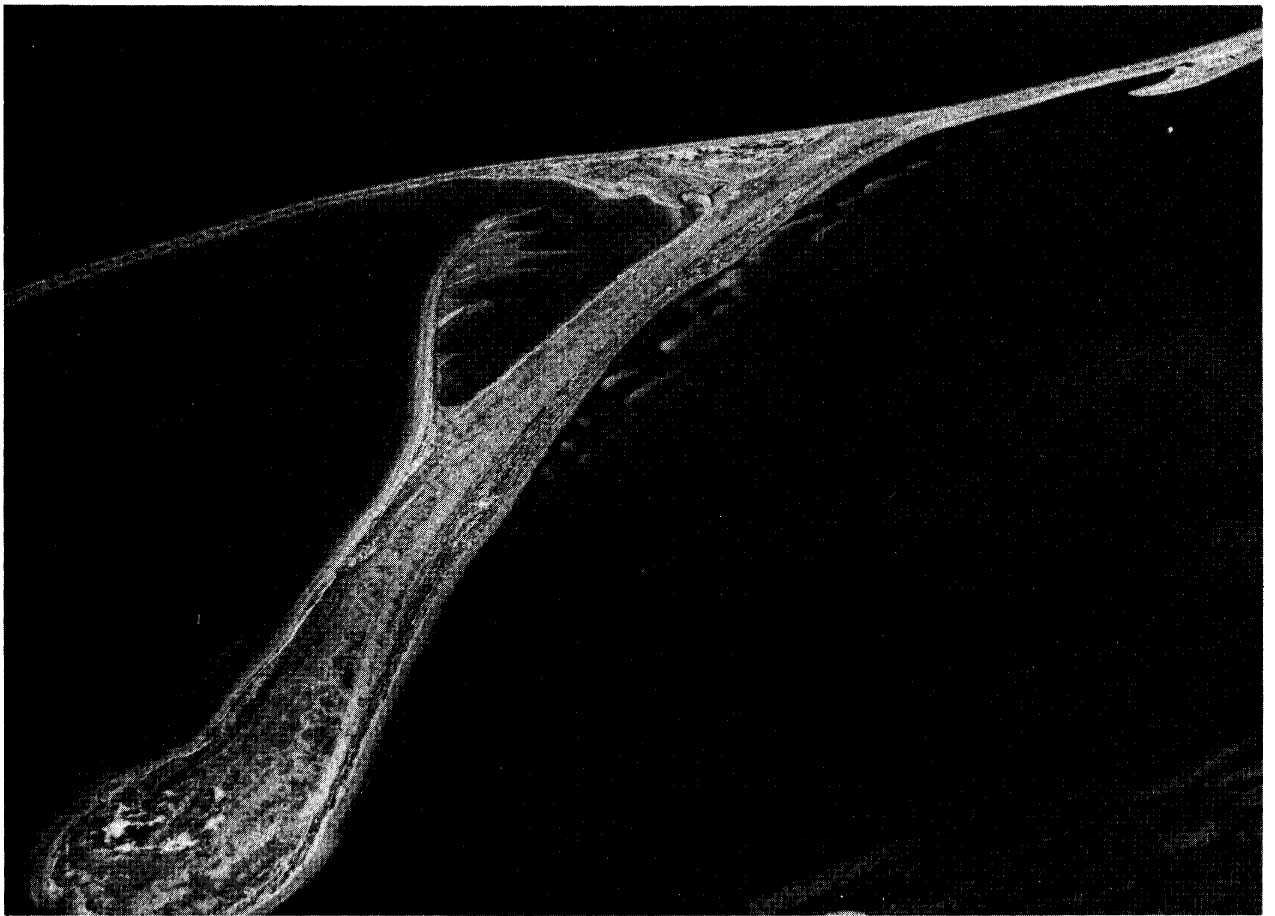
Pigeon Guillemot	2	McAllister	06/ ?/82	L III 192
Black Oystercatcher	4	Ramsey	05/13/78	L III 221
Black Oystercatcher	8	Speich	06/13/79	L III 255
Pigeon Guillemot	6	Ramsey	05/13/78	L III 221
Pigeon Guillemot	11	Speich	06/13/79	L III 255
Pigeon Guillemot	2	McNutt	07/03/81	L III 194



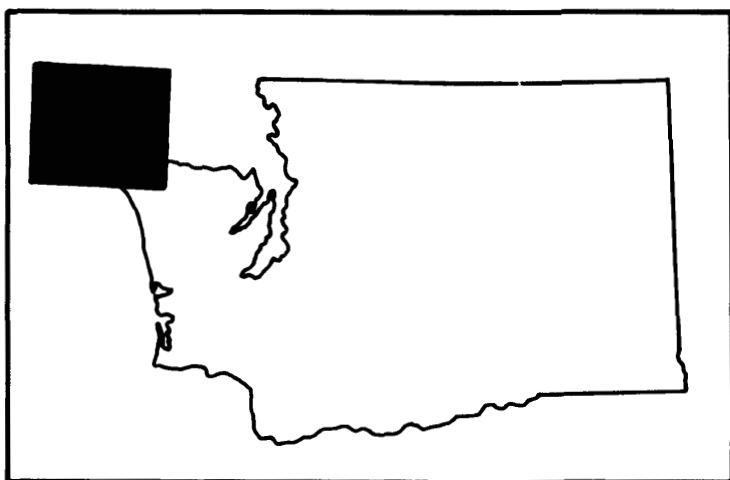
AREA 156, Victoria (cont'd.)



Dungeness Spit (156202) US Coast Guard



Dungeness Spit (Graveyard Spit) (156202) 26 February 1962 R.M. Glahn



155

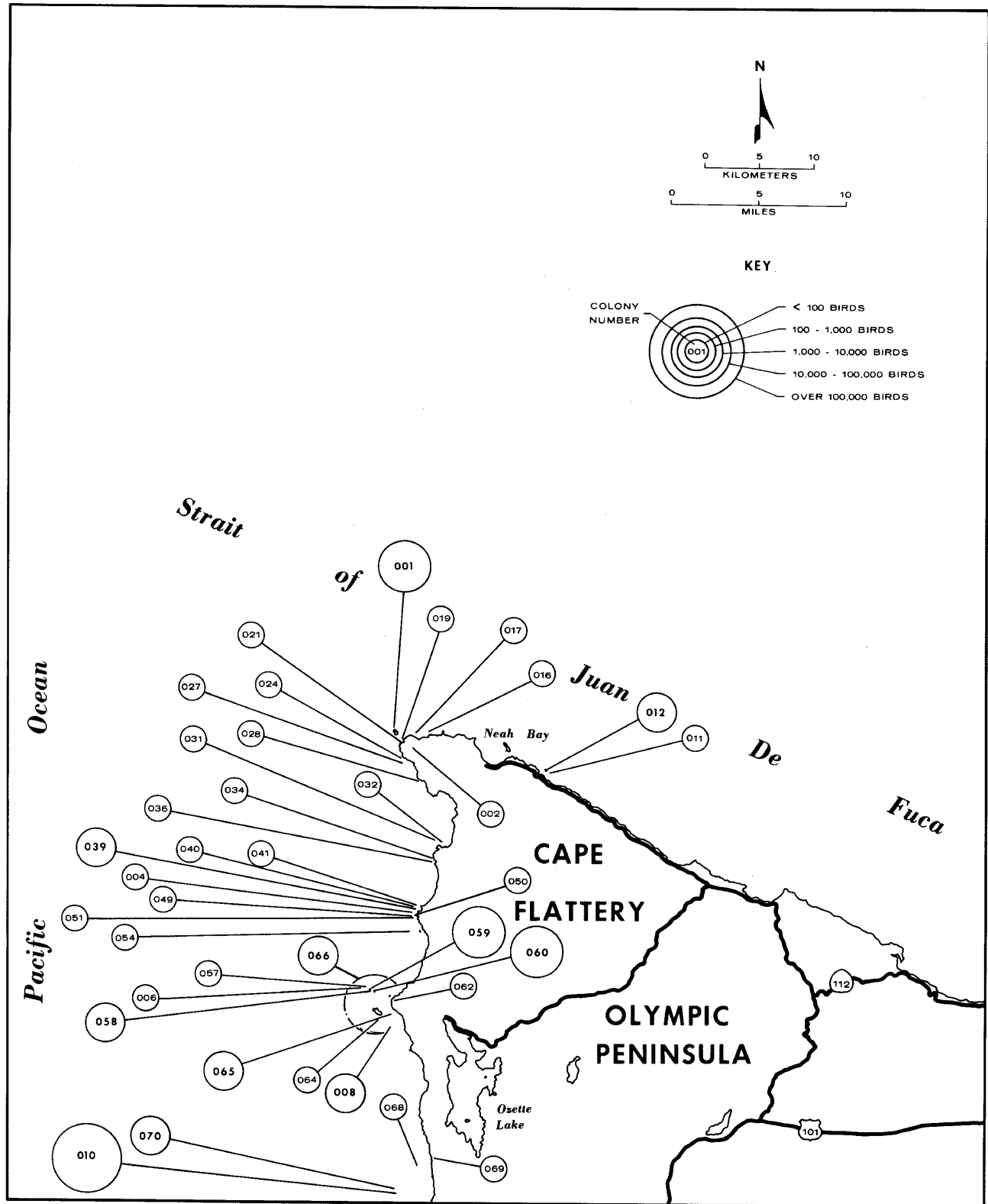
Cape Flattery

The map on the facing page is an index to the locations of the colonies within Map 155, Cape Flattery. Note that all colonies on the map are not numbered consecutively from north to south, since many previously unreported sites have been added since initial colony numbers were assigned by Varoujean (1979). On the pages following this map, all colonies are listed sequentially and a detailed map of each is provided.

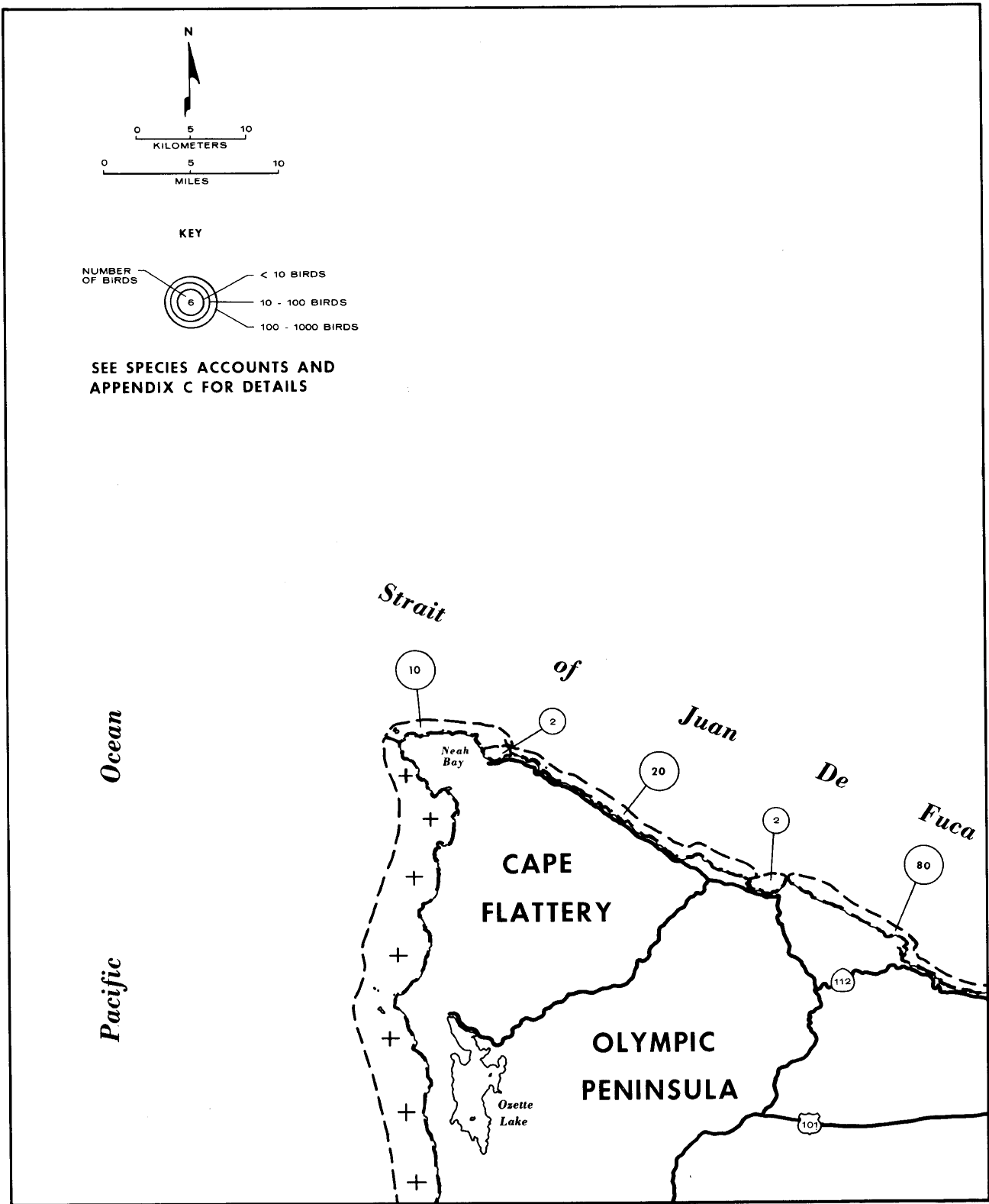
Numbers of breeding seabirds will vary from year to year. Below are the approximate numbers of breeding seabirds within this region.

Fork-tailed Storm-Petrel	3,700
Leach's Storm-Petrel	11,000
Double-crested Cormorant	150
Brandt's Cormorant	10
Pelagic Cormorant	900
American Black Oystercatcher	60
Glaucous-winged and Western gulls	4,400
Common Murre	900
Pigeon Guillemot	150
Marbled Murrelet	50
Cassin's Auklet	24,000
Rhinoceros Auklet	200
Tufted Puffin	8,700

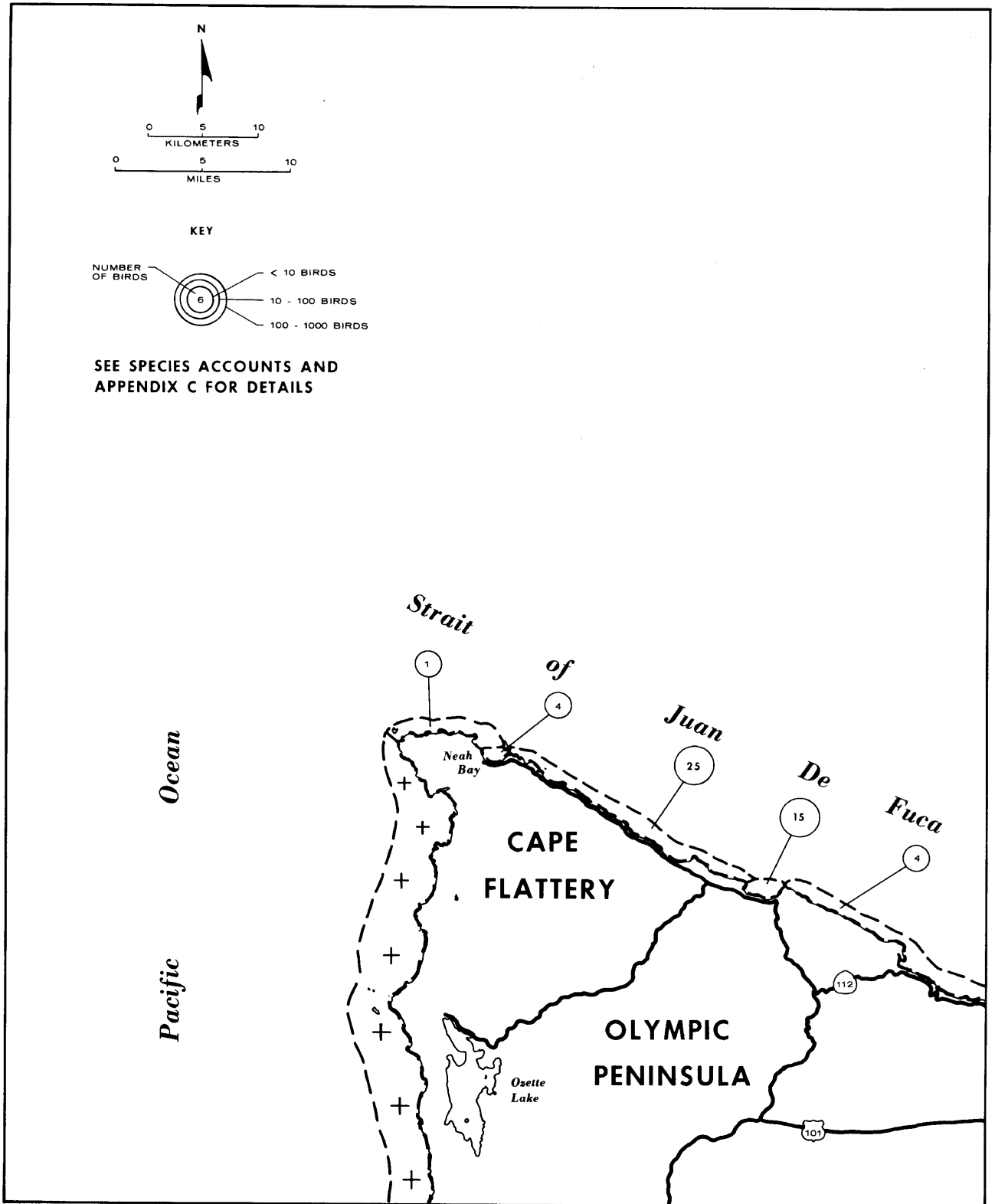
155 CAPE FLATTERY



Relative distribution for Pigeon Guillemots in map area 155, Cape Flattery.



Relative distribution for Marbled Murrelets in map area 155, Cape Flattery.



AREA 155, Cape Flattery (cont'd.)

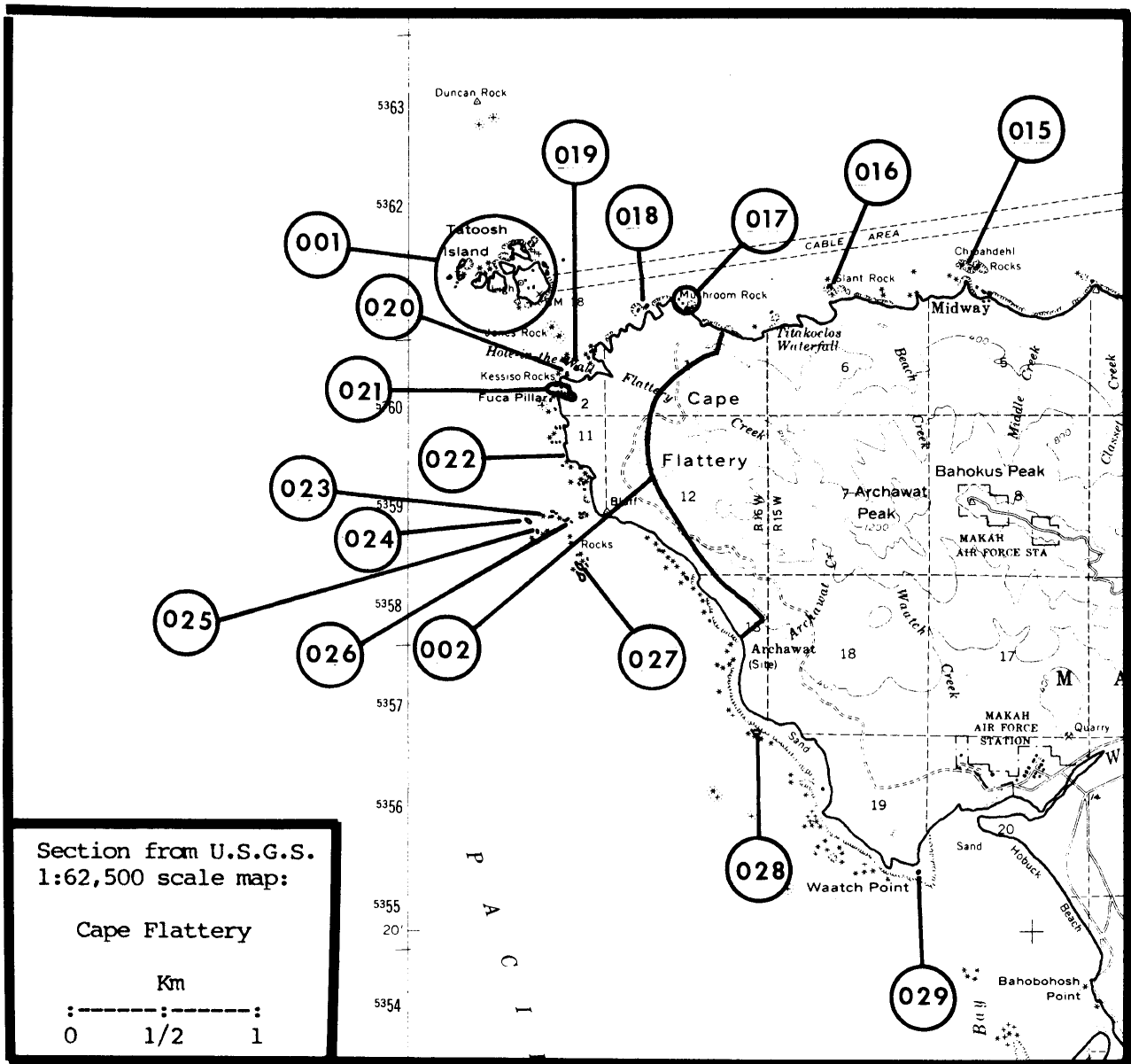
SITE NUMBER	COLONY NAME	LAT.-LONG.				
191	PORT WILLIAMS	48° 07' 00", 123° 03' 00" W				
PIGEON GUILLEMOT	34	SPEICH	05/23/79	B III	255	
PIGEON GUILLEMOT	33	SPEICH	05/26/78	B III	255	
SPECIES NAME	NUMBER BREEDING BIRDS	SOURCE	SURVEY DATE	SURVEY TYPE	REFERENCE DATA QUALITY	

Box gives the most recent or the best estimates available.

001 Tatoosh Island, complex 48°23'32"N, 124°44'07"W

Fork-tailed Storm-Petrel	40	Pitman	06/16-18/78	L III	217
Leach's Storm-Petrel	400	Pitman	06/16-18/78	L III	217
Pelagic Cormorant	300	Pitman	06/16-18/78	L I	217
Black Oystercatcher	8	Pitman	06/16-18/78	L II	217
Glaucous-winged Gull	2000	Pitman	06/16-18/78	L III	217
Common Murre	200	Pitman	06/16-18/78	L III	217
Pigeon Guillemot	80	Pitman	06/16/18/78	L III	217
Cassin's Auklet	X	Pitman	06/16-18/78	L III	217
Rhinoceros Auklet	200	Pitman	06/16-18/78	L III	217
Tufted Puffin	300	Pitman	06/16-18/78	L III	217
Total	3528				

Storm-Petrel, species	X	Dawson 1908	06-07/ ?/06-07	L III	66
Fork-tailed Storm-Petrel	0	Kenyon & Scheffer 1962	07/15/59	L III	167
Fork-tailed Storm-Petrel	3	Paulson	06/06-08/70	L III	207
Fork-tailed Storm-Petrel	6	Paulson	?/ ?/74	L III	206
Fork-tailed Storm-Petrel	200	Boersma	05,06,09/ ?/78	L III	31
Leach's Storm-Petrel	4	Cowan	07/10/15	S -	63
Leach's Storm-Petrel	1	Cowan	07/19/15	S -	63
Leach's Storm-Petrel	3	Richardson	07/28/56	S -	230
Leach's Storm-Petrel	10	Richardson	07/28/56	L III	229
Leach's Storm-Petrel	1	Goodge	07/28/56	S -	116
Leach's Storm-Petrel	X	Kenyon & Scheffer 1962	07/15/59	L III	167
Leach's Storm-Petrel	1	Hawkins	07/15/59	S -	127
Leach's Storm-Petrel	4	Hawkins	07/15/59	S -	126
Leach's Storm-Petrel	P	Paulson	06/06-08/70	L III	207
Leach's Storm-Petrel	1	Paulson	06/08/70	S -	209
Leach's Storm-Petrel	25	Frazer 1973	07/18-21/73	L III	108



Leach's Storm-Petrel	16	Paulson	?/ ?/74	L III	206
Leach's Storm-Petrel	23	Sibley	07/16/77	S -	248
Leach's Storm-Petrel	1000	Boersma	06/16/78	L III	31
Pelagic Cormorant	X	Preble & Young	05/13-06/18/1897	L III	218
Pelagic Cormorant	X	Dawson 1908	06-07/ ?/06-07	L III	66
Pelagic Cormorant	8?	Richardson	07/28/56	L III	229
Pelagic Cormorant	500	Paulson	06/06-08/70	L II	207
Pelagic Cormorant	200	Frazer 1973	06/18-21/73	L III	108
Pelagic Cormorant	6	Sibley	07/15/77	S -	248
Pelagic Cormorant	400	Boersma	06/16/78	L III	31
Black Oystercatcher	X	Dawson 1908	06-07/ ?/06-07	L III	66
Black Oystercatcher	24	Cantwell	07/01/15	L III	52

AREA 155, Cape Flattery (cont'd.)

Black Oystercatcher	16-20	Jewett et al. 1953	07/26/17	? III	158
Black Oystercatcher	4-6	Jewett et al. 1953	05/06-05/07/20	L III	158
Black Oystercatcher	1	Goodge	07/28/56	S -	116
Black Oystercatcher	15-20	Kenyon & Scheffer 1962			
			07/15/59	L III	167
Black Oystercatcher	16	Paulson	06/06-08/70	L III	207
Black Oystercatcher	10	Frazer 1973	06/18-21/73	L III	108
Black Oystercatcher	2	Sibley	07/15/77	S -	248
Black Oystercatcher	6-8	Boersma	06/16/78	L III	31
Glaucous-winged Gull	X	Dawson 1908	06-07/ ?/06-07	L III	66
Glaucous-winged Gull	50	Jewett et al. 1953	07/26/17	L II	158
Glaucous-winged Gull	10's	Richardson	07/28/56	L III	229
Glaucous-winged Gull	X	Richardson	05/ ?/57	L III	228
Glaucous-winged Gull	2000	Kenyon & Scheffer 1962			
			07/15/59	L III	167
Glaucous-winged Gull	1200	Paulson	06/06-08/70	L III	207
Glaucous-winged Gull	3000	Frazer 1973	06/18-21/73	L III	108
Glaucous-winged Gull	100's	Hoffman	06/22/75	M III	139
Glaucous-winged Gull	1	Sibley	07/14/77	S -	248
Glaucous-winged Gull	1	Sibley	07/15/77	S -	248
Glaucous-winged Gull	~800	Harrington-Tweit	04/28/78	A III	124
Glaucous-winged Gull	1000	Harrington-Tweit	05/25/78	A III	124
Glaucous-winged Gull	4000	Boersma	06/16/78	L III	31
Common Murre	5	Richardson	07/28/56	L III	229
Common Murre	400	Kenyon & Scheffer 1962			
			07/15/59	L II	167
Common Murre	400	Paulson	06/06-08/70	L II	207
Common Murre	200	Frazer 1973	06/18-21/73	L III	108
Common Murre	1	Sibley	07/15/77	S -	248
Common Murre	125	Harrington-Tweit	05/25/78	A III	124
Common Murre	200	Boersma	06/16/78	L II	31
Pigeon Guillemot	X	Dawson 1908	06/07/ ?/06-07	L III	66
Pigeon Guillemot	15	Kenyon & Scheffer 1962			
			07/15/59	L III	167
Pigeon Guillemot	160	Paulson	06/06-08/70	L II	207
Pigeon Guillemot	40	Frazer 1973	06/18-21/73	L III	108
Pigeon Guillemot	1	Woodby	07/22/75	S -	288
Pigeon Guillemot	1	Sibley	07/16/77	S -	248
Pigeon Guillemot	16	Boersma	06/16/78	L III	31
Cassin's Auklet	?	Dawson 1908	06-07/ ?/06-07	L III	66
Cassin's Auklet	0	Paulson	06/06-08/70	L III	207
Cassin's Auklet	?	Paulson	?/ ?/71	L III	207
Cassin's Auklet	20	Frazer 1973	06-07/ ?/06-07	L III	108
Cassin's Auklet	5	Paulson	?/ ?/74	L III	206
Cassin's Auklet	1	Close	09/05/75	S -	59
Cassin's Auklet	?	Boersma	06/16/78	L III	31
Rhinoceros Auklet	0	Kenyon & Scheffer 1962			
			07/15/59	L III	167
Rhinoceros Auklet	30?	Paulson	06/06-08/70	L III	207
Rhinoceros Auklet	100?	Frazer 1973	06/18-21/73	L III	108
Rhinoceros Auklet	5	Sibley	07/14/77	S -	248
Rhinoceros Auklet	X	Boersma	06/16/78	L III	31
Tufted Puffin	X	Dawson 1908	06-07/ ?/06-07	L III	66
Tufted Puffin	X	Cantwell	08/22/14	L III	52

Tufted Puffin	50	Kenyon & Scheffer 1962	07/15/59	L III 167
Tufted Puffin	X	Washington Dep. Game	07/02/68	? ? 203
Tufted Puffin	200	Paulson	06/06-08/70	L II 207
Tufted Puffin	20?	Willapa NWR	05/21/71	A III 284
Tufted Puffin	60	Frazer 1973	06/18-21/73	L III 108
Tufted Puffin	50+	Leschner	07/24/73	L III 178
Tufted Puffin	X	Leschner	?/ ?/75	? ? 178
Tufted Puffin	100+	Boersma	06/16/78	L III 31



Tatoosh Island (155001) U.S. Coast Guard

AREA 155, Cape Flattery (cont'd.)

002 Cape Flattery, mainland 48°22'50"N, 124°43'20"W

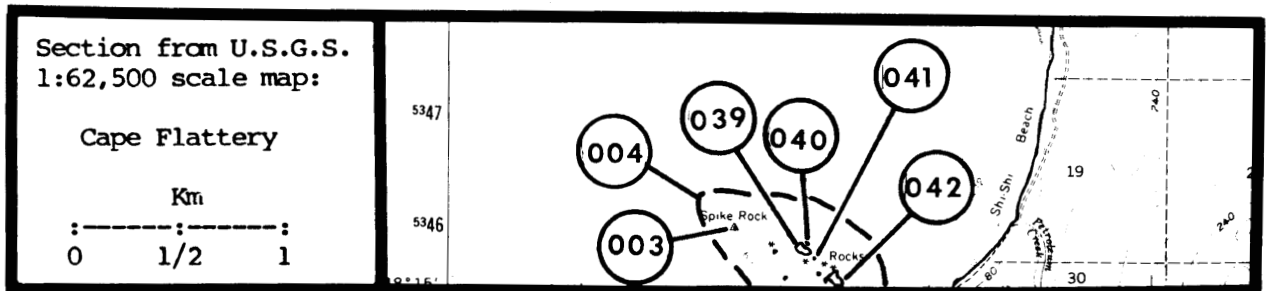
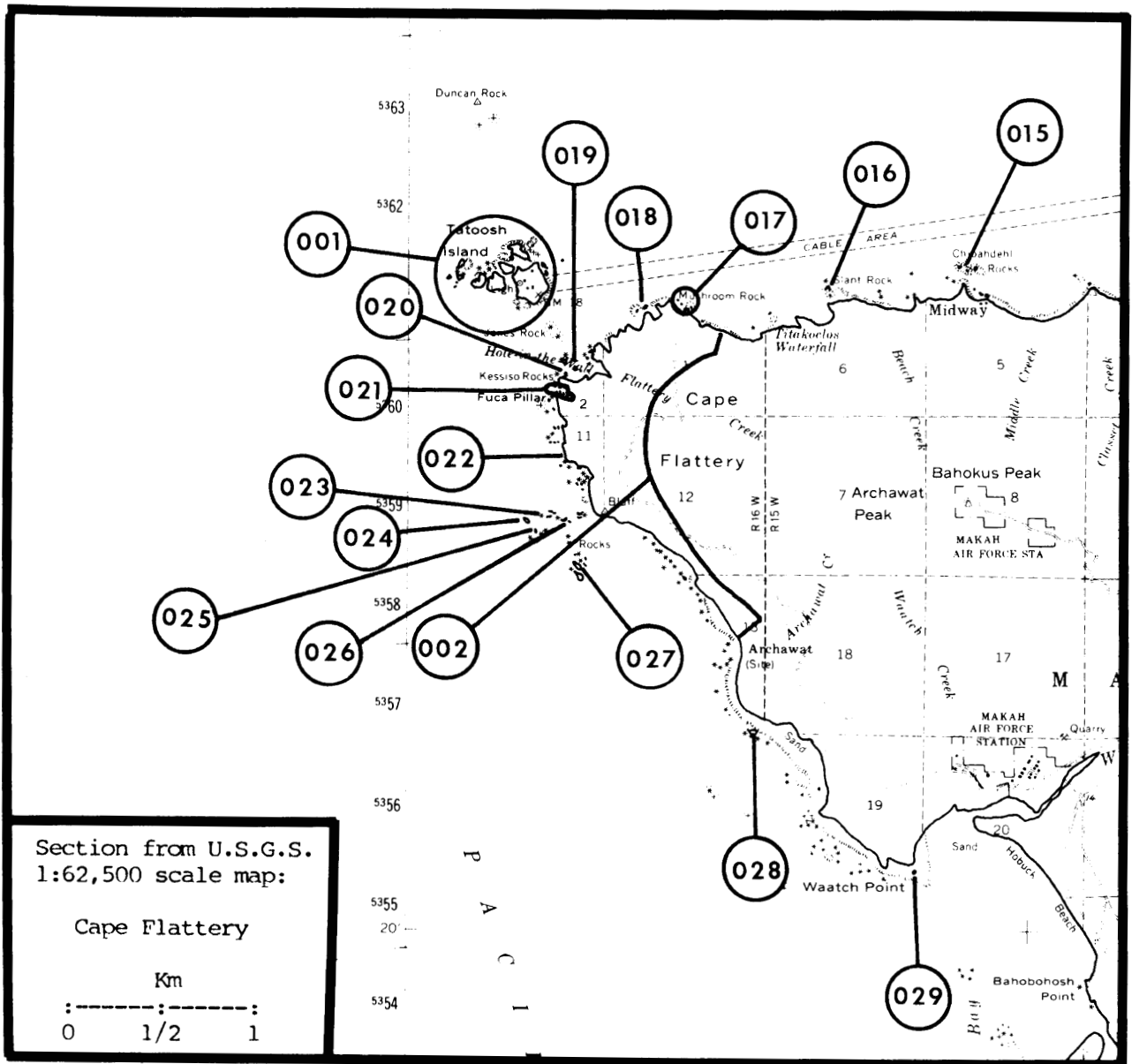
Black Oystercatcher	2	Rodrick	06/20/78	L III	236
Pigeon Guillemot	30	Widrig	?/ ?/82	L III	282
Pelagic Cormorant	1000	Dawson 1908	06-07/ ?/06-07	B III	66
Pelagic Cormorant	160	Pitman	06/17/78	B I	217
Black Oystercatcher	12	Dawson 1908	06-07/ ?/06-07	B III	66
Black Oystercatcher	31	Kenyon & Scheffer 1962	07/15/59	B III	167
Glaucous-winged Gull	200-500	Dawson 1908	06-07/ ?/06-07	B III	66
Glaucous-winged Gull	2	Hoffman	06/22/75	L III	139
Pigeon Guillemot	2	LaFave	09/12/65	L III	174
Pigeon Guillemot	2+	Quar	06/ ?/79	L III	219

003 Spike Rock 48°15'16"N, 124°42'58"W

No Nesting Observed	0	Speich	06/27/78	B III	255
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Cape Flattery mainland (155002) June 1978 R.L. Pitman



AREA 155, Cape Flattery (cont'd.)

① Point of the Arches¹ 48°14'50"N, 124°41'58"W

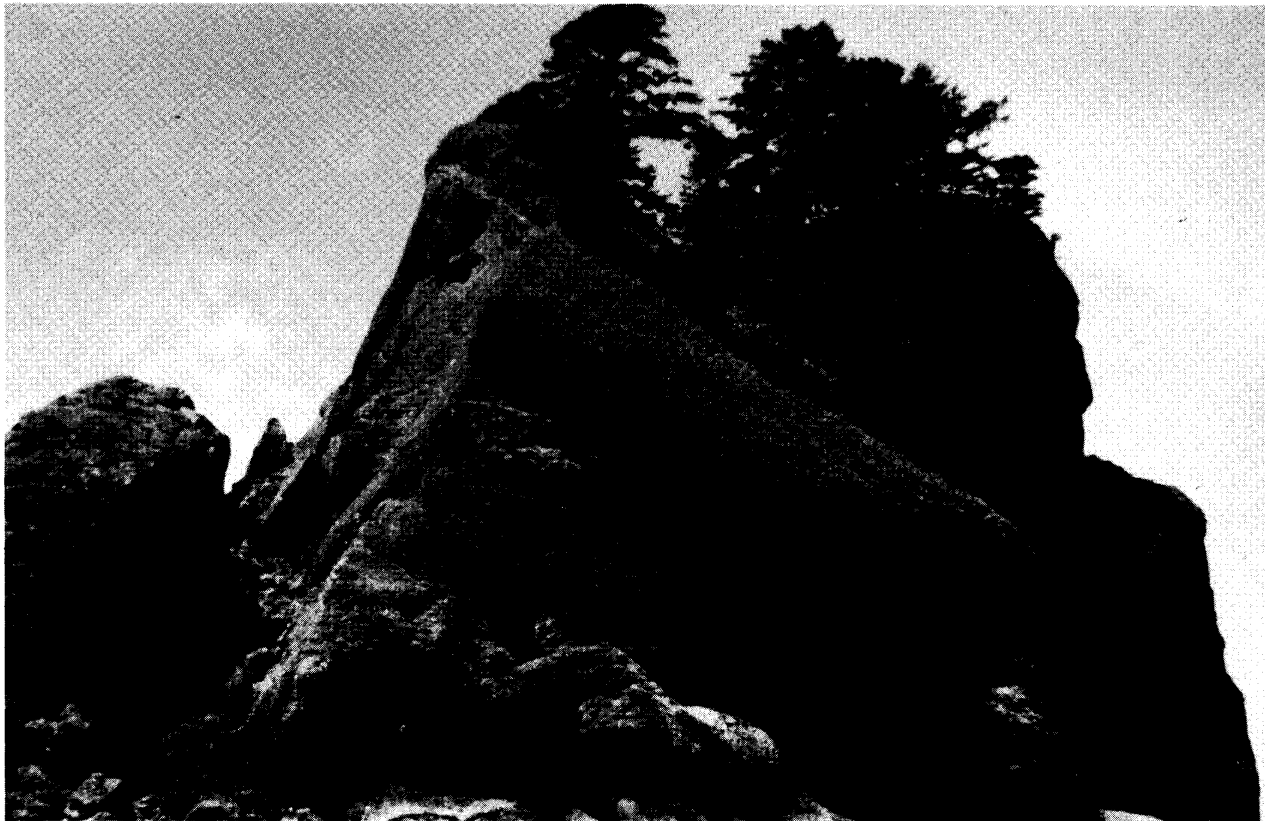
Black Oystercatcher	3	Speich	06/27/78	B III 255
Glaucous-winged Gull	6	Speich	06/27/78	B I 255
Total	9			

Black Oystercatcher 11 Harkins 04/09/80 M III 123

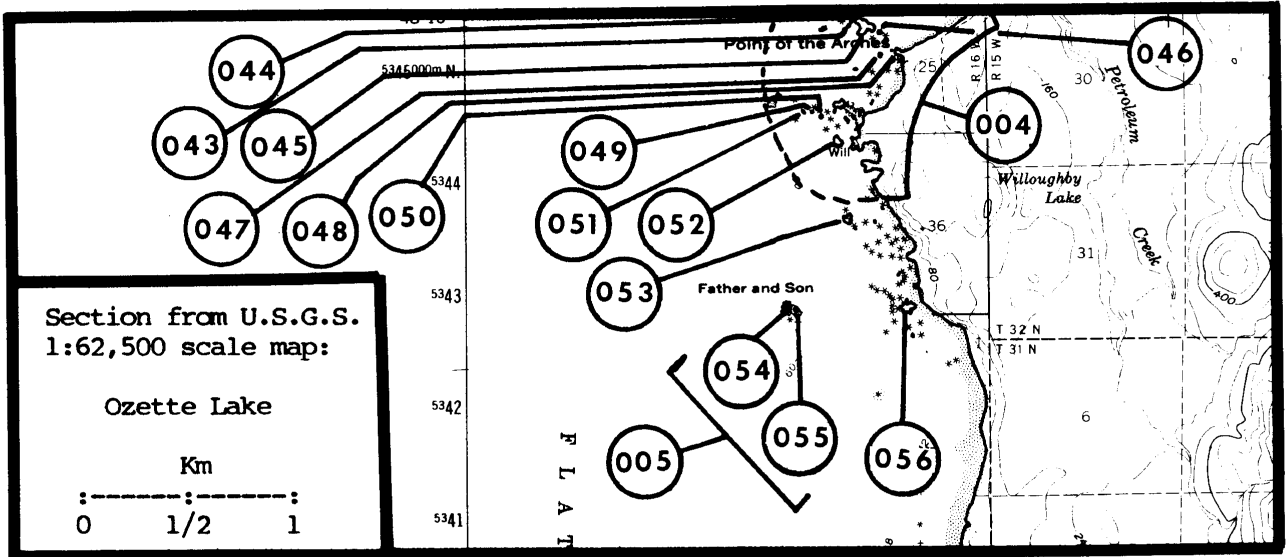
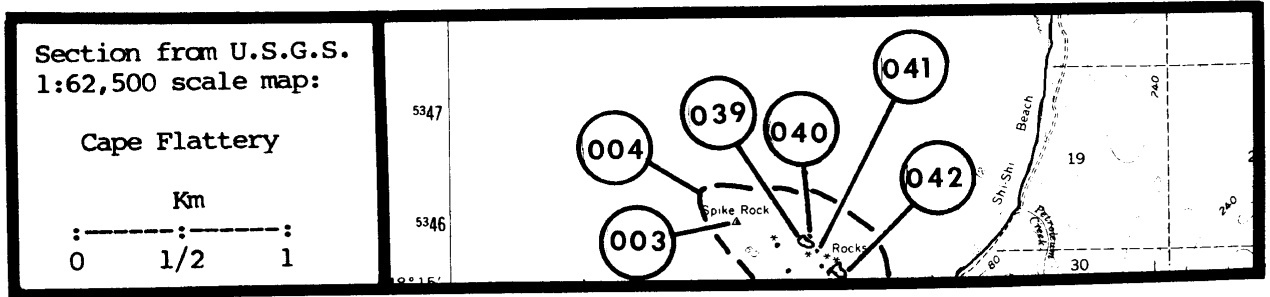
¹Insufficient data to determine the exact location of records.

① Father and Son¹ 48°13'36"N, 124°42'41"W

¹Insufficient data to determine the exact location of records. For specific information see also Father (155054) and Son (155055).



Point of the Arches (155004) 27 June 1978 R.L. Pitman

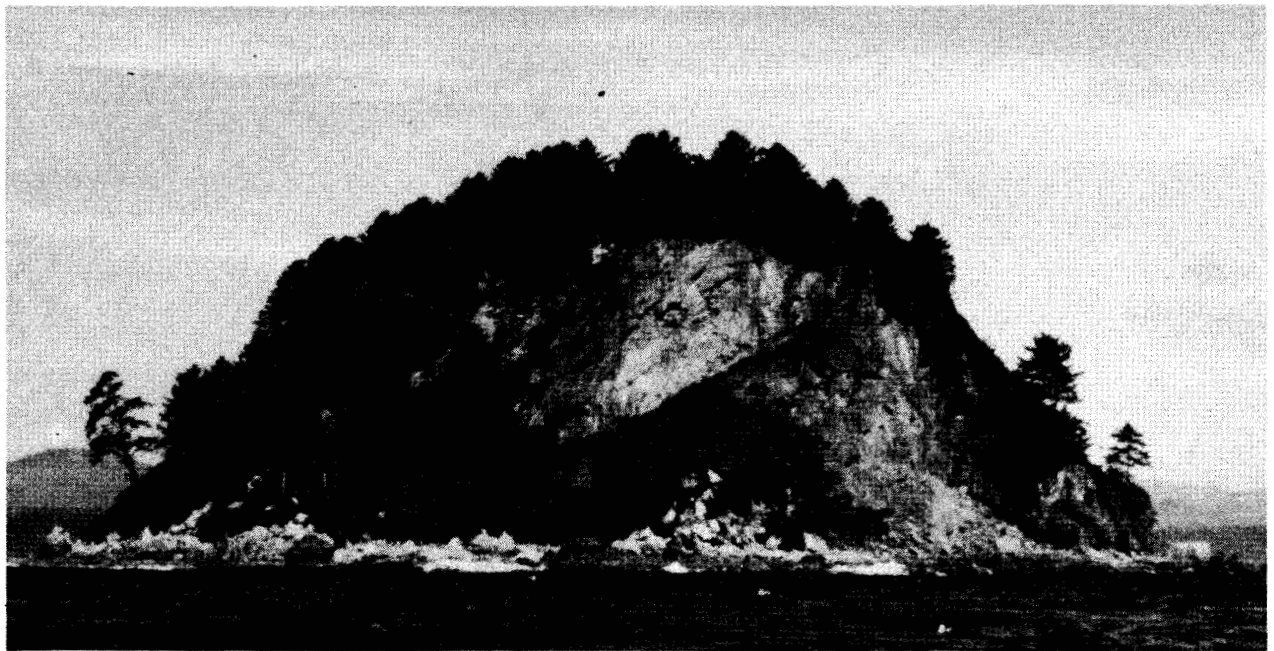
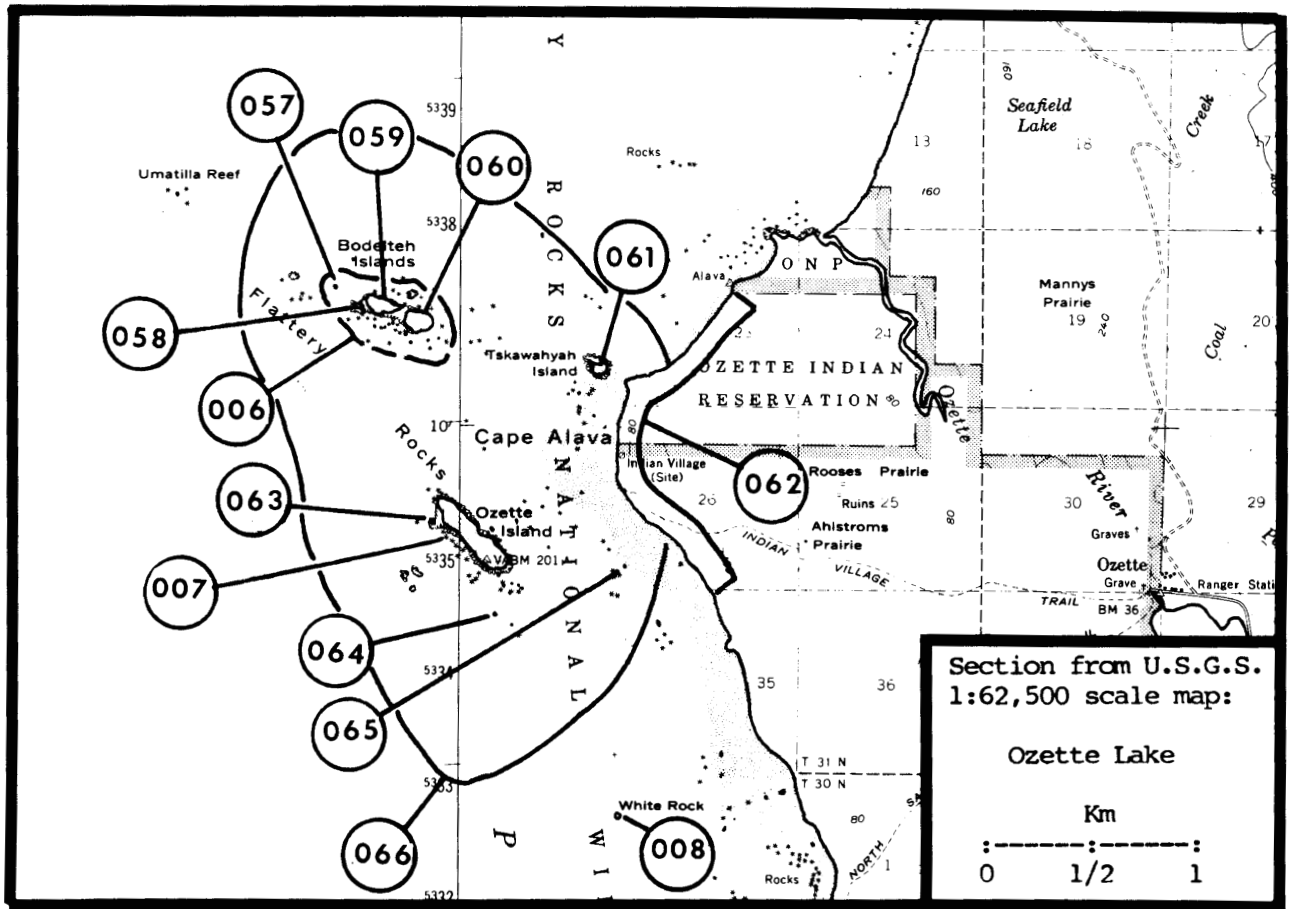


AREA 155, Cape Flattery (cont'd.)

006 Bodelteh Islands¹ 48°10'32"N, 124°45'30"W

Black Oystercatcher	20	Pitman	06/04-06/79	L II	217
Pigeon Guillemot	30	Pitman	06/04-06/79	L III	217
Total	50				
Fork-tailed Storm-Petrel	1	Eddy	07/17/59	S -	96
Fork-tailed Storm-Petrel	5	Hawkins	07/17/59	S -	126
Fork-tailed Storm-Petrel	1	Anonymous	07/17/59	S -	15
Leach's Storm-Petrel	X	Kenyon & Scheffer 1962			
			07/17/59	L III	167
Pelagic Cormorant	500	Dawson 1908	06-07/ ?/06-07	L III	66
Pelagic Cormorant	60	Kenyon & Scheffer 1962			
			07/17/59	L II	167
Black Oystercatcher	6	Dawson 1908	06-07/ ?/06-07	L II	66
Black Oystercatcher	40	Kenyon & Scheffer 1962			
			07/17/59	L II	167
Black Oystercatcher	30+	Knight	07/06/78	M III	171
Glaucous-winged Gull	500	Dawson 1908	06-07/ ?/06-07	L III	66
Glaucous-winged Gull	2500	Kenyon & Scheffer 1962			
			07/17/59	L III	167
Glaucous-winged Gull	400	Hoffman	06/22/75	L III	139
Glaucous-winged Gull	2000	Pitman	06/28-29/78	L III	217
Common Murre	100	Kenyon & Scheffer 1962			
			07/13/59	A III	167
Common Murre	N	Kenyon & Scheffer 1962			
			07/17/59	L II	167
Pigeon Guillemot	6	Kenyon & Scheffer 1962			
			07/17/59	L II	167
Pigeon Guillemot	50	Pitman	06/28-29/78	L III	217
Cassin's Auklet	X	Kenyon & Scheffer 1962			
			07/17/59	L III	167
Cassin's Auklet	1	Eddy	07/17/59	S -	96
Cassin's Auklet	1	Richardson	07/17/59	S -	230
Cassin's Auklet	1	Hawkins	07/17/59	A III	126
Cassin's Auklet	X	Pitman	06/28-29/78	L III	217
Rhinoceros Auklet	N	Kenyon & Scheffer 1962			
			07/17/59	L III	167
Tufted Puffin	500-1000	Dawson 1908	06-07/ ?/06-07	L III	66
Tufted Puffin	20	Kenyon & Scheffer 1962			
			07/17/59	L III	167
Tufted Puffin	1000-2000	Pitman	06/28-29/78	L II	217

¹Insufficient data to determine the exact location of records. For more specific information see also Bodelteh Island, west (155058), Bodelteh Island, middle (155059), and Bodelteh Island, east (155060).



Ozette Island (155007) 28 June 1978 R.L. Pitman

AREA 155, Cape Flattery (cont'd.)

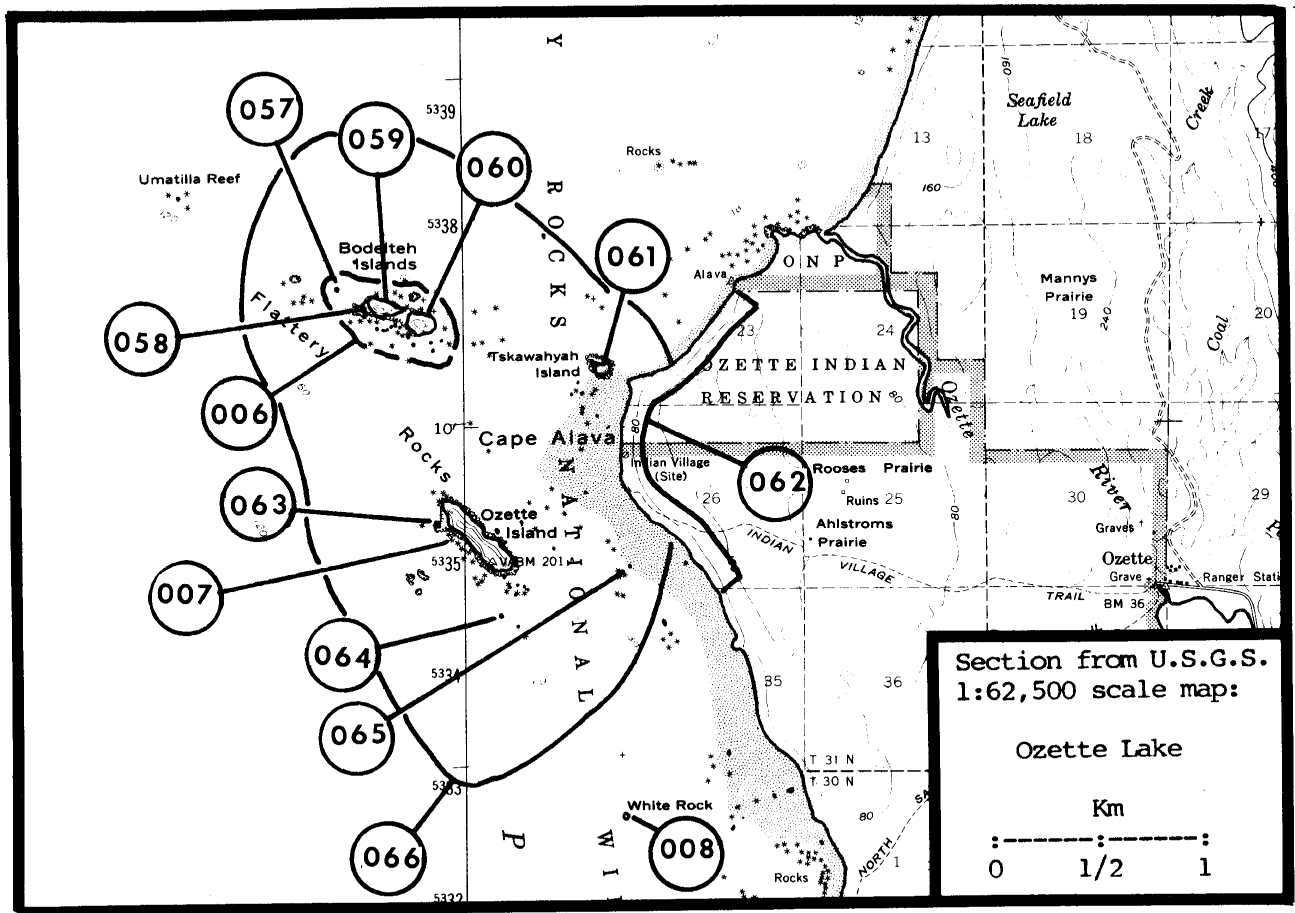
007 Ozette Island 48°09'28"N, 124°44'52"W

No Nesting Observed	0	Speich	06/26-27/79	L II 255
Fork-tailed Storm-Petrel	N	Kenyon & Scheffer 1962	07/16/59	L III 217
Fork-tailed Storm-Petrel	N	Pitman	06/29-30/78	L III 217
Leach's Storm-Petrel	N	Kenyon & Scheffer 1962	07/16/59	L III 167
Leach's Storm Petrel	N	Pitman	06/29-30/78	L III 217
Pelagic Cormorant	110	Kenyon & Scheffer 1962	07/16/59	L I 167
Black Oystercatcher	15?	Kenyon & Scheffer 1962	07/16/59	L III 167
Black Oystercatcher	6	Pitman	06/29-30/78	L II 217
Glaucous-winged Gull	1	Hudson	07/15/40	S - 149
Common Murre	0	Kenyon & Scheffer 1962	07/16/59	L III 167
Pigeon Guillemot	10	Pitman	06/29-30/78	L III 217
Cassin's Auklet	N	Kenyon & Scheffer 1962	07/16/59	L III 167

008 White Rock 48°08'05"N, 124°44'00"W

Double-crested Cormorant	120	Wilson	07/17/82	A II 287
Pelagic Cormorant	X	Speich	06/26/79	B III 255
Black Oystercatcher	X	Speich	06/26/79	B III 255
Glaucous-winged Gull	130	Wilson	07/17/82	A II 287
Common Murre	630	Wilson	07/17/82	A III 287
Pigeon Guillemot	X	Speich	06/26/79	B III 255
Tufted Puffin	X	Speich	06/26/79	B III 255
Total	880			

Double-crested Cormorant	N	Pitman	06/30/78	B III 217
Double-crested Cormorant	X	Speich	06/26/79	B III 255
Brandt's Cormorant	10	Marshall	06/ ?/63	? ? 191
Pelagic Cormorant	100	Dawson 1908	06-07/ ?/06-07	B III 66
Pelagic Cormorant	208	Pitman	06/30/78	B I 217
Black Oystercatcher	1	Pitman	06/30/78	B III 217
Glaucous-winged Gull	300-500	Dawson 1908	06-07/ ?/06-07	B III 66
Glaucous-winged Gull	X	Dawson 1909	07/ ?/07	B III 68
Glaucous-winged Gull	100P	Kenyon & Scheffer 1962	07/13/59	A III 167
Glaucous-winged Gull	110	Pitman	06/30/78	B III 217
Glaucous-winged Gull	X	Speich	06/26/79	B III 255
Common Murre	100P	Kenyon & Scheffer 1962	07/13/59	A III 167
Common Murre	25	Pitman	06/30/78	B III 217
Common Murre	40	Speich	06/26/79	B III 255



Pigeon Guillemot	2	Pitman	06/30/78	B III 217
Tufted Puffin	200-500	Dawson 1908	06-07/ ?/06-07	B III 66
Tufted Puffin	10	Kenyon & Scheffer	07/13/59	A III 167
Tufted Puffin	150	Pitman	06/30/78	B III 217

009 "Bald Island"

This colony number is not used here. Bald Island, given this number, lies south in the Copalis Beach, North map area (174) and appears as Jagged Island, number 174027.

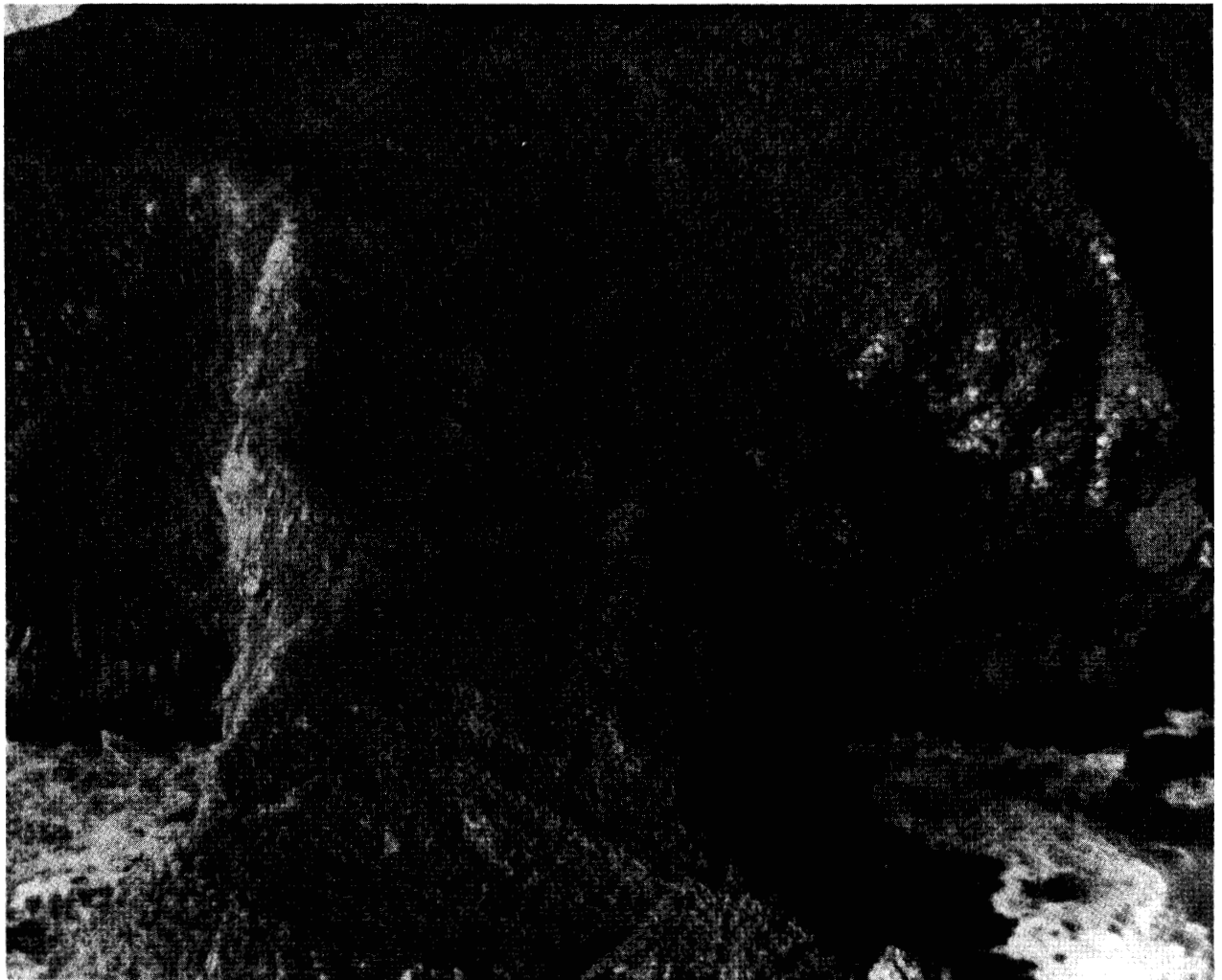
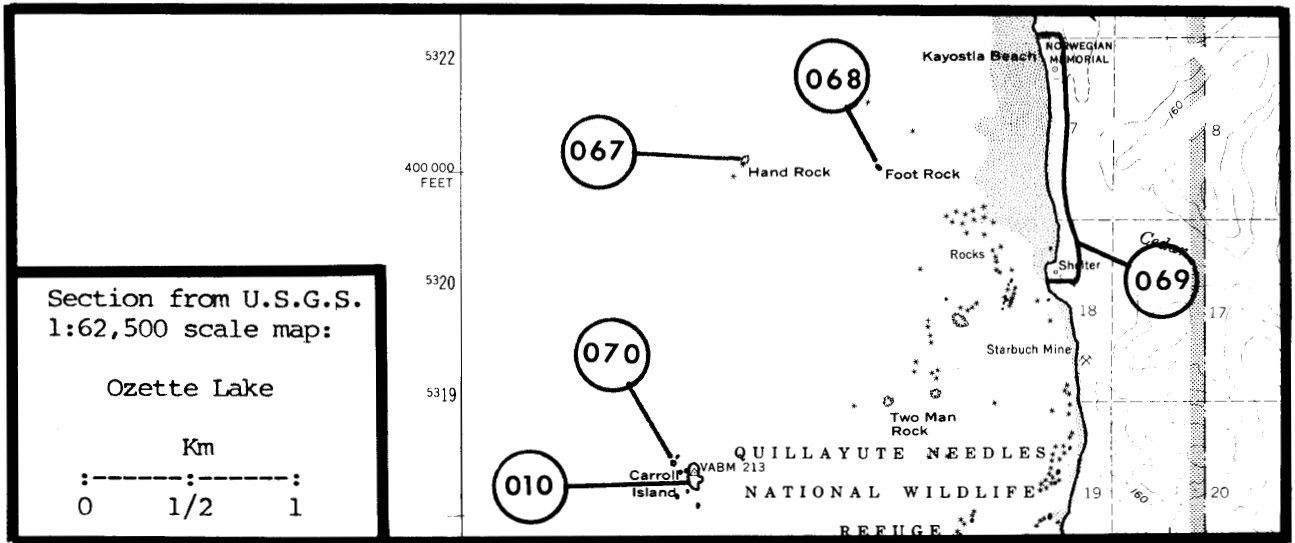
AREA 155, Cape Flattery (cont'd.)

010

Carroll Island (Habaht-aylch) 48°00'20"N, 124°43'16"W

Fork-tailed Storm-Petrel	<200	Wilson	06/08/82	L III 287
Leach's Storm-Petrel	?	Wilson	06/08/82	L III 287
Double-crested Cormorant	0	Wilson	06/08/82	L III 287
Pelagic Cormorant	0	Wilson	06/08/82	L III 287
Black Oystercatcher	6	Speich	06/27/79	L III 255
Glaucous-winged Gull	1000	Wilson	06/08/82	L III 287
Common Murre	0	Wilson	06/08/82	L III 287
Cassin's Auklet	15400	Wilson	06/08/82	L III 287
Tufted Puffin	2270	Wilson	06/08/82	L III 287
Total	18876			

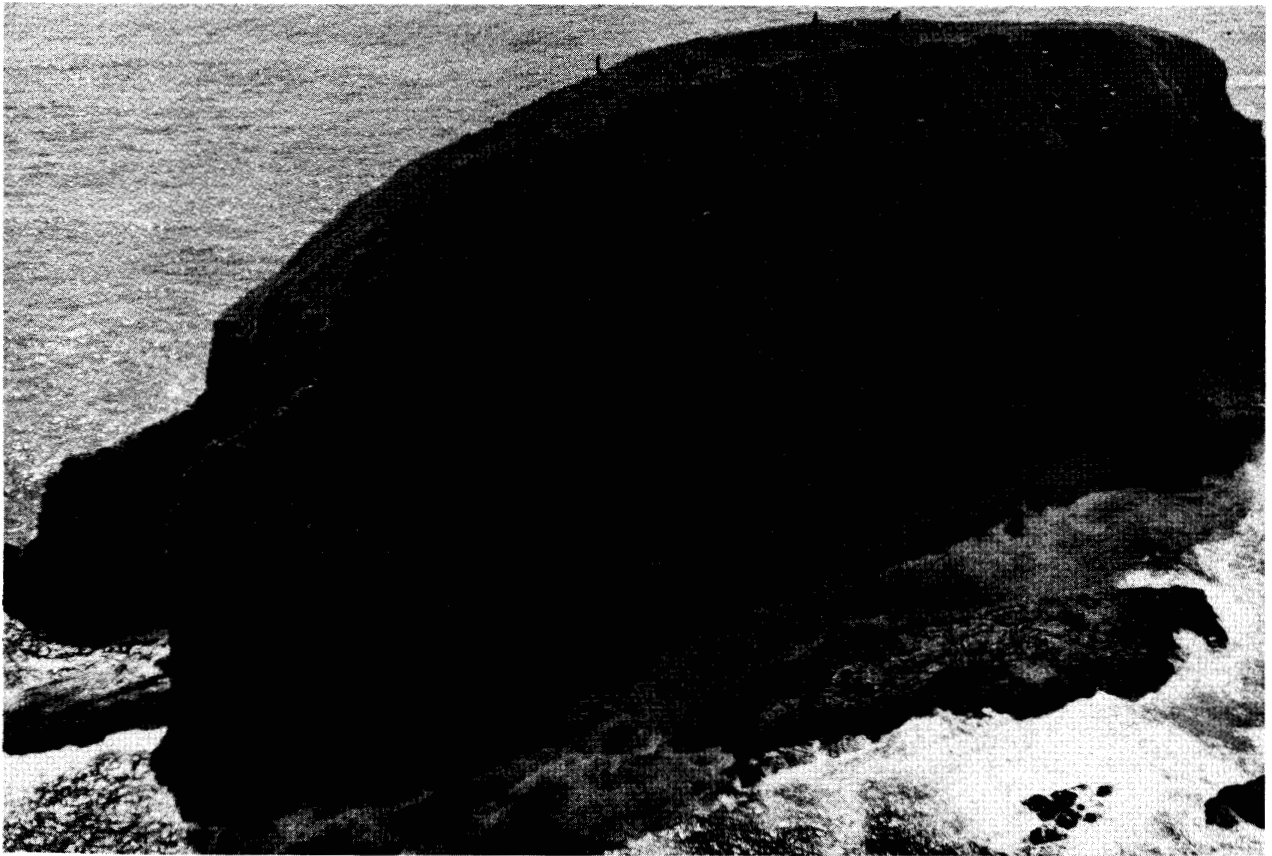
Fork-tailed Storm-Petrel	X	Speich	06/08-09/78	L III 255
Fork-tailed Storm-Petrel	100	Pitman	06/08-09/78	L III 217
Fork-tailed Storm-Petrel	1	Speich	07/22/78	S - 256
Fork-tailed Storm-Petrel	1600	Speich	08/04/79	L III 255
Leach's Storm-Petrel	500	Dawson 1908	06-07/ ?/06-07	L III 66
Leach's Storm-Petrel	4	Dawson	06/11-17/07	E - 78
Leach's Storm-Petrel	X	Jones 1908	06/ ?/07	L III 163;164
Leach's Storm-Petrel	X	Dawson 1908	06/18-21/07	L III 67
Leach's Storm-Petrel	X	Jewett et al. 1953	05/29/15	L III 158
Leach's Storm-Petrel	X	Jewett et al. 1953	08/10/15	L III 158
Leach's Storm-Petrel	2	Johnson	06/20/16	E - 159
Leach's Storm-Petrel	100's	Hancock	08/04/67	L III 122
Leach's Storm-Petrel	100's	Speich	06/08-09/78	L III 255
Leach's Storm-Petrel	100's	Pitman	06/08-09/78	L III 217
Leach's Storm-Petrel	10000	Speich	08/04/79	L III 255
Double-crested Cormorant	100	Dawson 1908	06-07/ ?/06-07	L III 66
Double-crested Cormorant	X	Jones 1908	06/ ?/07	L III 161;163
Double-crested Cormorant	X	Dawson 1908	06/18-21/07	L III 67
Double-crested Cormorant	X	Jewett et al. 1953	05/29/15	L III 158
Double-crested Cormorant	0	Speich	06/08-09/78	L III 255
Double-crested Cormorant	0	Speich	06/27/79	B III 255
Brandt's Cormorant	X	Jewett et al. 1953	05/29/15	L III 158
Brandt's Cormorant	0	Speich	06/08-09/78	L III 255
Brandt's Cormorant	0	Speich	06/27/79	B III 255
Pelagic Cormorant	500	Dawson 1908	06-07/ ?/06-07	L III 66
Pelagic Cormorant	X	Jones 1908	06/ ?/07	L III 161;164
Pelagic Cormorant	X	Dawson 1908	06/18-21/07	L III 67
Pelagic Cormorant	X	Jewett et al. 1953	05/29/15	L III 158
Pelagic Cormorant	X	Speich	06/08-09/78	L III 255
Pelagic Cormorant	40+	Pitman	06/08-09/78	L III 217
Pelagic Cormorant	76+	Speich	06/27/78	B III 255
Pelagic Cormorant	464	Speich	07/27/79	B I 255
Pelagic Cormorant	90	Wilson	08/13/81	B I 287
Black Oystercatcher	6	Dawson 1908	06-07/ ?/06-07	L III 66
Black Oystercatcher	X	Jones 1909	06/ ?/07	L III 164
Black Oystercatcher	X	Dawson 1908	06/18-21/07	L III 67
Black Oystercatcher	2	Johnson	05/30/17	E - 62



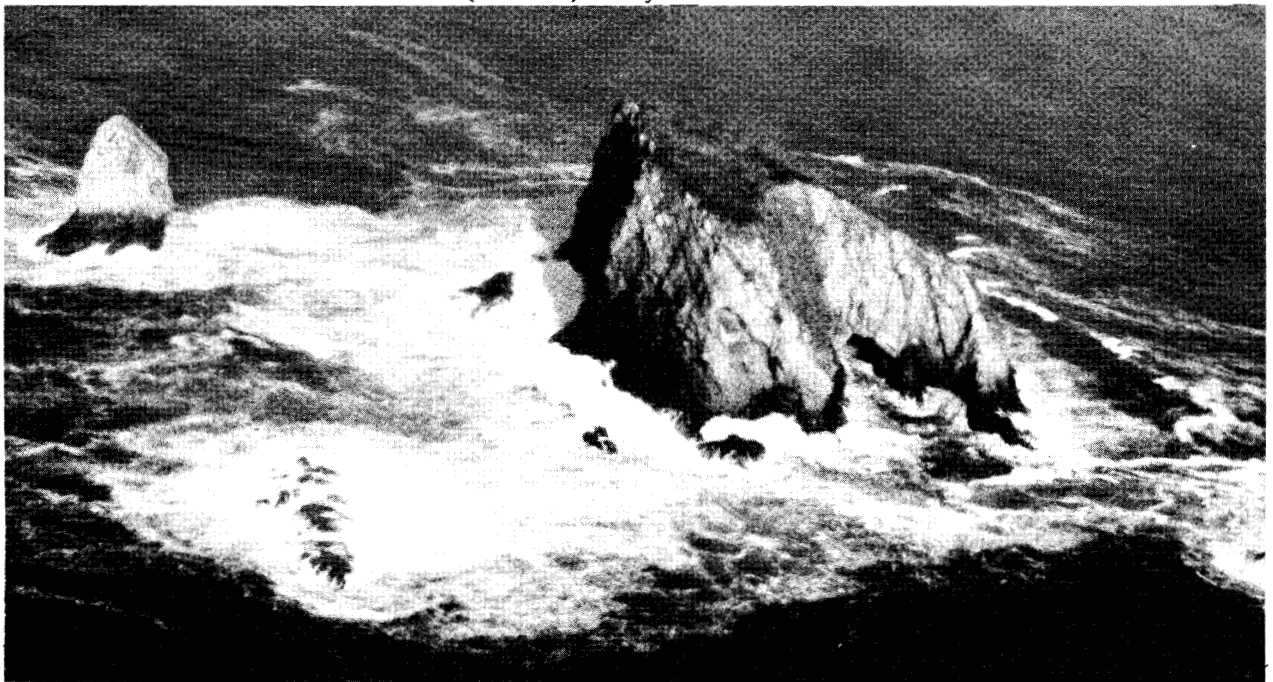
Carroll Island (155010) 19 November 1979 S.M. Speich

AREA 155, Cape Flattery (cont'd.)

Black Oystercatcher	X	Speich	06/08-09/78	L III	255
Black Oystercatcher	3	Pitman	06/08-09/78	L III	217
Glaucous-winged Gull	1000	Dawson 1908	06-07/ ?/06-07	L III	66
Glaucous-winged Gull	X	Jones 1908	06/ ?/07	L III	163
Glaucous-winged Gull	1000	Dawson 1908	06/18-21/07	L III	67
Glaucous-winged Gull	100's	Hancock	08/04/67	L III	122
Glaucous-winged Gull	500-750	Speich	06/08-09/78	L III	255
Glaucous-winged Gull	750	Pitman	06/08-09/78	L III	217
Glaucous-winged Gull	400-500	Pitman	06/30/78	L III	217
Glaucous-winged Gull	X	Speich	06/27/79	L III	255
Common Murre	700	Dawson 1908	06-07/ ?/06-07	L III	66
Common Murre	X	Jones 1908	06/ ?/07	L III	161;164
Common Murre	200+	Dawson 1908	06/18-21/07	L III	67
Common Murre	P	Jewett et al. 1953	05/29/15	L III	158
Common Murre	200	Cantwell	?/ ?/16	? ?	52
Common Murre	X	Cantwell	07/24/17	? ?	52
Common Murre	P	Hancock	08/04/67	L III	122
Common Murre	30	Cody 1973	Summer/68-69	L III	60
Common Murre	X	Speich	06/08-09/78	L III	255
Common Murre	50	Pitman	06/08-09/78	L III	217
Common Murre	25	Speich	06/27/78	B III	255
Common Murre	30	Pitman	06/30/78	B III	217
Common Murre	400	Speich	06/27/79	B III	255
Common Murre	200+	Wilson	08/13/81	B III	287
Pigeon Guillemot	20	Dawson 1908	06-07/ ?/06-07	L III	66
Pigeon Guillemot	24	Hancock	08/04/67	L III	122
Pigeon Guillemot	X	Speich	06/08-09/78	L III	255
Pigeon Guillemot	28+	Pitman	06/08/78	L III	217
Ancient Murrelet	2	Hoffman 1924	05/09/24	L III	135
Cassin's Auklet	1000	Dawson 1908	06-07/ ?/06-07	L III	66
Cassin's Auklet	X	Jones 1908	06/ ?/07	L III	163;164
Cassin's Auklet	X	Dawson 1908	06/18-21/07	L III	67
Cassin's Auklet	X	Jewett et al. 1953	05/29/15	L III	158
Cassin's Auklet	100's	Cody 1973	Summer/68-69	L III	60
Cassin's Auklet	X	Speich	06/08-09/78	L III	255
Cassin's Auklet	1000's	Pitman	06/08/78	L III	217
Cassin's Auklet	11000	Speich	07/22/78	L III	255
Cassin's Auklet	8400	Speich	08/04/78	L III	255
Tufted Puffin	5000	Dawson 1908	06-07/ ?/06-07	L III	66
Tufted Puffin	X	Jones 1909	06/ ?/07	L III	164
Tufted Puffin	2	Jones	06/06/07	E -	166
Tufted Puffin	1000's	Dawson 1908	06/18-21/07	L III	67
Tufted Puffin	100's	Hancock	08/04/67	L III	122
Tufted Puffin	X	Cody 1973	Summer/68-69	L III	60
Tufted Puffin	100's	Speich	06/08-09/78	L III	255
Tufted Puffin	1000-2000	Pitman	06/08/78	L III	217
Tufted Puffin	4000	Pitman	06/30/78	L III	217
Tufted Puffin	8000	Speich	07/22/78	L III	255
Tufted Puffin	~2000	Pitman	06/04/79	L III	217
Tufted Puffin	X	Speich	06/27/79	L III	255
Tufted Puffin	6800	Speich	08/04/79	L III	255
Tufted Puffin	250	Wilson	08/13/81	B III	287



Carroll Island (155010) July 1959 V.B. Scheffer



Carroll Island (155010) "Paahwoke-it" (155070) 19 November 1979 S.M. Speich

AREA 155, Cape Flattery (cont'd.)

(011) Sail Rock 48°20'32"N, 124°32'35"W

Glaucous-winged Gull	<20	Wilson	08/20/81	B III 287
Pigeon Guillemot	6	Wilson	08/20/81	B III 287
Total	26			

Pigeon Guillemot X Speich Summer/78 M III 255

(012) Seal Rock 48°21'45"N, 124°32'50"W

Double-crested Cormorant	8	Wilson	08/20/81	B I 287
Pelagic Cormorant	84	Wilson	08/20/81	B I 287
Glaucous-winged Gull	80	Wilson	08/20/81	B III 287
Pigeon Guillemot	4	Wilson	08/20/81	B III 287
Tufted Puffin	8	Wilson	08/20/81	B III 287
Total	184			

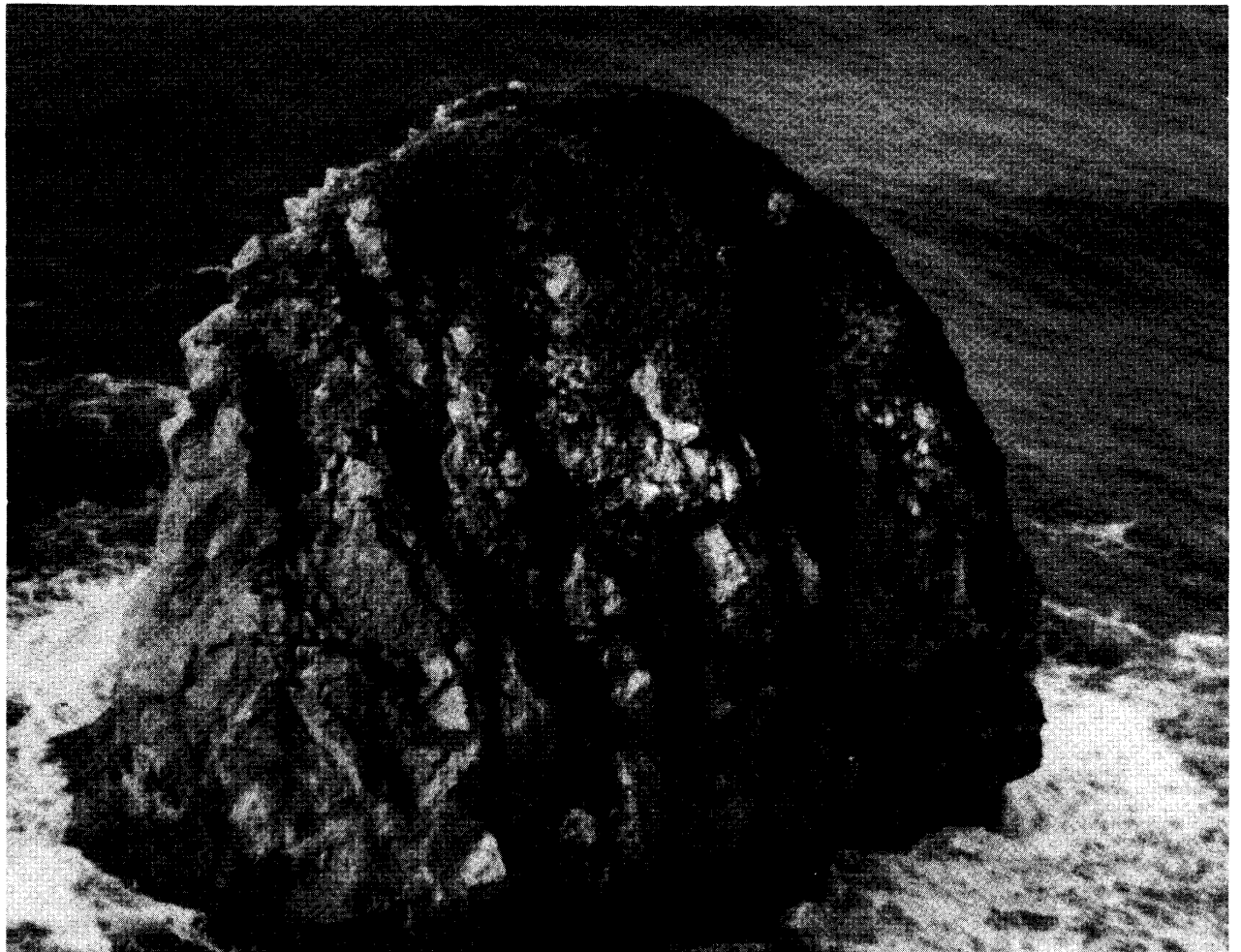
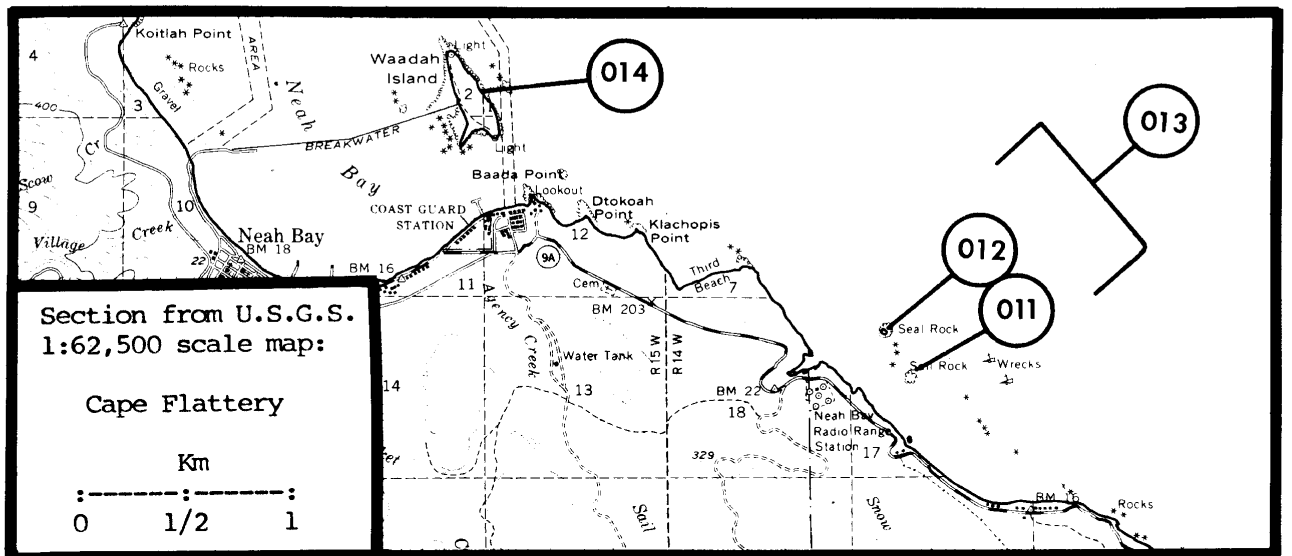
Pelagic Cormorant 40 Speich Summer/78 M III 255
 Pelagic Cormorant 2+ Harrington-Tweit 05/06/78 M III 124
 Pelagic Cormorant 20 Harrington-Tweit 05/25/78 A III 124
 Glaucous-winged Gull 15 Speich Summer/78 M III 255
 Glaucous-winged Gull P Harrington-Tweit 04/09/78 M III 124
 Glaucous-winged Gull 12+ Harrington-Tweit 05/06/78 M III 124
 Glaucous-winged Gull 30 Harrington-Tweit 05/25/78 A III 124
 Glaucous-winged Gull X Wahl 07/05/78 A III 269
 Glaucous-winged Gull 43 Harrington-Tweit 08/21/78 M III 124
 Pigeon Guillemot X Speich Summer/78 M III 255
 Pigeon Guillemot 2 Harrington-Tweit 05/06/78 M III 124
 Tufted Puffin X Chappell 08/ ?/76 M III 58
 Tufted Puffin 25 Speich Summer/78 M III 255
 Tufted Puffin 36 Harrington-Tweit 05/06/78 M III 124
 Tufted Puffin 24 Harrington-Tweit 05/25/78 A III 124
 Tufted Puffin 41 Wahl 07/05/78 A III 269
 Tufted Puffin X Chappell 08/08/78 ? ? 58

(013) Sail Rock and Seal Rock 48°21'42"N, 124°32'42"W

Unidentified Species	X	Einarsen 1925	?/ ?/20's	? ? 103
Pelagic Cormorant	X	Preble & Young	05/13-06/18/1897	? ? 218
Black Oystercatcher	X	Speich	Summer/78	M III 255

(014) Waadah Island 48°22'55"N, 124°35'50"W

No Nesting Observed 0 Pitman 06/18/78 B III 217



White Rock (155008) 19 November 1979 S.M. Speich

AREA 155, Cape Flattery (cont'd.)

(015) Chibahdehi Rocks 48°23'40"N, 124°40'30"W
 No Nesting Observed 0 Wilson 08/20/81 B III 287

(016) Slant Rock 48°23'29"N, 124°41'38"W

Black Oystercatcher	2	Wilson	08/20/81	B III 287
Black Oystercatcher	2	Pitman	06/18/78	B III 217

(017) Mushroom Rock 48°23'24"N, 124°42'47"W

Black Oystercatcher	2	Knight	06/20/78	M I 171
No Nesting Observed	0	Pitman	06/18/78	B III 217

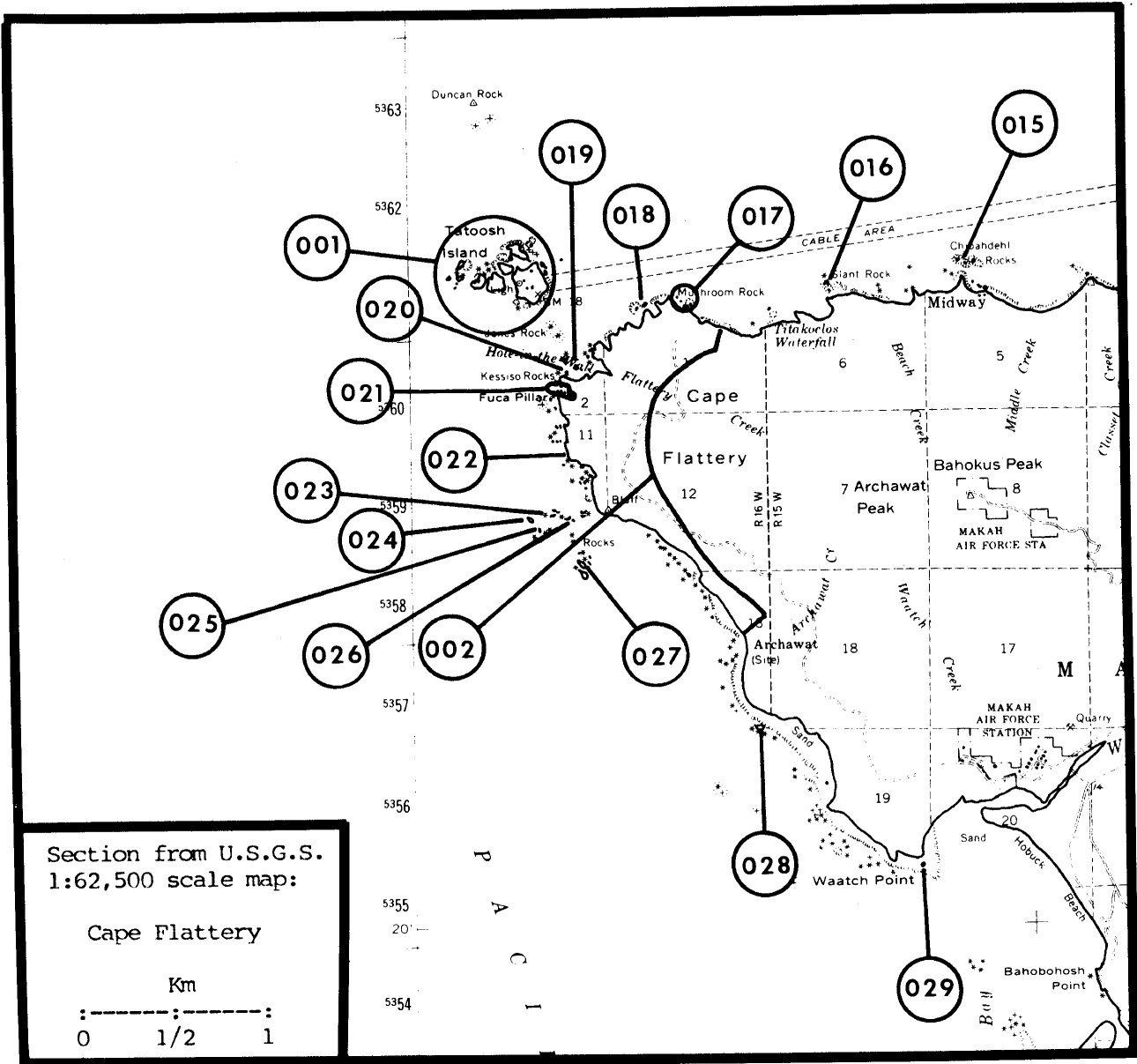
(018) "Unnamed Rock" 48°23'22"N, 124°43'08"W
 No Nesting Observed 0 Pitman 06/18/78 B III 217

(019) "Unnamed Rock" 48°23'22"N, 124°43'08"W

Black Oystercatcher	1	Pitman	06/17/78	B III 217
Glaucous-winged Gull	10	Pitman	06/17/78	B III 217
Total	<u>11</u>			

(020) Kessiso Rocks 48°23'00"N, 124°43'43"W
 No Nesting Observed 0 Wilson 08/20/81 B I 287
 No Nesting Observed 0 Pitman 06/17/78 B III 217

(021) "Unnamed Rocks" 48°22'54"N, 124°43'46"W
 Black Oystercatcher 1? Pitman 06/17/78 B III 217



AREA 155, Cape Flattery (cont'd.)

(022) Fuca's Pillar 48°22'52"N, 124°43'51"W

No Nesting Observed 0 Pitman 06/17/78 B III 217

(023) "Unnamed Rock" 48°22'16"N, 124°43'52"W

No Nesting Observed 0 Pitman 06/17/78 B III 217

(024) "Unnamed Rock" 48°22'13"N, 124°44'03"W

Pelagic Cormorant	34	Pitman	06/17/78	B I 217
Black Oystercatcher	1	Pitman	06/17/78	B III 217
Glaucous-winged Gull	4	Pitman	06/17/78	B II 217
Total	39			

(025) "Unnamed Rock" 48°22'09"N, 124°43'58"W

No Nesting Observed 0 Pitman 06/17/78 B III 217

(026) "Unnamed Rock" 48°22'12"N, 124°43'44"W

No Nesting Observed 0 Pitman 06/17/78 B III 217

(027) "Unnamed Rock" 48°21'58"N, 124°43'38"W

Pelagic Cormorant	10	Pitman	06/17/78	B I 217
Black Oystercatcher	1	Pitman	06/17/78	B III 217
Glaucous-winged Gull	50	Pitman	06/17/78	B II 217
Total	61			

(028) "Unnamed Rock" 48°21'06"N, 124°42'15"W

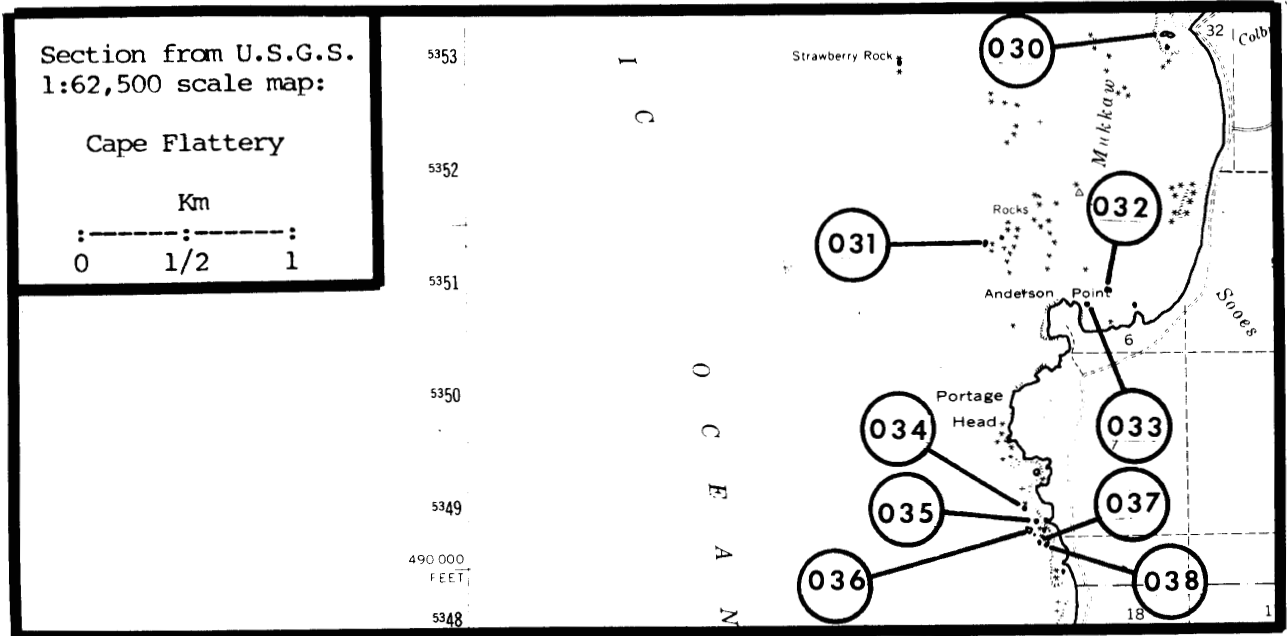
Glaucous-winged Gull 2 Pitman 06/17/78 B I 217

(029) Waatch Point, rock 48°20'19"N, 124°40'55"W

No Nesting Observed 0 Pitman 06/17/78 B III 217

AREA 155, Cape Flattery (cont'd.)

③30	"Unnamed Rock"	48°19'08"N, 124°40'00"W			
No Nesting Observed	0	Speich	06/27/78	B III	255
③31	"Unnamed Rock"	48°18'08"N, 124°41'17"W			
Black Oystercatcher	1?	Speich	06/27/78	B III	255
③32	"Unnamed Rock"	48°17'55"N, 124°40'29"W			
Black Oystercatcher	3	Speich	06/27/78	B III	255
Glaucous-winged Gull	30	Speich	06/27/78	B II	255
Total	33				
③33	"Unnamed Rock"	48°17'52"N, 124°40'41"W			
No Nesting Observed	0	Speich	06/27/78	B III	255
③34	"Unnamed Rock"	48°16'49"N, 124°41'03"W			
Pelagic Cormorant	16	Speich	06/27/78	B I	255
Glaucous-winged Gull	2	Speich	06/27/78	B I	255
Total	18				
③35	"Unnamed Rock"	48°16'47"N, 124°41'00"W			
No Nesting Observed	0	Speich	06/27/78	B III	255
③36	"Unnamed Rock"	48°16'45"N, 124°41'02"W			
Pelagic Cormorant	52	Speich	06/27/78	B I	255
Glaucous-winged Gull	8	Speich	06/27/78	B I	255
Total	60				



037

"Unnamed Rock" 48°16'42"N, 124°40'58"W

No Nesting Observed

0

Speich

06/27/78

B III 255

038

"Unnamed Rock" 48°16'39"N, 124°40'51"W

No Nesting Observed

0

Speich

06/27/78

B III 255

AREA 155, Cape Flattery (cont'd.)

039 "Silver Sides" 48°15'11"N, 124°42'30"W

Double-crested Cormorant	32	Speich	06/27/78	B I 255
Pelagic Cormorant	64	Speich	06/27/78	B I 255
Glaucous-winged Gull	102	Speich	06/27/78	B III 255
Tufted Puffin	200	Speich	06/27/78	B III 255
Total	398			

Double-crested Cormorant	32	Pitman	06/27/78	B I 217
Pelagic Cormorant	200	Dawson 1908	06-07/ ?/06-07 ?	III 66
Pelagic Cormorant	64	Pitman	06/27/78	B I 217
Black Oystercatcher	10	Dawson 1908	06-07/ ?/06-07 ?	III 66
Glaucous-winged Gull	500	Dawson 1908	06-07/ ?/06-07 ?	III 66
Glaucous-winged Gull	70	Pitman	06/27/78	B I 217
Tufted Puffin	1000	Dawson 1908	06-07/ ?/06-07 ?	III 66
Tufted Puffin	X	Pitman	06/27/78	B III 217

040 "Unnamed Rock" 48°15'12"N, 124°42'26"W

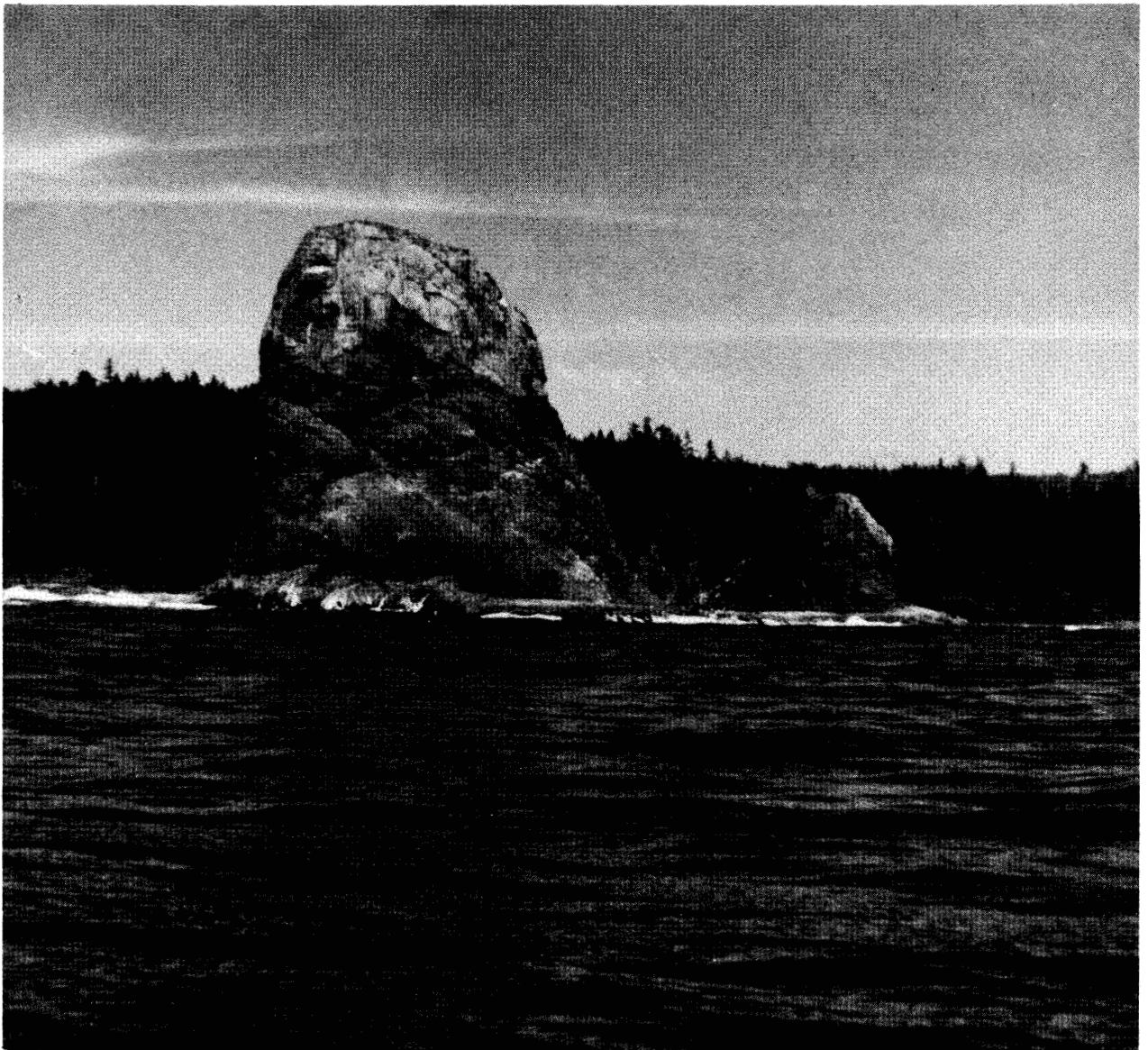
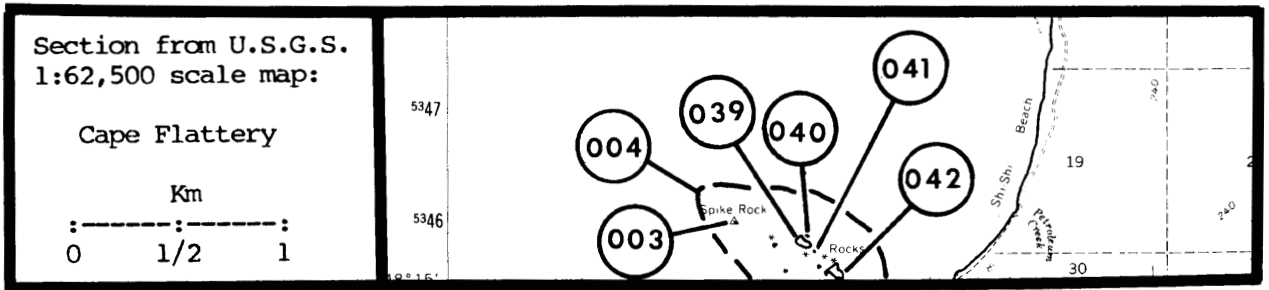
Glaucous-winged Gull	6	Speich	06/27/78	B II 255
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041 "Unnamed Rock" 48°15'07"N, 124°42'25"W

Black Oystercatcher	2	Speich	06/27/78	B III 255
Glaucous-winged Gull	16	Speich	06/27/78	B II 255
Total	18			

042 "Unnamed Rock" 48°15'02"N, 124°42'15"W

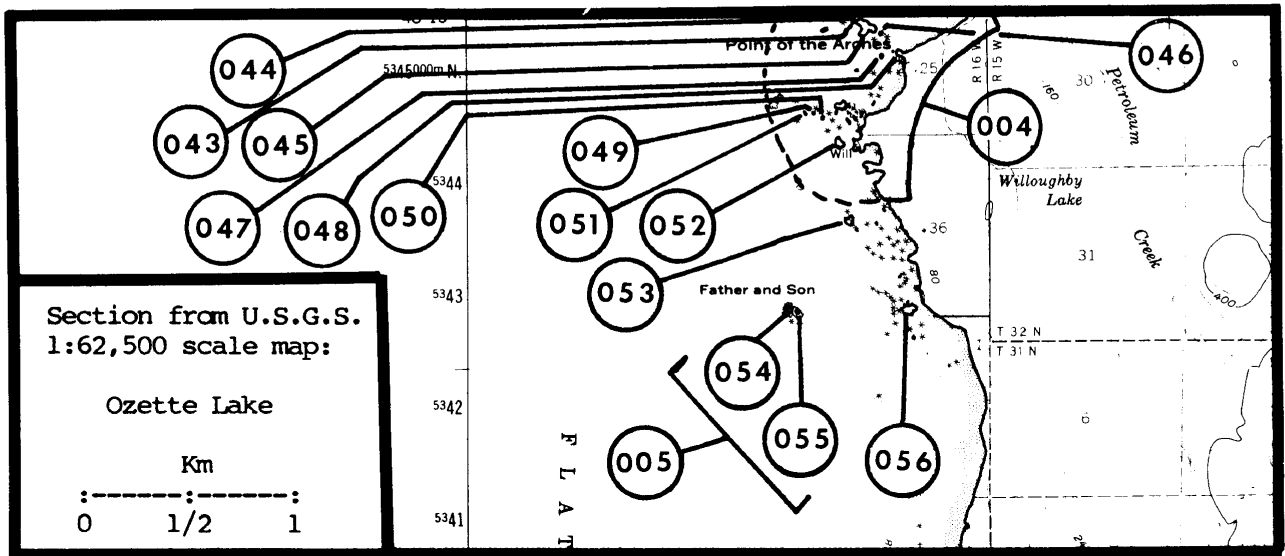
No Nesting Observed	0	Speich	06/27/78	B III 255
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Father and Son (155054 & 155055) 27 June 1978 R.L. Pitman

AREA 155, Cape Flattery (cont'd.)

043	"Unnamed Rock"	48°14'58"N, 124°42'15"W			
No Nesting Observed	0	Speich	06/27/78	B III	255
044	"Unnamed Rock"	48°14'54"N, 124°42'11"W			
No Nesting Observed	0	Speich	06/27/78	B III	255
045	"Unnamed Rock"	48°14'56"N, 124°42'11"W			
No Nesting Observed	0	Speich	06/27/78	B III	255
046	"Unnamed Rock"	48°14'55"N, 124°42'03"W			
No Nesting Observed	0	Speich	06/27/78	B III	255
047	"Unnamed Rock"	48°14'48"N, 124°42'03"W			
No Nesting Observed	0	Speich	06/27/78	B III	255
048	"Unnamed Rock"	48°14'54"N, 124°42'01"W			
No Nesting Observed	0	Speich	06/27/78	B III	255
049	"Unnamed Rock"	48°14'32"N, 124°42'32"W			
Pelagic Cormorant	30	Speich	06/27/78	B I	255
Black Oystercatcher	2	Speich	06/27/78	B III	255
Total	<u>32</u>				
050	"Unnamed Rock"	48°14'32"N, 124°42'27"W			
Pelagic Cormorant	20	Speich	06/27/78	B I	255
Glaucous-winged Gull	14	Speich	06/27/78	B III	255
Total	<u>34</u>				



051 "Unnamed Rock" 48°14'32"N, 124°42'37"W

Pelagic Cormorant	10	Speich	06/27/78	B I 255
Glaucous-winged Gull	4	Speich	06/27/78	B II 255
Total	14			

052 "Unnamed Rock" 48°14'22"N, 124°42'21"W

No Nesting Observed	0	Speich	06/27/78	B III 255
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(Habitat for small burrowing species present)

053 "Unnamed Rock" 48°14'01"N, 124°42'16"W

No Nesting Observed	0	Speich	06/27/78	B III 255
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(Habitat for small burrowing species present)

AREA 155, Cape Flattery (cont'd.)

054 Father, of Father & Son¹ 48°13'36"N, 124°42'43"W

Pelagic Cormorant	2	Speich	06/27/78	B	I	255
Glaucous-winged Gull	2	Speich	06/27/78	B	I	255
Total	$\frac{4}{4}$					

Double-crested Cormorant	20	Dawson 1908	06-07/ ?/06-07 ?	?	66
Pelagic Cormorant	200	Dawson 1908	06-07/ ?/06-07 ?	?	66
Black Oystercatcher	2	Dawson 1908	06-07/ ?/06-07 ?	?	66
Glaucous-winged Gull	100	Dawson 1908	06-07/ ?/06-07 ?	?	66

¹See also Father and Son (155005).

055 Son, of Father & Son¹ 48°13'36"N, 124°42'39"W

No Nesting Observed 0 Speich 06/27/78 B III 255

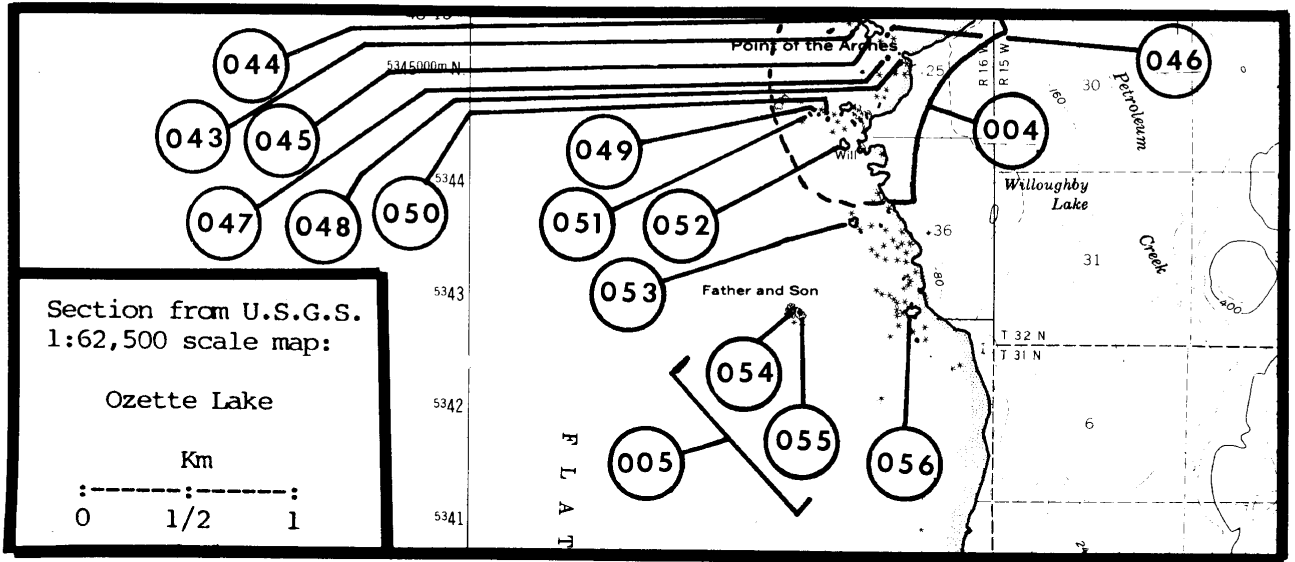
¹See also Father and Son (155005).

056 "Unnamed Rock" 48°13'35"N, 124°41'52"W

No Nesting Observed 0 Speich 06/27/78 B III 255



Bodelteh Island, west (155058), left; Bodelteh Island, middle (155059)
1979 S.M. Speich



Bodelteh Island, middle (155059), front; Bodelteh Island, west(155058) 5 June 1979
S.M. Speich

AREA 155, Cape Flattery (cont'd.)

(057) "Unnamed Rock" 48°10'39"N, 124°45'49"W

Double-crested Cormorant	?	Pitman	06/04-06/79	M III	217
Pelagic Cormorant	30	Pitman	06/04-06/79	M II	217
Glaucous-winged Gull	5?	Pitman	06/04-06/79	M III	217
Total	35				

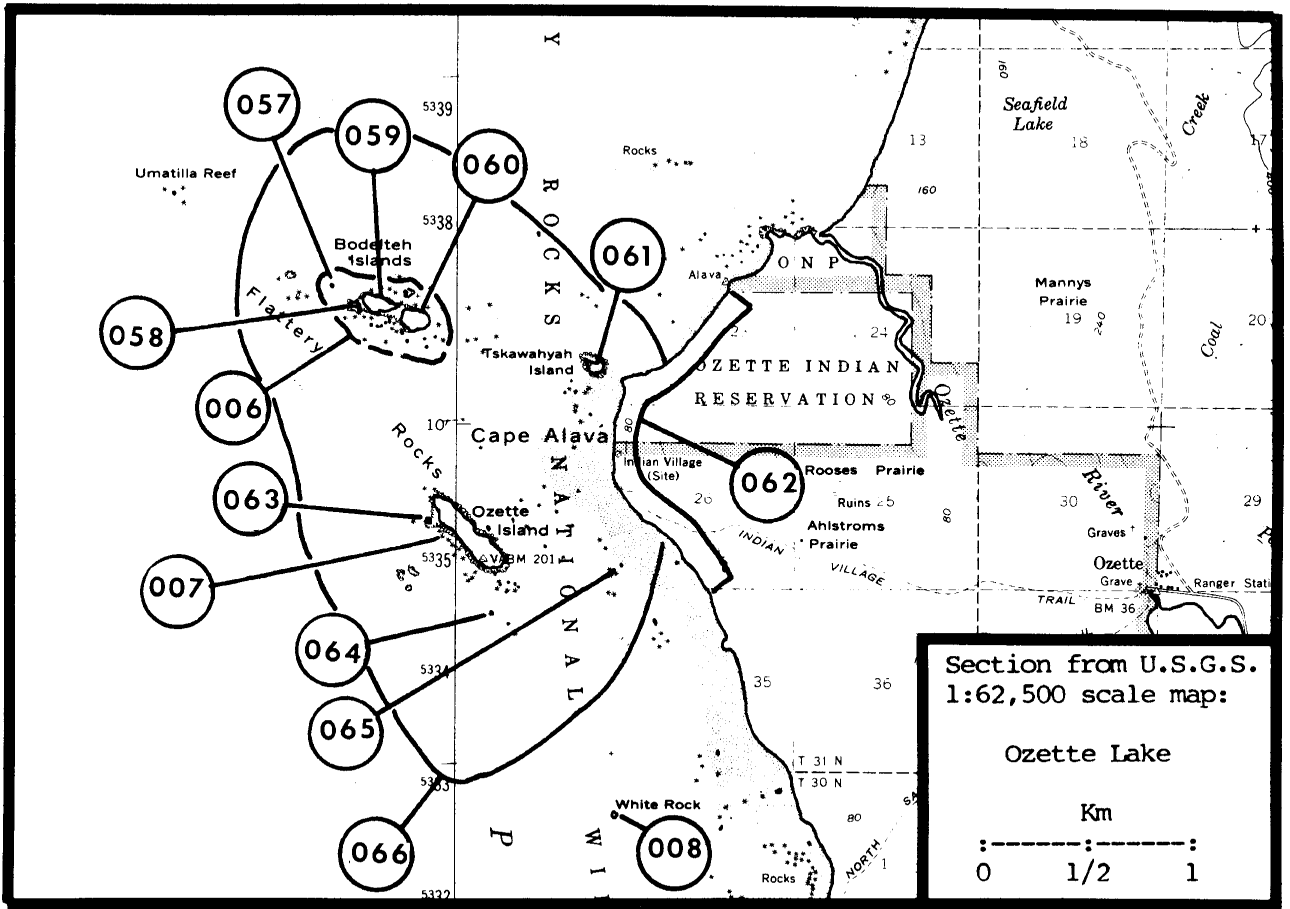
Pelagic Cormorant	8	Speich	06/27/78	B III	255
Pelagic Cormorant	40	Pitman	06/28-29/78	M II	217
Glaucous-winged Gull	6?	Speich	06/27/78	B III	255

(058) Bodelteh Island, west¹ 48°10'33"N, 124°45'44"W

Double-crested Cormorant	0	Wilson	05/27-29/82	M III	287
Pelagic Cormorant	0	Wilson	05/27-29/82	M III	287
Black Oystercatcher	4	Wilson	05/27-29/82	M III	287
Glaucous-winged Gull	185	Wilson	05/27-29/82	M III	287
Pigeon Guillemot	8	Wilson	05/27-29/82	M III	287
Tufted Puffin	10?	Wilson	05/27-29/82	M III	287
Total	207				

Double-crested Cormorant	0	Pitman	06/04-06/79	M III	217
Double-crested Cormorant	X	Speich	06/04-06/79	M III	255
Pelagic Cormorant	4	Speich	06/27/78	M III	255
Pelagic Cormorant	40	Pitman	06/28-29/78	M III	217
Pelagic Cormorant	86	Pitman	06/04-06/79	M III	217
Pelagic Cormorant	X	Speich	06/04-06/79	M III	255
Glaucous-winged Gull	150	Speich	06/27/78	M III	255
Glaucous-winged Gull	X	Pitman	06/28-29/78	M III	217
Glaucous-winged Gull	76	Pitman	06/04-06/79	M III	217
Glaucous-winged Gull	X	Speich	06/04-06/79	M III	255
Common Murre	15P	Pitman	06/28-29/78	M III	217
Common Murre	19?	Pitman	06/04-06/79	M III	217
Pigeon Guillemot	19	Pitman	06/28-29/78	M III	217
Tufted Puffin	150-200	Speich	06/27/78	M III	255
Tufted Puffin	X	Pitman	06/28-29/78	M III	217
Tufted Puffin	130	Pitman	06/04-06/79	M III	217
Tufted Puffin	X	Speich	06/04-06/79	M III	255

¹See also Bodelteh Islands (155006).



AREA 155, Cape Flattery (cont'd.)

(059)

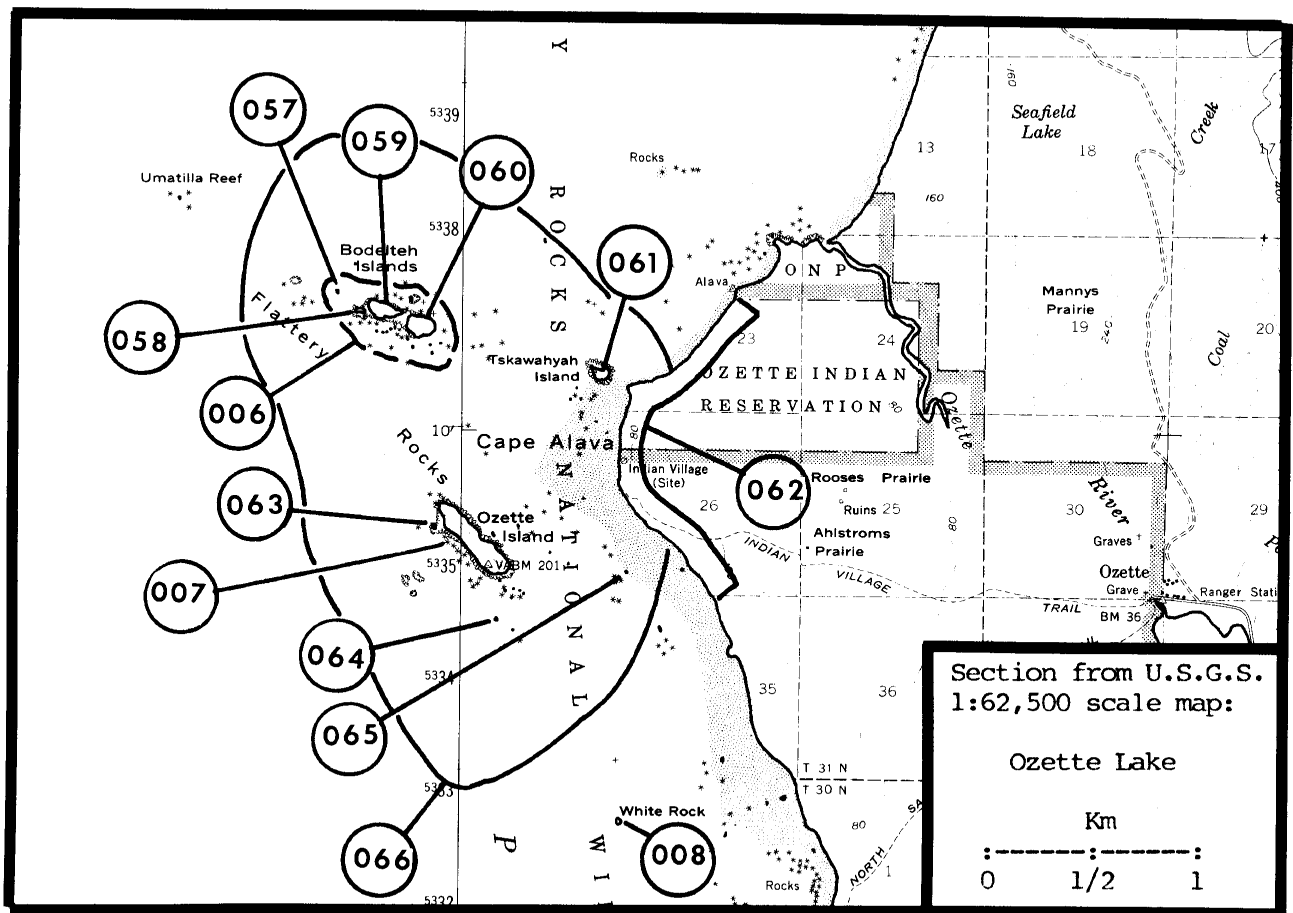
Bodelteh Island, middle¹

48°10'33"N, 124°45'33"W

Fork-tailed Storm-Petrel	978	Wilson	05/27-29/82	L III 287
Leach's Storm-Petrel	X	Pitman	06/04-06/79	L III 217
Double-crested Cormorant	0	Wilson	05/27-29/82	L III 287
Pelagic Cormorant	0	Wilson	05/27-29/82	L III 287
Black Oystercatcher	4	Wilson	05/27-29/82	L III 287
Glaucous-winged Gull	250	Wilson	05/27-29/82	L II 287
Common Murre	<100	Speich	06/04-06/79	L III 255
Pigeon Guillemot	15	Wilson	05/27-29/82	L III 287
Cassin's Auklet	3000	Pitman	06/04-06/79	L III 217
Tufted Puffin	8	Wilson	05/27-29/82	L II 287
Total	4355			

Fork-tailed Storm-Petrel	100's	Richardson 1960	07/17/59	L III 226
Fork-tailed Storm-Petrel	100's	Pitman	06/28-29/78	L III 217
Fork-tailed Storm-Petrel	X	Pitman	06/04-06/79	L III 217
Fork-tailed Storm-Petrel	X	Pitman	06/04-06/79	L III 255
Leach's Storm-Petrel	X	Richardson 1960	07/17/59	L III 226
Leach's Storm-Petrel	X	Pitman	06/28-29/78	L III 217
Double-crested Cormorant	0	Pitman	06/04-06/79	L III 217
Pelagic Cormorant	70	Speich	06/27/78	B II 255
Pelagic Cormorant	56	Pitman	06/28-29/78	L III 217
Pelagic Cormorant	48	Graybill	06/04-05/79	L II 119
Pelagic Cormorant	104	Pitman	06/04-06/79	L II 217
Black Oystercatcher	3	Speich	06/27/78	L III 255
Glaucous-winged Gull	370	Speich	06/27/78	B II 255
Glaucous-winged Gull	X	Pitman	06/28-29/78	L III 217
Glaucous-winged Gull	X	Pitman	06/04-06/79	L III 217
Glaucous-winged Gull	X	Speich	06/04-06/79	L III 255
Cassin's Auklet	X	Richardson 1960	07/17/59	L III 226
Tufted Puffin	X	Speich	06/27/78	L III 255
Tufted Puffin	X	Pitman	06/28-29/78	L III 217
Tufted Puffin	250	Pitman	06/04-06/79	L III 217

¹See also Bodelteh Islands (155006).



AREA 155, Cape Flattery (cont'd.)

060

Bodelteh Island, east¹ 48°10'30"N, 124°45'18"W

Fork-tailed Storm-Petrel	900	Wilson	05/27-29/82	L III 287
Leach's Storm-Petrel	X	Speich	08/02-04/79	L III 255
Double-crested Cormorant	0	Wilson	05/27-29/82	L III 287
Pelagic Cormorant	0	Wilson	05/27-29/82	L III 287
Black Oystercatcher	8	Wilson	05/27-29/82	L III 287
Glaucous-winged Gull	470	Wilson	05/27-29/82	L III 287
Pigeon Guillemot	12	Wilson	05/27-29/82	L III 287
Cassin's Auklet	5600	Wilson	05/27-29/82	L III 287
Rhinoceros Auklet	10	Wilson	05/27-29/82	L III 287
Tufted Puffin	6	Wilson	05/27-29/82	L I 287
Total	7006			

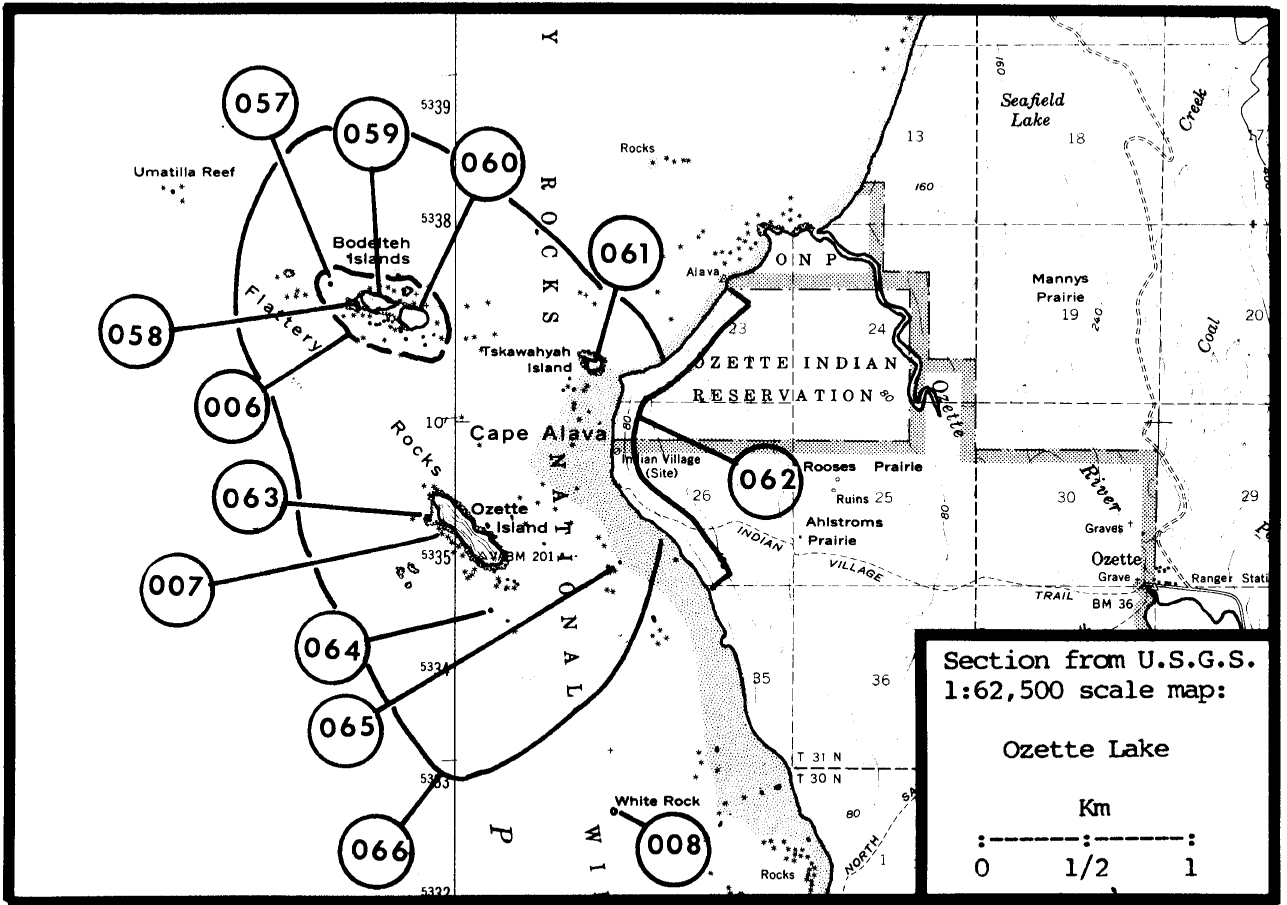
Fork-tailed Storm-Petrel	100's	Richardson 1960	07/17/59	L III 226
Fork-tailed Storm-Petrel	100's	Pitman	06/28-29/78	L III 217
Fork-tailed Storm-Petrel	X	Pitman	06/04-06/79	L III 217
Fork-tailed Storm-Petrel	100's	Speich	06/04-06/79	L III 255
Fork-tailed Storm-Petrel	100's	Speich	08/02-04/79	L III 255
Leach's Storm-Petrel	X	Richardson 1960	07/17/59	L III 226
Leach's Storm-Petrel	X	Pitman	06/28-29/78	L III 217
Leach's Storm-Petrel	X	Pitman	06/04-06/79	L III 217
Leach's Storm-Petrel	X	Speich	06/04-06/79	L III 255
Double-crested Cormorant	0	Pitman	06/04-06/79	L III 217
Pelagic Cormorant	0	Pitman	06/28-29/78	L III 217
Pelagic Cormorant	0	Pitman	06/04-06/79	L III 217
Black Oystercatcher	16	Speich	06/04-06/79	L III 255
Glaucous-winged Gull	X	Pitman	06/28-29/78	L III 217
Glaucous-winged Gull	260	Graybill	06/04-05/79	L II 119
Glaucous-winged Gull	X	Pitman	06/04-06/79	L III 217
Glaucous-winged Gull	X	Speich	06/04-06/79	L III 255
Glaucous-winged Gull	X	Speich	08/02-04/79	L III 255
Pigeon Guillemot	14	Pitman	06/28-29/78	L III 217
Cassin's Auklet	X	Richardson 1960	07/17/59	L III 226
Cassin's Auklet	X	Graybill	06/04-05/79	L III 119
Cassin's Auklet	4000-6000	Speich	06/04-06/79	L II 255
Cassin's Auklet	5400	Speich	08/02-04/79	L II 255
Rhinoceros Auklet	10-15	Graybill	06/04-05/79	L III 119
Rhinoceros Auklet	6	Speich	08/02-04/79	L II 255
Tufted Puffin	20	Pitman	06/28-29/78	L II 217
Tufted Puffin	7	Graybill	06/04-05/79	L II 119
Tufted Puffin	10	Pitman	06/04-06/79	L II 217

¹See also Bodelteh Islands (155006).

061

Tskawahyah Island 48°10'16"N, 124°46'02"W

No Nesting Observed 0 Speich 06/27/78 B III 255



AREA 155, Cape Flattery (cont'd.)

062 Cape Alava, mainland 48°10'00"N, 124°44'00"W

Black Oystercatcher	3	Chappell	08/20/78	L III 58
Black Oystercatcher	1	Alcorn	04/07/48	S - 8
Black Oystercatcher	1	Alcorn	05/15/48	S - 8
Black Oystercatcher	2	Nysewander 1977	?/ ?/74?	L III 204

063 "Unnamed Rock" 48°09'28"N, 124°45'15"W

No Nesting Observed	0	Speich	06/26-27/79	L III 255
Glaucous-winged Gull	X	Kenyon & Scheffer 1962	07/16/59	L III 167

064 "Unnamed Rock" 48°09'07"N, 124°44'45"W

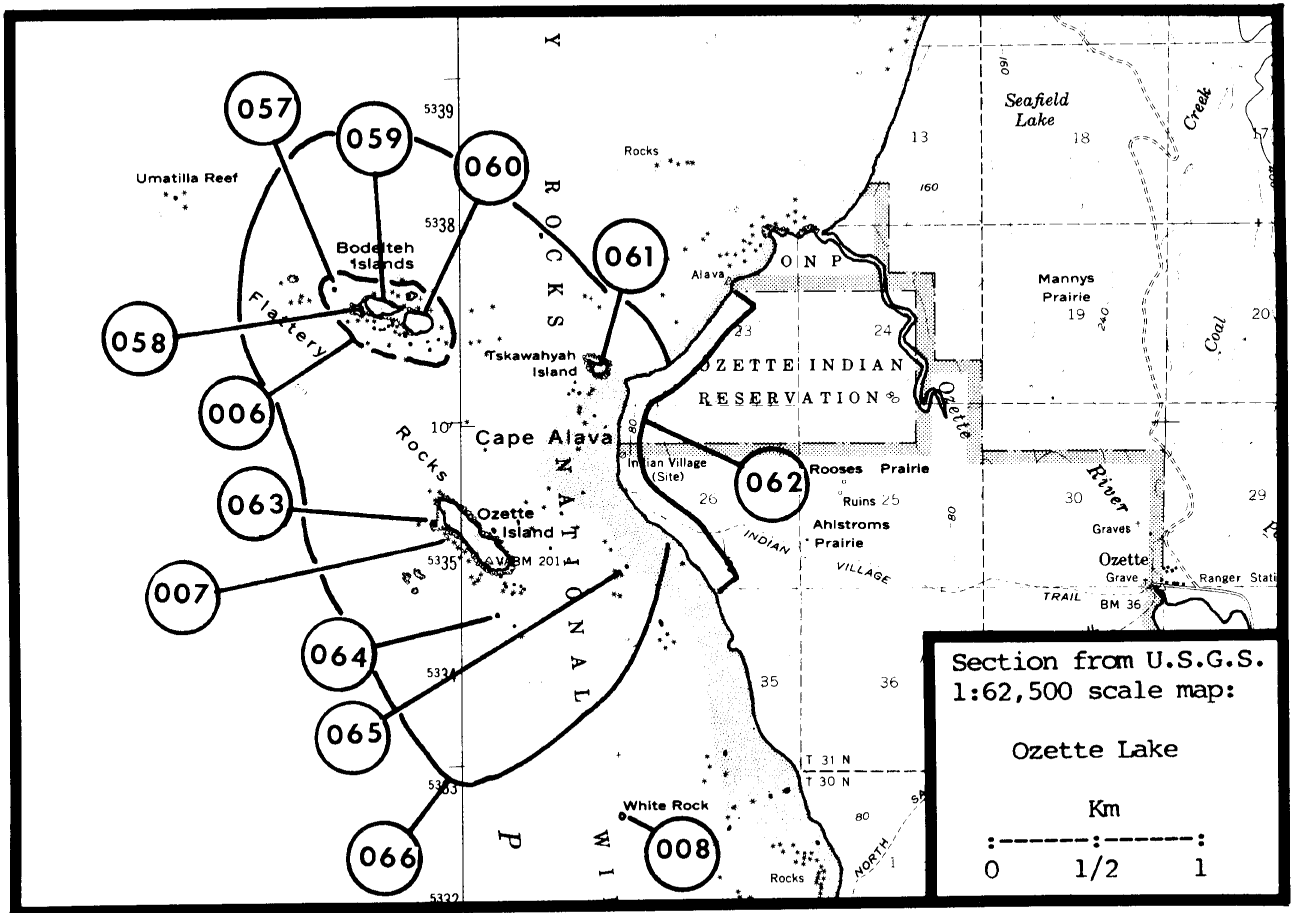
Black Oystercatcher	1	Speich	06/27/78	B III 217
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065 "Unnamed Rock" 48°09'14"N, 124°43'50"W

Pelagic Cormorant	60	Pitman	06/30/78	B II 217
Black Oystercatcher	1	Pitman	06/30/78	B III 217
Glaucous-winged Gull	25	Pitman	06/30/78	B III 217
Pigeon Guillemot	17?	Pitman	06/30/78	B III 217
Tufted Puffin	60	Pitman	06/30/78	B III 217
Total	<u>163</u>			

066 Flattery Rocks 48°10'00"N, 124°46'00"W

Brandt's Cormorant	100	Cantwell	08/04/15	L III 52
Glaucous-winged Gull	X	Cantwell	08/04/15	L III 52
Common Murre	P	Howeattle	06/20/14	L III 146
Cassin's Auklet	500	Howeattle	06/25/14	L III 146



AREA 155, Cape Flattery (cont'd.)

067 Hand Rock 48°01'55"N, 124°43'00"W

No Nesting Observed	0	Pitman	06/30/78	B III 217
Leach's Storm-Petrel	3000	Cantwell	?/ ?/16	L III 52
Leach's Storm-Petrel	X	Jewett et al. 1953	07/24/17	L III 158
Tufted Puffin	5000	Cantwell	?/ ?/14-15	L III 52

068 "Foot Rock" 48°01'55"N, 124°42'06"W

Black Oystercatcher	2	Pitman	06/30/78	B III 217
Glaucous-winged Gull	2?	Pitman	06/30/78	B III 217
Total	<u>4</u>			

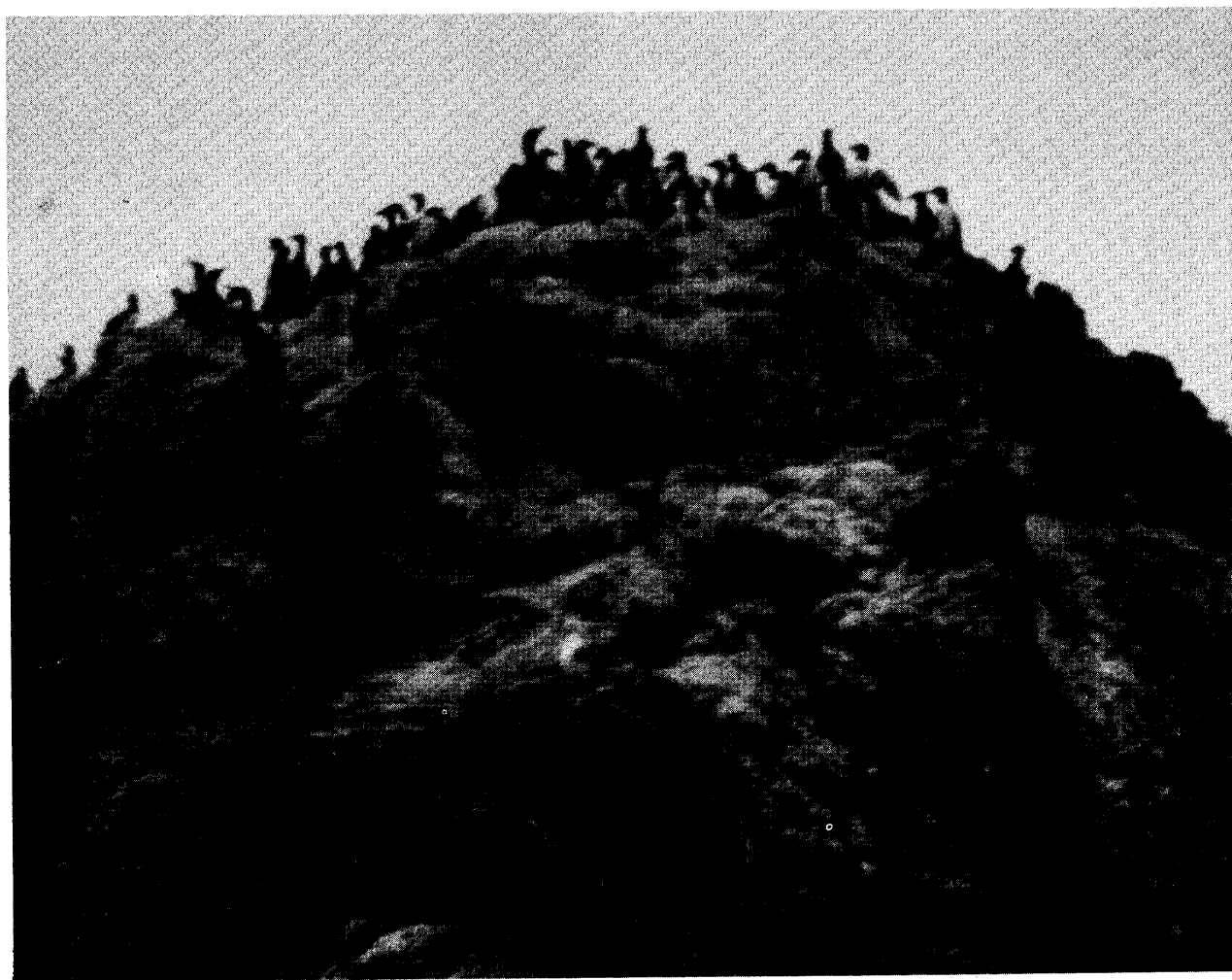
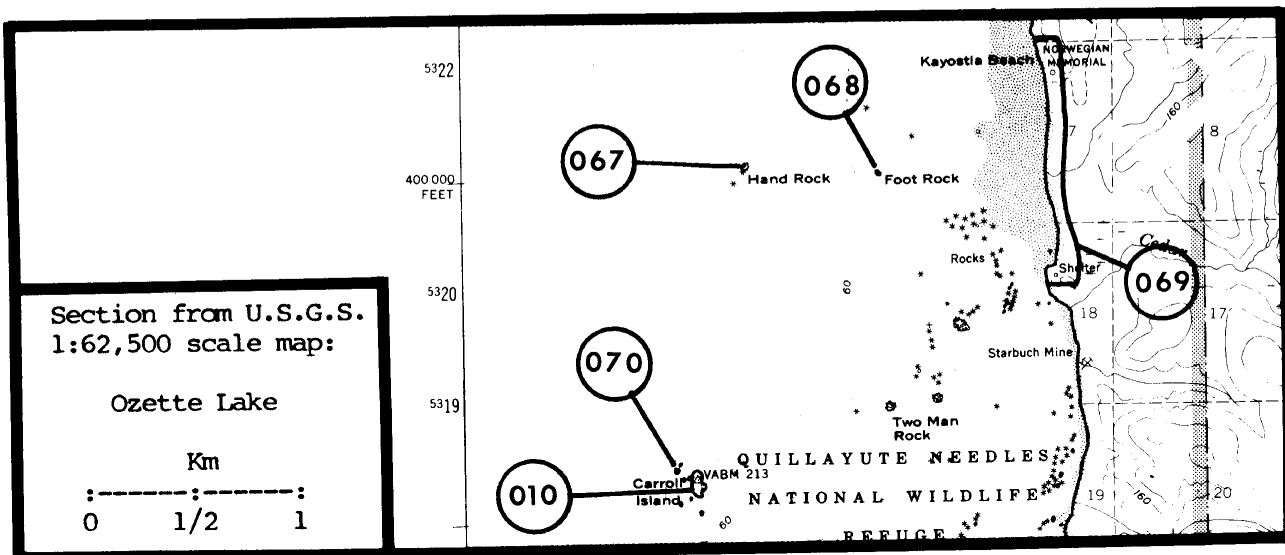
069 "Norwegian Creek" (mainland shore area) 48°02'00"N, 124°41'00"W

Black Oystercatcher	13	Blau	07/24/74	L III 29
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070 "Paahwoke-it" 48°00'25"N, 124°43'27"W

Brandt's Cormorant	12	Speich	06/27/79	B I 255
Pelagic Cormorant	200	Speich	06/27/79	B I 255
Pigeon Guillemot	5	Speich	06/27/79	B III 255
Total	<u>217</u>			

Double-crested Cormorant	X	Speich	06/27/78	M III 255
Brandt's Cormorant	60	Dawson 1908	06-07/ ?/06-07	M III 66
Brandt's Cormorant	X	Jones 1909	06/ ?/07	M III 164
Brandt's Cormorant	10	Pitman	06/04/79	M II 217
Pelagic Cormorant	150	Dawson 1908	06-07/ ?/06-07	M III 66
Pelagic Cormorant	22	Speich	06/08/78	M III 255
Pelagic Cormorant	30	Speich	06/27/78	M III 255
Glaucous-winged Gull	10	Dawson 1908	06-07/ ?/06-07	M III 66
Glaucous-winged Gull	4?	Speich	06/27/78	M III 255
Common Murre	200	Dawson 1908	06-07/ ?/06-07	M III 66
Common Murre	X	Cantwell	07/24/17	M III 52
Common Murre	10	Speich	06/27/78	M III 255

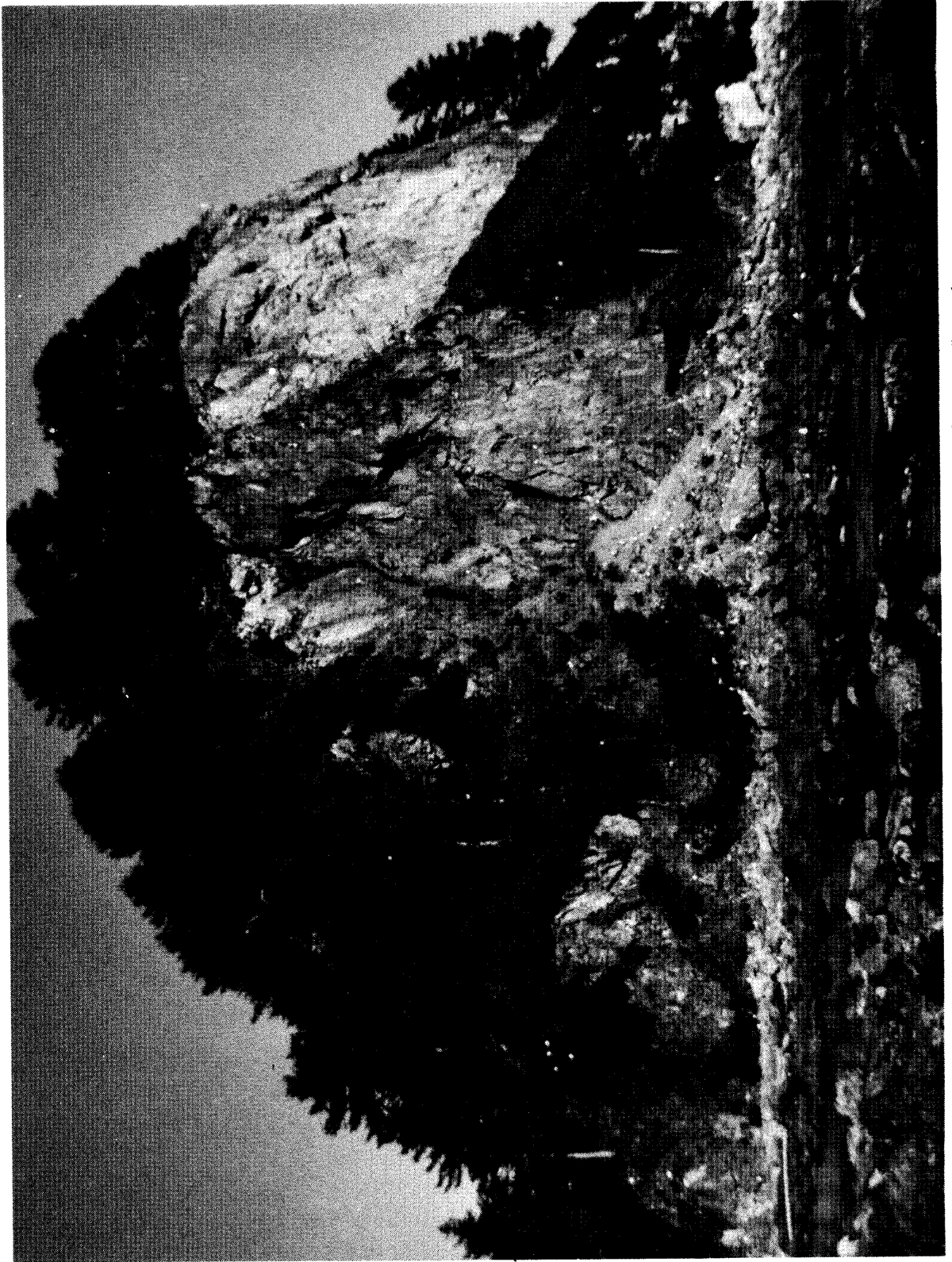


"Paahwoke-it" (155070) 27 June 1979 S.M. Speich

AREA 155, Cape Flattery (cont'd.)

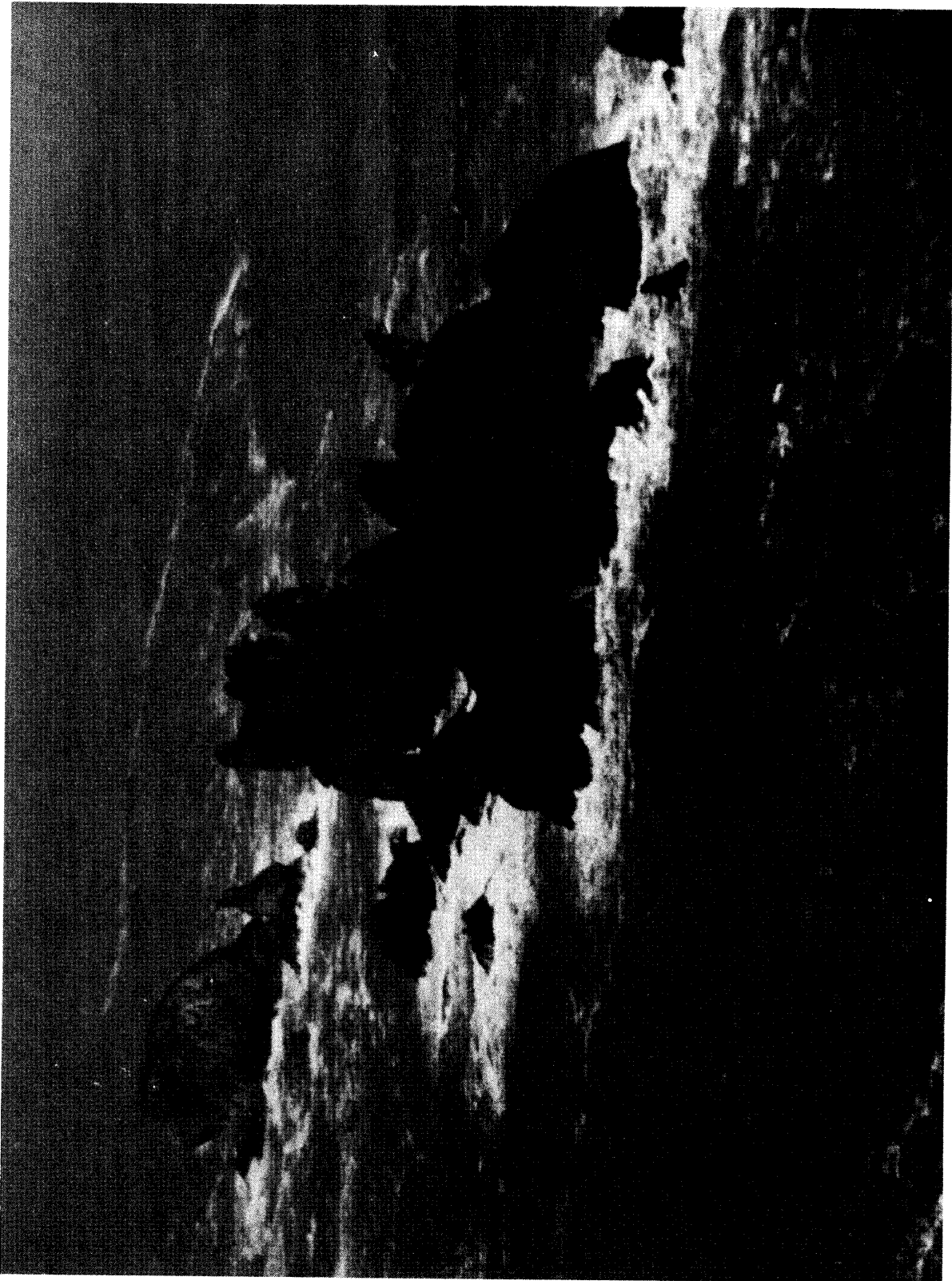


Bodelteh Island, middle (155059), left; Bodelteh Island, east (155060) 19 November 1979 S.M. Speich



Bodelteah Island, east (155060) 28 June 1978 S.M. Speich

AREA 155, Cape Flattery (cont'd.)

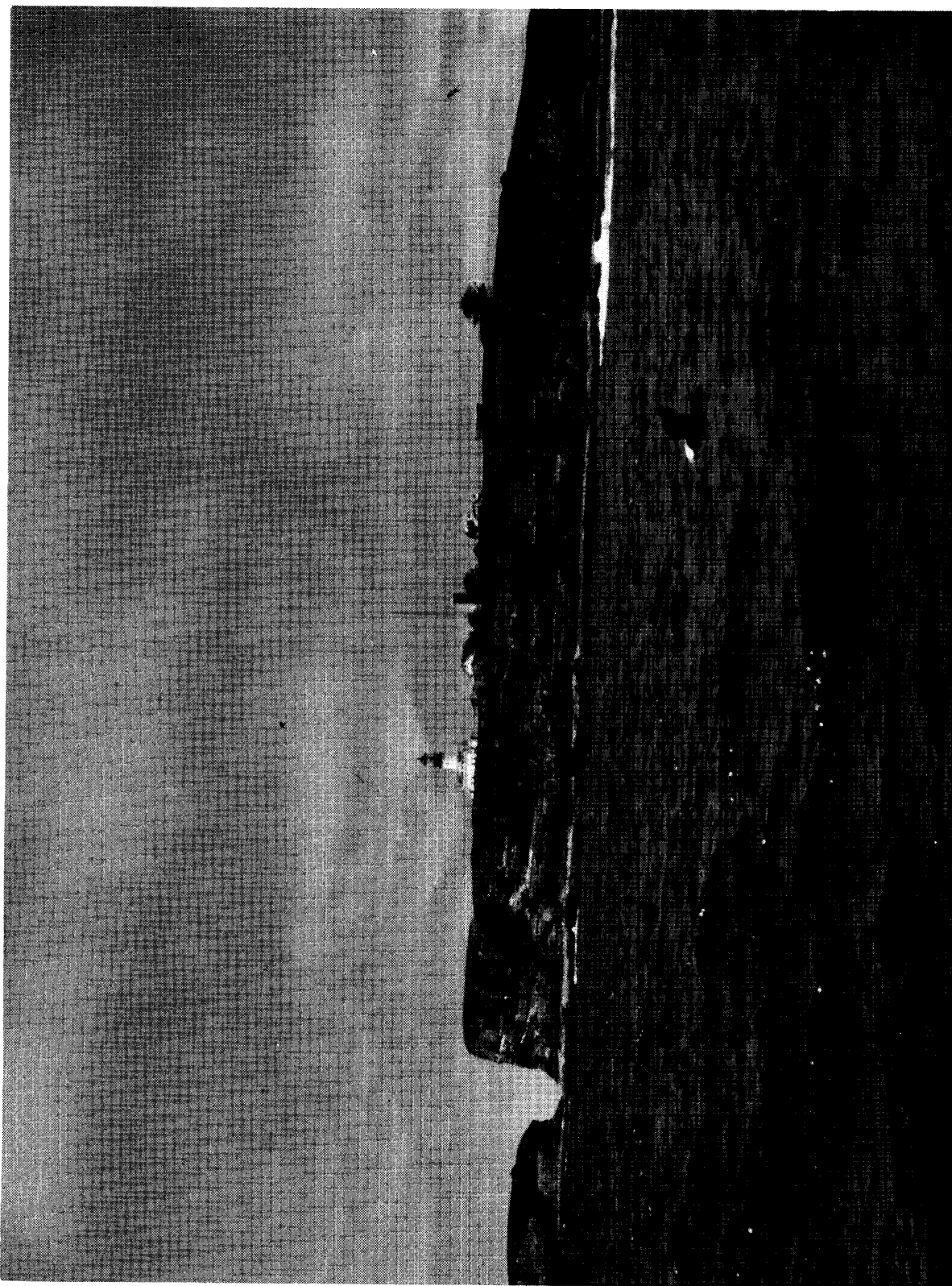


Point of the Arches (155004) 19 November 1979 S.M. Speich

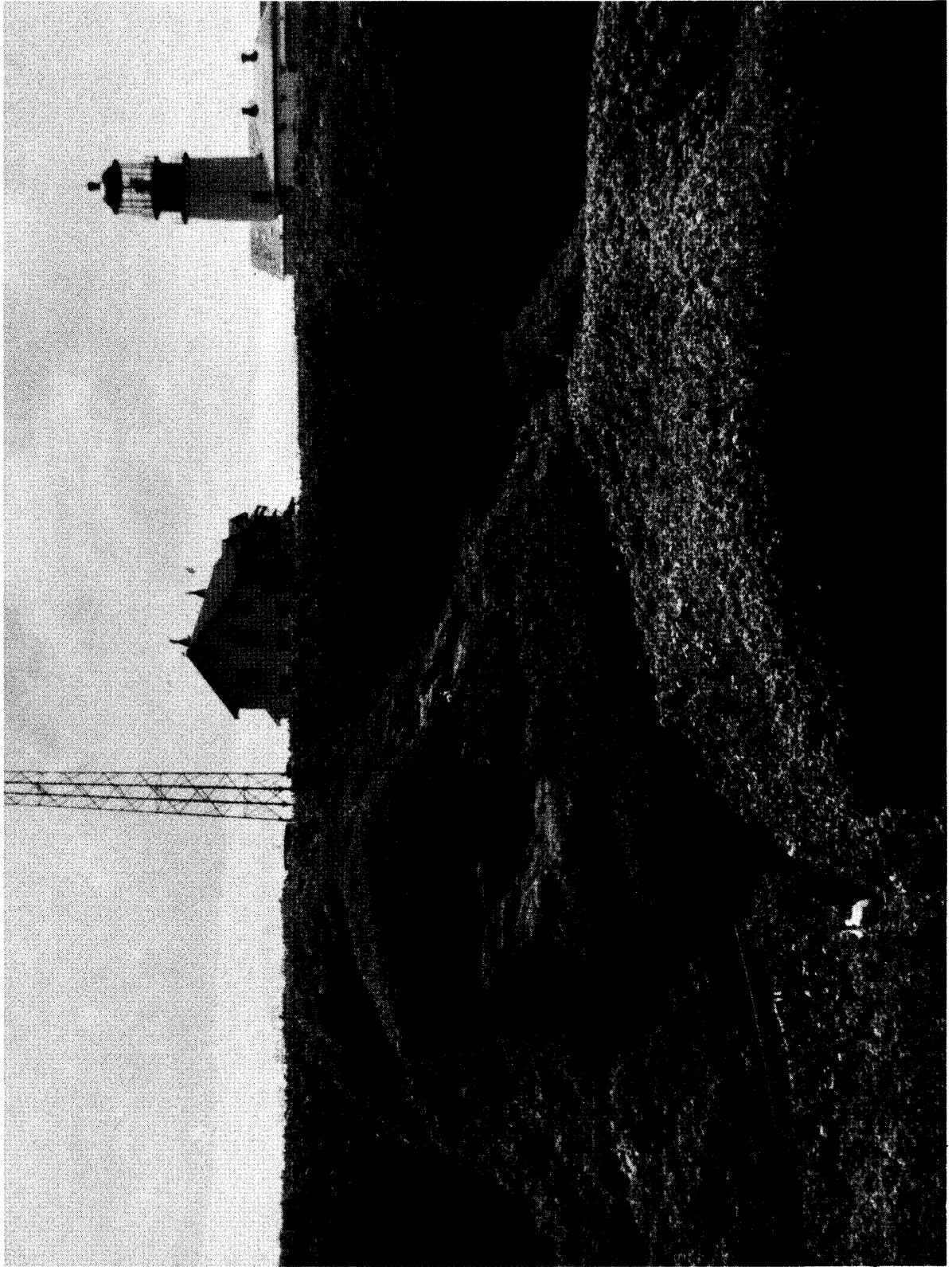


Ozette Island (155007) 1979 S.M. Speich

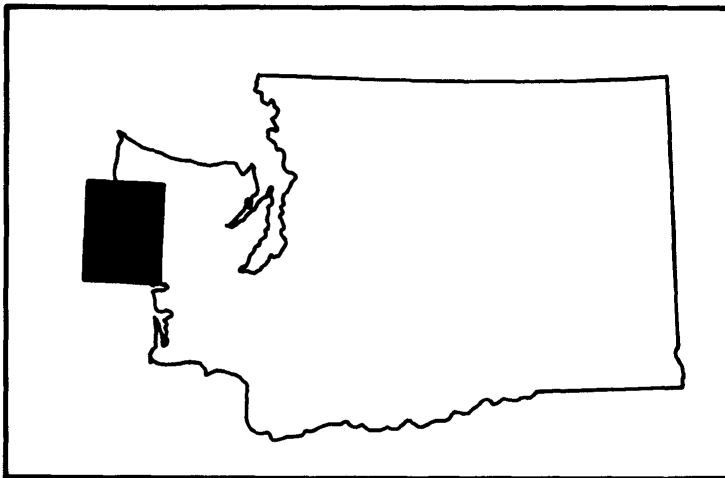
AREA 155, Cape Flattery (cont'd)



Tatoosh Island (155001) June 1978 R.L. Pitman



Tatoosh Island (155001) June 1978 R.L. Pitman



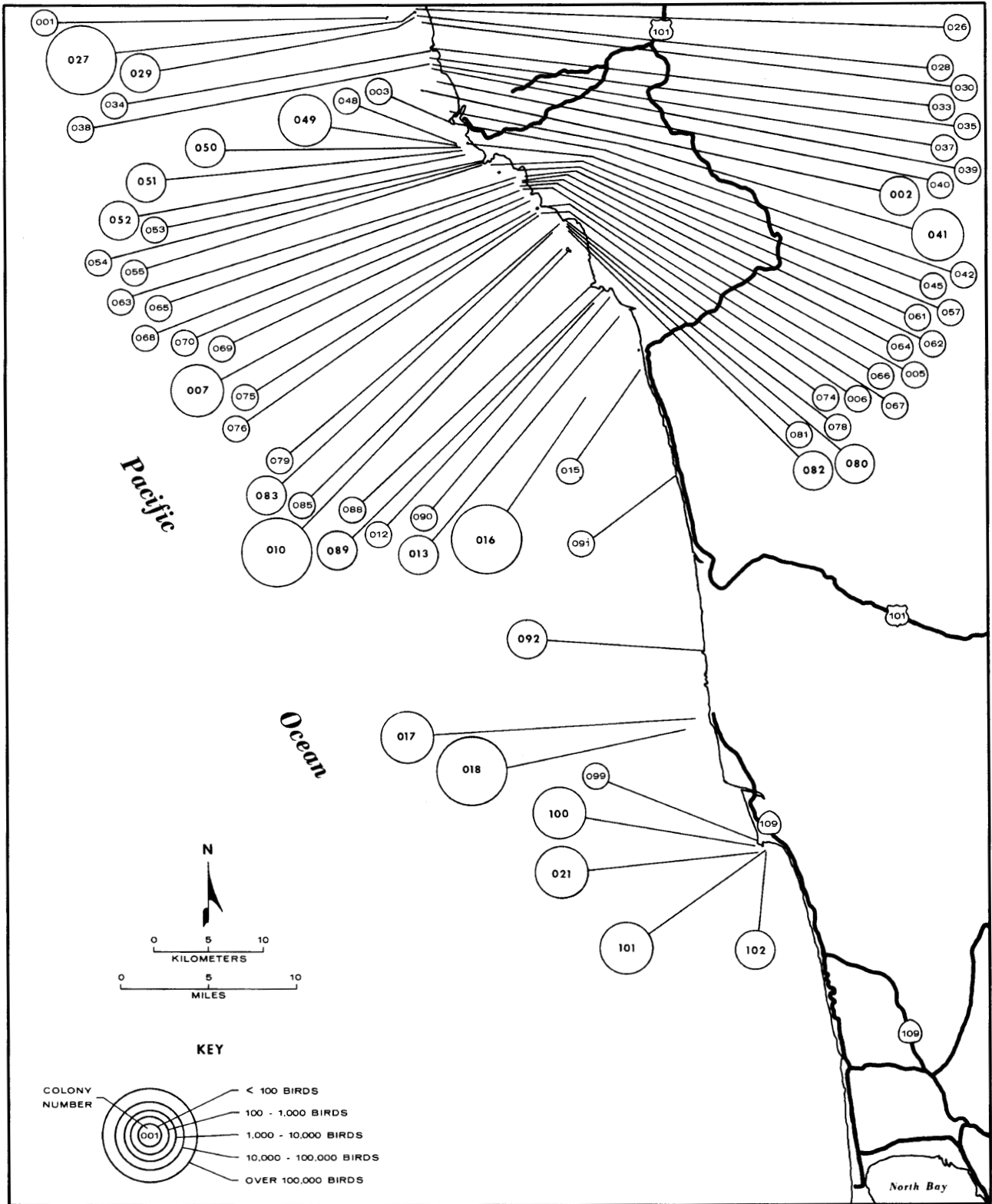
174
Copalis Beach
(North)

The map on the facing page is an index to the location of colonies within map 174, Copalis Beach, North. Note that all colonies on the map are not numbered consecutively from north to south, since many previously unreported sites have been added since initial colony numbers were assigned by Varoujean (1979). On the pages following this map, all colonies are listed sequentially and a detailed map of each is provided.

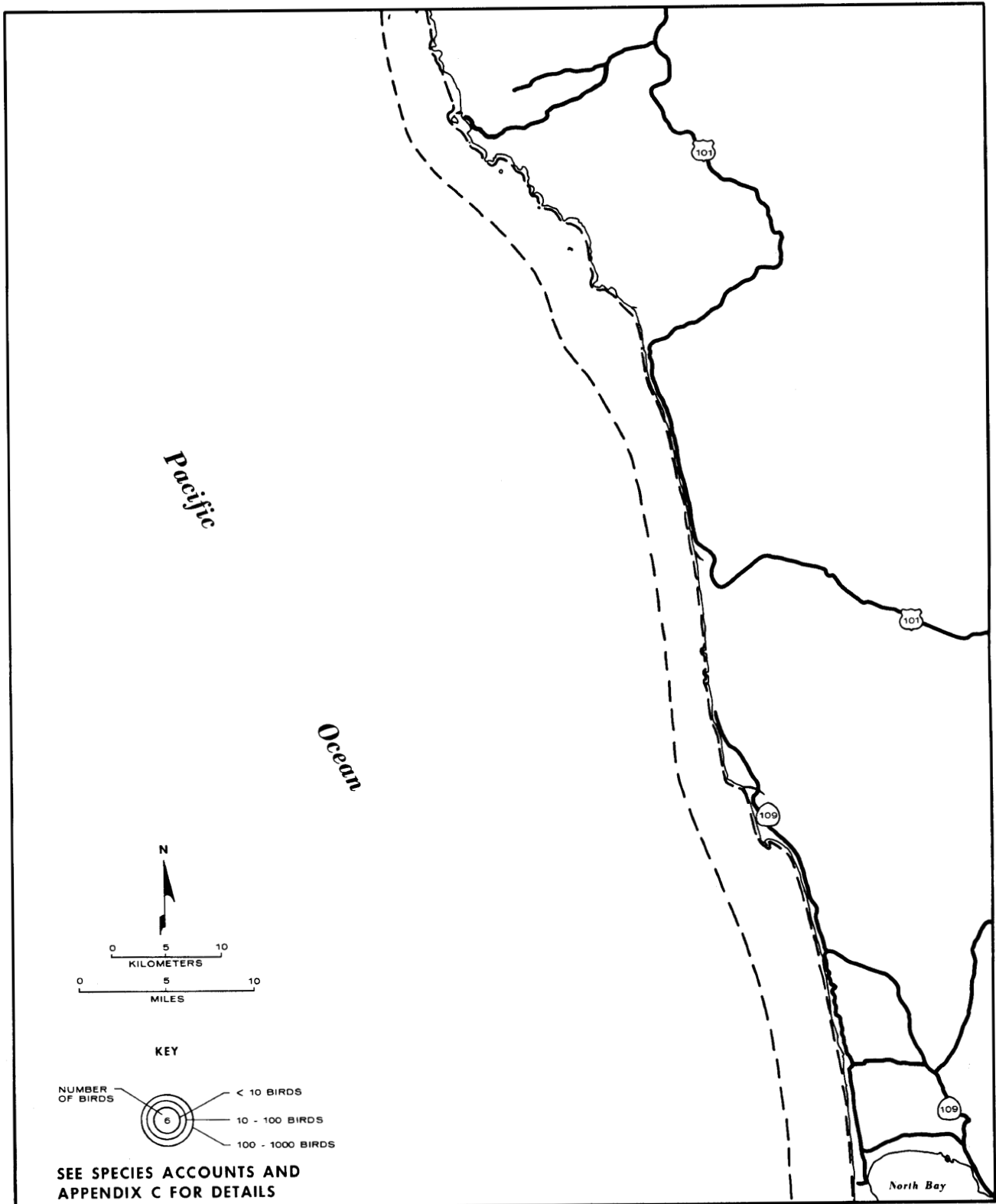
Numbers of breeding seabirds will vary from year to year. Below are the approximate numbers of breeding seabirds within this region.

Fork-tailed Storm-Petrel	200
Leach's Storm-Petrel	25,000
Double-crested Cormorant	1,100
Brandt's Cormorant	450
Pelagic Cormorant	1,500
American Black Oystercatcher	160
Glaucous-winged and Western gulls	3,900
Common Murre	30,000
Pigeon Guillemot	280
Marbled Murrelet	no estimate
Cassin's Auklet	64,000
Rhinoceros Auklet	24,000
Tufted Puffin	15,000

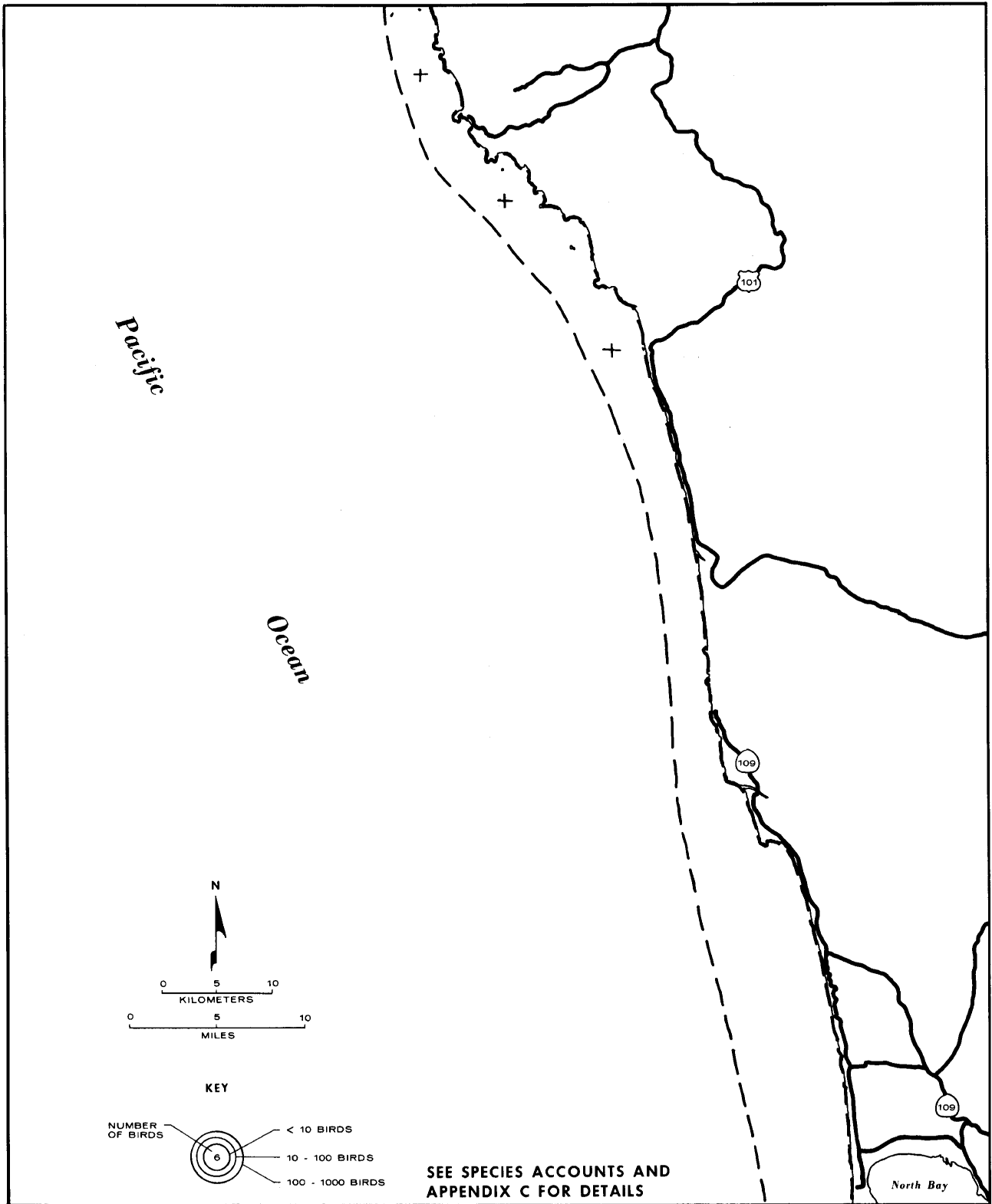
174 (NORTH) COPALIS BEACH



Relative distribution for Pigeon Guillemots in map area 174 (North) Copalis Beach.



Relative distribution for Marbled Murrelets in map area 174 (North) Copalis Beach.



AREA 174, Copalis Beach, North (cont'd.)

SITE NUMBER	COLONY NAME	LAT.-LONG.											
191	PORT WILLIAMS	48° 07' 00", 123° 03' 00" W											
<table border="1"> <tr> <td>PIGEON GUILLEMOT</td> <td>34</td> <td>SPEICH</td> <td>05/23/79</td> <td>B III</td> <td>255</td> <td></td> </tr> </table>							PIGEON GUILLEMOT	34	SPEICH	05/23/79	B III	255	
PIGEON GUILLEMOT	34	SPEICH	05/23/79	B III	255								
PIGEON GUILLEMOT	33	SPEICH	05/26/78	B III	255								
SPECIES NAME	NUMBER BREEDING BIRDS	SOURCE	SURVEY DATE	SURVEY TYPE	REFERENCE DATA QUALITY								

Box gives the most recent or the best estimates available.

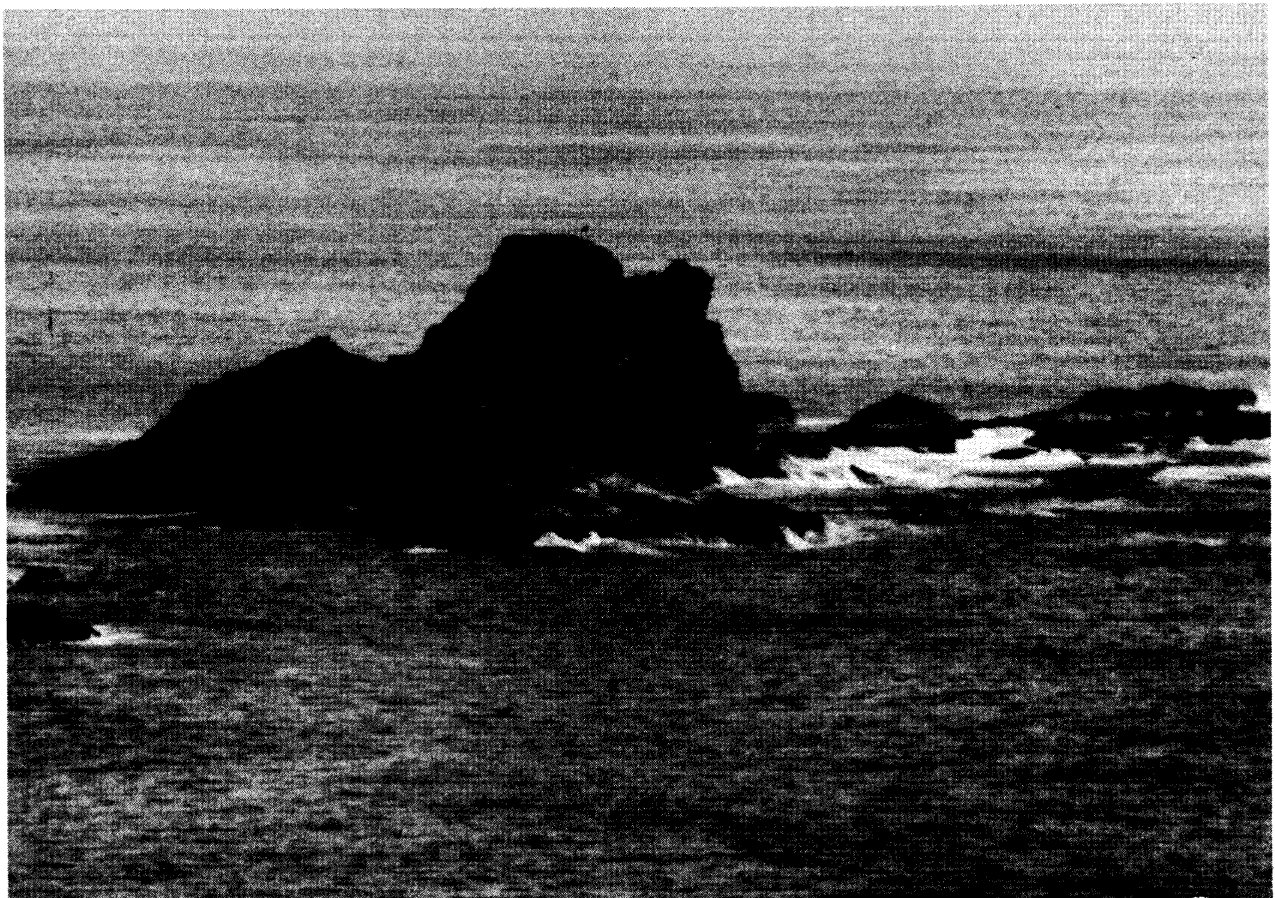
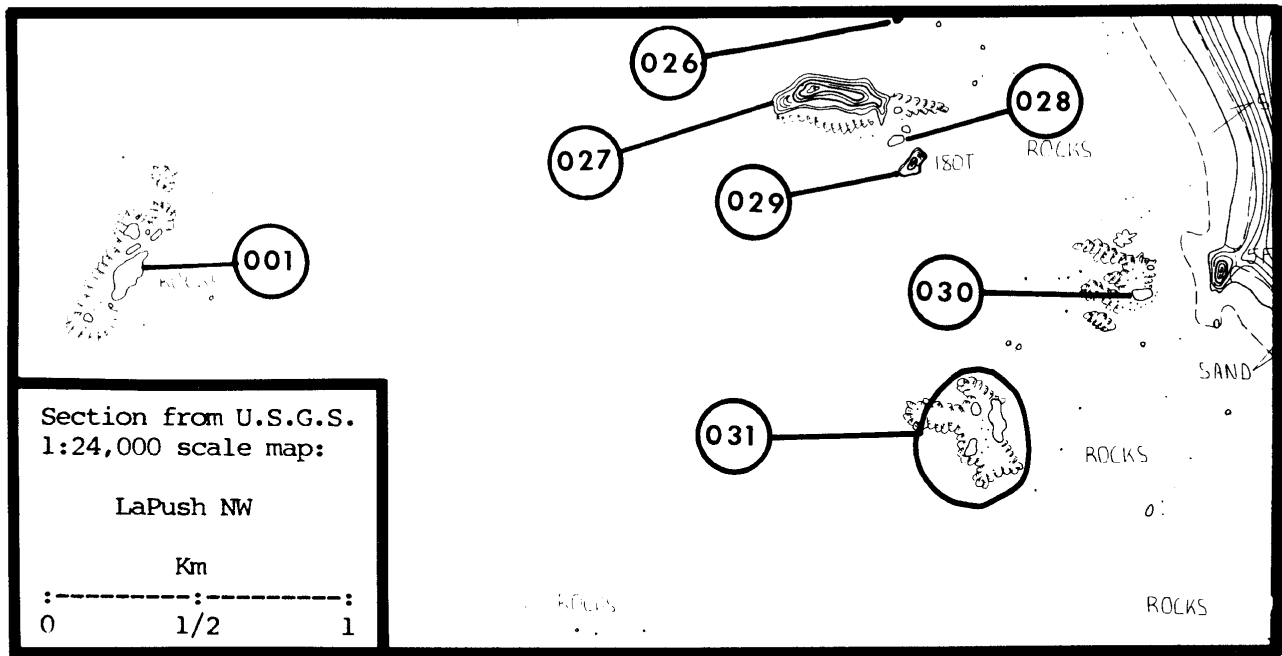
001

Sea Lion Rock (Jagged Islet) 47°59'32"N, 124°43'36"W

Black Oystercatcher	7	Pitman	06/08/78	L III	217
Glaucous-winged Gull	30	Wilson	08/13/81	B III	287
Pigeon Guillemot	2	Wilson	08/13/81	B III	287
Total	39				

Brandt's Cormorant	50	Dawson 1908	06-07/ ?/06/07	? III	66
Black Oystercatcher	6	Dawson 1908	06-07/ ?/06-07	? III	66
Black Oystercatcher	X	Cantwell ¹	05/29/15	L III	52
Glaucous-winged Gull	200	Dawson 1908	06-07/ ?/06-07	? III	66
Glaucous-winged Gull	44	Pitman	06/08/78	L I	217
Common Murre	6	Dawson 1908	06-07/ ?/06-07	? III	66
Pigeon Guillemot	2	Hancock	08/04/67	B III	122

¹Location not definite.



Sea Lion Rock (174001) 8 June 1978 R.L. Pitman

AREA 174, Copalis Beach, North (cont'd.)

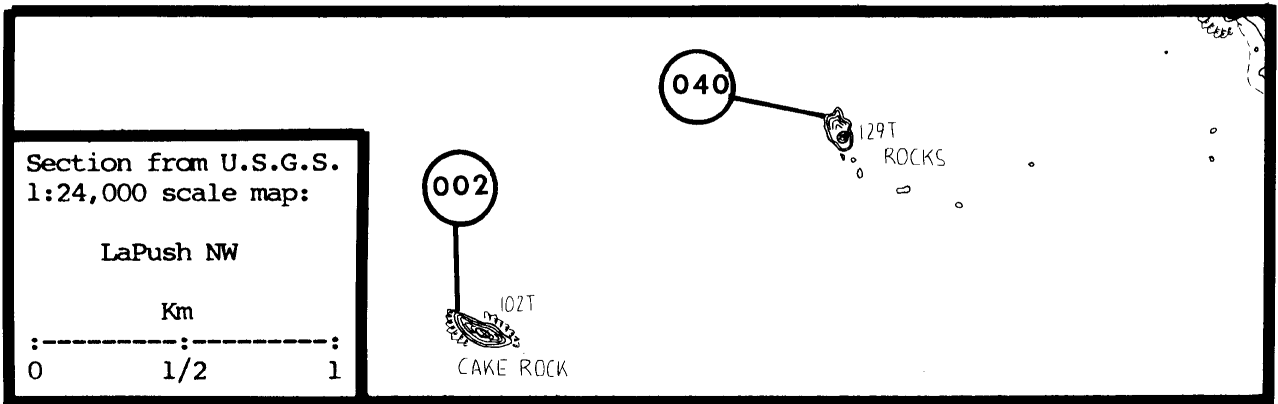
002

Cake Rock (Chah-chah-lakh-hoos-set)

47°55'58"N, 124°41'02"W

Pelagic Cormorant	84	Wilson	08/13/81	B II	287
Black Oystercatcher	10	Speich	07/22/78	B III	255
Glaucous-winged Gull	400	Speich	06/08/78	B III	255
Pigeon Guillemot	39	Speich	07/22/78	B III	255
Tufted Puffin	500-1000	Pitman	06/30/78	B III	217
Total	949-1449				

Double-crested Cormorant	N	Hancock	08/04/67	B III	122
Double-crested Cormorant	N	Speich	07/22/78	B III	255
Brandt's Cormorant	N	Speich	07/22/78	B III	255
Pelagic Cormorant	100	Dawson 1908	06-07/ ?/06-07	B III	66
Pelagic Cormorant	230	Hancock	08/04/67	B III	122
Pelagic Cormorant	168	Speich	06/08/78	B I	255
Pelagic Cormorant	252	Speich	07/22/78	B I	255
Black Oystercatcher	2	Dawson 1908	06-07/ ?/06-07	B III	66
Black Oystercatcher	2	Hancock	08/04/67	B III	122
Black Oystercatcher	1	Speich	06/08/78	B III	255
Glaucous-winged Gull	1000	Dawson 1908	06-07/ ?/06-07	B III	66
Glaucous-winged Gull	200	Hancock	08/04/78	B III	122
Glaucous-winged Gull	310	Speich	07/22/78	B III	255
Glaucous-winged Gull	200	Wilson	08/13/81	B III	287
Common Murre	50?	Kenyon & Scheffer 1962	07/13/59	B III	167
Common Murre	30	Hancock	08/04/67	B III	122
Common Murre	N	Speich	07/22/78	B III	255
Pigeon Guillemot	6	Hancock	08/04/67	B III	122
Pigeon Guillemot	18	Speich	06/08/78	B III	255
Pigeon Guillemot	7	Pitman	06/30/78	B III	217
Pigeon Guillemot	4	Wilson	08/13/81	B III	287
Tufted Puffin	500	Dawson 1908	06-07/ ?/06-07	B III	66
Tufted Puffin	30	Kenyon & Scheffer 1962	07/13/59	B III	167
Tufted Puffin	X	Hancock	08/04/67	B III	122
Tufted Puffin	X	Cody 1973	?/ ?/68-69	B III	60
Tufted Puffin	1000	Speich	06/08/78	B III	255
Tufted Puffin	480+	Speich	07/22/78	B III	255
Tufted Puffin	70	Wilson	08/13/81	B III	287



Cake (174002) 22 July 1978 S.M. Speich

AREA 174, Copalis Beach, North (cont'd.)

003 James Island 47°54'22"N, 124°38'50"W

Black Oystercatcher	2-4	Nysewander	06/16/74	B III 205
Pigeon Guillemot	P	Speich	06/12/79	B III 255
Total	2-4			

No Nesting Observed	0	Speich	06/08/78	B III 255
Pelagic Cormorant	X	Dawson 1908	06-07/ ?/06-07	B III 66
Pelagic Cormorant	X	Eddy	07/25/54	B III 95
Pelagic Cormorant	?	Nysewander	06/16/74	B III 205
Pigeon Guillemot	P	Hancock	08/04/67	B III 122
Tufted Puffin	?	Hancock	08/04/67	B III 122
Tufted Puffin	X	Chappell	07/ ?/75	? III 58

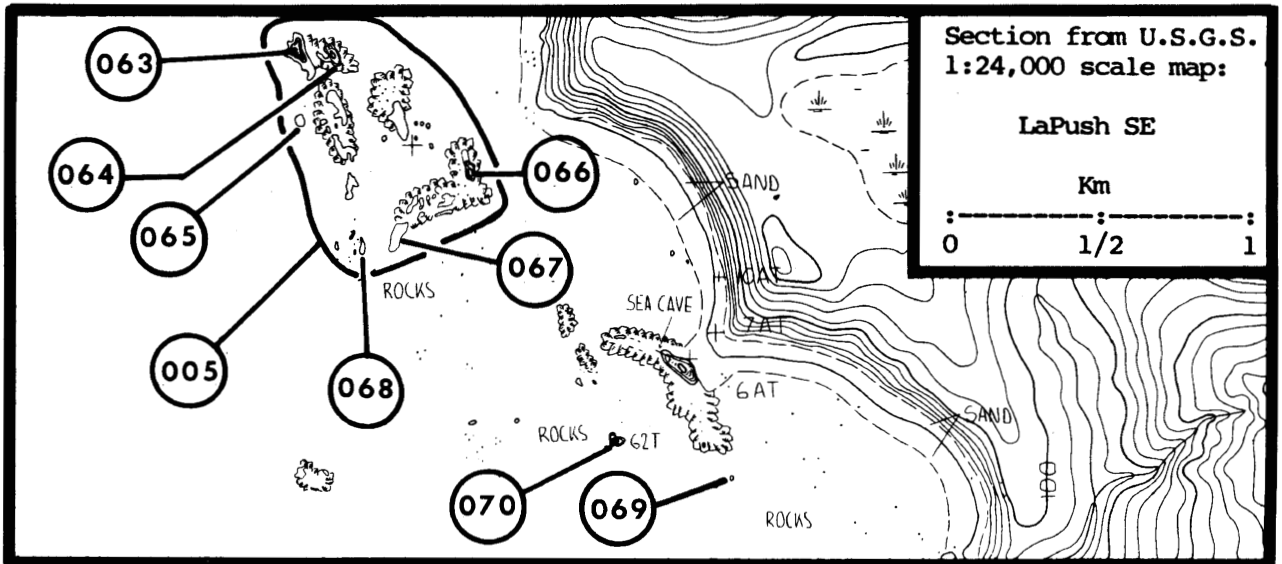
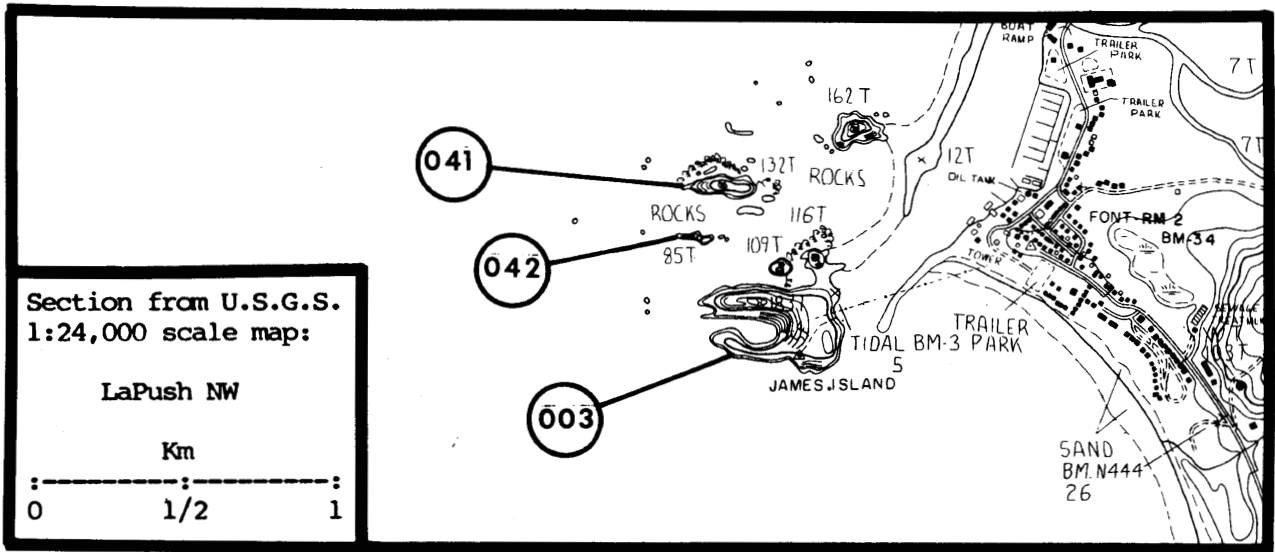
004 Quillayute Needle¹

¹The previous assignment of "Quillayute Needle" (174004) by Varoujean (1979) was inaccurate. Data for the Quillayute Needle site are found listed under (174052). Other sites in the Quillayute Needles are found under numbers 174043 and 174047 through 174051.

005 Giant's Graveyard, complex 47°51'15"N, 124°34'00"W

Black Oystercatcher	2	Speich	06/16/78	B III 255
Pigeon Guillemot	2	Wilson	06/16/81	B III 287

Black Oystercatcher	5	Hoffman	06/14/74	B III 139
Black Oystercatcher	1	Speich	06/01/78	B III 255
Glaucous-winged Gull	P	Hoffman	06/14/74	B III 139



AREA 174, Copalis Beach, North (cont'd.)

(006) Toleak Point, nearshore rocks and mainland 47°50'08"N, 124°32'20"W

Black Oystercatcher 2 Nysewander 1977 06/14/74 B III 204

(007) Rounded Island 47°49'55"N, 124°33'13"W

Double-crested Cormorant	120	Wilson	07/17/82	A III 287
Pelagic Cormorant	56	Wilson	06/16/81	B II 287
Black Oystercatcher	4	Speich	06/01/78	B III 255
Glaucous-winged Gull	400	Speich	06/01/78	B III 255
Common Murre	2180	Wilson	07/17/82	A III 287
Pigeon Guillemot	2	Speich	06/01/78	B III 255
Tufted Puffin	150	Speich	06/01/78	B III 255
Total	2912			

Double-crested Cormorant	X	Hoffman	06/14/74	B III 139
Double-crested Cormorant	260+	Speich	06/01/78	B III 255
Double-crested Cormorant	400	Speich	06/02/78	B II 255
Double-crested Cormorant	78	Wilson	06/16/81	B II 287
Pelagic Cormorant	200	Dawson 1908	06-07/ ?/06-07	B III 66
Pelagic Cormorant	70	Speich	06/01/78	B II 255
Pelagic Cormorant	64	Speich	06/02/78	B II 255
Black Oystercatcher	2	Dawson 1908	06-07/ ?/06-07	B III 66
Glaucous-winged Gull	100	Dawson 1908	06-07/ ?/06-07	B III 66
Glaucous-winged Gull	150?	Nysewander	06/14/74	B III 205
Glaucous-winged Gull	150	Hoffman	06/14/74	B III 139
Glaucous-winged Gull	X	Speich	06/02/78	B III 255
Glaucous-winged Gull	170	Wilson	06/16/81	B III 287
Glaucous-winged Gull	130	Wilson	07/17/82	A III 287
Common Murre	1000	Nysewander	06/14/74	B III 205
Common Murre	1000	Hoffmann	06/14/74	B III 205
Common Murre	1000	Speich	06/01/78	B III 255
Common Murre	400	Speich	06/02/78	B III 255
Common Murre	2130	Wilson 1980	06/05/79	A III 286
Common Murre	3435	Wilson 1980	07/02/80	A III 286
Common Murre	800	Wilson	06/16/81	B III 287
Pigeon Guillemot	2	Speich	06/02/78	B III 255
Tufted Puffin	500	Dawson 1908	06-07/ ?/06-07	B III 66
Tufted Puffin	?	Nysewander	06/14/74	B III 205
Tufted Puffin	20	Wilson	06/16/81	B III 287

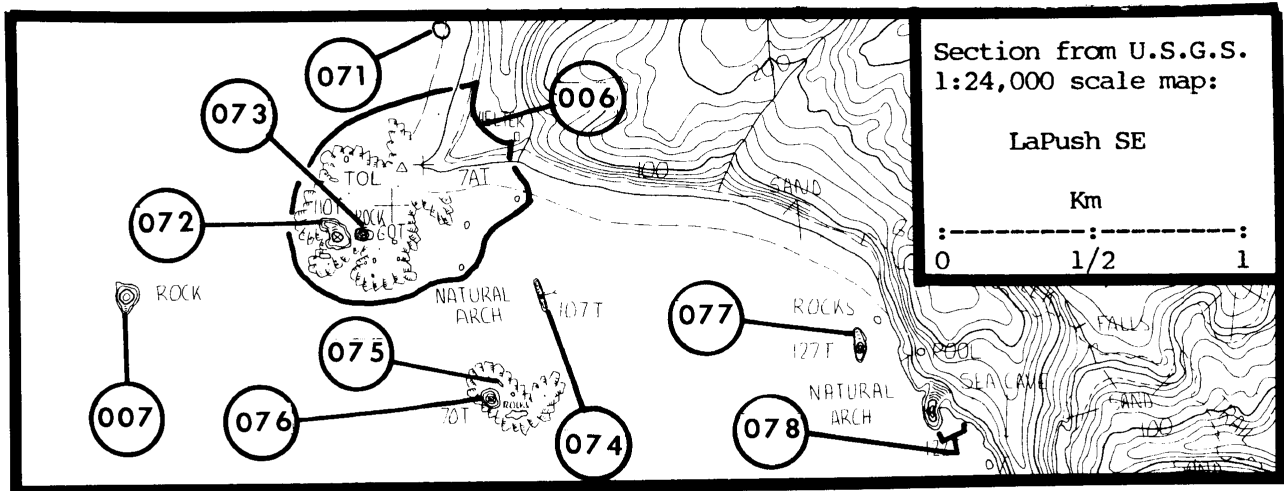
(008) "South Round Island"¹

¹Field descriptions are inadequate to determine the location of this site. This number was assigned by Varoujean (1979).

009

"Half Round Island"¹

¹Field descriptions are inadequate to determine the location of this site. This number was assigned by Varoujean (1979).



Cake (174002) 19 November 1979 S.M. Speich

AREA 174, Copalis Beach, North (cont'd.)

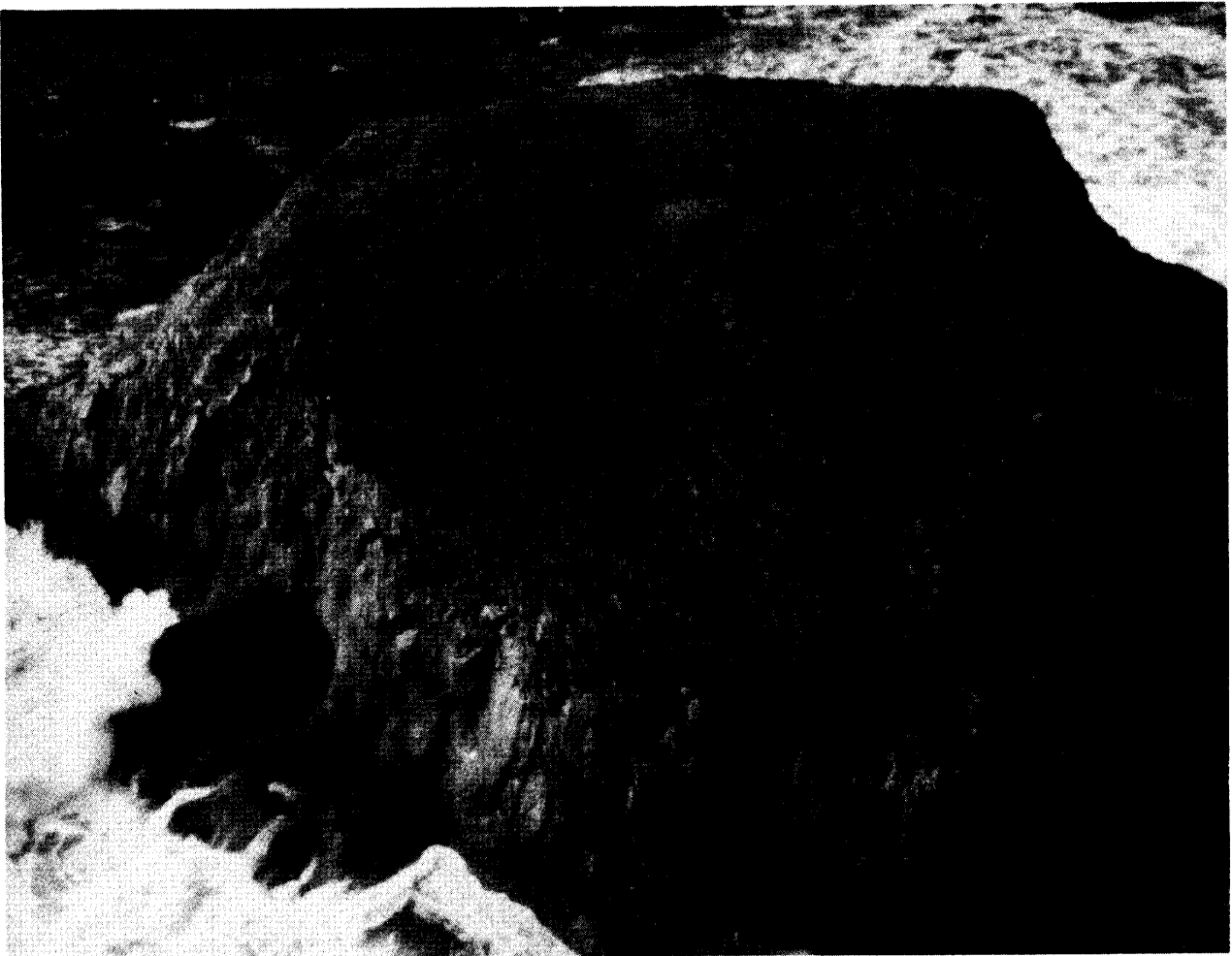
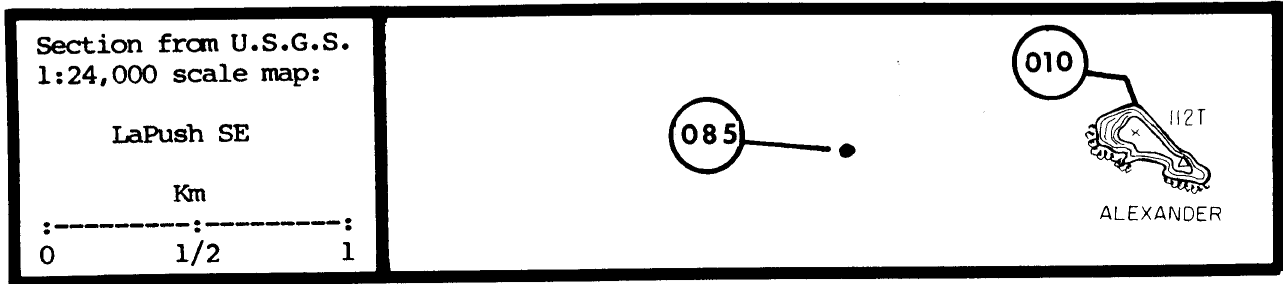
010

Alexander Island 47°47'52"N, 124°30'16"W

Fork-tailed Storm-Petrel	200	Pitman	06/01-02/78	L III 217
Leach's Storm-Petrel	2000	Pitman	06/01-02/78	L III 217
Double-crested Cormorant	230	Wilson	06/16/81	B I 287
Pelagic Cormorant	6	Speich	06/01-02/78	L I 255
Black Oystercatcher	12	Speich	06/01-02/78	L III 255
Glaucous-winged Gull	360	Speich	06/01-02/78	L III 255
Pigeon Guillemot	60	Speich	06/01-02/78	L III 255
Cassin's Auklet	54600	Speich	07/12/78	L III 255
Rhinoceros Auklet	200	Speich	06/01-02/78	L III 255
Tufted Puffin	4000	Speich	07/12/78	L III 255
Total	61668			

Fork-tailed Storm-Petrel	100's	Speich	06/01-02/78	L III 255
Leach's Storm-Petrel				
	1000-10000	Dawson 1908	06-07/ ?/06-07	L III 66
Leach's Storm-Petrel	X	Jones 1908	06/ ?/07	L III 162
Leach's Storm-Petrel	2000	Cantwell	?/ ?/14	? III 52
Leach's Storm-Petrel	100-1000's	Speich	06/01-02/78	L III 255
Double-crested Cormorant	X	Cantwell	08/19/14	? III 52
Double-crested Cormorant	8	Nysewander	06/14/74	B III 205
Double-crested Cormorant	N	Pitman	06/01-02/78	L III 217
Double-crested Cormorant	N	Speich	07/12/78	L III 255
Double-crested Cormorant	14	Speich	06/12/79	B I 255
Brandt's Cormorant	?	Cantwell	08/19/14	? III 52
Pelagic Cormorant	300	Dawson 1908	06-07/ ?/06-07	L III 66
Pelagic Cormorant	?	Cantwell	08/19/14	? III 52
Pelagic Cormorant	6	Pitman	06/01-02/78	L I 217
Black Oystercatcher	12	Dawson 1908	06-07/ ?/06-07	L III 66
Black Oystercatcher	4	Hoffman	06/14/74	B III 139
Black Oystercatcher	4	Nysewander	06/14/74	B III 205
Black Oystercatcher	12	Pitman	06/01-02/78	L III 217
Black Oystercatcher	X	Leschner	06/22/78	B III 178
Glaucous-winged Gull	50	Dawson 1908	06-07/ ?/06-07	L III 66
Glaucous-winged Gull	X	Jones 1908	06/ ?/07	L III 162
Glaucous-winged Gull	400-500	Hoffman	06/14/74	B III 139
Glaucous-winged Gull	350	Nysewander	06/14/74	B III 205
Glaucous-winged Gull	X	Harrington-Tweit	05/20/77	A III 124
Glaucous-winged Gull	270	Pitman	06/01-02/78	L III 217
Common Murre	N	Pitman	06/01-02/78	L III 217
Pigeon Guillemot	2	Harrington-Tweit	05/20/77	A III 124
Pigeon Guillemot	50	Pitman	06/01-02/78	L III 217
Pigeon Guillemot	5	Wilson	06/16/81	B III 287
Cassin's Auklet	1000	Dawson 1908	06-07/ ?/06-07	L III 66
Cassin's Auklet	X	Dawson 1909	06/ ?/07	L III 69
Cassin's Auklet	X	Jones 1908	06/ ?/07	L III 162;163
Cassin's Auklet	X	Cantwell	08/19/14	? III 52
Cassin's Auklet	50000	Pitman	06/01-02/78	L III 217
Cassin's Auklet	>20000	Speich	06/01-02/78	L III 255
Rhinoceros Auklet	100	Pitman	06/01-02/78	L III 217

Tufted Puffin	5000	Dawson 1908	06-07/ ?/06-07	L III	66
Tufted Puffin	X	Jones 1908	06/ ?/07	L III	162
Tufted Puffin	5000	Cantwell	?/ ?/14-15	L III	52
Tufted Puffin	X	Hoffman	06/14/74	B III	139
Tufted Puffin	300-400	Nysewander	06/14/74	B III	205
Tufted Puffin	80	Harrington-Tweit	05/20/77	A III	124
Tufted Puffin	600-1000	Pitman	06/01-02/78	L III	217
Tufted Puffin	400	Speich	06/01-02/78	L III	255
Tufted Puffin	45+	Wilson	06/16/81	B III	287



Rounded Island (174007) 19 November 1979 S.M. Speich

AREA 174, Copalis Beach, North (cont'd.)

011 Perkins Reef 47°46'28"N, 124°30'15"W

No Nesting Observed 0 Pitman 07/12/78 B III 217

012 North Rock 47°45'00"N, 124°28'30"W

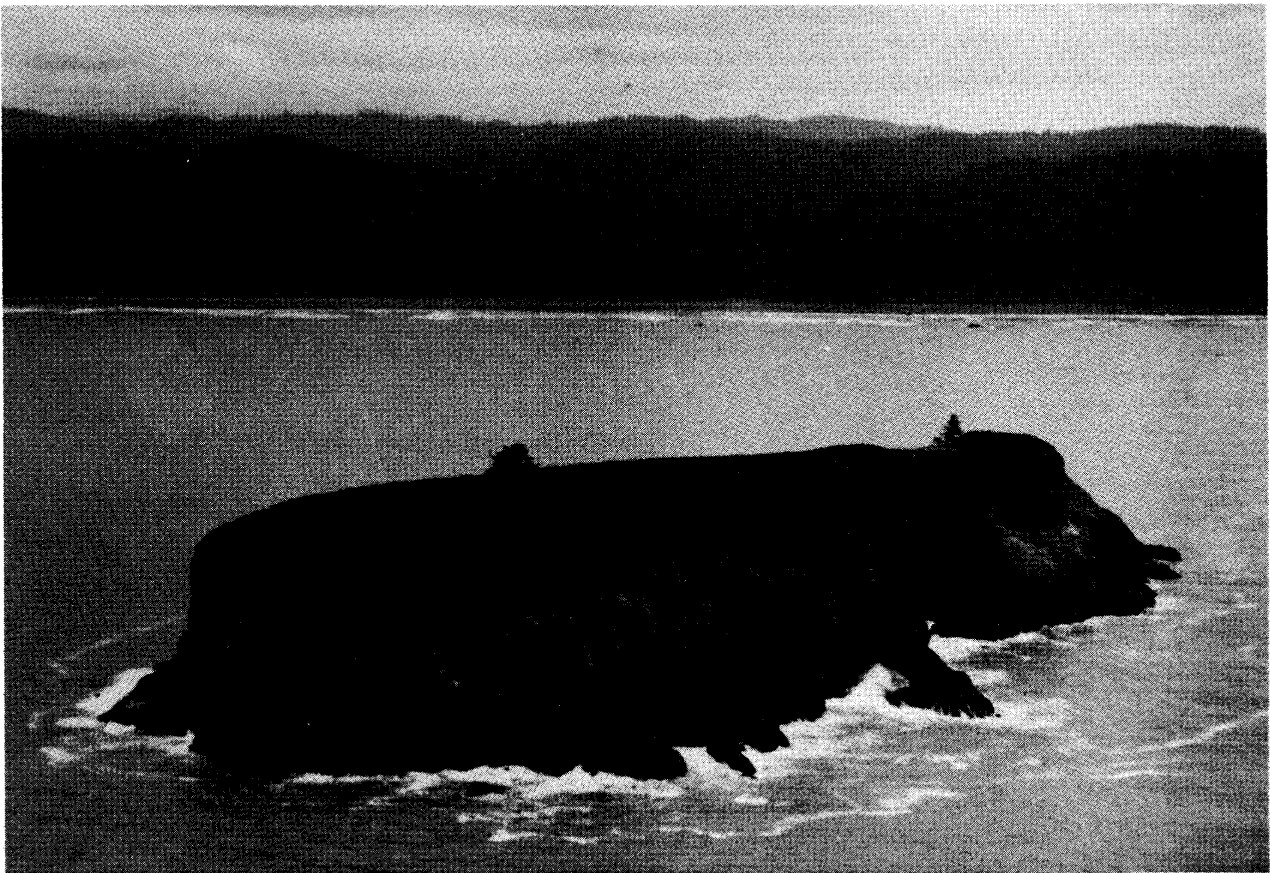
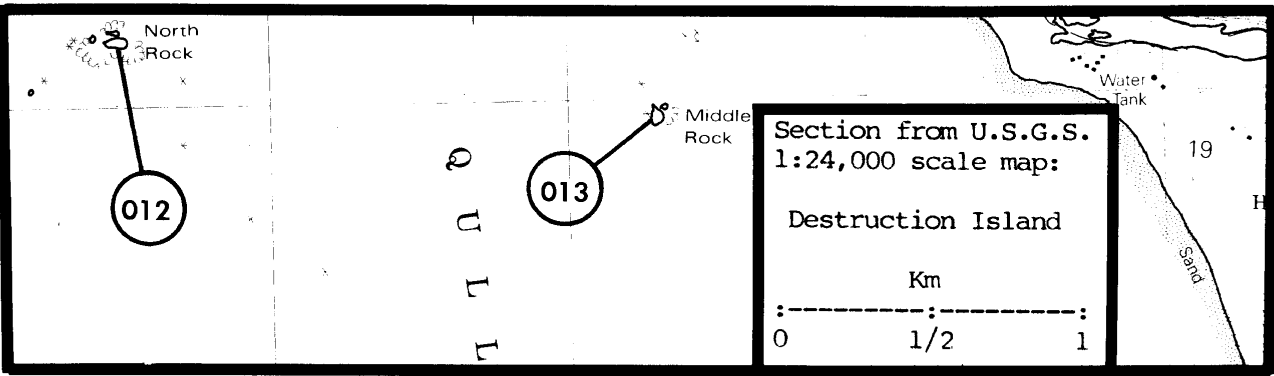
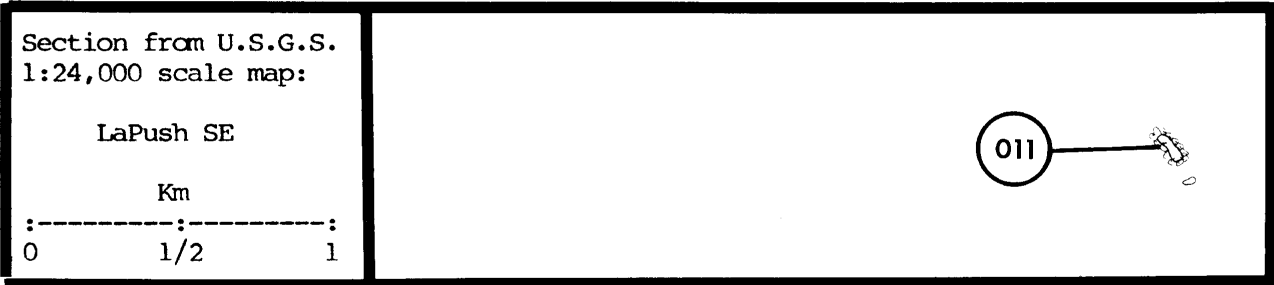
Double-crested Cormorant	18	Wilson	07/17/82	A II 287
Pelagic Cormorant	34	Wilson	07/17/82	A III 287
Pigeon Guillemot	6-8	Pitman	07/12/78	B III 217
Total	58-60			

Double-crested Cormorant	200	Dawson 1908	06-07/ ?/06-07	B III 65
Double-crested Cormorant	23	Nysewander	06/14/74	B III 205
Double-crested Cormorant	116	Pitman	07/12/78	B II 217
Double-crested Cormorant	76	Speich	06/11/79	B II 255
Pelagic Cormorant	200	Dawson 1908	06-07/ ?/06-07	B III 66
Pelagic Cormorant	70	Nysewander	06/14/74	B II 205
Pelagic Cormorant	94	Pitman	07/12/78	B I 217
Pelagic Cormorant	226	Speich	06/11/79	B I 255
Black Oystercatcher	2	Dawson 1908	06-07/ ?/06-07	B III 66
Glaucous-winged Gull	10	Dawson 1908	06-07/ ?/06-07	B III 66
Glaucous-winged Gull	?	Speich	06/11/79	B III 255

013 Middle Rock 47°44'54"N, 124°26'54"W

Double-crested Cormorant	N	Speich	06/11/79	B I 255
Pelagic Cormorant	102	Speich	06/11/79	B I 255
Glaucous-winged Gull	?	Speich	06/11/79	B III 255
Total	102			

Double-crested Cormorant	10-15?	Nysewander	06/14/74	B III 205
Pelagic Cormorant	45-60?	Nysewander	06/14/74	B III 205
Pelagic Cormorant	42	Pitman	07/12/78	B I 217
Glaucous-winged Gull	10?	Nysewander	06/14/74	B III 205



Alexander Island (174010) July 1959 V.B. Scheffer

AREA 174, Copalis Beach, North (cont'd.)

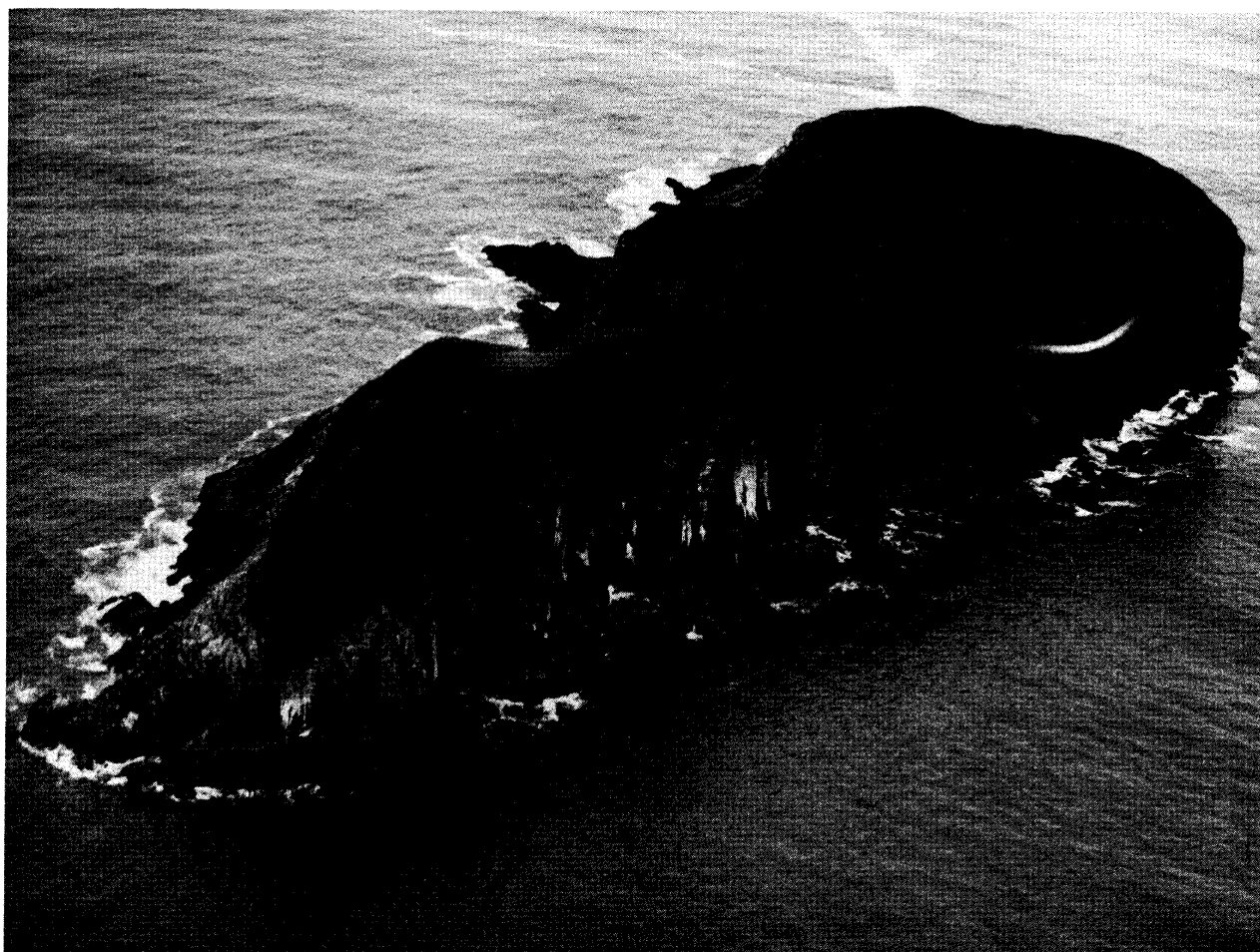
014 Abbey Island 47°42'58"N, 124°25'10"W

No Nesting Observed	0	Speich	06/11/79	B III 255
Pelagic Cormorant	26?	Pitman	07/12/78	B III 217

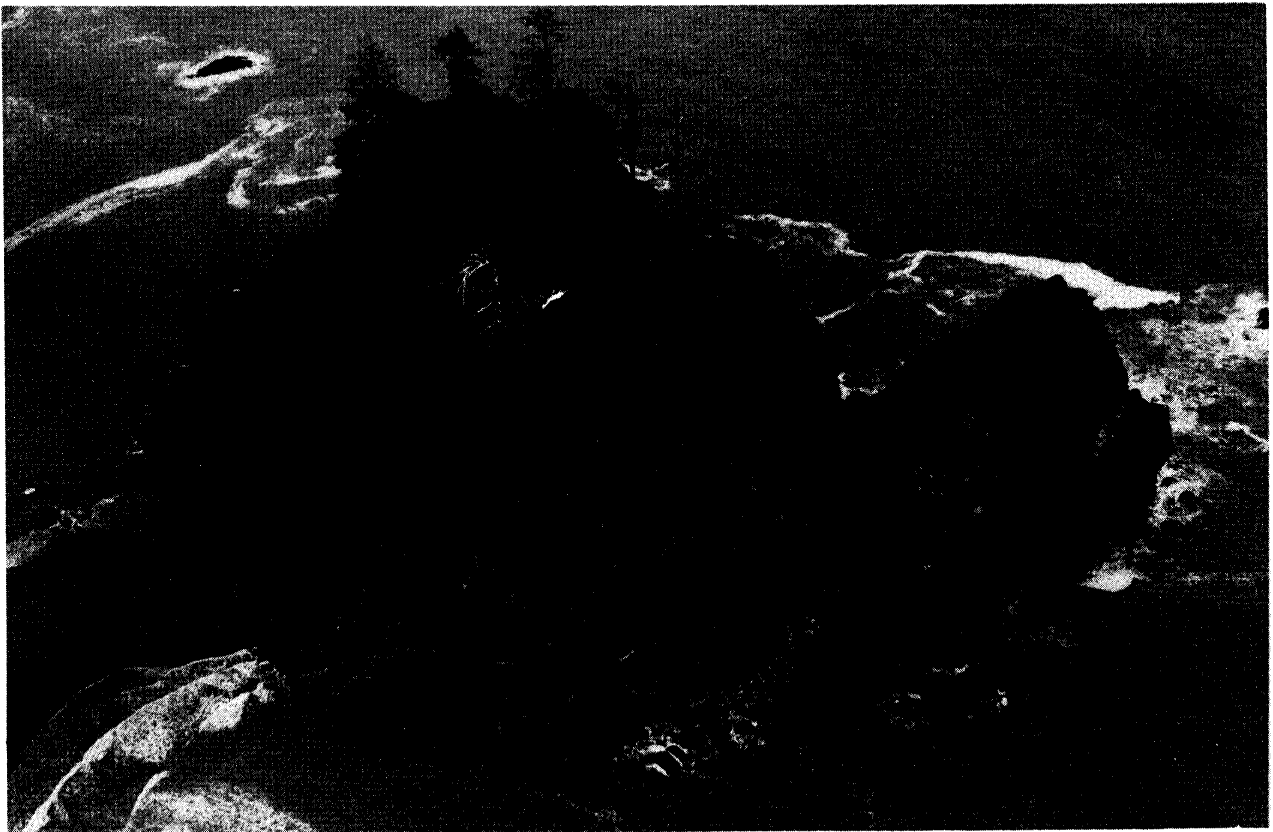
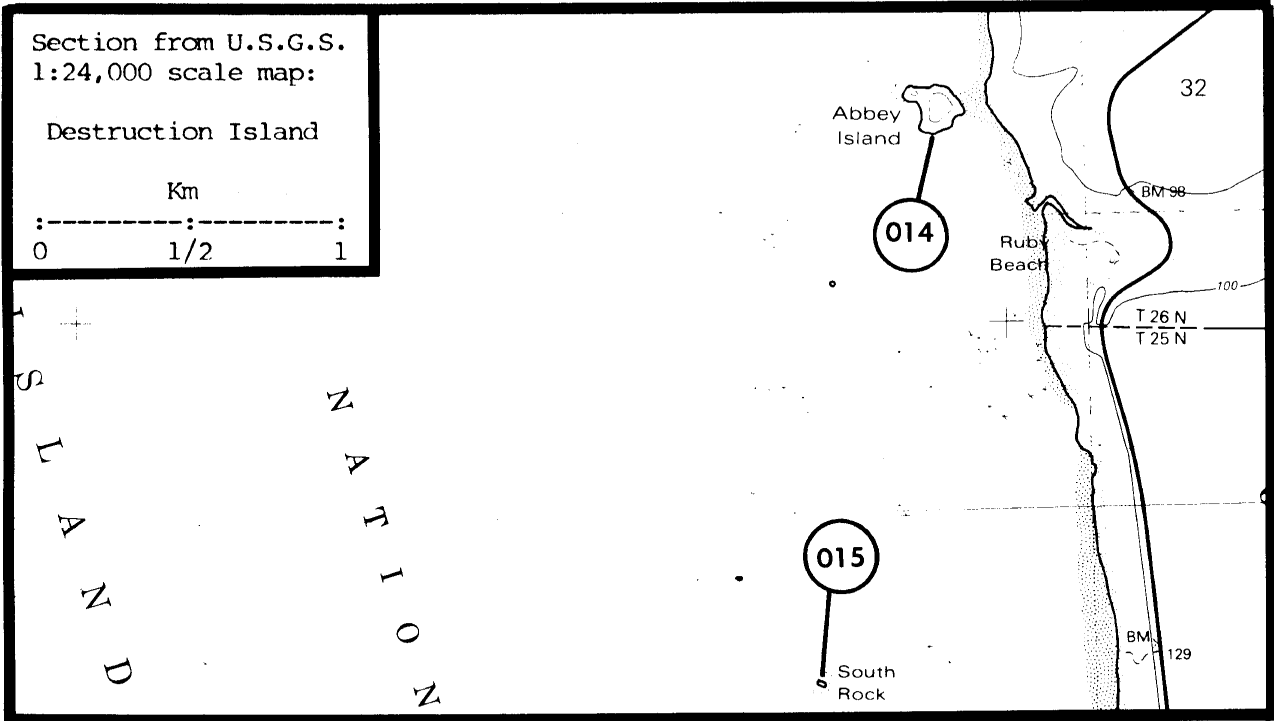
015 South Rock 47°41'57"N, 124°25'30"W

Black Oystercatcher	2?	Pitman	07/12/78	B III 217
Glaucous-winged Gull	4?	Speich	06/11/79	B III 255
Pigeon Guillemot	1?	Speich	06/11/79	B III 255
Total	7?			

Pigeon Guillemot	1?	Pitman	07/12/78	B III 217
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Alexander Island (174010) 15 July 1966 R. Glahn



Abbey Rock (174014) 15 July 1966 R. Glahn

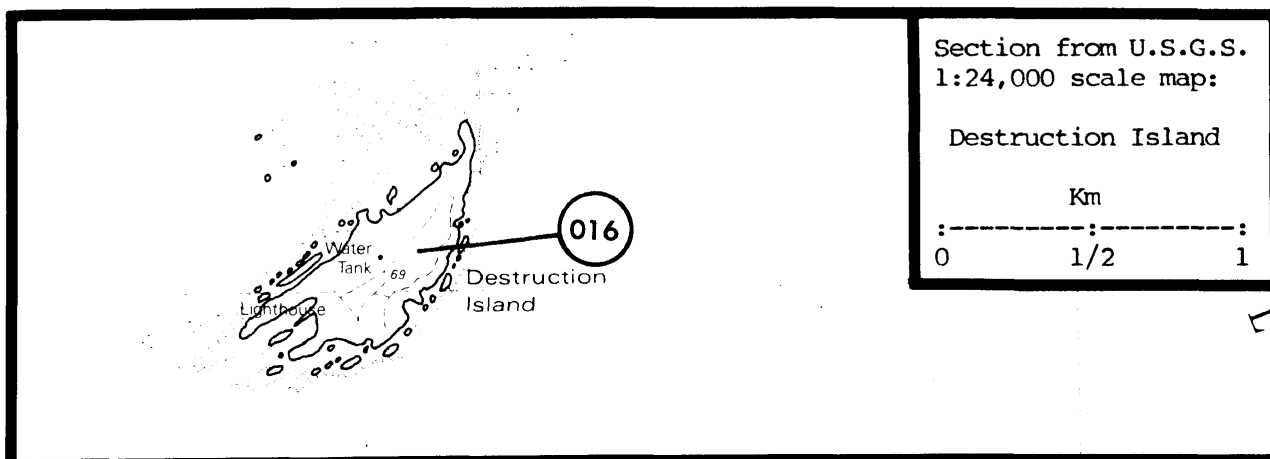
AREA 174, Copalis Beach, North (cont'd.)

016

Destruction Island 47°40'36"N, 124°28'57"W

Black Oystercatcher	24-26	Nysewander 1977	Summer/75	L I	204
Glaucous-winged Gull	1040	Hoffman	?/ ?/74	L I	139
Pigeon Guillemot	60	Frazer 1973; Rieck	08/09-10/73	L III	163;233
Rhinoceros Auklet	23600	Wilson	06/30/82	L III	287
Tufted Puffin	650-700	Frazer 1975	08/08-14/74	L II	109
Total	~25400				

Double-crested Cormorant	N	Lien	?/ ?/11-17	L III	183
Pelagic Cormorant	X	Lien	?/ ?/16	L III	183
Black Oystercatcher	24	Dawson 1908	06-07/ ?/06-07	L III	65;66
Black Oystercatcher	24	Jones 1908	06/ ?/07	L III	162
Black Oystercatcher	X	Cantwell	06/03-05/15	L III	52
Black Oystercatcher	20	Lien	?/ ?/20's	L III	182
Black Oystercatcher	2	Anonymous	04/22/41	E -	17
Black Oystercatcher	1	Hudson	06/24/63	S -	149
Black Oystercatcher	1	Hudson	07/ ?/63	S -	149
Black Oystercatcher	X	Leschner	?/ ?/70	L III	178
Black Oystercatcher	X	Leschner	?/ ?/71	L III	178
Black Oystercatcher	X	Leschner	?/ ?/72	L III	178
Black Oystercatcher	40	Frazer 1973; Rieck	08/09-10/73	L III	108;233
Black Oystercatcher	X	Leschner	?/ ?/73	L III	178
Black Oystercatcher	X	Leschner	?/ ?/74	L III	178
Black Oystercatcher	20-22	Nysewander 1977	04-08/ ?/74	L I	204
Black Oystercatcher	X	Leschner	06/ ?/78	L III	178
Glaucous-winged Gull	4	Dawson 1908	06-07/ ?/06-07	L II	66
Glaucous-winged Gull	4	Jones 1908	06/ ?/07	L II	162
Glaucous-winged Gull	6	Lien	?/ ?/11-17	L III	183
Glaucous-winged Gull	1	Hudson	07/23/63	S -	149
Glaucous-winged Gull	1000	LaFave	07/23-24/63	L III	175
Glaucous-winged Gull	X	Hancock	08/05/67	L III	122
Glaucous-winged Gull	450	VanWormer	06/09-10/71	L II	266
Glaucous-winged Gull	X	Hoffman	05/06-11/73	L III	137
Glaucous-winged Gull	1000	Frazer 1973	08/09-10/73	L III	108
Glaucous-winged Gull	X	Speich	07/25/79	L III	255
Pigeon Guillemot	30	Dawson 1908	06-07/ ?/06-07	L III	66
Pigeon Guillemot	30	Jones 1908	06/ ?/07	L III	162
Pigeon Guillemot	2	Hudson	07/ ?/63	S -	149
Pigeon Guillemot	X	Hancock	08/05/67	L III	122
Pigeon Guillemot	X	Hoffman	05/05-11/73	L III	139
Pigeon Guillemot	50	Manuwal et al. 1974	Summer/74	L III	189
Pigeon Guillemot	X	Speich	07/25/79	L III	255
Rhinoceros Auklet	10000	Dawson 1908	06-07/ ?/06-07	L III	66
Rhinoceros Auklet	10000	Dawson 1909	07/ ?/06	L III	70
Rhinoceros Auklet	2	Dawson	07/16/06	E -	79
Rhinoceros Auklet	10000	Dawson	06/10/10	L III	74
Rhinoceros Auklet	10000-20000	Jones 1908	06/ ?/07	L III	162
Rhinoceros Auklet	2	Jones	06/14/07	E -	165
Rhinoceros Auklet	6000	Lien	?/ ?/11-17	L III	183
Rhinoceros Auklet	1	Albrecht	06/03/15	E -	1



Rhinoceros Auklet		P Lien	03-09/ ?/16	L III 181
Rhinoceros Auklet		X Cantwell	08/04/16	L III 52
Rhinoceros Auklet	1	Hudson	06/24/63	S - 149
Rhinoceros Auklet	1	LaFave	06/24/63	S - 176
Rhinoceros Auklet	1	Hudson	07/ ?/63	S - 149
Rhinoceros Auklet	1	Hudson	07/23/63	S - 149
Rhinoceros Auklet	1000's	LaFave	07/23-24/63	L III 175
Rhinoceros Auklet	1000+	Hancock	08/05/67	L III 122
Rhinoceros Auklet	X	Cody 1973	?/ ?/68-69	L III 60
Rhinoceros Auklet	1000	Hoffman	05/05-11/73	L III 137
Rhinoceros Auklet	8000-15000	Frazer 1973; Rieck	08/09-10/73	L III 108;233
Rhinoceros Auklet	2	Leschner	06/30/74	S - 179
Rhinoceros Auklet	2	Leschner	07/04/74	S - 179
Rhinoceros Auklet	32300	Leschner 1976	?/ ?/74-75	L II 177
Rhinoceros Auklet	1	Leschner	06/21/75	S - 179
Rhinoceros Auklet	1000's	Speich	07/25/79	L III 255
Tufted Puffin	2	Hudson	07/ ?/63	S - 149
Tufted Puffin	1	LaFave	07/23/63	S - 176
Tufted Puffin	X	LaFave	07/23-24/63	L III 175
Tufted Puffin	X	Hancock	08/05/67	L III 122
Tufted Puffin	X	Cody 1973	?/ ?/68-69	L III 60
Tufted Puffin	550	Leschner	?/ ?/73	L III 178
Tufted Puffin	100's	Hoffman	05/05-11/73	L III 137
Tufted Puffin	400	Frazer 1973; Rieck	08/09-11/73	L II 108;233
Tufted Puffin	1	Anonymous	04/20/76	S - 16
Tufted Puffin	1	Welch	04/21/76	S - 278
Tufted Puffin	X	Speich	07/25/79	L III 255

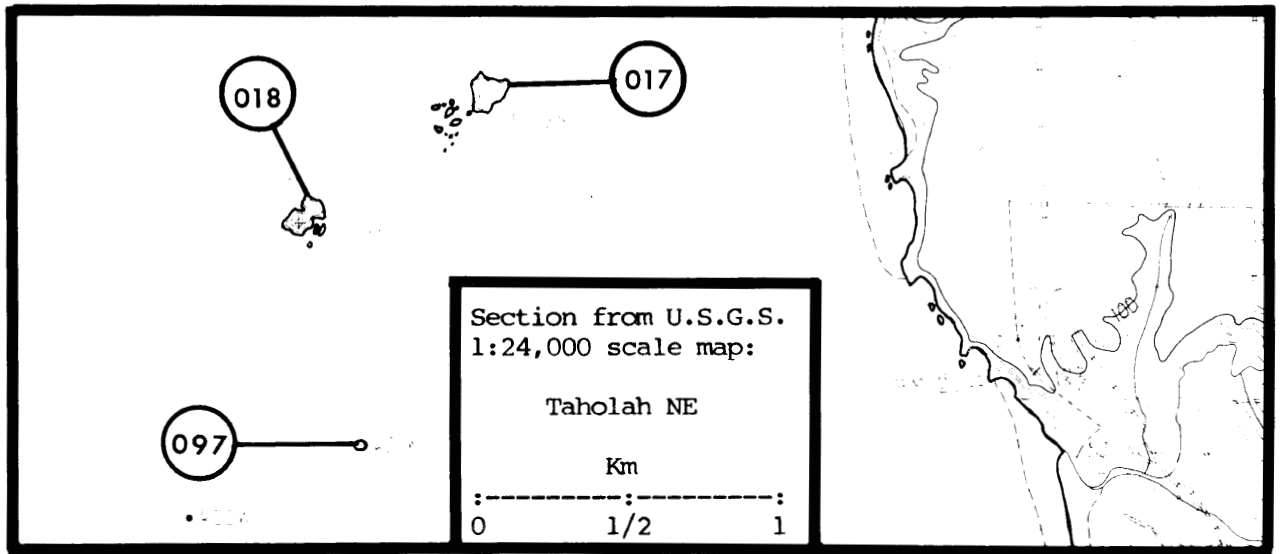
AREA 174, Copalis Beach, North (cont'd.)

017

Willoughby Rock 47°24'42"N, 124°21'17"W

Double-crested Cormorant	82	Wilson	07/17/82	A II	287
Brandt's Cormorant	446	Wilson	07/17/82	A II	287
Pelagic Cormorant	34+	Wilson	07/17/82	A III	287
Glaucous-winged Gull	150+	Wilson	07/17/82	A III	287
Common Murre	5270	Wilson	07/17/82	A III	287
Tufted Puffin	120+	Wilson	06/17/81	B III	287
Total	~6100				

Double-crested Cormorant	50	Dawson 1908	06-07/ ?/06-07	L III	66
Double-crested Cormorant	X	Dawson 1909	07/ ?/07	L III	68
Double-crested Cormorant	X	Harrington-Tweit	05/20/77	A III	124
Double-crested Cormorant	158	Speich	06/12/79	B II	255
Double-crested Cormorant	62	Wilson	06/17/81	B II	287
Brandt's Cormorant	X	Harrington-Tweit	05/20/77	A III	124
Brandt's Cormorant	356	Speich	06/12/79	B II	255
Brandt's Cormorant	50	Wilson	06/17/81	B II	287
Pelagic Cormorant	500	Dawson 1908	06-07/ ?/06-07	L III	66
Pelagic Cormorant	X	Jewett et al. 1953	06/14/16	? III	155
Pelagic Cormorant	X	Harrington-Tweit	05/20/77	A III	124
Pelagic Cormorant	388	Speich	06/12/79	B I	255
Pelagic Cormorant	96	Wilson	06/17/81	B I	287
Black Oystercatcher	2	Dawson 1908	06-07/ ?/06-07	L III	66
Glaucous-winged Gull	1000's	Dawson 1908	06-07/ ?/06-07	L III	65; 66
Glaucous-winged Gull	X	Dawson 1909	07/ ?/07	L III	68
Glaucous-winged Gull	X	Cantwell	?/ ?/10's	? III	52
Glaucous-winged Gull	50	Speich	06/12/79	B III	255
Common Murre	300	Dawson 1908	06-07/ ?/06-07	L III	66
Common Murre	3000	Jewett et al. 1953	06/14/16	? III	155
Common Murre	1930	Speich	06/12/79	B III	255
Common Murre	5300	Wilson	06/05/79	A III	287
Common Murre	3100	Wilson	07/02/80	A III	287
Common Murre	3800	Wilson	06/17/81	B III	287
Common Murre	2500	Wilson	07/20/81	A III	287
Pigeon Guillemot	10	Dawson 1908	06-07/ ?/06-07	L III	66
Pigeon Guillemot	16	Speich	06/12/79	B III	255
Tufted Puffin	500	Dawson 1908	06-07/ ?/06-07	L III	66
Tufted Puffin	X	Harrington-Tweit	05/20/77	A III	124
Tufted Puffin	28	Speich	06/12/79	B III	255



Willoughby Rock (174017) 19 November 1979 S.M. Speich

AREA 174, Copalis Beach, North (cont'd.)

018 Split Rock 47°24'29"N, 124°21'46"W

Double-crested Cormorant	316	Wilson	07/17/82	A II 287
Common Murre	10400	Wilson	07/17/82	A III 287
Total	10716			

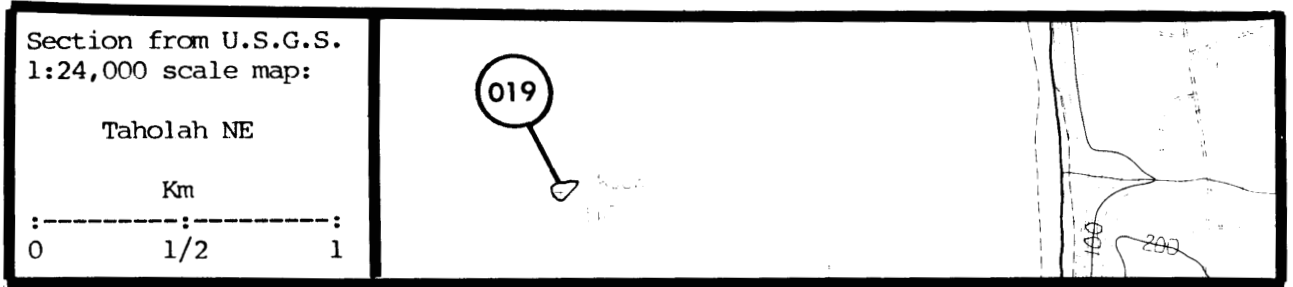
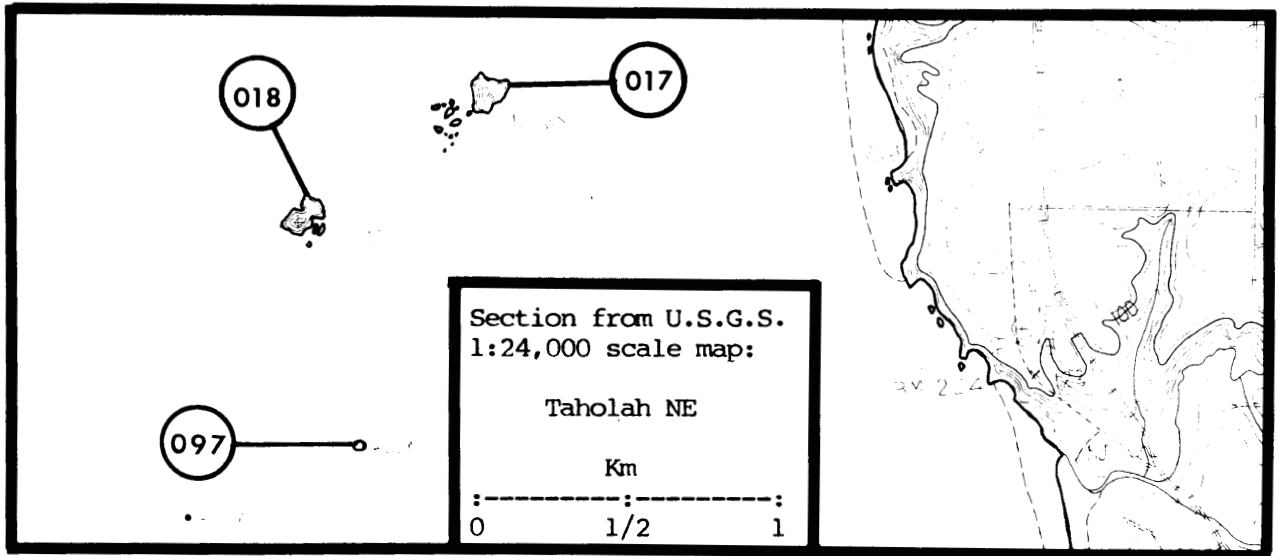
Double-crested Cormorant	4	Dawson 1908	06-07/ ?/06-07 ?	III 66
Double-crested Cormorant	210	Wilson	06/17/81	B I 287
Double-crested Cormorant	X	Wilson	07/20/81	A III 287
Brandt's Cormorant	236	Wilson	06/17/81	B I 287
Brandt's Cormorant	X	Wilson	07/20/81	A III 287
Pelagic Cormorant	60+	Wilson	06/17/81	B II 287
Black Oystercatcher	2	Dawson 1908	06-07/ ?/06-07 ?	III 66
Glaucous-winged Gull	200	Dawson 1908	06-07/ ?/06-07 ?	III 66;65
Common Murre	1000's	Harrington-Tweit	05/20/77	A III 124
Common Murre	4600	Speich	06/12/79	B III 255
Common Murre	9150	Wilson	07/05/79	A III 286
Common Murre	3070	Wilson	07/02/80	A III 286
Common Murre	5100	Wilson	06/17/81	B III 287
Common Murre	8000+	Wilson	07/20/81	A III 287

019 Flat Rock 47°22'44"N, 124°20'38"W

No Nesting Observed 0 Speich 06/12/79 B III 255



Split Rock (174018) 19 November 1979 S.M. Speich



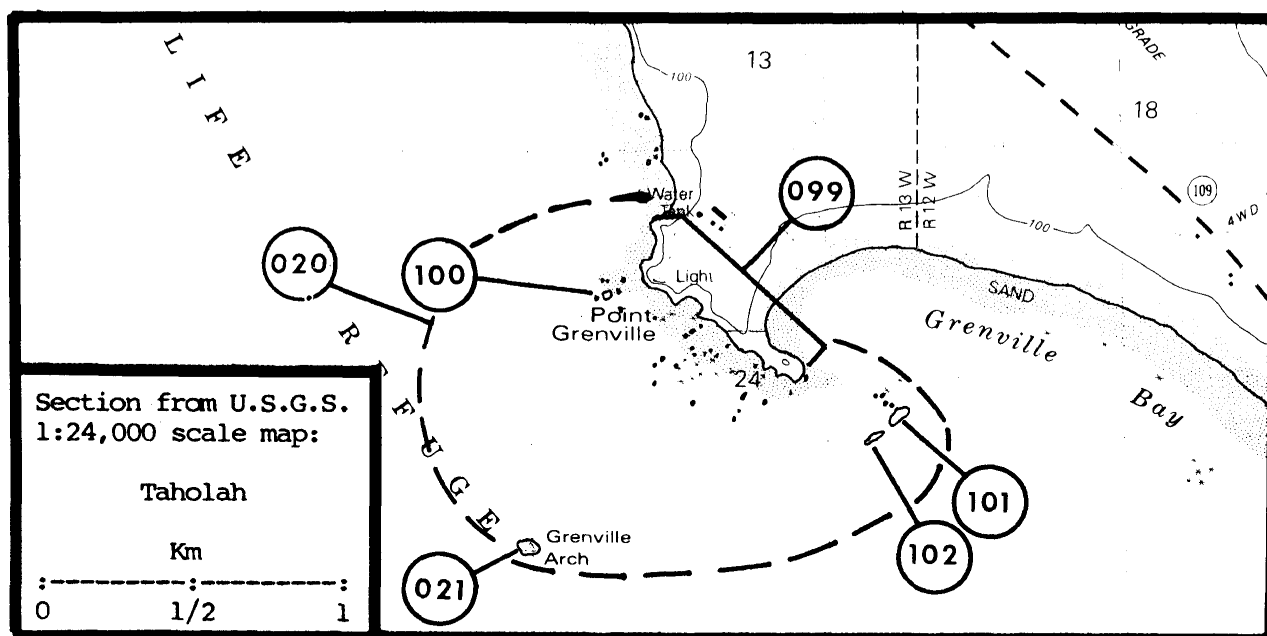
AREA 174, Copalis Beach, North (cont'd.)

020

Point Grenville, mainland & offshore rocks¹ 47°18'00"N, 124°16'45"W

Double-crested Cormorant	X	Harrington-Tweit	05/20/77	A III 124
Double-crested Cormorant	50	Harrington-Tweit	06/25/78	M III 124
Double-crested Cormorant	X	Wilkins	05/21/81	M III 283
Brandt's Cormorant	X	Harrington-Tweit	05/20/77	A III 124
Brandt's Cormorant	4?	Harrington-Tweit	06/25/78	M III 124
Pelagic Cormorant	60-80	Frazer 1973	07/24/73	M III 108
Pelagic Cormorant	X	Harrington-Tweit	05/20/77	A III 124
Pelagic Cormorant	30	Harrington-Tweit	06/25/78	M III 124
Pelagic Cormorant	X	Wilkins	05/21/81	M III 283
Black Oystercatcher	?	Egbert	06/25/75	M III 102
Black Oystercatcher	1?	Hoge & Hoge	06/20/76	M III 143
Black Oystercatcher	2?	Hoge & Hoge	07/10/76	M III 143
Black Oystercatcher	X	Egbert	06/22/79	M III 102
Glaucous-winged Gull	X	Harrington-Tweit	05/11/80	M III 124
Glaucous-winged Gull	80	Harrington-Tweit	06/25/78	M III 124
Common Murre	X	Harrington-Tweit	05/20/77	A III 124
Common Murre	6000+	Harrington-Tweit	06/25/78	M III 124
Common Murre	1000's	Harrington-Tweit	05/11/80	M III 124
Pigeon Guillemot	12	Harrington-Tweit	06/25/78	M III 124
Tufted Puffin	100	Leschner	07/24/73	M III 178
Tufted Puffin	80	Hoge & Morris	04/26/74	M III 142
Tufted Puffin	40-50	Hoge & Hoge	06/26/74	M III 141
Tufted Puffin	20	Crowell & Nehls 1975	07/26/75	M III 64
Tufted Puffin	64	Hoge & Hoge	07/11/76	M III 140
Tufted Puffin	X	Harrington-Tweit	05/20/77	A III 124
Tufted Puffin	X	Hoge & Hoge	07/13/79	M III 143
Tufted Puffin	X	Harrington-Tweit	05/11/80	M III 124

¹Insufficient data to determine exact location.



021

Grenville Arch (Arch Rock; Granville Arch; Granvill Rock)
47°17'46"N, 124°16'59"W

Common Murre	5000	Wilson	07/17/82	A III 287
Leach's Storm-Petrel	1000	Cantwell	?/ ?/15	? III 52
Double-crested Cormorant	100	Dawson 1908	06-07/ ?/06-07	L III 66
Double-crested Cormorant	80	Cantwell	08/01/15	L II 52
Double-crested Cormorant	N	Speich	06/12/79	B I 255
Double-crested Cormorant	N	Wilson	08/14/81	B I 287
Brandt's Cormorant	100	Dawson 1908	06-07/ ?/06-07	L III 66
Brandt's Cormorant	40	Cantwell	08/01/15	L II 52
Brandt's Cormorant	N	Speich	06/12/79	B I 255
Brandt's Cormorant	N	Wilson	08/14/81	B I 287
Pelagic Cormorant	100	Dawson 1908	06-07/ ?/06-07	L III 66
Pelagic Cormorant	14	Speich	06/12/79	B I 255
Pelagic Cormorant	N	Wilson	08/14/81	B I 287
Black Oystercatcher	2	Dawson 1908	06-07/ ?/06-07	L III 66
Glaucous-winged Gull	50	Dawson 1908	06-07/ ?/06-07	L III 66
Glaucous-winged Gull	X	Cantwell	?/ ?/10's	L III 52
Glaucous-winged Gull	4	Speich	06/12/79	B II 255
Common Murre	10	Dawson 1908	06-07/ ?/06-07	L III 66
Common Murre	800+	Frazer 1973	08/24/73	L III 108
Common Murre	3750	Speich	06/12/79	B III 255
Common Murre	8990	Wilson	07/05/79	A III 287
Common Murre	5830	Wilson	07/02/80	A III 287
Common Murre	250	Wilson	08/14/81	B III 287
Pigeon Guillemot	10	Dawson 1908	06-07/ ?/06-07	L III 66
Tufted Puffin	X	Cantwell	08/01/15	? III 52

AREA 174, Copalis Beach, North (cont'd.)

022 Copalis Rock 47°09'02"N, 124°11'45"W

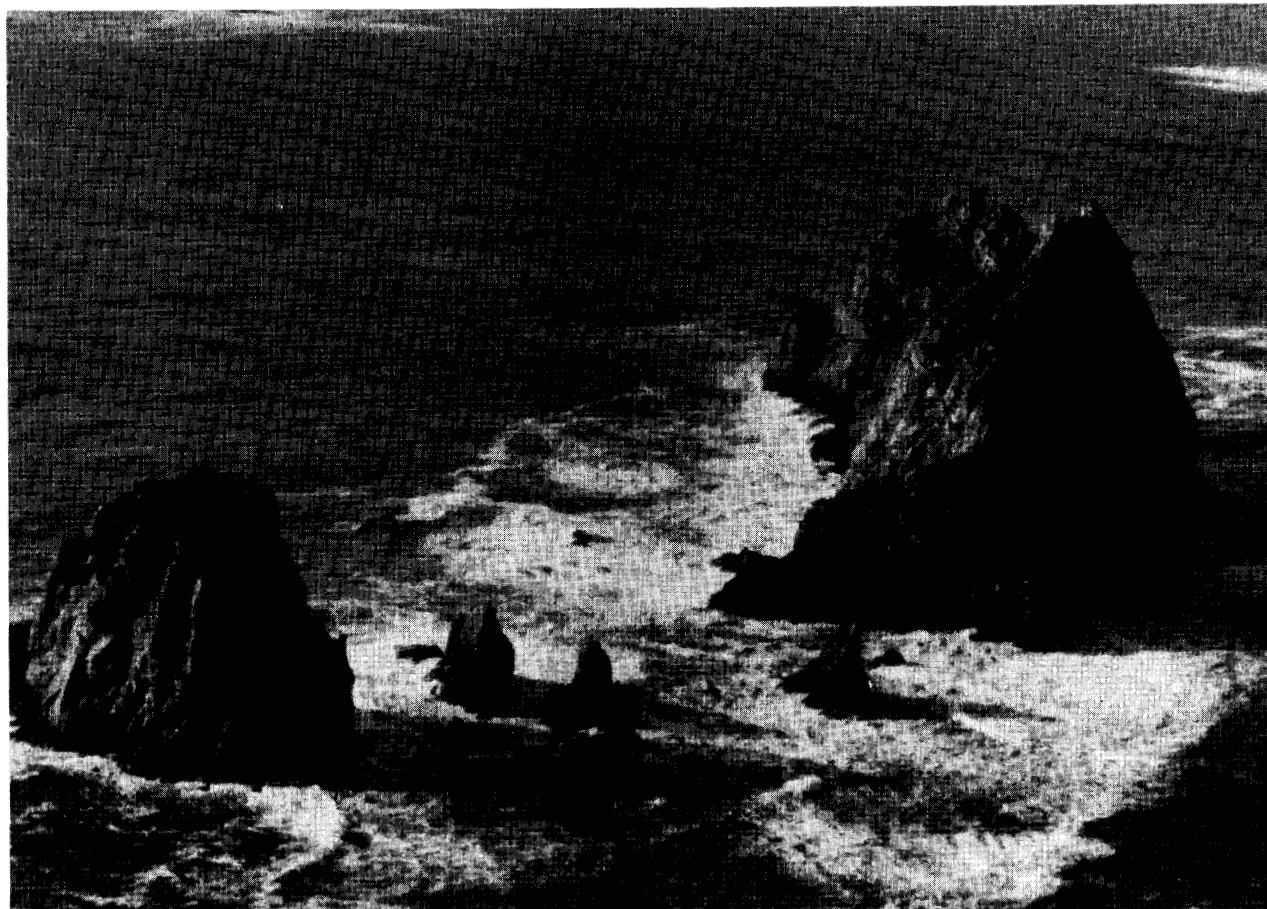
There are no definite records of marine birds nesting at this site.

023 Goose Island
024 Sand Island
025 Whitcomb Flats

These sites are included in AREA 174, Copalis Beach, South

026 "Unnamed Rock" 47°59'59"N, 124°41'28"W

Pelagic Cormorant 20 Pitman 06/30/78 B I 217

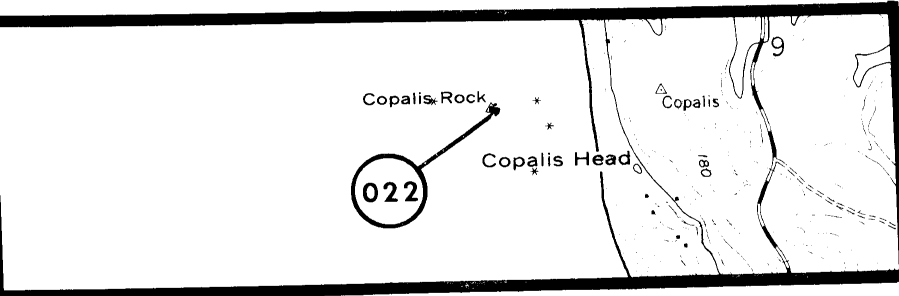
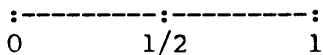


Jagged Island (174027) (right) 19 November 1979 S.M. Speich

Section from U.S.G.S.
1:24,000 scale map:

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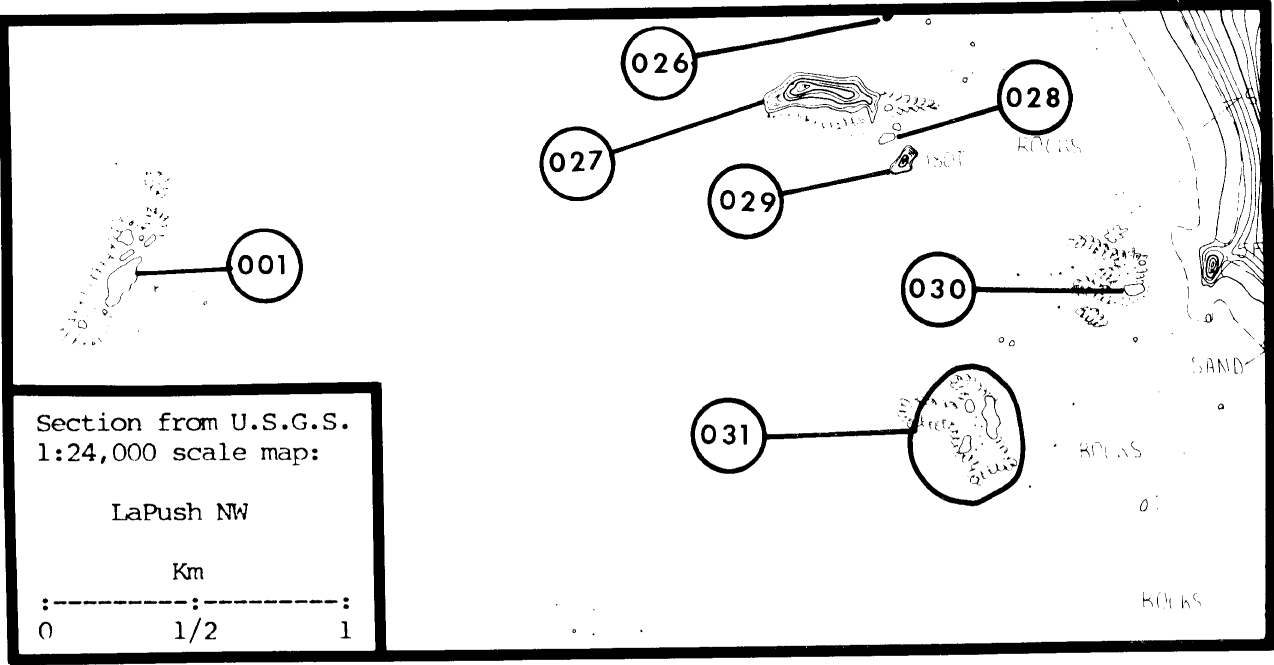
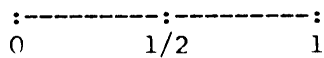
Km



Section from U.S.G.S.
1:24,000 scale map:

LaPush NW

Km



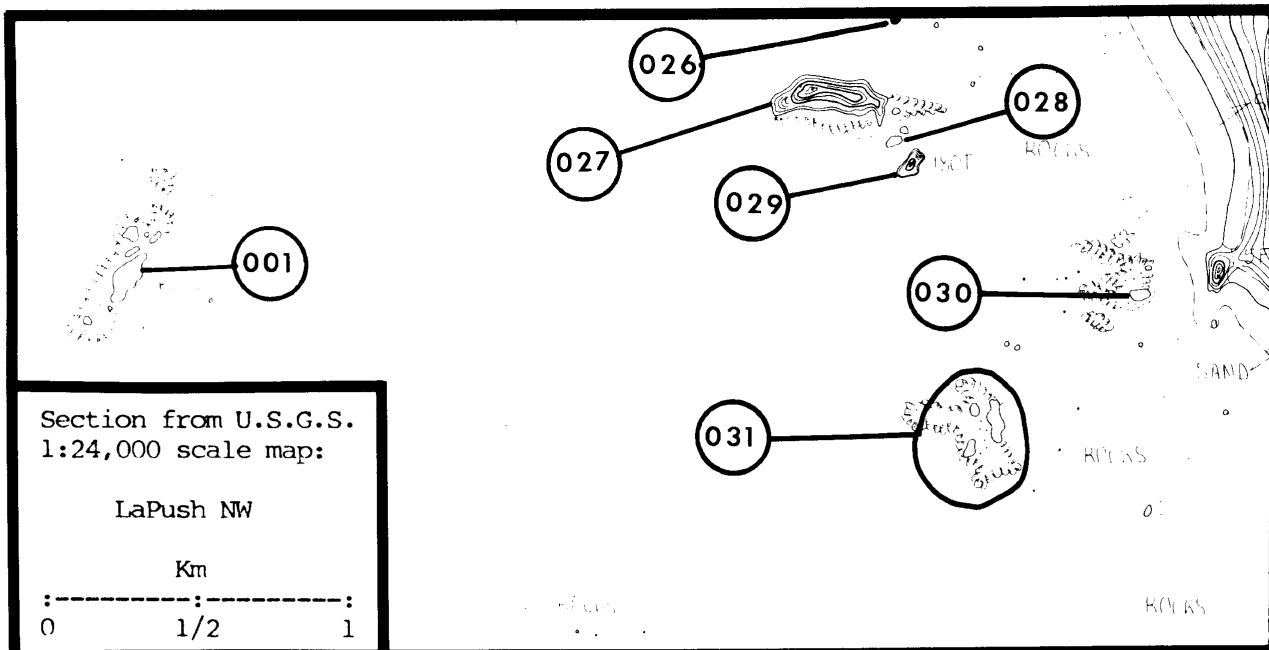
AREA 174, Copalis Beach, North (cont'd.)

027

Jagged Island (Wishaloolth; Bald Island) 47°59'48"N, 124°41'40"W

Leach's Storm-Petrel	20000	Speich	08/04/79	L III	255
Double-crested Cormorant	34	Wilson	06/08/82	B I	287
Pelagic Cormorant	70	Wilson	06/08/82	B I	287
Black Oystercatcher	6	Wilson	06/08/82	B III	287
Glaucous-winged Gull	690	Wilson	06/08/82	B III	287
Common Murre	430	Wilson	06/08/82	B III	287
Pigeon Guillemot	27	Wilson	06/08/82	B III	287
Cassin's Auklet	8000	Speich	08/04/79	L III	255
Tufted Puffin	7800	Wilson	06/08/82	B III	287
Total	37057				

Leach's Storm-Petrel	8	Dawson	06/11-17/07	E -	78
Leach's Storm-Petrel	100's	Dawson	06/11-17/07	L III	73
Leach's Storm-Petrel	5000-15000	Dawson 1908	06-07/ ?/06-07	L III	66
Double-crested Cormorant	X	Cantwell	05/29/15	? III	52
Double-crested Cormorant	X	Hancock	08/04/67	B III	122
Double-crested Cormorant	180	Pitman	06/30/78	B I	217
Double-crested Cormorant	186	Speich	07/22/78	B I	255
Double-crested Cormorant	X	Pitman	06/04/79	B III	217
Double-crested Cormorant	X	Speich	06/04/79	B III	255
Double-crested Cormorant	30	Wilson	08/13/81	B I	287
Pelagic Cormorant	100	Dawson 1908	06-07/ ?/06-07	L III	66
Pelagic Cormorant	X	Hancock	08/04/67	B III	122
Pelagic Cormorant	332	Pitman	06/30/78	B II	217
Pelagic Cormorant	430	Speich	07/22/78	B I	255
Pelagic Cormorant	X	Pitman	06/04/79	B III	217
Pelagic Cormorant	X	Speich	06/04/79	B III	255
Pelagic Cormorant	82	Wilson	08/13/81	B I	287
Black Oystercatcher	6	Dawson 1908	06-07/ ?/06-07	L III	66
Black Oystercatcher	6	Hancock	08/04/67	B III	122
Black Oystercatcher	2	Leschner	06/21/78	B III	178
Black Oystercatcher	4	Pitman	06/30/78	B III	217
Black Oystercatcher	4	Speich	07/22/78	B III	255
Black Oystercatcher	X	Speich	06/04/79	B III	255
Glaucous-winged Gull	2000-3000	Dawson 1908	06-07/ ?/06-07	L III	66
Glaucous-winged Gull	X	Jones 1908	06/17/07	L III	163
Glaucous-winged Gull	X	Hancock	08/04/67	B III	122
Glaucous-winged Gull	620	Pitman	06/30/78	B III	217
Glaucous-winged Gull	640	Speich	07/22/78	B III	255
Glaucous-winged Gull	X	Speich	06/04/79	B III	255
Glaucous-winged Gull	400+	Wilson	08/13/81	B III	287
Common Murre	X	Jones 1908	06/17/07	L III	163
Common Murre	50?	Kenyon & Scheffer 1962	07/13/59	A III	167
Common Murre	1	Pitman	06/30/78	B III	217
Common Murre	54	Speich	07/22/78	B III	255
Common Murre	X	Pitman	06/04/79	B III	217
Common Murre	X	Speich	06/04/79	B III	255



Common Murre	250	Wilson	08/13/81	B III 287
Pigeon Guillemot	X	Hancock	08/04/67	B III 122
Pigeon Guillemot	12	Pitman	06/30/78	B III 217
Pigeon Guillemot	7	Speich	07/22/78	B III 255
Pigeon Guillemot	X	Speich	06/04/79	B III 255
Tufted Puffin	1000	Dawson 1908	06-07/ ?/06-07	L III 66
Tufted Puffin	X	Dawson	06/11-17/07	L III 73
Tufted Puffin	X	Jones 1908	06/17/07	L III 163
Tufted Puffin	30	Kenyon & Scheffer 1962	07/13/59	A III 167
Tufted Puffin	X	Hancock	08/04/67	B III 122
Tufted Puffin	10000	Pitman	06/30/78	B III 217
Tufted Puffin	X	Speich	07/22/78	B III 255
Tufted Puffin	1000's	Pitman	06/04/79	B III 217
Tufted Puffin	X	Speich	06/04/79	B III 255
Tufted Puffin	12000	Speich	08/04/79	L III 255
Tufted Puffin	950+	Wilson	08/13/81	B III 287

AREA 174, Copalis Beach, North (cont'd.)

028 "Unnamed Rock" 47°59'47"N, 124°41'24"W

Pelagic Cormorant	4	Wilson	06/08/82	B I 287
Black Oystercatcher	2	Speich	07/22/78	B III 255
Glaucous-winged Gull	10	Wilson	06/08/82	B I 287
Total	<u>16</u>			

Glaucous-winged Gull 20 Pitman 06/30/78 B III 217

029 "Unnamed Rock" 47°59'42"N, 124°41'24"W

Pelagic Cormorant	12	Wilson	06/08/82	B I 287
Black Oystercatcher	1	Wilson	06/08/82	B III 287
Glaucous-winged Gull	150	Wilson	06/08/82	B III 287
Common Murre	25	Wilson	06/08/82	B III 287
Pigeon Guillemot	8	Wilson	06/08/82	B III 287
Tufted Puffin	110	Wilson	06/08/82	B II 287
Total	<u>306</u>			

Pelagic Cormorant 90 Pitman 06/30/78 B I 217
 Pelagic Cormorant 98 Speich 07/22/78 B I 255
 Black Oystercatcher 2 Pitman 06/30/78 B III 217
 Glaucous-winged Gull X Hancock 08/04/67 B III 122
 Glaucous-winged Gull 60 Pitman 06/30/78 B III 217
 Glaucous-winged Gull X Speich 07/22/78 B III 255
 Common Murre 17 Speich 07/22/78 B III 255
 Pigeon Guillemot 9 Speich 07/22/78 B III 255
 Tufted Puffin 200 Pitman 06/30/78 B III 217

030 "Unnamed Rock" 47°59'30"N, 124°40'58"W

Black Oystercatcher 2 Wilson 06/08/82 L I 287

031 Sandy Island, group 47°59'14"N, 124°41'24"W

No Nesting Observed 0 Speich 06/08/78 B III 255

AREA 174, Copalis Beach, North (cont'd.)

(032) "Unnamed Rock" 47°58'12"N, 124°40'54"W

No Nesting Observed	0	Pitman	07/22/79	B III 217
No Nesting Observed	0	Speich	06/08/78	B III 255
No Nesting Observed	0	Pitman	06/30/78	B III 217

(033) Cape Johnson, mainland 47°58'00"N, 124°40'26"W

Black Oystercatcher	23	Nysewander 1977	06/11/74	L III 204
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(034) Cape Johnson, offshore rocks 47°58'00"N, 124°40'30"W

Pelagic Cormorant	X	Dawson 1908	06-07/ ?/06-07	B III 66
Black Oystercatcher	X	Dawson 1908	06-07/ ?/06-07	B III 66
Black Oystercatcher	6	Nysewander 1974	06/14-16/74	B III 204
Glaucous-winged Gull	X	Dawson 1908	06-07/ ?/06-07	B III 66

(035) "Unnamed Rock" 47°57'32"N, 124°40'31"W

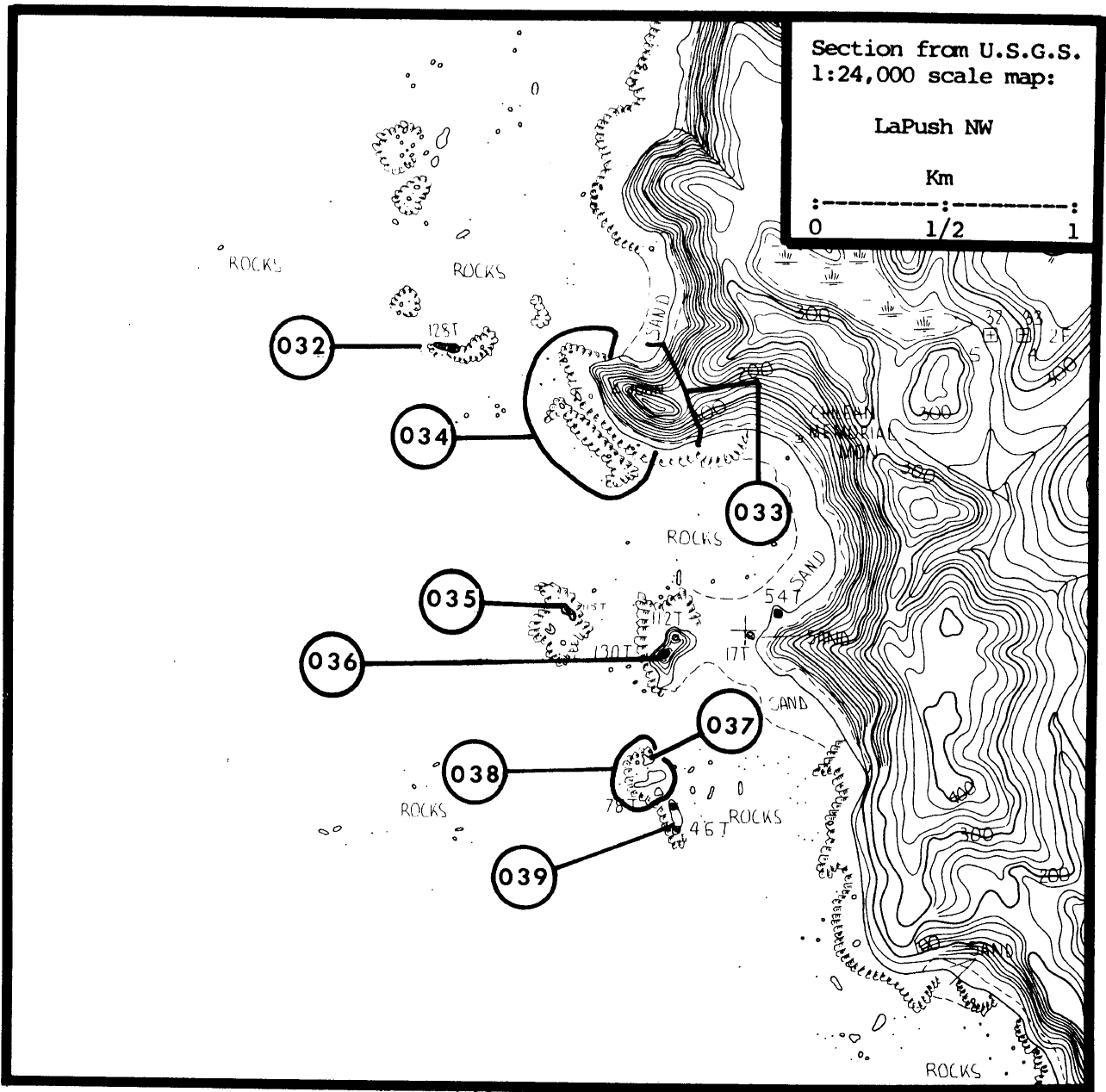
Black Oystercatcher	1	Speich	06/08/78	B III 255
Black Oystercatcher	3	Speich	07/22/78	B III 255
Pigeon Guillemot	2	Speich	06/08/78	B III 255

(036) "Unnamed Rock" 47°57'30"N, 124°40'14"W

No Nesting Observed	0	Pitman	06/30/78	B III 217
No Nesting Observed	0	Speich	06/08/78	B III 255

(037) "Unnamed Rock" 47°57'15"N, 124°40'24"W

Black Oystercatcher	2	Wilson	06/08/82	B III 287
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AREA 174, Copalis Beach, North (cont'd.)

③ "Unnamed Rocks" 47°57'13"N, 124°40'20"W

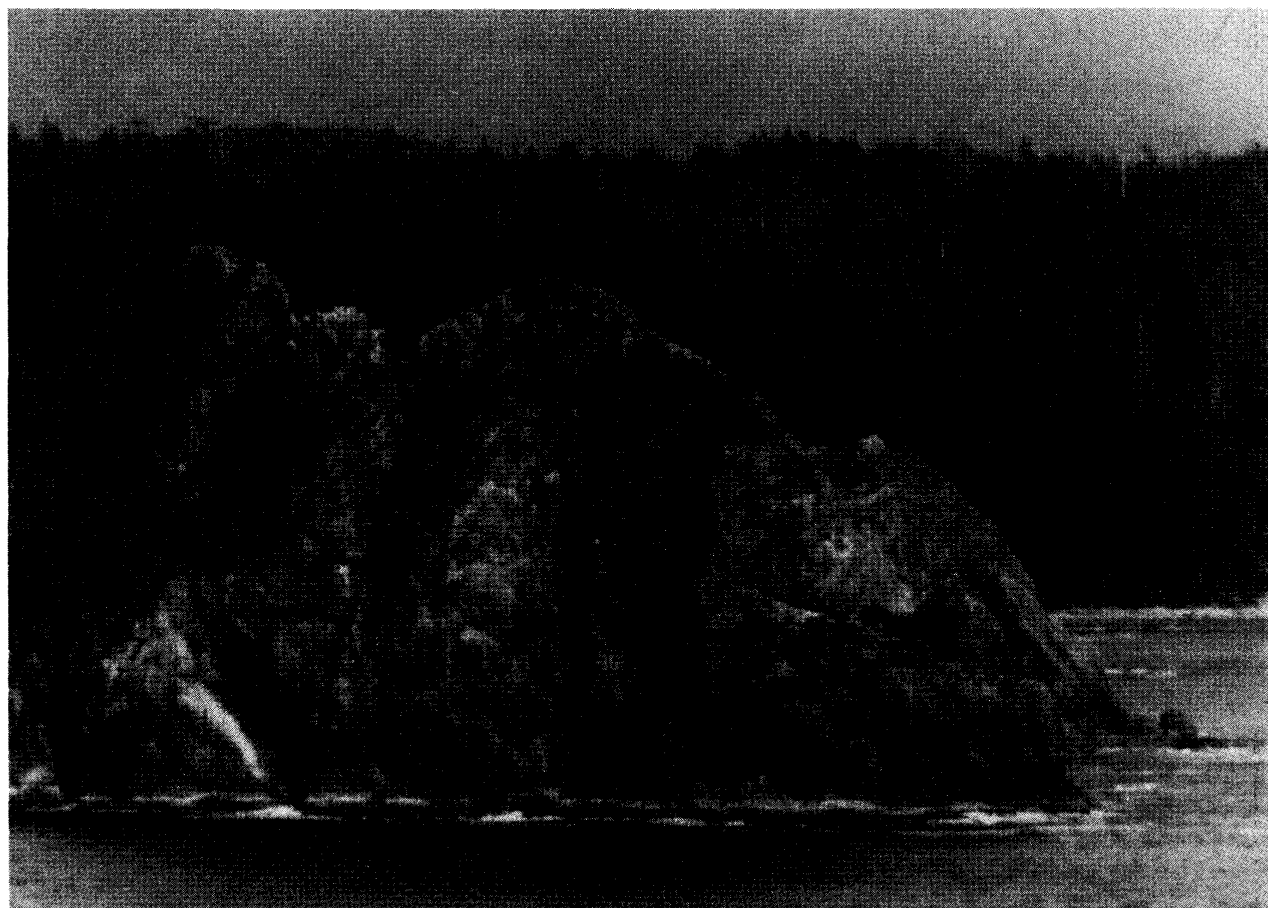
Black Oystercatcher	1	Speich	07/22/78	B III 255
Glaucous-winged Gull	1?	Speich	07/22/78	B III 255
Total	2			

Glaucous-winged Gull 2 Speich 06/08/78 B I 255

③ "Dohodaaluh" 47°57'05"N, 124°40'13"W

Glaucous-winged Gull	6?	Speich	07/22/78	B III 255
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Double-crested Cormorant	20	Dawson 1908	06-07/ ?/06-07	B III 66
Pelagic Cormorant	100	Dawson 1908	06-07/ ?/06-07	B III 66
Black Oystercatcher	12	Dawson 1908	06-07/ ?/06-07	B III 66
Glaucous-winged Gull	50	Dawson 1908	06-07/ ?/06-07	B III 66
Tufted Puffin	40	Dawson 1908	06-07/ ?/06-07	B III 66

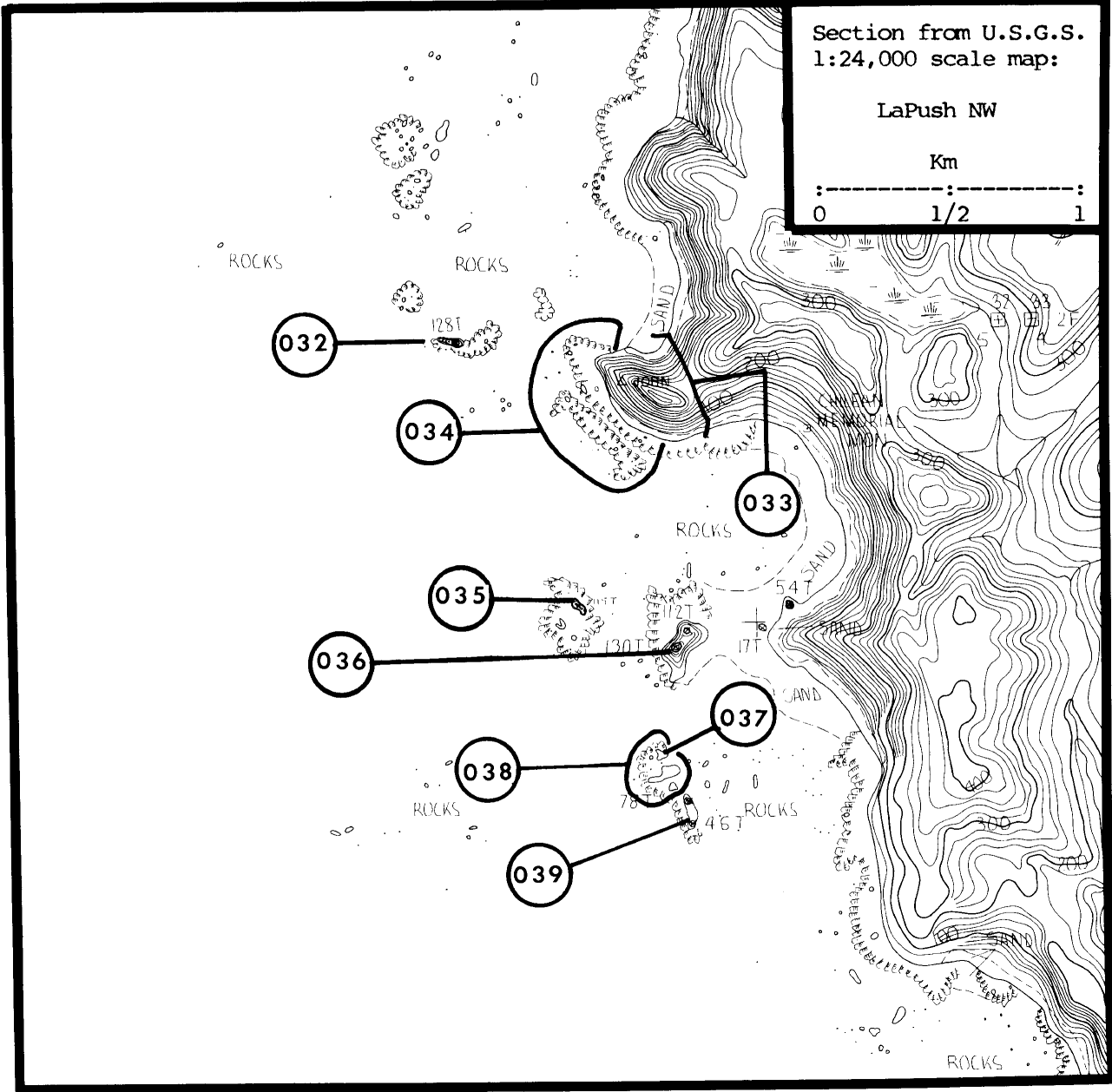
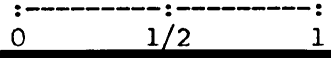


Jagged Island (174027) 8 June 1978 R.L. Pitman

Section from U.S.G.S.
1:24,000 scale map:

LaPush NW

Km



AREA 174, Copalis Beach, North (cont'd.)

040

Dahdayla 47°56'08"N, 124°40'01"W

Double-crested Cormorant	22	Wilson	06/08/82	B I 287
Pelagic Cormorant	8	Wilson	06/08/82	B I 287
Black Oystercatcher	4	Wilson	06/08/82	B III 287
Glaucous-winged Gull	35	Wilson	06/08/82	B III 287
Pigeon Guillemot	14	Speich	06/26/79	B III 255
Total	83			

Double-crested Cormorant	150+	Hancock	08/04/67	B III 122
Double-crested Cormorant	78	Speich	06/08/78	B I 255
Double-crested Cormorant	56	Speich	07/22/78	B I 255
Double-crested Cormorant	46	Speich	06/26/79	B I 255
Double-crested Cormorant	50	Wilson	08/13/81	B I 287
Pelagic Cormorant	X	Hancock	08/04/67	B III 122
Pelagic Cormorant	80	Speich	06/08/78	B I 255
Pelagic Cormorant	88	Speich	07/22/78	B I 255
Pelagic Cormorant	76	Speich	06/26/79	B I 255
Pelagic Cormorant	14	Wilson	08/13/81	B I 287
Black Oystercatcher	2	Hancock	08/04/67	B III 122
Black Oystercatcher	5	Speich	06/08/78	B III 255
Black Oystercatcher	4	Speich	07/22/78	B III 255
Black Oystercatcher	2	Speich	06/26/79	B III 255
Black Oystercatcher	2	Wilson	08/13/81	B III 287
Glaucous-winged Gull	40	Hancock	08/04/67	B III 122
Glaucous-winged Gull	42	Speich	06/08/78	B II 255
Glaucous-winged Gull	X	Speich	07/22/78	B III 255
Glaucous-winged Gull	66	Speich	06/26/79	B II 255
Glaucous-winged Gull	150	Wilson	08/13/81	B III 287
Common Murre	20-30	Hancock	08/04/67	B III 122
Common Murre	2	Cody 1973	?/ ?/68-69	B III 60
Pigeon Guillemot	6	Speich	06/08/78	B III 255
Pigeon Guillemot	8	Speich	07/22/78	B III 255

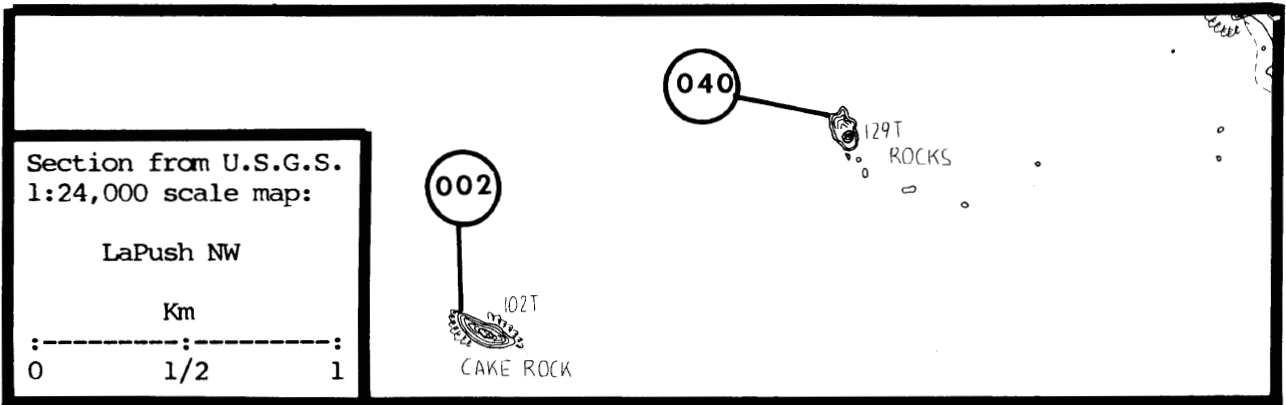


Table Rock (174051) (front) "Dhuoyautzachtah1" (174049) (left) Cakesosta (174050) (right) 19 November 1979 S.M. Speich

AREA 174, Copalis Beach, North (cont'd.)

041

"Kohchaa (uh)" 47°54'38"N, 124°39'00"W

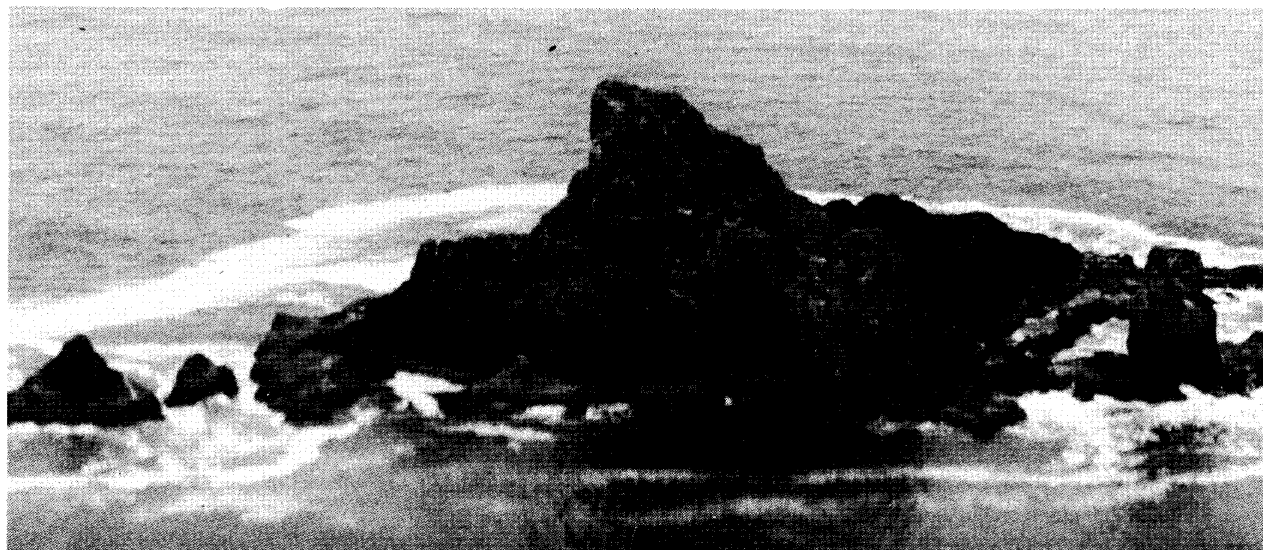
Leach's Storm-Petrel	100's	Speich	06/28/79	B III 255
Common Murre	850	Wilson	07/17/82	A III 287
Pigeon Guillemot	1	Speich	06/08/78	B III 255
Tufted Puffin	200-400	Speich	06/08/78	B III 255
Total	-1150			

Double-crested Cormorant	X	Eddy	07/25/54	M III 95
Double-crested Cormorant	10's	Hancock	08/04/67	B III 122
Pelagic Cormorant	X	Eddy	07/25/54	M III 95
Pelagic Cormorant	X	Hancock	08/04/67	B III 122
Glaucous-winged Gull	X	Dawson 1908	06-07/ ?/06-07	B III 66
Glaucous-winged Gull	X	Eddy	07/25/54	M III 95
Glaucous-winged Gull	25?	Speich	06/08/78	B III 255
Common Murre	X	Eddy	07/25/54	M III 95
Common Murre	10's	Hancock	08/04/67	B III 122
Common Murre	480	Wilson	07/05/79	A III 287
Common Murre	1600	Wilson	07/02/80	A III 287
Pigeon Guillemot	X	Hancock	08/04/67	B III 112
Cassin's Auklet	?	Speich	06/28/79	B III 255
Tufted Puffin	X	Eddy	07/25/54	M III 95
Tufted Puffin	X	Hancock	08/04/67	B III 122

042

"Unnamed Rock" 47°54'29"N, 124°39'02"W

Pelagic Cormorant	8	Speich	06/08/78	B III 255
Glaucous-winged Gull	50	Speich	06/08/78	B III 255
Total	58			



Dahdayla (174040) 16 June 1970 J.P. Mazzoni

AREA 174, Copalis Beach, North (cont'd.)

043 Quillayute Needles, group¹ 47°54'31"N, 124°38'40"W

Leach's Storm-Petrel	X	Young	pre-1897	? III	289
Leach's Storm-Petrel	10000	Cantwell	?/ ?/15	? III	52
Double-crested Cormorant	100	Cantwell	?/ ?/15	? III	52
Double-crested Cormorant	X	Nysewander	06/14/74	B III	205
Pelagic Cormorant	X	Young	06/21/1897	L III	289
Pelagic Cormorant	X	Nysewander	06/14/74	B III	205
Pelagic Cormorant	X	Hoffman	06/14/74	B III	139
Glaucous-winged Gull	X	Young	pre-1897	? III	289
Glaucous-winged Gull	X	Young	06/21/1897	? III	289
Glaucous-winged Gull	N	Cantwell	08/10/16	? III	52
Glaucous-winged Gull	X	Hoffman	06/14/74	B III	139
Common Murre	2	Albrecht	06/12/19	S -	1
Common Murre	100's	Nysewander	06/14/74	B III	205
Common Murre	100's	Hoffman	06/14/74	B III	139
Pigeon Guillemot	X	Nysewander	06/14/74	B III	205
Pigeon Guillemot	X	Hoffman	06/14/74	B III	139
Tufted Puffin	1	Anonymous	07/?/54	S -	16
Tufted Puffin	25	Kenyon & Scheffer 1962	07/13/59	A III	167
Tufted Puffin	X	Cody 1973	?/ ?/68-69	B III	60

¹Insufficient data to determine exact location.

044 "Unnamed Rock" 47°53'32"N, 124°37'46"W

No Nesting Observed 0 Speich 06/02/78 B III 255

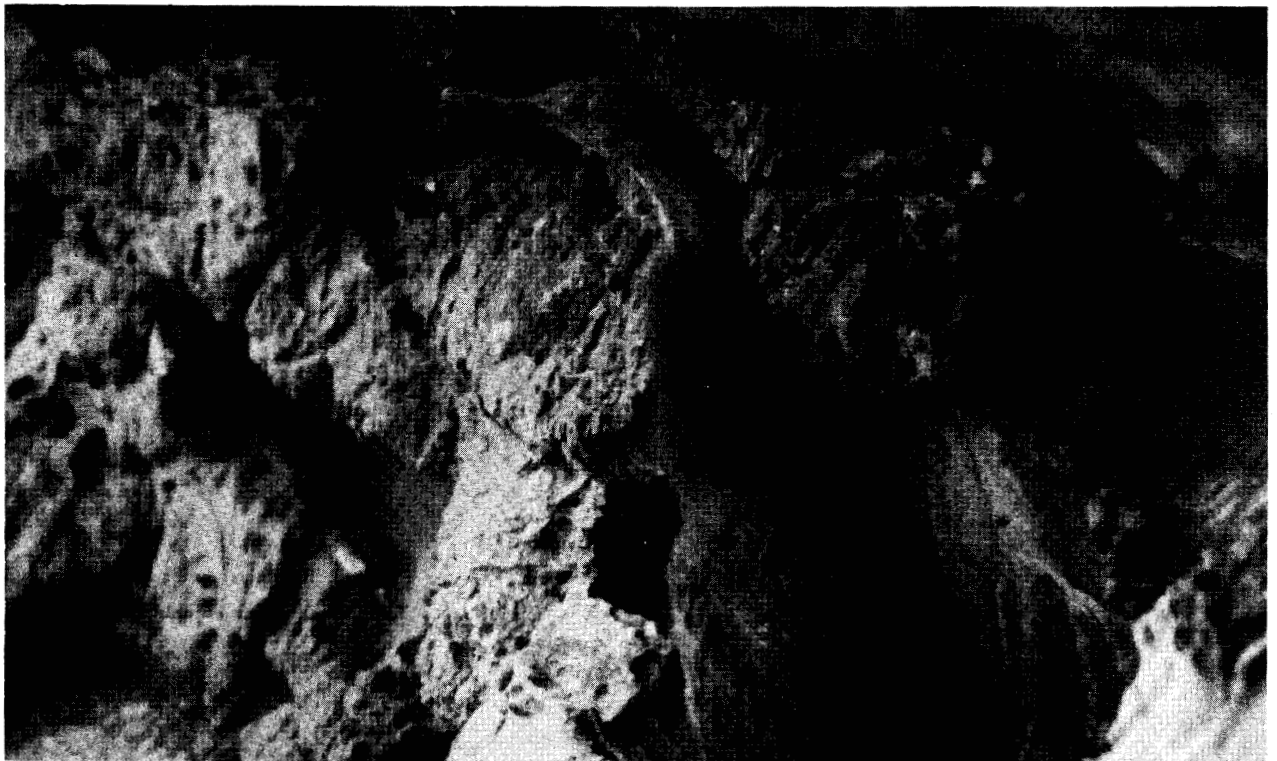
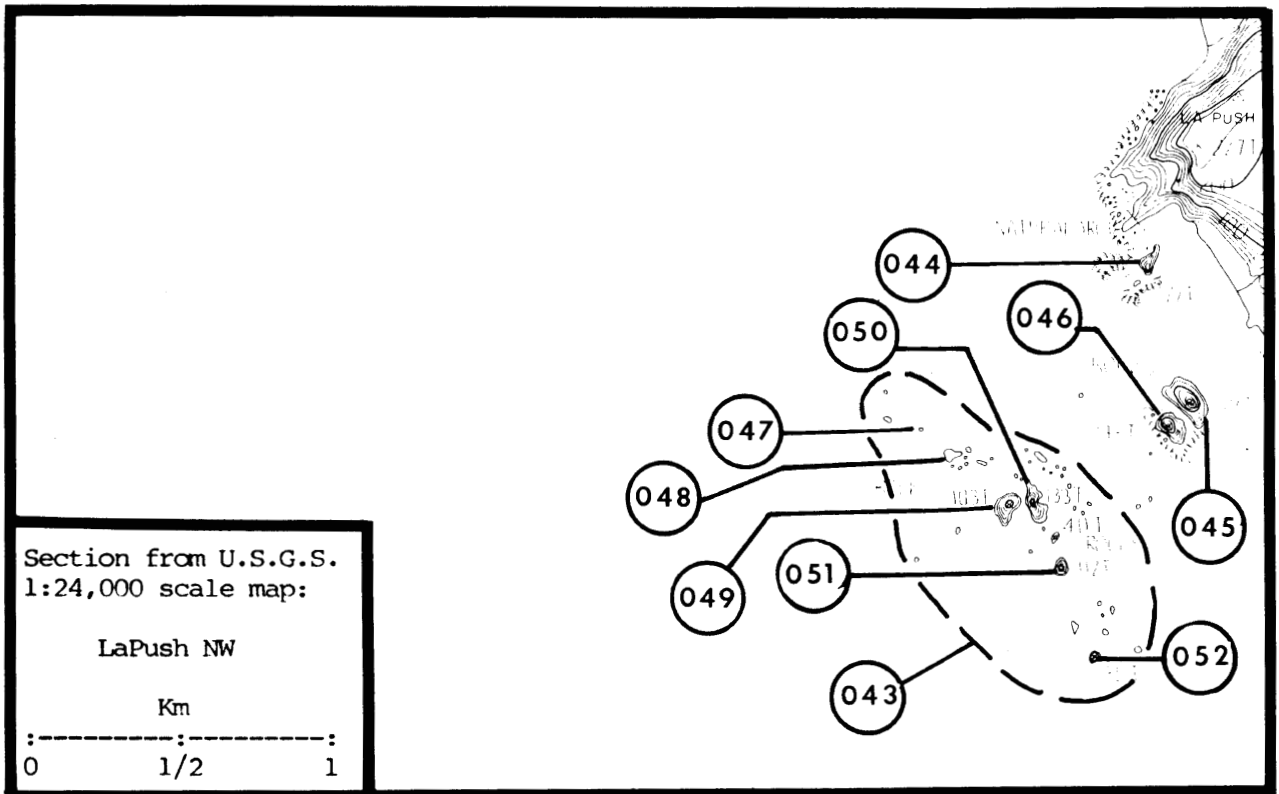
045 "Unnamed Rock" 47°53'17"N, 124°37'38"W

Pelagic Cormorant	4	Wilson	08/12/81	B I	287
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No Nesting Observed 0 Speich 06/01/78 B III 255

046 "Unnamed Rock" 47°53'12"N, 124°37'42"W

No Nesting Observed 0 Speich 06/01/78 B III 255



"Dhuoyautzachtah1" (174049) 26 September 1979 S.M. Speich Pelagic Cormorant

AREA 174, Copalis Beach, North (cont'd.)

047 "Unnamed Rock" 47°53'15"N, 124°38'35"W

No Nesting Observed 0 Speich 06/01/78 B III 255

048 "Unnamed Rock" 47°53'10"N, 124°38'16"W

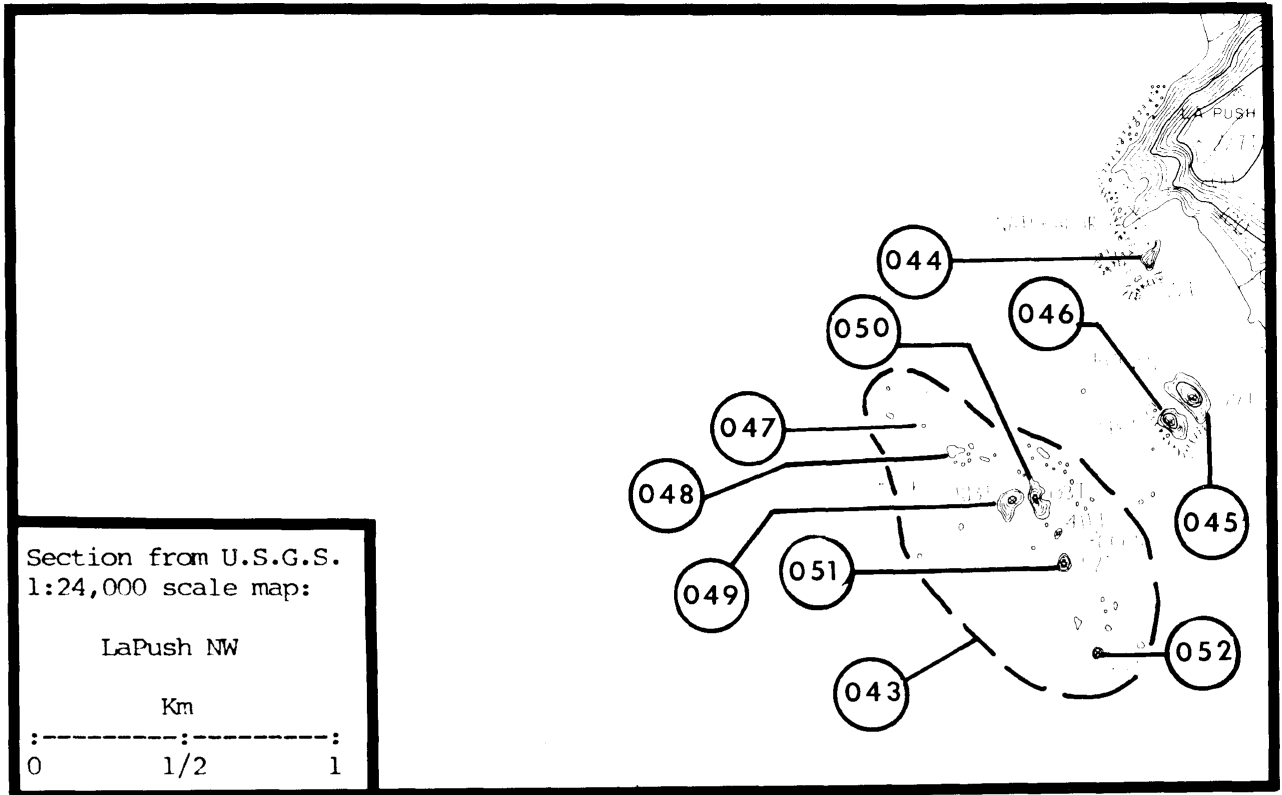
Pelagic Cormorant	14	Wilson	08/12/81	B I 287
Black Oystercatcher	2	Speich	06/02/78	B III 255
Glaucous-winged Gull	2	Speich	06/02/78	B I 255
Total	18			

Pelagic Cormorant 4 Speich 06/02/78 B I 255
 Pigeon Guillemot 1? Speich 06/02/78 B III 255

049 "Dhuoyautzachtahl" (Petrel Rock; Bird Rock; Huntington Island)
 47°53'02"N, 124°38'15"W

Leach's Storm-Petrel	2600	Speich	09/26/79	L III 255
Black Oystercatcher	2	Speich	09/26/79	L I 255
Glaucous-winged Gull	200	Wilson	08/12/81	B III 287
Common Murre	630	Wilson 1980	07/02/80	A III 286
Cassin's Auklet	1000	Speich	09/26/79	L III 255
Tufted Puffin	1100	Speich	09/26/79	L III 255
Total	5532			

Leach's Storm-Petrel 100's Dawson 1909 07/20/06 L III 70
 Leach's Storm-Petrel X Dawson 07/20/06 L III 75
 Leach's Storm-Petrel 1000's Dawson 1909 07/23-24/06 L III 70
 Leach's Storm-Petrel 10000-50000 Dawson 1908 07/23-24/06 L III 75
 Leach's Storm-Petrel 40000 Dawson 1908 06-07/ ?/06-07 L III 66
 Leach's Storm-Petrel 2 Jones 06/11/07 E - 166
 Leach's Storm-Petrel 10 Dawson 06/11/07 E - 79
 Leach's Storm-Petrel 40000 Dawson 06/11/07 L III 74;71;72
 Leach's Storm-Petrel 2 Dawson 06/11/07 E - 77
 Leach's Storm-Petrel 2 Dawson 06/17/07 E - 77
 Leach's Storm-Petrel 4 Dawson 06/11-17/07 E - 78
 Leach's Storm-Petrel X Dawson 06/ ?/07 L III 69
 Leach's Storm-Petrel X Jones 06/17-18/07 L III 163
 Leach's Storm-Petrel 2 Dawson 06/09/10 E - 79
 Leach's Storm-Petrel 1 Lewis 07/25/13 S - 180
 Leach's Storm-Petrel 1000's Jewett et al. 1953 07/14/15 L III 158
 Leach's Storm-Petrel X Jewett et al. 1953 05/30/16 L III 158
 Leach's Storm-Petrel 100's Alcorn & Eddy 1954 07/24-25/54 L III 9
 Leach's Storm-Petrel 3 Anonymous 07/24/54 S - 16
 Leach's Storm-Petrel 1 Anonymous 08/23/55 S - 16
 Double-crested Cormorant 2 Albrecht 05/22/15 S - 1



Double-crested Cormorant	1	Albrecht	06/06/19	S -	1
Pelagic Cormorant	20	Dawson 1908	06-07/ ?/06-07	L III	66
Pelagic Cormorant	1	Albrecht	05/21/15	S -	1
Pelagic Cormorant	X	Jewett et al. 1953	07/20/16	L III	158
Pelagic Cormorant	X	Eddy	07/24-25/54	L III	95
Pelagic Cormorant	X	Speich	09/26/79	L III	255
Black Oystercatcher	1	Albrecht	05/21/15	S -	1
Black Oystercatcher	1	Albrecht	05/28/15	S -	1
Black Oystercatcher	4	Jewett et al. 1953	07/20/16	L III	158
Black Oystercatcher	4	Eddy	07/24-25/54	L III	95
Glaucous-winged Gull	20	Dawson 1908	06-07/ ?/06-07	L III	66
Glaucous-winged Gull	X	Dawson 1909	06/17/07	L III	70
Glaucous-winged Gull	N	Jones 1908	06/17-18/07	L I	161
Glaucous-winged Gull	X	Eddy	07/24-25/54	L III	95
Glaucous-winged Gull	40	Speich	07/22/78	B III	255
Glaucous-winged Gull	X	Speich	09/26/79	L III	255
Common Murre	X	Eddy	07/24-25/54	L III	95
Common Murre	X	Speich	07/12/78	B III	255
Common Murre	250	Speich	07/22/78	B III	255
Common Murre	580	Wilson 1980	07/05/79	A III	286
Pigeon Guillemot	2	Eddy	07/24-25/54	L III	95
Cassin's Auklet	500	Dawson 1908	06-07/ ?/06-07	L III	66
Cassin's Auklet	1000	Dawson 1909	06/17/07	L III	69
Cassin's Auklet	X	Jones 1908	06/17-18/07	L III	163
Tufted Puffin	300	Dawson 1908	06-07/ ?/06-07	L III	66
Tufted Puffin	1	Albrecht	06/08/19	S -	1

AREA 174, Copalis Beach, North (cont'd.)

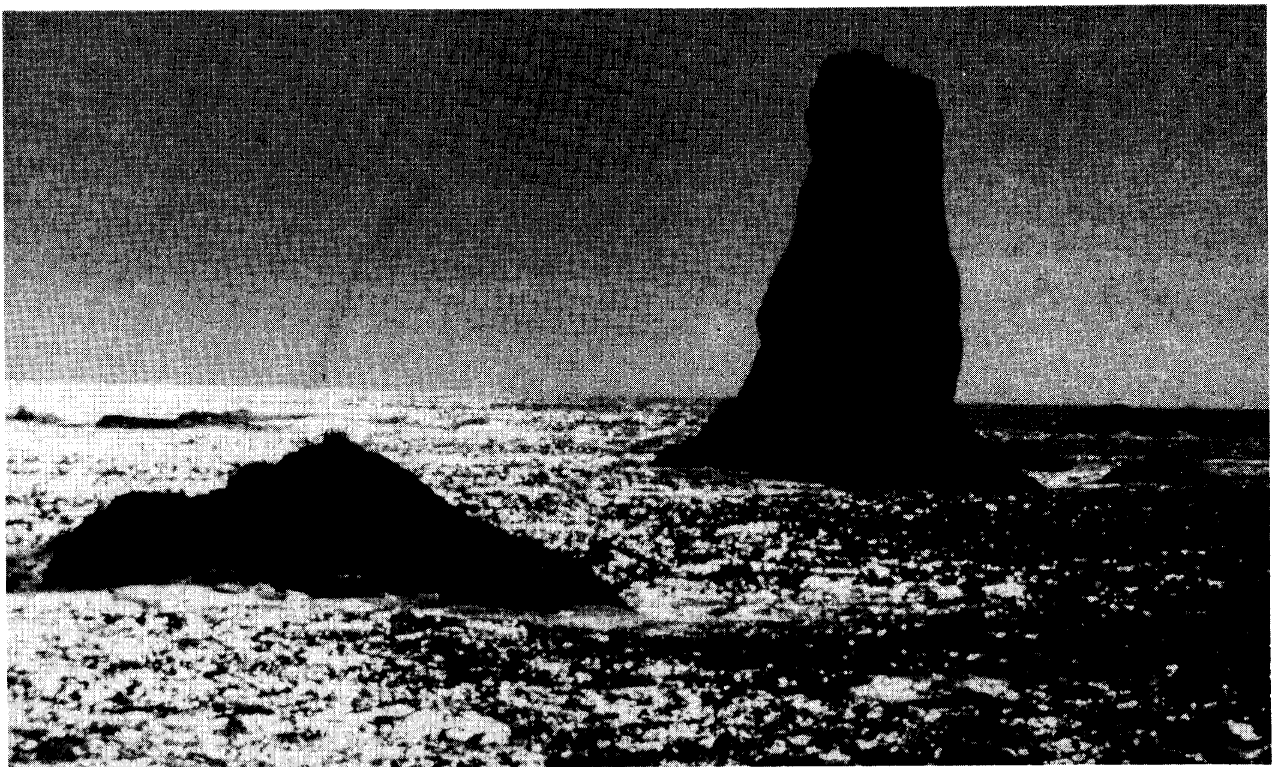
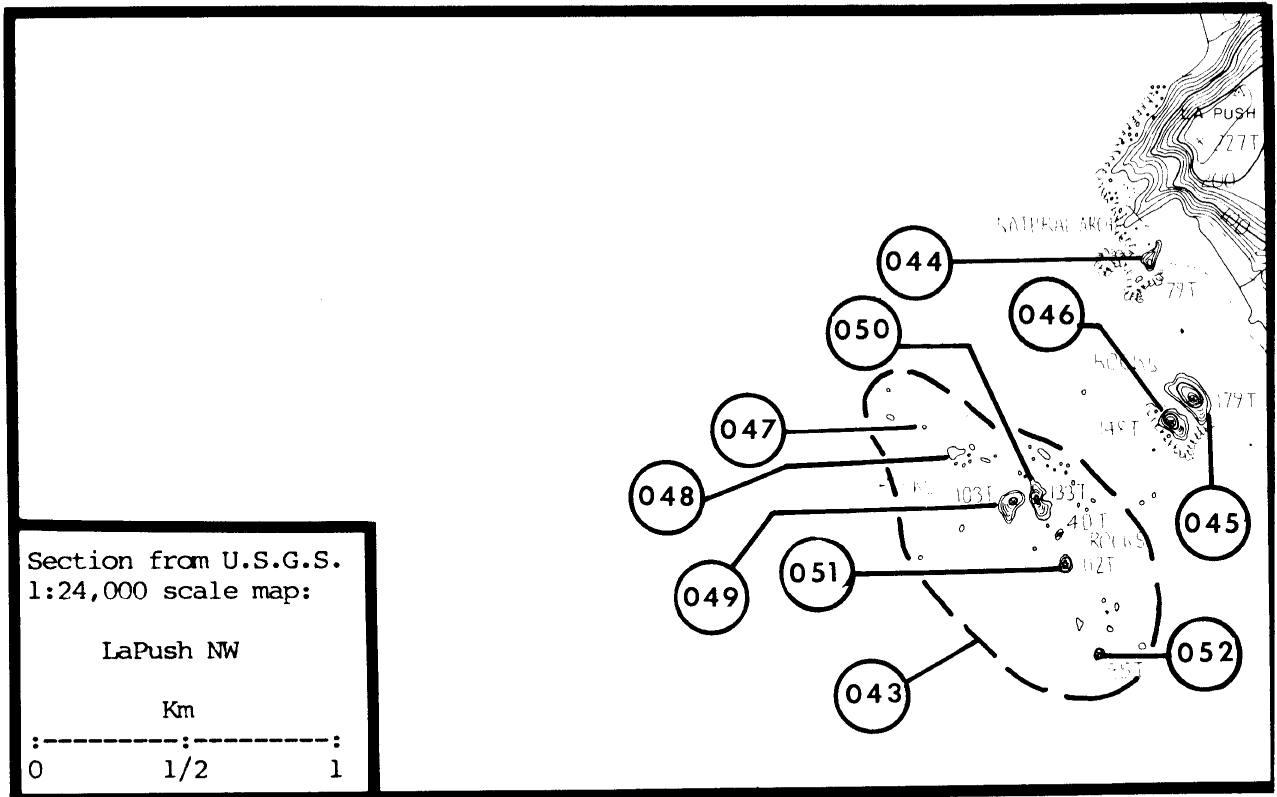
Tufted Puffin	X	Alcorn & Eddy 1954	07/24-25/54	L III	9
Tufted Puffin	X	Eddy	07/24-25/54	L III	95
Tufted Puffin	25	Wilson	08/12/81	B III	287

050

Cakesosta (Keeksoostahl) 47°53'02"N, 124°38'07"W

Black Oystercatcher	3	Speich	06/02/78	B III	255
Glaucous-winged Gull	119+	Wilson	07/17/82	A III	287
Common Murre	580	Wilson	07/17/82	A III	287
Pigeon Guillemot	1	Speich	06/02/78	B III	255
Tufted Puffin	125+	Wilson	08/12/81	B III	287
Total	-830				

Leach's Storm-Petrel	P	Speich	09/26/82	M III	255
Double-crested Cormorant	30	Speich	06/02/78	B I	255
Double-crested Cormorant	42	Speich	07/22/78	B I	255
Pelagic Cormorant	100	Dawson 1908	06-07/ ?/06-07	M III	66
Pelagic Cormorant	100	Speich	06/01/78	B II	255
Pelagic Cormorant	20	Speich	06/02/78	B I	255
Glaucous-winged Gull	200	Dawson 1908	06-07/ ?/06-07	M III	66
Glaucous-winged Gull	40	Speich	06/02/78	B III	255
Glaucous-winged Gull	50	Speich	07/22/78	B III	255
Glaucous-winged Gull	50	Wilson	08/12/81	B III	287
Common Murre	550	Speich	06/02/78	B III	255
Common Murre	200	Speich	07/12/78	B III	255
Common Murre	470	Speich	07/22/78	B III	255
Common Murre	765	Wilson 1980	07/05/79	A III	286
Common Murre	685	Wilson 1980	07/02/80	A III	286
Common Murre	50	Wilson 1980	08/12/81	B III	287
Cassin's Auklet	P	Speich	09/26/82	M III	255
Tufted Puffin	500	Dawson 1908	06-07/ ?/06-07	M III	66
Tufted Puffin	60-80	Speich	06/02/78	B III	255
Tufted Puffin	6+	Wilson	07/17/82	A III	287



Quillayute Needle (174052) June 1978 R.L. Pitman

AREA 174, Copalis Beach, North (cont'd.)

051 Table Rock 47°52'52"N, 124°38'06"W

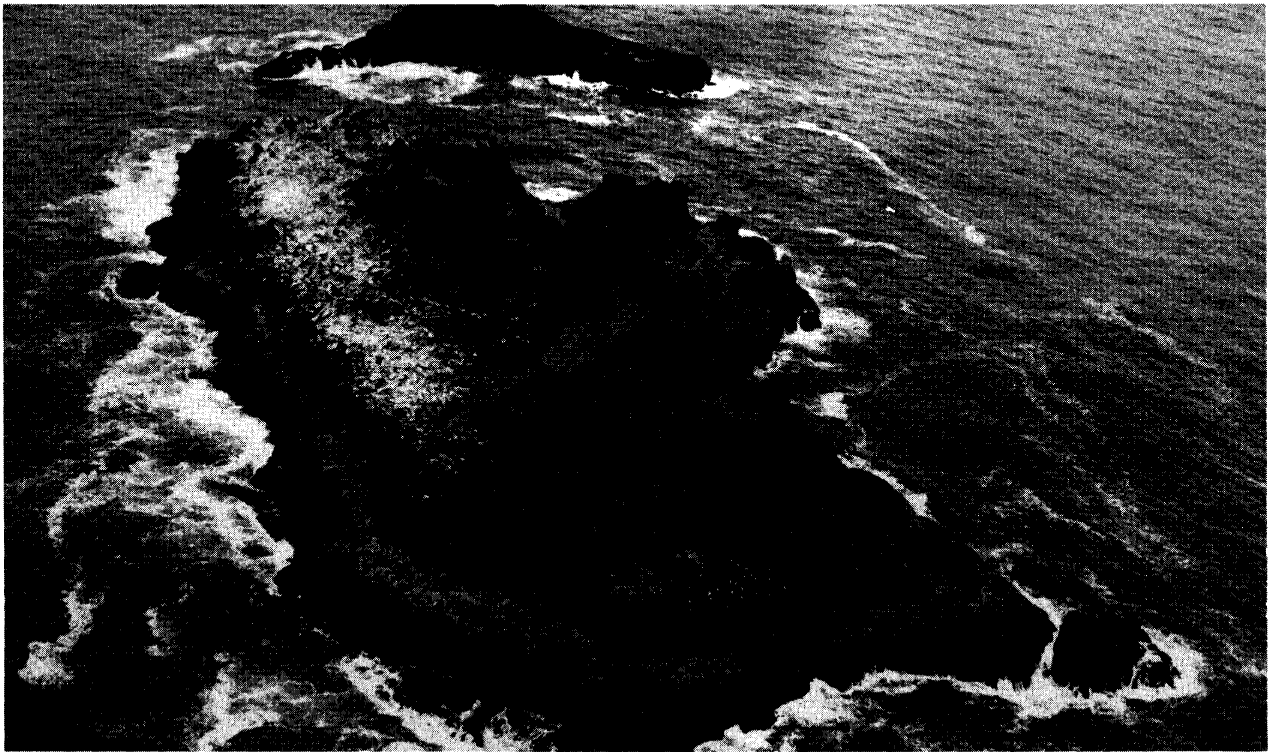
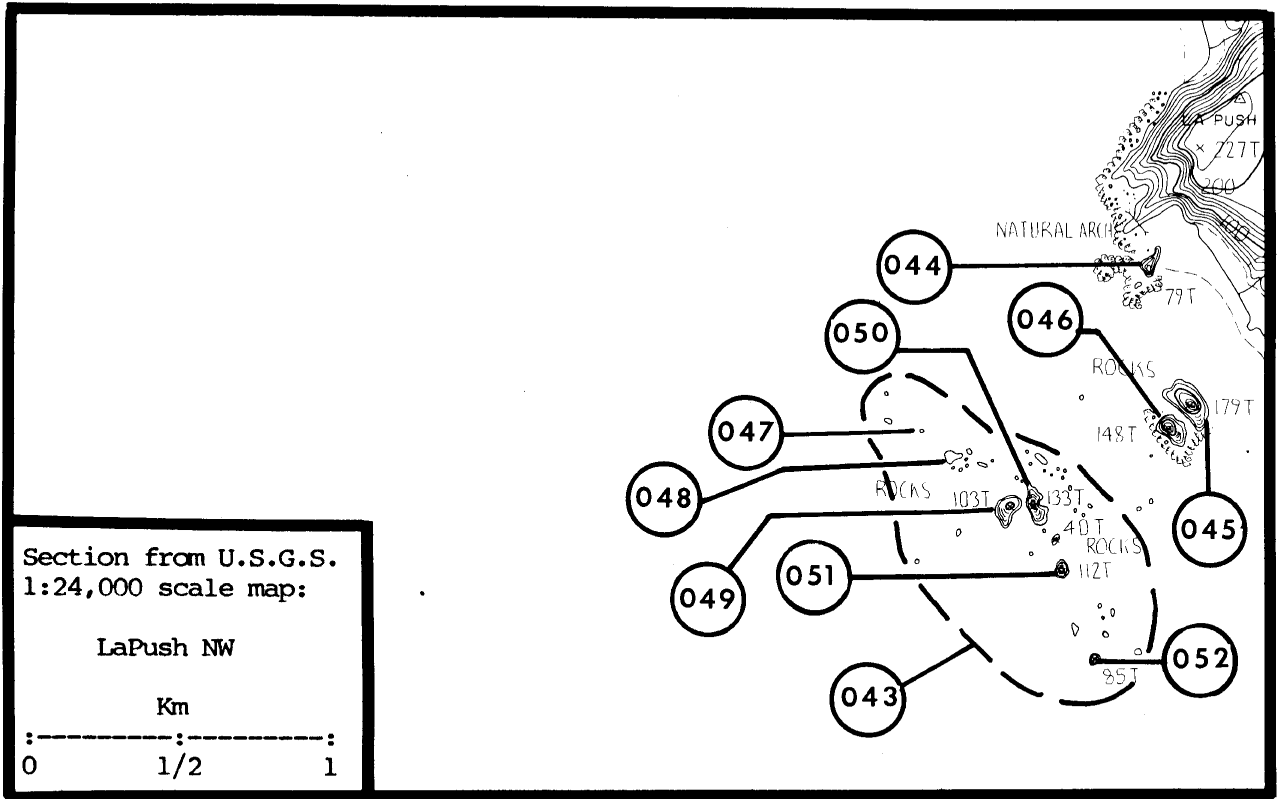
Double-crested Cormorant	64	Wilson	07/17/82	A I 287
Glaucous-winged Gull	25	Wilson	07/17/82	A III 287
Common Murre	320	Wilson	07/17/82	A III 287
Pigeon Guillemot	2	Wilson	08/12/81	B III 287
Tufted Puffin	X	Speich	06/02/78	B III 255
Total	-410			

Double-crested Cormorant	X	Eddy	07/24-25/54	M III 95
Double-crested Cormorant	30	Wilson	08/12/81	B I 287
Pelagic Cormorant	18	Speich	06/02/78	B I 255
Pelagic Cormorant	62	Wilson	08/12/81	B III 287
Glaucous-winged Gull	X	Dawson 1908	06-07/12/06-07	M III 66
Glaucous-winged Gull	20	Speich	06/02/78	B III 255
Common Murre	750	Speich	06/02/78	B III 255
Common Murre	1000-1300	Speich	07/12/78	B III 255
Common Murre	670	Speich	07/22/78	B III 255
Common Murre	250+	Wilson	08/12/81	B III 287
Pigeon Guillemot	2	Speich	06/02/78	B III 255

052 Quillayute Needle 47°52'50"N, 124°37'59"W

Black Oystercatcher	1	Speich	06/02/78	B III 255
Common Murre	275	Wilson 1980	07/02/80	A III 286
Total	276			

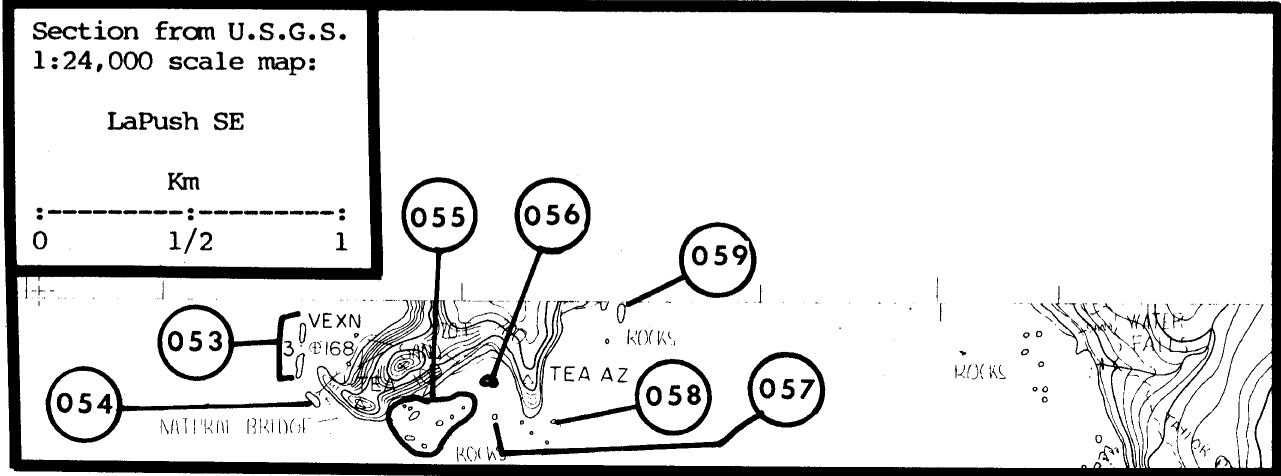
Common Murre	35	Speich	06/02/78	B III 255
Common Murre	210	Wilson 1980	07/05/79	A III 286



Perkins Reef (174011) 15 July 1966 R. Glahn

AREA 174, Copalis Beach, North (cont'd.)

⑤3	"Unnamed Rocks"	47°52'35"N, 124°36'34"W			
	Glaucous-winged Gull	1?	Speich	06/01/78	B III 255
⑤4	"Unnamed Rock"	47°52'20"N, 124°36'39"W			
	Black Oystercatcher	2	Speich	06/01/78	B III 255
⑤5	"Unnamed Rock"	47°52'15"N, 124°36'18"W			
	Black Oystercatcher	1	Speich	06/01/78	B III 255
	Pigeon Guillemot	1?	Speich	06/01/78	B III 255
⑤6	"Unnamed Rock"	47°52'22"N, 124°36'06"W			
	No Nesting Observed	0	Speich	06/01/78	B III 255
⑤7	"Unnamed Rock"	47°52'20"N, 124°36'00"W			
	Black Oystercatcher	1	Speich	06/01/78	B III 255
	Pigeon Guillemot	1?	Speich	06/01/78	B III 255
	Total	$\frac{2}{2}$			
⑤8	"Unnamed Rock"	47°52'27"N, 124°35'50"W			
	No Nesting Observed	0	Speich	06/01/78	B III 255
⑤9	"Unnamed Rock"	47°52'32"N, 124°35'44"W			
	No Nesting Observed	0	Speich	06/01/78	B III 255



Rounded Island (174007) 15 July 1966 R. Glahn

AREA 174, Copalis Beach, North (cont'd.)

060 "Unnamed Rock" 47°52'05"N, 124°34'18"W

No Nesting Observed 0 Speich 06/01/78 B III 255

061 "Unnamed Rock" 47°51'58"N, 124°34'09"W

Pelagic Cormorant	16	Speich	06/01/78	B I 255
Black Oystercatcher	3	Speich	06/01/78	B III 255
Glaucous-winged Gull	3?	Speich	06/01/78	B III 255
Total	<u>22</u>			

062 "Unnamed Rock" 47°51'40"N, 124°33'43"W

No Nesting Observed	0	Wilson	06/16/81	B III 287
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Black Oystercatcher	3	Speich	06/01/78	B III 255
Pigeon Guillemot	1?	Speich	06/01/78	B III 255

063 "Ghost Rock" 47°51'22"N, 124°34'05"W

Glaucous-winged Gull	5	Wilson	06/16/81	B III 287
Pigeon Guillemot	1?	Speich	06/01/78	B III 255
Tufted Puffin	<u>25</u>	Wilson	06/16/81	B III 287
Total	<u>30</u>			

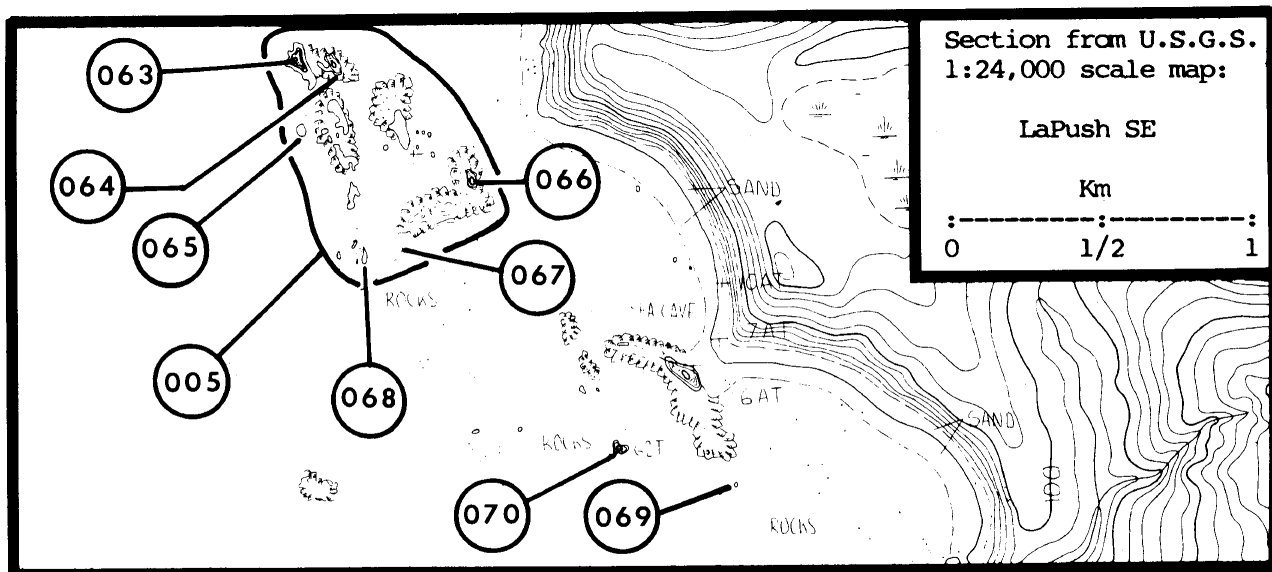
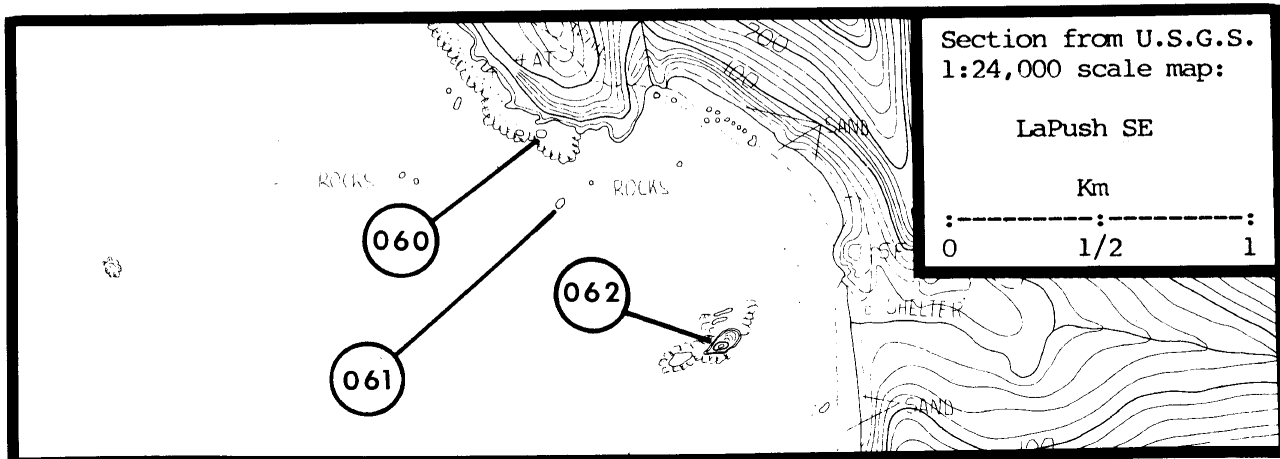
Double-crested Cormorant	50	Dawson 1908	06-07/ ?/06-07	B III 66
Pelagic Cormorant	100	Dawson 1908	06-07/ ?/06-07	B III 66

064 "Unnamed Rock" 47°51'22"N, 124°34'00"W

Pigeon Guillemot 3 Speich 06/01/78 B III 255

065 "Unnamed Rock" 47°51'15"N, 124°34'03"W

Pelagic Cormorant	64	Wilson	06/16/81	B I 287
Black Oystercatcher	2	Speich	06/01/78	B III 255



066 "Unnamed Rock" 47°51'11"N, 124°33'41"W

Pelagic Cormorant	54	Wilson	06/16/81	B I 287
Black Oystercatcher	2	Speich	06/01/78	B III 255

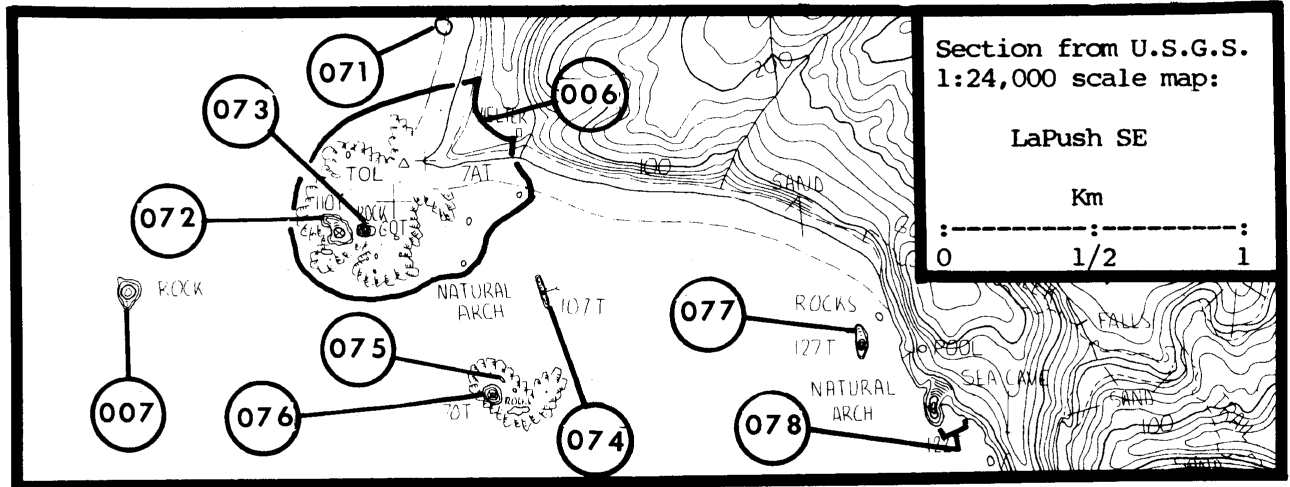
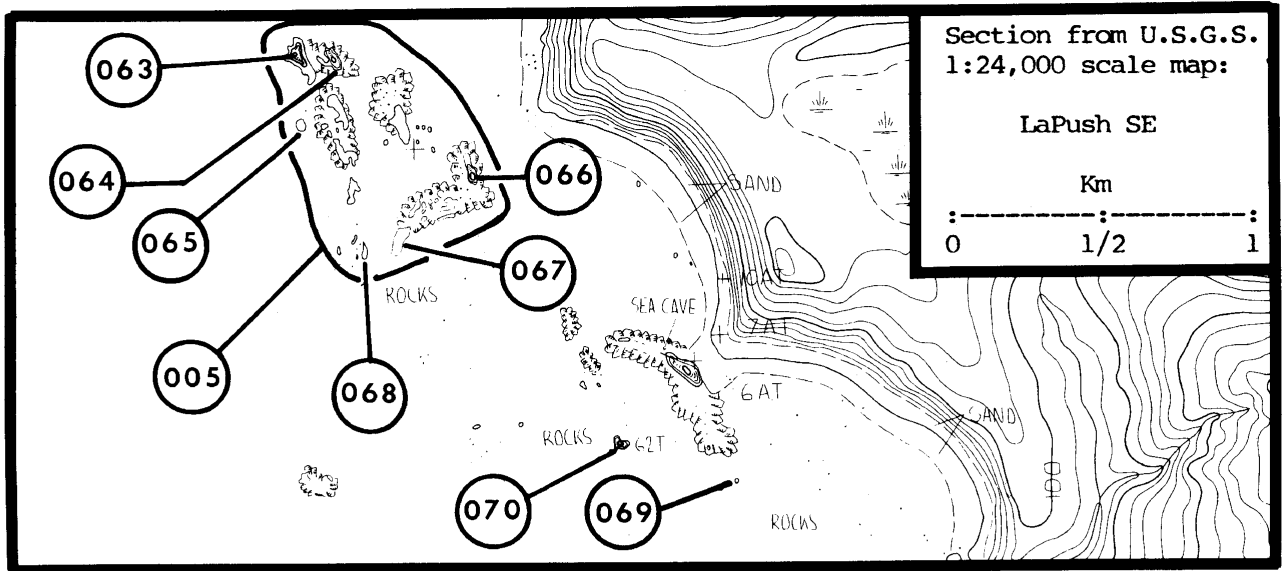
067 "Unnamed Rock" 47°51'02"N, 124°33'47"W

Pelagic Cormorant	3	Wilson	06/16/81	B I 287
Black Oystercatcher	1	Speich	06/01/78	B III 255
Total	4			

Pelagic Cormorant	6?	Speich	06/01/78	B I 255
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AREA 174, Copalis Beach, North (cont'd.)

(068)	"Unnamed Rock"	47°51'02"N, 124°33'57"W			
Pelagic Cormorant	10	Speich	06/01/78	B I	255
(069)	"Unnamed Rock"	47°50'39"N, 124°32'52"W			
Pigeon Guillemot	7	Speich	06/02/78	B III	255
(070)	"Unnamed Rock"	47°50'40"N, 124°33'13"W			
Pigeon Guillemot	5	Speich	06/01/78	B III	255
(071)	"Unnamed Rock"	47°50'22"N, 124°32'20"W			
No Nesting Observed	0	Speich	06/02/78	B III	255
(072)	"Unnamed Rock"	47°50'00"N, 124°32'41"W			
No Nesting Observed	0	Speich	06/02/78	B III	255
(073)	"Unnamed Rock"	47°49'58"N, 124°32'30"W			
No Nesting Observed	0	Speich	06/02/78	B III	255
(074)	"Unnamed Rock"	47°49'57"N, 124°32'02"W			
Pelagic Cormorant	12	Speich	06/02/78	B I	255
Black Oystercatcher	2	Speich	06/02/78	B III	255
Pigeon Guillemot	9	Speich	06/02/78	B III	255
Total	23				



⑦ "Unnamed Rock" 47°49'49"N, 124°32'12"W

Pelagic Cormorant

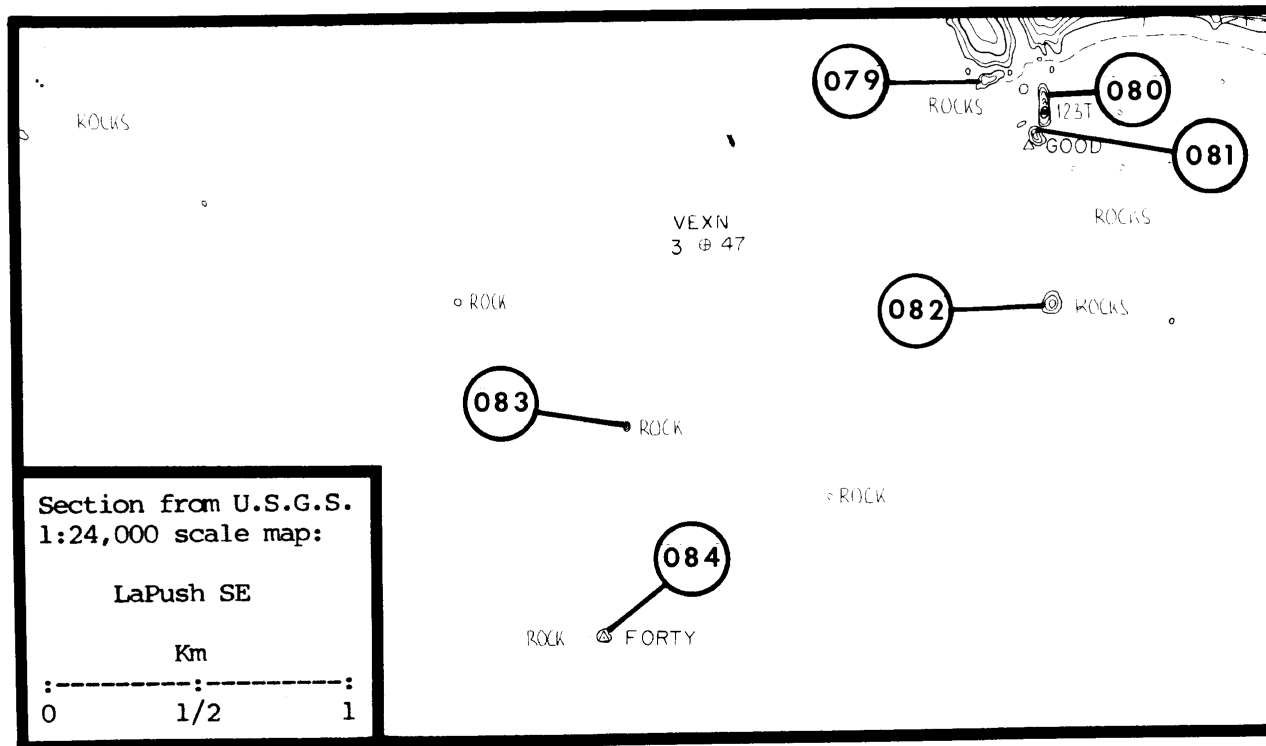
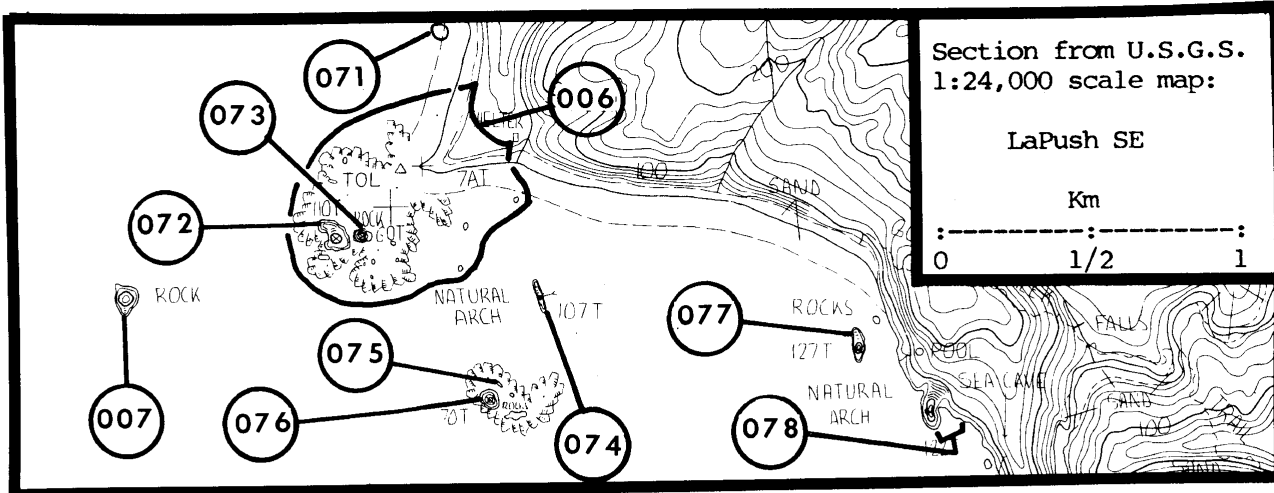
6 Speich

06/02/78

B I 255

AREA 174, Copalis Beach, North (cont'd.)

(076)	"Unnamed Rock"	47°49'48"N, 124°32'12"W		
	Pelagic Cormorant	12	Speich	06/02/78 B I 255
	Black Oystercatcher	1	Speich	06/02/78 B III 255
	Total	13		
(077)	"Unnamed Rock"	47°49'44"N, 124°31'03"W		
	No Nesting Observed	0	Speich	06/02/78 B III 255
(078)	"Mainland Cave"	47°49'38"N, 124°30'52"W		
	Pelagic Cormorant	8	Speich	06/02/78 B I 255
(079)	"Unnamed Rock"	47°49'20"N, 124°30'48"W		
	Black Oystercatcher	4	Speich	06/02/78 B III 255
(080)	"Unnamed Rock"	47°49'18"N, 124°30'40"W		
	Pelagic Cormorant	112	Wilson	06/16/81 B I 287
(081)	"Unnamed Rock"	47°49'13"N, 124°30'42"W		
	Pelagic Cormorant	82	Wilson	06/16/81 B I 287
	No Nesting Observed	0	Speich	06/01/78 B III 255



AREA 174, Copalis Beach, North (cont'd.)

082 "Half Round Rock" 47°48'56"N, 124°30'29"W

Double-crested Cormorant	20	Wilson	06/16/81	B I 287
Pelagic Cormorant	16	Wilson	06/16/81	B I 287
Common Murre	250+	Wilson	06/16/81	B III 287
Tufted Puffin	2+	Wilson	06/16/81	B III 287
Total	288+			

Pelagic Cormorant	212	Speich	06/02/78	B I 255
Black Oystercatcher	1	Hoffman	06/14/74	B III 139
Glaucous-winged Gull	40	Hoffman	06/14/74	B III 139
Glaucous-winged Gull	30	Speich	06/02/78	B II 255
Tufted Puffin	1	Hoffman	06/14/74	B III 139
Tufted Puffin	20	Speich	06/02/78	B III 255

083 Half Round Rock, Outer 47°48'44"N, 124°31'45"W

Double-crested Cormorant	42	Speich	06/12/79	B I 255
Pelagic Cormorant	276	Speich	06/12/79	B I 255
Black Oystercatcher	1	Speich	06/12/79	B III 255
Glaucous-winged Gull	25	Speich	06/12/79	B III 255
Total	344			

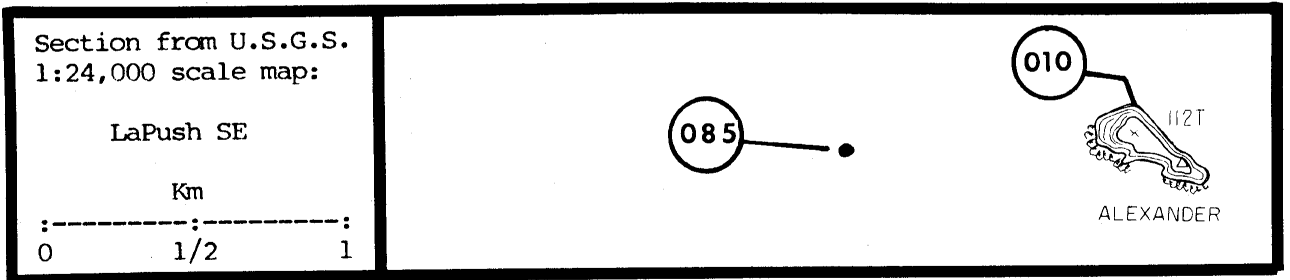
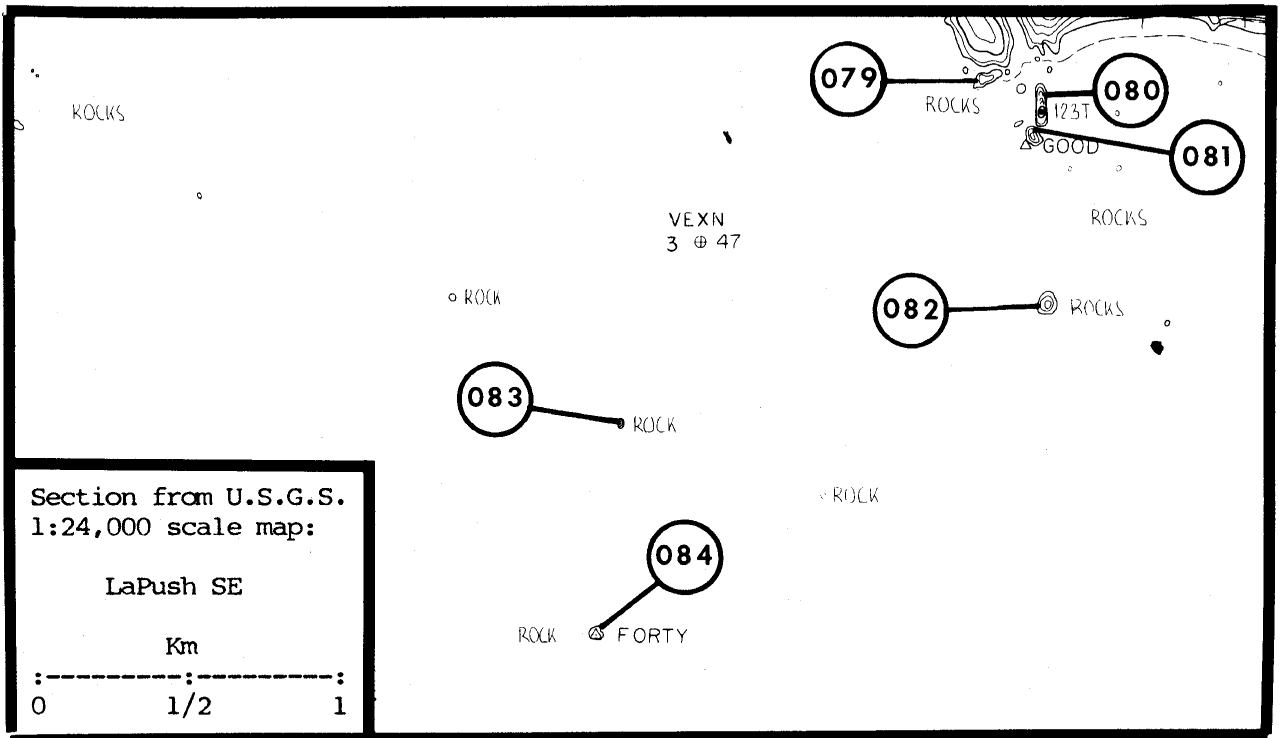
Pelagic Cormorant	60	Hoffman; Nysewander	06/14/74	B III 139;205
Black Oystercatcher	2	Hoffman; Nysewander	06/14/74	B III 139;205
Glaucous-winged Gull	35	Hoffman; Nysewander	06/14/74	B III 139;205
Glaucous-winged Gull	20-30	Speich	06/02/78	B III 255

084 "Unnamed Rock" 47°48'23"N, 124°31'46"W

No Nesting Observed	0	Speich	06/02/78	B III 255
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085 "Unnamed Rock" 47°47'55"N, 124°31'00"W

Black Oystercatcher	1	Speich	06/02/78	B III 255
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AREA 174, Copalis Beach, North (cont'd.)

086

"Unnamed Rock" 47°47'32"N, 124°28'52"W

No Nesting Observed

0

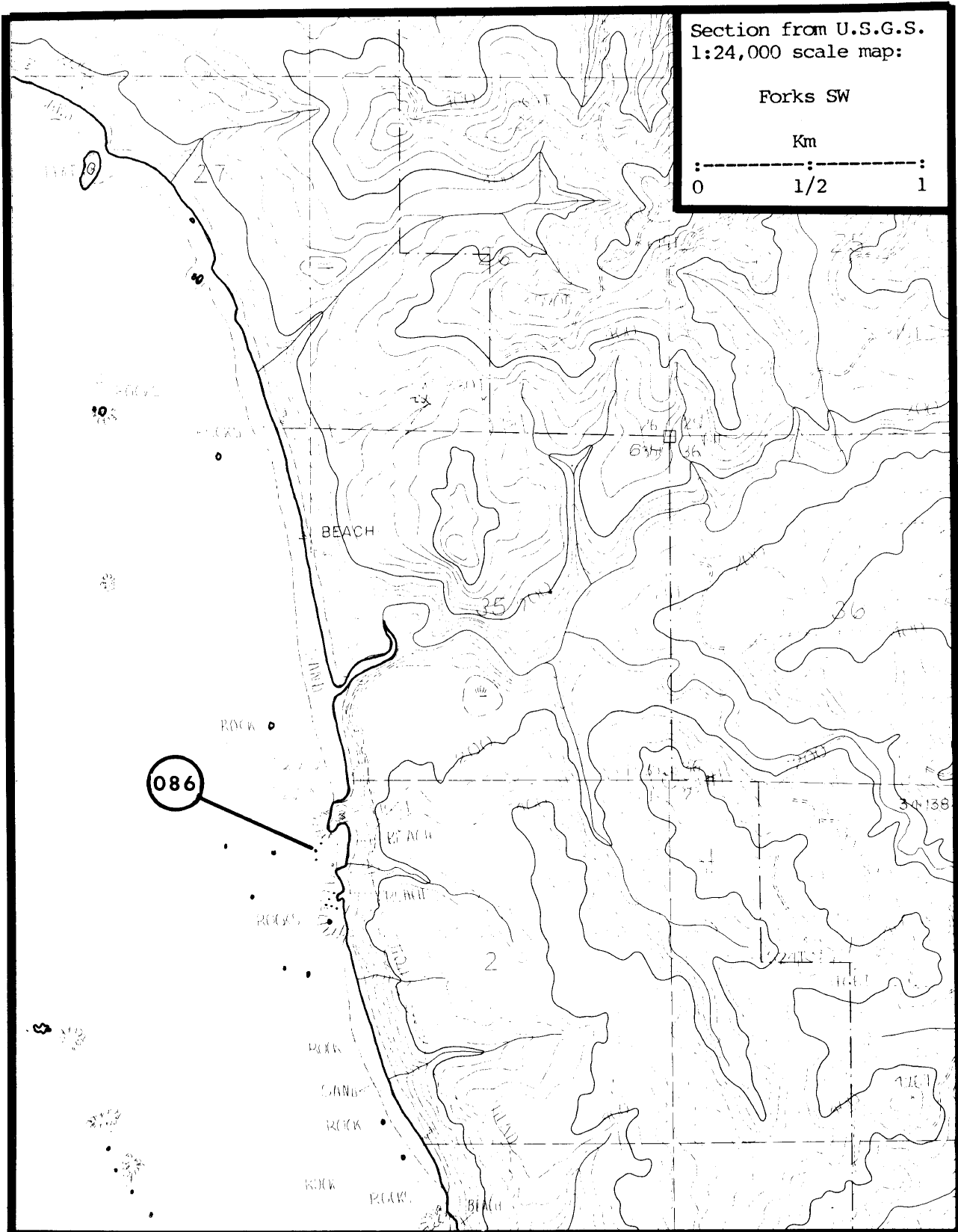
Pitman

07/12/78

B III 217



Quillayute Needle (174052) June 1978 S.M. Speich



Section from U.S.G.S.
1:24,000 scale map:

Forks SW

Km
0 1/2 1

086

AREA 174, Copalis Beach, North (cont'd.)

①087 "Unnamed Rock" 47°46'17"N, 124°28'27"W
 No Nesting Observed 0 Speich 06/12/79 B III 255

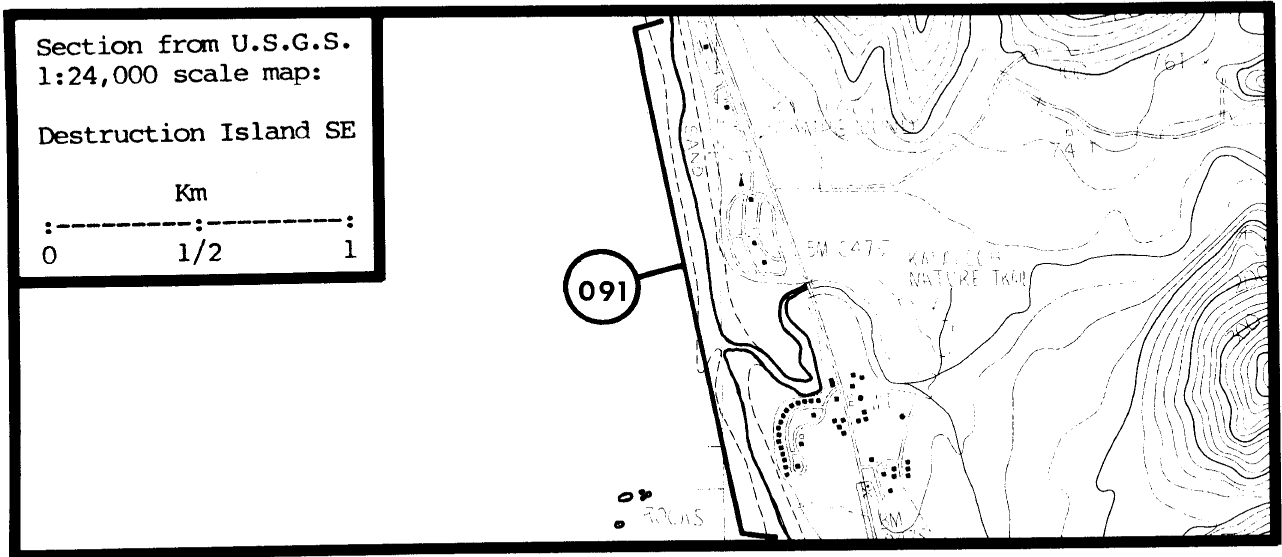
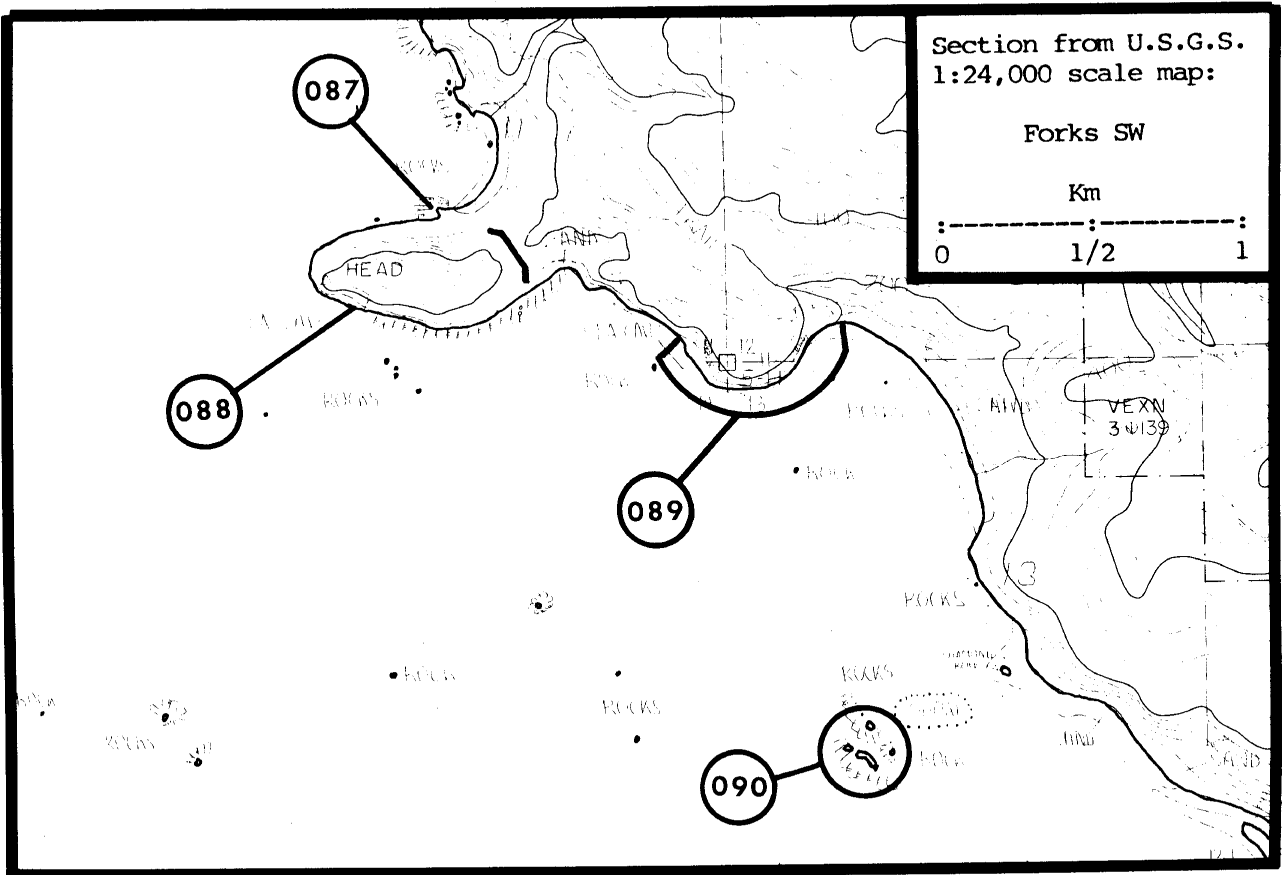
①088 Hoh Head 47°46'12"N, 124°28'30"W

Black Oystercatcher	1	Speich	06/12/79	B III 255
Pelagic Cormorant	20	Pitman	07/12/78	B III 217
Black Oystercatcher	2	Nysewander 1977	07/30/74	L III 204

①089 Jefferson Cove, mainland cliffs 47°45'55"N, 124°27'30"W
 Pelagic Cormorant 114 Speich 06/12/79 B I 255

①090 "Unnamed Rock" 47°45'15"N, 124°27'15"W
 Black Oystercatcher 2 Speich 06/11/79 B III 255

①091 Kalaloch, mainland 47°36'30"N, 124°22'25"W
 Black Oystercatcher 2 Nysewander 1977 08/03/74 L III 204



AREA 174, Copalis Beach, North (cont'd.)

092 Tunnel Island 47°27'50"N, 124°20'40"W

Double-crested Cormorant	48	Speich	06/12/79	B I 255
Pelagic Cormorant	62	Speich	06/12/79	B I 255
Total	<u>110</u>			

093 Sea Lion Rock 47°27'03"N, 124°24'15"W

No Nesting Observed	0	Wilson	07/17/82	A III 287
No Nesting Observed	0	Wilson	07/20/81	A III 287

094 Hogsback 47°26'49"N, 124°20'31"W

No Nesting Observed	0	Speich	06/12/79	B III 255
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095 Hogsback, Little 47°26'16"N, 124°20'30"W

No Nesting Observed	0	Speich	06/12/79	B III 255
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096 "Unnamed Rock" 47°26'14"N, 124°20'29"W

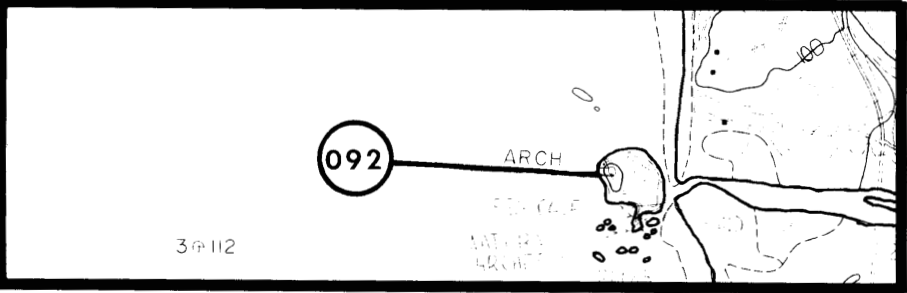
No Nesting Observed	0	Speich	06/12/79	B III 255
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Section from U.S.G.S.
1:24,000 scale map:

Taholah NE

Km

0 1/2 1

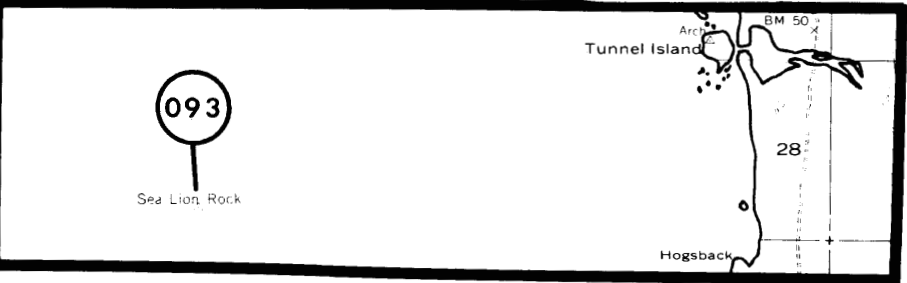


Section from U.S.G.S.
1:62,500 scale map:

Taholah

Km

0 1/2 1

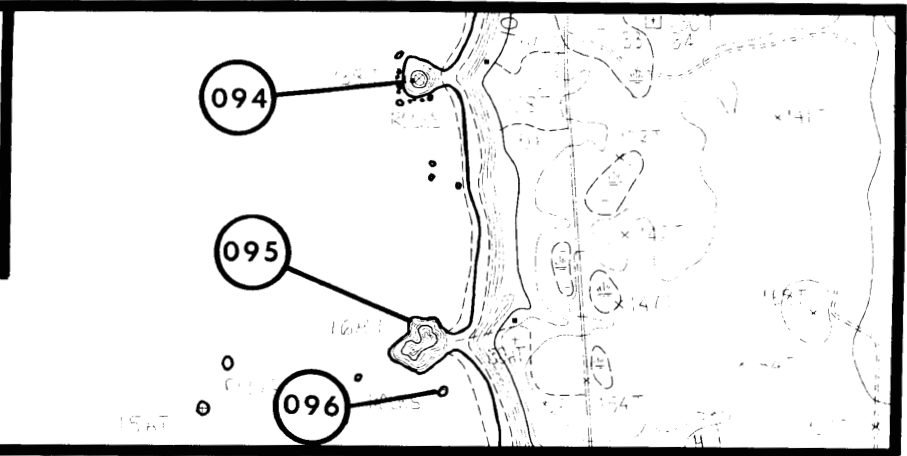


Section from U.S.G.S.
1:24,000 scale map:

Taholah NE

Km

0 1/2 1



AREA 174, Copalis Beach, North (cont'd.)

① "Unnamed Rock" 47°23'55"N, 124°21'45"W

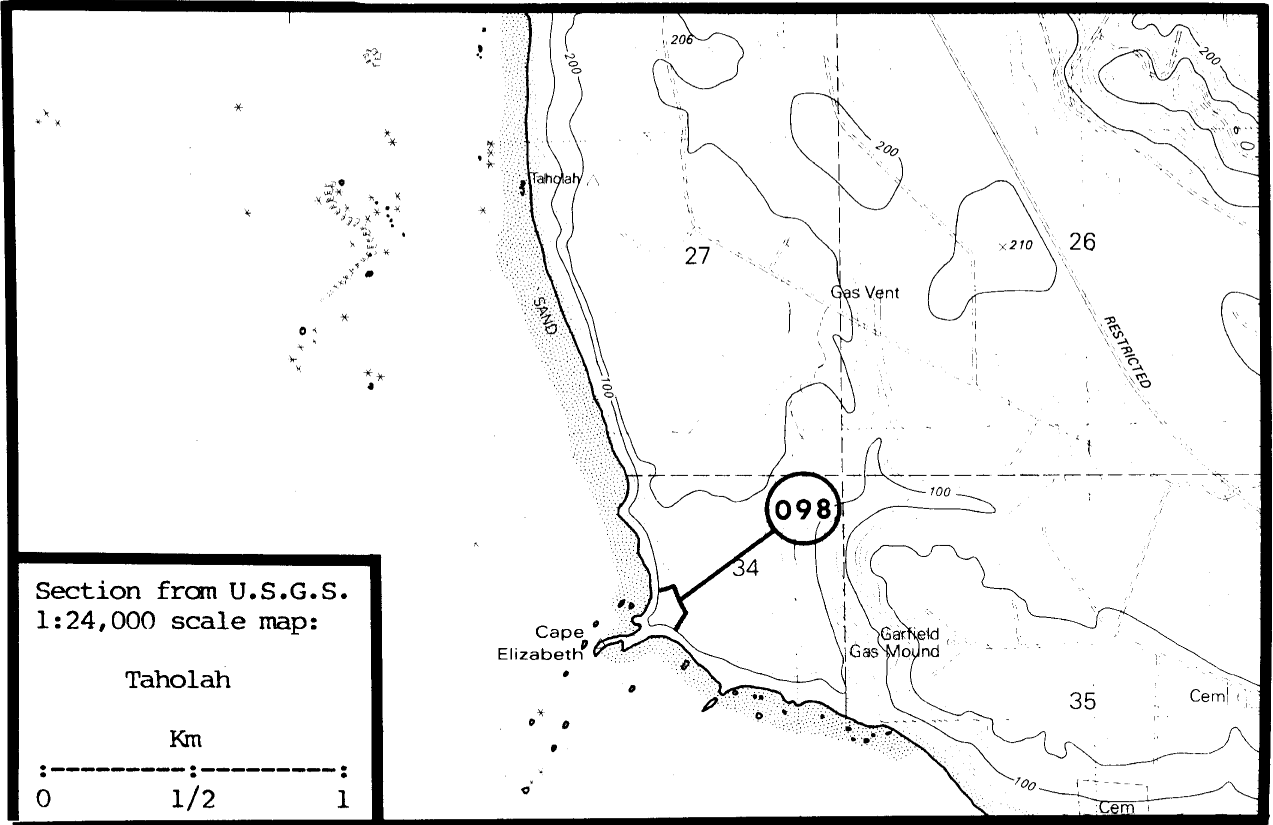
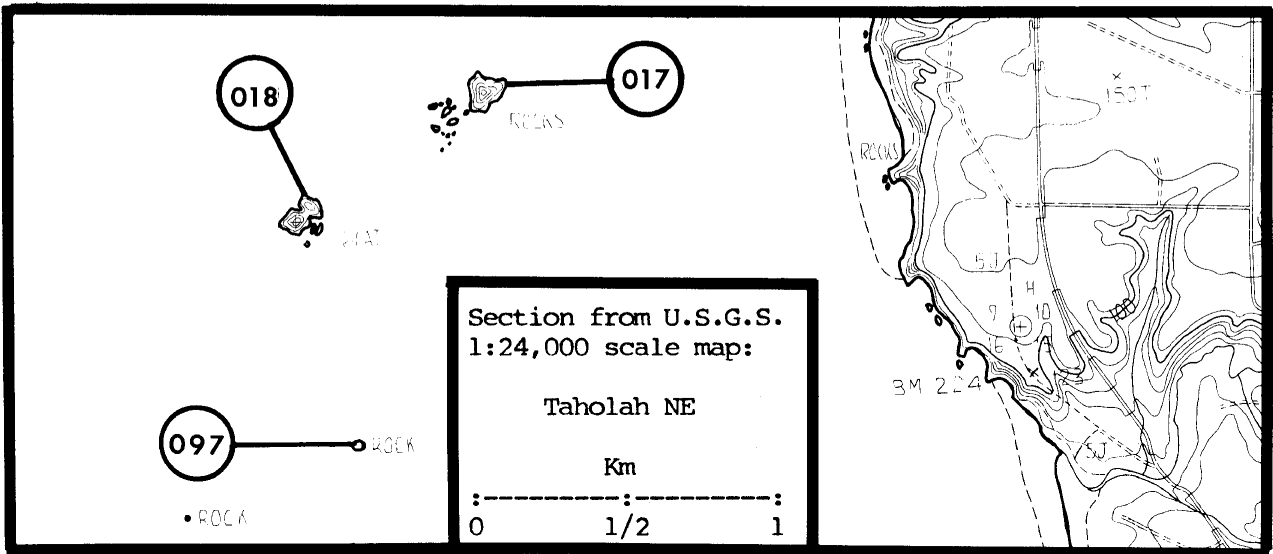
No Nesting Observed	0	Wilson	07/17/82	A	I 287
Brandt's Cormorant	20	Wilson	06/17/81	B	I 287
No Nesting Observed	0	Wilson	07/20/81	A	I 287

② Cape Elizabeth 47°21'22"N, 124°19'04"W

No Nesting Observed	0	Speich	08/19/78	L III	255
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Split Rock (174018), front; Willoughby Rock (174017) July 1959 V.B. Scheffer



AREA 174, Copalis Beach, North (cont'd.)

(099) Pt. Grenville, mainland cliffs 47°18'18"N, 124°16'07"W

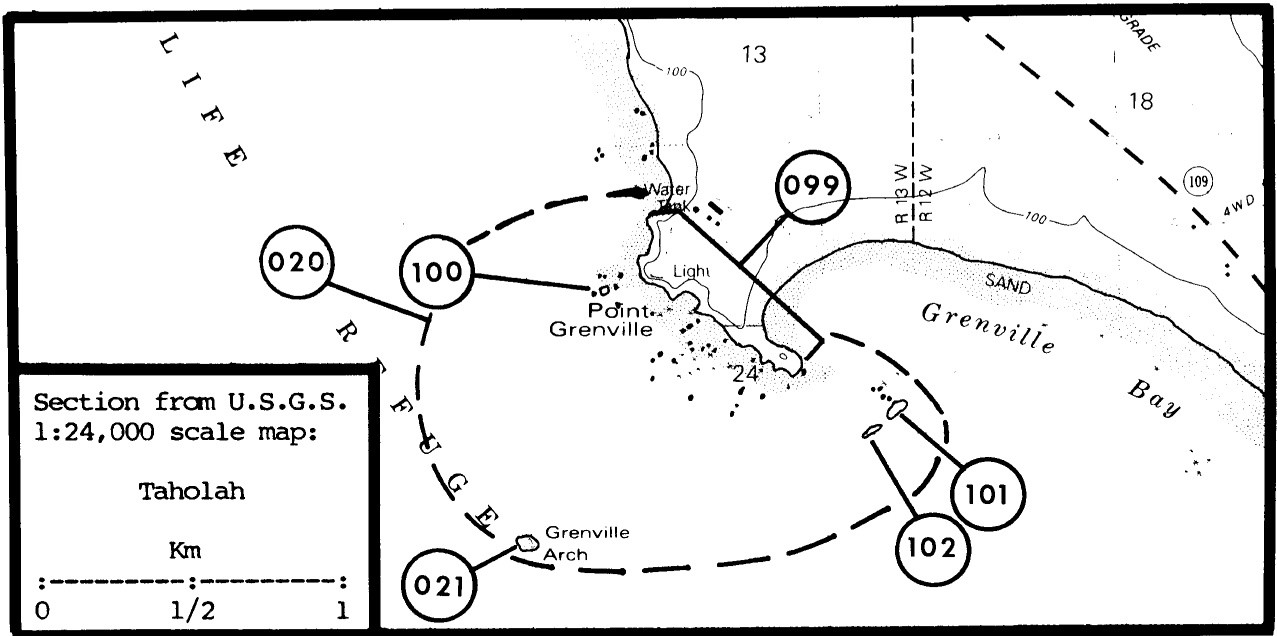
Pelagic Cormorant	50	Speich	06/12/79	B II 255
Pigeon Guillemot	X	Speich	06/12/79	B III 255
Total	50+			

Pelagic Cormorant	24	Speich	08/19/78	L III 255
Tufted Puffin	X	Fletcher	Pre-1921	B III 105
Tufted Puffin	10-12?	Smith	05/10/80	M III 254

(100) "Grenville Pillar" (Tower Rock) 47°18'08"N, 124°16'45"W

Double-crested Cormorant	6	Wilson	07/17/82	A I 287
Common Murre	1115	Wilson	07/17/82	A III 287
Glaucous-winged Gull	19	Speich	08/19/78	M III 255
Tufted Puffin	3	Harrington-Tweit	05/11/80	M III 124
Total	1143			

Double-crested Cormorant	100	Dawson 1908	06-07/ ?/06-07	B III 66
Double-crested Cormorant	32	Speich	08/19/78	M II 255
Double-crested Cormorant	40	Speich	06/12/79	B II 255
Double-crested Cormorant	12+	Harrington-Tweit	05/11/80	M III 124
Double-crested Cormorant	100	Wilson	08/14/81	B II 287
Brandt's Cormorant	100	Dawson 1908	06-07/ ?/06-07	B III 66
(Large Cormorant)	50	Frazer 1973	08/24/73	M III 108
Pelagic Cormorant	14	Frazer 1973	08/24/73	M III 108
Pelagic Cormorant	12	Speich	08/19/78	M III 255
Pelagic Cormorant	22	Speich	06/12/79	B II 255
Black Oystercatcher	2	Dawson 1908	06-07/ ?/06-07	B III 66
Common Murre	500	Dawson 1908	06-07/ ?/06-07	B III 66
Common Murre	80	Frazer 1973	08/24/73	M III 108
Common Murre	X	Speich	08/19/78	M III 255
Common Murre	230	Speich	06/12/79	B III 255
Common Murre	1550	Wilson 1980	07/05/79	A III 286
Common Murre	1690	Wilson 1980	07/02/80	A III 286
Common Murre	1200	Wilson	08/14/81	B III 287
Glaucous-winged Gull	40	Dawson 1908	06-07/ ?/06-07	B III 66
Glaucous-winged Gull	40	Frazer 1973	08/24/73	M III 108
Tufted Puffin	?	Dawson 1908	06-07/ ?/06-07	M III 66



AREA 174, Copalis Beach, North (cont'd.)

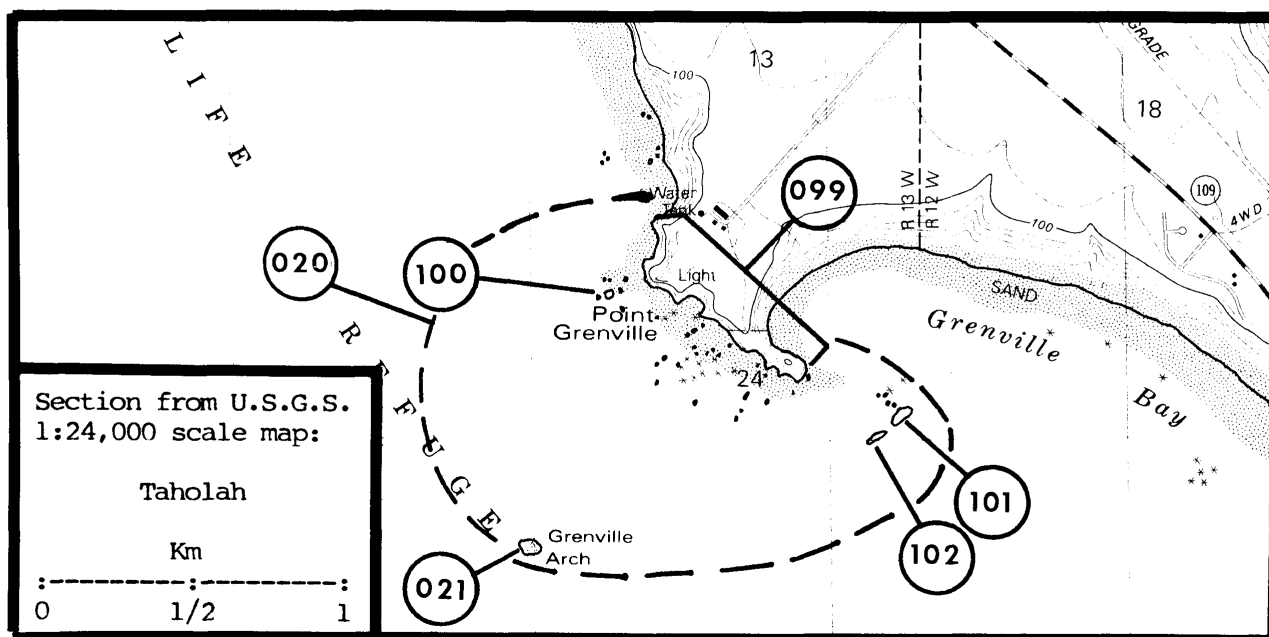
(101)

"Puffin Rock" (Erin) 47°18'01"N, 124°16'00"W

Double-crested Cormorant	52	Wilson	07/17/82	A II 287
Pelagic Cormorant	70	Wilson	08/14/81	B I 287
Black Oystercatcher	2	Speich	06/12/79	B III 255
Glaucous-winged Gull	10	Wilson	07/17/82	A III 287
Common Murre	1735	Wilson	07/17/82	A III 287
Pigeon Guillemot	10	Speich	06/12/79	B III 255
Tufted Puffin	15	Wilson	07/17/82	A III 287
Total	1894			

Leach's Storm-Petrel

	10000-25000	Dawson 1908	06-07/ ?/06-07	L III 66
Double-crested Cormorant	2	Frazer 1973	08/24/73	M III 108
Double-crested Cormorant	58	Speich	08/19/78	M I 255
Double-crested Cormorant	46	Speich	06/12/79	B I 255
Double-crested Cormorant	30+	Harrington-Tweit	05/11/80	M III 124
Pelagic Cormorant	50	Dawson 1908	06-07/ ?/06/07	L III 66
Pelagic Cormorant	30	Speich	08/19/78	M III 255
Pelagic Cormorant	34	Speich	06/12/79	B I 255
Glaucous-winged Gull	18?	Speich	08/19/78	M III 255
Glaucous-winged Gull	24	Speich	06/12/79	B III 255
Common Murre	20	Dawson 1908	06/07/ ?/06/07	L III 66
Common Murre	480	Frazer 1973	08/24/73	M III 108
Common Murre	35	Speich	06/12/79	B III 255
Common Murre	1576	Wilson 1980	07/05/79	A III 286
Common Murre	1177	Wilson 1980	07/02/80	A III 286
Common Murre	200	Wilson	08/14/81	B III 287
Pigeon Guillemot	1	Speich	08/19/78	M III 255
Tufted Puffin	2000	Dawson 1908	06-07/ ?/06-07	L III 66
Tufted Puffin	98	Frazer 1973	08/24/73	M III 108
Tufted Puffin	X	Hunn	05/16/76	M III 150
Tufted Puffin	16	Harrington-Tweit	06/25/78	M III 124
Tufted Puffin	200	Speich	08/19/78	M III 255
Tufted Puffin	42	Speich	06/12/79	B III 255
Tufted Puffin	62	Harrington-Tweit	05/11/80	M III 124
Tufted Puffin	50	Wilson	08/14/81	B III 287



102

"Erin's Bride" 47°17'57"N, 124°16'01"W

Double-crested Cormorant	62	Wilson	07/17/82	A I	287
Pelagic Cormorant	64	Wilson	07/17/82	A I	287
Black Oystercatcher	2	Wilson	08/14/81	B III	287
Glaucous-winged Gull	5	Wilson	07/17/82	A III	287
Common Murre	790	Wilson	07/17/82	A III	287
Tufted Puffin	16+	Harrington-Tweit	06/25/78	M III	124
Total	~930				

Double-crested Cormorant	100	Dawson 1908	06/07/ ?/06-07	B III	66
Double-crested Cormorant	6	Speich	08/19/78	M II	255
Double-crested Cormorant	32	Speich	06/12/79	B I	255
Double-crested Cormorant	6+	Harrington-Tweit	05/11/80	M III	124
Double-crested Cormorant	20	Wilson	08/14/81	B I	287
Pelagic Cormorant	100	Dawson 1908	06/07/ ?/06/07	B III	66
Pelagic Cormorant	52	Speich	08/19/78	M III	255
Pelagic Cormorant	62	Speich	06/12/79	B I	255
Pelagic Cormorant	50	Wilson	08/14/81	B I	287
Black Oystercatcher	2	Speich	06/12/79	B III	255
Glaucous-winged Gull	50	Dawson 1908	06/07/ ?/06/07	B III	66
Glaucous-winged Gull	7?	Speich	08/19/78	M III	255
Glaucous-winged Gull	12	Speich	06/12/78	B III	255
Common Murre	142	Speich	06/12/79	B III	255
Common Murre	675	Wilson 1980	07/05/79	A III	286
Common Murre	730	Wilson 1980	07/02/80	A III	286
Common Murre	250	Wilson	08/14/81	B III	287
Tufted Puffin	X	Hunn	05/16/76	M III	150

AREA 174, Copalis Beach, North (cont'd.)

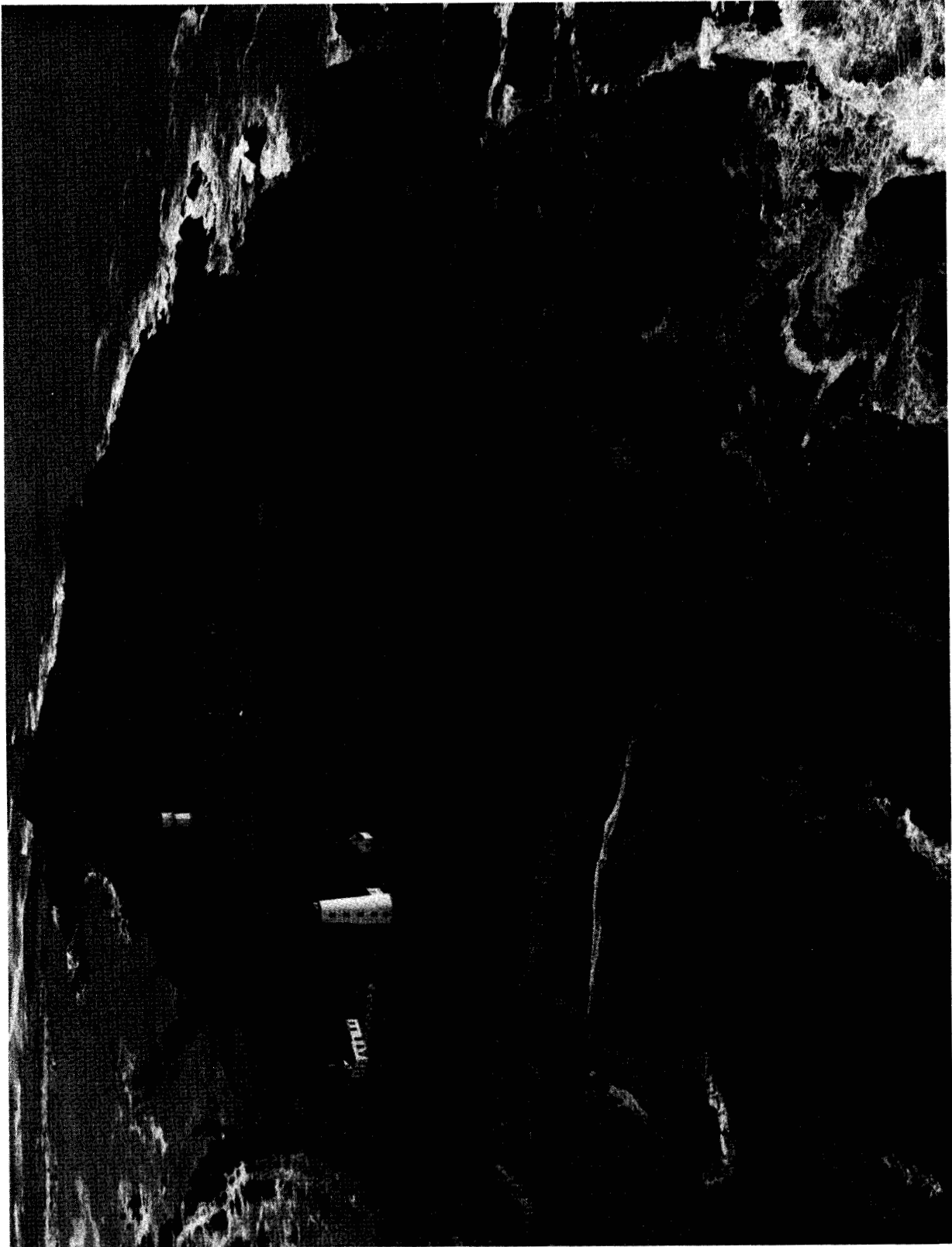


Cake (174002) 16 June 1970 J.P. Mazzoni

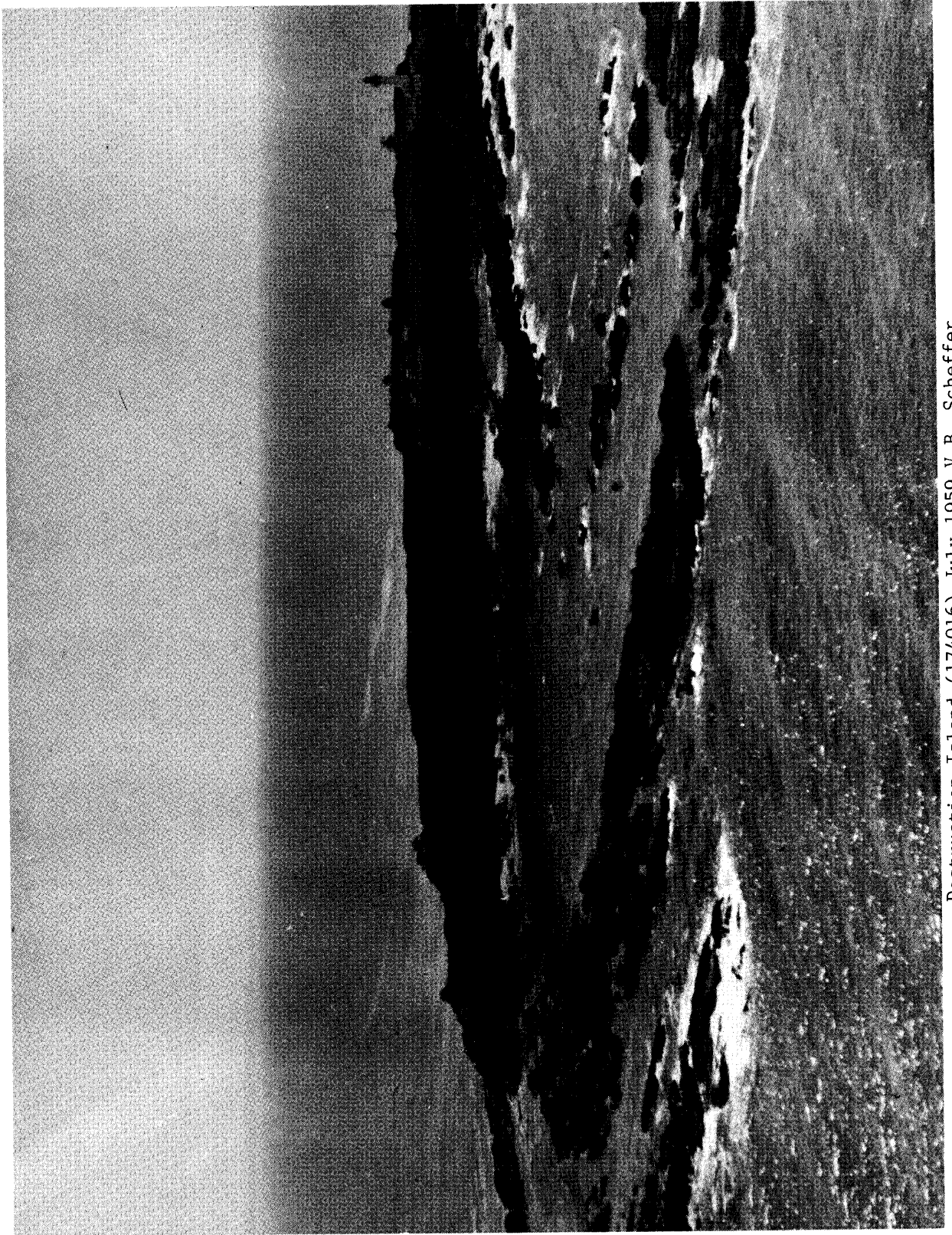


James Island (174003) July 1959 V.B. Scheffer

AREA 174, Copalis Beach, North (cont'd.)



Destruction Island (174016) U.S. Coast Guard

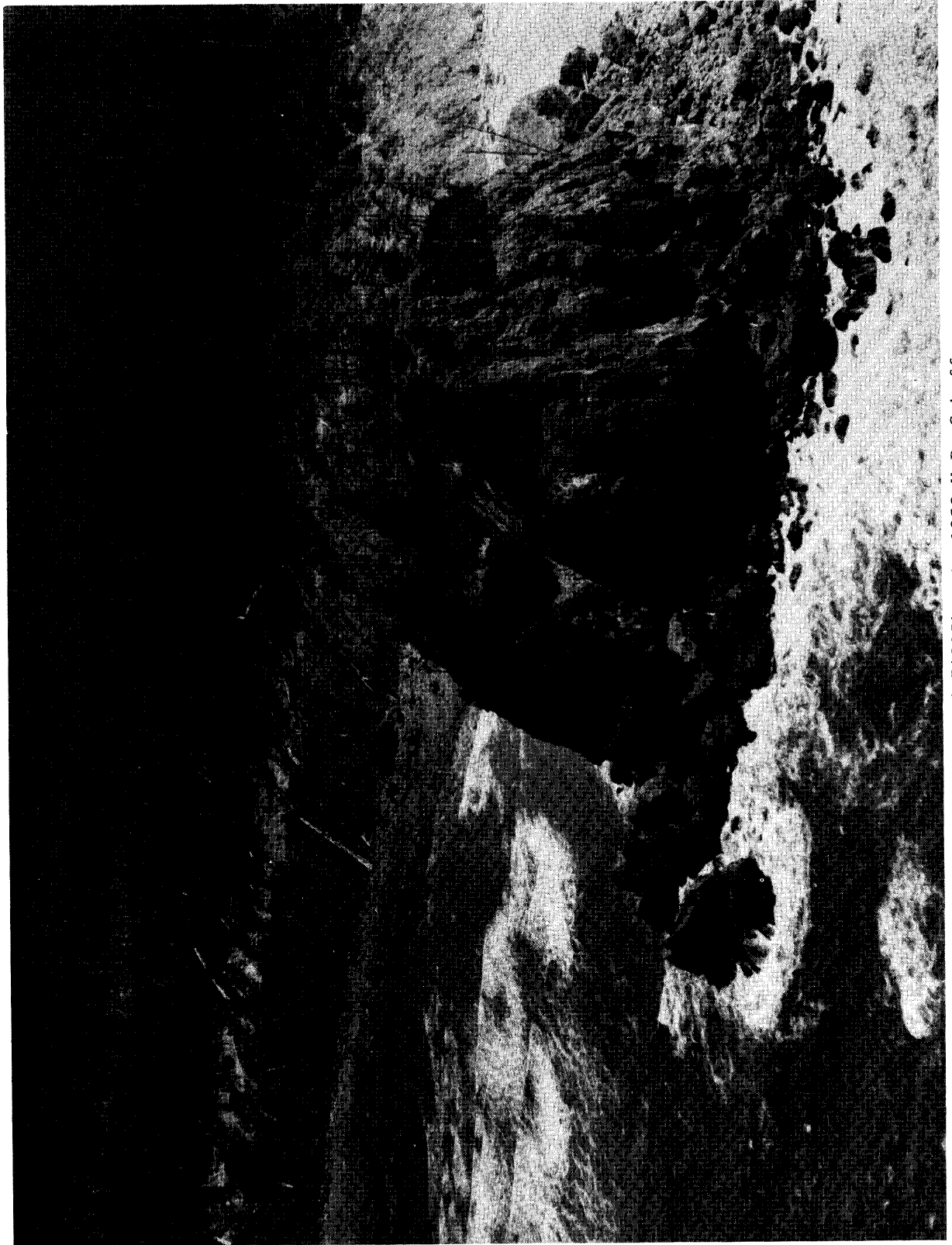


Destruction Island (174016) July 1959 V.B. Scheffer

AREA 174, Copalis Beach, North (cont'd.)

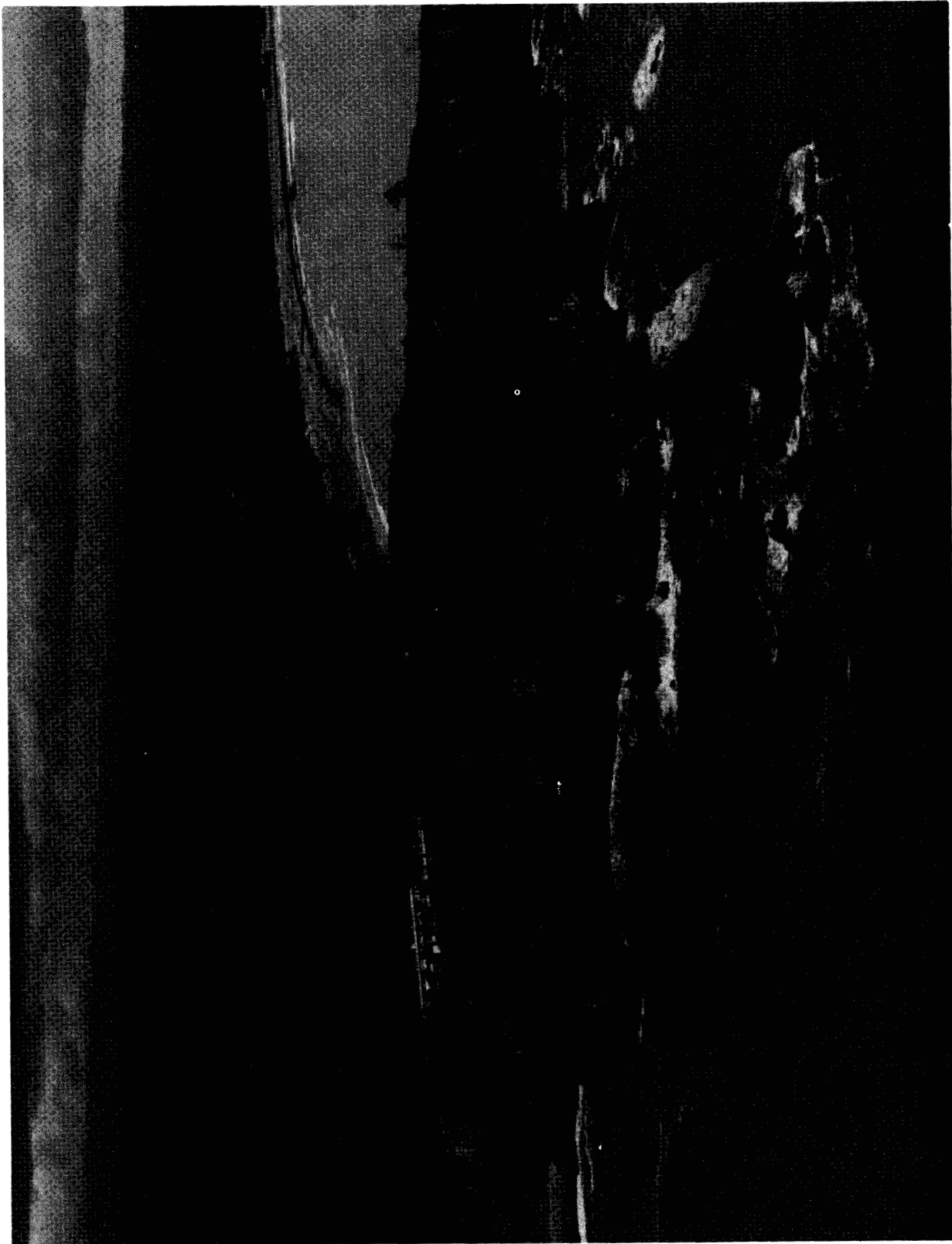


Tunnel Island (174092) 15 July 1966 R. Glahn



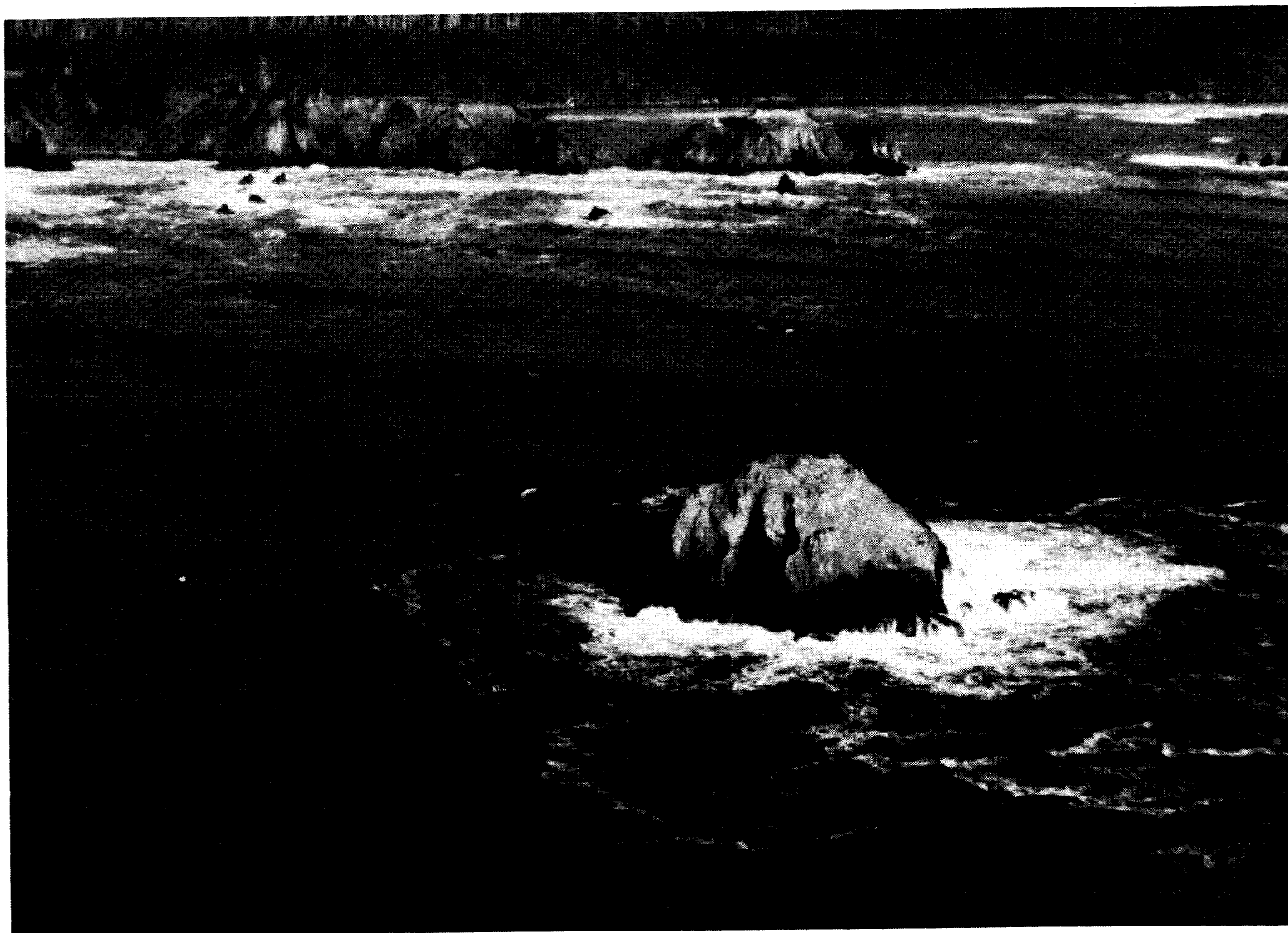
Hogsback, Little (174095) July 1959 V.B. Scheffer

AREA 174, Copalis Beach, North (cont'd.)



Pt. Grenville (174099); Grenville Pillar, foreground (174100) U.S. Coast Guard

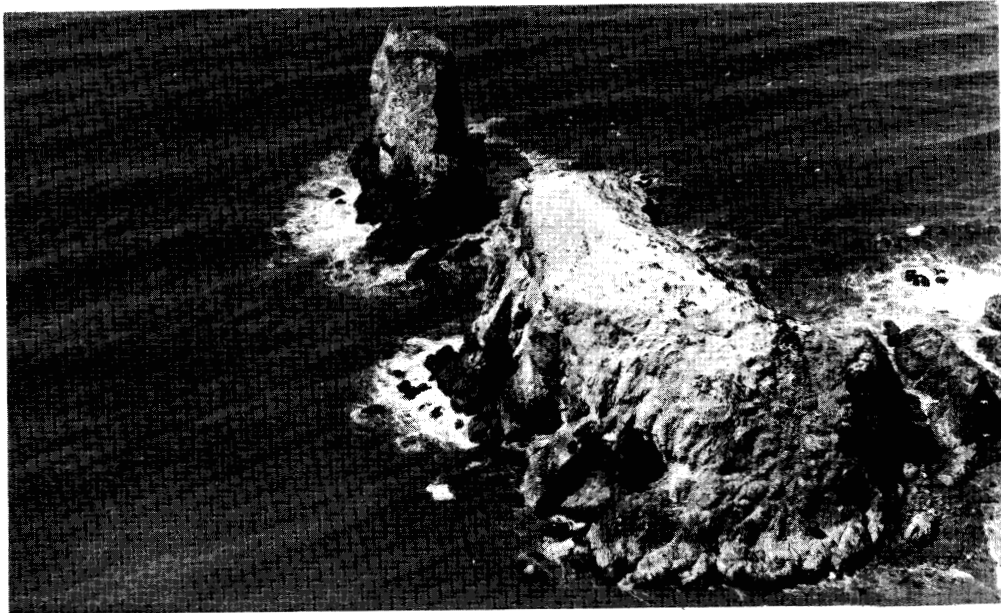
407



Grenville Arch (174021); Pt. Grenville, left background (174099) 19 November 1979 S.M.
Speich



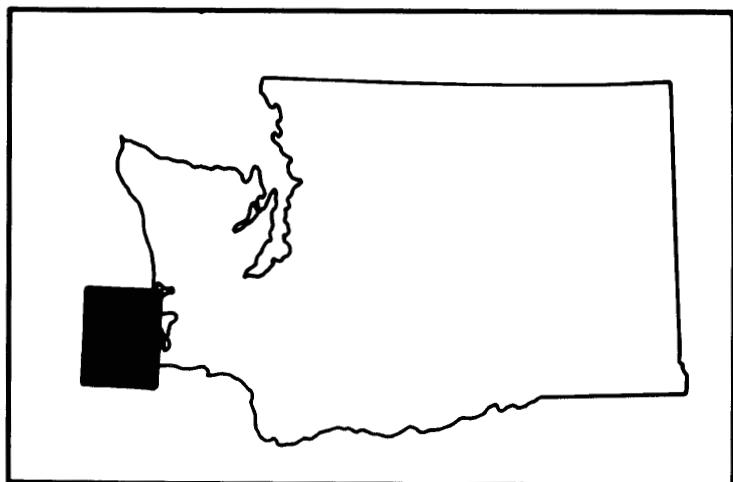
Grenville Arch (174021) 12 June 1979 S.M. Speich



"Erin" (174101), front; "Erin's Bride" (174102) July 1959
V.B. Scheffer



"Erin" (174101) 1978 S.M. Speich



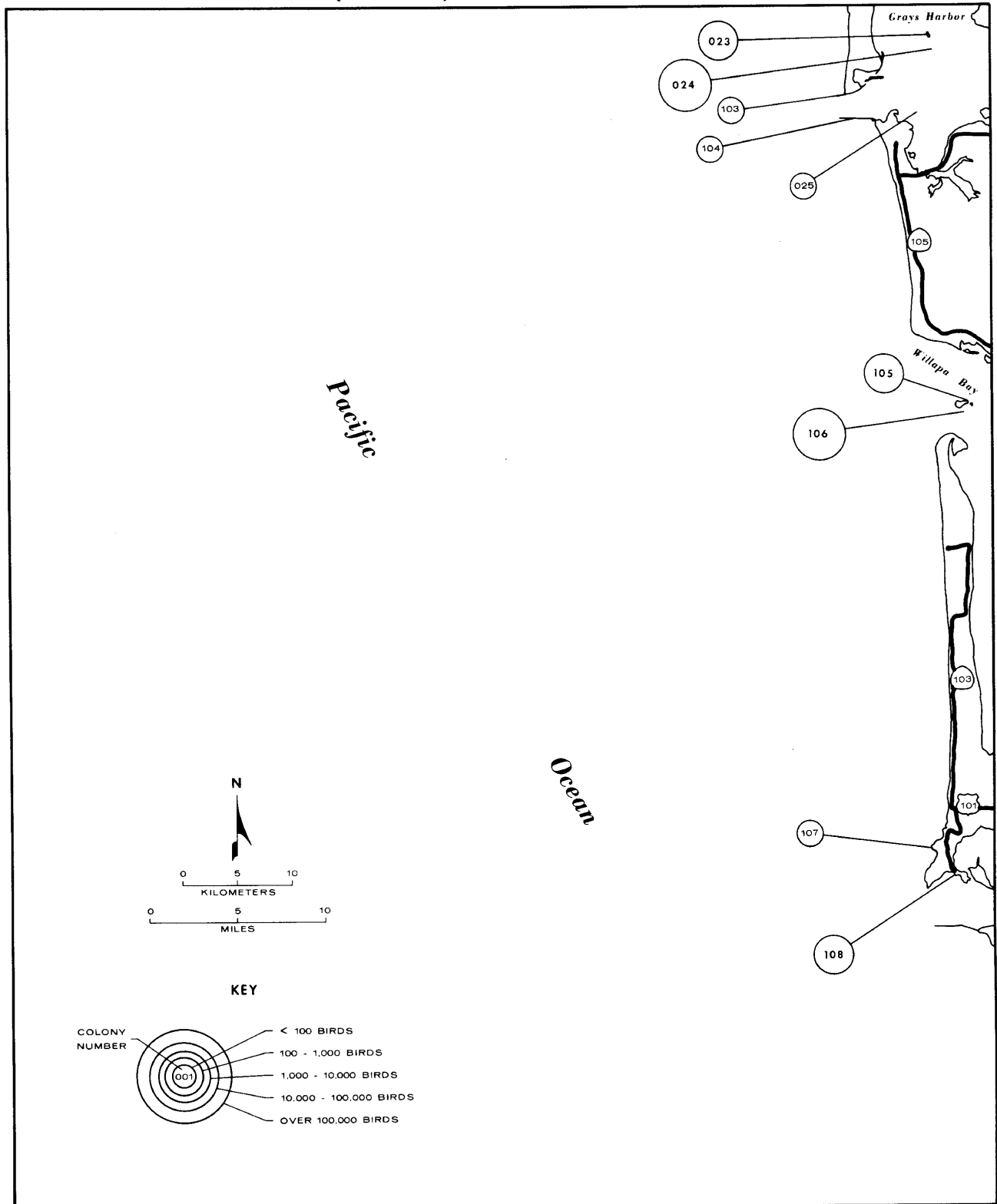
174
Copalis Beach
(South)

The map on the facing page is an index to the locations of colonies within map 174, Copalis Beach, South. Note that all colonies on the map are not numbered consecutively from north to south, since many previously unreported sites have been added since initial colony numbers were assigned by Varoujean (1979). On the pages following this map, all colonies are listed sequentially and a detailed map of each is provided.

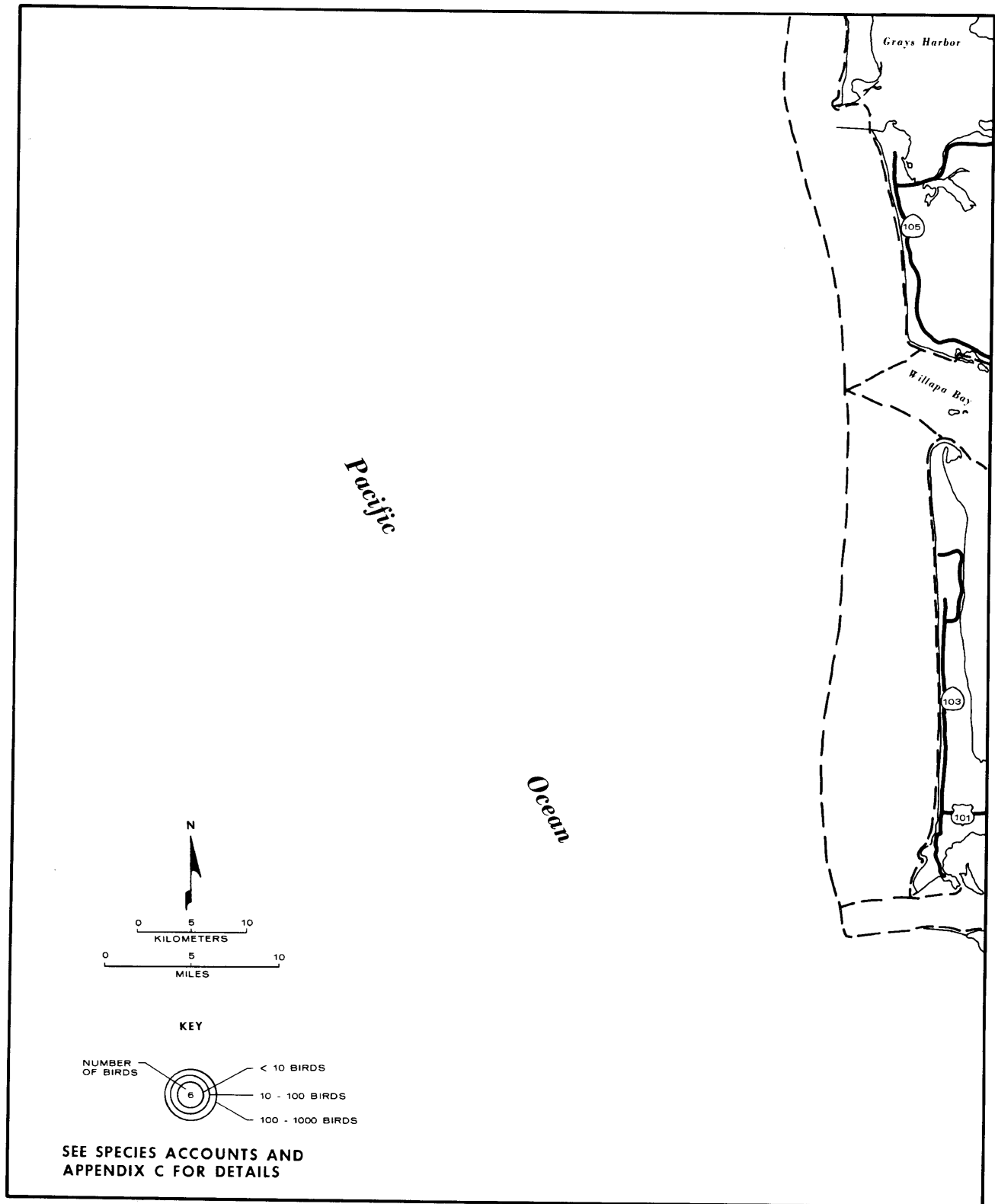
Numbers of breeding seabirds will vary from year to year. Below are the approximate numbers of breeding seabirds within this region.

Double-crested Cormorant	900
Brandt's Cormorant	100
Pelagic Cormorant	240
American Black Oystercatcher	2
Glaucous-winged and Western gulls	6,300
Ring-billed Gull	110
Caspian Tern	7,900
Pigeon Guillemot	70
Marbled Murrelet	no estimate

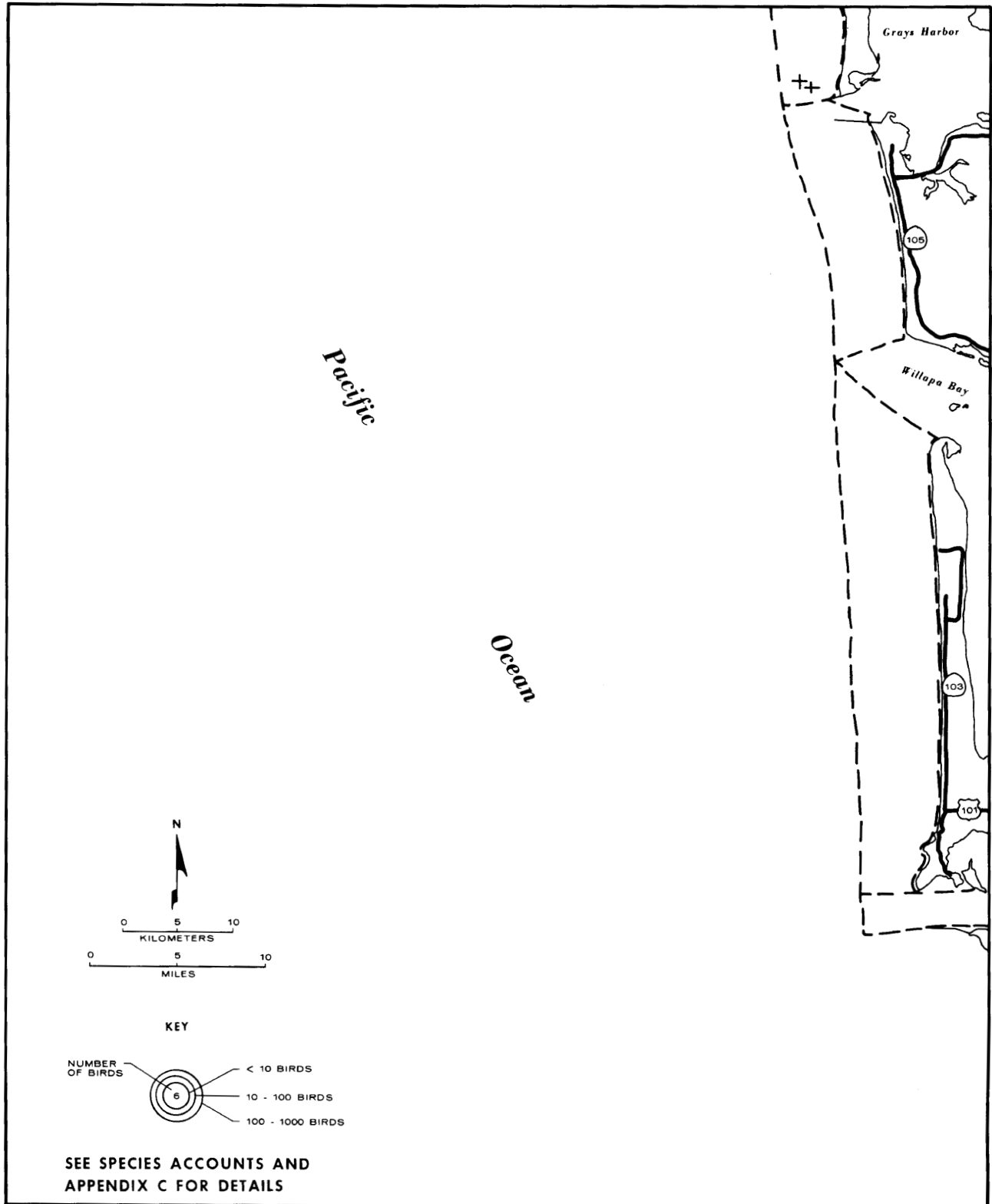
174 (SOUTH) COPALIS BEACH



Relative distribution for Pigeon Guillemots in map area 174 (South) Copalis Beach.



Relative distribution for Marbled Murrelets in map area 174 (South) Copalis Beach.



AREA 174, Copalis Beach, South (cont'd.)

SITE NUMBER	COLONY NAME	LAT.-LONG.				
191	PORT WILLIAMS	48° 07' 00", 123° 03' 00" W				
PIGEON GUILLEMOT	34	SPEICH	05/23/79	B III	255	
PIGEON GUILLEMOT	33	SPEICH	05/26/78	B III	255	
SPECIES NAME	NUMBER	SOURCE	SURVEY DATE	SURVEY TYPE	REFERENCE	DATA QUALITY
	BREEDING BIRDS					

Box gives the most recent or the best estimates available.

023 Goose Island 46°58'40"N, 124°04'10"W

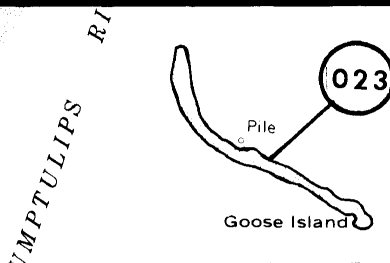
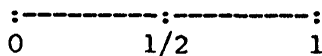
Double-crested Cormorant	916	Washington Dep. Game	06/23/82	A III	203
Glaucous-winged Gull	8+	Alcorn	06/05/82	E -	8
Caspian Tern	N	Washington Dep. Game	06/23/82	A III	203
Total	916+				

Double-crested Cormorant	N	Alcorn	?/ ?/73	L III	6
Double-crested Cormorant	N	Washington Dep. Game	?/ ?/74	L III	276
Double-crested Cormorant	N	Washington Dep. Game	?/ ?/75	L III	277
Double-crested Cormorant	N	Washington Dep. Game	?/ ?/76	L III	203
Double-crested Cormorant	N	Washington Dep. Game	?/ ?/77	L III	203
Double-crested Cormorant	N	Washington Dep. Game	?/ ?/78	L III	203
Double-crested Cormorant	200	Washington Dep. Game	06/02/79	L I	203
Double-crested Cormorant	200	Smith	06/22/79	L I	254
Double-crested Cormorant	580	Washington Dep. Game	05/23/80	L I	203
Double-crested Cormorant	590	Smith	?/ ?/80	L I	254
Double-crested Cormorant	752	Washington Dep. Game	06/27/81	L I	203
Double-crested Cormorant	4	Alcorn	06/05/82	E -	8
Double-crested Cormorant	200	Alcorn	06/05/82	L III	5
Double-crested Cormorant	916	Washington Dep. Game	06/15/82	L I	203
Glaucous-winged Gull	X	Alcorn 1958	?/ ?/54	L III	3
Glaucous-winged Gull	X	Alcorn 1958	?/ ?/55	L III	3
Glaucous-winged Gull	X	Alcorn 1958	?/ ?/56	L III	3
Glaucous-winged Gull	X	Alcorn 1958	?/ ?/57	L III	3
Glaucous-winged Gull	X	Alcorn 1958	06/ ?/58	L III	3
Glaucous-winged Gull	X	Alcorn 1958	07/20/58	L III	3
Glaucous-winged Gull	2	Alcorn	07/20/58	S -	8
Glaucous-winged Gull	X	Washington Dep. Game	?/ ?/72	L III	203
Glaucous-winged Gull	2	Alcorn	05/14/74	E -	8

Section from U.S.G.S.
1:24,000 scale map:

Westport

Km



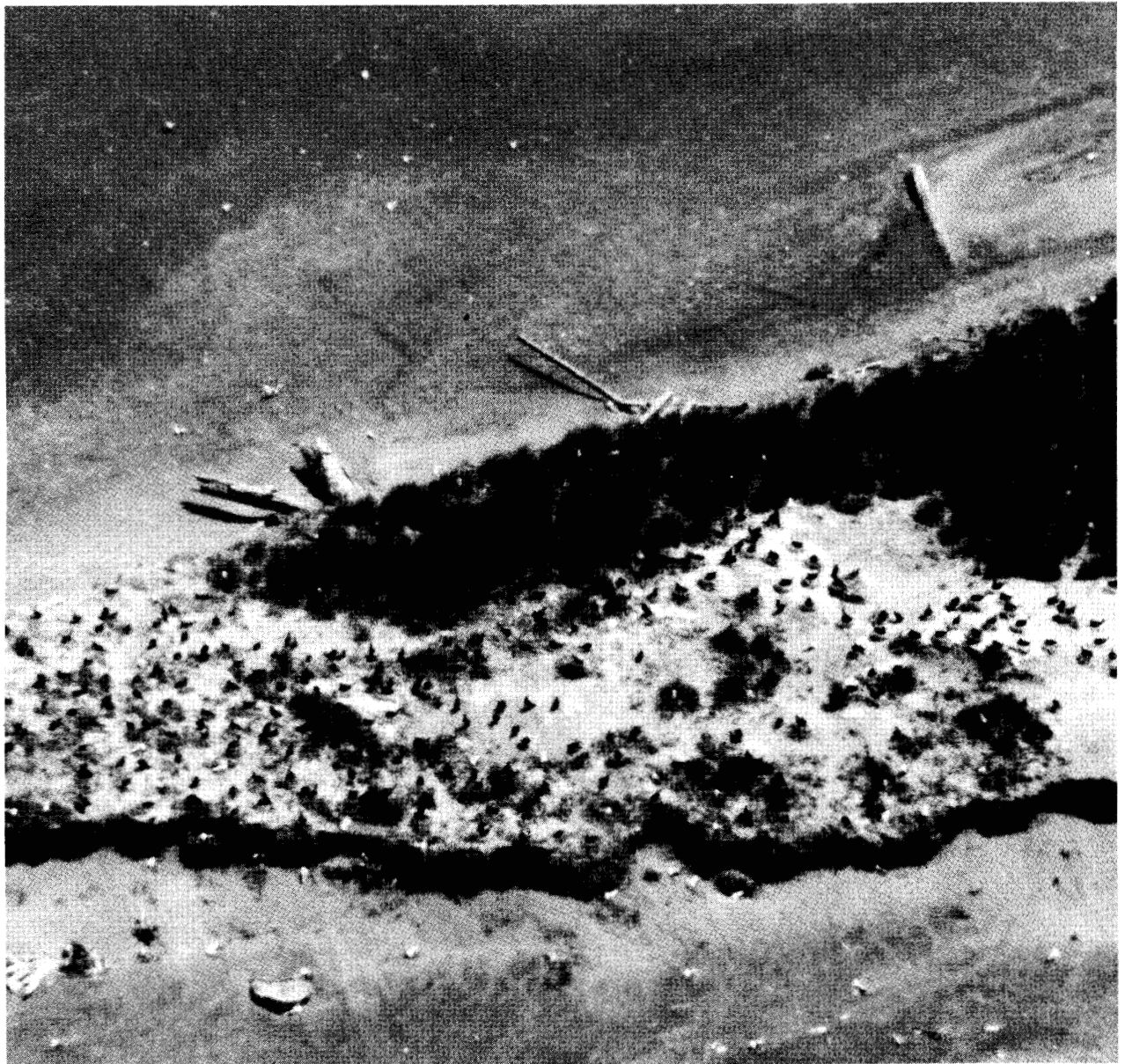
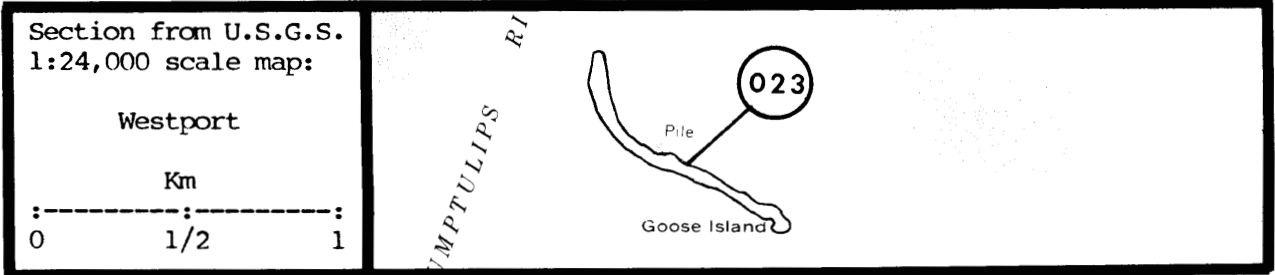
Glaucous-winged Gull	7000	Penland 1976	06/08/75	L III 211
Glaucous-winged Gull	2000	Hoffman	07/14/75	L III 138
Glaucous-winged Gull	1300	Smith & Mudd 1976	07/14/75	L III 252
Glaucous-winged Gull	7000	Washington Dep. Game	?/ ?/77	L III 203
Glaucous-winged Gull	4000	Harrington-Tweit	05/20/77	A III 124
Glaucous-winged Gull	X	Harrington-Tweit	05/26/77	L III 124
Glaucous-winged Gull	5000-6600	Peters et al. 1978	05/26/77	L III 216
Glaucous-winged Gull	X	Harrington-Tweit	06/14/77	L III 124
Glaucous-winged Gull	X	Harrington-Tweit	07/14/77	L III 124
Glaucous-winged Gull	N	Harrington-Tweit	08/17/77	L III 124
Glaucous-winged Gull	60-80	Washington Dep. Game	?/ ?/78	L III 203
Glaucous-winged Gull	X	Smith	06/22/79	L III 254
Glaucous-winged Gull	X	Smith	05/23/80	L III 254
Caspian Tern	18	Alcorn 1958	?/ ?/57	L I 3
Caspian Tern	140	Alcorn 1958	?/ ?/58	L I 3
Caspian Tern	100+	Alcorn 1958	Jun/ ?/58	L III 3
Caspian Tern	150	Alcorn 1958	07/20/58	L III 3
Caspian Tern	2	Anonymous	07/20/58	E - 16
Caspian Tern	4	Anonymous	06/13/59	E - 16
Caspian Tern	8	Chabot & Alcorn	05/19/61	E - 57
Caspian Tern	2000	Washington Dep. Game	?/ ?/71	L III 203
Caspian Tern	2000	Reick	05/04/72	L III 233
Caspian Tern	2	Anonymous	06/03/72	S - 16
Caspian Tern	2000	Alcorn	?/ ?/73	L III 7
Caspian Tern	1600	Alcorn	?/ ?/73	L III 6
Caspian Tern	2	Anonymous	06/11/73	S - 16
Caspian Tern	600	Penland 1976	?/ ?/74	L III 211
Caspian Tern	300	Washington Dep. Game	?/ ?/74	L III 276
Caspian Tern	4	Alcorn	05/14/74	E - 8
Caspian Tern	2	Anonymous	06/08/74	S - 16
Caspian Tern	180	Washington Dep. Game	?/ ?/75	L III 277
Caspian Tern	338	Penland 1976	06/08/75	L III 213
Caspian Tern	N	Penland 1976	?/ ?/76	L III 211
Caspian Tern	N	Peters et al. 1978	?/ ?/76	L III 216
Caspian Tern	N	Washington Dep. Game	?/ ?/76	L III 203
Caspian Tern	N	Peters et al. 1978	?/ ?/77	L III 216
Caspian Tern	N	Washington Dep. Game	?/ ?/77	L III 203
Caspian Tern	N	Harrington-Tweit	05/20/77	A III 124
Caspian Tern	N	Harrington-Tweit	05/26/77	L III 124
Caspian Tern	N	Harrington-Tweit	06/14/77	L III 124
Caspian Tern	N	Harrington-Tweit	07/14/77	L III 124
Caspian Tern	N	Harrington-Tweit	08/17/77	L III 124
Caspian Tern	N	Washington Dep. Game	?/ ?/78	L III 203
Caspian Tern	N	Washington Dep. Game	?/ ?/79	L III 203

AREA 174, Copalis Beach, South (cont'd.)

Caspian Tern	N Washington Dep.	Game ?/ ?/80	L III 203
Caspian Tern	N Washington Dep.	Game ?/ ?/81	L III 203
Caspian Tern	N Washington Dep.	Game 06/15/82	L III 203



Goose Island (174023) 1977 S.G. Herman



Goose Island (174023) 15 June 1982 E. Cummins Double-crested Cormorants

AREA 174, Copalis Beach, South (cont'd.)

024

Sand Island 46°57'45"N, 124°03'25"W

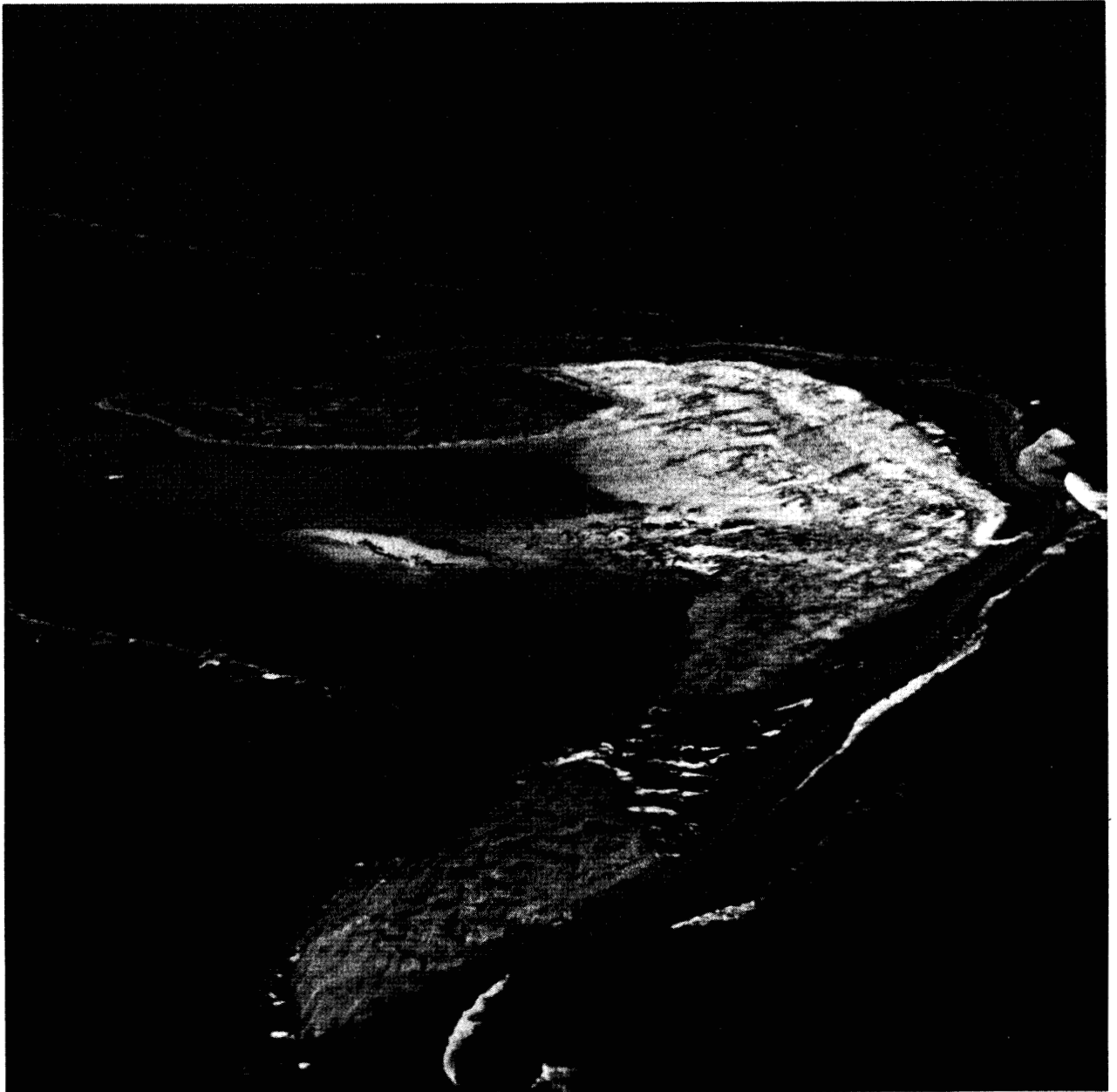
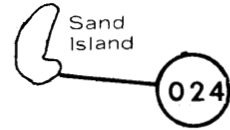
Caspian Tern	5216	Washington Dep. Game	06/05/82	L II 203
Ring-billed Gull	10	Smith	?/ ?/77	L I 253
Ring-billed Gull	24	Smith	?/ ?/78	L I 253
Ring-billed Gull	24	Smith	05/19/78	L I 254
Ring-billed Gull	30B	Washington Dep. Game	06/14/79	L I 203
Ring-billed Gull	34	Smith	05/23/80	L I 254
Ring-billed Gull	96	Washington Dep. Game	05/31/80	L I 203
Ring-billed Gull	106	Washington Dep. Game	05/30/81	L I 203
Glaucous-winged Gull	2000	Penland 1976	07/ ?/76	L III 211
Glaucous-winged Gull	2000	Washington Dep. Game	?/ ?/77	L III 203
Glaucous-winged Gull	750+	Harrington-Tweit	05/20/77	A III 124
Glaucous-winged Gull	X	Harrington-Tweit	05/22/77	L III 124
Glaucous-winged Gull	X	Harrington-Tweit	06/14/77	L III 124
Glaucous-winged Gull	X	Harrington-Tweit	07/14/77	L III 124
Glaucous-winged Gull	X	Harrington-Tweit	08/17/77	L III 124
Glaucous-winged Gull	X	Washington Dep. Game	06/14/79	L III 203
Caspian Tern	N	Washington Dep. Game	?/ ?/73	L III 203
Caspian Tern	N	Washington Dep. Game	?/ ?/74	L III 203
Caspian Tern	1400	Washington Dep. Game	?/ ?/76	L II 203
Caspian Tern	1200	Washington Dep. Game	07/ ?/76	L II 203
Caspian Tern	300+	Harrington-Tweit	05/20/77	A III 124
Caspian Tern	X	Harrington-Tweit	05/22/77	L III 124
Caspian Tern	3470	Harrington-Tweit	05/26/77	L II 124
Caspian Tern	X	Harrington-Tweit	06/14/77	L III 124
Caspian Tern	X	Harrington-Tweit	07/14/77	L III 124
Caspian Tern	X	Harrington-Tweit	07/17/77	L III 124
Caspian Tern	3560	Smith	05/19/78	L II 254
Caspian Tern	3780	Rodrick	06/02/79	L II 203
Caspian Tern	4000	Smith	05/23/80	L II 254
Caspian Tern	4380	Washington Dep. Game	05/31/80	L II 203
Caspian Tern	X	Washington Dep. Game	05/19/81	L III 203
Caspian Tern	4310	Washington Dep. Game	05/30/81	L II 203

Section from U.S.G.S.
1:24,000 scale map:

Westport

Km

0 1/2 1



Sand Island (174024) 1977 S.G. Herman

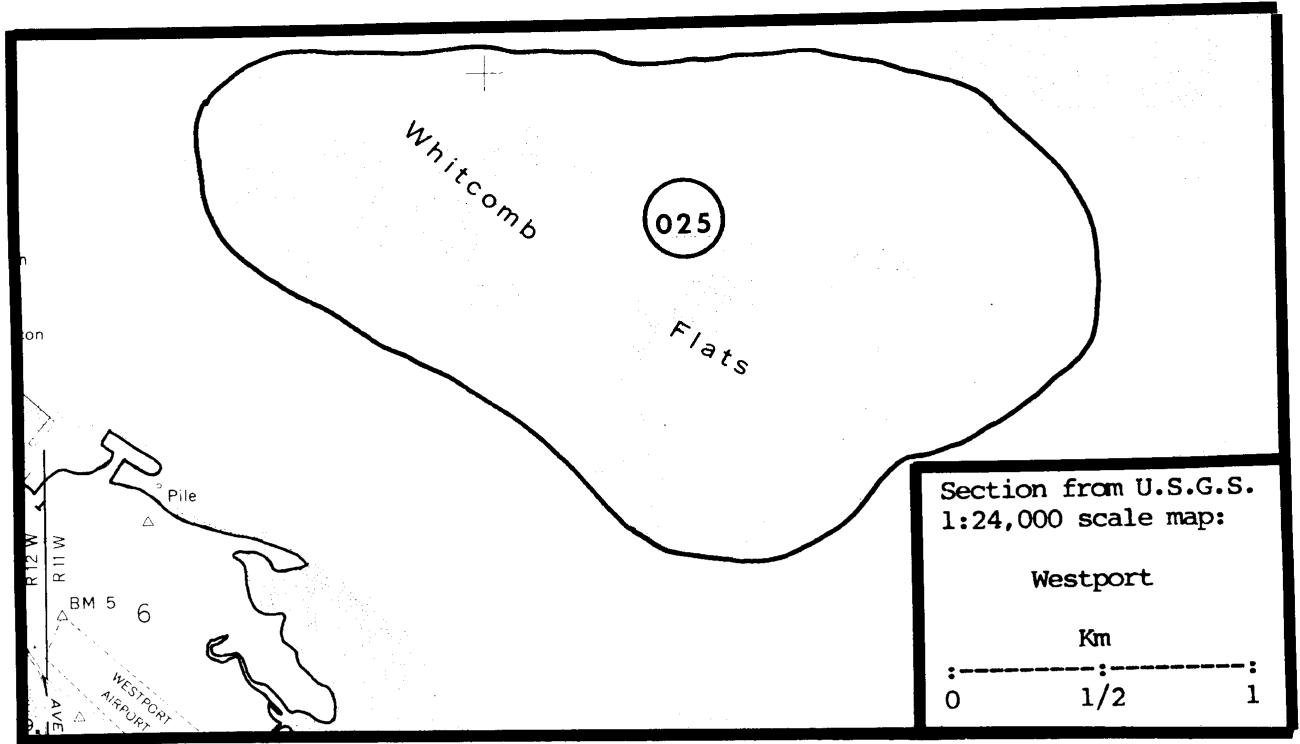
AREA 174, Copalis Beach, South (cont'd.)

025

Whitcomb Island 46°54'40"N, 124°04'40"W

Glaucous-winged Gull	28	Washington Dep. Game	05/19/81	L	I	203
Caspian Tern	N	Washington Dep. Game	05/19/81	L	I	203
Total	<u>28</u>					

Gull sp.	N	Peters et al. 1978	?/ ?/74	?	?	216
Ring-billed Gull	4	Penland 1976	06/02/76	L	I	211
Ring-billed Gull	6	Washington Dep. Game	?/ ?/77	L	I	203
Ring-billed Gull	6	Harrington-Tweit	05/26/77	L	I	124
Ring-billed Gull	14	Alcorn	06/07/77	L	I	4
Ring-billed Gull	2	Alcorn	06/07/77	E	-	8
Ring-billed Gull	18	Harrington-Tweit	07/14/77	L	I	124
Glaucous-winged Gull	80	Penland 1976	05/27/75	L	I	211
Glaucous-winged Gull	2	Alcorn	05/30/75	E	-	8
Glaucous-winged Gull	54	Smith & Mudd 1976	06/ ?/75	L	III	252
Glaucous-winged Gull	80	Penland 1976	06/02/76	L	I	211
Glaucous-winged Gull	2	Alcorn	06/03/76	E	-	8
Glaucous-winged Gull	116	Washington Dep. Game	?/ ?/77	L	I	203
Glaucous-winged Gull	30+	Harrington-Tweit	05/20/77	A	III	124
Glaucous-winged Gull	90+	Harrington-Tweit	05/26/77	L	III	124
Glaucous-winged Gull	6	Alcorn	06/07/77	S	-	8
Glaucous-winged Gull	X	Harrington-Tweit	08/17/77	L	III	124
Glaucous-winged Gull	X	Washington Dep. Game	?/ ?/78	L	III	203
Glaucous-winged Gull	360	Washington Dep. Game	05/ ?/79	L	III	203
Glaucous-winged Gull	400+	Smith	05/30/80	L	III	254
Caspian Tern	?	Washington Dep. Game	?/ ?/73	L	III	203
Caspian Tern	2000	Washington Dep. Game	?/ ?/74	L	III	203
Caspian Tern	2000-3000	Smith & Mudd 1976	08/ ?/74	L	III	252
Caspian Tern	6	Penland	05/12/75	E	-	214
Caspian Tern	1500	Penland	05/12/75	L	III	213
Caspian Tern	2	Alcorn	05/16/75	E	-	8
Caspian Tern	2150	Alcorn	05/16/75	L	III	4
Caspian Tern	2150	Smith & Mudd 1976	05/ ?/75	L	I	252
Caspian Tern	2150	Penland 1976	05/27/75	L	I	211
Caspian Tern	1	Anonymous	05/30/75	S	-	16
Caspian Tern	2200	Reick	08/25/75	L	III	233
Caspian Tern	6	Penland	05/14/76	E	-	214
Caspian Tern	2500	Penland	05/14/76	L	III	213
Caspian Tern	1	Anonymous	05/24/76	S	-	16
Caspian Tern	2480	Penland 1976	06/02/76	L	I	211
Caspian Tern	4	Anonymous	06/02/76	S	-	16
Caspian Tern	1	Anonymous	08/15/76	S	-	16
Caspian Tern	4	Alcorn	05/07/77	E	-	8
Caspian Tern	700	Alcorn	05/07/77	L	III	4
Caspian Tern	150	Harrington-Tweit	05/20/77	A	III	124
Caspian Tern	610	Harrington-Tweit	05/26/77	L	I	124
Caspian Tern	1	Anonymous	06/07/77	S	-	16
Caspian Tern	X	Alcorn	06/07/77	L	III	5
Caspian Tern	80	Harrington-Tweit	07/14/77	L	I	124
Caspian Tern	X	Harrington-Tweit	08/17/77	L	III	124



Caspian Tern	154	Washington Dep. Game	?/ ?/78	L I 203
Caspian Tern	2	Alcorn	05/06/78	E - 8
Caspian Tern	14-20	Washington Dep. Game	05/ ?/79	L II 203
Caspian Tern	14	Washington Dep. Game	05/23/80	L I 203
Caspian Tern	?	Washington Dep. Game	?/ ?/82	L III 203

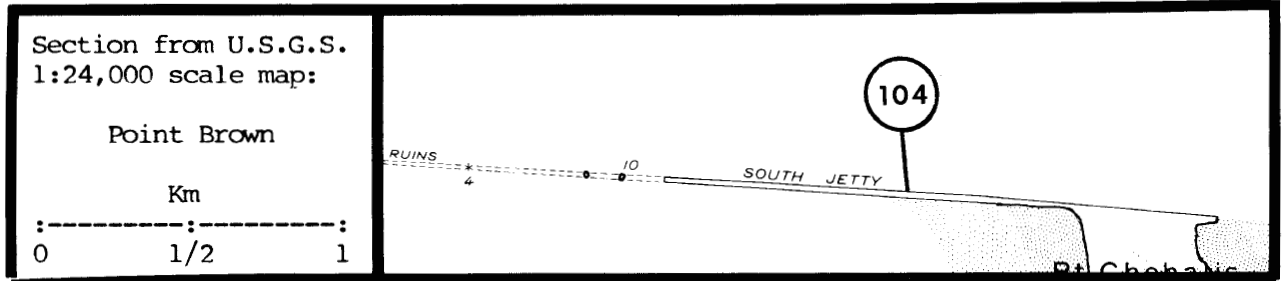
AREA 174, Copalis Beach, South (cont'd.)

(103) Point Brown, jetty 46°55'38"N, 124°10'37"W

Pigeon Guillemot	23	Wahl	08/14/82	B III 269
Glaucous-winged Gull	18	Morris	?/ ?/73	L III 200
Pigeon Guillemot	20	Harrington-Tweit	04/22/77	B III 124
Pigeon Guillemot	20	Paulson	?/ ?/79	L III 207
Pigeon Guillemot	11	Paulson	?/ ?/80	L III 207
Pigeon Guillemot	8	Paulson	?/ ?/81	L III 207
Pigeon Guillemot	13	Paulson	?/ ?/82	L III 207

(104) Point Chehalis, jetty 46°54'21"N, 124°08'37"W

Pigeon Guillemot	4	Speich	07/27/82	L III 255
Pigeon Guillemot	2	Hudson	07/03/48	? III 148
Pigeon Guillemot	25	Harrington-Tweit	07/04/78	B III 124
Pigeon Guillemot	12	Wahl	05/12/79	B III 269
Pigeon Guillemot	7	Wahl	05/10/80	B III 269
Pigeon Guillemot	5	Smith	05/23/80	L III 254



"Gunpowder Island" (174106) 13 June 1982 S.J. Jeffries Caspian Terns

AREA 174, Copalis Beach, South (cont'd.)

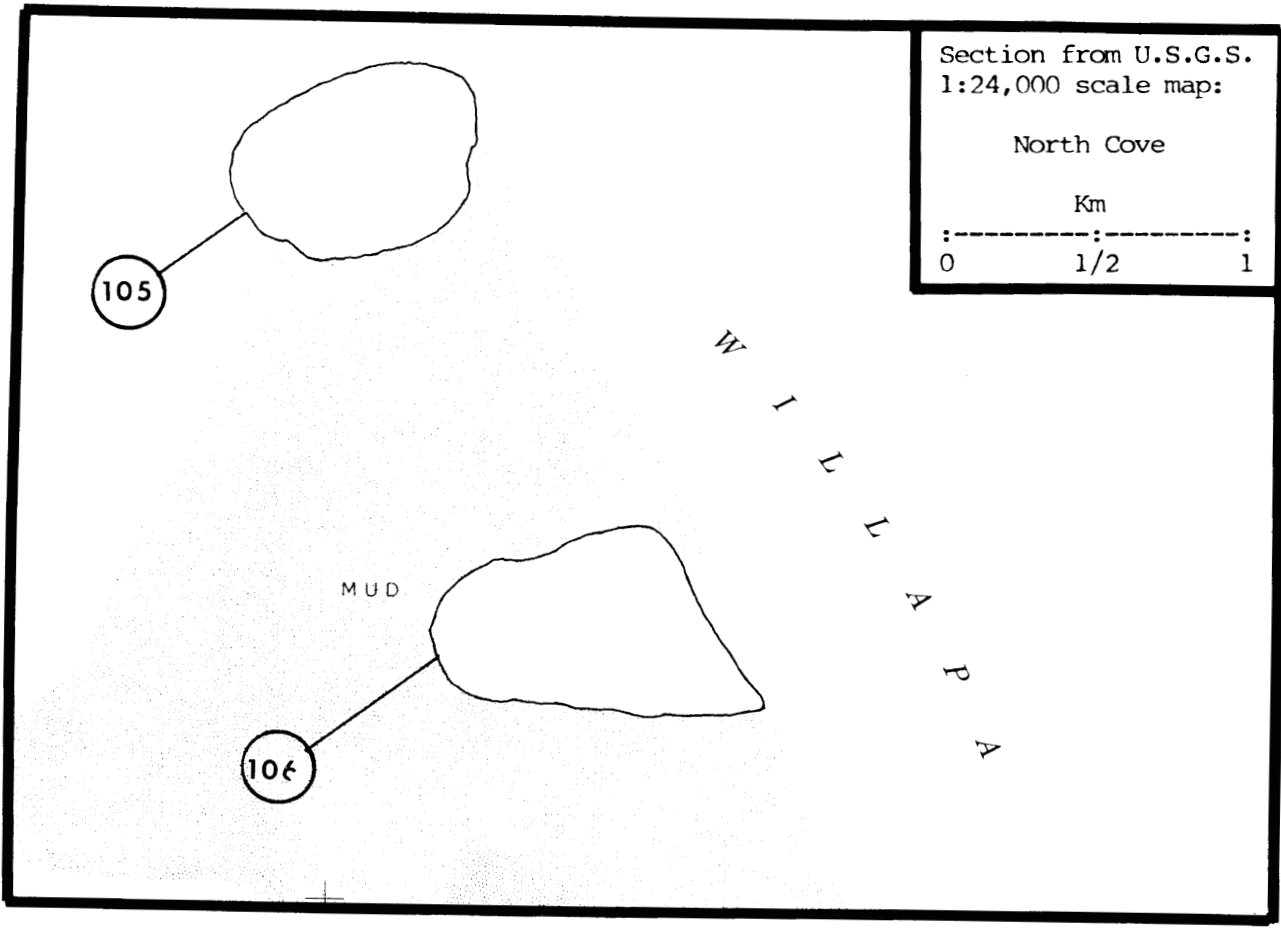
(105) "Whaleback Island" 46°41'25"N, 124°02'30"W

Glaucous-winged Gull	240	Speich; Harrington-Tweit	06/07/82	L I 255;124
Caspian Tern	X	Hosea	06/19/80	? III 144

(106) "Gunpowder Island" 46°40'55"N, 124°02'15"W

Ring-billed Gull	106	Speich; Harrington-Tweit	06/07/82	L I 255;124
Glaucous-winged Gull	6000	Speich; Harrington-Tweit	06/07/82	L III 255;124
Caspian Tern	2700-3000	Speich; Harrington-Tweit	06/07/82	L III 255;124
Total				8806-9106

Glaucous-winged Gull	4	Alcorn	06/04/77	E - 8
Glaucous-winged Gull	2000-3000	Harrington-Tweit	07/21/77	L III 124
Glaucous-winged Gull	1000	Widrig	06/03/80	L III 282
Caspian Tern	100	Harrington-Tweit	07/21/77	L III 124
Caspian Tern	1000-1600	Widrig	?/ ?/80	L III 281
Caspian Tern	1000	Widrig	06/03/80	L III 282
Caspian Tern	2000	Washington Dep. Game	06/19/80	L III 203



Section from U.S.G.S.
1:24,000 scale map:

North Cove

Km

0 1/2 1

AREA 174, Copalis Beach, South (cont'd.)

107 North Head 46°18'00"N, 124°04'35"W

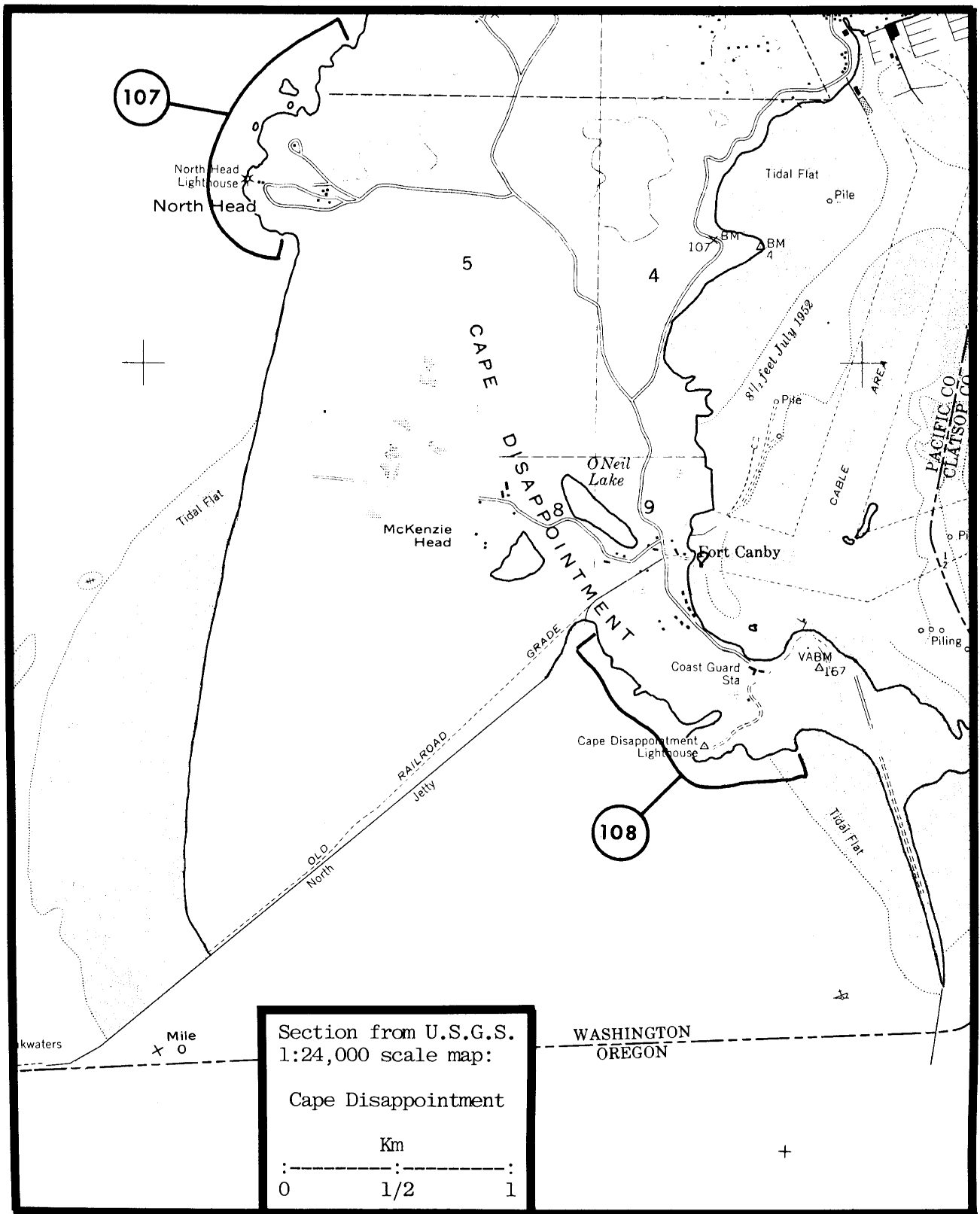
Black Oystercatcher	2	Widrig	?/ ?/82	L III 282
Pigeon Guillemot	30	Widrig	?/ ?/82	L III 282
Total	32			

Black Oystercatcher	2	Widrig	?/ ?/78	L III 282
Black Oystercatcher	2	Widrig	?/ ?/79	L III 282
Black Oystercatcher	2	Widrig	?/ ?/80	L III 282
Black Oystercatcher	2	Widrig	?/ ?/81	L III 282

108 Cape Disappointment 46°16'30"N, 124°03'00"W

Brandt's Cormorant	96	Speich	06/10/82	L II 255
Pelagic Cormorant	240	Speich	06/10/82	L II 255
Glaucous-winged Gull	12	Speich	06/10/82	L I 255
Pigeon Guillemot	12	Speich	06/10/82	L III 255
Total	360			

Brandt's Cormorant	N	Suckley & Cooper 1860	07/ ?/1853	B III 260
Brandt's Cormorant	150+	Harrington-Tweit	04/12/75	L III 124
Brandt's Cormorant	X	Wahl	08/15-17/79	L III 269
Brandt's Cormorant	10-20	Harrington-Tweit	08/16-17/79	L III 124
Pelagic Cormorant	~200P	Suckley & Cooper 1860	07/ ?/1853	B III 260
Pelagic Cormorant	24	Jewett et al. 1953	05/10-18/18	L III 158
Pelagic Cormorant	8	Harrington-Tweit	04/12/75	L III 124
Pelagic Cormorant	?	Leschner	04/25/79	L III 178
Pelagic Cormorant	X	Wahl	08/15-17/79	L III 269
Pelagic Cormorant	50	Harrington-Tweit	08/16-17/79	L III 124
Black Oystercatcher	3	Widrig 1979	08/08/78	L III 280
Black Oystercatcher	2	Widrig 1979	05/22/79	L III 280



AREA 174, Copalis Beach, South (cont'd.)

109

Sand Island, West 46°16'30"N, 124°01'20"W

No Nesting Observed

0

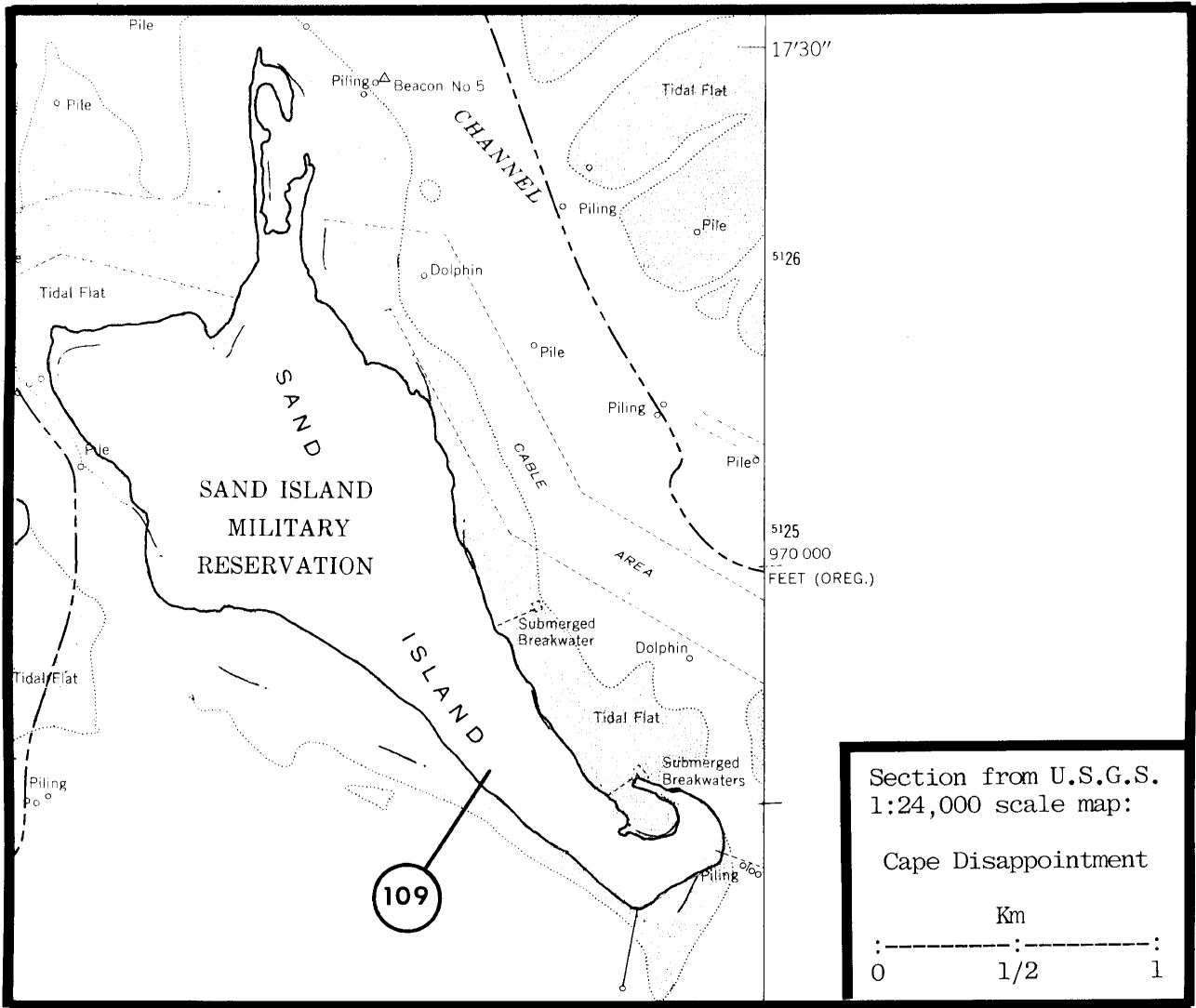
Speich

06/10/82

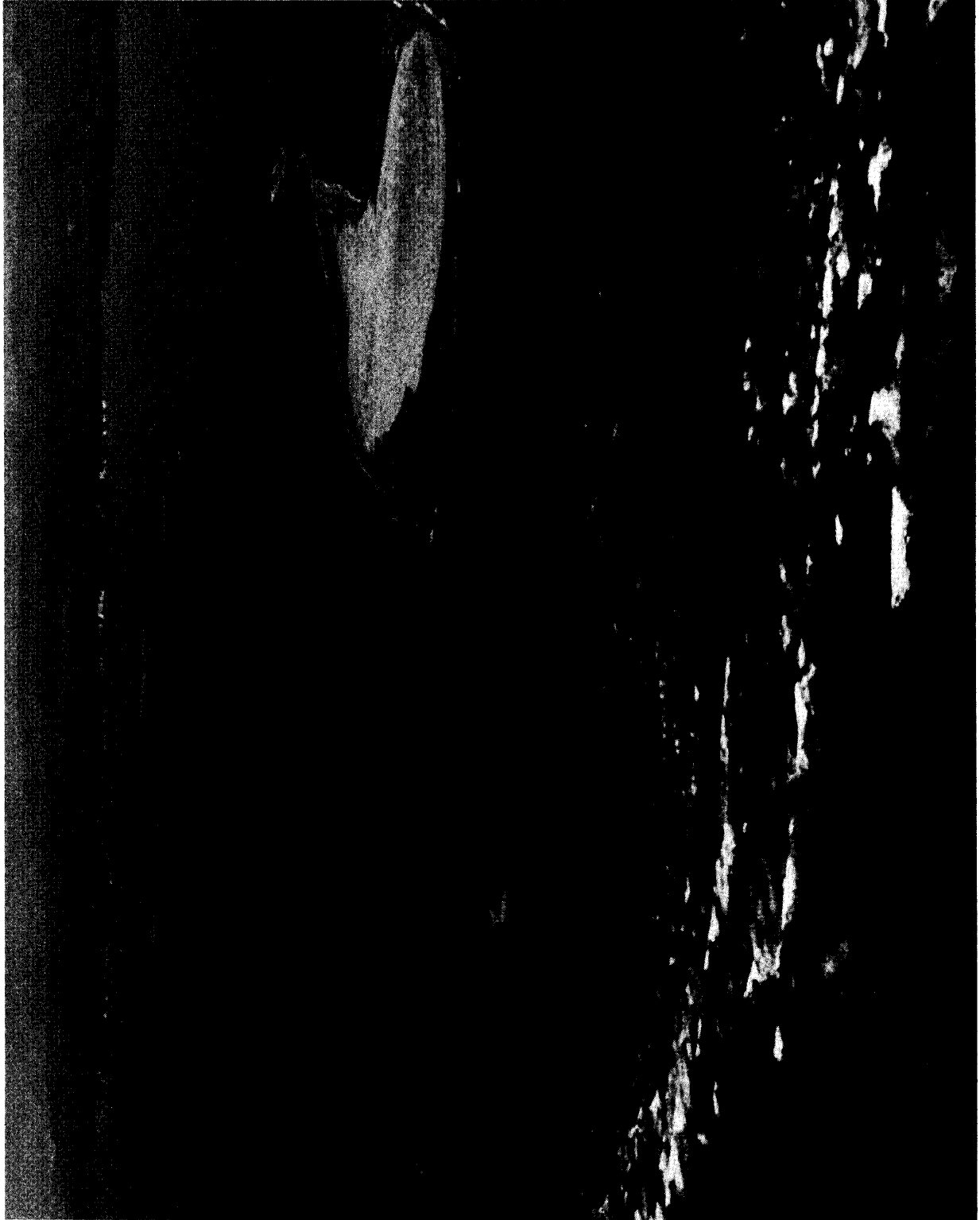
M III 255



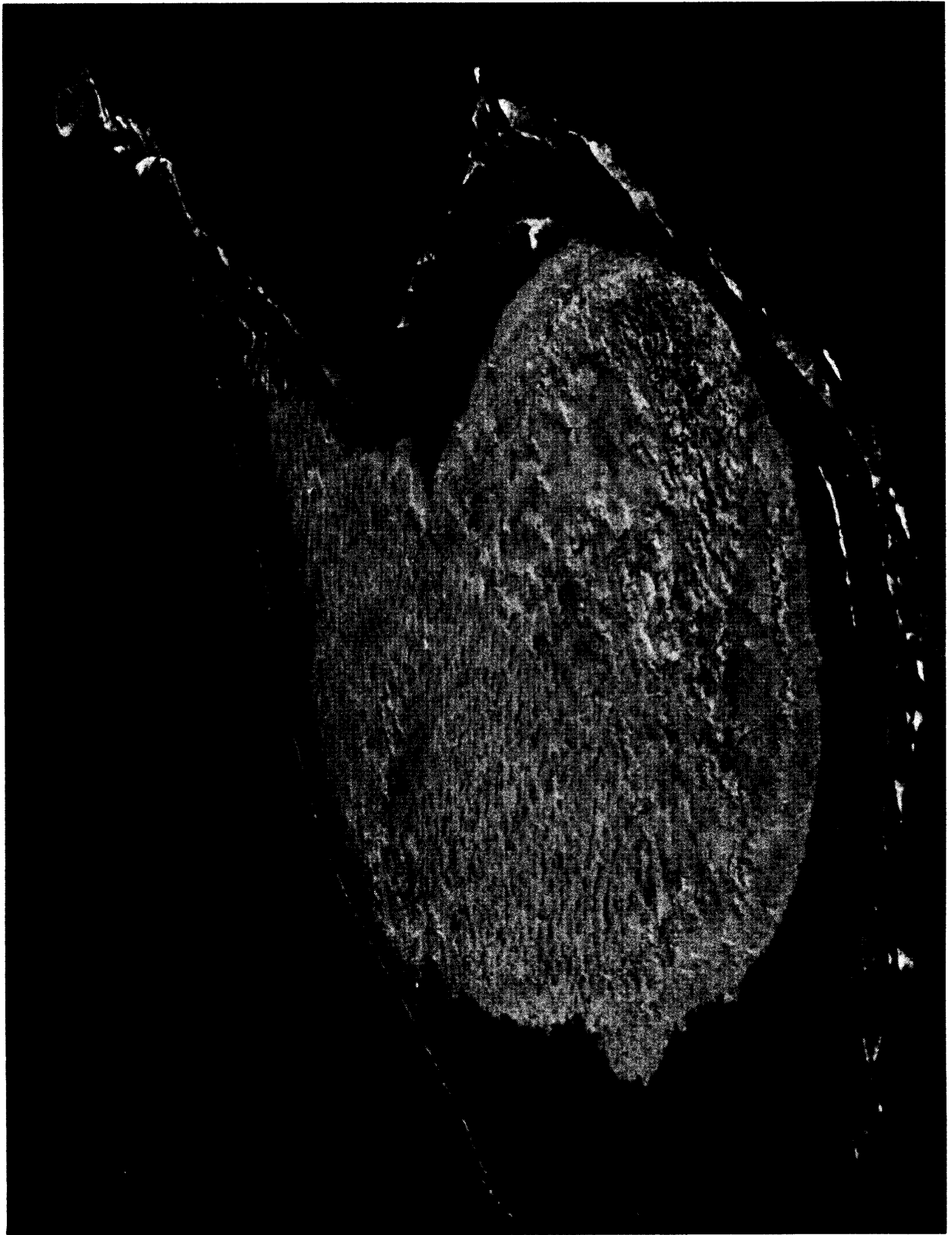
Whitcomb Island (174025) 1977 S.G. Herman



AREA 174, Copalis Beach, South (cont'd.)



"Whaleback Island" (174105), left; "Gunpowder Island" (174016) 1977 S.G. Herman



"Gunpowder Island" (174106) 1977 S.G. Herman

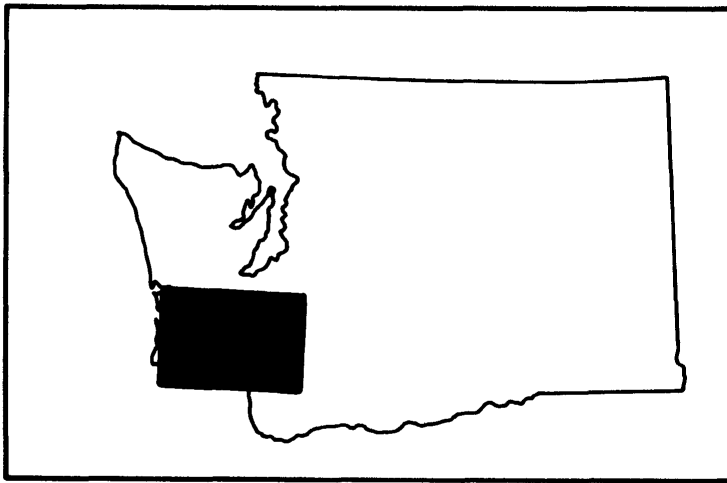
AREA 174, Conalis Beach, South (cont'd.)



North Head, Cape Disappointment (174107) U.S. Coast Guard



Cape Disappointment (174108) U.S. Coast Guard



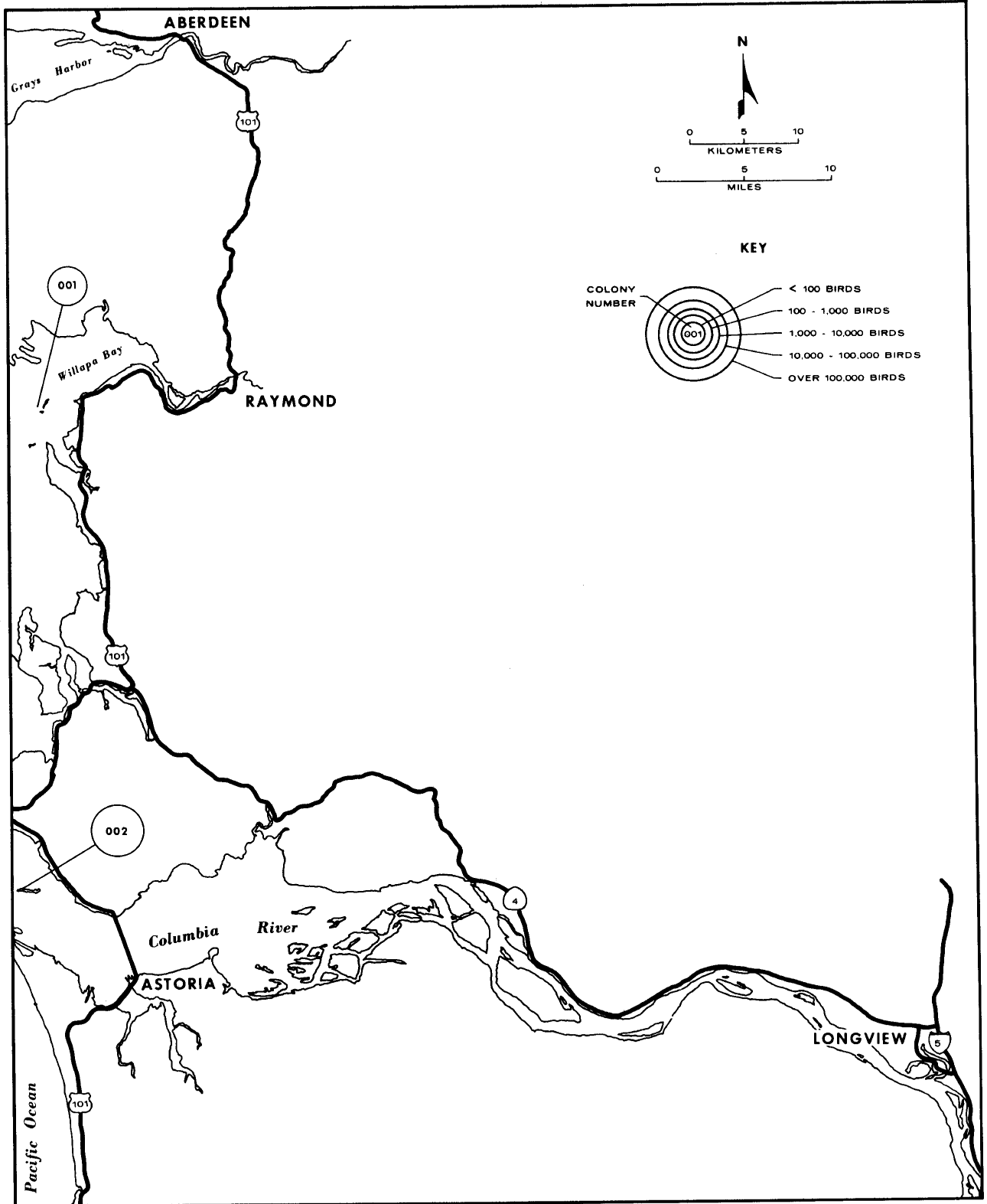
195
Hoquiam

The map on the facing page is an index to the locations of colonies within map 195, Hoquiam. On the pages following this map, all colonies are listed sequentially and a detailed map of each is provided.

Numbers of breeding seabirds will vary from year to year. Below are the approximate numbers of breeding seabirds within this region.

Glaucous-winged and Western gulls	1,900
Caspian Tern	2

195 HOQUIAM



AREA 195, Hoquiam (cont'd.)

001 Ellen Sands, complex¹ 46°40'00"N, 123°57'30"W

Ring-billed Gull		N Speich;			
		Harrington-Tweit	06/07/82	L III	257;124
Glaucous-winged Gull	190	Speich;			
		Harrington-Tweit	06/07/82	L I	257;124
Caspian Tern	2	Speich;			
Total	192	Harrington-Tweit	06/07/82	L I	257;124
Ring-billed Gull	80	Benson ²	06/10/68	? ?	27
Ring-billed Gull	54	Penland and			
		Jeffries 1977 ²	06/01/76	A II	212
Ring-billed Gull	40	Penland and			
		Jeffries 1977 ²	06/09/76	B I	212
Ring-billed Gull	4	Jeffries ²	06/09/76	E -	153
Ring-billed Gull		N Harrington-Tweit ³	Summer/77	L III	125
Ring-billed Gull		N Harrington-Tweit ⁴	06/29/77	L III	124
Glaucous-winged Gull		X Penland and			
		Jeffries 1977 ²	06/01/76	A III	212
Glaucous-winged Gull	300	Penland and			
		Jeffries 1977 ²	06/09/76	L III	212
Glaucous-winged Gull	196	Harrington-Tweit ⁴	06/29/77	L I	124
Caspian Tern	500	Benson ^{2,4}	06/10/68	? ?	27
Caspian Tern	-700	Penland and Jeffries ²	06/01/76	A III	212
Caspian Tern	200+	Harrington-Tweit ⁴	05/20/77	A III	124
Caspian Tern		N Harrington-Tweit ⁴	06/29/77	L III	124

¹Ellen Sands is defined here as to include Ellen Sands, Snag Island, and Pine Island. These sand islands are not stable; there is confusion in their names and locations on various maps; and investigators are not always specific as to the site visited.

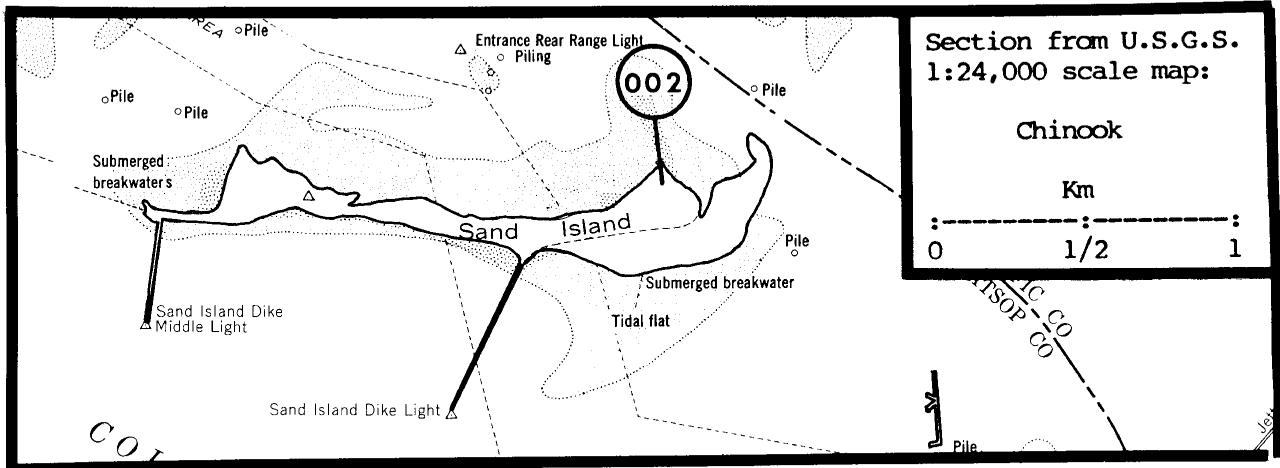
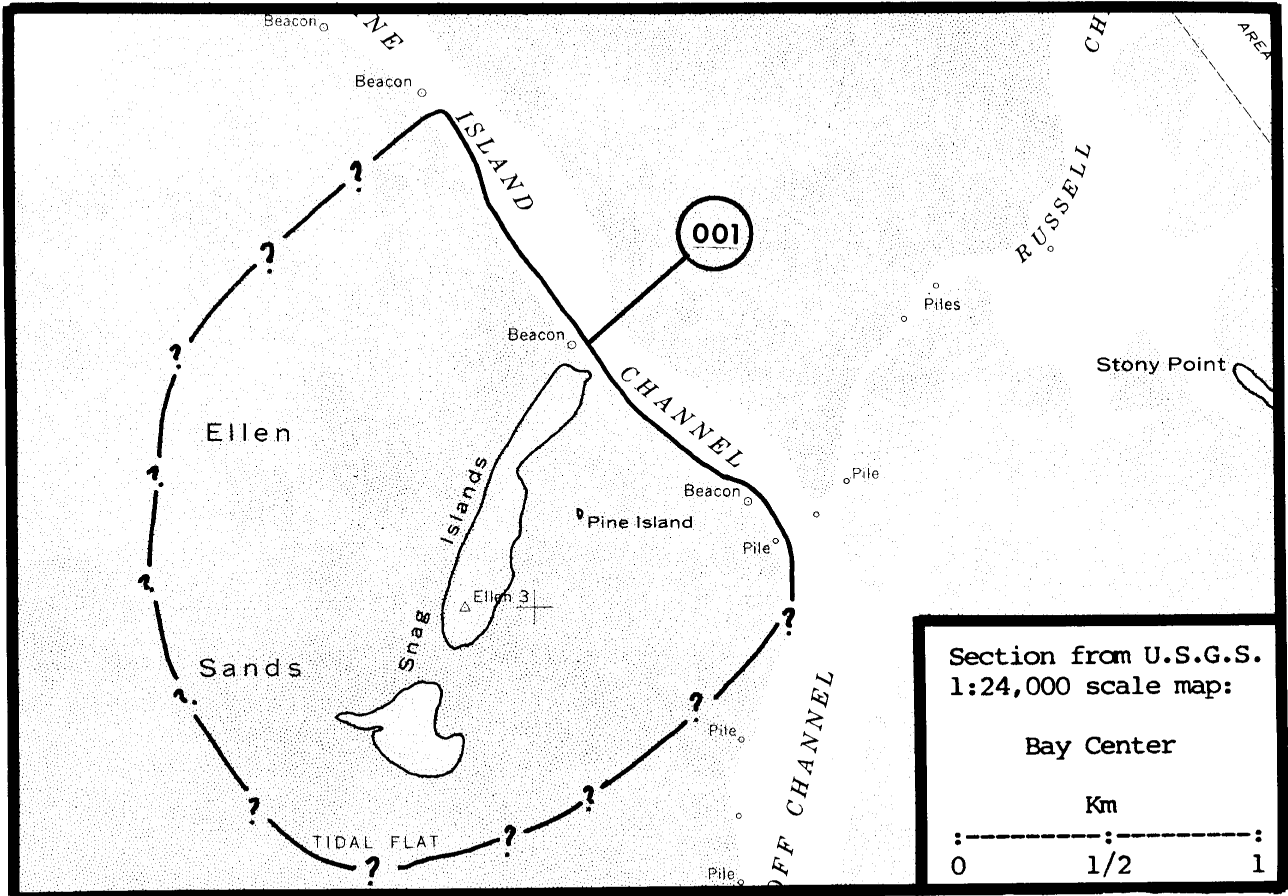
²Attributed to Ellen Sands.

³Attributed to Snag Island.

⁴Attributed to Pine Island.

002 Sand Island, East 46°15'45"N, 123°57'45"W

Glaucous-winged Gull	1750	Richter	06/04/81	L II	232
Glaucous-winged Gull	1240	Peters et al. 1978	06/21/77	L III	216
Glaucous-winged Gull		X Peters et al. 1978	06/22/77	L III	216
Glaucous-winged Gull		X Peters et al. 1978	06/30/77	L III	216
Glaucous-winged Gull	0	Peters et al. 1978	08/ ?/77	L III	216
Glaucous-winged Gull	600+	Richter	06/23/79	L III	232
Glaucous-winged Gull	100's	Speich	06/10/82	M III	255





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APPENDIX A
GAZETTEER OF LOCALITIES

The sites of seabird colonies and other locations in this catalog are listed below. Names given are as they appear on U.S. Geological Survey topographic maps unless they are in quotation marks. Names in quotation marks for the referred-to sites and locations do not appear on these maps nor do lower case site-and-location name description modifiers. Names in quotation marks are derived from (1) National Oceanic and Atmospheric Administration, National Ocean Survey, Nautical Charts; (2) local use; (3) the literature; (4) previous investigators; or (5) were assigned by the authors.

Name	Colony	Latitude and Longitude
Abbey Island	174 014	47°42'58"N, 124°25'10"W
Agate Bay	156 182	48°09'30"N, 123°44'00"W
Aleck Rocks	156 162	48°25'23"N, 122°50'48"W
Alexander Island	174 010	47°47'52"N, 124°30'16"W
Allan Island	156 170	48°27'55"N, 122°42'12"W
Allen Point, SE cliffs	175 030	47°20'25"N, 122°39'50"W
Anacortes, waterfront	156 134	48°31'24"N, 122°36'20"W
Anderson Island, south end	175 054	47°07'30"N, 122°42'00"W
Armitage Island	156 117	48°32'09"N, 122°47'42"W
"Bald Island" (see Jagged Island)	155 009	
Bare Island	156 013	48°43'48"N, 123°00'47"W
Barnes Island	156 070	48°42'00"N, 122°46'24"W
Barren Island	156 084	48°37'22"N, 123°09'34"W
Battleship Island	156 082	48°37'30"N, 123°11'03"W
Bell Island	156 107	48°35'46"N, 122°58'46"W
Belle Rock	156 159	48°29'35"N, 122°45'12"W
Bellingham Bay, waterfront north	156 047	48°45'20"N, 122°30'00"W
Bellingham Bay, waterfront south	156 076	48°43'40"N, 122°30'40"W
Ben-Ure Island	156 176	48°24'12"N, 122°37'43"W
Bird Rock	156 095	48°35'54"N, 123°00'49"W
Bird Rocks	156 024	48°29'08"N, 122°45'43"W
Blaine	156 039	48°59'18"N, 122°45'19"W
Blakely Rock	175 016	47°35'40"N, 122°28'48"W
Blind Island	156 164	48°25'27"N, 122°49'34"W
Blind Island	156 108	48°35'06"N, 122°56'15"W
Blowers Bluff	156 186	48°14'30"N, 122°39'40"W
Bodelteh Island, east	155 060	48°10'30"N, 124°45'18"W

Bodelteh Island, middle	155 059	48°10'33"N,	124°45'33"W
Bodelteh Island, west	155 058	48°10'33"N,	124°45'44"W
Bodelteh Islands	155 006	48°10'32"N,	124°45'30"W
Boulder Island	156 167	48°25'58"N,	122°48'02"W
Bremerton, ferry dock	175 014	47°33'45"N,	122°37'20"W
Bremerton, shipyard	175 013	47°33'15"N,	122°38'30"W
Buck Island	156 140	48°27'09"N,	122°55'15"W
Burrows Island	156 168	48°28'48"N,	122°42'06"W
Cactus Island, east	156 057	48°39'07"N,	123°07'43"W
Cactus Island, west	156 056	48°39'04"N,	123°08'10"W
Cactus Islands	156 017	48°39'00"N,	123°07'50"W
Cake	174 002	47°55'58"N,	124°41'02"W
Cape Alava, mainland	155 062	48°10'00"N,	124°44'00"W
Cape Disappointment	174 108	46°16'30"N,	124°03'00"W
Cape Elizabeth	174 098	47°21'22"N,	124°19'04"W
Cape Flattery, mainland	155 002	48°22'50"N,	124°43'20"W
Cape Johnson, mainland	174 033	47°58'00"N,	124°40'26"W
Cape Johnson, offshore rocks	174 034	47°58'00"N,	124°40'30"W
Carroll Island	155 010	48°00'20"N,	124°43'16"W
Castle Island	156 031	48°25'20"N,	122°49'13"W
Charles Island	156 147	48°26'30"N,	122°54'30"W
Cherry Point	156 046	48°51'24"N,	122°43'53"W
Chibahdehi Rocks	155 015	48°23'40"N,	124°40'30"W
Chuckanut Island	156 078	48°40'38"N,	122°30'05"W
Chuckanut Rock	156 077	48°41'05"N,	122°30'05"W
Clark Island	156 069	48°42'08"N,	122°45'48"W
Cliff Island	156 100	48°35'24"N,	123°00'13"W
Colville Island	156 032	48°24'58"N,	122°49'17"W
Colvos Rock, south	175 002	47°56'55"N,	122°39'56"W
Colvos Rock, north	175 001	47°57'06"N,	122°40'10"W
Commencement Bay, Hylebos Waterway	175 038	47°17'00"N,	122°24'12"W
Commencement Bay, Milwaukee	175 037	47°16'07"N,	122°25'15"W
Commencement Bay, NE shore	175 039	47°17'50"N,	122°25'08"W
Commencement Bay, St. Paul	175 036	47°15'57"N,	122°25'48"W
Commencement Bay, SW shore	175 035	47°16'33"N,	122°27'40"W
Cone Island, east	156 124	48°35'31"N,	122°40'22"W
Cone Island, north	156 122	48°35'40"N,	122°40'56"W
Cone Island, south	156 123	48°35'35"N,	122°40'56"W
Coon Island	156 096	48°35'43"N,	123°01'04"W
Copalis Rock	174 022	47°09'09"N,	124°11'45"W
Crab Island	156 158	48°27'44"N,	122°50'36"W
Cutts Island	175 031	47°19'15"N,	122°41'09"W
Cypress Island	156 125	48°34'20"N,	122°42'30"W
Dahdayla	174 040	47°56'08"N,	124°40'01"W
Danger Rocks	156 060	48°39'51"N,	123°04'00"W
Davis Bay, cliffs	156 141	48°27'10"N,	122°55'00"W
Deadman Island	156 139	48°27'30"N,	122°56'36"W
Decatur Island	156 160	48°30'35"N,	122°48'30"W
Deception Island	156 173	48°24'27"N,	122°40'05"W
Destruction Island	174 016	47°40'36"N,	124°28'57"W
Dinner Island	156 102	48°30'26"N,	123°00'30"W
Double Island, north	156 104	48°36'24"N,	122°58'21"W

Double Island, south	156 105	48°36'16"N,	122°58'21"W
Doe Island	156 072	48°38'00"N,	122°47'12"W
Dot Island	156 132	48°31'58"N,	122°33'06"W
Drayton Harbor, northeast	156 040	48°59'45"N,	122°45'36"W
Drayton Harbor, southwest	156 041	48°58'50"N,	122°46'25"W
Dungeness, wharf	156 183	48°09'30"N,	123°06'54"W
Dungeness Spit	156 202	48°10'00"N,	123°09'00"W
Duwamish Head, waterfront	175 017	47°35'40"N,	122°23'15"W
Eagle Harbor	175 015	47°37'15"N,	122°30'30"W
Eagle Island	175 049	47°11'17"N,	122°41'40"W
Edmonds, ferry dock	175 005	47°48'50"N,	122°23'09"W
Eliza Island	156 008	48°39'54"N,	122°35'00"W
Eliza Rock	156 080	48°38'23"N,	122°34'35"W
Ellen Sands, complex	195 001	46°40'00"N,	123°57'30"W
"Erin"	174 101	47°18'01"N,	124°16'00"W
"Erin's Bride"	174 102	47°17'57"N,	124°16'01"W
Father	155 054	48°13'36"N,	124°42'43"W
Father and Son	155 005	48°13'36"N,	124°42'41"W
Fawn Island	156 091	48°36'50"N,	123°00'20"W
Flat Rock	174 019	47°22'44"N,	124°20'38"W
Flattery Rocks	155 066	48°10'00"N,	124°46'00"W
Flattop Island	156 020	48°38'51"N,	123°04'52"W
"Flint Beach Island"	156 161	48°25'12"N,	122°52'00"W
Flower Island	156 022	48°32'43"N,	122°51'12"W
Foot Rock	155 068	48°01'55"N,	124°42'06"W
Fortress Island	156 156	48°27'56"N,	122°50'13"W
Fox Island	175 033	47°15'00"N,	122°37'30"W
Freeman Island	156 063	48°41'55"N,	122°57'00"W
Friday Harbor	156 101	48°32'00"N,	123°00'20"W
Frost Island	156 115	48°32'18"N,	122°50'42"W
Fuca's Pillar	155 022	48°22'52"N,	124°43'51"W
"Gargoyle Rock"	156 081	48°39'12"N,	122°29'43"W
Georgetown Reach, north	175 023	47°33'50"N,	122°20'45"W
Gertrude Island	175 048	47°13'04"N,	122°39'30"W
Giants Graveyard	174 005	47°51'15"N,	124°34'00"W
Glen Cove, cliff N of	175 029	47°20'22"N,	122°43'25"W
Goose Island	174 023	46°58'40"N,	124°04'10"W
Goose Island	156 026	48°27'30"N,	122°57'18"W
Gossip Island	156 051	48°39'47"N,	123°10'17"W
Green Cove, bank NE of	175 051	47°06'10"N,	122°56'38"W
Green Point	175 032	47°16'52"N,	122°41'26"W
Grenville Arch	174 021	47°17'46"N,	124°16'59"W
Grenville Pillar	174 100	47°18'08"N,	124°16'45"W
Gull Harbor, cliff	175 052	47°06'50"N,	122°53'27"W
Gull Reef, west	156 052	48°39'17"N,	123°08'44"W
Gull Rock	156 018	48°39'04"N,	123°05'18"W
"Gunpowder Island"	174 106	46°40'55"N,	124°02'15"W
Guss Island	156 086	48°35'04"N,	123°09'11"W
"Half Round Rock"	174 082	47°48'56"N,	124°30'29"W
"Half Round Rock, outer"	174 083	47°48'44"N,	124°31'45"W
Hall Island	156 030	48°26'06"N,	122°54'37"W
Hammersley Inlet, eastern third	175 043	47°12'10"N,	122°58'06"W
Hand Rock	155 067	48°01'55"N,	124°43'00"W

Harbor Island, north waterfront	175 021	47°35'20"N,	122°21'00"W
Harbor Rock	156 138	48°28'13"N,	122°58'12"W
Hat Island	156 133	48°31'28"N,	122°32'48"W
Hogsback	174 094	47°26'49"N,	124°20'31"W
Hogsback, Little	174 095	47°26'16"N,	124°20'30"W
Hoh Head	174 088	47°46'12"N,	124°28'30"W
Hope Island	156 180	48°23'54"N,	122°34'06"W
Huckleberry Island	156 130	48°32'10"N,	122°34'06"W
Humphrey Head	156 114	48°33'45"N,	122°52'14"W
Iceburg Island	156 151	48°25'37"N,	122°53'18"W
Indian Island, bar	156 196	48°05'23"N,	122°44'00"W
Indian Island, navy dock	156 198	48°03'05"N,	122°44'30"W
Jack Island	156 129	48°34'52"N,	122°36'48"W
Jagged Island	174 027	47°59'48"N,	124°41'40"W
James Island	174 003	47°54'22"N,	124°38'50"W
James Island	156 119	48°30'45"N,	122°46'26"W
Jefferson Cove, mainland cliff	174 089	47°45'55"N,	124°27'30"W
Jetty Island	156 201	48°00'35"N,	122°13'37"W
Johns Island	156 015	48°40'00"N,	123°09'00"W
Jones Island	156 090	48°36'53"N,	123°02'42"W
Kalaloch	174 091	47°36'30"N,	124°22'25"W
Kessiso Rocks	155 020	48°23'00"N,	124°43'43"W
Keyport, pier	175 008	47°42'00"N,	122°36'45"W
Keystone, wharf	156 189	48°09'28"N,	122°40'09"W
Killisut Harbor, north bluff	156 197	48°05'36"N,	122°43'20"W
Kingston, ferry dock	175 006	47°47'39"N,	122°29'40"W
Lake Whatcom	156 204	48°45'40"N,	122°24'00"W
Lawson Rock	156 118	48°31'50"N,	122°47'15"W
Lemolo	175 007	47°42'40"N,	122°37'00"W
Lime Kiln Bay	156 088	48°31'12"N,	123°09'03"W
Lone Tree Island	156 004	48°41'41"N,	122°45'22"W
Long Island	156 029	48°26'32"N,	122°55'20"W
Lopez Island, south shore	156 143	48°26'00"N,	122°52'30"W
Lopez Island	156 142	48°28'30"N,	122°53'00"W
Low Island	156 021	48°35'22"N,	123°01'27"W
Low Island	156 087	48°32'37"N,	123°09'47"W
Lummi Rocks	156 007	48°40'15"N,	122°40'00"W
"Mainland Cave"	174 078	47°49'38"N,	124°30'52"W
March Point, piers	156 135	48°30'32"N,	122°34'21"W
Matia Island	156 002	48°44'50"N,	122°50'00"W
Maury Island	175 027	47°23'00"N,	122°26'00"W
McConnell Island	156 094	48°35'46"N,	123°01'17"W
McMicken Island	175 046	47°14'57"N,	122°51'40"W
Middle Rock	174 013	47°44'54"N,	124°26'54"W
"Migley Rocks"	156 075	48°44'54"N,	122°43'00"W
Minor Island	156 033	48°19'28"N,	122°49'06"W
Mummy Rocks	156 027	48°26'54"N,	122°55'40"W
Mushroom Rock	155 017	48°23'24"N,	124°42'47"W
Nisqually Reach, east shoreline	175 055	47°06'50"N,	122°40'06"W
North Head	174 107	46°18'00"N,	124°04'35"W
North Rock	174 012	47°45'00"N,	124°28'30"W
Northwest Island	156 172	48°25'09"N,	122°40'06"W

"Norwegian Creek"	155 069	48°02'00"N,	124°41'00"W
Nob Island	156 098	48°35'28"N,	123°01'00"W
O'Neal Island	156 089	48°36'14"N,	123°05'28"W
Oak Harbor	156 200	48°16'30"N,	122°39'00"W
Oak Harbor	156 106	48°36'22"N,	122°57'09"W
Observatory Point	156 205	48°09'02"N,	123°38'18"W
Olympia, waterfront	175 053	47°03'30"N,	122°54'30"W
Ozette Island	155 007	48°09'28"N,	124°44'52"W
"Paahwoke-it"	155 070	48°00'25"N,	124°43'27"W
Parker Reef	156 062	48°43'40"N,	122°53'42"W
Pass Island	156 174	48°24'25"N,	122°38'33"W
Patos Island	156 001	48°47'05"N,	122°57'10"W
Patos Island, Little	156 044	48°47'06"N,	122°58'00"W
Peapod, Middle	156 074	48°38'24"N,	122°45'01"W
Peapod, North	156 009	48°38'32"N,	122°44'37"W
Peapod, South	156 010	48°38'03"N,	122°45'27"W
Peapod Rocks	156 073	48°38'21"N,	122°45'00"W
Penn Cove, north shore	156 185	48°14'22"N,	122°41'45"W
Penn Cove, south shore	156 188	48°12'52"N,	122°43'00"W
Penn Cove, southwest shore	156 187	48°13'00"N,	122°43'25"W
Perkins Reef	174 011	47°46'28"N,	124°30'15"W
Pitt Island	175 047	47°13'25"N,	122°42'55"W
Point Brown, jetty	174 103	46°55'38"N,	124°10'37"W
Point Chehalis, jetty	174 104	46°54'21"N,	124°08'37"W
Point Defiance	175 034	47°18'42"N,	122°32'00"W
Point Grenville, complex	174 020	47°18'00"N,	124°16'45"W
Point Grenville, mainland cliffs	174 099	47°18'18"N,	124°16'07"W
Point No Point	175 004	47°54'55"N,	122°31'30"W
Point of the Arches	155 004	48°14'50"N,	124°41'58"W
Point Southworth	175 025	47°30'36"N,	122°29'40"W
Point Partridge	156 184	48°13'51"N,	122°46'00"W
Point Roberts, southeast	156 037	48°58'30"N,	123°01'30"W
Point Roberts, west	156 036	48°59'02"N,	123°05'04"W
Point Whitehorn, north	156 042	48°53'40"N,	122°47'00"W
Point Whitehorn, south	156 043	48°53'00"N,	122°46'30"W
Pointer Island	156 023	48°32'20"N,	122°46'50"W
Pole Island	156 085	48°36'04"N,	123°10'00"W
Port Angeles	156 190	48°07'02"N,	123°24'38"W
Port Ludlow	175 003	47°55'09"N,	122°41'06"W
Port Townsend, bluffs	156 194	48°06'38"N,	122°45'46"W
Port Townsend, mill dock	156 193	48°05'34"N,	122°47'28"W
Port Townsend, tower	156 195	48°05'36"N,	122°44'00"W
Port Williams	156 191	48°07'00"N,	123°03'00"W
Posey Island	156 083	48°37'07"N,	123°10'00"W
Poverty Bay	175 041	47°22'30"N,	122°19'20"W
Protection Island	156 035	48°07'40"N,	122°55'50"W
Puffin Island	156 003	48°44'42"N,	122°49'12"W
Quillayute Needle	174 052	47°52'50"N,	124°37'59"W
Quillayute Needles, group	174 043	47°54'31"N,	124°38'40"W
Ram Island	156 155	48°28'35"N,	122°49'50"W
Reef Island	156 092	48°36'18"N,	123°00'52"W
Rim Island	156 153	48°28'55"N,	122°49'35"W

Ripple Island	156 054	48°39'26"N,	123°07'47"W
Rounded Island	174 007	47°49'55"N,	124°33'13"W
Rum Island	156 154	48°28'48"N,	122°49'41"W
Saddlebag Island	156 131	48°32'09"N,	122°33'21"W
Sail Rock	155 011	48°20'32"N,	124°32'35"W
Sail Rock & Seal Rock	155 013	48°21'42"N,	124°32'42"W
Salmon Bay	175 009	47°40'30"N,	122°24'36"W
Sand Island	174 024	46°57'45"N,	124°03'25"W
Sand Island, East	195 002	46°15'45"N,	123°57'45"W
Sand Island, West	174 109	46°16'30"N,	124°01'20"W
Sanderson Harbor, cliff NE of	175 045	47°09'00"N,	122°55'56"W
Sandy Island, group	174 031	47°59'14"N,	124°41'24"W
Sares Head	156 171	48°26'00"N,	122°40'30"W
Satellite Island	156 049	48°41'00"N,	123°11'20"W
Scow Bay	156 203	48°01'52"N,	122°41'48"W
Sea Lion Rock	174 093	47°27'03"N,	124°24'15"W
Sea Lion Rock (Jagged Islet)	174 001	47°59'32"N,	124°43'36"W
Seal Rock	155 012	48°21'45"N,	124°32'50"W
Seattle, downtown	175 019	47°36'30"N,	122°20'00"W
Seattle, East Waterway	175 020	47°35'00"N,	122°21'06"W
Seattle, waterfront	175 018	47°36'20"N,	122°21'00"W
Seattle, west waterfront	175 024	47°35'00"N,	122°22'15"W
Seattle, West Waterway/Harbor	175 022	47°34'45"N,	122°21'30"W
Secar Rock	156 148	48°26'17"N,	122°54'22"W
Semiahmoo Spit	156 038	48°59'27"N,	122°46'08"W
Sentinel Island	156 019	48°38'24"N,	123°08'57"W
Sentinel Rock	156 058	48°38'25"N,	123°09'22"W
Shannon Point	156 127	48°30'30"N,	122°41'15"W
Sheep Island	156 067	48°37'19"N,	122°57'25"W
Shelton	175 042	47°12'40"N,	122°05'12"W
"Silver Sides"	155 039	48°15'11"N,	124°42'30"W
Sister, Little	156 006	48°41'23"N,	122°45'30"W
Sister Island, middle	156 005	48°41'33"N,	122°45'28"W
Sisters, The	156 071	48°41'02"N,	122°45'30"W
Skagit Island	156 179	48°24'48"N,	122°34'42"W
Skipjack Island	156 012	48°43'56"N,	123°02'00"W
Skull Island	156 065	48°38'22"N,	122°59'07"W
Skull Island	156 157	48°27'57"N,	122°49'55"W
Slant Rock	155 016	48°23'29"N,	124°41'38"W
Small Island	156 152	48°29'44"N,	122°51'42"W
Smith Cove, piers	175 011	47°37'45"N,	122°22'48"W
Smith Island	156 034	48°19'08"N,	122°50'32"W
Smith and Minor Islands	156 181	48°19'16"N,	122°49'47"W
Son	155 055	48°13'36"N,	124°42'39"W
South Rock	174 015	47°41'57"N,	124°25'30"W
Spike Rock	155 003	48°15'16"N,	124°42'58"W
Split Rock	174 018	47°24'29"N,	124°21'46"W
Steamboat Island	175 044	47°11'08"N,	122°56'25"W
Strawberry Island	156 126	48°33'42"N,	122°44'03"W
Strawberry Island	156 175	48°24'26"N,	122°37'50"W
Stuart Island, Turn Point	156 048	48°41'20"N,	123°14'18"W
Sucia Island, complex	156 045	48°45'30"N,	122°54'00"W

"Swinomish Islands, east"	156 178	48°27'40"N,	122°30'38"W
"Swinomish Islands, west"	156 177	48°28'15"N,	122°31'27"W
Swirl Island	156 163	48°25'07"N,	122°50'51"W
"Table Rock"	174 051	47°52'52"N,	124°38'06"W
Tacoma/Commencement Bay	175 040	47°17'00"N,	122°26'30"W
Tatoosh Island, complex	155 001	48°23'32"N,	124°44'07"W
Tift Rocks/Egg Rock	156 109	48°34'42"N,	122°59'10"W
Toleak Point	174 006	47°50'08"N,	124°32'20"W
Tongue Point	156 206	48°10'00"N,	123°42'05"W
"Tower Rock"	174 100	47°18'08"W,	124°16'45"W
Towhead Island	156 121	48°36'48"N,	122°42'43"W
Travis Spit	156 192	48°04'50"N,	123°02'00"W
Trump Island	156 120	48°30'16"N,	122°50'09"W
Tskawahyah Island	155 061	48°10'16"N,	124°46'02"W
Tunnel Island	174 092	47°27'50"N,	124°20'40"W
Turn Island	156 111	48°32'00"N,	122°58'12"W
Twin Rocks	156 113	48°36'57"N,	122°51'50"W
Union Bay	175 012	47°39'00"N,	122°17'30"W
"Unnamed Island"	155 064	48°09'07"N,	124°44'45"W
"Unnamed Island"	155 065	48°09'14"N,	124°43'50"W
"Unnamed Island"	156 144	48°26'32"N,	122°55'45"W
"Unnamed Island"	156 093	48°35'57"N,	123°01'27"W
"Unnamed Rock"	155 018	48°23'22"N,	124°43'08"W
"Unnamed Rock"	155 019	48°23'06"N,	124°43'42"W
"Unnamed Rock"	155 023	48°22'16"N,	124°43'52"W
"Unnamed Rock"	155 024	48°22'13"N,	124°44'03"W
"Unnamed Rock"	155 025	48°22'09"N,	124°43'58"W
"Unnamed Rock"	155 026	48°22'12"N,	124°43'44"W
"Unnamed Rock"	155 027	48°21'58"N,	124°43'38"W
"Unnamed Rock"	155 028	48°21'06"N,	124°42'15"W
"Unnamed Rock"	155 030	48°19'08"N,	124°40'00"W
"Unnamed Rock"	155 031	48°18'08"N,	124°41'17"W
"Unnamed Rock"	155 032	48°17'55"N,	124°40'29"W
"Unnamed Rock"	155 033	48°17'52"N,	124°40'41"W
"Unnamed Rock"	155 034	48°16'49"N,	124°41'03"W
"Unnamed Rock"	155 035	48°16'47"N,	124°41'00"W
"Unnamed Rock"	155 036	48°16'45"N,	124°41'02"W
"Unnamed Rock"	155 037	48°16'42"N,	124°40'58"W
"Unnamed Rock"	155 038	48°16'39"N,	124°40'51"W
"Unnamed Rock"	155 040	48°15'12"N,	124°42'26"W
"Unnamed Rock"	155 041	48°15'07"N,	124°42'25"W
"Unnamed Rock"	155 042	48°15'02"N,	124°42'15"W
"Unnamed Rock"	155 043	48°14'58"N,	124°42'15"W
"Unnamed Rock"	155 044	48°14'54"N,	124°42'11"W
"Unnamed Rock"	155 045	48°14'56"N,	124°42'11"W
"Unnamed Rock"	155 046	48°14'55"N,	124°42'03"W
"Unnamed Rock"	155 047	48°14'48"N,	124°42'03"W
"Unnamed Rock"	155 048	48°14'54"N,	124°42'01"W
"Unnamed Rock"	155 049	48°14'32"N,	124°42'32"W
"Unnamed Rock"	155 050	48°14'32"N,	124°42'27"W
"Unnamed Rock"	155 051	48°14'32"N,	124°42'37"W
"Unnamed Rock"	155 052	48°14'22"N,	124°42'21"W

"Unnamed Rock"	155 053	48°14'01"N,	124°42'16"W
"Unnamed Rock"	155 056	48°13'35"N,	124°41'52"W
"Unnamed Rock"	155 057	48°10'39"N,	124°45'49"W
"Unnamed Rock"	155 063	48°09'28"N,	124°45'15"W
"Unnamed Rock"	174 026	47°59'59"N,	124°41'28"W
"Unnamed Rock"	174 028	47°59'47"N,	124°41'24"W
"Unnamed Rock"	174 029	47°59'42"N,	124°41'24"W
"Unnamed Rock"	174 030	47°59'30"N,	124°40'58"W
"Unnamed Rock"	174 032	47°58'12"N,	124°40'54"W
"Unnamed Rock"	174 035	47°57'32"N,	124°40'31"W
"Unnamed Rock"	174 036	47°57'30"N,	124°40'14"W
"Unnamed Rock"	174 037	47°57'15"N,	124°40'24"W
"Unnamed Rock"	174 038	47°57'13"N,	124°40'20"W
"Unnamed Rock"	174 039	47°57'05"N,	124°40'13"W
"Unnamed Rock"	174 041	47°54'38"N,	124°39'00"W
"Unnamed Rock"	174 042	47°54'29"N,	124°39'02"W
"Unnamed Rock"	174 044	47°53'32"N,	124°37'46"W
"Unnamed Rock"	174 045	47°53'17"N,	124°37'38"W
"Unnamed Rock"	174 046	47°53'12"N,	124°37'42"W
"Unnamed Rock"	174 047	47°53'15"N,	124°38'35"W
"Unnamed Rock"	174 048	47°53'10"N,	124°38'16"W
"Unnamed Rock"	174 049	47°53'02"N,	124°38'15"W
"Unnamed Rock"	174 050	47°53'02"N,	124°38'07"W
"Unnamed Rock"	174 054	47°52'20"N,	124°36'39"W
"Unnamed Rock"	174 056	47°52'22"N,	124°36'06"W
"Unnamed Rock"	174 057	47°52'20"N,	124°36'00"W
"Unnamed Rock"	174 058	47°52'27"N,	124°35'50"W
"Unnamed Rock"	174 059	47°52'32"N,	124°35'44"W
"Unnamed Rock"	174 060	47°52'05"N,	124°34'18"W
"Unnamed Rock"	174 061	47°51'58"N,	124°34'09"W
"Unnamed Rock"	174 062	47°51'40"N,	124°33'43"W
"Unnamed Rock"	174 063	47°51'22"N,	124°34'05"W
"Unnamed Rock"	174 064	47°51'22"N,	124°34'00"W
"Unnamed Rock"	174 065	47°51'15"N,	124°34'03"W
"Unnamed Rock"	174 066	47°51'11"N,	124°33'41"W
"Unnamed Rock"	174 067	47°51'02"N,	124°33'47"W
"Unnamed Rock"	174 068	47°51'02"N,	124°33'57"W
"Unnamed Rock"	174 069	47°50'39"N,	124°32'52"W
"Unnamed Rock"	174 070	47°50'40"N,	124°33'13"W
"Unnamed Rock"	174 071	47°50'22"N,	124°32'20"W
"Unnamed Rock"	174 073	47°49'58"N,	124°32'30"W
"Unnamed Rock"	174 074	47°49'57"N,	124°32'02"W
"Unnamed Rock"	174 075	47°49'49"N,	124°32'12"W
"Unnamed Rock"	174 076	47°49'48"N,	124°32'12"W
"Unnamed Rock"	174 077	47°49'44"N,	124°31'03"W
"Unnamed Rock"	174 079	47°49'20"N,	124°30'48"W
"Unnamed Rock"	174 080	47°49'18"N,	124°30'40"W
"Unnamed Rock"	174 081	47°49'13"N,	124°30'42"W
"Unnamed Rock"	174 084	47°48'23"N,	124°31'46"W
"Unnamed Rock"	174 085	47°47'55"N,	124°31'00"W
"Unnamed Rock"	174 086	47°47'32"N,	124°28'52"W
"Unnamed Rock"	174 087	47°46'17"N,	124°28'27"W

"Unnamed Rock"	174 096	47°26'14"N, 124°20'29"W
"Unnamed Rock"	174 097	47°23'55"N, 124°21'45"W
"Unnamed Rock" (see 174 051)	174 004	
"Unnamed Rock"	174 072	47°50'00"N, 124°32'41"W
"Unnamed Rock"	156 053	48°39'13"N, 123°08'31"W
"Unnamed Rock"	156 055	48°39'15"N, 123°07'55"W
"Unnamed Rock"	156 064	48°41'40"N, 122°54'23"W
"Unnamed Rock"	156 136	48°29'24"N, 123°06'30"W
"Unnamed Rock"	156 137	48°28'58"N, 123°05'00"W
"Unnamed Rock"	156 145	48°26'18"N, 122°55'30"W
"Unnamed Rock"	156 146	48°26'22"N, 122°55'07"W
"Unnamed Rock"	156 165	48°25'18"N, 122°49'29"W
"Unnamed Rock"	156 166	48°25'00"N, 122°49'32"W
"Unnamed Rock"	156 050	48°39'54"N, 123°10'24"W
"Unnamed Rock"	156 059	48°40'10"N, 123°04'15"W
"Unnamed Rock"	156 066	48°38'02"N, 122°59'28"W
"Unnamed Rock"	156 068	48°44'36"N, 122°48'53"W
"Unnamed Rock"	156 061	48°38'52"N, 123°07'34"W
"Unnamed Rock"	156 099	48°35'27"N, 123°01'05"W
"Unnamed Rock"	156 149	48°25'57"N, 122°52'58"W
"Unnamed Rock"	156 150	48°25'52"N, 122°52'51"W
"Unnamed Rock"	156 110	48°33'45"N, 122°55'16"W
"Unnamed Rock"	156 112	48°31'42"N, 122°58'10"W
"Unnamed Rocks"	155 021	48°22'54"N, 124°43'46"W
"Unnamed Rocks"	174 053	47°52'35"N, 124°36'34"W
"Unnamed Rocks"	174 055	47°52'15"N, 124°36'18"W
"Unnamed Rocks"	174 090	47°45'15"N, 124°27'15"W
Vashon Island	175 026	47°25'00"N, 122°29'00"W
Vendovi Island	156 128	48°36'37"N, 122°36'22"W
Victum Island	156 103	48°36'48"N, 122°58'24"W
Viti Rocks	156 011	48°38'00"N, 122°37'17"W
Waadah Island	155 014	48°22'55"N, 124°35'50"W
Waatch Point, rock	155 029	48°20'19"N, 124°40'55"W
Waldron Island	156 014	48°42'05"N, 123°01'48"W
West Point	175 010	47°39'15"N, 122°25'14"W
Whale Rocks	156 028	48°26'51"N, 122°56'26"W
"Whaleback Island"	174 105	46°41'25"N, 124°02'30"W
Whidbey Island	156 199	48°10'00"N, 122°40'00"W
Whiskey Rock	156 079	48°39'38"N, 122°30'08"W
Whitcomb Island	174 025	46°54'40"N, 124°04'40"W
White Rock	155 008	48°08'05"N, 124°44'00"W
White Rock	156 016	48°40'04"N, 123°04'14"W
Williamson Rocks	156 025	48°27'03"N, 122°42'17"W
Willoughby Rock	174 017	47°24'42"N, 124°21'17"W
Willow Island	156 116	48°32'26"N, 122°49'20"W
Windy Bluff	175 028	47°20'45"N, 122°47'40"W
Yellow Island	156 097	48°35'33"N, 123°01'50"W
Young Cove, bank E of	175 050	47°09'00"N, 122°56'00"W
Young Island	156 169	48°28'32"N, 122°41'22"W

APPENDIX B

OBSERVATION POINTS FOR SEABIRD COLONIES

Bird-watching, birding, or nature observation has become a major non-consumptive recreational pursuit in North America, and people often travel great distances to see hard-to-find species or rarities from other parts of the world. This is true in Washington and the situation exists not only for birds in general but also for species breeding in the State.

With this greatly increased interest and awareness of the natural world, more and more people are attempting to see seabirds, particularly where they nest. A few years ago a Horned Puffin appeared on one relatively accessible colony in Washington, and within a short period of time bird-watchers converged on the area, having chartered boats in order to try to add the species to their "Washington list." It is with this experience in mind and with concern for the welfare of the birds and their reproductive success that we include this section. Some cautions are also introduced here for the welfare of persons viewing seabirds.

Seabird colonies in Washington, as elsewhere, tend to be inaccessible because of the need of the birds for security from predation and disturbance. Thus many colonies are offshore and

must be viewed at a distance, usually with a telescope, or must be approached in a boat. The former method is preferable because possibilities for disturbance are minimal. The use of boats allows close approach but also introduces possible disturbance stress and this is not only undesirable but is illegal in some cases. Many nesting islands are wildlife refuges and entry is forbidden. Maintaining a distance of perhaps 100-200 yards from a colony is necessary in many cases to prevent birds being frightened, taking flight, and causing loss of eggs or young to predators or being crushed. A further cause for caution in using small boats in Washington is that in many areas it can be extremely hazardous. Along the outer coast, there are very few places where boats can be rented or launched--Neah Bay, LaPush, Grays Harbor, Willapa Bay, and Ilwaco--and only the first two are near colonies. Even in the summer, sea conditions can change within a few minutes and heavy swells or fog can quickly create dangerous circumstances around rocks and islands or make entry into harbor impossible. In the inside waters, particularly in the San Juans, navigation near rocks can be very hazardous due to very strong tidal currents, and inexperienced sailors are well advised to be

extremely cautious, even during ideal weather. There are a number of places in the State where the summer resident seabirds can be observed, perhaps even better than on the colonies themselves. Most of these are included in Wahl and Paulson (1981) and full details are given there.

Trips to view pelagic birds on the ocean encounter not only nesting species, including storm-petrels and Cassin's Auklets not visible from shore, but also such species as Black-footed Albatrosses (Diomedea nigripes), Northern Fulmars (Fulmarus glacialis), and several species of shearwaters. Details can be obtained through the Seattle Audubon Society.

Ocean jetties at Ocean Shores, Westport, and Ilwaco (north jetty of the Columbia River) extend out from shore and allow, in good conditions, excellent views of seabirds. Birds rest on and forage around the jetties, and vast numbers pass by during migration. Pigeon Guillemots often nest in crevices in the jetties themselves, and large numbers of gulls, cormorants, sea ducks, rock shorebirds, and other species can be seen in season.

The lighthouse site at Point Wilson, Fort Worden State Park, near Port Townsend is an excellent location all year. Rhinoceros Auklets from Protection Island feed offshore, and large numbers of many species of birds forage in the strong tidal currents off the point.

Point Roberts, reached through Canada, is the extreme north-western tip of Whatcom County. Lighthouse Park, at the southwest

tip of the Point, is an excellent place to see seabirds close to shore, especially when the tide is running.

Green Point, in Washington Park, Anacortes, overlooks Rosario Strait and, while Bird Rocks can be seen by telescope in the distance, this spot is best known for spectacular flights of cormorants moving between roosts and foraging areas and for large numbers of Common Murres and many other species feeding in the tidal convergences.

Deception Pass, at the north end of Whidbey Island is reached by entering Deception Pass State Park and also has large flocks of birds feeding in strong tidal currents. Pigeon Guillemots, cormorants, loons, and many other species are often present.

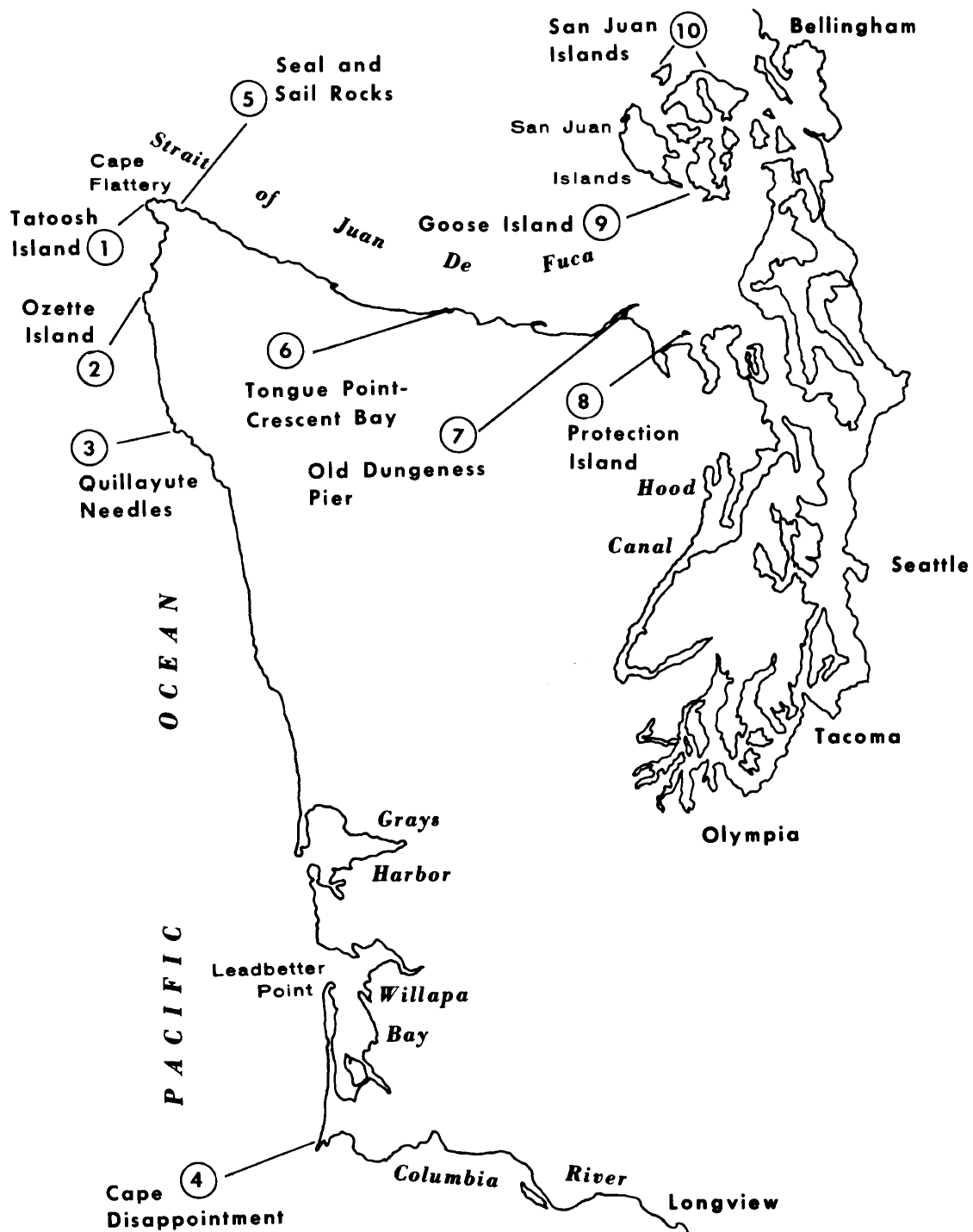
Washington also has what many other places do not--passenger and car ferries traveling through waters where there are many seabirds to observe in the appropriate season. While the routes in the southern inland waters of Puget Sound do not often encounter many birds, two Washington State Ferry routes do have abundant birds. The "Keystone Ferry" between Whidbey Island and Port Townsend crosses the tidal fronts of Admiralty Inlet, which drains most of Puget Sound into the Strait of Juan de Fuca and the Pacific Ocean. While large numbers of birds of many species may be seen during the 35-minute crossing, the most abundant species are Rhinoceros Auklets in summer, and Common Murres in winter, and gulls during all seasons. Thousands of Rhinoceros Auklets, from the colonies at Protection Island and Smith

Island, can be seen particularly on the west side of Admiralty Inlet. Tufted Puffins are also possible here.

The other ferry route with good bird observation possibilities is the ferry from Anacortes to Friday Harbor or Sidney, British Columbia. The ferry passes, at some distance, a number of important colonies. Foraging birds and others moving from one feeding area to another are often seen close to the vessel. The ferry to Sidney normally passes close to Mandarte Island, B.C., which has hundreds of nesting cormorants, thousands of nesting gulls, as well as Pigeon Guillemots and Black Oystercatchers. This is one of the largest colonies in the inside waters of Washington and British Columbia. Bald Eagles are often seen in the San Juans and Gulf Islands, with largest numbers in winter.

One excellent location for viewing nesting seabirds is not listed below. That is Point Grenville, where the many offshore rocks and islands can be seen well from the lighthouse site. However, the access to this former Coast Guard station is questionable at present. The property itself is now under Quinault Indian Tribal jurisdiction and access has not been allowed recently, at least at writing of this catalog.

Hiking the outer coastal beaches of the Olympic National Park has been a popular form of recreation for years. Many of the offshore nesting colonies may be seen from along the shore, though a telescope is necessary and transporting the necessary equipment while back-packing makes this out of the question for most people.



VIEW POINT: Cape Flattery

COLONY: Tatoosh Island

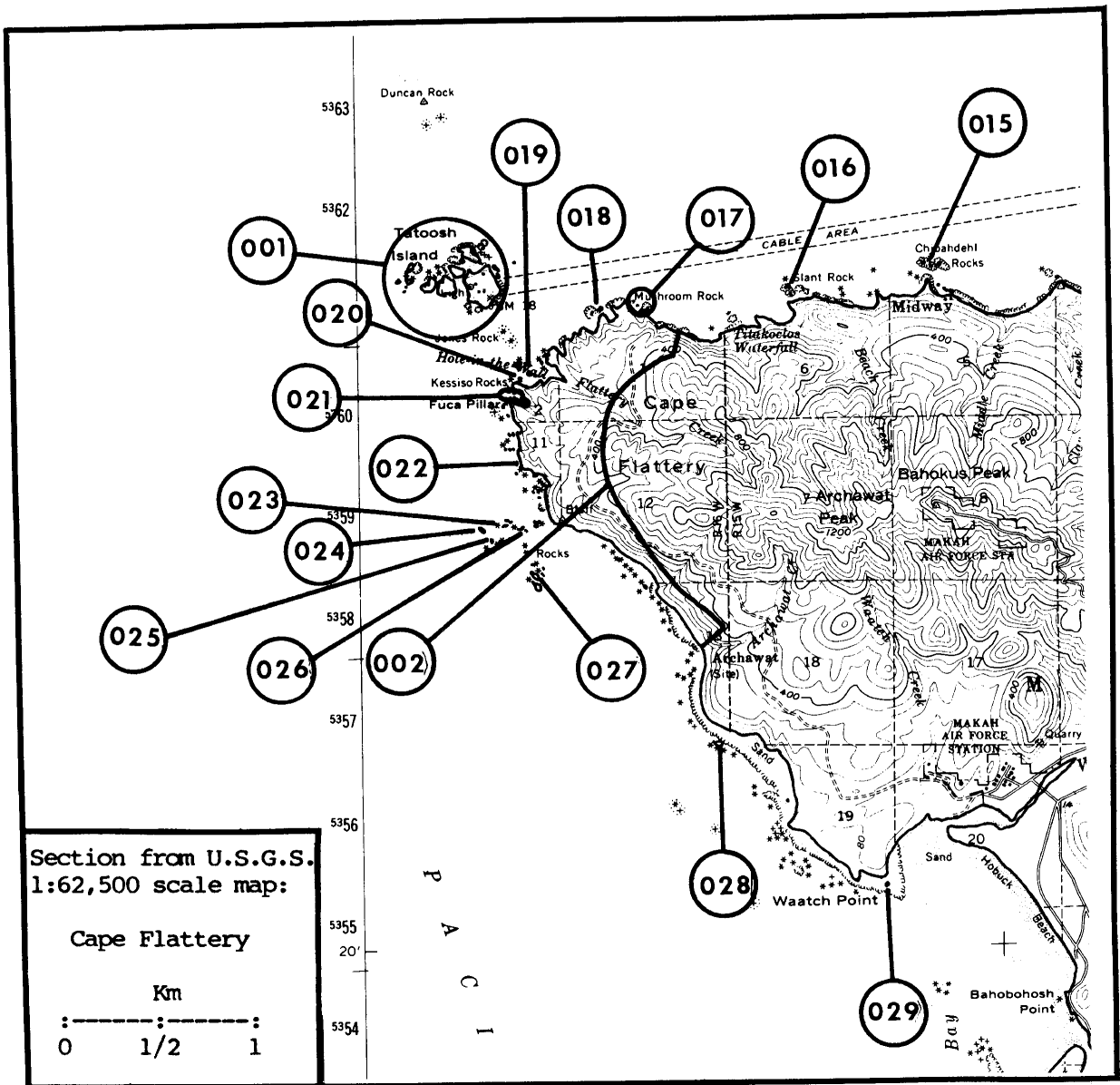
ACCESS Follow the signs in Neah Bay to "Cape Flattery." The road from the west end of Neah Bay circles the Cape itself. The parking area for the trail to the Cape Flattery viewpoint on the cliffs is about 5 miles from Neah Bay. It is about one-half mile down a trail, with some stepping over tree roots under the forest, to the edge of the cliffs.

①

SEABIRD SPECIES:

From the viewpoint at the edge of the cliffs--caution is advised: do not get too close to the edge--

Tatoosh Island is visible offshore, and with a telescope, birds can be seen on nesting territories or flying to and from foraging areas offshore. Pelagic Cormorants, Black Oystercatchers, Glaucous-winged Gulls, Common Murres, Pigeon Guillemots, and Tufted Puffins may be clearly, if distantly, seen. Leach's and Fork-tailed Storm-Petrels and Cassin's Auklets nest here, too, but are strictly nocturnal and only infrequently seen near the island during daylight hours. Pelagic Cormorants and Black Oystercatchers also nest on sea stacks closer to Cape Flattery and can be seen there also. A great amount of bird activity can often be seen from Cape Flattery, from vast flocks of shearwaters feeding at the entrance to the Strait of Juan de Fuca, to flocks of migrating Brants and hawks passing in the spring. Gray Whales may be seen during their spring migration, with some passing directly under the cliff view point.



VIEW POINT: Cape Alava

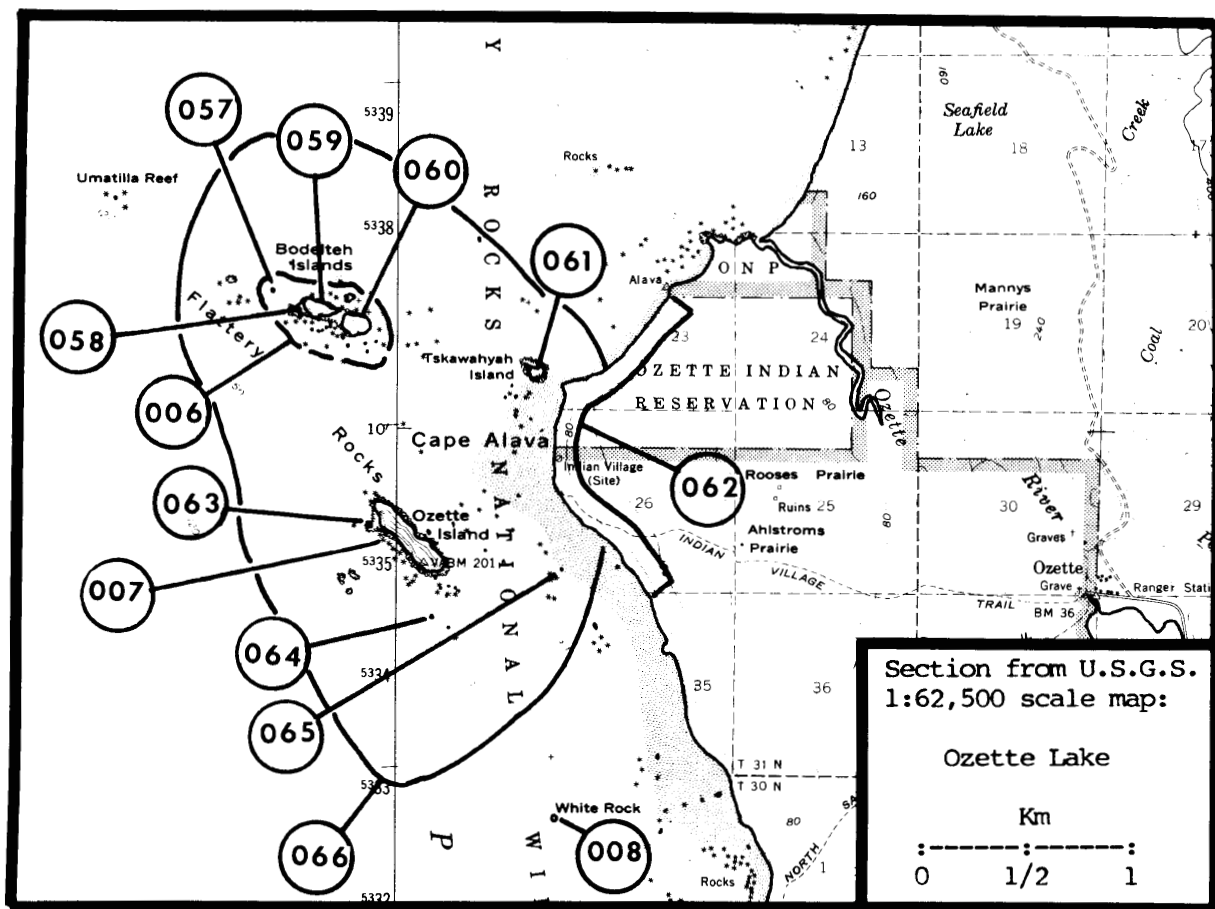
SEABIRD SPECIES:

COLONY: Bodeliteh Islands,
Ozette Island

Pelagic Cormorants, Black Oystercatchers, Glaucous-winged Gulls, Common Murres, Pigeon Guillemots and Tufted Puffins can be seen by telescope on the islands offshore. In addition, storm-petrels and Cassin's Auklets nest there. One of the few places in the State where Sea Otters may be seen from shore is near Ozette Island, to the south of Cape Alava.

ACCESS: The Cape Alava trail is 3.3 miles long, from Lake Ozette to the Cape. The trail is reached by a road leaving Highway 110 west of Sekiu.

②



VIEW POINT: Rialto Beach or LaPush

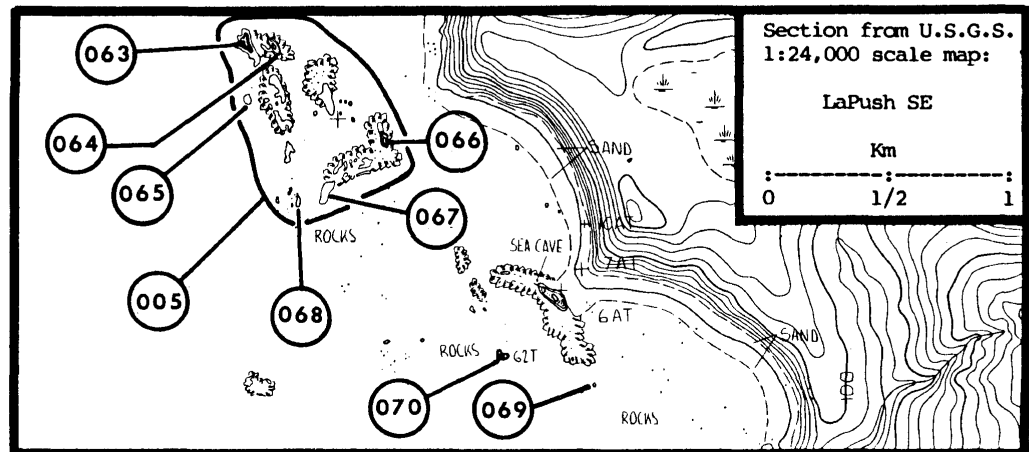
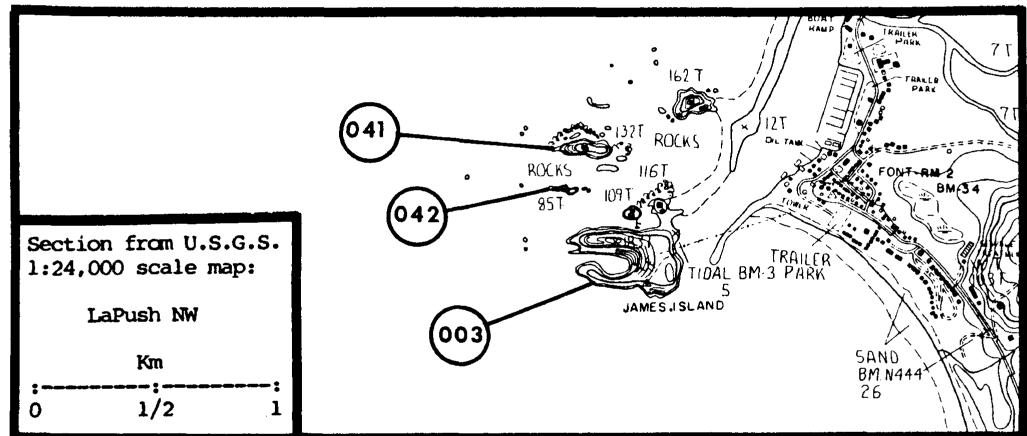
COLONY: Quillayute Needles

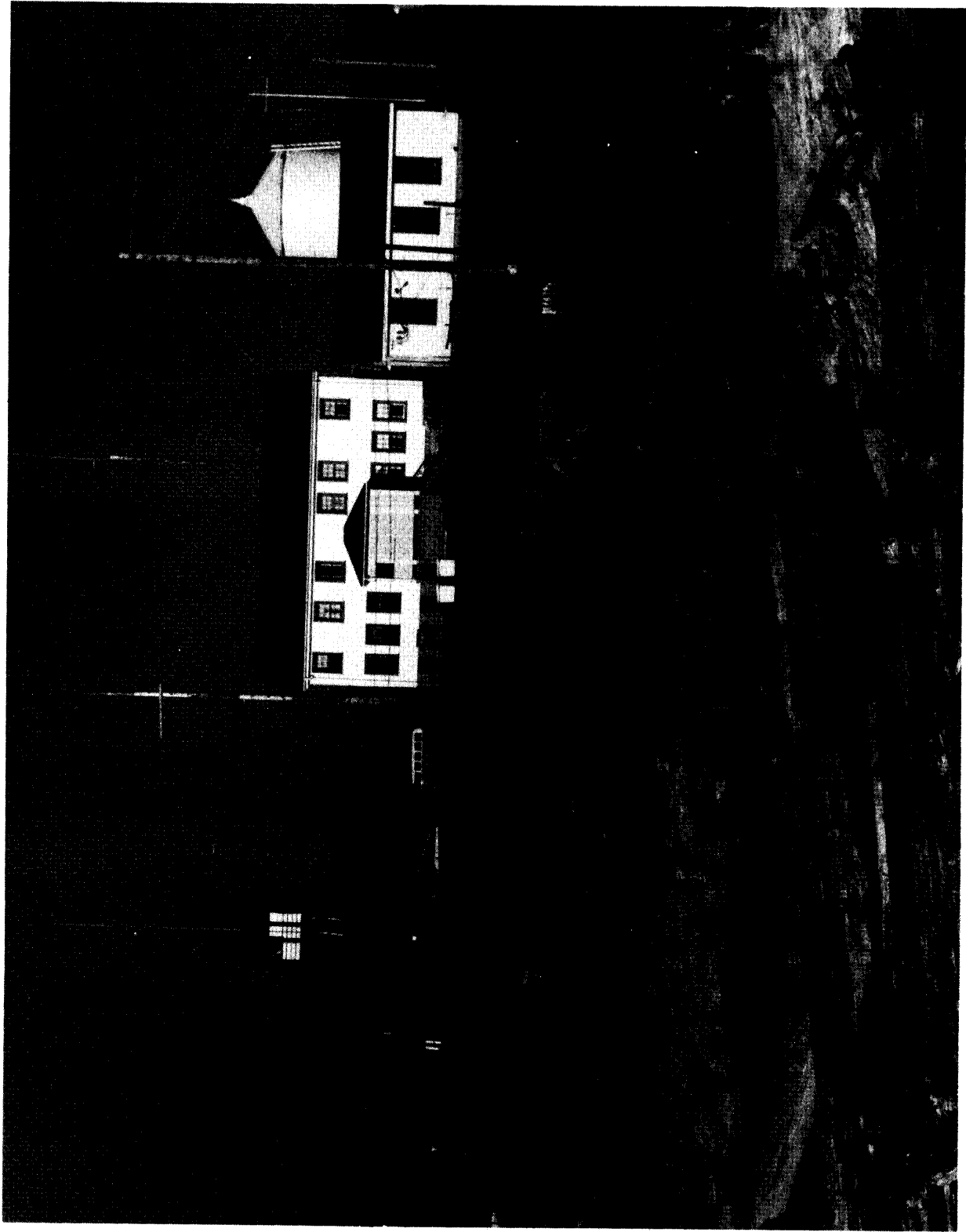
ACCESS: Leave Highway 101 just north of Forks, go about 10.5 miles where the right fork in the road goes to Mora Campground, Olympia National Park, and then to Rialto Beach, just across the river from LaPush. The left fork goes to the town of LaPush.

3

SEABIRD SPECIES:

From Rialto Beach, the Quillayute Needles are visible just beyond wooded James Island. With a telescope, nesting murrelets, guillemots, and Tufted Puffins, may be seen along with many other species, including Harlequin Ducks (Histrionicus histrionicus), scoters, Bald Eagles (Haliaeetus leucocephalus), and shorebirds. For better views of the Quillayute Needles colonies, take the road to LaPush (left-hand fork). From LaPush it is possible to walk the beach south and from there to look at the offshore islands and their colonies.





LaPush U.S. Coast Guard

VIEW POINT: Cape Disappointment Interpretive Center overlook, lighthouse

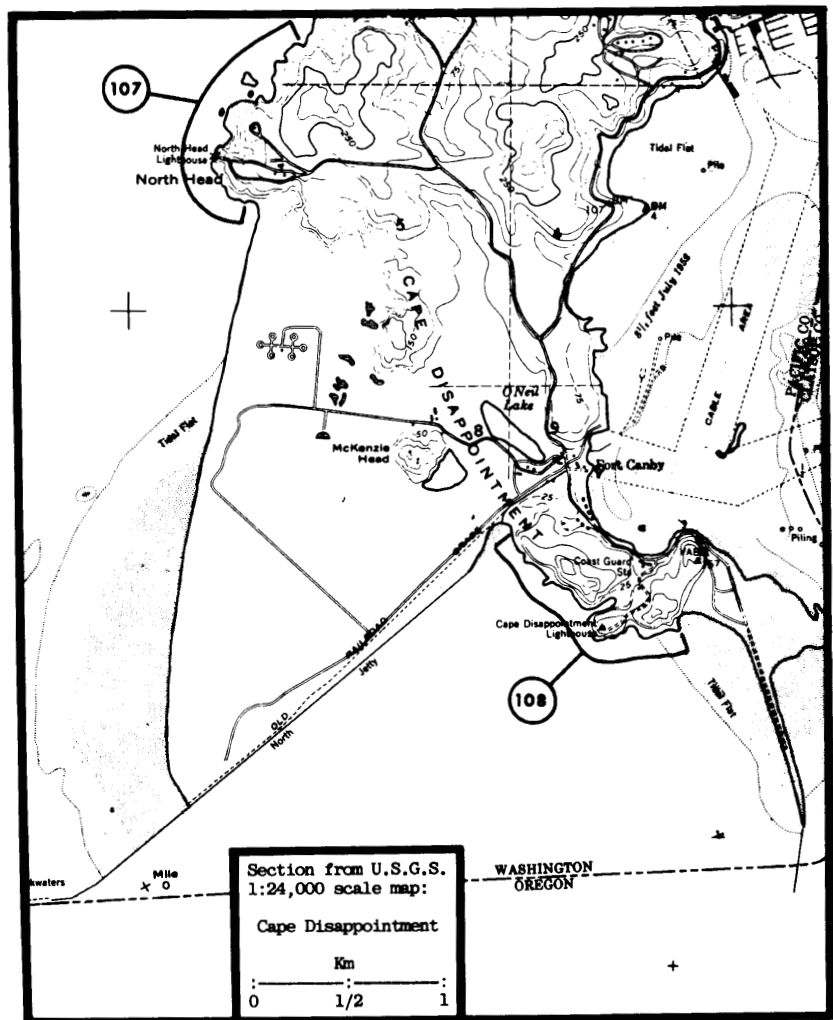
COLONY: Cape Disappointment

ACCESS: Reach the Lewis and Clark Interpretive Center by following directions from Ilwaco. The access trail to the Cape Disappointment lighthouse is also marked.

4

SEABIRD SPECIES:

The nesting Brandt's and Pelagic cormorants can be seen by peering over the edge of the cliff at the interpretive center (stay behind the fence!) or from the lighthouse site with a telescope. This is one of only four known locations where Brandt's Cormorants nest in Washington and views here are good.





Cape Disappointment (174108) U.S. Coast Guard

VIEW POINT: Highway 112 east of Neah Bay

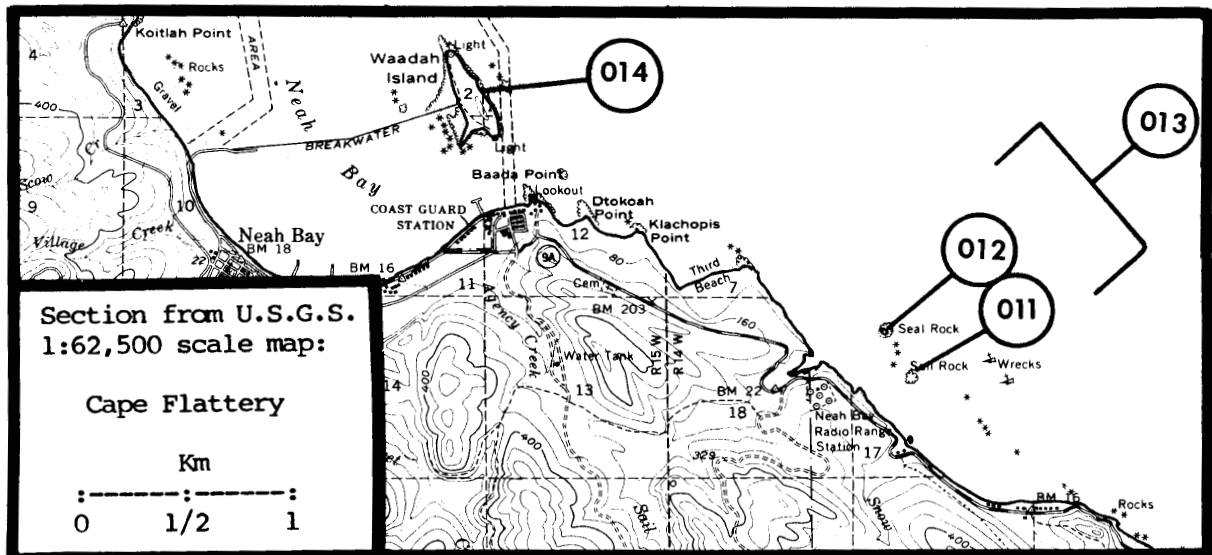
SEABIRD SPECIES:

COLONY: Seal and Sail Rocks

Cormorants, Black Oyster-catchers, Glaucous-winged Gulls, Pigeon Guillemots, and Tufted Puffins can be seen by telescope on these rocks: the only sizeable colony between Cape Flattery and Port Angeles.

ACCESS: Pull off where space permits. Can be viewed by small boat from a distance.

5



VIEW POINT: Tongue Point, Salt
Creek Recreation
Area

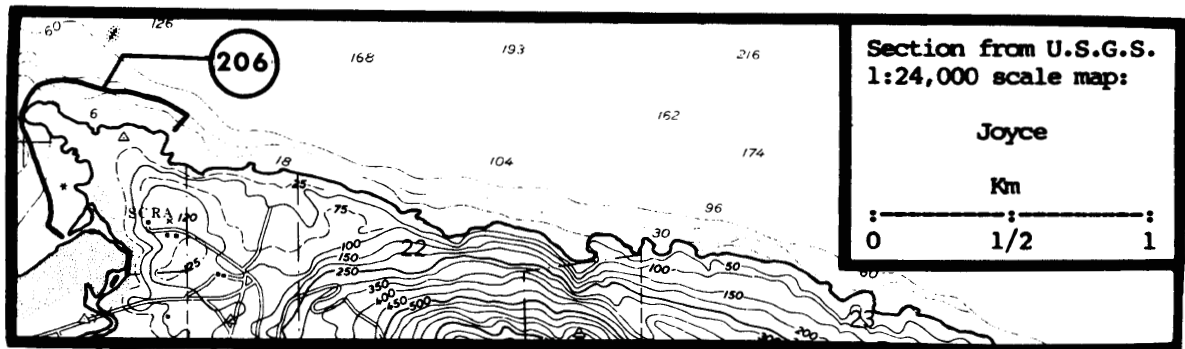
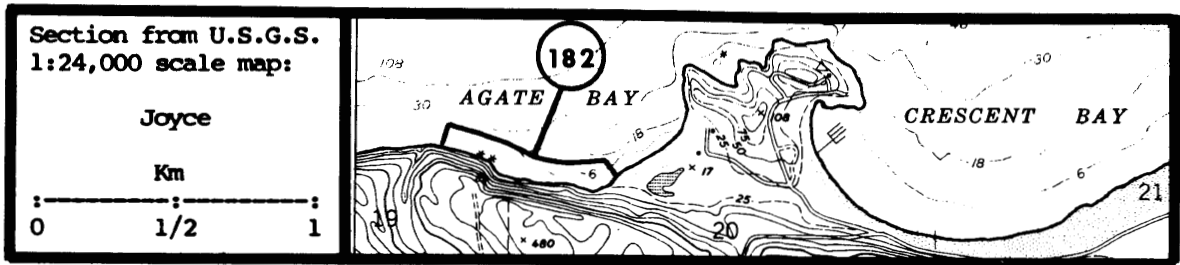
COLONY: Tongue Point-
Crescent Bay

ACCESS: Leave Highway 112
about 13 miles west
of Port Angeles at
signs from Salt
Creek Recreation
Area (Clallam County
Park). Follow the
road through the
camping area to
Tongue Point.

6

SEABIRD SPECIES:

While this is not a "colony" as such, it is a good place to see Black Oystercatchers and Pigeon Guillemots at close range during the nesting season. Marbled Murrelets are usually here, too.



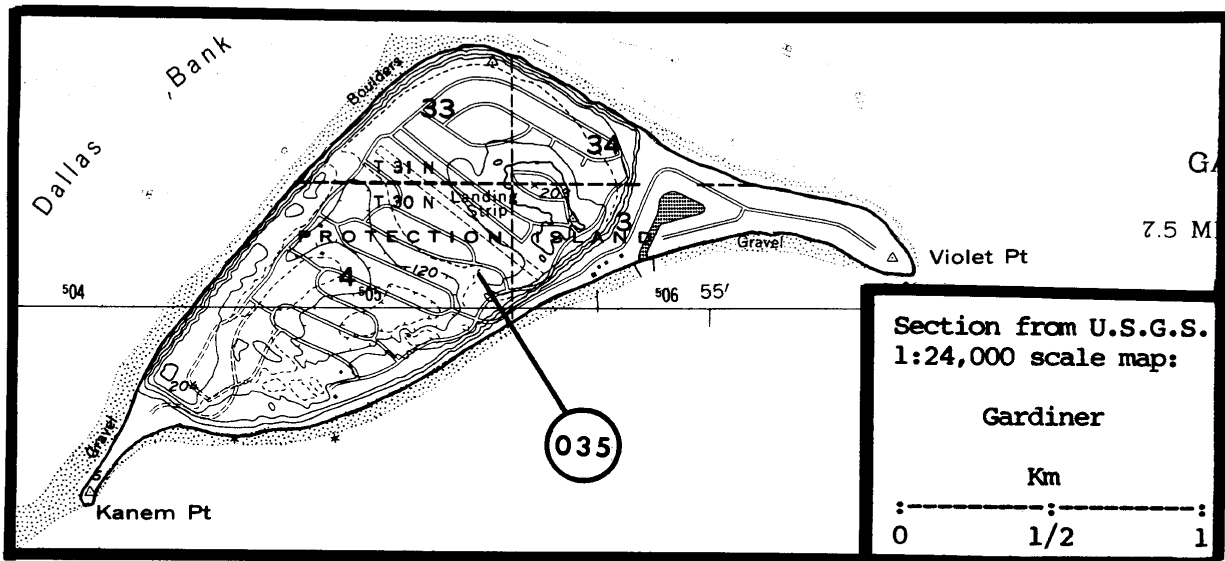
VIEW POINT: Boat
 COLONY: Protection Island
 ACCESS: Boats may be rented or larger vessels chartered in Port Townsend.

8

SEABIRD SPECIES:

This colony contains the largest number of Rhinoceros Auklets in Washington, along with impressive concentrations of Black Oystercatchers, gulls, Pigeon Guillemots, and Tufted Puffins. However, this colony is included in this section only because it is so well known and accessible, and compared to the open ocean coast, it is in relatively sheltered waters. Because of possible disturbance of nesting cormorants,

puffins, and hauled-out harbor seals, close approach is ill-advised. The north side of the island is fraught with navigational hazards and puffins in particular can be chased off cliffs on the south side. Most of the nesting seabirds can be seen much better at foraging areas. Rhinoceros Auklets can be seen close at hand at dusk offshore from the west end of the island as they bring food to chicks. Thousands of Rhinos feed during the daytime in Admiralty Inlet and can be seen from Point Wilson and the Keystone Ferry. The completion of acquisition of Protection Island by the U.S. Fish and Wildlife Service as a refuge and subsequent development of interpretive facilities and programs will minimize disturbance to animals and provide viewing possibilities in the future.



VIEW POINT: Cattle Point

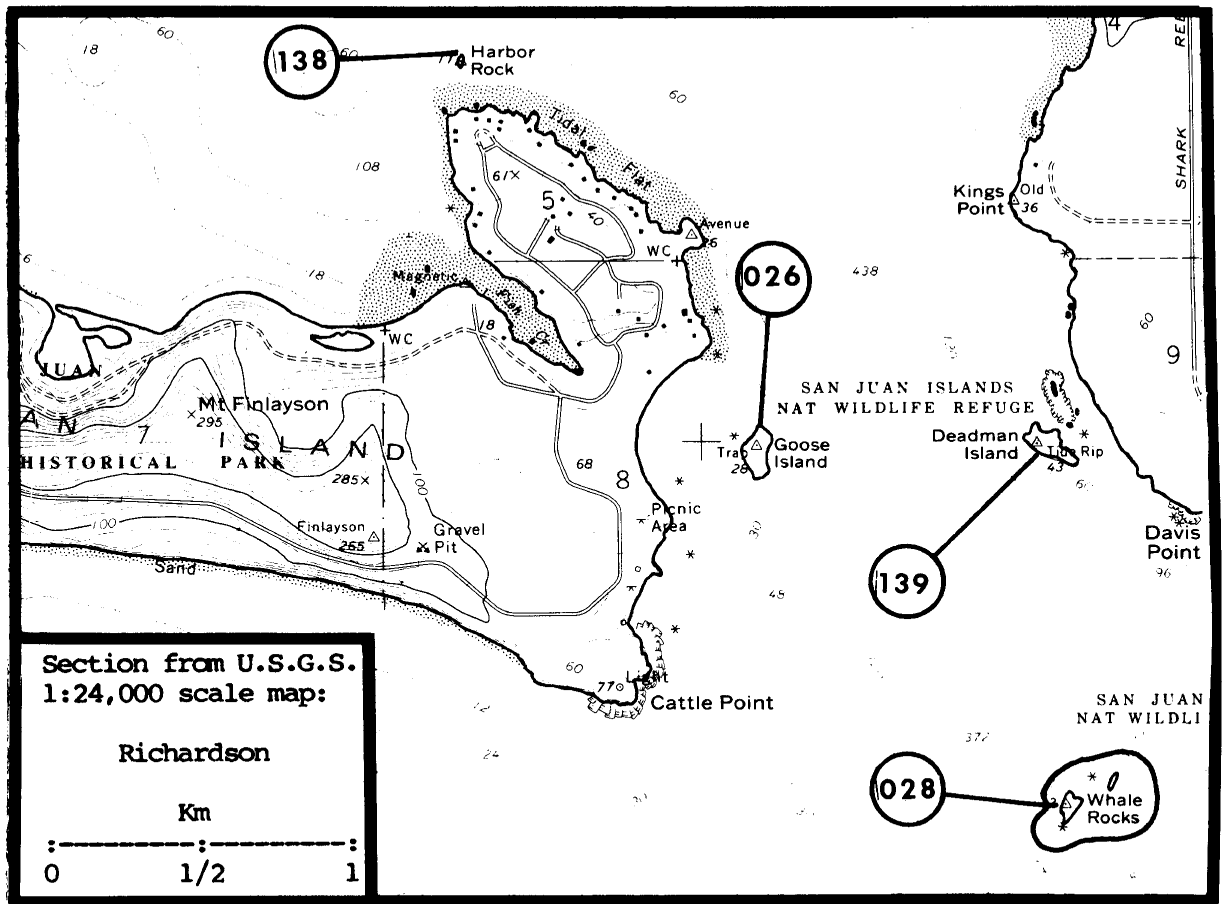
SEABIRD SPECIES:

COLONY: Goose Island

ACCESS: Drive from Friday Harbor on San Juan Island to Cattle Point at the south end. There is a State Department of Natural Resources park on the site of an old lighthouse generator station.

Goose Island is a small island offshore from Cattle Point, in the narrow entrance to San Juan Channel. Glaucous-winged Gulls and Black Oystercatchers nest here, and many other seabirds can be seen foraging in the tidal currents and along the shorelines. Whale Rocks and Mummy Rocks are visible to the east, near Lopez Island. These are very important cormorant roosting sites. Sea lions may be seen near them in the winter, and Minke Whales may be seen in the passage. Bald Eagles are also numerous in the area, and river otters may be seen.

9



VIEW POINT: Boat

COLONY: Colonies in San Juan Islands area

ACCESS: Small boats may be chartered in Anacortes and Friday Harbor.

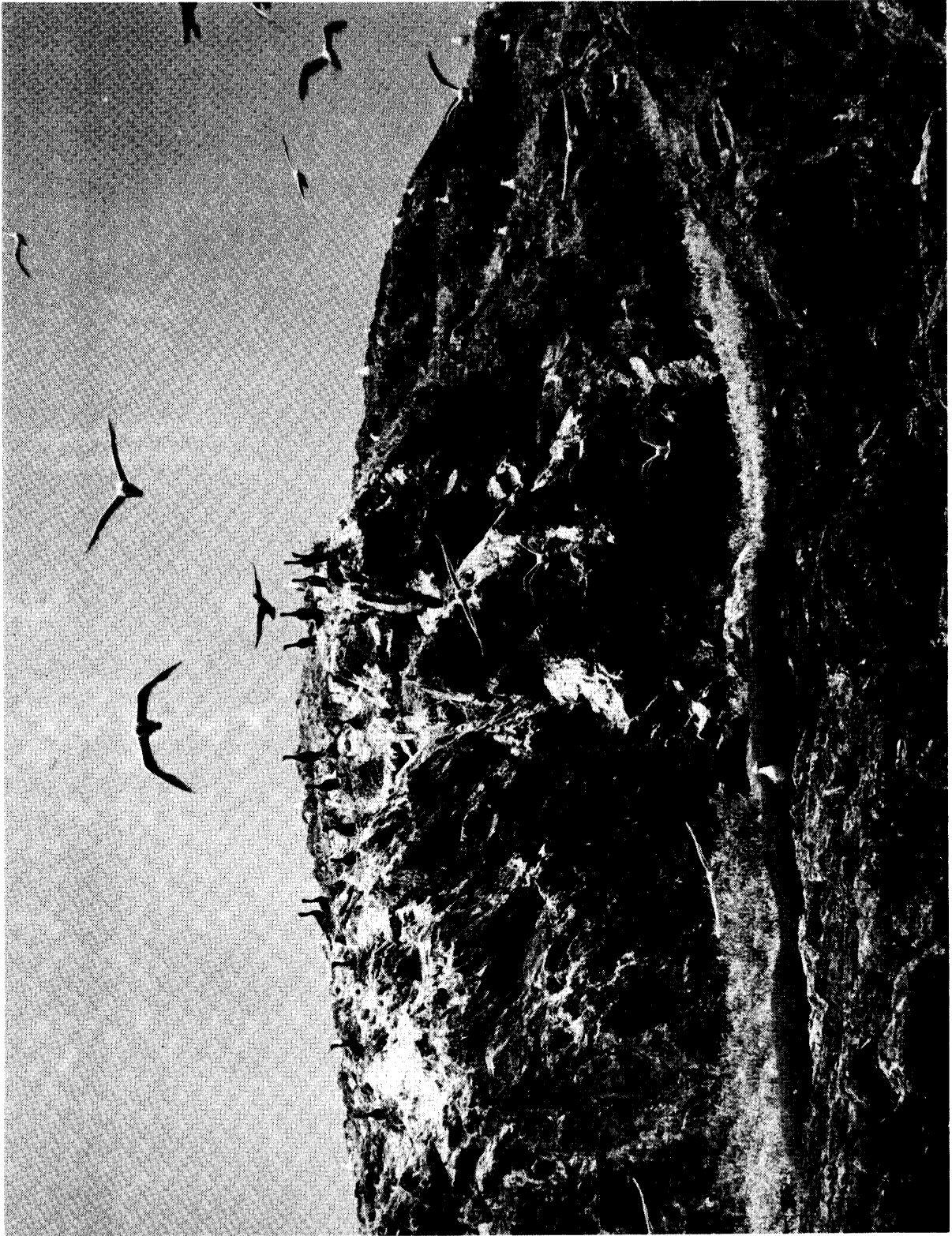
⑩

SEABIRD SPECIES:

There are many accessible small islands throughout the San Juan Islands. Almost all of these already have a great deal of disturbance due to small boats, scuba diving, and other

activities, however, and close approach is not advised.

Species nesting in the San Juans include Double-crested and Pelagic cormorants, Black Oystercatcher, Glaucous-winged Gulls, Pigeon Guillemot, and very few Tufted Puffins. Refer to individual site maps and listings for specifics. Marbled Murrelets may be seen in numbers at several locations in the San Juan Islands. The shoreline of Lopez Island near Point Colville and Watmough Head, Peavine Pass, and Obstruction Pass between Orcas and Blakely Islands, and the southwestern shoreline of Lummi Island are among the best places.



Colville Island (156032) D. Marshall

APPENDIX C

NUMBERS OF PIGEON GUILLEMOTS AND MARBLED MURRELETS

All of the marine waters east of Cape Flattery have been systematically surveyed for the presence of marine birds during the summer breeding period. Marine waters of the Strait of Juan de Fuca, San Juan Islands, Georgia Strait, and the northeastern bays were surveyed during June of 1978 and 1979, using a variety of platforms of observation, such as a small airplane, a small boat, the Washington State Ferry, and land sites (see Manuwal et al. 1979b and Wahl et al. 1981 for details of sites, transect routes, and census methods). The results of these surveys for Pigeon Guillemots and Marbled Murrelets are summarized in Appendix Table 1.

The marine waters of Puget Sound (waters south of Admiralty Inlet) and Hood Canal were first systematically surveyed in summer 1982. During this survey, the entire marine shoreline was sampled from a small boat, a small airplane, and, in some cases, from shore (see Wahl and Speich 1984 for details). All open waters were also sampled. The numbers of Pigeon Guillemots and Marbled Murrelets observed are listed in Appendix Table 2.

As pointed out in the Species Accounts, these surveys are only samples; actual numbers of breeding individuals of each species are likely larger.

Censuses are sensitive to a variety of factors. Environmental conditions such as sun glare and glare area, water surface condition, and tidal stage all affect the detectability of birds during censuses. The activity patterns of the species determine their presence on the water surface during surveys. Pigeon Guillemots often loaf on shore beaches, rocks, logs, and cliff ledges, making detection difficult, especially from aircraft. Censuses made during feeding periods likely will fail to detect birds beneath the water surface. Birds may also dive to avoid the approaching boat or aircraft and go undetected. During the incubation period, the incubating adult in the nest would of course also go unobserved.

There have been no systematic surveys along the outer coast of Washington, sensitive to Pigeon Guillemots and Marbled Murrelets, which would allow quantification of their numbers. Numerous pelagic trips out of Westport over the continental slope have shown the species to be rare in deep waters (Wahl, pers. obs.). Pigeon Guillemots are found all along the coast where suitable nesting habitat is found. These observations are recorded in the colony-site tables in this catalog. Apparently, few if any birds nest along the long stretches of

beaches south of Pt. Grenville, except as observed in the rocks of the jetties at the entrance to Grays Harbor and the cliffs of Cape Disappointment. Marbled Murrelets have been observed along the entire nearshore area of the outer coast. Birds are often seen in the entrance channels of Grays Harbor and Willapa Bay. Birds have been observed in the shallow coastal waters north of the Grays Harbor entrance. During surveys

of the north coastal islands between Pt. Grenville and Cape Flattery, during the summers of 1978 and 1979, Marbled Murrelets were often observed. However, these observations were from a Zodiac and were incidental to colony surveys. Marbled Murrelets appear to stay in shallow waters, and within 1 or 2 miles of shore. Comments on numbers are found in the Species Accounts.

Table 1. Projected totals of Pigeon Guillemots and Marbled Murrelets by MESA^a study area subregions, summer of 1978 and 1979.

Subregion			Projected totals ^d		
Number ^b	Area ^c (km ²)	Name	Catalog map area	Pigeon Guillemot	Marbled Murrelet
0101	840.8	Swiftsure Bank ^e	155	0	0
0201	1883.7	Strait of Juan de Fuca (Outer) ^e	155	0	0
0203	5.4	Cape Flattery	155	10	1
0204	4.5	Neah Bay	155	2	4
0205	12.9	Neah Bay to Clallam Bay	155	20	25
0206	3.2	Clallam Bay	155	2	15
0207	20.8	Clallam Bay to Crescent Bay	155/156	80	4
0208	1.1	Crescent Bay	156	15	4
0209	9.0	Crescent Bay to Ediz Hook	156	120	20
0301	1630.8	Strait of Juan de Fuca (Inner) ^e	156	50	10
0302	0.4	Ediz Hook	156	(+) ^g	(+)
0303	10.4	Port Angeles	156	10	0
0304	24.0	Voice of America	156	150	150
0305	4.0	Dungeness Spit	156	15	25
0306	12.0	Dungeness Bay/Harbor	156	40	(+)
0307	21.4	Jamestown	156	90	0
0308	13.8	Sequim Bay	156	15	1
0309	4.8	Miller Peninsula	156	90	30
0310	3.1	Protection Island	156	560	0
0311	37.1	Discovery Bay ^f	156	30	1
0312	10.7	Quimper Peninsula	156	60	3
0313	21.0	Whidbey Island	156	30	10
0314	0.3	Smith Island	156	20	0
0315	5.6	Deception Pass	156	15	10
0316	8.9	Lopez Island (south shore)	156	170	30
0317	3.5	San Juan Island (south shore)	156	2	3
0401	40.9	Admiralty Inlet ^f	156	35	10
0501	73.9	Bellingham Channel ^f	156	80	10
0502	10.2	Guesnes Channel	156	30	20
0503	11.5	Fidalgo Bay	156	3	2

(continued)

Table 1. Continued

Subregion			Projected totals ^d		
Number ^b	Area ^c (km ²)	Name	Catalog map area	Pigeon Guillemot	Marbled Murrelet
0504	80.0	Padilla Bay ^f	156	20	30
0505	66.0	Samish Bay ^f	156	20	60
0506	158.0	Bellingham Bay ^f	156	30	25
0507	16.1	Hale Passage	156	20	260
0601	25.0	Lummi Bay ^f	156	(?)	(+)
0602	14.1	Cherry Point	156	30	20
0603	19.0	Birch Bay ^f	156	30	1
0604	9.5	Semiahmoo Spit	156	1	10
0605	12.8	Drayton Harbor	156	1	5
0606	157.0	Boundary Bay ^f	156	40	340
0607	34.4	San Juan Islands - Northern Tier ^f	156	130	30
0608	288.3	Georgia Strait ^e	156	60	320
0701	16.3	Pt. Roberts	156	10	170
0702	6.1	Tsuwvassem Bay	156	0	2
0703	364.5	Georgia Strait ^e	156	10	110
0801	338.7	Northern Haro Strait ^f	156	150	110
0802	224.4	Southern Haro Strait ^f	156	30	0
0901	123.2	Southern Rosario Strait ^f	156	50	40
0902	83.1	Central Rosario Strait ^f	156	30	2
0903	92.2	Northern Rosario Strait ^f	156	40	10
1001	103.6	President Channel ^f	156	50	10
1002	50.0	Northern Areas ^f	156	5	2
1101	13.7	Speiden Channel ^f	156	20	0
1102	36.1	Northern San Juan Channel ^f	156	1	2
1103	48.5	Southern San Juan Channel ^f	156	4	0
1104	2.5	Wusp Pass	156	3	2
1105	8.8	Upright Channel ^e	156	0	3
1106	32.9	Harney Channel ^f	156	10	10
1107	2.5	Obstruction Pass	156	2	2
1108	0.9	Thatcher Pass	156	1	(+)
1201	6.0	Mosquito/Roche Complex	156	40	0

(continued)

Table 1. Concluded

Subregion			Projected totals ^d		
Number ^b	Area ^c (km ²)	Name	Catalog map area	Pigeon Guillemot	Marbled Murrelet
1202	1.5	Friday Harbor	156	0	0
1203	15.0	Griffin Bay ^f	156	0	15
1205	1.9	Fisherman Bay	156	0	0
1206	4.6	Swifts/Shoal Bays	156	10	5
1207	2.0	Deer Harbor	156	10	2
1208	9.1	West Sound	156	2	0
1209	29.6	East Sound ^f	156	1	0
1210	23.9	Lopez Sound	156	<u>20</u>	<u>5</u>
TOTALS				2,605	1,991

NOTES:

- a. Refers to Marine Ecosystem Analysis Program, National Oceanic and Atmospheric Administration, Seattle, Washington. For full details of this extensive project see Wahl et al. 1981.
- b. These are MESA subregion numbers. Many numbers were assigned during the MESA project. The numbering system was then subsequently extended to cover all marine waters of Washington (Wahl and Speich 1980). Subregion boundaries, although arbitrary, generally follow natural geographic and oceanographic features. Subregion boundaries and numbers are shown in maps on pages 502-507.
- c. The surface area, km², of the subregion.
- d. These are projected totals based on the mean density calculated from all censuses in the subregions in June of 1978 and 1979. The mean density was extended to the Subregion Area to obtain the projected totals. For full details see Wahl et al. (1981).
- e. This subregion consists entirely of offshore waters, greater than 20 m deep. See Wahl et al. (1981) for full details. If no comments are made, the subregion consists entirely or primarily of nearshore waters less than 20 m deep.
- f. This subregion contains nearshore waters and significant proportions of offshore waters. See Appendix A in Wahl et al. 1981 for full details.
- g. Number present indeterminant but probably small.

Table 2. Numbers of Pigeon Guillemots and Marbled Murrelets observed during censuses of Puget Sound nearshore waters, Summer 1982. All nearshore areas were surveyed 100% except for Admiralty Inlet (0401) with only 20% of the nearshore area surveyed and Penn Cove/Crescent Harbor (1402) with only 75% of the nearshore area surveyed.

Subregion Number ^a	Name	Catalog map area	Survey type ^b	Numbers observed	
				Pigeon Guillemot	Marbled Murrelet
0401	Admiralty Inlet	156	B	7	3
0402	Southern Admiralty Inlet	156/175	A/B	43	20
0403	Port Townsend	156	B	71	159
0404	Oak Bay	156/175	B	21	49
0405	Killisut Harbor		B	118	0
1401	Skagit Bay	156	A	6	2
1402	Penn Cove/Crescent Harbor	156	S	88	0
1403	Saratoga Passage	156	A	9	21
1404	Holmes Harbor	156	A	1	4
1405	Port Susan	156	A	5	2
1406	Possession Sound	156/175	A	8	24
1501	Hood Canal Entrance	175	A	28	26
1502	Port Ludlow	175	B	3	1
1503	Port Gamble	175	A	0	0
1504	Northern Hood Canal	175	A	3	10
1505	Central Hood Canal	175	A	0	2
1506	Dabob Bay	175	A	6	17
1507	Quilcene Bay	175	A	0	2
1508	Southern Hood Canal	175	A	2	8
1509	Anna's Bay	175	A	0	18
1510	Great Bend	175	A	3	3
1601	Northern Puget Sound	175	A	10	1
1602	Northcentral Puget Sound	175	A/B	32	4
1603	Central Puget Sound	175	B	15	12
1604	Elliott Bay	175	B	4	0
1605	East Passage	175	A	0	1
1606	Colvos Passage	175	A	1	0
1607	Commencement Bay	175	B	10	0
1635	Dalco Passage	175	B	2	0
1608	The Narrows	175	B	3	2

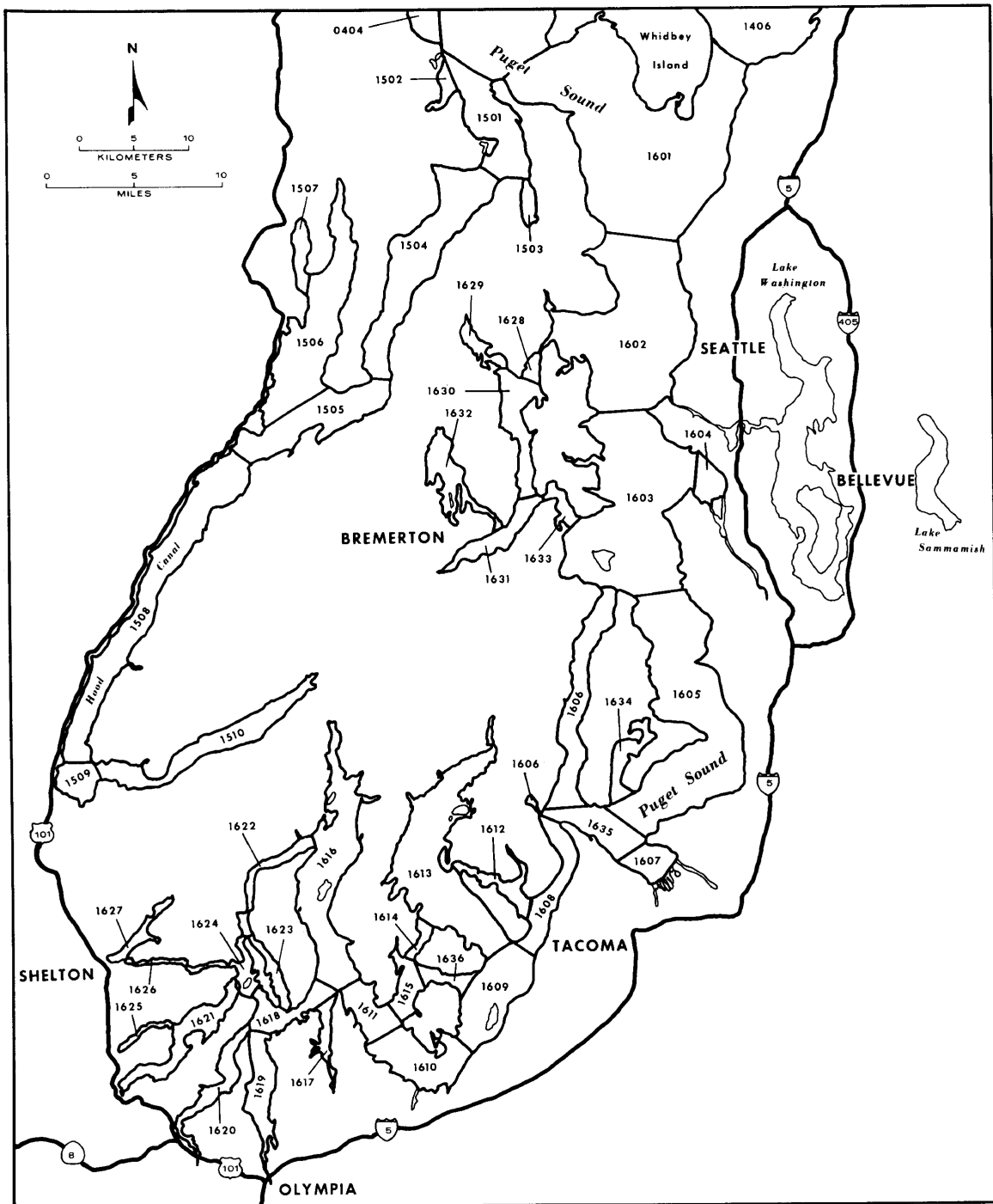
(Continued)

Table 2. Concluded

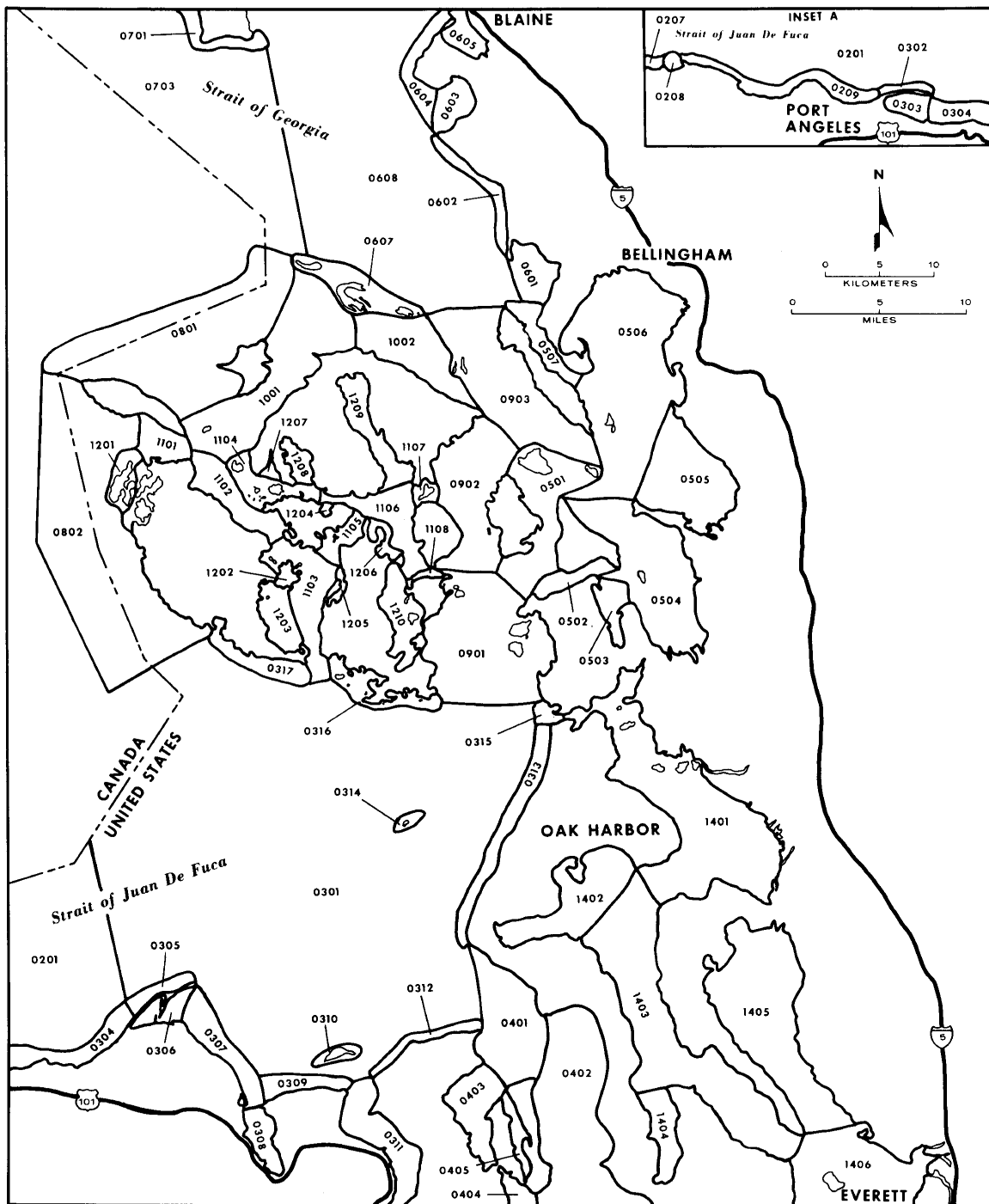
Subregion Number ^a	Name	Catalog map area	Survey type ^b	Numbers observed	
				Pigeon Guillemot	Marbled Murrelet
1609	Steilacoom	175	B	6	3
1610	Nisqually Reach	175	B	28	12
1611	Treble Point/ Johnson Point	175	B	35	2
1612	Hale Passage	175	B	11	0
1613	Carr Inlet	175	B	105	4
1614	Pitt Passage	175	B	18	0
1636	Balch Passage	175	B	8	0
1615	Drayton Passage	175	B	9	4
1616	Case Inlet	175	B	93	5
1617	Henderson Inlet	175	B	12	0
1618	Dana Passage	175	B	9	
1619	Budd Inlet	175	B	36	0
1620	Eld Inlet	175	B	21	0
1621	Totten Inlet	175	B	44	0
1622	Pickering Passage	175	B	8	0
1623	Peale Passage	175	B	11	0
1624	Squaxin	175	B	19	0
1625	Skookum Inlet	175	B	8	0
1626	Hammersley Inlet	175	B	49	0
1627	Oakland Bay	175	B	1	0
1628	Agate Passage	175	B	27	0
1629	Liberty Bay	175	B	20	0
1630	Port Orchard	175	B	46	4
1631	Sinclair Inlet	175	B	8	0
1632	Dyes Inlet	175	B	18	0
1633	Rich Passage	175	B	1	1
1634	Quartermaster Harbor	175	S	<u>3</u>	<u>1</u>
TOTALS				1,153	429

- a. These are MESA subregion numbers. Many numbers were assigned during the MESA project. The numbering system was then subsequently extended to cover all marine waters of Washington (Wahl and Speich 1980). Subregion boundaries, although arbitrary, generally follow natural geographic and oceanographic features. Subregion boundaries and numbers are shown in maps on pages 501-506.
- b. Survey type (observation platform) codes: A = airplane; B = small boat (and Washington State Ferry); and S = shoreline.

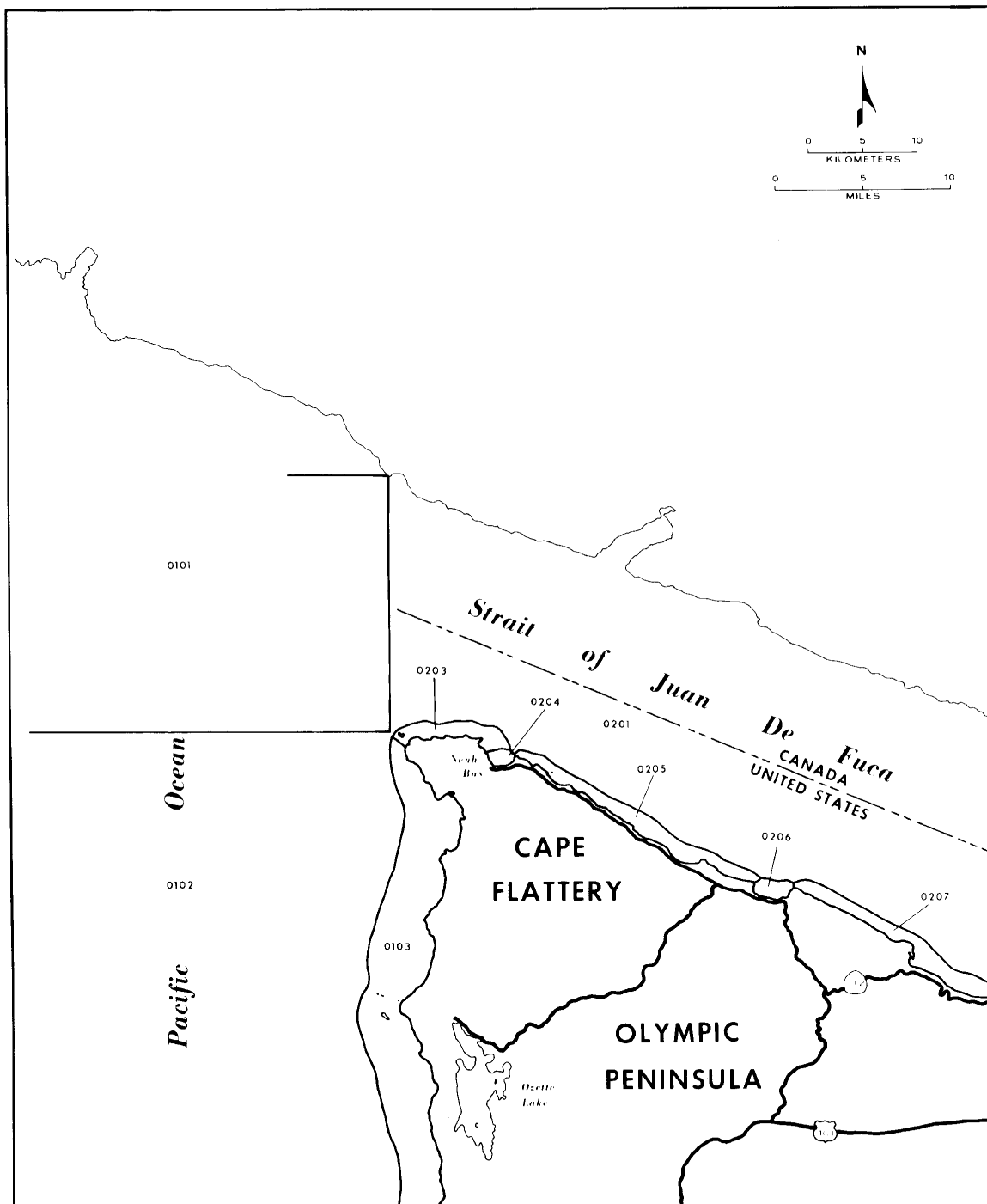
175 SEATTLE



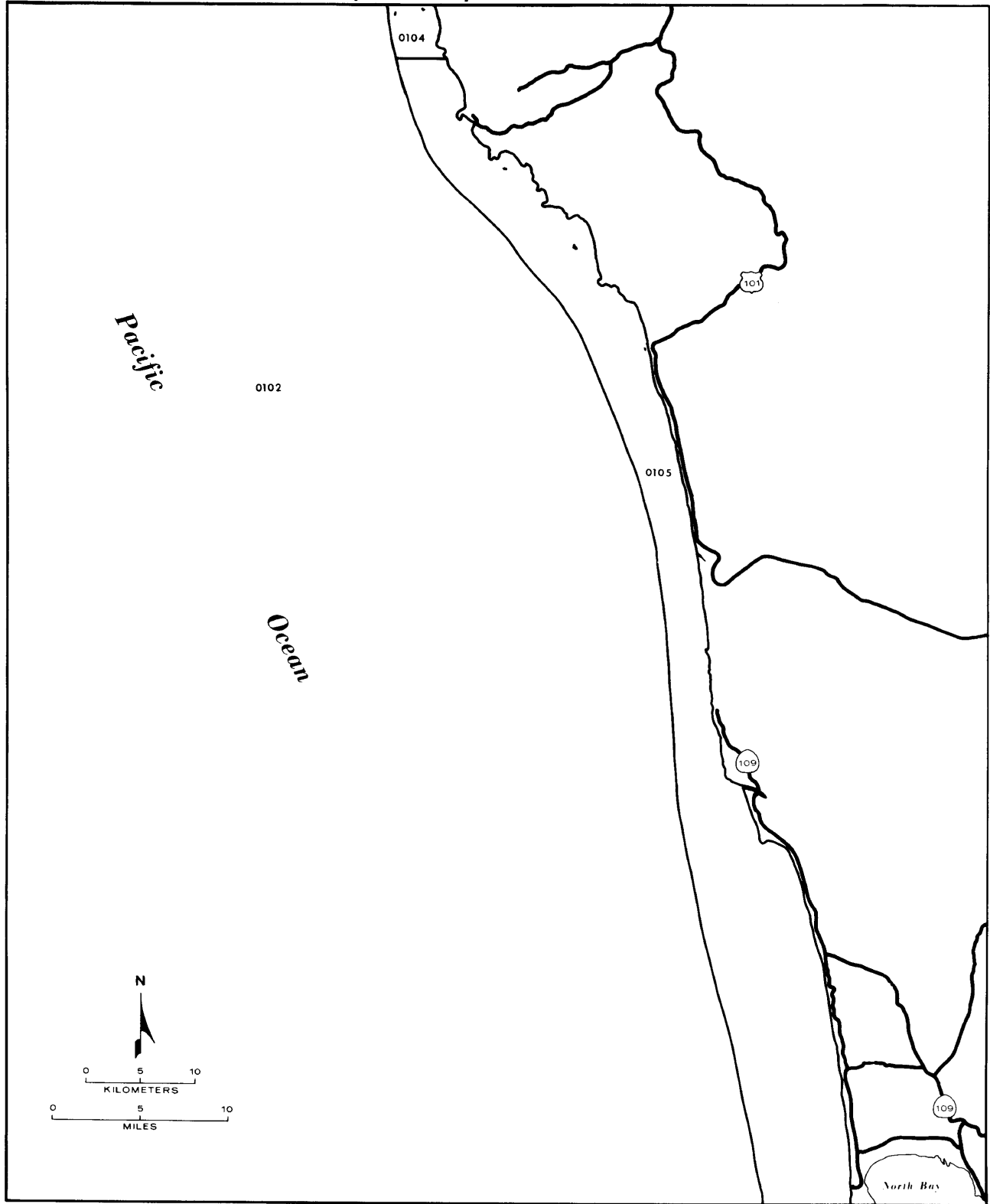
156 VICTORIA



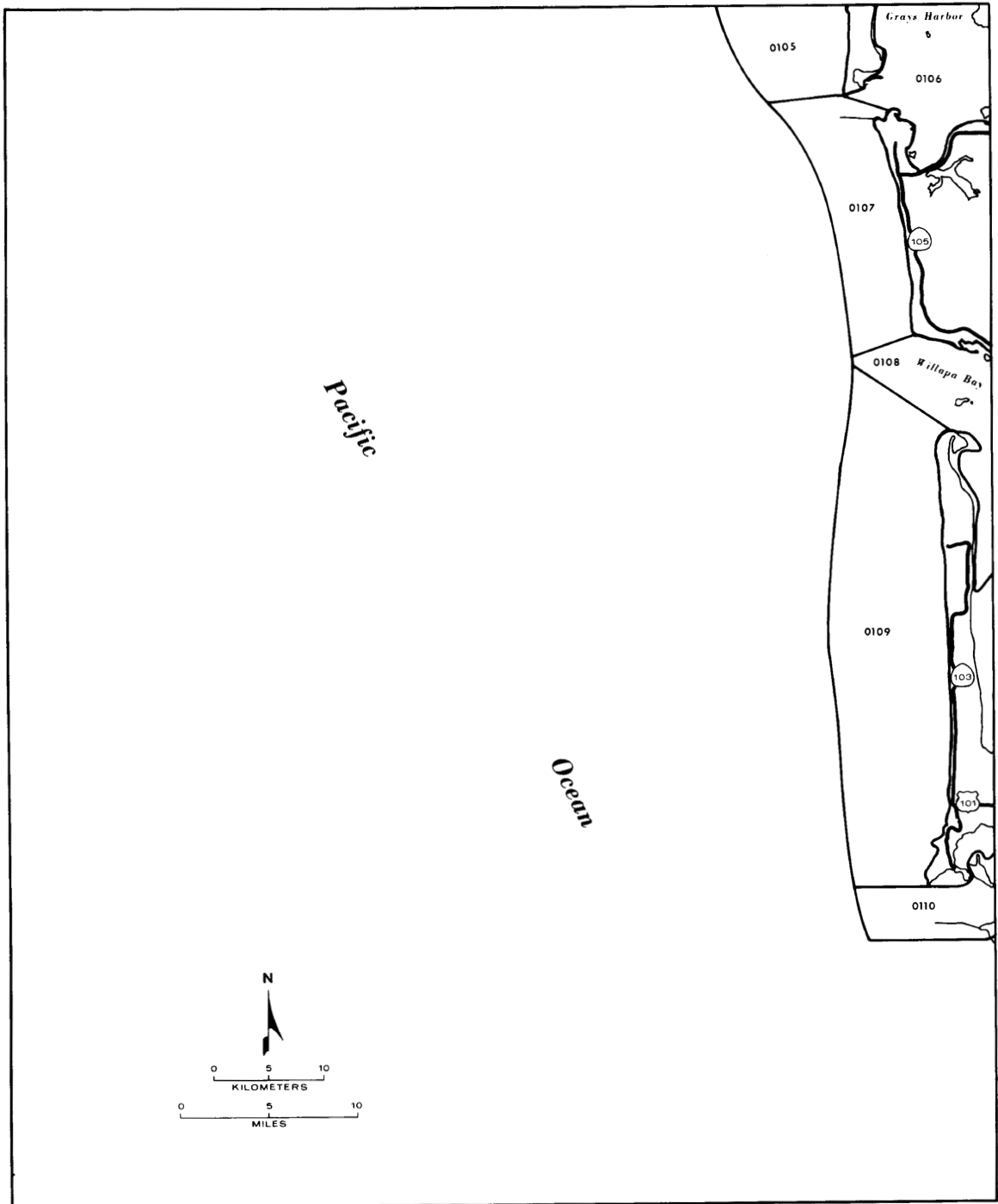
155 CAPE FLATTERY



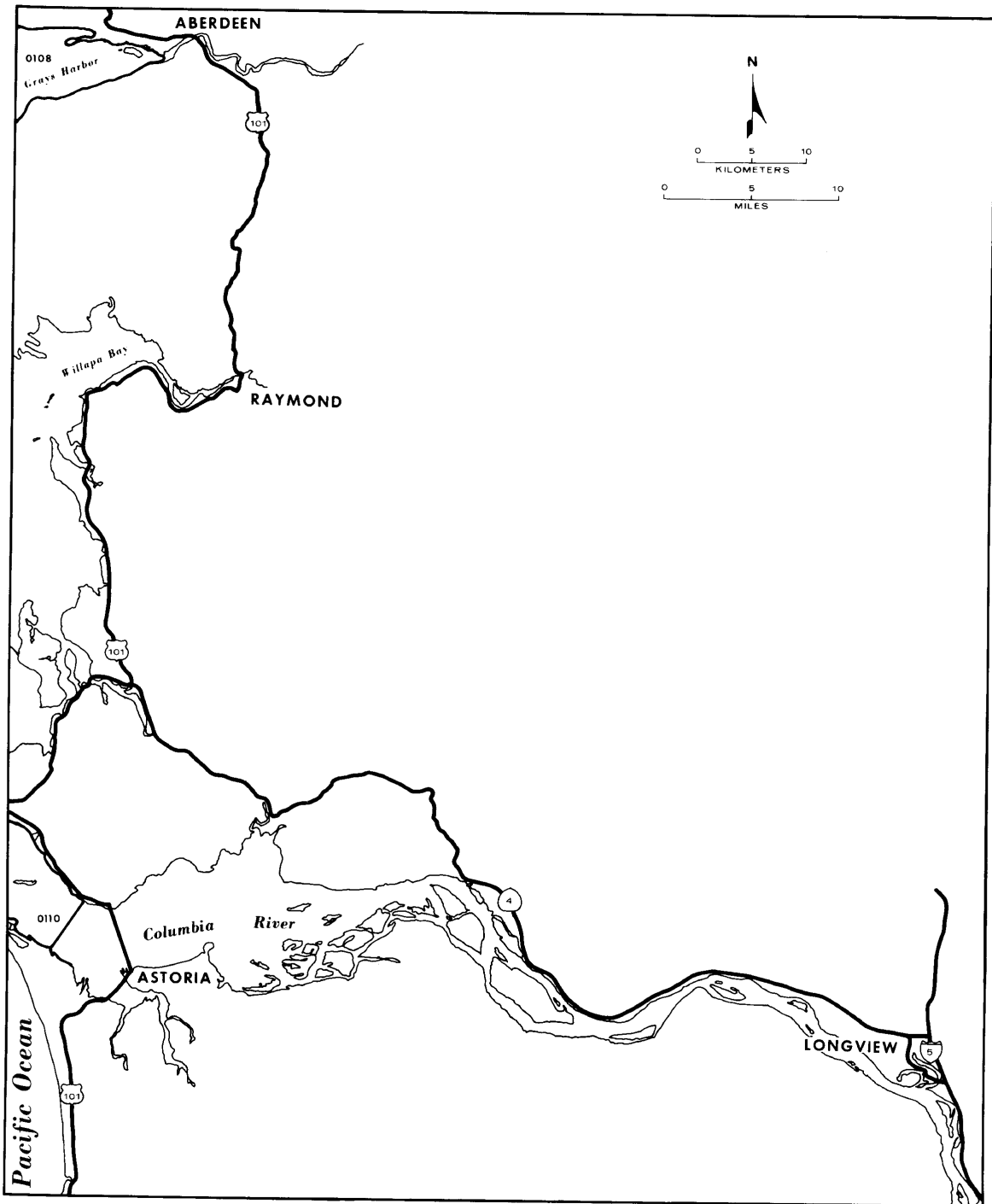
174 (NORTH) COPALIS BEACH



174 (SOUTH) COPALIS BEACH



195 HOQUIAM



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APPENDIX E

AVAILABILITY AND PUBLISHING STATUS OF WATERBIRD ATLASES AND CATALOGS

Most of the listed atlases or catalogs are no longer available from the U.S. Fish and Wildlife Service, but may be found in the Federal Documents section in some libraries under the Superintendent of Documents code I 49.89/2 (see your local librarian for the location of the nearest library designated as a Federal Depository). Most may also be ordered from the National Technical Information Service (NTIS) at a cost (NTIS/U.S. Department of Commerce/5285 Port Royal Road/Springfield, VA 22161).

ATLANTIC COAST:

Erwin, R.M., and C.E. Korschgen. 1979. Coastal waterbird colonies: Maine to Virginia, 1977. An atlas showing colony locations and species composition. U.S. Fish Wildl. Serv. FWS/OBS-79/08. 647 pp. NTIS PB80 147 945

Osborn, R.G., and T.W. Custer. 1978. Herons and their allies: atlas of Atlantic coast colonies, 1975 and 1976. U.S. Fish Wildl. Serv. FWS/OBS-77/08. 211 pp. NTIS PB297 864

Portnoy, J.W., R.M. Erwin, and T.W. Custer. 1981. Atlas of gull and tern colonies: North Carolina to Key West, Florida (including pelicans, cormorants, and skimmers). U.S. Fish Wildl. Serv. FWS/OBS-80/05. 121 pp. NTIS PB82 116 054

FLORIDA:

Nesbitt, S.A., J.C. Ogden, H.W. Kale II, B.W. Patty, and L.W. Rowse. 1982. Florida atlas of breeding sites for herons and their allies: 1976-78. U.S. Fish Wildl. Serv. FWS/OBS-81/49. 449 pp. NTIS PB83 138 438

GULF COAST:

Portnoy, J.W. 1977. Nesting colonies of seabirds and wading birds - coastal Louisiana, Mississippi, and Alabama. U.S. Fish Wildl. Serv. FWS/OBS-77/07. 126 pp. NTIS PB 286 216

TEXAS:

Texas Colonial Waterbird Society. 1982. An atlas and census of Texas waterbird colonies 1973-1980. Caesar Kleberg Wildlife Research Institute, Texas A&I University, Kingsville. 358 pp. (not available from USFWS)

GREAT LAKES:

Scharf, W.C. 1978. Colonial birds nesting on man-made and natural sites in the U.S. Great Lakes. U.S. Army Eng. Waterways Exp. Stn., Vicksburg, Miss. Tech. Rep. 0-78-10, and U.S. Fish Wildl. Serv. FWS/OBS-78/15. 136 pp. + appendixes. NTIS AD A061 818

CALIFORNIA:

Sowls, A.L., A.R. DeGange, J.W. Nelson, and G.S. Lester. 1980. Catalog of California seabird colonies. U.S. Fish Wildl. Serv. FWS/OBS-80/37. 371 pp. NTIS PB81 212 599

OREGON:

Pitman, R.L, J. Hodder, M.R. Graybill, and D.H. Varoujean. 1988. Catalog of Oregon seabird colonies. U.S. Fish Wildl. Serv. Biol. Rep. 88(7). (Unpubl)

ALASKA:

Sowls, A.L., S.A. Hatch, and C.J. Lensink. 1978. Catalog of Alaska seabird colonies. U.S. Fish Wildl. Serv. FWS/OBS-78/78. 153 pp. + appendixes.

UNITED STATES:

Spendelow, J.A., and S.R. Patton. 1988. National atlas of coastal waterbird colonies in the contiguous United States: 1976-82. U.S. Fish Wildl. Serv. Biol. Rep. 88(5). x +326 pp.

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