CRITICAL HABITAT RECOMMENDATIONS FOR THE ALEUTIAN CANADA GOOSE.

by Barry Reiswig

Key Words: Aleutian Canada goose
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ALEUTIAN ISLANDS UNIT
ALASKA MARITIME NATIONAL WILDLIFE REFUGE
U.S. FISH AND WILDLIFE SERVICE
ADAK, ALASKA
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INTRODUCTION

The following recommendations concern the designation of critical habitat on Federal lands in Alaska for the Endangered Species, Aleutian Canada goose, (Branta canadensis leucopareia). The Aleutian Canada goose once bred from the eastern Aleutian Islands to the Kuril Islands, and was abundant in the western Aleutians. Today the only known breeding population occurs on tiny Buldir Island in the western Aleutains.

Present Range and Abundance

The only known breeding population of Aleutain Canada geese includes an estimated 200 pairs on Buldir Island (Henry and Early, 1979). The precise migration route and overall use areas are not yet known. The current population, about 1750 birds, migrate to and winter in California (Springer 1980).

Suspected Reasons for Decline

The decline in numbers of Aleutian Canada geese and the reduction of their breeding range is largely attributed to predation by introduced arctic foxes (Alopex lagopus). The Russian-American Company initiated the practice of introducing foxes in the Aleutians about 1836, and it was continued by U.S. citizens until about 1930 (Tikhmenev 1863).

By 1962, the only known breeding population of Aleutian Canada geese existed on Buldir Island (Jones 1963), one of the few Aleutian Islands to escape an introduction of foxes.

Other factors which may have contributed to the decline of Aleutian Canada geese include hunting by natives on the nesting area and during migration (Bent 1912), and hunting of birds and loss of habitat on the wintering grounds.

RECOVERY PLAN OBJECTIVE

The primary objective of the Recovery Plan for the Aleutian Canada goose is to restore the subspecies to a secure status within its historic range. This has further been divided into two sub-objectives:

1. maintain the wild population of the Aleutian Canada goose at 1977 levels of 1,160 or greater, and
2. reestablish self-sustaining populations of geese on three former breeding areas (50 breeding pairs/area).

When these objectives are met, the species will be de-listed as endangered.

CRITICAL HABITAT RECOMMENDATIONS

The following islands are recommended for inclusion as Critical Habitat of the Aleutian Canada goose: (Figure A.)

ISLAND	ISLAND GROUP
Nizki/Alaid Islands and Agattu Island	Near
Buldir Island	Rat
Amchitka Island	Rat
Kanaga Island	Andreanof

These islands are included in the Aleutian Islands National Wildlife Refuge.

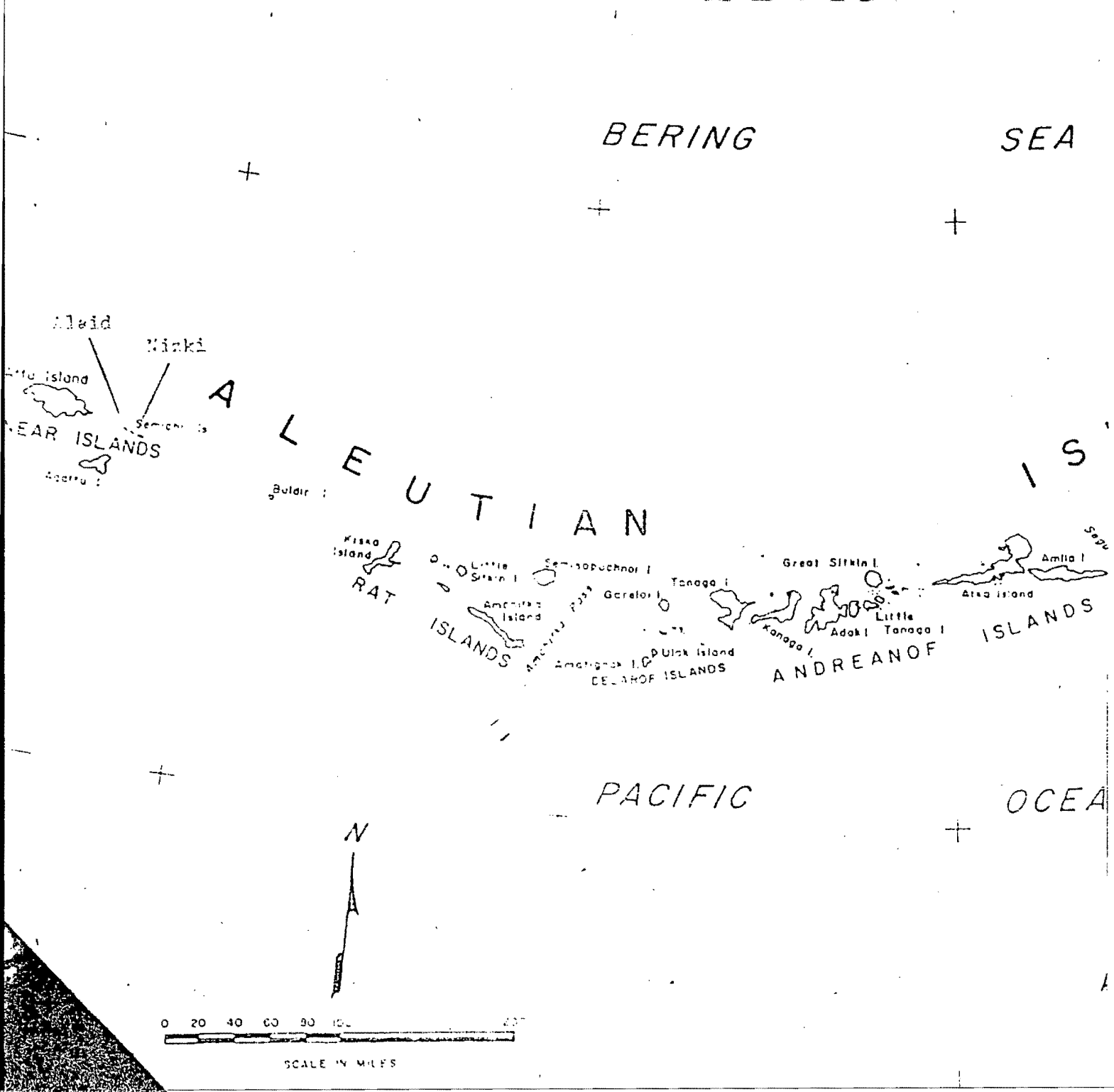
PHYSICAL DESCRIPTION OF RECOMMENDED ISLANDS

Nizki/Alaid and Agattu Islands

Nizki/Alaid and Agattu Islands are located in the Near Island group of the Aleutian Islands. The former two are part of the Semichi Islands. Nizki Island which is centered roughly 52° 46' N and 173° 59' E is 691 hectares (1,707 acres) in size with an average shoreline of 19 kilometers (11.8 miles). Nizki measures 5 kilometers (3 miles) long by 1.6 kilometers (1 mile) wide. It is connected to Alaid by a sand spit that disappears at various times due to tidal action. The island is level and low-lying with the high point at 51 meters (165 feet). (Figure B.)

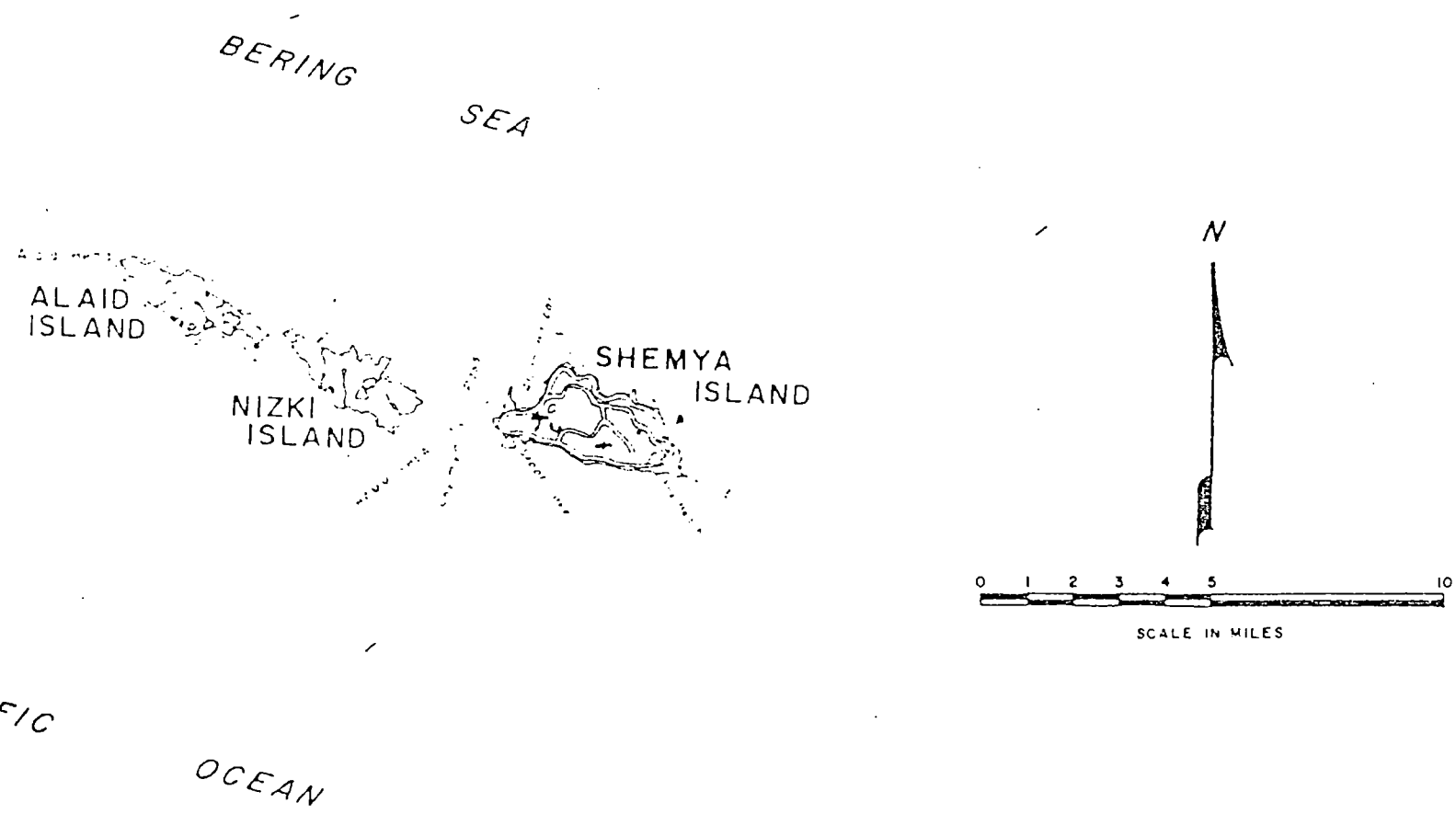
Alaid Island which is centered roughly 52° 46' N and 173° 53' E is 595 hectares (1,468 acres) in size and has an average shoreline of 15 kilometers (9.4 miles). Alaid Island measures 4.8 kilometers (3 miles) long and about 1.6 kilometers (1 mile) wide. The eastern portion of the island is rolling tundra, and the westernmost is composed of four hills, two of which are over 185 meters (600 feet) high. (Figure B.)

Agattu is the second largest of the Near Islands and is 22,491 hectares (55,535 acres) in size with an average of 113.4 kilometers (70.5 miles) of shoreline. It is roughly centered 52° 25' N and 173° 55' E. Agattu is the most southern of the Near Islands and is roughly triangular in shape with the north shore, or base of the triangle trending in a west-southwestern direction. The north shore is about 30.6 kilometers (19 miles) in length, and the southern shoreline 25.7 kilometers (16 miles), and the eastern, 17.7 kilometers (11 miles). The island is similar in terrain, vegetation, and shoreline to the other islands in the Aleutians. Mountain peaks 613 meters (1,992 feet)


BERING SEA
ALEUTIAN IS
Attu Island
Kiska Island
RAT ISLANDS
Little Sitkin I
Semisopochnoi I
Amchitka Island
Amchitka Pass
Gareloi I
Tanaga I
Great Sitkin I
Kanaga I
Adak I
Little Tanaga I
Amlia I
Atka Island
ANDREANOF ISLANDS
Buldir I
Segu
PACIFIC OCEA
N
0 20 40 60 80
SCALE IN MILES

Preliminary – Subject to change

FIGURE B



SHEMYA ISLAND

ALEUTIAN ISLANDS WILDERNESS PROPOSAL

ALEUTIAN ISLANDS NATIONAL WILDLIFE REFUGE

ALASKA

high are adjacent to the east half of the north shore, and 640 meters (2,080' feet) across from the southwestern shore. The southern-southeastern portion of the island is made up of hills and plateaus, giving the appearance of a flat tableland, and interspersed with numerous valleys and many shallow lakes. The shoreline is rocky, precipitous, and ringed with many inshore pinnacles, or sea stacks. Boulder or pebble beaches are common at the heads of most of the bights, although some sand beaches do exist. (Figure C.)

Buldir Island

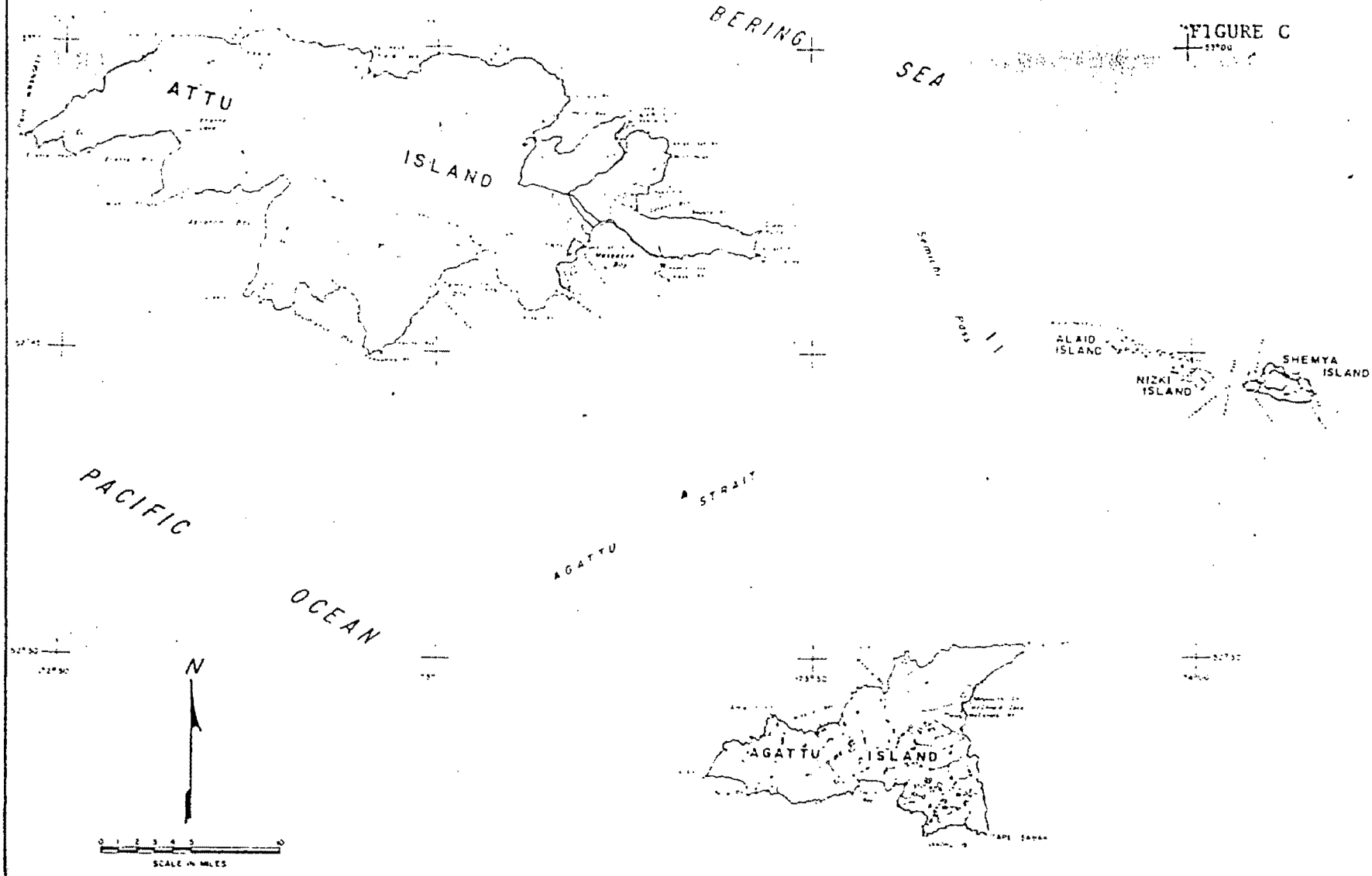
Buldir Island is centered 52° 21' N and 175° 55' E. The island is 1990.6 hectares (4,915 acres) in size and has an average shoreline of 19.3 kilometers (12 miles). Buldir, lying between Kiska Island and the Semichi Islands, is the westernmost of the Rat Group. This island has formed an excellent mariner's landmark for the western Aleutains. The highest point of the island is 655.3 meters (2,150 feet) high, and the island measures 6.4 kilometers (4 miles) long and 3.2 kilometers (2 miles) wide. There are two lesser summits on the island at 613.6 meters (2,013 feet) and 538.9 meters (1,768 feet) on the northeastern end. High, steep landslides dominate the eastern end and the southwestern corner. Shorelines in general consist of cliffs rising from the water's edge or a narrow rock and sand beach. (Figure D.)

Amchitka Island

Amchitka Island is located 51° 30' N and 179° 04' E. The island is 29,575 hectares (73,024 acres) in size and has an average shoreline of 169.9 kilometers (106.5 miles). The largest of the Rat Islands, Amchitka measures 64.4 kilometers (40 miles) long and averages 7.2 kilometers (4.5 miles) wide, with the island's axis lying in a northwest-southeast direction. It is divided into two physiographic types, the eastern lowlands and western mountains. The eastern lowlands are relatively flat, with an interspersion of many small lakes and streams. Elevations vary from below 30.5 meters (100 feet) to 152.4 meters (500 feet). The western section of the island is mountainous, with peaks rising to the 365.8-meter (1,200-foot) level. The coastline is irregular and ringed with numerous rocks, reefs, and extensive kelp beds. (Figure E.)

Kanaga Island

Kanaga Island is located immediately west of Adak Island across Adak Strait. Kanaga, which is centered 51° 44' N and 177° 15' W, contains 37,145 hectares (91,716 acres) and has an average shoreline of 184.4 kilometers (114.6 miles). This island extends 29 kilometers (18 miles) north to south and 45 kilometers (28 miles) east to west and has a maximum width of 11.3 kilometers (7 miles), being roughly right-angled in shape. The northern part of the island is dominated by the cone-shaped Kanaga volcano that rises directly from the water on the



NEAR ISLAND GROUP

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FIGURE D

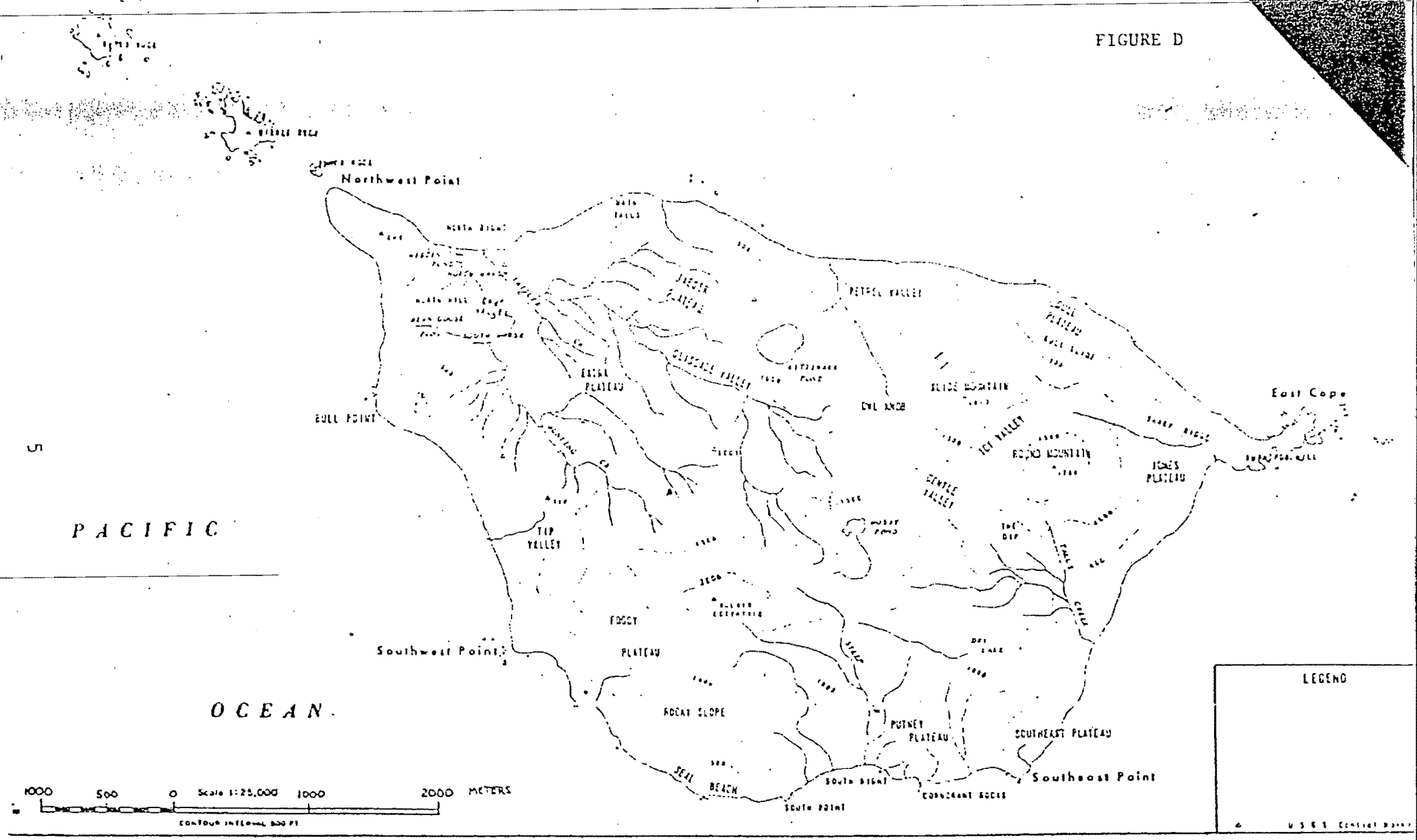
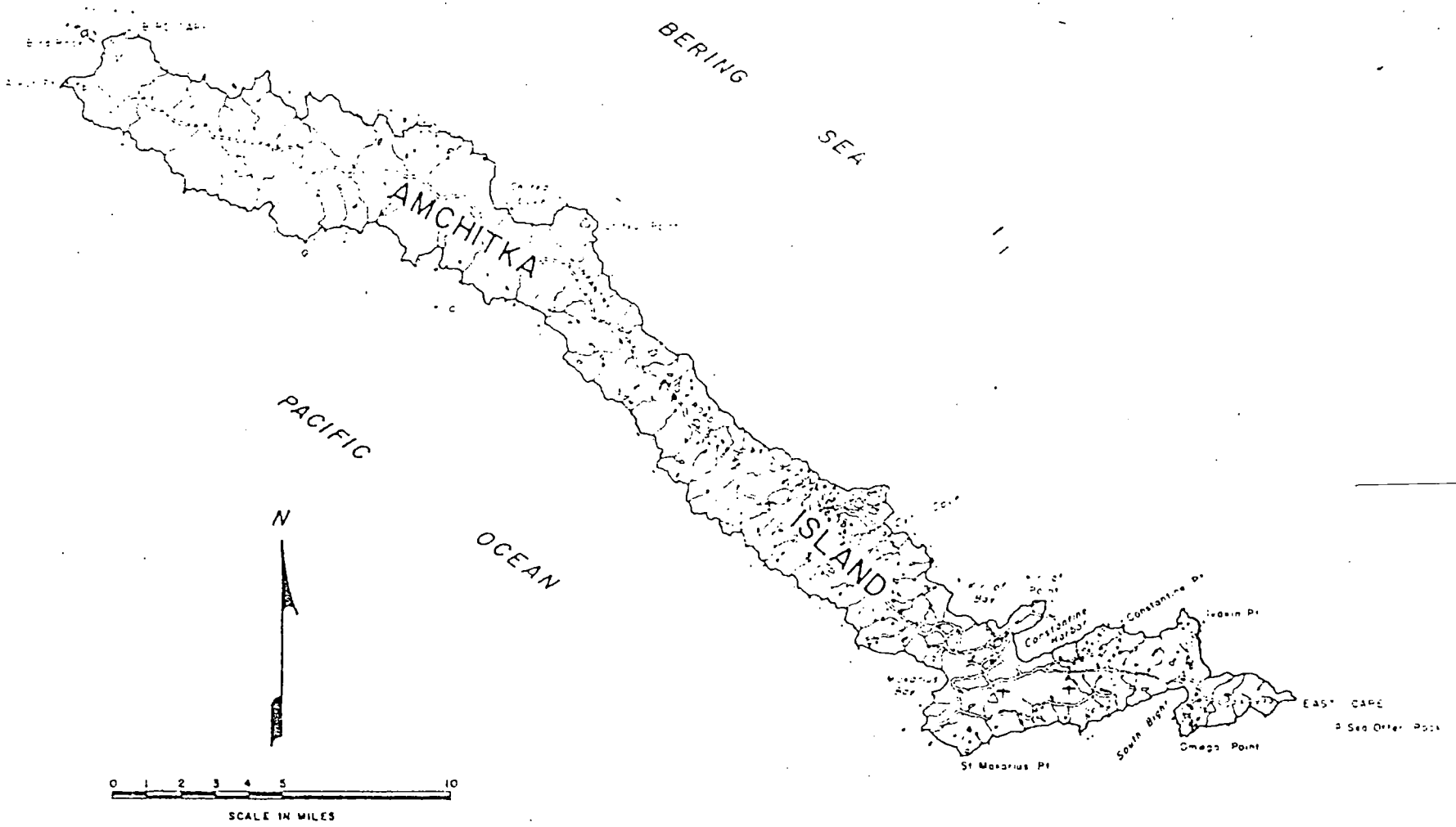


FIGURE 2

PLACE NAMES USED AT BULDIR

FIGURE E



AMCHITKA ISLAND

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northern edge to approximately 1346 meters (4,416 feet). There are several lesser peaks south of the volcano from which the land slopes down to the rolling tundra-covered hills of the southern portion of the island. The hills average from 30.5 to 183 meters (100 to 600 feet) in elevation, and are covered by numerous streams and small lakes. The coastline of Kanaga Island along the west side is fringed by kelp beds, small islands and rocks. The northern coast is steep, with precipitous cliffs ringed by numerous small islets and rocks. (Figure F.)

HABITAT FACTORS ESSENTIAL TO SPECIES

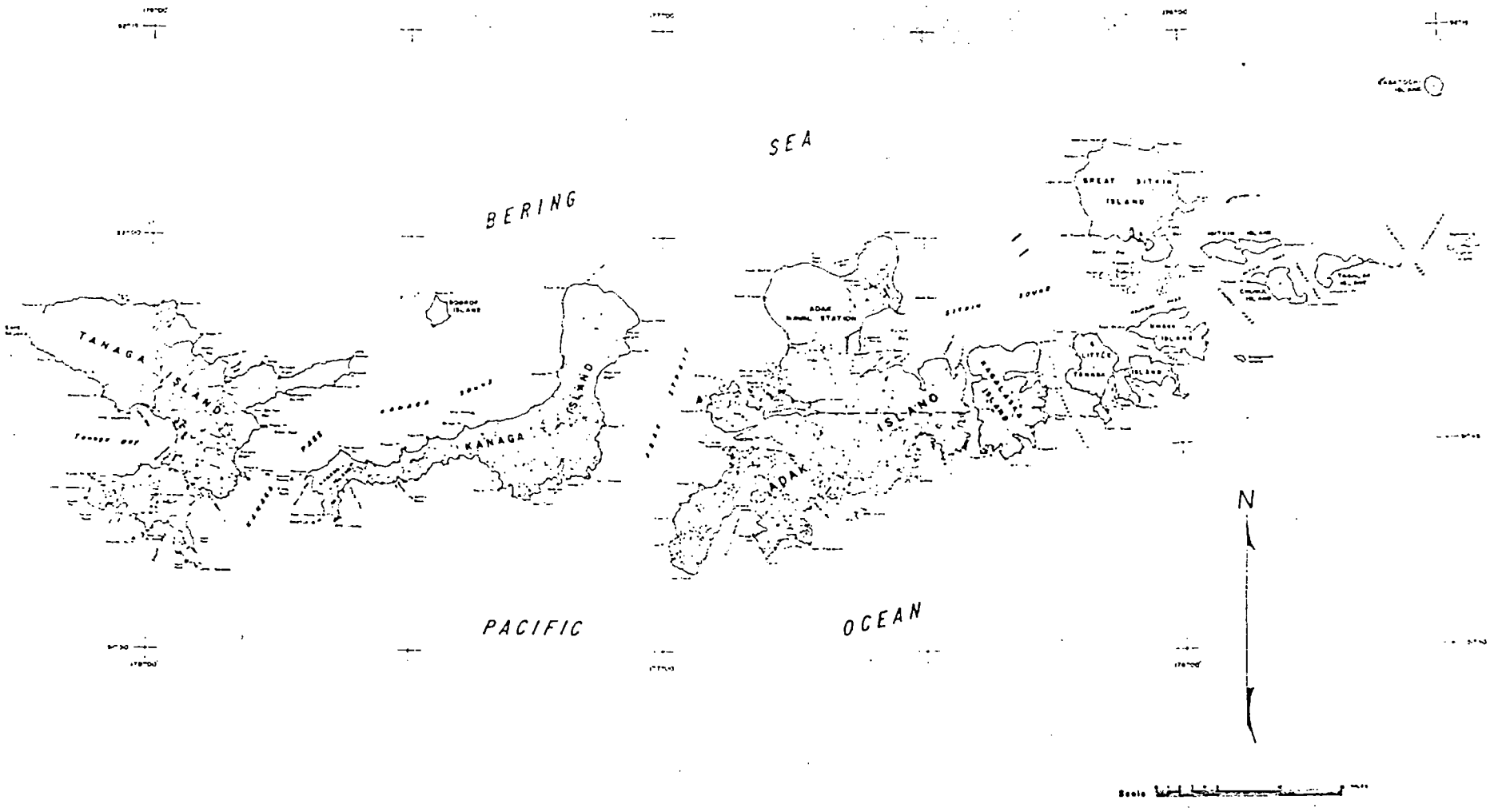
The selection of islands for inclusion as critical habitat is based on historical, physical, behavioral, and biological factors.

1. HISTORIC RANGE

Few records are available from the isolated nesting areas; and confusion has existed over classification and identification of other similar-appearing subspecies. The original breeding range appears to have included most of the larger Aleutian Islands from the Islands of Four Mountains to Attu Island (Bent 1912, Clark 1910, Murie 1959, Nelson 1883, and Turner 1886), Bering Island in the Commander Islands (Stejneger 1885), and some of the Kuril Islands (Stejneger 1885). Aleutian Canada geese may have historically wintered in Japan and from British Columbia to California in North America (Delacour 1954).

Prior to the turn of the century, thousands of Aleutian Canada geese are believed to have bred and otherwise inhabited the islands recommended for critical habitat designation. Turner (1886) noted, "The westernmost of the Aleutian Islands is also a favorite summer resort for it. It breeds in greatest abundance on the Semichi Islands and Agattu Island of the extreme western islands. The Semichi are especially adapted as breeding-grounds. They lie in 174' E longitude, and are low and level, covered with marshes and lagoons rank in aquatic vegetation, among which the geese breed in thousands. . . On Unashka, Amlia, Atkha, Athakh, Kanaga, Tanaga, Kiska, Buldir, Semichi, and Agattu are the greatest breeding grounds of the Aleutian Islands." Clark (1910) stated "This goose is the most abundant bird on Agattu, where it breeds by the thousands, . . ." and "the absence of foxes from Agattu and Semichi undoubtedly accounts for the occurrance of this species (leucopareia) on these islands in such abundance." He also noted "Although common on the seashore, these geese were more abundant inland, especially in marshy places, and where there was an abundant growth of long, rank grass" . . . and "The natives here (Attu) told me of their breeding in great number on Agattu, and also in lesser numbers in Semichi . . ." Murie (1959) stated the village chief from Atka, Bill Dirks, listed Amchitka among others as former nesting grounds. Murie also stated, ". . . and leucopareia feed mostly on crowberry (during the fall) and other berries and spend so much time on slopes seeking these foods that they are known locally as 'land geese'--distinguishing them from the 'beach goose' which is the local name for the emperor goose."

FIGURE F



WESTERN ANDREANOF ISLAND GROUP

ALEUTIAN ISLANDS WILDERNESS PROPOSAL

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2. BIOLOGICAL CHARACTERISTICS

Terrestial Plant Communities

Several diverse plant communities in the subarctic maritime tundra are vital to the Aleutian Canada goose in providing food, nesting and escape cover, and shelter for goslings. These habitats are characterised by lowlands dotted with lakes found on all the recommended islands except for Buldir. With regard to habitat, Murie (1959) noted, "Agattu in the Near Islands Group, is the most favorable for geese. Most of the island is lowland, liberally dotted with lakes. This makes it easy to understand why such islands as Semichi, Amchitka, Tanaga, and Kanaga were at one time a goose paradise--all of them have extensive lowlands with lakes." Extensive vegetative classification completed on Amchitka has provided a characterization of these lowland vegetation types (Amundsen and Clebsch 1971). Three plant associations are noted: lowland tundra, upland tundra and beach. The lowland tundra is dominated by Juncus arcticus, Aleopecurus aecualis. Empetrum nigrum, Carex spp., and Calamagrastis nutkaensis are common on the drier sites. The upland tundra association is dominated by grasses such as Elymus arenarius, Festuca rubra, and Calamagrastis species. Crowberry, Salix spp, and Vaccinium are also important components. The beach association is dominated by Elymus but Calamagrastis, Festucs, and Poa eminens are common. These associations are further divided into ten communities many of which are extensively utilized by Aleutian Canada geese. During observations of released geese on Amchitka (Brennan and Reiswig, 1980), the crowberry-grass-sedge meadow in the upland tundra was utilized for feeding, as was the crowberry-grass-sedge meadow. The sedge-lichen meadow in the lowland tundra was used for loafing. Tall, rank vegetation around ponds was used as escape cover during the molt. The habitat of Buldir is considerably different than the other recommended islands as evidenced by Murie's comments (1959), "There is another type of nesting habitat which is typified by Buldir Island--a domelike island rising sheer from the sea. Buldir possesses beaches and a small grassy valley cut by a stream. In this valley, where the grasses and sedges are heavy and rank, there were no geese. High on the mountain there are little depressions, benches, and valleys, which are cut by water courses. In this terrain, where the grasses and sedges are short and tender, there were geese--even though there is fog much of the time. So, on Buldir, the geese apparently have found an environment that is suited to them."

Byrd and Woolington (1978) listed two plant associations, the Lowland-Tall and the Upland-Short for Buldir. Most of the geese on Buldir nested in the Lowland-Tall association, especially in the Elymus-umbel and Elymus-umbel-fern plant communities.

Geese moved to the upper edge of the Lowland-Tall and fed extensively in the Upland-Short association. Foods included Festuca, Carex spp., and Poa artica. Immediately prior to migration, geese fed exclusively in the Upland-Short association. Empetrum became an important fall food item in years it was available.

Absence of Foxes

The decline of the Aleutian Canada goose to near extinction is due primarily to the introduction of foxes to the Aleutian Islands and underscores the importance of fox-free breeding habitat to the survival of the species. With the exception of Kanaga, all islands recommended for inclusion are fox-free, and planning is currently underway to remove foxes from Kanaga as well. These are the only fox-free islands of major importance in the island chain.

3. CURRENT BREEDING GROUND

Buldir Island is currently the only known breeding habitat for the Aleutian Canada goose. Population estimates have reanged from 200-300 birds in 1962 (Jones) to an estimated full population of 1,700 in 1979 (Henry and Early 1979). Annual production is between 600-700 goslings. Aleutian geese inhabit Buldir from approximately early May to early October and account for approximately 233,800 days of goose use each year.

4. PHYSICAL CHARACTERISTICS

Provision for Disasters

At present, a natural disaster such as renewed volcanic activity or a man-caused disaster such as an oil spill near Buldir Island could destroy the habitat and threaten the existence of the remaining Aleutian Canada geese. As provided forinthe Recovery Plan, the selection of suitable habitat and the restablishment of goose populations at three different island groups, in addition to Buldir, will prevent the extinction of this subspecies. As target populations are established, the separation of the island groups by a total of more than 643.6 kilometers (400 miles) provides a necessary margin of safety in the event of a disaster.

5. BEHAVIOR

Because of behavioral adaptions, Aleutian Canada geese have strong ties to Buldir Island. Young produced there tend to return to Buldir when they in turn reach breeding age. As the young migrate they learn the migration route from experienced adults, further reinforcing the tendency to return to Buldir the following spring. Because of these factors, Buldir is critically important to the subspecies from a behavioral standpoint. As additional populations are established on other target islands, similar patterns will develop in these populations, making all the proposed critical habitats important to the goal of removing the subspecies from Endangered status.

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IMPACTS OF CRITICAL HABITAT DESIGNATION

At present, none of the islands recommended for inclusion are inhabited, although facilities of a refuge station exist on Amchitka. There are no economic ventures on the islands. Some offshore fishing does occur, although this has greatly decreased as a result of the prohibition of Soviet fishing fleets within the 321.8 kilometer (200 mile) offshore limit.

At present, a communications tower is maintained by the Air Force on Alaid Island. The tower is visited annually for maintenance by aircraft helicopter or vessel.

The United States Geological Survey maintains three seismic sensors and transmitters on Kanaga Island. These are also visited annually by helicopter for maintenance.

The designation of selected islands as Critical Habitat is not expected to have any adverse impact on these activities if properly timed to avoid the nesting season.