

**CLARENCE RHODE NATIONAL WILDLIFE RANGE
NATIONAL NATURAL LANDMARK (Registered)**

OWNER : U.S. Fish and Wildlife Service
MANAGING AGENCY : U.S. Fish and Wildlife Service

MANAGER : Ronald L. Perry
MANAGING INSTITUTION : Yukon Delta National Wildlife Refuge
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COOPERATING INSTITUTIONS : The site has several owners in addition to the USFWS: 1) Calista Corporation, 51 Denali St., Anchorage, AK 99501 (907) 273-5516; 2) Nine Native Village Corporations. ADF&G, DEC, EPA, and the state of Alaska all cooperate with the USFWS in certain aspects of management (e.g. fish and wildlife, anadromous fish, habitat management, water, and water quality). Surrounding shorelands, tidelands, submerged lands, and water to the 3-mile territorial limit are in state ownership. Submerged lands under navigable rivers are also in state ownership, and navigability determinations are conducted by BLM. The Native lands subject to 22(g) of ANCSA are under cooperative management. Section 304(g)(4) of ANILCA requires the USFWS to consult with appropriate state agencies and Native corporations to ensure public interests and concerns are addressed in the management plan for the Yukon Delta National Wildlife Refuge (NWR). USFWS activities affecting the coastal zone should be consistent with the State Coastal Zone Management Plan (Cenaliulriit Coastal Management Program, City of Bethel Coastal Management Program, and Bering Straits Coastal Management Program; the latter has not yet been completed). The Yukon-Kuskokwim Delta Goose Management Plan, agreed to by the USFWS, the Alaska and California Departments of Fish and Game, the Association of Village Council Presidents, and the Waterfowl Conservation Committee of the Association of Village Council Presidents for the Yukon-Kuskokwim Delta Region, governs the taking of four species of geese. A number of international treaties affect how the USFWS manages the Yukon Delta NWR, and includes treaties with Japan, Great Britain, the Soviet Union, Canada, Mexico, and other American Republics. The primary purposes of these treaties are the protection of migratory birds and their environment, fish management, navigation, cooperation in the field of environmental protection, and nature protection and wildlife preservation in the western hemisphere (Yukon Delta NWR CCP 1988, N88FWS03AKUS).

ESTABLISHMENT DATE : November 1968

TOTAL ACRES : 1,878,200

LANDMARK THEMES : Special Animal Area & River Systems

LANDMARK DESCRIPTION

Clarence Rhode National Natural Landmark is located on the Bering Sea Coast between Hooper Bay on the north and Kipnuk to the south. It includes Kigigak Island at the northern outlet of Baird Inlet but excludes Nelson Island. The landmark comprises the former Clarence Rhode National Wildlife Range and the Hazen Bay Migratory Waterfowl Refuge (see also Acreage section).

PHYSICAL DESCRIPTION : The landmark occupies a large portion of the Yukon and Kuskokwim River deltas which form a vast subarctic wetland. Underlain by permafrost, the Yukon-Kuskokwim Delta is characterized by extensive tidal flats and thousands of thaw lakes and ponds pocketing the tundra vegetation (more than 50,000 within the landmark). Water, in the form of tidal rivers and sloughs, lakes, and ponds, is the dominant feature of this low-lying coastal plain. The majority of the landmark is scarcely above sea level and is frequently inundated by tides from the Bering Sea. The landmark encompasses a large segment of the coastal plain of the Yukon-Kuskokwim Delta which has been identified by the USFWS (in response to the requirements of ANILCA: Sec. 304 g) as being one of the special values of the Yukon Delta Refuge (Yukon Delta NWR CCP 1988, N88FWS03AKUS).

VEGETATION : Vegetation communities on the refuge are adapted to permafrost, periodic flooding by tidal or riverine water, low temperatures, and wind. The periodic flooding favors graminoid dominated plant complexes. Alaska vegetation maps depict inland areas as moist tundra meadows dominated by tussock sedges with scattered willows and dwarf birch. Near the coast, the region changes to wet tundra meadows of sedges and grasses (Viereck and Little 1972, JFSLUPCA 1973 in USFWS-Wetlands and Marine Ecology Branch Report 1986, N86TAN01AKUS). Typical species of graminoid marshes and meadows, common within the landmark, are Carex rariflora, C. ramenskii, C. lyngbyaei, C. aquatilis, Calamagrostis canadensis, C. deschampsiioides, and Potentilla palustris. More upland areas are dominated by Labrador tea (Ledum palustris), dwarf birch (Betula nana), crowberry (Empetrum nigrum), cottongrass (Eriophorum vaginatum), Vaccinium sp., and a variety of lichens and mosses. The vegetation of the tundra near Hazen Bay on the Yukon Delta NWR has been classified and mapped (ibid.).

FISH & WILDLIFE : The coastal plain of the Yukon-Kuskokwim Delta is the most productive wildlife area of the refuge and one of the most productive wildlife areas in Alaska, providing habitat for a large number of migratory birds (Yukon Delta NWR CCP 1988, N88FWS03AKUS). Coastal zones support very high densities of shorebirds and waterfowl from all four North American flyways. It is considered the best goose nesting area in America (Spencer et al. 1951, A51SPE01AKUS) and is the primary breeding ground for emperor geese, cackling Canada geese, brant, and the Pacific Flyway population of white-fronted geese. High densities of greater scaups, pintails, oldsquaws, tundra swans, and lesser

sandhill cranes are also found here. Other common species include common scoters, green-winged teals, mallards, widgeons, spectacled and common eiders, loons, gulls, arctic terns, and jaegers. The delta is the major nesting ground for many species of North American shorebirds including black turnstones, dunlins, western sandpipers, rock sandpipers, and bar-tailed godwits. During late summer and fall as many as 20 species of shorebirds use the intertidal flats (Gill 1986, U86GIL01AKUS), providing for the greatest density and diversity of shorebirds in Alaska. Raptors, such as golden eagles, peregrine falcons, gyrfalcons, rough-legged hawks, snowy and short-eared owls, are occasionally present. Arctic fox are common. Small mammals include beaver, muskrat, mink, and river otter. Seals, walruses, and beluga whales are the primary sea mammals using coastal and marine habitats of the Yukon-Kuskokwim Delta. Several species of whales (gray, bowhead, fin, and minke) pass along the coast during their migration. Each summer great numbers of king, silver, red, pink, and chum salmon migrate up the delta rivers, while resident fish include pike, sheefish, whitefish, and burbot.

THREATENED OR ENDANGERED SPECIES : The endangered American peregrine falcon (Falco peregrinus anatum) is known to breed within the Yukon Delta NWR. However, the landmark does not encompass any known primary nesting locations (Yukon Delta NWR CCP 1988, N88FWS03AKUS). A threatened subspecies, F.p. tundrius, migrates through the refuge. Endangered Eskimo curlews (Numenius borealis) were historically found on the Yukon-Kuskokwim Delta during fall and spring (Gabrielson and Lincoln 1959, B59GAB01AKUS). This species may no longer occur in Alaska. The endangered short-tailed albatross (Diomedea albatrus) could occasionally occur along the coastal fringe. All three of these species are also protected under the Alaska Endangered Species Law. Bristle-thighed curlews (Numenius tahetiensis), a USFWS candidate species (C2 status) are regularly seen on the coastal tundra during fall migration (Robert Gill, pers. comm.). In addition, several "National Resource Species," recognized by the USFWS, are found on the Yukon Delta NWR. Many of these will pertain to the landmark area. The National Resource Species are: polar bear, Pacific walrus, trumpeter swan, tundra swan, Pacific Flyway white-fronted goose, brant, lesser snow goose, cackling Canada goose, golden eagle, bald eagle, peregrine falcon, lesser sandhill crane, northern pintail, canvasback, and mallard. (Note: National resources species are an internal designation used to focus management direction on selected species). The federally endangered gray whales (Eschrichtius robustus), bowhead whales (Balaena mysticetus), and fin whales (Balaenoptera physalus) are found in Bering Sea waters.

CULTURAL RESOURCES : The Yukon-Kuskokwim Delta is the heart of the Yup'ik Eskimo region and significant for its Yup'ik culture. There are over 16,000 residents living in 43 communities within or adjacent to the refuge. Of the Yup'ik Eskimo people, 60 to 70 percent live within the Yukon Delta NWR and/or rely on resources found within the refuge boundaries to maintain their subsistence

lifestyle. The social and material culture of the Yup'ik is based on the resources of the land, creating a closely intertwined relationship between a distinct cultural group and land resources. Indications of a long history of human occupation come from hundreds of known archaeological sites.

LAND USE : Clarence Rhode National Natural Landmark is primarily a nesting area for large numbers of geese, other waterfowl, and shorebirds. It is remote, roadless, and mostly undeveloped. Several Native communities are located within or adjacent to the landmark. Natives hunt, trap and fish for subsistence according to seasons. Other than these subsistence activities, public use of the area is limited because of the area's isolation and relative inaccessibility. Commercial fishing occurs in coastal waters. The coastal plain of the Yukon-Kuskokwim Delta is regularly visited by scientists during the summer months.

SIGNIFICANCE : Clarence Rhode is significant as the nesting grounds for myriads of birds and for being "the best and most extensive example of coastal and upland tundra habitat" (Site Evaluation Report 1968, U68BLA02AKUS). As goose habitat, the Yukon-Kuskokwim Delta is unparalleled (Yukon Delta NWR CCP 1988, N88FWS03AKUS), and the coastal plain supports the highest densities. Over half to the entire world's populations of black brant, cackling Canada geese, emperor geese, and Pacific Flyway white-fronted geese come from these nesting grounds. Numerous other waterfowl, shorebirds, and lesser sandhill cranes nest here. The area is also considered part of the largest and most important shorebird habitat in the Pacific Flyway (ibid.).

MANAGEMENT COMMENTS

MANAGEMENT : Clarence Rhode National Natural Landmark is located within the Yukon Delta NWR and managed according to USFWS policy. A long and rather complex history of land designation began in the Yukon-Kuskokwim Delta in 1909. The landmark was designated in 1968 and included those lands identified as Area I and Area II of the Clarence Rhode National Wildlife Range (Public Land Order 2213, December 6, 1960) and the Hazen Bay Migratory Waterfowl Refuge (Executive Order No. 7770, December 14, 1937). These lands were "reserved and set apart" as a refuge and breeding ground for migratory birds and other wildlife and "to effectuate further the purposes of the Migratory Bird Conservation Act" (45 Stat. 1222). Additional lands, the Nelson Island Unit, the Kokechik River Unit, and the Yukon Unit, were added to Clarence Rhode National Wildlife Range in 1969 by Public Land Order No. 4584 (January 20, 1969). With enactment of the Alaska National Interest Lands Conservation Act (ANILCA, 94 Stat. 2371) in 1980, the Yukon Delta NWR was established. Since the establishment of the Hazen Bay Refuge in 1937 and the Kuskokwim (the later Clarence Rhode) National Wildlife Range in 1960, the area of the landmark has been protected under the stewardship of the U.S. Fish and Wildlife Service. The USFWS has agreed to consider the

national significance of the recognized scientific values in planning for management and development of the land, and will preserve those values, insofar as possible, consistent with the Nation's welfare (USFWS Memo 1968, U68FWS02AKUS).

Clarence Rhode has several owners in addition to the federal government, who are responsible for its land and resource management. Up to 622,000 acres of refuge lands are being (and have been) conveyed to nine Native villages. Subsurface rights of conveyed post-ANCSA refuge lands belong to the Calista Corporation, a Native regional corporation. (Note: The federal government retains subsurface rights to lands conveyed to Native village corporations within the boundaries of pre-ANCSA refuges). Under the terms of section 22(g) of ANCSA, the federal government retains the right of first refusal if any of this land is to be sold. Refuge lands conveyed to village corporations, although in private ownership, remain subject to the laws and regulations governing land use and development of the refuge. Consequently, it is thought "that the landmark values will be perpetuated regardless of ownership" (NNL Status Report 1985). The USFWS regional staff has requested that the NPS does not attempt to contact the Native landowners regarding the NNL Program, "as it would further confuse the federal/private land use issue" (ibid.).

The major management issues and concerns identified for the Yukon Delta NWR are fish and wildlife populations and habitats, subsistence, access and transportation, recreation, wilderness, oil and gas development, mineral exploration and development, cabins, private lands, management of the refuge, and information and education. Lands are currently managed under the concepts of the minimal management category (Yukon Delta NWR CCP 1988, N88FWS03AKUS), which is the USFWS's preferred management alternative for continued management of the landmark. The preferred alternative "emphasizes the protection of fish and wildlife populations and habitats in their present state on the refuge but would provide for a limited amount of development to occur" (ibid.). The proposed management direction differs from the current scenario in that it would: 1) provide opportunities for oil and gas leasing and development on less than two percent of the refuge (note: oil and gas exploration, including core drilling and seismic activities, could occur throughout the refuge in the future under the current management situation); and 2) provide opportunities for mechanical manipulation projects and water impoundments and diversions to improve terrestrial habitats on less than two percent of the refuge. Hunting, fishing, and trapping are permitted subject to state and federal regulations. Habitat and population manipulations are allowed under the current and prospective management regimes. Refuges are open to oil and gas leasing, but coal and geothermal leasing are not permitted. Other public uses and facilities, economic uses, access, and resource management activities compatible with the management policies of minimal management are summarized in the Yukon Delta NWR CCP (1988, ibid.). Refuge lands that have been

conveyed to Native corporations are under cooperative management; i.e. the USFWS works cooperatively with the Native villages to identify how these lands should be managed. Clarence Rhode Natural Landmark is adjacent to the state of Alaska's coastal zone, and consequently, all USFWS activities affecting the coastal zone must be consistent with the approved state coastal management plan (Sec. 307(c) of the Coastal Zone Management Act).

GOOSE MANAGEMENT : A controversial issue in the region in recent years concerns the declining populations of several species of wild geese (Yukon Delta NWR CCP 1988, N88FWS03AKUS). In the spring of 1984, the USFWS negotiated the Hooper Bay Agreement with the state of Alaska, the California Department of Fish and Game, and Native groups in the Yukon-Kuskokwim Delta region. The agreement was further refined in 1985 and became known as the Yukon-Kuskokwim Delta Goose Management Plan. Under this plan, which is reviewed annually and revised accordingly, the signature parties agreed to cease hunting of cackling Canada and emperor geese, to cease the taking of geese eggs, and to limit the spring hunting of brant and white-fronted geese. The legality of the Hooper Bay Agreement/Yukon-Kuskokwim Delta Goose Management Plan was challenged in the U.S. District Court for Alaska on the grounds that they violated the Migratory Bird Treaty Act, and a final decision has not been rendered. The USFWS has no enforcement authority, and the agreement is voluntary. Natives of the region are concerned about the declining number of geese and about potential stipulations to their subsistence activities, saying "the birds and their eggs are an important part of their diet in the spring, and hunting and eggng are essential activities in sustaining Yup'ik culture" (ibid.). For the most part, the terms of the Hooper Bay Agreement/Yukon-Kuskokwim Goose Management Plan have been followed by local residents, although incidences of the taking of geese and eggs have been reported (Una Swain, pers. obs.). The issues surrounding subsistence and the taking of geese are politically very sensitive and highly controversial. There is a lot of local resentment and distrust (even "contempt") of the USFWS and their policies. The feelings of the local residents are not new developments but date back to original land withdrawals and to the original Clarence Rhode National Wildlife Range for which there was "unanimous and adamant opposition by the local people and their leaders" (Study Team Review 1970, A70SPE01AKUS). Residents view the land and its resources from a proprietary viewpoint, and they feel the Government has taken the land from them (Hoare 1970, A70HOA01AKUS). Local villagers have also frequently mentioned that they believe disturbance of nesting geese by USFWS field biologists is the cause for the decline.

VULNERABILITY/DANGERS TO INTEGRITY : Although this area has changed little since prehistoric times, it remains a precarious landform where nature maintains a delicate balance between the land, the sea, and the permafrost in order to sustain its unique features (Yukon Delta NWR CCP 1988, N88FWS03AKUS). The freeze-thaw cycle coupled with regular tidal and riverine

flooding maintains a herbaceous wetland in the coastal zone that is excellent waterfowl habitat. There are no reported threats to the integrity of the area (NNL Status Report 1986). However, several potential dangers do exist. The area's integrity, in terms of its species composition, importance, and "outstanding and unique natural values" (Site Evaluation Report 1968, U68BLA02AKUS), is endangered by the declining numbers of nesting geese. The populations of all four species of geese that nest on the coastal plain of the Yukon-Kuskokwim Delta have experienced dramatic declines, approximately 80-90 percent, in the last 20 years (Yukon Delta NWR CCP 1988, op. cit.). Among the myriad of factors most likely responsible for the population declines, there is general agreement that hunting is one of the most important ones. Hunting is done by two very different groups of hunters. Hunters in the Pacific Flyway, chiefly in California, hunt geese in the fall on the wintering grounds. Hunters in the Yukon-Kuskokwim Delta, primarily Natives, hunt the geese in spring and early summer on the nesting grounds. Restrictions on sport hunting of the geese have been implemented. Control of spring and summer hunting on the delta is the most complicated question relating to the management of the geese, and it has become a highly controversial issue. Spring and summer hunting is an important facet of the Native subsistence lifestyle, which has been going on for hundreds of years. The Hooper Bay Agreement/Yukon-Kuskokwim Delta Goose Management Plan has been signed to give protection to the geese, hopefully resulting in population increases. Data are needed for precise determination of the significance and impact of various factors thought to be responsible for the goose population declines, so that management can address these and protective measures can be initiated. An active research program is underway involving the USFWS's Alaska Fish and Wildlife Research Center and Migratory Bird Branch, as is a program to inform and educate local residents, sport hunters, and the general public to the problem of declining populations of arctic nesting geese. Improper management of the waterfowl resource in other places and further reductions in available wintering grounds threatens the existence of some species that nest here.

Depressed wildlife populations was one of the "significant problems" identified for the Yukon Delta NWR (CCP 1988, op. cit.). Other identified problems involve private inholdings, the need for additional detailed data on fish and wildlife populations, habitats, and their uses, and difficulties in managing the refuge because of its large size and number of communities. Only a limited amount of enforcement, surveillance, and monitoring of activities occurring on the refuge is currently undertaken. There is concern that as the human population of the Yukon-Kuskokwim Delta continues to grow, more and more people will be relying on the resources of the land to support their subsistence lifestyle, while additional pressure will be applied to develop these lands. Increasing public use (from the estimated doubling of recreational use over the next ten years and the projected increase of up to 40 percent in regional

population) could result in visual impacts from littering and physical impacts from human use (Yukon Delta NWR CCP 1988, op. cit.).

Large areas of privately owned land occur within the landmark. Currently, private inholdings are relatively intact and undeveloped. However, development and use of refuge inholdings, such as oil and gas development, residential, and commercial activities, could result in a number of effects in the future. Village wastewater disposal, disposal of trash, and damage to fragile habitats related to access (by snowmobiles, three-wheelers, and other vehicles) between villages, to allotments, and for resource harvesting activities are all significant long-term concerns for management.

Development of transportation and utility corridors is possible. One of the most "obvious" threats is oil and gas development (Site Evaluation Report 1968, U68BLA02AKUS). If oil exploration were to take place within this region, it could be a serious threat to its integrity (NNL Brief 1983, U83NPS01AKUS). Concern has been expressed in many villages that any oil and gas development or road construction would be harmful to waterfowl because such activities might disturb the birds, cause loss of habitat, and lead to eventual pollution of the waters (Yukon Delta NWR CCP 1988, op.cit.).

LAND USE & DEVELOPMENT : The primary land uses are subsistence activities by local residents. The 16,000 residents of the Yukon-Kuskokwim area generally consolidate into 43 communities during most of the year. Two Native villages (Cheforak and Newtok) are located within the landmark, and several others are nearby, including Nightmute, Toksook, Tununak, Hooper Bay, Chevak, Eek, and Kipnuk. These communities serve as bases for winter activities that often range miles from the home settlements. During the summer, some families disperse and reorganize into a number of "summer camps" or "fish camps" along the region's rivers, sloughs, and tributaries. The demographic patterns of the area's population is dynamic with the size, composition, and location of living sites showing seasonal variations. Subsistence is the cultural, as well as economic, foundation of human life on the Yukon Delta NWR and the cornerstone of the Yup'ik value system. The subsistence way of life is land use extensive, i.e. it requires vast, undisturbed tracts of land for harvesting activities. Thus, subsistence activities are carried out over the entire Yukon-Kuskokwim Delta, not just in small areas around villages (Cenaliulriit 1985, N85CEN01AKUS).

The economy of the area has evolved from a total subsistence economy to a mixed subsistence/cash economy with the local government being the largest employer. Commercial salmon and herring fisheries operate in coastal waters and rivers. Very little mineral resource development has occurred in the past. A few tons of coal were mined from the north coast of Nelson

Island, adjacent to the landmark, during the early part of the century. Much of the area was leased to oil companies under Federal oil and gas lease regulations in the 1950's. Nearly all of the leases have been dropped and none have been issued since. No oil and gas exploration or leasing activities are currently occurring on refuge or private lands. Tentative estimates of the mineral potential in the region are low. However, surveys of mineral resources have been minimal (Yukon Delta NWR CCP 1988, N88FWS03AKUS). The most likely area for further petroleum exploration would include the south coastal areas between Kuskokwim Bay and Etolin Strait. Petroleum potential in offshore areas may be slightly greater than onshore but is still considered low (Lyle et al. 1982 in ibid.).

The land status, and hence use and management, of the Yukon Delta NWR is constantly changing because lands within the refuge boundary selected by the state, Natives, and Native corporations are in the process of being conveyed, relinquished, or invalidated (rejected). Large portions of the coastal plain have been selected or conveyed to Native village and regional corporations, including both surface and subsurface estates. Numerous Native allotment applications have been conveyed or are pending. In addition to its other selection, the Calista Corporation has filed many historical place applications. (Note: Exact acreages for individual applications and patents can be determined from the Master Title Plats (MTPs) and corresponding records at the BLM and USFWS). The surrounding shorelands, tidelands, submerged lands, and water to the 3-mile territorial limit are in state ownership. Lands under navigable waters are also state controlled. The navigability of many Yukon Delta Refuge waters has not yet been determined, nor have offshore tidelands and shorelands been set out. The USFWS, Division of Realty is in the process of updating the land status on the Yukon Delta NWR (Gary Nichols, pers. comm. Nov. 1990) (see also Yukon Delta NWR Land Status Maps 1985-1988, M85FWS01AKUS). The USFWS has established the acquisition priority rating for most of the inholdings within Clarence Rhode National Wildlife Range as high (Alaska Submerged Lands Act Report 1989, U89FWS01AKUS).

PUBLIC ACCESS : Open

ACREAGE INFORMATION : Acreage is approximate (Site Evaluation Report 1968, U68BLA02AKUS). The former Clarence Rhode National Wildlife Range Area consists of 1,871,400 acres in two units: one unit extending from Hooper Bay to Baird Inlet and the second from Baird Inlet to Kipnuk. The former Hazen Bay Refuge area consists of the 6,800 acres of Kigigak Island.

Note: These two areas were designated as the Clarence Rhode National Natural Landmark which did not include the subsequent 1969 additions of the Nelson Island Unit, the Kokechik River Unit, and the Yukon Unit to the Clarence Rhode National Wildlife Range. The acreage of these areas is not included in the

landmark's acreage figure, since the Clarence Rhode National Wildlife Range did not include these areas when it was designated a landmark.

SPECIAL AREAS : The entire Clarence Rhode National Wildlife Range Natural Landmark is located within the Yukon Delta NWR. There are no specially designated areas within the landmark.

MAPPING COMMENTS : Clarence Rhode National Natural Landmark AKNHP MABR boundary was drawn from USFWS land status maps of the Yukon Delta National Wildlife Refuge (NWR) at 1:250,000. Boundaries of the former Clarence Rhode National Wildlife Range and Hazen Bay Migratory Waterfowl Refuge, which comprise the landmark area, are represented on these maps.

MAP AVAILABILITY :

- * Clarence Rhode National Natural Landmark, 1968, 1,000,000, photocopy (M68NPS02AKUS).
- * AKNHP Management Area Map, 1:63,360, 1990, mylar (42) (M90AHP04AKUS).
- * Yukon Delta NWR Land Status Maps, 1:250,000, 1985-1988, blueines (M85FWS01AKUS).

TOPOGRAPHIC MAPS :	Baird Inlet A-5	Kwiguk D-4
	Baird Inlet A-6	Kwiguk D-5
	Baird Inlet A-7	Kuskokwim Bay D-6
	Baird Inlet B-5	Marshall A-5
	Baird Inlet B-6	Marshall A-6
	Baird Inlet B-7	Marshall A-7
	Baird Inlet B-8	Marshall A-8
	Baird Inlet C-5	Marshall B-6
	Baird Inlet C-6	Marshall B-7
	Baird Inlet C-7	Marshall B-8
	Baird Inlet C-8	St. Michael A-4
	Baird Inlet D-5	St. Michael A-5
	Baird Inlet D-6	St. Michael A-6
	Baird Inlet D-7	Nunivak Island B-1
	Baird Inlet D-8	Nunivak Island C-1
	Hooper Bay A-1	Nunivak Island D-1
	Hooper Bay A-2	
	Hooper Bay B-1	
	Hooper Bay B-2	
	Hooper Bay B-3	
	Hooper Bay C-1	
	Hooper Bay C-2	
	Hooper Bay C-3	
	Hooper Bay D-1	
	Hooper Bay D-2	
	Hooper Bay D-3	

CONTACTS : Robert E. Gill (AFWRC-USFWS, Anchorage)
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MAPS

<u>SOURCECODE</u>	<u>CITATION</u>
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MAPS (continued)

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