

**Table 3-1
 Composite Grain Size Distribution of Sediments
 at the Osprey Platform Location**

Grain Size Diameter	Percent Passing
12 inches	100
6 inches	63
4 inches	37
3 inches	28
2 inches	13
1.5 inches	8
1 inch	4
0.75 inch	3
0.5 inch	1
3/8 inch	1
#4 screen	0

Source: NCG 2001

**Table 3-2
 Cook Inlet Area Volcanoes**

Volcano	Historical Eruptions	Present Condition
Mt. Augustine	1812, 1833, 1908, 1935, 1963-64, 1976, 1986	Active and potentially eruptive
Mt. Hayes	--	Quiescent
Mt. Iliamna	--	Active but steam only
Mt. Redoubt	1902, 1936, 1967-68, 1989-90	Active and potentially eruptive
Mt. Spurr	1953, 1992	Active and potentially eruptive

Source: MMS 1996b, Alaska Volcano Observatory 2000

Table 3-3
Summary of Temperature and Precipitation Data for the Project Area

	Kustatan (1999-2000)	Kenai (1943-1987)	Nikiski (1967-1978)	Tyonek (1967-1970)
Temperature (°F)				
January Mean Minimum	11.1	3.6	3.9	7.1
January Mean Maximum	18.3	21.1	20.4	21.1
April Mean Minimum	33.1	24.5	25.2	29.3
April Mean Maximum	43.0	41.4	40.3	42.4
July Mean Minimum	50.0	46.7	48.9	48.9
July Mean Maximum	58.5	61.5	62.1	64.1
October Mean Minimum	32.4	27.7	30.3	27.8
October Mean Maximum	39.6	42.5	42.7	45.4
Year Mean	37.4	33.5	34.9	38.1
Precipitation (Inches)				
January	--	1.05	0.64	0.21
April	0.46	0.86	0.98	0.95
July	--	1.96	1.26	1.84
October	3.43	2.36	2.52	1.4
Year	--	18.89	18.05	15.41
Mean Annual Snowfall	--	59.3	36.6	19.2

Source: Leslie 1989; HCG 2000a, b, c, d

Table 3-4
Extreme Wind Estimates for Anchorage International Airport

Return Period (years)	Wind Speed (knots)
25	60
55	69
100	79
250	95
500	109
1,000	124

Source: Leslie 1984

Table 3-5
Summary of Baseline Air Quality Data
(Beluga Area, July 1993 to September 1994)

Parameter	Measured Concentration (ug/m³)	National Ambient Air Quality Standard (ug/m³)
NO ₂ Annual Mean	1.9	100
O ₃ Maximum 1-Hour Second Highest 1-Hour Annual Mean	104 102.1 52.6	235 -- No Standard
SO ₂ Maximum 3-Hour Second Highest 3-Hour Maximum 24-Hour Second Maximum 24-Hour Annual Mean	13.1 10.5 5.2 5.2 2.6	1,300 -- 365 -- 80
H ₂ S Maximum 1-Hour Second Highest 1-Hour Annual Mean	8.4 8.4 1.4	No Standard -- No Standard
CO Maximum 1-Hour Second Highest 1-Hour Maximum 8-Hour Second Highest 8-Hour	3,092 2,634 1,489 1,489	40,000 -- 10,000 --
PM-10 (Beta Gauge) Maximum 24-Hour ¹ Second Highest 24-Hour ¹ Annual Average ²	32 32 6.5	150 -- 50
PM-10 (Hi-Vol) Maximum 24-Hour Annual Average	14.9 4.6	150 50

¹ This value reflects a measurement from midnight to midnight, not a 24-hour running average

² Annual average of hourly data from beta gauge

Source: ENSR 1995

Table 3-6
Summary of Tidal Data for Various Cook Inlet Locations
(Depths in feet above MLLW)

Datum	Drift River	Nikiski	North Foreland
Est. Extreme High Water	23.00	27.00	27.00
Mean Higher High Water	17.90	20.70	21.00
Mean High Water	17.20	20.00	20.40
Mean Tide Level	9.60	11.05	11.25
Mean Low Water	2.00	2.10	2.10
Mean Lower Low Water (MLLW)	0.00	0.00	0.00
Est. Extreme Low Water	-5.50	-6.00	-6.00

Source: USCGS 1967, 1969,
 1970

Table 3-7
First Significant Ice and Ice-Free Dates for Upper Cook Inlet

Year	First Ice	Ice-Free
1969-70	November 18	March 23
1970-71	October 17	May 7
1971-72	November 23	May 15
1972-73	November 13	April 10
1973-74	November 18	April 6
1974-75	November 24	April 9
1975-76	November 12	April 10
1976-77	December 17	April 9
1977-78	November 20	March 18
1978-79	December 16	March 31
1979-80	December 12	March 26
1980-81	December 6	March 10
1981-82	November 20	April 19
Average	November 24	April 8
Median	November 20	April 9

Source: LaBelle and Wise
 1983

Table 3-8
Summary of General Water Quality Parameters in the East Foreland Area

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Salinity (parts per thousand)												
No. of Samples	2	6	6	10	14	14	22	14	4	19	1	0
Minimum	25.4	27.7	27.2	27.6	27.9	24.4	21.2	19.4	25.2	23.7	26.7	--
Average	27.8	29.3	28.5	28.7	29.4	28.0	24.6	23.8	26.1	25.5	27.4	--
Maximum	29.0	31.1	30.0	29.9	30.0	29.1	27.3	27.3	27.3	27.1	27.8	--
Water Temperature (°C)												
No. of Samples	1	6	2	9	10	10	18	12	2	17	2	0
Minimum	-2.1	-1.8	-1.6	-0.8	2.9	8.4	11.4	12.3	11.0	6.0	1.8	--
Average	-1.8	-1.3	-1.2	-0.5	3.3	8.8	12.6	13.8	11.2	7.9	2.3	--
Maximum	-1.4	-1.0	-0.6	0.4	3.5	9.1	14.3	15.3	11.3	11.6	3.3	--
Suspended Sediments (mg/L)												
No. of Samples	2	6	6	10	14	14	24	0	0	0	2	0
Minimum	34	37	147	170	86	33	26	--	--	--	111	--
Average	101	204	280	465	209	131	126	--	--	--	152	--
Maximum	212	444	530	840	333	256	312	--	--	--	188	--

Sources: Hood, et al. 1968; Rosenberg, et al. 1969

Table 3-9
Discharges at Major River Basins in Upper Cook Inlet

River	Drainage Area (sq.mi.)	Mean Annual Discharge (cu.ft./sec.)	Mean Discharge, May to Oct (cu.ft./sec.)	Mean Suspended Sediment Levels, May to Oct (mg/L)	Percent Glacier Cover (%)
Susitna River (at Susitna Station)	--	50,740	--	--	--
Susitna River (at Gold Creek)	6,160	9,970	19,300	796	5
Knik River (near Palmer)	1,180	6,784	12,309	1,130	54
Matanuska River (near Palmer)	2,070	3,869	7,088	1,564	12
Eagle River (at Eagle River)	192	499	911	128	--

Source: MMS 1996b

Table 3-10
Benthic Organisms Present in Upper Cook Inlet

Benthic Organisms Observed on Beaches¹		Major Species in Offshore Waters²
Chlorophyta	Arthropoda	Polychaetes
<i>Ulothric laetevirens</i>	Amphipoda	<i>Gylcera tenuis</i>
<i>Enteromorpha</i> sp.	<i>Gammarus</i> sp.	<i>G. capitata</i>
<i>E. intestinalis</i>	<i>B. wilkitzkii</i>	<i>Nephtys</i> sp.
<i>E. compressa</i>	<i>Anisogammarus</i> sp.	<i>N. ciliata</i>
<i>Ulva lactuca</i>	<i>A. confervicolus</i>	<i>Ophelia limacina</i>
Coelenterata	<i>Caprella</i> sp.	<i>Polygordius</i> sp.
Hydrozoa	<i>Atylus</i> sp.	<i>Scolelepis</i> sp.
<i>Obelia</i> sp.	Cirripedia	<i>Scoloplos armiger</i>
<i>Plumularia</i> sp.	<i>Balanus crenatus</i>	<i>Sphaerosyllis pirifera</i>
<i>Thuiaria</i> sp.	<i>B. balanoides</i>	<i>Spiophanes bombyx</i>
<i>Tubularia larynx</i>	Decapoda	<i>Streotistkku</i> br. <i>katuoakoa</i>
Anthozoa	<i>Crago</i> sp.	<i>S. nr. latipalpa</i>
<i>Anthopleura</i> sp.	<i>Cancer</i> sp.	<i>Chaetozone setosa</i>
Ectoprocta	<i>Cragon franciscorum</i>	<i>Eteone ne. longa</i>
<i>Membranipora</i> sp.	Isopoda	Amphipods
<i>Eucratea</i> sp.	<i>Idotoega entomon</i>	<i>Orchomene cf. pacifica</i>
<i>Scrupocellaria</i> sp.	<i>Neosphaeroma oregonensis</i>	<i>Paraphoxus milleri</i>
Platyheminthes	<i>Saduria entomon</i>	<i>Photis</i> sp.
<i>Notoplana</i> sp.	<i>Gnorimosphaeroma oregonensis</i>	Molluscs
Brachiopoda	Pycnogonida	<i>Astarte</i> sp.
<i>Terebratilia</i> sp.	<i>Pseudopallene</i> sp.	<i>Glycymeris subobsoleta</i>
Annelida	Echinodermata	<i>Liocyma fluctuosa</i>
Polychaete Larvae	Asteroidea	<i>Propebela</i> sp.
Mollusca	<i>Leptasterias</i> sp.	<i>Tellina nucloides</i>
Gastropoda	Chordata	Sand Dollars
<i>Anisodoris</i> sp.	Unidentified Cling Fish	<i>Echinarachnius parma</i>
<i>Acmaea</i> sp.	NOTES: 1 Samples obtained from Salamatof, Nikishka Bay and (Rosenberg et al. 1969) 2 Samples obtained from lower Cook Inlet off Kachemak Bay (Dames & Moore 1978)	
<i>A. pelta</i>		
<i>Littorina</i> sp.		
<i>Phenacoptygma</i> sp.		
<i>Buccinium</i> sp.		
<i>Buccinium</i> sp. egg cases		
Lamellibranchia		
<i>Tresus</i> sp.		
<i>Macoma</i> sp.		
<i>Yoldia myalis</i>		
<i>Y. limatula</i>		

Table 3-11
Fish Species Present in the Cook Inlet Area

Common Name	Scientific Name
Freshwater	
Arctic lamprey	<i>Lampetra japonica</i>
Burbot	<i>Lota lota</i>
Arctic grayling	<i>Thymallus arcticus</i>
Threespine stickleback	<i>Gasterosteus aculeatus</i>
Anadromous	
Bering cisco	<i>Coregonus laurettae</i>
Pink salmon	<i>Onchorhynchus gorbuscha</i>
Chum salmon	<i>Onchorhynchus keta</i>
Chinook salmon	<i>Onchorhynchus tshawytscha</i>
Sockeye salmon	<i>Onchorhynchus nerka</i>
Coho salmon	<i>Onchorhynchus kisutch</i>
Inconnu	<i>Stenodus leucichthys</i>
Dolly Varden	<i>Salvelinus malma</i>
White sturgeon	<i>Acipenser transmontanus</i>
Marine	
Pacific herring	<i>Clupea pallasii</i>
Eulachon	<i>Thaleichthys pacificus</i>
Longfin smelt	<i>Spirinchus thaleichthys</i>
Surf smelt	<i>Hypomesus pretiosus</i>
Pacific cod	<i>Gadus macrocephalus</i>
Pacific tomcod	<i>Microgadus proximus</i>
Walleye pollock	<i>Theragra chalcogramma</i>
Armorhead sculpin	<i>Gymnocanthus galeatus</i>
Pacific staghorn sculpin	<i>Leptocottus armatus</i>
Sturgeon poacher	<i>Agonus acipenserinus</i>
Tubenose poacher	<i>Pallasina barbata</i>
Variegated snailfish	<i>Liparis gibbus</i>
Masked greenling	<i>Hexagrammos octogrammus</i>
Daubed shanny	<i>Lumpenus maculatus</i>
Snake prickleback	<i>Lumpenus maculatus</i>
Pacific sand lance	<i>Ammodytes hexapterus</i>
Arrowtooth flounder	<i>Atheresthes stomias</i>
Butter sole	<i>Pleuronectes Isolepis</i>
Starry flounder	<i>Platichthys stellatus</i>
Yellowfin sole	<i>Pleuronectes asper</i>

Table 3-12
Migration Timing of Anadromous Fish Species in Cook Inlet

Species	Timing of Adult In-Migration	Timing of Smolt Out-Migration
Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)	Early May - Late July	Mid-June - Late August
Sockeye/Red Salmon (<i>O. nerka</i>)	Late June - Early August	Mid-May - Late August
Coho/Silver Salmon (<i>O. kisutch</i>)	Late July - November	March - Late September
Pink Salmon (<i>O. gorbuscha</i>)	Early July	Early Spring
Chum/Dog Salmon (<i>O. keta</i>)	Early July - Early August	Late May - Late June
Eulachon/Hooligan (<i>Thaleichthys pacificus</i>)	Early to Mid-May	June
Bering Cisco (<i>Coregoninus laurettae</i>)	August - October	Late April - May
Dolly Varden Char (<i>Salvelinus malma</i>)	Late Summer – Fall	Spring - Fall

Source: Hart 1973; Morrow 1980;
 MMS 1996b

Table 3-13
Seabird Species Occurring in the Cook Inlet Area

Common Name	Scientific Name	ESA Status ^a	Occurrence ^b
Short-tailed albatross	<i>Diomedea albatrus</i>	E	Acc
Northern fulmar	<i>Fulmarus glacialis</i>	--	C/S,M; R/W
Sooty shearwater	<i>Puffinus griseus</i>	--	C/S,M
Short-tailed shearwater	<i>Puffinus tenuirostris</i>	--	U/S,M
Fork-tailed storm petrel	<i>Oceanodroma furcata</i>	--	C/M
Leach's storm petrel	<i>Oceanodroma leucorhoa</i>	--	U/S
Double-crested cormorant	<i>Phalacrocorax auritus</i>	--	C/B,M; U/W
Pelagic cormorant	<i>Phalacrocorax pelagicus</i>	--	C/B,M,W
Red-faced cormorant	<i>Phalacrocorax urile</i>	--	U/B,M,W
Bonaparte's gull	<i>Larus philadelphia</i>	--	C/B,M
Mew gull	<i>Larus canus</i>	--	C/B,M,W
Herring gull	<i>Larus argentatus</i>	--	C/M; R/S,W
Glaucous-winged gull	<i>Larus glaucescens</i>	--	C/B,M,W
Glaucous gull	<i>Larus hyperboreus</i>	--	R/S,W,M
Black-legged kittiwake	<i>Rissa tridactyla</i>	--	C/B,M; U/W
Sabine's gull	<i>Xema sabini</i>	--	U/M; R/S
Arctic tern	<i>Sterna paradisaea</i>	--	C/B,M
Aleutian tern	<i>Sterna aleutica</i>	--	U/B,M
Common murre	<i>Uria aalge</i>	--	U/B,M,W
Pigeon guillemot	<i>Cephus columba</i>	--	C/B,M,W
Marbled murrelet	<i>Brachyramphus marmoratus</i>	--	C/M,W
Kittlitz's murrelet	<i>Brachyramphus brevirostris</i>	--	C/S; U/W
Ancient murrelet	<i>Synthliboramphus antiquus</i>	--	U/S,M,W
Parakeet auklet	<i>Cyclorhynchus psittacula</i>	--	R/B,M
Rhinoceros auklet	<i>Cerorhinca monocerata</i>	--	R/S,M
Tufted puffin	<i>Fratercula cirrhata</i>	--	C/B,M; R/W
Horned puffin	<i>Fratercula corniculata</i>	--	U/B,M; R/W

^a Federal status under the Endangered Species Act of 1973. E = endangered.

^b Occurrence information from DeGange and Sanger (1987) and Isleib and Kessel (1973). Abbreviations: C = common, U = uncommon, R = rare, Acc = accidental, B = breeding bird, M = migration, W = winter, and S = summer.

Table 3-14
Shorebird Species Occurring in the Cook Inlet Area

Common Name	Scientific Name	ESA Status ^a	Occurrence ^b
Black-bellied plover	<i>Pluvialis squatarola</i>	--	C/M
Lesser golden-plover	<i>Pluvialis dominica</i>	--	C/M
Semipalmated plover	<i>Charadrius semipalmatus</i>	--	C/B,M
Black oystercatcher	<i>Haematopus bachmani</i>	--	C/B,M,W
Greater yellowlegs	<i>Tringa melanoleuca</i>	--	C/B,M
Lesser yellowlegs	<i>Tringa flavipes</i>	--	C/B,M
Solitary sandpiper	<i>Tringa solitaria</i>	--	R/B; U/M
Wandering tattler	<i>Heteroscelus incanus</i>	--	U/B; C/M
Pribilof Islands rock sandpiper	<i>Calidris ptilocnemis</i>	--	C/W
Spotted sandpiper	<i>Actitis macularia</i>	--	C/B,M
Whimbrel	<i>Numenius phaeopus</i>	--	C/M
Hudsonian godwit	<i>Limosa haemastica</i>	--	U/B,M
Bar-tailed godwit	<i>Limosa lapponica</i>	--	U/B,M
Ruddy turnstone	<i>Arenaria interpres</i>	--	C/M
Black turnstone	<i>Arenaria melanocephala</i>	--	C/M; U/W
Surfbird	<i>Aphriza virgata</i>	--	U/B; C/M
Red knot	<i>Calidris canutus</i>	--	C/M
Sanderling	<i>Calidris alba</i>	--	U/M; R/W
Semipalmated sandpiper	<i>Calidris pusilla</i>	--	U/M
Western sandpiper	<i>Calidris mauri</i>	--	C/M
Least sandpiper	<i>Calidris minutilla</i>	--	C/B,M
White-rumped sandpiper	<i>Calidris fuscicollis</i>	--	Acc
Baird's sandpiper	<i>Calidris bairdii</i>	--	U/M
Pectoral sandpiper	<i>Calidris melanotos</i>	--	C/M
Rock sandpiper	<i>Calidris ptilocnemis</i>	--	C/M,W
Dunlin	<i>Calidris alpina</i>	--	C/M,W
Short-billed dowitcher	<i>Limnodromus griseus</i>	--	C/B,M
Long-billed dowitcher	<i>Limnodromus scolopaceus</i>	--	C/M
Common snipe	<i>Gallinago gallinago</i>	--	C/B,M; R/W
Red-necked phalarope	<i>Phalaropus lobatus</i>	--	C/B,M

^a Federal status under the Endangered Species Act of 1973.

^b Occurrence information from Isleib and Kessel (1973), DeGange and Sanger (1987), and Gill and Tibbets (1999). Abbreviations: C = common, U = uncommon, R = rare, Acc = accidental, B = breeding bird, M = migration, and W = winter.

Table 3-15
Marine Mammals Occurring in the Cook Inlet Area

Common Name	Scientific Name	ESA Status ^a
Northern right whale	<i>Eubalaena glacialis</i>	E
Minke whale	<i>Balaenoptera acutorostrata</i>	--
Sei whale	<i>Balaenoptera borealis</i>	E
Blue whale	<i>Balaenoptera musculus</i>	E
Fin whale	<i>Balaenoptera physalus</i>	E
Gray whale	<i>Eschrichtius robustus</i>	--
Humpback whale	<i>Megaptera novaeangliae</i>	E
Beluga whale	<i>Delphinapterus leucas</i>	D
Killer whale	<i>Orcinus orca</i>	--
Dall's porpoise	<i>Phocoenoides dalli</i>	--
Harbor porpoise	<i>Phocoena phocoena</i>	--
Steller sea lion	<i>Eumetopias jubatus</i>	E
Harbor seal	<i>Phoca vitulina richardsi</i>	--
Sea otter	<i>Enhydra lutris</i>	--

^a E = endangered under the Endangered Species Act of 1973;
D = depleted stock (applies to Cook Inlet stock of belugas).

Table 3-16
Threatened and Endangered Species Potentially Present

Common Name	Scientific Name	ESA Status
Steller's eider	<i>Polysticta stelleri</i>	T
Short-tailed albatross	<i>Phoebastria albatrus</i>	E
Fin whale	<i>Balenoptera physalus</i>	E
Humpback whale	<i>Megaptera novaeangliae</i>	E
Blue whale	<i>Balenoptera musculus</i>	E
Northern right whale	<i>Eubalaena glacialis</i>	E
Steller sea lion, western stock	<i>Eumetopias jubatus</i>	E
Beluga whale	<i>Delphinapterus leucas</i>	D

T - Listed as threatened under the Endangered Species Act
E - Listed as endangered under the Endangered Species Act
D - Listed as depleted under the Marine Mammal Protection Act

Table 3-17
Waterbird Species Occurring in the Cook Inlet Area

Common Name	Scientific Name	ESA Status ^a	Occurrence ^b
Common loon	<i>Gavia immer</i>	--	U/B,W; C/M
Pacific loon	<i>Gavia pacifica</i>	--	U/B; C/M,W
Red-throated loon	<i>Gavia stellata</i>	--	C/B,M; U,W
Yellow-billed loon	<i>Gavia adamsii</i>	--	U/M; U/W
Red-necked grebe	<i>Podiceps grisegena</i>	--	U/W
Horned grebe	<i>Podiceps auritus</i>	--	U/W
Tundra swan	<i>Cygnus columbianus</i>	--	C/M
Trumpeter swan	<i>Cygnus buccinator</i>	--	C/B,M
Greater white-fronted goose	<i>Anser albifrons</i>	--	C/B,M
Snow goose	<i>Chen caerulescens</i>	--	C/M
Emperor goose	<i>Chen canagica</i>	--	U/M,W
Brant	<i>Branta bernicla</i>	--	U/M
Canada goose	<i>Branta canadensis</i>	--	C/B,M
Green-winged teal	<i>Anas crecca</i>	--	C/B,M
Mallard	<i>Anas platyrhynchos</i>	--	C/B,M
Northern pintail	<i>Anas acuta</i>	--	C/B,M
Northern shoveler	<i>Anas spatula</i>	--	C/B,M
Gadwall	<i>Anas strepera</i>	--	U/B
American wigeon	<i>Anas americana</i>	--	C/B,M
Canvasback	<i>Aythya valisineria</i>	--	U/B,M
Ring-necked duck	<i>Aythya collaris</i>	--	R/B,M
Greater scaup	<i>Aythya marila</i>	--	C/B,M
Lesser scaup	<i>Aythya affinis</i>	--	R/B,M,W
Common eider	<i>Somateria mollissima</i>	--	U/B,M,W
King eider	<i>Somateria spectabilis</i>	--	U/M,W
Steller's eider	<i>Polysticta stelleri</i>	T	U-C/W
Harlequin duck	<i>Histrionicus histrionicus</i>	--	C/B,M
Oldsquaw	<i>Clangula hyemalis</i>	--	C/M,W
Black scoter	<i>Melanitta nigra</i>	--	C/M,W
Surf scoter	<i>Melanitta perspicillata</i>	--	C/M,W
White-winged scoter	<i>Melanitta fusca</i>	--	C/B,M,W
Common goldeneye	<i>Bucephala clangula</i>	--	R/B; C/M,W
Barrow's goldeneye	<i>Bucephala islandica</i>	--	C/B,M,W
Bufflehead	<i>Bucephala albeola</i>	--	R/B; C/M,W
Hooded merganser	<i>Lophodytes cucullatus</i>	--	R/B,M,W
Common merganser	<i>Mergus merganser</i>	--	C/B,M,W
Red-breasted merganser	<i>Mergus serrator</i>	--	C/B,M,W

^a Federal status under the Endangered Species Act of 1973. T = threatened.

^b Occurrence information from Armstrong (1990), Isleib and Kessel (1973), USFWS (1999a), and DeGange and Sanger (1986). Abbreviations: C = common, U = uncommon, R = rare, Acc = accidental, B = breeding bird, M = migration, and W = winter.

NOTE: Some rare and accidental species are not listed.

Table 3-18
Occurrence of Terrestrial Mammals in the Upper Cook Inlet Area

Common Name	Scientific Name
Masked Shrew	<i>Sorex cinereus</i>
Dusky Shrew	<i>Sorex monticolus</i>
Water Shrew	<i>Sorex palustris</i>
Pigmy Shrew	<i>Sorex hoyi</i>
Little Brown Bat	<i>Myotis lucifugus</i>
Collared Pika	<i>Ochotona collaris</i>
Snowshoe Hare	<i>Lepus americanus</i>
Arctic Ground Squirrel	<i>Spermophilus parryii</i>
Hoary Marmot	<i>Marmota caligata</i>
Red Squirrel	<i>Tamiasciurus hudsonicus</i>
Beaver	<i>Castor canadensis</i>
Northern Red-backed Vole	<i>Clethrionomys rutilus</i>
Tundra Vole	<i>Microtus oeconomus</i>
Singing Vole	<i>Microtus miurus</i>
Muskrat	<i>Ondatra zibethicus</i>
Brown Lemming	<i>Lemmus sibiricus</i>
Northern Bog Lemming	<i>Synaptomys borealis</i>
Meadow Jumping Mouse	<i>Zapus hudsonicus</i>
Porcupine	<i>Erthizon dorsatum</i>
Coyote	<i>Canis latrans</i>
Wolf	<i>Canis lupus</i>
Red Fox	<i>Ulpes vulpes</i>
Black Bear	<i>Ursus americanus</i>
Brown Bear	<i>Ursus arctos</i>
Marten	<i>Martes americana</i>
Ermine	<i>Mustela erminea</i>
Mink	<i>Mustela vison</i>
Wolverine	<i>Gulo gulo</i>
River Otter	<i>Lutra canadensis</i>
Lynx	<i>Lynx canadensis</i>
Moose	<i>Alces alces</i>

Source: NCG 2001

Table 3-19
Historical Populations for the Project Area

Year	Tyonek	Kenai	Nikiski	Soldotna	Kenai Peninsula Borough	Anchorage
1900	107	290	--	--	--	--
1910	--	250	--	--	--	--
1920	58	332	--	--	--	1,856
1930	78	286	--	--	--	2,277
1940	136	303	--	--	--	3,495
1950	132	321	--	--	--	11,254
1960	187	778	--	32	6,097	82,833
1970	232	3,533	--	1,202	15,836	124,542
1980	239	4,324	1,109	2,320	25,282	174,431
1990	154	6,327	2,743	3,482	40,802	226,338
2000	193	6,942	4,327	3,759	49,691	260,283

Source: U.S. Census Bureau 2000

Table 3-20
Employment by Occupation (Based on 1990 Census Data)^a

Occupation	Tyonek	Kenai	Nikiski	Soldotna	Kenai Peninsula Borough
Precision Craft or Repair	0	488	252	172	2,796
Administrative Support	3	402	155	269	2,254
Professional Specialty	14	331	64	203	2,202
Other Professional Service	8	326	87	186	1,908
Executive/Administrative	3	284	89	182	1,889
Sales	2	323	68	237	1,595
Transportation or Materials	0	115	84	96	1,081
Forestry/Fishing/Farming	0	57	55	27	842
Handler/Equipment/Labor	1	135	62	41	828
Machine Operators	2	165	54	59	795
Protective Service	0	67	32	46	454
Technical	0	43	51	78	449
Private Household	0	2	6	0	44
Total	33	2,738	1,059	1,596	17,137

Source: DCED 2001

^aNote: 2000 Census data was not available at the time this EA was prepared.

Table 3-21
Employment by Industry (Based on 1990 Census Data)^a

Occupation	Tyonek	Kenai	Nikiski	Soldotna	Kenai Peninsula Borough
Retail Trade	3	542	123	387	2,963
Education Services	13	218	27	176	1,558
Petroleum/Mining	0	367	161	114	1,401
Public Administration	6	205	68	151	1,390
Construction	0	129	81	85	1,350
Fishing/Forestry/Farming	0	100	67	35	1,174
Non-Durable Manufacturing	0	256	135	58	1,029
Other Professional Services	0	131	50	100	982
Health Services	5	125	24	148	973
Transportation	0	96	68	21	891
Wholesale Trade	0	98	101	44	668
Business & Repair Service	0	123	83	104	650
Durable Manufacturing	0	65	23	15	556
Personal Services	2	101	6	45	472
Finance/Insurance/Real Est.	0	88	29	61	454
Communications/Utilities	0	41	4	39	399
Entertainment/Recreation	4	53	9	13	227
Total	33	2,738	1,059	1,596	17,137

Source: DCED 2001

^aNote: 2000 Census data was not available at the time this EA was prepared.

Table 3-22
Other Economic and Employment Indicators (Based on 1990 Census Data)^a

Economic Parameter	Tyonek	Kenai	Nikiski	Soldotna	Kenai Peninsula Borough
Total Potential Workers (16+)	93	4,428	1,833	2,282	28,709
Total Employment	33	2,738	1,059	1,596	17,245
Private Sector Employment	17	2,252	965	1,233	13,588
Self Employed	0	199	40	233	2,024
Local Government	10	258	65	232	1,881
State Government	0	151	29	110	1,156
Federal Government	6	77	0	21	512
Unemployed & Seeking Work	20	376	180	153	1,975
Percent Unemployed	37.7%	12.1%	14.5%	8.7%	10.3%

Source: DCED 2001

^aNote: 2000 Census data was not available at the time this EA was prepared.

Table 3-23
Upper Cook Inlet Oil and Gas Fields (1958 through 1996)

Field	Current Operator	Location	Production History	Total Production (MMB)	Percent Depleted (%)
Swanson River	Unocal	Onshore-east side	Began-1958	223.432 MMB Oil	95
				1.379 MMB NGL	--
				<160.278 BCF Gas>	0
Stump Lake	--	Onshore-west side	Began 1958	5.345 BCF Gas	--
Sterling	Marathon	Onshore-east side	Began-1962	2.540 BCF Gas	10
			Closed 1986		
			Restart-1990		
Beluga River	ARCO	Onshore-west side	Began 1963	561.956 BCF Gas	44
Granite Point	Unocal	Offshore platforms	Began 1965	127.688 MMB Oil	91
				111.068 BCF Gas	80
McArthur River	Unocal	Offshore platforms	Began 1965	581.148 MMB Oil	94
				8.979MMB NGL	--
				793.051 BCF Gas	57
Birch Hill	ARCO	Onshore-east side	Closed 1965	0.065 BCF Gas	1
Middle Ground Shoal	Shell & Unocal	Offshore platforms	Began 1965	176.679 MMB Oil	91
				98.035 BCF Gas	88
Trading Bay	Unocal & Marathon	Offshore platforms	Began-1965	96.757 MMB Oil	96
				0.360 MMB NGL	--
				70.767 BCF Gas	71
Falls Creek	--	Onshore-east side	Closed 1966	0.019 BCF Gas	0
North Fork	--	Onshore-east side	Closed 1966	0.105 BCF Gas	1
Moquawkie	CIRI	Onshore-west side	Began 1967	0.985 BCF Gas	--
			Closed 1970		
Redoubt Shoal	Forest Oil	Offshore	Closed 1968	0.002 MMB Oil	
Nicolai Creek	Unocal	Onshore-west side	Began 1968	1.062 BCF Gas	35
			Closed 1977		
North Cook Inlet	Phillips	Offshore platforms	Began 1970	1,252.427 BCF Gas	54
Beaver Creek	Marathon	Onshore-east side	Began 1972	5.004 MMB Oil	83
				133.314 BCF Gas	55
Albert Koloa	CIRI	Onshore-west side	Began 1972	0.119 BCF Gas	--
			Closed 1973		
West Fork	CIRI	Onshore-east side	Began 1978	4.212 BCF Gas	58
			Closed 1985		
			Began 1991		
			Closed in 1995		

Table 3-23 (Continued)
Upper Cook Inlet Oil and Gas Fields (1958 through 1996)

Field	Current Operator	Location	Production History	Total Production (MMB)	Percent Depleted (%)
Lewis River	ARCO	Onshore-west side	Began 1984	8.641 BCF Gas	--
Pretty Creek	Unocal	Onshore-west side	Began 1986	5.560 BCF Gas	--
Cannery Loop	Marathon	Onshore-east side	Began 1988	111.068 MMB Gas	69
Ivan River	Unocal	Onshore-west side	Began 1990	47.449 BCF Gas	47
West McArthur R.	Forest Oil	Offshore with	Began 1991	3.240 MMB Oil	29
		onshore production		0.789 BCF Gas	--
Kenai	Marathon	Onshore-east side	Began 1960	0.012 MMB NGL	--
				2,129.758 BCF Gas	88

Source: Alaska Division of Oil and Gas 1998

MMB - million barrels

BCF - billion cubic feet

Table 3-24
Cook Inlet Oil and Gas Production (1958 through 1996)

Year	Production		
	Oil (MMB)	NGL (MMB)	Gas (BCF)
1958	0.036	0	0.006
1959	0.187	0	0.027
1960	0.558	0	<46.345>
1961	6.327	0	1.508
1962	10.259	0	3.298
1963	10.74	0	4.333
1964	11.054	0	6.245
1965	11.131	0	7.311
1966	14.364	0	12.764
1967	28.913	0	24.649
1968	66.146	0.004	41.535
1969	74.038	0.073	80.328
1970	82.415	0.53	145.225
1971	77.628	0.71	155.674
1972	72.64	0.608	148.514
1973	72.196	0.812	137.754
1974	70.074	0.793	143.005
1975	69.111	0.765	154.578
1976	62.404	0.77	153.281
1977	56.095	0.863	161.575
1978	50.132	0.815	179.099
1979	43.635	0.635	184.716
1980	36.247	0.481	179.264
1981	31.075	0.538	192.881
1982	27.411	0.499	196.062
1983	24.763	0.381	210.667
1984	21.984	0.361	211.733
1985	16.944	0.223	216.893
1986	17.58	0.284	191.272
1987	16.191	0.227	189.302
1988	15.716	0.195	196.614
1989	15.366	0.024	198.37
1990	11.147	0.019	205.488
1991	15.34	0.023	203.067
1992	15.179	0.019	204.452
1993	13.853	0.018	201.024
1994	15.561	0.023	214.521
1995	15.513	0.017	214.478
1996	14.585	0.019	222.967
Total	1,213.95	10.73	5,146.53

Source: Alaska Division of Oil and Gas 1998

**Table 3-25
 Commercial Salmon Catches in Upper Cook Inlet
 (Northern District, 1987-1996)**

Year	Chinook	Sockeye	Coho	Pink	Chum
1987	565	123,780	20,623	116,518	23,861
1988	666	51,378	47,089	326,614	37,151
1989	1,714	113,918	53,087	26,382	9,310
1990	993	105,647	90,098	474,488	16,728
1991	725	249,662	134,625	53,325	46,208
1992	2,716	118,060	85,352	73,307	43,006
1993	933	184,219	53,867	21,604	29,321
1994	1,004	218,965	114,786	106,284	74,727
1995	1,890	181,191	91,837	30,232	36,122
1996	15,488	141,830	88,108	139,002	76,040
Average	2,669	148,865	77,947	--	39,247
Odd Year	--	--	--	49,612	--
Even Year	--	--	--	223,939	--

Source: Ruesch and Fox 1997

**Table 3-26
 Estimated Ex-Vessel Value of Commercial Salmon Catches
 in Upper Cook Inlet¹ (Northern District, 1987-1996)**

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1987	\$515,000	\$1,638,000	\$519,000	\$14,000	\$215,000	\$2,901,000
1988	532,000	2,111,000	1,263,000	75,000	440,000	4,421,000
1989	382,000	3,147,000	867,000	30,000	297,000	4,705,000
1990	260,000	967,000	673,000	37,000	153,000	2,090,000
1991	177,000	650,000	621,000	2,000	91,000	1,541,000
1992	168,000	768,000	439,000	14,000	68,000	1,457,000
1993	81,000	867,000	374,000	4,000	67,000	1,393,000
1994	101,000	1,001,000	818,000	13,000	111,000	2,044,000
1995	110,000	710,000	259,000	5,000	84,000	1,168,000
1996	55,000	762,000	195,000	4,000	16,000	1,032,000
Average	\$238,000	\$1,262,000	\$603,000	\$20,000	\$152,000	\$2,275,000

¹ Values calculated by modifying estimated regional ex-vessel values using published catch entire region and Northern District

Source: Ruesch and Fox 1997, as presented in NCG 2001

Table 3-27
Resource Harvest Summary for Tyonek¹

Resource Group²	Annual Per Capita Harvest (Pounds)
Fish	191.64
Salmon	186.63
Non-salmon fish	5.01
Land Mammals	56.05
Large land mammals (moose)	54.95
Small land mammals (beaver and snowshoe hare)	1.1
Marine Mammals (beluga whales)	2.56
Birds and Eggs	1.77
Migratory birds	1.43
Other birds	0.33
Marine Invertebrates (clams)	4.51
Vegetation (plants, greens, mushrooms)	3.41
Total	259.93

¹ Source: ADFG 1999b; data from survey in 1983

² Species in parentheses account for harvest for entire resource group.

Table 3-28
Salmon Catch from the Tyonek Subsistence Fishery

Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
1980	67	1,936	262	0	0	0
1981	70	2,002	269	64	32	15
1982	69	1,565	209	113	15	4
1983	75	2,750	185	40	0	2
1984	75	2,354	310	66	3	23
1985	76	1,720	44	8	0	10
1986	65	1,523	198	210	45	44
1887	64	1,552	161	149	5	24
1988	47	1,474	52	185	6	9
1989	49	1,314	67	175	0	1
1990	42	797	92	366	124	10
1991	57	1,105	25	80	0	0
1992	57	905	74	234	7	19
1993	53	1,247	43	36	11	9
1994	49	840	41	111	0	22
1995	55	1,271	45	123	14	15
1996	48	993	65	61	20	18

Source: NCG
2001

Table 3-29
Summary of Cook Inlet Beluga Population and Native Subsistence Harvests

Year	Estimated Population	Estimated Subsistence Take
1988	--	25 ¹
1989	--	24 ¹
1990	--	16 ¹
1991	653 ²	20 ¹
1992	--	--
1993	--	20 ¹
1994	653 ³	--
1995	491 ³	67 ⁴
1996	594 ³	98 ⁴
1997	440 ³	70 ⁴
1998	347 ³	78 ⁴

¹ Stanek 1994

² Morris 1992

³ Hobbs et al. 1998

⁴ Cook Inlet Marine Mammal Commission 1996, 1997,

Table 3-30
Vessel Traffic to the Port of Anchorage

Year	Self-Propelled Vessels			Non Self-Propelled		
	Passenger & Dry Cargo	Tanker	Tow or Tug	Dry Cargo	Tanker	Total
1987	202	39	51	143	26	461
1988	252	17	167	149	33	618
1989	195	17	402	132	13	706
1990	213	5	107	70	15	410
1991	286	94	268	176	13	837
1992	--	--	--	--	--	--
1993	228	14	111	65	9	427
1994	239	25	66	38	11	397
1995	231	33	71	42	30	407
1996	260	61	32	29	38	420

Sources: USCOE 1987-1996