

Chapter 5

Examples of Economic or Other Relevant Impacts of Designation of Critical Habitat

The State of Alaska, as trustee of the fish and wildlife within Alaska's boundaries, shares with the Service the responsibility for continued survival and recovery of the Cook Inlet stock of beluga whales. Therefore, the beluga population's survival and recovery is of paramount importance to the State. As discussed in Chapters 1-3, the State finds no basis for the Service's proposal to list the Cook Inlet beluga whale DPS as endangered and concludes that existing regulatory mechanisms and management actions adequately assure that the habitat will be protected. Consequently, the State concludes that no critical habitat or primary constituent elements (PCE) should be designated. This conclusion is based on the lack of scientific or commercial information and analyses regarding the status of the population that would support an ESA listing. This conclusion is not based on the potential significant economic or other impacts that would accompany an ESA listing and critical habitat designation.

If, despite the lack of scientific basis, the Service lists the Cook Inlet stock of beluga whale under ESA, then the Service will evaluate critical habitat and PCE for possible designation. Chapter 5 provides the State's comments requested by the Service in the 2007 proposed rule (19861) related to the fifth ESA listing factor: "(5) *Economic or other relevant impacts of designation of critical habitat.*" This chapter also addresses the following statement and solicitation for information (19861):

*The ESA directs the Secretary of Commerce to consider the economic impact of designating critical habitat, and under section 4(b)(2) **the Secretary may exclude any area from such designation if the benefits of exclusion outweigh those of inclusion, provided that the exclusion will not result in the extinction of the species.** We are considering proposal of critical habitat for the Cook Inlet beluga whale in a separate rulemaking. To assist us with that rulemaking, **we specifically request information on the economic attributes within the Cook Inlet region that could be impacted by critical habitat designation, as well as identification of the PCEs or "essential features" of this habitat and to what extent those features may require special management considerations or protection.*** (emphasis added)

Information regarding existing regulatory mechanisms which protect critical habitat and essential physical or biological features for the Cook Inlet stock of beluga whales are addressed in Chapter 3. Thus, this chapter addresses the current economic attributes of the Cook Inlet region and beyond that could be impacted by an ESA listing, the required ESA Section 7 consultation, and a critical habitat designation. If the Cook Inlet stock of beluga whale is listed as an endangered species under ESA, Section 9 "*prohibits certain activities that directly or indirectly affect*" the species by any individual, organization, or agency subject to United States jurisdiction (19860). The activities discussed below are examples of activities that directly or indirectly could be interpreted to affect the Cook Inlet stock of beluga whales.

Range of public activities potentially impacted:

Before identifying potential economic impacts or attributes affected by an ESA listing, the range of activities potentially involved must be identified. Under Section 7 of ESA, all federal agencies are required to consult with the Service to ensure that activities which the agencies authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or to destroy or adversely modify critical habitat. Examples include “. . . permits and authorizations relating to coastal development (including seismic exploration), toxic waste and other pollutant discharges, Federal fishery management plans, and cooperative agreements for subsistence harvest.” The proposed rule (19858) specifically references the following proposed developments and ongoing activities that are planned and permitted within Cook Inlet that could be impacted by a critical habitat designation:

(1) Major expansion to the Port of Anchorage, which requires filling more than 135 acres of intertidal and subtidal habitat, with increased in-water noise from pile driving, dredging, and expanded port operations; (2) Port McKenzie expansion as a commercial port facility directly across a narrow portion of upper Cook Inlet from the Port of Anchorage; (3) the proposed Knik Arm Bridge, which would increase in-water noise with both construction and operational activities and would occupy a portion of upper Cook Inlet that is presently undeveloped and provides important beluga feeding and other habitats; and (4) construction and operation of a large coal mine and marine terminal along the west side of upper Cook Inlet, near the Native Village of Tyonek. Ongoing activities that may impact this habitat include: (1) continued oil and gas exploration, development, and production; and (2) industrial activities that discharge or accidentally spill pollutants (e.g., petroleum, seafood processing, ship ballast, municipal wastewater treatment systems, runoff from urban, mining, and agricultural areas).

The types of developments and activities impacted by a critical habitat designation may also include vessel traffic for subsistence, recreational, and commercial fishing on the rivers and in marine waters throughout the Cook Inlet watershed. Activities may also include military operations, state regulated timber and mining activities, air transportation into the airports and for access to remote sites, state management of fish species that are prey to beluga, shipping, cruise ships, and many other routine activities, perhaps reaching as far as upland wetland fill permits necessary for home construction.

The majority of the State's populous throughout the State depends upon the shipping into and transportation out of Anchorage, and over half of the state's population reside near or engage in the activities described above associated with the Cook Inlet watershed. **Identifying which activities could be affected by a critical habitat designation and then estimating the economic impact of additional permitting requirements and stipulations will require more comprehensive evaluation than is possible during this public comment period. Consequently, the State comments provide only examples and discuss the economics of select activities related to possible critical habitat designation. More detailed economic analysis will be necessary prior to any designation of critical habitat.**

Geographic range of habitat or PCE potentially designated:

A review of “*Habitat areas identified for CI beluga whales*” in Figure 5 of the 2005 draft Conservation Plan includes all of Cook Inlet (including Kachemak Bay) out to the Barrier Islands as the known range. (Other publications document beluga sightings on the south side of the Alaska Peninsula, around the coast of Kodiak Island, throughout Prince Williams Sound, and areas in the Gulf of Alaska) Based on the petition to list and testimony by the petitioners at public hearings, the Service will be pressured to list all of Cook Inlet as critical habitat and to list certain fish species as PCE. Although the Service recognizes that these activities and current habitat conditions did not contribute to the decline in the Cook Inlet stock of beluga whale, **an ESA listing may lead to a critical habitat designation. If a critical habitat designation includes the entire marine waters of Cook Inlet, it may also affect many activities occurring on land that potentially use fresh waters that run into the Inlet, thus affect the economies of all the communities surrounding the Inlet.** The potential economic impact of the beluga whale listing and critical habitat designation is difficult to assess and will largely depend on how a Beluga Recovery Plan is written, the nature and extent of the critical habitat designated, how the critical habitat designation impacts Section 7 consultation on existing permitting, and other regulatory mechanisms. This is difficult to predict since there is no identifiable cause for the recovery of the Cook Inlet stock of beluga whales being slower than was predicted by the Service.

Commercial activities or attributes within Cook Inlet watershed:

OIL AND GAS

Modern exploration in Cook Inlet began in 1955 when Richfield Oil Corporation began exploration on the Kenai Peninsula in the Swanson River area. Oil was discovered on July 23, 1957. This discovery began an oil rush in south central Alaska. Shortly after the Swanson River discovery, Standard Oil Company of California and Richfield formed a joint venture to explore for oil. Additional wells were drilled in the Swanson River area, and more onshore leases were taken on both sides of Cook Inlet. Several other oil companies moved in to participate in leasing and drilling activities on the Kenai Peninsula. By 1959, 187,000 barrels of crude oil were produced annually. The State’s first competitive sale was held December 10, 1959, bringing the State more than \$4 million in bonus bids. By 1960, further development of the Swanson River and Soldotna Creek Units raised annual oil production to 600,000 barrels. Five other Cook Inlet fields began production between 1965 and 1972. In 1962, Pan American Petroleum Corporation discovered the first offshore oil in Cook Inlet. This led to extensive exploration throughout the Cook Inlet region in the 1960s and 1970s. Chevron opened a refinery in 1963. The Tesoro refinery began operating in 1969. Cook Inlet production peaked at 83 million barrels per year in 1970 and declined to 7 million barrels per year in 2005.

More recently, the West McArthur River field began production in 1993 and Redoubt oil field in 2002. All Cook Inlet oil is currently shipped to the Tesoro refinery at Nikiski on the Kenai Peninsula. Oil from fields on the west side of Cook Inlet is transported by pipeline to the Drift River terminal then transported to Nikiski. Oil from the eastside fields is shipped by pipeline directly to the refinery. By year-end 2005, the Cook Inlet tallied more than 1.3 billion barrels of cumulative oil production, including about 11 million barrels of natural gas liquids.

Cook Inlet gas production began as a by-product of Swanson River oil development. As more oil and gas fields were discovered, nearby markets for the gas were developed in Anchorage and Kenai to supply space heat and electricity generation. In 1968 Unocal launched the ammonia-urea plant at Nikiski to take advantage of the abundance of cheap stranded natural gas. This plant was acquired in 2000 by Agrium Inc. of Calgary, Alberta. In 1969, Phillips and Marathon began operating the liquid natural gas (LNG) plant, also located at Nikiski.

LNG exports to Japan accounted for about a third of total Cook Inlet gas production. Total industrial use of Cook Inlet gas, including LNG exports, fertilizer manufacture, and oil field operations, has remained fairly constant at about 75 percent of total consumption since 1990. Cook Inlet natural gas production has remained relatively stable at an average of 203 Bcf per year from 2001 to 2005. In recent years, the steady increase in residential and commercial demand for space heating and electric power generation has been balanced by declines in oil field operations and reduced fertilizer production.

The history of Swanson River gas production differs from other Cook Inlet fields. Initially, gas was imported from other fields and injected into Swanson River to enhance oil recovery. In 1992, the operator began to “blow-down” the reservoir. In recent years, the Swanson River field became a major net gas producer in Cook Inlet and, since 2005, has been transformed into a federally approved gas storage facility with approximately 2 Bcf of annual storage capacity. The State approved two gas storage facilities in Cook Inlet in depleted reservoirs at Pretty Creek and Kenai Field, which contribute 0.7 and 6 Bcf, respectively, annual storage capacity to the Cook Inlet gas pipeline system.

The Cook Inlet sale area encompasses approximately 4 million acres divided into 815 tracts ranging in gross area from 640 to 5,760 acres. The sale area consists of state-owned uplands and tide and submerged lands lying between the cities of Houston to the north, Homer to the south, the Chugach and Kenai mountain ranges to the east, the Aleutian Range to the west, and within Cook Inlet. In this year’s sale (May 24, 2007), 45 tracts were sold (213,120 acres) bringing in \$2.3 million in bonus bids.

Cook Inlet oil production peaked at 230,000 barrels per day in 1970 and declined to 19,500 barrels per day in 2005. Oil production in Cook Inlet is expected to continue beyond 2025, including oil production from the Beaver Creek field and other non-state lands. Oil and gas exploration drilling since 2000 in Cook Inlet is driven by strong demand and rising prices for both oil and gas, coupled with decline in production from existing fields.

In summary, the majority of developments along the Inlet occurred in the 1960s and 1970s. While the population in the communities has grown, the additional oil and gas facilities and related developments throughout the Inlet have occurred at a slow pace and have been tightly regulated by the responsible state and federal agencies. This development occurred without impact to the beluga population. In 2001, gas reserves in south central Alaska were estimated to be at about a nine year supply. Over the past 6 years, there have been about 30 exploratory wells drilled in Cook Inlet compared with approximately 226 exploratory wells from 1955 through 1999. (See Table below) That approximate rate of exploration can be expected to increase over the next two decades, as the limitations on gas supply in Southcentral Alaska become more

severe. There are, however, no indications of a rapid and imminent increase in exploration. The economic value of that activity, in drilling alone, is roughly \$200 - \$300 million. Support services such as roads and facilities and other indirect and induced economic benefits to the area (primarily to the Kenai Peninsula) add much more.

Table: Oil and gas exploration wells and gas fields discoveries in Cook Inlet, 1955-2003.

Time Period	Number of exploratory wells drilled	Number of gas fields discovered	Success ratio (%)	Estimated ultimate recovery (Bcf)
1955-60	17	5	29.4	2,603.50
1961-65	42	9	21.4	3,575.23
1966-70	85	6	7.1	1,814.86
1971-75	29	1	3.4	10.86
1976-80	14	1	7.1	8.19
1981-85	13	0	0	0
1986-90	5	0	0	0
1991-95	11	2	18.2	139.78
1996-00	10	3	30.0	151.72
2001-03	14	1	7.1	100.00 (?)
Total	240	28	11.7	8,404.14

Source: "South-Central Alaska Natural Gas Study", June 2004, Prepared for the US Dept. of Energy, National Energy Technology Laboratory, Arctic Energy Office, Contract: DE-AM26-99FT40575

Chevron currently has a \$200 million program to find new oil and gas in Cook Inlet. ConocoPhillips and Pioneer Natural resources are also active in Cook Inlet and optimistic about the prospects. Escopeta Oil contracted for a drilling rig to be approved for use in Cook Inlet in 2007 for both oil and gas exploration. The economic value with the renewed interest in Cook Inlet oil and gas will be substantial, especially to the Kenai Peninsula Borough.

It is uncertain how a beluga recovery plan may impact the economics for exploration and development of oil and gas in Cook Inlet. However, it has only been the recent spike in natural gas price that made the Inlet once again attractive for exploration. Additional costs associated with beluga recovery plan requirements and Section 7 consultation could curtail enthusiasm due to significant regulatory delays and increased costs.

COAL

The Cook Inlet – Susitna Coal Province hosts significant coal resources and include the Beluga, Kenai, Matanuska, Susitna, and Yentna coal fields. There are numerous coal leases on the Beluga and Matanuska coal fields, but no active mining is occurring at this time. The Alaska Department of Natural Resources has issued several coal exploration and mine permits within these coal fields and is in the process of coordinating the permitting of one proposed coal mine.

Beluga Field

The Beluga field is one of Alaska's most accessible sources of steam coal. Potentially mineable coal occurs in the Capps (B1), Chuitna (B2), and Threemile (B3) districts within 6 to 25 miles of port sites on Cook Inlet. Several coal seams have been identified in the area east of the Chuitna River (Diamond Coal Co., 1986); and in the area west of the Chuitna River (Placer Dome, 1986).

The Chuitna Coal Project is a surface coal mining and export development located in the Beluga coal field of Southcentral Alaska, approximately 45 miles west of Anchorage, near Tyonek. The project is based on the development of a 300 million ton, ultra low sulfur, sub bituminous coal resource, the center of the mine pit will be approximately 12 miles from the coast of Cook Inlet. The project area is largely undeveloped except for a system of primitive roadways that remain as a result of previous oil and gas exploration and production and logging activities. The workforce to support operations is anticipated at 350 people from Anchorage and the Kenai Peninsula.

The proposed Project includes: a surface coal mine and associated support facilities (Chuitna Coal Mine); mine access road; coal transport conveyor; personnel housing; air strip facility (Chuitna Project Infrastructure); a logistic center; and coal export terminal (Ladd Landing Development). The coal export terminal is currently proposed to include a 10,000-foot trestle constructed into Cook Inlet for the purpose of loading ocean-going coal transport ships. The mine will be positioned in close proximity of the Chuitna River and Lone Creek. The Chuitna River is anticipated to be proposed for use for some of the mine's wastewater and will be regulated closely by several State entities to assure its quality is protected, particularly for anadromous fish habitat. PacRim Coal, the project applicant predicts a minimum 25-year mine life based on the proven reserves in one of three mining areas within the 20,571 acre coal lease area.

If beluga whales are listed under ESA and the proposed loading area is listed as critical habitat, this would likely delay and in other ways impact construction plans of the trestle due to the required Section 7 consultation. Such delays or additional stipulations, beyond the tightly regulated mechanisms already in place under state and federal authorities, will affect the project's construction and operational economics. At the present time, studies are being conducted in anticipation of steps to reduce hydrology and noise impacts from the trestle during construction and operation in order avoid impacts to beluga and other biological and physical features of the habitat. The total economic benefit to south central Alaska from this proposed project throughout its expected life is projected to be in the hundreds of millions of dollars.

Kenai Field

The Kenai Field contains three districts – the Kenai onshore, Kenai offshore, and Seldovia – Port Graham districts (K1, K2, & K3). Coals of the Beluga and Tyonek Formations underlie extensive areas of Cook Inlet, and it is estimated that 532 million short tons of coal occur in beds more than 20 feet thick to a depth of 10,000 feet.

Matanuska Field

This field is located in the Matanuska Valley of South Central Alaska near the head of Knik Arm, 50 miles NE of Anchorage. This field contains the Wishbone Hill district, the Chickaloon district, and the Anthracite Ridge District (M1, M2, & M3). The Wishbone hill district ranks second in historic coal production; 7 million short tons of bituminous coal were extracted for railroad, power plant, and domestic use prior to 1968 (Barnes & Payne, 1956). Rocky Mountain

Energy (1986) identified 17 million tons of surface mineable coal in the Western and Northeastern parts of the Wishbone hill district. The higher ranked coals of the Chickaloon and Anthracite Ridge districts have not been fully explored due to their structural complexity (Waring, 1936).

The Wishbone Hill Mine lies at the western end of the Wishbone Hill Coal district on the southwestern extent of Wishbone Hill approximately seven miles north of Palmer, Alaska. The project is based on the development of a 13 million ton, ultra low sulfur, bituminous coal resource. The project targets four main coal seam groups area proposed for mining utilizing a truck and shovel operation. The workforce to support operations is anticipated at 100 people from Anchorage and the Matanuska-Susitna Borough.

The Jonesville Coal Mine is located in the Matanuska Valley approximately two miles northwest of Sutton, Alaska, near the southeast portion of Wishbone Hill. Mining has been conducted in this area since about 1916, and portions of as many as six separate coal seams have been removed in the past by both underground and surface methods. The project consists primarily of a surface spoils re-mining operation targeting the refuse of the former Evan Jones coal washing facility. Most of the surface disturbance will be associated with the surface re-mining operation. Annual production of re-mined material is expected to range between 350,000 and 750,000 tons.

Susitna Field

The Susitna field contains two districts: the Susitna Flats district and the Little Susitna district. Extensive areas of coal that probably correlate with the Beluga or Sterling Formations of the Kenai Group underlie the Susitna Flats district. In the area north of the Castle Mountain fault, oil-well logs show seams up to 15 feet thick in 2,000 feet of Kenai Group rocks that overlie granitic basement. Just south of the Castle Mountain fault, a well log shows a total of 301 feet of coal in 37 seams in an 8,500 foot section of the Tyonek Formation. The test well did not reach basement (Conwell, Triplehorn, and Ferrell, 1982). The Susitna district has a potential resource of 14.7 million tones of coal that is borderline between high-volatile bituminous and subbituminous A (Barnes and Sokol, 1959).

Yentna Field

Coal seams exposed in the area north of the Beluga Field generally occur in the Conglomerate and Sandstone members of the Tyonek Formation (Reed & Nelson, 1980). Less well-known than the Beluga Field, the Yentna contains drill-proven reserves in the outlying Canyon Creek and Johnson Creek districts (Y1 & Y2). The identified resources, to a depth of 250 feet and with less than a 10: 1 waste/coal ratio, are greater than 500 million short tons in the combined districts.

PORT OF ANCHORAGE

The Port of Anchorage (POA) is a Commercial Strategic Seaport serving the majority of the residents, communities, and activities within the State of Alaska. Ninety percent of all consumer goods provided to eighty percent of the State's population (along the rail belt, Aleutians, Interior Alaska, Western Alaska, and the Arctic) transit through the port. The POA also handles consumer goods for all military installations in the State and supports the rapid military deployment of the US Army's Stryker Brigade Combat Team, Aviation Task Force, and

Airborne Brigade Combat Team. When the POA officially began operations in September 1961, 38,000 tons of cargo moved across its single berth in one year. In the years since, the POA has expanded to five berths and handles five million tons of cargo, generating more than \$750 million for the State's economy.

The POA delivers jet fuel directly from the Port through pipelines to two military bases. In addition, the POA currently stages 100% of the exports of refined petroleum products from the State's largest refinery and facilitates petroleum deliveries from several smaller refineries in the State. The POA also handles delivery of approximately eighty percent of all fuel for the Ted Stevens Anchorage International Airport, the busiest cargo airfield in the United States (measured by landed weight).

The POA currently is undergoing a comprehensive expansion program to replace aging infrastructure and enhance its ability to serve the State of Alaska as a major marine cargo and cruise complex. This expansion includes creating and developing land; constructing advanced road and rail infrastructures; constructing longer and deeper dock spaces with the ability to accommodate today's larger ships; renovating and relocating existing dock structures and facilities; expanding gas and oil pipelines; and upgrading utility and communication infrastructure. Pre-expansion, the POA occupied 129 acres of land—approximately 120 acres of which serve as Port administration and tenant lease area—with the remaining approximately nine acres dedicated to road and circulation areas. Post-construction, the POA will have added 135 new acres of land, significantly increasing traffic movement throughout major industrial areas and in particular along the main arterial route supporting a combination of commercial, employee, and visitor traffic. The POA is fully operational without closure 365 days a year regardless of Alaska's harsh weather conditions.

The Port of Anchorage is the economic life line that serves the majority of Alaska. Any disruption of the Port's activities, would economically impact most, if not all, of the State of Alaska.

TOURISM

Current summer visitor volume estimates for the Kenai Peninsula total 439,000.¹ On average, visitors spend \$934 per person while in Alaska, not including the cost of transportation to enter and exit the State. For the Kenai Peninsula region where visitors tend to spend an average of 5.3 nights, this amounts to a total of \$419 million and includes money spent by air, cruise, and highway travelers. The following table illustrates estimated Kenai Peninsula average spending by visitors by transportation mode:

Total Estimated Visitor Expenditures in Kenai Peninsula Area (Millions of Dollars) Summer 2006 by Mode

	All Visitors	Air	Cruise	Highway /Ferry
Total in-state spending	\$419	\$247	\$134	\$38

Source: AVSP Summer 2006

¹ Alaska Visitor Statistic Program Summer of 2006 conducted by McDowell Group for the Department of Commerce, Community and Economic Development.

Tourism impacts will be immediately felt. Any water-based activity from cruise ships to boat tours and commercial sport fishing might be limited or curtailed depending on areas designated as critical habitat and how a beluga recovery plan is written. For example, in 2005 the Kenai Peninsula's taxable primary tourism sales totaled \$84.2 million accounting for 10 percent of total taxable sales. (source: <http://www.borough.kenai.ak.us>).

Visitor Taxable Sales by Community in the Kenai Peninsula Borough, 2000 - 2005							
Year	Homer	Kenai	Seldovia	Seward	Soldotna	Other	Kenai Pen Borough Total
2000	\$ 12,487,597	\$ 4,827,106	\$ 440,636	\$ 19,561,615	\$ 3,204,886	\$ 27,178,838	\$ 67,700,678
2001	\$ 13,134,430	\$ 5,090,686	\$ 323,902	\$ 19,560,607	\$ 3,438,109	\$ 26,947,338	\$ 68,495,072
2002	\$ 14,371,079	\$ 4,699,916	\$ 315,411	\$ 20,304,667	\$ 4,323,213	\$ 26,900,296	\$ 70,914,582
2003	\$ 14,580,419	\$ 4,520,163	\$ 309,491	\$ 20,358,596	\$ 4,030,155	\$ 27,290,295	\$ 71,089,119
2004	\$ 15,963,723	\$ 4,693,265	\$ 302,136	\$ 21,557,817	\$ 4,506,852	\$ 30,665,855	\$ 77,689,648
2005	\$ 17,155,060	\$ 5,067,795	\$ 302,759	\$ 23,867,140	\$ 4,742,653	\$ 33,136,577	\$ 84,271,984

Source: http://www.borough.kenai.ak.us/Econ/1S_P%20data/VisitorIndustry/Sales.htm

Additionally, visitor industry business licenses totaling 8,055 in 2005 and representing 25 percent of total borough-wide businesses, account for 2,060 jobs or twelve percent of borough employment.² An important tourism-based employment segment is the Kenai River registered guides. The number of registered guides increased rapidly during 1985 – 1997, from 171 to 400. The number of guides in 2005 was 407. These guides operate on waters within the Cook Inlet watershed that could be impacted by additional restrictions on their activities.

Additional information for communities throughout southcentral and the Cook Inlet watershed can be acquired from the following statewide tourism links:

Alaska Office of Tourism Development: <http://www.commerce.state.ak.us/oed/toubus/home.cfm>
 Alaska Travel Industry Association: <http://www.alaskatia.org/>

SHORE FISHERIES AND AQUATIC FARMING

Shore fisheries authorized by the Alaska Department of Natural Resources (DNR) currently include approximately 345 leases, or lease applications, in Cook Inlet (including Kachemak Bay). During a fishery opening period, as determined by the Alaska Department of Fish and Game, set gillnets are suspended in the tide, harvested, and as the water ebbs the nets are removed from the tidelands to be cleaned and repaired. Some of the leases are for off-shore sites and must be tended by boat. Set net fishing activity occurs during the summer months of June through August. After fishing is completed, no gear or buoys remain on the tidelands. DNR collects approximately \$103,500 per year in fees from these leases. We do not have specific information on the true economic impact of the fishery because the leases are only issued to one individual per site. Often the extended family or multiple families participate in fishing one lease site, so the economic benefit is spread substantially. This estimated ex-vessel value and other economic benefits of the commercial Cook Inlet set net fishery are discussed in greater depth in the commercial fishing section of this chapter.

Aquatic farming currently authorized by the Alaska Department of Natural Resources includes approximately 18 leases in Cook Inlet; all are in Kachemak Bay. DNR collects approximately \$13,600 from the leases in Cook Inlet. One report estimates the total economic value of those

² http://www.borough.kenai.ak.us/Econ/1S_P%20data/VisitorIndustry/Earnings.htm

leases at approximately \$414,000. The distribution of these leases within the larger Kachemak Bay is: 3 in Kachemak Bay itself, 4 in Jakalof Bay, 2 in Kasitsna Bay, 3 in Peterson Bay, and 6 in Halibut Cove. They range in size from .23 to 28.6 acres, with the median being 1.95 acres. The sites are primarily for suspended oyster growth on gear comprised of vertical leads attached to buoys and mesh baskets in which the oysters grow. These are suspended in the water column and should not lay on the bottom of the ocean floor.

TRANSMISSION LINES AND PIPELINES

Approximately 22 transmission lines and oil and gas pipelines are permitted by DNR on tide and submerged lands in Cook Inlet. Most all of these rights of way were issued just after statehood in the 1960s and 1970s. These lines are either buried or laid on the submerged lands and since covered by mud. DNR expects to receive more applications for relocation or maintenance of existing facilities, construction of new facilities for new oil and gas discoveries, alternative energy projects (such as Fire Island wind generators), and tidal power generators in Cook Inlet. No new oil or gas discoveries have been announced, but there is renewed exploration activity in Cook Inlet. At present there is only one test tidal power project near Point MacKenzie on Matanuska-Susitna Borough tidelands. If that project is successful, there is a chance to see more tidal generators placed in Cook Inlet. The placement of the array of generators depends on many factors including tidal energy, substrate conditions, ice flows, navigation obstructions, and fishery considerations. The only impact from the proposed Fire Island wind farm would be the submerged power cable to the mainland.

OTHER FACILITIES

The Agrium Facility

The Agrium facility on the Kenai Peninsula could see significant expansion in the near future, which will likely involve expanded tidelands facilities, including a coal unloading facility. Agrium has a long history in Alaska, with its roots in Cominco Fertilizers Ltd which dates back to 1931.

The Kenai plant is located on the east side of Cook Inlet on the Kenai Peninsula and boasts a tidewater terminal. Products are shipped from this facility by ocean-going vessels to many parts of the world including South Korea, Mexico, and Taiwan. Kenai produces anhydrous ammonia and urea. Annual urea capacity is 640,000 tons and net ammonia capacity is approximately 280,000 tons. Kenai Storage Facility can store 73,000 tons of ammonia and 118,000 tons of dry product. Shipping is primarily by water; however, some product is shipped by truck to local agricultural and industrial markets. Agrium employs about 150 people; the employees remain on the payroll over the winter.

Port MacKenzie

Port MacKenzie is strategically placed as an area for commercial and industrial expansion adjacent to Anchorage. The Port is the only south central port site not constrained by urbanization. The 14 square miles of uplands are dedicated solely for commercial/industrial development. A ferry, bridge, and railroad spur are all programmed for Port MacKenzie. The ferry is scheduled to start operating between Anchorage and Port MacKenzie in summer 2007. Current business includes 'NPI, LLC,' an exporter of wood chips that invested \$3 million in the

Deep-Draft Dock and \$20 million in a new road, commodities storage pad, conveyor system, and equipment. The Deep-Draft Dock's total project costs were approximately \$15.4 million; aside from the creation of new jobs in the Matanuska-Susitna Borough, the project is estimated to produce \$220,000 to 600,000 in annual wharfage and dockage fees.

The ferry terminal building at Port Mackenzie was completed in October 2006, ahead of schedule. The terminal is a 7,000 square feet, two-story facility. Funding for the construction of the terminal was acquired from a Federal Transit Administration grant, and the total cost of the project was approximately \$4.5 million.

Port MacKenzie consists of a 500' bulkhead barge dock at -20' mean lower low water (MLLW), a 1,200' long deep-draft dock at -60' MLLW, and 8,940 acres (14 square miles) of adjacent uplands which are available for commercial lease. There is also a filter rock ramp adjacent to the south wingwall which is useable two hours before high tide until two hours after high tide for vessels with ramps. This allows for heavy equipment to be driven on/off the dock. The dock has a gravel surface with a load capacity of 1,000 lbs. /sq ft. The deep-draft dock is equipped with a 5' wide conveyor system capable of loading bulk commodities at 2,000 tons/hour.

Cook Inlet Ferry System

This is currently in the planning/build out stage. The ferry is now under construction. Two docks are being planned for upper Cook Inlet. Permits are in place for the Knik side, the Municipality of Anchorage has yet to issue permits for the Anchorage landing. Total investment for the project is \$44.8 million. The two planned docks could be affected if Cook Inlet beluga whales are listed under ESA.

Knik Arm Bridge Crossing

The Knik Arm Bridge and Toll Authority (KABTA), was established by the Alaska Legislature in 2003 to construct a bridge across the Knik Arm of Cook Inlet to link Anchorage to the Matanuska-Susitna Borough. To date, efforts to build the bridge have cost \$33 million, and another \$10 million is budgeted for 2007. KABATA hopes to have the bridge operational by 2010. The Federal Highway Administration has not released an environmental impact statement for the project, which KABATA completed on February 6. The fate of the proposed bridge could be affected if Cook Inlet beluga whales are listed under ESA.

MUNICIPAL WASTEWATER DISCHARGES

Since the early 1980s, Anchorage Water and Wastewater Utility (AWWU) of the Municipality of Anchorage has operated under a waiver of Section 301(h) of the Clean Water Act, allowing AWWU to discharge wastewater without secondary treatment. This waiver was given in recognition of the high mixing capacity of the tidal flats in the discharge zone, the limited number (<20) of permitted industrial discharges in AWWU's service area, and regular toxicity tests demonstrating a lack of harm to marine wildlife.

Kenai and Homer have both primary and secondary treatment facilities in place, so it is fair to state that those communities would **not** face the same level of prospective financial burden as Anchorage if an upgrade were required. Currently, AWWU of the Municipality of Anchorage is in good standing with the EPA. In spite of the track record, an ESA listing of beluga whale

would increase operational costs to rate payers due to the imposition of stricter wastewater discharge standards. A potential worst case scenario would result if the facilities permit were not reauthorized. Facility upgrades to comply with new standards could cost AWWU utility rate payers \$400 - \$600 million.

The following additional information is excerpted from correspondence by Craig Woolard, Ph.D., P.E., Treatment Division Director, Anchorage Water and Wastewater Utility:

. . .the Asplund facility which has operated since October, 1985 under a Clean Water Act 301(h) waiver which permits discharge of primary treated effluent to Cook Inlet.

In order to operate under a 301(h) waiver, AWWU conducts extensive monitoring of our treatment facility and Cook Inlet to verify that our activities are not impacting the environment. These monitoring requirements are over and above those normally placed on conventional secondary treatment plants to insure the receiving body of water is not degraded. Our monitoring activities are too numerous to mention in total here but include:

- Influent, effluent and sludge monitoring for conventional compounds (biochemical oxygen demand, total suspended solids, fecal coliform bacteria) and toxic pollutants and pesticides (126 priority pollutants that include metals and cyanide) and organics.*
- Receiving water quality monitoring to determine effluent plume dispersion and compliance with water quality standards.*
- Biological and sediment monitoring to measure toxicity of the effluent to standard test species, sediment quality, the concentration of bacteria in the Inlet, and the bioaccumulation of effluent constituents in local species (e.g., algae, salmon and cod).*

AWWU also administers an Industrial Pretreatment Program to enforce the MOA sewer ordinance and prevent local industries from discharging wastes that could impact treatment performance or Cook Inlet water quality. AWWU also supports a non-industrial source control program that partially funds the MOA hazardous waste collection facilities to prevent the introduction of harmful wastes into the sewer system.

The monitoring data show that over the last 20 years, the performance of the Asplund facility has been excellent. This facility has been operated to meet effluent limits and requirements specified in the NPDES permit and 301(h) Waiver. In fact, the Asplund treatment process achieves removal rates that are much higher than typical primary treatment facilities. The discharge itself contains very low concentrations of metals or organic materials and meets discharge requirements and water quality standards. In addition, Knik Arm provides rapid mixing and dispersion of wastewater discharged by the Asplund facility into the marine waters off Point Woronzof. As a result, our monitoring in Knik Arm has found no evidence of any significant impact of the discharge on the water quality of Cook Inlet or Cook Inlet beluga whales.

NMFS concurred with this assessment as part of our 2000 permit renewal. As part of the permitting process, EPA prepared a biological evaluation of site-specific water quality

criteria for the Point Woronzof Area and concluded that that conventional pollutant and metals discharges allowed by the NPDES permit were not likely to adversely affect beluga whales. NMFS concurred with this determination in 2000.

In addition, EPA also conducted an Essential Fish Habitat Assessment as part of the permit renewal process and concluded that issuance of our discharge permit was not likely to adversely impact any essential fish habitat in the vicinity of the discharge. Again, NMFS concurred with these findings in 2000.

MINING

The Cook Inlet watershed includes all or portions of 11 mining districts with past production greater than 2 million troy ounces of gold; more than 143 million tons of sand and gravel and more than 9.5 million tons of rock in the past 25 years; 40,000 tons of metallurgical-grade chromium ore; and significant silver, copper, antimony, and coal. Total past production value of these commodities at current commodity prices exceeds \$2.5 billion.

The area of the Cook Inlet watershed is richly endowed with mineral resources. There are over 1,500 known mineral occurrences in the Cook Inlet watershed tabulated in the Alaska Resource Data Files (ARDF) (<http://ardf.wr.usgs.gov/>). These mineral occurrences are about evenly split between placer gold and metallic lode sites. Significant gold, silver, copper, zinc, lead, nickel, platinum, chromium, tin, and antimony occurrences are known in the area, and these commodities are being aggressively explored by international mining companies in this region. In the past 5 years, mining companies have spent more than \$27.5 million exploring for minerals in the south central region of Alaska. More than 10,186 mining claims and mining leases cover State and federal lands within the Cook Inlet watershed. Significant recent mineral discoveries, such as the Whistler copper-molybdenum-gold-silver prospect near Rainy Pass, the Lucky Shot gold prospect in the Willow Creek mining district, and the Golden Zone gold-silver-copper property near the Chulitna River, may be developed in the near future. The area's excellent infrastructure and proximity to a large workforce have and will continue to attract mineral exploration for the foreseeable future.

Currently, there are no large mines operating around Cook Inlet. However, there are a large number of mineral occurrences around the Inlet, particularly along the eastern flank of the Alaska Range. The Pebble prospect is the obvious prospect for a large mine in the foreseeable future. A number of companies are exploring in the area north and west of Iliamna near the Pebble prospect. On the other side of Cook Inlet, there is a chromite deposit at Red Mountain, on the southern end of the Kenai Peninsula. There is presently no activity on the deposit, but it has been mined in the past and could be developed in the future. The deposit is on Cook Inlet Region Inc. (CIRI) land. Full Metal Minerals is doing development drilling on the old Lucky Shot gold mine on upper Willow Creek in the Talkeetna Mountains, with a good possibility of developing that prospect into a working mine again. The Lucky Shot will likely be a small operation, and farther away from Cook Inlet. This deposit is small but has good values and could become a mine in the future. The Johnson River prospect is on CIRI land.

Currently no shoreline or offshore mining activities occur around Cook Inlet. Hemis Gold is beginning an offshore sampling program in the Anchor Point area this year.

The Pebble Project

The Alaska Department of Commerce, Community and Regional Development recently did an evaluation of the economics of a base case mining operation at the Pebble prospect. The base case considered that the mine would be developed as a combination underground and open pit operation with milling at site. Mineral concentrates would be shipped by pipeline to Cook Inlet to a port located near Williamsport.

It is anticipated that typical operation of Pebble, although not yet proposed by the operator, would involve mining 80,300,000 tons of ore annually. Development costs would be in the order of \$4 billion for this typical scenario and employ several thousand persons, many from the immediate area. Direct operating employment would be in the order of 3,500 persons on a full time basis. Other elements of the base (typical) case would be:

- Power would be provided from the Kenai Peninsula
- Concentrates would be shipped worldwide for smelting and metals recovery
- Tailings from the milling operation at site would be placed in a tailings pond (lake) to prevent oxidizing and mobilizing sulfides and metals
- Cost of labor was assumed to be 40% of the total operating cost for the operations; wages would average \$85,000 annually plus 35% burden and benefits
- The base case operating cost was calculated to be \$12.50 per ton milled.

Operation of the property would have a significantly positive economic impact to southwest Alaska and the State. The results of preliminary tax calculations indicated that the mine would pay average annual revenues as follows:

- Municipal taxes of \$23.3 M
- Total state revenues of \$141.1 M (mining license and income taxes, production royalty and claim lease payments).

The project would contribute to indirect employment of a certain percentage, probably equal to or exceeding the direct employment at the operation. This would add at least another 3,500 jobs to the immediate area and the State. Fairbanks Gold's Ft. Knox property is estimated to contribute \$180 million per year to the economy of Fairbanks and vicinity; the Pebble project would be several orders of magnitude larger than Ft. Knox suggesting a tremendous economic influence. This economic boost could easily be in the order of \$500 million annually.

TIMBER

Approximately 39,203 acres of state, private, and borough land could be harvested for timber over the next 20 years within the Cook Inlet watershed. A summary of these harvests is shown below.

PROJECTED TIMBER HARVEST ACTIVITY IN COOK INLET WATERSHED					39,203 acres				
Division of Forestry estimates of likely timber harvest activity in the Cook Inlet watershed, 2007-2027. Actual harvests will depend on market demand and forest management decisions by the landowners.									
Total within 5 years (2007-2011)					Total within 5-20 years (2012-2027)				
		State	Other	Total	Notes	State	Other	Total	Notes
High Probability	Mat-Su	1,000	1,500	2,500	Small sales to local mills on state, Native, and Borough land; plus land use conversions on other private land; limited harvesting for chips	3,000	1,000	4,000	Small sales to local mills
	Kenai Peninsula	2,500		2,500	Ongoing sales of spruce beetle-killed timber	1,500		1,500	
	W. Side Cook Inlet	0	0	0					
Moderate Probability	Mat-Su	2,800	500	3,300	Additional harvesting for chips or pellets -- 2800 acres State sales, 1000 ac Borough sales, approx. 1500 ac in Native sales+ private land use conversions	7,000-12,000	200-400	700-1200	Additional harvesting for chips or pellets
	Kenai Peninsula	7,000	2,000-5,000	9,000-14,000	Additional harvesting for pellets				
Low Probability	Tyonek		5,000	5,000	Harvesting for chips on Native and Mental Health land in Tyonek area				Harvests could occur on Tyonek land if harvest is not complete in first 5 years
	Tuxedni Bay		2,400	2,400	Native land at Crescent River				see notes
	Kalgin Island	1,100		1,100					
	S. Kenai Pen.						500-1,000		Native land Seldovia to Port Chatham
	Jakolof Bay						500		Mental Health Land/Native land
	W. Side Cook Inlet						2,000		Native land

FISHERIES

The statutory responsibility of the Alaska Department of Fish and Game is to protect, maintain, and improve the fish, shellfish, and aquatic plant resources of the State, consistent with the sustained yield principle for the maximum benefit of the economy and the people of Alaska. The following comments address examples of the economic impact of designating critical habitat aspect of a proposed listing under ESA.

The Alaska Department of Fish and Game manages all fish stocks for sustained yield under the mandate of the Alaska Constitution and manages salmon according to the regulatory policy for the management of sustainable salmon fisheries, 5 AAC 39.222, which is based in part on the goal of ensuring “*conservation of the salmon and the salmon’s required marine and aquatic habitats.*”

- **SUBSISTENCE FISHERIES**

Most of the waters of the Cook Inlet Management Area are within the Anchorage-MatSu-Kenai Nonsubsistence Area as established by the Joint Boards of Fisheries and Game (5 AAC 99.015(3)). Subsistence fisheries are not authorized within these nonsubsistence areas. Non-commercial harvesting opportunities are provided under sport and personal use fishing regulations.

Cook Inlet waters outside the nonsubsistence area include the Tyonek Subdistrict and the western portion of the Susitna River drainage in Upper Cook Inlet, plus those waters north of Point Bede which are west of a line from the eastern most point of Jakolof Bay north of the westernmost point of Hesketh Island including Jakolof Bay and south of a line west of Hesketh Island and the waters south of Point Bede which are west of the easternmost point of Rocky Bay, which are in Lower Cook Inlet. These are areas where the Joint Board found subsistence fishing and hunting to be a principal characteristic of the economy, culture, and way of life, the standard established by Alaska statute (AS 16.05.258(c)) to identify areas where subsistence hunting and fishing will be permitted.

Cook Inlet communities outside the nonsubsistence area include Skwentna (population 111 in 2000), Alexander (population 39), Tyonek (population 193), Seldovia (population 430), Port Graham (population 171), and Nanwalek (population 177). These communities have economic attributes directly linked to decisions regarding management of the subsistence fisheries and related access to those fisheries.

Outside the nonsubsistence area, the Alaska Board of Fisheries is required to identify fish stocks with customary and traditional uses and adopt regulations that provide a reasonable opportunity for subsistence uses of those stocks. If the harvestable surplus for any fish stock with customary and traditional uses is not sufficient to provide opportunities for all consumptive uses, non-subsistence uses must be restricted or eliminated before restricting subsistence fishing opportunities (AS 16.05.258). All Alaska residents are eligible to participate in authorized subsistence fisheries.

The Alaska Board of Fisheries has adopted regulations for 4 subsistence salmon fisheries in the Cook Inlet Area. Brief descriptions follow. For more detail, see Fall et al. 2007.

1. Port Graham and Koyuktoik Subdistricts. This subsistence setnet salmon fishery is located along the southern shore of outer Kachemak Bay in the Port Graham and Koyuktoik subdistricts of the Southern District and, beginning in 2002, the Port Chatham and Wind Bay subdistricts. Two Alaska Native communities, Nanwalek and Port Graham, are located in the Port Graham Subdistrict, and residents of these communities are the primary participants in the fishery. The recent (2001 to 2005) annual harvest for this fishery was 8,000 salmon (Table S1). For a detailed description of this subsistence fishery and other subsistence harvests and uses in Nanwalek and Port Graham, see Stanek (1985).

2. Seldovia Subsistence Salmon Fishery. This setnet fishery is located on the south side of Kachemak Bay in the vicinity of the community of Seldovia in the Southern District of the Lower Cook Inlet Area. It targets Chinook salmon runs passing through lower Cook Inlet and a separate enhanced Chinook run returning to Seldovia Bay. Coho salmon are targeted in a fall fishery. Most participants in the fishery live in Seldovia. The recent (2001 – 2005) annual harvest in this fishery was 342 salmon (Table S2).

3. Tyonek Subdistrict Subsistence Salmon Fishery. This subsistence setnet fishery is located in the Tyonek Subdistrict of the Northern District of upper Cook Inlet. The subdistrict includes the area from one mile south of the mouth of the Chuitna River south to the eastern-most part of

Granite Point and from the mean high tide to the mean lower low tide. Most fishery participants live in Tyonek. From 2001 through 2005, the average annual harvest in the fishery was 1,346 salmon, mostly Chinook salmon (Table S3). For a detailed discussion of this fishery and other subsistence uses at Tyonek, see Fall et al. (1984).

4. Upper Yentna River Subsistence Fish Wheel Fishery. This is a subsistence fish wheel fishery that began in 1996 as a personal use fishery and was reclassified as a subsistence fishery by the Board of Fisheries beginning in 1998. It is located in the main stem of the Yentna River from its confluence with Martin Creek upstream to its confluence with the Skwentna River. Legal gear includes a fish wheel with a live box. Over half the participants are residents of the Skwentna area. From 2001 through 2005, the average annual harvest was 553 salmon (Table S4).

References:

Fall, James A., Dan J. Foster, and Ronald T. Stanek. 1984. The Use of Fish and Wildlife Resources in Tyonek, Alaska. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 105. Juneau.

Fall, James A., Dave Caylor, Michael Turek, Caroline Brown, James Magdanz, Tracie Krauthoefer, Jeannie Heltzel, and David Koster. 2007. Alaska Subsistence Salmon Fisheries 2005 Annual Report. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 318. Juneau.

Stanek, Ronald T. 1985. Patterns of Wild Resource Use in English Bay and Port Graham, Alaska. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 104. Juneau.

Table S1. Historic Subsistence Salmon Harvests, Port Graham and Koyuktolik Subdistricts, 1981-2005.

YEAR	PERMITS		REPORTED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1981		57	138	2,670	825	177	874	4,684
1982		61	124	2,354	1,493	220	2,932	7,123
1983		46	67	2,480	471	95	187	3,300
1984		24	45	3,262	510	6	673	4,496
1985		24	146	1,177	621	26	345	2,315
1986		44	125	647	481	14	1,062	2,329
1987		55	21	901	914	114	714	2,664
1988		48	104	1,021	844	110	1,756	3,835
1989		44	51	157	1,155	74	1,495	2,932
1990		60	265	1,162	1,417	151	2,960	5,955
1991		63	163	688	2,053	221	4,587	7,712
1992		71	200	535	1,150	236	1,421	3,542
1993		56	277	1,148	913	257	2,663	5,258
1994		70	300	830	1,370	504	1,979	4,983
1995		87	585	1,795	538	376	1,273	4,567
1996		75	310	1,744	939	276	749	4,018
1997		26	202	325	203	153	511	1,394
1998		19	169	289	243	240	459	1,400
1999		74	485	3,157	1,747	1,104	2,023	8,516
2000		67	259	4,664	1,831	953	1,606	9,313
2001		49	133	1,085	1,295	228	1,454	4,195
2002		79	346	10,620	1,057	488	1,831	14,342
2003		52	465	5,534	1,006	532	1,572	9,109
2004		80	312	3,525	1,303	213	1,600	6,953
2005		68	292	2,126	1,193	180	1,608	5,399
5-Year								
Average		66	310	4,578	1,171	328	1,613	8,000
10-Year								
Average		59	297	3,307	1,082	437	1,341	6,464
All Years								
Average		56	223	2,156	1,023	278	1,533	5,213

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table S2. Historic Subsistence Salmon Harvests, Seldovia Fishery, 1996-2005.

YEAR	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1996	43	42	51	9	0	0	0	60
1997	20	17	52	22	0	0	0	74
1998	22	20	143	65	0	8	0	216
1999	16	16	136	130	0	38	0	304
2000	22	22	179	252	0	16	0	447
2001	19	16	149	142	0	0	0	290
2002	20	20	124	234	13	11	31	413
2003	18	15	117	290	2	66	22	496
2004	14	12	102	69	5	18	65	258
2005	18	16	53	74	14	11	100	251
5-Year								
Average	18	16	109	162	7	21	43	342
All Years								
Average	21	20	110	129	3	17	22	281

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table S3. Historic Subsistence Salmon Harvests, Tyonek Subdistrict, 1980-2005

YEAR	PERMITS		REPORTED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1980	67		1,757	235	0	0	0	1,992
1981	70		2,002	269	64	32	15	2,382
1982	69		1,590	310	113	4	14	2,031
1983	75		2,665	187	59	6	0	2,917
1984	75		2,200	266	79	23	3	2,571
1985	76		1,472	164	91	10	0	1,737
1986	65		1,676	203	223	46	50	2,198
1987	64	61	1,610	166	149	24	10	1,959
1988	47	42	1,587	91	253	12	8	1,951
1989	49	47	1,250	85	115	1	0	1,451
1990	42	37	781	66	352	12	20	1,231
1991	57	54	902	20	58	0	0	980
1992	57	44	907	75	234	19	7	1,242
1993	62	54	1,370	57	77	17	19	1,540
1994	58	49	770	85	101	22	0	978
1995	70	55	1,317	45	153	15	0	1,530
1996	73	49	1,039	68	137	7	21	1,272
1997	70	42	639	101	137	8	0	885
1998	74	49	1,027	163	64	2	1	1,257
1999	77	54	1,230	144	94	11	32	1,511
2000	60	59	1,157	63	87	0	6	1,313
2001	84	58	976	172	49	6	4	1,207
2002	101	71	1,080	209	115	4	9	1,417
2003	87	74	1,183	111	44	10	7	1,355
2004	97	75	1,345	93	130	0	0	1,568
2005	78	66	982	61	139	2	0	1,184
5-Year								
Average	89	69	1,113	129	95	4	4	1,346
10-Year								
Average	80	60	1,066	119	100	5	8	1,297
All Years								
Average	69	55	1,327	135	120	11	9	1,602

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table S4. Historic Subsistence and Personal Use Salmon Harvest, Upper Yentna Fishery, 1996-2005.¹

YEAR	PERMITS		ESTIMATED SALMON HARVEST						TOTAL
	ISSUED	RETURNED	CHINOOK ²	SOCKEYE	COHO	CHUM	PINK		
1996	17	17	0	242	46	51	115	454	
1997	24	21	0	549	83	10	30	672	
1998	21	18	0	495	113	15	30	653	
1999	18	16	0	516	48	13	18	595	
2000	19	19	0	379	92	7	4	482	
2001	16	15	0	545	50	4	10	608	
2002	25	22	0	454	133	31	14	632	
2003	19	15	0	553	67	8	2	630	
2004	21	19	0	441	146	3	36	625	
2005	18	17	0	177	42	25	24	268	
5-Year Average	20	18	0	434	87	14	17	553	
All Years Average	20	18	0	435	82	17	28	562	

¹ This fishery was classified as personal use in 1996 and 1997; it has been a subsistence fishery since 1998.

² Regulations prohibit the retention of chinook salmon in this fishery (5 AAC 01.593).

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

• RECREATIONAL AND PERSONAL USE FISHERIES

The following three marine sport and personal use fisheries are examples of the broad attributes of sustainable managed fishing effort and harvest in Cook Inlet. Additional information regarding guides and businesses involved in these fisheries may be available from the required guide/charter registration and logbook program. The fisheries and descriptions are:

1. Turnagain Arm hooligan personal use dipnet fishery open only to Alaska residents, occurs in upper Turnagain Arm and Twentymile River from mid-May to late June. Fishing effort and harvest information is available in the Statewide Harvest Survey reports and recent Anchorage Area Management Report.
2. Central Cook Inlet marine recreational fishery primarily targets halibut and Chinook salmon, some coho salmon; occurs from mid-May through August, with most effort mid-May through July. Most boats launch from Deep Creek and Anchor River on the Kenai Peninsula, with some effort occurring by fishermen launching at Homer. Guides/charters and area businesses (Kasilof south to Anchor Point and to some degree Homer) are dependent on these fisheries. Effort and harvest information is in the Statewide Harvest Survey reports and recent North Kenai Peninsula Area Management Report.
3. Lower Cook Inlet marine recreational fishery primarily targets halibut and Chinook salmon, some rockfish; occurs nearly year-round with most effort May-August targeting mostly halibut, though some Chinook effort, and lower levels of effort September-April targeting feeder

Chinook. Most fishermen launch from Homer and Seldovia. Guide/charters and area businesses in Homer/Kachemak Bay are dependent on these fisheries. Effort and harvest information is in the Statewide Harvest Survey reports, recent Lower Cook Inlet Area Management Report, and Groundfish Area Management Report.

The salmon personal use fishery primarily occurs at the mouth of the Kenai and Kasilof rivers, with set net personal use fishery in marine waters near the mouth of the Kasilof. The fishery takes place from mid-June to mid-August, with most effort from late-June to end of July. Guiding is minor, but businesses in the Kenai, Soldotna, and Kasilof area are intensively involved. Effort and harvest information is in recent Upper Kenai Peninsula Area Management Reports and an report by Reimer and Sigurdsson.

The last study the Alaska Department of Fish and Game contracted to provide an estimate of the economic impact of sport fishing activities within the Cook Inlet region was published in 1999 for the 1993 fishing year. The estimates contained within the report are based on data that is now over a decade old, so the economic estimates contained in the report are likely underestimates of the current economic impact of fishing activities. The report is available at <http://www.iser.uaa.alaska.edu/ResourceStudies/sportfishing.htm>. Updated estimates of the economic impact of sport fishing specific to the Cook Inlet region will be available in December 2008, as part of a new study contracted by the Department in February 2007.

In March 2006, the University of Alaska Institute of Social and Economic Research (ISER) published a report under contract with the Kenai River Sport Fishing Association, which focused on estimating the economic benefits of sport fishing, personal use, and commercial fishing in Upper Cook Inlet. The economic estimates in the report were developed by aggregating available information from a variety of sources (including the Department's 1993 economic study) to produce updated estimates based upon several economic assumptions (KRSA 2006). The National Marine Fisheries Services (NMFS) has also conducted several recent economic studies within south central Alaska and Cook Inlet, focusing on recreational saltwater fisheries. The economic estimates associated with sport fishing in Alaska produced by these and other studies, along with the methodology used, scope of work, are summarized in a historical spreadsheet prepared by Department staff below. A summary of the available economic impact of just salmon sport fishing in the south central region and for Upper Cook Inlet waters in 1993 and 2003 is noted in the following table below (KRSA 2006)

Economic Contribution	1993¹	2003²
A. Total Expenditures³ (millions \$)		
Southcentral Alaska	338	415
Upper Cook Inlet salmon	N/A	246
B. Total Payroll⁴ (millions \$)		
Southcentral region	139	171
Upper Cook Inlet salmon	N/A	95
C. Average Annual Jobs⁵		
Southcentral region	6,100	6,100
Upper Cook Inlet salmon	N/A	3,400
D. Net Economic Value⁶ (millions \$)		
Upper Cook Inlet salmon	86	104
E. Total Net Economic Value⁷		
Upper Cook Inlet salmon	N/A	350

¹ Source: ISER 1999

² Source: ISER 2006

³ Direct expenditures by anglers for costs related to sport and personal use fishing

⁴ Total wages and salaries generated by direct and indirect spending arising out of sport fishing activity.

⁵ Total average annual (full time equivalent) jobs created by direct and indirect effects of sport fishing expenditures.

⁶ collective economic gain attributable to residents and nonresidents measured as the monetary value that participants place on the benefits they receive from fishing over and above the cost of going fishing

⁷ total direct spending (expenditures plus net economic value for residents and non-residents)

The Department maintains a current database of the number of license sport fishing guides and guide businesses in the Guide Licensing Database. In 2006, the following counts of sport fishing guide business for Cook Inlet (by water type) were available:

685 = the total number of licensed guide businesses in communities around Cook Inlet in 2006

295 = the total number of licensed guide businesses that operated in saltwater in 2006^a

358 = the total number of licensed guide that operated in freshwater in 2006^b

^a some guided businesses based in one community may actually operate in non-Cook Inlet saltwaters (i.e., North Gulf Coast or Prince William Sound)

^b I did not analyze what fishery/what freshwaters these businesses fished in and thus the count may include business that operate in non-Cook Inlet based freshwater fisheries.

Detailed lists of the guide businesses by community and water type are available from the ADF&G Guide Licensing Database as well.

The following references provide additional information on Economics of Sport Fishing in Alaska. Although several address sport fishing economics in parts of Alaska outside of Cook

Inlet, the methodology and information sources should be helpful to any analysis conducted on economic attributes of sport fishing.

1. ADF&G Guide License Database, 2006. Summary data provided by K. Brogdon.
2. Coughenower, D. D. 1986. Homer, Alaska Charter Fishing Industry Study. University of Alaska Marine Advisory Program, Marine Advisory Bulletin #22.
3. Haley, S.; Berman, M.; Goldsmith, S.; Hill, A., and Kim, H. 1999. *Economics of Sport Fishing in Alaska*. (Institute of Social and Economic Research, University of Alaska Anchorage). Prepared for the Alaska Dept. of Fish and Game. (copy available from UAA: <http://www.iser.uaa.alaska.edu/ResourceStudies/sportfishing.htm>
**NOTE Department disclaimer in beginning of report and executive summary
4. Jones and Stokes, Inc & ASK Marketing and Research Group. 1991. *Southeast Alaska Sport Fishing Economic Study*. Prepared for the Alaska Dept of Fish and Game. (full text .pdf)
5. Jones and Stokes, Inc. 1987. *Juneau Area Sport Fishing Economic Study*. Prepared for the Alaska Dept of Fish and Game. (full text .pdf)
6. Jones and Stokes, Inc. 1987. *Southcentral Alaska Sport Fishing Economic Study*. Prepared for the Alaska Dept of Fish and Game. (full text .pdf)
7. Kenai River Sportfishing Association (KSRA). 2006. Economic Values of Sport, Personal Use and Commercial Salmon Fishing in Upper Cook Inlet. March 2006
8. Lee, S. T.; Herrmann, M.; Wedin, I.; Criddle, K.; Hamel, C., and Greenberg, J. (Alaska Fisheries Science Center, NMFS), 1999. Summary of Angler Survey of Saltwater Sport Fishing off the Kenai Peninsula, Alaska
http://www.afsc.noaa.gov/refm/Socioeconomics/current_research.htm

State of Alaska Comments on ESA Beluga Listing
 August 3, 2007, Enclosure
 Chapter 5, Page 25

Selected Economic Studies of Alaska Sport Fisheries: Statewide and regional economic impact and value estimates

Sub- Regional Economic Impact & Value Estimates																							
Study Year	Study	(year \$)	Economic Impact Estimates (Statewide)					Southcentral Alaska -- (Region II)					Cook Inlet (or Lower, Central or Upper Cook Inlet)					Referenced Page(s)					
			Type of Expenditure(s)	Total Expenditure	Retail Sales	Earnings (payroll)	Jobs ^a	Total Economic	Total Expenditures	Retail Sales	Earnings (payroll)	Jobs ^a	Total Economic	NEV	Total Expenditures	Retail Sales	Earnings (payroll)		Jobs ^a	Total Economic	NEV		
2006	Economic value of Bristol Bay wild salmon watersheds	2005 \$	Total local resident																		Exec Summary p15-25		
			Total non-local (AK) resident																				
			Total non-resident																				
			Total (all anglers)																				
2003	Economic Value of Sport, Personal Use, and Commercial Salmon Fishing in Upper Cook Inlet	2003 \$	Recreational salmon fishing (UCL)												\$246,000,000	\$290,000,000	\$95,000,000	3,400	\$350,000,000	\$104,000,000	p13		
			All Recreational fishing (Southcentral)						\$415,000,000	\$532,000,000	\$171,000,000	6,100										p9	
2003	National FWHAR Survey--ASA analysis	2003 \$	Total (Statewide)	\$562,000,000	\$640,167,515	\$259,556,537	12,065	\$1,046,706,782													link on ADFG site to ASA		
2001 ^c	National FWHAR Survey--ASA analysis	2001 \$	Total (Statewide)	\$557,355,000	\$587,028,597	\$238,011,311	11,064	\$959,821,921													link on ADFG site to ASA		
1997	Linking sport fishing trip attributes, participation decisions, and regional economic impacts in Lower and Central Cook Inlet	1997 \$	Avg. daily expenditures for marine fishing only (halibut/salmon): local residents (Ken. Penin. Borough) non-local AK residents non-residents												\$28,500,000 (halibut/marine salmon only)								
1996 ^c	National FWHAR Survey--USFWS	2001 \$	Total (Statewide)	\$495,717,000	not provided	not provided	not provided	not provided													15		
1996	Duffield, Neher, Merritt (2002) (Reg III only)	1996 \$	Total (Reg III & 5 sub-regions)																		\$28,809,984		
1993-1994	ISER Statewide Study ^d	1993 \$	Total resident	\$340,952,485	\$351,131,867	\$127,173,159	5,524	\$241,371,583	\$261,933,586	\$92,180,137	3955												
			Total nonresident	\$198,664,560	\$286,116,293	\$82,234,558	3,712	\$137,528,436	\$205,935,594	\$58,430,077	2620												
			Total (Statewide & 4 Regions)	\$539,617,045	\$637,248,160	\$209,407,717	9,236	\$378,900,019	\$467,869,180	\$150,610,214	6,575	not provided	\$136,859,545										
1991 ^c	National FWHAR Survey--USFWS	2001 \$	Total (Statewide)	\$311,389,000																	15		
1988	Jones and Stokes Southeast Study	1988 \$	Resident																			Table 8-1, 7-24	
			Non-resident																				Table 8-1, 7-24
			Total																				Table 8-1, 7-24
1986	Jones and Stokes Southcentral Study	1986 \$	Resident					\$74,163,000							\$246,391,000							4-2, Table 4.1	
			Non-resident					\$52,892,000							\$30,385,000								4-2, Table 4.1
			Total					\$127,055,000	---	\$65,276,000	2,840				\$276,776,000								4-15, Table 4.10

^a Direct and indirect jobs (full-time equivalents)

^b The basis for arriving at these totals is not identified in the sources cited

- **COMMERCIAL FISHING**

According to the Alaska Department of Commerce, Community and Economic Development, the economic impacts and economic attributes involving the Alaska Department of Fish and Game's closely regulated and sustainable management of commercial salmon fishing in Cook Inlet would be significant. For example, the combined salmon harvests of Upper and Lower Cook Inlet range between three and six million total salmon in any given year. In the Upper Cook Inlet, this includes the valuable sockeye salmon, which in 2006 were worth \$12.3 million or about 90% of the total ex-vessel value to fishermen. In 2006, Upper Cook Inlet total salmon ex-vessel harvest was worth \$13.72 million. Lower Cook Inlet total ex-vessel harvest last year was worth \$1.9 million. Total Cook Inlet salmon (ex-vessel) value was \$15.6 million, just slightly above the recent 5-year average:

5-Year Average Harvest Value: \$14.7 million
5-Year Average Permits Fished: 982
5-year Average Harvest (# of salmon): 5.3 million

The ex-vessel value does not include the significant multiplicative effect of the economic activity generated by commercial fishing operations in the region. This role supports retail for groceries and supplies in the communities, employment and business in seafood processing, the portion of the salmon prices that is automatically contributed to communities for schools and other infrastructure, transportation for fishermen and fish, service providers, fuel, housing, etc.

Details of the economics and attributes of the commercial fisheries follow:

Historically, commercial fishing activity has occurred in Cook Inlet well before Statehood in 1959. The first documented report of commercial fishing began in the 1880s and continues today. The commercial fishing industry located in Cook Inlet contributes significantly to the overall economy of the South Central region of the state.

Salmon fishing comprises the majority of the harvest and value of present day commercial fishing activity in Cook Inlet. During the most recent ten years (1997–2006) over 286 million pounds of salmon have been processed in Cook Inlet for a combined exvessel value of nearly \$189 million dollars. During 2006 alone, 481 salmon set gillnet permits, 396 salmon drift gillnet permits and 24 salmon purse seine permits fished.

The Pacific cod and herring fisheries represent two additional commercial fisheries in Cook Inlet. Pacific cod fisheries in Alaska are managed by both the federal and state governments. State-managed fisheries for Pacific cod began in 1997 and are distinct from the parallel fisheries. Parallel fisheries for Pacific cod occur in state waters at the same time as the federal fisheries in Cook Inlet and harvest against the federal total allowable biological catch. State-managed Pacific cod fisheries allow only pot and jig gear types to harvest against a fixed portion of the total allowable biological catch that is allocated to the State fisheries.

The Pacific cod fishing fleet has decreased from 167 vessels with a harvest of 4.1 million fish in 1997 to 56 vessels with a harvest of 2 million fish in 2006.

Limited commercial herring fishing activity occurs in Cook Inlet. There has not been a directed herring purse seine opening since 1998. On average, about one dozen permits participate annually in the herring roe gillnet fishery.

The Cook Inlet area is subdivided into the Upper Cook Inlet (UCI) and Lower Cook Inlet (LCI) management areas.

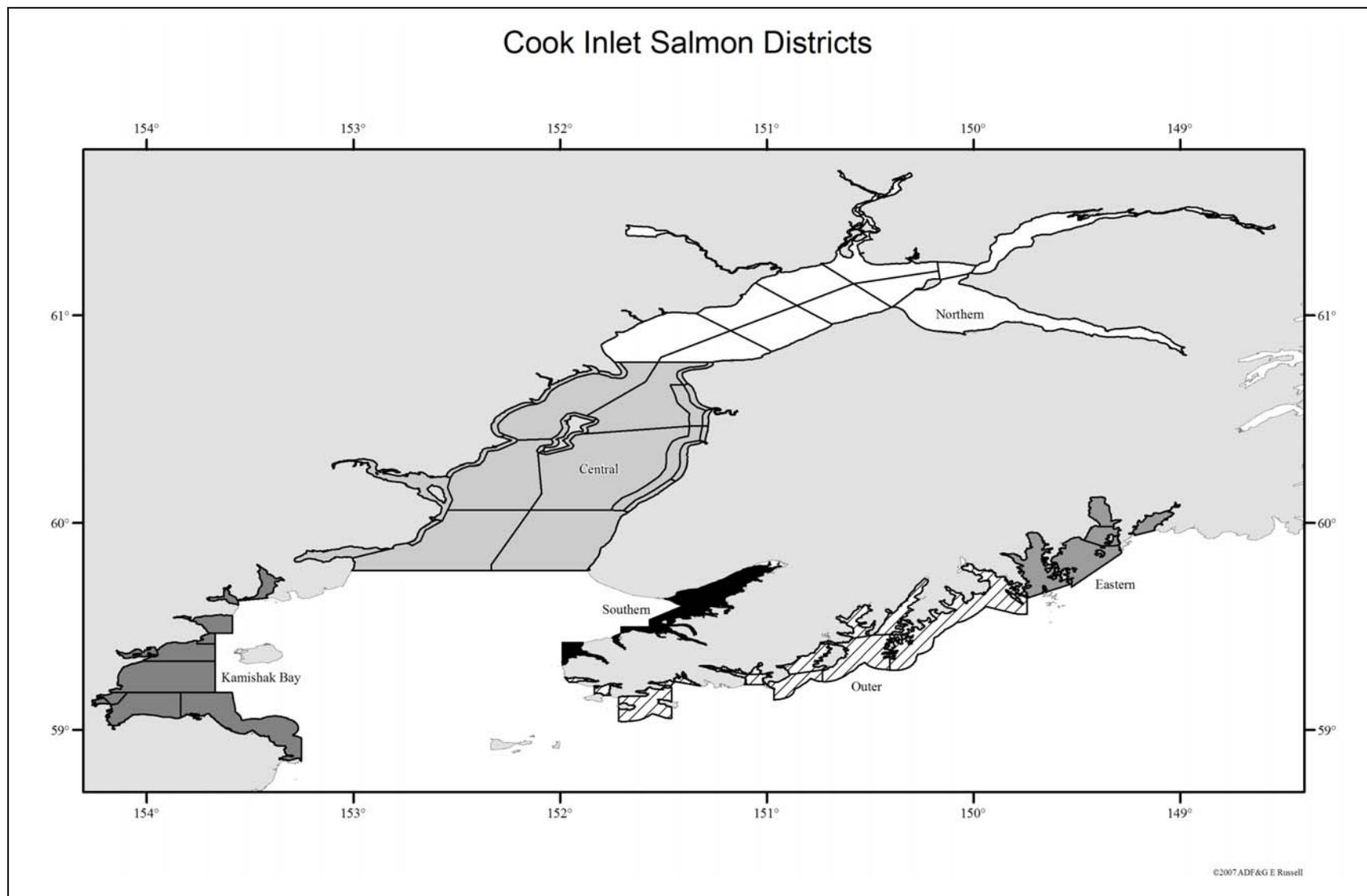


Figure 1.—Map of Upper and Lower Cook Island salmon districts.

UPPER COOK INLET

The UCI management area consists of that portion of Cook Inlet north of the latitude of Anchor Point and is divided into the Central and Northern Districts (Figure 2). The Central District is approximately 75 miles long, averages 32 miles in width, and is further subdivided into six subdistricts. The Northern District is 50 miles long, averages 20 miles in width and is divided into two subdistricts. At present, 5 species of Pacific salmon (*Oncorhynchus*) and Pacific herring (*Clupea harengus pallasii*) represents the majority of commercial harvest in UCI.

SALMON

Since the inception of a commercial fishery in 1882, many gear types, including fish traps, gillnets, and seines, have been employed with varying degrees of success to harvest salmon in UCI. Currently, set (fixed) gillnets are the only gear permitted in the Northern District, while both set and drift gillnets are used in the Central District. The use of seine gear is restricted to the Chinitna Bay Subdistrict, where they are employed sporadically. Drift gillnets have accounted for approximately 50% of the average annual salmon harvest since 1966, with set gillnets harvesting virtually all of the remainder.

Table 1.—Upper Cook Inlet, Northern District, Set Gillnet Harvest and Exvessel Value, 1997–2006 (Fish Ticket Database).

Year	Landed Pounds	Exvessel Value
1997	1,023,976	\$749,036
1998	717,594	\$621,326
1999	605,787	\$617,550
2000	908,498	\$584,791
2001	670,772	\$329,274
2002	642,698	\$241,633
2003	498,564	\$265,412
2004	502,437	\$275,424
2005	398,463	\$305,822
2006	276,322	\$280,135

Table 2.—Upper Cook Inlet, Central Drift and Set Gillnet Harvest and Exvessel Values, 1997–2006 (Fish Ticket Database).

Year	Landed Pounds	Exvessel Value
1997	28,785,455	\$28,130,959
1998	10,110,898	\$8,024,097
1999	17,466,194	\$21,637,725
2000	10,831,508	\$8,125,889
2001	12,102,197	\$7,418,666
2002	23,065,366	\$11,050,202
2003	22,107,296	\$13,829,443
2004	34,597,003	\$21,985,901
2005	34,204,671	\$31,285,685
2006	14,710,139	\$13,546,652

HERRING

Commercial herring fishing began in UCI in 1973 with a modest harvest of bait-quality fish along the east side of the Central District and expanded in the late 1970s to include small-scale sac roe fisheries in Chinitna and Tuxedni bays. In 1988, significant decreases in herring abundance were observed in Tuxedni Bay, as well as a shift towards older age class herring, resulting in the closure of Tuxedni Bay to commercial herring fishing prior to the 1992 season. In Chinitna Bay and along the eastside beaches, similar declines began to materialize after the 1990 season.

In 1998 the Upper Subdistrict of the Central District and the Eastern Subdistrict of the Northern District were opened to commercial herring fishing to assess the status of the herring population. The herring fisheries on the west side of Cook Inlet remained closed until the status of the east side stocks was determined.

The Central District Herring Recovery Management Plan, which became active prior to the 1999 season, limited herring fishing in UCI to the waters of the Upper, Western, and Chinitna Bay Subdistricts. In the Upper Subdistrict, fishing for herring is not allowed within 600 feet of the mean high tide mark on the Kenai Peninsula to reduce the interception of salmon. The management plan was amended by the Board of Fisheries (BOF) prior to the 2002 fishing season, extending the closing date for the fishery an additional 11 days to May 31.

In 2001, samples of herring were collected in Chinitna and Tuxedni Bays. Age, sex, and size distribution of the samples revealed that the years of closed fishing in these areas had resulted in an increase of younger fish being recruited into the population. As a result of these analyses, and in accordance with the herring management plan, the commercial fishery was reopened in 2002 in both the Chinitna Bay and Western Subdistricts. The management plan allowed for a very conservative harvest quota, not to exceed 40 and 50 tons, respectively. There has been very little participation in either fishery since they were reopened. However, there has been limited food/bait harvest in the Central District in 1999, and from 2002 through 2004.

Because the glacial waters of UCI preclude the use of aerial surveys to estimate the biomass of herring stocks, management of these fisheries has departed from the standard techniques employed in the more traditional herring fisheries. Gillnets are the only legal gear for herring in UCI, with set gillnets being used almost exclusively. This gear type is significantly less efficient at capturing herring than purse seines. Moreover, conservative guideline harvest levels have been set, which provide for a low-level commercial fishery on these stocks. In the Upper Subdistrict, harvests are generally concentrated in the Clam Gulch area, with very little or no participation in either the Western Subdistrict (Tuxedni Bay), Chinitna Bay, or Kalgin Island subdistricts.

Table 3.—Upper Cook Inlet, herring harvest by fishery, 1997–2006 (from Area Management Reports) Harvest (tons).

Year	Upper Subdistrict	Chinitna Bay	Tuxedni Bay	Kalgin Island	Total
1997	-	-	-	not open	-
1998	19.5	-	-	not open	19.5
1999	10.4	-	-	not open	10.4
2000	14.7	-	-	not open	14.7
2001	9.9	-	-	not open	9.9
2002	16.2	1.9	0	not open	18.1
2003	3.7	0	0	not open	3.7
2004	6.7	0.1	0	not open	6.8
2005	17.1	0.2	0	0	17.3
2006	14.4	0	0	0	14.4

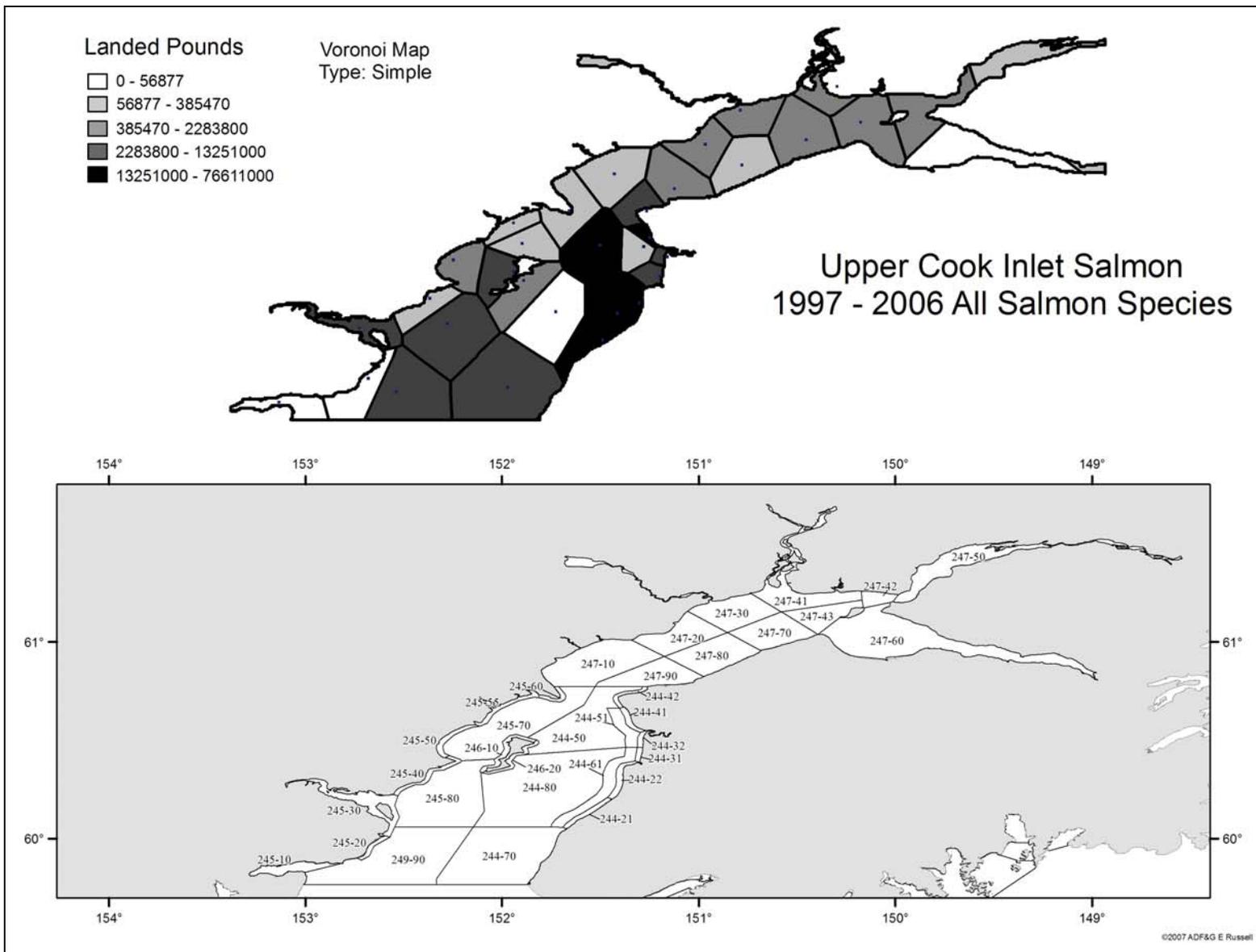


Figure 2.—Map of Upper Cook Inlet salmon.

LOWER COOK INLET

The Lower Cook Inlet (LCI) management area, comprised of all waters west of the longitude of Cape Fairfield, north of the latitude of Cape Douglas, and south of the latitude of Anchor Point, is divided into five commercial salmon fishing districts (Figure 3). The Barren Islands District is the only fishing district where no salmon fishing occurs, with the remaining four districts (Southern, Outer, Eastern, and Kamishak Bay) separated into approximately 40 subdistricts and sections to facilitate management of discrete stocks of salmon.

SALMON

Chinook and coho salmon are not normally commercially important species. However, the set gillnet fleet comprises the majority of the Chinook salmon catch. While sockeye salmon harvests are experiencing lower than average harvests in recent years, pink (the dominant salmon species in numbers of fish) and chum salmon harvests are higher than average. Participation levels in the salmon set net fishery remain low, while participation levels in the purse seine fleet show a slight increase in recent years.

Table 4.—Lower Cook Inlet, Common Property Purse Seine Salmon Harvest and Exvessel Values, 1997–2006 (from Area Management Reports).

Year	Landed Pounds	Exvessel Value
1997	1,617,995	\$805,657
1998	2,851,252	\$1,051,642
1999	2,272,343	\$1,968,502
2000	2,384,579	\$984,217
2001	1,893,655	\$715,855
2002	4,800,041	\$738,127
2003	3,547,954	\$1,430,798
2004	2,351,568	\$699,856
2005	1,944,024	\$738,082
2006	5,630,979	\$1,356,471

Table 5.—Lower Cook Inlet Set Gillnet Salmon Harvest and Exvessel Values, 1997–2006 (from Area Management Reports).

Year	Landed Pounds	Exvessel Value
1997	683,965	\$368,041
1998	294,248	\$198,051
1999	229,596	\$314,989
2000	298,197	\$211,065
2001	268,525	\$155,937
2002	377,832	\$223,203
2003	581,860	\$389,717
2004	132,445	\$145,887
2005	120,675	\$137,718
2006	170,473	\$179,602

Table 6.—Lower Cook Inlet, Hatchery (Purse Seine & Weir) Salmon Harvest and Exvessel Values, 1997–2006 (from Area Management Reports).

Year	Landed Pounds	Exvessel Value
1997	7,688,209	\$1,233,686
1998	2,858,569	\$737,860
1999	2,714,379	\$732,350
2000	2,844,575	\$576,936
2001	1,597,130	\$358,159
2002	3,399,702	\$386,890
2003	2,246,126	\$361,024
2004	8,694,295	\$402,629
2005	7,668,315	\$732,809
2006	1,277,477	\$375,903

Table 7.—Lower Cook Inlet, Derby Salmon Harvest and Exvessel Values, 1997–2006 (from Area Management Reports).

Year	Landed Pounds	Exvessel Value
1997	19,517	\$14,052
1998	22,993	\$14,945
1999	11,607	\$7,545
2000	21,959	\$14,273
2001	18,318	\$7,877
2002	24,293	\$10,446
2003	26,751	\$10,700
2004	35,999	\$18,000
2005	31,124	\$18,052
2006	15,920	\$10,348

HERRING

Since 1973, the majority of LCI sac roe herring harvest and effort has occurred within the Kamishak Bay District. With the exception of a test fishery in 1999, there has been no directed commercial herring fishery since 1998 because the spawning biomass has been below the threshold of 6,000 set before a commercial sac roe harvest can be considered for Kamishak Bay.

PACIFIC COD

Historically, the Cook Inlet area commercial Pacific cod fishery was managed via emergency order to coincide with seasons in the adjacent federal Central Gulf of Alaska area (CGOA). The Cook Inlet Pacific Cod Management Plan (5 AAC 28.367), first effective in 1997, defines two seasons, a “parallel season” and a “state waters season.” Similar to historical seasons, the parallel season is set by emergency order to coincide with the federal CGOA fishery for Pacific cod with respect to season dates and allowable gears—provided those gear types are legal for state waters. The state waters season occurs 24 hours after the parallel season closes, but with allowable gear types restricted to pot or jig (mechanical or hand) and with an annual allocation equal to 3.75% of the federal CGOA allowable biological catch. Season dates for these fisheries are shown in Table 9.

Annual Pacific cod harvests in the Cook Inlet Area have declined sharply since 1999 due primarily to a shift of longline effort from Cook Inlet to the Kodiak management area. Since 2002, overall harvest has remained somewhat stable at between 2.0 million and 2.5 million pounds, primarily from pot gear. The number of vessels in the pot fishery has ranged from 25 in 1999 to 10 from 2001 to 2003. The 2007 harvest is expected to be comparable to recent years.

Table 8.—Cook Inlet Area commercial Pacific cod harvest by gear type and estimated exvessel values, 1997–2006.

Year	Vessels	Landings	Jig/troll	Pot	Longline	Net Gear	Harvest	Value (\$)
1997	167	943	599,309	1,391,096	2,049,394	72,354	4,112,154	1,105,001
1998	143	825	230,662	1,071,615	1,900,375	211,406	3,414,058	810,160
1999	141	786	148,560	2,372,352	2,171,877	8,296	4,701,085	1,724,949
2000	110	748	15,235	1,906,201	815,742		2,737,178	1,105,020
2001	94	452	19,428	1,190,021	301,654		1,511,103	586,390
2002	72	543	19,560	1,618,622	582,635		2,220,817	732,505
2003	56	442	429,684	1,318,484	126,168		1,874,336	693,504
2004	77	423	326,538	2,146,023	27,143		2,499,704	811,610
2005	53	352	90,769	2,394,737	25,720		2,511,226	790,939
2006	56	319	1,406	1,996,728	70,507		2,068,642	883,230

Note: Totals include at-sea discards.

Table 9.—Cook Inlet Area Pacific cod season dates, 1997–2006.

Year	Dates and Times ^a	Season and Gears
1997	January 1-March 11; October 2-26	Parallel seasons
	April 4-October 2; October 26-December 31	State season jigs
	April 4-7; June 15-October 2; October 26-December 31	State season pots
1998	January 1-March 1; October 5-9	Parallel seasons
	March 17-October 5; October 9-December 31	State seasons jigs
	March 17-April 7; June 15-October 5; October 9-December 31	State seasons pots
1999	January 1-March 14; September 1-October 5	Parallel seasons
	March 21-September 1, October 5-December 31	State seasons jigs
	March 21-May 1; June 15-September 1; October 5-December 31	State seasons pots
2000	January 1-March 4	Parallel season
	March 5-December 31	State season jigs
	March 5-May 1; June 15-December 31	State season pots
2001	January 1-February 26	Parallel season, longline gear
	January 1-March 4	Parallel season, pot/jig gears
	March 5-December 31	State season jigs
	March 5-May 1; June 15-December 31	State season pots
2002	January 1-March 9	Parallel season
	March 10-December 31	State season jigs
	March 10-May 1; June 15-August 5; September 1-December 31	State seasons pots
2003	January 1-February 9, bycatch till September 9 then closed to retention	Parallel season
	February 10-December 8 (5:00 pm)	State season jigs
	February 10-27 (5:00 pm), September 1-December 8 (5:00 pm)	State seasons pots
2004	January 1-31	Parallel season
	February 1-December 31	State season jigs
	February 1-23 (5:00 pm); September 1-December 31	State seasons pots
2005	January 1-26	Parallel season
	January 27-December 31	State season jigs
	January 27-May 1; June 15-December 31	State seasons pots
2006	January 1-February 28; October 2-December 31	Parallel seasons
	March 1-October 2	State season jigs
	March 1-May 1, June 15-October 2	State seasons pots

^a All season openings and closures occurred at 12:00 noon unless otherwise noted.

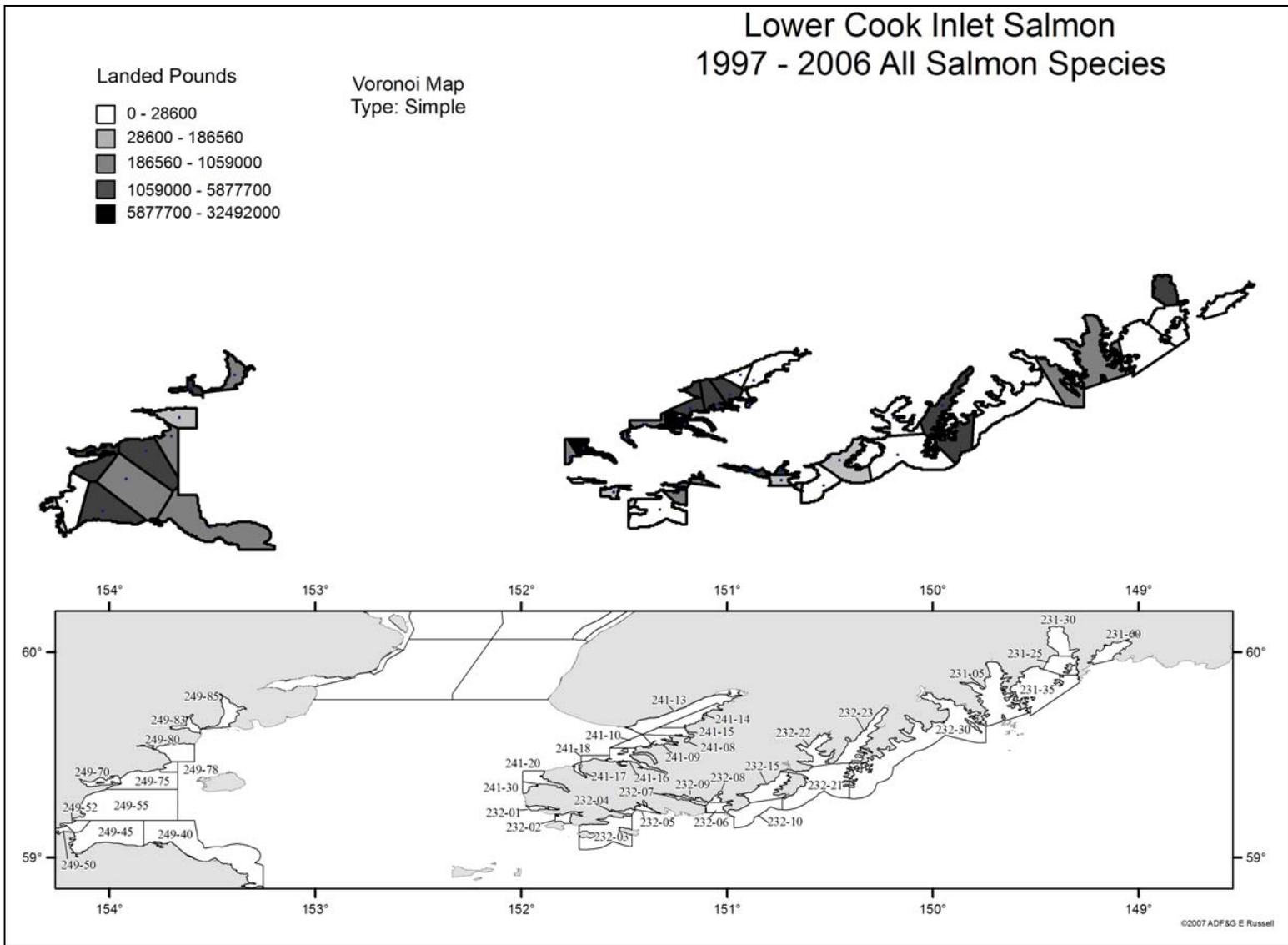


Figure 3.—Map of Lower Cook Inlet salmon.

FISHING SEASONS

Fishing seasons vary in Cook Inlet. In the salmon fisheries, the drift gillnet season is open from late June through August; the set gillnet season is from June through September and the purse seine season is from June through August.

The herring fishery is usually open from mid-April through mid-May. The Lower Cook Inlet has not had a directed commercial herring opening since 1998.

The Cook Inlet commercial Pacific cod season is comprised of three to four opening periods represented by allowable gear type and management plan. The parallel season (concurrent with federal season) is from January through March and the state waters fishery is open intermittently from February through December.

COMMERCIAL FISHERIES IMPACT

Commercial fishing processors operating in Cook Inlet reported total combined fishery purchases of \$449 million dollars between 1997 and 2006. The first wholesale value alone accounts for over \$1 billion dollars in sales between 1997 and 2005 (ADF&G COAR Database). Curtailment of commercial fishing due to adoption of a critical habitat designation may result in a depressed commercial fishing industry economy.

The Department concurs with the Service's finding: "There is no indication at this time that competition with commercial fishing operations is having any significant or measurable effect on CI beluga whales" (Draft Conservation Plan for the Cook Inlet Beluga Whale, U.S. Department of Commerce and NOAA, March 16, 2005). Based on this finding, designated important commercial and recreational fishing areas and fishing support facilities within Cook Inlet should be excluded from any designation of critical habitat. Economic benefits of exclusion outweigh any marginal benefit that might accrue from such designation.

36

CONCLUSION

As illustrated by the examples of various economic activities in Cook Inlet described above, it will be difficult to determine the economic impact that a listing of Cook Inlet beluga whales or any PCE or critical habitat may have. The industries and communities that engage in activities in and around Cook Inlet are just now assessing the possible ramifications of a beluga listing under ESA. If the whales are listed under ESA, it would certainly change the economic landscape of Southcentral Alaska and most likely have an impact through out the State.

We urge the Service to carefully consider the many activities in the Cook Inlet watershed and the many effective steps that have been effectively and proactively implemented to eliminate or reduce impacts on the beluga whales and their habitat, and thereby mitigate the decline of beluga whales in the 1990s. The Port of Anchorage currently has an operational plan in place designed to minimize the Port's impact on beluga whale's activities. Exploration companies are seeking ways to minimize disturbing operations that could be detrimental to the beluga's free range. We must continue to employ means of conducting business in and around Cook Inlet that will assure the coexistence of commerce and the beluga whale population.

