
Chapter Five: Current and Projected Uses

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Chapter Five: Current and Projected Uses of the License Area

AS 38.05.035(g)(iv) requires the director to consider and discuss the current and projected uses in the license area, including uses and value of fish and wildlife. The land and waters included in and near the license area provide habitat for a variety of fish and wildlife as described in Chapter Four. The license area also provides a variety of uses such as subsistence, sport, and commercial harvest activities. The area is used for forestry and oil and gas exploration. The primary industries in the area are commercial fishing and marine transportation. The US federal oil and gas lease Cook Inlet planning area is directly east of the marine waters of the license area. Increased marine traffic and resources development of the region may increase traffic volumes and duration periods of uses in the license area.

The license area is within the vessel traffic corridor for marine traffic to Williamsport from the various Cook Inlet ports, e.g. Homer, Kenai, and Anchorage. These and other current and projected uses are considered and discussed below. The projected uses of the license area are expected to remain consistent with current uses. The following information is not intended to be all inclusive, but to provide an overview of the current and projected uses (Cape International Inc. 2012).

A. Kenai Area Plan

Area plans are developed by DNR's Resource Assessment and Development Section within the Division of Mining, Land, and Water. AS 38.04.065 requires that state land be classified through a planning process prior to a sale or lease (excluding oil and gas lease sales), and incorporates the public's meaningful participation in the planning process.

The state owned lands and waters in the license area are within the boundaries of the current Kenai Area Plan (KAP) (ADNR 2001). This plan provides guidance to DNR to manage state land and waters in the Cook Inlet region in the vicinity of the Kenai Peninsula, the inlet's marine waters, and western Cook Inlet. The Kenai Area Plan defers any decision regarding leasing for oil and gas to DNR's existing leasing process. Oil and gas lease sales are not subject to this Kenai Area planning process but rather under processes established under AS 38.05.180

The plan sets out land disposal locations, land use classifications, administrative designations, and land selections, relinquishments and exchanges. The recommended land use designations within and around the license area include forestry for the School Trust Lands on the Iniskin Peninsula uplands, with other land use designations in the license area that include resource development, habitat, high value resource management, waterfront development (Williamsport area), and general uses (ADNR 2001: KAP Region 12 map).

Because more than one use is allowed on most state lands, the plan establishes guidelines that allow various uses to occur without serious conflicts. For instance, oil and gas and mineral exploration activities are allowed, and surface leasing that support oil and gas activities may be allowed (ADNR 2001).

B. Uses and Value of Wildlife, Fish and Plants

Alaska Game Management Units are managed by ADF&G. They compile and analyze harvest and biological information, enabling the establishment of ecologically sound population-based fishing, hunting, and trapping regulations. This information may also be used to promote conservation strategies and recovery actions (ADF&G 2013e). The license area is located within game management unit 9A.

1. Subsistence

The state, through the Boards of Fisheries and Game, manages subsistence resources on all state-owned lands and waters in Alaska. State law defines subsistence use as the noncommercial, customary and traditional uses of wild, renewable resources for a variety of purposes (AS 16.05.940(33)). AS 16.05.258 requires that subsistence uses be consistent with sustained yield.

The ADF&G, Division of Commercial Fisheries manages subsistence fishing in state managed fisheries. The USFWS, Office of Subsistence Management manages subsistence hunting, trapping and fishing on Alaska's federal public lands and non-navigable waters. Since 1999, federal subsistence management has expanded to include fisheries on all federal public lands and waters (ADF&G 2013f).

From 2005-2006, 96% of Tyonek households used wild resources and 94% successfully harvested at least one type of fish, wildlife, or wild plant resource (Stanek et al. 2007). Common subsistence resources in the license area are listed in Table 5.1 below.

Table 5.1. Common subsistence use resources in the license area.

Fish	Birds	Small Mammals	Large Mammals
King (chinook) salmon	Waterfowl	Beaver	Moose
Red (sockeye) salmon	Trumpeter swans	Red Fox	Brown bear
Silver (coho) salmon	Tule white-fronted geese	Coyote	Black bear
Pink (pink) salmon	Seabirds	Wolverine	Dall sheep
Dog (chum) salmon	Murres	Lynx	Wolf
Pacific herring	Gulls	Mink	
Eulachon (hooligan)	Kittiwakes	Marten	
Pacific sand lance	Cormorants	River otter	
Groundfish	Murrelets		
Halibut	Puffins		
Bottom fish	Shorebirds		
Shellfish	Land birds		
Whitefish	Spruce grouse		
Northern pike	Ruffed grouse		
Rainbow trout	Willow ptarmigan		
Steelhead trout	Common loon		
Dolly Varden			
Burbot			

Source: Stanek et al. 2007

a. Fish and Shellfish

There are several subsistence salmon fisheries in Cook Inlet, one of which is on state land and managed and reported by ADF&G, however not within the license area. Most subsistence fisheries are located where there are few roads, and they require boat access (ADF&G 2014c). There is one ADF&G subdistrict area of west Cook Inlet open for subsistence fishing near Tyonek (ADF&G 2013a). The area designated for subsistence use is centered around Tyonek and stretches south to Trading Bay which is approximately 100 miles north of the northern boundary of the license area.

Salmon setnet fishing for subsistence is conducted in May and targets Chinook salmon within the Tyonek subdistrict (Stanek et al. 2007). In 2009, 89 permits were issued for the Tyonek subdistrict subsistence salmon fishery. Sixty-two permits were issued to Tyonek residents and 27 permits issued to other Alaska residents. Residents of Tyonek accounted for 86% of the reported harvest total which was 927 salmon (Holen and Fall 2011).

Halibut may be caught under the federal subsistence halibut program. The subsistence halibut fishery is managed by the National Oceanic and Atmospheric Administration (NOAA), and fishers must obtain a Subsistence Halibut Registration Certificate (NOAA 2014). The United States and Canada participate in the International Pacific Halibut Commission, which publishes regulations governing the Pacific halibut fishery under the authority of the Northern Pacific Halibut Act of 1982. The regulations that govern the subsistence halibut fishery can be found in 50 CFR Part 300 (NOAA 2014b). Approximately 312,650 pounds of halibut were harvested for subsistence in 2010 which is 39% of the total for Alaska subsistence harvest (Fall and Koster 2012).

Additional subsistence fisheries occur for Pacific herring, eulachon, bottomfish, and shellfish (ADF&G 2014c). Subsistence fishers harvested an estimated 12,851 rockfish and 2,864 lingcod in 2010 (Fall and Koster 2012). Pacific herring subsistence fisheries predate recorded history and have occurred for centuries by indigenous coastal peoples. Eulachon is one of the first fish resources available in the spring in Cook Inlet waters. Tyonek residents begin set gillnet fishing for eulachon on beaches close to the village in April (Stanek et al. 2007). In the early summer months, Tyonek residents harvest razor clams and cockles on sand bars during low tidal cycles. They target the shellfish south of the Tyonek subdistrict on beaches in Redoubt Bay, which is outside of the license area approximately 60 miles to the north (Stanek et al. 2007).

b. Wildlife

i. Marine Mammals

Subsistence hunting of marine mammals is federally regulated under the federal Marine Mammal Protection Act, and is limited to Alaska Natives who reside on the coast of the North Pacific Ocean or the Arctic Ocean (ADF&G 2013b). The USFW manages subsistence hunting of sea otters in the region. The National Marine Fisheries Service (NMFS) manages subsistence hunting for seals, sea lions, and whales (ADF&G 2013b). In the Cook Inlet area, Alaska Natives hunted beluga whales prior to and subsequent to the Marine Mammal Protection Act in 1972 (Hobbs et al. 2006). NMFS implemented regulations on subsistence hunting of belugas in Cook Inlet beginning in 2001. In 2001 and 2002, subsistence harvest was 1 beluga each year, no belugas were harvested in 2003 and 2004, 2 were harvested in 2005, and none were harvested in 2006 and 2007 (Angliss and Outlaw 2008; Hobbs et al. 2006; Hobbs et al. 2008).

The one harvested beluga taken in the study year 2005-2006 provided 700 pounds of food to the community of Tyonek, averaging 11 pounds per household. Based on regulation in 73 FR 60976 from October 2008, no harvest of Cook Inlet belugas is allowed if the 5-year average abundance drops below 350 belugas. Because the 5-year average abundance was below 350 whales for the 2003-2007 time period, the allowable harvest during 2008-2012 was set at zero (Allen and Angliss 2012).

Additionally, harbor seals inhabit the waters of the license area and those around Tyonek as well. Two Tyonek hunters harvested 4 seals during the 2005-2006 study (Stanek et al. 2007).

ii. Terrestrial Mammals

In ADF&G GMU 9, (Figure 4.1) hunting permits are required for brown and grizzly bear, caribou, Dall sheep, moose, and wolf (ADF&G 2013d). Many of the subsistence hunting permits are restricted to residents of the area. Three large land mammals are readily available in the Tyonek area: moose, brown bear, and black bear. All three species are harvested by Tyonek residents for subsistence.

Moose usually provide a large amount of food for Tyonek residents, though moose populations have declined in the area during recent years (Stanek et al. 2007).

Tyonek residents do utilize small mammals for subsistence; however a minor percentage of the total subsistence harvest in the area consists of small land mammals as the predominant harvests are from fish and large mammals (Stanek et al. 2007).

iii. Birds

Federal subsistence regulations apply to subsistence hunting for migratory birds in Alaska (ADF&G 2013b). There is a spring and fall waterfowl hunting season for Tyonek residents. Migrating ducks, geese and cranes are hunted as they congregate on the Trading Bay Flats near the Beluga River as they move through the area (Stanek et al. 2007).

c. Plants

Berries begin to ripen at the end of July and Tyonek households pick blueberries, currants, highbush cranberries, and several other varieties of berries and greens (Stanek et al. 2007). In 2005-2006, 92% of Tyonek households used wild plants and berries with 70% of all households participating in berry harvests. An estimated 241 gallons of berries were harvested yielding 963 total pounds equaling 15 pounds per household. In the spring, fresh greens including fireweed, cow parsnip, and bluebells are harvested (Stanek et al. 2007).

2. Commercial Fishing

Alaska's commercial fishing industry is the most productive and valuable in the nation with a wholesale value of over \$3 billion (McDowell Group 2013). The State of Alaska has primary jurisdiction for managing fish in Alaska; this includes commercial, sport, personal use, and educational fisheries. State jurisdiction includes freshwaters, and marine waters within 3 miles of shore (Clark et al. 2006b). Article 8 of the Alaska Constitution mandates that state fish resources be managed under the sustained yield principle. The Alaska Board of Fisheries sets fishing regulations and management guidelines. Advisory committees are local groups that make recommendations to the Board; there are 81 advisory committees statewide, and nine in the Cook Inlet area. ADF&G implements regulations passed by the Board, manages the state's fisheries according to management guidelines, and provides information and recommendations on fish populations and harvest through research (ADF&G 2013c).

There are a few exceptions to state fisheries management. NMFS manages fisheries in federal waters, from 3 miles to 200 miles off shore, as well as most groundfish fisheries. Similar to the Alaska Board of Fisheries, the North Pacific Fishery Management Council sets regulations and management guidelines for federal marine fisheries (Clark et al. 2006b). The USFWS, with the Federal Subsistence Board, manages subsistence fisheries on waters in which the federal government has reserved water rights (USFWS 2012).

Cook Inlet is divided into two main state management areas: Upper Cook Inlet and Lower Cook Inlet. The Upper Cook Inlet area includes waters north of Anchor Point; the Lower Cook Inlet area includes the remainder of Cook Inlet waters, Kachemak and Kamishak bays south to Cape Douglas, and the Barren Islands. The license area occurs in the Kamishak Bay district in the Lower Cook Inlet Management Area and in the Chitina District within the Upper Cook Inlet Management Area. Cook Inlet districts are further divided into sub-districts (ADFG 2013c). The license area is near the boundary between the management areas but is considered a part of the Lower Cook Inlet management area (Hollowell et al. 2013).

All five species of Pacific salmon are harvested commercially in Cook Inlet. Commercial fisheries for halibut, groundfish, herring, and razor clams also occur in Lower Cook Inlet and Kamishak Bay. Fish are delivered to docks at Anchorage, Nikiski, Ninilchik, Kenai, Kasilof and Homer for processing.

Salmon fisheries are the most significant commercial fisheries in the Cook Inlet area. Sockeye salmon are the most important economically, followed by coho, Chinook, chum, and pink (Shields and Dupuis 2013). Three types of commercial fishing gear are allowed for salmon in Cook Inlet: set gillnets, drift gillnets, and seines. However, all types of gear are not allowed in all districts. The locations, times, and other details of fishery prosecution are tightly controlled through fishing regulations and in-season emergency orders guided by management plans (ADF&G 2013c).

In 2012, Lower Cook Inlet management area commercial salmon harvest was 499,080 fish comprised of 256,590 pink, 186,644 sockeye, 55,466 chum, 243 coho, and 137 Chinook salmon (Hollowell et al. 2013). The total 2012 Kamishak Bay District commercial harvest was 55,255 sockeye, 2,425 chum, and 61 pink salmon harvested by 6 seine permit holders (Hollowell et al. 2013).

Pacific halibut have been commercially harvested in Cook Inlet for many years. Halibut are managed by several different state, federal, and international agencies (Clark and Hare 2006; Meyer 2006; NMFS 2014; PFMC 2014). The International Pacific Halibut Commission (IPHC), created in 1923 by a convention between the U.S. and Canada, sets harvest strategies and total allowable harvest levels for the U.S. and Canada, and conducts studies on halibut population dynamics. The North Pacific Fishery Management Council (NPFMC), a federal agency, deals with allocation issues within Alaska. The National Marine Fisheries Service (NMFS), another federal agency, manages individual fishing quotas for the commercial fishery. Although it does not have management jurisdiction over halibut, the Alaska Board of Fisheries has adopted sport fishing regulations that do not conflict with IPHC regulations to facilitate enforcement of regulations, and ADF&G monitors and conducts research on the sport fishery (IPHC 2013, ADF&G 2014c).

In 1995, an individual fishing quota (IFQ) system was implemented in Alaska for the commercial halibut fishery. Under this system, individual fishers are given a percentage share of the total commercial harvest that will be allowed each year. After implementation of IFQs, the commercial fishery was quickly transformed from a “derby fishery” in which the entire annual harvest was taken in a few days in chaos and danger, to a fishery that now extends through most of the year. In addition, the value of the harvest has increased, bycatch of other species has decreased, and the fishery is much less dangerous (Clark and Hare 2006; Meyer 2006; NMFS 2014; PFMC 2014).

From 1997-2006, statewide commercial harvest of halibut ranged from about 700,000 pounds in 2000 to over one million pounds in 1997, 1998, 2004 and 2005. In 2012, the commercial harvest for halibut was highest in Area 3A with 4.4 million pounds of halibut off loaded in Homer. Area 3A includes the license area within the Gulf of Alaska waters off Southcentral Alaska between Cape Spencer and the southernmost tip of Kodiak Island. This equaled 18% of the Alaskan commercial catch and was higher than any other regulatory area (IPHC 2013).

Pacific herring were harvested at varying levels in the Cook Inlet area from the early 1900s through the 1990s, primarily in Kamishak Bay on the west side of Lower Cook Inlet. Declines in abundance, as well as market conditions, resulted in decreased harvests. This led to closure of herring fisheries in Lower Cook Inlet from 1980-1984 and 1999 through the present (Hammarstrom et al. 2007). The commercial herring fishery in Upper Cook Inlet dates from 1973, but decreases in abundance and a shift in age structure were observed in 1988, leading to closures and additional restrictive seasons (Shields and Dupuis 2013). Harvest, abundance and closures have fluctuated widely. Although there is a herring management plan and commercial fisheries in several subdistricts were reopened in 2002, participation has been low (35.6 tons and 14 permit holders in 2013) (Shields and Dupuis 2013). For example, the Kamishak Bay sac roe fishery remained closed in 2012 because the spawning biomass did not reach the regulatory threshold of 6,000 tons. Information collected in 2012 suggested that the 2013 biomass would be less than the regulatory threshold as well (Hollowell et al. 2013).

Several species of **clams** are harvested commercially in the Cook Inlet area (Figure 5.1). DEC is required to certify beaches for commercial clam harvest to ensure that clams are safe for human

consumption (Trowbridge and Goldman 2006). In Lower Cook Inlet, littleneck clams, butter clams, and cockles are harvested commercially, but all commercial harvest occurs in Kachemak Bay (Trowbridge and Goldman 2006) which is not included in the license area. Kachemak Bay beaches are opened for commercial clam harvests on an alternating schedule, with half the certified beaches open in even years and the other half in odd years.

King, Tanner and Dungeness crab stocks have been harvested in the Cook Inlet area since the early 1900s. Crab fisheries in the Cook Inlet area are managed as part of ADF&G shellfish Area H which is divided into Central, Southern (includes Kachemak Bay), Kamishak Bay, Barren Islands, Outer, and Eastern districts. Commercial fisheries for king crab in Cook Inlet began in 1937, peaking at 8.0 million pounds per year in the 1960s and ranging from 2.5-4.8 million pounds annually during the late 1960s and early 1970s (ADF&G 2002). Red king crab was the primary king crab species harvested commercially, and most of the harvest came from the Southern District and Kamishak/Barren Islands districts. After 1976, harvests declined and the commercial fishery was closed during the 1981-1982 season in the Southern District and during the 1983-1984 season in the Kamishak/Barren Islands fishery districts because of low abundance, and the fisheries have remained closed. Causes for the decline in abundance and subsequent failure of the population to recover, even after the fishery has been closed for many years, are poorly understood, but overfishing and environmental conditions are considered likely explanations (ADF&G 2002). The commercial king crab fishery will remain closed until stocks recover sufficiently for a harvest strategy to be developed by the department and adopted by the Alaska Board of Fisheries (5 AAC 34.310).

Commercial fisheries for Tanner crab developed during the mid-1960s in Kachemak Bay as they were harvested incidentally to red king crab (ADF&G 2002). However, the fishery soon expanded to other areas of Cook Inlet and harvests increased rapidly, peaking at 8.0 million pounds in 1973-1974. The Tanner crab commercial fishery was closed in 1989, and has remained closed since 1995 in the Southern District and since 1992 in the Kamishak Bay/Barren Islands districts. Due to low abundance, non-commercial fisheries have been closed since 2002 (Kerkvliet et al. 2013). After the stock collapsed, it continued to remain depressed despite many years of the fishery remaining closed. Possible causes include overfishing of legal crabs, high incidence of death due to handling of illegal crabs, and death from lost and derelict crab fishing pots. Another possible cause may be ocean conditions that favor production of predators and suboptimal environment conditions for crab larvae survival (ADF&G 2002). The Alaska Board of Fisheries adopted conditions under which the commercial Tanner crab fishery could be reopened, in particular, setting specific abundance levels (5 AAC 35.408).

During the late 1970s, a commercial fishery for Dungeness crab developed in the Cook Inlet area, primarily in the Southern District, with harvests averaging 1.0 million pounds from 1978-1991 (Trowbridge and Goldman 2006). As with other crab fisheries in the Cook Inlet area, abundance decreased sharply, and in 1991 the commercial fishery was closed and has remained closed since. In addition to natural fluctuations, the sharp decrease in abundance is due to three primary factors: “1) depression of the stock due to handling and trapping mortality that was the result of fishing during and immediately after the molting period; 2) extremely high effort over long seasons with the resultant high annual fishing mortality due to ease of access by both commercial and recreational fishermen; 3) violation of the 150 pot limit by a portion of the fleet” (ADF&G 2002).

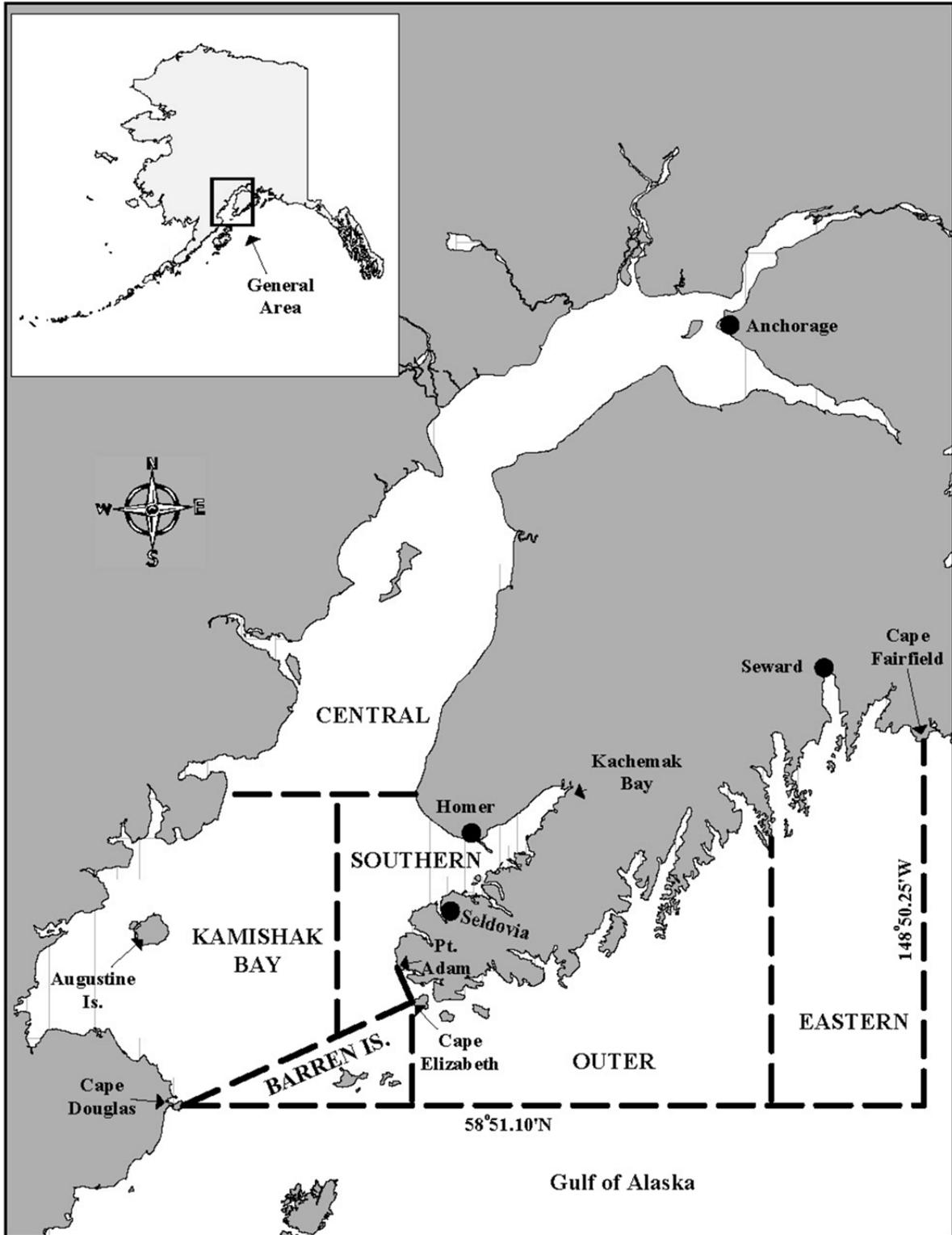


Figure 5.1. Six districts of ADF&G shellfish management

Source: ADF&G 2013c

The Cook Inlet Area Dungeness Crab Fisheries Management Plan specifies that fisheries will not be reopened until crab stocks recover and the Alaska Board of Fisheries adopts a further management plan that addresses 14 factors such as allowable exploitation rates, biological composition of the stock, reporting requirements, and ecosystem functions (5 AAC 32.390). Despite the long-term, continued fishery closure, Cook Inlet Dungeness crab stocks remain depressed and increases in abundance are considered unlikely in the near future (Trowbridge and Goldman 2006). This fishery remains closed due to the reduced crab stocks.

Shrimp were harvested commercially with trawls and pots in the Cook Inlet area from 1970 through the mid-1980s, primarily in Kachemak Bay (Trowbridge and Goldman 2006) which is not included in the license area. Annual harvests averaged over 5 million pounds, but abundance declined and the fishery was closed in 1987 and has remained closed since (Trowbridge and Goldman 2006). Causes for the collapse of shrimp stocks and subsequent continued lack of recovery are unknown. It is suspected that stocks were overfished during the 1970s and 1980s. Failure of the stocks to recover despite long-term fishery closures may be due to changing environmental conditions which could result in greater mortality of shrimp larvae, greater mortality of the forage base, and increased production of shrimp predators (ADF&G 2002). Shrimp stocks remain at low levels but show signs of recovery in some locations (Trowbridge and Goldman 2006).

Other shellfish species that are harvested commercially in the Cook Inlet area include weathervane scallops, octopus, green sea urchins, and sea cucumbers. Development of the fishery began in 1983, harvest and participation in the fishery has been variable, and regulations and management of the fishery have become increasingly restrictive and complex (Trowbridge and Goldman 2006).

Although fisheries for octopus are closed, they are harvested incidentally to other commercial fisheries, particularly the Pacific cod pot fishery, and harvests are highly variable, ranging from 435 to 48,067 pounds (Trowbridge and Goldman 2006). Small commercial fisheries for green sea urchins and sea cucumbers have also occurred in the Cook Inlet area. From 1987-1996, harvest ranged from 80 pounds to 195,403 pounds; in some years there was no participation in the fishery (Trowbridge and Goldman 2006). From 1990-1997, sea cucumbers were harvested in four years, and harvest ranged from 1,528-30,940 pounds. Divers did not find commercial quantities of sea cucumbers in 1991, 1992, or 1995-1996 (Trowbridge and Goldman 2006).

3. Sport Fishing

Sport fishing is an important part of the culture and economy of the Cook Inlet area. It provides recreation, food, and jobs to both residents and visitors. In the summer, sport fishing opportunities range from bank fishing in small streams, to saltwater trolling and jigging for salmon and bottomfish, and clam digging. Charter flights are offered from the Kenai Peninsula and Anchorage to the west side of Cook Inlet to access more remote salmon fishing. The license area is outside of the areas where sport fishing usually takes place because of the distance from the license area to population centers (ADF&G 2014b).

Salmon species and Dolly Varden provide sport fishing opportunities in western Cook Inlet fresh waters. The main sport fishing window is between July and August, but opportunities extend from June through October (ADF&G 2014d) (Table 5.2).

The only notable fishing restriction within the license area is at the head of Chinitna Bay. The Clearwater Creek drainage, including Roscoe Creek, is closed year round to all fishing approximately ½ mile upstream of the confluence with the Chinitna River (ADF&G 2014c). An estimated 10,682 angler-days were fished in West Cook Inlet drainages in 2012, a reduction of angler-days over the past 10 years which averaged 14,686 angler-days per year (ADF&G 2014d).

Table 5.2. Peak run timing of sport fish in western Cook Inlet fresh waters.

	June	July	August	September	October
Chinook salmon	X	X			
sockeye salmon		X	X		
coho salmon			X		
pink salmon		X			
chum salmon		X	X		
Dolly Varden			X	X	X

Source: ADF&G 2014d

State sport fishing licenses are generally required, which brings in revenue of \$24 per annual license for residents and \$145 for non-residents. In addition to a fishing license, anglers fishing for Chinook salmon must also purchase a Chinook salmon stamp at an additional cost of \$10 for residents and \$100 for non-residents (ADF&G 2014e). The revenue from sport fishing licenses, tags and permits directly supports ADF&G research and management of sport fisheries (ADF&G 2013g).

Current economic estimates for sport fishing specific to the license area are unavailable. However, in 2011, statewide fishing in Alaska generated approximately \$718 million in retail sales, \$359 million in wages and salaries, 9,992 jobs, and over \$1 billion moved through the statewide economy as a result of sport fishing in Alaska (USFWS 2012; Southwick Associates 2012). All categories increased since 2006, except jobs (Table 5.3). It should be noted that these estimates, which use data from the U.S. Fish and Wildlife Service’s National Survey of Fishing, Hunting and Wildlife-Associated Recreation, may underestimate the total economic impact of sport fishing in Alaska because it does not include expenditures made outside Alaska. For example, fishing equipment purchased in another state used for fishing in Alaska (Southwick Associates et al. 2008).

Table 5.3. Economic impact of sport fishing in Alaska in 2006 and 2011.

Year	Retail Sales	Output	Wages and Salaries	Jobs
2006	\$530,165,682	\$800,921,744	\$252,957,398	8,465
2011	\$718,452,401	\$1,073,716,980	\$358,679,292	9,992

Sources: Southwick Associates 2007, 2012.

4. Hunting and Trapping

It is estimated that moose population within Game Management Unit (GMU) 9A is 300. Since 2000, about 154 moose were harvested per year throughout GMU 9 (Butler 2010). The number of moose hunters in Unit 9 reached its highest number in 1987 with 694 hunters. Participation has dropped to an average of 561 hunters in the 1990s. In 2008, only 363 people hunted for moose in Unit 9 (Butler 2010). Compared to other areas of the state, moose harvests in Unit 9 have remained relatively stable since 1990. The recent decline in the number of harvested moose is associated with the decrease in the number of people attempting to hunt in GMU 9. This is not attributed to a reduction in moose population (Butler 2010).

The majority of the Northern Alaska Peninsula Caribou herd are present within GMU 9C and 9E, and typically do not enter the license area which is within GMU 9A (Butler 2009). The herd has declined since 2000 (Butler 2010). Tension between user groups has increased as a result of the decline in caribou populations throughout GMU 9 (Butler 2010). Biologists have evaluated intensive management options for this population and concluded that no viable solutions exist to alter the status of this herd (Butler 2009).

Some of the small mammals in and around the license area are harvested for their fur or pelts. During 2005-2006 three species were reported as harvested including 14 beavers, 11 porcupines, and 3 snowshoe hares. These small game species contributed a combined 206 pounds to the community harvest and revenue from the pelts (Stanek et al. 2007) (Table 5.4).

Table 5.4. Average statewide prices paid for raw furs.

Species	2008-09	2009-10	2010-11	2011-12	2012-13	Top Price 2012-13
Lynx	\$ 94.53	\$ 127.50	\$ 149.64	\$ 179.78	\$ 205.11	\$ 1050.00
Muskrat	\$ 3.19	\$ 7.73	\$ 7.72	\$ 9.97	\$ 12.53	\$ 54.00
Fox (all species)	\$ 21.42	\$ 26.22	\$ 33.55	\$ 52.82	\$ 59.97	\$ 340.00
Coyote	\$ 24.33	\$ 36.13	\$ 52.90	\$ 65.99	\$ 76.27	\$ 1400.00
River Otter	\$ 33.11	\$ 43.65	\$ 58.84	\$ 86.76	\$ 100.75	\$ 330.00
Beaver	\$ 20.11	\$ 12.83	\$ 17.82	\$ 32.56	\$ 32.56	\$ 200.00

Source: ADF&G 2013

5. Recreation and Tourism

Alaska's Cook Inlet region offers a wide range of year-round outdoor recreational activities and opportunities that are valuable and important to local residents and visitors to the area. Ocean environments, rivers, streams, lakes, valleys, mountains, and numerous trails can be used for hiking, dog mushing, fishing, hunting, sightseeing, cross-country skiing, snowmachining, rafting, boating, camping, and other private and commercial recreational activities (ADNR 2001). The majority of the recreation and tourism activity within the license area likely occurs during the summer (ADF&G 2014f; ADF&G 2014g). However, the license area's remote distance from population areas makes access challenging and limits the amount of recreational use.

6. Marine Vessel Traffic

Cook Inlet is a wide, long inlet with moderate to low levels of marine vessel traffic when compared to other large North American ports. Traffic is complicated by sudden and severe weather, strong tides, and seasonal sea ice. Eighty percent of large ship operations were made by only 15 vessels that regularly called at Homer, Nikiski, or Anchorage. Commercial fishermen and suppliers use this cross-Inlet traffic route to reduce the travel distance from Cook Inlet locales to the Bristol Bay region (Cape International Inc. 2012).

The closest port to the license area is Williamsport. Williamsport is a shallow draft port at the head of Iliamna Bay. There is a gravel portage road that connects Williamsport on Cook Inlet to Pile Bay on Lake Iliamna. The portage provides shorter transport of goods and supplies between Cook Inlet and the Lake and Peninsula borough communities. Access to Williamsport is reliant on tides, and larger vessels must utilize the highest tides of the month to navigate into Williamsport (Cape International Inc. 2012).

7. Fiber Optic Cable Communication

In 2011, United Utilities Inc., a subsidiary of GCI, installed a fiber optic cable within Cook Inlet, Iliamna Bay, and other areas of southwest Alaska that runs through the license area (Figure 5.2). The hybrid fiber-microwave system utilizes a combination of the fiber optic cable and a series of microwave repeater towers to provide broadband service to the Bristol Bay and Yukon-Kuskokwim

Delta regions of southwest Alaska. The cable is buried on the seafloor within the license area. Damage to the cable must be avoided as it would interrupt or eliminate broadband service to rural communities in Southwest Alaska including schools and hospitals (TERRA GCI 2014). The UUI cable's location within the license area is shown on NOAA navigation charts 16640 and 16648. Technical manuals are available from the International Cable Protection Committee to help the licensee avoid impacting the cable during subsequent activities (ICPC 2008a, 2008b, and 2008c).

8. Energy

The license area and surrounding region have a long history of oil and gas exploration. See Chapter 6 for a full description of the geology and exploration history.

U.S. Department of Energy has released reports stating that waves and tidal currents off Alaska's coastline could generate more than 850 terrawatt-hours of electrical energy annually, if fully developed (Spence 2012). Ocean Renewable Power Company is currently conducting a study on the effects of tidal turbines on beluga whales partially funded by the U.S. Department of Energy (USDOE 2013; ORPC 2014). Two companies are engaged in monitoring the inlet environment and characterizing a potential turbine site off Nikiski in the East Forelands area of the inlet, northeast of the license area (Spence 2012).

Cook Inlet Regional Incorporated owns and operates a 17.6 megawatt wind turbine project on Fire Island in Cook Inlet northeast of the license area. The project came on-line in 2012 with 11 wind turbines and has the capacity to deliver power to 6,500 homes in the region. The project is projected to supply more than 50,000 megawatt-hours to Chugach Electric Association annually (Fire Island Wind 2014).

The Augustine Island geothermal resource disposal area is located approximately 20 miles south of the southern boundary of the license area. In January 2013 DNR issued the Augustine Island Geothermal Resources Disposal Written Finding of the Director which approved the offering of approximately 65,992 acres of land on and surrounding Augustine Island for geothermal resources disposal (ADNR 2013). Currently there is an active lease in tract number 13 of the area exploring the geothermal energy resources (ADNR 2014).

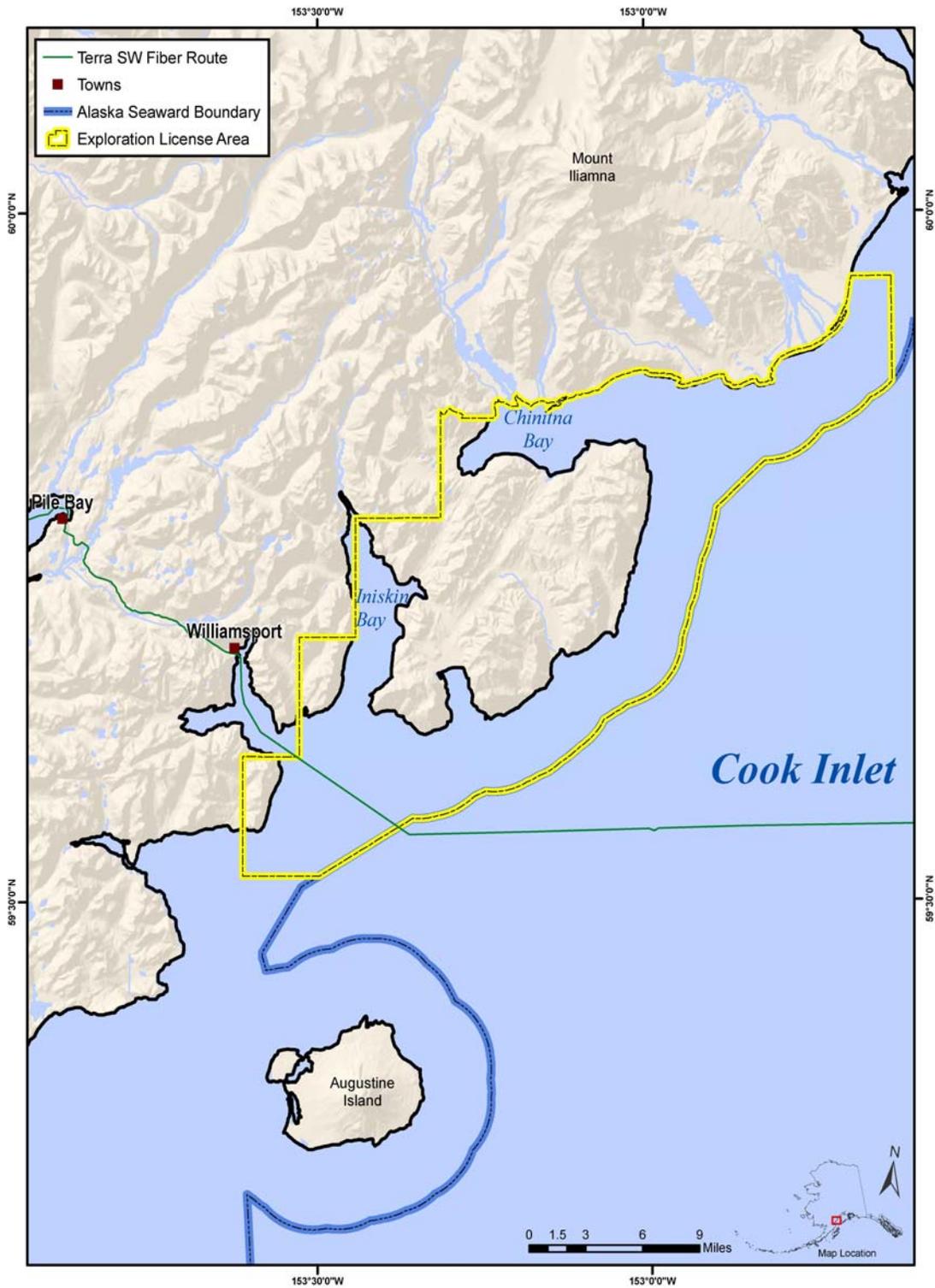


Figure 5.2. Route of UUI buried fiber optic cable in southern portion of the license area.

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