Chapter 2
Biological or Other Information Regarding Threats to the Species

This chapter provides information and analyses to supplement or correct information considered by the National Marine Fisheries Service (Service) in the 2007 proposed rule and contained in the underlying November 2006 Status Review. Through the regulatory process, the Service is required to determine whether a species is likely to be in danger or threatened with extinction because of any one or a combination of the following factors (19857):

(1) The present or threatened destruction, modification, or curtailment of its habitat or range;
(2) Overutilization for commercial, recreational, scientific, or educational purposes;
(3) Disease or predation;
(4) The inadequacy of existing regulatory mechanisms; or
(5) Other natural or manmade factors affecting its continued existence.

The State of Alaska (State) agrees with the Service's conclusion in the proposed rule (19858) and in its supporting materials that factor "***(2) overutilization***" is not contributing to either the current status or potential endangered status of Cook Inlet beluga whales. Unregulated harvest contributed to the low population level in 1998. Indications are that the population has stabilized since harvest was regulated, and full recovery is expected (See Chapter 1).

The Service expresses concern that overutilization could occur if commercial and recreational whale watching increases in the future. This same concern was expressed in the 2000 final rule determining that the stock of whales is not endangered; however, no water-based whale watching occurred then or now in fresh or marine waters of upper Cook Inlet. Anyone conducting commercial day-use activities on State waters is required to register their activities. According to the Alaska Department of Natural Resources, no companies have registered commercial whale watching activities within State waters in upper Cook Inlet since the regulation became effective. According to the Alaska Department of Fish and Game, permits are also required for commercial activities within Special Designated Areas, and no permits for whale watching have been requested within State Refuges or State Critical Habitat Areas in upper Cook Inlet (See Chapter 3 for map and further discussion).

Regarding **the other four factors listed above,** the Service, after taking into account conservation efforts, concludes in the proposed rule (19860):

> *. . . that the Cook Inlet beluga whale is in danger of extinction throughout all of its range because of: present or threatened destruction, modification or curtailment of habitat or range; the inadequacy of existing regulatory mechanisms (largely the past absence of regulations on subsistence harvests); disease and/or predation (further predation by killer whales can be shown to have a significant impact on survival); and other natural and manmade factors affecting its continued existence (effects of past subsistence removals).*

We disagree, as addressed for each of the remaining four factors below.

Factor *"(1) The present or threatened destruction, modification, or curtailment of its habitat or range"*

The Service's conclusion in the proposed rule (19858) is correct that:

> *No information exists that beluga habitat has been modified or curtailed to an extent that it is likely to have caused the population declines observed within Cook Inlet.*

Based on this conclusion and the supporting information, the Service should determine that listing the Cook Inlet stock of beluga whales as endangered is not warranted at this time.

As described in the Service's proposed rule and Status Review, the current habitat conditions have been relatively constant since the large scale developments of the 1970s. Since the 1970s, the State and federal agencies implemented additional regulatory measures, including land use plans and implementing regulations, oil spill contingency plans, and restrictive permitting conditions for developments and for other public activities in order to increase protection of the marine and freshwater habitat. This land stewardship is codified, implemented, and enforced by a number of federal, state, and local agencies. These protective regulatory mechanisms are particularly evident in State permitting requirements designed to protect water quantity and quality that is fundamentally important to the habitat for healthy salmon populations, which in turn serve as primary prey for beluga whales. Although the proposed rule concludes there have been no impacts to the Cook Inlet habitat since the 2000 decision that a listing was not warranted, the proposed rule fails to acknowledge that these important and comprehensive regulatory measures will continue to provide environmental protection so that ongoing and future developments and activities do not affect beluga whale habitat.

As quoted above, the proposed rule recognizes growth and development which have occurred to date did not contribute to beluga whale population declines, but the Service speculates that (19858) "*concern is warranted for the continued development within and along upper Cook Inlet and the cumulative effects on important beluga habitat."* Concern is always present, which is why we regulate the developments for both present and cumulative effects, but that does not provide sufficient basis for a prediction of endangerment so long as the comprehensive regulatory measures continue in effect.

The proposed rule (19858) describes four developments currently under consideration for construction in Upper Cook Inlet "*which may have adverse consequences*" and two "*ongoing activities that may impact this habitat*" (oil and gas activities and developments and industrial discharges or pollutant spills). The Service applies its extinction risk assessment (See State comments in Chapter 1) and, without evaluating improvements since 2000 leading to the existing regulatory mechanisms applicable to these developments and activities, concludes: "*Therefore, threatened destruction and modification of Cook Inlet beluga whale DPS habitat contributes to the proposed endangered status."* No reasonable basis is provided to assume that these developments, either individually or cumulatively, will destroy or modify the habitat. This conclusion is an uncharacteristic deviation away from the factual assessment contained in the proposed rule, which recognizes past activities did not contribute to the beluga population

declines in the 1990s. This deviation toward an unsubstantiated projection that future and ongoing activities would contribute to increases in mortality despite continued habitat management measures is scientifically unfounded.

The State provides information in subsequent chapters on current beluga habitat and concludes there are no scientific data that indicate "present or threatened" impacts on essential features of beluga habitat will occur due to the two ongoing and four proposed developments described in the proposed rule. There are no scientific or commercial data or any other rational basis for concluding that present or future habitat conditions are slowing the recovery of beluga or will result in cumulative impacts that affect its continued existence. To the contrary, today's habitat protection standards are no less effective than past standards, and in some cases are superior, resulting in restoration of Cook Inlet habitat.

Factor *"(3) Disease and/or predation"*

The proposed rule's conclusion (19858) below is not based on supporting scientific information or substantive analyses:

> *. . . the Cook Inlet beluga whale is in danger of extinction throughout all of its range because of . . .* ***disease and/or predation (further predation by killer whales can be shown to have a significant impact on survival)*** (emphasis added)

We provide comments on each of these two factors separately then combined. Regarding disease, the following additional conclusion in the proposed rule (19858) contradicts the conclusion above:

> *Despite the considerable pathology that has been done on belugas, nothing indicates that the occurrence of diseases or parasites has had a measurable impact on their survival and health. Therefore, diseases and parasites are not known to be factors that have led to the current status of the Cook Inlet beluga whale DPS.*

Information in the draft conservation plan, status assessment, proposed rule, or other sources supports that conclusion. This supports the Service making a determination that an ESA listing based on disease is unwarranted at this time.

Regarding predation, the following two statements in the proposed rule (19858), taken together, also contradict the conclusion above that the whale is in danger of extinction because of predation:

> *The best available information does not allow us to accurately quantify the mortality level due to killer whale predation or its effect on the DPS.*
>
> *While disease and predation occur in the Cook Inlet beluga population and may affect reproduction and survival,* ***neither appears to be a likely contributor to the observed decline.*** (emphasis added)

The Service's statement that predation did not contribute to the decline in Cook Inlet stock of beluga is substantiated by analysis of killer whale movements and observed predation.

In contrast, the 2007 proposed rule (19858) makes a contradictory projection that "*the loss of more than one beluga whale annually could impede recovery, particularly* ***if total mortality due to predation*** *would be near the recruitment level in the DPS.*" (emphasis added) The recruitment level is projected to be 2 to 6 percent depending upon the model used, or 10-12 beluga whales. **There is no similar projection that the estimated take by killer whales of one beluga whale per year has increased or would be likely to increase ten-fold.**

Furthermore, it stands to reason that, if predation did not contribute to the decline caused by subsistence harvests that approximated roughly 50% of the population and was not subsequently found to be a factor for listing in 2000, then a significant increase in predation would have to occur for predation to contribute comparably to further declines and to the probability of extinction. Although the proposed rule asserts that "*further predation by killer whales can be shown to have a significant impact on survival*," no scientific information or reasonable claim is provided to support that statement or to predict that past predation rates (estimated by the Service as one per year) will change or have changed since publication of the final determination that listing under ESA was not warranted in 2000.

Despite the lack of supporting information that predation is impeding recovery of the Cook Inlet stock of beluga whale, we recognize that predation by killer whales is a factor for which additional information is highly desirable. The State proposes significantly increased cooperative studies of predation and movements of killer whales be prioritized in the final Conservation Plan.

Regarding both <u>disease and predation,</u> the proposed rule concludes the following contradictory statement (19858) with no supporting substantive information or analyses that disease and predation are factors contributing to the probability of extinction:

> *However, the present low population abundance and the gregarious* [no definition] *nature of beluga whales predispose the population to significant consequences from disease and predation, which contributes to the probability of extinction, and, therefore to the proposed classification as endangered under the ESA.*

The latter theoretical assertion does not constitute a finding based on best available scientific and commercial data. The same highly theoretical assertion, that "*significant consequences* [could result] *from disease and predation*," could be applied to populations of any species at any level anywhere in the world. Given that diseases or parasites occur at levels significantly lower in the Cook Inlet stock than in other beluga stock around the world, the Service's application of this factor to justify an ESA classification is both arbitrary and unreasonable. Given that migrating killer whales that prey on beluga infrequently occur in Cook Inlet, the Service's application of this factor is likewise unsubstantiated and arbitrary.

Factor *"(4) The inadequacy of existing regulatory mechanisms"*

The lack of control of the unsustainable subsistence harvest that occurred prior to 1999 was the single contributing factor to the decline of the Cook Inlet stock of beluga whale. Subsequently, regulatory mechanisms contributed to stabilizing the population and continue to be effective in controlling the harvest. Thus, the decision in the final rule in 2000, that a listing is unwarranted, should be the same conclusion reached in the 2007 proposed rule. The State disagrees with the incongruous new conclusion in the 2007 proposed rule (19858-19859) that a lack of past controls endangers the whale:

> *. . . the Cook Inlet beluga whale is in danger of extinction throughout all of its range because of . . .* ***the inadequacy of existing regulatory mechanisms (largely the past absence of regulations on subsistence harvests)*** (emphasis added)

This lack of existing regulatory mechanisms was not found to be a factor, so the Service's 2000 determination was that an ESA listing was unwarranted; this likewise is not a factor today.

The proposed conclusion that Cook Inlet beluga whale is in danger of extinction is based upon the claim that the population is continuing to decline and that there is some statistical possibility that the population is too small to be sustainable. As explained in Chapter 1, the best available scientific and commercial data does not support this claim. Future harvests are controlled by existing regulatory mechanisms (co-management agreements) that were imposed to end prior unsustainably high harvests. These mechanisms are adequate to provide for rebuilding and prevent harvests from triggering further beluga declines. Additional mechanisms are discussed further as part of conservation efforts proposed in Chapter 3. Therefore, while the lack of regulatory mechanisms contributed to the decline of the Cook Inlet stock of beluga whale in the 1990s, effective regulatory mechanisms were implemented prior to publication of the 2000 rule. The stock is not currently in danger of extinction due to this factor.

Factor *"(5) Other natural or manmade factors affecting its continued existence"*

Although the State concurs that past subsistence hunting levels, in combination with natural mortality from stranding events and other causes, was unsustainable and significantly reduced the population prior to the 2000 rule, that rule concluded that an ESA listing is unwarranted. The State finds no substantive evidence to support the contradictory conclusion in the 2007 proposed rule (19859), which states:

> *. . . the Cook Inlet beluga whale is in danger of extinction throughout all of its range because of . . .* ***other natural and manmade factors affecting its continued existence (effects of past subsistence removals)*** (emphasis added)

The Service discusses two components of this category: "*Impacts of Past Subsistence Harvest Efforts*" and "*Impacts of Stranding Events.*" Regarding the stranding events, we agree with the Service's conclusion that "*mass stranding events are not believed to be a factor that has caused, or had a significant role in, the decline of the Cook Inlet beluga whale DPS.*" Because the unsustainable harvest was not curtailed until 1999, we concur that harvests contributed to the

decline. However, few belugas have been hunted since 1999, and we disagree that the harvest prior to 1999 "*must be considered as a factor in the proposed classification of the Cook Inlet beluga whale DPS as endangered.*" **This conclusion contradicts the conclusion reached in the 2000 final rule that the population was not endangered and that a listing was not warranted based on this factor or any other of the factors. That 2000 determination was based on the same information.** There are no scientific or commercial data supporting a change from that conclusion.

Prey Populations

During the public comment period, several individuals speculated that perhaps there is a lack of salmon to support a recovering beluga whale population. In the proposed rule and Status Review, the Service evaluates prey status and dismisses this as a potential factor. However, because this issue was raised we are providing the following summary of the status of Cook Inlet salmon stocks to further substantiate that this is not a factor:

Upper Cook Inlet Overall: The status of salmon stocks in Upper Cook Inlet (UCI) has been, and remains, very optimistic. Since the mid-1990s, Cook Inlet salmon management plans have become more tightly restrictive of commercial fishing and remain very restrictive compared to management in the 1980s. In the last 15 years, harvests ranged from 1.8 to 10.5 million fish, with a 10 year average of 3.7 million fish. The run strength of one species will affect how the Department manages harvests of another species. For example, if a poor run of Chinook salmon occurs in one year, harvests of other species, no matter their run strength, will be reduced due to conservation efforts.

Sockeye Salmon: Sockeye salmon are the most abundant species in UCI. Their harvests have ranged from 1.2 to 9.1 million (record year) in the last 15 years, with an average harvest of 3.2 million fish in the last 10 years. Runs were strong through the early 1990s until 1998. From 1998 to 2001, runs were weaker but generally sufficient to meet escapement goals. Since 2001, runs have rebounded. See Table below. Sockeye salmon runs, when compared decade by decade, have been stable and consistent since 1980.

Decade	Esc[a]	Harvest	Total Run
1970-1979		1,136,304	1,675,929
1980-1989	1,181,250	4,360,213	5,997,673
1990-1999	1,208,899	3,812,910	5,566,874
2000-2006	1,634,007	3,107,936	5,481,415

Pink Salmon: Pink salmon runs in UCI are even-year dominant, with odd year average harvests typically less than 1/7th of even-year harvests. Assessments are based largely on commercial fish reports, recreational fishing success, and limited escapement monitoring. Pink salmon are counted as part of programs designed to enumerate Chinook, sockeye, and coho salmon. In general, pink salmon stocks in UCI are maintaining their even-year dominance and continue to return in numbers that reveal that there are no obvious problems with the stock. As an example, the 2006 pink salmon harvest of 404,000 was approximately 50,000 fish greater than the average from the previous five even-year harvests (10 year history).

Chum Salmon: Chum salmon production had a decade of mediocre runs beginning in the mid-1980s, in part due to impacts from fall flooding in the Susitna River Basin in 1986. Chum salmon stocks throughout Southcentral Alaska have mirrored Susitna River chum salmon production, both revealing reductions in abundance from the mid-1980s to the mid-1990s. Beginning in 1995, an improvement in chum salmon production was observed in many areas of Southcentral Alaska, including UCI. Chum salmon runs from 2000 to 2004 were much improved from those realized during the 1990s. The 2002 escapement counts of chum salmon in Susitna River tributary weirs were the highest ever observed for these systems, while the 2001 chum salmon escapement in the Little Susitna River was the second largest ever observed. Therefore, although there is a limited amount of information available for assessing chum salmon stocks in UCI, there are no obvious concerns at this time.

Coho Salmon: UCI's coho salmon stocks generally benefited from excellent production throughout most of the 1980s and early 1990s. However, coho salmon runs in 1997 and 1999 were viewed as mediocre. The 2000 run appeared to be much improved with the 2001 run being even stronger yet, and finally the 2002 run being exceptional, perhaps even a record run. Because coho salmon are strongly dominated by a 4-year cycle, the returns from the 1997 and 1999 brood years occurred primarily in 2001 and 2003. The 2003 run, while not exceptionally strong, still produced escapements nearly three times the level of the 1999 brood year. Since 1997, the drainage-wide coho salmon smolt emigrations have stabilized and coho salmon runs have also stabilized. Since 2000, Kenai River adult coho salmon runs have been considered good to excellent.

Chinook Salmon: UCI Chinook salmon stocks are relatively stable. The Kenai and Kasilof rivers contain both early and late-run Chinook salmon that support major sport fisheries. The Kenai River stocks are popular with anglers due to ease of access, commercial enterprises to support anglers, and large size of fish in the returns. Both returns are harvested to an unkown degree in a marine recreational fishery in Lower Cook Inlet and late-run fish are also harvested in marine commercial fisheries. Recent escapements for the Kenai stocks have met or exceeded spawning escapement needs over the past three years. Kasilof early-run Chinook salmon originate primarily in Crooked Creek and are supplemented by a Department hatchery program. Naturally produced Chinook salmon from this system have met or exceeded spawning escapement needs recently. Late-run Kasilof Chinook salmon support a developing sport fishery and are harvested in the mixed stock marine sport and commercial fisheries to an unknown degree. Ongoing Department research indicates that inriver sport fishery exploitation is relatively low in comparison to spawning population size. An escapement goal has not been determined for this stock due to insufficient data.

Conclusion

The Service's conclusion that the Cook Inlet stock of beluga whales is in danger of extinction throughout all of its range based on the above factors is not supported by the information described in the proposed rule (19858-19859) and in its supporting sources. **In fact, the information provided in the 2007 proposed rule and 2006 Status Review overwhelmingly supports reaching the opposite conclusion for each of these factors, consistent with the 2000**

conclusion that a listing is not warranted. The Service appears to be proposing to reverse its earlier determination that a listing is unwarranted. This new determination is based entirely on unsupported population modeling predictions of a continued decline (Chapter 1) and on unsubstantiated speculation of possible increases in "threats" described above. We find no basis for a conclusion that the above factors or the theoretical possibility that a combination of these factors currently places the Cook Inlet stock of beluga whales in danger of extinction. We urge the Service to reconsider these hypothetical and arbitrary conclusions and affirm its previous finding that a listing under ESA is not warranted at this time.