



MARINE MAMMAL COMMISSION

7 October 2010

Mr. P. Michael Payne, Chief
Permits, Conservation and Education Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway, Room 13635
Silver Spring, MD 20910

Dear Mr. Payne:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's 8 September 2010 *Federal Register* notice (75 Fed. Reg. 54599) and the revised application submitted by Knik Arm Bridge and Toll Authority in conjunction with the Department of Transportation's Federal Highway Administration. The applicants are seeking authorization under section 101(a)(5)(A) of the Marine Mammal Protection Act to take small numbers of beluga whales, harbor seals, and harbor porpoises incidental to construction of the 2.5-km (8,200-ft) Knik Arm Bridge in Alaska from spring 2013 through autumn 2017. The Service is considering whether to propose regulations to authorize such taking and is inviting public comment regarding the content of such regulations. The applicants applied for a similar authorization on 23 August 2006 but later withdrew that request. The Commission commented on the previous request for an incidental take authorization (see enclosed letter dated 22 September 2006). The Commission believes that those comments remain pertinent and requests that they be considered in the Service's review of the current application.

Although harbor seals and harbor porpoises use the Upper Cook Inlet and Knik Arm occasionally, they are relatively uncommon in those waters. The Commission believes it is reasonable to assume that any impact to those species from the proposed construction activities would be negligible. However, the proposed activities would occur within the core range of the Cook Inlet beluga whale population (Hobbs et al. 2005) in an area that has been proposed as critical habitat (74 Fed. Reg. 63080). Therefore, the Commission's recommendations and comments focus on Cook Inlet beluga whales.

RECOMMENDATIONS

Based on its review of the information provided, the Marine Mammal Commission recommends that the National Marine Fisheries Service—

- before issuing a proposed rule, require the applicants to (1) clarify how source levels of the impact and vibratory hammers were determined, (2) fully describe the process and data used to estimate propagation loss, associated distances to Level A and B harassment thresholds, and the number of takes, and (3) clarify how those takes reflect variations in the activities that would be conducted and the seasonal distribution of marine mammals near the project site;

- refrain from issuing a proposed rule for the proposed construction activities until the Service or the applicants have obtained and verified source level and propagation loss data for large-diameter, drilled-shaft construction methods using an oscillator and use that information to estimate the expected number of takes;
- verify the timing of the proposed in-water construction activities and require that the applicants provide marine mammal density estimates and estimated takes during those months that currently are not addressed in the application and explain how they would adjust their activities during the construction period to take into account the observed distribution, movements, and behavior of beluga whales;
- if the Service proposes regulations for the planned bridge construction activities without better data, incorporate safety zones with added precautionary buffers for use with the impact and vibratory hammers until in-situ measurements have been made and estimated sound pressure levels have been verified;
- apply the proposed safety zones used for the vibratory hammer (the other continuous source) when using the oscillator;
- before publishing a proposed rule, resolve the uncertainty associated with use of the qualifiers “when possible and practicable” and “when weather and daylight hours permit” and structure the proposed rule to prohibit in-water activities at times and under conditions when the specified mitigation and monitoring measures are not being implemented or are not expected to be effective;
- require that observations be made before, during, and after all soft-starts of pile-driving and pile-removal activities to gather the data needed to analyze the effectiveness of this technique as a mitigation measure and require the applicants to submit an analysis and report of their findings as part of the monitoring and reporting requirements to be established in the regulations under section 101(a)(5)(A)(i)(II)(bb) of the Marine Mammal Protection Act; and
- condition the proposed rule and any letter of authorization issued thereunder to require suspension of the construction activities if a marine mammal is seriously injured or killed and the injury or death could be associated with those activities and, if supplementary measures are unlikely to reduce this risk to a negligible level, require the applicants to suspend their activities until an authorization for such taking has been obtained.

RATIONALE

Before issuing an incidental take authorization under section 101(a)(5)(A) of the Marine Mammal Protection Act, the Service is required to determine that the taking will have a negligible impact on the species or stocks and will not have an unmitigable adverse impact on the availability of the species or stocks for subsistence use. Further, the Service is required to determine that the permissible methods of taking and requirements pertaining to the mitigation, monitoring, and reporting of such taking have been structured to effect the least practicable adverse impact to marine mammal species and stocks. The Service has yet to make the required determinations. However, the applicants do not anticipate that the proposed construction activities (i.e., pile driving and removal, shaft drilling, support vessel activities, and general construction sound) would result in injury to or

death of a marine mammal and, therefore, are not seeking authorization for Level A harassment. The applicants believe that the proposed mitigation and monitoring measures (i.e., scheduling of construction activities to avoid periods of regular beluga whale use of Knik Arm, soft-starts to pile-driving and pile-removal activities, establishment of safety zones, shutdown procedures, and land- and vessel-based monitoring) would reduce the impact to marine mammals to a negligible level.

Estimation of Takes

During bridge construction, the applicants would use impact and vibratory hammers to drive and then subsequently remove 90 temporary piles 61 cm (24 in) in diameter and 348 temporary piles 122 cm (48 in) in diameter. The applicants have estimated the numbers of marine mammals that would be taken incidental to the proposed construction activities based on the source levels of the hammers, associated distances or radii to Level A and B harassment thresholds, and estimated densities of marine mammals in the vicinity of the project. The applicants used the Level A harassment thresholds of 190 and 180 dB re 1 μ Pa (rms) for pinnipeds and cetaceans, respectively, and the Level B harassment thresholds of 160 and 120 dB re 1 μ Pa (rms) for impulsive (impact hammer) and continuous (vibratory hammer) sources, respectively. The applicant used two linear regression methods to estimate both source levels and sound propagation loss from the source, which in turn were used to estimate the distances at which received levels were expected to meet the Level A and Level B harassment thresholds. However, it is not clear which of these two methods was used to determine the estimated source levels and propagation loss cited in the *Federal Register* notice. This is a developing scientific field, particularly as it relates to estimating propagation loss for activities in shallow water, and given the uncertainty in such estimates, the Service should require use of an additional distance-based buffer zone until in-situ measurements can be verified to ensure that beluga whales are not being exposed to greater than anticipated sound levels or are not being taken in greater numbers than predicted. Furthermore, to allow the reader to judge whether reliance on any take estimation procedure is reasonable, the applicant should provide all of the details used to estimate propagation loss and the associated distances at which Level A and B harassment would occur. The information presented in Table 5 of the application lacks sufficient detail for this purpose. In addition, the Commission notes that the densities of marine mammals at the proposed site of the bridge differ seasonally. However, the types of construction activities (as set forth in Table 2 of the application) are identified only on a yearly basis. Thus, it is not possible to associate particular construction activities or differences in those activities during the course of a year with the likely local density of marine mammals at the times when those activities would occur. This, too, raises questions about the estimated number of takes.

The Marine Mammal Commission therefore recommends that, before issuing a proposed rule, the National Marine Fisheries Service require the applicants to (1) clarify how source levels of the impact and vibratory hammers were determined, (2) fully describe the process and data used to estimate propagation loss, associated distances to Level A and B harassment thresholds, and the number of takes, and (3) clarify how those takes reflect variations in the activities that would be conducted and the seasonal distribution of marine mammals near the project site.

In addition, the Commission knows of no data available for describing in-water sound levels produced by the type of oscillator the applicants plan to use to drill 116 large-diameter shafts for the bridge's permanent piers. The applicants assume that the sound level of the oscillator would be lower in amplitude and higher in frequency, thus attenuating more quickly than impact or vibratory pile driving. Based on this assumption, the applicants do not believe that the use of the oscillator would result in Level A or B harassment of marine mammals. The applicants indicate that before initiating any construction activities using the oscillator, they would obtain sound level and propagation loss data for large-diameter, drilled-shaft construction methods involving the oscillator and other drilling activities to confirm that these activities would not produce sound levels believed capable of resulting in takes. Although such a commitment is commendable, it does not provide the Service with a basis for determining that taking would not occur from the use of the oscillator, or that any such taking that does occur would have a negligible impact on marine mammals. The Marine Mammal Commission therefore recommends that the National Marine Fisheries Service refrain from issuing a proposed rule for the proposed construction activities until the Service or the applicants have obtained and verified source level and propagation loss data for large-diameter, drilled-shaft construction methods using an oscillator and use that information to estimate the expected number of takes.

Timing of Construction Activities

Although the Service's *Federal Register* notice indicates that the in-water construction season would be from April to November, the application indicates, in one place at least, that it will begin in March, and the Commission has confirmed the March date with Service staff. It also is unclear when the oscillator will be used. If either pile driving and removal or use of the oscillator is to begin in March, additional marine mammal density estimates are required to estimate takes in March. In addition, because the distribution, movements, and behavior of beluga whales vary considerably from March to November, the applicants should explain how they would adjust their activities to have the least practical effect on the whales. To address all of these shortcomings, the Marine Mammal Commission recommends that the National Marine Fisheries Service verify the timing of the proposed in-water construction activities and require that the applicants provide marine mammal density estimates and estimated takes during those months that currently are not addressed in the application and explain how they would adjust their activities during the construction period to take into account the observed distribution, movements, and behavior of beluga whales.

Mitigation and Monitoring

Until the Service can estimate with confidence the size of appropriate safety zones and associated takes, it lacks a sound basis for determining that only small numbers of marine mammals would be taken and that the takes would have a negligible impact, which is required to issue regulations for the activity. In addition, the application, as submitted, does not anticipate takes from use of the oscillator and therefore does not propose the establishment of associated safety zones. But there, too, the Service cannot simply assume that such takes will not occur without some legitimate basis for doing so. In the absence of reliable data, the Service's only alternative would be to create precautionary buffer zones that provide assurance that the number and types of takes will

not exceed a negligible threshold. To that end, the Marine Mammal Commission recommends that, if the National Marine Fisheries Service proposes regulations for the planned bridge construction activities without better data, the Service incorporate safety zones with added precautionary buffers for use with the impact and vibratory hammers until in-situ measurements have been made and estimated sound pressure levels have been verified. In addition, until empirical evidence is obtained to verify that the use of the oscillator is not likely to result in takes, the Marine Mammal Commission recommends that the National Marine Fisheries Service apply the proposed safety zones used for the vibratory hammer (the other continuous source) when using the oscillator.

Proposed mitigation and monitoring measures include monitoring the safety zones for 60 minutes prior to, during, and for 60 minutes after pile driving and removal and the use of soft-starts and shutdown procedures. The application indicates that “when possible and practicable—and to reduce the exposure of animals to pile-driving sound—noise-producing in-water activities will be conducted when belugas are not observed within the harassment zone.” The applicants propose that “when weather and daylight hours permit, all in-water construction activities will be monitored by properly trained marine mammal personnel.” The terms “when possible and practicable” and “when weather and daylight hours permit” are not precise and do not give a clear picture of when the proposed mitigation and monitoring measures will be employed or how effective they will be. Therefore, the Marine Mammal Commission recommends that, prior to publishing a proposed rule, the Service resolve the uncertainty associated with use of the qualifiers “when possible and practicable” and “when weather and daylight hours permit” and structure the proposed rule to prohibit in-water activities at times and under conditions when the specified mitigation and monitoring measures are not being implemented or are not expected to be effective.

The effectiveness of soft-start procedures in minimizing the taking of marine mammals has yet to be empirically verified. The Commission has emphasized this point in many letters to the National Marine Fisheries Service. Marine mammal behavior is sufficiently unpredictable that scientists and managers should not simply assume that marine mammals always will act in their best interest by moving away from loud sounds. Neither should they assume that soft-starts are an effective mitigation measure. For those reasons, the Marine Mammal Commission recommends that the National Marine Fisheries Service require that observations be made before, during, and after all soft-starts of pile-driving and pile-removal activities to gather the data needed to analyze the effectiveness of this technique as a mitigation measure. The Service should further require the applicants to submit an analysis and report of their findings as part of the monitoring and reporting requirements to be established in the regulations under section 101(a)(5)(A)(i)(II)(bb) of the Marine Mammal Protection Act. Collection and analysis of such data should be relatively straightforward and would provide a scientific basis for continued reliance on this particular mitigation measure. The Commission notes that this issue will be discussed at an upcoming meeting between Service and Commission personnel to determine how to address this issue in a more satisfactory way.

Level A Harassment and Mortality

The applicants are not seeking authorization to take any marine mammal, including the beluga whale, by serious injury or mortality. Accordingly, the Marine Mammal Commission

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recommends that the National Marine Fisheries Service condition the proposed rule and any letter of authorization issued thereunder to require suspension of the construction activities if a marine mammal is seriously injured or killed and the injury or death could be associated with those activities. The injury or death should be investigated to establish the cause, assess the full impact of the activities (e.g., the total number of animals involved), and determine whether and how the construction activities can be modified to avoid additional injuries or deaths. Full investigation of such incidents is essential to provide information regarding potential effects to marine mammals from pile driving and removal and use of an oscillator. If supplementary measures are unlikely to reduce the risk of additional serious injuries or deaths of marine mammals to a negligible level, the Service should require the applicants to suspend their activities until an authorization for such taking has been obtained.

The Need for Caution

The Commission's 22 September 2006 letter emphasized the significance to the Cook Inlet beluga whale stock of the potentially detrimental cumulative effects arising from general factors (i.e., increased vessel traffic, contaminants, military operations, waste management, and urban runoff) and from numerous other proposed development activities in this same area. Moreover, the Commission is not convinced that much, if any, progress has been made to address the fundamental research questions mentioned in the 2006 letter. The recent history of this stock and its management have repeatedly underestimated its vulnerability and overestimated its ability to recover due to multiple risk factors. Yet, this stock's small size means there is virtually no margin of error for well-intended but ill-suited management decisions. The fact that no one involved in the management and conservation of this stock, including the Service and the Commission, can explain its failure to recover suggests that management decisions must err on the side of caution. Otherwise, we are managing this species based on uncertain probabilities, and with this stock, we already have been wrong too many times. If we truly intend to manage our marine ecosystems in a sustainable fashion, then there will be times when we must invoke a precautionary approach until such time as we have sufficient scientific evidence that we can be confident we are not adding to the stock's risk of extinction. The Commission believes that this stock's present circumstances require such precaution because once gone, it is gone forever.

Please contact me if you have questions concerning the Commission's recommendations or comments.

Sincerely,



Timothy J. Ragen, Ph.D.
Executive Director

Enclosure

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Literature Cited

Hobbs, R.C., K.L. Laidre, D.J. Vos, B.A. Mahoney, and M. Eagleton. 2005. Movements and area use of belugas, *Delphinapterus leucas*, in a subarctic Alaskan estuary. *Arctic* 58:331–340.

MARINE MAMMAL COMMISSION
4340 EAST-WEST HIGHWAY, ROOM 905
BETHESDA, MD 20814

22 September 2006

Mr. P. Michael Payne
Chief, Permits Division
National Marine Fisheries Service
Office of Protected Resources
1315 East-West Highway, Room 13635
Silver Spring, MD 20910

Dear Mr. Payne:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's 23 August 2006 *Federal Register* notice soliciting comments on an incidental take authorization request from the Knik Arm Bridge and Toll Authority. The applicant is seeking authorization under section 101(a)(5)(A) of the Marine Mammal Protection Act to take small numbers of beluga whales, harbor seals, Steller sea lions, harbor porpoises, and killer whales incidental to construction of the Knik Arm Bridge in Alaska over a five-year period. The Service is considering whether to propose regulations to govern the multi-year activity and is inviting public comments on the content of such regulations.

The applicant does not anticipate that the proposed activities (i.e., pile driving, support vessel activities, and general construction noise) will result in injury to marine mammals. Nonetheless, the applicant is seeking authorization for taking by Level A harassment (injury) of up to two animals. Construction activities would be suspended, pending review and authorization to proceed by the Service, if activities result in the serious injury or death of a marine mammal. The applicant believes that the proposed mitigation and monitoring measures (i.e., scheduling of construction activities to avoid periods of high beluga whale use of Knik Arm, soft starts to pile-driving activities, establishment of safety zones, land- and vessel-based observer monitoring, and shut-down procedures) will reduce the impact on marine mammals to a negligible level.

Although harbor seals, harbor porpoises, Steller sea lions, and killer whales may occur in Upper Cook Inlet and Knik Arm, they do so rarely. The Commission believes it is reasonable to assume that any impact of the bridge construction project on them would be negligible. However, the project will take place within the core range of the Cook Inlet beluga whale population (see Hobbs et al. 2005) in an area that is identified in the National Marine Fisheries Service's draft conservation plan for the Cook Inlet beluga whale as "high value" habitat. Our recommendations and comments therefore focus on Cook Inlet beluga whales.

RECOMMENDATION

Based on its review of the information provided, the Marine Mammal Commission recommends that—

- A rulemaking to issue the requested authorization be deferred until such time as the National Marine Fisheries Service can, with reasonable confidence, support a conclusion that the proposed activities would have no more than a negligible impact on the Cook Inlet beluga whale population, which is continuing its unexpected and unexplained decline. The many ongoing human activities in the area already may be having a non-negligible impact on the population. Unless and until human activities can be ruled out as causing or contributing to the decline, and until there is an affirmative basis for ruling out additional impacts from the activities associated with construction of the Knik Arm Bridge, the Commission does not believe that the Service can support a non-negligible impact finding for this whale population.
- If the National Marine Fisheries Service nevertheless decides to issue proposed regulations to authorize taking incidental to bridge construction based on the submitted application, the Service should provide more detailed information on (1) beluga whale habitat-use patterns in the project area and Upper Cook Inlet, (2) the cause or causes of the continuing decline of the beluga population, and (3) the likely impacts of the proposed activities on the beluga population, particularly in conjunction with other ongoing or planned activities in Upper Cook Inlet. Additional research likely will be needed to obtain this information. For instance, the Commission believes that it will not be possible to make the required findings for an incidental take authorization without better information on whether disturbance from bridge construction will (a) impede beluga whales from moving into Knik Arm and gaining access to important feeding, resting, or molting habitat, or (b) affect their movements in some other way and make them either more prone to strand or more at risk from predation by killer whales.
- In either case, before issuing regulations, the National Marine Fisheries Service should provide specific evidence that the proposed monitoring program will be effective in detecting beluga whales in or approaching the project area and that the proposed mitigation measures will be effective in preventing injury to the whales.

RATIONALE

The Cook Inlet beluga whale population was designated as depleted under the Marine Mammal Protection Act in 2000. The population also is being considered for listing under the Endangered Species Act. It was listed as “critically endangered” by IUCN–The World Conservation Union in May 2006 based on an assessment of its demographic characteristics and vulnerability to various threats (Lowry et al. 2006).

Using data from the National Marine Fisheries Service’s abundance surveys conducted since 1994, the IUCN assessment found that there is a 95 percent probability that the population numbers between 278 and 388 animals and, using the mode of that distribution (329), it estimated that there are only 207 mature individuals in the population. The assessment also found that “the underlying growth rate is so low that there is a 71% probability that if present conditions persist the population cannot withstand any take, and will decline in the future.” The assessment concluded that “Cook Inlet belugas face a suite of risks common to small populations, including those related to

demographic, environmental, and genetic stochasticity, amplified by the tendency of belugas to return annually to specific areas and to congregate in compact herds.” It also noted the limited knowledge of this population’s ecology, life history, and reproductive potential, as well as the uncertainty regarding current factors adversely affecting the population and its habitat. All of these findings demonstrate the precarious situation of Cook Inlet beluga whales.

During aerial surveys flown in June and July 1993–2000, beluga whales were seen exclusively in shallow, near-shore, low-salinity waters of Upper Cook Inlet, especially off the mouths of large rivers and in Knik and Turnagain Arms (Rugh et al. 2000, Moore et al. 2000). The whales are believed to concentrate in these areas to feed on out-migrating salmon smolt and spawning runs of other anadromous fishes (Calkins 1984, 1986; Rugh et al. 2000; Moore et al. 2000). The application indicates that beluga whale “takes” will likely occur at times when prey are most abundant in Knik Arm in late summer and fall. It notes, however, that the whales use the area north of the proposed bridge corridor and do not appear to feed or remain for long periods in the project area. Rather, they appear to use this area primarily for transiting into the upper reaches of Knik Arm and out of Knik Arm into other parts of Upper Cook Inlet (Markowitz et al. 2005). The application also states that, although disturbance from pile-driving noise could prevent beluga whales from entering Knik Arm, as they typically do in the fall months, and disrupt their seasonal use of the area, it is unlikely that their feeding activity would be significantly disrupted or that they would stop using Knik Arm because pile driving would occur only during a relatively short portion of each day (2 to 4 hours). The Commission believes that the applicant’s assumptions are overly optimistic and too dismissive of potential adverse effects, and that adverse behavioral responses, in particular, can reasonably be expected. Any interruption of or impediment to feeding could significantly affect the population’s ability to recover by affecting growth, condition, or health of animals in the population, their reproduction, or their survival.

In addition, the shallow waters of the upper inlet and coastal zone may provide refuge from predators and suitable habitat for calving and nursing (Rugh et al. 1999, Moore et al. 2000). Disturbance in a heavily used, relatively deep area, such as that around the bridge site, might prompt whales to move into shallower adjacent areas where they could be more susceptible to potentially lethal or injurious strandings. Alternatively, disturbance from construction activities at the bridge site might impede beluga whales from entering traditionally used areas in Knik Arm, causing them to remain in deeper waters where they may be more susceptible to predation by killer whales. Neither the application nor the Service’s *Federal Register* notice discusses in sufficient detail the question of whether the proposed activities may contribute to these risks.

The Commission also is concerned about the potential impact of the proposed activity in conjunction with other factors that might be adversely affecting beluga whales (i.e., the cumulative impact). Such factors include increased vessel traffic, contaminants, military operations, waste management, and urban runoff. An analysis by the National Marine Fisheries Service (NMFS 2003) concluded that “a significant part of the habitat for this species has been modified by municipal, industrial, and recreational activities in Upper Cook Inlet.” Furthermore, a variety of new activities are being planned for Cook Inlet during the period for which the incidental taking authorization is sought. These include—

- Cook Inlet oil and gas exploration and production,
- Seward highway upgrades in Turnagain Arm,
- Port of Anchorage expansion and operation,
- Port MacKenzie dock operations,
- Future Knik Arm ferry operations,
- Future coal development in the Tyonek area, and
- Various scientific research activities.

Neither the application nor the Service's *Federal Register* notice provides a substantive discussion of the potential cumulative impact of human activities on the whale population. Assessment of this potential is necessary in any proposed rule that the Service puts forward. The Commission notes that a draft environmental impact statement for the proposed bridge construction has been published by the Knik Arm Bridge and Transit Authority for public review. We plan to review that document and, if warranted, provide comments directly to the Authority.

In light of (a) the uncertainties associated with beluga whale habitat use in the project area and Upper Cook Inlet, (b) the fact that the Cook Inlet beluga whale stock has continued to decline for undetermined reasons, and (c) the lack of site-specific data that could be used to predict the reactions of beluga whales to bridge construction activities, the Commission believes that the proposal poses potentially significant risks to the population. To avoid those risks, the Marine Mammal Commission recommends that an incidental taking authorization not be issued until (1) better information becomes available on beluga whale use of the project area and Upper Cook Inlet, (2) the cause or causes of the continuing decline of the population are better understood, and (3) relevant data become available for use in predicting the responses of beluga whales at the proposed bridge site and in adjacent areas. Without such information and data, the Commission does not believe the Service can make the required finding under section 101(a)(5)(A)(i) that the total of the incidental taking that may result from the proposed activities will have no more than a negligible impact on the Cook Inlet beluga whale stock.

If a bridge is to be constructed across Knik Arm, construction activities clearly will overlap spatially and temporally with the small, declining, population of Cook Inlet beluga whales. In such a case, the bridge authority proposes certain monitoring and mitigation measures that it believes will ensure that any resulting takings will have a negligible impact. However, the *Federal Register* notice provides no information to demonstrate the effectiveness of the proposed monitoring and mitigation measures. The waters of Knik Arm are extremely turbid and fast-flowing, and it seems unlikely that land-based or boat-based observers will be able to detect all whales in or entering the project area. We are skeptical about the value of weekly boat-based surveys because the whales regularly move substantial distances from day to day. Regarding mitigation, the notice states that "construction activities will occur to the greatest extent practicable during December through mid-August when beluga whale abundance in Knik Arm are (sic) generally low." This proposal is weak in two regards: (1) data from satellite-tagged whales clearly show a substantial amount of activity in Knik Arm during the months of August through November (Hobbs et al. 2005), and (2) because this mitigation will be applied only "to the greatest extent practicable," there is no guarantee as to

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whether or how often it will occur. The plan to shut down pile driving if animals are seen in the safety zone depends critically on an ability to see all animals in all circumstances, which, as mentioned above, is unproven. The measure to use a “soft start” during pile driving is interesting, but the Commission is not aware of any data that suggest that such a procedure will be effective in avoiding impacts to beluga whales. The Marine Mammal Commission therefore recommends that prior to issuing regulations to permit this activity, the Service should provide specific evidence that the proposed monitoring program will be effective in detecting beluga whales in or approaching the project area and that the proposed mitigation measures will be effective in preventing injury to the whales.

Finally, the Service’s *Federal Register* notice referenced its statutory requirement to determine whether any taking will have an unmitigable adverse impact on the availability of marine mammal species or stocks for subsistence uses. Presumably, this determination will need to take into account the applicable limitations on subsistence harvesting and the fact that any incidental taking that might prompt a suspension of hunting or cause a reduction in the authorized number of strikes could be viewed as having an adverse impact on subsistence users.

Please contact me if you have any questions concerning these comments and recommendations.

Sincerely,



Timothy J. Ragen, Ph.D.
Acting Executive Director

Cc: Knik Arm Bridge and Toll Authority

References:

- Calkins, D. G. 1984. Susitna hydroelectric project phase II annual report: Big game studies. Vol. IX, Belukha whale. Alaska Dept. of Fish and Game, Anchorage, AK, 15 pp.
- Calkins, D. 1986. Marine mammals. In D. W. Hood and S. T. Zimmerman (eds.), *The Gulf of Alaska physical environment and biological resources*. NOAA Ocean Assessments Division, Alaska Office, Washington, D.C., pp. 527–558.
- Hobbs, R. C., K. L. Laidre, D. J. Vos, B. A. Mahoney, and M. Eagleton. 2005. Movements and area use of belugas, *Delphinapterus leucas*, in a subarctic Alaskan estuary. *Arctic* 58:331–340.
- Lowry, L., G. O’Corry-Crowe, and D. Goodman. 2006. *Delphinapterus leucas* (Cook Inlet population). In IUCN 2006. 2006 IUCN Red List of Threatened Species.
- Markowitz, T. M., D. W. Funk, R. Rodrigues, D. S. Ireland, S. R. McKendrick, A. M. Prevel, M. K. Bles, and M. R. Link. 2005. Use of the Knik Arm Crossing Corridor by Cook Inlet Beluga Whales. In D. W. Funk, T. M. Markowitz, and R. Rodrigues (eds.), *Baseline studies of beluga*

- whale habitat use in Knik Arm, Upper Cook Inlet, Alaska, July 2004–July 2005. Report from LGL Alaska Research Associates, Inc., in association with HDR Alaska, Inc., for the Knik Arm Bridge and Toll Authority, Department of Transportation and Public Facilities, Anchorage, AK, and the Federal Highway Administration, Juneau, AK.
- Moore, S. E., K. W. Sheldon, D. J. Rugh, B. A. Mahoney, and L. K. Litzky. 2000. Beluga, *Delphinapterus leucas*, habitat associations in Cook Inlet, Alaska. *Marine Fisheries Review* 62(3):60–80.
- National Marine Fisheries Service. 2003. Subsistence harvest management of Cook Inlet beluga whales. Final Environmental Impact Statement. NMFS, Anchorage, AK, 179 pp.
- Rugh, D. J., K. E. W. Sheldon, and B. A. Mahoney. 2000. Distribution of belugas, *Delphinapterus leucas*, in Cook Inlet, Alaska, during June/July 1993–1998. *Marine Fisheries Review* 62(3):6–21.