IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF ALASKA

NATIVE VILLAGE OF CHICKALOON, et al., Plaintiffs, v. NATIONAL MARINE FISHERIES SERVICE, et al. Defendants.	Case No. 3:12-cv-00102-SLG

ORDER RE MOTION FOR SUMMARY JUDGMENT

This action was initiated in May 2012 by the Native Village of Chickaloon, the Natural Resources Defense Council, the Center for Biological Diversity, and the Center for Water Advocacy and challenges the National Marine Fisheries Service's ("NMFS") issuance of an "Incidental Harassment Authorization" that allowed Apache Alaska Corporation to conduct seismic surveys in Cook Inlet, Alaska. The inlet has been designated as critical habitat for certain marine mammals, including the endangered Cook Inlet beluga whale. Apache applied for the authorization and, after a public notice and comment period, NMFS issued the requested authorization for a one-year period. The authorization imposed certain operating restrictions on Apache's seismic operations and permitted the incidental "take" by harassment of up to 30 beluga whales by exposure to noise generated by the seismic activity. Plaintiffs' Complaint alleges that the issuance of the Incidental Harassment Authorization ("IHA") and associated documents to Apache violated the Marine Mammal Protection Act ("MMPA"), 16 U.S.C. §§ 1361-1421; the Endangered Species Act ("ESA"), 16 U.S.C. §§ 1531-1544; and the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4231-4370.

Several parties joined this action as intervenors in support of NMFS, including the American Petroleum Institute and International Association of Geophysical Contractors (collectively "API"), Apache, and the State of Alaska ("State").

Before the Court is a Motion for Summary Judgment filed by Plaintiffs on October 1, 2012.[1] On November 7, 2012, NMFS and all the intervenors responded.[2] Plaintiffs replied on November 21, 2012.[3] Oral argument was held on February 1, 2013. For the reasons set forth below, Plaintiffs' motion is GRANTED in part and DENIED in part. Although this Court denies the Plaintiffs' motion for summary judgment with respect to the agency's decision-making on many of the challenged issues, the Court concludes the agency erred in one significant respect when it made mathematical errors in computing its take estimates for the Cook Inlet beluga whale. This Order does not resolve the extent to which those mathematical errors may impact other aspects of the agency's decision-making, but requests further briefing from the parties as warranted.

FACTUAL BACKGROUND AND PROCEDURAL HISTORY

I. Cook Inlet.

Cook Inlet is a semi-enclosed tidal estuary located in Southcentral Alaska that is approximately 370 km long and 48 km wide. The inlet is a shallow body of water with its deepest areas near the mouth of the inlet. The three primary rivers that flow into the

[1] Pursuant to Local Rule of Civil Procedure 16.3(c)(1), Plaintiffs' opening brief is labeled a Motion for Summary Judgment. Docket 48. Plaintiffs later filed a Notice of Errata correcting one citation in each of their briefs. Docket 66.

[2] Docket 51; Docket 52; Docket 53; Docket 54.

[3] Docket 56.

inlet are the Knik, Matanuska, and Susitna rivers. The semidiurnal tides and currents in the inlet are some of the most extreme in the world. During the winter, ice forms over much of the upper inlet, although the inlet rarely freezes over completely because of the extreme tides. This ice usually leaves the inlet by April, but sometimes lasts until May.

Cook Inlet is one of the most industrialized and urbanized regions of Alaska. High artificial noise levels in the inlet are caused by vessels; air traffic; construction equipment; and activities such as pile driving, oil and gas development, coastal development, dredging and filling. Natural sound sources in the inlet include earthquakes; tidal currents; substrate movement from tides, wind, and ice; and sounds from some animal species.

II. The Cook Inlet Beluga Whale.

Cook Inlet supports a wide variety of marine wildlife and mammals.[4] Fish include multiple species of salmon, trout, and eulachon.[5] Marine mammals include beluga whales, harbor seals, killer whales, harbor porpoises, and Steller sea lions.[6] Although all these mammal species are covered by the IHA, Plaintiffs' arguments are focused on NMFS' findings on beluga whales, so this Order is also focused on that species.

There are five stocks of beluga whales in Alaska.[7] The Cook Inlet stock is the most isolated of these stocks; it resides year-round in the inlet and does not migrate to

[4] B 877.

[5] B 877-879.

[6] B 881.

[7] B 882.

other locations.[8] However, Cook Inlet beluga whales do migrate within the inlet; they concentrate in the upper inlet at rivers and bays in summer and fall, and then disperse offshore to the mid to lower inlet during the winter.[9] Beluga whales show high site fidelity and may stay in an area with fluctuating fish runs or disturbance from boats or other anthropogenic activity.[10]

Although there were no systematic surveys or population estimates performed on the Cook Inlet beluga whale species before 1994, it is believed they numbered in the low thousands at that time.[11] NMFS has adopted 1,300 whales as the "carrying capacity" for the species in Cook Inlet.[12]

Beginning in 1994, NMFS began annual comprehensive, systematic aerial surveys to document the population of Cook Inlet beluga whales. These surveys documented a population decline of nearly 50 percent between 1994 and 1998, from approximately 653 to 347 whales.[13]

In 1999, NMFS received petitions to list the Cook Inlet beluga whale stock as an endangered species, but the agency rejected the requests as it determined the species'

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[8] B 882; BiOp 170-171. For purposes of this Order, when "B" is used in a citation followed by a number, it refers to the page or pages within the administrative record for the Biological Opinion. When "BiOp" is used, it refers to the Biological Opinion itself issued in May 2012, and located in the record at B 142-272. The Environmental Assessment is also included in that portion of the administrative record. *See* B 843-984.

[9] BiOp 172.

[10] BiOp 175.

[11] B 882.

[12] B 882; BiOp 176. "Carrying capacity is the largest number of a species that a given ecosystem can sustain." *Anderson v. Evans*, 371 F.3d 475, 481 n.2 (9th Cir. 2002).

[13] B 882; BiOp 176.

decline was due to overharvest by Alaska Native subsistence hunters.[14] As a result, beginning in 1999, the subsistence harvest of beluga whales became regulated. These regulations were expected to result in a yearly population growth rate of two to six percent.[15] But that yearly growth has never materialized. Instead, population estimates from 2011 to 2011 have shown a yearly population decline of 1.1 percent.[16] In May 2000, the Cook Inlet beluga whale population was designated as "depleted" under the MMPA.[17]

In 2006, NMFS received another petition to list the Cook Inlet beluga whale species as endangered. On April 20, 2007, NMFS issued a proposed rule to list the species as a distinct population segment ("DPS") in danger of extinction. A notice and comment period followed and on October 17, 2008, NMFS announced its decision to list the species as endangered under the ESA. On April 11, 2011, NMFS announced two areas of critical habitat for the Cook Inlet beluga whale within the inlet totaling 7,800 km^2.[18] The 2011 population estimate for Cook Inlet beluga whales was 284.[19]

[14] B 882.

[15] BiOp 176.

[16] BiOp 176-77.

[17] B 882.

[18] B 883.

[19] BiOp 177.

III. The Apache Project and Request for 2012-2013 IHA.

Apache Alaska submitted its application for an IHA to NMFS on June 15, 2011.[20] After receiving initial comments from NMFS, Apache submitted a revised application on July 19, 2011.[21] Apache sought an IHA allowing the incidental take by Level B harassment of 30 beluga whales during its first year of seismic surveying, as Apache acknowledged that its proposed activities "have the potential to result in takes by harassment of marine mammals by acoustic disturbance during seismic operations."[22]

"Take" is defined slightly differently by the MMPA and the ESA, but in broad terms means to disturb or attempt to disturb a marine mammal by conduct ranging from incidental harassment to killing.[23] The MMPA specifies two levels of harassment. Level A harassment is defined as "any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild."[24] Level B harassment means "any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering."[25]

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[20] A 1242; A 1572. Citations to "A" followed by a page number refer to that portion of the administrative record that contains the IHA and some NEPA documents. *See* Docket 52 at 11 n.1.

[21] A 1332; A 1572.

[22] A 1362, 1371.

[23] 16 U.S.C. § 1362(13) (Marine Mammal Protection Act); 16 U.S.C. § 1532(19) (Endangered Species Act).

[24] A 1363; 16 U.S.C. § 1362(18)(A)(i).

[25] *Id.*

Apache's application indicated that it had acquired over 300,000 acres of oil and gas leases in Cook Inlet in 2010 and "propose[d] to conduct a phased 3D seismic survey program throughout Cook Inlet over the course of the next three to five years."[26] Apache proposed to begin surveying in the fall of 2011, completing approximately 829 km^2 within an area it labeled Area 1, which is "located along the western coast of upper Cook Inlet."[27] Apache proposed to conduct seismic surveying for approximately 160 days during an eight to nine month period in the program's first year.[28]

Seismic surveys use high-energy, low-frequency sound in short pulse durations to determine substrates below the sea floor, such as gas and oil deposits.[29] Apache stated that its proposed "[i]n-water air gun activity will average 10-12 hours per day and will generally occur around the slack tide or low current periods."[30] Apache proposed using two synchronized source vessels that would operate in parallel lines and use a

[26] A 1338.

[27] A 1338, 1346.

[28] A 1346; *see* BiOp 157 (Figure 6: Apache's seasonal windows of opportunity to conduct seismic surveys across the entire project area).

[29] B 900.

[30] A 1339. Unlike many seismic surveys that operate airguns continuously for 24 hours each day, Apache's "in-water airguns will only be active for approximately 2.5 hours during each of the slack tide periods. . . . Seismic operations are not conducted in ebb and flood tides because the signal-to-noise ratio of the seismic data are extremely poor due to the high ambient noise from the tidal flow. Furthermore, actual towing of the array by the vessel in the high tidal flows . . . is difficult and potentially unsafe for the vessel, people, and equipment." BiOp 156, 158.

ping/pong method that alternates the firing of airguns every 12 seconds.[31] Each vessel would be equipped with 16 high-volume airguns.[32]

During those portions of each day when the full array of airguns would not be conducting seismic surveying, a mitigation gun would typically be in continuous operation so as to deter marine mammals from approaching the vessels.[33]

Apache proposed using thresholds of 180 dB for Level A (injury) harassment and 160 dB for Level B (disturbance) harassment for the beluga whales, and indicated it relied on NMFS for those threshold levels. Apache explained that "[s]ince 1997, NMFS has been using [these] generic sound exposure thresholds to determine when an activity in the ocean that produces sound might result in impacts to a marine mammal such that a take by harassment might occur."[34] Apache indicated that NMFS is "developing new science-based thresholds to improve and replace the current generic exposure level thresholds," but the criteria have not been finalized," so Apache relied on the generic thresholds.[35] Apache opined that the generic thresholds are likely lower than necessary and are intended to be precautionary estimates below which no physical

[31] A 1343-44.

[32] BiOp 161.

[33] A 1384; BiOp 158.

[34] A 1363. These are the thresholds for cetaceans, including the beluga whale. The application also includes a 190 dB injury threshold for pinnipeds, such as seals and sea lions.

[35] A 1363.

injury will occur."[36] But it added, "[n]o data are available for any free ranging marine mammals or for exposure to multiple pulses of sound during seismic surveys."[37]

Apache's IHA application included information about the hearing ability of beluga whales: "Although they are known to hear a wide range of frequencies, their greatest sensitivity is around 10 to 100 kHz, well above sounds produced by most industrial activities . . . recorded in Cook Inlet."[38] Apache indicated that its seismic activities would be at a frequency considerably below the 10 to 100 kHz range.[39] It also indicated that "[t]emporary disturbance or localized displacement reactions are most likely to occur" from its seismic operations although the "implementation of the mitigation and monitoring measures" should result in "no takes by injury or mortality (Level A)" and the minimization of "takes by disturbance (Level B)."[40] "The effects of sounds from air guns on marine mammals might include one or more of the following: tolerance, masking of natural sounds, behavioral disturbance, and temporary or permanent hearing impairment, or non-auditory physical effects."[41] Apache proposed "mitigation measures to be implemented during the survey . . . based on Level B harassment criteria using the 160 dB . . . threshold[.]"[42]

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[36] A 1375 (citing Southall et al. (2007)).

[37] A 1376.

[38] A 1355 (citing Richardson et al. (1995)).

[39] BiOp 216.

[40] A 1362.

[41] A 1372 (citing Richardson et al. (1995)).

[42] A 1363.

To estimate the number of marine mammals that could be disturbed by its seismic surveying, Apache determined the area that would be ensonified to 160 dB and the estimated density of marine mammals within that area.[43] Apache hired a consultant, Jasco, to estimate the area that would be ensonified to 160 dB when the full airgun array was operating.[44] Apache used the density figures for beluga whales gathered "from the annual aerial surveys conducted by NMFS for Cook Inlet beluga whale between 2000 and 2010 in June."[45] To account for the increased density of beluga whales at river mouths, Apache used "the highest number of beluga whales observed for each year . . . to provide a density for river mouths," while "the average number of beluga whales observed for each year was used to provide density away from river mouths."[46] However, Apache used only the whales that were actually seen in the aerial surveys for its density estimates.[47] NMFS has adjusted the aerial survey results upward each year to determine its population abundance estimates in order to account for submerged and other whales that were undetected in the aerial surveys.[48] NMFS' annual adjustments in this regard have been significant: in most years the

[43] A 1364-1368.

[44] A 1385; A 1417; BiOp 164.

[45] A 1366.

[46] A 1367.

[47] A 1368.

[48] *See, e.g.,* Doc. A 150 at 11 (Table 1, Whale Counts); NMFS researchers note counts are uncorrected at: Doc. A 139 at 5 (2000), Doc. A 141 at 7 (2001), Doc. A 142 at 7 (2002), Doc. A 143 at 7 (2003), Doc. A 145 at 7 (2004), Doc. A 148 at 8 (2005), BiOp 2581 (2006), Doc. A 150 at 8 (2007), Doc. A 154 at 13 (2008), Doc. A 155 at 12 (2009), Doc. A 156 at 13 (2010).

uncorrected count from the aerial surveys has been between 50%–70% of the total population abundance estimate.[49]

To calculate the estimated number of "takes" by harassment of beluga whales, Apache "multipl[ied] the expection densities . . . by the anticipated areas ensonified by levels [greater than or equal to] 160 dB . . . by the number of expected days that will be surveyed seismically in Area 1."[50] Apache then divided this amount by two to calculate the takes, reasoning that its "operations would occur over 12 hours per day."[51] With these calculations Apache estimated the "take" by harassment[52] of beluga whales as follows:[53]

	Total Maximum "Take"	Average "Take"
Away from river mouths:	4.7	2.4
Near river mouths:	41.0	16.3

From these estimates, Apache requested authorization from NMFS to "take" by harassment up to 30 beluga whales during its first year of seismic surveying. Noting its request was less than the maximum take it had estimated might occur at river mouths, Apache indicated it "will implement a rigorous monitoring program when conducting seismic operations near river mouths during periods of high potential for encountering beluga whales," and further "commits to shutting down air guns when beluga whales are

[49] Doc A 154 at 17.

[50] A 1369.

[51] A 1369. When the mitigation gun alone is operating, the boundary of the area ensonified to 160dB was estimated at 330 meters from the vessel. A 1385.

[52] I.e., the estimated number of beluga whales that would be exposed to 160 dB of sound.

[53] A 1371.

observed to be approaching the 160 dB threshold to minimize and avoid takes of beluga whales to the greatest extent possible."[54]

Apache's application also addressed the effect of its planned operations on the subsistence use of the beluga whale. It concluded "[t]he project should [not] have any effect because no beluga harvest will take place in 2011 or 2012[.]"[55]

Apache's proposed mitigation measures included establishing safety radii; monitoring; and power down, shut down, and ramp up procedures.[56] The safety radii is the estimated distance that Apache computed that a whale must be to the vessels to encounter sounds above the 160 dB or 180 dB thresholds. The safety radii distances are as follows for the 2400 airguns:[57]

	180 dB	160 dB
2400 in^3 airgun (nearshore)	1.42 km	6.41 km[58]
2400 in^3 airgun (offshore)	.98 km	4.89 km

If whales approach the safety radii, Apache proposed to power down or shut down its operations.[59] During a power down, the number of airguns in use is reduced until "the

[54] A 1370.

[55] A 1380.

[56] A 1384.

[57] A 1417, 1385. Apache's application also included radii for the 190 dB ensonified area, the Steller sea lion injury threshold. A 1363.

[58] Apache conducted a sound source verification study to confirm these safety radii distances before beginning its in-water seismic operations. A 1802; BiOp 254. The study adjusted the 160 dB threshold distance to 9.5 km. Docket 55 at 4.

[59] A 1384.

radius of the 180 dB . . . zone is decreased to the extent that marine mammals are not in the safety zone." During a shut down, "all air gun activity is suspended." "[I]f a marine mammal is already within the harassment safety zone when first detected, the air guns will be powered down immediately if this is a reasonable alternative to a complete shut down."[60] Apache proposed to shut down its operations "if a group of more than five beluga whales is sighted within the 160 dB harassment sound level zone," or "if a beluga whale calf is sighted approaching or within the 160 dB harassment zone."[61]

Ramp up procedures would be utilized "at the start of air gun operations, including a power down, shut down, and after any period greater than 10 minutes in duration without air gun operations[.]" During ramp up, the number of guns operating is gradually increased. Ramp up would not be used at the start of each 2.5 hour seismic surveying period so long as "the mitigation gun has been operating during the interruption of seismic survey operations."[62]

Apache's application proposed monitoring measures including visual boat-based monitoring. Two protected species observers ("PSOs") would be present on each of the two source vessels and two PSOs would be present on one support vessel, and "would normally be on duty in shifts no longer than 4 hours with 2 hour minimum breaks to avoid observation fatigue." During daytime operations, these six PSOs would watch to determine whether marine mammals "are about to enter or are sighted within

[60] A 1385.

[61] A 1384.

[62] A 1386.

designated safety zones." They "will scan the area around the vessel systematically with reticle binoculars … and with the naked eye.[63]

Apache indicated that "[s]eismic operations will not be initiated or continue when adequate observation of the designated safety zone is not possible due to environmental conditions such as high sea state, fog, ice and low light."[64] However, the PSOs would only work during the daytime hours of airgun operations. "PSOs will not monitor during seismic operations at night."[65] Instead, Apache proposed that the "[v]essel captain and crew will watch for marine mammals (insofar as practical at night) and will call for the air gun(s) to be shut down if marine mammals are observed in or about to enter the safety radii."[66] Apache's application added, "vessel crew will also be instructed to assist in detecting marine mammals and implementing mitigation requirements (if practical)."[67]

Apache also proposed to use a shore based monitoring station "when possible."[68] The observer located there would use "big-eye binoculars" to "scan the area prior to, during, and after the air gun operations." A shore-based observer would be able to communicate with the PSOs on the vessels to alert them of any marine mammal sightings. In addition, "[w]hen practicable, Apache proposes to utilize the crew

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[63] A 1388.

[64] A 1388.

[65] A 1384.

[66] A 1384.

[67] A 1388.

[68] A 1389.

helicopter to conduct aerial surveys near river mouths prior to the commencement of operations in order to identify locations of congregations of beluga whales."[69]

Apache also proposed to use two passive acoustic monitoring ("PAM") systems attached to surface buoys on anchored moorings. These recorders would send real-time acoustic data to PAM operators aboard the support vessels. These surface buoys are not deployable when ice is present. When the buoys are deployed, "[d]etection ranges for beluga whales are nominally a maximum of 2 km for whistles and 500 m for clicks, although much greater ranges for whistle detections have been achieved[.]"[70] When the buoys are not deployable, Apache proposed to use a hydrophone attached to its support vessel.[71]

Apache's application acknowledged that acoustic monitoring has limitations for detecting marine mammals because "it requires that the animals produce sounds . . . [and] it requires those sounds to be of sufficient amplitude to be detected at the monitoring location." The "received levels of the biological sounds [also must] exceed background noise and other measurement noise," and "[f]low noise could be significant for this study due to high tidal currents in Cook Inlet." Apache estimated the maximum detection range of the PAM for beluga whales would be from two to three kilometers.[72]

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[69] A 1389.

[70] A 1390.

[71] BiOp 167.

[72] A 1393.

Based on the foregoing, Apache's application sought the issuance of an IHA from NMFS to permit the take by harassment of up to 30 beluga whales incidental to its first year of seismic survey operations in Cook Inlet.[73]

IV. Agency Actions.

On September 21, 2011, NMFS issued a Federal Register Notice regarding Apache's application with a request for comments.[74] The Notice included a summary of Apache's application, made preliminary determinations regarding a proposed IHA, and noted the applicability of the MMPA and ESA.[75] It noted the mitigation, monitoring, and reporting requirements that Apache had proposed in its application, and proposed minor changes and additions.[76] It also noted that NMFS is "currently preparing an Environmental Assessment, pursuant to NEPA, to determine whether or not this proposed activity may have a significant effect on the human environment." The Notice concluded that on the basis of "these preliminary determinations, NMFS proposes to authorize the take of marine mammals incidental to Apache's seismic survey in Cook Inlet, Alaska, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated."[77]

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[73] A 1337, A1371.

[74] A 1572-1586 (Federal Register Notice, Vol. 76, No. 183, 58473-58487, September 21, 2011).

[75] A 1572-1586.

[76] A 1579-1581. For example, the Notice proposed three mitigation measures for support vessels that are not directly relevant to this appeal. *Cf.* A 1386 and A 1579.

[77] A 1586.

On October 27, 2011, the Marine Mammal Commission ("MMC") provided its recommendations to NMFS.[78] MMC recommended that NMFS "defer issuance of the proposed incidental harassment authorization until such time as the 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."[79] But "if the National Marine Fisheries Service decides to issue the requested authorization notwithstanding possible significant impacts to the Cook Inlet population of beluga whales," MMC made several recommendations, including that NMFS (1) require Apache "to recalculate the estimated number of takes for all species based on the modeled areas of ensonification for each sound threshold . . . using the full number of survey days rather than half that number"; and (2) "ensure that the monitoring measures included in the authorization are sufficient to account for all takes of marine mammals[.]"[80]

Several comments were submitted by environmental non-government organizations, which are substantially similar to the arguments presented by Plaintiffs in this action and discussed below.

On February 17, 2012, NMFS' Alaska Region issued a Biological Opinion ("BiOp") which set out the agency's opinion on the effects of Apache's proposed seismic

[78] MMC is an independent commission of three members appointed by the President with the advice and consent of the Senate. It was established by the MMPA and is charged with making reports and recommendations on marine mammal matters. 16 U.S.C.A. §§ 1401-02.

[79] B 13307.

[80] B 13307-13308.

surveying on endangered species.[81] The BiOp found that most aspects of Apache's proposed seismic activity would not adversely any endangered species.[82] But with respect to the expected noise of the operation, the BiOp concluded that "[d]ue to the potential for exposure of beluga whales and sea lions to noises at or above 160 dB . . . NMFS agrees with [Apache's] determination that noise from the use of airguns associated with the proposed seismic program **may affect, and is likely to adversely affect** the Cook Inlet beluga whales[.]"[83] The BiOp concluded that Apache's proposed seismic surveying with its proposed mitigation measures "is not likely to jeopardize the continued existence of the Cook Inlet beluga whale . . . nor to destroy or adversely modify Cook Inlet beluga whale critical habitat."[84] An Incidental Take Statement ("ITS") concluded the BiOp, which incorporated the mitigation measures set forth in the BiOp,[85] and authorized the "non-lethal incidental take of no more than 30 Cook Inlet beluga

[81] B 412-538; *see also* Amended BiOp, BiOp 142-272.

[82] BiOp 250.

[83] A 1723 (emphasis in original); *also see* BiOp 222.

[84] A 1750; *also see* BiOp 250.

[85] BiOp 253-255; A 1754. The BiOp also included conservation recommendations, which "are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information." BiOp 251. These recommendations included: (1) consider using new research and techniques for reducing the horizontal spread of airgun noise; (2) conduct aerial surveys to verify there are no groups of 5 or more marine mammals in an area before beginning surveying in a non-contiguous patch; (3) to reduce the total acoustic energy added to the marine environment, do not use the mitigation gun in between surveying periods, but rather use the ramp-up procedure at the start of each new shooting period; (4) extend the ramp up procedure from 30 to 45 minutes to provide beluga whales enough time to swim beyond the 6.41 km harassment radius before shooting begins; (5) conduct a sound source verification study at both nearshore and offshore areas so a harassment/harm zone can be identified for each depth category as used in the acoustic model. *Id*. These discretionary recommendations were not included in the ITS.

whales . . . per year for three operational years as a result of exposure to impulsive sounds with received levels ≥ 160 dB[.]"[86]

In April 2012, NMFS issued an Environmental Assessment ("EA") and a Finding of No Significant Impact ("FONSI"), rendering preparation of an Environmental Impact Statement ("EIS") unnecessary.[87]

On April 30, 2012, NMFS issued the IHA to Apache, which was "valid from April 30, 2012 through April 30, 2013."[88] The IHA authorized the take by Level B harassment of 30 beluga whales.[89]

On May 11, 2012, NMFS published a final rule in the Federal Register regarding the issuance of the IHA.[90] The final rule summarized and responded to the comments that NMFS had received from MMC, ADFG, non-governmental organizations, and one member of the public.[91] The final rule also summarized Apache's intended survey operations and discussed the potential effects of the airgun sounds on marine mammals, anticipated effects on marine mammal habitat, mitigation measures, and monitoring and reporting requirements.[92] By and large, NMFS adopted the mitigation measures that Apache had proposed and indicated that "NMFS used Apache's take

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[86] BiOp 10.

[87] B 843-969, B 970-78.

[88] A 1783. A new IHA is now in place that is effective from March 1, 2013 to March 1, 2014. Docket 73-1.

[89] A 1791.

[90] A 1792-1808 (Federal Register Notice Vol. 77, No. 92, 27720-27736, May 11, 2012).

[91] A 1793.

[92] A 1798-1803.

estimates in its analyses."[93] NMFS also required Apache to comply with the terms and the conditions in the ITS issued with the BiOp, including its time/area restrictions.[94] The final rule indicated NMFS would not impose any other specific time/area restrictions in the IHA because it "believes that the timing and location of the seismic survey, as proposed, will avoid areas and seasons that overlap with important beluga whale behavioral patterns."[95] The final rule also determined that the amount of Level B take authorized would have a negligible impact on the beluga whale and represented a small number (10%) of the Cook Inlet beluga whale population.[96] NMFS also concluded the

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[93] A 1803-1805. The Notice slightly changed the restriction regarding groups of whales and cow-calf pairs approaching the harassment sound level zone and added three mitigation measures for support vessels. A 1783-1790, 1801.

[94] A 1790. The BiOp contains two area restrictions:

> There shall be no marine seismic activity within 10 miles of the mean higher high water (MHHW) line of the Susitna Delta (the area from Beluga River to Little Susitna River) from mid-April to mid-October so as to avoid any effects to belugas and their prey in this critical feeding and potential breeding area. If the results of the SSV study indicate that noise over 160 dB travels further than 6.41 km (~4 mi), Apache will work with NMFS AKR to establish a new minimum setback distance for this area during this time.
>
> There shall be no airguns used as an energy source within 1.6 km (1 mi) of the mouth of any stream listed by the ADF&G on the Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes, unless approved by ADF&G on a case-by-case basis.
>
> *Although the applicant identifies this as a mitigation measure, NMFS does not consider the 1.6 km (1 mi) setback from river mouths in the analysis of impacts to beluga whales, beluga critical habitat . . . because there is the possibility of exemptions to this setback by ADF&G. NMFS has no authority to determine exemptions allowed or denied by ADF&G, and thus must assume in this opinion that airguns will occur within 1 mile of the mouths of all anadromous streams.*

BiOp 168-169 (emphasis in original).

[95] A 1796.

[96] A 1807.

IHA would not have an unmitigable adverse impact on the subsistence use of the beluga whale.[97]

On May 21, 2012, an amended BiOp was issued that made minor changes to the February opinion.[98] However, the agency's conclusions and the ITS remained the same.[99]

DISCUSSION

I. Jurisdiction.

A. Subject Matter Jurisdiction.

This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. § 1331 (federal question), 5 U.S.C. § 702 (Administrative Procedure Act), and 28 U.S.C. § 1361 (mandamus).

B. Standing.

In its opposition, Apache challenges Plaintiffs' standing to bring this case.[100] The Supreme Court has enumerated the requirements for standing:

> [W]e held that, to satisfy Article III's standing requirements, a plaintiff must show (1) it has suffered an 'injury in fact' that is (a) concrete and particularized and (b) actual or imminent, not conjectural or hypothetical; (2) the injury is fairly traceable to the challenged action of the defendant; and (3) it is likely, as opposed to merely speculative, that the injury will be redressed by a favorable decision. An association has standing to bring

[97] A 1806-1808.

[98] BiOp 143.

[99] BiOp 143, 253-255. In 2013, NMFS Alaska Region requested that consultation be reinitiated and a new BiOp has since been issued. Docket 73-3 at 3.

[100] Docket 54 at 7-8.

> suit on behalf of its members when its members would otherwise have standing to sue in their own right, the interests at stake are germane to the organization's purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit.[101]

The Supreme Court has held that the requisite "injury in fact" need not be economic harm, but may also reflect "aesthetic, conservational, and recreational as well as economic values."[102]

Apache argues that although Plaintiffs have submitted the declarations of various individuals establishing their attachment to Cook Inlet or the Cook Inlet beluga whale population, Plaintiffs do not have injury-based standing because they have not demonstrated that the issuance of the IHA or Apache's activities conducted pursuant to the IHA have harmed any beluga whales or any of the Plaintiffs. Apache asserts that its first year of seismic testing has concluded and resulted in "no instance of harassment of any Beluga or other type of whale."[103] Thus, it maintains the "injury alleged by the Plaintiffs was – and remains – purely conjectural and hypothetical."[104]

Plaintiffs refute Apache's arguments, emphasizing that those arguments assume "that Apache's visual and passive acoustic monitoring plan can detect any marine mammal that enters the survey's vast harassment zone – a point that has no basis in

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[101] *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 180-81 (2000) (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992); *Hunt v. Wash. State Apple Adver. Comm'n*, 432 U.S. 333, 343 (1977)).

[102] *Sierra Club v. Morton*, 405 U.S. 727, 738 (1972) (internal citation omitted).

[103] Docket 54 at 8 (emphasis omitted); Docket 55 at 3-4 ¶¶ 9-10 (Ex. A: Hendrix Decl.). Although the administrative record is closed and this declaration cannot be considered in this Court's review of the agency's decision, the parties agree that it may be considered for purposes of evaluating Plaintiffs' standing. Docket 72 at 8-9, 28.

[104] Docket 54 at 8.

the record or the scientific literature."[105] Moreover, even if Apache's monitoring efforts were adequate and no harm to any beluga whales occurred, Plaintiffs maintain they have standing "because a threatened injury is sufficient to satisfy the injury-in-fact requirement."[106] Plaintiffs assert that "NMFS and Apache both predicted that the seismic survey is likely to take 90 Cook Inlet beluga whales over its three-year duration" and this predicted harm establishes standing.[107]

Apache's September 2012 monthly report indicates that 25 beluga whales were visually observed from Apache's vessel or land based stations during that month's monitoring effort.[108] This Court finds that the presence of these animals in the survey area indicates the harm that Plaintiffs are concerned with could have occurred or is likely to occur, particularly given Plaintiffs' challenge to certain aspects of Apache's monitoring techniques and NMFS' take calculations. "[E]nvironmental plaintiffs adequately allege injury in fact when they aver that they use the affected area and are persons 'for whom the aesthetic and recreational values of the area will be lessened' by the challenged activity."[109] Here, Plaintiffs, through their declarations, have made such a showing.[110] Plaintiffs have adequately established an injury in fact that is sufficiently

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[105] Docket 56 at 9.

[106] Docket 56 at 10 (citing *Friends of the Earth, Inc.* 528 U.S. at 180-81; *Cent. Delta Water Agency v. U.S.*, 306 F.3d 938, 947-48 (9th Cir. 2002)).

[107] Docket 56 at 11.

[108] Docket 55-1 at 5 (Sept. 2012 Monthly Report).

[109] *Friends of the Earth,* 528 U.S. at 183 (citing *Sierra Club* 405 U.S. at 735; *Lujan*, 504 U.S. at 562-63).

[110] *See* Docket 49-1 at 5 ¶¶ 13-14; Docket 49-2 at 2-3, 7 ¶¶ 7, 9-11, 23.

"concrete and particularized" and "actual or imminent," and not merely "conjectural or hypothetical," such that they have standing to bring this suit.[111]

II. Standard of Review.

The sufficiency of NMFS' analysis included in the IHA, BiOp, and EA is reviewed pursuant to the Administrative Procedure Act ("APA").[112] The APA directs a court to overturn agency action if the action is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."[113] In this regard, the Supreme Court has held:

> [t]he scope of review under the 'arbitrary and capricious' standard is narrow and a court is not to substitute its judgment for that of the agency. Nevertheless, the agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'[114]

Agency decisions are arbitrary and capricious "if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."[115]

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[111] *See Friends of the Earth*, 528 U.S. at 180-81. Additionally, a new IHA has been issued for the next year of surveying so the anticipated threat of injury is ongoing. Docket 73 (Notice of Issuance of New IHA to Apache on February 15, 2013).

[112] *Humane Soc'y of U.S. v. Locke*, 626 F.3d 1040, 1047 (9th Cir. 2010) (MMPA review subject to APA); *Karuk Tribe of Cal. v. U.S. Forest Serv.*, 681 F.3d 1006, 1017 (9th Cir. 2012) (ESA review subject to APA); *Pac. Rivers Council v. U.S. Forest Serv.*, 689 F.3d 1012, 1020 (9th Cir. 2012) (NEPA review subject to APA).

[113] 5 U.S.C. § 706(2)(A).

[114] *Motor Vehicles Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quoting *Burlington Truck Lines v. U.S.*, 371 U.S. 156, 168 (1962)).

[115] *Motor Vehicles Mfrs.*, 463 U.S. at 43.

The Ninth Circuit directs a court "to conduct a 'particularly deferential review' of an 'agency's predictive judgments about areas that are within the agency's field of discretion and expertise . . . as long as they are reasonable.'"[116] In such cases, a court must "treat [the agency's] decision with great deference because [it is] reviewing the agency's technical analysis and judgments, based on an evaluation of complex scientific data within the agency's technical expertise."[117]

A reviewing court may not "supply a reasoned basis for the agency's action that the agency itself has not given," but it shall "uphold a decision of less than ideal clarity if the agency's path may be reasonably discerned."[118]

III. Claim 1: Violation of the Marine Mammal Protection Act.

Congress enacted the MMPA in 1972 based on its finding that "marine mammals have proven themselves to be resources of great international significance, esthetic and recreational as well as economic[.]" The MMPA's stated purpose is "that [marine mammals] should be protected and encouraged to develop to the greatest extent feasible commensurate with sound policies of resource management and that the primary objective of their management should be to maintain the health and stability of the marine ecosystem."[119] To effectuate this purpose, the MMPA imposes a moratorium on the taking and importation of marine mammals. Within the context of the

[116] *The Lands Council v. McNair*, 537 F.3d 981, 993 (9th Cir. 2008).

[117] *Envtl. Def. Ctr., Inc. v. U.S. E.P.A.*, 344 F.3d 832, 869 (9th Cir. 2003) (citing *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 103 (1983); *Chem. Mfrs. Ass'n v. EPA*, 919 F.2d 158, 167 (D.C.Cir. 1990)).

[118] *Motor Vehicles Mfrs.*, 463 U.S. at 43.

[119] 16 U.S.C. § 1361.

MMPA, "taking" means "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal."[120] The MMPA divides responsibility for its enforcement between two agencies. The National Oceanic and Atmospheric Administration, which contains NMFS, is responsible for enforcing the MMPA with regard to "members of the order Cetacea [which includes beluga whales] and members, other than walruses, of the order Pinnipedia."[121]

The MMPA contains a number of exceptions to the moratorium.[122] The exception relevant here applies to activities other than commercial fishing and requires NMFS to authorize "for periods of not more than 1 year, subject to such conditions as [NMFS] may specify, the incidental, but not intentional, taking by harassment of small numbers of marine mammals[,]" if NMFS makes the following two findings:

> (1) the harassment "will have a negligible impact" on such species or stock; and
>
> (2) the harassment "will not have an unmitigable adverse impact on the availability of such species or stock for taking for subsistence uses[.][123]

[120] 16 U.S.C. § 1362(13).

[121] 16 U.S.C. §§ 1362(12)(A)(i), 1371. The Secretary of the Interior is responsible for "all other marine mammals covered by" the MMPA (such as walruses, sea otters, polar bears, and sea cows). 16 U.S.C. § 1362(12)(A)(ii).

[122] 16 U.S.C. § 1371(a)(1).

[123] 16 U.S.C. § 1371(a)(5)(D)(i) (I)-(II). Much of the case law on the MMPA reviews an agency's harassment authorization for up to five years issued under different provisions of the act. *See* 16 U.S.C. § 1371(a)(5)(A)(i)(I)-(II). However, the same statutory standards apply (small numbers, negligible impact, unmitigable adverse impact, and least practicable impact) such that those cases are relevant to the Court's analysis under the one-year provision of the MMPA at issue in this case.

If NMFS authorizes an incidental taking, its authorization must prescribe (1) "permissible methods of taking by harassment pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat"; (2) the measures determined by NMFS to be "necessary to ensure no unmitigable adverse impact on the availability of the species or stock for taking for subsistence uses"; and (3) "requirements pertaining to the monitoring and reporting of such taking by harassment[.]"[124]

Plaintiffs assert that NMFS has violated the MMPA in four respects: (1) arbitrarily and capriciously concluding that the Apache project will take only "small numbers" of beluga whales; (2) erroneously calculating the estimated marine mammal take; (3) failing to ensure the least practicable adverse impact on beluga whales; and (4) failing to ensure no unmitigable adverse impact on subsistence use.[125]

A. Small Numbers.

The MMPA directs the agency to authorize the incidental taking of "small numbers" of marine mammals. A separate part of the statute requires the agency to authorize such a taking if it finds that the taking "will have a negligible impact on such species or stock[.]"[126] Plaintiffs challenge the NMFS' small numbers determination on two grounds: (1) that the agency improperly conflated its small numbers analysis with its negligible impact analysis; and (2) that the agency improperly quantified 10% of the beluga whale population as small numbers.

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[124] 16 U.S.C. § 1371(a)(5)(D)(ii)(I)-(III).

[125] Docket 48 at 23-38 (Pl's Mot.).

[126] 16 U.S.C. § 1371(a)(5)(D)(i).

(1) Small Numbers and Negligible Impact Analyses.

Plaintiffs assert that "NMFS failed to differentiate its cursory 'small numbers' analysis from its 'negligible impact' analysis and in doing so failed to explain how it reached its conclusion regarding small numbers."[127] Plaintiffs cite to *Center for Biological Diversity v. Salazar*,[128] and assert that in that case, "[c]entral to the [Ninth Circuit's] finding that the two terms were applied legally was the fact that the rule "analyzes the 'small numbers' and 'negligible impact' standards separately under different headings."[129] In contrast, Plaintiffs assert that here "NMFS neither separated its small numbers analysis from its negligible impact analysis nor identified different factors for each concept."[130]

NMFS responds that even though small numbers and negligible impact are discussed under the same heading in the final rule, it "did not conflate its small numbers and negligible impact analyses . . . [but rather] performed its standard [small numbers] analysis, which is to examine the amount of take allowed for each species relative to each species' or stock's total population size."[131] NMFS maintains it "applied a different standard for its negligible impact finding, using its regulatory definition" that takes into account the "'number, nature, intensity, and duration' of the takes and the context in

[127] Docket 48 at 24.

[128] 695 F.3d 893 (9th Cir. 2012).

[129] Docket 48 at 25 (citing *CBD v. Salazar*, 695 F.3d at 905).

[130] Docket 48 at 26.

[131] Docket 52 at 19-20.

which they occur."[132] Given the "distinct, separate standards for the two analyses," NMFS argues that the fact that the two analyses are under the same heading in the final rule does not render the final rule arbitrary and capricious.[133]

In *CBD*, the Ninth Circuit held that "to effectuate Congress' intent, 'small numbers' and 'negligible impact' must be defined so that each term has a separate meaning."[134] The final rule at issue in *CBD* did address "small numbers" and "negligible impact" under separate headings. But the Circuit Court did not expressly hold that the "small numbers" and "negligible impact" analyses must be placed under separate headings. Rather, it held that "[t]he key interpretative requirement of the Section 101(a)(5)(A) language is that 'small numbers' and 'negligible impact' remain distinct standards."[135] The Ninth Circuit also recognized that "there will inevitably be 'some overlap' between the two standards" and that "[t]he Service can (and should) do a better job of keeping the standards distinct when promulgating future incidental take regulations."[136]

In this case, in its small numbers determination, NMFS considered the percentage of the population affected.[137] It indicates the requested take of 30 beluga whales "represent[s] 10 percent of the Cook Inlet beluga whale population of

[132] Docket 52 at 20 (quoting A 1806-07); 50 C.F.R. § 216.103.

[133] Docket 52 at 20-22.

[134] *CBD*, 695 F.3d at 904 (internal citations omitted).

[135] *CBD*, 695 F.3d at 906.

[136] *CBD*, 695 F.3d at 907.

[137] *Cf. CBD*, 695 F.3d at 907 (small numbers analysis properly focused on the number of mammals affected).

approximately 284 animals . . . These percentage estimates represent small numbers relative to the affected population sizes[.]"[138]

In its negligible impact determination, NMFS looked at the expected impact on animal behavior, whether crucial habitat would be affected, and the duration of any anticipated harassment.[139] The agency identified several reasons for its conclusion that the requested take would have a negligible impact on the species, including: "no injuries or mortalities are anticipated to occur"; the "takes that are anticipated are expected to be limited to short-term Level B behavioral harassment"; few beluga whales are likely to be affected by the surveying due to their dispersed distribution during the months surveying will occur; "any behaviors that are interrupted during the survey are expected to resume once the activity ceases"; and "the area where the survey will take place is not known to be an important location where beluga whale[s] congregate for feeding, calving, or nursing."[140]

As was the case in *CBD*, NMFS could have done a better job in this case of keeping these two standards more distinct in the final rule, including the use of separate headings for each topic. But although discussed under the same heading in the final rule, this Court concludes that the agency kept the two standards sufficiently distinct and adequately analyzed "small numbers" as a distinct, separate standard from the negligible impact standard.

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[138] A 1807.

[139] *Cf. CBD*, 695 F.3d at 907 (negligible impact analysis properly considered the likely effects on the mammals' recruitment and survival).

[140] A 1807.

(2) Quantification of Small Numbers.

Plaintiffs also maintain the agency improperly based its "small numbers finding on a conclusion that take will be smaller than the amount authorized due to mitigation measures" because the "MMPA requires analysis of the actual level of take *authorized*."[141] But it is clear that in the final rule, the agency determined that 10% of the population constituted "small numbers" before consideration of any mitigation measures. The final rule sets out the 10% figure for beluga whales, as well as percentages for other species, and states "these percentage estimates represent small numbers[.]" Only then does it state, "In addition, mitigation measures are expected to reduce even further these numbers."[142] Thus, NMFS determined that 10% of the beluga population represented "small numbers," without reliance on mitigation measures.

Plaintiffs also fault NMFS' small numbers determination for failing to consider the conservation status of the beluga whales.[143] NMFS responds that the conservation status was properly considered in its negligible impact analysis.[144] This Court agrees with NMFS on this issue—to consider the species' conservation status in the small numbers analysis might well run afoul of *CBD*'s directive to maintain sufficiently distinct analyses of "small numbers" and "negligible impact."

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[141] Docket 48 at 27 (emphasis in original).

[142] A 1807.

[143] Docket 52 at 23-24; Docket 56 at 14.

[144] *See* A 1794 ("The status of the Cook Inlet beluga population (i.e., the fact that it is an isolated, endangered populations) has been carefully considered in NMFS' negligible impact analysis.").

More fundamentally, Plaintiffs contend that NMFS' small numbers analysis is deficient because the agency "failed to demonstrate, with support from the record, that 10% take of this highly endangered, isolated, declining population or marine mammals constitutes 'small numbers.'"[145] The final rule at issue in *CBD* did not quantify or estimate the number of mammals that would be taken. But the Ninth Circuit held that quantification was not required under the statute. Rather, it held the key requirement is that "the 'small numbers' determination focuses on the portion of a species or stock subject to incidental take[.]"[146] The Court of Appeals also held that in determining whether an activity directly affects only a small number of animals, the nature of the activity must be considered. As the Ninth Circuit explained, the agency's small numbers determination in that case, although unquantified, was upheld because the agency "in making its 'small numbers' determination . . . concludes that 'given the spatial distribution, habitat requirements, and observed and reported data, the number of animals coming in contact with the industry activity will be small by an order of magnitude to the . . . polar bear populations.'"[147]

Here, Plaintiffs assert that the agency failed to articulate any rational basis for its determination that 10% of the beluga whale population constitutes a small number.[148] But NMFS responds that its quantification approach is consistent with the Ninth Circuit's

[145] Docket 48 at 24.

[146] 695 F.3d at 906.

[147] 695 F.3d at 907.

[148] Docket 48 at 26.

reasoning in *CBD*.[149] And it maintains that here, it did not categorically establish 10% as a small number; rather, it determined, through consideration of the available data, that 10% was a small number in the specific context of the Cook Inlet beluga whale and the nature of the proposed activity.[150]

Mathematically speaking, 10% represents a relatively limited or small portion of 100%. And the agency presented a rational, albeit sparse, basis for its determination that 10% of the Cook Inlet beluga whale population constitutes "small numbers" of that total whale population. It looked at the nature of the activity in determining that 10% of the beluga whale population constituted small numbers, indicating that it had considered that the takes "were expected to be limited to short-term Level B harassment."[151] In *CBD*, the Ninth Circuit upheld the agency's "small numbers" determination even though the agency had not quantified the number of anticipated takes. Here, where the agency has quantified the number of authorized takes, its "small numbers" determination that 30 authorized takes by incidental harassment constitute small numbers relative to the population as a whole is not arbitrary and capricious.[152]

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[149] Docket 52 at 22.

[150] Docket 52 at 23.

[151] A 1806.

[152] *See Envtl. Def. Ctr., Inc. v. U.S. E.P.A.*, 344 F.3d 832, 869 (9th Cir. 2003) (agency's determination is entitled to "great deference" when evaluating "complex scientific data within the agency's technical expertise") (citing *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 103 (1983); *Chem. Mfrs. Ass'n v. EPA*, 919 F.2d 158, 167 (D.C.Cir. 1990)). However, as discussed more below, the Court has determined that NMFS erred in its density estimates; thus, the small numbers and negligible impact analyses, which relied on an estimated take of 30 beluga whales out of a total population of 284 whales, should have analyzed the impact of the action using a corrected figure that may be well above 30.

B. Take Estimations.

Plaintiffs assert "NMFS made two fundamental errors in calculating the amount of 'take' Apache's airgun surveys will cause" by using "erroneous density estimates and a scientifically invalid take threshold."[153]

(1) Density Estimations.

Plaintiffs first maintain that NMFS adopted Apache's density estimates derived from ten years of Cook Inlet aerial surveys, and that "Apache mistakenly used the survey's raw, 'uncorrected' numbers – numbers that do not account for whales that are swimming beneath the surface or are missed through human error."[154]

NMFS responds that Plaintiffs' argument is flawed for two reasons: (1) Plaintiffs failed to raise the issue in their comments to NMFS on the IHA application, thereby waiving it on appeal; and (2) even if the beluga whale densities are incorrect, Apache's monitoring efforts will ensure that take is limited to the 30 whales authorized and the "authorized take of 30 beluga whales is conservative and reasonable."[155]

On the waiver issue, NMFS asserts that the IHA application, which was "publicly noticed and available, included beluga density calculations that expressly relied upon the aerial survey data that Plaintiffs argue were not adjusted" and thus, their failure to comment means the argument is forfeited.[156] However, an argument may be considered by this Court as long as the agency had an opportunity to consider it during

[153] Docket 48 at 28.

[154] Docket 48 at 20.

[155] Docket 52 at 25.

[156] Docket 52 at 26.

the notice and comment period.[157] "This is true even if the issue was considered sua sponte by the agency or was raised by someone other than the petitioning party."[158] Here, MMC's comments to the agency identified "uncertainty in the estimation of marine mammal takes," and added "the Commission is not sure how the [non-river mouth] density estimates were derived and was not able to replicate them."[159] In the final rule, NMFS responded that the "abundance estimate for belugas was derived from the highest daily mean count acquired during the annual surveys . . . [but t]he applicant used the average number of belugas for the non-river mouths as a conservative estimate."[160] It added that "in response to the Commission's recommendation, Apache has removed the Chickaloon Bay and Susitna Delta highest daily mean counts and re-calculated the maximum number of belugas observed, which results in higher abundance estimates for non-river mouths."[161] Thus, NMFS had ample opportunity to correct any error in its density estimates in light of the MMC's comments, and did in fact make some slight adjustments in the final rule based on MMC's comments on this issue. Accordingly, the Court finds this issue has not been waived.

Plaintiffs argue that the numbers from NMFS' aerial surveys must be corrected to "account for missed whales" because the "distinct environment of Cook Inlet renders

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[157] *Portland Gen. Elec. Co. v. Bonneville Power Admin.*, 501 F.3d 1009, 1024 (9th Cir. 2007) ("In general, we will not invoke the waiver rule in our review of a notice-and-comment proceeding if an agency has had an opportunity to consider the issue." (internal citation omitted)).

[158] *Id*. at 1024 (internal citation omitted).

[159] A 1793; B 13311.

[160] A 1793.

[161] *Id.*

beluga whales basically invisible when they are underwater" and "juveniles with their gray coats are 'harder to detect.'"[162] Plaintiffs emphasize that the survey's own researchers have made these corrections each year when determining the abundance of the population, but NMFS did not make those corrections here. They add, "[i]ncredibly, NMFS did not include a single one of the researchers' papers correcting their survey data . . . in the administrative record for the IHA."[163]

NMFS maintains that "Apache's take estimates are conservative overall and supported by the record." Specifically, NMFS asserts that (1) the "take estimates do not take into account the full effect of the required protective measures;" (2) "the estimates assume that belugas appear in mid-Inlet with the same density as in the upper Inlet, when in fact far fewer whales are present in mid-Inlet during survey operations;" (3) "Apache overestimated surveying days near river mouths;" and (4) the "take estimates . . . use Apache's largest airgun array, when nearshore areas will be surveyed with a smaller airgun." NMFS also notes that Apache used the maximum whales counted to calculate densities near river mouths, where most takes are expected to occur such that application of correction factors is unnecessary.[164]

NMFS has conducted aerial surveys of the beluga whales in Cook Inlet since 1994.[165] For each of those years, NMFS has adjusted the counts from the aerial surveys substantially upward to determine the population abundance of beluga whales:

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[162] Docket 48 at 29.

[163] Docket 48 at 30.

[164] Docket 52 at 27.

[165] Doc. A150 at 2 (2007); BiOp 176.

"The annual calculated abundance will include corrections for whales missed within the viewing range of observers, whales missed because they were beneath the surface."[166] The adjustments each year are significant. For example, in 2005, a total of 192 beluga whales were counted in the aerial survey.[167] The adjusted population estimate for that year after correction was 278. In 2006, 153 beluga whales were counted; the adjusted population estimate for that year was 302.[168] NMFS has fully explained the methodology that it has consistently used to adjust the aerial survey counts to determine population abundance in a pair of papers prepared in 2000.[169] One paper notes that "wide ranges in counts from one aerial pass to the next" occur, "even when other variables (observer, visibility, etc.) have not changed."[170] It explains that submerged beluga whales are invisible to observers "[b]ecause the waters in upper Cook Inlet are extremely turbid and essentially opaque," and added that even when beluga whales are at or above the surface, "the gray color of young belugas is harder to detect" than the white bodies of the adult whales.[171] The paper sets out a mathematical model to correct the survey counts that "produce[s] abundance estimates with relatively

[166] Doc. A150 at 9 (2007).

[167] Doc. A150 ("Aerial Surveys of Belugas in Cook Inlet, Alaska, June 2007" (Rugh, et al.)).

[168] *Id.*

[169] B 1347; B 1349 (referencing Hobbs et al. 2000a and 2000b); B 10719 ("Abundance of Belugas, *Delphinapterus Ieucas,* in Cook Inlet, Alaska, 1994-2000" (Hobbs et al.) ("Hobbs 2000a").]

[170] B 10725 (Hobbs 2000a).

[171] B 10719 (Hobbs 2000a).

high accuracy,"[172] which NMFS has used each year thereafter to determine population abundance estimates for the Cook Inlet beluga whale.

In the final rule, NMFS determined the "population abundance" at 284 whales, using an abundance estimate that had been corrected through an upward adjustment the number of whales from the aerial survey to determine the estimated population.[173] In responding to MMC's comment "that NMFS require the applicant to describe and provide the rationale for the method used to determine the density estimate for beluga whales away from river mouths," the final rule stated that "The abundance estimate for belugas was derived from the highest daily mean count acquired during the annual surveys."[174] But it is undisputed that NMFS had simply adopted, without explanation, the uncorrected survey count that Apache had used in its application to compute the density estimates for the survey area.[175] Certainly an individual reading the final rule would expect that the same methodology that was used to compute the total population abundance would be used to compute the number of whales that would be subject to incidental take by harassment, and particularly when there is no indication to the contrary. But even with a direct inquiry from MMC as to the rationale for the survey density estimates, the final rule is silent as to why uncorrected visual survey figures

[172] B 10726 (Hobbs 2000a).

[173] A 1806 (table 5 uses population abundance figure of 284 whales); BiOp 176-177 (population estimated at 284 whales using abundance estimates derived from corrected figures from aerial surveys (citing Hobbs et al., "Estimated abundance of belugas in Cook Inlet, Alaska, from aerial surveys conducted in June 2011"));

[174] A 1793.

[175] A 1368-69, 1804 (density estimates derived from raw figures from aerial surveys (citing Rugh et al. 2000-2007, Sheldon et al. 2008-2010, "Aerial surveys of belugas in Cook Inlet, Alaska")); *also see* Docket 48 at 21 n.9 (citations that show aerial surveys contained uncorrected data).

were used for the project's density estimate, which were then applied to the corrected population abundance figure in small numbers analysis. Applying the uncorrected survey data to the corrected total population abundance resulted in an underestimation of the percentage of the beluga whale population that would be encountered in the survey area.[176]

NMFS asserts that any inaccuracies in the density estimates are immaterial because the agency has authorized a take of no more than 30 beluga whales and has required "'real-time' monitoring to insure that this authorized take amount is not exceeded."[177] But NMFS has not shown that Apache's monitoring will detect all beluga whales in the safety radii. In particular, NMFS did not require any nighttime observers, and the required nighttime acoustic monitoring efforts only detect beluga whales up to a maximum distance of 3 km, while the 160 dB threshold distance is over three times further at 9.5 km.[178] Moreover, the amount of correction has been significant. In most years, the aerial survey count has been approximately one-half or two-thirds of the total population abundance estimate after correction.[179]

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[176] API asserts that "it is not true that the aerial researchers always 'correct' the number of whales that were visually counted." Docket 53 at 39. But the source quoted for this proposition explains that uncorrected figures only yield minimum density estimates and do not represent the abundance of whales in an area. "In some cases, those were the sums of maximum visual counts and therefore represent minimum estimates. In other cases, estimates of total abundance were made by multiplying the counts by ad hoc correction factors to account for whales that were presumed to have been missed." B 10719 (Hobbs 2000a). Moreover, this does not address the problem that the uncorrected figures for the survey area were then applied to the higher, corrected figures used for the total population in the small numbers analysis.

[177] Docket 52 at 26.

[178] Docket 72 at 11, 71-72; Docket 55 at 4; A 1390; BiOp 167.

[179] Doc A 154 at 17.

Significant mathematical errors can render an agency decision arbitrary and capricious. In *Alabama Power Co. v. F.C.C*., the D.C. Circuit "judge[d] the validity of the order by examining whether the [agency] in fact calculated that which it sought to calculate[.]"[180] The Court of Appeals determined that the agency had made several errors, including applying a "wholly irrelevant percentage figure" to a sum, erroneously excluding certain items in calculating net pole costs, and using a fraction that bore "no rational relationship to the determination it purport[ed] to make."[181] Finding that the agency's "somewhat casual calculations exhibit at several points the sort of 'clear error[s] of judgment,' *. . .* and absence of 'rational connection[s] between the facts found and the choice[s] made,'" that court held that the order was arbitrary and capricious.[182]

Here, NMFS' take calculations are clearly erroneous because they inexplicably mix corrected population abundance figures with uncorrected survey density estimates, thereby failing to adequately calculate that which the agency was actually trying to calculate—the number and percentage of the beluga whale population that are estimated to be exposed to the 160 dB take threshold within the survey areas.[183] The

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[180] *Alabama Power Co. v. F.C.C*., 773 F.2d 362, 367 (D.C. Cir. 1985).

[181] 773 F.2d 362, 368-370 (D.C. Cir. 1985).

[182] *Alabama Power Co. v. F.C.C*., 773 F.2d 362, 372 (D.C. Cir. 1985) (quoting *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 416 (1971); *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)). *Cf. Salt River Project Agr. Imp. and Power Dist. v. U.S*., 762 F.2d 1053, 1060 (D.C. Cir. 1985) (Even where an agency's decision rests on erroneous findings, the court must reverse "only when there is a significant chance that but for the errors the agency might have reached a different result.").

[183] Although NMFS' density estimates appear to include other mathematical errors, these issues were not expressly raised by Plaintiffs in this appeal, and thus are not directly before this court. But this Court will observe that NMFS adopted Apache's calculations for its density estimates, and Apache had relied on the numbers provided in the modeling study prepared by Jasco Applied Sciences, and attached as Appendix A to its application. A 1363-1368; A 1419-1420.

fact that NMFS maintains that other aspects of the density estimates may cancel out this inaccuracy does not render the agency action less erroneous, as the agency has not persuasively demonstrated, nor has it asserted, that it would have authorized the IHA with a take estimate that would have been significantly higher had corrected density estimates been used. As such, the agency's incidental take calculations are arbitrary and capricious.[184]

(2) Take Threshold.

Plaintiffs also challenge NMFS' use of a take threshold of 160 decibels, asserting that the threshold is "no longer scientifically valid."[185] Plaintiffs assert that NMFS relied on two sets of studies from the mid-1980s, but "the copious size of the scientific literature that has emerged over the last twenty years . . . render that literature out of

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In calculating its number of takes, Apache divided the Jasco figures by two on the assumption that operations would occur over 12 hours per day rather than a full 24-hour period. A 1369. But Jasco's proposed survey area was based off of the number of tracklines surveyed, the length of each trackline, and the distance between tracklines, not the amount of time it would take to survey a particular area. A 1415. Since Jasco's calculations were based on distance traveled each day, and not on the amount of time spent surveying, this additional 50% reduction appears unwarranted. MMC noted this issue to NMFS in its comments, but the agency rejected that concern. *See* A 1793-94. Also, Apache's estimated tracklines surveyed each day and length of trackline appear to differ considerably from the ones used in Jasco's modeling, but Apache used the same figures from Jasco's modeling method to estimate its daily acoustic footprint and calculate take. *Compare* A 1344 (noting tracklines would be "approximately 12.9 km" long and that each vessel can acquire a source line in approximately an hour, leading to approximately 20-24 tracklines surveyed each day); A 1363 (noting anticipated survey line length is 16.1 km and approximately 12-14 survey lines will be completed each day). Using these figures, Jasco assumed Apache would survey approximately 16.1 km x 13 km (209.30 $km^{)}$ per day, while Apache assumed it would survey considerably more—12.9 km x 22 km (283.80 $km^{)}$ per day. Then Apache compounded this error by only using one-half of Jasco's daily surveying amount in its density calculation. These apparent mathematical errors in Apache's take estimations were subsequently adopted by NMFS. *See* B 13311; A 1793-94.

[184] *Alabama Power*, 773 F.2d at 368-370, 372.

[185] Docket 48 at 30-31.

date" as "[m]any of these new studies document airgun impacts at noise levels well below 160 decibels."[186] Plaintiffs state that "[f]ive leading bioacousticians . . . sent NMFS a letter specifically criticizing the 160 decibel threshold as 'overly simplified, scientifically outdated, and artificially rigid' and stating that the threshold has been 'repeatedly demonstrated to be incorrect.'"[187] Plaintiffs assert that the experts recommended a "risk curve centered at 140 decibels," but NMFS ignored these experts and instead used the 160 decibel threshold.[188]

Plaintiffs refer to Dr. Manolo Castellote, a bioacoustician at NMFS, who commented that "behavioral changes (such as displacement) might well occur at much greater distances than the 160 dB radii."[189] Plaintiffs also contend that NMFS' reliance on a 2007 synthesis paper (Southall et al. 2007) is misplaced because NMFS mischaracterizes the findings of that study. Plaintiffs maintain that reliance on the 160 dB threshold is "significant" because "an impact threshold between 140 and 160 decibels means that marine mammals could be affected well beyond 10 kilometers from the source . . . [which is] much farther than the furthest distances in Apache's present impact zone."[190] Plaintiffs also reject NMFS' assertion that the 160 dB threshold is "species and context-specific," noting it "has been applied to every airgun survey the

[186] Docket 48 at 31.

[187] Docket 48 at 31 (quoting A 744).

[188] Docket 48 at 31-32 (emphasis omitted).

[189] Docket 48 at 32 (quoting B 13338). The full sentence there by Dr. Castellote reads: "I don't think we can do much about it since 160 dB & 180 dB are the legal thresholds, but behavioral changes (such as displacement) might occur at much greater distances than the 160 dB radii."

[190] Docket 48 at 33.

agency has authorized over the last decade."[191] Thus, Plaintiffs assert that NMFS' reliance on the 160 dB threshold is arbitrary and capricious as the agency failed to justify why it adhered to an outdated inaccurate standard and ignored the concerns of its own expert and other leading scientists in the field.

NMFS contends that the 160 dB level threshold is reasonable, supported by the record, and entitled to deference.[192] NMFS claims it appropriately considered the issue and "specifically explained that the 160 dB threshold was appropriate in this case."[193] NMFS asserts its reliance on the 2007 Southall study was warranted, as that study "comprehensively reviews and synthesizes the studies and data from over a more than 20-year period regarding the levels at which marine mammals are impacted by manmade sound."[194] NMFS states that the "degree to which marine mammal behavior is affected by sound is highly species- and context-specific" and since beluga whales are mid-frequency cetaceans, the 160 dB threshold is appropriate,[195] and adds "information from prior seismic surveys show that many marine mammals do not react to seismic sound at audible levels[.]" NMFS also notes that the Marine Mammal Commission accepted its use of the 160 dB threshold.[196]

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[191] Docket 56 at 17.

[192] Docket 52 at 28.

[193] Docket 52 at 29. The BiOp noted that "[t]here is new research to suggest that the 160 dB behavioral harassment and 180 dB injury levels currently accepted by NMFS might be significantly below the noise levels that actually harass or injure beluga whales." BiOp 209.

[194] Docket 52 at 29 (citing B 2959-3075).

[195] Docket 52 at 29 (emphasis omitted).

[196] Docket 52 at 30.

NMFS disputes the scientific evidence offered by Plaintiffs to justify a lower threshold. The agency notes that one study, Miller et al., analyzed beluga whales living in the Beaufort Sea, which is a "less industrialized and sparsely populated area that is not subject to regular vessel traffic" so those whales "are not as experienced with the types and variety of sound sources as the belugas are in Cook Inlet."[197] NMFS also contests Plaintiffs' reliance on the bioacousticians' letter as it was filed late, applies to exploration in the Arctic Ocean, and does not, in the agency's view, support a lower take threshold.[198] NMFS further asserts its use of the 160 dB threshold was appropriate because it did not merely rely on past practice, but cited "species, population, and context-specific evidence indicating that use of [that] threshold was conservative and reasonable for estimating Level B take for Cook Inlet marine mammal populations."[199] NMFS disputes Dr. Castellote's findings because he did not cite supporting literature, and even if his findings are contrary to those of the agency, "that is not dispositive."[200] API adds that "[a] recent exhaustive review of all available, relevant scientific information . . . led by NMFS itself—relied on data relating specifically to beluga whales in concluding that the criteria for Level A takes should in fact be 230 dB[.]"[201]

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[197] Docket 52 at 31.

[198] Docket 52 at 32-33. *But see* A 745 (bioacousticians' letter) ("A risk function with a 50% midpoint at 140 dB (RMS) that accounts, even qualitatively, for contextual issues likely affecting response probability, come much closer to reflecting the existing data for marine mammals . . .").

[199] Docket 52 at 33 (citing A1803, 1806).

[200] Docket 52 at 34.

[201] Docket 53 at 42 (citing A 157 at 442-44).

Plaintiffs recognize that while "an agency may use discretion in assessing the scientific evidence and in relying on its own experts, 'courts must independently review the record in order to satisfy themselves that the agency has made a reasoned decision based on its evaluation of the evidence.'"[202] This Court has independently reviewed the record on this topic and is satisfied that NMFS made a reasoned decision to use the 160 dB sound threshold level for Cook Inlet Level B take based on the evidence before the agency.[203] Accordingly, the agency is entitled to deference on this finding.

C. Least Practicable Impact.

An IHA must include "permissible methods of taking by harassment pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat[.]"[204] While the MMPA sets out the factors that should be considered when determining the "least practicable impact" in the context of a military readiness activity, it does not elaborate on that standard in other contexts.[205] In *Natural Resources Defense Council v. Evans*, the Northern District of California held the purpose of this statutory requirement is "to assure that the take allowed under the

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[202] Docket 48 at 28 (quoting *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147, 1160 (9th Cir. 2006)).

[203] *See River Runners for Wilderness v. Martin*, 593 F.3d 1064, 1070 (9th Cir. 2010); *Ariz. Cattle Growers' Ass'n v. U.S. Fish and Wildlife, Bureau of Land Mgmt.*, 273 F.3d 1229, 1236 (9th Cir. 2001) ("Deference is particularly important 'when the agency is making predictions, within its area of special expertise, at the frontiers of science.") (quoting *Central Ariz. Water Conservation Dist. v. EPA*, 990 F.2d 1531, 1539-40 (9th Cir. 1993)).

[204] 16 U.S.C. § 1371(a)(5)(D)(ii)(I)-(III).

[205] 16 U.S.C. § 1371(a)(5)(D)(vi).

permit is, in fact, small, and also has only a negligible impact on affected species."[206] The district court added that while the agency "has some discretion to choose among possible mitigation measures, it cannot exercise that discretion to vitiate this stringent standard." [207]

Plaintiffs assert that NMFS improperly ruled out "important time-area restrictions" and failed to properly consider the "specific habitat that might be restricted during the project's first year."[208] They claim that NMFS improperly relied on Apache's expectations of when and where it would survey and failed to include restrictions that would require "Apache to avoid offshore surveys during the late fall and winter months when, NMFS acknowledges, belugas concentrate in deeper waters of the mid-Inlet."[209] To this, NMFS responds that the whales are never "concentrated" in the deep waters of the inlet.[210] Rather, as the final rule indicates, the whales "tend to disperse offshore and move to mid-Inlet in the winter."[211] This finding is consistent with the record before the Court.[212] In light of this finding, the fact that the IHA did not specify when Apache could conduct offshore seismic activities was not arbitrary and capricious.

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[206] *Nat. Resources Def. Council, Inc. v. Evans*, 279 F. Supp. 2d 1129, 1159 (N.D. Cal. 2003) (citing H. Rpt. No. 228, 97th Cong., 1st Sess. 18–20 (1981)).

[207] *NRDC v. Evans*, 279 F. Supp. 2d at 1159.

[208] Docket 48 at 34; Docket 66-1 at 1.

[209] Docket 66-1 at 1 (internal citation omitted).

[210] Docket 52 at 35.

[211] A 1796.

[212] *See supra* at 11 regarding the take estimates for river mouths versus non-river mouths.

Plaintiffs next contend that the one time-area closure that NMFS prescribed near the Beluga River was inadequate because it only applied from mid-April to mid-October. Plaintiffs maintain evidence in the record indicated that area was important for foraging beginning in mid-February.[213] NMFS maintains that the Beluga River area is not included within the area set for the project's first year.[214] The final rule states that Area 1 consists of an area "along the west coast of Cook Inlet from the McArthur River up and to the south of the Beluga River."[215] Although the cited reference is not a model of clarity, it does appear that NMFS is correct and that the area designated for surveying in the first season of operations does not reach to the Beluga River.[216]

Plaintiffs also assert that additional time-area restrictions should have been imposed in areas in the upper Cook Inlet. NMFS responds that it did consider additional time-area restrictions, but concluded in the final rule that they were unnecessary as "the timing and location of the seismic survey, as proposed, will avoid areas and seasons that overlap with important beluga whale behavioral patterns." Further, it concluded that the upper inlet areas where the whales are regularly sighted "are well outside of the area where Apache will be conducting seismic surveying."[217] This Court finds that Plaintiffs have not demonstrated that Apache's planned year one operations fall within areas where whales are regularly sighted in the upper Cook Inlet.

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[213] Docket 48 at 36; *see* B 16603.

[214] Docket 52 at 36 (citing Doc A 69 at A 1434, Fig. 2).

[215] A 1793.

[216] *See* Figure 2 at BiOp 153.

[217] A 1796.

If an agency's approval of an incidental take was based on certain key assumptions of when and where the activity was scheduled to occur, and those times and locations were not included within the agency's IHA, such an oversight might constitute an agency action that was arbitrary and capricious. But on the record before this Court, Plaintiffs have not demonstrated that that this occurred with respect to Apache's IHA. Rather, the record reflects that the agency did consider additional time-area restrictions and exercised its expertise to determine that they were not necessary.[218]

D. Effects on Subsistence Use.

Plaintiffs next assert that NMFS failed in its statutory duty to ensure that the proposed incidental take will not have an "unmitigable adverse impact on the availability of such species or stock for taking for subsistence uses[.]"[219] Plaintiffs claim that "NMFS failed to consider the current population levels, trends, or the fact that it is likely that subsistence use of whales will be prohibited for many years into the future[.]"[220] They add that NMFS' statement that "the taking will not 'reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs' is simply incorrect in light of the regulatory background" of subsistence hunting in the area. Plaintiffs contend that as the beluga population numbers are already insufficient to meet subsistence needs, "NMFS' failure to properly assess the future status of [the]

[218] *See* A at 1796.

[219] Docket 48 at 37 (citing 16 U.S.C. § 1371(a)(5)(D)(i)(II)).

[220] Docket 48 at 38.

subsistence harvest of the Cook Inlet beluga whale was a serious error that requires reversal."[221]

The applicable regulation defines "unmitigable adverse impact" as an impact "likely to reduce the availability of the species" to levels insufficient for subsistence needs by "(i) Causing the marine mammals to abandon or avoid hunting areas; (ii) Directly displacing subsistence users; or (iii) Placing physical barriers between the marine mammals and the subsistence hunters[.]"[222] The regulation also provides that the impact is one that "cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met."[223]

NMFS asserts that Plaintiffs never argued at the agency level that the agency failed "to consider [beluga] population levels, trends, or the fact that it is likely that subsistence use of whales will be prohibited for many years" so these arguments are waived.[224] And even if this argument is reviewed, NMFS asserts it did consider each of these points.[225] It maintains its finding that there would be no unmitigable adverse impact on the subsistence hunt is appropriate and consistent with its regulations because "the surveying would not cause abandonment or avoidance of hunting areas, and that belugas would return to areas once surveying was done," "the survey would not directly displace subsistence uses[, and it] would not place barriers between animals

[221] Docket 48 at 38.

[222] 50 C.F.R. § 216.103.

[223] *Id.*

[224] Docket 52 at 37.

[225] Docket 52 at 37.

and hunters."[226] Additionally, NMFS alleges Apache's surveying would not reduce beluga numbers for a future subsistence harvest because no injuries or mortalities are authorized and any effects on marine mammals would be "short-term, site-specific, and limited to inconsequential changes in behavior and mild stress responses."[227]

The State of Alaska adds that NMFS did consider the subsistence whale hunt and "acknowledged the traditional importance of beluga whale subsistence harvest both for nutritional and economic contributions as well as its cultural importance."[228] The State also notes that "Apache Alaska itself met with many Alaska Native communities to discuss the potential impact of the proposed activity on subsistence needs."[229]

Plaintiffs acknowledge that "[i]t is . . . unlikely that any subsistence harvest of belugas will be allowed through 2017."[230] In these circumstances, even if considered on its merits, Plaintiffs have not demonstrated that NMFS' consideration of this statutory factor was arbitrary and capricious.

IV. Claim 2: Violation of the Endangered Species Act.

Congress enacted the ESA "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate" to meet the United States'

[226] Docket 52 at 38.

[227] Docket 52 at 38 (citing A 1807-08).

[228] Docket 51 at 29 (citing B 897).

[229] Docket 51 at 29 (citing B 898).

[230] Docket 48 at 38.

obligations under certain international agreements to conserve species facing extinction.[231] NMFS, as part of the Department of Commerce, shares responsibility for administering the act with the Department of the Interior's U.S. Fish and Wildlife Service ("FWS"). NMFS bears responsibility for most marine species, including the Cook Inlet beluga whale, while the FWS is responsible for most terrestrial species.[232] Under the ESA, if an agency authorizing a major federal action determines it "may affect listed [endangered] species or critical habitat," it must pursue formal consultation with NMFS (or FWS, as applicable).[233] After formal consultation, NMFS prepares a biological opinion that sets forth its expert opinion on whether the proposed action is (1) "likely to jeopardize the continued existence of a listed species" or (2) "result in the destruction or adverse modification of critical habitat."[234] The statute requires that NMFS "shall use the best scientific and commercial data available" in preparing the biological opinion.[235]

In this case, the NMFS Office of Protected Resources, Permits, and Conservation Division, in conjunction with the U.S. Army Corps of Engineers, engaged in formal consultation with NMFS Alaska Region.[236] NMFS Alaska Region first prepared the BiOp for this IHA in February 2012, which it later revised and reissued in

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[231] 16 U.S.C. § 1531.

[232] *Westlands Water Dist. v. U.S. Dept. of Int*., 376 F.3d 853, 873 (9th Cir. 2004).

[233] 50 C.F.R. §§ 402.14(a), (g).

[234] 50 C.F.R. § 402.14; 16 U.S.C. § 1536(a)(2).

[235] 16 U.S.C. § 1536(a)(2).

[236] BiOp 142. The Court does not distinguish between the two NMFS offices elsewhere in this decision, as the distinction is largely procedural and has no apparent bearing on the merits of this case.

May 2012. The BiOp concluded "[a]fter reviewing the current status of beluga whales . . . the environmental baseline, the effects of the proposed action, and the cumulative effects, . . . that the implementation of the proposed action, as described in this opinion, is not likely to jeopardize the continued existence of the Cook Inlet beluga whale . . . populations, nor to destroy or adversely modify Cook Inlet beluga whale critical habitat."[237] The BiOp is effective for the full three-year project period unless consultation is reinitiated.[238] The Incidental Take Statement ("ITS") at the end of the BiOp permitted the "non-lethal incidental take of no more than 30 Cook Inlet beluga whales . . . per year for three operational years."[239]

Plaintiffs claim NMFS violated the ESA by issuing a BiOp that contained five errors: (1) the BiOp failed to adequately evaluate the effects of the proposed action on the recovery of the Cook Inlet beluga whale; (2) the BiOp failed to analyze whether the Cook Inlet beluga whale is already in jeopardy; (3) the BiOp failed to articulate a rational connection between the facts found and its conclusion that the Cook Inlet beluga whale's survival or reproductive capacity will not be affected; (4) the BiOp did not use the best scientific data both in adopting a 160 dB threshold and in failing to consider a study on cod; and (5) the BiOp authorized three times more take than it analyzed.[240]

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[237] BiOp 250.

[238] BiOp 143. In this case, consultation was reinitiated in early 2013. *See* Docket 73-3.

[239] BiOp 253.

[240] Docket 48 at 40-47 (Pl's Mot.).

A. Effects on Recovery of the Species.

By regulation, the statutory phrase "to jeopardize the continued existence of a species" means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival *and recovery* of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."[241]

Plaintiffs allege that the "BiOp fails to properly evaluate the recovery prospects of the Cook Inlet beluga whale and how this action affects those prospects." Plaintiffs posit that "[r]ecovery is a separate concept from survival and requires a separate analysis," but the BiOp "contains no detailed analysis of how this action will impact recovery" and "only focuses on the effects of the project on survival and reproduction."[242] Plaintiffs claim that "NMFS did not discuss how the Cook Inlet beluga whale might be recovered, what the rate of recovery might be, when recovery might occur, or how this action would affect the whale's recovery prospects."[243] Plaintiffs also challenge the BiOp because it omits any "analysis of 'roughly at what point' recovery will be at risk," and argue this omission is particularly significant because the beluga whale population has already "'collapsed' and is in the 'small dynamics' phase of the extinction process."[244]

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[241] 50 C.F.R. § 402.02 (emphasis added).

[242] Docket 48 at 40-41.

[243] Docket 56 at 24.

[244] Docket 48 at 41 (citing BiOp 238-39). On this point, in *National Wildlife Federation v. National Marine Fisheries Service*, the Ninth Circuit did state "[i]t is only logical to require that the agency know roughly at what point survival and recovery will be placed at risk before it may conclude

NMFS maintains that Ninth Circuit precedent makes "clear that a 'separate analysis' of recovery is not required."[245] Rather, it notes that the Ninth Circuit has explicitly recognized that survival and recovery are "intertwined concepts" to be considered in the jeopardy analysis.[246] NMFS also asserts that it did not ignore or fail to analyze the impacts of recovery because it directly incorporated information on the viability and recovery needs of the beluga whale population from the 2008 Conservation Plan into the BiOp.[247] And it maintains that the BiOp "identified factors that have the potential to impact recovery," and "found that none of these risks are increased by survey operations."[248] NMFS contends "a significant component of [the BiOp's] analysis included a focus on the population's growth rate . . . which is critical for a species' recovery."[249] And the BiOp found Apache's seismic surveying was not likely to influence "the fitness of the individual animals" and thus concluded it was "unlikely that non-injurious takes . . . would elicit consequences to the survival or reproductive

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that no harm will result from 'significant' impairments to habitat" caused by the agency action. *Natl. Wildlife Fedn. v. NMFS*, 524 F.3d 917, 936 (9th Cir. 2008). At issue in that case was the management of the Columbia River System. There, the BiOp "explicitly found that the proposed [dam] operations would have significant negative impacts on each affected species' critical habitat[.]" *Natl. Wildlife Fedn. v. NMFS*, 524 F.3d at 934-35. It was in light of that finding that the Ninth Circuit found that a rough analysis of the point of recovery was warranted. In contrast, no such finding of significant negative impact was made in the BiOp here with respect to Apache's proposed operation; hence an analysis of the point of recovery is not required.

[245] Docket 52 at 43.

[246] *Natl. Wildlife Fedn. v. NMFS*, 524 F.3d at 932.

[247] Docket 52 at 43-44.

[248] Docket 52 at 44 (citing B 322, 342, 350-53, 363).

[249] Docket 52 at 44-45 (citing B 317; B 10075 at 9).

capacity of the Cook Inlet beluga whale."[250] The State points to applicable Ninth Circuit precedent that requires the BiOp's recovery analysis to "simply provide[] some reasonable assurance that the agency action in question will not appreciably reduce the odds of success for future recovery planning, by tipping a listed species too far into danger."[251]

This Court finds that Plaintiffs have not demonstrated that the BiOp failed to adequately consider the effects of the IHA's issuance on the recovery of the Cook Inlet beluga whale and whether the proposed permit issuance would appreciably reduce the species' chances of recovery.[252] Specifically, the BiOp states:

> A significant issue with regard to the seismic program's effect on beluga whale concerns changes in their behavior (which may not rise to the level of take) when confronted with acoustic disturbance during the surveys. . . . High levels of predation risk (or human disturbance) may indirectly effect survival and reproduction by causing prey (in this case, beluga whales) to divert a large proportion of time and energy away from resource acquisition, so that body condition deteriorates and survival and reproductive success are reduced. We considered this effect in our evaluation. Such a theory is consistent with the lack of recovery by this population despite the fact that hunting has not been a significant factor since 1999. . . .Since the survey areas are not primary feeding areas, any diminished use of these areas is not likely to result in significant effects to individual fitness.[253]

Another discussion regarding species recovery in the BiOp is as follows:

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[250] Docket 52 at 45 (citing B 387)(emphasis omitted).

[251] Docket 51 at 33 (quoting *Natl. Wildlife Fedn. v. NMFS*, 524 F.3d at 936).

[252] *Rock Creek Alliance v. U.S. Fish and Wildlife Serv*., 663 F.3d 439, 443 (9th Cir. 2011); *cf. Natl. Wildlife Fedn. v. NMFS*, 524 F.3d at 933 (While an agency will not be overturned for failing to address recovery impacts in "separate, distinct sections of the biological opinion[,]" a fair reading of the opinion must indicate that the agency "adequately considered the impact" the proposed action would have on the protected species' recovery.).

[253] BiOp 244.

> The baseline condition experienced by the Cook Inlet beluga whale DPS is characterized by its very low abundance, no observable recovery within the population . . ., and a high (26%) probability of extinction within the next 100 years. . . . Although NMFS believes past excessive harvest removals are largely responsible for the decline of this DPS, we are not able to identify the present cause(s) for the lack of recovery. While coastal development in the upper inlet and oil and gas development in the mid inlet have been extensive, and are important aspects of the baseline condition, we have no evidence such work has had any significant detrimental impact to individual whales, nor to this population.[254]

The BiOp adequately evaluates the effects of the proposed agency action on the recovery of Cook Inlet beluga whales, and rationally concludes, based on the scope and location of the project, that it would not appreciably reduce the odds of success for the species' future recovery.[255]

B. Analyzing Whether the Species Is in Jeopardy.

Plaintiffs contend that "NMFS also erred by failing to analyze whether the species is already at such a risk of extinction that it is already in jeopardy." Plaintiffs maintain that if the beluga whale population is already in jeopardy, any "additional action that 'causes some deterioration in the species' pre-action condition' is illegal."[256] They maintain that "NMFS recognized that the whale is extremely endangered and at high risk of extinction, yet it failed to take the essential next step to determine whether it is

[254] BiOp 247.

[255] However, the fact that the BiOp was premised upon inaccurate take estimates may well call into question the validity of its analysis and conclusions. *See* discussion *supra* at 34-41.

[256] Docket 48 at 42.

already in jeopardy."[257] Maintaining that this "in jeopardy" determination is critical, Plaintiffs assert the failure to undertake it is arbitrary and capricious.[258]

NMFS asserts that "Plaintiffs' arguments fundamentally misconstrue the ESA" and that statute "does not require NMFS to determine whether a species is 'in jeopardy'" at its baseline level.[259]

In *National Wildlife Federation v. National Marine Fisheries Service*, the Ninth Circuit emphasized that NMFS may not "conduct the bulk of its jeopardy analysis in a vacuum[,]" but rather must "consider the proposed . . . operations in their actual context[.]"[260] However, the Ninth Circuit also held this consideration of context does not require the agency to consider the proposed action as if that action included "all independent or baseline harms to listed species."[261] Because the verb "to jeopardize . . . implies causation, and thus some new risk of harm[,]" the agency need only assess the risk of new jeopardy posed by the proposed action.[262] Thus, while NMFS was required in the BiOp in this case to consider the effects of Apache's surveying "within the context of other existing human activities that impact" the beluga whale,[263] it was not required to

[257] Docket 56 at 25.

[258] Docket 48 at 42.

[259] Docket 52 at 40-1 (citing *Natl. Wildlife Fedn. v. NMFS*, 524 F.3d at 930).

[260] *Natl. Wildlife Fedn. v. NMFS*, 524 F.3d at 929-930.

[261] *Natl. Wildlife Fedn. v. NMFS,* 524 F.3d at 930.

[262] *Id.*

[263] *Id.* (citation omitted).

specifically determine whether the beluga whale, at that baseline, was already in jeopardy.

Here, the BiOp acknowledges that "the Cook Inlet beluga DPS exists at a highly precarious state" and explains, "[o]ur best population model places the risk of extinction at 26 percent within the next 100 years."[264] The BiOp contains a discussion entitled "Population Viability Analysis and Extinction Risk Assessment."[265] And the BiOp considers several distinct baseline factors affecting the beluga whale, including "coastal development; ship strikes; noise pollution; water pollution; prey reduction; direct mortalities; research; and environmental change."[266] It concludes Apache's seismic surveying would, "at most," result in "a temporary, short-term (matter of days) displacement from habitat to a small number of belugas" and that the seismic program is "unlikely to have significant impacts on the whales' essential life functions."[267] This Court finds that the BiOp provides an adequate analysis to support its conclusion that the issuance of the IHA to Apache, when added to the existing baseline, will not further jeopardize the continued existence of the Cook Inlet beluga whale.

C. Rational Connection Between Facts Found and Conclusion Reached.

Plaintiffs next assert that the BiOp "appears to assume that Apache's surveys will not actually impact the beluga whale population in any serious way[.]" Plaintiffs maintain there "is a tension, if not an outright conflict, between NMFS' conclusion that

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[264] BiOp 238.

[265] BiOp 177-178.

[266] BiOp 189-190 (full discussion at 190-207).

[267] BiOp 218, 247.

almost one-third of an endangered population will be harassed in a way that will significantly disrupt behaviors like feeding, breeding, or sheltering and its conclusion that the activity will have no consequences on the survival and reproductive capacity of the species."[268] Plaintiffs claim this incongruity between the facts presented and the BiOp's conclusion warrants reversal.

NMFS argues Plaintiffs misunderstand the BiOp and the associated ITS. It asserts that the agency did not find that significant disruption to behavior patterns would occur to any beluga whales.[269]

Contrary to Plaintiffs' assertions, the ESA itself does not define harassment.[270] Rather, the FWS has promulgated a regulation that defines the term as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering."[271] NMFS maintains it did not rely on FWS's definition of the term. Rather, it asserts the BiOp "used the MMPA Level B harassment take estimates as a proxy for identifying how many 'takes' could occur under the ESA[.]"[272] In this regard, the BiOp stated "Available information indicates that incidental acoustic harassment of small numbers of Cook Inlet beluga whales . . . may occur during Apache's Cook Inlet 3D Seismic Program. NMFS does not expect beluga

[268] Docket 48 at 43.

[269] *See* Docket 52 at 48 (citing B 383-84).

[270] Docket 48 at 43 ("The ESA defines harassment . . .) (citing 50 C.F.R. § 17.3).

[271] 50 C.F.R. § 17.3.

[272] Docket 52 at 48; BiOp 241 ("[T]his opinion considers all potential takes associated with this action, including the ones covered under the more inclusive MMPA definition of harassment.").

whales . . . to be injured or killed by the Apache marine surveys."[273] Further, the BiOp concluded that the only takes that would occur would be the takes authorized under the IHA—Level B harassment.[274] Reliance on the MMPA harassment take estimates in a BiOp has been expressly approved by the Ninth Circuit.[275] Here, the BiOp did not find that beluga whales would be harassed under the FWS definition to such an extent as to significantly disrupt normal behavior patterns. Plaintiffs have failed to show a lack of a rational connection between the facts found and conclusions reached in the agency's analysis on this issue.

D. Best Available Science.

Plaintiffs allege that NMFS failed to consider the best available science with regard to two issues: (1) the 160 decibel take threshold; and (2) the effects of seismic activity on prey species.

(1) 160 dB Threshold.

The ESA requires NMFS to "use the best scientific and commercial data available."[276] Plaintiffs assert that NMFS failed to do so in its BiOp. As discussed above, Plaintiffs claim that the 160 decibel threshold is scientifically outdated and contrary to the opinion of five leading bioacousticians.[277] Plaintiffs contend that in the

[273] BiOp 253.

[274] BiOp 241.

[275] *CBD*, 695 F.3d at 913 ("[T]he relevant MMPA standard at issue here is more conservative than the ESA standard. . . [S]o long as the amount and extent of take remains consistent with the Service's small numbers' and 'negligible impact' findings in the MMPA incidental take regulations, there should be no need for reinitiating consultation under the ESA.").

[276] 16 U.S.C. § 1536(a)(2).

[277] Docket 48 at 44; *see* discussion *supra at* 41-45.

BiOp, "NMFS failed to adequately address these expert comments or explain why its reliance on the 'incorrect' threshold was reasonable."[278] And Plaintiffs assert that "NMFS' repeated belief that it is actually using a threshold that underestimates harm to beluga whales from a multiple pulse source like seismic is . . . based on a misreading of Southall."[279] Plaintiffs assert that "Southall recommends the 224 decibel threshold as the behavioral disturbance criteria for *single pulse* sources only – not multiple pulse sources like seismic."[280]

NMFS responds that it "is entitled to decide between conflicting scientific evidence" and "the manner in which an agency resolves conflicting evidence is entitled to deference so long as it is not arbitrary and capricious."[281] And NMFS contends that "Plaintiffs miss the entire point of [the BiOp's threshold] discussion, which is that the body of available scientific data—including Southall 2007—shows that the 160 dB threshold used by NMFS for behavioral impacts are appropriately conservative and precautionary."[282]

"The NMFS cannot ignore available biological information when formulating a BiOp or ITS . . . [but] it has some discretion in deciding which scientific data is the 'best available' because that determination, in and of itself, is scientific in nature and

[278] Docket 48 at 45.

[279] Docket 48 at 45.

[280] Docket 56 at 27-28 (citing B 3006, Table 5).

[281] Docket 52 at 46 (citing *Trout Unlimited v. Lohn*, 559 F.3d 946, 958-59 (9th Cir. 2006)).

[282] Docket 52 at 47.

accordingly deserves deference."[283] As discussed above, Plaintiffs have failed to show that the dispute over the appropriate take threshold is anything other than a disagreement over the interpretation of the available scientific evidence.[284] The letter by the five bioacousticians does not change the Court's conclusion. Indeed, although that letter refers to a 140 dB threshold, it primarily contends that the use of sound levels to predict marine mammal behavioral response from surveying is limited, and instead encourages predicting response based on several contextual factors.[285]

This Court finds that NMFS adequately weighed and considered the best scientific data available in determining that the 160 dB take threshold was appropriate.

(2) Cod.

Plaintiffs assert that NMFS improperly ignored a 1993 study concerning the impact of seismic activity on cod in Norway (the Engas study). Plaintiffs assert that NMFS' conclusion that "it is unlikely that significant numbers of fish would be impaired to the point that it would impact the feeding success of Cook Inlet beluga whales" is contradicted by the Engas study, which found that "cod catch rates fell 45-70% during

[283] *Oregon Natural Desert Ass'n v. Tidwell*, 716 F.Supp.2d 982, 996 (D. Or. 2010) (internal citations omitted); *also see Trout Unlimited v. Lohn*, 559 F.3d 946, 958 (9th Cir. 2009) ("An agency's decision may be based on the best scientific evidence available even if the administrative record contains evidence for and against its decision.").

[284] *See* discussion *supra* at 41-45.

[285] A 744-745 (Bioacousticians Letter) ("The clear point of these observations is that behavioral response in nature clearly follows more probabilistic function that changes based on the species in question, behavioral state and other contextual issues. It has become painfully obvious that the use of received level alone is seriously limited in terms of reliably predicting impacts of sound exposure.").

seismic activity," declines occurred up to "18 nautical miles from the shooting area," and the catch did not increase within five days after the surveys were completed.[286]

NMFS responds that Plaintiffs' claim regarding the Engas study "is wholly without merit" because "[t]he Engas study . . . is not the only, or most recent, information on the potential effects to beluga whale prey species, and Plaintiffs cannot meet their burden of citing a scientific study that indicates the agency's analysis is outdated or flawed."[287] And NMFS notes that the BiOp did explicitly consider a 2005 study on how noise affects fish, as well as a 2004 study prepared by the Canadian Department of Fisheries and Oceans, each of which considered Engas's later works.[288] This Court concludes that Plaintiffs have failed to establish that the studies the agency relied on in the BiOp on the impact of seismic activity on fish were "outdated and flawed."[289]

E. Take Authorization.

Plaintiffs assert that NMFS erred by issuing an ITS authorizing the take of 30 beluga whales per year for each of the three years of the project, but focusing its jeopardy analysis only on the 30 beluga whales expected to be taken during the first year of surveying. Plaintiffs claim that the BiOp authorizes "three times the amount of take that it appears to have considered in its analysis."[290] This assertion is without

[286] Docket 48 at 46 (citing Doc A097 at 4).

[287] Docket 52 at 47 (citing *Ecology Ctr. v. Castaneda*, 574 F.3d 652, 659 (9th Cir. 2009) (internal citation marks omitted)).

[288] *See* BiOp 228 (citing Hastings and Popper, Effects of Sound on Fish (2005); Department of Fisheries and Oceans, Review of scientific information on impacts of seismic sound on fish invertebrates, marine turtles and marine mammals (2004)). *See* B 2100.

[289] *Ecology Ctr. v. Castaneda*, 574 F.3d 652, 659 (9th Cir. 2009).

[290] Docket 48 at 47.

merit. The BiOp reviewed and analyzed Apache's entire project, not just the proposed year one activities. The resultant ITS was issued for a three-year period and thus included three years of takes of 30 beluga whales per year. [291]

V. Claim 3: Violation of the National Environmental Policy Act.

NEPA declares a federal policy "to use all practicable means and measures . . . to create and maintain conditions under which man and nature can exist in productive harmony" and "recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment."[292] Unlike the other environmental laws at issue in this action, "NEPA itself does not mandate particular results, but simply prescribes the necessary process."[293] NEPA operates "simply by focusing the agency's attention on the environmental consequences of a proposed project," thereby ensuring "that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast."[294]

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[291] "This biological opinion will be valid upon issuance and remain in force until January 31, 2015, unless re-initiation becomes necessary." BiOp 143. "Thus, this biological opinion will review the proposed action of the applicant in its full scope (three-year project, not just the first year activities)." BiOp 150. *Also see* BiOp 253 (NMFS AKR anticipates that the non-lethal incidental take of no more than 30 Cook Inlet beluga whales . . . per year for three operational years as a result of exposure to impulsive sounds[.]").

[292] 42 U.S.C. §§ 4331(1)(a), (c).

[293] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

[294] *Robertson*, 490 U.S. at 349; *see also Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgt*., 387 F.3d 989, 992-93 (9th Cir. 2004) (internal omissions, citations, and substitutions omitted) ("Through the NEPA process, federal agencies must 'carefully consider detailed information concerning significant environmental impacts,' but they are "not required to do the impractical.'"); *Inland Empire Public Lands Council v. United States Forest Serv*., 88 F.3d 754, 764 (9th Cir.1996); *Churchill County v. Norton*, 276 F.3d 1060, 1072 (9th Cir. 2001)).

NEPA requires the preparation of an environmental impact statement ("EIS") for all "major federal actions significantly affecting the quality of the human environment."[295] When "an agency's regulations do not categorically require the preparation of an EIS, then the agency must first prepare an Environmental Assessment (EA) to determine whether the action will have a significant effect on the environment."[296] An EA is a "concise public document that briefly provide[s] sufficient evidence and analysis for determining whether to prepare an EIS[.]"[297] If the agency determines in the EA that an EIS is not necessary, it issues a finding of no significant impact ("FONSI").[298]

"Whether there may be a significant effect on the environment requires consideration of two broad factors: 'context and intensity.'"[299] "Context simply delimits the scope of the agency's action, including the interests affected. Intensity relates to the degree to which the agency action affects the locale and interests identified in the context part of the inquiry."[300] The applicable regulation lists ten factors to be considered when evaluating intensity.[301] In addition, an EA must "include brief

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[295] 42 U.S.C. § 4332(C).

[296] *Natl. Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 730 (9th Cir. 2001) *abrogated on other grounds by Monsanto Co. v. Geertson Seed Farms*, 130 S. Ct. 2743 (2010) (citing 40 C.F.R. § 1501.4).

[297] *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998) (citing 40 C.F.R. § 1508.9).

[298] 40 C.F.R. § 1501.4(e).

[299] *Natl. Parks v. Babbitt*, 241 F.3d at 731; 42 U.S.C. § 4332(2)(C); *Sierra Club v. United States Forest Serv.*, 843 F.2d 1190, 1193 (9th Cir.1988)).

[300] *Natl. Parks v. Babbitt*, 241 F.3d at 731.

[301] 40 C.F.R. § 1508.27(b).

discussions . . . of alternatives as required by section 102(2)(E) [and] of the environmental impacts of the proposed action and alternatives[.]"[302]

Here, NMFS prepared an EA and concluded that no EIS was necessary. It therefore issued a FONSI.[303] Plaintiffs assert that NMFS' analysis in the EA that authorization of Apache's surveying would not have a significant effect on the environment was inadequate and that NMFS should have prepared an EIS.[304]

A. NEPA and the "Hard Look" Standard.

In reviewing an agency's decision under NEPA, a court applies the arbitrary and capricious standard "to determine whether the agency has taken a 'hard look' at the consequences of its actions, 'based [its decision] on a consideration of the relevant factors,' . . . and provided a 'convincing statement of reasons to explain why a project's impacts are insignificant.'"[305] Plaintiffs note that they "need not show that significant effects will in fact occur, but instead must only raise 'substantial questions whether a project may have a significant effect on the environment.'"[306]

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[302] 40 C.F.R. § 1508.9.

[303] B 970.

[304] Docket 48 at 47.

[305] *Natl. Parks v. Babbitt*, 241 F.3d at 730 (quoting *Blue Mountains v. Blackwood*, 161 F.3d at 1211; *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000)); *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976) ("[t]he only role for a court is to insure that the agency has taken a "hard look" at environmental consequences[.]") (quoting *Nat. Resources Def. Council, Inc. v. Morton*, 458 F.2d 827, 838 (D.C. Cir. 1972)).

[306] Docket 56 at 29 (quoting *Blue Mountains v. Blackwood*, 161 F.3d at 1212).

B. The EA's Determination.

Plaintiffs contend that the issuance of the IHA will "significantly affect" the environment, such that an EIS was required.[307] They assert that the following intensity factors contained within the applicable regulation warrant an EIS:

- The degree to which the effects on the quality of the human environment are likely to be highly controversial.[308]
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.[309]
- The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.[310]
- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.[311]

[307] Docket 48 at 47.

[308] 40 C.F.R. § 1508.27(b)(4).

[309] 40 C.F.R. § 1508.27(b)(5).

[310] 40 C.F.R. § 1508.27(b)(7).

[311] 40 C.F.R. § 1508.27(b)(9).

- Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.[312]

Plaintiffs initially asserted in their motion that "[a]ny one of these factors standing alone is sufficient to require preparation of an EIS,"[313] but tempered this assertion in their reply, stating instead that any of these factors "may be sufficient to require preparation of an EIS in appropriate circumstances."[314] Plaintiffs also assert that even if an EIS was not required, NMFS failed to take the requisite "hard look" at mitigation measures and the cumulative impact of Apache's surveying.[315]

(1) Highly Controversial.

In the context of NEPA, "'controversial' is 'a substantial dispute [about] the size, nature, or effect of the major Federal action rather than the existence of opposition to a use.'"[316] Plaintiffs assert that an EIS is warranted by this intensity factor, as "substantial

[312] 40 C.F.R. § 1508.27(b)(10).

[313] Docket 48 at 48 (citing *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 865 (9th Cir. 2005)).

[314] Docket 56 at 29 (quoting *Barnes v. U.S. Dep't of Transp.*, 655 F.3d 1124, 1140 (9th Cir. 2011) (internal quotation marks omitted).

[315] Docket 48 at 51 (citing *Robertson*, 490 U.S. at 350). Plaintiffs separated their NEPA argument into two sections—one asserting that the intensity factors warranted an EIS, and one asserting that NMFS failed to take a "hard look" at mitigation and cumulative impact. This Court has combined those arguments in its analysis herein. The purpose of NEPA's process requirements is to ensure that agencies take a "hard look" at potential consequences; thus, the "hard look" issue is implicated in each factor the agency must consider. *See Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgt*., 387 F.3d 989, 992-93 (9th Cir. 2004) "Alternatively phrased, [NEPA's] task is to ensure that the agency has taken a 'hard look' at the potential environmental consequences of the proposed action.").

[316] *Blue Mountains v. Blackwood*, 161 F.3d at 1212 (citing *Greenpeace Action v. Franklin*, 14 F.3d 1324, 1335 (9th Cir.1993); *Sierra Club v. United States Forest Service*, 843 F.2d 1190 (9th Cir.1988)).

dispute exists concerning the significance of adverse environmental effects from the use of seismic airguns."[317] They point to MMC's criticisms of the project and the bioacousticians' letter of February 28, 2012 as demonstrative of this substantial dispute. NMFS responds that the untimely letter from the bioacousticians and MMC's comments do not demonstrate that Apache's seismic survey plan is "highly controversial."[318] API adds that "[t]he mere existence of scientific dispute or opposition . . . is not enough to mandate an EIS."[319] The Ninth Circuit has "held that when the record reveals that an agency based a finding of no significant impact upon relevant and substantial data, the fact that the record also contains evidence supporting a different scientific opinion does not render the agency's decision arbitrary and capricious."[320]

Although Plaintiffs are clearly strongly opposed to this seismic surveying project, the record does not demonstrate the degree to which the Apache project will affect the human environment is highly controversial.[321] The Court finds that this intensity factor did not require the agency to issue an EIS.

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[317] Docket 48 at 49.

[318] Docket 52 at 52-53.

[319] Docket 53 at 26.

[320] *Wetlands Action Network v. U.S. Army Corps of Engineers*, 222 F.3d 1105, 1120-21 (9th Cir. 2000), *abrogated on other grounds by Wilderness Soc. v. U.S. Forest Serv*., 630 F.3d 1173 (9th Cir. 2011).

[321] An "outpouring of public protest" can render an action highly controversial, but the number of comments submitted here—14—falls far short of that level. A 1793-96; *cf. Sierra Club v. Bosworth*, 510 F.3d 1016, 1032 (9th Cir. 2007) (39,000 public comments and strong criticism satisfied "highly controversial" factor); *Natl. Parks v. Babbitt*, 241 F.3d at 728 (450 comments, 85% of which were negative, mandated preparation of an EIS), *abrogated on other grounds by Monsanto Co. v. Geertson Seed Farms*, 130 S. Ct. 2743 (2010).

(2) Highly Uncertain Effects.

Plaintiffs assert that there is substantial uncertainty regarding the effects of seismic surveying on Cook Inlet beluga whales and that "NMFS admits it does not know why the Cook Inlet beluga population continues to decline[.]"[322] NMFS maintains that despite the uncertainty as to the reason for the decline in the beluga population, NMFS "reasonably concluded that given the location of the permitted activities and the location and habits of the beluga whales, there will not be any significant impact."[323]

The Ninth Circuit has held that an uncertainty analysis requires specificity; "general statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided."[324] And yet the analysis is to be focused on the uncertainty concerning the effect of the particular agency action.[325]

Here, as API points out, here "NMFS had available separate analyses of three CI seismic surveys conducted as recently as 2007, each of which concluded that the projects 'appeared to have no more than negligible effect on the species of marine mammals in the survey area[.]'"[326] Although some degree of uncertainty with respect to the project's effects on the environment has been demonstrated, the Court finds that the effects of Apache's surveying on the beluga whales, as considered by NMFS in the EA,

[322] Docket 48 at 49 (quoting B 882-83).

[323] Docket 52 at 53.

[324] *Blue Mountains v. Blackwood*, 161 F.3d at 1213 (quoting *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1380 (9th Cir.1998)).

[325] 40 C.F.R. § 1508.27(b)(5).

[326] Docket 53 at 28 (quoting A091 at 3; A092 at 6; A093 at 6).

were not "highly uncertain" such as to require an EIS and that the EA took the requisite "hard look" at those effects.[327]

(3) Precedent for Future Actions.

Plaintiffs assert that NMFS' negligible impact determination "could have a significant precedential impact on future decisions to permit the harassment of marine mammals incidental to seismic exploration in Cook Inlet under the MMPA[.]"[328]

NMFS responds that the agency explicitly noted in the EA that its decision would not have a precedential effect on future actions and that, by law, each action must be considered individually.[329]

This Court finds that the agency's consideration of this intensity factor, which determined that the issuance of an authorization for Apache's surveying was unique and independent from future actions, was adequate and the factor did not warrant an EIS.[330]

(4) Cumulative Impact.

Plaintiffs assert that the EA is inadequate because it failed to take a "hard look" at the cumulative impact of Apache's proposed surveying.[331] Plaintiffs focus on the EA's discussion of gas and oil development in Cook Inlet, which states as follows:

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[327] B 913-28.

[328] Docket 48 at 50-51 (citing *Anderson v. Evans*, 371 F.3d 475, 493 (9th Cir. 2004)).

[329] Docket 52 at 54 (quoting FONSI at B 976).

[330] *Cf. Presidio Golf Club v. Natl. Park Serv*., 155 F.3d 1153, 1163 (9th Cir. 1998) ("The public golf clubhouse is a unique, independent project, however, and does not serve to establish any precedent.").

[331] Docket 48 at 51-52. *See* 40 C.F.R. § 1508.7. Although this is a separate regulation from the one listing the intensity factors, courts construe the two together as requiring the same analysis.

> Most of the existing gas and oil development occurs in the action area and it is likely that future gas and oil development will continue to take place in the action area. Impacts from gas and oil development include increased noise from seismic activity, vessel and air traffic and well drilling; discharge of wastewater; habitat loss from the construction of oil and gas facilities; and contaminated food sources and/or injury from a natural gas blowout or oil spill. The risk of these impacts may increase as oil and gas development increases; however, new development will undergo consultation prior to exploration and development.
>
> Support vessels are required for gas and oil development to transport supplies and products to and from the facilities. Not only will the support vessels from increased gas and oil development likely increase noise in the action area, there is a potential for a slightly increased risk of ship strikes with beluga whales; however, ship strikes have not been definitively confirmed in a Cook Inlet beluga whale death, and monitoring measures should reduce this risk by placing visual monitors on ships to look out for whales and by deploying acoustic monitors to listen for vocalizing marine mammals.[332]

After this discussion, as well as what the EA describes as a "brief summary" of other human-related activities, the EA then states that Apache's seismic surveying "would not be expected to result in a cumulative significant impact," reasoning that "[t]he potential impacts to marine mammals, their habitats, and the human environment in general are expected to be minimal based on the limited and temporary noise footprint and mitigation and monitoring requirements of the IHA."[333]

See Blue Mountains v. Blackwood, 161 F.3d at 1214 (citing 40 C.F.R. § 1508.7 and 40 C.F.R. § 1508.27(b)(7) together in prefacing its cumulative impact analysis).

[332] B 937.

[333] B 940. Additional information regarding the scope of oil and gas development is set forth in another section of the EA, and states that there are "16 oil and gas production platforms located in upper Cook Inlet, 12 of which are active today. There are no platforms in the lower Inlet, and no permits have been issued for the construction of a new permanent platform anywhere within the Inlet." B 900.

Plaintiffs assert this discussion of oil and gas activity is inadequate in the cumulative impact analysis. They state that "Apache is one of about a dozen oil and gas companies currently exploring and developing oil and gas in Cook Inlet, and there are currently 391 active oil and gas leases totaling almost 1 million acres of State leased land in Cook Inlet."[334] Plaintiffs assert that "the EA summarized – but did not actually analyze – cumulative impacts" and its failure to do so is arbitrary and capricious and unsupported by the record evidence.[335]

An EA "must fully assess the cumulative impacts of a project."[336] However, "under NEPA [courts] defer to an agency's determination of the scope of its cumulative effects review."[337] In *Center for Biological Diversity v. Salazar*, the plaintiffs challenged an EA related to incidental take regulations that were issued for a five-year plan limited to oil and gas exploration activities. The EA only assessed the impact of small spills, concluding that the likelihood of a large spill during the exploratory stage was very low. Plaintiffs asserted that the EA should have considered the likelihood of large spill that might occur in future development and production activity in its cumulative impacts analysis. But the Ninth Circuit said that the agency's failure to analyze the effects of a potential oil spill as a result of future development and production activities outside the

[334] Docket 48 at 52.

[335] Docket 56 at 32.

[336] *CBD v. Salazar*, 695 F.3d at 917 (citing *Barnes v. U.S. Dept. of Transp.*, 655 F.3d 1124, 1141 (9th Cir. 2011); *Te-Moak Tribe of W. Shoshone of Nev. v. U.S. Dep't of Interior*, 608 F.3d 592, 602–03 (9th Cir.2010)).

[337] *Selkirk Conservation Alliance v. Forsgren*, 336 F.3d 944, 959 (9th Cir. 2003) (quoting *Neighbors of Cuddy Mt. v. Alexander*, 303 F.3d 1059, 1071 (9th Cir. 2002)).

scope of the authorized activity was not "arbitrary and capricious given the relatively narrow scope of the activity contemplated in the incidental take regulations."[338]

The EA here adequately addresses the past, present and future projects in the inlet. In addition to the above-quoted discussion of oil and gas development, the EA addressed the effects of pollution; fisheries interaction; coastal zone development including the Port of Anchorage and Port Mackenzie expansions, the Chuitna Coal Project, and the ORPC Alaska Tidal Energy projects; marine mammal research; and climate change. After discussing each of these categories of activity, the EA concluded that "the incremental impact of an IHA for the proposed Apache seismic survey in Cook Inlet would not be expected to result in a cumulative significant impact to the human environment from past, present, and future activities" and that "[t]he potential impacts to marine mammals, their habitats, and the human environment in general are expected to be minimal based on the limited and temporary noise footprint and mitigation and monitoring requirements of the IHA."[339]

Based on the foregoing, this Court finds that the cumulative impacts of Apache's surveying activities did not require the agency to prepare an EIS and that the agency took the requisite hard look at those impacts.[340]

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[338] *CBD v. Salazar*, 695 F.3d at 917.

[339] B 937-940.

[340] And yet here again, this Order does not address the extent to which corrected take estimates may impact the agency's determination.

(5) Adverse Effect on Endangered Species and Threatened Legal Violation.

Plaintiffs address these two intensity factors together, relying on their prior arguments that "NMFS' IHA may adversely affect endangered Cook Inlet beluga whales and designated critical habitat in violation of both the MMPA and ESA."[341]

NMFS maintains that "preparation of an EIS is not required just because an agency identifies adverse impacts on wildlife species or their habitat, or acknowledges information favorable to a different outcome . . . even if the impacts are to an endangered species."[342] API adds that NMFS' conclusion "that Apache's seismic activities would have no substantial impact on marine mammals, but at most short-term and localized changes in behavior" is "precisely the kind of agency assessment of the effects of proposed action that implicates 'a scientific prediction within the scope of its technical expertise' and hence qualifies for judicial deference."[343]

Although it appears that the agency did give the requisite hard look on this topic, it did so with inaccurate assumptions with respect to the percent of the population that would be subjected to takes by harassment.[344] Given the agency's reliance on these inaccurate assumptions, the adverse effect on the endangered species and threatened legal violation must be set aside to be revisited by the agency as warranted in light of the determinations reached by this Court in this Order.

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[341] Docket 48 at 51.

[342] Docket 52 at 54 (citing *Native Ecosystems Council v. U.S. Forest Serv*., 428 F.3d 1233, 1240 (9th Cir. 2005); *Envtl Prot. Info, Ctr. v. U.S. Forest Serv*., 451 F.3d 1005, 1010-11 (9th Cir. 2006)).

[343] Docket 53 at 26 (quoting *Ctr. For Biological Diversity v. Kempthorne*, 588 F.3d 701, 712 (9th Cir. 2009)).

[344] *See* B 936.

Plaintiffs assert the EA is deficient because its alternatives analysis failed to take a "hard look" at mitigation measures.[345] They assert that "the EA summarily rejects time-area restrictions on the assumption that the survey's 'timing and location' makes restrictions unnecessary" but this "assumption is patently inconsistent with the scope of the authorization and NMFS' own science."[346]

The EA considered three alternatives: (1) "No Action Alternative," (2) "Issuance of IHA with Required Mitigation, Monitoring and Reporting Measures (Preferred Alternative), and (3) "Issuance of an IHA with Additional Mitigation and Monitoring Measures."[347] It briefly evaluated the alternative of no action, and thoroughly evaluated the alternative of permitting Apache to proceed with its proposal alternative.[348] With respect to the third alternative, the EA simply stated that "an alternative that would have included time/area restrictions was considered but eliminated from consideration because such measures were unnecessary given the timing and location of the seismic survey."[349]

NMFS maintains this statement is sufficient given the "limited temporal and physical limitations of the activities permitted by the IHA."[350] Additionally, NMFS alleges

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[345] Docket 48 at 53-54.

[346] Docket 48 at 53-54 (citing B867).

[347] B 866.

[348] B 902-31.

[349] B 867.

[350] Docket 52 at 54 (citing B975-76); *id.* at 53-54 (referencing the "limited and temporary footprint and required mitigation measures of the IHA" to conclude any cumulative impacts would be minimal).

its "discussion of the mitigation measures in the EA . . . is both adequate and self explanatory" and "fully complied with the requirements of NEPA."[351]

Section 102(2)(E) of NEPA directs federal agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources[.]"[352] Regulations requires an EA to "include brief discussions . . . of alternatives as required by section 102(2)(E) [and] of the environmental impacts of the proposed action and alternatives[.]"[353] But neither NEPA itself nor its regulations explicitly requires consideration of mitigation measures. Plaintiffs cite to the Supreme Court's ruling in *Robertson v. Methow Valley Citizens Council* to support their assertion that "NEPA requires an agency to sufficiently analyze reasonable mitigation alternatives that would lessen environmental impacts."[354] However, in that case, the Supreme Court addressed the need for a discussion of mitigation alternatives as an "important ingredient" of an EIS—not an EA.[355] Thus, that authority is inapposite. Similarly, Plaintiffs' citation to the Ninth Circuit case *Oregon Natural Res. Council v. Harrell* for the

[351] Docket 52 at 55.

[352] 42 U.S.C. § 4332(E).

[353] 40 C.F.R. § 1508.9.

[354] Docket 48 at 53 (citing *Methow Valley*, 490 U.S. 332, 333 (1989)).

[355] *Robertson*, 490 U.S. at 351-52 ("[O]ne important ingredient of an EIS is the discussion of steps that can be taken to mitigate adverse environmental consequences. . . Implicit in NEPA's demand that an agency prepare a detailed statement on 'any adverse environmental effects which cannot be avoided should the proposal be implemented,' 42 U.S.C. § 4332(C)(ii), is an understanding that the EIS will discuss the extent to which adverse effects can be avoided.").

proposition that an agency's failure to discuss mitigation requires remand is not persuasive, as that case also analyzed an EIS, not an EA.[356]

In *Akiak Native Community v. U.S. Postal Service*, the Ninth Circuit explicitly held that "NEPA does not require that Environmental Assessments include a discussion of mitigation strategies."[357] The Ninth Circuit explained that "[a]lthough NEPA regulations do require a discussion of the "[m]eans to mitigate adverse environmental impacts," 40 C.F.R. § 1502.16(h), this provision governs the preparation of an Environmental Impact Statement, not an Environmental Assessment[,]"and emphasized that "[t]his distinction is critical."[358] Here, NMFS' analysis in the EA followed the correct procedure and took the requisite "hard look" in making its determination that an EIS was not required. But here again, the extent to which the agency's erroneous percentage take estimations may influence the appropriate mitigation alternatives has not been addressed by the parties nor addressed in this Order.

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[356] Docket 48 at 54 (citing *Oregon*, 52 F.3d 1499, 1507 (9th Cir. 1995)).

[357] *Akiak Native Community v. U.S. Postal Serv*., 213 F.3d 1140, 1147 (9th Cir. 2000).

[358] *Akiak v. USPS*, 213 F.3d at 1147; *cf*. *Bering Strait Citizens for Responsible Resource Dev. v. U.S. Army Corps of Engineers*, 524 F.3d 938, 955 (9th Cir. 2008) ((“Under NEPA, an agency's consideration of alternatives is sufficient if it considers an appropriate range of alternatives, even if it does not consider every available alternative. An agency need not, therefore, discuss alternatives similar to alternatives actually considered, or alternatives which are infeasible, ineffective, or inconsistent with the basic policy objectives for the management of the area[.]") (quoting *Northern Alaska Env'l Center v. Kempthorne*, 457 F.3d 969, 978 (9th Cir. 2006)); *Envtl. Protec. Info. Ctr. v. U.S. Forest Serv*., 451 F.3d 1005, 1016 (9th Cir. 2006) (“an agency's obligation to consider alternatives under an EA is a lesser one than under an EIS") (quoting *Native Ecosystems Council v. U.S. Forest Serv*., 428 F.3d 1233, 1246 (9th Cir. 2005)).

CONCLUSION

For the foregoing reasons, Plaintiffs' motion for summary judgment is GRANTED in part and DENIED in part. This Court finds that the National Marine Fisheries Services' use of the 160 dB threshold for determining when incidental take by harassment would occur, together with many other aspects of the agency's decision-making as discussed herein, is affirmed. But this Court finds that the agency erroneously determined the number and percentage of Cook Inlet beluga whales that would be subject to take by Level B incidental harassment during Apache's seismic surveying activities under year one of its permit, and it appears that the agency arbitrarily and capriciously relied upon this erroneous determination in the issuance of the Incidental Harassment Authorization, the Biological Opinion, and the Environmental Assessment.

In light of the foregoing, IT IS ORDERED that within 21 days of the date of this Order, the parties shall file and serve, either jointly or separately, a motion(s) or stipulation that proposes the further proceedings that should occur in this matter, taking into account the fact that the Initial Harassment Authorization issued by the NMFS to Apache at issue in this proceeding expired with the issuance of the amended IHA in February 2013.

DATED this 28th day of May, 2013.

/s/ Sharon L. Gleason
UNITED STATES DISTRICT JUDGE