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Comments on Draft Environmental Impact Statement for Lease Sale 258

I. Introduction

These comments on the Bureau of Ocean Energy Management's (BOEM) Draft Environmental Impact Statement (DEIS) for Lease Sale 258 are submitted on behalf of Cook Inletkeeper, Friends of Alaska National Wildlife Refuges, Alaska Community Action on Toxics, Kachemak Bay Conservation Society, the Center for Biological Diversity, Defenders of Wildlife, Earthjustice, and the Natural Resources Defense Council.

Our organizations value the protection of ocean ecosystems and species, preventing the acceleration of climate change, and collaborative partnership with indigenous communities. Opening up over a million acres for oil and gas development in Lower Cook Inlet will cause

unacceptable and irreversible damage to this unique place. As set forth in this comment letter, the DEIS is deficient in the following ways:

- Failing to consider the devastating impacts climate change is already having on Alaska, its waters, fisheries, life, and economy;
- Ignoring Hilcorp's – the likely bidder in any Cook Inlet lease sale – track record of disregarding safety and environmental regulations in the DEIS;
- Relying on a flawed oil spill analysis that suffers from a number of defects, including failing to consider oil that would disperse into the water column, not considering how “small spills” could impact the environment, and errors in the statistical analysis;
- Failing to offer tribal consultation to any of the Kodiak region tribes;
- A lack of baseline data regarding any of the fisheries likely to be affected by the action, which deprives the public of key information about the value, health, or status of these fisheries;
- Ignoring the continued impacts climate change is having on Cook Inlet fisheries such as the Pacific cod fishery, which was closed due to climate change in 2019-2020;
- Failing to give thorough consideration to the value of tourism in the region, including the economic value of local bear viewing which generates \$34 million in annual sales;
- Failing to take a “hard look” at the impact the Proposed Action and a spill would have on the threatened Steller's eider;
- Failing to take a “hard look” at the potentially catastrophic impacts to Cook Inlet's endangered beluga whales, including impacts from noise, prey disruption, pollution, and oil spills;
- Failing to address impacts to other whales such as humpback and fin whales;
- Failing to consider the impacts that the Proposed Action would have on sea otters, particularly in the event of oil spills;
- Failing to develop adequate mitigation measures to protect the Cook Inlet beluga whale and the Northern sea otter;
- Failing to consult with NMFS and FWS concerning listed species that will be impacted by the Proposed Action; and
- Failing to consider a full range of alternatives, including renewable energy alternatives.

If BOEM fully considers the impacts of the Proposed Action on Alaska, the waters, and local communities—including Tribal Communities—there is only one possible conclusion: Lease Sale 258 should be cancelled. We urge BOEM to fully consider the effects Lease Sale 258 will have on the environment, local sustainable economies, and the climate, and to adopt the No Action Alternative and cancel Lease Sale 258.

II. Alaska Is Already Suffering the Impacts of Climate Change

An overwhelming international scientific consensus has established that human-caused climate change is already causing severe and widespread harms and that climate change threats are becoming increasingly dangerous. The climate crisis, caused primarily by fossil fuel emissions, poses an existential threat to every aspect of society. Fossil fuel-driven climate change has already led to more frequent and intense heat waves, floods, and droughts; more destructive hurricanes and wildfires; rising seas and coastal erosion; increased spread of disease; food and water insecurity; acidifying oceans; and increasing species extinction risk and collapse of ecosystems. The climate crisis is killing people across the nation and around the world, accelerating the extinction crisis, and costing the U.S. economy billions in damages every year. The harms from the climate crisis and fossil fuel pollution are not felt equally, but instead fall most acutely on Black, Brown, Indigenous, and other communities of color, as well as low-wealth and other frontline communities, worsening the environmental justice crisis.¹ The vast scientific literature documenting these findings has been set forth in a series of authoritative reports from the Intergovernmental Panel on Climate Change (IPCC), U.S. Global Change Research Program, and other institutions,² which make clear that fossil-fuel driven climate change is a “code red for humanity.”³ Without limits on fossil fuel production and deep and rapid emissions reductions, global temperature rise will exceed 1.5°C and will result in catastrophic damage in the U.S. and around the world.⁴

The IPCC, the international scientific body for the assessment of climate change, concluded in its *Climate Change 2021: The Physical Science Basis* report that: “[i]t is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the

¹Donaghy, Tim & Charlie Jiang for Greenpeace, Gulf Coast Center for Law & Policy, Red, Black & Green Movement, and Movement for Black Lives, *Fossil Fuel Racism: How Phasing Out Oil, Gas, and Coal Can Protect Communities* (2021), <https://www.greenpeace.org/usa/wp-content/uploads/2021/04/Fossil-Fuel-Racism.pdf>; U.S. Environmental Protection Agency, *Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts*, EPA 430-R-21-003 (2021), www.epa.gov/cira/social-vulnerability-report.

We will provide BOEM with a courtesy copy of the sources cited in this comment letter.

² U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment*, Vol. I (2017), <https://science2017.globalchange.gov/>; U.S. Global Change Research Program, *Impacts, Risks, and Adaptation in the United States*, Fourth National Climate Assessment, Vol. II (2018), <https://nca2018.globalchange.gov/>; Intergovernmental Panel on Climate Change, *Summary for Policymakers*. In: *Climate Change 2021: The Physical Science Basis*. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2021), <https://www.ipcc.ch/report/sixth-assessment-report-working-group-i>.

³ United Nations Secretary-General, *Secretary-General’s statement on the IPCC Working Group I Report on the Physical Science Basis of the Sixth Assessment*, Aug. 9, 2021, <https://www.un.org/sg/en/content/secretary-generals-statement-the-ipcc-working-group-1-report-the-physical-science-basis-of-the-sixth-assessment>.

⁴ Intergovernmental Panel on Climate Change, *Summary for Policymakers*. In: *Global Warming of 1.5°C*. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018) [Masson-Delmotte, V. et al. (eds.)], <https://www.ipcc.ch/sr15/>

atmosphere, ocean, cryosphere and biosphere have occurred,” and further that “[t]he scale of recent changes across the climate system as a whole and the present state of many aspects of the climate system are unprecedented over many centuries to many thousands of years.”⁵

The U.S. federal government has repeatedly recognized that human-caused climate change is causing widespread and intensifying harms across the country. Most recently, the Fourth National Climate Assessment, prepared by hundreds of scientific experts and reviewed by the National Academy of Sciences and 13 federal agencies including the Department of the Interior, found that “evidence of human-caused climate change is overwhelming and continues to strengthen, that the impacts of climate change are intensifying across the country, and that climate-related threats to Americans’ physical, social, and economic well-being are rising.”⁶

And in October 2021 several reports issued by the Department of Homeland Security, the Department of Defense, the National Security Council, and the National Intelligence Director all highlight the threat that climate change poses to national security. For example, the Office of the Director of National Intelligence issued the first-ever National Intelligence Estimate on Climate Change (NIE). The NIE notes that climate change will increasingly exacerbate a number of risks to U.S. national security interests through (1) increased geopolitical tension as countries argue over who should be doing more, and how quickly, and compete in the ensuing energy transition; (2) cross-border geopolitical flash points from the physical effects of climate change as countries take steps to secure their interests; and (3) climate effects straining country-level stability in select countries and regions of concern.⁷ The NIE further states that “[g]iven current government policies and trends in technology development . . . collectively countries are unlikely to meet the Paris goals,” and concludes that “[h]igh-emitting countries would have to make rapid progress toward decarbonizing their energy systems by transitioning away from fossil fuels within the next decade.”⁸

The Fourth National Climate Assessment highlighted the extreme pace of climate change in Alaska and the Arctic in particular:

⁵ Intergovernmental Panel on Climate Change, Summary for Policymakers. In: *Climate Change 2021: The Physical Science Basis*. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2021), <https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/> at SPM-5 and SPM-9.

⁶ U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II: Impacts, Risks, and Adaptation in the United States* (March 2021)(NCA4) at 36; https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf.

⁷ National Intelligence Council’s National Intelligence Estimate on Climate Change, Oct. 2021, available at https://www.dni.gov/files/ODNI/documents/assessments/NIE_Climate_Change_and_National_Security.pdf;

⁸ *Id.*; see also Report on the Impact of Climate Change on Migration, Oct. 2021, available at <https://www.whitehouse.gov/wp-content/uploads/2021/10/Report-on-the-Impact-of-Climate-Change-on-Migration.pdf>; Climate Risk Analysis, Oct. 2021, available at <https://media.defense.gov/2021/Oct/21/2002877353/-1/-1/0/DOD-CLIMATE-RISK-ANALYSIS-FINAL.PDF>.

Alaska is on the front lines of climate change and is among the fastest warming regions on Earth. It is warming faster than any other state, and it faces a myriad of issues associated with a changing climate.⁹

The rate at which Alaska's temperature has been warming is twice as fast as the global average since the middle of the 20th century.¹⁰

Temperatures have been increasing faster in Arctic Alaska than in the temperate southern part of the state, with the Alaska North Slope warming at 2.6 times the rate of the continental U.S.¹¹

In Alaska, starting in the 1990s, high temperature records occurred three times as often as record lows, and in 2015, an astounding nine times as frequently.¹²

According to the Assessment, Alaska will experience more heating than any other state, with the greatest increases expected in the Alaskan Arctic.¹³ Heating is projected to be less severe under scenarios where greenhouse gas emissions are greatly reduced. For example, average temperatures on the North Slope are projected to rise by 8 to 10°F under the lower RCP 4.5 scenario, compared with 14 to 16.5°F under the higher RCP 8.5 scenario by 2070–2099.¹⁴

Other recent scientific assessments have similarly documented the extreme impacts of Arctic climate change, including NOAA's Arctic Report Card¹⁵ and the Arctic Monitoring and Assessment Programme's 2017 Snow, Water, Ice and Permafrost in the Arctic report.¹⁶ For example, one study found that decreasing seasonal sea ice extent and a lengthening of the open-water season is resulting in fall storms that generate more destructive waves and cause damage later in the year, resulting in increased flooding and erosion.¹⁷ Another study evaluated infrastructure hazard areas in the Northern Hemisphere's permafrost regions under projected climatic changes through 2050, and identified 550 km of the Trans-Alaska Pipeline System that are in the area in which near-surface permafrost thaw may occur by 2050;¹⁸ while another reported a trend toward earlier spring snowmelt and later onset of autumn snow accumulation in

⁹ NCA4 Vol. II at 1190.

¹⁰ *Id.*

¹¹ *Id.* at 1191.

¹² *Id.* at 1190.

¹³ *Id.* at 1191.

¹⁴ NCA4 Vol. II at Figure 26.1.

¹⁵ Arctic Report Card, <https://arctic.noaa.gov/report-card/report-card-2020>.

¹⁶ AMAP, Snow, Water, Ice and Permafrost in the Arctic (SWIPA) 2017. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway. xiv + 269 pp (2017).

¹⁷ Fang, Z. et al., 2018. Reduced sea ice protection period increases storm exposure in Kivalina. 4 Arctic Science 4:525.

¹⁸ Hjørt, J. et al. 2018. Degrading permafrost puts Arctic infrastructure at risk by mid-century. Nature Communications 9:5147.

the North Slope.¹⁹ Other studies have also documented extreme weather events, including one that determined that the record-setting warmth during the 2015/16 cold season in Alaska—when statewide average temperatures exceeded the mean by more than 4°C over the 7-month cold season and by more than 6°C over the 4-month late-winter period—was driven in large part by anthropogenic climate change;²⁰ another study that examined how climate change is expected to alter the frequencies and intensities of extreme temperature and precipitation events, concluding that “the shifts in temperature and precipitation indicate unprecedented heat and rainfall across Alaska during this century;”²¹ and yet another that projected that wet snow and rain-on-snow events will increase in frequency and extent in Alaska with climate warming.²²

Climate change can also negatively impact fisheries and wildlife. Indeed, the Cook Inlet region is also already suffering these effects in numerous ways. For example, fish populations are collapsing, including Pacific cod whose biomass dropped by nearly 80 percent from 2013 to 2017 in the Gulf of Alaska, coinciding with a period of warm water.²³ In 2020, fisheries managers took the unprecedented step of closing the federal Pacific cod fishery in Lower Cook Inlet/Gulf of Alaska, citing climate change as the culprit behind low stock numbers.²⁴

Additionally, in a study of 15 sites across Cook Inlet, scientists have predicted that water temperatures could rise by more than 3°C over the next 100 years.²⁵ Such drastic changes to water temperature may significantly increase incidence of disease in fish prey populations and generally reduce prey availability or distribution.²⁶ This can have ripple effects up the food chain, including potentially harming the health and reproduction of critically endangered Cook Inlet beluga whales due to decreased energy intake and increased energy expenditure to find suitable prey; related loss of sea ice can exacerbate this trend.²⁷

Climate change may also be increasing siltation as warming temperatures reduce snowfall during warmer winters and cause glaciers to melt, releasing sediment.²⁸ Such elevated siltation and

¹⁹ Cox, C.J. et al., Responses to the changing annual snow cycle of northern Alaska, *Bulletin of the American Meteorological Society* 2559 (December 2017).

²⁰ Walsh, J.E. et al. 2017. The exceptionally warm winter of 2015/2016 in Alaska. *Journal of Climate* 30: 2069.

²¹ Lader, R. et al. 2017. Projections of twenty-first-century climate extremes for Alaska via dynamical downscaling and quantile mapping. *Journal of Applied Meteorology and Climatology* 56:2393.

²² Pan, C.G. et al. 2018. Rain-on-snow events in Alaska, their frequency and distribution from satellite observations. *Environmental Research Letters* 13:075004.

²³ NMFS, Alaska Cod Populations Plummeted During The Blob Heatwave— New Study Aims to Find Out Why, Nov. 8, 2019, <https://www.fisheries.noaa.gov/feature-story/alaska-cod-populations-plummeted-during-blob-heatwave-new-study-aims-find-out-why>.

²⁴ See, e.g., Kavitha George, Alaska Cod Fishery Closes And Industry Braces For Ripple Effect, NPR, Dec. 8, 2019, <https://www.npr.org/2019/12/08/785634169/alaska-cod-fishery-closes-and-industry-braces-for-ripple-effect>.

²⁵ Norman et al. 2015. Potential Natural and Anthropogenic Impediments to the Conservation and Recovery of Cook Inlet Beluga Whales, *Delphinapterus leucas*, 94 *Marine Fisheries Review* 77(2).

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.* at 305.

deposition levels can cause numerous harmful impacts, including potentially “affect[ing] beluga whale access to river mouths, impeding access to feeding habitat.”²⁹

The National Climate Assessments make clear that the harms of climate change are long-lived, and the choices we make now on reducing greenhouse gas pollution will affect the severity of the climate change damages that will be suffered in the coming decades and centuries.³⁰ As the Fourth National Climate Assessment explains: “[m]any climate change impacts and associated economic damages in the United States can be substantially reduced over the course of the 21st century through global-scale reductions in greenhouse gas emissions...The effect of near-term emissions mitigation on reducing risks is expected to become apparent by mid-century and grow substantially thereafter.”³¹ As summarized by the National Research Council:

Emissions of carbon dioxide from the burning of fossil fuels have ushered in a new epoch where human activities will largely determine the evolution of Earth’s climate. Because carbon dioxide in the atmosphere is long lived, it can effectively lock Earth and future generations into a range of impacts, some of which could become very severe. [E]mission reduction choices made today matter in determining impacts experienced not just over the next few decades, but in the coming centuries and millennia.³²

III. BOEM Has the Authority to Cancel Lease Sale 258

While a recent district court decision blocked implementation of the Administration’s nationwide oil and gas leasing pause, BOEM retains the statutory authority to adopt the No Action Alternative and cancel Lease Sale 258. Given the sensitivity of the Cook Inlet ecosystem and the severity of the climate crisis, BOEM must exercise that authority here.

The Outer Continental Shelf Lands Act (OCSLA) directs the Secretary of the Interior to balance the nation’s energy needs with several other factors, including protection of the environment, coastal communities, and safety, when deciding whether and how oil and gas development in federal waters should proceed. *E.g.*, 43 U.S.C. §§ 1332, 1344(a)(1). The Secretary has been given discretion to determine how to “best meet national energy needs” based on these factors. *Id.* § 1344(a) (emphasis added); *see id.* § 1344(a)(2), (3); *California v. Watt (California I)*, 668 F.2d 1290, 1317 (D.C. Cir. 1981). OCSLA thus seeks to ensure “orderly development” that properly protects the environment, safety, and other national, state, and local interests. 43 U.S.C. § 1332(3).

²⁹ *Id.*

³⁰ NCA4 Vol. II at 34.

³¹ *Id.* at 1347.

³² National Research Council, *Climate Stabilization Targets: Emissions, Concentrations, and Impacts over Decades to Millennia*, Washington, DC: National Academies Press (2011) at 3.

OCSLA by its plain text “authorize[s],” but does not require, Interior to sell leases. 43 U.S.C. § 1337(a)(1). In addition to its plain text, OCSLA has a “pyramidal” structure that provides Interior broad latitude at the lease sale stage to decide whether and when to hold sales proposed in a five-year program. *California v. Watt (California II)*, 712 F.2d 584, 588 (D.C. Cir. 1983) (citation omitted). “Congress has . . . taken pains to separate the various federal decisions involved in formulating a leasing program [and] conducting lease sales . . .” *Sec’y of Interior*, 464 U.S. at 340. The five-year program stage involves one set of federal decisions that creates the universe of potential lease sales that Interior has the option to offer. See 43 U.S.C. § 1344(d)(3) (“no lease shall be issued unless it is for an area included in the approved leasing program”). The lease sale stage involves a separate set of decisions and steps to determine how much, if any, of the leasing proposed in a five-year program to offer for sale. See, e.g., 30 C.F.R. §§ 556.301, .302(a), (b); *California II*, 712 F.2d at 592 (“Before an area is actually put up for sale, other steps must be taken.”). Interior’s ultimate decisions about leasing at this stage are not required to match the leasing proposed in a five-year program: “while an area excluded from the leasing program cannot be leased . . . or developed, an area included in the program may be excluded at a latter stage.” *California II*, 712 F.2d at 588; see 30 C.F.R. § 556.302(c) (stating that there may be “changes from the area(s) proposed for leasing”).

Interior has regularly declined to hold individual proposed lease sales under multiple presidential administrations. In fact, since OCSLA was amended in 1978 to add the five-year program framework, there has never been a program in which all the proposed lease sales were held. See Cong. Rsch. Serv., *Five-Year Program for Offshore Oil and Gas Leasing: History and Program for 2017–2022*, at 10–12 (Aug. 23, 2019), <https://fas.org/sgp/crs/misc/R44504.pdf>. For example, the Reagan Administration did not hold 18 of the 41 proposed lease sales in its 1982–1987 Program, and the George W. Bush Administration opted not to hold 5 of the 20 proposed lease sales in its 2002–2007 Program. *Id.* Interior has more recently cancelled lease sales in Alaska due to market conditions or conservation reasons, 80 Fed. Reg. 74,796 (Nov. 30, 2015); 80 Fed. Reg. 74,797 (Nov. 30, 2015); 76 Fed. Reg. 11,506 (Mar. 2, 2011), and in the Mid-Atlantic and Gulf of Mexico to allow for the development of stronger protections following the Deepwater Horizon disaster, 75 Fed. Reg. 44,276 (July 28, 2010); see also *Nat. Res. Def. Council v. Hodel*, 865 F.2d 288, 293 n.3 (D.C. Cir. 1988) (describing other actions to delay proposed sales).

The 2017–2022 Final Five-Year Program itself provides that Interior “can reduce or cancel lease offerings” proposed in the Program. Bureau of Ocean Energy Mgmt. (BOEM), 2017–2022 Outer Continental Shelf Oil and Gas Leasing Proposed Final Program 6-7 (Nov. 2016).³³

³³ See also *id.* at 10-16 (discussing option value provided by Secretary’s ability to cancel lease sales); BOEM, 2017–2022 Proposed Final Program Frequently Asked Questions–General, <https://www.boem.gov/2017-2022-Proposed-Final-Program-FAQs/> (last visited May 17, 2021) (“Once a Final Program is approved, the Secretary has discretion to cancel or delay a lease sale as well as to narrow the geographic scope of a proposed leasing area, without developing a new program.”).

Interior has recognized this authority to cancel scheduled lease sales in a recent filing in the Fifth Circuit, challenging the district court opinion overruling the Administration's pause on new oil and gas leases.³⁴ Interior stated that it has no legal obligation to "move forward with [lease] sales on the schedule adopted by the prior Administration."³⁵ OCSLA, existing judicial precedent, and past agency practice all "reinforce that Interior has significant flexibility in administering the offshore leasing program."³⁶ It noted that since 1978, all of the five-year programs "have scheduled more lease sales than have actually occurred."³⁷

IV. BOEM's Purpose and Need Statement Is Unreasonable and Fails to Consider the Urgent Need to End New Leasing and Transition off Fossil Fuels

The National Environmental Policy Act's (NEPA) implementing regulations provide that an environmental document must "specify the underlying purpose and need to which the agency is responding in proposing the alternative including the proposed action."³⁸ This purpose and need inquiry is crucial for a sufficient environmental analysis because "[t]he stated goal of a project necessarily dictates the range of 'reasonable' alternatives."³⁹ As courts have explained, "[a]n agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action, and the EIS would become a foreordained formality."⁴⁰ In other words, "an agency cannot define its objectives in unreasonably narrow terms" without violating NEPA.⁴¹

Yet that is just what BOEM has done here. BOEM states that "the purpose of the Proposed Action . . . is to offer for lease certain OCS blocks located within the federally owned portion of Cook Inlet that may contain economically recoverable oil and gas resources" and that "[t]he need for the Proposed Action is to further the orderly development of OCS resources in accordance with the Outer Continental Shelf Lands Act."⁴² This purpose and need statement is unreasonably narrow as it makes approving the lease sale the only alternative that will satisfy the purpose and need. Moreover, BOEM's purpose and need fails to consider the urgent national need to end new leasing, transition off fossil fuels, and leave oil in the ground.

³⁴ Brief of Defendant-Appellant, *Louisiana et. al. v. Biden*, No. 21-30505 (5th Cir. Nov. 16, 2021).

³⁵ *Id.* at 3.

³⁶ *Id.* at 33.

³⁷ *Id.* at 34.

³⁸ 40 C.F.R. § 1502.13.

³⁹ *Carmel-by-the-Sea v. U.S. Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997).

⁴⁰ *Friends of Se's Future v. Morrison*, 153 F.3d 1059, 1066 (9th Cir. 1998).

⁴¹ *Carmel-by-the-Sea*, 123 F.3d at 1155; *see also Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1175 (10th Cir. 1999) ("the statements of purpose and need drafted to guide the environmental review process" may not be "unreasonably narrow").

⁴² DEIS at 1.

The climate emergency demands immediate action to halt new offshore oil and gas leasing. Indeed, the best available science on climate change demonstrates that we not only need to end the federal fossil fuel leasing program, but phase out existing production as well. As recently stated by several scientific experts, “[t]he scale of threats to the biosphere and all its lifeforms — including humanity — is in fact so great that it is difficult to grasp for even well-informed experts” and our planet faces a “ghastly future” unless swift action is taken to reverse the climate crisis, including “a rapid exit from fossil fuel use.”⁴³

The need to end new fossil fuel production and infrastructure approvals has been acknowledged by leaders around the world. Upon the release of the IPCC’s Sixth Assessment Report, U.N. Secretary-General António Guterres said “This report must sound a death knell for coal and fossil fuels, before they destroy our planet.... There must be no new coal plants built after 2021.... Countries should also end all new fossil fuel exploration and production....”⁴⁴ Fatih Birol, Executive Director of the International Energy Agency (IEA), said upon the release of the IEA’s climate report in May 2021: “If governments are serious about the climate crisis, there can be no new investments in oil, gas and coal, from now – from this year.”⁴⁵

President Biden himself has acknowledged the science and directed federal agencies to take all necessary action. For example, in his January 27, 2021 Executive Order on Tackling the Climate Crisis at Home and Abroad, he wrote:

There is little time left to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory....we face a climate crisis that threatens our people and communities, public health and economy, and, starkly, our ability to live on planet Earth.... We must listen to science — and act.... The Federal Government must drive assessment, disclosure, and mitigation of climate pollution and climate-related risks in every sector of our economy, marshaling the creativity, courage, and capital necessary to make our Nation resilient in the face of this threat.... It is the policy of my Administration to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy.⁴⁶

⁴³ Bradshaw, C., et al. 2021. Understanding the Challenges of a Ghastly Future. *Front. Conserv. Sci.* Vol. 1, Article 61541.

⁴⁴ United Nations Secretary-General, *Secretary-General’s statement on the IPCC Working Group I Report on the Physical Science Basis of the Sixth Assessment*, Aug. 9, 2021, <https://www.un.org/sg/en/content/secretary-generals-statement-the-ipcc-working-group-1-report-the-physical-science-basis-of-the-sixth-assessment>.

⁴⁵ Harvey, Fiona, *No new oil, gas or coal development if world is to reach net zero by 2050, says world energy body*, *Guardian*, May 18, 2021, <https://www.theguardian.com/environment/2021/may/18/no-new-investment-in-fossil-fuels-demands-top-energy-economist>.

⁴⁶ White House, *Tackling the Climate Crisis at Home and Abroad*, Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021).

And just last month, President Biden stated at the United Nations climate summit in Glasgow that we are at an “inflection point” in the fight against climate change and countries have only a “brief window” to act.⁴⁷ He further noted that “every day we delay, the cost of inaction increases” and urged “this be the . . . start of a decade of transformative action that preserves our planet and raises the quality of life for people everywhere.”⁴⁸ President Biden also stated that the United States is “not only back at the table but, hopefully, leading by the power of our example.”⁴⁹

The United States has committed to the climate change limit of holding the long-term global average temperature “to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels” under the Paris Agreement.⁵⁰ The Paris Agreement established the 1.5°C climate limit given the evidence that 2°C of warming would lead to catastrophic climate harms.⁵¹ Scientific research has estimated the global carbon budget—the remaining amount of carbon dioxide that can be emitted—for maintaining a likely chance of meeting the Paris climate limits, providing clear benchmarks for U.S. and global climate action. The 2018 IPCC special report on *Global Warming of 1.5°C* estimated the carbon budget for a 66% probability of limiting temperature rise to 1.5°C at 420 GtCO₂ and 570 GtCO₂ from January 2018 onwards, depending on the temperature dataset used.⁵² The IPCC Sixth Assessment updated the remaining carbon budget from the beginning of 2020 at 400 GtCO₂ for a 67% probability of meeting the 1.5°C limit and 500 GtCO₂ for a 50% probability of 1.5°C.⁵³ At the current global emissions rate of 42 GtCO₂ per year, the entire global carbon budget would be used up in just 10 to 12 years. Notably, the U.S. carbon budget is far smaller than the global carbon budget. Most estimates of the remaining U.S. carbon budget consistent with keeping temperature rise below 1.5°C are negative or near zero, depending on the equity principles used to apportion the global budget across countries.⁵⁴

Importantly, a 2016 global analysis found that the carbon emissions that would be released from burning the oil, gas, and coal in the world’s currently operating fields and mines would fully

⁴⁷ See, e.g., Morgan Chalfant and Rachel Frazin, Biden warns of 'existential' climate threat at Glasgow summit, The Hill, Nov. 1, 2021, <https://thehill.com/policy/energy-environment/579403-biden-calls-for-collective-action-at-glasgow-climate-summit?rl=1>.

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ United Nations Framework Convention on Climate Change, Conference of the Parties, Nov. 30-Dec. 11, 2015, Adoption of the Paris Agreement Art. 2, U.N. Doc. FCCC/CP/2015/L.9 (December 12, 2015), <http://unfccc.int/resource/docs/2015/cop21/eng/l09.pdf> (“Paris Agreement”).

⁵¹ IPCC 2018.

⁵² *Id.* at SPM-16.

⁵³ IPCC 2021 at SPM-38.

⁵⁴ Van den Berg, Nicole et al., 2020. Implications of various effort-sharing approaches for national carbon budgets and emission pathways, *Climatic Change* 162: 1805-1822 ([showing a range for the U.S. carbon budget for 2010-2100 of ~10 GtCO₂ to -90 GtCO₂ for a 1.5°C limit at Figure 4](#)); Dooley, Kate et al. 2021. Ethical choices behind quantifications of fair contributions under the Paris Agreement, *Nature Climate Change* 11:300.

exhaust and exceed the carbon budget consistent with staying below 1.5°C.⁵⁵ The reserves in currently operating oil and gas fields alone, even excluding coal mines, would lead to warming beyond 1.5°C.⁵⁶ An important conclusion of the analysis is that no new fossil fuel extraction or infrastructure should be built, and governments should grant no new permits for extraction and infrastructure. Furthermore, many of the world's existing oil and gas fields and coal mines will need to be closed before their reserves are fully extracted in order to limit warming to 1.5°C.⁵⁷ In short, the analysis established that there is no room in the carbon budget for new fossil fuel extraction or infrastructure anywhere, including in the United States, and much existing fossil fuel production must be phased out to avoid the catastrophic damages from climate change.⁵⁸

Other studies issued since then reinforce these findings. The United Nations *Production Gap Report* found that governments plan to produce more than twice the amount of fossil fuels in 2030 than would be consistent with limiting warming to 1.5°C.⁵⁹ According to the report's analysis, fossil fuel producers are planning an average increase of 2% per year in production, which by 2030 would result in more than double the production consistent with the 1.5°C limit. Instead, to follow a 1.5°C-consistent pathway, the world's governments will need to decrease fossil fuel production by roughly 6% per year between 2020 and 2030, including annual production declines of 11% for coal, 4% for oil and 3% for gas.

The 2021 *Fossil Fuel Exit Strategy* analysis similarly confirms that ending fossil fuel expansion and the early phase-out of existing extraction is necessary to meet the 1.5°C limit.⁶⁰ The analysis concluded that even if all new fossil fuel extraction were halted, in 2030 emissions from existing fossil fuel production would be 66% higher than what is needed to limit temperature rise to 1.5°C. The report estimated that global fossil fuel production will need to decline by an average

⁵⁵ Oil Change International, *The Sky's Limit: Why the Paris Climate Goals Require a Managed Decline of Fossil Fuel Production* (September 2016), <http://priceofoil.org/2016/09/22/the-skys-limit-report/> at Table 3. According to this analysis, the CO₂ emissions from developed reserves in existing and under-construction global oil and gas fields and existing coal mines are estimated at 942 Gt CO₂, which vastly exceeds the 1.5°C-compatible carbon budget estimated in the 2018 IPCC report on *Global Warming of 1.5°C* at 420 GtCO₂ to 570 GtCO₂.

⁵⁶ The CO₂ emissions from developed reserves in currently operating oil and gas fields alone are estimated at 517 Gt CO₂, which would likely exhaust the 1.5°C-compatible carbon budget estimated in the 2018 IPCC report on *Global Warming of 1.5°C* at 420 GtCO₂ to 570 GtCO₂. See IPCC 2018.

⁵⁷ Oil Change International, *The Sky's Limit California: Why the Paris Climate Goals Demand That California Lead in a Managed Decline of Oil Extraction* (2018), <http://priceofoil.org/ca-skys-limit> at 7, 13.

⁵⁸ This conclusion was reinforced by the IPCC Fifth Assessment Report which estimated that global fossil fuel reserves exceed the remaining carbon budget (from 2011 onward) for staying below 2°C (an amount of temperature rise that is incompatible with the Paris Agreement) by 4 to 7 times, while fossil fuel resources exceed the carbon budget for 2°C by 31 to 50 times. See Bruckner, Thomas et al. 2014. Energy Systems. In: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press at Table 7.2.

⁵⁹ SEI, IISD, ODI, E3G, and UNEP, *The Production Gap: The discrepancy between countries' planned fossil fuel production and global production levels consistent with limiting warming to 1.5°C or 2°C (2020)*, <http://productiongap.org/>; SEI, IISD, ODI, E3G, and UNEP, *The Production Gap Report 2021* (2021), <http://productiongap.org/2021report>.

⁶⁰ Teske, Sven & Sarah Niklas, *Fossil Fuel Exit Strategy: An orderly wind down of coal, oil and gas to meet the Paris Agreement* (June 2021), <https://fossilfuel treaty.org/exit-strategy>.

of 9.5% for coal, 8.5% for oil and 3.5% for gas per year between 2021 and 2030 to remain aligned with 1.5°C. The authors emphasized that “more fossil fuels are already being produced than what is needed, as the world has more than enough renewable energy resources that can be scaled up rapidly enough to meet the energy demands of every person in the world without any shortfall in global energy generation.” As a result, many existing fossil fuel projects are already obsolete and risk becoming stranded assets as they simply are not needed to meet demand and cannot compete with renewable energy. In addition, a 2021 analysis concluded that globally at least 89% of coal reserves, 58% of oil reserves, and 59% of gas reserves must be kept in the ground in order to have even a 50-50 chance of meeting a 1.5°C limit.⁶¹

Scientific research makes clear that the United States, as a dominant driver in expanding global fossil production, must halt new fossil fuel extraction and infrastructure and rapidly phase out existing production and infrastructure to avoid jeopardizing our ability to meet the Paris climate limits.⁶² A 2021 analysis concluded that U.S. oil and gas production is poised to expand by the largest absolute increase globally by 2030, more than twice as much as any other country.⁶³ A separate study found that the U.S. oil and gas industry is on track to account for 60% of the world’s projected growth in oil and gas production between now and 2030—the time period over which the IPCC concluded that global carbon dioxide emissions should be roughly halved to meet the 1.5°C Paris Agreement limit.⁶⁴ Between 2018 and 2050, the United States is poised to unleash the world’s largest influx of CO₂ emissions from new oil and gas development—primarily from shale and largely dependent on fracking—estimated at 120 billion metric tons of CO₂ which is equivalent to the lifetime CO₂ emissions of nearly 1,000 coal-fired power plants. Based on a 1.5°C IPCC pathway, U.S. production alone would exhaust nearly 50% of the world’s total allowance for oil and gas by 2030 and exhaust more than 90% by 2050. Additionally, if U.S. coal production is to be phased out over a timeframe consistent with equitably meeting the Paris goals, at least 70% of U.S. coal reserves in already-producing mines must stay in the ground. In short, if not curtailed, U.S. fossil fuel expansion will impede the world’s ability to meet the Paris climate limits and preserve a livable planet.

Research on the carbon emissions locked in U.S. fossil fuels similarly establishes that the U.S. must halt new fossil fuel production and rapidly phase out existing production to avoid the worst dangers of climate change. One quarter of total U.S. greenhouse gas emissions comes from the extraction and end-use combustion of fossil fuels produced on federal lands alone—not including

⁶¹ Welsby, Dan et al. 2021. Unextractable fossil fuels in a 1.5 °C world. *Nature* 597:230.

⁶² Oil Change International, *Drilling Toward Disaster: Why U.S. Oil and Gas Expansion Is Incompatible with Climate Limits* (January 2019), <http://priceofoil.org/drilling-towards-disaster>.

⁶³ Achakulwisut, Ploy & Peter Erickson, *Trends in fossil fuel extraction: Implications for a shared effort to align global fossil fuel production with climate limits*, Stockholm Environment Institute Working Paper (April 2021), www.sei.org/publications/trends-in-fossil-fuel-extraction/ at Figure 3.

⁶⁴ IPCC 2018 at SPM-15.

non-federal lands.⁶⁵ A 2015 analysis estimated that recoverable fossil fuels from U.S. federal lands would release up to 349 to 492 GtCO₂eq of carbon emissions, if fully extracted and burned.⁶⁶ Of that amount, already leased fossil fuels would release 30 to 43 GtCO₂eq of emissions, while as yet unleased fossil fuels would emit 319 to 450 GtCO₂eq of emissions. Thus, the carbon emissions from already leased fossil fuel resources on federal lands alone (30 to 43 GtCO₂eq) would exceed any remaining U.S. carbon budget for a 1.5°C limit⁶⁷ and exhaust ~10% of the remaining *global* carbon budget for 1.5°C.⁶⁸ The potential carbon emissions from unleased federal fossil fuel resources (319 to 450 GtCO₂eq) would exhaust the entire global carbon budget for limiting warming to 1.5°C. This does not include the additional carbon emissions that will be emitted from fossil fuels extracted on non-federal lands, estimated up to 500 GtCO₂eq if fully extracted and burned. In contrast, a nationwide federal fossil fuel leasing ban would reduce carbon emissions by an estimated 280 million tons per year, ranking among the most ambitious U.S. federal climate policy proposals in recent years.⁶⁹

Put another way, the production horizons for already leased federal fossil fuel resources underscore how unwarranted, unreasonable, and capricious any additional leasing is. Comparing production horizons to dates at which carbon budgets would be exceeded if current emission levels continue, a 2020 report concluded:

- “Federal crude oil already leased will continue producing for 34 years beyond the 1.5°C threshold and 19 years beyond the 2°C;” and
- “Federal natural gas already leased will continue producing 23 years beyond the 1.5°C threshold and 8 years beyond the 2°C.”⁷⁰

These analyses highlights that the United States has an urgent responsibility to lead in the transition from fossil fuel production to 100% clean energy, as a wealthy nation with ample financial resources and technical capabilities, and due to its dominant role in driving climate change and its harms. The United States is currently the world’s largest oil and gas producer and second-largest coal producer.⁷¹ The United States is also the world’s largest historic emitter of greenhouse gas pollution, responsible for 25% of cumulative global CO₂ emissions since 1870,

⁶⁵ Merrill, Matthew D. et al., Federal lands greenhouse gas emissions and sequestration in the United States—Estimates for 2005–14: U.S. Geological Survey Scientific Investigations Report 2018–5131 (2018) at 8.

⁶⁶ Ecoshift Consulting, et al., The Potential Greenhouse Gas Emissions of U.S. Federal Fossil Fuels, Prepared for Center for Biological Diversity & Friends of the Earth (2015).

⁶⁷ See e.g., Van den Berg, et al. 2020 ([showing a range for the U.S. carbon budget for 2010-2100 of ~10 GtCO₂ to -90 GtCO₂ for a 1.5°C limit at Figure 4](#)).

⁶⁸ As noted above, the IPCC Sixth Assessment Report updated the remaining global carbon budget from the beginning of 2020 at 400 GtCO₂ for a 67% probability of meeting the 1.5°C limit.

⁶⁹ Erickson, Peter & Michael Lazarus. 2018. Would constraining U.S. fossil fuel production affect global CO₂ emissions? A case study of US leasing policy. *Climatic Change* 150:29.

⁷⁰ D. Mulvaney et al., *Over-Leased: How Production Horizons of Already Leased Federal Fossil Fuels Outlast Global Carbon Budgets* at 5 (2016).

⁷¹ The Production Gap Report 2021 at Table 4.1.

and is currently the world's second highest emitter on an annual basis and highest emitter on a per capita basis.⁷² The U.S. must focus its resources and technology to rapidly phase out extraction while investing in a just transition for affected workers and communities currently living on the front lines of the fossil fuel industry and its pollution.⁷³

Ending the approval of new fossil fuel production and infrastructure is also critical for preventing “carbon lock-in,” where approvals and investments made now can lock in decades-worth of fossil fuel extraction that we cannot afford. New approvals for wells, mines, and fossil fuel infrastructure—such as pipelines and marine and rail import and export terminals—require upfront investments that provide financial incentives for companies to continue production for decades into the future.⁷⁴ As summarized by Green and Denniss (2018):

When production processes require a large, upfront investment in fixed costs, such as the construction of a port, pipeline or coalmine, future production will take place even when the market price of the resultant product is lower than the long-run opportunity cost of production. This is because rational producers will ignore ‘sunk costs’ and continue to produce as long as the market price is sufficient to cover the marginal cost (but not the average cost) of production. This is known as ‘lock-in.’⁷⁵

Given the long-lived nature of fossil fuel projects, ending the approval of new fossil fuel projects is necessary to avoid the lock-in of decades of fossil fuel production and associated emissions.

Another study has estimated the U.S.’s portion of the global carbon budget by allocating the remaining global budget across countries based on factors including equity principles and economics. It has determined that the U.S.’s fair share of the global mitigation effort in 2030 is equivalent to a reduction of 195 percent below its 2005 emissions levels. To achieve this reduction, the U.S. will not only have to reduce its own emissions but will also have to provide

⁷² Le Quéré, Corinne et al., 2018. Global carbon budget. *Earth System Science Data* 10:2141 at 2163 and Figure 5, 2167; Global Carbon Project, *Global Carbon Budget 2018* (Dec. 2018) at 19 (Historical cumulative fossil CO₂ emissions by country).

⁷³ Piggot, Georgia et al., *Realizing a just and equitable transition away from fossil fuels*, Discussion brief, Stockholm Environment Institute (January 2019).

⁷⁴ Davis, Steven J. and Robert H. Socolow. 2014. Commitment accounting of CO₂ emissions, *Environmental Research Letters* 9:084018; Erickson, Peter et al., 2015. Assessing carbon lock-in. *Environmental Research Letters* 10:084023; Erickson, Peter et al., *Carbon lock-in from fossil fuel supply infrastructure*, Stockholm Environment Institute, Discussion Brief (2015); Seto, Karen C. et al. 2016. Carbon Lock-In: Types, Causes, and Policy Implications. *Annual Review of Environmental Resources* 41:425; Green, Fergus and Richard Denniss. 2018. Cutting with both arms of the scissors: the economic and political case for restrictive supply-side climate policies. *Climatic Change* 150:73.

⁷⁵ Green, Fergus & Richard Denniss 2018 at 78.

financial and technological support for additional reductions in poorer countries.⁷⁶ Therefore, whatever remaining carbon budget that the U.S. still has left, if any, is very small and rapidly being consumed.

Other research has demonstrated that construction of new fossil fuel infrastructure projects, including but not limited to pipelines, import and export terminals, storage facilities, refineries, power plants and petrochemical plants, is also inconsistent with meeting the 1.5°C limit.⁷⁷ This research shows that the committed carbon emissions from *existing* fossil fuel infrastructure in the energy and industrial sectors exceed the carbon budget for limiting warming to 1.5°C, meaning that no new fossil infrastructure can be built and much existing infrastructure must be *retired early* to avoid catastrophic climate harms.⁷⁸

The need to stop new production means that the Interior Department should not issue any new leases. In an IEA report⁷⁹ emphasizing the need to stay below 1.5°C in warming, IEA’s Executive Director said that “[i]f governments are serious about the climate crisis, there can be no new investments in oil, gas and coal, from now—from this year.”⁸⁰ The IEA’s report itself concludes that “hav[ing] a fighting chance of . . . limiting the rise in global temperatures to 1.5°C . . . requires nothing short of a total transformation of the energy systems that underpin our economies.”⁸¹

Despite the weight of this evidence, BOEM’s purpose and need statement reads as though the climate crisis does not exist and that the only path forward is to continue business-as-usual oil and gas leasing. This not only ignores the urgent need to end fossil fuel extraction but it also violates NEPA.

V. BOEM Must Take a Hard Look at the Effects of the Proposed Action

NEPA establishes a national policy to “encourage productive and enjoyable harmony between man and his environment” and “promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.” 42 U.S.C. § 4321. To achieve these broad goals, NEPA mandates that for every federal action “significantly affecting the quality of the human environment,” agencies must prepare a “detailed statement”

⁷⁶ U.S. Climate Action Network, *The US Fair Share: Towards a USCAN Working Consensus* (2020) (U.S. Climate Action Network 2020).

⁷⁷ Tong, D. et al. 2019. Committed emissions from existing energy infrastructure jeopardize 1.5 °C climate target. *Nature* 572: 373; Smith, C.J. et al. 2019. Current fossil fuel infrastructure does not yet commit us to 1.5 °C warming. *Nature Communications* 10:101; Pfeiffer, Alexander et al. 2018. Committed emissions from existing and planned power plants and asset stranding required to meet the Paris Agreement. *Environmental Research Letters* 13:054019.

⁷⁸ Tong, D. et al., 2019.

⁷⁹ IEA, *Net Zero by 2050: A Roadmap for the Global Energy Sector* at 51, 101, 160 (2021) (IEA 2021).

⁸⁰ F. Harvey, *No new oil, gas or coal development if world is to reach net zero by 2050, says world energy body*, *THE GUARDIAN* (May 18, 2021).

⁸¹ IEA 2021 at 3.

on the proposed action’s environmental impacts, adverse effects, and alternatives. 42 U.S.C. § 4332(C). Through this process, agencies are required to take a “hard look” at environmental consequences before deciding whether to proceed with a proposed action. *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1075 (9th Cir. 2011).

To comply with NEPA, an EIS must include a “full and fair discussion” of direct and indirect environmental impacts. 40 C.F.R. § 1502.1. This includes “considering all foreseeable direct and indirect impacts.” *N. Alaska Env’t. Ctr. v. Kempthorne*, 457 F3d 969, 975 (9th Cir. 2006). Direct impacts include those that are “caused by the action and occurring at the same time and place,” while indirect impacts include those that are “caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8(a)-(b).⁸² Moreover, NEPA requires considering the cumulative effects of reasonably foreseeable activities in combination with the proposed action. *N. Plains Res. Council, Inc.*, 668 F.3d at 1076. Agencies must also include a rigorous and full analysis of reasonable alternatives. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008); 40 C.F.R. § 1502.1, 1502.14.

NEPA analysis must be based on “[a]ccurate scientific analysis.” *Id.* § 1500.1(b). Where scientific information is unavailable, the agency must acknowledge the missing information, state the relevance of that information to evaluating significant environmental impacts and provide a summary of existing scientific information relevant to assessing those impacts. *Mont. Wilderness Ass’n v. McAllister*, 666 F.3d 549, 559-560 (9th Cir. 2011); 40 C.F.R. § 1502.22(a)-(c).

A. BOEM’s Draft EIS Must Consider Hilcorp’s Poor Track Record, Including in Cook Inlet

Hilcorp is the only oil company currently holding leases in federal waters in the Cook Inlet OCS Planning Area, and the primary oil and gas company still operating in any of Cook Inlet’s waters. As such, it could be the sole bidder in the event BOEM holds Lease Sale 258. Therefore, BOEM must consider the company’s poor track record of environmental and safety violations and accidents and how this reality may affect the environmental impacts of its activities under Lease Sale 258. Indeed, courts have held that a company’s safety record is relevant to NEPA analysis.⁸³

⁸² BOEM has noted that “[b]ecause the NEPA process for this action began prior to September 14, 2020, the DEIS was prepared in conformance with the NEPA regulations in effect immediately prior to September 14, 2020.” 86 Fed. Reg. 60,068 (Oct. 29, 2021). We therefore reference the regulations in effect prior to September 14, 2020, unless otherwise noted, in this comment letter.

⁸³ See, e.g., *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng’rs*, No. 20-5197, 985 F.3d 1032, 2021 U.S. App. LEXIS 2049, at *26–29 (D.C. Cir. Jan. 26, 2021) (recognizing pipeline operator’s safety record is relevant to NEPA analysis).

Yet BOEM’s Draft EIS fails to consider Hilcorp’s poor environmental and safety record. According to the Alaska Oil and Gas Conservation Commission (AOGCC), Hilcorp has a documented pattern of safety violations and disregard for compliance with the law in Alaska. As documented by AOGCC, Hilcorp had more than two dozen violations over a 3.5-year period—so many that the agency concluded that “disregard for regulatory compliance is endemic to Hilcorp’s approach to its Alaska operations.”⁸⁴ AOGCC recently reiterated Hilcorp’s “substantial history of noncompliance” in an order issued December 2021.⁸⁵

In one instance, AOGCC fined Hilcorp \$20,000 for failure to test crucial safety equipment—blowout prevention equipment—after using it to control a well.⁸⁶ The agency characterized Hilcorp’s communications about the underlying events as “misleading and incomplete,” finding that “critical factual information known to Hilcorp was not provided to AOGCC.”⁸⁷

Another enforcement order, finalized on March 3, 2017, is connected to Hilcorp’s unapproved decision to pump nitrogen down a well to aid clean-out in September 2015.⁸⁸ Nitrogen is a colorless and odorless gas that replaces life-supporting oxygen when concentrated in a closed space. During this incident, nitrogen filled a trailer when a valve was left open, and the nitrogen caused the crew members to lose consciousness.⁸⁹ In its enforcement action, AOGCC noted that “[t]he extent and seriousness of the consequences of the violations cannot be overstated: nothing but luck prevented the deaths of three workers during the cleanout operations.”⁹⁰ It further stated that “Hilcorp has a significant history of noncompliance with AOGCC regulations,” and that Hilcorp has a “relatively high frequency of noncompliant activities.”⁹¹

In yet another incident, AOGCC fined Hilcorp \$10,000 for violating state regulatory requirements while performing production operations at Prudhoe Bay after a safety valve designed to prevent oil spills was shut off.⁹² AOGCC stated that it was assessing this specific penalty given “the critical role of the SVS device that was defeated, Hilcorp’s substantial history of noncompliance, and need to deter similar behavior.”⁹³

⁸⁴ AOGCC, Decision and Order Re: Failure to Test BOPE After Use, Milne Point Unit I-03, PTD 1900920, Other Order 109, Docket No. OTH-15-029 at 3 (May 3, 2016).

⁸⁵ AOGCC, Defeated Well Safety Valve System PBU H-24A (PTD 2071330), Other Order 188, Docket No. OTH-21-037 at 1 (Nov. 30, 2021).

⁸⁶ AOGCC, Decision and Order Re: Failure to Test BOPE After Use, Milne Point Unit I-03, PTD 1900920, Other Order 109, Docket No. OTH-15-029 at 4.

⁸⁷ *Id.* at 2–3.

⁸⁸ AOGCC, Decision and Order Re: Failure to Notify of Changes to an Approved Permit & Failure to Maintain a Safe Work Environment, Milne Point Unit J-08A, PTD 1991170, Docket No. OTH-15-025, Other Order 116 at 2-3 (Mar. 3, 2017).

⁸⁹ *Id.* at 4.

⁹⁰ *Id.* at 6.

⁹¹ *Id.* at 5.

⁹² AOGCC, Defeated Well Safety Valve System PBU H-24A (PTD 2071330), Other Order 188, Docket No. OTH-21-037 at 1 (Nov. 30, 2021).

⁹³ *Id.*

In addition to these actions and violations documented by AOGCC, the federal Pipeline and Hazardous Materials Safety Administration has sent Hilcorp numerous warning letters for probable violations of pipeline safety regulations in Alaska since November 2015.⁹⁴ The probable violations include violations of reporting requirements, failure to institute adequate procedures to inspect its pipelines, and failure to conduct required inspections, among others.⁹⁵

On top of these numerous safety violations, Hilcorp has had multiple leaks and spills in its current drilling operations in Alaska. For example, in February 2017, Hilcorp reported a natural gas leak in Cook Inlet.⁹⁶ The source of the leak, which was 98.67% methane, was later identified as an 8-inch transmission pipeline, and a flow analysis conducted after Hilcorp discovered the leak revealed that the pipeline began leaking in late December 2016.⁹⁷ Hilcorp was unable to investigate or repair the leak for nearly four months due to broken ice, tidal flows, and limited daylight.⁹⁸ It is estimated that the pipeline leaked 193,000 (at its lowest leakage rate) to 325,000 (at its highest leakage rate) of cubic feet of natural gas every day until the leak was finally reported repaired in April 2017.⁹⁹

Hilcorp also had multiple other incidents in Cook Inlet during 2017, including a spill of oil-based drilling mud from its Steelhead platform in the Trading Bay oil field,¹⁰⁰ an ongoing natural gas release from the Steelhead platform pipeline to shore,¹⁰¹ and a crude oil spill from its Anna platform in the Upper Inlet near Granite Point.¹⁰² And in December 2020, nearly 8,000 gallons of ‘slop oil’ spilled at an onshore Hilcorp facility near Cook Inlet.¹⁰³

⁹⁴ See PHMSA, Operator Information, Federal Inspection and Enforcement Data: Hilcorp Alaska, LLC, Enforcement Action Details (updated Sept. 5, 2017) (listing warning letters).

⁹⁵ *Id.*; see also PHMSA, Incident/Accident Report: Gas Transmission, <https://portal.phmsa.dot.gov/analytics/saw.dll?Dashboard> (describing a pipeline incident due to corrosion) (accessed Feb. 22, 2021).

⁹⁶ PHMSA, In the Matter of Hilcorp Alaska, LLC, CPF No. 5-2017-0004S, Notice of Proposed Safety Order (Mar. 3, 2017).

⁹⁷ *Id.* at 2–4.

⁹⁸ *Id.* at 7.

⁹⁹ S. Shankman, Natural Gas Leak in Cook Inlet Stopped, Effects on Marine Life Not Yet Known, Inside Climate News (Apr. 15, 2017); Alaska Department of Environmental Conservation, Hilcorp Natural Gas Leak from 8-inch Pipeline, Situation Report #1 (Feb. 15, 2017); Alaska Department of Environmental Conservation, Hilcorp Natural Gas Leak from 8-inch Pipeline, Situation Report #3 (Mar. 1, 2017); Alaska Department of Environmental Conservation, Hilcorp Natural Gas Leak from 8-inch Pipeline, Situation Report #5 (Apr. 14, 2017); Hilcorp Alaska, LLC, Middle Ground Shoal Gas Leak Sampling and Monitoring Plan, Mar. 2017.

¹⁰⁰ S. Cochran, Hilcorp Reports Another Spill in Cook Inlet, Alaska Public Media (Aug. 11, 2017).

¹⁰¹ R. McChesney, Hilcorp shuts down third pipeline in Cook Inlet, Alaska Public Media (April 7, 2017).

¹⁰² Alaska Department of Environmental Conservation, Hilcorp Anna Platform Crude Oil Line Leak, Situation Report (SITREP), 4th and Final, (May 7, 2017).

¹⁰³ Tegan Hanlon, Alaska Public Media, Nearly 8,000 gallons of ‘slop oil’ spilled at onshore Hilcorp facility near Cook Inlet, Dec. 16, 2020, <https://www.alaskapublic.org/2020/12/16/nearly-8000-gallons-of-slop-oil-spilled-atonshore-hilcorp-facility-near-cook-inlet/>.

Hilcorp has also had numerous accidents from its operations on the North Slope. For example, “in February 2015, Hilcorp spilled nearly 10,000 gallons of crude oil and produced water onto 40,000 square feet of arctic tundra and gravel pad. The spill resulted from a leak in the bottom of a pipeline from Hilcorp’s Milne Point Tract 14 production line.”¹⁰⁴

B. BOEM’s Draft EIS Fails to Examine the Impacts of Offshore Fracking and Acidizing

BOEM’s Draft EIS fails to examine the additional harmful impacts from extreme forms of oil extraction such as hydraulic fracturing or acidizing, despite the fact these practices are currently being employed in Alaska, including offshore.¹⁰⁵ These dangerous forms of oil extraction increase the numerous risks and harms inherent in offshore oil and gas development. Fracking and acidizing produce water and air pollution, and increase the risk of earthquakes and oil spills.

These techniques lead to dangerous pollution. A 2021 preliminary report provided to the Environmental Protection Agency by the oil industry analyzed fracking waste in concentrations likely to occur around offshore drilling platforms in the Gulf of Mexico. The report found that fracking effluent kills species in laboratory tests.¹⁰⁶ The report indicated that 520 barrels, or 21,840 gallons, of well treatment, completion, and workover fluids (collectively called “TCW” fluids) with industrial chemicals like biocides, polymers and solvents were discharged with every frack. From 2010 through 2020, the oil industry discharged an estimated 66.3 million gallons of TCW fluids chemicals into the Gulf.¹⁰⁷ (The actual amount discharged is likely higher as the industry is not required to report or track the amount of fracking chemicals discharged along with produced wastewater.) Toxicity data indicate that fracking fluid discharges from offshore platforms in the Gulf may cause acute toxicity to marine organisms such as fish and mysids in concentrations that are likely to occur near offshore wells.¹⁰⁸

Phenol formaldehyde resins are also used in offshore fracking, including in prior small fracture stimulations in Cook Inlet.¹⁰⁹ These resins are toxic and can cause cancer and mutations; if released into the marine environment, these pollutants have the potential to absorb other chemical compounds such as nonylphenol, increasing their toxicity to marine life.¹¹⁰ Other chemicals also previously used in offshore fracks in the Inlet are inherently toxic to marine

¹⁰⁴ EPA, News Release, BP Exploration Alaska and Hilcorp Alaska Settle with EPA and State of Alaska for North Slope Oil Spills (July 14, 2016).

¹⁰⁵ FracFocus, <https://fracfocusdata.org/DisclosureSearch/Search.aspx> (search for Alaska).

¹⁰⁶ AECOM, Year 1 Interim Report: Joint Industry Project Study of Well Treatment, Completion, and Workover Effluents (2021).

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ See Hydraulic Fracturing Fluid Product Component Information Disclosure, Hilcorp Alaska, State Waters - Kenai Quadrangle, Apr. 6, 2013.

¹¹⁰ Mato, Y. et al. 2001. Plastic resin pellets as a transport medium for toxic chemicals in the marine environment. *Environmental Science & Technology* 35:318-324.

life.¹¹¹ Indeed, some chemicals used in fracking are among the most toxic in the entire world with respect to aquatic life.¹¹² BOEM’s Draft EIS ignores the impacts of the discharge of these chemicals. To the extent it ignores it because it “assum[es]” produced wastewater will be reinjected, this is improper unless it is made part of the lease stipulation.¹¹³ Moreover, as the 2021 report to EPA makes clear, discharges from fracking and acidizing also occur as part of TCW fluids, not just produced water discharges.

Wastewater injection—a way oil companies dispose of wastewaters generated by fracking—can result in leaks and contamination through the loss of well casing integrity. Studies have shown that 30 percent of offshore oil wells in the Gulf of Mexico experienced well casing damage in the first five years after drilling, and damage increased over time to 50 percent after 20 years. Well stimulation can increase the risk of well casing damage. A recent scientific study found that older wells can become pathways for fluid migration, and that the high injection pressures used in fracking can “increase this risk significantly.” For this same reason, fracking can also increase the risk of oil and other spills.

C. BOEM Must Fully Analyze the Effects of Potential Oil Spills

Oil spills resulting from the proposed lease sale could have devastating effects on Cook Inlet and the wildlife and people who rely on it. As described more fully in the attached analysis by Dr. Susan C. Lubetkin, the DEIS’s oil spill analysis is flawed in a number of respects. As a result, the DEIS presents an incomplete and misleading picture of the significant risks and impacts of oil spills that could result from Lease Sale 258.

BOEM Erroneously Focuses Its Analysis on Surface Oil. BOEM’s analysis focuses on oil on the surface of the water. Large amounts of spilled oil, however, do not remain on the surface but rather disperse into the water column. BOEM does not analyze how oil in the water column will move around the region. It does not analyze how long, in what form, and where spilled oil that disperses into the water column will persist and cause harm to fish, whales, seals, and other species traveling through the water column. This omission misleadingly downplays the potential impacts of oil spills by, among other things, creating the impression that once oil is dispersed, it no longer causes harm.

BOEM’s Analysis of Surface Oil Spills Is Flawed. Even as to surface oil, BOEM’s analysis is seriously flawed.

¹¹¹ Fluid Product Disclosure, *supra* n. 88.

¹¹² CCST. 2015, Vol. II at 76.

¹¹³ See DEIS at 32–33; *cf.*, *S. Fork Band Council of W. Shoshone v. U.S. Dep’t of the Interior*, 588 F.3d 718, 727 (9th Cir. 2009) (agency must actually identify proposed mitigation measures and provide “an assessment of whether the proposed mitigation measures can be effective . . . [and] whether anticipated environmental impacts can be avoided”); see also *id.* at 726 (reliance on a non-NEPA document and process is unacceptable).

- BOEM’s analysis focuses for methodological (rather than impact) reasons only on how a large oil spill of greater than 1000 barrels of oil will move throughout the region. However, BOEM predicts that the lease sale will result in over four hundred spills smaller than 1000 barrels, some of them quite large. It does not analyze or even qualitatively explain how these smaller spills will move around and affect different parts of Cook Inlet while they persist in the environment.
- BOEM has violated basic and well-accepted statistical practices by failing to assess and disclose a range of probabilities for its conclusions about where spilled oil will travel on the surface of the water. As a result, BOEM presents its assessment of where spilled oil will travel with a greater level of certainty than the data support, obscuring the risk that any one area may be contaminated by spilled oil. BOEM’s focus on presenting the probability of spills reaching specific land segments also obscures the overall risk. If there is a large oil spill, oil will almost certainly reach land, and this will have dire consequences for the whole region.
- BOEM fails to take into account that a single large spill may break apart and have multiple trajectories. BOEM must provide this analysis to give a full picture of the effects of an oil spill.
- BOEM has departed from its practice—for lease sales in the Arctic Ocean, for example—of modeling how oil will move on the water’s surface for 360 days. Instead, it has modeled for less than a third of the time—110 days. BOEM must model for 360 days or explain and justify this departure in Cook Inlet from its past practice elsewhere. *See F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502 (2009)(noting an agency must provide a “reasoned explanation” for a change in position).

BOEM Has Ignored Directly Relevant Oil Spill Data from Cook Inlet. The Alaska Department of Environmental Conservation has compiled decades of data about oil spills from oil and gas infrastructure in Cook Inlet’s state waters and lands and made it available to the public. Rather than using these data to assess oil spill risks, BOEM bases its risk analysis on oil spill data from the Gulf of Mexico. This reliance on out-of-region data is unexplained and appears misguided given readily available regional data and the very different factors that may cause spills in sub-Arctic, tidally extreme Cook Inlet versus the sub-tropical Gulf of Mexico. It also significantly understates the risk of spills—the data show that Cook Inlet experiences more spills per barrel of oil produced than the Gulf of Mexico. Reliance on out-of-region spill data where region-specific data are available is also out of step with other agencies. BLM, for example, relies on data from the North Slope when assessing oil spill risks from oil and gas leasing on federal lands in the Arctic.

BOEM’s Analysis Erroneously Focuses Only on the Effects of Crude Oil. BOEM also has failed adequately to analyze spills of toxic substances other than oil. ADEC’s database discloses that oil activities result in spills of significant amounts of extremely hazardous substances such as phosphoric and sulfuric acid, other hazardous materials, and produced waters. BOEM must fully analyze the risk and impacts of these spills in addition to crude oil spills.

BOEM Does Not Disclose the Limits of Spill Containment in Cook Inlet. The Draft EIS also fails to acknowledge the limits of oil spill clean-up and containment at sea, particularly in the cold, often ice-filled, and strongly tidal conditions that prevail in Cook Inlet. The science, much of it the government’s own, clearly demonstrates the ineffectiveness of spill response in conditions prevalent in Cook Inlet.

To take but a few examples: The Bureau of Safety and Environmental Enforcement has acknowledged that “containment and recovery at sea rarely results in the removal of more than a relatively small proportion of a large spill, at best only 10 – 15 [percent] of the spilled oil and often considerably less.”¹¹⁴ Elsewhere the agency explained that mechanical containment and recovery in open water conditions typically recovers five to 30 percent of the spilled oil.¹¹⁵ For example, in the Beaufort Sea Multiple-Sale Environmental Impact Statement, the agency explained that: “On average, spill-response efforts result in recovery of approximately 10-20 [percent] of the oil released to the ocean environment.”¹¹⁶

The National Oceanic and Atmospheric Administration (NOAA) has cautioned that offshore mechanical containment and recovery rates rarely exceed 20 percent even under the best of circumstances. “Recovery rates of spilled oil in optimum situations (calm weather, in a harbor, rapid response) rarely exceed 20 percent, and response to spills in ice in remote areas is substantially more challenging.”¹¹⁷ NOAA also cautioned that “[o]n-scene response efforts may take days to weeks to implement, and are rarely effective.”¹¹⁸

¹¹⁴ Minerals Management Service, Technology Assessment & Research (TA&R) Project Categories, Mechanical Containment and Recovery at PDF 2-3 (Print screen of page as last updated on Apr. 21, 2010). After the *Deepwater Horizon*, BSEE removed with this statement from its website without explanation.

¹¹⁵ U.S. Dept. of the Interior, Minerals Management Service, Arctic Oil Spill Response Research and Development Program: A Decade of Achievement at PDF 14 (2009) (Decade of Achievement), http://www.uscg.mil/iccopr/files/MMSArcticResearch_2009.pdf (“5 to 30% for open ocean response without broken ice”).

¹¹⁶ Minerals Management Service, Alaska Outer Continental Shelf, Beaufort Sea Planning Area, Oil and Gas Lease Sales 186, 195, and 202, Final Environmental Impact Statement, at IV-17 (Feb. 2003), http://www.boem.gov/About-BOEM/BOEM-Regions/Alaska-Region/Environment/Environmental-Analysis/2003_001.aspx.

¹¹⁷ Lubchenco, J., Under Secretary of Commerce for Oceans and Atmosphere, Letter to S. Elizabeth Birnbaum, Director, Minerals Management Service, at 6 (Sept. 21, 2009).

¹¹⁸ *Id.*

Industry sources confirm this understanding. According to the International Tanker Owners Pollution Federation, “containment and recovery at sea rarely results in the removal of more than a relatively small proportion of a large [oil] spill, at best only 10 – 15 [percent] and often considerably less.”¹¹⁹ After the *Exxon Valdez* disaster, for example, the recovery rate was closer to eight percent.¹²⁰ Even in the Gulf of Mexico, the mechanical recovery efforts during the *Deepwater Horizon* response only recovered three percent of the total amount of oil released.¹²¹

A November 2010 report entitled “Beaufort Sea Oil Spills State of Knowledge Review and Identification of Key Issues”¹²² reviewed the current state of the knowledge about oil spills. It explained that containment and recovery for spill response “has significant limitations when used for large spills in either temperate or Arctic locations” and noted “[t]here is a growing recognition of the limitations of [containment and recovery] for large spills.”¹²³ It described the challenges of “[e]ncounter rate limitations.”¹²⁴ In any large oil spill, the oil “rapidly spread[s] to form a thin layer on the water surface. The problem is worse for blowout spills, where the initial spill condition may be an average slick thickness in the range of 0.001 mm to 0.01 mm.”¹²⁵ These problems are exacerbated in cold-water and ice conditions that may prevail in Cook Inlet. According to the Bureau of Safety and Environmental Enforcement, in broken ice conditions, oil spill recovery rates drop dramatically to between “1 [percent] to 20 [percent] depending on the degree of ice coverage and if responding during freeze-up or spring break-up.”¹²⁶

Following spill exercises in the Beaufort Sea in 2000, the Nuka Research & Planning Group explained:

[T]he limit to mechanical recovery with containment booms and skimmers in ice-infested waters is generally considered to be 20-30% ice coverage (Figure 44).

¹¹⁹ See International Tanker Owners Pollution Federation, *Limitations of Containment & Recovery at PDF 1* (Print screen of page as last updated on July 20, 2011). A more recent version of the web site similarly states that “key challenges” for oil containment and recovery “commonly combine to limit the proportion of oil spilled that can be recovered to 10-15 [percent].” See International Tanker Owners Pollution Federation, *Containment & Recovery*, <http://www.itopf.com/knowledge-resources/documents-guides/response-techniques/containment-recovery/>.

¹²⁰ Wolfe, D.A. *et al.*, *The Fate of the Oil Spilled from the Exxon Valdez*, 28 ENV. SCI. & TECH. 13, 561A, at 563A (1994); *id.*, 567A (even total recovery and disposal constituted only 14 percent).

¹²¹ Lubchenco, J. *et al.*, *BP Deepwater Horizon Oil Budget: What Happened to the Oil?* (Aug. 4, 2010) Fig. 1, http://www.noaanews.noaa.gov/stories2010/PDFs/OilBudget_description_%2083final.pdf.

¹²² The authors of this report, SL Ross Environmental Research and DF Dickins Associates, have served as consultants for BSEE dating back twenty years. See, e.g., <http://www.sloss.com/publications/MMSStudiesNF.htm> (“Since 1988, SL Ross has been a major participant in the [BSEE] Technology Assessment & Research (TAR) program.”); DF Dickins, *Oil Spill Projects*, <http://www.dfdickins.com/oilspills.html>.

¹²³ SL Ross Environmental Research Ltd., DF Dickins Associates LLC., *Envision Planning Solutions Inc. 2010, Beaufort Sea Oil Spills State of Knowledge Review and Identification of Key Issues*, Environmental Studies Research Funds Report No. 177, at 29-30 (Nov. 2010) (Beaufort Knowledge Review), <http://www.esrfunds.org/pdf/177.pdf>.

¹²⁴ *Id.* at 30.

¹²⁵ *Id.*

¹²⁶ *Decade of Achievement at PDF 14.*

However, the 2000 offshore response exercises in the Alaska Beaufort Sea demonstrated that the actual operating limits were closer to 10%, and that during fall freeze-up, ice conditions as low as 1% constituted the operating limit for a barge-based mechanical recovery system using conventional boom and skimmers[.] In addition to ice coverage, the characteristics of the ice regime are an important determinant of response efficiency. The 2000 offshore exercises demonstrated that fall ice conditions (freeze-up) can be more challenging than spring break up (Robertson and DeCola 2001, NRC 2003a). Therefore, 10% ice coverage in fall may pose different limits than 10% coverage in spring.¹²⁷

After the *Deepwater Horizon* disaster, and roughly ten years after the Beaufort Sea oil spill exercises, Pew Environmental Group commissioned a report that reached the same troubling conclusions regarding mechanical cleanup in ice infested seas, in this case in the Arctic Ocean:

If a major blowout were to occur in the Arctic OCS, the same mechanical cleanup techniques [as those used in the Deepwater Horizon spill response] (boats with skimmers and booms) would be applied at a much less efficient recovery rate. Although some refinements have been made to adapt certain types of equipment for use in cold or ice-infested waters, there have been no breakthroughs in oil spill response technologies to significantly enhance the capacity to recover oil when sea ice is present. The National Academy of Sciences (NAS) determined that ‘no current cleanup methods remove more than a small fraction of oil spilled in marine waters, especially in the presence of broken ice’ (National Research Council-NAS 2003).¹²⁸

BOEM must account for the limits of oil spill response at sea in general and in the conditions that prevail in Cook Inlet in particular. Its failure to do so renders its impact conclusions arbitrary and in violation of NEPA.

D. BOEM’s Greenhouse Gas Emissions Analysis Is Inadequate

NEPA requires agencies to analyze direct, indirect, and cumulative impacts. *Ocean Advocates. v. U.S. Army Corps of Eng’rs*, 402 F.3d 846, 868 (9th Cir. 2005); 40 C.F.R. 1508.7; *id.* § 1508.8. Federal courts have consistently found that these impacts include greenhouse gas emissions that will contribute to or exacerbate climate change. *See Ctr. for Biological Diversity*

¹²⁷ Nuka Research & Planning Group, LLC., Oil Spill Response Mechanical Recovery Systems for Ice-Infested Waters: Examination of Technologies for the Alaskan Beaufort Sea at 58 (June 2007), <http://www.dec.state.ak.us/spar/ipp/docs/2007%20Mechanical%20Recovery%20Ice.pdf>.

¹²⁸ Nuka Research & Planning Group, LLC, Oil Spill Prevention and Response in the U.S. Arctic Ocean: Unexamined Risks, Unacceptable Consequences at 8 (Nov. 2010), <http://www.pewtrusts.org/~media/legacy/uploadedfiles/peg/publications/report/oil20spill20preventionpdf.pdf>.

v. Bernhardt, 982 F. 3d 723, 737-740 (9th Cir. 2020); *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172 (9th Cir. 2008); *Sierra Club v. Fed. Energy Reg. Comm’n*, 867 F. 3d 1357, 1374 (D.C. Cir. 2017).

1. BOEM must assess the lease sale’s GHG emissions in the context of commitments to address the climate crisis.

In addition to quantifying accurately the full GHG consequences of the lease sale, BOEM must put the lease sale’s emissions in context. Because any project’s emissions may appear “individually minor” when compared against global (or even national) totals, quantifying emissions is only a first step; agencies must also explain the project’s “incremental impact” on climate change.¹²⁹ BOEM must disclose what effect its decision to hold or forgo the lease sale would have on the United States’ commitments to limit warming to below 1.5 °C ¹³⁰~~or~~.

a. NEPA requires agencies to consider the incremental impacts of GHG emissions.

NEPA requires agencies to “provide the necessary contextual information about [an action’s] cumulative and incremental environmental impacts.”¹³¹ This rule recognizes that in many situations, a pollutant’s marginal impact depends on the level of pollution in the system.¹³² For environmental impacts that have a tipping point, quantification of a project’s pollutants “is a necessary component” of the agency’s analysis but “not a sufficient description of the actual environmental effects that can be expected [from the project].”¹³³

Applying this rule in the climate change context, the Ninth Circuit has held that an agency must “evaluate the ‘incremental impact’ that [GHG] emissions will have on climate change or on the environment more generally in light of other past, present, and reasonably foreseeable actions.”¹³⁴ In *Center for Biological Diversity v. National Highway Traffic Safety*

¹²⁹ *Nat’l Highway Traffic Safety Admin.*, 538 F.3d at 1215-1217; see also *California v. Bernhardt*, 472 F. Supp. 3d 573, 623 (N.D. Cal. 2020) (“[Agencies] must communicate ‘the actual environmental effects resulting from . . . emissions’ of greenhouse gas, not just quantify [those emissions].”) (quoting *Nat’l Highway Traffic Safety Admin.*, 538 F.3d at 1216).

¹³⁰ See *Nat’l Highway Traffic Safety Admin.*, 538 F.3d at 1220-21 (concluding petitioners’ argument raised substantial questions about the effects of the agency’s action on the human environment).

¹³¹ *Id.* at 1217; see also *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004) (agencies must analyze the “degree that each [environmental factor] will be impacted”).

¹³² See, e.g., *Klamath-Siskiyou Wildlands Ctr.*, 387 F.3d at 994 (acknowledging “the addition of a small amount of sediment to a creek may have only a limited impact on salmon survival, or perhaps no impact at all” but that multiple additions of sediment “could add up to something with a much greater impact, until there comes a point where even a marginal increase will mean that no salmon survive.”).

¹³³ *Id.* at 995; see also *id.* at 997 (setting aside environmental assessments that, among other things, quantified the total amount of spotted owl habitat that the projects would adversely affect but did not discuss “the effect of this loss on the spotted owl throughout the watershed”).

¹³⁴ *Nat’l Highway Traffic Safety Admin.*, 538 F.3d at 1216.

Administration, the agency analyzed stricter light truck fuel efficiency standards by describing general environmental impacts from climate change and calculating the percent decrease in GHG emissions from each alternative.¹³⁵ As the court acknowledged, there is compelling evidence that GHGs are pollutants that have environmental tipping points: “The climate system involves many processes and feedbacks that interact in complex non-linear ways. This interaction can give rise to thresholds in the climate system that can be crossed if the system is perturbed sufficiently.”¹³⁶

Based on climate change’s non-linear impacts, the court held that the agency needed to (1) analyze the “*actual* environmental effects resulting from [light truck] emissions” or (2) “place those emissions in context of other [fuel efficiency standard] rulemakings.”¹³⁷ As the court later explained in finding the agency’s FONSI arbitrary, without the required NEPA analysis, it was “impossible for [the agency] to know whether a change in [GHG] emissions of 0.2 [percent] or 1 [percent] or 5 [percent] or 10 [percent] w[ould] be a significant step toward averting the ‘tipping point’ and irreversible adverse climate change” or whether a larger decrease was necessary.¹³⁸ An agency’s analysis must be able to answer this question to take a hard look at climate change impacts.

District courts have applied *Center for Biological Diversity v. National Highway Traffic Safety Administration* to further explain why quantifying emissions without additional context is insufficient. In *California v. Bernhardt*, the district court rejected as insufficient a NEPA assessment of a regulation relaxing rules for methane flaring and leakage that only quantified emissions and compared them to nationwide totals, citing evidence that “framing sources as less than 1 [percent] of [national or] global emissions is dishonest and a prescription for climate disaster.”¹³⁹ As the court recognized, an agency “must communicate the *actual* environmental effects resulting from emissions of greenhouse gas, not just quantify them.”¹⁴⁰

WildEarth Guardians v. U.S. Bureau of Land Management underscored the need for agencies to look at similar projects’ contributions to climate change. Claiming it could not perform more detailed analysis, BLM calculated the lease sales’ emissions as a percentage of state- and nationwide emissions.¹⁴¹ The court acknowledged “[t]he global nature of climate change and greenhouse-gas emissions” but explained that this underscored the need for BLM to consider other projects’ contributions.¹⁴² Agencies must look at projects “in combination with each

¹³⁵ See *id.* at 1216, 1223.

¹³⁶ *Id.* at 1222 (quoting IPCC Working Group I, *Climate Change 2001: The Scientific Basis, Technical Summary* at 53 (2001)) (alterations omitted).

¹³⁷ *Id.* at 1216.

¹³⁸ *Id.* at 1221 (alterations and citation omitted).

¹³⁹ 472 F. Supp. 3d at 623 (quoting Stack & Vandenberg, *The One Percent Problem*, 111 COLUM. L. REV. 1385, 1393 (2011)).

¹⁴⁰ *Id.* (internal quotation marks and alterations omitted).

¹⁴¹ *WildEarth Guardians v. U.S. Bureau of Land Mgmt.*, 457 F. Supp. 3d 880, 895 (D. Mont. 2020).

¹⁴² *Id.* at 894.

other,”¹⁴³ to determine “whether, or how, to alter the program to lessen cumulative impacts’ on climate change.”¹⁴⁴ Together, *California* and *WildEarth Guardians* underscore that NEPA requires agencies to place their projects in the context of climate science and emission targets because percentages do not tell (and often obscure) the collective action problem presented by GHG emissions.

CEQ’s Final Climate Guidance explains how federal agencies should address climate change in their NEPA analyses.¹⁴⁵ In its guidance, the CEQ recognizes that:

Climate change results from the incremental addition of GHG emissions from millions of individual sources, which collectively have a large impact on a global scale. CEQ recognizes that the totality of climate change impacts is not attributable to any single action but are exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA. Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact.¹⁴⁶

Further, if information relevant to reasonably foreseeable significant adverse impacts is incomplete or unavailable, an agency must in an EIS summarize the existing relevant credible scientific evidence and must nonetheless attempt to evaluate such impacts based on theoretical approaches or methods generally accepted in the scientific community.¹⁴⁷

¹⁴³ *Id.* (citing *Nat’l Highway Traffic Safety Admin.*, 538 F.3d at 1217).

¹⁴⁴ *Id.* (quoting *Churchill Cty. v. Norton*, 276 F.3d 1060, 1080 (9th Cir. 2001)).

¹⁴⁵ The Final Climate Guidance applies to all federal agency actions subject to NEPA, “including land and resource management decisions.” See Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews (Aug. 5, 2016), at 9; 86 Fed. Reg. 10,252 (Feb. 19, 2021) (noting rescission of Trump administration guidance, initiation of a review of climate guidance, and instructing agencies to follow 2016 guidance pending completion of the review).

¹⁴⁶ *Id.* at 10-11 (internal references omitted).

¹⁴⁷ 40 C.F.R. § 1502.21(c)(3) & (4).

b. The science shows that any additional GHG emissions from new lease sales are incompatible with meeting commitments to hold warming to 1.5°C.

Scientific research has established that there is little, and rapidly diminishing, space in the global carbon budget for new fossil fuel infrastructure and extraction if we are to avoid the worst dangers from climate change.¹⁴⁸ Instead, as set forth in greater detail in the Purpose and Need discussion above, new fossil fuel leasing, exploration, production, and infrastructure projects need to be halted and much existing production phased out to meet the Paris Agreement climate targets and avoid catastrophic climate damages.¹⁴⁹

The Biden Administration recognizes the climate imperative and states that it is committing the government to taking decisive action. It is the policy of the administration to “deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy.”¹⁵⁰ This approach includes a “reconsideration of Federal oil and gas permitting . . . practices.”¹⁵¹ Indeed, the federal oil and gas permitting program requires swift and immediate change to avert climate disaster.

c. BOEM must assess the lease sale’s potential GHG emissions in the context of the climate crisis and commitments to limit warming to below 1.5°C

BOEM must assess the cumulative lifecycle emissions from the proposed Cook Inlet lease sale, in combination with other fossil fuel production in Alaska, and nationwide, in the context of the global and U.S. carbon budgets, based on climate change thresholds. Although BOEM’s draft EIS for the potential Cook Inlet lease sale quantifies the downstream greenhouse gas consequences of the project, it fails to put those emissions into the context of the climate crisis and science described above. BOEM must consider its action within the context of climate science, fully assessing how the decision to hold or forgo the lease sale will affect the nation’s commitments to keep warming below 1.5°C.

2. BOEM’s Reliance on the MarketSim Model Creates a Misleading Picture of Greenhouse Gas Emissions

BOEM’s analysis of the greenhouse gas emissions from the no action alternative and the proposed lease sale are improper for several reasons. BOEM relies heavily on the MarketSim

¹⁴⁸ D. Tong *et al.*, *Committed emissions from existing energy infrastructure jeopardize 1.5 °C climate target*, 572 NATURE 373 (2019) (Tong *et al.* 2019).

¹⁴⁹ *Id.*

¹⁵⁰ 86 Fed. Reg. at 7622.

¹⁵¹ *Id.* at 7624.

model to evaluate emissions from the various alternatives, as well as to inform the upstream and downstream emissions estimates.¹⁵² However, the model does not provide a full and accurate picture of the emissions that could result from the alternatives set forth in the DEIS – underestimating the climate benefits of the no action alternative and underestimating the climate harms from holding the lease sale. The flaws in the MarketSim model are set forth below.

MarketSim Erroneously Assumes Constant Trends in Energy Demand and Greenhouse Gas Emissions Production. BOEM’s MarketSim analysis assumes that U.S. oil and gas production and greenhouse gas emissions will stay near constant through 2050. This is unreasonable and unrealistic, would lead to catastrophic climate damages, and results in BOEM underestimating the greenhouse gas emissions reductions resulting from the No Action alternative.

BOEM’s MarketSim analysis uses the U.S. Energy Information Administration’s (EIA’s) 2020 Annual Energy Outlook reference case to evaluate the greenhouse gas impacts of the Proposed Action, No Action, and other alternatives.¹⁵³ However, the EIA 2020 reference case which extends through 2050 assumes that the U.S. “continues to produce historically high levels of crude oil and natural gas.”¹⁵⁴ The EIA reference case also assumes that the U.S. fails completely to meet its climate commitments under the Paris Agreement as U.S. greenhouse gas emissions in 2050 are only 4% lower than 2019 levels¹⁵⁵ instead of reaching near zero emissions. This scenario does not account for shifting trends in energy demands, including the rapidly growing capacity and price competitiveness of solar and wind energy that can substitute for fossil fuels, or expanding policy action to phase out fossil fuels and reduce emissions, such as federal and state emissions reduction policies or U.S. commitments under the Paris Agreement.

Rhodium Group, a leading independent energy research firm, examined the effects of federal and state vehicle and utility sector policy “on the books” as of May 2021. They found that demand for transportation fuels, which account for around 70 percent of U.S. petroleum consumption¹⁵⁶,

¹⁵² See DEIS at 44-45.

¹⁵³ New York University’s Institute for Policy Integrity (IPI) has also engaged in a thorough critique of the MarketSim model for minimizing or altogether eliminating the climate impacts of major fossil-fuel projects. See Institute for Policy Integrity, New York University School of Law, *Toward Rationality in Oil and Gas Leasing: Building the Toolkit for Programmatic Reforms* (Aug. 2021) at 10;

https://policyintegrity.org/files/publications/Toward_Rationality_in_Oil_and_Gas_Leasing_%282%29.pdf

¹⁵⁴ U.S. Energy Information Administration, Annual Energy Outlook 2020 with projection to 2050 (January 29, 2020) at 3.

¹⁵⁵ *Id.*

¹⁵⁶ Office of Energy Efficiency & Renewable Energy, FOTW #1094: The Transportation Sector Consumes More Petroleum than All Other Sectors Combined, Dept. of Energy (August 12, 2019),

<https://www.energy.gov/eere/vehicles/articles/fotw-1094-august-12-2019-transportation-sectorconsumes-morepetroleum-all>.

will be between 8 and 12 percent below 2019 levels by 2027 and 10 and 15 percent below 2019 levels by 2030, with a central estimate of 12.5 percent.¹⁵⁷

In another analysis, Rhodium Group looked at the potential impact of new federal policy, such as electric vehicle tax incentives and public charging grants, as well as EPA emissions standards. They found that federal incentives for EVs and charging infrastructure (such as those included in the Build Back Better bill) would cut gasoline and diesel demand by about another 4 percent by 2030. Adding on top a strengthened emissions standard for light-duty vehicles could cut demand another 7 percent by 2030.¹⁵⁸

Additional vehicle policies are currently under discussion at the state and federal levels and will further decrease oil demand. President Biden has set a goal for reaching 50 percent zero emission vehicle (ZEV) sales by 2030¹⁵⁹, and the governors of twelve states¹⁶⁰ support setting a federal 100 percent ZEV sales by 2035 goal. These states and others are also expected to follow suit¹⁶¹ in setting goals in line with California's 100 percent ZEV sales by 2035 commitment, as well as its rule for all new medium- and heavy-duty truck sales to be zero-emission by 2045.¹⁶² These policy shifts will significantly decrease domestic oil demand beyond the levels anticipated by Rhodium Group.

¹⁵⁷ "Taking Stock 2021: US Emissions Outlook Under Current Policy," (July 15, 2021), <https://rhg.com/research/taking-stock-2021/>. EIA AEO 2021 also shows a decline in gasoline demand through 2030, (<https://www.eia.gov/outlooks/aeo/data/browser/#/?id=2-AEO2021&cases=ref2021&sourcekey=0>) but since it only models the effects of policy on the books as of September 2020, it does not incorporate some more recent policy that Rhodium does (for example, California's 100% ZEV sales by 2035 order). Thus, EIA's transportation fuel projections show more gradual demand declines than Rhodium's analysis. Energy Information Administration (EIA), Summary of Legislation and Regulations Included in the Annual Energy Outlook 2021, February 2021, <https://www.eia.gov/outlooks/aeo/assumptions/pdf/summary.pdf>. EIA and Rhodium projections also differ because EIA assumes higher EV costs than Rhodium (<https://rhg.com/wpcontent/uploads/2021/07/Taking-Stock-2021-Technical-Appendix.pdf>) and EIA is usually more conservative in its assumptions on emerging technologies that may reduce fuel consumption. According to an AEO retrospective comparing EIA projections with realized energy use, EIA overestimated transportation energy use in 77.6 percent of its projections between 1994 and 2019 (<https://www.eia.gov/outlooks/aeo/retrospective/>).

¹⁵⁸ Rhodium Group, Pathways to Build Back Better – Investing in Transportation Decarbonization, (May 13, 2021), <https://rhg.com/research/build-back-better-transportation/pathways-to-build-back-betterinvesting-in-transportation-decarbonization/>.

¹⁵⁹ White House, Fact Sheet: President Biden Announces Steps to Drive American Leadership Forward on Clean Cars and Trucks, (August 5, 2021), <https://www.whitehouse.gov/briefing-room/statementsreleases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-truc>

¹⁶⁰ Multi-State ZEV Governors Letter, April 2021, <https://www.gov.ca.gov/wpcontent/uploads/2021/04/4.21.21-Multi-State-Gover>

¹⁶¹ In July 2020, California and a coalition of 15 states and Washington, D.C. signed a Memorandum of Understanding (MOU) committing to accelerate the adoption of zero-emission technology, with a target of 100 percent zero-emission new medium and heavy-duty truck sales by 2050. Cal. Air Resources Bd., 15 states and the District of Columbia join forces to accelerate bus and truck electrification (July 14, 2020), <https://ww2.arb.ca.gov/news/15-states-and-district-columbia-join-forces-accelerate-bus-and-truck-electrification>.

¹⁶² Office of Gov. Gavin Newsom, Governor Newsom Announces California Will Phase Out Gasoline-Powered Cars & Drastically Reduce Demand for Fossil Fuel in California's Fight Against Climate Change (Sept. 23, 2020), <https://www.gov.ca.gov/2020/09/23/governor-newsom-announces-californiawill-phase-out-gasoline-powered-cars-drastically-reduce-demand-for-fossil-fuel-in-californias-fightagainst-climate-change/>.

With the rapidly growing capacity and price competitiveness of renewables, clean solar and wind energy, paired with energy storage, efficiency and grid technologies, these energy sources can be scaled up to meet U.S. and global energy needs, while providing 100% energy access in a just transition.¹⁶³ Solar photovoltaics and wind energy are by far the fastest-growing new energy resources, comprising 90% of the global power sector’s growth in 2020.¹⁶⁴ Several solar technologies and wind power are now cheaper than the cheapest fossil fuel generation, while renewables across the board are achieving cost parity.¹⁶⁵

In recognition of the climate emergency and need for just clean energy transition, the Biden administration has made a series of climate pledges that, while still inadequate to meet the Paris Agreement climate limit, put the U.S. on a pathway of decreasing greenhouse gas emissions and fossil fuel production, contrary to the baseline scenario used by BOEM. For example, President Biden rejoined the Paris Agreement, launched a review of the fossil fuel leasing and permitting program, pledged to reduce U.S. greenhouse gas emissions by 50-52% below 2005 levels by 2030, and pledged to reaching a 100% carbon pollution-free power sector by 2035 and a net-zero economy by 2050.¹⁶⁶

BOEM’s unrealistic assumption of near-constant high-volume oil and gas production and emissions over the next three decades is inconsistent with its obligation under NEPA to make assumptions that are reasonable and based on the best available information.¹⁶⁷ In practice, this assumption significantly inflates the estimates of how much avoided oil and gas production under the No Action alternative would be substituted by fossil fuels, rather than by clean, renewable energy and energy efficiency. As a result of inflating the amount of fossil fuel substitution that would occur, BOEM underestimates the net greenhouse gas reductions that would result from the No Action alternative. BOEM should instead model a baseline scenario that assumes that the U.S. and other countries meet their commitments under the Paris Agreement and transition to clean, renewable energy.

MarketSim contains misleading assumptions about substitution of energy supplies.

MarketSim assumes that a large percentage of avoided oil and gas production under the No

¹⁶³ Teske & Niklas, 2021; Carbon Tracker Initiative, *The Sky’s The Limit: Solar and wind energy potential is 100 times as much as global energy demand* (2021), <https://carbontracker.org/reports/the-skys-the-limit-solar-wind/>

¹⁶⁴ Press Release, International Energy Agency, *Renewables are stronger than ever as they power through the pandemic* (May 11, 2021), <https://www.iea.org/news/renewables-are-stronger-than-ever-as-they-power-through-the-pandemic>.

¹⁶⁵ Lazard 2020; Simon Evans, *Carbon Brief*, *Solar is now ‘cheapest electricity in history’, confirms IEA* (Oct. 13, 2020, 8:37 PM), <https://www.carbonbrief.org/solar-is-now-cheapest-electricity-in-history-confirms-iea>.

¹⁶⁶ White House, *Tackling the Climate Crisis at Home and Abroad*, Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021); White House, *Fact Sheet: President Biden Renews U.S. Leadership on World Stage at U.N. Climate Conference* (November 1, 2021).

¹⁶⁷ *See, e.g., Balt. Gas & Elec. Co.*, 462 U.S. at 103 (1983) (stating that agency’s assumptions in NEPA review must reflect “reasoned decisionmaking” and “consider[] the relevant factors”).

Action alternative would be replaced by foreign oil imported into the US which does not reflect the significantly decreasing trend in oil imports, and results in an underestimate of the greenhouse gas emission reductions resulting from the No Action alternative.

BOEM's MarketSim analysis estimates that 66% of the avoided oil production under the No Action alternative would be replaced by foreign oil imports into the US, totaling 162 mmBOE.¹⁶⁸ However, this appears to ignore the significantly decreasing trend in foreign oil imports as a result of increasing U.S. crude oil production. According to the EIA, U.S. crude oil production increased from 5.3 million barrels per day in 2009 to 12.1 million barrels a day in 2019 and resulted in a decrease in crude oil imports from 9 million barrels per day in 2009 to 7 million barrels per day in 2019.¹⁶⁹ In addition, after Congress lifted the 40-year old crude oil export ban in 2015, crude oil exports skyrocketed, increasing by ~750% and averaging more than three million barrels per day—about a quarter of all U.S. production.¹⁷⁰ In 2020 the U.S. became a net exporter of crude oil and petroleum products.¹⁷¹ Therefore, the BOEM's estimation that the U.S. will substitute 66% of avoided oil production with oil imports under the No Action case is not consistent with current realities.

This is significant because BOEM's modeling estimates that the production and transport of foreign oil results in higher greenhouse gas emissions per barrel than the domestic supply.¹⁷² For example, CO₂ emissions emitted from OCS production are estimated at 0.007759 metric tons per barrel of oil equivalent (boe) versus overseas production, which is estimated at 0.036522 metric tons per boe.¹⁷³ Therefore, by assuming that a high proportion of avoided OCS production in the No Action case is replaced by more-greenhouse-gas intensive foreign imports rather than less-greenhouse-gas-intensive domestic supply leads to an overestimate of the net GHG emissions resulting from the No Action alternative. BOEM should use a substitution scenario that is aligned with current and projected trends in fossil fuel imports and exports.

The model also assumes that there will be near perfect substitution of energy supplies – for example, the model assumes that if extraction cannot occur on a parcel of public land, oil

¹⁶⁸ DEIS at 44.

¹⁶⁹ U.S. Energy Information Administration, U.S. petroleum export exceed imports in September (December 5, 2019), <https://www.eia.gov/todayinenergy/detail.php?id=42176>

¹⁷⁰ Government Accountability Office (GAO), Crude Oil Markets: Effects of the Repeal of the Crude Oil Export Ban, October 2020, GAO-21-118, <https://www.gao.gov/products/GAO-21-118>; Oil Change International and Greenpeace, Policy Briefing: Carbon Impacts of Reinstatement the U.S. Crude Export Ban, January 2020, <http://priceofoil.org/2020/01/28/crude-export-ban-carbon>.

¹⁷¹ U.S. Energy Information Administration, The U.S. exported slightly more petroleum than it imported in the first half of 2021 (September 17, 2021).

¹⁷² Industrial Economics, Inc., Forecasting Environmental and Social Externalities Associated with Outer Continental Shelf (OCS) Oil and Gas Development, Volume 1: 2018 Revised Offshore Environmental Cost Model (OECM). Sterling (VA): U.S. Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2018-066. 120 p + appendices (2018) at Table 5.

¹⁷³ Wolvovsky, E. and Anderson, W., OCS Oil and Natural Gas: Potential Lifecycle Greenhouse Gas Emissions and Social Cost of Carbon, BOEM OCS Report 2016-065, 44 pp (2016) at Foreword, 12.

producers would extract similar quantities from state or private lands at similar prices.¹⁷⁴ MarketSim produces a substitution rate of 95%, but recent studies reviewed by IPI show that substitution rates are likely significantly lower, and closer to 50%.¹⁷⁵ In a larger sense, MarketSim's assumption ignores the realities of oil and gas production, as well as consumer behavior. Federal lands are often the cheapest source for energy, and producers turning elsewhere will often face higher costs for energy production.¹⁷⁶ Consumers will shift their behavior in response to higher energy prices, and will implement conservation measures and/or seek out cheaper energy sources.¹⁷⁷ MarketSim's assumptions that there will be near perfect substitution does not sufficiently account for these effects, and lead to erroneous conclusions about the effects of leasing and extraction projects.

MarketSim's assumptions about elasticities are outdated. MarketSim's elasticities are outdated and questionable. Many of MarketSim's demand and supply elasticities are outdated or based on inconsistent sources, even after the update to the values made in September 2021. BOEM should ensure that elasticities are updated from the recent literature, derived from the same version of NEMS, and consistent with the calibrations run for quantity and prices in each year.

MarketSim's methane modeling is out of date. BOEM uses a global warming potential (GWP) for methane that is outdated and significantly underestimates methane's heating effects on the climate. Additionally, BOEM only uses the 100-year GWP rather than the more policy-relevant 20-year time frame for GWP. BOEM must use the updated GWP from the authoritative Intergovernmental Panel on Climate Change over a 20-year time frame that is most policy-relevant for accurately assessing the impacts of the methane pollution from the Proposed Action.

In the DEIS, BOEM uses an outdated GWP for methane of 25.¹⁷⁸ However, the 2013 IPCC Fifth Assessment Report reported a much higher GWP for fossil fuel sources of methane of 87 over a 20-year time period and 36 over a 100-year time period.¹⁷⁹ The 2021 IPCC Sixth Assessment Report updated the GWP for fossil methane to 83 over a 20-year time period and 30 over a 100-year time period,¹⁸⁰ also much higher than BOEM's GWP of 25. The IPCC GWP values make

¹⁷⁴ *Toward Rationality* at 11, 14.

¹⁷⁵ *Id.* at 14.

¹⁷⁶ *Id.*

¹⁷⁷ *Id.*

¹⁷⁸ DEIS at Table 4-9.

¹⁷⁹ Myhre, G. et al., 2013: Anthropogenic and Natural Radiative Forcing. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, [Stocker, T.F. et al. (eds.)], Cambridge University Press (2013) at Table 8.7.

¹⁸⁰ IPCC, 2021 at Table 7.15.

clear that methane is a super-pollutant 83 to 87 times more powerful than CO₂ at warming the atmosphere over a 20-year period, second only to CO₂ in driving climate change.¹⁸¹

Accurate representation of methane’s heating effects is critical because methane emissions have a relatively immediate effect in increasing the rate of temperature rise in the near-term due to its high GWP and shorter residence time in the atmosphere of roughly a decade. Deep cuts in methane emissions are critical for reducing near-term temperature rise and climate change damages and avoiding the crossing of planetary tipping points—abrupt and irreversible changes in Earth systems to states wholly outside human experience, resulting in severe physical, ecological and socioeconomic harms.¹⁸² Using the policy-relevant time frame of 20 years for methane GWP, rather than just the 100-year GWP, is critical for evaluating the near-term harms of methane pollution at a time when methane emissions must be halved by 2030 to achieve the Paris Agreement’s 1.5°C climate limit and prevent the worst damages from the climate crisis.¹⁸³

E. BOEM’s Social Cost of Greenhouse Gas Analysis Should More Fully Disclose the Costs and Benefits of the Proposed Action

In its analysis of the social costs of greenhouse gases that could be produced by the lease sale, BOEM acknowledges that it has not conducted a “complete cost-benefit analysis,” and that its analysis does not “present a direct comparison with other impacts analyzed in this Draft EIS.” DEIS at 48-49. BOEM must provide a more robust discussion of both the social costs and benefits of the Proposed Action.

While NEPA does not require an explicit cost-benefit analysis, where such an analysis is included, it “cannot be misleading.” *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1182 (D. Colo. 2014); *see also, Utah Physicians for a Healthy Environment v. U.S. Bureau of Land Management*, 528 F. Supp. 3d 1222, 1231-32 (D. Utah 2021)(finding agency analysis arbitrary and capricious for failure to quantify socioeconomic costs from greenhouse gases and climate change); *Mont. Env’t Info. Ctr. v. U.S. Off. of Surface Mining*, 274 F. Supp. 3d 1074, 1098 (D. Mont. 2017)(finding that it was arbitrary and capricious to consider the benefits, but not the costs of coal mining project); *WildEarth Guardians v. Bernhardt*, No. CV 17-80-BLGSPW, 2021 WL 363955, at *8-9 (D. Mont. Feb. 3, 2021).

¹⁸¹ United Nations Environment Programme and Climate and Clean Air Coalition, *Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions*, Nairobi: United Nations Environment Programme (2021), <https://www.unep.org/resources/report/global-methane-assessment-benefits-and-costs-mitigating-methane-emissions>, at 11.

¹⁸² IPCC 2018 at 262.

¹⁸³ United Nations Environment Programme and Climate and Clean Air Coalition, *Global Methane Assessment 2021* at 11.

In *Utah Physicians*, the court held that BLM’s analysis of greenhouse gas effects was arbitrary and capricious, because it qualitatively discussed the effects of GHGs on the climate but failed to quantify the socioeconomic costs, and further that its discussion was spread out throughout the document. 528 F. Supp. 3d at 1232. The court noted that “it is unacceptable for the information and analysis that is included on the topic to be spread out and disjointed in such a way that the public is unlikely to find the related pieces...or to have confidence that the agency considered the interrelated qualitative and quantitative information as a whole.” *Id.* In *High Country Conservation Advocates*, the court found the Forest Service’s greenhouse gas analysis arbitrary and capricious because while it acknowledged that the project would release emissions that could contribute to climate change, it failed to discuss the impacts caused by such emissions. 52 F. Supp. 3d at 1190. The Forest Service also engaged in misleading analysis by including the benefits from fossil fuel extract, but not the costs, in its final EIS. *Id.* at 1191. The court in *Mont. Env’t Info. Ctr.* found the Office of Surface Mining’s NEPA analysis of a coal lease expansion deficient for similar reasons – the agency evaluated the socioeconomic benefits of expanded mining activity, but not the costs. 274 F. Supp. 3d at 1098.

In its DEIS, BOEM acknowledges that it “does not monetize most of the major costs or benefits and does not include all revenue streams from the proposed lease sale but seeks to quantify certain impacts related to employment numbers and labor income.” DEIS at 49. In the DEIS, BOEM discusses the number of jobs and wages generated by the oil industry in the region, as well as the types of jobs and revenues it expects will be created by the Proposed Action. DEIS at 114-17. However, it does not disclose the jobs and wages generated by other industries in the region. *Id.* at 115. Nor does it discuss the jobs, wages, revenues and other economic indicators associated with sport-fishing and other types of recreation and tourism activities. *Id.* at 102-07. Likewise, the DEIS does not discuss in detail the economic effects the Proposed Action could have on subsistence communities. DEIS at 109-11. Further, it does not discuss in great detail the socioeconomic costs and benefits that would result from the greenhouse gas emissions caused by various alternatives. *Id.* at 51-53.

As various courts have found, because the discussion of costs and benefits is distributed throughout the document and BOEM does not provide a true comparison of the economic benefits of the Proposed Action against the economic costs to other industries or the climate and environment, BOEM creates a misleading picture of the economic costs and benefits of the Proposed Action. Having opted to include a social cost of carbon analysis, BOEM should monetize the major costs and benefits and discuss not just the employment and labor effects of the Proposed Action.

F. BOEM Must Fully Analyze the Effects of the Proposed Action on ESA Listed Species

1. Steller's Eider

In the DEIS, BOEM acknowledged that vulnerable and declining bird populations could experience long-term and/or widespread impacts from development activities.¹⁸⁴ These impacts include habitat alterations that displace birds and interfere with foraging, collision risks from vessel and platform activity, and oil spill risks.¹⁸⁵ BOEM also acknowledged that the threatened Steller's eider may be particularly vulnerable to risks from development, given its limited population.¹⁸⁶ Yet, BOEM minimizes the potential for the Proposed Action to have adverse effects on the species. BOEM must take a "hard look" at the effects of the project on the Steller's eider.

The Alaska-breeding population of Steller's eiders was listed as threatened on June 11, 1997 due, in part, to habitat loss from development.¹⁸⁷ The marine waters of southwest Alaska are important for molting, resting, feeding, and wintering.¹⁸⁸ Currently, the only known North American nesting population is concentrated near Barrow in northern Alaska.¹⁸⁹ The western Alaska subpopulation appears to have nearly disappeared; since 1970, only 11 nests have been reported from a few locations.¹⁹⁰ In 2001, NMFS designated 2,830 mi² (7,330 km²) of critical habitat for the Alaska-breeding population of Steller's eiders.¹⁹¹

A significant proportion of the world's population of Steller's eiders winter in shallow, nearshore waters from the eastern Aleutian Islands to lower Cook Inlet in Alaska, where they may be exposed to petroleum and other contaminants.¹⁹² Cook Inlet itself provides winter habitat to substantial numbers of the eider population.¹⁹³ Oil and gas development poses various threats to Steller's eiders, including: damaging eider habitat, forcing birds to locate to alternate, lower-quality habitats, and causing the loss of eiders directly.¹⁹⁴ Lethal and sublethal effects of spills

¹⁸⁴ DEIS at 78.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 70, 76-77.

¹⁸⁷ 62 Fed. Reg. 31748 (June 11, 1997).

¹⁸⁸ Biological Opinion at 65.

¹⁸⁹ Steller's Eider (*Polysticta stelleri*), USFWS Alaska Region, <https://www.fws.gov/alaska/pages/endangered-species/stellers-eider>; Steller's Eider (*Polysticta stelleri*), Alaska Dept. of Fish and Game, <http://www.adfg.alaska.gov/index.cfm?adfg=stellereider.printerfriendly#:~:text=Alaska's%20breeding%20population%20occurs%20in,population%20breeding%20in%20North%20America>.

¹⁹⁰ *Id.*

¹⁹¹ 66 Fed Reg. 8850 (Feb. 2, 2001).

¹⁹² Biological Opinion at 47.

¹⁹³ Larned, W.W. 2006. Winter distribution and abundance of Steller's eiders (*Polysticta stelleri*) in Cook Inlet, 2004-2005. U.S. Fish and Wildlife Service, Waterfowl Management Branch, Anchorage, Alaska. OCS Study, MMS 2006-066 at 2.

¹⁹⁴ *Id.* at 32.

include contamination of their critical habitat. Harbors and bays tend to have increased marine traffic and Steller’s eiders have been observed roosting and feeding in nearshore waters near industrial activity and amid ship traffic in these areas. Steller’s eiders may be attracted to drilling structures and lights, increasing the risk of bird strikes.

A more comprehensive discussion of the status of and stressors facing Alaska-breeding Steller’s eiders is available in the most recent Species Status Assessment (SSA).¹⁹⁵

2. Cook Inlet Beluga Whale

Cook Inlet beluga whales (CIBW) are both ecosystem and cultural sentinels. This critically endangered population is genetically and geographically isolated from all other beluga stocks, meaning their role as apex predators in the Cook Inlet ecosystem is unique and cannot be filled by another species. Since the 1970s the CIBW Distinct Population Segment (DPS) has declined nearly 80% from around 1,300 to approximately 300 whales.¹⁹⁶ On May 31, 2000, NMFS listed the Cook Inlet beluga whale Distinct Population Segment (DPS) as “depleted” under the MMPA.¹⁹⁷ NMFS listed the Cook Inlet beluga whale as an endangered species in October 2008.¹⁹⁸ NMFS also designated critical habitat for the CIBW, including 3,013 square miles of marine habitat in Cook Inlet that was determined as biologically important to the conservation of the species.¹⁹⁹ Despite mitigation measures taken by the federal government to date, the current population is disappointingly on a downward trend of 2.3% annually. The most recent population estimate is just 279 individuals.²⁰⁰ Cook Inlet beluga whales are currently one of nine “Species in the Spotlight”—a NMFS initiative that includes animals considered most at risk for extinction in the near future and prioritizes their recovery efforts.²⁰¹ NMFS has taken various actions over the past decade in an attempt to halt the decline, yet despite these efforts the population continues to show no signs of recovery. The removal of even one animal from the population is expected to have a population-level effect.

The CIBW live in one of the most populated and industrialized regions in Alaska, where their health, habitat, and survival are continuously threatened. The Proposed Lease Sale 258 would take place in Lower Cook Inlet, Alaska, overlapping with habitat of the critically endangered

¹⁹⁵ U.S. Fish and Wildlife Service, Status Assessment of the Alaska-breeding population of Steller’s eiders Version 1 (March 2019), <https://ecos.fws.gov/ServCat/DownloadFile/163633>.

¹⁹⁶ National Marine Fisheries Service. 2008. Conservation Plan for the Cook Inlet beluga whale (*Delphinapterus leucas*). National Marine Fisheries Service, Juneau, Alaska at 29.

¹⁹⁷ 64 Fed. Reg. 56298 (Oct. 19, 1999).

¹⁹⁸ *Id.*

¹⁹⁹ 76 Fed. Reg. at 20180.

²⁰⁰ Sheldon, K. E. W. and P. R. Wade (editors). 2019. Aerial surveys, distribution, abundance, and trend of belugas (*Delphinapterus leucas*) in Cook Inlet, Alaska, June 2018. AFSC Processed Rep. 2019-09, 93 p. Alaska Fish. Sci. Cent., NOAA, Natl. Mar. Fish. Serv., 7600 Sand Point Way NE, Seattle WA 98115.

²⁰¹ NOAA Fisheries, *Endangered Species Conservation: Species in the Spotlight*, <https://www.fisheries.noaa.gov/topic/endangered-species-conservation#species-in-the-spotlight>

DPS. Critical habitat includes two specific marine areas in Cook Inlet (termed Critical Habitat Area 1 and Area 2). The primary constituent elements of CIBW Critical Habitat Area 2²⁰² will be compromised by oil and gas exploration, operation and production, including:

- Increased exposure to noise and disturbance from seismic surveys, oil and gas operation and production, and vessel traffic, leading to reduced communication space, chronic stress, and possible habitat abandonment.
- Reduced prey quality, quantity, availability, and access from oil and gas exploration, operation and production.
- Impaired health due to exposure to pollutants from oil spills, contaminants, wastewater discharge, fuel spills, and heavy metals.

Oil and gas exploration, development, and production activities represent a serious threat to the CIBW. Activities associated with oil and gas exploration and development include increased vessel presence, increased and potentially injurious noise, pollution (i.e., spills, discharges, etc.) potential impacts to prey, and habitat displacement. This DEIS is inadequate in its description of effects of noise pollution, oil spills, pollution and contaminants, prey reduction and habitat modification. The action alternatives and mitigation measures are insufficient to prevent further harm to Cook Inlet beluga. Additionally, the Cook Inlet beluga is currently under a 5- year review. This review may shed light on current threats and better mitigations for the species. BOEM should not authorize any activities that could potentially harm belugas while this review is in process. The no action alternative is the only alternative that would guarantee no harm to this fragile population. The DEIS fails to adequately address the potential impacts of pollution, noise, and the cumulative effects of activities associated with Proposed Lease Sale 258 oil and gas exploration and development.

a. Inadequate Impact Analysis

i. Pollution

The Cook Inlet Beluga Recovery Plan describes oil spills as a catastrophic event and a threat of high concern and could have population-level consequences.²⁰³ One catastrophic spill of

²⁰² Critical Habitat Area 2 includes all marine waters of Cook Inlet south of a line from the mouth of Threemile Creek (61°08.5' N., 151°04.4' W.) to Point Possession (61°02.1' N., 150°24.3' W.) and north of 60°15.0' N., including waters within 2 nautical miles seaward of the Mean High Water datum along the western shoreline of Cook Inlet between 60°15.0' N. and the mouth of the Douglas River (59°04.0' N., 153°46.0' W.); all waters of Kachemak Bay east of 151°40.0' W.; and waters of the Kenai River below the Warren Ames bridge at Kenai, Alaska. 76 Fed. Reg. 20,108 (Apr. 11, 2011).

²⁰³ NMFS. (2016). Recovery Plan for the Cook Inlet Beluga Whale (*Delphinapterus leucas*). Juneau, AK: National Marine Fisheries Service.

sufficient quantity could very well injure or kill a significant number of animals, having devastating consequences for a small population such as Cook Inlet beluga.²⁰⁴ Despite this high level of concern, a literature search revealed that few publications exist pertaining to pollution and fewer addressing oil spills directly and their effect on Cook Inlet belugas.²⁰⁵ In addition to one large spill having the potential to generate a population level impact to the magnitude of sealing this population's fate in functional extinction, this DEIS ignores chronic, smaller-scale pollution that requires a different profile of risks and mitigations. These smaller spills are and have been frequent, occurring an average of 1.25 times every month for 17 years.

In the past decade multiple smaller spills have been reported. In December 2020 Alaska Department of Conservation reported a leak from an underground line at a Hilcorp Alaska, LLC location 20 miles from Kenai near Cook Inlet, resulting in a 7,980-gallon oil spill.²⁰⁶ In April 2021, Hilcorp reported another undersea natural gas leak near one of its platforms in Cook Inlet, approximately six miles offshore from Nikiski.²⁰⁷ Three previous leaks were reported for the same pipeline; twice in 2014 and once in 2017, where ice in the inlet blocked repairs of the leak for three months.²⁰⁸

The Cook Inlet Beluga Recovery Plan states:

From 1994 to 2011, there were 255 events in or near Cook Inlet releasing more than 100 gallons or 100 pounds of reportable substances – an average of 15 sizable but not catastrophic events every year. These spills included 90 events releasing a total of 84,195 gallons (318,713 liters) of various types of oils (diesel, hydraulic, gasoline, engine lube, aviation fuel, and natural gas); 48 events releasing a total of 25,404 gallons and 25,055,199 pounds of hazardous materials (bases or alkaline substances, drilling muds, glycols, and urea); and 73 events releasing 1,574 gallons and 243,241 pounds of extremely hazardous substances (anhydrous ammonia, hydrochloric acid, and sulfur dioxide).²⁰⁹

As the DEIS acknowledges, this lease sale increases the likelihood of both large and small spills. Yet it fails to analyze differences between, and impacts resulting from, large, infrequent spills

²⁰⁴ Reed, D. H., O'Grady, J. J., Ballou, J. D., and Frankham, R. (2003). The frequency and severity of catastrophic die-offs in vertebrates. *Anim. Conserv.* 6(2):109-114. doi: 10.1017/ S1367943003003147.

Wade, P. R., Reeves, R. R., and Mesnick, S. L. (2012). Social and behavioural factors in cetacean responses to overexploitation: are odontocetes less "resilient" than mysticetes? *J. Mar. Sci.* 2012:Article ID 567276. doi: 10.1155/2012/567276

²⁰⁵ Hobbs, R. C., Wade, P. R., and Shelden, K. E. W. (2015). Viability of a small, geographically Isolated population of beluga whale, *Delphinapterus leucas*: effects of hunting, predation, and mortality events in Cook Inlet, Alaska. *Mar. Fish. Rev.* 77(2):59-88. doi: 10.7755/MFR.77.2.4

²⁰⁶ <https://www.alaskanewssource.com/2020/12/17/leak-in-hilcorp-underground-line-leads-to-near-8000-gallon-oil-spill-northwest-of-kenai/>

²⁰⁷ <https://www.alaskapublic.org/2021/04/06/hilcorp-gas-pipeline-springs-another-leak/>

²⁰⁸ *Id.*

²⁰⁹ Recovery Plan at III-5-6.

with potential catastrophic impact and smaller, virtually continuous toxic releases and the short- and long-term effects to beluga. The few studies investigating the presence of pollutants in Cook Inlet have confirmed that pollution is indeed a threat to Cook Inlet beluga recovery as beluga (in Cook Inlet and from other populations) are prone to bioaccumulation of significantly higher levels of polycyclic aromatic hydrocarbons through their prey than Arctic and aquarium belugas.²¹⁰ Several other studies document a strong link between hormone alternations and increased incidences of cancer.²¹¹

ii. Impacts to Beluga Whale Prey Species

Noise from oil and gas activities can additionally impact CIBW by affecting their prey species. The DEIS summarily dismisses the impacts of noise on prey species: “Most noises produced by post-lease activities as described in the E&D Scenario are incapable of injuring marine mammals or their prey because they lack the necessary source levels, and/or the noises do not occur in the frequencies that are likely to injure marine mammals (Richardson et al., 1995; OSPAR Commission, 2009; NMFS, 2018).”²¹² There is no further analysis on how CIBW prey could potentially be adversely impacted, yet studies on fisheries from various parts of the world have reported that intense acoustic activities, particularly airgun surveys, have resulted in declines in catch.²¹³ A group of Norwegian scientists documented these declines in a Barents Sea fishery and found that catch rates of haddock and cod (the latter known for its particular sensitivity to low-frequency sound) plummeted in the vicinity of an airgun survey across a 1600-square-mile area; in another study, catch rates of rockfish were similarly shown to decline.²¹⁴ Drops in catch

²¹⁰ Poirier, M. C., Lair, S., Michaud, R., Hernández-Ramon, E. E., Divi, K. V., Dwyer, J. E., et al. (2019). Intestinal polycyclic aromatic hydrocarbon-DNA adducts in a population of beluga whales with high levels of gastrointestinal cancers: PAH-DNA adducts in intestine of whales with cancer. *Environ. Mol. Mutagen.* 60(1):29–41. doi: 10.1002/em.22251

²¹¹ Béland, P., De Guise, S., Girard, C., Lagacé, A., Martineau, D., Michaud, R., et al., (1993). Toxic compounds and health and reproductive effects in St. Lawrence beluga whales. *J. Great Lakes Res.* 19(4), 766-775. doi: 10.1016/S0380-1330(93)71264-2

De Guise, S., Martineau, D., Béland, P., and Fournier, M. (1995). Possible mechanisms of action of environmental contaminants on St. Lawrence beluga whales (*Delphinapterus leucas*). *Environ. Health Persp.* 103(Suppl 4):73-77. doi: 10.1289/ehp.95103s473

Simond, A. E., Houde, M., Lesage, V., Michaud, R., Zbinden, D., and Verreault, J. (2019). Associations between organohalogen exposure and thyroid- and steroid-related gene responses in St. Lawrence Estuary belugas and minke whales. *Mar. Pollut. Bull.* 145:174-184. doi: 10.1016/j.marpolbul.2019.05.029

²¹² EIS at 86

²¹³ See, e.g., McCauley, R.D., J. Fewtrell, A.J. Duncan, C. Jenner, M.-N. Jenner, J.D. Penrose, R.I.T. Prince, A. Adhitya, J. Murdoch, and K. McCabe (2000), Marine seismic surveys: analysis and propagation of airgun signals, and effects of air-gun exposure on humpback whales, sea turtles, fishes, and squid, at 185.

²¹⁴ Engås, A., S. Løkkeborg, E. Ona, and A.V. Soldal (1996), Effects of Seismic Shooting on Local Abundance and Catch Rates of Cod (*Gadus morhua*) and Haddock (*Melanogrammus aeglefinus*), 53 *Canadian Journal of Fisheries and Aquatic Sciences* 2238-49 (1996); J.R. Skalski, W.H. Pearson, and C.I. Malme, Effects of sound from a geophysical survey device on catch-per-unit-effort in a hook-and-line fishery for rockfish (*Sebastes* spp.), *Can. J. Fish. Aquat. Sci.* 49: 1357-65 (1992). See also Løkkeborg, S., and A.V. Soldal (1993), The influence of seismic exploration with airguns on cod (*Gadus morhua*) behaviour and catch rates, *ICES Mar. Sci. Symposium* 196: 62-67.

rates in these experiments range from 40% to 80%.²¹⁵ A variety of other species, including herring, zebrafish, pink snapper and juvenile Atlantic salmon, have been observed to react to various noise sources with acute alarm.²¹⁶ Belugas in the inlet are known to feed on several species in the same families, including salmon and tomcod.²¹⁷ It is not clear whether the observed declines in catch rates are due to fish moving horizontally away from the source array or vertically within the water column, or both; in any case, displacement of fish over a portion of the inlet could significantly affect the beluga's primary food source. BOEM must include in their analysis the potential effects of the Proposed Lease Sale 258 and resulting oil and gas activities on Cook Inlet beluga whale prey.

iii. Cumulative Impacts

BOEM is required by NEPA in the EIS process to consider and analyze the cumulative impacts of multiple activities in Cook Inlet combined with the proposed lease sale. Other risk factors facing the CIBW include increased ship traffic, increased dredging, increased in-water noise levels, military operations, competition with fisheries for prey, sewage waste discharges, urban runoff and other habitat modification. BOEM must consider whether the cumulative impacts from Lease Sale 258, along with the proposed oil and gas activities, will have a significant effect on beluga whales. In addition to oil and gas development, a number of development projects are planned that would significantly increase encroachment, pollution, vessel traffic and noise levels in Cook Inlet. Potential development projects include the Donlin Gold Mine Proposed Natural Gas Pipeline, the Diamond Point Rock Quarry, the Pebble Mine Project, Alaska LNG Pipeline, West Susitna Access Road, Port of Anchorage expansion, other oil and gas activities in Cook Inlet, subsistence and commercial fisheries, marine transportation, shipping, and tourism. The effects of Proposed Lease Sale 258 would be exacerbated by these activities.

The DEIS fails to sufficiently analyze the cumulative effects of sound from all sources in Cook Inlet on CIBW and other marine mammals. Current industrial activity and proposed development in Cook Inlet produces a variety of anthropogenic noise sources that could interfere with Cook Inlet beluga habitat including: propeller cavitation, engines, and depth sounders associated with vessels; dredging activities; pile driving activities; military detonations; aircraft; airguns used for seismic surveys; drilling associated with oil and gas exploration; hydraulic/mechanical noise; and sounds associated with other noise-producing activities.²¹⁸ Analysis of sound in the EIS should include the collective effects of seismic surveys, G&G surveys, acoustical positioning,

²¹⁵ *Id.*

²¹⁶ See Blaxter, J.H.S., and R.S. Batty (1985), The development of startle responses in herring larvae, *J. Mar. Biol. Ass'n U.K.* 65: 737-750; Knudsen, F.R., P.S. Enger, and O. Sand (1992), Awareness reactions and avoidance responses to sound in juvenile Atlantic salmon, *Salmo salar* L., *J. Fish Biol.* 40: 523-534; McCauley et al., Marine seismic surveys at 126-61.

²¹⁷ Fall, J.A., D.J. Foster, and R.T. Stanek (1984), The use of fish and wildlife resources in Tyonek, Alaska, technical report series 105 from the Alaska Dep't of Fish & Game.

²¹⁸ Recovery Plan at III-11

and other activities associated with oil and gas activities. Rather than considering each activity in isolation, BOEM must assess their combined effects, considering timing, proximity, and similarity of frequencies.

iv. Cumulative Oil and Gas Activities and Authorized Take

In the 2016 CIBW Recovery Plan, Recovery Action 62 recommends NMFS reassess its current project-by-project approach for authorizing harassment takes to determine whether a comprehensive approach is more effective at reducing cumulative effects.²¹⁹ In Recovery Action 62 it states that in 2012, when an estimated 312 belugas remained, “over 2,700 takes were requested for research and development projects” and recommended that NMFS “review the current system for allocation of takes (by harassment) of CI belugas to see if a comprehensive approach, rather than by individual project, increases managers' ability to reduce the cumulative effects of harassment takes by numerous projects.”²²⁰

A recent publication compiled data from publicly available documents about CIBW research and incidental take authorizations effective since publication of the Recovery Plan (2016), identified the amount of legal harassment NMFS authorized annually.²²¹ By the end of 2020, NMFS authorized nearly 120,000 takes of CIBWs cumulatively for 2017–2025. In 2020 alone, 22,350 takes were authorized of an estimated 267 whales, equating to 8371% of the estimated population size and each CIBW in the population authorized to be legally harassed 84 times.²²²

Since 2017, for oil and gas related activities alone, 30 incidental takes were authorized for Apache Alaska seismic activities (2016 to 2021), 40 were authorized to Harvest, Alaska LLC, a subsidiary of Hilcorp Alaska LLC (2018 to 2019) for oil and gas pipeline installation activities associated with the Cook Inlet Pipeline Cross Inlet Extension Project, 58 were authorized to Harvest/Hilcorp (2019 to 2024), for oil and gas activities and including exploration, development, production, and decommissioning activities within Hilcorp's area of operations in and adjacent to Cook Inlet, and 61 were authorized to Alaska Liquefied Natural Gas Project for construction of facilities to transport and offload LNG in Cook Inlet, including a marine terminal and the mainline crossing (2021 to 2025).²²³ Authors state: “A review of publicly available literature regarding take authorizations and CIBW-related documents on NMFS websites suggested there has not been an examination of the total amount of take authorized (research and incidental) for this endangered species at this scale. This is likely because the status quo

²¹⁹ Recovery Plan at VI-30

²²⁰ *Id.*

²²¹ Migura, M., & Bollini, C. (2021). To take or not take? Examination of the status quo process for issuing take authorizations of endangered Cook Inlet beluga whales and implications for their recovery. *Conservation Science and Practice*, e590. <https://doi.org/10.1111/csp2.590>

²²² *Id.*

²²³ *Id.* (see Table 3; Figure 1).

authorization process is designed to review requests for take at a project-by-project level in only a portion of the CIBWs' range, rather than taking a comprehensive approach.”²²⁴

The DEIS states “Further mitigation may also be required by the National Marine Fisheries Service (NMFS) or the U.S. Fish and Wildlife Service (USFWS) through the ESA Section 7 consultation process. Also, any activities that would incidentally “take” marine mammals are prohibited unless authorized by a Letter of Authorization or an Incidental Harassment Authorization under the Marine Mammal Protection Act (MMPA).”²²⁵ However the DEIS utterly fails to address how BOEM will deal with cumulative impacts of authorized take and simultaneous permitted oil and gas activities.

Simultaneous oil and gas activities are not uncommon in Cook Inlet. In 2014 alone Apache, Furie, and SAExploration were authorized to conduct seismic exploration in Cook Inlet, largely within the same general areas. In comments to NMFS regarding its MMPA permits for oil and gas exploration activities, the Marine Mammal Commission has repeatedly recommended that NMFS defer any take permits for Cook Inlet beluga whales “until it has a better understanding of the factor or factors that are causing or contributing to the observed population trend or until the population begins to demonstrate sustained growth.”²²⁶ And further stated that “combined, aggregate, or cumulative disturbance associated with the broad suite of activities occurring in the Inlet (e.g., oil and gas exploration, development, and production, port construction, shipping, coastal development, military activities, fisheries, etc.) is the cause or a significant contributor to the continued 10-year decline of this endangered population.”²²⁷

Similarly, the Proposed Lease Sale 258 DEIS fails to consider a comprehensive approach to cumulative impacts of multiple E&D activities on this critically endangered species. The DEIS states: “Activities producing excessive amounts of noise include seismic surveying, pile-driving and other construction activities, drilling for oil or gas, vessel or air traffic, and dredging. The loudest of these activities are seismic surveying, pile-driving and other construction activities, and dredging; all of which have potential to compromise a marine mammal’s ability to hear and properly interact with their natural environment.”²²⁸ BOEM should consider and analyze the potential cumulative effects of multiple oil and gas activities resulting from Proposed Lease Sale 258 on the critically endangered CIBW. In general, potential simultaneous operations associated with oil and gas are not adequately addressed in the DEIS.

²²⁴ *Id.* At 2.

²²⁵ DEIS at 24.

²²⁶ Marine Mammal Commission. (2014). 2014 Marine Mammal Commission Letters and Agency Responses. Letter submitted to the National Marine Fisheries Service on January 31, 2014 regarding the Application from Apache Alaska Corp. to take small numbers of marine mammals incidental to a 3D seismic survey in Cook Inlet, Alaska. <https://www.mmc.gov/letters-and-reports/letters/2014-marine-mammal-commission-letters-and-agency-responses/>.

²²⁷ *Id.*

²²⁸ DEIS at 93-94

v. Noise

CIBW are highly gregarious odontocetes that rely on sound for foraging, communicating, avoiding predators, and other social and biological functions. Masking important vocalizations can have direct negative implications for predator avoidance, navigation, and foraging.²²⁹ In addition to masking important social and biological functions, noise can also cause permanent and temporary threshold shifts in beluga that can have lasting consequences to the individual. Noise is identified as a threat of high concern in the Recovery Plan. Anthropogenic noise introduced into their environment can disturb beluga whales and interfere with these important biological behaviors, necessary for their survival as a species. Anthropogenic noise reduces the survivability, and recovery of the CIBW.²³⁰

The harmful effects of high-intensity anthropogenic noise include:

- strandings and other non-auditory physical injuries;
- temporary or permanent loss of hearing, which impairs an animal's ability to communicate, avoid predators, and detect and capture prey;
- avoidance behavior, which can lead to abandonment of habitat or migratory pathways;
- disruption of biologically important behaviors such as mating, feeding, nursing, or migration, or loss of efficiency in conducting those behaviors;
- aggressive (or agonistic) behavior, which can result in injury;
- masking of biologically meaningful sounds, such as the call of predators or potential mates;
- chronic stress, which can compromise viability, suppress the immune system, and lower the rate of reproduction;
- habituation, causing animals to remain near damaging levels of sound, or sensitization, exacerbating other behavioral effects; and
- declines in the availability and viability of prey species, such as fish.²³¹

²²⁹ Erbe, C., Reichmuth, C., Cunningham, K., Lucke, K., and Dooling, R. (2016). Communication masking in marine mammals: a review and research strategy. *Mar. Pollut. Bull.* 103(1-2):15-38. doi: 10.1016/j.marpolbul.2015.12.007

Small, R. J., Brost, B., Hooten, M., Castellote, M., and Mondragon, J. (2017). Potential for spatial displacement of Cook Inlet beluga whales by anthropogenic noise in critical habitat. *Endang. Species R.* 32:43-57. doi: 10.3354/esr00786

²³⁰ 73 Fed. Reg. 63919, 62922 (Oct. 22, 2008) (“noise...may have some impact on this population...”); 74 Fed. Reg. 63080, 63087 (Dec. 2, 2009) (“Anthropogenic noise above ambient levels may cause behavioral reactions in whales (harassment) or mask communication between these animals...[noise] would be expected to have consequences to this DPS in terms of survival and recovery.”); NMFS, Conservation Plan at 5 (“This Conservation Plan reviews and assesses the known and possible threats influencing Cook Inlet beluga whales...Potential human impacts include subsistence harvest, poaching, fishing, pollution, vessel traffic, tourism and whale watching, coastal development, noise, oil and gas activities, and scientific research.”) (emphasis added).

²³¹ For a review of research on behavioral and auditory impacts of undersea noise, see, e.g., Richardson, W.J., C.R. Greene, Jr., C.I. Malme, and D.H. Thomson (1995), *Marine Mammals and Noise*; National Research Council (2003), *Ocean Noise and Marine Mammals*; Whale and Dolphin Conservation Society (2004), *Oceans of Noise*;

Belugas are highly sensitive to a range of anthropogenic sounds, including broadband sounds whose energy is concentrated in the low frequencies.²³² For example, belugas in the Canadian high Arctic were found to produce alarm calls at 85 km distance from a large ship and icebreaker, and to start engaging in avoidance behavior at 45-60 km, where received levels were 94-105 decibels; apparently the whales moved to areas up to 80 km from the vessels and did not return for 1-2 days following the transit.²³³ In the presence of various types of ships, including cargo vessels, tug boats, and motor boats, belugas in other areas have been shown to break off foraging and other activities and to separate or swim away, even at relatively low received levels; in many cases, the effects were reported to last for some time after the source had departed.²³⁴ In addition, a number of changes in vocalization behavior have been observed in beluga whales in association with motorboat and ferry traffic in the St. Lawrence estuary, including progressive reductions in calling rates, a shift in frequency bands, and an increase in the repetition of particular calls, all of which suggest a decrease in calling efficiency, particularly for communications between herds.²³⁵ Beluga whales in the Alaskan Colville River Delta were found to increase vocalization rates in response to seismic activity (i.e., due to a ‘noisier environment’).²³⁶

Further oil and gas development in Cook Inlet will harm the CIBW and will threaten its continued existence. The seismic surveys used in oil and gas exploration affect the habitat distribution and important biological behaviors of marine wildlife. The large airgun arrays typically used in offshore exploration can produce effective peak pressures of sound that are higher than those of virtually any other manmade source save explosives—as much as 250 decibels or more; and survey vessels frequently employ multi-beam and sub-bottom profiling

Hildebrand, J. (2006), Impacts of anthropogenic sound, in Ragen, T.J., J.E. Reynolds, W.F. Perrin, R.R. Reeves, and S. Montgomery, *Marine Mammal Research: Conservation beyond Crisis* at 101-123.

²³² See NMFS, Conservation Plan at 7 (“Beluga whales have a well-developed sense of hearing and echolocation. These whales hear over a large range of frequencies...”).

²³³ Findley, K.J., G.W. Miller, R.A. Davis, and C.R. Greene, Jr. (1990), Reactions of belugas, *Delphinapterus leucas*, and narwhals, *Monodon monoceros*, to ice-breaking ships in the Canadian high Arctic, *Can. J. Fish. Aquat. Sci.* 224: 97-117; see also Cosens, S.E., and L.P. Dueck (1993), Ice breaker noise in Lancaster Sound, NWT, Canada: implications for marine mammal behavior, *Mar. Mamm. Sci.* 9: 285-300.

²³⁴ See, e.g., Fraker, M.A. (1977), The 1976 white whale monitoring program, MacKenzie estuary, report for Imperial Oil, Ltd., Calgary; Fraker, M.A. (1977), The 1977 white whale monitoring program, MacKenzie estuary, report for Imperial Oil, Ltd., Calgary; Fraker, M.A. (1978), The 1978 white whale monitoring program, MacKenzie estuary, report for Imperial Oil, Ltd., Calgary; Stewart, B.S., W.E. Evans, and F.T. Awbrey (1982), Effects of manmade water-borne noise on the behaviour of beluga whales, *Delphinapterus leucas*, in Bristol Bay, Alaska, Hubbs Sea World report 82-145 to NOAA; Stewart, B.S., F.T. Awbrey, and W.E. Evans (1983), Belukha whale (*Delphinapterus leucas*) responses to industrial noise in Nushagak Bay, Alaska: 1983; Edds, P.L., and J.A.F. MacFarlane (1987), Occurrence and general behavior of balaenopterid cetaceans summering in the St. Lawrence estuary, Canada, *Can. J. Zoo.* 65: 1363-1376.

²³⁵ Lesage, V., C. Barrette, M.C.S. Kingsley, and B. Sjare (1999), The effect of vessel noise on the vocal behavior of belugas in the St. Lawrence River estuary, Canada. *Mar. Mamm. Sci.* 15: 65-84.

²³⁶ Lomac-MacNair, K. S., Smultea, M. A., Yack, T., Lammers, M., Norris, T., Green, G., ... & James, V. (2019). Marine mammal visual and acoustic surveys near the Alaskan Colville River Delta. *Polar Biology*, 42(2), 441-448.

sonars as well, with source levels rising well above 200 decibels.²³⁷ In 2004, the International Whaling Commission’s Scientific Committee—considered the world’s foremost experts on whales—concluded that increased sound from seismic surveys was “cause for serious concern.”²³⁸ In addition to the noise from seismic surveys, the construction of oil and gas facilities may result in habitat loss for CIBW through both actual loss and potential displacement.

In comparison to other threats to beluga recovery, noise is relatively well studied, indicating there is sufficient evidence to be highly concerned with how noise effects this species. While data gaps are still present regarding how noise pollution effects belugas, the majority of these publications express deep concern over the cumulative amount, frequency, and seasonality of noise in Cook Inlet.²³⁹ Both globally and locally, researchers are calling on management agencies to be more precautionary, proactive, and ambitious in regulating and utilizing technological solutions and management actions to mitigate and reduce noise pollution.²⁴⁰ There is more than enough justification for BOEM to be more cautious than this DEIS demonstrates in permitting any action that will increase artificial man-made sounds, or the anthropophony, in ecologically sensitive areas such as Cook Inlet. In response to noise, studies have documented behavioral responses by CIBW such as changes in group composition, increased diving with decreased feeding, increased travel, and increased spatial displacement.²⁴¹^[OBJ]

Additionally, there is concern that CIBW are already lacking a safe passage due to noise pollution.²⁴² The DEIS states:

²³⁷ See Richardson et al., *Marine Mammals and Noise*; Nieukirk, S.L., K.M. Stafford, D.K. Mellinger, R.P. Dziak, C.G. Fox (2004), Low-frequency whale and seismic airgun sounds recorded in the mid-Atlantic Ocean, *J. Acoust. Soc. Am.* 115: 1832-43; Tolstoy, M., J.B. Diebold, S.C. Webb, D.R. Bohnenstiehl, E. Chapp, R.C. Holmes, and M. Rawson (2004), Broadband calibration of R/V Ewing seismic sources, 31 *Geophysical Res. Letters* L14310-L14313.

²³⁸ International Whaling Commission, 2004 Report of the Scientific Committee: Chairman’s Summary at § 12.2.5.1.

²³⁹ Castellote, M.; Thayre, B.; Mahoney, M.; Mondragon, J.; Schmale, C.; Small, R. J. (2016). Anthropogenic noise in Cook Inlet beluga habitat: sources, acoustic characteristics, and frequency of occurrence. Alaska Department of fish and Game.

Small, Rj; Brost, B; Hooten, M; Castellote, M; Mondragon, J. (2017). Potential for spatial displacement of Cook Inlet beluga whales by anthropogenic noise in critical habitat. *Endangered Species Research*. 32:43-57 10.3354/esr00786

²⁴⁰ Duarte, C. M., Chapuis, L., Collin, S. P., Costa, D. P., Devassy, R. P., Eguiluz, V. M., Erbe, C., Gordon, T. A. C., Halpern, B. S., Harding, H. R., Havlik, M. N., Meekan, M., Merchant, N. D., Miksis-Olds, J. L., Parsons, M., Predragovic, M., Radford, A. N., Radford, C. A., Simpson, S. D., ... Juanes, F. (2021). The soundscape of the Anthropocene ocean. *Science*, 371(6529), eaba4658. <https://doi.org/10.1126/science.aba4658>

Castellote, M., Thayre, B., Mahoney, M., Mondragon, J., Lammers, M. O., and Small, R. J. (2018). Anthropogenic noise and the endangered Cook Inlet beluga whale, *Delphinapterus leucas*: acoustic considerations for management. *Mar. Fish. Rev.* 80(3):63-88. doi:10.7755/MFR.80.3.3

²⁴¹ Castellote et al., 2018.

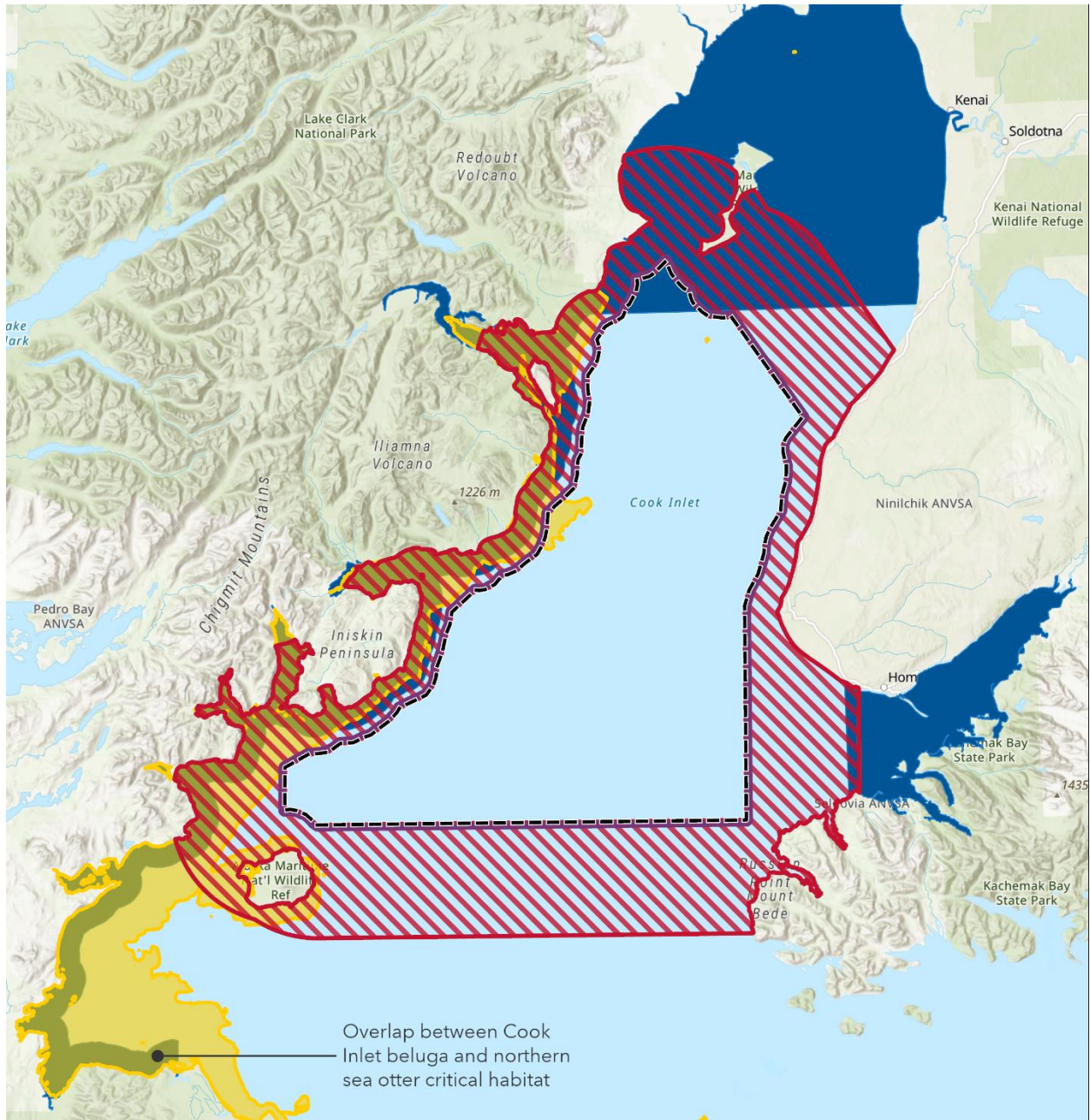
²⁴² Castellote et al., 2018.

“Belugas can react to seismic operations at distances greater than 20 km (12.4 mi) depending on the airgun array, and data suggests they could be more sensitive to airgun noise than their known hearing abilities would indicate (Table 4-6; Gordon et al., 2004; Ellison et al., 2012; Richardson, 1995; Sysueva et al., 2018; Mooney et al., 2018; Miller et al., 2005). Under certain conditions, behavioral responses may occur at even greater distances (Potter et al., 2007; DeRuiter et al., 2006; Goold and Coates, 2006; Tyack et al., 2006). Belugas, if present in the vicinity of survey activities, would likely avoid the area unless they are engaged in feeding or social activity (Erbe and Farmer, 2000).”²⁴³






Given a 20 km reaction distance, the impact of the Proposed Action could significantly restrict belugas’ ability to pass safely through the area, potentially completely restricting any passage, depending on the source block (see Figure 1 below). Likewise, the ensonified area of block adjacent to critical habitat (no matter the alternative) will undoubtedly radiate sound into critical habitat.

²⁴³ EIS at 87.

Figure 1



Cook Inlet Planning Area: Lease Sale

-  Proposed Lease Sale Area
-  1km Buffer Around Proposed Lease Sale Area
-  20km Buffer Around Proposed Lease Sale Area
-  Cook Inlet Beluga Critical Habitat
-  Northern Sea Otter Critical Habitat

Basemap: Esri, CGIAR, USGS, State of Alaska, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS



Map CC BY Defenders of Wildlife 2021

BOEM must provide a more extensive review of what is known about their hearing and potential reaction to anthropogenic noise. Mooney et al. (2020) compared hearing data from a wild, stranded Cook Inlet beluga to pile-driving and container-ship noise measurements made in Cook Inlet and found that masking is occurring at ecologically relevant distances, this relevant study is missing from the EIS.²⁴⁴ These data provide the first empirical hearing data for a CIBW and provide estimations of sound-sensitivity in this population. Authors state, “Anthropogenic noise is a primary threat to these animals” and “The beluga's sensitive hearing and likelihood of masking show noise is a clear concern for this population struggling to recover.”²⁴⁵ BOEM should also include Southall et al 2019 which includes numerous scientific updates and recommendations about noise exposure concerning beluga and other marine mammals to the previous Southall 2007 which BOEM cites.²⁴⁶

Further oil and gas development in Cook Inlet will harm the CIBW and could threaten its continued existence. The seismic surveys used in oil and gas exploration affect the habitat distribution and important biological behaviors of marine wildlife. The large airgun arrays typically used in offshore exploration can produce effective peak pressures of sound that are higher than those of virtually any other manmade source save explosives—as much as 250 decibels or more; and survey vessels frequently employ multi-beam and sub-bottom profiling sonars as well, with source levels rising well above 200 decibels.²⁴⁷ In 2004, the International Whaling Commission’s Scientific Committee—considered the world’s foremost experts on whales—concluded that increased sound from seismic surveys was “cause for serious concern.”²⁴⁸ In addition to the noise from seismic surveys, the construction of oil and gas facilities may result in habitat loss for CIBW through both actual loss and potential displacement.

b. Cumulative Effects

Cumulative effects are a top concern for CIBW and exposure to pollution and spills is indeed an additive stressor of cumulative effects. For example, the synergistic effect between certain

²⁴⁴ Mooney, T. A., Castellote, M., Jones, I., Rouse, N., Rowles, T., Mahoney, B., & Goertz, C. E. (2020). Audiogram of a Cook Inlet beluga whale (*Delphinapterus leucas*). *The Journal of the Acoustical Society of America*, 148(5), 3141-3148.

²⁴⁵ *Id.*

²⁴⁶ Southall, B. L., Finneran, J. J., Reichmuth, C., Nachtigall, P. E., Ketten, D. R., Bowles, A. E., Ellison, W. T., Nowacek, D. P., & Tyack, P. L. (2019). Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects. *Aquatic Mammals*, 45(2), 125–232. <https://doi.org/10.1578/AM.45.2.2019.125>

²⁴⁷ See Richardson et al., Marine Mammals and Noise; Nieuwkerk, S.L., K.M. Stafford, D.K. Mellinger, R.P. Dziak, C.G. Fox (2004), Low-frequency whale and seismic airgun sounds recorded in the mid-Atlantic Ocean, *J. Acoust. Soc. Am.* 115: 1832-43; Tolstoy, M., J.B. Diebold, S.C. Webb, D.R. Bohnenstiehl, E. Chapp, R.C. Holmes, and M. Rawson (2004), Broadband calibration of R/V Ewing seismic sources, 31 *Geophysical Res. Letters* L14310-L14313.

²⁴⁸ International Whaling Commission, 2004 Report of the Scientific Committee: Chairman’s Summary at § 12.2.5.1.

chemical pollutants and noise is of increasing concern in the marine environment, especially in coastal areas where chemical pollutants are concentrated. Well-known chemicals that, when combined with excessive noise exposure, can have synergistic effects on hearing in humans include organic solvents, some insecticides, and heavy metals like lead and mercury. The fact that CIBW habitat is both noisy and surrounded by many human activities that generate chemicals known to impact hearing (e.g., jet fuel from the airplane activity around the Inlet) raises the concern of potential synergistic effects on CIBW from chemicals in the water and noise.²⁴⁹

The DEIS summarily states “The effects of past Cook Inlet oil and gas exploration and development on marine mammals have been short-term with no population-level impacts, and responses of marine mammals to oil and gas activities have consisted of inconsequential behavioral reactions by individual marine mammals (NMFS, 2017).”²⁵⁰

This statement is not valid as it is unknown if oil and gas exploration and development has had a long-term or population-level impact. The CIBW remains critically endangered and at high risk for extinction. Currently, the acoustic footprint of the oil and gas industry has barely been described in Cook Inlet. In addition, there have been no specific behavioral response studies conducted in Cook Inlet and specifically on CIBW, thus it is not known if oil and gas activities have consisted of behavioral reactions by marine mammals. The Conservation Plan for the Cook Inlet Beluga Whale lists “continued oil and gas exploration, development, and production” as the primary ongoing activity that may impact habitat. In addition, noise and oil and gas activities are listed as potential human-caused threats.²⁵¹

It is also critical that the EIS consider cumulative impacts from climate change and ocean acidification. Climate change is likely to result in habitat loss, degradation, or alteration for marine mammals, including Cook Inlet beluga whales. As a non-migratory population that exhibits high fidelity to summering areas and occupies a small, constricted range, Cook Inlet beluga whales may be particularly vulnerable to climate-induced habitat alteration and reduction of their prey base. Cook Inlet beluga whales rely largely on Pacific salmon (*Oncorhynchus* spp.) runs in Cook Inlet, yet these runs are threatened by increasing water temperatures both in the marine waters of Alaska and freshwater spawning habitat.²⁵² In addition to impacts on the prey base, increased siltation in Cook Inlet as a result of faster glacier melt and runoff has the potential to result directly in habitat loss or alteration for Cook Inlet beluga whales and other

²⁴⁹ Recovery Plan at III-8-9

²⁵⁰ EIS at 93

²⁵¹ NMFS Conservation Plan 2008

²⁵² Leslie A. Jones, et al. *Watershed-scale climate influences productivity of Chinook salmon populations across southcentral Alaska*. *Glob Change Biol.*, 26: 4919– 4936 (2020).

marine mammal species.²⁵³ Increasing ocean acidification is also likely to impact coastal Alaskan fish populations and ultimately marine mammals, including the Cook Inlet beluga whale. Ocean acidification is occurring more rapidly in the coastal and pelagic waters of Alaska than in tropical climates, and is likely to result in a decrease in abundance of pteropods and other shelled planktonic species, which are unable to grow as rapidly in acidic waters.²⁵⁴ These species represent an important food source for salmon; given the short life cycle of salmon, prey quality, and availability during the juvenile stage strongly affect salmon biomass and abundance.^{255[4]} While the full impact of warming waters and ocean acidification on marine mammal prey species is difficult to predict, these changes will almost certainly negatively impact the abundance of salmon and other prey. Yet this kind of cumulative impact analysis is missing from the DEIS.

c. Inaccurate Statements in the DEIS

There are numerous false and misleading statements as well as general assumptions made on the potential effects of seismic activity and noise. Multiple marine mammal monitoring and mitigation programs have been implemented in Cook Inlet (Upper and Lower) over the last 20 years, one as recently as 2019. Data on marine mammal sightings, mitigation measures implemented, safety radii, and exposures is publicly available as part of the technical (i.e., 90-day) reports as a requirement of IHAs and LOAs. Many contain data relevant for the evaluation of the Affected Environment and Environmental Consequences. Below we have highlighted misleading and or false statements in the DEIS and provide references refuting and disproving those statements. Through the EIS assessment and analysis process, BOEM should ensure that accurate statements and extensive review of data from previous seismic surveys that have occurred in Cook Inlet over the last 20 years be incorporated into the EIS.

i. CIBW Occurrence in Lower Cook Inlet

The DEIS states: “Due to the affinity most beluga whales have to the upper reaches of Cook Inlet during most of the year, they should be unaffected by seismic operations in the Proposed Lease Sale Area during summer, and sea ice presence would likely prevent seismic surveys from being conducted in winter where it could affect them (<https://cispri.org/sea-ice/>). For these reasons, seismic surveys have a low likelihood of impacting beluga whales. However, in 2019 monitoring detected at least one beluga whale near Port Graham in lower Cook Inlet concurrent with a

²⁵³ University of Alaska, Fairbanks, Center for Global Climate Change and Arctic System Research, The potential consequences of climate variability and change—Alaska (December) (1999), available at <http://www.besis.uaf.edu/regional-report/regional-report.html>.

²⁵⁴ Fabry, V.J., Seibel, B.A., Feely, R.A., and Orr, J.C., Impacts of ocean acidification on marine fauna and ecosystems processes, *ICES J. Mar. Sci.* 65: 414-432 (2008).

²⁵⁵ Aydin, K.Y., McFarlane, G.A., King, J.R., Megrey, B.A., and Myers, K.W., Linking oceanic food webs to coastal production and growth rates to Pacific salmon (*Oncorhynchus* spp.), using models on three scales, *Deep Sea Res. II* 52: 757-780 (2005).

seismic survey in the Proposed Lease Sale Area. This information suggests a few individual belugas could be in the lower inlet when seismic surveys occur, and could be impacted (Castellote et al., 2020).”²⁵⁶

How beluga use Cook Inlet seasonally is still not well understood and their use of the Inlet has dramatically changed over time as the population has decreased, indicating that, should the population rebound, the lower Inlet would become increasingly more important to the species.²⁵⁷ In other words, unencumbered access to the lower Inlet grants CIBW a greater opportunity to recover. There is a significant data gap for distribution of marine mammals in Lower Cook Inlet since most of the monitoring effort has occurred in Upper Cook Inlet. However, there are multiple accounts of CIBW in Lower Cook Inlet from previous surveys that are not accounted for or incorporated into the DEIS. The records listed below suggest CIBW could indeed be present in Lower Cook Inlet and the Proposed Lease Sale Area when seismic surveys occur.

- 1) Passive acoustic monitoring efforts have shown that Cook Inlet Beluga whales can be present in Tuxedni Bay and the Kenai River (Lower Cook Inlet) November through April.²⁵⁸
- 2) During Apache Alaska 2D Seismic Test Program March and April 2011, 3 groups (33 estimated individuals) were recorded near Drift River in Redoubt Bay (Lower Cook Inlet).²⁵⁹
- 3) During April 2014, 3 groups (18 estimated individuals) of beluga whales were recorded near the Kenai River and Kasilof (Lower Cook Inlet).²⁶⁰
- 4) Two beluga whale carcasses were reported during the Hilcorp 3D Seismic Survey in the Proposed Lease Sale Area in October 2019.²⁶¹

ii. Impacts from Seismic Activities

The DEIS inaccurately states: “Impacts from airgun operations would consist of exposure to non-injurious intensities of low frequency noise that would result in temporary behavioral

²⁵⁶ EIS at 87

²⁵⁷ M.M. Muto et al. 2020 Beluga Whale Cook Inlet Stock Stock, 2019 Stock Assessment Report. NOAA-TM-AFSC-404

²⁵⁸ Castellote, M., Small, R. J., Lammers, M. O., Jenniges, J., Mondragon, J., Garner, C. D., ... & Westerholt, D. (2020). Seasonal distribution and foraging occurrence of Cook Inlet beluga whales based on passive acoustic monitoring. *Endangered Species Research*, 41, 225-243.

²⁵⁹ Lomac-MacNair, K.S. and S. Wisdom. *90-Day Report of the Protected Species Monitoring Program for Apache Alaska Corporation 2D Seismic Test Program Cook Inlet, Alaska June 2011*. Prepared by Northern Exploration Services LLC 9525 King Street Anchorage, AK. Prepared for Apache Alaska Corporation.

²⁶⁰ Lomac-MacNair, K., M.A. Smultea and G. Campbell. 2014. Draft NMFS 90-Day Report for Marine Mammal Monitoring and Mitigation during Apache’s Cook Inlet 2014 Seismic Survey, 2 April – 27 June 2014.

²⁶¹ Fairweather Science. 2020. 2019 Hilcorp Alaska Lower Cook Inlet Seismic Survey Marine Mammal Monitoring & Mitigation Program Final Report. Submitted to National Marine Fisheries Service and United States Fish and Wildlife Service. Prepared for Hilcorp Alaska. January 2020.

responses from marine mammals. This is due to the short-term avoidance marine mammals show; required mitigations such as posting PSOs onboard vessels and shutdowns of operating airgun arrays if marine mammals are detected in close proximity (Section 3.3.2); small behavioral responses; and lack of injuries among marine mammals associated with seismic surveys in Alaska. Overall, most marine mammals would avoid approaching seismic surveys before they could be seen or physically affected. However, there is a low likelihood some marine mammals could remain near seismic surveys and be adversely impacted (NMFS, 2017; Castellote et al. 2020).”

As previously stated, mitigation (i.e., PSO visual monitoring onboard seismic vessels) cannot ensure marine mammals will be detected before within a distance that is considered injurious. In addition, a recent publication suggested that mitigation efforts attempting to minimize injury by enabling animals to move away as noise levels are increased gradually (i.e., during a ramp up procedure or the use of a mitigation gun) are inadequate or even counterproductive for small, localized marine mammal populations.²⁶² Authors suggest that for the localized populations displacement could be harmful to the species, thus, suggesting the use of mitigation measures to enable avoidance could in fact harm species such as the already critically endangered Cook Inlet beluga whale.

The DEIS states: “Because of attenuation characteristics of airgun noises in marine waters, the zone of potentially hazardous noise radiating out from an airgun array extends for several tens of meters, up to around 1,000 m (0.6 mi) from a survey depending on airgun array size (Richardson et al., 1995). The zone for potential injury for arrays used in Cook Inlet has been much smaller than 1,000 m with typical radii above 190 dBRMS radiating out for no more than a few hundred meters from airgun arrays (NMFS, 2017).”²⁶³

This statement is false and does not include data from recent seismic surveys in Cook Inlet (i.e., Level A radii (190 dB) for cetaceans was 1,400 m, and Level B radii (160 dB) for all marine mammals was 9,500 m during the 2012 Apache 3D seismic survey).²⁶⁴

The DEIS states: “During spring migrations whales are unlikely to encounter any vessels associated with the proposed activities since most seismic surveys and exploration drilling in Cook Inlet occur in summer and fall.”²⁶⁵

²⁶² Forney, K. A., Southall, B. L., Slooten, E., Dawson, S., Read, A. J., Baird, R. W., & Brownell Jr, R. L. (2017). Nowhere to go: noise impact assessments for marine mammal populations with high site fidelity. *Endangered species research*, 32, 391-413.

²⁶³ EIS at 87

²⁶⁴ Lomac-MacNair, K.S., L.S. Kendall, and S. Wisdom. Marine Mammal Monitoring and Mitigation, 90-Day Report, May 6- September 30, 2012, Alaska Apache Corporation 3D Seismic Program, Cook Inlet, Alaska.

²⁶⁵ EIS at 89

This statement is false and does not include data from multiple seismic surveys occurring outside of the “summer and fall” window. Seismic surveys in Upper Cook Inlet have frequently started in spring, as soon as there are ice-free conditions, including:

- 1) 2011 Apache Seismic Test Program started March 24, 2011
- 2) 2012 Apache Seismic Survey started May 6, 2012²⁵
- 3) Apache 2014 seismic survey started April 2, 2014²⁶⁶
- 4) ExxonMobil Alaska LNG LLC 2016 Cook Inlet Geophysical and Geotechnical Survey occurred April 02-30, 2016,²⁶⁷
- 5) SAExploration seismic survey started May 5, 2015.²⁶⁸

Further, the Proposed Lease Sale Area in Lower Cook Inlet is expected to remain ice-free for longer periods, allowing for exploration and drilling to occur year-round and will likely not be limited to only summer and fall. BOEM permitted Hilcorp to conduct the Hilcorp Lower Cook Inlet (2019) Seismic Survey and shallow hazard survey (2021) from mid-August to the end of October. However, the Lease Sale 258 Alternative 3B prohibits seismic surveys and exploration drilling activities in the 10 northernmost OCS lease blocks of the Proposed Lease Sale Area from November 1 to April 1, which still allows seismic surveys in any other lease blocks throughout year.²⁶⁹ Under Alternative 3C, seismic surveys would still be allowed October 1–31 and April 1–June 30.²⁷⁰

In addition, the Proposed Lease Sale Area in Lower Cook Inlet is expected to remain ice-free for longer periods, allowing for exploration and drilling to occur year-round and will likely not be limited to only summer and fall. BOEM permitted Hilcorp to conduct the Hilcorp Lower Cook Inlet (2019) Seismic Survey and shallow hazard survey (2021) from mid-August to the end of October. However, the Lease Sale 258 Alternative 3B prohibits seismic surveys and exploration drilling activities in the 10 northernmost OCS lease blocks of the Proposed Lease Sale Area from November 1 to April 1, which still allows seismic surveys in any other lease blocks throughout year.²⁷¹ Under Alternative 3C, seismic surveys would still be allowed October 1–31 and April 1–June 30.²⁷²

The EIS states “The installation of platforms would also disturb benthic feeding areas for some marine mammals. However, over time those platforms would become colonized by

²⁶⁶ Lomac-MacNair et al. 2014.

²⁶⁷ Lomac-MacNair, K., and G. Campbell. 2016. NMFS Technical Report for Marine Mammal Monitoring and Mitigation during the 2015 and 2016 Alaska LNG Project Geophysical & Geotechnical Program in Cook Inlet

²⁶⁸ Kendall, L.S., K.Lomac-MacNair, G. Campbell, S. Wisdom, and N. Wolf. 2015. SAExploration 2015 Cook Inlet 3D Seismic Surveys Marine Mammal Monitoring and Mitigation Report.

²⁶⁹ EIS at 79 (See Section 4.7.3.2 Alternative 3B – Beluga Whale Critical Habitat Mitigation)

²⁷⁰ EIS at 79 (See Section 4.7.3.3 Alternative 3C – Beluga Whale Nearshore Feeding Areas Mitigation)

²⁷¹ EIS at 79 (See Section 4.7.3.2 Alternative 3B – Beluga Whale Critical Habitat Mitigation)

²⁷² EIS at 79 (See Section 4.7.3.3 Alternative 3C – Beluga Whale Nearshore Feeding Areas Mitigation)

invertebrates, potentially becoming artificial reefs, which provide habitat for small schooling fishes. Such changes can be advantageous for smaller fish-eating marine mammals.”²⁷³ and “Marine Mammals: Impacts of noise on marine mammals could lead to individual animals avoiding the most heavily ensonified areas, particularly around seismic surveys and pile-driving. Long-term disturbances to marine mammal habitat could occur with the installation of production platforms and pipelines; platforms could have a positive impact by increasing food availability.”²⁷⁴

To our knowledge there are no published reports of platforms in Cook Inlet being advantageous or feeding grounds for marine mammals. The assumption that there would be a potential positive impact from the installation of platforms needs validation or at a minimum a reference.

3. Humpback, Fin Whales

a. Inadequate Impact Analysis

The Proposed Lease Sale 258 DEIS fails to adequately address and analyze the potential impacts related to other cetaceans occurring in Lower Cook Inlet; fin whale (*Balaenoptera physalus*) Northeast Pacific Stock and humpback whale (*Megaptera novaeangliae*), Central and Western North Pacific Stocks. Both species, all three stocks are listed as Endangered/Depleted under the ESA/MMPA. Fin and humpback whales are two of the most common cetacean species in the Gulf of Alaska (GOA).²⁷⁵ Biologically Important Areas (BIA), defined as reproductive areas, feeding areas, migratory corridors, and areas of concentration for small resident populations, have been designated for both species within the GOA.²⁷⁶ Although the Proposed Lease Sale 258 Area does not overlap with the fin and humpback whale BIAs, they are within close proximity. Distance from BIAs to the Proposed Lease Sale Area should be addressed along with a more comprehensive evaluation of potential impacts to these endangered species. In general, the Proposed Lease Sale 258 DEIS insufficiently assesses impacts from the stressors 1) increased vessel presence (increased likelihood of resulting vessel collisions) and 2) increased anthropogenic noise.

The fin whale recovery plan states 1) “Collisions with vessels is considered a high threat”, and 2) “The effects of anthropogenic noise are unknown, but this plan stresses continuing to investigate these effects, which are potentially significant” and “Seismic - the severity of this threat is

²⁷³ DEIS at 91.

²⁷⁴ DEIS at 130.

²⁷⁵ Rone, B. K., Zerbini, A. N., Douglas, A. B., Weller, D. W., & Clapham, P. J. (2017). Abundance and distribution of cetaceans in the Gulf of Alaska. *Marine biology*, 164(1), 1-23.

²⁷⁶ Ferguson, M. C., Curtice, C., Harrison, J., & Van Parijs, S. M. (2015). 1. Biologically Important Areas for Cetaceans Within US Waters-Overview and Rationale. *Aquatic Mammals*, 41(1), 2.

unknown, and the uncertainty of this threat is high.”²⁷⁷ Further, The ESA Section 7(a)(2) Biological Opinion for Lease Sale 244, Cook Inlet, Alaska 2017-2022 determined that the action was likely to adversely affect the fin whale and humpback whale (Western North Pacific DPS and Mexico DPS).

i. Whale-vessel collisions

BOEM failed to sufficiently analyze impacts of whale-vessel collisions. Pages 94-95 in the DEIS inaccurately states “the likelihood of large, slow- moving vessels typically associated with oil and gas activities striking a marine mammal is very low and should remain low into the future. Since maritime transportation should increase in the future in response to growing communities, the number of vessel strikes to marine mammals will likely increase, though most likely not from vessels working for the oil and gas industry (Neilson et al., 2012).” This conclusion is both unfounded and erroneously references Neilson et al. (2012). Neilson et al. (2012) summarizes whale-vessel collisions in Alaska water from 1978-2011 and reports 108 whale-vessel collisions, of which 25 were known to have resulted in the whale's death.²⁷⁸ Most (86%) of the strikes involved humpback whales, including reports from Cook Inlet. One of the reported known humpback deaths was from an oil tanker (i.e., from the oil and gas industry) where the whale’s carcass was caught on the bow of the ship. Further, the report states that small (<15 m) vessel strikes were most common (60%), followed by medium (15–79 m) and large (≥80 m) vessels, contrasting other studies that link large vessels to collisions.²⁷⁹ BOEM should ensure that conclusions from publications being referenced in the impact analysis are correctly interpreted and cited. Further, oil and gas industry vessels are not necessarily large and slow-moving. Vessels typically used during seismic and geophysical and geotechnical (G&G) survey operations in Cook Inlet, for example, have included smaller (<15 m) “bow pickers” as well as larger (>90 m) housing and operations vessels (see 90-day reports from marine mammal monitoring and mitigation surveys in Cook Inlet, 2012-2019^{280,281,282,283}).

The DEIS includes the potential number of boat trips per week to and from Homer (ranging from 5 to 42 trips).²⁸⁴ Estimated vessel size should be presented either in this table or provided elsewhere in the EIS for the impact analysis on marine mammals. In addition, this table does not

²⁷⁷ National Marine Fisheries Service. 2010. Recovery plan for the fin whale (*Balaenoptera physalus*). National Marine Fisheries Service, Silver Spring, MD. 121 pp.

²⁷⁸ Neilson JL, Gabriele CM, Jensen AS, Jackson K, Straley JM (2012) Summary of reported whale–vessel collisions in Alaskan waters. *J Mar Biol* 2012: 106282

²⁷⁹ Laist, D. W., Knowlton, A. R., Mead, J. G., Collet, A. S., & Podesta, M. (2001). Collisions between ships and whales. *Marine Mammal Science*, 17(1), 35-75.

²⁸⁰ Fairweather Science. 2020.

²⁸¹ Lomac-MacNair et al. 2012.

²⁸¹ Lomac-MacNair et al. 2014.

²⁸² Lomac-MacNair and Campbell 2016.

²⁸³ Kendall et al. 2015.

²⁸⁴ EIS at 35 (see Table 4-4)

provide the total estimated distance that vessels will likely be transiting in the Proposed Lease Sale Area. Potential whale-vessel collisions could occur during exploration activity (i.e., during actual seismic and G&G operations) along with transiting to and from port.

ii. Noise

The DEIS assessment of humpback and fin whale reaction to operating airguns, suggesting minimal impact to the ESA species is incomplete and inaccurately written based on published accounts of behavioral responses.

The DEIS states: “Humpback, minke, fin, and gray whales generally avoid operating airguns, but their avoidance reactions also vary with species, location, whale activities, oceanographic conditions, and noise characteristics (Gordon et al., 2004; Richardson et al., 1995; Cato et al., 2013; Dunlop and Noad, 2017; Dunlop et al., 2018, 2020; Noad et al., 2011). Whales have also been reported to show no overt reactions to pulses from large seismic surveys at distances beyond a few kilometers, even though the noise pulses remain above ambient sound levels out to greater distances. Likewise, baleen whales have demonstrated tolerance to vessels and sonar operations. However, when exposed to strong airgun noises, they often deviate from migration routes or cease feeding and move away (Gordon et al., 2004; Johnson et al., 2007; Malme et al., 1984; Malme and Miles, 1985; McCauley et al., 1998; 2000a, b; Nowacek et al., 2007; Richardson, 1995; Weir, 2008).”²⁸⁵

The DEIS provides no reference to validate that baleen whales have demonstrated tolerance to vessels and sonar operations. In contrast, baleen whales, including fin and humpback whales, are known to detect sound pulses emitted by airguns and have been observed reacting to seismic vessels.^{286,287} Along with avoidance as stated in the DEIS, baleen whale responses also include changes in behaviors and vocalization patterns.^{288,289} Studies on blue whales have shown an initial increase in detections and calling rates in the presence of seismic survey noise²⁹⁰ and

²⁸⁵ EIS at 98

²⁸⁶ Stone, C.J. 2003. The effects of seismic activity on marine mammals in UK waters, 1998-2000, Rep. No. 323. Joint Nature Conservation Committee, Aberdeen.

²⁸⁷ McCauley, R.D., Jenner, M.N., Jenner, C., McCabe, K.A., & Murdoch, J. 1998. The response of humpback whales (*Megaptera novaeangliae*) to offshore seismic survey: Preliminary results of observations about a working seismic vessel and experimental exposures. APPEA Journal: 692-706.

²⁸⁸ Richardson, W. J., Würsig, B., & Greene Jr, C. R. (1986). Reactions of bowhead whales, *Balaena mysticetus*, to seismic exploration in the Canadian Beaufort Sea. The Journal of the Acoustical Society of America, 79(4), 1117-1128.

²⁸⁹ Blackwell, S. B., Nations, C. S., McDonald, T. L., Greene Jr, C. R., Thode, A. M., Guerra, M., & Michael Macrander, A. (2013). Effects of airgun sounds on bowhead whale calling rates in the Alaskan Beaufort Sea. Marine Mammal Science, 29(4), E342-E365.

²⁹⁰ Castellote, M., Clark, C. W., & Lammers, M. O. (2012). Acoustic and behavioural changes by fin whales (*Balaenoptera physalus*) in response to shipping and airgun noise. Biological Conservation, 147(1), 115-122.

humpback whales have demonstrated behavioral reaction (i.e., change in acoustic behavior; discontinuation of song) in the presence of seismic survey noise.²⁹¹ The EIS should include references to studies on acoustic impacts specific to fin and humpback whales in evaluating the potential effects of noise on these ESA-listed species relative to the Proposed Lease Sale 258.

A single seismic survey has been shown to cause endangered fin and humpback whales to stop vocalizing—a behavior essential to breeding and foraging—over an area at least 100,000 square nautical miles in size, and can cause baleen whales to abandon habitat over the same scale.²⁹² Similarly, airgun noise can also mask the calls of vocalizing baleen whales over vast distances, substantially compromising their ability to communicate, feed, find mates, and engage in other vital behavior.²⁹³ The intermittency of airgun pulses hardly mitigates this effect since their acoustic energy spreads over time and can sound virtually continuous at distances from the array.²⁹⁴ According to recent modeling from Cornell and the National Oceanic Atmospheric Administration (NOAA), the highly endangered North Atlantic right whale is particularly vulnerable to masking effects from airguns and other sources given the acoustic and behavioral characteristics of its calls.²⁹⁵ In addition, sperm whale foraging appears to decline significantly on exposure to even moderate levels of airgun noise, with potentially serious long-term consequences;²⁹⁶ and harbor porpoises have been seen to engage in strong avoidance responses fifty miles from an array.²⁹⁷ Seismic surveys also have been implicated in the long-term loss of marine mammal biodiversity off the coast of Brazil.²⁹⁸

²⁹¹ Cerchio, S., Strindberg, S., Collins, T., Bennett, C., & Rosenbaum, H. (2014). Seismic surveys negatively affect humpback whale singing activity off northern Angola. *PLoS one*, 9(3), e86464.

²⁹² Clark, C.W., and Gagnon, G.C., Considering the temporal and spatial scales of noise exposures from seismic surveys on baleen whales (2006) (IWC Sci. Comm. Doc. IWC/SC/58/E9); Clark, C.W., pers. comm. with M. Jasny, NRDC (Apr. 2010); see also MacLeod, K., Simmonds, M.P., and Murray, E., Abundance of fin (*Balaenoptera physalus*) and sei whales (*B. borealis*) amid oil exploration and development off northwest Scotland, *Journal of Cetacean Research and Management* 8: 247-254 (2006).

²⁹³ Clark, C.W., Ellison, W.T., Southall, B.L., Hatch, L., van Parijs, S., Frankel, A., and Ponirakis, D., Acoustic masking in marine ecosystems as a function of anthropogenic sound sources (2009) (IWC Sci. Comm. Doc. SC/61/E10).

²⁹⁴ Id.; Weilgart, L. (ed.), Report of the workshop on alternative technologies to seismic airgun surveys for oil and gas exploration and their potential for reducing impacts on marine mammals, 31 Aug. – 1 Sept., 2009, Monterey, Calif. (2010) (available at www.oceanos-stiftung.org/oceanos/download.php?id=19).

²⁹⁵ Clark et al., Acoustic masking in marine ecosystems as a function of anthropogenic sound sources; Clark, C.W., Ellison, W.T., Southall, B.L., Hatch, L., Van Parijs, S.M., Frankel, A., and Ponirakis, D., Acoustic masking in marine ecosystems: Intuitions, analysis, and implication, *Marine Ecology Progress Series* 395: 201-222 (2009).

²⁹⁶ Miller, P.J.O., Johnson, M.P., Madsen, P.T., Biassoni, N., Quero, M., and Tyack, P.L., Using at-sea experiments to study the effects of airguns on the foraging behavior of sperm whales in the Gulf of Mexico, *Deep-Sea Research I* 56: 1168-1181 (2009).

²⁹⁷ Bain, D.E., and Williams, R., Long-range effects of airgun noise on marine mammals: responses as a function of received sound level and distance (2006) (IWC Sci. Comm. Doc. IWC/SC/58/E35).

²⁹⁸ Parente, C.L., Pauline de Araújo, J., and Elisabeth de Araújo, M., Diversity of cetaceans as tool in monitoring environmental impacts of seismic surveys, *Biota Neotropica* 7(1) (2007).

b. The DEIS Is Lacking Baseline Data

BOEM should incorporate additional baseline data on fin and humpback whale occurrence in Lower Cook Inlet. There is a significant data gap on the density, abundance, and seasonal trends of large whales (i.e., fin and humpback whales) in Cook Inlet. Lower Cook Inlet is considered highly productive and biologically rich but with minimal marine mammal monitoring efforts. Lower Cook Inlet and offshore waters within Cook Inlet have not been systematically surveyed for marine mammal presence for over 40 years; most effort is focused on coastal zones for the endangered Cook Inlet beluga whale²⁹⁹. During the NMFS Cook Inlet Beluga Whale Aerial Surveys from 2000-2016, 10 sightings of 26 estimated individual fin whales were opportunistically observed and 67 sightings of >170 estimated individual humpback whales were opportunistically observed, including animals exhibiting bubble net feeding behavior.^{300,301,302}

In general, most fin and humpback whales are expected to occur near the entrance to Cook Inlet but abundance and seasonal trends are still not well documented or understood. There is an overall paucity of data on the potential occurrence and estimated abundance of fin and humpback whales in the Proposed Lease Sale 258 Area. The EIS should include a thorough assessment of sightings, acoustic detections, strandings, and seasonal trends over the past 20 years. CEQ guidance indicates that “agencies shall ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental documents. Agencies shall make use of reliable existing data and resources.” Reliable existing data and resources from multiple relevant surveys in Lower Cook Inlet are either entirely absent or minimally incorporated into the DEIS.

c. Recent Fin and Humpback Whale Unusual Mortality Event

The DEIS does not consider the humpback and fin whale Alaska Unusual Mortality Event (UME) that occurred in 2015 and 2016 in the Gulf of Alaska.³⁰³ During this event 52 whale carcasses were investigated, 34 from Alaska including fin and humpback whale carcasses found in Upper Cook Inlet, including a humpback whale carcass found in the Proposed Lease Sale

²⁹⁹ Shelden KEW, Goetz KT, Rugh DJ, Calkins DG, Mahoney BA, Hobbs RC. 2015. Spatio-temporal changes in beluga whale, *Delphinapterus leucas*, distribution: results from aerial surveys (1977–2014), opportunistic sightings (1975–2014), and satellite tagging (1999–2003) in Cook Inlet, Alaska. *Marine Fisheries Review* 77: 1–60.

³⁰⁰ Rugh, D. J., K. E. W. Shelden, C. L. Sims, B. A. Mahoney, B. K. Smith, L. K. Litzky, and R. C. Hobbs. 2005b. Aerial surveys of belugas in Cook Inlet, Alaska, June 2001, 2002, 2003, and 2004. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-149, 71 p.

³⁰¹ Shelden, K. E. W., D.J. Rugh, K.T. Goetz, C.L. Sims, L. Vate Brattström, J.A. Mocklin, B.A. Mahoney, B.K. Smith, and R.C. Hobbs. 2013. Aerial surveys of beluga whales, *Delphinapterus leucas*, in Cook Inlet, Alaska, June 2005 to 2012. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-263, 122 p.

³⁰² Shelden KEW, Goetz KT, Rugh DJ, Calkins DG, Mahoney BA, Hobbs RC. 2015. Spatio-temporal changes in beluga whale, *Delphinapterus leucas*, distribution: results from aerial surveys (1977–2014), opportunistic sightings (1975–2014), and satellite tagging (1999–2003) in Cook Inlet, Alaska. *Marine Fisheries Review* 77: 1–60.

³⁰³ Savage, K. (2017). Alaska and British Columbia large whale unusual mortality event summary report

Area. In addition, during June 2016 a live stranding of a fin whale was reported in Upper Cook Inlet and later reported as dead. When addressing occurrence of fin and humpback whales BOEM should include these strandings (live and dead). In addition, when evaluating cumulative impacts, BOEM should consider UMEs occurring within the past decade in and near the Lease Sale area in the assessment.

d. Relevant and Recent Surveys Absent from DEIS

i. Acoustic Monitoring of Cetaceans & Noise during Hilcorp 3D Seismic Survey in Lower Cook Inlet

The DEIS does not adequately analyze the most recent acoustic survey data available for Lower Cook Inlet. Significant findings from the September/October 2019 acoustic monitoring survey are either nonexistent or minimally included in the DEIS.³⁰⁴ During September and October 2019, an acoustic monitoring survey with the focus on documenting cetacean species diversity, disturbance of the acoustic environment generated by the seismic survey, and potential for spatial displacement of detected cetacean species was conducted in Lower Cook Inlet.³⁰⁵ Acoustic sampling occurred over 69 days and covered 4 locations, Chinitna Bay, Iniskin Bay, Port Graham, and the Hilcorp 3D Seismic Survey Area in the central part of the lower Inlet. Results reported “a wide-scale displacement of porpoises and humpback whales, and likely behavioral responses by killer whales and fin whales.” Fin whales were the second highest of the acoustic calls detected (following porpoises) and were found to have significantly increased their vocal activity during the survey, likely to reduce masking effects. Marine mammals are known to modify their vocal behavior to compensate for ambient (and anthropogenic) noise by increasing the call rate, signal intensity and duration.^{306,307} Humpback whales were the fourth most detected species and results showed differences in humpback whale presence during and after the seismic survey, “suggesting a strong change in acoustic behavior or spatial displacement.”

³⁰⁴ Castellote, M., Stocker, M., & Brewer, A. (2020). Passive acoustic monitoring of cetaceans & noise during Hilcorp 3D seismic survey in Lower Cook Inlet, AK. *Final report–October* cited in EIS at 87 in reference to potential beluga whale presence in Lower Cook Inlet and 87 stating “low likelihood some marine mammals could remain near seismic surveys and be adversely impacted.” Other key findings such as presence of fin and humpback whales in Lower Cook inlet and the reported “wide-scale displacement of porpoises and humpback whales, and likely behavioral responses by killer whales and fin whales.”

³⁰⁵ Castellote et al. (2020).

³⁰⁶ Tyack PL (2008) Implications for marine mammals of large-scale changes in the marine acoustic environment. *J Mammal* 89(3):549–558.

³⁰⁷ Erbe C, Reichmuth C, Cunningham K, Lucke K, Dooling R. 2016. Communication masking in marine mammals: A review and research strategy. *Marine Pollution Bulletin* 103: 15–38.

In the DEIS, Castellote et al. (2020) is referenced twice, once regarding the potential for beluga whales in Lower Cook Inlet³⁰⁸ and in the following statement: “Impacts from airgun operations would consist of exposure to non-injurious intensities of low frequency noise that would result in temporary behavioral responses from marine mammals. This is due to the short-term avoidance marine mammals show; required mitigations such as posting PSOs onboard vessels and shutdowns of operating airgun arrays if marine mammals are detected in proximity (Section 3.3.2); small behavioral responses; and lack of injuries among marine mammals associated with seismic surveys in Alaska. Overall, most marine mammals would avoid approaching seismic surveys before they could be seen or physically affected. However, there is a low likelihood some marine mammals could remain near seismic surveys and be adversely impacted (NMFS, 2017; Castellote et al. 2020).”³⁰⁹ The statement, “there is a low likelihood some marine mammals could remain near seismic surveys and be adversely impacted,” is both false and misrepresents Castellote et al. (2020) acoustic report. Castellote et al. 2020 reported the contrary, stating that the Hilcorp 2019 Lower Cook Inlet Seismic Survey, caused “a wide-scale displacement of porpoises and humpback whales, and likely behavioral responses by killer whales and fin whales.” BOEM should ensure that references included in the analysis are accurately interpreted and represented in the EIS.

ii. Hilcorp 2019 Lower Cook Inlet 3D Seismic Survey is absent from the DEIS

The DEIS does not speak to the most recent marine mammal monitoring and mitigation program data available for Lower Cook Inlet. Significant findings from the 3D seismic survey in central lower Cook Inlet (between Anchor Point and the Iniskin Peninsula) during September/October 2019 are absent from the DEIS.³¹⁰ Marine mammal observation occurred during activities under the LOA issued by NMFS and USFWS. As part of the LOA requirements a 90-day (technical) report summarizes completed operations, numbers of marine mammal sightings, number and type of mitigation measures implemented, and number of exposures recorded. Over the duration of the marine mammal monitoring and mitigation program a total of 134 sightings of 232 individual animals were observed by vessel PSOs along with 844 sightings of 6,147 individual marine mammals recorded by the aerial survey team.³¹¹ A total of 23 fin whales and 38 humpback whales were recorded during this survey. Results indicated that sightings of fin whales, harbor porpoises, sea otters, and Steller sea lions were recorded at higher rates during non-seismic activity, potentially suggesting avoidance of the seismic activity. Results showed

³⁰⁸ DEIS at 87 (See text “However, in 2019 monitoring detected at least one beluga whale near Port Graham in lower Cook Inlet concurrent with a seismic survey in the Proposed Lease Sale Area. This information suggests a few individual belugas could be in the lower inlet when seismic surveys occur, and could be impacted (Castellote et al., 2020))

³⁰⁹ DEIS at 87

³¹⁰ Fairweather Science 2020.

³¹¹ *Id.*

estimated Level B exposure for fin whales to be ~10 animals and ~32 for humpback whales. Further, a fin whale was recorded 20 m from the seismic array when operating at full volume (1,945 cui), well within the Level A radii, although no Level A takes were authorized. Total allowable Level B exposures for Dall’s porpoises and minke whales were exceeded and two beluga whale carcasses were recorded and reported. These data are significant both for additional information on the occurrence of fin and humpback whales, and to address the limitations and failings of marine mammal monitoring and mitigation programs associated with oil and gas exploration in Cook Inlet. These data should inform BOEM’s evaluation in the DEIS, and it is unclear why they are omitted.

Additionally, the statement that “most marine mammals would avoid approaching seismic surveys before they could be seen or physically affected” is false. Monitoring and mitigation programs and PSOs cannot ensure detection by marine mammals prior to possible exposure to injurious noise. Based on results from the marine mammal monitoring and mitigation program during the Hilcorp 2019 Lower Cook Inlet Seismic Survey, a fin whale was initially detected within 20 m of the seismic array that was operating at full volume (1,945 cui and associated >7 km Level B radii).³¹² Therefore, the fin whale was not detected until it was well within the Level A and B radii. This event occurred with supplemental aerial survey monitoring. This indicates that mitigation (i.e., PSO visual monitoring onboard seismic vessels) cannot ensure an ESA-listed marine mammal will be detected before it comes within a distance that is considered injurious and refutes the statement that marine mammals avoid injurious noise such as seismic surveys.

4. Northern Sea Otters

a. Habitat and Distribution

BOEM should provide general habitat and distribution information on sea otters specific to Cook Inlet. Kenyon (1969) and Garshelis (1987) are from the Aleutian Islands and Canadian waters, not from sea otters in (or near) Cook Inlet. Furthermore, there are more recent (in the last 30 years) data available on the distribution of sea otters in Lower Cook Inlet that is not addressed or incorporated into the DEIS.³¹³

The DEIS states that sea otters generally inhabit nearshore waters <35 m (115 ft) deep and rarely range beyond the 55-m (180-ft) depth contour (citing Kenyon, 1969; Garshelis, 1987). But sea otters are year-round residents within the Proposed Lease Sale Area, including nearshore areas in parts of western and eastern lower Cook Inlet and associated bays, and nearby waters. BOEM

³¹² *Id.*

³¹³ See Gerlach-Miller, J., Esslinger, G. G., & Weitzman, B. (2018). Aerial Surveys of Sea Otters (*Enhydra lutris*) in Lower Cook Inlet, Alaska, May, 2017. US Fish and Wildlife Service.

should include results from the USFWS Technical Report Aerial Surveys of Sea Otters (*Enhydra lutris*) in Lower Cook Inlet, Alaska, May, 2017. Results from the USFWS aerial survey clearly demonstrate that sea otters are found in central waters of Lower Cook Inlet and are not limited to the Critical Habitat nor only the coastal/nearshore area. Specifically, Figure 5 of the report depicts the relative densities of sea otters in the CI Lease Area. BOEM should include results from the Hilcorp 2019 Lower Cook Inlet 3D Seismic Survey.³¹⁴ During the seismic survey an estimated 60 individual sea otters were recorded in Lower Cook Inlet by the vessel-based observers, including one dead sea otter.³¹⁵ An additional 5,856 estimated individual sea otters were counted during the aerial surveys many of which were recorded in the central waters of Lower Cook Inlet.³¹⁶

b. Inadequate Impact Analysis

i. Potential Oil Spill

The Proposed Lease Sale 258, associated exploration and development, and transport of oil and gas could adversely impact the recovery of this threatened species. In the USFWS Technical Report Aerial Surveys authors state that “[e]merging conservation and management concerns for sea otters in LCI include an increase in disease related mortality (Gill 2006) and potential impacts associated with expanding oil and gas exploration and resource development.”³¹⁷

BOEM fails to adequately analyze the potential impacts from the possibility of an oil spill. The DEIS states: “With the addition of a large spill, the impacts would be minor to moderate, with minor impacts for most marine mammal populations other than sea otters. Sea otters could experience a moderate level of impacts from a large spill due to the severe adverse effects oiling often has on the insulative integrity of their fur.”³¹⁸ However, it is ambiguous how the determination that a “large spill” would produce only moderate level of impacts. Sea otters are particularly vulnerable to contamination from oil spills and are among the marine mammals most detrimentally affected by contact with oil. When exposed to oil, their fur mats, preventing the fur from insulating their bodies. Without this natural protection from the cold-water temperature, sea otters can quickly die from hypothermia; the toxicity of oil can also be harmful to sea otters, causing liver and kidney failure and damage to their lungs and eyes.³¹⁹ Previous studies have found that sea otters can survive low levels of oil contamination (<10% of body surface), but

³¹⁴ Fairwather Sciences, 2020.

³¹⁵ *Id.* See Figure 11.

³¹⁶ *Id.* See Figure 13.

³¹⁷ Gerlach-Miller et al. 2018

³¹⁸ DEIS at 92.

³¹⁹ USFWS, Southern Sea Otter (*Enhydra lutris nereis*) 5-Year Review: Summary and Evaluation, 24 (Sept. 15, 2015).

higher levels (>25%) will result in mortality.³²⁰ The devastating effects from oil spills was demonstrated by the 1989 *Exxon Valdez* oil spill, which led to the death of 3,905 sea otters statewide.³²¹

The *Exxon Valdez* oil spill also “demonstrated that spilled oil can travel long distances and take large numbers of sea otters far from the point of initial release.”³²² Oil spills can affect sea otters over the long term, due to interactions between natural environmental stressors and the compromised health of animals exposed to oil lingering in the water. Studies undertaken since the *Exxon Valdez* Oil Spill confirmed persistent exposure of sea otters to residual oil in western Prince William Sound that can lead to chronic, persistent exposure to oil appears to cause reduced productivity and reduced survival of young. Additionally, sea otter carcasses from the oil spill that were examined as part of the damage assessment had lesions associated with stress, including oral ulcers from herpes infection, hemorrhagic enteritis, vullous emphysema and liver pathology.³²³ The EIS must properly analyze the potential cumulative impacts of such oil spills on this threatened DPS considering the long- and short-term effects.

ii. Noise

There is minimal analysis on potential impacts of noise on sea otters. BOEM does not include analysis of studies that have found sea otters exhibit behavioral responses to acoustic stimuli, including pile driving activities. One study exposed captive (Simpson Bay, AK) and free ranging sea otters (Morro Bay, CA) to an assortment of aerial and underwater sounds, projected at a variety of frequencies, decibel levels, and intervals.³²⁴ Authors noted that in both the captive and free-ranging study populations of sea otters, certain acoustic stimuli could cause a startle response and result in dispersal.³²⁵ Results from a sea otter monitoring program during vibratory pile driving in California demonstrated that sea otters are disturbed by and avoid vibratory pile-driving activities (including female-pup pairs).³²⁶

³²⁰ See e.g., Costa, D.P., and G.L. Kooyman. 1981. Effects of oil contamination in the sea otter *Enhydra lutris*. Outer Continental Shelf Environmental Assessment Program. NOAA Final Report. La Jolla, California

Siniff, D.B., T.D. Williams, A.M. Johnson, and D.L. Garshelis. 1982. Experiments on the response of sea otters *Enhydra lutris* to oil contamination. *Biological Conservation* 23: 261-272.

³²¹ DeGange, A.R., A.M. Doroff, and D.H. Monson. 1994. Experimental recovery of sea otter carcasses at Kodiak Island, Alaska, following the Exxon Valdez oil spill. *Marine Mammal Science* 10:492-496.

³²² U.S. Fish and Wildlife Service, Northern Sea Otter Southwest Alaska Stock Assessment, 5 (April 2014), <https://www.fws.gov/ecological-services/es-library/pdfs/Northern-Sea-Otter-SWAK-Final-SAR.pdf>.

³²³ USFWS, Southwest Alaska Distinct Population Segment of the Northern Sea Otter (*Enhydra lutris kenyoni*) Recovery Plan, 3–11 (July 2013) (Sea Otter Recovery Plan).

³²⁴ Davis, R.W., Williams, T.M., and Awbrey, F. 1988. Sea Otter Spill Avoidance Study. Rep. from Sea World Research Institute, San Diego, CA, for Minerals Management Serv. Los Angeles, CA. MMS 88-0051.

³²⁵ *Id.*

³²⁶ Marine Mammal Commission (2018). 2018 Marine Mammal Commission Letters and Agency Responses. Letter submitted to the U.S. Fish and Wildlife Service on May 1, 2018 regarding the Application from USCG to take small

The DEIS states: “Seismic airgun operations, particularly the larger 2D/3D surveys, have the greatest potential for noise impacts to sea otters, harbor seals, and sea lions (NMFS, 2017; USFWS, 2013, 2017). Steller sea lions mainly occur in the lower inlet and based on existing marine mammal surveys and proximity to their critical habitat areas, would likely be encountered by seismic surveys, but less often than harbor seals due to population differences and distributions between the species. Monitoring suggests seals and sea lions typically do not react strongly to airgun operations, often watching from within 300 meters (984 ft) of a survey until it passes them by (NMFS, 2016, 2017; Beland et al., 2013).”

There is no further discussion of noise analysis, hearing abilities, and potential responses of sea otters in the DEIS. BOEM should ensure that there is an extensive analysis of potential impacts from noise on sea otters.

The DEIS states: “Consequently, adverse impacts of seafloor disturbance and habitat alteration from the presence of production platforms could be offset by the creation of more productive feeding habitat and better feeding opportunities for porpoises, harbor seals, Steller sea lions, and sea otters.”³²⁷ BOEM should provide a reference for this statement. There are 16 platforms currently located in Cook Inlet, and to our knowledge there have been no publications or reports that demonstrate there is increased feeding habitat for sea otters.

The DEIS states “The USFWS determined disturbances from vessel traffic were likely, particularly if drill sites were placed in sea otter critical habitat, and that those disturbances would be greatest during summer when sea otter pups are in open waters, away from their nearshore wintering areas (USFWS, 2017). Because the likely shore bases are located on the eastern side of Cook Inlet, routine vessel traffic is not expected to transit through sea otter critical habitat. For this reason, sea otters occurring in the western portion of sea otter critical habitat would mostly remain unaffected by vessel traffic from post-lease activities (USFWS, 2017).”³²⁸ This above statement does not address the potential for overlap with the sea otters found in Kachemak Bay and along the western shore of Lower Cook Inlet (specifically from Kenai to Anchor Point) where sea otter presence is high.³²⁹

numbers of marine mammals incidental to replacement of structures at USCG’s Station Monterey in Monterey, California. <https://www.mmc.gov/wp-content/uploads/18-05-01-Henry-USCG-Monterey-FWS-IHA.pdf/>.

³²⁷ DEIS at 89.

³²⁸ DEIS at 90.

³²⁹ See e.g., Gerlach-Miller et al. 2018 and Fairweather Science 2020

G. BOEM Must Fully Analyze the Effects of the Proposed Action on Recreational and Commercial Fisheries

BOEM has failed to take a hard look at the impacts the Proposed Action would have on fisheries in Cook Inlet. The DEIS has systemic and foundational problems that undermine the BOEM's conclusions on the impact the Proposed Action will have on fisheries.

First, BOEM provides only the most basic data on fisheries, i.e., essentially just the presence of a fishery in the proposed lease sale area. For example, throughout section 4.6.1.2, the DEIS offers only very basic and general information on these species with no information on each species' importance and population health. The DEIS fails to provide abundance or density of fish populations even though Alaska Department of Game and Fish (ADGF) provided this information and other data from trawl studies in the scoping process.³³⁰ Without this information, it is impossible to understand the importance a species has to the area. At the very least, the DEIS must provide the population, density, and biomass for each fishery potentially impacted by the Proposed Action. This means not only the species for a fishery but also information on the economic value and direct and indirect jobs associated with each fishery.

The DEIS's fishery analysis is cursory at best. An example is the following sentence: "Individual population size for fish and invertebrates can vary throughout Cook Inlet and over time."³³¹ Without providing the known data on these populations, the DEIS fails to offer context for the severity of impacts to a population. While many population sizes vary over time, a species' population will still have known stable states within these healthy population cycles. Without this information, the DEIS fails to provide how much the Proposed Action places a population at risk.

Second, the DEIS completely lacks baseline data within the lease area, preventing BOEM from accurately evaluating how to protect important fisheries and habitat within the lease sale area. This is particularly obvious in the lease stipulations ostensibly in place to protect "populations or habitats of biological significance" which requires that if an operator discovers such populations or habitats, the operator would have to report such a finding and make every "reasonable effort to preserve the biological resource and protect it from damage."³³² This stipulation is meaningless without baseline data or required surveys *prior to undertaking* actions for populations or habitats of biological significance within and surrounding the lease sale area. Baseline studies would detect the presence of these important populations or biologically significant habitats to ensure these resources are protected from lease sale activities. Instead, BOEM appears to simply be hoping that these populations or habitats of biological significance

³³⁰ See Memorandum from Ashley Adoko to Ron Benkert (Oct. 7, 2020) (submitted during the scoping process).

³³¹ DEIS at 63.

³³² DEIS at 24.

will be discovered.³³³ Cook Inlet supports important fisheries and failing to assess their baseline status within the lease area could result in unknown and catastrophic damages.

Third, inaccurate baseline data in the sale area undermines BOEM's analysis regarding potential impacts from the Proposed Action on Cook Inlet's fisheries. Specifically, the baseline data BOEM cites for water quality and hydrocarbon concentrations in Cook Inlet sediments are inaccurate misleading. BOEM cites studies for the assertion that the water within the proposed lease sale area meets water quality criteria^{334,335}; however, it is unclear whether any of the study's sample sites were actually located within the proposed lease sale area.³³⁶ Similarly, BOEM asserts that "Hydrocarbon concentrations in Cook Inlet sediments are comparable to values reported for background hydrocarbons in Alaska offshore coastal waters; therefore, oil and gas production in upper Cook Inlet does not appear to be a source of petroleum contaminants," but the study cited for this assertion *did not* sample within the proposed lease sale area.³³⁷ This absence of important baseline data makes it impossible to understand the current status and health of the proposed lease area, what pressure the area is already under, and the impacts of the Proposed Action. Present pollution could already be impacting fisheries, ultimately making these fisheries less resilient to additional stress and pollution.

1. BOEM's Assessment of the Proposed Action's Noise Impacts on Fisheries is Inadequate.

Throughout the DEIS, BOEM appears to downplay possible impacts of noise on Cook Inlet's fish and marine invertebrates, including by failing to providing supported information for the lack of impacts. For example, when addressing concerns regarding seismic surveys, BOEM asserts that "[i]mpacts from noise to fish and invertebrate communities may have acute effects on individuals close to the noise source, but overall population impacts are not expected because the noises will be temporary, and individuals will habituate or leave the area."³³⁸

The inadequacy of this statement is particularly evident with respect to invertebrate communities. Invertebrate species such as scallops are simply unable to "leave the area." At a minimum, the DEIS must accurately point out that risks to invertebrates from noise are

³³³ DEIS at 63.

³³⁴ DEIS at 54.

³³⁵ DEIS at 54.

³³⁶ Sue Saupe, et. al., *National Coastal Assessment Program: The Condition of Southcentral Alaska Coastal Bays and Estuaries, Technical Report and Statistical Summaries* (2005), <https://www.circac.org/wp-content/uploads/EMAPSC2-Report.pdf> At 39.

³³⁷ MMS (Minerals Management Service), *Sediment Quality in Depositional Areas of Shelikof Strait and Outermost Cook Inlet* fig. 2-1 (Boehm ed.) 2001 https://www.boem.gov/sites/default/files/boem-newsroom/Library/Publications/2000/2000_024.pdf, (cited as Boehm 2001 within the DEIS). Even if this study had sampled within the project area, this data is not over 20 years out of date.

³³⁸ DEIS at 65.

unknown. The statement also ignores recommendations from the agency’s own research on these impacts. In 2012, BOEM conducted a workshop specifically to consider the impacts of man-made noise on fish, fisheries, and invertebrates.³³⁹ That report acknowledges that “[a]lmost nothing is known about the detection of sound and vibration by invertebrates . . . In this state of ignorance there needs to be a focus on examining those species that are of greatest interest, either because of their ecological importance, or their role in supporting commercial fisheries, or because sound is suspected of being important to them.”³⁴⁰

2. BOEM’s Assessment of the Impacts from Climate Change from the Proposed Action on Fisheries is Inadequate.

When considering the cumulative impacts of climate change on Cook Inlet fish and invertebrates, BOEM states that “[a]lthough the cumulative impacts to fish and invertebrates is likely to be major, primarily due to climate change, the incrementally additive impact of the Proposed Action in the context of these Past, Present, and RFFAs is negligible.”³⁴¹ However, when revising the DEIS, BOEM’s assessment of the Proposed Action’s impact on climate change drastically changed from stating that the Proposed Action would produce less greenhouse gases than the no action alternative to now asserting that the Proposed Action will increase the greenhouse gases. However, BOEM made no changes to how this significant change would affect the impact of climate change on fisheries or cumulative impacts.

Species facing pressure from climate change will require resilience in order to survive the forthcoming changes. These major impacts from climate change on Cook Inlet fisheries are occurring in conjunction with all the other stressors listed within the DEIS, including seismic surveys, discharges, other noise pollution, and possible spills. BOEM fails to consider the cumulative impacts of these stressors and overlooks impacts from these project emissions on an already stressed system.

³³⁹ Normandeau Associates, Inc. *Effects of Noise on Fish, Fisheries, and Invertebrates in the U.S. Atlantic and Arctic from Energy Industry Sound-Generating Activities*. 2012.

³⁴⁰ *Id.* at 55-56.

³⁴¹ DEIS at 69.

3. BOEM Failed to Take a Hard Look at the Impacts of the Proposed Action on Each Affected Fishery.

i. Drift Gillnet Fishery

Although BOEM includes an alternative addressing the drift gillnet fishery,³⁴² the DEIS fails to consider the value of this fishery or how gear conflicts would uniquely impact this fishery. Instead of considering each salmon fishery independently, the DEIS considers all the salmon fisheries in Cook Inlet as a single valuable fishery—which is “one of the largest fisheries in volume and value.”³⁴³ BOEM fails to provide the value of each fishery or how Proposed Action will impact these fisheries differently. For example, for the drift gillnet fishery, there is a huge risk of gear conflicts because of how one fishes using drift gillnets. Specifically, drift nets (once set) can drift many miles before gathered especially in the strong Cook Inlet currents. Avoiding infrastructure for the drift gillnet fishery would be incredibly difficult.

Simply indicating that there may be gear conflicts does not adequately explain what that would look like for this fishery.³⁴⁴ Instead, BOEM casually asserts that gear conflicts for the drift gillnet fishery could be managed by notifying the United Cook Inlet Drift Association (UCIDA) of temporary or permanent structures during the fishing season.³⁴⁵ Although UCIDA has an email listserv, it is unclear if BOEM has consulted with UCIDA to know how effective or successful these efforts would be in reaching the drift fishermen or if they have the capacity to undertake this task.

Regardless of the logistics to inform these drift gillnet fishermen of new temporary and permanent structures, the DEIS never explores the cost to drift gillnet fishermen to make these changes. At the very least, BOEM must consider the cost for fishermen to avoid these structures, as well as potential reductions to catch. BOEM must take a hard look at how the Proposed Action will impact the Cook Inlet drift gillnet fishery.

ii. Scallop Fisheries

The DEIS fails to adequately evaluate the likely damage to our scallop fisheries. Studies have shown that oil can be deadly for scallop species, BOEM fails to disclose the specific risks to the

³⁴² Although the North Pacific Fishery Management Council recently closed the drift gillnet fishery, it would be unreasonable to assume that this is a permanent closure over the life of the proposed action. Sabine Poux, *Feds release final rule closing part of Cook Inlet to commercial salmon fishing*, Alaska Public Radio (Nov. 8, 2021) available at: <https://www.alaskapublic.org/2021/11/08/feds-release-final-rule-closing-part-of-cook-inlet-to-commercial-salmon-fishing/>.

³⁴³ DEIS at 119.

³⁴⁴ DEIS at 120-21.

³⁴⁵ DEIS at 8.

scallop fishery, referring instead to marine invertebrates.³⁴⁶ The DEIS fails to recognize that scallop populations could be one of the casualties from an oil spill and that this would affect the Cook Inlet scallop fishery. BOEM must include the value of the scallop fishery and its current status and future.

iii. Herring Fisheries

The DEIS only briefly mentions the valuable Pacific Herring fishery and only mentions the herring fishery in Kamishak Bay to indicate that it is currently closed.³⁴⁷ BOEM must take a hard look at this fishery to include whether it is recovering, when it is anticipated to be opened again, and the value when reopened. To do this, the agency has to consider specifics for the species and in Kamishak Bay. This is vital to inform the impacts of a potential spill and seismic impacts on the recovering herring population. How difficult a cleanup or how sound would impact Kamishak Bay depends on the specific conditions in Kamishak Bay (e.g., depth, vegetation). How the herring would be impacted by a spill or seismic surveys depends on how long eggs remain in the Bay, how long juveniles remain protected within the Bay before moving offshore, and other information on the herring would allow BOEM to actually assess the risk from the Proposed Action on the Pacific herring fishery in Kamishak Bay.

iv. Crab Fisheries

Similar to the herring fishery, BOEM essentially ignores Cook Inlet crab and shrimp fisheries rationalizing that they have been closed because of population collapse.³⁴⁸ But the DEIS fails to consider the possibility of recovery for these fisheries (and other struggling fisheries in Cook Inlet). The DEIS also fails to consider how the Proposed Action could negatively impact recovery efforts.

The DEIS also ignores surrounding crab fisheries including the open and active crab fisheries in Kodiak.³⁴⁹ The risks of a spill impacting the waters around northern Kodiak are high but the DEIS has failed to consider the potential impacts to this fishery. Not only has BOEM failed to consider how this fishery could be affected, the DEIS also fails to indicate the value of this fishery on the economy and on direct and indirect employment of this fishery.

³⁴⁶ DEIS at A-21.

³⁴⁷ DEIS at 119.

³⁴⁸ DEIS at 118-119.

³⁴⁹ DEIS at 118.

v. Halibut Fishery

BOEM inaccurately includes halibut in the analysis of groundfish species.³⁵⁰ This is a baffling because halibut are not considered groundfish within fisheries management, the State of Alaska website actually states “Halibut are not a groundfish and are managed by the International Pacific Halibut Commission (IPHC).”³⁵¹ This error demonstrates a fundamental misunderstanding of the Cook Inlet halibut fishery.

But like many fisheries throughout the DEIS, the analysis of the Cook Inlet halibut fishery is very brief and cursory stating only “Halibut is a major commercial groundfish fishery in the Cook Inlet area for much of the year; landings in 2019 were recorded to be over 10 million lbs (IPHC, 2019).”³⁵² This statement fails to provide information on direct and indirect employment from this fishery but instead ignores the economic benefits from 10 million pounds of halibut annually.

vi. Pacific Cod Fishery

The DEIS’s only mention of the Pacific cod fishery is: “Allowable groundfish harvest was reduced in 2018 due to a downturn in Pacific cod populations in the Gulf of Alaska.”³⁵³ But the DEIS never explains the fishery’s value to the economy or the health and population status. This is particularly concerning because of the current status and the recent history for this fishery. The North Pacific Fisheries Management Council closed the Pacific cod fishery in Cook Inlet’s federal waters in 2019-2020 because of climate change impacts on the Pacific cod population.³⁵⁴ Concerns of warming waters for the Pacific cod are well documented.³⁵⁵ While the DEIS acknowledges that the Proposed Action will result in increased greenhouse gases, it completely ignores the risks to the Pacific cod fishery where increased warming temperatures are likely to lead to future closures and the associated economic impacts. BOEM has failed to take a hard look at the impacts to the Cook Inlet Pacific cod fishery.

³⁵⁰ DEIS at 120.

³⁵¹ AK Dep’t of Game & Fish, *Information by Fishery, Commercial Groundfish Fisheries*, <https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherygroundfish.main#other> (last visited Dec. 12, 2021 5:13 P.M.); see also NOAA, *Pacific Halibut*, <https://www.fisheries.noaa.gov/species/pacific-halibut> (last visited Dec. 12, 2021, 5:14 P.M.).

³⁵² DEIS at 120.

³⁵³ DEIS at 120.

³⁵⁴ Kavitha George, *Extremely low cod numbers lead feds to close the Gulf of Alaska fishery for the first time*, Alaska Public Radio (Dec. 6 2019) available at: <https://www.alaskapublic.org/2019/12/06/extremely-low-cod-numbers-linked-to-the-marine-heatwave-lead-feds-to-close-the-gulf-of-alaska-fishery-for-the-first-time/>.

³⁵⁵ Steven J. Barbeaux, et al., *Marine Heatwave Stress Test of Ecosystem-Based Fisheries Management in the Gulf of Alaska Pacific Cod Fishery*. *Front. Mar. Sci.* 7:703 (2020); Benjamin J. Laurel, et al., *Regional warming exacerbates match/mismatch vulnerability for cod larvae in Alaska*, *Progress in Oceanography* 193 (2021).

4. Sport Fisheries

Similar to the concerns noted above for many of the commercial fisheries in Cook Inlet, the lack of specificity and information on the sport fish economy is notably absent from the DEIS. The DEIS simply asserts:

Marine sport fisheries play an increasingly important role in Alaska's recreation-based economy. Directly, sport fishing benefits charter companies and fishing guides. Indirectly, marine sport fishing financially benefits tourism-related businesses including transportation, hotels, restaurants, gear shops, and other service sector concerns.³⁵⁶

But the DEIS must take a hard look at specifics for sport fisheries. This requires analyzing at a minimum: the number of charter boats operating in Cook Inlet, the economic benefit of the sport fishing economy, and how this thriving economy would be affected by a large oil spill. The DEIS does not consider the direct and indirect jobs from Cook Inlet's sport fishery or the loss that this sector would be for communities throughout Cook Inlet.

H. BOEM Must Fully Analyze the Effects of the Proposed Action on Tourism.

BOEM failed to take a hard look at effects of the Proposed Action on the vital and sustainable tourism industry in the region. Although BOEM provides brief statements about tourism in the region, the agency never provides the economic benefits from the tourism industry; including tourism related to fisheries, bear viewing, or other sightseeing activities.³⁵⁷ In fact, the DEIS never even mentions the incredible economy that thrives around bear viewing in Lake Clark and Katmai National Parks and Preserve and McNeil River State Game Sanctuary and Refuge.³⁵⁸

This oversight of Southcentral Alaska's bear viewing tourism market, which generates an incredible \$34 million dollars in sales annually³⁵⁹ is concerning. BOEM acknowledges the risk to protected lands--with Lake Clark National Park and Preserve having the highest risk (more than 50% in the winter and between 25 and 50% in the summer) of a spill reaching those bear dense shores or the shores of Kamai National Park and Preserve or McNeil River State Game Sancturary and Refuge.³⁶⁰ Ignoring bear viewing as a vital economy in Southcentral Alaska means that BOEM has failed to adequately consider how this industry could be impacted by the Proposed Action. Tourists may not spend \$34 million dollars annually to see Cook Inlet bears if

³⁵⁶ DEIS at 103.

³⁵⁷ See DEIS at § 4.10.1.

³⁵⁸ *Id.*

³⁵⁹ Taylor B. Young & Joseph M. Little, *The Economic Contributions of Bear Viewing in Southcentral Alaska*, University of Alaska Fairbanks (May 2019).

³⁶⁰ DEIS at A-47.

there is a spill in Lower Cook Inlet. Tourists also may choose to go to other locations simply because of the presence of oil rigs and platforms in Lower Cook Inlet.

BOEM has also failed to consider other tourism impacts. BOEM fails to consider tourists who travel to Lower Cook Inlet for the views and landscape. “Bed & Breakfasts” along the coast regularly advertise with pictures of the incredible views of Lower Cook Inlet.³⁶¹ Instead BOEM’s simple assertions that “after the initial cleanup is completed and the areas reopened, recreationists and tourists would still likely avoid visiting those areas for some extended time due to a perception of contamination.”³⁶² But this does not consider the likely cost to local communities from an oil spill. Because BOEM has failed to determine how important the tourism industry around sightseeing, bear viewing, and accommodations, it is impossible to understand the damages to these resources from the DEIS.

VI. BOEM’s DEIS Fails to Consider a Reasonable Range of Alternatives

NEPA requires a “detailed statement” of “alternatives to the proposed action.”³⁶³ In the alternatives analysis, the agency must “rigorously explore and objectively evaluate all reasonable alternatives to a proposed action.”³⁶⁴ In considering what constitutes a reasonable alternative, “an agency should always consider the views of Congress, expressed, to the extent that the agency can determine them, in the agency’s statutory authorization to act, as well as in other congressional directives.”³⁶⁵ The purpose of this section is “to insist that no major federal project should be undertaken without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different means.”³⁶⁶ “The existence of a viable but unexamined alternative renders an [EIS] inadequate.”³⁶⁷

Here, BOEM considered only four action alternatives in detail: (1) the proposed action of offering all available OCS blocks in the northern portion of the Cook Inlet Planning Area, totaling approximately 1.08 million acres; (2) exclusion or mitigation areas for Cook Inlet beluga whales; (3) exclusion or mitigation areas for Northern sea otters; and (4) mitigation measures for the Cook Inlet drift gillnet fishery. This is insufficient.

³⁶¹ See *Homer Bed and Breakfast Association* available at: <http://homerbedbreakfast.com/> (last visited Dec. 12, 2021 5:25 P.M.).

³⁶² DEIS at A-46

³⁶³ 42 U.S.C. § 4332(2)(c).

³⁶⁴ *Southeast Alaska Conservation Council v. FHA*, 649 F.3d 1050, 1056 (9th Cir. 2011) (cleaned up).

³⁶⁵ *Citizens Against Burlington v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991); *League of Wilderness Defs. v. U.S. Forest Serv.*, 689 F.3d 1060, 1070 (9th Cir. 2012) (similar).

³⁶⁶ *Environmental Defense Fund v. Corps of Engineers*, 492 F.2d 1123, 1135 (5th Cir. 1974).

³⁶⁷ *Ala. Wilderness Recreation & Tourism Ass’n v. Morrison*, 67 F.3d 723, 729 (9th Cir. 1995) (citations omitted)

As discussed above, and reiterated here, scientific research has established that there is no room in the global carbon budget for new fossil fuel extraction if we are to avoid the worst dangers from climate change. Instead, new fossil fuel production and infrastructure must be halted and much existing production must be phased out. As such, BOEM must adopt the no action alternative and cancel Lease Sale 258. At the very least, BOEM must consider an alternative that would delay new offshore oil and gas leasing until there is a firm plan in place to limit warming to 1.5°C.

BOEM also failed to consider several other reasonable alternatives, including a renewable energy alternative; an alternative that would limit the scope of development activities; and an alternative that would reduce impacts to critically endangered Cook Inlet beluga whales. BOEM's failure to consider alternatives that would minimize harm to the environment from Lease Sale 258 is particularly glaring considering the statute under which BOEM is acting here—OCSLA—vests BOEM with the duty to ensure offshore oil and gas activity is balanced “with protection of the human, marine, and coastal environments” and that sufficient “environmental safeguards” are in place.³⁶⁸

A. BOEM Failed to Consider a Renewable Energy Alternative

BOEM failed to examine an alternative whereby the energy to be obtained by Lease Sale 258 would instead be obtained through renewable resources. It is becoming readily apparent that clean, renewable solar and wind energy, paired with energy storage, efficiency and grid technologies, can and must be rapidly scaled up to meet U.S. and global energy needs many times over, while providing 100 percent energy access in a just transition.³⁶⁹ As explained above, solar photovoltaics and wind energy are by far the fastest-growing new energy resources, comprising 90 percent of the global power sector's growth in 2020.³⁷⁰ Several solar technologies and wind power are now cheaper than the cheapest fossil fuel generation, while renewables across the board are achieving cost parity.³⁷¹ The IPCC has mapped out multiple pathways that achieve the 1.5°C climate limit through immediate, transformative action to end new fossil fuel projects, phase-out existing fossil fuel production and use, and rapidly build up new clean and renewable energy technologies alongside new storage, efficiency, and grid technologies.³⁷²

³⁶⁸ 43 U.S.C. §§ 1332(3), 1802(2).

³⁶⁹ Anthony Lopez et al., U.S. Renewable Energy Technical Potentials: A GIS-Based Analysis. National Renewable Energy Laboratory (2012); Sven Teske & Sarah Niklas 2021; Carbon Tracker Initiative, *The Sky's The Limit: Solar and wind energy potential is 100 times as much as global energy demand* (2021), <https://carbontracker.org/reports/the-skys-the-limit-solar-wind/>.

³⁷⁰ Press Release, International Energy Agency, *Renewables are stronger than ever as they power through the pandemic* (May 11, 2021), <https://www.iea.org/news/renewables-are-stronger-than-ever-as-they-power-through-the-pandemic>.

³⁷¹ Lazard, *Insights: Levelized Cost Of Energy, Levelized Cost Of Storage, and Levelized Cost Of Hydrogen* (2020); Simon Evans, *Carbon Brief*, *Solar is now ‘cheapest electricity in history’, confirms IEA* (Oct. 13, 2020, 8:37 PM).

³⁷² IPCC, *Global Warming of 1.5°C at Summary for Policymakers*.

Renewable solar and wind energy—particularly distributed renewable energy resources such as rooftop and community solar, storage, and microgrids—are not only a key solution to the climate crisis while fully meeting the nation’s energy needs, but also provide numerous co-benefits³⁷³ that serve the public interest and avoid and redress the catastrophic harms to the public interest created by fossil fuel infrastructure. Renewable energy avoids the toxic air and water pollution created by the current fossil fuel-dominated energy system that disproportionately harms Black, Brown, Indigenous, and low-wealth communities³⁷⁴ as well as injuring wildlife and ecosystems.³⁷⁵ Rooftop solar and community-owned solar and storage offer critical climate resilience benefits during emergencies, such as hurricanes and wildfires worsened by the climate crisis,³⁷⁶ and can empower local communities through local energy choice, job creation, and other regenerative economic benefits that remain local.³⁷⁷

Indeed, study after study has shown that investment in clean energy creates many more jobs than investment in fossil fuels.³⁷⁸ Globally, undertaking ambitious climate action could result in an additional 65 million jobs by 2030 as compared to a business-as-usual scenario.³⁷⁹ The Biden administration just released a report that recognizes this is the decisive decade for addressing climate change and transitioning to clean energy; that the clean-energy transition would create 500,000 to 1 million new jobs on net, and there would be significant co-benefits from reducing air pollution.³⁸⁰

³⁷³ Rebecca R. Hernandez et al. 2019. Techno-Ecological Synergies of Solar Energy for Global Sustainability. *Nature Sustainability* 2:560.

³⁷⁴ Tim Donaghy and Charlie Jiang, *Fossil Fuel Racism: How Phasing Out Oil, Gas, and Coal Can Protect Communities*, Apr. 2021.

³⁷⁵ Nathalie Butt et al. 2013. Biodiversity risks from fossil fuel extraction. *Science* 342:425; Margaret C. Brittingham et al. 2014. Ecological risks of shale oil and gas development to wildlife, aquatic resources and their habitats. *Environmental Science and Technology* 48:11034; Paul D. Pickell et al. 2014. Monitoring forest change in landscapes under-going rapid energy development: challenges and new perspectives. *Land* 3:617; Sara Souther et al. 2014. Biotic impacts of energy development from shale: research priorities and knowledge gaps. *Frontiers in Ecology and the Environment* 12:330; Brady W. Allred et al. 2015. Ecosystem services lost to oil and gas in North America. *Science* 348:401; Michael B. Harfoot et al. 2018. Present and future biodiversity risks from fossil fuel exploitation. *Conservation Letters* 11:e12448.

³⁷⁶ *Energy Democracy: Advancing Equity in Clean Energy Solutions* (Denise Fairchild & Al Weinrub eds. 2018); Sherry Stout et al., *National Renewable Energy Laboratory, Distributed Energy Planning for Climate Resilience* (2018); John Farrell, *The New Rules Project, Community Solar Power: Obstacles and Opportunities* (2010).

³⁷⁷ *Id.*

³⁷⁸ Brian O’Callaghan & Cameron Hepburn, *Carbon Brief, Leading economists: Green coronavirus recovery also better for economy* (May 5, 2020, 6:54 AM), <https://www.carbonbrief.org/leading-economists-green-coronavirus-recovery-also-better-for-economy>; Heidi Garrett-Peltier. 2017. Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model. *Economic Modelling* 61:439; Robert Pollin et al., *Center for American Progress & Political Economy Research Institute, Green Growth: A U.S. Program for Controlling Climate Change and Expanding Job Opportunities* (2014).

³⁷⁹ *Global Commission on the Economy and the Climate, Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times* (2018) at 39

³⁸⁰ *The Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050*. Published by the United States Department of State and the United States Executive Office of the President, Washington DC. November 2021 at 13, 51.

B. BOEM Failed to Examine an Alternative that Would Limit the Extent of Development

BOEM also failed to examine an alternative that would limit the extent of development or other oil and gas activity under Lease Sale 258. Indeed, its draft EIS admits that “all action alternatives are presumed to entail the same amount of oil and gas activity.”³⁸¹ This is improper for two reasons.

First, this approach violates NEPA’s requirement that an EIS must consider alternatives that are meaningfully different from one another “to allow for a real, informed choice.”³⁸² Second, it fails to consider reasonable alternatives that would reduce the overall scope of activity—such as an alternative that limited the number of wells to be drilled; an alternative that limited the quantity of oil that could be extracted; or an alternative that would prohibit the use of particularly dangerous drilling activities such as offshore fracking and acidizing; or an alternative that involved leasing a smaller amount of acreage and thus reduce the overall harmful environmental impacts.

Numerous courts have rejected a NEPA analysis where the agency failed to consider alternatives that would reduce the scope of the permitted activity. This includes a case in which the court held an agency’s alternatives analysis improper where it failed to examine an alternative that would have reduced the amount of oil and gas development allowed under a land management plan.³⁸³

C. BOEM Failed to Consider an Alternative that Would Further Reduce Impacts to Critically Endangered Cook Inlet Beluga Whales

As explained above, the Cook Inlet beluga whale population has been in steep decline for the last several decades. With a loss of more than 75% of the population since 1970 and a current population decline of 2.3% per year, scientists estimate that only 279 individuals remain. Along with the population’s declining numbers, the condition of Cook Inlet beluga habitat has degraded over this same timeframe because of increased industrialization and urbanization in the inlet and surrounding areas. While BOEM’s Draft EIS includes alternatives that it states “were developed to address potential impacts to Cook Inlet . . . beluga whales,”³⁸⁴ BOEM failed to consider other

³⁸¹ Draft EIS at 29.

³⁸² *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1039 (9th Cir. 2008).

³⁸³ *N.M. ex rel. Richardson v. Bureau of Land Mgmt.*, 565 F.3d 683, 710–11 (10th Cir. 2009); *see also W. Watersheds Project v. Abbey*, 719 F.3d 1035, 1051 (9th Cir. 2013) (questioning “how an agency can make an informed decision on a project’s environmental impacts when each alternative considered would authorize the same underlying action”); *Klamath-Siskiyou Wildlands Ctr. v. U.S. Forest Serv.*, 373 F.Supp.2d 1069, 1088–89 (E.D. Cal. 2004) (holding the agency did not take a hard look at reasonable alternatives when it “dismissed out of hand any proposal which would have reduced the amount of timber harvest.”)

³⁸⁴ Draft EIS at 5.

alternatives that would better protect critically endangered Cook Inlet beluga whales from the numerous harms inherent in Lease Sale 258, including noise pollution—one of the single greatest threats to Cook Inlet belugas.

For example, BOEM failed to consider an alternative that combines the lease sale exclusions identified in Alternative 3A with the additional mitigation measures for all remaining areas identified in Alternative 3C. BOEM also failed to consider an alternative that would include year-round restrictions on all seismic surveys and exploratory drilling operations north of Anchor Point, despite available information indicating that beluga whales continue to inhabit lower inlet waters south of Kalgin Island at various times during the year, and evidence the whales can be found throughout the Inlet.³⁸⁵ BOEM also failed to consider an alternative that would require vessels associated with the lease sale to slow to 10 knots or less to reduce impacts to endangered beluga whales and other marine life.³⁸⁶ Slowing ships has been shown to greatly reduce the chances of a lethal ship strike.³⁸⁷

BOEM also failed to consider an alternative that would reduce the extent of tugboat and other vessel traffic permitted under the lease sale. Commercial shipping is a pervasive source of anthropogenic noise in Cook Inlet and is of high concern, given its noise levels, prevalence, and large distribution throughout the Cook Inlet beluga habitat.³⁸⁸ Indeed, the National Marine Fisheries Service considers noise pollution from vessels as the noise source of highest concern to

³⁸⁵ See, e.g., McGuire, et al. 2014. Photo-identification of Cook Inlet beluga whales in the waters of the Kenai Peninsula Borough, Alaska. Final Report of Field Activities and Belugas Identified 2011-2013. Report prepared by LGL Alaska Research Associates, Inc., Anchorage, Alaska, for the Kenai Peninsula Borough; Sheldon, K. E. W. and P. R. Wade (editors). 2019. Aerial surveys, distribution, abundance, and trend of belugas (*Delphinapterus leucas*) in Cook Inlet, Alaska, June 2018. AFSC Processed Rep. 2019-09, 93 p. Alaska Fish. Sci. Cent., NOAA, Natl. Mar. Fish. Serv., 7600 Sand Point Way NE, Seattle WA 98115, at 42

³⁸⁶ Cf., 50 C.F.R. § 224.105 (requiring ships 65 feet in length and longer to slow to 10 knots or less in certain areas at certain times of year to protect North Atlantic right whales).

³⁸⁷ See, e.g., Szesciorka AR, et al. 2019. A Case Study of a Near Vessel Strike of a Blue Whale: Perceptual Cues and Fine-Scale Aspects of Behavioral Avoidance. *Front. Mar. Sci.* 6:761; Rockwood, R.C., et al. 2020. Estimating effectiveness of speed reduction measures for decreasing whale-strike mortality in a high-risk region. *Endangered Species Research*, 43, pp.145-166; National Marine Fisheries Service, “North Atlantic Right Whale (*Eubalaena glacialis*) Vessel Speed Rule Assessment,” Office of Protected Resources, Silver Spring, MD (June 2020).

³⁸⁸ Castellote, M. et al. 2018. Anthropogenic Noise and the Endangered Cook Inlet Beluga Whale, *Delphinapterus leucas*: Acoustic Considerations for Management. *Marine Fisheries Review* 80(3):63-88; Castellote, M. et al. 2016. Anthropogenic Noise in Cook Inlet Beluga Habitat: Sources, Acoustic Characteristics, and Frequency of Occurrence. Alaska Department of Fish and Game, Final Wildlife Research Report, Juneau; see also Mooney, T.A., et al. 2020. Audiogram of a Cook Inlet beluga whale (*Delphinapterus leucas*). *Journal of the Acoustical Society of America* 148(5):3141-3148 (“Anthropogenic increase in background noise levels (i.e., dredging, shipping, pile driving) will unavoidably alter CIB hearing abilities.”); Small, R.J., B. Brost, M. Hooten, M. Castellote, and J. Mondragon. 2017. Potential for spatial displacement of Cook Inlet beluga whales by anthropogenic noise in critical habitat. *Endangered Species Research* 32:43-57 (noting that Cook Inlet belugas are particularly vulnerable to anthropogenic impacts, in part due to their close proximity of critical habitat to Alaska’s largest urban area); Stewart, B.S. 2012. Interactions between beluga whales (*Delphinapterus leucas*) and boats in Knik Arm, upper Cook Inlet, Alaska: Behavior and bioacoustics. Hubbs-SeaWorld Research Institute Technical Report 2012-380: 1-28.

the recovery of this highly endangered population.³⁸⁹ Specifically, the agency ranked 16 sources of industrial noise pollution in Cook Inlet beluga whale habitat in order of level of concern relative to the impacts on the whale’s recovery. It compiled the list based on signal characteristics and the spatio-temporal acoustic footprint and consideration of several factors, including intensity (loudness), frequency (range of tones), and duration of acoustic signal; area affected by the sound source; and duration of sounds in both seasonal terms and frequency of occurrence.³⁹⁰ Based on this analysis, the agency considers noise from tugboats as the number one noise source of concern, noise from cargo/tanker vessels as number two, and noise from small vessels as number three.³⁹¹

Reducing the overall level of vessel traffic is particularly important because the mitigation measures on which the agency relies to dismiss the impacts from vessels are insufficient for at least two reasons.³⁹² First, they are only triggered in the event a marine mammal is observed, when seeing the whales is difficult in the turbid waters of Cook Inlet. Indeed, researchers are finding that they have not been accurately estimating the capability of lookouts to monitor and detect marine animals. Species that respond to noise by avoiding an area are unlikely to be observed using traditional methods, such as via Protected Species Observers (PSOs) or Passive Acoustic Monitoring (PAM), because animals may react at these farther distances well beyond the potential detection range, meaning even strong reactions could remain unobserved and unrecorded.³⁹³ The petroleum industry has admitted that “1 or 2 PSOs and/or PAMs cannot detect all marine mammals within a radius of 1 to 1.5 km around a seismic survey vessel.”³⁹⁴ Even if scientists could consistently detect all beluga individuals within a 500-m zone, animals located far beyond this safety zone may also be experiencing severe physiological stress and behavioral disruption.³⁹⁵ Second, in the event a PSO sees a whale, certain vessels cannot easily change course or speed. For example, tugs cannot discontinue activity when towing a rig, and the available science shows tugboats, “can produce sound capable of harassing marine mammals located over 2 km [2,187 yards] from the source.”³⁹⁶

³⁸⁹ National Marine Fisheries Service. 2016. Recovery Plan for the Cook Inlet Beluga Whale (*Delphinapterus leucas*) National Marine Fisheries Service, Alaska Region, Protected Resources Division, Juneau, AK.

³⁹⁰ *Id.* at III-11.

³⁹¹ *Id.*

³⁹² Draft EIS at 26.

³⁹³ Forney, Karin A. et al. 2017. Nowhere to go: noise impact assessments for marine mammal populations with high site fidelity. *Endang. Species Res.* Vol. 32: 391–413, 392.

³⁹⁴ *Id.* at 397.

³⁹⁵ Weilgart, L.S. 2014. “Are We Mitigating Underwater-Noise Producing Activities Adequately?: A Comparison of Level A and Level B Cetacean Takes,” 14. (Vol. 7). International Whaling Commission Working Paper, SC/65b; Nowacek, et al., Marine seismic surveys and ocean noise: time for coordinated and prudent planning, *Front Ecol Environ* 13(7): 378–386.

³⁹⁶ *See, e.g.*, National Marine Fisheries Service, Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion Hilcorp Alaska and Harvest Alaska Oil and Gas Activities, Cook Inlet, Alaska NMFS Consultation Number: AKRO-2018-00381, June 18, 2019; Jacobs Engineering. 2017. Biological Evaluation for Offshore Oil and Gas Exploratory Drilling in the Kitchen Lights Unit of Cook Inlet, Alaska. Developed for Furie Operating Alaska, LLC.

VII. BOEM's EIS Must Include Strong Mitigation Measures

NEPA regulations require agencies to include measures to mitigate adverse environmental impacts in an EIS. 40 C.F.R. § 1502.14(f); *id.* 1502.16(h). While the courts do not require that project proponents develop detailed mitigation plans or commit to any particular actions, mitigation measures must be discussed in more than cursory detail for those impacts that are unavoidable. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989); *see also, Okanogan Highlands All. v. Williams*, 236 F. 3d 468, 473 (9th Cir. 2000). A “perfunctory description” of mitigation measures, such as a mere listing of mitigation measures, is insufficient to meet NEPA’s requirements. *See Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F. 3d 1372, 1380 (9th Cir. 1998).

A. Beluga Whales.

Two of the alternatives proposed – Alternative 3B and Alternative 3C – would prohibit exploration drilling and seismic activities from November 1 through April 1 in certain or all lease blocks.³⁹⁷ However, this mitigation measure fails to take into account breeding and calving periods for the whales that occur in April and May.³⁹⁸ Therefore, BOEM should revise these alternatives to prohibit these activities until the end of the calving period – the end of May.

Alternative 3C also include a prohibition on seismic surveys from July 1 to September 30 for 146 lease blocks located within 10 miles of major anadromous streams.³⁹⁹ However, “[l]arge aggregations of belugas in specific areas of upper Cook Inlet during May to October are presumed to indicate a critical time period for foraging, based on the need to assimilate resources for overwinter survival.”⁴⁰⁰ While multiple data sources indicate that belugas exhibit seasonal shifts in distribution and habitat use within Cook Inlet, belugas do not migrate out of Cook Inlet. Belugas may be found throughout the Inlet at any time of year and will be affected by anthropogenic noise not only during the ice-free months but year-round. The EIS must include mitigation measures targeted to fully minimize adverse impacts to Cook Inlet belugas throughout the year.

B. Northern Sea Otter.

Alternative 4B, which includes mitigation for northern sea otter critical habitat, would prohibit discharging drilling fluids and cuttings and seafloor disturbance (including anchor and placement

³⁹⁷ DEIS at 5.

³⁹⁸ See Huntington, H.P., Traditional Knowledge of the Ecology of Belugas, *Delphinapterus leucas*, in Cook Inlet, Alaska, 62 MARINE FISHERIES REV. 134, 137 (2000) (noting that Cook Inlet beluga whale calving areas include the northern side of Kachemak Bay in April and May).

³⁹⁹ DEIS at 5.

⁴⁰⁰ Recovery Plan at II-13.

of bottom-founded structures) on 14 lease blocks located within 1000 meters of northern sea otter critical habitat.⁴⁰¹

Sea otters eat numerous invertebrates and fish. Due to their benthic foraging,⁴⁰² sea otter distribution is largely limited by their ability to dive to the sea floor.⁴⁰³ In Alaska and other northern populations, most mortality (other than human related) occurs during late winter and spring, presumably associated with harsh winter environmental conditions and seasonal declines in prey availability.⁴⁰⁴ Therefore, mitigation measures should consider seasonal mitigation measures in addition to those already proposed, as well as seismic activity which could affect the availability of prey.

C. Other Vulnerable Species.

The agency should also include alternatives that would reduce the potential impacts on other vulnerable species surrounding the action area. As mentioned above, oil spills can spread long distances and the impacts of oil and gas activities may impact species outside of the action area. The scoping proposals fail to consider an alternative that would prohibit any exploration or drilling activities from June to September when the waters outside Cook Inlet in the Gulf of Alaska are designated as biologically important areas for North Pacific right whales.

The EIS should consider mitigation measures restricting lease activities during other important migratory, breeding, and birthing periods as well. BOEM should discuss possible spatial alternatives that would lower the likelihood of catastrophic effects of oil spills on wildlife, rather than limit the options considered to those that might benefit the two species with designated critical habitat within the project area.

VIII. BOEM Must Include Tribes, Tribal Non-Profits, and Native Corporations in the Decision-Making Process and Thoroughly Analyze Project Effects on Their Communities

The United States government has an important trust responsibility to Alaska Native Tribes. These Tribes have stewarded these lands and waters in and around the Proposed Action area since time immemorial. The DEIS fails to provide adequate tribal consultation, fails to include Indigenous Traditional Ecological Knowledge, and mischaracterizes or minimizes the risk that the Proposed Action would have on communities that rely on traditional hunting and gathering or subsistence activities near the proposed lease sale area.

⁴⁰¹ DEIS at 7.

⁴⁰² Sea Otter Recovery Plan at 5.

⁴⁰³ Stock Assessment at 1.

⁴⁰⁴ Sea Otter Recovery Plan at 2-26.

A. BOEM Must Engage in Meaningful Tribal Consultation

The United States has a unique relationship with Alaska Native Tribes. The Council on Environmental Quality requires that federal agencies actively solicit participation from tribal governments no later than the scoping process.⁴⁰⁵ Executive Order 13175 further requires regular and meaningful consultation and collaboration with tribal officials when federal decisions will have tribal implications to strengthen government-to-government relationships. The Secretary of the Interior recently issued an order to ensure that there are meaningful consultations from the Department of the Interior.⁴⁰⁶ This order attempts to achieve meaningful consultations by “identifying and involving Tribal representatives early in the planning process.”⁴⁰⁷ The order specifies that “by including tribes” in “all stages of the tribal consultation will help ensure that future Federal action is achievable, comprehensive, long-lasting, and reflective of tribal input.”

The Secretary of the Interior also recently issued a Joint Secretarial Order on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters on November 15, 2021.⁴⁰⁸ In it, the Secretary recognizes that “millions of acres of Federal lands and waters were previously owned and managed by Indian Tribes,” which contain “cultural and natural resources of significance and value to Indian Tribes and their citizens, including sacred religious sites, burial sites, wildlife, and sources of indigenous foods and medicines.” The joint order attempts to ensure that “all decisions by the Departments relating to Federal stewardship of federal lands, waters, and wildlife under their jurisdiction include consideration of how to safeguard the interests of any Indian Tribes such decisions may affect.” The order directs that the Departments “will engage affected Indian Tribes in meaningful consultation at the earliest phases of planning and decision-making relating to the management of Federal lands to ensure that Tribes can shape the direction of management.”⁴⁰⁹

Regardless of this clear direction, the DEIS does not include any information on how BOEM offered consultation opportunities to tribes or whether BOEM held any tribal consultations in preparing the DEIS. The DEIS instead simply explains that BOEM had initiated consultations with 10 federally recognized Tribes, specifically, the Native Villages of Nanwalek, the Native Village of Port Graham, Seldovia Village Tribe, Ninilchik Traditional Council, Kenaitze Indian Tribe, Salamatof Tribal Council, Knik Tribal Council, Chickaloon Traditional Village Council, the Native Village of Tyonek, and the Cook Inlet Tribal Council.⁴¹⁰ BOEM asserts that tribal

⁴⁰⁵ 40 C.F.R. § 1501.9.

⁴⁰⁶ Secretarial order No. 3317.

⁴⁰⁷ *Id.*

⁴⁰⁸ Joint Secretarial Order No. 3403.

⁴⁰⁹ *Id.*

⁴¹⁰ DEIS at 132.

consultations were offered to these Tribes because their “members could be affected by activities related to proposed LS 258” BOEM also offered consultation to 11 ANCSA corporations.⁴¹¹

However, BOEM fails to specify how the agency identified affected tribal citizens and how BOEM offered government-to-government consultations to these tribes. Did BOEM reach out during the scoping process in October 2020?⁴¹² Was there any follow up in 2021 when the NEPA process was restarted? The undersigned groups recognize that government-to-government consultations benefit from confidentiality but the process that the federal government used to ensure that tribes have a meaningful opportunity to engage should not be confidential. It is impossible to assess from the text in the DEIS whether or not any tribe was actually given a meaningful opportunity to engage on this Proposed Action.

The list of tribes in the DEIS is also confusing. The DEIS lists Cook Inlet Tribal Council (CITC) as a Tribe but it is a tribal non-profit and not a sovereign nation.⁴¹³ Although consultation with CITC is valuable—at best it is disingenuous for BOEM to list a tribal nonprofit as a federally-recognized Tribe while at worst BOEM does not know that CITC is a tribal non-profit. BOEM also failed to specify how the agency identified tribes that have citizens that would likely be impacted by the Proposed Action. BOEM arbitrarily offered a government-to-government consultation to Knik Tribal Council but not to the Native Village of Eklutna, which is adjacent to Cook Inlet.⁴¹⁴ The DEIS does not provide answers to any of these questions, making it impossible to determine if BOEM has even attempted to engage in Tribal Consultations.

Even more glaring is that BOEM failed to provide consultation opportunities⁴¹⁵ to any of the 10 federally-recognized tribes located on the Kodiak Archipelago. This oversight is unacceptable. Throughout the DEIS, BOEM repeatedly references impacts or potential impacts to Kodiak, including impacts to harvest areas from a large spill.⁴¹⁶ Although the DEIS confusingly characterizes the risk of the Proposed Action to Kodiak as follows: “A large oil spill also has a very small probability of occurring and contacting substance areas for Kodiak Island and Alaska Peninsula communities. Although it is very unlikely to occur, it could result in severe impacts in

⁴¹¹ DEIS at 133.

⁴¹² If the agency engaged in tribal consultation for the Lease Sale 258 in 2020, it was not included in the 2020 Tribal Consultation Report, which only reports consultation in Alaska for the Proposed Arctic Rule Outreach. *See* Bureau of Ocean Energy Management, 2020 Tribal Consultation Report (May 7, 2021).

⁴¹³ *See Cook Inlet Tribal Council, About CITC* <https://citci.org/about/> (last visited Nov. 10, 2021).

⁴¹⁴ It would not be unreasonable for BOEM to provide tribal consultation to the 30+ tribes that are either undergoing or facing relocation from climate change given the proposed action would increase greenhouse gas emissions. *See* Dalia Faheid, *Indigenous Tribes Facing Displacement in Alaska and Louisiana Say the U.S. Is Ignoring Climate Threats* (Sept. 13, 2021) available at: <https://insideclimatenews.org/news/13092021/indigenous-tribes-alaska-louisiana/>.

⁴¹⁵ At this point, BOEM cannot go back in time to involve these tribe early in the process or within the scoping phase as required by 40 C.F.R. § 1501.9.

⁴¹⁶ DEIS at 111-12.

affected communities in those regions.”⁴¹⁷ But a 19% chance of a large spill cannot be characterized as having a “very small probability of occurring” and a ≥ 6 to $< 25\%$ chance of such a spill impacting Kodiak cannot be fairly characterized as a “very small probability” or as “very unlikely to occur.”⁴¹⁸ Although this is lower than the risk of a large spill impacting the tribes located in the Kachemak Bay area or the Native Village of Tyonek, it is certainly still a significant risk for citizens of Kodiak region tribes. It is not just the Kodiak region tribes but also the Kodiak region ANCSA Corporations that should have received consultation opportunities. Fishing is an important part of Kodiak’s economy and it stands to reason that many tribal citizens of Kodiak-based tribes would be impacted by the effects from the Proposed Action.

But the DEIS does not stop there. After failing to meaningfully consult with all potentially affected tribes, the DEIS actually assumes that tribal governments “could take on additional roles to cope with spill response and cleanup activities.”⁴¹⁹ Not only did BOEM fail to have government-to-government consultations but the agency then assumes that these same tribes will be able to help with cleanup efforts. Alaska Native Tribes have too often been expected to address or live with the consequences from agency decisions that the tribes were never consulted on and, often, do not benefit the tribes.

B. BOEM Must Consider Indigenous Traditional Ecological Knowledge

Secretary Haaland also has directed the Department of Interior and associated agencies to “consider Tribal expertise and/or Indigenous knowledge as part of Federal decision making relating to Federal lands, particularly concerning management of resources subject to reserved Tribal treaty rights and subsistence uses. . . . will consider Tribal expertise and/or Indigenous knowledge as part of Federal decision making relating to Federal lands, particularly concerning management of resources subject to reserved Tribal treaty rights and subsistence uses.” This is consistent with the Council on Environmental Quality’s direction that heads of agencies ensure that they are recognizing Indigenous Traditional Ecological Knowledge as “one of many important bodies of knowledge that contributes to the scientific, technical, social, and economic advancements of the United States and our collective understanding of the natural world.”⁴²⁰ The fact that BOEM has utterly failed to engage in government-to-government consultations with the Kodiak region Tribes is not simply a process issue for the DEIS. This issue undermines the entirety of the DEIS because it precludes the incorporation of the traditional knowledge held by these Tribes, which have stewarded these waters and land from time immemorial.

⁴¹⁷ DEIS at 111.

⁴¹⁸ DEIS at 111.

⁴¹⁹ DEIS at A-3.9.2.

⁴²⁰ Memorandum for the Heads of Departments and Agencies: Indigenous Traditional Ecological Knowledge and Federal Decision Making, From Eric Lander and Brenda Mallory, Council on Environmental Quality, (Nov. 15, 2021).

For example, BOEM received information from Seldovia Village Tribe during the scoping process regarding the “Compass Rose” and “the riffles”—two important fishing areas for both commercial and sport operators.⁴²¹ Seldovia Village Tribe explains that the “Compass Rose” is roughly 17 miles west of Homer Spit and “the riffles” is below Anchor Point. BOEM makes no mention of these areas or any efforts to protect them from the Proposed Action. Seldovia Village Tribe also highlights the importance of Kamishak Bay herring spawning grounds. As the Tribe highlights, this fishery has been closed since 1999 but that this “population has been an important resource for the area and the spawning grounds of this population should be avoided to allow for the population to continue to recover.”⁴²² But BOEM only mentions this fishery to note that is still closed.⁴²³ Yet there is a ≥ 50 percent chance of a large oil spill reaching Kamishak Bay.⁴²⁴ BOEM fails to explain how this historically important resource would be safe if the Proposed Action takes place. The recovery of this fishery is important to Seldovia Village Tribe and that must be considered within the DEIS.

BOEM’s failure to include or address Seldovia Village Tribe’s concerns in the DEIS is in direct opposition to Secretary Haaland’s expressed intention of ensuring meaningful consultations to build trust and collaboration between the Federal Government and Tribes. BOEM has not meaningfully engaged in conversations with the stewards of these waters and lands from time immemorial in order to incorporate and strengthen the information within the DEIS.

C. BOEM Must Fully Analyze the Effects of the Proposed Action on Alaska Native and Subsistence Communities

BOEM’s analysis of the effects of the Proposed Action on Alaska Native communities and subsistence activities is inadequate for it to be a hard look. BOEM asserts that impacts to subsistence or traditional harvest activities to be minor unless there is a large spill. But BOEM does not provide any baseline data for specific areas or traditional knowledge regarding current subsistence resources. Only through a meaningful consultation process could BOEM determine how subsistence users may be impacted by the Proposed Action. BOEM must reach out to subsistence communities to determine if populations and resources for subsistence or traditional harvest are currently sustainable or if they are in decline due to climate change or other anthropogenic causes. If a community relies on fish runs that are already in decline, additional stress from the Proposed Action may have much larger cumulative impacts than predicted in the report. But these actual impacts could only be determined through true consultation with subsistence users throughout Cook Inlet and the Kodiak Archipelago.

⁴²¹ Seldovia Village Tribe, *Comments on the Call for Information and Nominations for Proposed Gas Lease Sale* 258 (Oct. 8, 2020).

⁴²² *Id.*

⁴²³ DEIS at 119.

⁴²⁴ DEIS at A-39.

BOEM's asserts that small oil spills would not impact subsistence users because these users could likely avoid the affected area and could use other locations for targeted resources.⁴²⁵ This is an unfounded assertion. BOEM must consult with the tribes whose subsistence users rely on these areas. It is ludicrous to assert that all locations are of equal value or that subsistence users have the ability to simply move to a different area. For example, even a small spill that occurs in the "Compass Rose", in "the riffles", or in Kamishak Bay could have a profound impact on important resources relied on by Seldovia Village Tribe. It is unreasonable to assume that these important locations could simply be replaced by other locations for substance use. This is particularly concerning because it fails to consider the cultural importance of traditional harvest.

Similarly, BOEM failed to consider any impacts to subsistence users from Kodiak except to indicate that these communities would be affected by a large oil spill. Again, BOEM asserts that a 19% chance of a large oil spill is a "very small" possibility of occurring and reaching Kodiak.⁴²⁶ The DEIS does not actually take a hard look at this activity. The agency also fails to consider other impacts to subsistence users from this area. The DEIS fails to disclose what areas these subsistence users primarily rely on, as well as the most important resources for these subsistence users, and how the resources are currently doing (e.g., are they declining, stable, or increasing). These answers can only be obtained through meaningful tribal consultation.

Finally, within the spill analysis, BOEM asserts that population-level impacts from a large spill for traditionally harvested marine mammal species would only occur for the Cook Inlet beluga whale population.⁴²⁷ But BOEM does not analyze the impacts of this to subsistence resources but instead simply notes that traditional harvest of belugas is currently closed.⁴²⁸ But the Cook Inlet Beluga Whale Recovery Plan notes a "significant desire to rebuild a beluga population capable of again supporting subsistence use."⁴²⁹ The Proposed Action, with the potential major impact on the Cook Inlet beluga population, could further delay or entirely remove the possibility of ever seeing a healthy population that could sustain traditional harvest in Cook Inlet. The DEIS fails to consider the potential permanent loss of Cook Inlet belugas and the Native Village of Tyonek's important, and sustainable harvest from time immemorial.⁴³⁰

⁴²⁵ DEIS at A-3.10.1.

⁴²⁶ DEIS at 111.

⁴²⁷ DEIS at A-52.

⁴²⁸ *Id.*

⁴²⁹ NOAA Fisheries, Recovery Plan for the Cook Inlet Beluga Whale (*Delphinapterus leucas*) Pg 1-1 (Dec. 2016).

⁴³⁰ Stephen R. Braund & Associates and Huntington Consulting, *Relationship Between the Native Village of Tyonek, Alaska and Beluga Whales in Cook Inlet, Alaska* (June 2011). Beyond only a subsistence or traditional harvest resource, the beluga is important to the Native Village of Tyonek's culture.

IX. BOEM Must Formally Consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service on the Impacts of Lease Sale 258, Including on the Greenhouse Gas Emissions Caused by the Lease Sale

BOEM cannot hold Lease Sale 258 unless and until comprehensive and formal ESA consultation is completed. While BOEM’s Draft EIS indicates that BOEM intends to consult,⁴³¹ BOEM must ensure that consultation considers not only the impacts to ESA-listed species and their federally designated habitat from noise and light pollution, oil spills, vessel traffic and other impacts from Lease Sale 258, but also the impacts of the greenhouse gas emissions caused by the lease sale on species threatened by climate change.

Section 7(a)(2) of the ESA requires each federal agency, in consultation with the nation’s wildlife agencies, to “insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species” using the best scientific data available.⁴³² The Supreme Court has unequivocally stated that the Act’s “language, history, and structure” made clear “beyond doubt” that “Congress intended endangered species to be afforded the highest of priorities” and endangered species should be given “priority over the ‘primary missions’ of federal agencies” especially during such consultations.⁴³³ Even with a global threat to biodiversity such as climate change, “the plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, *whatever the cost.*”⁴³⁴ Because Lease Sale 258 will have an appreciable, cumulative impact on climate-threatened species, BOEM must include these species as part of its consultation with both the National Marine Fisheries Service and the U.S. Fish and Wildlife Service (collectively the “Services”).⁴³⁵

While many of the ESA’s provisions work to effectuate the conservation goals of the statute, the “heart of the ESA” is the interagency consultation requirements of Section 7 of the ESA.⁴³⁶ At the first step of the consultation process, an action agency must determine if its action either “may affect” listed species or will have “no effect” on listed species within the action area. Under the ESA, “action” is broadly defined to include “all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas” and include, but are not limited to “(a) actions intended to conserve listed species or their habitat; (b) the promulgation of regulations; (c) the granting of licenses,

⁴³¹ DEIS at 133.

⁴³² 16 U.S.C. § 1536(a)(2).

⁴³³ *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 174, 185 (1978).

⁴³⁴ *Id.* at 184 (emphasis added).

⁴³⁵ In *Massachusetts v. EPA*, the Supreme Court found that U.S. vehicle emissions represented a “meaningful contribution” to global emissions, and even addressing a fraction of these emissions was sufficient for standing purposes and requires EPA to take action. *Massachusetts v. EPA*, 549 U.S. 497 (2007).

⁴³⁶ *W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 495 (9th Cir. 2011); 16 U.S.C. § 1536.

contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air.”⁴³⁷ Similarly, the “action area” is equally broadly defined as “all areas to be affected directly *or indirectly* by the Federal action and not merely the immediate area involved in the action.”⁴³⁸

For this proposed action, it is clear that the anticipated greenhouse gas pollution from Lease Sale 258 will harm listed species far beyond the immediate area of the proposed activity in a manner that is attributable to the agency action.

A. Greenhouse gas emissions have direct, predictable, and devastating effects on endangered species and habitats.

As an initial matter, the science is overwhelmingly clear that climate change represents a stark threat to the future of biodiversity within the United States and around the world. The Fourth National Climate Assessment warns that “climate change threatens many benefits that the natural environment provides to society,” and that “extinctions and transformative impacts on some ecosystems” will occur “without significant reductions in global greenhouse gas emissions.”⁴³⁹ The best available science shows that anthropogenic climate change is causing widespread harm to life across the planet, disrupting species’ distribution, timing of breeding and migration, physiology, vital rates, and genetics—in addition to increasing species extinction risk.⁴⁴⁰ Climate change is already affecting 82% of key ecological processes that underpin ecosystem function and support basic human needs.⁴⁴¹ Climate change-related local extinctions are widespread and have occurred in hundreds of species, including almost half of the 976 species surveyed.⁴⁴² Nearly half of terrestrial non-flying threatened mammals and nearly one-quarter of threatened birds are estimated to have been negatively impacted by climate change in at least part of their range.⁴⁴³ Furthermore, across the globe, populations of terrestrial birds and mammals that are experiencing greater rates of climate warming are more likely to be declining at a faster rate.⁴⁴⁴ Genes are changing, species’ physiology and physical features such as body size are changing,

⁴³⁷ 50 C.F.R. § 402.02

⁴³⁸ *Id.* § 402.02 (emphasis added).

⁴³⁹ NCA4 Vol II at 42, 44.

⁴⁴⁰ Rachel Warren et al. 2011. Increasing impacts of climate change upon ecosystems with increasing global mean temperature rise. *Climatic Change* 106:141.

⁴⁴¹ Brett R. Scheffers. 2016. The broad footprint of climate change from genes to biomes to people. *Science* 354:719.

⁴⁴² John J. Wiens. 2016. Climate-related local extinctions are already widespread among plant and animal species. *PLoS Biology* 14:e2001104.

⁴⁴³ Michela Pacifici et al. 2017. Species’ traits influenced their response to recent climate change. *Nature Climate Change* 7:205. The study concluded that “populations of large numbers of threatened species are likely to be already affected by climate change, and ... conservation managers, planners and policy makers must take this into account in efforts to safeguard the future of biodiversity.”

⁴⁴⁴ Fiona E.B. Spooner et al. 2018. Rapid warming is associated with population decline among terrestrial birds and mammals globally. *Global Change Biology* 24:4521.

species are moving to try to keep pace with suitable climate space, species are shifting their timing of breeding and migration, and entire ecosystems are under stress.⁴⁴⁵

Species extinction risk will accelerate with continued greenhouse gas pollution. One million animal and plant species are now threatened with extinction, with climate change as a primary driver.⁴⁴⁶ At 2°C compared with 1.5°C of temperature rise, species' extinction risk will increase dramatically, leading to a doubling of the number of vertebrate and plant species losing more than half their range, and a tripling for invertebrate species.⁴⁴⁷ Numerous studies have projected catastrophic species losses during this century if climate change continues unabated: 15 to 37% of the world's plants and animals committed to extinction by 2050 under a mid-level emissions scenario⁴⁴⁸; the potential extinction of 10 to 14% of species by 2100⁴⁴⁹; global extinction of 5% of species with 2°C of warming and 16% of species with business-as-usual warming⁴⁵⁰; the loss of more than half of the present climatic range for 58% of plants and 35% of animals by the 2080s under the current emissions pathway, in a sample of 48,786 species⁴⁵¹; and the loss of a third or more of animals and plant species in the next 50 years.⁴⁵² As summarized by the Third National Climate Assessment, "landscapes and seascapes are changing rapidly, and species, including many iconic species, may disappear from regions where they have been prevalent or become extinct, altering some regions so much that their mix of plant and animal life will become almost unrecognizable."⁴⁵³

Methane emissions are particularly alarming. Immediate, deep reductions in methane emissions are critical for lowering the rate of global warming in the near-term, preventing the crossing of irreversible planetary tipping points, and avoiding harms to species and ecosystems from

⁴⁴⁵ Camille Parmesan & Gary Yohe. 2003. A globally coherent fingerprint of climate change impacts across natural systems. *Nature* 421:37; Terry L. Root et al. 2003. Fingerprints of global warming on wild animals and plants. *Nature* 421:57; Camille Parmesan. 2006. Ecological and evolutionary responses to recent climate change. *Annual Review of Ecology Evolution and Systematics* 37:637; I-Ching Chen et al. 2011. Rapid range shifts of species associated with high levels of climate warming. *Science* 333:1024; Ilya M. D. Maclean & Robert J. Wilson. 2011. Recent ecological responses to climate change support predictions of high extinction risk. *PNAS* 108:12337; Rachel Warren et al. 2011. Increasing impacts of climate change upon ecosystems with increasing global mean temperature rise. *Climatic Change* 106:141; Abigail E. Cahill et al. 2012. How does climate change cause extinction?. *Proceedings of the Royal Society B* 280:20121890.

⁴⁴⁶ IPBES, Global Assessment Report on Biodiversity and Ecosystem Services (E.S. Brondízio et al eds., 2019), <https://ipbes.net/news/Media-Release-Global-Assessment>.

⁴⁴⁷ IPCC 2021 at SPM.

⁴⁴⁸ Chris D. Thomas et al. 2004. Extinction risk from climate change. *Nature* 427:145.

⁴⁴⁹ Ilya M. D. Maclean & Robert J. Wilson. 2011. Recent ecological responses to climate change support predictions of high extinction risk. *PNAS* 108:12337.

⁴⁵⁰ Mark C. Urban. 2015. Accelerating extinction risk from climate change. *Science* 348: 571.

⁴⁵¹ Rachel Warren et al. 2013. Quantifying the benefit of early climate change mitigation in avoiding biodiversity loss. *Nature Climate Change* 3:678.

⁴⁵² Cristian Román-Palacios & John J. Wiens. 2020. Recent responses to climate change reveal the drivers of species extinction and survival. *PNAS* 117:4211.

⁴⁵³ U.S. Global Change Research Program, *Climate Change Impacts in the United States: The Third National Climate Assessment* at 196 (Jerry M. Melillo et al. eds., 2014).

methane's intensive near-term heating effects and ground-level ozone production.⁴⁵⁴ Methane is a super-pollutant 87 times more powerful than CO₂ at warming the atmosphere over a 20-year period,⁴⁵⁵ and is second only to CO₂ in driving climate change during the industrial era.⁴⁵⁶ Methane also leads to the formation of ground-level ozone, a dangerous air pollutant, that harms ecosystems and species by suppressing plant growth and reducing plant productivity and carbon uptake.⁴⁵⁷ Because methane is so climate-damaging but also comparatively short-lived with an atmospheric lifetime of roughly a decade, cutting methane has a relatively immediate effect in slowing the rate of temperature rise in the near-term. Critically, deep cuts in methane emissions of ~45% by 2030 would avoid 0.3°C of warming by 2040 and are considered necessary to achieve the Paris Agreement's 1.5°C climate limit and prevent the worst damages from the climate crisis.⁴⁵⁸ Deep cuts in methane emissions that reduce near-term temperature rise are also critical for avoiding the crossing of planetary tipping points—abrupt and irreversible changes in Earth systems to states wholly outside human experience, resulting in severe physical, ecological and socioeconomic harms.⁴⁵⁹

What is more, scientists can now predict specific harms to individual species from the incremental emissions increases directly attributable to the federal agency actions, and can also assess the consequences of emissions for listed species' conservation and recovery. For example, the recovery plan for the polar bear predicts three different scenarios for polar bear populations under scenarios where emissions are abated early, emissions are abated later, and where emissions continue unabated.⁴⁶⁰ Likewise, with respect to particular agency actions, scientists were able to calculate that the rollback of vehicle emissions standards by the Trump administration would have resulted in a sustained loss of more than 1,000 square miles of summer sea ice habitat for the polar bear and nearly one full additional day of ice-free conditions in Alaska and many other parts of the Arctic, which would reduce the length of the polar bear feeding season and lower reproductive success and survival.⁴⁶¹ Thus as a scientific matter, there is no basis for any federal agency to assert that climate change does not harm endangered and threatened species or that it is scientifically impossible to ascertain the particular harm caused by an agency's contribution to greenhouse gas emissions.

⁴⁵⁴ United Nations Environment Programme & Climate and Clean Air Coalition, *Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions* at 11 (2021), <https://www.unep.org/resources/report/global-methane-assessment-benefits-and-costs-mitigating-methane-emissions>.

⁴⁵⁵ G. Myhre et al., *Anthropogenic and Natural Radiative Forcing*, in: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (T.F. Stocker et al. eds., 2013) at Table 8.7.

⁴⁵⁶ United Nations Environment Programme & Climate and Clean Air Coalition at 11.

⁴⁵⁷ *Id.* at 11, 69.

⁴⁵⁸ *Id.* at 11.

⁴⁵⁹ IPCC 2018 at 262.

⁴⁶⁰ U.S. Fish and Wildlife Service, *Polar bear (Ursus maritimus) Conservation Management Plan, Final* (2016).

⁴⁶¹ *See* *Declarations of Shaye Wolf and Steven Amstrup, Competitive Enterprise Inst. et al. v. National Highway Traffic Safety Admin. et al.*, Case No. 20-1145, Document No. 1880214 (filed Jan. 14, 2021) and Dirk Notz & Julienne Stroeve. 2016. Observed Arctic sea ice loss directly follows anthropogenic CO₂ emission, *Science* 354:747.

Furthermore, there are no defensible legal rationales for ignoring climate-threatened species that are harmed by the emissions that will result from a proposed agency action. Since 2008, federal agencies have taken cover behind a cursory, two-page memorandum from the Fish and Wildlife Service, which asserted, without any citation or acknowledgement of the scientific literature, that the “best scientific data available today do not allow us to draw a causal connection between GHG emissions from a given facility and effects posed to listed species or their habitats, nor are there sufficient data to establish that such impacts are reasonably certain to occur.”⁴⁶² Several months later, David Bernhardt — then Interior Solicitor during the George W. Bush administration—issued a five-page memorandum concurring with the Fish and Wildlife Service.⁴⁶³ Even if these memoranda were correct at the time — and they were not — as the Fish and Wildlife Service memorandum stated: that “As new information and knowledge about emissions and specific impacts to species and their habitats is developed, we will adapt our framework for consultations accordingly. This is particularly important as more regionally-based models are developed and refined to the level of specificity and reliability needed for the Service to execute its implementation of the Act’s provisions ensuring consistency with the statute’s best available information standard.”⁴⁶⁴ Thus, the Fish and Wildlife Service and Bernhardt Memoranda were never intended to provide a permanent shield to avoid consultations, and any reliance on it today would simply be arbitrary and capricious. Accordingly, all federal agencies must assess whether the emissions that result from their activities harm climate-threatened species.

B. Lease Sale 258 Clearly Crosses the “May Affect” Threshold for Climate-Threatened Species and Requires Consultation

If the agency determines that an action *may affect* a species—even if the effect is small, indirect, or the result of cumulative actions—it must formally consult with the Services.⁴⁶⁵ Federal courts have repeatedly held that the “may affect” threshold is “very low” and that any effect — whether “beneficial, benign, adverse or of an undetermined character” — is sufficient to cross that threshold.⁴⁶⁶ Only a scientific finding of “no effect” is sufficient to avoid the consultation process altogether.⁴⁶⁷ In essence, as the Joint Consultation Handbook explains, a “no effect” finding means exactly what it says, and is only properly made “when the action agency

⁴⁶² Memorandum from H. Dale Hall, Director Fish & Wildlife Service, to Regional Directors, Regions 1-8 (May 14, 2008), <https://www.fws.gov/policy/m0331.pdf> (“FWS Memorandum”).

⁴⁶³ Memorandum from David L. Bernhardt, Department of the Interior, Office of the Solicitor to the Secretary of the Department of the Interior Director (Oct. 3, 2008).

⁴⁶⁴ FWS Memorandum at 2–3.

⁴⁶⁵ 50 C.F.R. §§ 402.02, 402.14(a), (g) (2020).

⁴⁶⁶ *Karuk Tribe of Cal. v. U.S. Forest Serv.*, 681 F.3d 1006, 1027 (9th Cir. 2012).

⁴⁶⁷ U.S. Fish and Wildlife Service & National Marine Fisheries Service, Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities under Section 7 of the Endangered Species Act xvi (1998), https://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf.

determines its proposed action will not affect a listed species or designated critical habitat”;⁴⁶⁸ it cannot be employed when an agency simply believes it is too hard to determine the impacts of its actions.⁴⁶⁹

Based on BOEM’s own analysis, Lease Sale 258 will result in 88.3 million metric tons of CO₂e,⁴⁷⁰ and consequently, there are real impacts that cross the “may affect” threshold, even if some of those impacts are still of an undetermined character at this point. The purpose of the consultation process, by Congressional design, is to allow the expert wildlife agencies to assess these impacts using the best available science, so that they can evaluate the harm that may be caused. Any attempt by BOEM to simply assert that it is unable to determine the impacts of greenhouse gas emissions on listed species is illegal and *ultra vires*. Only the expert wildlife agencies, with best scientific data available, can determine the effects of a federal action on species or habitat.

Indeed, the second step of the consultation process reinforces the basic notion that an action agency may not unilaterally assert that the greenhouse gases that will be emitted will not harm listed species. Once the “may affect” threshold is crossed, the action agency must then prepare a “biological assessment” to determine whether the listed species may be adversely affected by the proposed action⁴⁷¹

At the formal consultation phase, the Services must provide the action agency with a “biological opinion” explaining how the proposed action will affect the listed species or habitat.⁴⁷² If the Services conclude that the proposed action will jeopardize the continued existence of a listed species, including those that are not in the immediate project area and that are harmed by greenhouse gas emissions, or will result in the destruction or adverse modification of critical habitat, the Services must provide “reasonable and prudent alternatives” (RPAs) to the proposed action that they believe would address those impacts.⁴⁷³ If the Services conclude that the proposed action will not likely to jeopardize listed species, or result in the destruction or adverse modification of critical habitat, then they must provide an “incidental take statement” (ITS), specifying the amount or extent of such incidental taking on the species, any “reasonable and prudent measures” (RPMs) that they consider necessary or appropriate to minimize such impact.⁴⁷⁴

⁴⁶⁸ *Id.* at xvi. However, the agencies are still encouraged to obtain written concurrence from the Services. *See id.* definitions of “Formal consultation” and “Informal consultation” at xiv, xv.

⁴⁶⁹ *Am. Fuel & Petrochemical Mfrs. v. EPA*, 937 F.3d 559, 598 (D.C. Cir. 2019) (A finding that “it is impossible to know” an agency action will affect listed species or critical habitat “is not the same as” a no effect determination.).

⁴⁷⁰ Draft EIS at 46.

⁴⁷¹ U.S. Fish and Wildlife Service & National Marine Fisheries Service Consultation Handbook at xv.

⁴⁷² 16 U.S.C. § 1536(b); 50 C.F.R. §§ 402.14(g), (h).

⁴⁷³ 16 U.S.C. § 1536(b)(3).

⁴⁷⁴ *Id.* § 1536(b)(4); 50 C.F.R. §§ 402.14(h)(4)(i).

With respect to the greenhouse gas emissions that will result from Lease Sale 258, BOEM’s own analysis suggests that this will result in 88.3 million metric tons of CO₂e through the lifetime of activities conducted under the lease.⁴⁷⁵ These emissions are appreciable and significant and must be assessed under the ESA’s consultation framework. This analysis is also consistent with President Biden’s “whole of government” approach to addressing the climate crisis, as well as Executive Order 13990, which states that all federal agencies “must be guided by the best science and be protected by processes that ensure the integrity of Federal decision-making.”⁴⁷⁶

Consultation on climate-threatened species that may be affected by cumulative impacts of emissions caused by the agency’s action is similar to many other complex consultations undertaken by the Services. The Services must first attempt to quantify any take of listed species, but if such harms cannot be quantified, the Services can qualitatively assess the harm, something Congress contemplated when it passed the 1982 amendments to the ESA. The legislative history of those amendments reflects Congress’ recognition that a numerical determination of take would not always be obtainable— such as when the eggs of listed species are boiled alive in power plant cooling systems—and intention that such challenges not present an insurmountable barrier to completing consultations.⁴⁷⁷ Furthermore, the Services have regularly relied on surrogates, such as habitat, ecological conditions, or a similarly-affected species that are easier to monitor in instances where the biology of a listed species or the nature of the proposed action makes it difficult to detect or monitor take of individual animals.

Similarly, the Services must also assess the negative impacts of greenhouse gases on critical habitat. Assessing the loss of critical habitat in a climate consultation is complex, but no more difficult than assessing critical habitat in other nationwide programmatic consultations. Under the Services’ regulations,⁴⁷⁸ critical habitat is only adversely modified or destroyed when it appreciably diminishes the value of the “whole” designation. In many cases, climate impacts to critical habitat will affect the entirety of a designation — likely to the same extent in a relatively similar manner. For example, acidification impacts to a listed coral are likely to be roughly equivalent across the range of each species, and sea level rise would likely harm the habitat of Florida Keys species relatively equally across the range, making it more likely that an adverse modification determination would be needed at the end of the assessment process. But the fact that the outcome of such an analysis is a positive adverse modification or destruction determination is not a legal justification for not conducting an analysis at all. Thus, to the extent that the impacts to critical habitat are significant, the Services must develop RPAs and RPMs — including through surrogate metrics — to address the habitat degradation that climate change is bringing.

⁴⁷⁵ See DEIS at 46.

⁴⁷⁶ Exec. Order No. 13,990, 86 Fed. Reg. 7037 (Jan 20, 2021).

⁴⁷⁷ H.R. Rep. No. 97-567, at 27 (1982).

⁴⁷⁸ These regulations are being challenged in federal court and the Administration has signaled it may revise them in the near future.

For both the jeopardy analysis and critical habitat analysis, the Services will need to develop analytical tools and methods that meet the standards of the Endangered Species Act, just as it does in traditional consultations, to address complex threats that are hard to assess quantitatively. The National Marine Fisheries Service can use the amount of sea ice lost as a surrogate for determining anticipated take of bearded seals, while the Fish and Wildlife Service can use declining stream flows and increasing water temperatures as a surrogate to infer the status of the western glacier stonefly or its critical habitat. This has been a pre-existing practice and the Services already have the knowledge and expertise to do this.

If the Services ultimately determine that the proposed action will result in jeopardy, the Services must provide RPAs that will allow the agency to move forward in a way that avoids jeopardy to the species or destruction or adverse modification of designated critical habitat.⁴⁷⁹ While jeopardy determinations are rare, in the context of climate consultations they are all the more critical to the survival not only of listed species, but of humanity itself. If a federal agency action substantially increases the likelihood of overshooting the 1.5-degree Celsius goal of the Paris Agreement, it is likely to not only jeopardize climate-threatened species, but people everywhere. As the Endangered Species Act makes clear, the action agency must not take such an action, or it must implement RPAs that ensure that GHG emissions decrease such that they are consistent with the goals of the Paris Agreement, the reports of the IPCC, and the best available science. Thus, consultations would provide a powerful mechanism to achieve President Biden’s stated policy to “reduce climate pollution in every sector of the economy; increase resilience to the impacts of climate change; protect public health” and “conserve our lands, waters, and biodiversity.”⁴⁸⁰

In instances where the federal agency actions will not rise to the level of jeopardy but will result in incidental take in areas that are geographically remote from the agency action itself, the Services must *still* issue RPMs to minimize the take of climate-threatened species. The most durable and effective approach for climate consultations to implement RPMs would be for the Services to condition the receipt of an ITS through the implementation of RPMs within a climate-focused Section 7(a)(1) conservation program for each climate-threatened species identified in the biological opinion where the Services anticipate take.⁴⁸¹ Section 7(a)(1) requires all federal agencies to “utilize their authorities...by carrying out programs for the conservation of endangered species and threatened species.”⁴⁸² As the Supreme Court noted in *Tennessee Valley*

⁴⁷⁹ 16 U.S.C. 1536(b)(3)(A).

⁴⁸⁰ Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021).

⁴⁸¹ H.R. Rep. No 97-567, at 44 (“[I]n many cases in which a proposed action will not result in jeopardy, there may be minor modifications to the project which will minimize the effects on the species and which the action agency could easily and inexpensively adopt. We believe that providing such information to the action agency is important for the continued protection of endangered species and assists other federal agencies in fulfilling their obligations under section 7(a)(1) of the Act”).

⁴⁸² 16 U.S.C. 1536(a)(1).

Authority v. Hill noted, section 7(a)(1) is no less than “stringent, mandatory language,”⁴⁸³ that “reveals an explicit congressional decision to require agencies to afford first priority to the declared national policy of saving endangered species.”⁴⁸⁴ By requiring agencies to develop a climate-focused Section 7(a)(1) conservation program as a condition to obtaining an ITS, the Services can require agencies to finally comply with the law and ensure that their activities are consistent with the recovery of listed species and address the take they cause.

X. Conclusion

The Cook Inlet ecosystem is a unique resource that numerous species and communities depend on for survival. BOEM has failed to take the “hard look” required by NEPA, understating the effects that allowing decades of oil and gas development will cause in the region, and the contribution of this development to the increasingly severe climate crisis. We urge BOEM to revise the analysis in the EIS to meet NEPA’s requirements and use its inherent statutory authority to adopt the No Action Alternative and cancel Lease Sale 258.

Sincerely,

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⁴⁸³ *TVA v. Hill*, 437 U.S. at 183.

⁴⁸⁴ *Id.* at 185.