

COOK INLETKEEPER – KACHEMAK BAY CONSERVATION SOCIETY

October 31, 2016

VIA EMAIL

Alaska Department of Natural Resources
Division of Oil & Gas
550 West 7th Ave., Ste. 1100
Anchorage, AK 99501-3560
E: dog.bif@alaska.gov

Re: Call for New Information: State of Alaska Oil and Gas Lease Sales, 2017 Cook Inlet and Alaska Peninsula Areawides (Sept. 1, 2016)

To Whom It May Concern:

The Alaska Department of Natural Resources (ADNR) has issued a call for new information regarding the 2017 Cook Inlet and Alaska Peninsula areawide oil and gas lease sales.¹ The state intends to offer all available acreage in the lease sale areas, which encompass about 8.2 million acres, including tidal and submerged lands in Upper Cook Inlet, from Knik Arm and Turnagain Arm south to Anchor Point and Tuxedni Bay; uplands in the Matanuska and Susitna River Valleys, the Anchorage Bowl, the Kenai Peninsula, and the western shore of Cook Inlet; and much of the Alaska Peninsula, from Nushagak Peninsula and King Salmon in the north to the vicinity of Cold Bay.² Since ADNR's most recent best interest findings for these areas, however, substantial new information about the impacts of climate change—as well as the United States' international commitments to combat it—has emerged. In light of this new information, ADNR must supplement its findings and reassess whether production and consumption of oil and gas from these areas would be in the state's best interests. Given the devastating harms that climate change is already wreaking throughout the state, a fair reassessment would most likely lead to the conclusion that further oil and gas development, which will only exacerbate the problem, is not in the state's best interests.

I. Substantial new information about climate science and the United States' climate-focused policy commitments has emerged since ADNR's last best interest findings.

Climate science has advanced markedly in recent years, and our understanding of the trajectory and impacts of climate change in northern latitudes has increased as a result. At a global scale, scientific consensus about the threats of climate change has led to a historic international agreement in which countries, including the United States, have committed to curb their greenhouse gas emissions in a collective effort to limit warming to 2 °C. These developments, many of which have occurred within the past year, warrant supplementation of

¹ ADNR, Call for New Information: State of Alaska Oil and Gas Lease Sales, 2017 Cook Inlet and Alaska Peninsula Areawides (Sept. 1, 2016) (2017 Call for New Information).

² *Id.* at 1, 3-4.

the 2009 Cook Inlet and 2014 Alaska Peninsula best interest findings and militate against additional oil and gas development in these areas.

A. Substantial new information about the causes and effects of climate change in the State of Alaska—particularly Cook Inlet and the Alaska Peninsula—has recently become available.

Since ADNR issued its best interest finding for the Cook Inlet areawide lease sale in 2009, the international scientific community has all but confirmed that human activities, such as combusting oil and gas, are causing global warming. In a major 2014 report, the Intergovernmental Panel on Climate Change (IPCC) concluded that it was “extremely likely” that human influence has been the dominant cause of warming since the middle of the 20th century.³ This finding means that it is 95 to 100 percent certain that humans are causing climate change,⁴ an increase in confidence from the IPCC’s previous report.⁵ Carbon dioxide (CO₂) from fossil-fuel combustion and other industrial processes accounts for the vast majority of anthropogenic greenhouse gas emissions over the past several decades.⁶ ADNR must recognize the stronger causal connection between human activities and climate change when deciding whether leasing lands for oil and gas development would serve the best interests of the state.

The most recent monitoring of climatic trends indicates that Alaska is suffering the brunt of global warming. Summarizing data that the National Oceanic and Atmospheric Administration collected in 2016, the Environmental Protection Agency (EPA) notes that Alaska is among regions that have experienced greater temperature increases from 1901 to 2015 than other parts of the United States.⁷ Although not as dramatic as the changes in Interior Alaska and the North Slope, the northern shore of Alaska Peninsula has warmed at a relatively fast pace, with surface temperatures increasing between 2 to 2.5 °F per century.⁸ The latest data indicating rapid warming in the Alaska Peninsula and throughout the state—together with the impacts discussed below—call for a reweighing of the advantages and disadvantages of offering wide swaths of state land for fossil-fuel development.

³ IPCC, *Climate Change 2014: Synthesis Report, Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Core Writing Team, R.K. Pachauri & L.A. Meyer eds., 2014), <http://www.ipcc.ch/report/ar5/syr/> (IPCC Synthesis Report).

⁴ *Id.* at 37.

⁵ *See id.* at 47.

⁶ *See id.* at 46, Fig. 1.6.

⁷ EPA, *Climate Change Indicators in the United States: 2016 Fourth Edition* at 19 (2016), https://www.epa.gov/sites/production/files/2016-08/documents/climate_indicators_2016.pdf.

⁸ *Id.*

As documented in the 2014 U.S. National Climate Assessment, Alaska will likely experienced severe, sometimes unique consequences of climate change.⁹ These impacts include the following:

- Changes in precipitation patterns and temperatures could lead to more-extensive wildfires and insect outbreaks.¹⁰
- Shifts in the timing of snowmelt and freeze-up “would influence seasonal migration of birds and other animals, increase the likelihood and rate of northerly range expansion of native and non-native species, alter the habitats of both ecologically important and endangered species, and affect ocean currents.”¹¹
- Loss of summer sea ice in the Arctic will continue to expose coastal communities to erosion and degrade habitat for marine mammals such as polar bears and walrus.¹²
- Glaciers that have melted will no longer provide nutrients to critical fisheries.¹³
- Permafrost thaw could disrupt rural communities’ water supplies and sewage systems, add enormous costs to construction projects, and double the area of the state susceptible to wildfires by mid-century.¹⁴
- Rising ocean temperatures and ocean acidification could decrease the abundance and health of marine fishes such as pollock and salmon, which are important to commercial fisheries and subsistence users.¹⁵

⁹ See F.S. Chapin III *et al.*, *Climate Change Impacts in the United States, Ch. 22: Alaska* 514, 515-23, in *Climate Change Impacts in the United States: The Third National Climate Assessment* (J.M. Melillo *et al.* eds., 2014), http://s3.amazonaws.com/nca2014/high/NCA3_Climate_Change_Impacts_in_the_United%20States_HighRes.pdf (2014 U.S. National Climate Assessment).

¹⁰ *Id.* at 516; see also A.M. Young *et al.*, *Climatic Thresholds Shape Northern High-Latitude Fire Regimes and Imply Vulnerability to Future Climate Change*, 39 *Ecography* 1, 8-EV to 11-EV (2016) (regional vulnerabilities in Alaska to climatically induced fire-regime shifts).

¹¹ 2014 U.S. National Climate Assessment at 517.

¹² *Id.* at 517-19.

¹³ See *id.* at 519.

¹⁴ *Id.* at 520-21.

¹⁵ *Id.* at 522. Rising river temperatures could also “have profound consequences for growth, life history and demographics” in salmon near the Alaska Peninsula. M.D. Tillotson & T.P. Quinn, *Beyond Correlation in the Detection of Climate Change Impacts: Testing a Mechanistic Hypothesis for Climatic Influence on Sockeye Salmon (Oncorhynchus nerka) Productivity*, PLOS ONE DOI:10.1371/journal.pone.0154356 at 5, Fig. 2, 19 (2016).

Alaska Native communities, which depend on fish, wildlife, and plants for subsistence and often lack services and infrastructure typical of larger cities, are particularly susceptible to these impacts.

In Lower Cook Inlet, the impacts from climate change—and associated warming air and water temperatures, and increased ocean acidification—have catalyzed a wave of dramatic changes over the past several years. For example, a massive spruce aphid infestation caused by climate change is radically transforming the region’s terrestrial landscape,¹⁶ and highly acidic needle litter from the dead and dying trees may be degrading nearshore fish habitat and water quality.¹⁷ A wasting disease linked to climate and ocean acidification changes has devastated local sea star populations.¹⁸ Increasing temperatures have been suggested to be responsible for large-scale common murre and sea otter die-offs, as well as harmful algal blooms.¹⁹ Soft- and hard-shelled clams—including Pacific Razor Clams—have all but disappeared in Lower Cook Inlet just in the past five years.²⁰ These are but some of the significant and quantifiable changes in Lower Cook Inlet caused by, or at least linked to, rising air and water temperatures.

In sum, ADNR must consider the full range of consequences of oil and gas leasing on the state’s residents and seriously reconsider its decision to proceed with the 2017 areawide lease sales.

B. The United States has made significant, science-based international commitments to reduce its greenhouse gas emissions.

The United States has in the past several years helped catalyze world commitments to address the urgent crisis of climate change. Last December in Paris, the Administration played an instrumental role in guiding through a historic agreement in which over 180 countries committed to steadily and verifiably reducing their carbon emissions to hold the increase in global temperature average to “well below 2 °C above pre-industrial levels and pursuing efforts

¹⁶ C. Wohlforth, *New Bug Brings Back Memories of Spruce Bark Beetle Devastation*, Alaska Dispatch News (May 18, 2016), <https://www.adn.com/voices/commentary/2016/05/18/new-bug-brings-back-memories-of-spruce-bark-beetle-devastation>.

¹⁷ K.M. Mikkelsen *et al.*, *Bark Beetle Infestation Impacts on Nutrient Cycling, Water Quality, and Interdependent Hydrological Effects*, 115 *Biogeochemistry* 1, 16 (2013).

¹⁸ Y. Rosen, *Kachemak Bay Sea Stars Found Stricken with Wasting Disease*, Alaska Dispatch News (May 12, 2015), <https://www.adn.com/wildlife/article/kachemak-bay-sea-stars-found-stricken-wasting-disease/2015/05/13/>.

¹⁹ M. Armstrong, *Seabird Deaths, Warm Oceans, Algal Blooms Puzzle Scientists*, Homer News (Aug. 27, 2015), <http://homernews.com/homer-news/local-news/2015-08-27/seabird-deaths-warm-oceans-algal-blooms-puzzle-scientists>.

²⁰ E. Earl, *Fish & Game to Survey Cook Inlet Razor Clams*, Juneau Empire (Apr. 1, 2016), <http://juneauempire.com/outdoors/2016-04-01/fish-game-survey-cook-inlet-razor-clams>.

to limit the temperature increase to 1.5 °C above pre-industrial levels.”²¹ Reaching the Paris Agreement goals will require the United States to adopt measures that address the consumption of fossil fuels, such as those the Administration has put in place for greenhouse gas emissions from power plants and fuel efficiency for vehicles.²² As described below, it also will require measures that address the supply side of the equation by shifting away from fossil-fuel extraction.

The international scientific community has reached a consensus that in order to preserve a fair chance of avoiding the worst effects of climate change, the world must cap its emissions of greenhouse gases and that burning even a fraction of the remaining fossil-fuel reserves would cause us to exceed that cap. Indeed, the vast majority of known fossil-fuel reserves, let alone speculative resource categories, must remain undeveloped to provide a chance of meeting climate goals.

The concept of a carbon budget starts from the well-established scientific understanding that the global increase in temperature due to greenhouse gas emissions must be capped at or below 2 °C to avoid unmanageable climate change consequences. This understanding was enshrined in the Copenhagen Accord²³ in 2009 and was recently reaffirmed and strengthened in the Paris Agreement, which established a commitment to limit temperature rise to 1.5 °C above pre-industrial levels.²⁴

In 2012, the International Energy Agency, an international organization then made up of 28 member countries including the United States, and established to “provide authoritative research and analysis on ways to ensure reliable, affordable and clean energy” for its members²⁵ addressed the warming target’s implications for fossil-fuel extraction. It concluded there is a limit to the amount of fossil fuels that can be developed if the world is to remain within even the 2 °C cap. Based on an assessment of global carbon reserves, and given existing pollution

²¹ Paris Agreement, art. 2(1)(a), Dec. 12, 2015, FCCC/CP/2015/L.9, http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf.

²² 80 Fed. Reg. 64,662 (Oct. 23, 2015) (existing power plants); 80 Fed. Reg. 64,510 (Oct. 23, 2015) (new, modified, and reconstructed power plants); 77 Fed. Reg. 62,624 (Oct. 15, 2012) (light-duty vehicles); 76 Fed. Reg. 57,106 (Sept. 15, 2011) (medium- and heavy-duty vehicles).

²³ Copenhagen Accord, art. 1, Dec. 18, 2009, FCCC/CP/2009/11/Add.1, <http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf> (“recognizing the scientific view that the increase in global temperature should be below 2 degrees Celsius” relative to pre-industrial temperatures to “stabilize greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system”); *id.* art. 2 (agreeing that “deep cuts in global emissions are required according to science” to meet this goal).

²⁴ Paris Agreement, art. 2(1)(a).

²⁵ International Energy Agency, World Energy Outlook 2012 at 2 (2012), https://www.iea.org/publications/freepublications/publication/WEO2012_free.pdf.

controls, the agency concluded that “[n]o more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2 °C goal.”²⁶

In the fall of 2014, this analysis was expanded and strengthened by the IPCC’s synthesis report. The report describes the recent scientific consensus that there is an overall limit to the amount of CO₂ that can be released into the atmosphere to stay within the 2 °C warming cap.²⁷ It calculates that emissions would need to be limited to about 2,900 gigatons of CO₂ (GtCO₂) since 1870 to have a reasonable chance of staying within the cap.²⁸ By 2011, about 1,900 GtCO₂ had already been emitted.²⁹ Thus, the report concludes, to provide better than a 66 percent chance of limiting warming to less than 2 °C, additional carbon dioxide emissions must be limited to 1,000 GtCO₂.³⁰

The report estimates that there are about 3,670-7,100 GtCO₂ in proven fossil-fuel “reserves” remaining in the ground,³¹ which it describes as quantities of fossil fuels “able to be recovered under existing economic and operating conditions.”³² As the report notes, this volume of reserves is four to seven times the amount that can be burned to have better than a 66 percent chance of remaining within the 2 °C warming goal, with the amount of somewhat less certain “resources” much larger still.³³ One of the expert reports feeding into the IPCC’s synthesis report explained that to meet “[t]he emissions budget for stabilizing climate change at 2 °C above pre-industrial levels . . . only a small fraction of reserves can be exploited.”³⁴

The IPCC’s synthesis report was further refined in January 2015, when the scientific journal *Nature* published a study entitled “The geographical distribution of fossil fuels unused when limiting global warming to 2 °C.”³⁵ The study identifies which fossil fuels must remain undeveloped to improve the chances of remaining below the warming cap. It quantifies the regional distribution of fossil-fuel reserves and resources and, through modeling a range of

²⁶ *Id.* at 25.

²⁷ IPCC Synthesis Report at 63.

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.*

³¹ *Id.* at 64, Tbl. 2.2.

³² *Id.* at 64, Tbl. 2.2 n.f (defining “reserves” and noting that “resources,” by contrast, are quantities of fossil fuels “where economic extraction is potentially feasible”).

³³ *Id.* at 63.

³⁴ G. Blanco *et al.*, *Drivers, Trends and Mitigation, in Climate Change 2014: Mitigation of Climate Change, Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* at 351, 380 (O. Edenhofer *et al.* eds., 2014), http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter5.pdf.

³⁵ C. McGlade & P. Ekins, *The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2 °C*, 517 NATURE 187 (2015).

scenarios based on least-cost climate policies, identifies which reserves and resources would not be burned between 2010 and 2050 if the world efficiently complies with the 2 °C limit.³⁶ It concludes that “a stark transformation in our understanding of fossil-fuel availability is necessary,” because “large portions of the reserve base and an even greater proportion of the resource base should not be produced if the temperature rise is to remain below 2 °C.”³⁷ Thus, expanding on the prior analyses’ conclusion that development of already-existing reserves would far exceed the cap, let alone development of the more speculative category of resources, the study concludes that a commitment to meet the 2 °C limit would “render unnecessary continued substantial expenditure on fossil-fuel exploration, because any new discoveries could not lead to increased aggregate production.”³⁸

Subsequently, researchers have investigated and further refined our understanding of how major investment in developing such resources locks in oil production far into the future. In particular, a research brief from the Stockholm Environment Institute identified oil drilling, especially in higher-cost, yet-to-produce resources, as particularly prone to “carbon lock-in,” a continued dependence on future fossil fuel production and the associated emissions.³⁹ The high up-front sunk costs required prior to any return on investment create momentum for future over-production, adding fossil fuels to markets that should, consistent with limiting climate damage, be shrinking, thereby depressing adoption of efficiency measures and clean energy alternatives.⁴⁰

A recent report also confirms that reducing oil production from federal lands can reduce green-house gas emissions.⁴¹ It analyzes the impact of reforming the leasing of federal coal, oil, and gas on international energy markets and global CO₂ emissions.⁴² The report finds that for each unit of oil that is not produced from federal lands, net global consumption of oil and substitute fuels falls by 0.44 units by 2030 (due to a decrease in global supply), with a total overall drop in consumption of 0.22 units (when factoring in substitution fuels) with a

³⁶ *See id.* at 187-90.

³⁷ *Id.* at 190.

³⁸ *Id.* at 187.

³⁹ P. Erickson *et al.*, *Carbon Lock-in from Fossil Fuel Supply Infrastructure*, Stockholm Environment Institute (2015), <http://www.sei-international.org/publications?pid=2805>.

⁴⁰ *Id.*

⁴¹ P. Erickson & M. Lazarus, *How Would Phasing Out U.S. Federal Leases for Fossil Fuel Extraction Affect CO₂ Emissions and 2°C Goals?*, Stockholm Environment Institute, Working Paper 2016-02 at 31-32 (2016).

⁴² *Id.* at 3-5.

proportionate decrease in greenhouse gas emissions.⁴³ The same principle applies to oil produced from state lands: lowering supply decreases global consumption.

Thus, the science is clear—we cannot meet climate commitments without significantly limiting the supply of fossil fuels. The United States has recognized this science, and it has made international commitments to reduce greenhouse gas emissions in a collective effort to limit warming. ADNR should consider this national policy direction when deciding whether leasing oil and gas serves the state’s best interests. The science motivating these policies is compelling and calls into question any decision to develop additional oil and gas.

II. In light of the substantial new information described above, ADNR must assess the potential effects of leasing the Cook Inlet and Alaska Peninsula Areas for oil and gas on climate change.

In the 2009 best interest finding for the Cook Inlet areawide oil and gas lease sale, ADNR largely dismissed comments calling for an analysis of the sale’s consequences for climate change. It refused to acknowledge the then-current findings of the IPCC because the IPCC’s report dealt with “worldwide issues which are beyond the scope of review of the best interest finding.”⁴⁴ For the reasons discussed below, the decision not to consider the effects of the sale

⁴³ *Id.* at 23-25. The report models a cut in oil production as a shift in the supply curve and uses published estimates of the price elasticities for supply and demand to calculate changes in net consumption. The report concludes that for each unit of forgone production, net global oil consumption will drop by 0.44 units, meaning that substitution from other oil supplies would make up only 0.56 units of the lost production. Additionally, half of the remaining 0.44 unit decrease in net consumption would be made up by increased consumption of oil substitutes, such as biofuels, natural gas and electricity, giving a total drop of consumption of 0.22 units. *Id.* at 24 & Tbl. 5. The report also concludes that limiting supply in low-carbon scenarios, where countries adopt normative limits on carbon supply and use, will have a larger effect on consumption and emissions than in a high-carbon scenario. *Id.* at 36-37. But even in a high-carbon future, where no such limits are in place and only market forces operate, the effects are substantial. *Compare id.* at 28, Fig. 7 (showing greenhouse gas reductions from the rule totaling 5 Mt CO₂ in 2030), *with id.* at 37 & Tbl. B-1 (showing reductions of 4 Mt CO₂ in 2030 from oil in the high-carbon world scenario).

⁴⁴ ADNR, Cook Inlet Areawide Oil and Gas Lease Sale: Final Finding of the Director at A-3 (Jan. 2009) (2009 Cook Inlet BIF). Later in the document, the agency rejects requests that it consider the effects of oil and gas production on climate change:

Global warming, the effects of the world-wide oil and gas industry, and the effects of the use of oil and gas products are beyond the scope of review for the Cook Inlet best interest finding. Effects concerning specific future projects are not included because speculation would be required about possible future effects subject to future permitting that cannot reasonably be determined until a project or proposed use is more specifically defined (AS 38.05.035). Details that are unknown at this time include numbers, sizes, and types of projects, and technology that may be available that could affect emissions.

on climate change is unlawful, unsupported by recent agency precedent, and unwarranted given new approaches to assessing climate impacts. The substantial new information identified above presents an opportunity for the agency to correct its error and address the most recent science and policy on climate change.

A. ADNR is legally obligated to consider climate effects in making, and updating, its best interest finding.

Alaska’s constitution mandates that the state ensure that the use of its lands and development of its resources is consistent with the public interest.⁴⁵ Accordingly, it charges the legislature with providing for “the utilization, development, and conservation of all natural resources belonging to the State . . . for the maximum benefit of its people.”⁴⁶ The legislature has delegated its authority to do so to ADNR through statutes governing the agency’s best interest inquiry,⁴⁷ described below.

Before leasing state lands, ADNR typically must prepare a written finding that such disposition will best serve the interests of the state.⁴⁸ For oil and gas lease sales, the agency must base its finding on a number of specific factors,⁴⁹ including:

(iii) fish and wildlife species and their habitats in the area;

(iv) the current and projected uses in the area, including uses and value of fish and wildlife;

...

(vi) the reasonably foreseeable cumulative effects of exploration, development, production, and transportation for oil and gas or for gas only on the sale area, including effects on subsistence uses, fish and wildlife habitat and populations and their uses, and historic and cultural resources;

...

Id. at A-7.

⁴⁵ Alaska Const., art. VIII, § 1.

⁴⁶ *Id.* art. VIII, § 2.

⁴⁷ See *Kachemak Bay Conservation Soc’y v. ADNR*, 6 P.3d 270, 276 (Alaska 2000), *superseded by statute on other grounds as stated in Sullivan v. Resisting Env’tl. Destruction on Indigenous Lands (REDOIL)*, 311 P.3d 625, 635 (Alaska 2013).

⁴⁸ AS 38.05.035(e).

⁴⁹ *Id.* § 38.05.035(e)(3).

(x) the reasonably foreseeable effects of exploration, development, production, and transportation involving oil and gas or gas only on municipalities and communities within or adjacent to the lease sale area.⁵⁰

Climate change resulting from the consumption of oil and gas produced in the sale area squarely falls within the last two factors and directly affects the first two. While the statute requires a best interest finding for the state as a whole and arguably does not limit the scope of the review to the sale area, the effects of unmitigated warming would in any event be felt in the Cook Inlet and Alaska Peninsula Areas.⁵¹ Therefore, ADNR must consider climate change when determining whether oil and gas lease sales in these areas would serve the best interests of the state.

ADNR has a responsibility to examine the reasonably foreseeable cumulative effects of the present action, notwithstanding the typically phased process of oil and gas development. The relevant statute does permit the agency to limit the scope of its review to facts that pertain solely to the disposal phase of oil and gas development.⁵² That provision, however, cannot obviate the state's constitutional duty to "take a 'hard look' at all factors material and relevant to the public interest," including the cumulative impacts of a project.⁵³ Nor did the legislature seek to do so when it added the provision in 1994; rather, it explained that:

consideration of a disposal as a phase of a development project is not intended to artificially divide or segment a proposed development project to avoid thorough review of the project or to avoid consideration of potential future environmental, sociological, or economic effects, but rather is intended to allow for consideration of those issues when sufficient data are available upon which to make reasoned decisions.⁵⁴

Both the 2009 finding for Cook Inlet and the 2014 finding for the Alaska Peninsula contain estimates of the recoverable oil and gas resources in their respective areas.⁵⁵ It is possible to predict the greenhouse gas emissions that will result from combustion of these resources,⁵⁶

⁵⁰ *Id.* § 38.05.035(g)(1)(B).

⁵¹ *See supra* pp. 2-4.

⁵² AS 38.05.035(e)(1)(C).

⁵³ *Sullivan v. Resisting Envtl. Destruction on Indigenous Lands (REDOIL)*, 311 P.3d 625, 635 (Alaska 2013).

⁵⁴ 1994 Alaska Laws Ch. 38, § 1(11) (S.B. 308); *see also Sullivan*, 311 P.3d at 636.

⁵⁵ *See* 2009 Cook Inlet BIF at 6-19, Tbl. 6.3; ADNR, Alaska Peninsula Areawide Oil and Gas Lease Sales: Written Finding of the Director at 6-5 (Nov. 2014, corrected Dec. 2014) (2014 Alaska Peninsula BIF).

⁵⁶ ADNR convert estimates of resources to greenhouse gas emissions using EPA's calculator. *See* EPA, GHG Equivalencies Calculator - Calculations and References (2016), <https://www.epa.gov/energy/ghg-equivalencies-calculator-calculations-and-references>.

which, as discussed below,⁵⁷ is a useful proxy for climate effects. Deferring consideration of the climate impacts of leasing, when sufficient data are available to do so now, would flout the legislature's intent and violate the constitution.

Relatedly, ADNR should use existing estimates of oil and gas resources in the sale areas to assess the actions' potential contributions to climate change. The legislature has excused the agency from considering otherwise pertinent factors only where doing so would require guesswork:

In preparing a written finding under (e)(1) of this section, the director may not be required to speculate about possible future effects subject to future permitting that cannot reasonably be determined until the project or proposed use for which a written best interest finding is required is more specifically defined.⁵⁸

Contrary to the agency's assertion in its 2009 Cook Inlet best interest finding,⁵⁹ estimates of greenhouse gas emissions from leasing within the sale area are not too speculative to inform its analysis. Indeed, such estimates, though necessarily involving some uncertainty, would not require ADNR to predict any of the facts listed in the statute, such as "the exact location and size of an ultimate use and related facilities."⁶⁰ The agency must consider the significant effects of the lease sales on climate change, even if these effects are not precisely quantifiable at this point.

ADNR should follow these principles governing best interest findings when determining whether substantial new information exists warranting supplementation. While the agency need not prepare a written finding every year it holds an oil and gas lease sale,⁶¹ it must consider the cumulative impacts of every such disposition.⁶² The legislature has expressly relied on the "substantial new information" inquiry to fulfill this duty, which the agency usually discharges through a written best interest finding.⁶³ Accordingly, the same requirements that the legislature has laid out for the original finding should apply to an assessment of new information.⁶⁴

⁵⁷ See *infra* p. 14.

⁵⁸ AS 38.05.035(h).

⁵⁹ 2009 Cook Inlet BIF at A-7.

⁶⁰ AS 38.05.035(h)(1).

⁶¹ *Id.* § 38.05.035(e)(6)(F).

⁶² *Cf. Sullivan*, 311 P.3d at 635.

⁶³ 2013 Alaska Laws Ch. 13, §1 (H.B. 129) (2013).

⁶⁴ Furthermore, ADNR should not limit its consideration to information that became publicly available since the last call for new information, as it has historically done. See, e.g., ADNR, Decision of No New Substantial Information: 2016 Cook Inlet and Alaska Peninsula Areawide Lease Sale at 3-4 (Jan. 15, 2016); see also 2017 Call for New Information at 2 (defining "substantial new information"). The statutory term "new" plainly refers to the last best interest finding, not the last call for information. See AS 38.05.035(e)(6)(F).

Given the statutory criteria that may be affected by warming, the agency has overlooked an important factor in its best interest inquiry by ignoring the effects of a sale on climate change.⁶⁵ This omission is particularly glaring in light of the state's previous acknowledgement of the ongoing harms of climate change, and its attempts to address it. For example, the Alaska Climate Change Strategy Mitigation Advisory Group observed that "[a] warming climate is having serious and broad-scale impacts in Alaska, including flooding of villages; increasingly strong coastal storms, eroding the beaches of coastal villages; subsidence from thawing of permafrost; and a record number of forest fires threatening communities, property, and air quality."⁶⁶ It therefore recommended a suite of actions that could reduce greenhouse gas emissions by 11.7 million metric tons of CO₂ equivalent from a business as usual scenario by 2025.⁶⁷ ADNR must not only assess the lease sales' contributions to climate change, but place those contributions in the context of past and present efforts to curb statewide emissions. Viewed in that light, it should become clear that more oil and gas development is incompatible with a prosperous, healthy future for Alaskans.

B. ADNR's has considered climate change in past best interest findings and acknowledged global environmental issues as "substantial new information."

ADNR has previously considered the statewide effects of climate change when making its best interest finding. For example, in the 2014 finding for the Alaska Peninsula Area, the agency observes that:

At northern latitudes potential effects of climate change may include rising temperatures, melting glaciers, reduction in seasonal sea ice cover resulting in increased storm effects and higher coastal erosion rates, increased permafrost melting, shifting vegetation zones, increased fires, insect outbreaks, changing animal migration paths, and changing subsistence patterns. Climate changes and associated geologic hazards may threaten and negatively impact Alaskans and other users of the Arctic.⁶⁸

It goes on to note that the Alaska Climate Impact Assessment Commission recommended measures for mitigating greenhouse gas emissions in Alaska, including emissions from the oil

⁶⁵ *Cf., e.g., Trustees for Alaska v. ADNR*, 865 P.2d 745, 751 (Alaska 1993) (remanding a best interest finding that failed to consider the impact of an oil and gas lease sale on a caribou herd); *Trustees for Alaska v. ADNR*, 795 P.2d 805, 811 (Alaska 1990) (remanding a best interest finding that failed to consider transportation facilities).

⁶⁶ Alaska Climate Change Strategy Mitigation Advisory Group, Final Report: Greenhouse Gas Inventory and Forecast and Policy Recommendations Addressing Greenhouse Gas Reduction in Alaska at Ex-1 to Ex-2 (Aug. 2009) (Alaska Mitigation Advisory Group Final Report), <http://climatechange.alaska.gov/mit/O97F21995.pdf>.

⁶⁷ *See id.* at 1-9 to 1-10 & Tbl. 1-1.

⁶⁸ 2014 Alaska Peninsula BIF at 3-9. The 2009 Cook Inlet finding made similar observations. *See* 2009 Cook Inlet BIF at 3-18 to 3-19.

and gas industry.⁶⁹ Climate effects on existing uses of the Alaska Peninsula Area, such as reduced sea-ice habitat for ice seals, also factored into the agency’s finding.⁷⁰ This past practice confirms that climate change should be a factor in any best interest finding for an oil and gas leasing decision. Nevertheless, the agency in 2014 stopped short of considering lease sales’ effects on climate change, leaving its analysis incomplete and legally inadequate.

A recent finding of substantial new information further suggests that it would be appropriate for ADNR to revisit the issue of climate change here. In 2010, an environmental group submitted information concerning the *Deepwater Horizon* incident in response to a call for new information for the Cook Inlet and Alaska Peninsula areawide lease sales.⁷¹ The agency noted that many of the recommendations in the materials submitted applied to activities outside Alaska, and that issuance of a lease did not authorize exploration, development, or production.⁷² Nevertheless, because of the “magnitude” of the *Deepwater Horizon* incident, ADNR concluded that it amounted to substantial new information that needed to be addressed in the best interest finding.⁷³ Following this precedent, the agency should address new federal policy direction regarding climate change, based on the most recent scientific consensus about the need to limit emissions—an environmental crisis with much more certain and much farther-reaching impacts than even a catastrophic oil spill.

C. Recent federal guidance on assessing the impacts of climate change will assist ADNR in updating its best interest findings.

On August 1, 2016, the Council on Environmental Quality (CEQ) published final guidance on the consideration of greenhouse gas emissions and climate effects in environmental impacts statements under the National Environmental Policy Act.⁷⁴ Although the guidance is addressed to federal agencies implementing a well-established statutory scheme, it nonetheless provides several useful concepts for taking climate effects into account when conducting environmental reviews.

As an initial matter, CEQ counsels that a complete assessment of environmental consequences includes both the direct *and indirect* effects of the action.⁷⁵ For example, the leasing of fossil fuels, such as coal, implicates greenhouse gas emissions from the combustion of

⁶⁹ *Id.* at 3-9 to 3-10.

⁷⁰ *Id.* at 5-3.

⁷¹ ADNR, Decision of Substantial New Information: Alaska Peninsula and Cook Inlet Areawide Lease Sales, 2011 at 5 (Feb. 8, 2011).

⁷² *Id.* at 8.

⁷³ *Id.* at 9.

⁷⁴ CEQ, 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. 1, 2016) (CEQ Guidance).

⁷⁵ *Id.* at 16.

those fuels.⁷⁶ Where appropriate, CEQ advises agencies to use authoritative lifecycle-emissions analyses from the Energy Information Administration, the Federal Energy Management Program, or Office of Fossil Energy of the Department of Energy to quantify indirect effects.⁷⁷ ANDR's best interest findings remains incomplete so long as it ignores the reasonably foreseeable climate impacts of issuing oil and gas leases.

CEQ also recommends using greenhouse gas emissions as a proxy for actual climate impacts because of the global scope of the impacts and the incremental contribution of each project to the problem.⁷⁸ An emissions estimate can present an informative picture of environmental consequences when coupled with a qualitative description of climate effects, such as the U.S. Global Change Research Program's "National Climate Assessments and the Impacts of Climate Change on Human Health in the United States"⁷⁹ and other resources cited above. As noted,⁸⁰ it would not be difficult for ADNR to convert available estimates of technically recoverable oil and gas to eventual greenhouse gas emissions.

Further, CEQ advises against comparing an action's emissions to global emissions 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 [greenhouse gas] concentrations that collectively have a large impact."⁸¹ Instead, it suggests that agencies use approved federal, regional, state, tribal, or local plans, policies, or laws for greenhouse gas emission reductions as a frame of reference.⁸² As noted above, the Alaska Climate Change Strategy Mitigation Advisory Group developed a series of recommendations which, if implemented, would reduce statewide emissions of greenhouse gases by 11.7 million metric tons in 2025.⁸³ ADNR could compare emissions from producing and combusting oil and gas from the Cook Inlet and Alaska Peninsula Areas to that target when considering whether issuing leases in these areas is in the best interests of the state. Alternatively, it could apply the United States' goal of reducing greenhouse gas emissions by 26 to 28 percent by 2025—its "intended nationally determined contribution" leading up to the Paris Climate Agreement⁸⁴—to statewide emissions and compare the effects of these sales to the result.

⁷⁶ *See id.* at 16 n.42.

⁷⁷ *Id.* at 16.

⁷⁸ *See id.* at 10.

⁷⁹ *See id.*

⁸⁰ *See supra* notes 55, 56 & accompanying text.

⁸¹ CEQ Guidance at 11.

⁸² *See id.* at 28-29.

⁸³ *See* Alaska Mitigation Advisory Group Final Report at 1-9 to 1-10 & Tbl. 1-1.

⁸⁴ *See* United States Intended Nationally Determined Contribution, UNFCCC, <http://www4.unfccc.int/submissions/INDC/Published%20Documents/United%20States%20of%20America/1/U.S.%20Cover%20Note%20INDC%20and%20Accompanying%20Information.pdf>.

For the foregoing reasons, we request that you supplement the 2009 Cook Inlet and 2014 Alaska Peninsula best interest findings to take into account the climate-related effects of oil and gas lease sales on both the areas at issue and the state as a whole. Climate change is ravaging Alaska's coasts, melting its glaciers, altering its ecosystems, destroying its infrastructure, and harming its fishing industry. Moreover, the impacts are most sharply felt in rural, predominantly Native communities, which often lack access to services available elsewhere in the state. Given new information about the serious, disproportionate harms of climate change on Alaskans, ADNR would be well justified in concluding that the areawide lease sales proposed here are not in the best interests of the state. We urge the agency to review this information fully and fairly, consistent with its statutory obligations, and revoke its best interest findings for both the Cook Inlet and Alaska Peninsula Areas. Expanded oil and gas leasing, which will make it more difficult to rein in climate change, is not in the state's best interest.

Respectfully submitted,

Bob Shavelson
Inletkeeper & Executive Director
COOK INLETKEEPER

Jim Stearns
President
KACHEMAK BAY CONSERVATION
SOCIETY

**Sources for Cook Inletkeeper and Kachemak Bay Conservation Society Response to
Call for New Information: State of Alaska Oil and Gas Lease Sales: 2017 Cook Inlet and
Alaska Peninsula Areawides**

Alaska Climate Change Strategy Mitigation Advisory Group, Final Report: Greenhouse Gas Inventory and Forecast and Policy Recommendations Addressing Greenhouse Gas Reduction in Alaska (2009), <http://climatechange.alaska.gov/mit/O97F21995.pdf>

Armstrong, M., *Seabird Deaths, Warm Oceans, Algal Blooms Puzzle Scientists*, Homer News (Aug. 27, 2015), <http://homernews.com/homer-news/local-news/2015-08-27/seabird-deaths-warm-oceans-algal-blooms-puzzle-scientists>

Blanco, G. *et al.*, *Drivers, Trends and Mitigation*, in *Climate Change 2014: Mitigation of Climate Change*, Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (O. Edenhofer *et al.* eds., 2014), http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter5.pdf

Chapin III, F.S. *et al.*, *Climate Change Impacts in the United States*, Ch. 22: Alaska 514, 515-23, in *Climate Change Impacts in the United States: The Third National Climate Assessment* (J.M. Melillo *et al.* eds., 2014), http://s3.amazonaws.com/nca2014/high/NCA3_Climate_Change_Impacts_in_the_United%20States_HighRes.pdf (2014 U.S. National Climate Assessment)

Council on Environmental Quality, 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. 2016) (CEQ Guidance), https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf

Earl, E., *Fish & Game to Survey Cook Inlet Razor Clams*, Juneau Empire (Apr. 1, 2016), <http://juneauempire.com/outdoors/2016-04-01/fish-game-survey-cook-inlet-razor-clams>

Environmental Protection Agency (EPA), *Climate Change Indicators in the United States: 2016 Fourth Edition* (2016), https://www.epa.gov/sites/production/files/2016-08/documents/climate_indicators_2016.pdf

EPA, GHG Equivalencies Calculator - Calculations and References (2016), <https://www.epa.gov/energy/ghg-equivalencies-calculator-calculations-and-references>

Erickson, P. *et al.*, *Carbon Lock-in from Fossil Fuel Supply Infrastructure*, Stockholm Environment Institute (2015), <http://www.sei-international.org/publications?pid=2805>

Erickson, P. & M. Lazarus, *How would phasing out U.S. federal leases for fossil fuel extraction affect CO₂ emissions and 2°C goals?*, Stockholm Environment Institute, Working Paper 2016-02 (2016), <https://www.sei-international.org/mediamanager/documents/Publications/Climate/SEI-WP-2016-02-US-fossilfuel-leases.pdf>

Intergovernmental Panel on Climate Change, Synthesis Report, Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Core Writing Team, R.K. Pachauri & L.A. Meyer eds., 2014), <http://www.ipcc.ch/report/ar5/syr/> (IPCC Synthesis Report)

International Energy Agency, World Energy Outlook 2012 (2012), https://www.iea.org/publications/freepublications/publication/WEO2012_free.pdf

McGlade, C. and P. Ekins, *The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2 °C*, 517 NATURE 187 (2015), <http://www.nature.com/nature/journal/v517/n7533/full/nature14016.html>

Mikkelsen, K.M. *et al.*, *Bark Beetle Infestation Impacts on Nutrient Cycling, Water Quality, and Interdependent Hydrological Effects*, 115 Biogeochemistry 1 (2013), <http://link.springer.com/article/10.1007/s10533-013-9875-8>

Rosen, Y., *Kachemak Bay Sea Stars Found Stricken with Wasting Disease*, Alaska Dispatch News (May 12, 2015), <https://www.adn.com/wildlife/article/kachemak-bay-sea-stars-found-stricken-wasting-disease/2015/05/13/>

Tillotson, M.D. & T.P. Quinn, *Beyond Correlation in the Detection of Climate Change Impacts: Testing a Mechanistic Hypothesis for Climatic Influence on Sockeye Salmon (Oncorhynchus nerka) Productivity*, PLOS ONE DOI:10.1371/journal.pone.0154356 (2016), <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0154356>

Wohlforth, C., *New Bug Brings Back Memories of Spruce Bark Beetle Devastation*, Alaska Dispatch News (May 18, 2016), <https://www.adn.com/voices/commentary/2016/05/18/new-bug-brings-back-memories-of-spruce-bark-beetle-devastation>

United Nations Framework Convention on Climate Change, Conference of the Parties, Adoption of the Paris Agreement (Dec. 12, 2015), <http://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf>

United Nations Framework Convention on Climate Change, Conference of the Parties, Adoption of the Copenhagen Accord, *agreed* Dec. 18, 2009, FCCC/CP/2009/11/Add.1, <http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf>

United States Intended Nationally Determined Contribution, UNFCCC, <http://www4.unfccc.int/submissions/INDC/Published%20Documents/United%20States%20of%20America/1/U.S.%20Cover%20Note%20INDC%20and%20Accompanying%20Information.pdf>

Young, A.M. *et al.*, *Climatic Thresholds Shape Northern High-Latitude Fire Regimes*, 39 Ecology 1 (2016), <http://onlinelibrary.wiley.com/doi/10.1111/ecog.02205/abstract>