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Via BLM E-Planning Website

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Re: Willow Master Development Plan Draft Environmental Impact Statement (No. DOI-BLM-AK-0000-2018-0004-EIS)

On behalf of the Center for Biological Diversity ("Center"), please accept the following comments on the Bureau of Land Management ("BLM")'s draft Supplemental Environmental Impact Statement ("EIS") for the proposed Willow Master Development Plan ("Willow").[1]

Fossil fuels are killing us and killing our planet. The climate emergency is already causing devastating impacts from rising seas and coastal erosion; more destructive hurricanes and wildfires; increasing heatwaves, droughts, and floods; imperiling food and water security; and the collapse of ecosystems.

President Biden has acknowledged that we are facing a "profound climate crisis" and we have only a little time to pursue bold actions to avoid the most catastrophic impacts of climate change.[2] The overwhelming scientific consensus has conclusively determined that without significant, rapid emissions reductions, warming will exceed 1.5 degrees Celsius and will result in catastrophic damage around the world. Every fraction of additional warming above 1.5 degrees Celsius will worsen these harms, threatening people's lives, health, safety, and livelihoods; as well as the economy and national security for this generation and future generations.

To address this crisis, our nation must transform our extractive economy to a regenerative and inclusive one, in a manner that dismantles systemic racism and advances environmental, racial, and economic justice. As part of this transformation, the federal government must stop permitting new fossil fuel projects and phase out existing activity in the Arctic and elsewhere.

Approving Willow would do just the opposite. Willow would result in the development of up to

[1] 87 Fed. Reg. 44,148 (July 25, 2022).

[2] President Joe Biden, Tackling the Climate Crisis at Home and Abroad, Exec. Order No. 14,008, (Jan. 27, 2021).

nearly 630 million barrels of oil and nearly 290 million metric tons of greenhouse gas emissions. It would involve the drilling of up to 251 wells, hundreds of miles of ice roads, over 380 miles of pipelines, an airstrip, a gravel mine, and a processing facility in Alaska's Western Arctic. Willow would destroy essential wildlife habitat for polar bears, migratory birds, caribou, and other species; permanently scar sensitive Arctic ecosystems; and cause more oil spills and toxic air pollution that threaten communities on Alaska's North Slope.

Approving this massive oil project would thus be fundamentally inconsistent the Biden administration's pledge to address the climate emergency, promote environmental justice, and follow the science. It would also contravene BLM's legal obligation to protect the Reserve's surface resources.[3] BLM must therefore adopt the no-action alternative and reject Willow.

At the very least, BLM must substantially revise its woefully inadequate supplemental environmental analysis and reissue an updated draft EIS for public notice and comment. Indeed, the Biden administration's decision to issue essentially the same EIS as the Trump administration is both deeply disappointing and unlawful.[4]

BLM continues to take the same constricted view of its legal authority — arbitrarily assuming it must approve the project "in some form," despite ample legal authority to reject it.[5] BLM's EIS also continues to fail to evaluate a meaningful range of alternatives to the project; for example, all of the action alternatives would result in roughly the same amount of oil production, thus resulting in nearly the same climate impacts.[6] BLM failed to consider an alternative that would restrict the amount of oil ConocoPhillips can produce under the project or an alternative that would defer approval of the project until there is a global plan to limit warming to 1.5 degrees. The draft EIS also contains an unduly narrow purpose and need statement, failing to properly grapple with the urgent national need to transform our extractive economy to a regenerative and inclusive one, in a manner that dismantles systemic racism and advances environmental, racial, and economic justice; and that, as part of this transformation, the federal government must stop permitting new fossil fuel projects and phase out existing activity in the Arctic and elsewhere.

In addition to remedying each of these significant failures in a subsequent draft EIS, BLM must also consult on the impacts of Willow on threatened and endangered species and their federally designated critical habitats under section 7(a)(2) of the Endangered Species Act.[7] This

[3] 42 U.S.C. §§ 6506a(b), 6506a(k)(2).

[4] *See, e.g.*, BLM, Draft Supplemental Environmental Impact Statement: Willow Master Development Plan, June 2022, Vol. 1 at ES-1 (stating that the updated analysis responds to the District Court of Alaska's decision holding the prior EIS unlawful by adjusting the greenhouse gas emission analysis and including one new alternative related to the Teshekpuk Lake Special Area) (hereafter "DSEIS").

[5] *See, e.g.*, DSEIS Vol. 5 at 29; *cf.* 42 U.S.C. § 6506a(b) (stating, without limitation, that BLM "*shall* include or provide for such conditions, restrictions, and prohibitions" on activities within the Reserve as it determines necessary to protect the Reserve's surface resources) (emphasis added).

[6] DSEIS Vol. 1 at 41 (total GHG emissions from alternatives range from 278 million metric tons to 287 million metric tons).

[7] 16 U.S.C. § 1536(a)(2).

consultation must consider the impacts from the direct, indirect, and cumulative greenhouse gas emissions caused by the project. The latter requirement is the subject of this letter.

Studies have demonstrated that every barrel of federal oil left undeveloped would result in nearly half a barrel reduction in net oil consumption, with associated reductions in greenhouse gas emissions.[8] Conversely, approving new oil and gas activity increases greenhouse gas emissions. Permitting Willow will thus have an appreciable, cumulative impact on climate-threatened species. As such, BLM must consult with both the National Marine Fisheries Service and the U.S. Fish and Wildlife Service prior to permitting the project. BLM's failure to undertake such consultation would violate both the procedural requirements of section 7(a)(2) of the Endangered Species Act as well as BLM's substantive duty to ensure against jeopardy of federally-listed species and the adverse modification of their critical habitats.[9]

Indeed, despite the absolutely clear requirements of the Endangered Species Act to consult on the impacts of federal agency actions that might harm endangered species, never at *any* stage in the fossil fuel leasing or production approval process has BLM ever consulted with the U.S. Fish and Wildlife Service and National Marine Fisheries Service on the impacts of the emissions from burning fossil fuels extracted from public lands. This puts species like polar bears, ringed seals, and bearded seals — already struggling to survive in the face of melting sea ice — at even greater risk of extinction. BLM cannot continue the errors of its ways by ignoring its consultation obligations for greenhouse gas emissions from Willow.

By undergoing Section 7 consultation, BLM could make discretionary decisions — such as rejecting the project or limiting the amount of oil that can be produced under the project — that mitigate the climate effects from the project on protected species and their critical habitats. Consultation 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."

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[8] *See, e.g.*, P. Erickson and M. Lazarus, How would phasing out US federal leases for fossil fuel extraction affect CO2 emissions and 2°C goals?, Stockholm Environment Institute, Working Paper No. 2016-2 (2016); P. Erickson and M. Lazarus, Impact of the Keystone XL Pipeline on Global Oil Markets and Greenhouse Gas Emissions, 4 Nature Climate Change 778 (2016); *see also* P. Erickson, Rebuttal: Oil Subsidies—More Material for Climate Change Than You Might Think (Nov. 2, 2017); United Nations Environment Programme, Emissions Gap Report 2019, UNEP, Nairobi (2019), at 25, 26, https://wedocs.unep.org/bitstream/handle/20.500.11822/30797/EGR2019.pdf?sequence=1&isAllowed=y; United Nations Environment Programme, et al., 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 (2019), at 4, 14, http://productiongap.org/; Jason Bordoff and Trevor Houser, Navigating the U.S. Oil Export Debate, Columbia SIPA Center on Global Energy Policy, Jan. 2015.

[9] 16 U.S.C. § 1536(a)(2).

Global warming will exceed 1.5°C without an immediate end to new fossil fuel production and infrastructure and a phase-out of much existing production and infrastructure.

Fossil fuels are driving a global climate emergency that presents a "code red for humanity."[10] As UN Secretary-General António Guterres stated upon the release of the Intergovernmental Panel on Climate Change's ("IPCC") latest 2022 report:

> Climate scientists warn that we are already perilously close to tipping points that could lead to cascading and irreversible climate impacts. But, high-emitting Governments and corporations are not just turning a blind eye, they are adding fuel to the flames. They are choking our planet, based on their vested interests and historic investments in fossil fuels, when cheaper, renewable solutions provide green jobs, energy security and greater price stability…. Climate activists are sometimes depicted as dangerous radicals. But, the truly dangerous radicals are the countries that are increasing the production of fossil fuels. **Investing in new fossil fuels infrastructure is moral and economic madness**…. [11]

The climate emergency is here, and it is killing people, causing ecosystem collapse, costing the U.S. economy billions in damages every year, and creating escalating suffering across the nation and around the world.[12] The climate crisis also breeds glaring injustice, with Black, Latino, Indigenous, Asian American and Pacific Islanders, and other communities of color and low-wealth communities experiencing the gravest harms.[13] Without deep and rapid reductions in fossil fuel production and emissions, global temperature rise will exceed 1.5°C and result in catastrophic damages in the U.S. and around the world.[14]

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[10] United Nations Secretary-General, Secretary-General's statement on the IPCC Working Group 1 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.

[11] United Nations Secretary-General, António Guterres (UN Secretary-General) to the press conference launch of IPCC report (February 28, 2022) (emphasis added), https://media.un.org/en/asset/k1x/k1xcijxjhp.

[12] IPCC, Climate Change 2022, Impacts, Adaptation and Vulnerability (2022), https://www.ipcc.ch/report/ar6/wg2/; NOAA, National Centers for Environmental Information, Billion-Dollar Weather and Climate Disasters, https://www.ncdc.noaa.gov/billions/ (reporting that in 2021 alone in the U.S. , there were 20 weather and climate disaster events with losses exceeding $1 billion each and 688 deaths).

[13] Donaghy, 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.

[14] IPCC, 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,

The scientific literature documenting these findings has been set forth in a series of authoritative reports from the IPCC, U.S. Global Change Research Program, and other institutions, which make clear that fossil-fuel driven climate change is an existential "threat to human well-being and planetary health"[15] and that every increase in fossil fuel pollution pushes us further toward a dangerous and increasingly unlivable planet.[16]

The vast majority of all CO_2 pollution—86 percent—in the U.S. and globally comes from oil, gas, and coal.[17] The science is clear that limiting global temperature rise to 1.5°C under the Paris Agreement requires governments to immediately halt approval of all new fossil fuel production and infrastructure and rapidly phase out existing fossil fuel production and infrastructure in many developed fields and mines.[18] 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

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sustainable development, and efforts to eradicate poverty (2018) [Masson-Delmotte, V. et al. (eds.)], https://www.ipcc.ch/sr15/; IPCC, 2022*:* Climate Change 2022: Mitigation of Climate Change, Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla et al. (eds.)].

[15] IPCC, Climate Change 2022, Impacts, Adaptation and Vulnerability (2022) at SPM-35, https://www.ipcc.ch/report/ar6/wg2/.

[16] 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/; IPCC, Summary for Policymakers. In: Global Warming of 1.5°C, Masson-Delmotte, V. et al. (eds.) (2018), https://www.ipcc.ch/sr15/; IPCC, 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; IPCC, Climate Change 2022, Impacts, Adaptation and Vulnerability (2022), https://www.ipcc.ch/report/ar6/wg2/; IPCC, 2022*:* Climate Change 2022: Mitigation of Climate Change.

[17] Fourth National Climate Assessment, Vol. II at 60 (2018); IPCC, 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) at 5-19, https://www.ipcc.ch/report/sixth-assessment-report-working-group-i.

[18] IPCC, Summary for Policymakers, In: Global Warming of 1.5°C, Masson-Delmotte, V. et al. (eds.) (2018), https://www.ipcc.ch/sr15/; Oil Change International, Drilling Toward Disaster: Why U.S. Oil and Gas Expansion Is Incompatible with Climate Limits (2019), http://priceofoil.org/drilling-towards-disaster; Tong, Dan et al., Committed emissions from existing energy infrastructure jeopardize 1.5°C climate target, 572 Nature 373 (2019), https://www.nature.com/articles/s41586-019-1364-3; 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/; 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://fossilfueltreaty.org/exit-strategy; Welsby, Dan et al., Unextractable fossil fuels in a 1.5 °C world, 597 Nature 230 (2021); Trout, Kelly et al., Existing fossil fuel extraction would warm the world beyond 1.5°C, 17 Environmental Research Letters 064010 (2022), https://iopscience.iop.org/article/10.1088/1748-9326/ac6228#references.

must be ***retired early*** to avoid catastrophic climate harms.[19] Other research shows that the fossil fuels already in development globally, in existing and under-construction oil and gas fields and coal mines, contain enough carbon to substantially exceed the 1.5°C limit, meaning that extraction in existing fields and mines must also be shut down before their reserves are fully depleted.[20]

Yet, as detailed in the landmark United Nations Production Gap Reports, fossil fuel producers are planning to extract more than double the amount of oil, gas, and coal by 2030 than is consistent with limiting warming to 1.5°C.[21] Rather than increasing fossil fuel production and use, the world's fossil fuel production must decrease by roughly 6% per year on average between 2020 and 2030.[22]

The U.S. and other wealthy, high-emitting producer nations with the greatest capacity to achieve a just transition must make more rapid cuts. A recent Tyndall Center study concluded that an equitable phase-out requires the U.S. to end all oil and gas production by 2031 to preserve a 67% chance of limiting temperature rise to 1.5°C.[23] For a lower 50% of 1.5°C, the U.S. must reduce oil and gas production 74% by 2030 and end production by 2034.[24] Stated succinctly, there is no room in the global carbon budget for any new fossil fuel production and infrastructure of any kind anywhere in the world, right now. All such fossil fuel project approvals are inconsistent with meeting the Paris climate targets and inconsistent with maintaining a livable planet.

In the 1990 U.N. Framework Convention on Climate Change, signed by President George H.W. Bush and ratified by the U.S. Senate, the United States and other wealthy countries that have done the most to cause the climate crisis agreed to take the lead in solving it, enshrined in principle known as "common but differentiated responsibilities."[25] The United States has a moral responsibility to lead the world in a rapid managed decline of fossil fuel production and use — including an end to fossil fuel imports and exports — based on its role as the historic, dominant driver of the climate crisis and its capacity for a just transition to clean energy.[26] Thus, while any

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[19] Tong, Dan et al., 2019; Pfeiffer, Alexander et al., Committed emissions from existing and planned power plants and asset stranding required to meet the Paris Agreement, 13 Environmental Research Letters 054019 (2018).

[20] Oil Change International, Drilling Toward Disaster, 2019. Trout, Kelly et al. 2022.

[21] The Production Gap 2020 http://productiongap.org/; SEI, IISD, ODI, E3G, and UNEP, The Production Gap Report 2021 (2021), http://productiongap.org/2021report.

[22] *Id.*

[23] Calverley and Anderson, Phaseout Pathways for Fossil Fuel Production Within Paris-compliant Carbon Budgets (2022), https://www.iisd.org/publications/report/phaseout-pathways-fossil-fuel-production-within-paris-compliant-carbon-budgets (Tyndall Report).

[24] *Id*. at 6.

[25] UNFCC Article 3: Principles in United Nations, United Nations Framework Convention on Climate Change (May 9, 1992).

[26] Muttitt, Greg & Sivan Kartha, Equity, climate justice and fossil fuel extraction: principles for a managed phase out, 20 Climate Policy 1024 (2020), https://www.tandfonline.com/doi/abs/10.1080/14693062.2020.1763900?journalCode=tcpo20.

new fossil fuel production or infrastructure project globally is inconsistent with meeting the Paris climate targets, continued approvals in the United States are particularly egregious.

Alaska's Arctic Is on the Frontlines of the Climate Crisis

Alaska and the Arctic are on the front lines of the climate crisis, suffering rapid rates of sea ice loss and some of the most severe and rapid temperature rise on the planet. 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,[27] highlighted the extreme pace of climate change in Alaska and the Arctic:

> 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.[28]
>
> 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.[29]
>
> 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.[30]
>
> 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.[31]

Other more recent studies have found that the Arctic is warming at four times the global rate,[32] with localized warming as high as five times the global average.[33]

According to the Fourth Assessment, Alaska will experience more heating than any other state, with the greatest increases expected in the Alaskan Arctic.[34] Heating is projected to be less severe under scenarios where greenhouse gas emissions are greatly reduced. For example,

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[27] Fourth National Climate Assessment, Vol. I (2017); Fourth National Climate Assessment, Vol. II (2018); USGCRP [U.S. Global Change Research Program], "Fourth National Climate Assessment: Report Development Process," https://nca2018.globalchange.gov/chapter/appendix-1/.

[28] NCA4 Vol. II at 1190.

[29] *Id*.

[30] *Id.* at 1191.

[31] *Id.* at 1190.

[32] P. Chylek, et al. 2022. Annual Mean Arctic Amplification 1970–2020: Observed and Simulated by CMIP6 Climate Models. Geophysical Research Letters Vol. 49, Issue 13; M. Rantanen, et al. 2022. The Arctic has warmed nearly four times faster than the globe since 1979. Communications Earth & Environment. 3:168.

[33] K. Isaksen, et al. 2022. Exceptional Warming Over the Barents Area. Scientifc Reports 12:9371.

[34] NCA4 Vol. II at 1191.

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.[35]

Arctic summer sea ice extent and thickness have decreased by 40% during the past several decades.[36] Sea ice loss has accelerated since 2000, with Alaska's coast suffering some of the fastest losses.[37] Approximately 95% of the oldest and thickest sea ice has disappeared during the past three decades, and the remaining thinner, younger ice is more vulnerable to melting.[38] The length of the sea ice season is getting shorter as ice melts earlier in spring and forms later in autumn.[39] Along Alaska's northern and western coasts, the sea ice season has shortened by more than 90 days.[40] A study quantifying sea ice trends in all 19 polar bear subpopulation regions from 1979 to 2014 found that in all regions sea ice is retreating earlier in spring and advancing later in fall, and the number of ice-covered days declined in all regions at the loss rate of 7 to 19 days per decade.[41]

As greenhouse gas emissions continue to rise, the Arctic is projected to be virtually ice-free in summer by 2040,[42] a shocking loss given that minimum summer sea ice averaged 2.64 million square miles during 1979 to 1992.[43] As summarized by the Fourth National Climate Assessment:

> Since the early 1980s, annual average arctic sea ice has decreased in extent between 3.5% and 4.1% per decade, become thinner by between 4.3 and 7.5 feet, and began melting at least 15 more days each year. September sea ice extent has decreased between 10.7% and 15.9% per decade (*very high confidence*). Arctic-wide ice loss is expected to continue through the 21st century, *very likely* resulting in nearly sea ice-free late summers by the 2040s (*very high confidence*)."[44]

Rising temperatures are also causing Arctic permafrost to thaw at rapid rates, and coastal erosion is increasing as protective sea ice disappears and sea levels rise. According to the Fourth National Climate Assessment:

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[35] *Id.* at Figure 26.1.

[36] NCA4 Vol. I at 29, 57, 303.

[37] *Id.* at 305.

[38] Osborne, Emily, et al. (eds.), Arctic Report Card 2018, NOAA (2018), https://www.arctic.noaa.gov/Report-Card/Report-Card-2018 at 2; *see also* Moon, T.A. et al. (eds), Arctic Report Card 2021, NOAA (2021), https://www.arctic.noaa.gov/Report-Card/Report-Card-2021.

[39] NCA4 Vol. I at 307.

[40] *Id.* at 307.

[41] Stern, Harry L. and Kristin L. Laidre, Sea-ice indicators of polar bear habitat, 10 The Cryosphere 2027 (2016).

[42] NCA4 Vol. I at 29, 303.

[43] National Oceanic and Atmospheric Administration (NOAA), Climate Change: Arctic Sea Ice Summer Minimum, Climate.gov, Sept. 8, 2020, https://www.climate.gov/news-features/understanding-climate/climate-change-minimum-arctic-sea-ice-extent.

[44] NCA4, Vol. I at 29, 303.

> Since the 1970s, Arctic and boreal regions in Alaska have experienced rapid rates of warming and thawing of permafrost, with spatial modeling projecting that near-surface permafrost will likely disappear on 16% to 24% of the landscape by the end of the 21st century.[45]
>
> With the late-summer sea ice edge located farther north than it used to be, storms produce larger waves and cause more coastal erosion. In addition, ice that does form is very thin and easily broken up, giving waves more access to the coastline. A significant increase in the number of coastal erosion events has been observed as the protective sea ice embankment is no longer present during the fall months.[46]

The Intergovernmental Panel on Climate Change (IPCC) similarly 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 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."[47] With regard to the Arctic, the IPCC concluded that climate change is causing rapid sea ice loss, permafrost thawing, and loss of snow cover:

> In 2011–2020, annual average Arctic sea ice area reached its lowest level since at least 1850 (*high confidence*). [48]
>
> Late summer Arctic sea ice area was smaller than at any time in at least the past 1000 years (*medium confidence*).[49]
>
> It is *virtually certain* that the Arctic will continue to warm more than global surface temperature, with *high confidence* above two times the rate of global warming.[50]
>
> The Arctic is projected to experience the highest increase in the temperature of the coldest days, at about 3 times the rate of global warming (*high confidence*).[51]

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[45] NCA4 Vol. II at 1197.

[46] *Id*.

[47] Intergovernmental Panel on Climate Change (IPCC), 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.

[48] *Id.* at SPM-9.

[49] *Id.* at SPM-9.

[50] *Id.* at SPM-19.

[51] *Id.* at SPM-20.

> With additional global warming, the frequency of marine heatwaves will continue to increase (*high confidence*), particularly in the … Arctic *(medium confidence).*[52]
>
> Additional warming is projected to further amplify permafrost thawing, and loss of seasonal snow cover, of land ice and of Arctic sea ice (*high confidence*). [53]
>
> The Arctic is *likely* to be practically sea ice free in September at least once before 2050 under the five illustrative scenarios considered in this report, with more frequent occurrences for higher warming levels.[54]
>
> The Arctic is projected to be practically ice-free near mid-century under mid and high GHG emissions scenarios.[55]

Other recent scientific assessments have similarly documented the extreme impacts of Arctic climate change, including NOAA's *Arctic Report Card*[56] and the Arctic Monitoring and Assessment Programme's 2017 *Snow, Water, Ice and Permafrost in the* Arctic report.[57] Recent studies include the following:

(1) Increased coastal erosion and storm surge: For Arctic Alaska, Fang et al. (2018) 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.[58]

(2) Permafrost thaw: McGuire et al. (2018) concluded that effective efforts through the remainder of this century to reduce greenhouse gas pollution would help prevent much of the loss of ecosystem carbon storage from permafrost loss, and "could attenuate the negative consequences of the permafrost carbon–climate feedback**.**"[59] Hjort et al. (2018) 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.[60]

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[52] *Id*.

[53] *Id*.

[54] *Id*.

[55] *Id.* at SPM-30.

[56] Thoman, R.L. et al (eds). Arctic Report Card 2020, NOAA (2020), https://arctic.noaa.gov/report-card/report-card-2020.

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

[58] Fang, Z. et al., Reduced sea ice protection period increases storm exposure in Kivalina, Alaska, 4 Arctic Science 525 (2018).

[59] McGuire, A.D. et al., Dependence of the evolution of carbon dynamics in the northern permafrost region on the trajectory of climate change, 115 PNAS 3882 (2018).

[60] Hjort, J. et al., Degrading permafrost puts Arctic infrastructure at risk by mid-century, 9 Nature Communications 5147 (2018).

(3) Changes in snowpack: Cox et al. (2017) reported a trend toward earlier spring snowmelt and later onset of autumn snow accumulation in the North Slope.[61]

(4) Extreme weather events: Walsh et al. (2017) determined that the record-setting warmth during the 2015/16 cold season in Alaska — when statewide average temperatures exceeded the mean by more than 48°C over the 7-month cold season and by more than 68°C over the 4-month late-winter period — was driven in large part by anthropogenic climate change.[62] Lader et al. (2017) 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."[63] Pan et al (2018) projected that wet snow and rain-on-snow events will increase in frequency and extent in Alaska with climate warming.[64]

Importantly, the Fourth National Climate Assessment and numerous scientific studies make clear that the harms of climate change to the Arctic and other regions are long-lived, and the choices we make now to reduce greenhouse gas pollution will affect the severity of the climate change impacts that will be suffered in the future.[65] As summarized by the National Research Council, "emissions reduction choices made today matter in determining impacts experienced not just over the next few decades, but in the coming centuries and millennia."[66]

BLM Must Consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service on the Greenhouse Gas Emissions Caused by Willow

For every discretionary action, Section 7(a)(2) of the Endangered Species Act ("ESA") requires each federal agency, in consultation with the nation's wildlife agencies, to "insure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of the critical habitat of such species" using the best scientific data available.[67] The Supreme Court has unequivocally stated that the Act's "language, history, and structure" made clear "beyond a 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

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

[62] Walsh, J.E. et al., The exceptionally warm winter of 2015/2016 in Alaska, 30 Journal of Climate 2069 (2017).

[63] Lader, R. et al., Projections of twenty-first-century climate extremes for Alaska via dynamical downscaling and quantile mapping, 56 Journal of Applied Meteorology and Climatology 2393 (2017).

[64] Pan, C.G. et al., Rain-on-snow events in Alaska, their frequency and distribution from satellite observations, 13 Environmental Research Letters 075004 (2018).

[65] NCA4 Vol. II, Overview at 4.

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

[67] 16 U.S.C. § 1536(a)(2).

federal agencies" especially during such consultations.[68] 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*."[69] Because the oil and gas activity under Willow will have an appreciable, cumulative impact on climate-threatened species, BLM 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").[70]

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.[71] 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, 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."[72] 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."[73]

As such, BLM and the Services cannot continue to arbitrarily define the action area narrowly as it has done in the past, such as defining the onshore action area to include only the area within one mile of project activities, or the buffer used by FWS for den disturbance; and defining the offshore action area to include only the area within 1.5 miles of offshore project components. For this proposed action, it is clear that the anticipated greenhouse gas pollution from oil and gas activity under Willow 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. Indeed, 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-

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[68] *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 174 (1978).

[69] *Id*. (emphasis added).

[70] 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 US 497 (2007).

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

[72] 50 C.F.R. § 402.02

[73] *Id*. § 402.02 (emphasis added).

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."[74]

The U.S. federal government has repeatedly recognized that human-caused climate change is causing widespread and intensifying harms across the country in the authoritative National Climate Assessments, scientific syntheses prepared by hundreds of scientific experts and reviewed by the National Academy of Sciences and federal agencies. Recently, the Fourth National Climate Assessment warned 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."[75] 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.[76] Climate change is already affecting 82% of key ecological processes that underpin ecosystem function and support basic human needs.[77] Climate change-related local extinctions are widespread and have occurred in hundreds of species, including almost half of the 976 species surveyed.[78] 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.[79] 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.[80] Genes are changing, species' physiology and physical features such as body size are changing, 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.[81]

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[74] Bradshaw, C., et al. 2021. Understanding the Challenges of a Ghastly Future. Front. Conserv. Sci. Vol. 1, Article 615419.

[75] *Id.* at 51.

[76] Warren, Rachel et al., Increasing impacts of climate change upon ecosystems with increasing global mean temperature rise, 106 Climatic Change 141 (2011).

[77] Scheffers, Brett R. et al., The broad footprint of climate change from genes to biomes to people, 354 Science 719 (2016).

[78] Wiens, John J., Climate-related local extinctions are already widespread among plant and animal species, 14 PLoS Biology e2001104 (2016).

[79] Pacifici, Michela et al., Species' traits influenced their response to recent climate change, 7 Nature Climate Change 205 (2017). 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."

[80] Spooner, Fiona E.B. et al., Rapid warming is associated with population decline among terrestrial birds and mammals globally, 24 Global Change Biology 4521 (2018).

[81] Parmesan, Camille & Gary Yohe, A globally coherent fingerprint of climate change impacts across natural systems, 421 Nature 37 (2003); Root, Terry L. et al., Fingerprints of global warming on wild animals and plants, 421 Nature 57 (2003); Parmesan, Camille, Ecological and evolutionary responses to recent climate change, 37 Annual Review of Ecology Evolution and Systematics 637 (2006); Chen, I-Ching et al., Rapid range shifts of species associated with high levels of climate warming, 333 Science 1024 (2011); Maclean, Ilya M. D. & Robert J. Wilson, Recent ecological responses to climate change support predictions of high extinction risk, 108 PNAS 12337 (2011); Warren, Rachel et al., Increasing impacts of climate change upon ecosystems with increasing global mean temperature rise, 106 Climatic

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.[82] 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.[83] 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 scenario;[84] the potential extinction of 10 to 14% of species by 2100;[85] global extinction of 5% of species with 2°C of warming and 16% of species with business-as-usual warming;[86] 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 species;[87] and the loss of a third or more of animals and plant species in the next 50 years.[88] 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."[89]

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 methane's intensive near-term heating effects and ground-level ozone production.[90] Methane is a super-pollutant 87 times more powerful than CO_2 at warming the atmosphere over a 20-year

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Change 141 (2011); Cahill, Abigail E. et al., How does climate change cause extinction?, 280 Proceedings of the Royal Society B 20121890 (2012).

[82] Brondizio, E.S. et al. (eds.), IPBES, Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, IPBES secretariat, Bonn, Germany (2019), *available at* https://ipbes.net/global-assessment.

[83] IPCC Climate Change 2021, Summary for Policymakers.

[84] Thomas, Chris. D. et al., Extinction risk from climate change, 427 Nature 145 (2004).

[85] Maclean, Ilya M. D. & Robert J. Wilson, Recent ecological responses to climate change support predictions of high extinction risk, 108 PNAS 12337 (2011).

[86] Urban, Mark C., Accelerating extinction risk from climate change, 348 Science 571 (2015).

[87] Warren, Rachel et al., Quantifying the benefit of early climate change mitigation in avoiding biodiversity loss, 3 Nature Climate Change 678 (2013).

[88] Román-Palacios, Cristian & John J. Wiens, Recent responses to climate change reveal the drivers of species extinction and survival, 117 PNAS 4211 (2020).

[89] Melillo 2014, Third National Climate Assessment at 196.

[90] 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.

period,[91] and is second only to CO_2 in driving climate change during the industrial era.[92] 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.[93] 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.[94] 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.[95]

For example, the loss of sea ice, and the lack of adequate regulatory mechanisms addressing greenhouse gas pollution, led the Fish and Wildlife Service to list the polar bear as a threatened species in 2008.[96] As a top Arctic predator, the polar bear relies on sea ice for all its essential activities, including hunting for prey, moving long distances, finding mates, and building dens to rear cubs.[97] Separately, recognizing the critical importance of sea ice for polar bear survival, the Fish and Wildlife Service designated sea ice habitat off Alaska as critical habitat for the polar bear in 2010.[98]

Federal documents acknowledge that shrinkage and premature breakup of sea ice due to climate change is the primary threat to the species, leaving bears with vastly diminished hunting grounds, less time to hunt, and a shortage of sea ice for other essential activities such as finding mates and

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[91] Myhre, G. 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 [Stocker, T.F. et al. (eds.)] (2013), *available at* https://www.ipcc.ch/report/ar5/wg1/ at Table 8.7.

[92] Global Methane Assessment at 11.

[93] *Id.* at 11, 69.

[94] *Id.* at 11.

[95] Hoegh-Guldberg, O. et al., Impacts of 1.5°C Global Warming on Natural and Human Systems, 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 [Masson-Delmotte, V. et al. (eds)] (2018), https://www.ipcc.ch/sr15/chapter/chapter-3/ at 262.

[96] 73 Fed. Reg. 28212 at 28293: "On the basis of our thorough evaluation of the best available scientific and commercial information regarding present and future threats to the polar bear posed by the five listing factors under the Act, we have determined that the polar bear is threatened throughout its range by habitat loss (i.e., sea ice recession). We have determined that there are no known regulatory mechanisms in place at the national or international level that directly and effectively address the primary threat to polar bears—the rangewide loss of sea ice habitat."

[97] *Id.*

[98] U.S. Fish and Wildlife Service, Designation of Critical Habitat for the Polar Bear (Ursus maritimus) in the United States, 75 Fed. Reg. 76086 (Dec. 7, 2010).

resting.[99] As summarized in the species' 2017 five-year review, sea ice loss and a shorter sea ice season makes hunting calorie-rich seals more difficult for polar bears, leading to nutritional stress, reduced body mass, and declines of some populations.[100] As the sea ice retreats, polar bears have been forced to swim longer distances,[101] which is more energetically costly,[102] and they are spending more time on land where they have reduced access to food.[103] Females are denning more often on land than on ice, increasing the potential for conflicts with humans.[104] Because polar bears have high metabolic rates, increases in movement resulting from loss and fragmentation of sea ice result in higher energy costs and are likely to lead to reduced body condition, recruitment and survival.[105]

In the southern Beaufort Sea of Alaska, polar bears declined by 40 percent over a recent 10-year period,[106] and this decrease has been attributed to sea ice loss that limited access to prey over multiple years.[107] For the bears in this population, research has linked sea ice loss to decreases in survival, lower success in rearing cubs, shrinking body size, and increases in fasting and

[99] 73 Fed. Reg. 28212 at 28303; U.S. Fish and Wildlife Service, Polar bear (Ursus maritimus) Conservation Management Plan, Final. U.S. Fish and Wildlife Service, Region 7, Anchorage, Alaska (2016); U.S. Fish and Wildlife Service, Polar Bear (Ursus maritimus) 5-Year Review: Summary and Evaluation, U.S. Fish and Wildlife Service, Marine Mammals Management, Anchorage, Alaska (Feb. 3, 2017).

[100] Polar Bear 5-Year Review 2017 at 16.

[101] Durner, George M. et al., Consequences of long-distance swimming and travel over deep-water pack ice for a female polar bear during a year of extreme sea ice retreat, 34 Polar Biology 975 (2011); Pagano, Anthony M. et al., Long-distance swimming by polar bears (Ursus maritimus) of the southern Beaufort Sea during years of extensive open water, 90 Canadian Journal of Zoology 663 (2012); Pilfold, Nicholas W. et al., Migratory response of polar bears to sea ice loss: to swim or not to swim, 40 Ecography 189 (2017); Durner, George M. et al., Increased Arctic Sea Ice Drift Alters Adult Female Polar Bear Movements and Energetics, 23 Global Change Biology 3460 (2017).

[102] Griffen, Blaine D., Modeling the metabolic costs of swimming in polar bears (Ursus maritimus), 41 Polar Biology 491 (2018).

[103] Cherry, Seth G. et al., Fasting physiology of polar bears in relation to environmental change and breeding behavior in the Beaufort Sea, 32 Polar Biology 383 (2009); Whiteman, John P. et al., Summer declines in activity and body temperature offer polar bears limited energy savings, 349 Science 295 (2015).

[104] Olson, J.W. et al., Collar temperature sensor data reveal long-term patterns in southern Beaufort Sea polar bear den distribution on pack ice and land, 564 Marine Ecology Progress Series 211 (2017); Polar Bear 5-Year Review 2017 at 20-21.

[105] Polar Bear 5-Year Review 2017 at 17; Pagano, Anthony M. et al., High-energy, high-fat lifestyle challenges an Arctic apex predator, the polar bear, 359 Science 568 (2018).

[106] Bromaghin, Jeffrey F. et al., Polar Bear Population Dynamics in the Southern Beaufort Sea during a Period of Sea Ice Decline, 25 Ecological Applications 634 (2015).

[107] Obbard, Martyn E. et al., eds, Polar Bears: Proceedings of the 15th Working Meeting of the IUCN/SSC Polar Bear Specialist Group, Copenhagen, Denmark, 29 June–3 July 2009 (2010) at 52 ("Thus, the SB subpopulation is currently considered to be declining due to sea ice loss"); Bromaghin 2015.

nutritional stress.[108]

For example, one recent study of polar bear population dynamics in Alaska's SBS from 2001 to 2016 concluded that SBS polar bear carrying capacity has been eroding for nearly two decades and that the SBS population has been in general decline. Specifically, the study estimated that SBS polar bear abundance fluctuated around an average of 565 bears (95% Bayesian credible interval [340, 920]) from 2006 to 2015, which is lower than at any time since passage of the U.S. Marine Mammal Protection Act. The study reported that abundance moved in concert with survival throughout the study period, declining substantially from 2003 and 2006 and afterward fluctuating with lower variation. Importantly, the study concluded that "[t]he potential for recovery is likely limited by the degree of habitat degradation the subpopulation has experienced, and future reductions in carrying capacity are expected given current projections for continued climate warming." The researchers further concluded that "[g]iven climate model projections for continued global warming and sea ice loss (e.g., SIMIP Community, 2020), further reductions in the abundance of polar bears in the SBS can be expected in the future."[109]

The loss of sea ice also jeopardizes the polar bear's sea-ice dependent prey species — the ringed seal and bearded seal — which were listed as threatened in 2012 due to sea ice loss from climate change.[110]

If current greenhouse gas emissions trends continue, scientists estimate that two-thirds of global polar bear populations will be lost by 2050, including the loss of both of Alaska's polar bear populations, while the remaining third will near extinction by the end of the century due to the disappearance of sea ice.[111] However, aggressive emissions reductions will allow substantially more sea ice to persist and increase the chances that polar bears will survive in Alaska and across

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[108] Regehr, Eric V. et al., Survival and breeding of polar bears in the southern Beaufort Sea in relation to sea ice, 79 Journal of Animal Ecology 117 (2010); Bromaghin 2015; Rode, Karyn D. et al., Reduced body size and cub recruitment in polar bears associated with sea ice decline, 20 Ecological Applications 768 (2010); Cherry 2009; Whiteman 2015; Atwood, Todd C. et al., Long-term variation in polar bear body condition and maternal investment relative to a changing environment, 32 Global Ecology and Conservation e01925 (2021); Whiteman, John P. et al, Phenotypic plasticity and climate change: can polar bears respond to longer Arctic summers with an adaptive fast? 186 Oecologia 369 (2018); Pagano, A.M. et al., High-energy, high-fat lifestyle challenges an Arctic apex predator, the polar bear, 359 Science 568 (2018); Pagano, Anthony M. et al., The seasonal energetic landscape of an apex marine carnivore, the polar bear, 10 Ecology e02959 (2020); Pagano, Anthony M. et al., Effects of sea ice decline and summer land use on polar bear home range size in the Beaufort Sea, 12 Ecosphere e03768 (2021).

[109] Bromaghin, J.F, et al., Survival and abundance of polar bears in Alaska's Beaufort Sea, 2001-2016, 11 Ecology and Evolution 14250 (2021).

[110] National Marine Fisheries Service, Threatened Status for the Arctic, Okhotsk, and Baltic Subspecies of the Ringed Seal and Endangered Status for the Ladoga Subspecies of the Ringed Seal, 77 Fed. Reg. 76706 (Dec. 28, 2012); National Marine Fisheries Service, Threatened Status for the Beringia and Okhotsk Distinct Population Segments of the *Erignathus barbatus nauticus* Subspecies of the Bearded Seal, 77 Fed. Reg. 76,740 (Dec. 28, 2012).

[111] Amstrup, Steven C. et al., Forecasting the Range-wide Status of Polar Bears at Selected Times in the 21st Century, U.S. Department of the Interior and U.S. Geological Survey, USGS Science Strategy to Support U.S. Fish and Wildlife Service Polar Bear Listing Decision, Reston, Virginia (2007); Amstrup,

their range.[112]

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. Highlighting the importance of reducing greenhouse gas emissions to protect sea ice and sea-ice dependent species, one recent study estimated that each metric ton of CO2 emission results in a sustained loss of 3 ± 0.3 m^2 of September Arctic sea ice area based on the robust linear relationship between monthly-mean September sea ice area and cumulative CO2 emissions.[113] Similar to other research,[114] the study concluded that limiting warming to 2°C is not sufficient to allow Arctic summer sea ice to survive, but that a rapid reduction in emissions to achieve a 1.5°C global warming target gives Arctic summer sea ice "a chance of long-term survival at least in some parts of the Arctic Ocean."[115] Additionally, 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 are not addressed at all.[116]

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 over 1,000 square miles of summer sea ice habitat for the polar bear and one additional day of ice-free conditions in the arctic, which would reduce the length of the polar bear feeding season and reduce reproductive success rates.[117] 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.

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, three-page memorandum issued by David Bernhardt — then Department of Interior Solicitor during the George W. Bush administration — which asserted, without any citation or acknowledgement of the scientific literature, that the "best

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Steven C. et al., Greenhouse Gas Mitigation Can Reduce Sea Ice Loss and Increase Polar Bear Persistence, 468 Nature 955 (2010).

[112] Amstrup 2010; Atwood, Todd C. et al., Forecasting the Relative Influence of Environmental and Anthropogenic Stressors on Polar Bears, 7 Ecosphere e01370 (2016); Regehr, Eric V. et al., Conservation status of polar bears (Ursus martimus) in relation to projected sea-ice declines, 12 Biology Letters 20160556 (2016).

[113] Dirk Notz & Julienne Stroeve, Observed Arctic sea ice loss directly follows anthropogenic CO2 emission, 354 Science 747 (2016).

[114] Schleussner, Carl-Friedrich et al., Science and policy characteristics of the Paris Agreement temperature goal, 6 Nature Climate Change 827 (2016) at 830.

[115] Notz & Stroeve 2016 at 3-4.

[116] Polar Bear Conservation Management Plan 2016.

[117] 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); Notz & Stroeve 2016.

scientific data available today do not allow us to draw a causal connection between greenhouse gas 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."[118] Even if this memorandum were correct at the time — and it was not — the memorandum also stated that:

> as new information and knowledge about emissions and specific impacts to species and their habitats is develop[s], 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.

Thus, the Bernhardt Memorandum was 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. Willow Clearly "May Affect" Climate-Threatened Species and Therefore 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.[119] The 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.[120] Only a scientific finding of "no effect" is sufficient to avoid the consultation process altogether.[121] 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 determines its proposed action will not affect a listed species or designated critical habitat"; it cannot be employed when an agency simply believes it is too hard to determine the impacts of its actions.[122]

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[118] Bernhardt Memorandum, May 14, 2008. Available at: https://www.fws.gov/policy/m0331.pdf.

[119] 50 C.F.R. §§ 402.02, 402.14(a), (g). A court recently vacated the amendments to long-standing ESA regulations issued by the Trump administration, meaning artificial limits on the "effects" of the action are no longer in place. *See Ctr. for Biological Diversity v. Haaland*, Case No., 4:19-cv-05206, ECF No. 168 (N.D. Cal. July 5, 2022) (vacating the amended regulations and reinstating prior ESA regulations).

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

[121] U.S. Fish and Wildlife Service & National Marine Fisheries Service, Consultation Handbook: Procedures for Conducting Consultation and Conference Activities under Section 7 of the Endangered Species Act ("Consultation Handbook"), at xvi.

[122] *American Fuel & Petrochemical Manufacturers, et al. v. EPA*, 937 F. 3d 559 (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.).

It is abundantly clear that when an agency action contributes a meaningful amount of total emissions, 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 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 BLM 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 action. If the action agency believes that the impacts of its greenhouse gas emissions are not significant, it may make a finding that such impacts are "not likely to adversely affect" listed species, which is defined as all impacts being "discountable" or "insignificant."[123] Critically, however, the expert wildlife agencies must themselves concur regarding whether the action agency's scientific assessment of the impacts to climate-threatened species is correct.[124]

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. 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" to the proposed action that they believes would address those impacts.[125] 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" that they consider necessary or appropriate to minimize such impact.[126]

Oil and gas activity under Willow will cause a myriad of direct impacts to polar bears and other ESA-listed species, in the form of noise disturbance, physical obstructions, human-bear interactions, oil spills, and seismic vehicles that could crush polar bears in their dens, among other impacts. Additionally, the greenhouse gas emissions that will result from Willow are appreciable, 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."

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[123] Consultation Handbook at xv.

[124] 50 C.F.R. § 402.14(b).

[125] 16 U.S.C. § 1536(b)(3).

[126] *Id.* § 1536(b)(4)

Consulting on climate-threatened species from the cumulative impacts of emissions caused by the action agency 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 intended that such challenges not represent an insurmountable barrier to completing consultations.[127] Furthermore, the Services have regularly relied on surrogates such as habitat, ecological conditions, or a similarly affected species that is 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, critical habitat is only adversely modified or destroyed when it appreciably diminishes the value of the "whole" designation.[128] 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 Reasonable and Prudent Alternatives and Reasonable and Prudent Measures — including through surrogate metrics — to address the habitat degradation that climate change is bringing.

For both the jeopardy analysis and critical habitat analysis, the Services will have to develop analytical tools and methods that meet the standards of the ESA, 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 Reasonable and Prudent Alternatives 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.[129] While jeopardy determinations are rare, in the context of climate consultations

[127] H.R. Rep. No. 97-567, at 27 (1982).

[128] *See* 50 C.F.R. § 402.02. The

[129] 16 U.S.C. § 1536(b)(3)(A).

they are all the more critical to the survival of not only listed species, but of humanity itself. If a federal agency action substantially increases the likelihood of overshooting the 1.5 degrees Celsius goal of the Paris Accords, that is likely to not only jeopardize climate-threatened species, but people everywhere. As the ESA makes clear, the action agency must not take such an action, or it must implement Reasonable and Prudent Alternatives that ensure greenhouse gas emissions decrease such that they are consistent with the IPCC and the best available science. Therefore, 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."[130]

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 Reasonable and Prudent Measures 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.[131] Section 7(a)(1) requires all federal agencies to "utilize their authorities…by carrying out programs for the conservation of endangered and threatened species."[132] As the Supreme Court noted in *Tennessee Valley Authority v. Hill*, Section 7(a)(1) is no less than "stringent, mandatory language,"[133] that "reveals an explicit congressional decision to require agencies to afford first priority to the declared national policy of saving endangered species."[134] 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.

Conclusion

Oil and gas activity under Willow, if conducted, may affect hundreds of threatened and endangered species and their critical habitats due to the resulting increase in carbon emissions. BLM must therefore consult under the ESA prior to permitting oil and gas activity in the area. BLM must also remedy the numerous deficiencies in its draft EIS as described above.

Sincerely,

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[130] Exec. Order No. 14,008.

[131] 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").

[132] 16 U.S.C. § 1536(a)(1).

[133] *Tenn. Valley Auth. v. Hill*, 437 U.S. at 183.

[134] *Id.* at 185.

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