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The impacts of United States politics on the Arctic wilderness in Alaska

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ABSTRACT

The Arctic National Wildlife Refuge (ANWR or the Refuge) has been at the core of the conservation-development debate in the U.S. for over fifty years. The Refuge case epitomizes how policies shape territories governed by overlapping federal, congress, local, and Indigenous regimes. For instance, between 2017 and 2023, the Refuge was opened and closed to hydrocarbon development by two U.S. Presidents. ANWR is among the largest environmental refuges in the U.S. with oil reserve between 4.3 and 11.8 million barrels. Our analysis of U.S. policies about the ANWR shows the contestation between pro-environment and pro-oil development at the federal and state levels. Federal policies of Republican and Democrat administrations align with pro-drilling and pro-environment positions, respectively. Alaskan policymakers are pro-drilling, which puts them at odds with pro-environment legislators from Democratic states. Tensions between Alaska and the Federal government are about control and distribution of the oil revenue. Further, Indigenous peoples are on different sides as well. Traditional Gwich'in oppose development because it threatens their way of life. Illupiat favor oil development because oil revenue has supported their modernized lifestyle. The fate of the ANWR will shape what happens with protected areas in the U.S. and with species across national boundaries.

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Introduction

For over 50 years, the Arctic National Wildlife Refuge (ANWR or the Refuge) has been the terrain of dispute about whether to preserve the wilderness or exploit the oil and natural gas reserves (Comay et al., 2018; Gibbens, 2021). The dispute has been dynamic with the upper hand shifting sides, which is particularly clear in the last 5 years. While for most of the 50 years of debate oil exploitation was not allowed, in December of 2017 President Trump signed the P.L. 115-97 establishing an oil and gas program in the ANWR's Coastal Plain. However, confirming the dynamic nature of the conservation-development debate, in early September of 2023, President Biden canceled all oil leases in the Arctic National Wildlife Refuge (ANWR). In doing so, Biden put an end to the never-ending controversy involving oil, the environment, and American politics. But is it that easy?

Though the past, present, and future of protected natural areas such as National Parks and Wildlife Refuges in the United States are determined by government policies at the

federal levels (The National Parks Service, 2023), regulation at the meso and micro levels (i.e. state and municipal) may support or counter federal policies (Office of Secretary of the interior, 2023). We analyze the dynamics of multi-level policies in northern Alaska's Arctic National Wildlife Refuge (ANWR).

The relation between policymaking and ANWR

The fate of ANWR is linked directly to policymaking at the federal level in the United States and the ripples it creates amongst smaller governments. In 1960, former President Eisenhower established the ANWR on the northern slope of Alaska to preserve unique wildlife, wilderness, and recreational values (Arctic National Wildlife Refuge, 2017). Another federal policy - the Alaska National Interest Land Conservation Act (ANILCA) - re-designated the area as protected wilderness and established the 19-million-acre ANWR's name under President Jimmy Carter in 1980 (Arctic National Wildlife Refuge, 2017; U.S. Fish and Wildlife Service, 2022). This redesignation also found Congress's control over the project in ANWR. Currently, ANWR is federal land controlled by the U.S. Fish and Wildlife Service (with section 1002, discussed below, managed by the Bureau of Land Management (BLM) under the Secretary of the interior) but this has not rendered ANWR invulnerable to state and municipal regulation.

ANWR has become a highly contested area for multi-level policymaking. On the one hand, the newly opened 'section 1002' is a highly sought-after area of 1.57 million acres on the northern lip of ANWR, also known as 'the Coastal Plain'. BLM reports predicted that this area holds between 4.3 and 11.8 million barrels of recoverable oil (Bureau of Land Management, 2021), a large bounty desirable for policymakers and large corporations wishing to access it for drilling and oil extraction. On the other hand, the ANWR was created and exists as the largest nature reserve in the United States, home to several arctic species as well as two indigenous tribes: the Gwich'in and the Iñupiat of Kaktovik (Protect the Arctic, 2021). The ANWR's symbolic, cultural, and historical importance for Native Alaskans runs deep.

Complicated multi-level policy making is also observed in the strife between the Alaskan state government and the federal government regarding the finances of section 1002 within ANWR and how the state and the U.S. Treasury will divide it. Historically, under the Mineral Leasing Act of 1920, the state of Alaska has received 90% of the revenue from gas leases within the state while the other 10% goes to the Treasury at the federal level (Tracy, 2020); in comparison, other states with oil leases typically split revenue 50/50 with the federal government. This revenue from leasing sites like the ANWR is vital to the state of Alaska, as from 2015 to 2021, the state's GDP shrank by 7.1% - the second-largest decline of any state (Sabbatini, 2022). Without the oil industry, Alaska would only have half its current (dwindling) economy (Resource Development Council, 2015).

Background on the debate on oil development-conservation in ANWR

The clash on whether development or conservation is the best use of ANWR is not new. However, the tension is different in the continental US than in Alaska (Comay et al., 2018; Gibbens, 2021). In the Lower 48, the contestants about oil drilling and environmental conservation for energy self-sufficiency and wilderness preservation are Republicans against Democrats, conservatives against liberals (Farrar, 2009). Whereas above the Arctic Circle,

tensions on whether oil development should take place on the coastal tundra are between two Native Alaskan peoples: The Gwich'in and the Iñupiat (Wallace, 2005). Traditionalist Gwich'in live along the route transited by the caribou in their annual migration between the Canadian Yukon and northeast Alaska. Opposed to the Gwich'in are the Iñupiat, who **transformed their traditional coastal villages into modern communities with services** such as schools, clinics, and indoor plumbing paid by the tax revenue from Prudhoe Bay oil exploitation in Alaska's North Slope (Wallace, 2005).

Besides these specific different contestants, the argument around the tension varies. The oil industry, some US administrations, and some of Alaska's congressional delegations have argued for allowing development on the Arctic coastal plain because of national benefits, such as having a domestic energy source to address the energy crisis and incentivize the economy (Daugherty, 2005; Lathrop, 2002; Sovacool, 2006). The sheer arguments supporting oil development are economic, including federal revenue, businesses, and hundreds of thousands of local jobs (Lathrop, 2002; Sovacool, 2006). For instance, the estimated federal revenue of the oil and gas program authorized in 2017 is \$1.1 billion (Comay et al., 2018). Other arguments in favor are the small footprint of oil development due to modern technology and the co-existence of this development with wilderness (Comay et al., 2018; Daugherty, 2005; Docherty, 2001).

The arguments against oil development are economic, geologic, environmental, and cultural. The opposition for economic reasons argues that costs would outweigh the short-term benefits (Lathrop, 2002). The uncertainty on the size of the oil reserves in the coastal plain and how long it will take to be in full production challenge the favorable economic arguments and the advantages of having a domestic supply of fossil fuel (Docherty, 2001). Moreover, seismic tests to gauge the size of the reserve would involve an intrusion (e.g. vehicles, equipment) that had negatively impacted the soil and vegetation in the past (Docherty, 2001).

The environmental movement opposing oil drilling argues that ANWR is environmentally important and sensitive (Comay et al., 2018; Russell et al., 2021). Oil development would irreparably impoverish the trophic levels, from the microbial biota to ecosystems (Sovacool, 2006), harming the wilderness, habitats, and species of this region, including polar bears and caribou (Comay et al., 2018). There is concern that offshore leasing following oil drilling would endanger the annual bowhead whale hunt, which is a crucial component of Iñupiat culture in the North Slope (Wallace, 2005). There is also great concern that development infrastructure in the coastal plain would disturb caribou habitat, leading to modification of their migration routes, foraging and calving areas (Daugherty, 2005; Docherty, 2001). For instance, large facilities for oil production in the coastal plain would imply the simultaneous loss of area for feeding on nutritious grasses, protecting calves from predators (e.g. wolves and grizzlies), and insect-relief for the herd, significantly impacting the Porcupine herd, its composition, and distribution (Docherty, 2001; Russell et al., 2021; Wallace, 2005). The herd's likelihood of decline over a decade would increase from 3% to 19% depending on the leasing model chosen and mitigation strategies used (Russell et al., 2021).

Threat to the caribou has also major implications also for the Indigenous peoples. Interestingly, however, Indigenous positions about oil development are divergent. The Gwich'in oppose oil development for moral, subsistence, environmental, and cultural reasons, as they see that it would destroy native culture. For instance, the Gwich'in consider ANWR the sacred place wherein life begins (Wallace, 2005). The subsistence of the Gwich'in is

based upon hunting the Porcupine herd (218,000 caribou) as it migrates 400 miles to and from the Canadian Yukon and their sacred calving areas in the coastal plain (Lathrop, 2002; Russell et al., 2021). But oil development in the coastal plain would reduce calf survival, downsizing the herd size; smaller herds, in turn, use smaller patches, leading to less migration (Wallace, 2005). A diet and economy based on hunting caribou allows the Gwich'in to be independent of the market economy and the US government influence, maintaining their cultural and spiritual identity (Docherty, 2001; Lathrop, 2002). Furthermore, though the Gwich'in hunt other game, the caribou is paramount in their spiritual identity such that they descend from the caribou and call themselves 'People of the Caribou' (Lathrop, 2002; Wallace, 2005). Conversely, the Inupiaq - i.e. the Arctic Slope Regional Corporation, Doyon Limited, and the native village of Kaktovik - see oil drilling as the way to maintain their oil money-based modern way of life, which is threatened by the possibility of not having oil development (Comay et al., 2018; Dieter, 2022).

The significance of ANWR for the Gwich'in and the legitimacy of the Indigenous voices are conspicuous in their criticism of the BLM way to conduct the leasing process. Native Alaskans and environmental groups filed lawsuits against the bureau for failing to conduct a proper NEPA analysis when it announced the beginning of the sales. The argument was that the United States government was too ill-prepared to pursue leasing and drilling in section 1002 of ANWR and argued that the data used for the NEPA analysis was insufficient to validate the drilling. Indeed, that data found in 1987, nearly 30 years before the publication of the leases, was discovered as part of the NEPA Environmental Impact Statement (EIS) that pushed to allow drilling (Polo, 2021). The issue is that environmental change today is not the same as in 1987, especially in the Arctic. In fact, since 1960, the Arctic has been warming at double the rate of the rest of the United States (Sherval, 2013), expediting thawing permafrost and heightening the amount of CO₂ in the Arctic atmosphere. These issues and the damage caused would only be exacerbated by unsafely opening drilling leases. Using data from three decades ago minimizes the catastrophic environmental problems currently plaguing Arctic ecosystems and those that rely on these ecosystems.

The other issue that stems from BLM's insufficient analysis under NEPA includes failure to adequately analyze a reasonable range of alternatives in the environmental impact statement (EIS). In fact, in 2020, the Gwich'in Steering Committee (an organization that advocates for the Gwich'in people in ANWR) filed a lawsuit against former Secretary of Interior David Bernhardt and the BLM, arguing that because 'BLM cannot ascertain the precise extent of the effects of granting those rights until it receives and reviews potential future site-specific proposals for exploration and development', its analysis of environmental effects is based on 'a hypothetical development scenario' that BLM states it developed 'in a good faith effort to identify' reasonably foreseeable environmental effects. It argued that BLM's unacceptable EIS would threaten the future Gwich'in way of life, which included subsistence hunting on permafrost lands (all of which are protected through U.S./CSA). In return, the Supreme Court of Alaska stated that because the plaintiffs could show no imminent irreparable harm, the case would not go in their favor; unless the group could show immediate, physical harm, the courts would side with the BLM.

Even further, because of the BLM's lack of protection implementations in the EIS, the BLM may lose the authority to prohibit oil and gas activities on the leases regardless of impact. Many Native Alaskans in the ANWR feel like BLM's poor *first* attempt at the EIS reflects the future of care that the bureau will give to the land that it oversees. If they cannot care enough to

implement protections for the area's people, flora, and fauna now, what is to say that they will not lose their grip on power to big oil corporations down the line? Nie (2003) disavows the political framing that symbolism has on conflict. Many contested places and species have symbolic values attached to them, and Nie argues that the protection of ANWR symbolizes the protection of federal lands everywhere (which is approximately 28% of the nation's entire land mass) (Konsilq*, 2020; Nie, 2003). He compares the BLM's work to running a razor blade across the face of the Mona Lisa by undermining federal laws and cutting corners to open one of America's final great frontiers for oil drilling.

The problem of the reserve size

Would it even make fiscal sense for the federal government to open the ANWR? Specifically in the Arctic Reserve, the issue of the amount of oil underground has deterred several oil companies from leasing in section J002. While the U.S. Geological Survey (USGS) estimates approximately 7.7 billion barrels of oil in the coastal plain (Field et al., 2021), other scholars and conservation groups argue that there could be significantly less. Some scholars even say that at the current rate of oil consumption in the United States, the amount of recoverable oil in the Coastal Plain would not even last U.S. consumers a month and a half (Field et al., 2021), therefore making oil drilling practically inconsequential for what we would get out of it.

It is hard to debate such a large and controversial project on hypotheticals, but the ANWR has never seen any physical evidence of oil supplies. The only oil drilling results in the Coastal Plain came from the 1980s when B.P. and Chevron drilled a test well on Kaktovik Iñupiat Corporation lands (Hardin, 2019). However, the results of this test have been one of the best-kept industrial secrets for decades. The two oil companies went as far as to file a permanent injunction lawsuit against releasing the collected data to the Alaska Department of Natural Resources, violating Alaska State Statute 31.05.035; since the information collected at the test well would be beneficial to the state's 'economic welfare', Alaska Supreme Court struck down this injunction. However, Hardin argues that B.P. and Chevron's significant financial resources and powerful law firms, as well as a state government interest in oil are the reasons why the twenty-year-old data remains hidden today. Unless these results were to be released, the secrets from the oil drilling done by B.P. and Chevron neither prove the fact that there is nothing there nor that there are, in fact, billions of gallons of oil. However, it should not go unnoticed that B.P. and Chevron have not leased lands in the ANWR since. So, while this area is exceptionally secretive and seemingly juxtaposed, there are clues that could lead us to helpful insight into the area.

Here, we analyze how federal and state policies have enabled Arctic National Wildlife Refuge (ANWR) use. In doing so, our analysis is at the intersection of economic, environmental, social, and political realms, analyzing the tension between oil exploitation and conservation regarding the use of ANWR. Further, the outcomes of this tension are insights into the future of protected areas in the U.S.

Policies enabling or constraining uses in ANWR

Policies facilitate and limit the activities occurring in ANWR. In the context of the debate between conservation and oil development, policies facilitating one activity may limit the other and vice versa. For instance, policies supporting oil development may hinder the

preservation of wilderness. Similarly, policies protecting the habitats and species in the ANWR may constraint oil development activities. Furthermore, these policies allow the government to implement decisions. We show three environmental legislations (FLPMA, NEPA, MNLCA) composed of policies enabling the conservation of the ANWR and three development legislations (ANCSA, FLPMA, NPRPA) with policies enabling the exploitation of the ANWR. We chose these five policies based on both the historical and current importance of their contents on the way ANWR is both viewed and used within the government, as we will continue to flesh out in our paper. These policies have created major impacts on ANWR and are also used by the government when making decisions regarding the land. Further, we notice that the political landscape of the United States is constantly shaping how these policies are used both for and against the protection of the ANWR.

1. Alaska Native Claims Settlement Act (ANCSA): established in 1971, ANCSA Settled aboriginal land claims in Alaska and entitled Alaska Native communities to select and receive title to 46 million acres of Federal land/native federal ownership. The Arctic Slope Regional Corporation (ASRC) and the Kaktovik Iñupiat Corporation (KIT) are the two Alaska Native corporations established under the Alaska Native Claims Settlement Act (ANCSA); many would assume that these two corporations have control over the usage of ANWR under ANCSA. However, since the BLM controls this area, it has been a divisive subject for many years whether Alaskan lands should exist under Alaska corporations or the federal government's control.
2. Federal Land Policy and Management Act (FLPMA): established in 1976 and Amended in 2021, FLPMA mandates the permanent federal ownership of public lands. FLPMA declares that BLM will manage public lands for multiple uses and values and ordered a new planning system for BLM that requires broad public participation, not just the involvement of those who may be directly affected by a decision. Section 1782 (which designates areas as wilderness) shall not apply to any lands in Alaska. However, in carrying out [the Secretary's] duties under sections 1711 and 1712 of this title and other applicable laws, the Secretary may identify areas in Alaska which he or she] determines are suitable as wilderness and may, from time to time, make recommendations to the Congress for inclusion of any such areas in the National Wilderness Preservation System (Department of interior, 2016).
3. National Environmental Protection Act (NEPA): established in 1970 under the Nixon Administration, NEPA requires federal agencies to consider the effects of their actions on the environment, including interrelated social, cultural, and economic effects through an Environmental Impact Statement (EIS). The EIS instructs agencies, to their fullest knowledge, to interpret and administer the policies, regulations, and public laws of the United States consistent with the policies in NEPA.
4. Alaska National Interest Lands Conservation Act (ANILCA): established in 1980, ANILCA originally expanded the wilderness area in northeast Alaska and established this area under the name of ANWR. When it was created, the government added four main purposes for the protection of ANWR: conservation of animals and plants in their natural lands, insurance of a place for subsistence hunting, protection of water quality and abundance, and fulfillment of international treaty obligations (Arctic National Wildlife Refuge, 2017). In 2017, the Trump Administration added a fifth purpose: to provide an oil and gas program on the coastal plain. Section 1003 of

ANILCA prohibited oil and gas development in the refuge unless authorized by an act of Congress.

5. Naval Petroleum Reserves Production Act (NPRPA): established in 1976, NPRPA Authorizes BLM as the manager of oil and gas on the coastal plain wlder the Secretary of Interior, to provide a competitive oil and gas leasing program (Congressional Research Service, 2018). Section 104 of the NPRPA states that production of petroleum from the reserve (in the areas the Secretary deems as vital to keep ecological conservation in Alaska) is prohibited and no development leading to production of petroleum from the reserve shaU be undertaken until authorized by an Act of Congress. (U.S. Congress, 1976) Framework for the NPRPA (43 C.F.R. §§3130, 3137, 3150, 3152, and 3160) includes requirements for leasing terms, bonding, environmental obligations, and many other activities associated with oil and gas developmentl. (Congressional Research Service, 2018)

Study area: the Arctic National Wildlife Refuge, Alaska

ANWR is approximately 19 million acres (roughly 30,000 square miles) of protected lands in the northeast quadrant of Alaska, resling right on the United States-Canada border (Figure 1). Cutting through the hearl of ANWR is the Brooks Range, 700 miles of mountainous terrain Lhat run from the Alaskan Arctic to the Canadian Yukon. In ANWR, these are some of the vastest coastal plains in the world. We focus our analysis on the north side of ANWR, by Lhe Beaufort Sea and the Arctic Ocean, in which Lhe environmental fulure of Section 1002 as a protected area of ANWR h<t been contested for many years (Figure 1).

ANWR also boasts a wide plelhora of arctic animals, including all three species of Norlh American bear (*Ursus Americanus*, *Ursus Arctos*, and *Ursus Maritimus*: Black, Brown, and Polar Bears, respectively) and over 200 bird species (e.g. *Bubo Scandiacus*, or the snowy

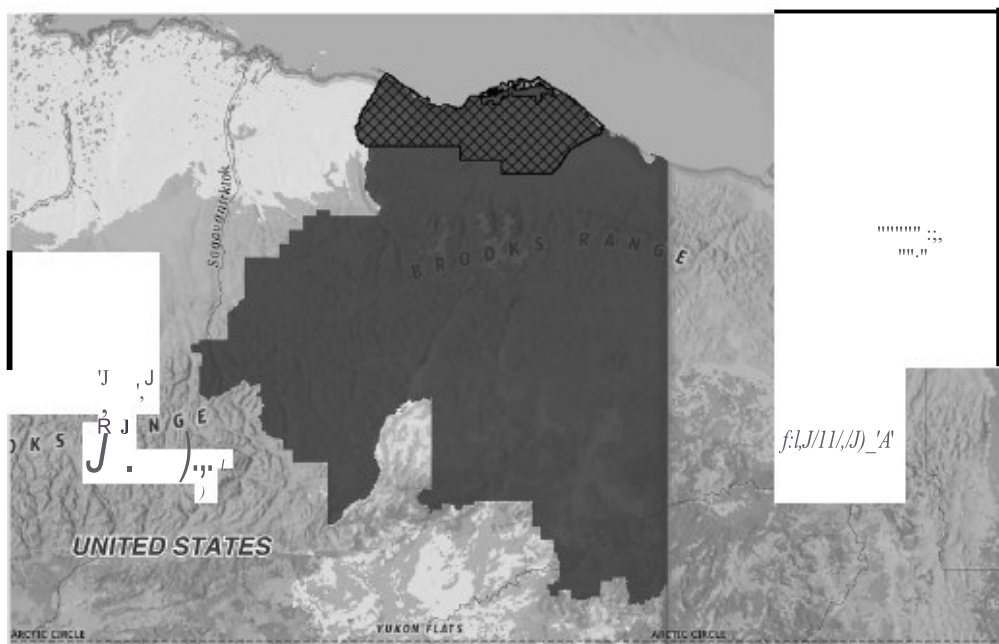


Figure 1. The ANWR (dark gray) with the coastal plain (Section 1002) (checked pattern).

owl), the *Rangifer Tarandus Gralliti* (Central Arctic Caribou), and more (U.S. Fish and Wildlife Service, 2022). Many of these species stand to lose their habitat and reproduction grounds if ANWR opens for oil production.

Methods

We analyze whether federal and state policies facilitate or limit the conservation or exploitation of oil and gas in the ANWR. The first two policies were the Federal Land Policy and Management Act (FLPMA) and the National Petroleum Reserves Production Act (NPRPA), which we found on the BLM's website (blm.gov). To ensure a systematic coverage of enabling policies, we searched Google Scholar for 'Act + "ANWR=", <t well <t 'policies'. This search yielded 2475 documents spanning over several decades. We then selected those published since 2016, when the Trump Administration came into power. This yielded 728 documents on the relationship between our government and enabling policies. Out of these 728 papers we searched for 'Act+ANWR' 'oil and gas leasing', and both 'environment' and 'economy' in the 'mentioned in article' field; from this, we analyzed 53 documents using NVivo. Initial index coding was used to identify potential and actual impacts of policies (positive and negative) of oil drilling in the ANWR on the environment and economy. We also coded for protection and prohibition of economic and environmental swelling in the pieces of legislation.

A second wave of coding focused on the representative who submitted the bills related to the ANWR, noting political party affiliation (R/D) <t well as any pieces of state legislation they had either written or supported regarding oil drilling in Alaska. The websites used to find state legislation were the Alaska State Legislature website (akleg.gov) as well as ProQuest (proquest.com). Interestingly, akleg.gov would list 28 stored matches on file yet only show JO - this could create some issues if any of the other 18 bills were revealed to promote the environmental protection of the ANWR. Nonetheless, in doing so, we created visible relationships between the state and federal governments, contributing to understanding these two levels of government on the future of ANWR.

Results of analysis

ANWR at the highest federal level

A substantial portion of the federal government's desire to drill in the ANWR is to halt the approximately 8.54 million barrels a day that it imports from seventy-three other countries around the world (U.S. Energy Information Administration, 2019). While energy independence is a buzzword for many politicians to entice voters who may be worried about unstable countries (in the sense that peaceful U.S. relations might askew), it is the methods of how we become independent that is a highly contested political argument that goes back and forth between Republicans and Democrats. While the Trump Administration worked extremely hard to increase oil drilling in the United States, his most damning piece of legislation against the environmental protection of ANWR would be in 2017 under the Tax Cuts and Jobs Act (TCJA). While most of the bill discussed new tax instructions for Americans, the administration slipped into the final few pages a new requirement: the opening of ANWR for leasing sales. To validate the launch of the new leasing program through the BLM, the TCJA made definitive changes to other pieces of environmental legislation; in section 20001b1, the bill determined that "Section 1003 of

the Alaska National Interest Lands Conservation Act (16 U.S.C. 3143) shall not apply to the Coastal Plain" (Congressional Research Service, 2018). The other amendment added a fourth purpose to the National Interest Lands Conservation Act: "to provide for an oil and gas program on the Coastal Plain" (Congressional Research Service, 2018). To pay for the tax cuts in TCJA, the Trump Administration called for (at least) two oil leases in section 1002 that would be opened to public and private investors before 2024, regardless of who would win the presidency in 2020. On 17 December 2020, the BLM announced it would hold the first required oil and gas lease sale on January 6th, 2021 (Bureau of Land Management (Alaska State Office), 2021).

A few weeks following this announcement, President Biden signed Executive Order 13990 after his presidential inauguration, which provided a whole section dedicated to protecting the Arctic Refuge (section 4). In his order, Biden instructed the Secretary of Interior to 'place a moratorium on all activities of the Federal Government relating to the implementation of the Coastal Plain Oil and Gas Leasing Program ... in the Arctic National Wildlife Refuge' (Secretary of Interior, 2021). This moratorium frustrated several (mainly Alaskan) politicians, as there was still one other promised leasing period through the TCJA. Senator Lisa Murkowski (R-AK) stated: "This action serves no purpose other than to obstruct Alaska's economy and put our energy security at great risk", while Senator Don Young (R-AK) argued that the halt of 'lawful' oil drilling in section 1002 "... utterly disregards BLM scientists and Alaskaans from across the political spectrum ..." (Murkowski et al., 2021).

Against the arguments of Republicans, Democrats are staunch supporters of environmental preservation and the fight against climate change. For Democrats like Biden, it is thus imperative to follow the trends of his constituents. Executive order 13990 and other environmental legislation stem from the Biden Administration's promise to lower greenhouse gas emissions by 50% by 2030 (The White House, 2021), a promise he maintained for much of his election campaign to gain the support of environmentally conscious voters.

In August of 2022, the Biden Administration passed the Inflation Reduction Act (IRA), a bill to achieve that promise. In a note from the Senior Advisor for Clean Energy Innovation and Implementation,

The Inflation Reduction Act makes a historic commitment to build a new clean energy economy, powered by American innovators, American workers, and American manufacturers, that will create good-paying union jobs and cut the pollution that is fueling the climate crisis and driving environmental injustice. (The White House, 2023)

However, there are still disruptions to the environment written within the act that could be detrimental to the future of natural preservations (like ANWR) around the United States and seem to preserve oil usage in the United States. These disruptions include the prevention of 'the Department of the Interior (DOI) from leasing federal land for wind and solar energy projects unless it has offered a certain amount of land for lease for oil and gas development' (House of Representatives, 2022). This prevention, however, might have been rendered inapplicable with the recent cancellation of all seven of the remaining oil and gas leases in ANWR by the Biden administration (Bohrer & Daly, 2023). It is unclear what this means for other controversial oil drilling projects in Alaska (e.g. the Willow Project), but many would say this is a win for the environmentalists regardless.

The political playing field surrounding the ANWR is shaky at best - politicians are constantly looking for moves that will satisfy the average voter while keeping multi-billion-dollar oil companies in business. While it seemed that the Democratic Party would never sway from pro-environmental legislation, the two parties are not particularly different. While the government has made recent strides in environmental legislation, there are still many unanswered questions about the future of ANWR.

ANWR at the state level

The Alaska state government wants to open ANWR. In the last eight years (2015-2023), nearly 100% of all state bills associated with 'ANWR' or 'Arctic National Wildlife Refuge' (Alaska State Legislature, 2015-2023). For instance, Alaskan lawmakers have tried to pass bills such as the 'Endorsing ANWR' bills of 2015, 2017, 2019, and 2021, or the 'Oppose ANWR Wilderness Designation' bill of 2015. However, the contents of their bills are always the same: urging a member (e.g. the president or the attorney general) or body (e.g. Congress) of the federal government to create an oil and gas leasing program in the coastal plain. Over half of the revealed bills (6/10) dealing with ANWR in Alaska have some version of this wording listed under the description of their bill. Another important bill, and most recent, is the 'End Import of O&G From Russia' Bill of 2022, which urges the Biden administration towards energy independence from warring Russia and to move oil production to states like Alaska, which are actively looking for the oil industry to continue to boost their economy.

Partisan disagreement- state against state

The consistent support of the Alaska legislature to open ANWR for development ceases at the state borders. Beyond Alaska, tensions surrounding the ANWR have garnered the attention of several states and their representatives. States' favorable attention towards conservation is partly explained because they have a stake in the prosperity of wilderness in Alaska. Additionally, there have been representatives from overwhelmingly Democratic states trying to protect the natural spaces of ANWR. For instance, Representative Jared Huffman (D-CA) and Senator Edward Markey (D-MA) have been trying to close ANWR permanently from oil companies for the past few years. In fact, during the time of the Trump administration, fifteen states (Washington, Maryland, Massachusetts, California, Connecticut, Delaware, Illinois, Maine, Michigan, Minnesota, New Jersey, New York, Oregon, Rhode Island, and Vermont) filed a lawsuit against David Bernhardt, Secretary of Interior, and the BLM for unlawfully authorizing the leasing on the coastal plain in 2020.

Many of the coastal states, including the Atlantic and Pacific coasts, argued that rising sea levels from melting ice sheets in Alaska would significantly damage the states' properties on the coasts. States like New York and Oregon argued that their migratory bird and fish populations would be depleted, directly impacting their economies.

Another reason for states to support the conservation of ANWR is the fear of the domino effect. In other words, if oil leases and development prosper in ANWR, it creates a precedent for this also happening at another protected area (Sovacool 2006). Moreover, such success may reveal a navigational chart for opening protected areas to exploration and exploitation. For instance, it would be simple to identify loopholes in the legislation and strategies that led to the success of development over conservation in the ANWR.

Conversely to their Democratic counterparts, there have been many Republican state senators and representatives who have been trying to open the ANWR for oil development over the past several years. Many of these representatives advocate repealing the ANILCA clause that prohibits leasing or oil-producing development from the ANWR. However, only one of these bills has made it to law in the past eight years: the Tax Cuts and Jobs Act (TCJA), passed in 2017 by former President Trump. Introduced by Texas Representative Kevin P. Brady and backed by an all-Republican group of 24 cosponsors, the TCJA was the biggest win for Republican lawmakers invested in oil drilling. The Tax Cuts and Jobs Act succeeded several other acts and policies from other Republican states and representatives under different names, but all read the same - the TCJA however, was the act that got the job done for Republican lawmakers.

The tensions between federal and state levels

Revenue from leasing sites like the ANWR is vital to the state of Alaska, as from 2015 to 2021, the state's GDP shrank by 7.1% - the second-largest decline of any state (Sabbatini, 2022). Without the oil industry, Alaska would only have half its current (dwindling) economy (Resource Development Council, 2015). Under P.L. 115-97 under the TCJA, Alaska's percentage split of the federal onshore oil and gas leasing profits changed to mirror the rest of the United States at 50/50. Previously, the state would receive 90% of the profits (Congressional Research Service, 2018). In 2020, the state of Alaska attempted to pass a bill requiring Congress to repeal this section of the TCJA, which is currently being heard in the Senate Rules Committee (Alaska State Legislature, 2020). If Alaska loses this bill and the 50/50 split remains, it could be detrimental to the foundations of Alaska's economy and require multiple companies to seriously invest in Alaska's oil leases to rebuild their previous revenue levels (which the ANWR is not seeing).

In response to the Inflation Reduction Act, Alaskan Governor Dunleavy stated, 'Our leases for oil and gas are valid and cannot be taken away by the federal government' (Murkowski et al., 2021). However, under this same logic, environmental restrictions against state governments should also be intolerable - but they are not. The TCJA was not the only restriction on state governments during the Trump Administration. During his administration, many state governments barred the implementation of oil pipelines under Section 401 of the Clean Water Act (1972), which gave '... states and authorized tribes the authority to grant, deny, or waive certification of proposed federal licenses or permits that may discharge into waters of the United States' (Environmental Protection Agency, 2022). The Trump Administration argued that this logic was 'outdated.' Section 3 of Executive Order 13868 (published 10 April 2019) called for the EPA to review and issue new guidance for states to make sure that their authority is not overriding federal desires (Tnmlp, 2019); this section effectively makes it harder for states to intervene with federal and private projects on their lands.

Unlimited pressure on ANWR and limited state capacity

The lack of oil leases purchased in the last few years may mark the dwindling interest in ANWR's oil. Following the passage of former President Trump's Tax Cuts and Jobs Act, the BLM was allowed to begin oil leasing in area 1002 starting in January 2021. Expecting

high levels of interest from big oil corporations, the BLM announced that it planned to open 31 lease tracts to both public (including Native corporations under 11 U-ISCAs) and private corporations. Before beginning leasing sales, the BLM opened the bill up to public opinion; after several thousand comments from the concerned public, a closer consideration of the environmental impact, and interest from potential bidders, the BLM Alaska State director announced that it would pull 10 of the lease tracts from the 2021 lease sale (Bureau of Land Management (Alaska State Office), 2021), leaving only 21 of the leasing **tracts available**.

In 2021, only three major companies purchased leases in the ANWR, raising a total of \$14.4 million - in comparison, the federal government was expecting sales revenue somewhere around \$1.8 billion (DeMarban, 2021). Of the three companies, only \$2.4 million was raised from the two small oil companies, while the other \$12 million was purchased by the State of Alaska itself (Bureau of Land Management (Alaska State Office), 2021; Field et al., 2021).

Discussion and forward looking

The long-standing debate between opening or permanently closing ANWR to oil development is rooted in multi-dimensional and multi-level battles. We have shown the shift in policies depending on whether it is a Republican and Democratic administration. The ideological battles over the fate of ANWR center on what is the best use of the territory: to have a domestic energy source, which reduces the dependency on foreign providers, or preserve the environment for enjoyment and ecological reasons. For instance, a study of Pew Research Center found that 9% of Democratic voters wanted to expand fossil fuels compared to 37% of Republicans (Cary Funk & Heffernon, 2019).

Economy is another dimension of the contestation: estimations of costs, private profit, and revenues oppose the subsistence hunting-based Indigenous economy. Simultaneously, the traditional Gwich'in subsistence economy opposes the Hupiat modern lifestyle dependent on oil revenue. The economic contestation sheds light on whether a monetary valuation is appropriate to compare lifestyles and land uses. It also poses an ethical and moral challenge to the American society and policymakers regarding the meaning and place of **nature**.

Based on our analysis, these dimensions may be addressed with three future scenarios for the ANWR: complete closure to development, complete opening for development, or a multiple-use or hybrid scenario that combines both environmental conservation and oil development. The first two scenarios had occurred between December 2017 and September 2023, when former President Trump opened the coastal plain for leases, which were canceled by President Biden six years later.

Complete closure of the ANWR could also mark a significant step away from fossil fuels and into alternative energy sources. Alaska's offer of this alternative is great, including biomass, hydropower, wind and tidal energy, and geothermal projects (WH Pacific Inc., 2013). Further, alternative energy jobs are among the most underdeveloped in Alaska, with the opportunity to expand to over 100 thousand new jobs in the state (Pacific Environment, 2022). However, this transition would require deeper federal support for the Alaskan state economy, which has been reliant on oil revenue and jobs for many years. Further, the federal government's presence in Alaska can enable rapid development of renewable energy initiatives as federal agencies work to reduce their own greenhouse gas footprint (WH Pacific Int., 2013). There is an exciting opportunity

for economic expansion in Alaska outside of the oil industry that can combine multilevel government initiatives and satisfy the state's need for a reliable, profitable industry after oil and gas.

Opening ANWR to oil and gas development would be based on the idea of American energy independence and the profit it generates. Oil independence is not a new topic in the United States, nor in Alaska; we can consider the spectacular find of Prudhoe Bay in northern Alaska, which was once considered to be rich in oil for the American people. Yet, decreased production levels over the last 25 years in Prudhoe Bay has more than halved the total barrels per day and only 20% of the reserves in Prudhoe Bay remaining (Shervail, 2013)(Shervail, 2013). This means renewed interest in ANWR.

While Alaska and the U.S. hope to create tens of thousands of jobs and government revenue of nearly \$440 billion (House Committee on Natural Resources, 2017), projects like ANWR are risky to invest in, since it is a huge portion of land that has virtually no viewable production history (U.S. Energy Information Administration, 2019). Furthermore, economic revenue of oil development in section 1002 would depend upon the size of the reserves and of the individual fields, the market reaction to the available reserves and volume produced, the U.S. economy, and the dynamic global oil prices (Gelb, 2006). This uncertainty and the multiple factors at play may explain the little interest raised by the leases in 2021.

A multi-use scenario, combining preservation and other land uses in certain parts of the ANWR exists in the FLPMA. The multiple-use clause (43 U.S.C. § 1701(a)(7) of FLPMA) focuses on the land's productivity and the environment's quality, considering the relative values of the resources and not necessarily the combination of uses that will give the most profitable economic return or the highest unit output. The clause establishes that public lands and their various resources are managed in the combination that will best meet the present and future needs of the American people (Greene, 2020). However, lacking an explanation of how future needs are determined and by whom limits the possibility of a sustainable multi-use, such as choosing the least amount of land disturbance, paired with adaptive management strategies as an effective balance of conservation purposes with energy development (Dister, 2022). Despite this potential tension, this scenario may be more likely to receive support from all sides of the political and social spectrum, though it will require planning to preserve environmental services to the highest degree while still creating energy development. For example, that the BLM adheres to the guidelines of the clause (Greene, 2020). In doing so, a successful and well managed multi-use scenario brings the possibility of ANWR providing an economic service (e.g. oil and gas) without compromising the provision of ecological and other services.

The feasibility of these scenarios also relates to tensions between the federal and state governments around ANWR, particularly with Alaska. From the governance of the land standpoint, the federal government has most of the decision-making power; the state has no control over the swinging politics happening at the federal level. However, there is a degree of governance overlap as the land is Alaskan, but the territory is owned by the BLM, a federal agency under the Department of Interior. The only way the state of Alaska has of making decisions about oil drilling on ANWR is if they buy the land in the leases, which the BLM controls. Moreover, when it comes down to the economics of oil drilling, the federal government was able to strip the state of 40% of its oil and gas revenue, **leaving Alaska in a much worse economic position.**

The response of BLM to the possible multi-use scenario has implications for the management of substantial portions of land beyond Alaska and Alaska. The BLM controls public lands across the United States that would be better managed for other purposes (Greene, 2020). In 2022, 23.7 million acres of land were available for leasing, of which only 12.4 were used to produce anything (Department of Interior, 2022). The BLM is obligated to provide a balanced stewardship of land to clean energy, restoration, recreation, and conservation. However, with the ever-so-changing political climate, it becomes difficult for the BLM to make decisions that will last longer than a one or two-term presidency, compromising the planning and undertaking of sustainable long-term management of ANWR and millions of acres of federal lands.

Conclusion

The conservation-hydrocarbon development debate around the ANWR is dynamic, multi-dimensional, and multi-level. At the highest federal level, from 2017 to 2023, the ANWR dramatically shifted from open to oil and gas development to cancel all the leases, corresponding to a change from a Republican to a Democrat administration. At this level, ideological arguments of energy sovereignty clash with those of preserving the wilderness of a remote area. Profit, job generation, and revenues for the federal and state governments are the economic reasons supporting development; however, uncertainty on the reserves size, productivity of fields, and the behavior of the international oil market has hindered investment. In terms of economic arguments, we identified an interesting opposition between Indigenous peoples. On one hand, the traditional subsistence hunting base Gwich'in are against oil development as it threatens their way of life, particularly with oil operations in the coastal plain where calving of the Porcupine caribou takes place. Conversely, the Iñupiat support oil development as their modernized lifestyle is subsidized by oil revenues. While Alaskan representatives chiefly support oil development, they will agree or disagree with a Republican or Democrat administration, respectively. However, neighborhood states will often oppose development. Since the ANWR is an iconic case for conservation, there is a concern that its development may become a precedent for cases elsewhere.

The increasingly polarized political climate in the U.S. may increase the likelihood of shifts between open and close the ANWR for hydrocarbon development, making combined options unlikely. Though the shift from open to close had been observed in the 2017-2023 period, the option of undertaking multiple uses in the ANWR remains unexplored. We found that multi-use of the ANWR is legally possible, but it is unclear how and who defines the parameters, metrics, and goals of combined uses. While this legal opening may muster political and social support from a wide spectrum, the undefined aspects create a space for political contestation. In doing so, the sustainable long-term management of the ANWR is compromised.

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