



December 16, 2020

Submitted via email to blm_akso_ak932_cpcomments@blm.gov.

Attn: Coastal Plain Oil and Gas Leasing Program Call for Nominations
Chad Padgett
State Director
Bureau of Land Management
Alaska State Office
222 West 7th Avenue, Mailstop 13
Anchorage, Alaska 99513-7504

Re: Comments on Coastal Plain Oil and Gas Leasing Call for Nominations.

Dear Mr. Padgett:

On behalf of our more than one million members and supporters, The Wilderness Society (TWS) submits these comments on the Bureau of Land Management's (BLM's) Call for Nominations and Comments for the Coastal Plain Alaska Oil and Gas Lease Sale, 85 Fed. Reg. 73,292 (Nov. 17, 2020).

Founded in 1935, TWS is the leading conservation organization working to unite people to protect America's wild places. For over 80 years, we have worked to protect the Arctic National Wildlife Refuge, our nation's premier wilderness refuge.

We vehemently oppose the selection of any tracts for leasing on the Coastal Plain of the Arctic Refuge. BLM should immediately terminate the lease sale currently underway. The severely deficient environmental impact statement (EIS) and record of decision (ROD) for the program, along with this deeply flawed lease sale process, cannot support this or any future lease sale. Sadly, this rush to auction off the entirety of the Coastal Plain is but the latest affront in a long history of injuries committed against Indigenous peoples and the lands on which we depend.

The more than eight decades TWS has worked to protect the Arctic Refuge are but a fraction of the generations that the Indigenous Gwich'in and Iñupiat peoples have relied on and thrived in harmony with the Refuge, physically, culturally, and spiritually. The Gwich'in have lived in symbiosis with the Porcupine Caribou Herd since time immemorial. Leasing to the highest bidder any portion of this sacred and biologically sensitive land would cause serious and lasting harm to the Indigenous communities who depend upon the Coastal Plain for their ways of life and for their survival.

The Arctic Refuge has been integral to the mission and history of TWS since our founding. No place is more emblematic of what it means to serve as refuge. A rich diversity of

wildlife depends upon this land for their survival—caribou, grizzly bear, wolverine, Dall sheep, polar bear, musk oxen, Arctic fox, fish and other aquatic species, and millions of migratory birds. It is a place like no other—a complete, intact arctic and subarctic ecosystem.

After nearly three years of a lease-at-all-costs approach, BLM’s fundamentally flawed process has culminated in an attempted last-minute fire sale of the Coastal Plain for oil and gas development. Throughout, BLM has had its thumb on the scales.

Nowhere is this predetermined outcome more evident than with the release of the notice of lease sale¹ during the pendency of the 30-day call for nominations and comment period meant to inform that very lease sale. Just as BLM has recklessly disregarded the significant impacts of an oil and gas program on the Coastal Plain, it likewise has shown little regard for a full and open public process. Starting this lease sale before all nominations and comments have even been received clearly signals that BLM has no intention of considering these comments. The agency has positioned itself to blatantly ignore the public’s (and any prospective bidder’s) input.

As documented in more detail in comments submitted on the programmatic EIS² and in comments prepared and submitted on the call for nominations by Trustees for Alaska, TWS, and numerous other groups, BLM should terminate this lease sale for a host of reasons. The present comments focus on several procedural and regulatory requirements that BLM should but has thus far failed to satisfy. We also provide several maps depicting the sprawling nature of BLM’s realistic surface development scenario.³ BLM has still failed to include such mapping in any of its analyses. The maps overlay the lease sale tracts onto the realistic surface development scenario, viewsheds analyses, and caribou calving areas. These visual depictions of projected oil and gas development on the Coastal Plain and of the critical importance of the entire area to caribou help to illustrate the devastating impacts this reckless lease sale sets in motion.

I. MEANINGFUL PUBLIC PARTICIPATION IN THIS PROCESS IS NOT POSSIBLE.

The nation is in the grip of another devastating wave of the COVID-19 pandemic, making it exceptionally difficult for people to participate in this comment period and concurrent lease sale process. Alaska is being affected especially hard, and Alaska Native communities in particular are being disproportionately impacted.⁴ Moving forward with a comment period and

¹ Notice of 2021 Coastal Plain Alaska Oil and Gas Lease Sale and Notice of Availability of Detailed Statement of Sale, 85 Fed. Reg. 78,865 (Dec. 7, 2020).

² Alaska Wilderness League et al., Comments re: Notice of Availability of the Draft Environmental Impact Statement for the Coastal Plain Oil and Gas Leasing Program and Announcement of Public Subsistence-Related Hearings (Mar. 13, 2019) (incorporated herein by reference) [hereinafter “Trustees et al. DEIS Comments”].

³ U.S. Dep’t of the Interior, Bureau of Land Mgmt., Coastal Plain Oil and Gas Leasing Program Record of Decision 11 (Aug. 2020) [hereinafter “ROD”]; U.S. Dep’t of the Interior, Bureau of Land Mgmt., Coastal Plain Oil and Gas Leasing Program Final Environmental Impact Statement ES-4 (Sept. 2019) [hereinafter “FEIS”].

⁴ E.g., *Alaska reports a record 18 deaths and 533 new COVID-19 cases Saturday*, Anchorage Daily News, Dec. 16, 2020., <https://www.adn.com/alaska-news/2020/12/12/tracking-covid-19-in-alaska-record-18-deaths-and-533-new-cases-reported-saturday/> (last visited December 14, 2020) [Ex. 1]; *Alaska Coronavirus Map and Case Count*, N.Y. Times, Dec. 6, 2020, 8:28 P.M E.T., <https://www.nytimes.com/interactive/2020/us/alaska-coronavirus-cases.html> (last visited December 6, 2020) [Ex. 2]; *Alaska Native Medical Center Exceeds Coronavirus Capacity*, Associated

decision that will grant leases for at least ten years when the public is unable to adequately participate is a further affront to what should be an open and participatory process. BLM should therefore withdraw its notice of lease sale and terminate this process immediately.

II. BLM SHOULD COMPLY WITH THE NATIONAL PETROLEUM RESERVE – ALASKA REGULATIONS AND THE NAVAL PETROLEUM RESERVES PRODUCTION ACT.

The Tax Cuts and Jobs Act of 2017 requires the oil and gas program on the Coastal Plain to be conducted “in a manner similar to the administration of lease sales under the Naval Petroleum Reserves Production Act of 1976.”⁵ BLM has stated multiple times that it is relying on the National Petroleum Reserve – Alaska (NPR-A) regulations for this lease sale.⁶ But BLM’s process for the call for nominations and the now concurrent lease sale is inconsistent with the NPR-A regulations and the Naval Petroleum Reserves Production Act (NPRPA). The agency cannot short-circuit key requirements of these laws.

a. BLM Should Comply with the NPR-A Regulations, Withdraw Its Notice of Lease Sale, and Give the Public a Meaningful Opportunity to Participate in the Leasing Process.

On November 17, 2020, BLM issued a “Call for Nominations and Comments for the Coastal Plain Alaska Oil and Gas Lease Sale” with a 30-day comment period ending on December 17, 2020.⁷ NPR-A regulations mandate that BLM issue this notice and receive comments on the lease tracts before oil and gas leasing may proceed.⁸ Additionally, the State Director shall select tracts for the lease sale only “*after* completion of the *required* environmental analysis.”⁹ In selecting the tracts, “the State Director *shall* consider available environmental information, multiple-use conflicts, resource potential, industry interest, information from appropriate Federal agencies and other available information.”¹⁰ BLM must also “develop measures to mitigate adverse impacts, including lease stipulations and information to lessees,” which must be “made public in the notice of sale.”¹¹ By requiring the State Director to request comments on tracts that should receive special concern and analysis and consider the list of additional items prior to selecting tracts for the lease sale, the regulations mandate that BLM receive and consider nominations and comments *before* initiating the lease sale.

Press, Nov. 26, 2020, <https://apnews.com/article/alaska-coronavirus-pandemic-f88d8e614fee57a1403ad0250e0e0d5b> (last visited December 14, 2020) (“The Alaska Native Medical Center, which specializes in health care for Alaska Native and American Indian people in the state, said it is now over capacity with coronavirus patients and had to open an alternate care site to handle overflow.”) [Ex. 3]; Amanda Bohman, *COVID Cases Soar in Alaska, Fairbanks Borough*, Fairbanks Daily News Miner, Dec. 5, 2020, http://www.newsminer.com/alerts/covid-cases-soar-in-alaska-fairbanks-borough/article_38aa89d2-374c-11eb-b705-133ccd432bc3.html (last visited December 14, 2020) [Ex. 4].

⁵ Pub. L. No. 115-97, 131 Stat. 2236, Title II, section 20001(b)(3) (citing 42 U.S.C. § 6501 et seq.).

⁶ ROD at 8; Detailed Statement of Sale at 1.

⁷ 85 Fed. Reg. 73,292 (Nov. 17, 2020).

⁸ 43 C.F.R. § 3131.2(a).

⁹ *Id.* § 3132.1(b) (emphases added) (citing 40 C.F.R. §§ 1500–1508).

¹⁰ *Id.* (emphasis added).

¹¹ *Id.*

When BLM issued the call for nominations and comments, it appeared to acknowledge these requirements. In the notice, the agency asked for “nominations and comments on tracts within the Coastal Plain . . . that may be offered for lease in the upcoming . . . Lease Sale.”¹² It also requested comments on which tracts should receive “special concern and analysis as well as the size of the tracts and, specifically, whether the sizes of any tracts should be reduced.”¹³

Yet, on December 7, 2020, with ten days still remaining on the nominations and comment period, BLM issued a notice of lease sale and detailed statement of sale.¹⁴ The nominations and comments BLM receives cannot possibly inform this “upcoming” lease sale when that sale has already been noticed and the detailed statement of sale has already been released. BLM is making a mockery of public participation in the administrative process, failing to give the public or industry the required meaningful opportunity to participate in the administrative process.¹⁵

The agency may believe it can simply amend the contents of the lease sale after the close of the comment period. BLM states that the “tracts offered . . . may be amended or withdrawn after taking into account information received in response to the Call for Nominations and Comments . . . and at any time prior to issuance of a written acceptance of a bid.”¹⁶ BLM reiterates this position in the detailed statement of sale.¹⁷ BLM also stated that it may determine after December 17 whether smaller tracts than published in the call for nominations and comments and in the notice of lease sale will be open for bidding.¹⁸

While BLM can withdraw tracts at any time without reissuing a notice of lease sale, the agency cannot amend tracts or alter leasing terms and conditions once the notice of lease sale and detailed statement of sale have been issued, as is the case here. In addition to offending public participation and constituting an opaque leasing process (which is neither good for the public nor industry), these actions would violate the NPR-A regulations—unless BLM re-notices the lease sale. “[I]mmediately after publication of the notice of sale,” BLM must publish a “detailed statement of the sale, including a description of the areas to be offered for lease, the lease terms, conditions and special stipulations and how and where to submit bids.”¹⁹ If BLM amends the “areas to be offered for lease” or needs to change the terms and conditions of the lease, including any stipulations, the agency must re-publish a detailed statement of sale, which means that BLM must first re-issue a notice of lease sale. Because BLM must publish the notice of lease sale in

¹² *Id.* at 73,293

¹³ *Id.*

¹⁴ 85 Fed. Reg. 78,866; Detailed Statement of Sale.

¹⁵ *See, e.g., W. Watersheds Project v. Zinke*, 441 F. Supp. 3d 1042, 1066 (D. Idaho 2020) (discussing the risk to adequate public participation in overlapping comment and protest period in the oil and gas leasing program and holding that public participation was unlawfully restricted).

¹⁶ Detailed Statement of Sale at 1; E-mail from Lesli J. Ellis-Wouters, BLM, to Lois Epstein (TWS) (Dec. 3, 2020, 16:07:20 AST) [Ex. 5]; *see also* Heather Richards, *Democrats Question Legality of ANWR Lease Sale*, Greenwire, Dec. 7, 2020 [Ex. 6] (“Ellis-Wouters noted that the call for nominations on tracks continues until Dec. 17 and that bids will be accepted between Dec. 21 and Dec. 31. The agency can also withdraw tracts at any time, before or after the sale, up until the leases are issued to bidders, she said.”).

¹⁷ Detailed Statement of Sale at 1.

¹⁸ *See* E-mail from Lois Epstein (TWS) to Lesli J. Ellis-Wouters and Wayne Svejnoha (BLM) (Dec. 3, 2020, 16:13 AST) and e-mail from Lesli J. Ellis-Wouters (BLM) to Lois Epstein (TWS) (Dec. 3, 2020 16:21 AST).

¹⁹ 43 C.F.R. § 3131.4-1(c).

the Federal Register “30 days prior to the date of the sale,”²⁰ it could not lawfully hold the lease sale on January 6, 2021. Rather, it would need to hold the sale 30 days after republishing the notice. To do otherwise would violate the regulatory mandate. This suggests that BLM has no intention of seriously considering comments submitted during the call for nominations.

BLM must withdraw its notice of lease sale and detailed statement of sale. It must wait to issue a notice of lease sale until after the nominations period has closed and after it has considered and addressed public comments, which is likely to take several days at minimum.

b. BLM Should Comply with the NPRPA’s Antitrust Review Requirements.

BLM has also committed to relying on the NPRPA. If BLM proceeds with the scheduled lease sale, it must then comply with the Act’s antitrust provisions before issuing any lease.

The NPRPA makes applicable to the oil and gas program, including all contracts, title 10, section 8730, subsections (g), (h), and (i).²¹ These subsections detail the requirements for antitrust review before a lease can be issued. In particular, “[n]o contract or operating agreement may be made, issued, or executed . . . *until at least 15 days after* the Secretary notifies the Attorney General of the proposed contract or operating agreement.”²² Neither the Attorney General nor the Secretary may short-circuit this process by issuing a lease before the 15-day period has elapsed.²³ If BLM proceeds with the lease sale date of January 6, 2021, it cannot issue any lease until at least 15 days after notifying the Attorney General of the proposed lease agreement and allowing the antitrust review to be completed.

III. BLM MUST CONSIDER AND ADDRESS RECENT STUDIES OF MITIGATION MEASURES ON CARIBOU AND PROPERLY ANALYZE THE IMPACTS TO CARIBOU FROM OIL AND GAS DEVELOPMENT ON THE COASTAL PLAIN.

As described in detail in the Trustees et al. DEIS Comments, the Arctic Refuge is used, with varying frequency, by three of the four caribou herds that calve on the North Slope of Alaska.²⁴ The Coastal Plain is used most consistently and extensively by the Porcupine Caribou Herd, which relies on this area for essential calving, post-calving, insect relief, and other summer habitat.²⁵ Over time, the entire Coastal Plain is used by the Porcupine Caribou Herd and other herds, which makes issuing any oil and gas leases problematic and harmful.

Displacement of calving caribou four kilometers or more from infrastructure has been consistently documented.²⁶ Recent work has confirmed that this displacement behavior continues

²⁰ *Id.* § 3131.4-1(a).

²¹ 42 U.S.C. § 6506 (citing 10 U.S.C. § 8730(g), (h), (i)).

²² 10 U.S.C. § 8730(g)(2) (emphasis added).

²³ *Id.*

²⁴ Trustees et al. DEIS Comments at 218.

²⁵ *Id.*

²⁶ *E.g.*, Cameron RD, Smith WT, White RG, Griffith B. 2005. Central Arctic caribou and petroleum development: distributional, nutritional, and reproductive implications. Arctic 58, 1-9. *See* Trustees et al. DEIS Comments 219, 241, 256, 409.

to be observed in the Central Arctic Herd about 40 years after Prudhoe Bay oil development and is maintained, though at shorter displacement distances, in the post-calving and mosquito relief seasons.²⁷ BLM has questioned these findings because they do not account for more recent mitigation measures.²⁸ But a recent paper focused on Central Arctic Herd use of just the more modern Kuparuk oilfield—which employs “more design improvements and mitigation measures than the older Prudhoe Bay oilfield”—also found reduced use near development in these seasons.²⁹ At higher levels of traffic and disturbance, crossing of roads by caribou is also diminished and avoidance is increased.³⁰ This displacement, and the potential for sprawl development across the Coastal Plain under the Arctic Refuge leasing plan, means that impacts to caribou may be much more extensive than indicated by the physical footprint of development.

As explained in Trustees et al. DEIS Comments, “barren-ground caribou rely on unimpeded local movements, especially after calves are born, to optimize changing nutrient availability and to avoid predators and harassing insects.”³¹ Any leasing and subsequent oil and gas development on the Coastal Plain will likely threaten these movements, with negative ramifications for caribou and the myriad species and people that rely on them. In sum, before BLM can hold a lease sale, the agency must complete additional National Environmental Policy Act (NEPA) analysis to remedy the programmatic EIS’s failure to adequately address impacts to caribou.

IV. BLM MUST PREPARE MAPS, DIAGRAMS, OR VISUALS DEPICTING REASONABLY FORESEEABLE DEVELOPMENT SCENARIOS.

As TWS explained in our previous comments on the draft EIS, and reiterated in supplemental comments on the final EIS, one of the many significant deficiencies in the EIS is the failure to include maps or visuals depicting the reasonably foreseeable extent and location of development and associated infrastructure—including well pads, pipelines and power lines, roads, central processing facilities, gravel mines, base camps, airstrips, industrial centers for oilfield service providers, gravel pad staging areas for construction equipment and materials, seawater treatment plants, and barge landings. This critical omission prevents BLM, other decision-makers, and the public, including Arctic residents, from understanding and being able to meaningfully analyze and comment on the infrastructure associated with a realistic development scenario. Particularly now, at this leasing stage, it is critical that the public be able to visualize the significant impact oil and gas development would have on the Arctic Refuge.

²⁷ Johnson HE, Golden TS, Adams LG, Gustine DD, Lenart EA. 2020. Caribou use of habitat near energy development in Arctic Alaska. *The Journal of Wildlife Management* 84(3), 401–412. [Ex. 7].

²⁸ U.S. Dep’t of the Interior, BLM, Willow Master Development Plan Final Environmental Impact Statement, Vol. 1, at 288 (Aug. 2020).

²⁹ Prichard AK, Lawhead BE, Lenart EA, Welch JH. 2020. Caribou distribution and movements in a northern Alaska oilfield. *The Journal of Wildlife Management* 84(8), 1483–1499. [Ex. 8].

³⁰ Curatolo JA, Murphy SM. 1986. The effects of pipelines, roads, and traffic on the movements of caribou, *Rangifer tarandus*. *Canadian Field-Naturalist* 100(2), 218–224. [Ex. 9]; Leblond M, Dussault C, Ouellet J-P. 2013. Avoidance of roads by large herbivores and its relation to disturbance intensity. *Journal of Zoology* 289, 32–40. [Ex. 10.]

³¹ Trustees et al. DEIS Comments at 218.

The omission of maps or visuals obscures the import of BLM's flawed interpretation of the 2017 Tax Act's 2,000-acre surface disturbance limitation. Because BLM failed to produce such a necessary depiction, TWS is again submitting a map that shows the sprawling web-like nature of oil and gas development across the Coastal Plain based on BLM's reasonably foreseeable development scenario in the programmatic EIS. This depiction of a realistic full-scale development scenario on the Coastal Plain is similar to how North Slope oil development has proceeded, beginning with Prudhoe Bay and moving mostly westward (and in the case of the Coastal Plain, development would move to the east and south). While the locations of each well pad and other types of oilfield infrastructure shown on the map are not exact because there is limited exploration data for the Coastal Plain, and the infrastructure icons are not to scale, the map does show the extent of the development possible while still within BLM's interpretation in the final EIS of the 2,000-acre limitation.³²

However, we note that because BLM changed its interpretation of the 2,000-acre limitation in the ROD, the scope and extent of that limitation is now unclear. The agency asserts that it "need not, and does not here, adopt a particular interpretation of 20001(c)(3) or attempt to apply it to a hypothetical future development."³³ Such uncertainty makes it nearly impossible to accurately depict surface disturbance and development on the Coastal Plain. BLM must clarify its position on the 2,000-acre limitation and issue a new EIS before proceeding with any lease sale.

The map was developed using information from Figures B-1 and B-2 and Table B-5 in the EIS that shows the approximate acreage for the different types of oilfield infrastructure, the estimated distances from central processing facilities to satellite well pads and to a seawater treatment plant for a stand-alone oil development facility, and the number of likely satellite well pads, along with information in the Call for Nominations GIS Data for Lease Tracts to overlay the leasing tracts on all of the maps. Additionally, because the high hydrocarbon potential area northwest of the Marsh Creek Anticline shown in Map B-1 in the EIS likely would have denser infrastructure development than to the southeast of that geological feature, the map shows pipelines and roads extending to more infrastructure towards the northwest. With less hydrocarbon potential towards the east and south as shown on Map B-1, there would be fewer well pads and less dense development toward the east and south. The map also takes into account the likely distances in the Arctic before new oilfield infrastructure is needed as development would proceed eastward, including additional central processing facilities, gravel mines, industrial centers, and seawater treatment plants. Finally, the map realistically locates facilities, pipelines, and roads to avoid lakes and rivers and geologically challenging terrain. Because this type of map has immense value for agency and other decision-makers and the public, BLM should make public comparable depictions.

We are also attaching a map that overlays onto the leasing tracts important caribou calving areas on our birds-eye-view map of Coastal Plain topography and geology.

Finally, we are attaching a series of maps overlaying onto the leasing tracts the visibility analyses performed and submitted to the BLM by Stuart Smith of True North GIS on our map

³² FEIS Appendix B at B-26, table B-5.

³³ ROD at 13.

depicting the Coastal Plain topography and geography from an oblique, birds-eye view. This visibility or viewshed analysis forecasts the extent and severity of impacts on visual resources based on the topography of the program area, locations of visitor/recreational use, and general characteristics of anticipated infrastructure. It is a critical component of an adequate NEPA analysis of the reasonably foreseeable impacts of an oil and gas development program on the Coastal Plain's exceptional wilderness, recreation, wild and scenic river, and aesthetic values. Such an analysis can readily be prepared using established and scientifically sound methodologies, even without information about the precise location of future infrastructure. Mr. Smith's analysis shows that visual resource impacts to the Coastal Plain and adjacent Mollie Beattie Wilderness—and associated degradation of recreation settings and opportunities and wilderness characteristics—are likely to be extensive, regardless of where infrastructure is ultimately located. The attached overlay maps further depict the severity and extent of those impacts. BLM must incorporate Mr. Smith's analysis or prepare its own comparable visibility analysis in a new EIS.

V. CONCLUSION.

For the reasons stated in these comments, previous comments submitted on the EIS, and the comments submitted on this current process by Trustees et al., BLM must cancel this lease sale. Leasing threatens irreparable harm to the Coastal Plain and those who depend on it. Unless and until BLM complies with procedural and regulatory requirements, allows adequate public participation, and issues a legally compliant EIS, the agency cannot proceed with any lease sale.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Karlin Itchoak', with a stylized, flowing script.

Karlin Itchoak
Alaska State Director
The Wilderness Society



A sprawling network of roads, pipelines and infrastructure

-  Central processing facility
 -  Well pad
 -  Pipeline and road connections
 -  Export pipeline
 -  Gravel mine
 -  Seawater treatment plant
 -  Barge landing
- Configuration is to scale;
symbols are not actual size.

North
↓

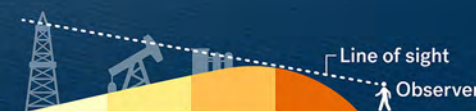


The Arctic Refuge Coastal Plain: Visibility from Wilderness Summits

At any given location, how tall would a structure need to be to be visible from peaks within the Mollie Beattie Wilderness?

Minimum height for visibility¹

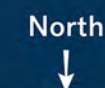
- | | |
|-----------|--|
| 0 meters | A structure of any height would be visible. Any changes to the ground's surface, such as roads, pads, or seismic grid marks would also be visible. |
| >0 - 15 m | Structures with a minimum height ranging from above the ground surface up to 15 meters tall would be visible (e.g. processing). |
| >15-30 m | Structures with a minimum height of 15-30m would be visible (e.g. towers and derricks). |
| >30-45 m | Structures with a minimum height of 30-45m would be visible (e.g. mobile drill rigs and communications towers). |



- Observation points used in visibility analysis**

¹Objects taller than the upper height value of each group (0, 15, 30, 45m) located within that group's area will also be visible.

Scale varies in this perspective. The area proposed for oil and gas leasing extends approximately 100 miles east to west. Sources: BLM.



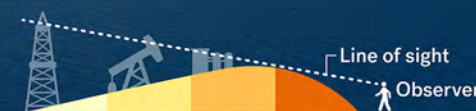


The Arctic Refuge Coastal Plain: Visibility from six rivers

At any given location, how tall would a structure need to be to be visible to a person traveling along a major river?

Minimum height for visibility¹

- 0 meters A structure of any height would be visible. Any changes to the ground's surface, such as roads, pads, or seismic grid marks would also be visible.
- >0 - 15 m Structures with a minimum height ranging from above the ground surface up to 15 meters tall would be visible (e.g. processing).
- >15-30 m Structures with a minimum height of 15-30m would be visible (e.g. towers and derricks).
- >30-45 m Structures with a minimum height of 30-45m would be visible (e.g. mobile drill rigs and communications towers).



— Observation paths used in visibility analysis

¹Objects taller than the upper height value of each group (0, 15, 30, 45m) located within that group's area will also be visible.

Scale varies in this perspective. The area proposed for oil and gas leasing extends approximately 100 miles east to west.
Sources: BLM.



North
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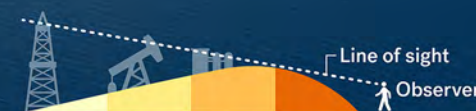


The Arctic Refuge Coastal Plain: Visibility from the Sadlerochit River

At any given location, how tall would a structure need to be to be visible to a person traveling along the Sadlerochit River?

Minimum height for visibility¹

- | | |
|-----------|--|
| 0 meters | A structure of any height would be visible. Any changes to the ground's surface, such as roads, pads, or seismic grid marks would also be visible. |
| >0 - 15 m | Structures with a minimum height ranging from above the ground surface up to 15 meters tall would be visible (e.g. processing). |
| >15-30 m | Structures with a minimum height of 15-30m would be visible (e.g. towers and derricks). |
| >30-45 m | Structures with a minimum height of 30-45m would be visible (e.g. mobile drill rigs and communications towers). |



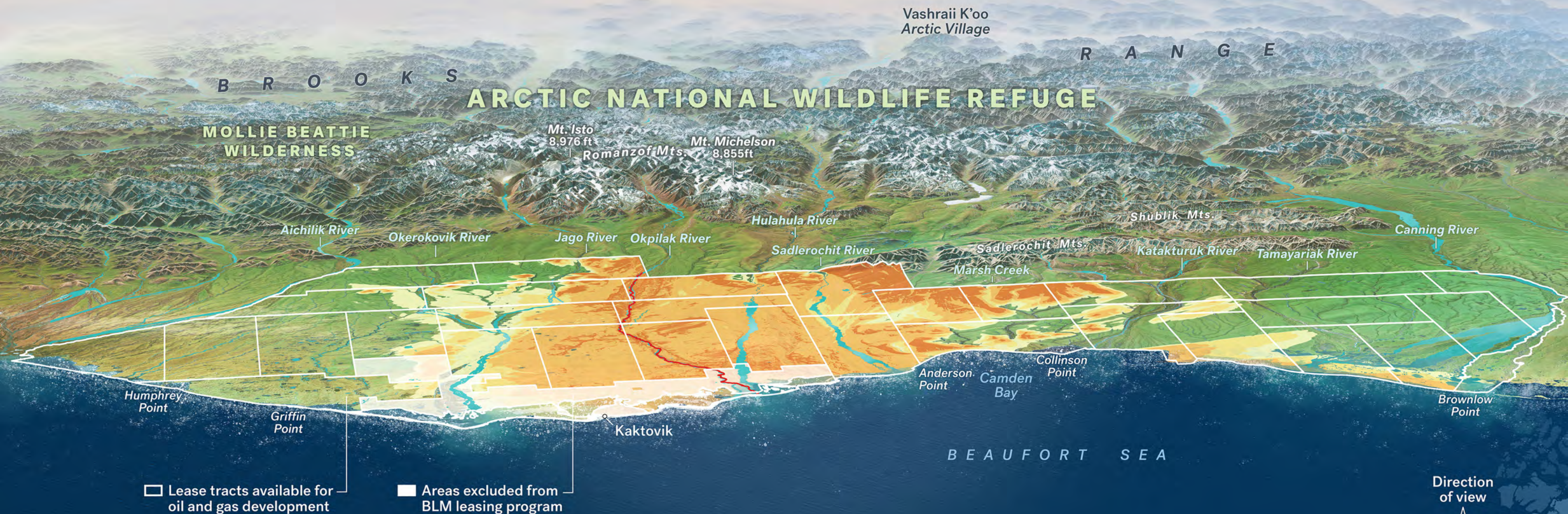
— Observation path used in visibility analysis

¹Objects taller than the upper height value of each group (0, 15, 30, 45m) located within that group's area will also be visible.

Scale varies in this perspective. The area proposed for oil and gas leasing extends approximately 100 miles east to west. Sources: BLM.



North
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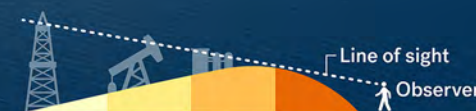


The Arctic Refuge Coastal Plain: Visibility from the Okpilak River

At any given location, how tall would a structure need to be to be visible to a person traveling along the Okpilak River?

Minimum height for visibility¹

- | | |
|-----------|--|
| 0 meters | A structure of any height would be visible. Any changes to the ground's surface, such as roads, pads, or seismic grid marks would also be visible. |
| >0 - 15 m | Structures with a minimum height ranging from above the ground surface up to 15 meters tall would be visible (e.g. processing). |
| >15-30 m | Structures with a minimum height of 15-30m would be visible (e.g. towers and derricks). |
| >30-45 m | Structures with a minimum height of 30-45m would be visible (e.g. mobile drill rigs and communications towers). |



— Observation path used
in visibility analysis

¹Objects taller than the upper height value of each group (0, 15, 30, 45m) located within that group's area will also be visible.

Scale varies in this perspective. The area proposed for oil and gas leasing extends approximately 100 miles east to west.
Sources: BLM.



North
↓



□ Lease tracts available for oil and gas development

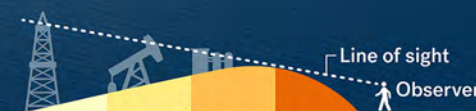
■ Areas excluded from BLM leasing program

The Arctic Refuge Coastal Plain: Visibility from Kaktovik

At any given location, how tall would a structure need to be to be visible from the village of Kaktovik?

Minimum height for visibility¹

- 0 meters A structure of any height would be visible. Any changes to the ground's surface, such as roads, pads, or seismic grid marks would also be visible.
- >0 - 15 m Structures with a minimum height ranging from above the ground surface up to 15 meters tall would be visible (e.g. processing)
- >15-30 m Structures with a minimum height of 15-30m would be visible (e.g. towers and derricks).
- >30-45 m Structures with a minimum height of 30-45m would be visible (e.g. mobile drill rigs and communications towers).



● Observation point used in visibility analysis

¹Objects taller than the upper height value of each group (0, 15, 30, 45m) located within that group's area will also be visible.

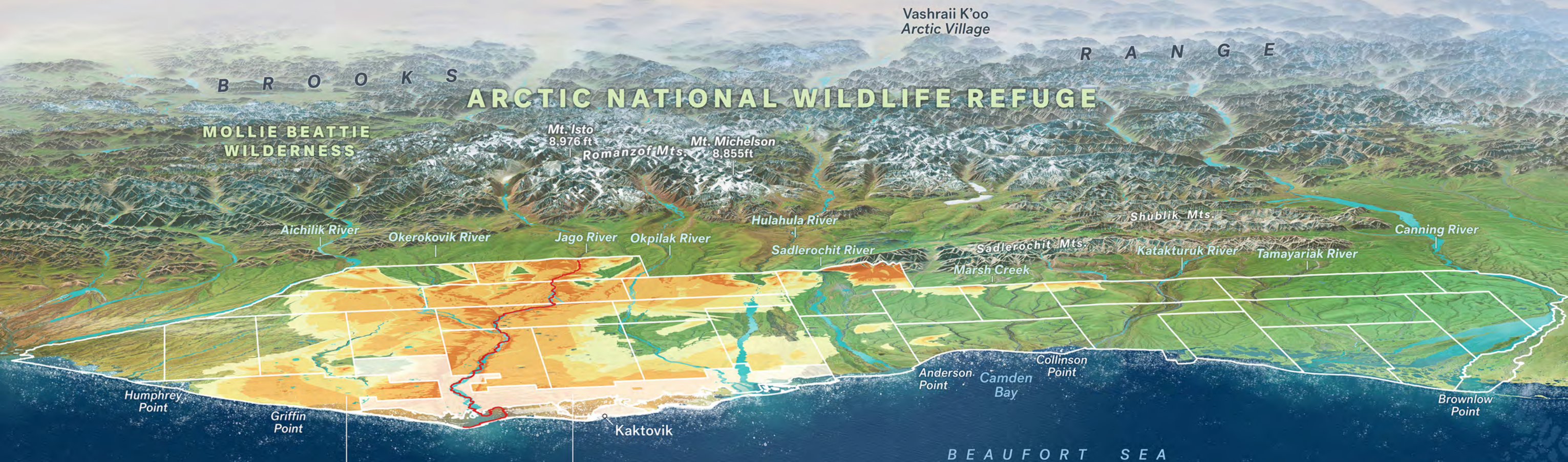
Scale varies in this perspective. The area proposed for oil and gas leasing extends approximately 100 miles east to west. Sources: BLM.

Direction of view

Arctic National Wildlife Refuge

Alaska U.S. CAN.

North
↓



□ Lease tracts available for oil and gas development

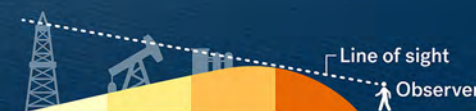
■ Areas excluded from BLM leasing program

The Arctic Refuge Coastal Plain: Visibility from the Jago River

At any given location, how tall would a structure need to be to be visible to a person traveling along the Jago River?

Minimum height for visibility¹

- 0 meters A structure of any height would be visible. Any changes to the ground's surface, such as roads, pads, or seismic grid marks would also be visible.
- >0 - 15 m Structures with a minimum height ranging from above the ground surface up to 15 meters tall would be visible (e.g. processing).
- >15-30 m Structures with a minimum height of 15-30m would be visible (e.g. towers and derricks).
- >30-45 m Structures with a minimum height of 30-45m would be visible (e.g. mobile drill rigs and communications towers).



— Observation path used in visibility analysis

¹Objects taller than the upper height value of each group (0, 15, 30, 45m) located within that group's area will also be visible.

Scale varies in this perspective. The area proposed for oil and gas leasing extends approximately 100 miles east to west. Sources: BLM.



North
↓

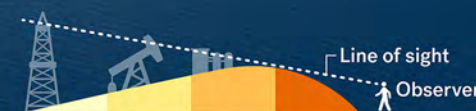


The Arctic Refuge Coastal Plain: Visibility from the Hulahula River

At any given location, how tall would a structure need to be to be visible to a person traveling along the Hulahula River?

Minimum height for visibility¹

- | | |
|-----------|--|
| 0 meters | A structure of any height would be visible. Any changes to the ground's surface, such as roads, pads, or seismic grid marks would also be visible. |
| >0 - 15 m | Structures with a minimum height ranging from above the ground surface up to 15 meters tall would be visible (e.g. processing). |
| >15-30 m | Structures with a minimum height of 15-30m would be visible (e.g. towers and derricks). |
| >30-45 m | Structures with a minimum height of 30-45m would be visible (e.g. mobile drill rigs and communications towers). |



— Observation path used
in visibility analysis

¹Objects taller than the upper height value of each group (0, 15, 30, 45m) located within that group's area will also be visible.

Scale varies in this perspective. The area proposed for oil and gas leasing extends approximately 100 miles east to west.
Sources: BLM.



North
↓

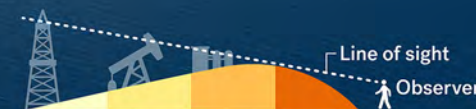


The Arctic Refuge Coastal Plain: Visibility from the Canning River

At any given location, how tall would a structure need to be to be visible to a person traveling along the Canning River?

Minimum height for visibility¹

- | | |
|-----------|--|
| 0 meters | A structure of any height would be visible. Any changes to the ground's surface, such as roads, pads, or seismic grid marks would also be visible. |
| >0 - 15 m | Structures with a minimum height ranging from above the ground surface up to 15 meters tall would be visible (e.g. processing). |
| >15-30 m | Structures with a minimum height of 15-30m would be visible (e.g. towers and derricks). |
| >30-45 m | Structures with a minimum height of 30-45m would be visible (e.g. mobile drill rigs and communications towers). |



— Observation path used in visibility analysis

¹Objects taller than the upper height value of each group (0, 15, 30, 45m) located within that group's area will also be visible.

Scale varies in this perspective. The area proposed for oil and gas leasing extends approximately 100 miles east to west. Sources: BLM.

Direction of view

Arctic National Wildlife Refuge

Alaska U.S. CAN.

North
↓

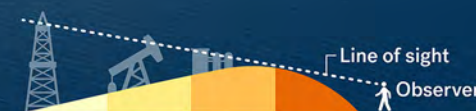


The Arctic Refuge Coastal Plain: Visibility from the Aichilik River

At any given location, how tall would a structure need to be to be visible to a person traveling along the Aichilik River?

Minimum height for visibility¹

- | | |
|-----------|--|
| 0 meters | A structure of any height would be visible. Any changes to the ground's surface, such as roads, pads, or seismic grid marks would also be visible. |
| >0 - 15 m | Structures with a minimum height ranging from above the ground surface up to 15 meters tall would be visible (e.g. processing). |
| >15-30 m | Structures with a minimum height of 15-30m would be visible (e.g. towers and derricks). |
| >30-45 m | Structures with a minimum height of 30-45m would be visible (e.g. mobile drill rigs and communications towers). |



— Observation path used
in visibility analysis

¹Objects taller than the upper height value of each group (0, 15, 30, 45m) located within that group's area will also be visible.

Scale varies in this perspective. The area proposed for oil and gas leasing extends approximately 100 miles east to west.
Sources: BLM.



North
↓



Oil development would overlap with caribou calving grounds

- Porcupine Caribou Herd calving area
- Central Arctic Caribou Herd calving area
- Calving area used by both herds

North
↓

Scale varies in this perspective. The area proposed for oil and gas leasing extends approximately 100 miles east to west. Sources: BLM; full caribou data citations can be found in Appendix B of the technical comments prepared and submitted by Trustees for Alaska, The Wilderness Society, and many other groups.