Alaska Wilderness League • Conservation Lands Foundation • Northern Alaska Environmental Center • Sierra Club • The Wilderness Society[1]

Bud C. Cribley, State Director
Bureau of Land Management
Alaska State Office
222 West Seventh Avenue, #13
Anchorage, Alaska 99513

5 November 2015

Re: National Petroleum Reserve-Alaska Regional Mitigation Strategy geographic scope and proposed mitigation actions

Dear Mr. Cribley,

We appreciate the Bureau of Land Management (BLM) taking the time and effort to complete an effective Regional Mitigation Strategy (RMS or Strategy) for the northeastern region of the National Petroleum Reserve – Alaska (NPR-A or Reserve). As we have communicated to you previously, this undertaking is an important and necessary step to ensure that conservation and subsistence values are protected while allowing responsibly-sited energy development.

It is necessary for BLM to set a course through the RMS for truly balanced management of the NPR-A. BLM's decision for the Greater Mooses Tooth One (GMT-1) project compromised the integrity of the 2013 Integrated Activity Plan by allowing infrastructure within the Fish Creek setback. In the future, it will be crucial for BLM to ensure that all setbacks and Special Area designations are protected as projects move forward. As the Record of Decision (ROD) describes, GMT-1 will have major impacts to subsistence, environmental justice, and socio-cultural resources, which are all directly connected to the surrounding landscape.[2] The RMS is an opportunity for BLM to improve management by ensuring that areas important for subsistence practices, fish and wildlife habitat, and traditional and cultural values are protected.

In this letter, we share some thoughts about geographic scope and mitigation actions. We begin with a series of foundational principles relating to the RMS boundary. From here, we offer our reaction to BLM's original boundary presented at the September 24th workshop in Barrow, Alaska. While we are aware that BLM intends to change this map, we feel it is still necessary to explain why the Bureau's original boundary is deficient and warrants significant expansion. In the latter portions of this letter, we present a series of proposed mitigation actions that we believe

[1] Letter prepared with assistance from Trustees for Alaska.
[2] 2014 Alpine Draft Supplemental Environmental Impact Statement. Vol. 3, p. 173.

BLM should use to improve the stewardship of the NPR-A so that designated Special Areas and special values are protected.

I. Geographic Scope

The geographic scope is one of the most important elements of the RMS. This boundary must incorporate impacted areas, locations where future impacts may occur, high value conservation and subsistence areas where developments' impacts can be offset, and areas that are necessary to ensure ecosystems function in a warmer and unknown future. Without all of these features, the objectives and goals of mitigation policies and practices cannot be achieved.

The RMS geographic scope and its associated purpose must be effectively and clearly explained to the public. BLM should take additional, proactive measures to explain to all stakeholders the importance of a true landscape-level approach and the benefits this approach has for impacted communities, subsistence values, and development. Efforts should also be made to steer the conversation away from money and potential financial gains that may result from mitigation fees. This focus is distracting and counterproductive to the goals of developing the Strategy. Moreover, BLM should resist pressures to interpret language pertaining to the Strategy's boundary within the ROD in a restrictive way. The RMS needs to be broad and cover a significant area if it is going to be effective and achieve its overarching goals.

Below we offer a series of concepts that BLM should consider when revisiting the NPR-A's geographic scope. These concepts complement the maps and rationale that The Wilderness Society provided to BLM on July 17, 2015 and that are included in Appendix A. Foundational and guiding principles that BLM should use to define the Strategy's geographic scope include the following:

A: Foundational Principles

1. Secretarial Order 3330

- Secretary Jewell's October 2013 Order[3] is the administrative foundation for creating the NPR-A's Regional Mitigation Strategy. This document is specifically referenced and described within the GMT-1 ROD. A core principle of this directive is for federal natural resource agencies, such as the BLM, to take a true landscape-level approach[4] to improve the stewardship of public lands.
- A primary purpose of Secretarial Order 3330 is to facilitate investment in key conservation priorities in the face of climate change. To ensure this objective, BLM's geographic scope should be large enough to capture current high value conservation areas, as well as locations that may be important for conservation in an uncertain and warmer future.

[3] Available at: https://www.doi.gov/sites/doi.gov/files/migrated/news/upload/Secretarial-Order-Mitigation.pdf

[4] BLM itself has indicated that landscapes are large, connected geographical regions and that a landscape-level approach should take into consideration ecological values and patterns that may not be apparent on a smaller scale. The geographic area encompassed by the Strategy should reflect this broad-based understanding of what it means to plan at a landscape level. See: http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach.html.

2. Integrated Activity Plan (IAP)

- The NPR-A's 2013 Integrated Activity Plan, the first Reserve-wide plan ever completed, was a monumental undertaking for the Department of the Interior. This effort took millions of dollars and years to complete. However, after only two years, BLM seems to have steered away from adhering to or constructively utilizing this plan. Specifically, and as we will discuss at greater length below, BLM's proposed mitigation boundary breaks-up the established Teshekpuk Lake and Colville River Special Areas.
- Special Area boundaries and buffers around important waterways were designated within the IAP for their high conservation and subsistence values. BLM should be constructively utilizing these boundaries to effectively and efficiently complete the RMS.

3. Greater Mooses Tooth One Record of Decision

- While the GMT-1 ROD left the Strategy's precise geographic scope undefined, there is considerable language that informs how it should be drawn.
- In numerous places, the ROD refers to and defines the general geographic scope of the RMS as the "Northeastern NPR-A region." The BLM has used this terminology during three different planning periods (1998, 2003-2006, and 2008) to capture many of the Reserve's landscape-level values.
- The ROD also says: "The RMS will serve as a roadmap for mitigating impacts from GMT-1 and future projects enabled or assisted by the existence of GMT-1." Some stakeholders are incorrectly focusing only on the direct physical effects of GMT-1 and have suggested that the scope of the RMS be limited by this provision. However, the most important element in this sentence is the word *impacts*. Impacts from GMT-1 go well beyond the footprint of the project and in most cases span the landscape. Furthermore, impacts from future projects enabled by GMT-1 will greatly expand the reaches of the impacts from GMT-1 across the landscape. The ROD identified the Strategy's objectives as including continued access to subsistence use areas and maintenance of functioning habitat to sustain fish and wildlife species abundance and distribution. To achieve these objectives, BLM will have to consider impacts and mitigation on a broad, landscape level. BLM should focus on how development will have significant effects across the landscape and take into account the broad geographic scale necessary to adequately offset the impacts identified in the GMT-1 ROD, including major impacts to subsistence.
- BLM has sold 212 leases in the NPR-A, the majority of which are in the northeastern region of the NPR-A. More leases will be sold very soon. It is difficult to assess at this time the development of how many of these leases would be enabled by GMT-1. Including the vast majority of these leases that are in the northeast region of the NPR-A should be a foundational tenet of the RMS's geographic scope.

4. Science-Based Decision-Making

- When defining the geographic scope of the RMS, the best-available science should be used to ensure inclusion of areas that are necessary to maintain ecosystem function,

habitat connectivity, and climate change resilience.[5] It should be noted that to achieve this on a per acre basis, more lands must be devoted to conservation than to development to maintain ecosystem processes, function, and subsistence resources.

- Ecological processes such as hydrology and species migration occur across vast spatial scales in the Arctic and a true landscape-level mitigation strategy should include a geographic scope broad enough to encompass these processes.

5. Exploration, Development, and Conservation

- As mentioned above, in order for the RMS to be a "forward thinking" document, exploration, development, and conservation areas need to be captured within BLM's geographic scope.
- The diversity and scale required to capture these values will require a substantial land area.

6. Subsistence

- Many subsistence resources in Arctic Alaska require a landscape to complete their life cycles, be self-sustaining, and abundant enough to allow for significant harvest levels. The Western Arctic and Teshekpuk caribou herds, as examples, occupy and utilize major areas on the North Slope to calve, find insect relief, and to migrate, forage, and overwinter. Similarly, aquatic systems that permeate the entire region support a variety of highly migratory fish species that are important subsistence resources (e.g., broad white fish). These fish require features throughout the watersheds to overwinter, feed, and breed. Without an intact ecosystem, subsistence practices would not be possible.
- The Alaska National Interest Lands Conservation Act (ANILCA) and the State of Alaska Constitution, among other laws, protect subsistence resources and practices. ANILCA also protected and conserved entire ecosystems in the conservation system units established by the law. This is a great model for planning on a landscape scale to allow for the continuation of subsistence activities and access to subsistence resources.

B: BLM's Working Draft Proposed Boundary

What follows is a discussion of BLM's rationale for its proposed NPR-A Regional Mitigation Strategy boundary, as presented at the September workshop in Barrow, Alaska. While we know that BLM is revisiting its original geographic scope, below we offer a detailed review of BLM's reasoning to date.

1. High potential for oil development

Including the "high potential" area for economically recoverable oil is an important feature to incorporate in the Strategy's proposed geographic scope, but should not be used to define the southern extent of the RMS boundary. The "high potential" area has already been heavily impacted by exploratory activities and it is likely to be further impacted by commercial production in the coming years. Only focusing on exploratory wells fails to capture the potential

[5] Mawdsley, J.R., R. O'Malley, and D.S. Ojima. 2009. A review of climate-change adaptation strategies for wildlife management and biodiversity conservation. *Conservation Biology* 23: 1080-1089.

for other, future developments on the landscape. There are currently 212 active leases within the NPR-A and BLM is holding another lease sale in November. The vast majority of these tracts, which were sold by BLM with the fundamental intent of discovering and producing oil, should be within the BLM's proposed boundary. Defining the southern extent of the geographic area based on the oil and gas potential also arbitrarily excludes areas that are important for fish and wildlife habitat, subsistence, or other uses, and where BLM has the opportunity to achieve meaningful conservation gains. Without including these lands, the goals of the RMS can easily be undermined.

It is important to note that the proposed BLM geographic scope unveiled at the RMS Workshop in Barrow failed to include two exploratory wells, Cassin 1 and Cassin 6. These wells were drilled by ConocoPhillips Alaska Inc. in the Bear Tooth Unit. This unit will also likely be "enabled" by the development of GMT-1.

2. Areas around Smith Bay

The inclusion of Smith Bay is a strong feature of BLM's proposed boundary. Exploration and potential development in this sensitive region has the potential to seriously impact imperiled species like the federally threatened Polar Bear, important subsistence resources like the Teshekpuk Caribou Herd, and the globally significant avian values of this Special Area. However, the area around Smith Bay also includes a number of stranded leases and exploratory well sites that were not included in BLM's geographic scope. We encourage BLM to broaden its geographic scope to capture these features and to include the entire Teshekpuk Lake Special Area in the Strategy's boundary.

3. "Right Size"

We believe that the "right size" for the RMS is based on a true landscape-level approach using the best available science. We are troubled that the rationale of this section is subjective and based on a flawed understanding of what it takes to effectively manage a complex and interconnected Arctic landscape, particularly in a changing climate.

4. Variety of ownership types

Including a variety of land ownership types is an excellent idea to include in the geographic scope. As we have discussed before, many of the Arctic's conservation and subsistence values, such as watersheds and highly migratory caribou, exist across political boundaries. Moreover, including lands of various jurisdictions offers unique and potentially novel opportunities to use mitigation funds to holistically steward the landscape.

Nevertheless, the politics of working across jurisdictions can often be challenging. While we support BLM's ability to find cross-boundary solutions, we also encourage BLM to take advantage of the large area of land under its own jurisdiction. The NPR-A is the largest federal land management unit in the nation and presents BLM with a unique opportunity to easily take a landscape-level approach.[6] And though it would be more complicated, offshore waters overseen by the Department of the Interior should be considered as those areas may be less challenging than acreage not overseen by Interior.

[6] See: http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach.html

5. Itkillik River and the Kuparuk River Unit
BLM's rationale for specifically including these features is unclear. The Itkillik River is a major tributary of the Colville River and is an important subsistence use area for residents of Nuiqsut. This area is worthy of protective mitigation actions. The Kuparuk River Unit, on the other hand, has already been extensively developed. This industrialization has compromised a core area of Nuiqsut's cultural landscape and has little to contribute to the goals of the RMS. Again, while we support BLM's cross-boundary efforts, we encourage BLM to first take advantage of the large area under its own management.

6. Core Teshekpuk Lake Special Area, Teshekpuk Herd habitat, and caribou corridors
We appreciate BLM recognizing the importance of the Teshekpuk Lake Special Area, the Teshekpuk Caribou Herd, and necessary migratory corridors. These are extremely valuable features of the landscape that are important for subsistence and conservation purposes. However, to effectively steward these lands and resources, a much larger area needs to be covered within BLM's geographic scope.

As mentioned above, BLM should not be compromising existing management boundaries. The whole Teshekpuk Lake Special Area, as defined within the 2013 IAP, should be included within the RMS. While BLM's inclusion of the "core area" is noteworthy, it is likely that the significance of this area will be changed in a warmer future. To hedge against these unknowns, large areas should be reserved to allow for effective adaptation in the region.

The animals of the Teshekpuk Caribou Herd are highly migratory and an incredibly important subsistence resource for communities of North Slope, particularly Nuiqsut and Anaktuvuk Pass. A portion of the herd moves southeast in the fall to overwinter in the Brooks Range and most migrating animals pass through the Colville River Special Area between Nuiqsut and Umiat.[7] The BLM's proposed boundary fails to recognize an opportunity to take proactive measures to ensure continued caribou movement. Specifically, a large area of unleased lands north of Umiat and along the Kikiakrorak, Kogosukruk, and Colville Rivers is not included within BLM's boundary. The RMS should capture these and similar lands as they are necessary for caribou movement and worthy of protective actions.

7. Umiat
BLM's rationale reads: "If development occurs near Umiat, the BLM believes it would merit another, separate Regional Mitigation Strategy that would encompass areas used by Anaktuvuk Pass hunters as well as Nuiqsut hunters." This reasoning is problematic for a number of reasons.

Firstly, waiting for development to occur around Umiat fundamentally ignores the purpose of a Regional Mitigation Strategy, an effort to get ahead of developments' unavoidable impacts. By waiting for the impacts of development, BLM misses the opportunity to holistically manage the landscape and to better guide where and how development occurs. Moreover, there is reason to believe that development near Umiat is not far off. In June 2015 Linc Energy publicly outlined a program to potentially build 13 drilling pads for 150 wells in the region. This development plan was reaffirmed in the October 18, 2015 issue of *Petroleum News* where Linc Energy expressed a

[7] Person, B.T., Prichard, A.K., Carroll, G.M., Yokel, D.A., Suydam, R.S., and George, J.C. 2007. Distribution and movements of the Teshekpuk caribou herd 1990-2005: Prior to Oil and Gas Development. *Arctic* 60:238-250.

desire to begin development by 2022.[8] With such development potential on the horizon, it would be wise for BLM to use a watershed-based approach - a core principle of sound environmental management that should be incorporated in a landscape-level plan - and include this area within the RMS.

Secondly, despite referencing Nuiqsut hunters, BLM's rationale for not including this region is contradictory to one of the primary reasons why this Strategy is being completed. As described in the ROD, GMT-1 was found to have major impacts on Nuiqsut's subsistence practices. BLM's exclusion of the Umiat area fails to consider how the region's systems and resources span the landscape and often connect communities of the region. From an ecosystem management and subsistence perspective, Nuiqsut and Anaktuvuk Pass are closely connected by the Colville River watershed and the Teshekpuk Lake Caribou Herd. With expanding development to the north and east of Nuiqsut, it will be increasingly important to ensure that there are protections for key subsistence areas to the west and south. As such, it would make sense for these values to be effectively and completely captured by the RMS.

8. GMT-1 Impact Area

A footnote within BLM's rationale for the Strategy's boundary references where the compensatory mitigation dollars from GMT-1 will be spent. Within this description, BLM defines the impacted area as 2.5 miles from the GMT-1 drill pad, road, and pipeline, and the City of Nuiqsut. This distance is arbitrary and fails to capture the natural and social values that have been impacted by the GMT-1 project.[9] For example, Fish Creek, an important subsistence use area for the community of Nuiqsut, would only minimally be captured by this distance. At its closest point, the planned GMT-1 project is 2.5 miles from the river. This distance would not cover the far bank or any significant distance up or down stream. BLM should look more holistically at impacted values across the landscape before assigning distances that may not effectively capture the goals and objectives of the RMS. Additionally, it is only appropriate to include a much larger area to address subsistence and wildlife values because factors such as noise, air pollution, and aviation go well beyond the immediate "footprint" of the development.

II. Mitigation Actions

Future land management decisions have the potential to further compromise the region's conservation and subsistence values. What follows are a series of purposed mitigation actions that BLM should use to improve its stewardship of the landscape to ensure subsistence resources and practices.

1. Conservation Easements / Rights-of-Way

To effectively offset the significant unavoidable impacts that development will have on the landscape, the use of conservation easements and rights-of-way (a form of easement) should be employed. These easements, which should last the life of the development's impact or in

[8] See: http://www.petroleumnews.com/pntruncate/239171327.shtml

[9] We encourage BLM to have greater transparency about how and why such determinations are made.

perpetuity[10], would be held by an entity outside of the federal government to ensure conservation durability. We propose that easements be used on high conservation lands, including the Teshekpuk Lake and Colville River Special Areas. The size of areas protected by easements would proportionally compensate for the significant landscape-level disturbance that oil production activities have on subsistence and conservation values in the region.

2. Lease Buybacks

A significant amount of high conservation and subsistence value land has been leased by BLM. These lands include important subsistence use areas around Nuiqsut, vulnerable aquatic systems, the Colville River Special Area, and migratory caribou corridors between the Teshekpuk Lake Special Area and the Brooks Range. Additionally, as mentioned earlier, there are currently three stranded leases within the Teshekpuk Lake Special Area; and these leases are incompatible with the values of this management unit. Mitigation funds should be used to buyback leases in important areas so that necessary landscape processes are protected and managed in a holistic manner.

3. Special Area Management Plans

To improve the stewardship of the NPR-A's Special Areas, BLM should utilize mitigation funds to complete formal management plans for the Teshekpuk Lake and Colville River Special Areas. While the 2013 IAP established these areas for their high conservation and subsistence values, this document did not offer formal management prescriptions and resource management goals. In the face of increasing development pressures and climate change, these plans would help BLM more actively manage the landscape to ensure ecosystem health and subsistence resources into the future.

4. Monitoring and Adaptive Management

In the face of increasing oil development and the unknown effects of a changing climate and coastal erosion, BLM will need to effectively monitor and adaptively manage the NPR-A. These efforts, which can be enhanced through compensatory mitigation funds, will help to evaluate the effectiveness of mitigation actions in light of compounding impacts and ensure that necessary management changes are made to steward the Reserve's natural resources.

We would appreciate the opportunity to discuss the above mentioned topics and the Regional Mitigation Strategy with you at your earliest convenience. Thank you for considering these concepts and please let us know if you have any questions.

Sincerely,

Kristen Miller
Conservation Director
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Lindsey Hajduk

[10] The Army Corps of Engineers 2008 Wetlands Mitigation Rule, 33 CFR Parts 325 and 332, for example, requires preservation options to be permanent.

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Appendix A

Proposed Geographic Scope: A Series of Maps and Memos[11]

[11] Originally submitted by The Wilderness Society on July 17, 2015

DRAFT FOR CONSIDERATION

Defining the Regional Mitigation Strategy's Geographic Scope Northeast National Petroleum Reserve - Alaska

This document provides a discussion of the principles, considerations, and values that went into defining the proposed Regional Mitigation Strategy geographic area for the first attached map ("**Map #1**"). This geography builds on the information provided to Assistant Secretary Mike Connor and BLM in October, 2014[1], BLM's Northeast Integrated Activity Plan efforts in 1998, 2005, and 2008 and the 2013 NPR-A Integrated Activity Plan. The defined federally-managed land area is approximately 8.2 million acres in size, roughly one-third of the Reserve. Such an area offers a true landscape-level approach, while also allowing for opportunities to refine planning efforts to ensure habitat connectivity, ecosystem function, and responsibly-sited development. While the depicted region is solely on BLM administered lands, we recognize the importance of managing resources across jurisdictional boundaries and efforts should be made through the Regional Mitigation Strategy to achieve this stewardship standard.[i] Below are the specific features of the proposed geographic area that were incorporated into the creation of this map:

Subsistence Use Areas - As noted on the image, this region takes into account Nuiqsut's contemporary subsistence use areas (1994-2003) within the NPR-A. This area was defined by Braund & Associates and incorporated into the 2014 GMT-1 Draft SEIS. The impacts to subsistence resources and practices are some of the primary reasons for the development of the Regional Mitigation Strategy.

Special Areas - Both the Teshekpuk Lake and Colville River Special Areas as defined in the 2013 NPR-A IAP are incorporated into this region. These tracts were designated for their high ecological and subsistence values. The Teshekpuk Lake and the Colville River Special Areas provide globally significant migratory bird habitat and important waterfowl resources and key habitat for caribou - all important resources for subsistence harvest. Special Areas warrant improved management standards to ensure resource protection. Areas of the Teshekpuk Lake Special Area are currently being used to support exploratory drilling in Smith Bay, marine waters under State of Alaska jurisdiction. The inclusion of these Special Areas within the geographic area captures these types of actions, as well as leasing and development activities that are permitted within parts of the Teshekpuk Lake Special Area and within the entire Colville River Special Area.

Development Activities - This region includes the Greater Mooses Tooth and Bear Tooth Units, the only two defined development units within the Reserve. The Greater Mooses Tooth Unit includes the location of the first and likely second commercial production sites within the NPR-A, GMT-1 and GMT-2. The Bear Tooth Unit includes two wells spud in 2013, Cassin 1 and Cassin 6. Linc Energy's Umiat 23H and Umiat 18 wells are also incorporated. This geographic area also includes 191 out of the 212 (90%) authorized leases currently held within the NPR-A. Inclusion of these units and leases will help to capture both exploratory activities, such as

[1] See provided document: Alaska Wilderness League et al., "Conservation Leaders Meeting with Assistant Secretary Mike Connor", Wednesday, October 22, 2014, Anchorage, Alaska.

seismic testing and exploratory drilling, and potential future development locations. (*For additional information see "Development Activities on the Landscape" and "Map #3".*)

Watersheds - Sound landscape-level environmental management must include complete watersheds. The aquatic systems of the NPR-A support many anadromous and highly migratory species of fish that are important subsistence resources. As such, watersheds must be managed holistically and not fragmented or compromised by haphazard planning efforts. This proposed geographic area captures the entire Ikpikpuk River watershed.

Caribou - The Teshekpuk Lake caribou herd is an extremely important subsistence resource that utilizes a considerable area of the North Slope to complete its life cycle. While the proposed geographic area does not capture these animals' entire range, the herd's calving location and a considerable amount of insect relief, late summer, and winter habitat are included within this region. See below for complementary Teshekpuk caribou herd maps from Person et al., 2007.

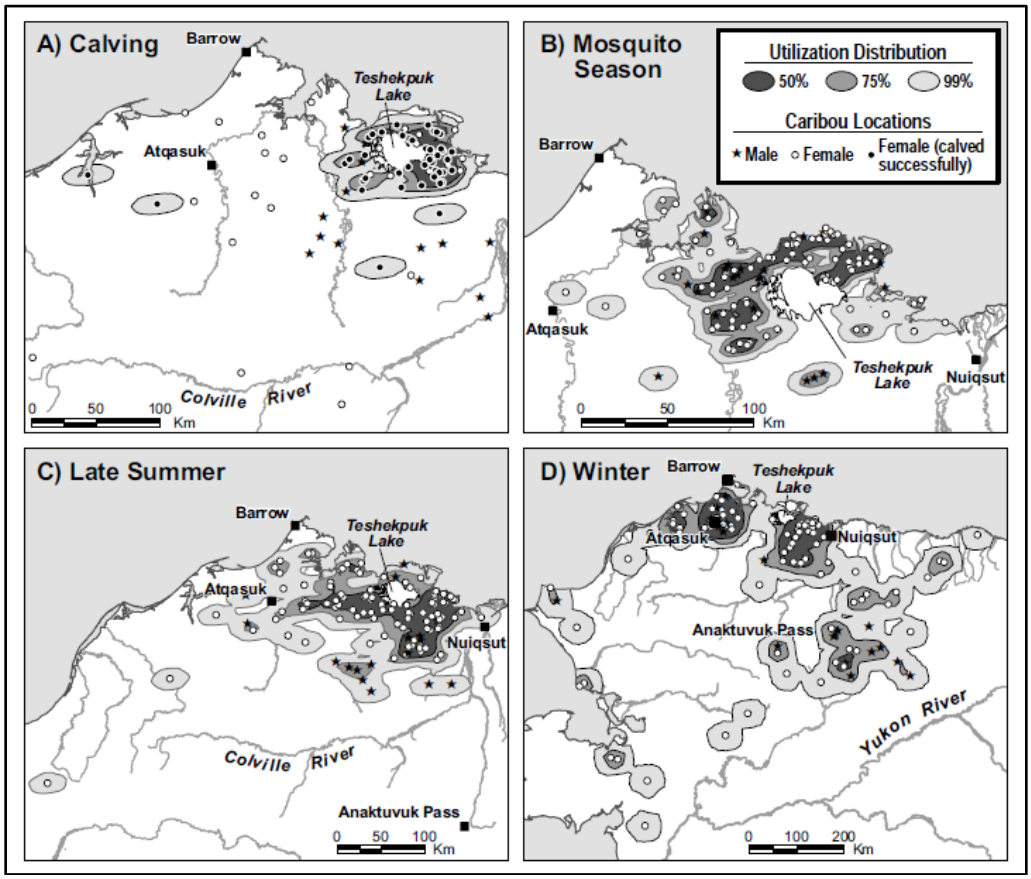
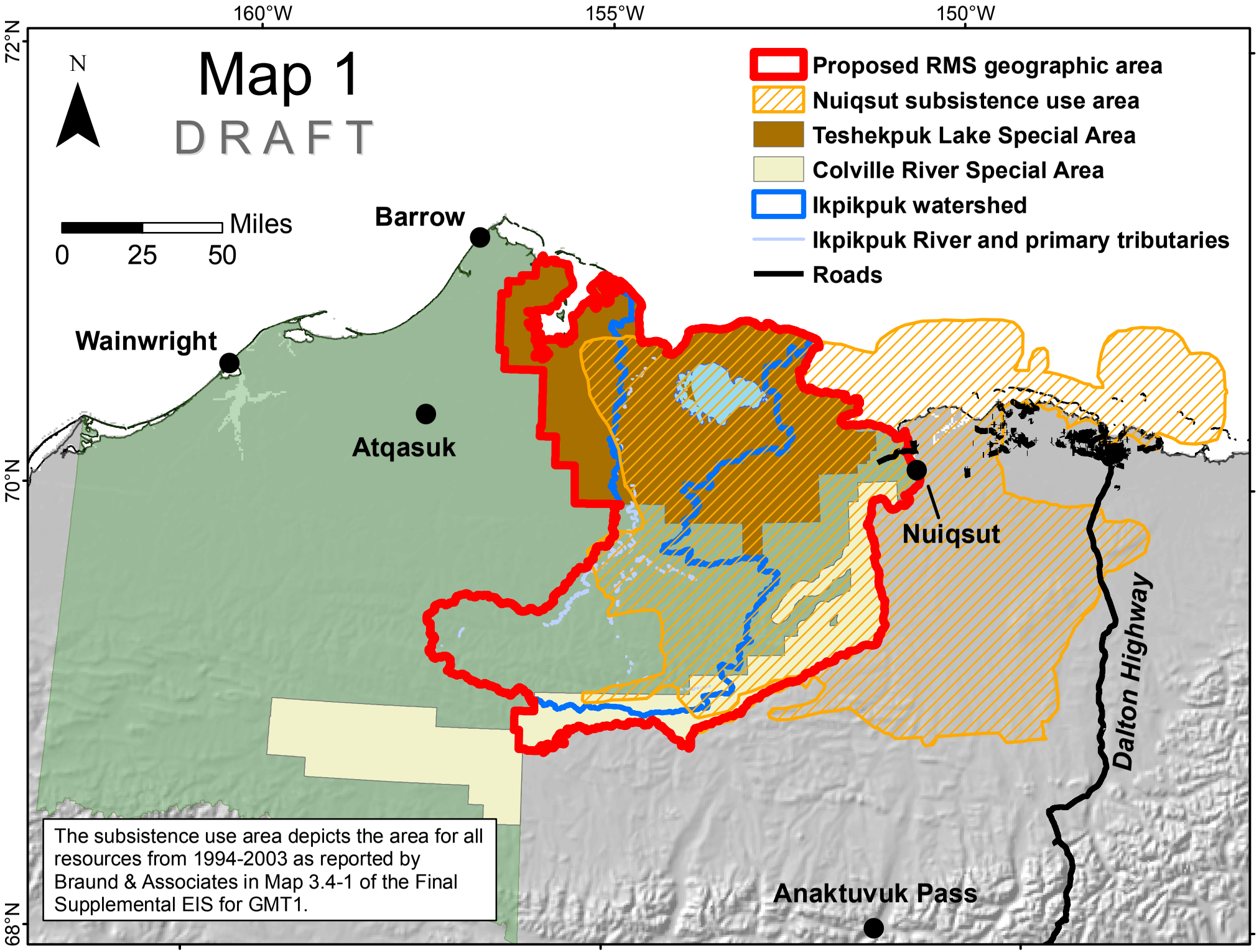


FIG. 3. Kernel utilization distribution (50%, 75%, and 99%) of caribou from the TCH as measured by satellite and GPS collars between 1990 and 2005. Figure panels represent: A) the calving season (1–15 June), B) mosquito harassment season (1–15 July), C) late summer (8 August–15 September) and, D) the winter season (1 December–15 April).

[i] The State of Alaska is currently working on a North Slope Management Plan. This effort includes a significant land area to the east and southeast of the NPR-A and contains important migratory corridors for caribou and a majority of the upper reaches of the Colville River watershed. For more information, see the state's website at: http://dnr.alaska.gov/mlw/planning/mgtplans/nsmp/. Also, "**Map #2**" offers a perspective of how Nuiqsut's subsistence use area, the Teshekpuk Caribou Herd, and the Colville River watershed all cross multiple management jurisdictions.


Map 1
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Miles
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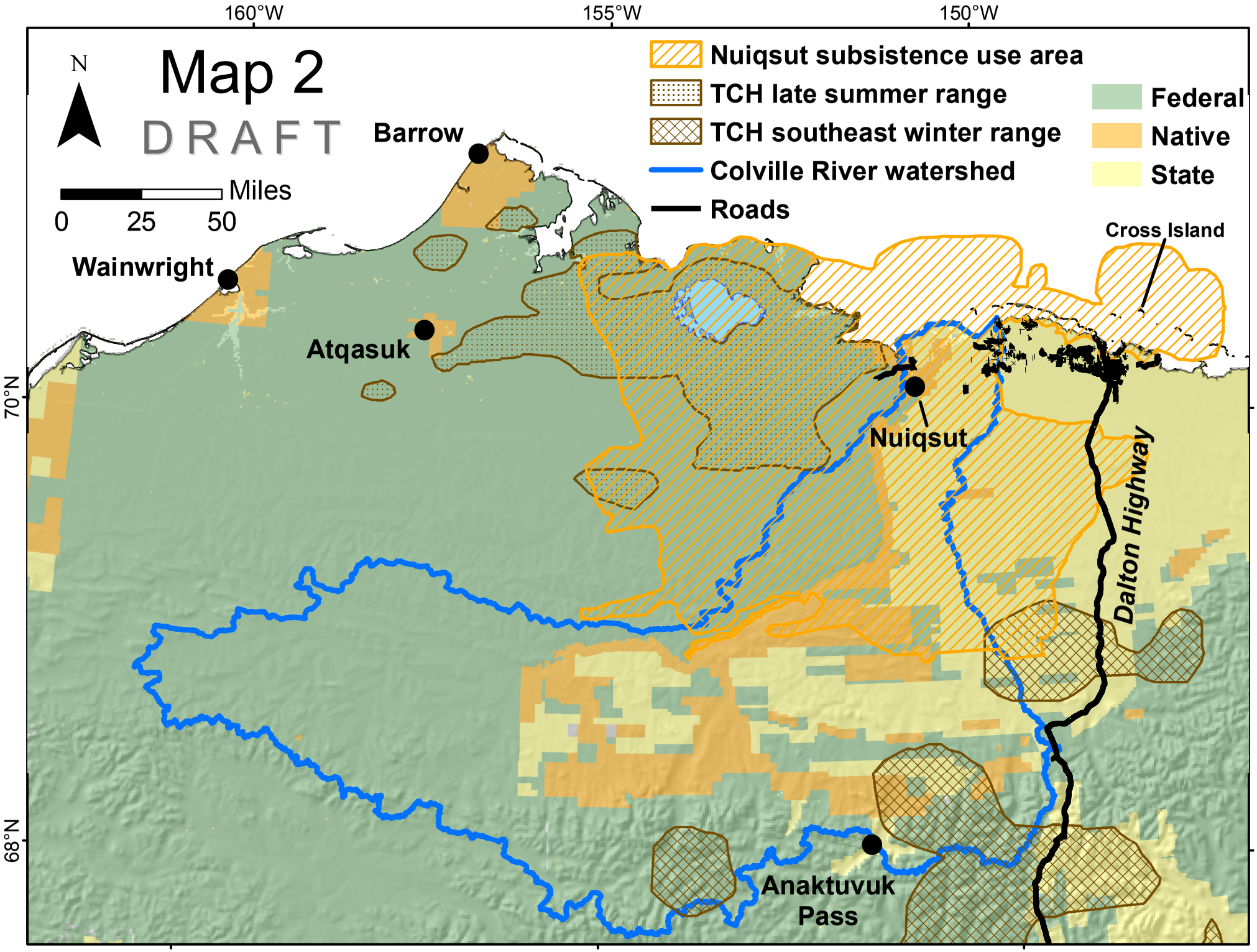
160°W
155°W
150°W
72°N
70°N
68°N
Proposed RMS geographic area
Nuiqsut subsistence use area
Teshekpuk Lake Special Area
Colville River Special Area
Ikpikpuk watershed
Ikpikpuk River and primary tributaries
Roads
Barrow
Wainwright
Atqasuk
Nuiqsut
Dalton Highway
Anaktuvuk Pass
The subsistence use area depicts the area for all resources from 1994-2003 as reported by Braund & Associates in Map 3.4-1 of the Final Supplemental EIS for GMT1.


Map 2
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160°W
155°W
150°W
70°N
68°N
Nuiqsut subsistence use area
TCH late summer range
TCH southeast winter range
Colville River watershed
Roads
Federal
Native
State
Barrow
Wainwright
Atqasuk
Nuiqsut
Cross Island
Dalton Highway
Anaktuvuk Pass

DRAFT FOR CONSIDERATION

Development Activities on the Landscape
National Petroleum Reserve – Alaska

What follows is a detailed description of **Map #3**'s features. This document provides a brief overview of the exploration and development activity currently occurring within and around the NPR-A. The proposed Regional Mitigation Strategy (RMS) geographic area and additional areas of mitigation importance are both depicted on this map. The additional areas of mitigation importance, defined by the hashed red line, build-off of Maps #1 and Map #2. This area captures ecological and social values that exist across political boundaries where energy development is also occurring.

Active NPR-A Leases – The lease tracts depicted on this map were obtained from the BLM website last updated in March, 2015. There are currently 212 active leases within the NPR-A and 191 (90%) fall within the proposed geographic area. Seismic surveys and exploratory activities are permitted within all of these tracts. Within the NPR-A, approximately 1.4 million acers of active federal leases are within Nuiqsut's subsistence use area. The 2015 oil and gas lease sale will likely add additional lands to this area.

Greater Mooses Tooth Unit – This unit contains the first, and what will likely be the second, commercial production projects within the NPR-A, Greater Mooses Tooth One (GMT-1) and Greater Mooses Tooth Two (GMT-2). The road from Colville Delta Five (CD-5) to GMT-1 has been approved by the Army Corps of Engineers and BLM. The road from GMT-1 to GMT-2 was digitized from Map 4.6-1 (pdf page 59) in the GMT-1 Final Supplemental Environmental Impact Statement. A portion of this unit is within the defined boarders of the Teshekpuk Lake Special Area.

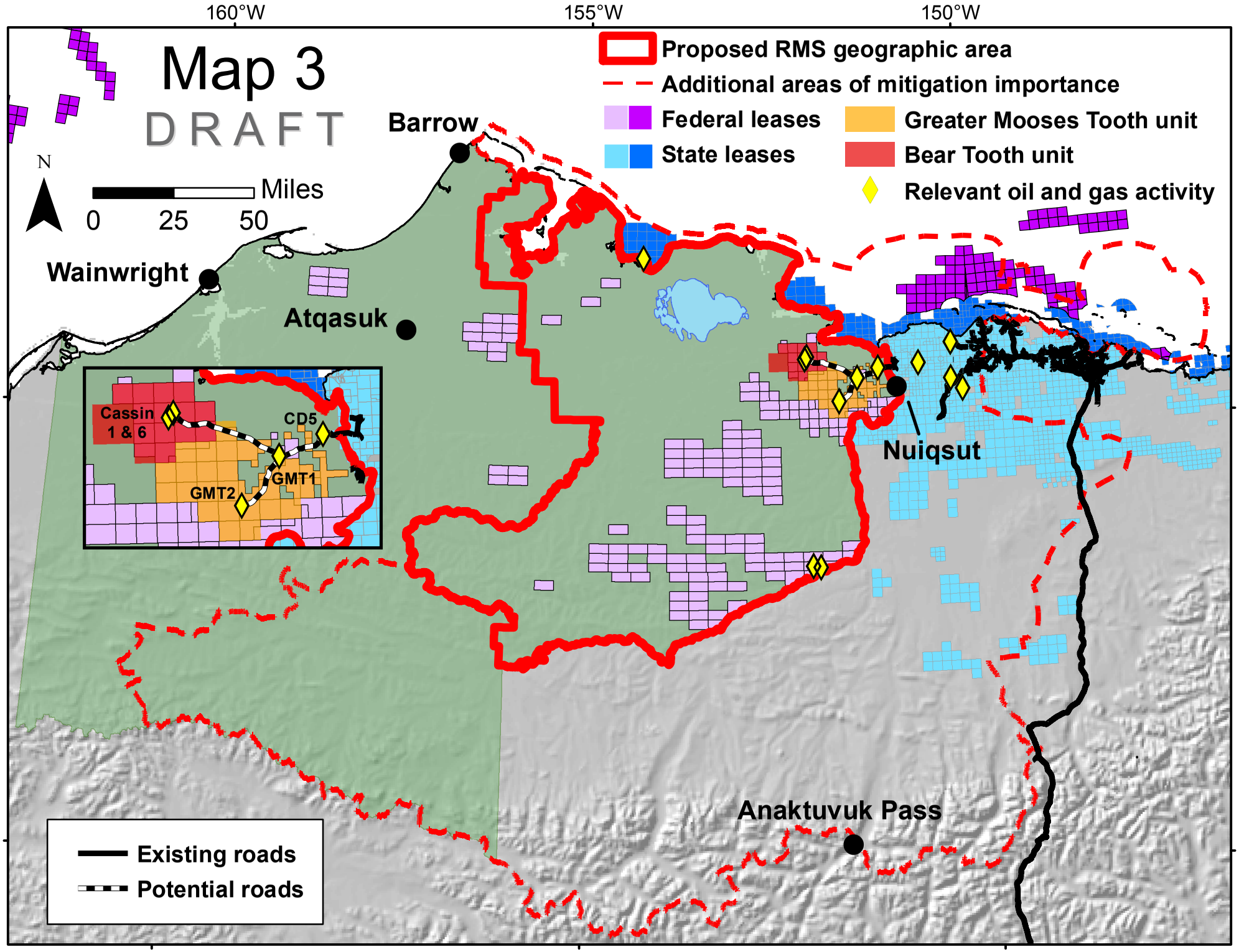
Bear Tooth Unit – This formally defined development unit is entirely within the borders of the Teshekpuk Lake Special Area. This area includes two wells spud in 2013: Cassin 1 and Cassin 6. The potential road from GMT-1 to Cassin 1 and 6 is based on the most probable route that the industry will take based on directness (cost) and physical features of the landscape.

Umiat – In 2013 and 2014 Linc Energy drilled two exploratory wells near Umiat. In June 2015, the Australian company publicly outlined a program to potentially build 13 drilling pads for 150 wells by 2021 in the region.

Federally-Administered Offshore Waters – Depicted in dark pink, this map captures all of the offshore leases administered by the Bureau of Ocean Energy and Management (BOEM) in the Beaufort Sea. Many of these leases fall within Nuiqsut's offshore subsistence use area.

Active State of Alaska Leases – As can be seen in light and dark blue, there are many onshore and offshore state leases on the northeastern edge of the NPR-A. These leases include recent activities, which are depicted by a yellow diamond, by Repsol (Nanushuk), Caelus Energy (Nuna), Brooks Range Petroleum (Mustang) and ConocoPhillips (Shark

Tooth). Moreover, this map captures the State of Alaska administered waters of Smith Bay. Exploratory activities for oil are currently being purposed by NordAq Energy in this coastal area. The yellow diamond identifies the approximate location of the permitted exploratory drilling site called Tulimaniq. As mentioned in accompanying material, BLM-administered lands and waters of the NPR-A are being used to support these activities. Specifically, winter trails have crossed through important caribou habitat within the Teshekpuk Lake Special Area and sensitive coastal areas are being used to stage and support drilling operations just offshore.


Map 3
DRAFT
160°W
155°W
150°W
70°N
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Miles
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25
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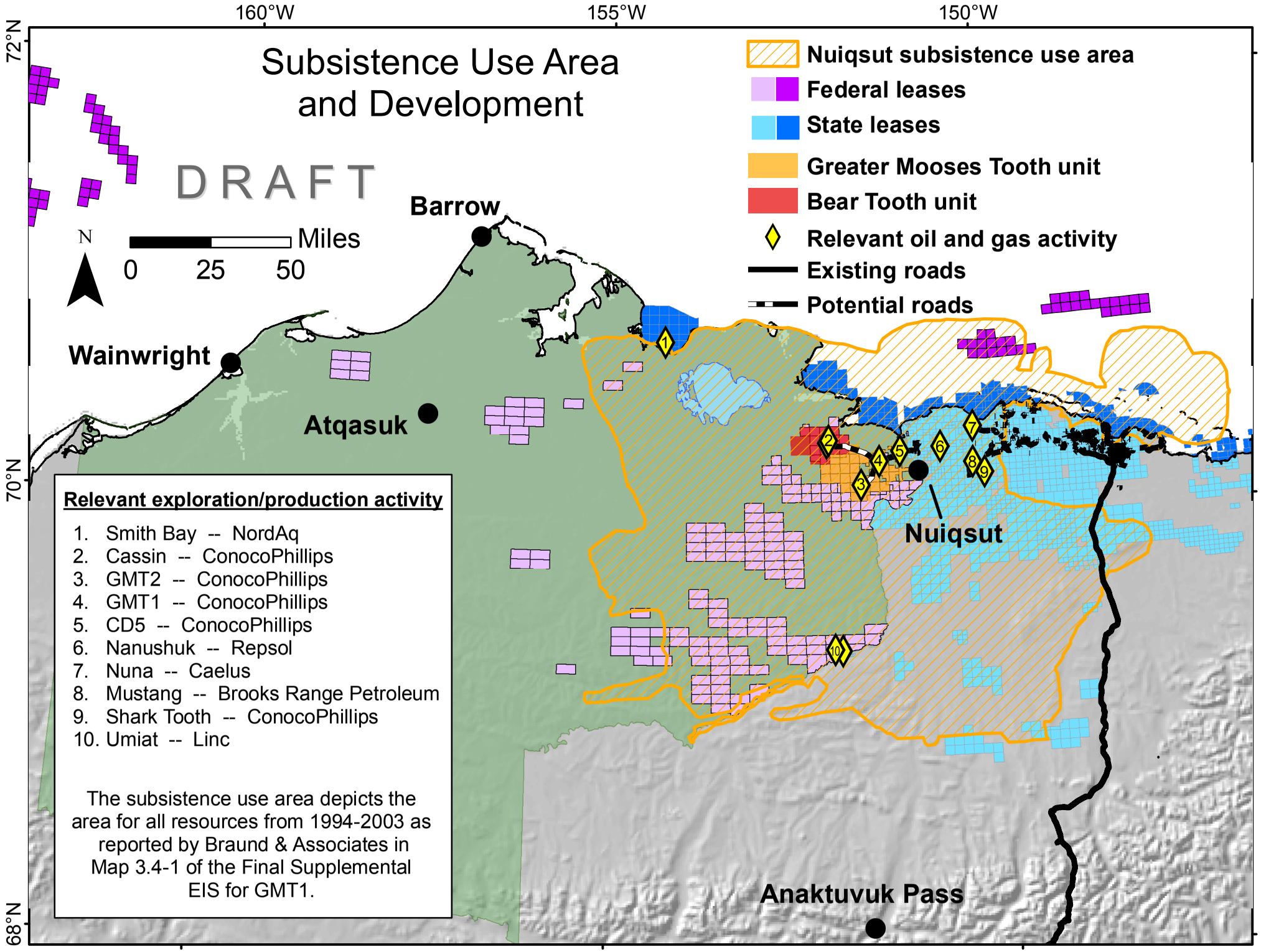
Proposed RMS geographic area
Additional areas of mitigation importance
Federal leases
State leases
Greater Mooses Tooth unit
Bear Tooth unit
Relevant oil and gas activity
Barrow
Wainwright
Atqasuk
Nuiqsut
Anaktuvuk Pass
Cassin 1 & 6
CD5
GMT1
GMT2
Existing roads
Potential roads


Subsistence Use Area and Development
DRAFT
160°W
155°W
150°W
72°N
70°N
68°N
N
Miles
0
25
50
Barrow
Wainwright
Atqasuk
Nuiqsut
Anaktuvuk Pass
Nuiqsut subsistence use area
Federal leases
State leases
Greater Mooses Tooth unit
Bear Tooth unit
Relevant oil and gas activity
Existing roads
Potential roads
Relevant exploration/production activity
1. Smith Bay -- NordAq
2. Cassin -- ConocoPhillips
3. GMT2 -- ConocoPhillips
4. GMT1 -- ConocoPhillips
5. CD5 -- ConocoPhillips
6. Nanushuk -- Repsol
7. Nuna -- Caelus
8. Mustang -- Brooks Range Petroleum
9. Shark Tooth -- ConocoPhillips
10. Umiat -- Linc
The subsistence use area depicts the area for all resources from 1994-2003 as reported by Braund & Associates in Map 3.4-1 of the Final Supplemental EIS for GMT1.