Appendix D

Issues Considered but Eliminated from Detailed Study

D. Issues Considered but Eliminated from Detailed Study

The National Environmental Policy Act (NEPA) requires agencies to disclose the alternatives and issues considered for inclusion in an environmental analysis but eliminated from detailed study, and briefly discuss the reasons for their elimination. This appendix provides details about 34 issues considered for inclusion in the alternatives of the revised Comprehensive Conservation Plan (Plan, Revised Plan) for Arctic National Wildlife Refuge (Refuge, Arctic Refuge), but dropped from detailed study in the Plan. Table D-1 summarizes the following discussion and is included at the end of this appendix (page D-19).

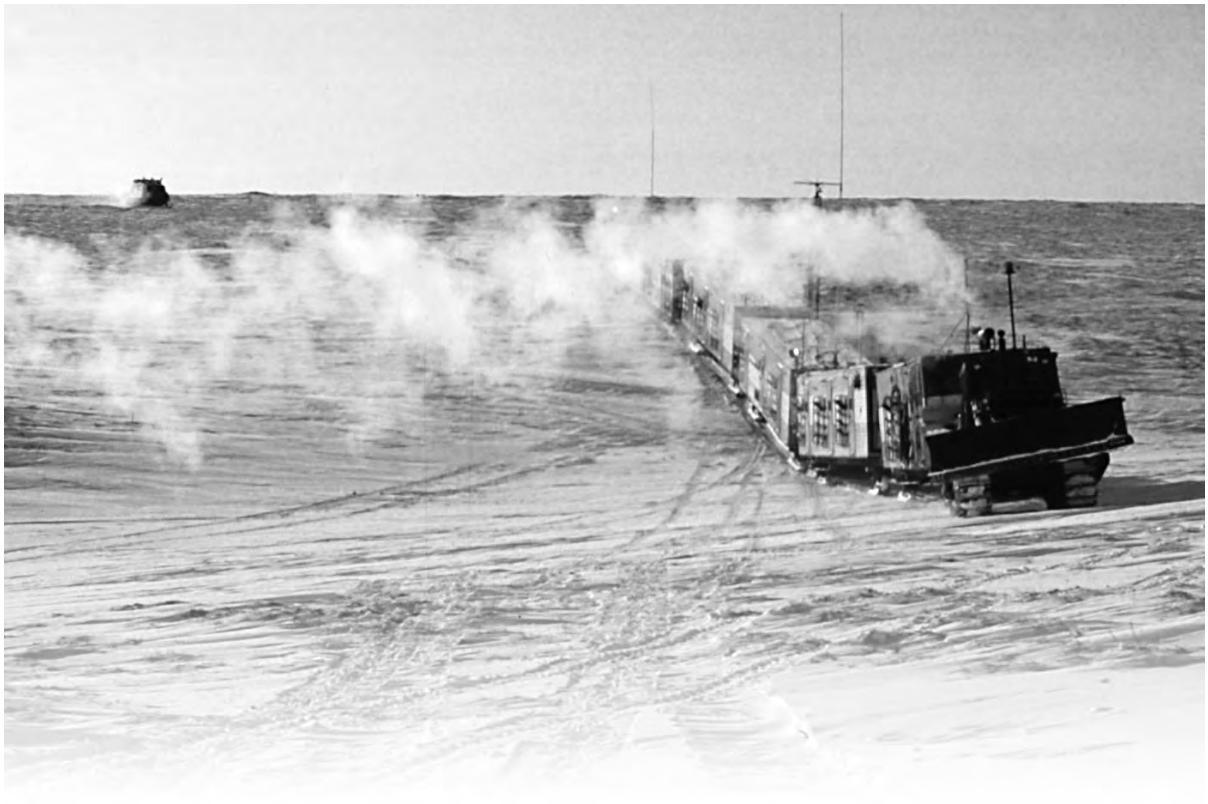
D.1 Development Issues

D.1.1 Oil and Gas Development

The public identified oil and gas development on the Refuge's Coastal Plain (also known as the "1002 Area") as a major planning issue. However, none of the alternatives carried forward in this Plan address oil and gas leasing or development scenarios. NEPA requires alternatives considered in an environmental impact statement (EIS) meet the purpose and need for the proposed action. The purpose and need for the Revised Plan is to ensure activities, actions, and management fulfill the legal purposes for which the Refuge was established, fulfill the statutory mission of the National Wildlife Refuge System (Refuge System), and provide direction on how the U.S. Fish and Wildlife Service (Service) will meet these purposes (Chapter 1, Section 1.1).

The Arctic National Wildlife Range (Arctic Range) was created in 1960 to preserve "unique wildlife, wilderness and recreational values." These purposes continue to apply to all lands in the former Arctic Range. In 1980, Alaska National Interest Lands Conservation Act (ANILCA) established four additional purposes that apply to all lands in Arctic Refuge. These purposes require the Refuge to: 1) conserve fish and wildlife populations and habitats in their natural diversity; 2) fulfill international treaty obligations for fish and wildlife; 3) provide continued opportunities for subsistence; and 4) ensure water quality and quantity. The Plan must also ensure that Arctic Refuge fulfills the mission of the Refuge System to "administer a national network of lands and waters for conservation, management and, where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the U.S. for the benefit of present and future generations of Americans."

There is nothing in the Refuge's purposes, or the mission of the Refuge System, that requires the Service to consider or propose development and utilization scenarios for natural resources, such as oil and gas, as part of the comprehensive conservation planning process. An alternative calling for oil and gas leasing and development does not meet the purpose and need of the Plan and is therefore not appropriate to include under the requirements of NEPA. Additionally, it is outside the Refuge's and Service's administrative authority to consider or propose oil and gas development alternatives. Congress has reserved the authority to make final decisions on oil and gas development in Arctic Refuge.



D.1.2 Updating Seismic Data on the Coastal Plain

Several commenters requested the Plan allow for the update of the two-dimensional seismic data gathered from the 1002 Area with newer three-dimensional (3-D) seismic technology. The data would provide more accurate information on oil and gas reserves in the Refuge's Coastal Plain. As with the oil and gas development issue (Section D.1.1), developing alternatives that would or would not allow 3-D seismic surveys does not meet the purpose and need for the Plan and is outside the Refuge's and the Service's administrative authority. This issue was not considered in detail and was not carried forward into the alternatives.

D.2 Policy Issues

D.2.1 Alaska National Interest Lands Conservation Act "No More" Clauses

ANILCA contains several provisions that are collectively referred to by some as "no more" clauses. These provisions include sections 101(d), 1326(a), and 1326(b).

ANILCA Section 101(d) states the designation and disposition of public lands in Alaska represent a proper balance between national conservation system units and those public lands necessary and appropriate for more intensive use. Section 101(d) goes on to say that Congress believes there should be no future legislation designating new conservation system units, national conservation areas, or national recreation areas.

ANILCA Section 1326(a) limits new withdrawals of public lands in Alaska to 5,000 acres in aggregate. If a withdrawal(s) exceeds 5,000 acres, it would not become effective unless approved by Congress within one year. Section 1326(b) disallows further studies of Federal lands in the State of Alaska for the single purpose of establishing a conservation system unit, national recreation area, national conservation area, or other similar purpose unless authorized by Congress.

ANILCA defines "conservation system units" as national parks, refuges, national forest monuments, and trails, in Alaska, and Alaska units in the National Wild and Scenic Rivers System and National Wilderness Preservation System. Included are units in existence prior to ANILCA; units established, designated, or expanded by or under the provisions of ANILCA; additions to existing and ANILCA-established units; and any unit established, designated, or expanded after ANILCA.

Several commenters stated that these "no more" clauses effectively prohibit the Service from conducting a wilderness review and a wild and scenic river review. People commented that these reviews constitute studies and should not be conducted per ANILCA.

Service policy (601 FW 3 and 610 FW 4), and a recent director's memorandum (Hamilton 2010), directs refuges to conduct wilderness reviews during comprehensive conservation planning, including refuges in Alaska. For Arctic Refuge, a wilderness review is a tool we can use to evaluate whether we are effectively managing the Refuge according to the Refuge's purposes and other legal requirements, including ANILCA Section 1004, which requires the Refuge to maintain the wilderness character of the Coastal Plain and its suitability for inclusion in the National Wilderness Preservation System. Section 5(d) of the Wild and Scenic Rivers Act and Service planning policy (602 FW 3.4 C (1)) require the Service to conduct a review of rivers for their potential inclusion in the National Wild and Scenic Rivers System as part of their comprehensive conservation plans. These reviews are administrative actions and a means by which the Refuge can assess the efficacy of its management in meeting Refuge purposes and other legal requirements.

These wilderness and wild and scenic river reviews do not violate the "no more" clauses of ANILCA because they are not a withdrawal and they are not being conducted for the sole purpose of establishing a conservation system unit.

D.3 Ecological Issues

D.3.1 Introduction of Disease, Organisms, and Invasive Species

Disease, organisms, and invasive species could be introduced onto the Refuge and into wild populations by a variety of means, including pack animals, ships, tires, dogs, shoes, human waste, food sources, helicopter bucket, water scooper planes (used during firefighting), and float planes. One action considered for addressing this issue was to expand monitoring efforts into possible source areas, such as the western edge of the Refuge near the Dalton Highway, and at important entry points into the Refuge, such as Arctic Village and Kaktovik. Other actions that could be taken include education and outreach about invasive species, encouraging or requiring the use of weed-free straw and hay, restricting the type of pack animals allowed on the Refuge and/or the geographic area in which pack animals would be authorized, and conducting weed pulls.

The Refuge manager can condition or restrict commercial activities that might inadvertently introduce invasive species and organisms into the Refuge via our special use permit program. Education and outreach is another tool that can be used to reach out to commercial and non-commercial users. These tools are available now without the Revised Plan. Therefore, the staff decided not to carry this issue forward into the alternatives. Additionally, the issue is further addressed through the Refuge's management goals and objectives, especially those pertaining to biological resources, climate change, fire management, and outreach and education.

D.3.2 Hunting Effects on Population Structures and Genetics

Some members of the public expressed concern that trophy hunting could be affecting the genetics and population structure of certain wildlife species, such as Dall's sheep. Refuge biologists think the issue could be broader than just trophy hunting and that all forms of hunting (and fishing) could potentially have an effect on population structures and the genetics of animal populations on the Refuge. The staff decided not to carry this issue forward into the alternatives, but rather to consider studying the issue through the Refuge's inventory and monitoring (I&M) or research plans (Objectives 1.2 and 1.3). These plans would receive peer review and input from key partners such as the Alaska Department of Fish and Game (ADFG), U.S. Geological Survey (USGS), academic institutions, and science-based non-governmental organizations.

D.3.3 Climate Change

Numerous changes have occurred on the Refuge in response to climate change (Chapter 4, Sections 4.2.3, 4.3.2, and 4.3.3). Climate change is expected to continue to affect Refuge resources and the associated human environment for the foreseeable future. There are few actions the Refuge can take to manage the effects of climate change. Climate change is not in the range of control of the Refuge and cannot be handled differently in the different alternatives. For these reasons, climate change was not carried forward into the alternatives. However, in recognition of the importance of climate change to Arctic Refuge and the people who live there or visit there, Refuge goal six and its associated objectives, 6.1 through 6.4, relate directly to climate change.

D.3.4 Fire Activity

Some members of the public, especially rural residents, brought up fire management as a potential issue for the Plan. Fire behavior appears to be changing in response to climate change (Chapter 4, Section 4.3.2). The Arctic Refuge Fire Management Plan (Service 2008) provides the Service with flexibility on how to respond to fires, and fire response behavior can be adjusted on an annual basis. The Fire Management Plan needs to be updated to ensure it is consistent with current policy and the goals, objectives, and management framework outlined in the Revised Plan. The issue of fire behavior is best addressed through revision of the existing Fire Management Plan (a step-down plan) and was not carried forward into the alternatives for the Plan. The Refuge is committed to working with local communities about smoke impacts and the protection of inholdings and adjacent properties, while minimizing unintended consequences to the Refuge's natural fire regime (see Objective 1.6).

D.3.5 Adequate Water Quality and Quantity

Maintaining adequate water quality and quantity is a Refuge purpose imposed by ANILCA. It is an important purpose that the Refuge recognizes and values. The following management objectives relate to water quality and quantity: 1.8, 1.9, and 7.4. These objectives would be adopted and implemented should the record of decision select any one of Alternatives B through F. Additionally, the monitoring of water quality and quantity would be addressed through the I&M Plan that the Refuge is committed to developing (Objective 1.2 and Chapter 6, Section 6.3). This issue was not considered in further detail.

D.3.6 Air Quality and Pollution

Maintaining air quality and minimizing air pollution are priorities for the Refuge. The Plan is not putting forward management alternatives that would have a measurable effect on air quality. Therefore, this issue was not considered in more detail. Air quality monitoring would be incorporated into the I&M Plan (Objective 1.2 and Chapter 6, Section 6.3).

D.4 Management Issues

D.4.1 Conflict Between Wilderness Values and Science-Related Technologies

Arctic Refuge is known as a vast, intact, diverse, and wild place with outstanding wilderness values. It is also valued as a natural laboratory for scientific research and study (Chapter 1, Section 1.5.6). This can create conflicts. Should temporary or permanent scientific research installations be allowed, or should the Refuge have no evidence of human constructs? Is it appropriate for radio-collared animals to be seen? How does the choice to use helicopters and fix-winged aircraft for research and monitoring, and where and when to land, affect the wilderness experience of users on the ground?

Service policy requires staff to conduct a Minimum Requirements Analysis (MRA) for any administrative action (including scientific studies) occurring in designated wilderness. The MRA is intended to protect wilderness character in designated wilderness. While an MRA is not required for areas of the Refuge outside of designated wilderness, how and where to conduct scientific studies can be addressed through management objectives and step-down plans. The Refuge is committed to developing an Inventory and Monitoring (I&M) Plan (Objective 1.2 and Chapter 6, Section 6.3) in which appropriate research techniques can be identified, especially for areas of the Refuge not designated as wilderness. The I&M Plan would allow this issue to be explored in more detail than if it were an issue in the Revised Plan. Thus, this issue was not carried forward into the alternatives.

D.4.2 Management of the Refuge's Three Wild Rivers

With ANILCA, Congress designated the Ivishak, Wind, and Sheenjek Rivers as wild rivers and included them in the National Wild and Scenic Rivers System. To date, no river-specific management guidelines have been developed for these rivers. The rivers are currently managed according to the Wild River Management category identified in the 1988 Plan. Alternatives B through F in the Revised Plan would update the Wild River Management category (Chapter 2, Section 2.3.5), but none of the proposed alternatives would provide river-specific management guidance. The staff decided that the Revised Plan would not allow for the level of detail necessary to fully describe the conditions, issues, and management direction for these rivers. Rather, this should be accomplished through a detailed step-down planning process that would include public involvement. Objective 3.1 commits to completing comprehensive river management plans for each of the three designated wild rivers on Arctic Refuge (see also Chapter 6, Section 6.3).

D.4.3 Management of the Refuge's Research and Public Use Natural Areas

The Refuge has two Research Natural Areas (RNAs) and one Public Use Natural Area (PUNA) (Chapter 4, Section 4.1.3). To date, no area-specific management guidelines have been developed for these natural areas, and they are managed according to the Wilderness Management category identified in the 1988 Plan. Alternatives B through F in the Revised Plan would update the Wilderness Management category (Chapter 2, Section 2.3.4), but none of the proposed alternatives would provide area-specific management guidance. The staff determined that Wilderness Management in combination with Refuge purposes afford a high degree of protection for the features and values for which these lands were designated as

RNAs and PUNAs, and no additional management guidance is needed. This issue was not considered in further detail.

D.4.4 Management of the Refuge's Marine Protected Area

The Refuge's Marine Protected Area (MPA) was established in 2005 (Chapter 4, Section 4.1.3). MPA designation does not come with any special conditions or management restrictions. Thus, this issue presents an opportunity to provide management direction to the Refuge's complex coastal marine environment. Currently the MPA is managed according to the Wilderness and Minimal management categories defined in the 1988 Plan. Alternatives B through F in the Revised Plan would update both these management categories (Chapter 2, Sections 2.3.3 and 2.3.4), but none of the proposed alternatives would provide MPA-specific management guidance. The staff decided that the underlying management categories, in combination with Refuge purposes, afford a high degree of protection for the features and values for which the MPA was designated, and no additional management guidance is needed. This issue was not considered in further detail.

D.4.5 An Area Free of Commercial Activity and Mechanization

Some commenters asked the Service to establish one or more zones in the Refuge free from commercial activities. The Firth-Mancha RNA (approximately 520,000 acres of designated wilderness; 2.7 percent of the Refuge) was mentioned most often. Other commenters expressed concerns related to mechanization and protection of solitude and natural quiet. These concerns relate to the protection of experiential and natural conditions and the concept that some area(s) in the Refuge should be free of mechanized activity.

In response, Refuge staff considered an issue that would establish a zone where commercial recreation and hunting operations, including landings by air-taxi operators, private aircraft, and Refuge aircraft, would not be allowed. Exceptions would be made for emergencies, such as human health and safety, and subsistence uses would not be restricted. The purpose of the zone would be to provide a destination for those seeking the most independent and self-reliant type of trip to an area representing the wilderness ideal and with the least likelihood of encountering other groups.

Several geographic areas were considered for this issue: Shublik Springs RNA, Neruokpuk Lakes PUNA, the Wind River wild river corridor, the Ivishak River wild river corridor, Guide Area 12, and the Salmon Trout drainage. These areas were dropped from consideration because either there is no practical way to access them (e.g., the Salmon Trout drainage), or there is enough existing commercial use in the area that imposing a restriction to such use would create conflict.

The Firth-Mancha RNA was considered the most viable option for a commercial and mechanized-free zone because of its exceptional remoteness and wilderness character and because it is visited by only about three guided or commercially transported visitors annually, on average. Access to the area would be by aircraft landing outside the zone, primarily along the Coleen and Kongakut Rivers and Joe Creek. Visitors could also hike or dogsled through the area from other points.

The issue was drafted to include the following options across the alternatives: no areas of natural quiet; the Firth-Mancha RNA does not allow commercially-supported visitation; and the Firth-Mancha RNA does not allow commercially-supported or mechanized visitation with the exception of subsistence users. Additionally, the staff considered an option that would allow air-taxis but not guides or air transporters. This option was dropped from consideration because many air transporters also hold air-taxi licenses. Restricting one industry and not the other would be confusing for these dual license-holders and challenging for the Refuge to manage.

Ultimately, the entire issue was dropped from consideration in this Plan due in part from a lack of information about access opportunities and the potential effects of the issue on private aircraft use, big-game hunting, and scientific research. Additionally, there were unresolved questions about ANILCA requirements for establishing such an area.

The Refuge manager decided to defer consideration of this issue to the Wilderness Stewardship and Visitor Use Management plans (Objectives 2.3 and 5.3), when these questions can be more fully examined in the context of a full range of wilderness and visitor experiences in designated wilderness and the management framework established by the Revised Plan.

D.5 Visitor Use Issues

D.5.1 Dispersed or Concentrated Visitor Use

This issue gets at the heart of public use management on the Refuge. Do we want to have a dispersed use model for the entire Refuge, or do we want to intentionally concentrate use in some areas so that dispersed use can occur in other areas? The concentrated use model could result in some areas of the Refuge having hardened surfaces from heavy use, such as landing areas, camping areas, or trails, while other areas of the Refuge would have natural surfaces and little to no evidence of recreational use. If we want to apply the dispersed use model for the entire Refuge, then we might have to propose additional restrictions on certain uses and remediate areas that are already impacted.

The staff recognized that this is an important issue but decided it would be best addressed in step-down planning with public involvement. This issue was not carried forward into the alternatives. Objectives 2.3 and 5.3 commit to developing a Wilderness Stewardship Plan and a Visitor Use Management Plan, respectively (see also Chapter 6, Section 6.3). Dispersed versus concentrated use is best addressed through these step-down plans.

D.5.2 Increasing Permits and Recreational Uses

Non-competitively awarded special use permits are increasing in number year to year. It appears that the number of visitors is about the same, but the number of operators servicing these visitors has increased substantially. Additionally, recreational uses, whether commercially supported or not, are trending upwards in some areas of the Refuge, such as areas near the Dalton Highway at the Refuge's western boundary. The staff decided this is not a stand-alone issue, but rather it relates to concerns about crowding and dispersed versus concentrated use. It is an important concern best addressed through a Wilderness Stewardship Plan and/or a Visitor Use Management Plan, and Objectives 2.3 and 5.3 commit to developing these step-down plans (see also Chapter 6, Section 6.3). The issue was not carried forward into the alternatives of the Revised Plan.

D.5.3 Different Standards for Different User Groups

Refuge staff and the public questioned whether we want to treat different user groups differently or treat them the same. Some of the public want us to further regulate commercial operators. Other members of the public want us to do more to regulate non-commercially supported recreationists. Each perspective points to the other group as causing or contributing to resource damage and/or impaired visitor experience. Service policy requires the Refuge to regulate commercial operators through special use permit (SUP) conditions (based on best practices) and compliance. Non-commercially supported recreational users are not subject to special use permits. Contact with these visitors is through occasional law enforcement or staff interactions during which visitors may be reminded of laws and Service policies. Should visitors voluntarily contact Refuge staff, or visit the Refuge website, they can receive a wealth of information for visitor best practices; however, many visitors do not contact us or visit our website, so they might not know that these resources and recommendations exist.

Refuge staff recognized "how we treat different user groups" as an important issue, but the issue was not carried forward into the alternatives. The staff decided the issue would best be

explored through a Wilderness Stewardship Plan and/or a Visitor Use Management Plan, both of which would be developed with public involvement. Objectives 2.3 and 5.3 commit to developing these step-down plans (see also Chapter 6, Section 6.3). This issue ties in with the dispersed versus concentrated use issue (Section D.5.1) and how we interact with the public (Section D.5.4).

D.5.4 Public Interaction

It is clear from the public comments received during Plan scoping that we are not effectively communicating best practices while visiting the Refuge. The public has asked us to do something about human waste management, instilling Leave No Trace principles, and regulating users. Public comment indicates that current visitor practices and management strategies are allowing Refuge conditions to degrade. The following actions were identified by the staff as potential options for addressing this issue:

- There could be more on-the-ground and face-to-face interactions with the public while they are visiting the Refuge; however, some of the staff are resistant to such interactions because it would mark a departure from management efforts to optimize visitor independence and solitude.
- More effort could be made towards developing targeted educational messages, but this might have limited effect. Because the Refuge does not regulate or register visitor use, dispersal of messages depends solely on visitors independently obtaining information from Refuge staff, from the Refuge website, or from commercial service providers. We already provide information on best practices, including Leave No Trace, yet it is not resulting in resource protections at levels adequate to meet desired conditions.
- We could further restrict commercial operators, but we would still not reach or condition independent users.
- Regulating private users would require the development of new regulations (i.e., rulemaking), a long process that would take staff away from other management priorities.

All the strategies mentioned contribute to resolving the issue, but at what point is a comprehensive change in interaction (either pre-visit through education or on-the-Refuge through personal interactions) warranted, and which are most effective? How we interact with the public before and after they step foot on the Refuge was recognized as an important issue. However, the staff decided the issue would be best addressed through management objectives pertaining to recreation, education, and outreach until Wilderness Stewardship and Visitor Use Management plans (Objectives 2.3 and 5.3) are developed with public input. The issue was not carried forward into the alternatives.

D.5.5 Crowding

Public comments consistently raised concerns having to do with crowding—too many users in too concentrated an area and/or at the same time to provide the opportunities and experiences Refuge visitors seek. Hunters, non-hunting recreationists, subsistence users, and commercial operators have all identified crowding as a problem on Arctic Refuge. The Service agrees that this is a major issue that needs to be addressed, recognizing that use is not evenly distributed across the Refuge and that crowding is a concern in only a few areas of the Refuge. Crowding

relates to the number of encounters users have with other groups, group sizes, and the number and distribution of access points. Impacts resulting from crowding or prolonged use include damage to soils, vegetation, and other resources; human waste accumulations; negative human-wildlife encounters; and erosion of visitor experience.

Crowding is a highly complex issue and merits detailed consideration and public input. The Revised Plan cannot go into the level of detail this issue requires. For this reason, the issue of crowding and all its associated sub-issues (e.g., group size) is being deferred to a Visitor Use Management Plan that would be developed in coordination with a Wilderness Stewardship Plan. The Refuge is committed to developing these plans (Objectives 2.3 and 5.3) and has given them a high priority (Chapter 6, Section 6.3).

D.5.6 Group Size

Group size was considered both as a component of crowding (Section D.5.5) and as a separate issue. This was in response to public comments recommending that limits be placed on the size of visitor groups and/or that changes are made to the current size limit for commercially guided groups. Concerns were related to the effect of encountering large groups on one's wilderness experience. Concerns were also expressed about adverse effects that large groups could have on wildlife and the physical impacts large groups could have at campsites and along hiking routes. In response, the Refuge considered several options for establishing group size limits. None would apply to qualified subsistence users.

Currently, guided groups are limited to 7 people hiking per group and to 10 people per river floating group. There are no size limits placed on non-guided groups, although the Refuge recommends the same group size limits as for guided groups. Among the actions considered were 1) continue the current policy, 2) apply the 7 hikers and 10 floaters limit to both guided and non-guided groups, and 3) set limits of either 8, 9, or 10 people for both guided and non-guided groups.

Ultimately, the issue was not included in the alternatives for the Revised Plan. Rather, it was deferred to future step-down management plans. Visitor use data show non-guided groups rarely exceed recommended group size limits, except in areas accessible by the Dalton Highway. Data also show hunting groups, whether guided or not, rarely exceed recommended group size limits anywhere in the Refuge. Addressing the issue in coordinated Visitor Use Management and Wilderness Stewardship planning processes will enable more comprehensive consideration of the expectations, concerns, and effects related to establishing group size limits. It would also allow the issue to be looked at in combination with other public use issues such as desired conditions, visitor expectations for encounters with other groups, economic effects, etc. Any group size limits that would affect the public, not just commercially-supported visitors, would require rule making (i.e., new Federal regulations).

D.5.7 Guided and Non-Guided Visitor Use Allocation

A concern frequently identified by the public is whether there should be a preference for either guided or non-guided visitors if recreational use needs to be limited in particular areas. Recreational use in a few areas, and particularly along popular rivers, has increased to a point where limits on the number of visitors may be necessary to protect resources or experience qualities. When and where the number of recreational groups needs to be limited, some means

of allocating use opportunities between commercially-guided and private users will need to be implemented.

Several allocation systems have been developed for recreational rivers and wilderness areas. A primary difference between these systems is whether they allocate a portion of use to commercial operators, whether they provide a preference to private users, or whether they employ a "freedom of choice" approach providing equal opportunity for both commercially-guided and unguided visitors.

The staff gave serious consideration to the following options: 1) no preference; 2) each group given a percentage of the opportunity; 3) non-guided users have the choice of accessing the Refuge with or without a guide; 4) non-guided groups get first choice and commercial guides get the remaining preference; and 5) the decision is not made in the Plan but deferred to a step-down plan.

The staff also considered, but rejected, the following options: commercial preference would be provided in heavily used areas because of the Refuge's ability to condition, restrict, and provide oversight to commercial permit holders; give commercial users a higher preference over private users throughout the Refuge; place more restrictions or limits on commercial groups; and conduct outreach and interpretation with both guided and non-guided visitors.

This issue was not carried forward into the alternatives of the Plan. Staff decided the issue could be better addressed in a more encompassing Visitor Use Management Plan. Through the step-down planning process, the Refuge would be better able to discuss the issue with the visitors and commercial service providers that would be directly affected by any proposed allocation methods or use limitations.

D.5.8 Human Waste

Certain sites in the Refuge have notable accumulations of human waste. Some of the actions the Refuge could take to address this issue are to increase outreach and education efforts, increase clean-up efforts, provide visitors with equipment (on- or off-Refuge) to haul-out waste, require waste haul-out as a special use permit condition, and require haul-out for all users (which would require rule making).

This issue is important because of its powerful effect on visitor experience and its potential localized effect on public health and water quality. However, it is not a stand-alone issue. It relates to four previously discussed issues: 1) different standards for different groups, 2) how we interact with the public, 3) whether the Refuge should be managed for dispersed or concentrated use, and 4) crowding. Further, it is important that any haul-out considerations prioritize practical solutions that accommodate every stage of the waste stream and also identify critical partnerships for each stage so that solutions don't create new and different problems. All of these issues are best addressed in step-down plans that can focus on the complexity and inter-relationship of the issues. The Refuge is committed to developing a Wilderness Stewardship Plan and Visitor Use Management Plan (Objectives 2.3 and 5.3, and Chapter 6, Section 6.3).

D.5.9 Erosion of Hunt Quality

An issue identified by the public is the erosion of hunt quality due to visitor concentration. Numerous camps, airplanes, and people materialize on the Refuge at the start of the fall hunting season. Hunters come to Arctic Refuge because they seek a specific kind of hunting experience; however, that experience can be thwarted when too many people hunt in the same drainage or area. This issue was not carried forward into the alternatives because it is not a stand-alone issue. It not only relates to the issue of crowding (Section D.5.5), but also to State and Federal regulatory authorities and processes to manage and allocate fish, wildlife, and subsistence resources. Any unilateral attempts to minimize user conflicts, based solely on allocation concerns, would circumvent these existing regulatory processes.

D.5.10 Conflicts Among and Between Commercial and Private Users

There are ongoing conflicts among different commercial users (air-taxis, transporters, and hunting guides) and between private and commercial users on Arctic Refuge. One action considered would be to create a controlled use area by following the State's process for proposal and authorization of such an area. Because these areas are typically developed in the proximity of villages to protect subsistence hunting, Refuge staff decided not to consider this action in further detail; controlled use areas would not address commercial use conflicts identified by this issue. Additionally, the process is completely separate from this Plan and could be initiated without a Revised Plan.

Another action considered to minimize conflict would be to divide the Refuge into different "use areas" and limit the number of hunters by 1) restricting the number of air-taxis and/or transporters allowed to operate in a given area, or 2) restrict the number of people an air-taxi and/or transporter could bring in. Ultimately Refuge staff decided not to carry the issue of commercial and private user conflicts into the alternatives because the issue overlaps with at least four other issues: 1) different standards for different user groups (Section D.5.3); 2) erosion of hunt quality (Section D.5.9); 3) monitoring commercial activities (Section D.5.13);

and 4) conflicts with subsistence users (Section D.5.11). In addition, it ties into the commercial-free and naturally quiet issue that is addressed in the alternatives.

D.5.11 Conflicts Between General Hunters and Subsistence Hunters

Local rural residents identified several concerns associated with general hunters, including trespass on private property, waste of meat, and trash. They have also repeatedly expressed concern that general hunters have changed animal population size and structure and altered animal behaviors, such as caribou migration routes.

The Service has no data to support or oppose these complaints. Some of the conflict may stem from a lack of understanding on the part of subsistence hunters about the rules and regulations under which general hunters operate. Similarly, general hunters might not fully understand and appreciate traditional Native practices and those of rural residents. There may also be a lack of knowledge about the locations of private lands, easements for accessing Refuge lands, and Refuge boundaries.

The staff considered this to be an important issue and considered incorporating the following actions into the alternatives: enhance education about such topics as hunting regulations, traditional ways, caribou biology, etc.; publish detailed land status maps that could be used for navigation while on the Refuge; hire village employees to work at Refuge visitor centers to improve communication and user education; improve messaging and information presented at kiosks; increase enforcement and patrols; restrict commercial uses in areas with high subsistence use; streamline permitting processes; and conduct research on hunting effects on wildlife. The issue was not considered in further detail, however, because the majority of these actions can be implemented without a Revised Plan. They can also be addressed through the Refuge's management goals and objectives, especially those pertaining to subsistence, recreation, and education (see Objectives 4.1, 4.2, 4.3, 5.5, 5.6, 8.4., 9.3, and 9.5).

D.5.12 Polar Bear Viewing in Kaktovik

In recent years, a commercial guided polar bear viewing industry has developed in and around Kaktovik, offering visitors the opportunity to view bears in the wild. Commercial guides operating motorized boats on Refuge waters to view polar bears are permitted through the special use permit program. Polar bears are listed as threatened under the Endangered Species Act and are a trust species managed by the Service under the Marine Mammal Protection Act (Appendix A). Refuge staff have worked in concert with the polar bear biologists in the Service's Marine Mammals Management office, endangered species specialists in the Service's Fairbanks Fish and Wildlife Field Office, and a wide array of Kaktovik community partners to address immediate concerns regarding commercial and private activities to promote effective cooperative management of polar bears on and off Refuge lands. Ongoing efforts include:

- promoting public safety
- improving awareness of minimizing attractants in the village
- understanding local conditions that might contribute to polar bear concentrations and other polar bear distribution considerations
- avoiding harassment of polar bears
- serving as technical advisors for the local community's effort to develop a polar bear management plan infused with a spirit of stewardship

However, some community members and Refuge staff believe these efforts are not reaching users. Regularly scheduled commercial airplanes bring visitors to Kaktovik; these visitors make their own way to view polar bears, independent of permitted commercial guides or the preferences of the community. It has been suggested the Service needs to regulate independent polar bear viewers so as to comply with the Endangered Species Act and the Marine Mammal Protection Act, and to provide a measure of public safety. Polar bear viewing activity in Kaktovik is evolving rapidly and changing dynamically. Refuge staff believes it needs the responsiveness and flexibility of working on this issue independent of the Plan in order to have the maximum ability to address concerns as they emerge. This issue was not considered in further detail in the Revised Plan.

D.5.13 Monitoring Commercial Activities

Public comments mentioned the need to regulate and/or better regulate commercial activities. Refuge staff regulates and monitors commercial use activities; however, public comments suggest the Refuge needs to improve 1) compliance checks on commercial operators, 2) information about existing rules and regulations, and/or 3) information about current enforcement levels and methods. This issue relates to how we interact with the public (Section D.5.4) and how commercial activities fit into the larger context of visitor use management. The staff decided to defer many of these visitor use management decisions to a step-down planning effort, so this issue was not carried forward into the alternatives.

D.5.14 Air Transporters

Air transporters provide transportation services and accommodations to big-game hunters, but they cannot provide big-game hunting services without holding the appropriate State license. Unlike air-taxis, who provide services to all clients seeking air service, air transporters directly seek hunting clients through advertisements; therefore, hunters make up the majority of a transporter's clients. Over the past few years, the Refuge has issued an increasing number of air operator permits to transporters who only operate during the fall hunting season. As a result, by early August, commercial services double over those in place earlier in the summer. Because of limited access points, hunters concentrate at various landing areas, sometimes reducing the quality of hunting experience Refuge visitors seek. Changing air transporter trends and several years of complaints from hunters and commercial service providers suggest the Refuge should consider regulating the transporter industry.

Some of the actions considered were to limit the number of transporters and their legal landing sites throughout the Refuge, limit air transporters only in heavily used areas, limit the number of air transporters but not where they go, and competitively award transporter use areas in a manner analogous to our competitive guide use areas. The issue of hunter concentrations is complex and would require regulating more than the transport industry. The concern is also related to the issue of crowding (Section D.5.5), and is not a stand-alone issue. Therefore, the staff decided to defer this issue to a step-down planning effort instead of considering it in further detail through the Revised Plan.

D.5.15 Fixed-wing Aircraft

Fixed-wing aircraft are a necessary means of accessing the Refuge, both for visitors and administrators. However, aircraft contribute to environmental degradation at landing areas by hardening surfaces and scarring tundra. Aircraft may also be perceived as eroding wilderness character when heard or seen, or when visible evidence is left behind, such as fuel caches.

Service authority regarding aircraft operations is limited to their use on Refuge lands and waters. The Federal Aviation Administration has jurisdiction over aircraft and their use in the air. Additionally, fixed-wing aircraft are a protected form of public access under Section 1110(a) of ANILCA; restrictions cannot be imposed without following a specific public process identified in 43 CFR 36.11(f) and (h), which includes rule making.

Refuge staff considered incorporating some of the following actions into the draft alternatives:

- a competitive selection process for air-taxi operators so as to further increase stewardship standards and expectations
- limiting the number, location, and quantity of fuel caches
- educating the public and permittees about aircraft impacts and how to minimize them
- implementing a monitoring program of aircraft impacts at specific sites
- closing select landing areas to allow them to rehabilitate
- promulgating public use regulations
- revising special use permit conditions for commercial aircraft operators
- limiting the number of drop-offs allowed on airstrips

Refuge staff decided not to carry this issue forward into the alternatives. Some of the concerns associated with fixed-wing aircraft can be addressed through the revision of special use permit conditions and/or developing a competitive prospectus application process. Refuge staff can also work with visitors to improve conditions through education and outreach, and concerns about hardened and newly pioneered landing areas can be addressed through management objectives (see Objective 5.9). The issue could also be further explored through a Wilderness Stewardship Plan or a Visitor Use Management Plan (Objectives 2.3 and 5.3), which would include public involvement.

D.5.16 Competitive Events

The Refuge received public comments questioning whether competitive events, such as races, should be allowed on the Refuge. These commenters expressed concern that such activities are not compatible with the wilderness purposes of the Refuge. This issue was not carried forward into the alternatives. It can be addressed on a case-by-case basis using existing management tools such as compatibility determinations and appropriate use determinations.

D.6 Other Issues

D.6.1 Administrative Buildings

During scoping, some people asked the Refuge to remove the buildings on the east side of Peters Lake because they are perceived as eyesores that impair the area's wilderness character. These are administrative buildings associated with the G. William Holmes Research Station, which was established in the late 1950s. Refuge staff decided to look at all the administrative buildings in the Refuge and drafted the following four options for the alternatives: 1) retain all the buildings at Peters Lake and Big Ram Lake; 2) remove the buildings at Big Ram Lake and reduce the number of buildings at Peters Lake; 3) keep the buildings at Big Ram Lake and reduce the number of buildings at Peters Lake; and, 4) remove all buildings at both sites.

Refuge staff also considered whether the issue should be broadened to include cabins instead of just administrative buildings. The Refuge has no administrative or other authority over cabins on private lands. For those cabins on Refuge lands that were grandfathered post-ANILCA, all are used for trapping, each complies with regional cabin policy, and each user has an individual special use permit. Therefore, the staff decided not to include cabins in this issue.

Refuge staff considered whether the issue should be broadened to include installations, such as weather stations. If included, the options would be to remove them, build more, or retain existing installations but not allow any new ones. The staff decided not to include any of these actions in this issue. The staff thought it important to retain as much management flexibility as possible. Should one of these actions be adopted through the record of decision for the Revised Plan, the Refuge would have little to no ability to address installations on a case-by-case basis. Ultimately, the staff decided not to include this issue in the alternatives. It can be addressed using available management tools (see Objective 2.5).

D.6.2 Archaeological Excavations

A few members of the public are concerned that archaeological excavations (one of several techniques that could be employed in a cultural resource survey) would not be compatible with the wilderness values of the Refuge or as an activity in designated wilderness. This issue was not considered in detail. It can already be addressed on a case-by-case basis using existing management tools such as compatibility determinations and appropriate use determinations. It could also be addressed through an Integrated Cultural Resources Management Plan, a step-down plan the Refuge is committed to develop (Objective 8.1 and Chapter 6, Section 6.3).

D.6.3 Adjacent Land Uses and Inholdings

Activities on lands adjacent to Arctic Refuge, and on lands owned or managed by others inside the Refuge boundary, can affect Refuge resources and wilderness characteristics. The Service has no authority over activities happening on private lands. However, we can partner with private landowners and other agencies to minimize impacts to the Refuge from activities happening on non-Refuge lands. Coordination and consultation would be the most effective action the Refuge could take to address this issue. Additionally, the Refuge can condition special use permits for commercial activities that occur on Refuge lands but that originate from private inholdings or other agency lands. For these reasons, this issue was not considered in further detail.

D.6.4 Naming of Features

The question of whether the Refuge should propose naming or support naming features (such as mountains) is an issue to some. The presence of nameless features contributes to their experience of the Refuge. The staff decided this is not an issue for the Revised Plan. It is a general approach the Refuge embraces, but it is not a policy or position that should be analyzed through the Plan's alternatives.

Table D-1. Summary of identified issues and how they were addressed in the planning process

Identified Issues	How Addressed				
	Through Management Guidelines	Included in Objectives[1]	Deferred to Step-Down Plans	Carried into Alternatives	Other[2]
Development Issues					
▪ Oil and gas development					X
▪ Updating seismic data on the coastal plain					X
Policy Issues					
▪ ANILCA "no more" clauses					X
Ecological Issues					
▪ Introduction of disease, organisms, and invasive species	X	X			
▪ Hunting effects on populations structures and genetics			X		
▪ Climate change	X	X			
▪ Fire activity			X		
▪ Adequate water quality and quantity		X	X		
▪ Air quality and pollution			X		
Management Issues					
▪ Wilderness recommendation				X	
▪ Wild and scenic river recommendation				X	
▪ Conflict between wilderness values and science-related technologies			X		
▪ Management of the Refuge's three designated wild rivers			X		
▪ Management of the Refuge's research and public use natural areas	X				
▪ Management of the Refuge's marine protected area	X				
▪ An area free of commercial use and mechanization			X		
Visitor Use Issues					
▪ Kongakut river overuse				X	
▪ Dispersed or concentrated visitor use			X		
▪ Increasing permits and recreational uses			X		
▪ Different standards for different user groups			X		
▪ Public interaction			X		
▪ Crowding			X		
▪ Group size			X		
▪ Guided and non-guided visitor use allocation			X		
▪ Human waste			X		
▪ Erosion of hunt quality			X		

▪ Conflicts among and between commercial and private users					X
▪ Conflicts between general hunters and subsistence hunters					X
▪ Polar bear viewing in Kaktovik					X
▪ Monitoring commercial activities			X		
▪ Air transporters			X		X
▪ Fixed-wing aircraft		X	X		
▪ Competitive events					X
Other Issues					
▪ Administrative buildings		X			
▪ Archaeological excavations			X		X
▪ Adjacent land uses and inholdings					X
▪ Naming of features					X

[1] Not in Alternative A

[2] Issues addressed through existing Refuge administrative or management tools such as Special Use Permits, through permit conditions, or through engaging with affected parties and interests; issue resolved on a case-by-case basis; issue is question of policy-level or legal interpretation.

D.7 References:

Hamilton, S. 2010. Memorandum from Service Director Sam D. Hamilton to Regional Director, Region 7, January 28, 2010. Alaska national wildlife refuge wilderness reviews. U.S. Fish and Wildlife Service, Washington, D.C., USA.

U.S. Fish and Wildlife Service. 2008. Fire Management Plan for Arctic National Wildlife Refuge. Arctic Refuge, Fairbanks, Alaska, USA.