

# **Appendix 1**

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## **Inventory and Monitoring**



**Table of Contents**

APPENDIX 1. INVENTORY AND MONITORING..... 3

    A. CULTURAL..... 3

    B. LANDS..... 3

    C. FISH..... 4

    D. HAZARDOUS MATERIALS..... 4

    E. PALEONTOLOGY..... 4

    F. RECREATION..... 4

    G. SUBSISTENCE..... 4

    H. VEGETATION..... 5

    I. WATER RESOURCES..... 5

    J. WELL SITE MANAGEMENT..... 5

    K. WILDLIFE..... 5



# APPENDIX 1. INVENTORY AND MONITORING

During the life of this plan, inventory and monitoring would be used to 1) determine the status of the various resources within the area, 2) ensure compliance with plan decisions, 3) measure the effectiveness of the decisions, 4) ensure compliance with stipulations that are attached to land use authorizations, and 5) evaluate the effectiveness of the stipulations in accomplishing the purposes for which they were implemented. In the inventory and monitoring program, the greatest amount of attention would be given to those activities with the highest potential for environmental impact and those that are the most controversial. The program would be carried out in cooperation with the State of Alaska, Department of Fish and Game, the U.S. Department of the Interior, Fish and Wildlife Service, and the North Slope Borough (NSB), as appropriate and the results of these activities would be documented in reports.

The following discussion lists the primary objectives for and brief descriptions of the types of inventory and monitoring of the surface resources managed by the Bureau of Land Management (BLM) within the Northwest NPR-A Planning Area.

## A. CULTURAL

Inventory and monitoring of cultural resources would be conducted primarily to ensure the preservation of all sites eligible for the National Register of Historic Places (National Register), as well as other important sites. Traditional knowledge is an important factor in the identification and interpretation that would go into compiling inventories of these sites. Inventories related to permitted development activities would focus on the cultural resources of specific locations, while inventories related to building a database of known sites would focus on more general areas--usually those expected to contain the highest numbers of cultural resources--such as good viewpoints, river banks, and game-concentration points. After a site is discovered through inventory/survey, it would be evaluated against criteria for nomination to the National Register to determine its level of significance. Many of these sites would be useful in the research, education, and interpretation that help to preserve the cultural heritage of North Slope residents.

## B. LANDS

The primary objective of an inventory and monitoring program for lands is locating through survey and later conveying the Native Allotments and other entitlements that exist under the Alaska Native Claims Settlement Act (ANCSA). The secondary objective is to establish the location and ownership of existing structures--primarily cabins--within the Planning Area. This information would be used to evaluate potential conflicts between existing land uses and potential oil and gas exploration and development. This information would also be used in studies and efforts by the BLM, working with the NSB, to address those structures that are on Federal public lands without authorization from the BLM.

## **C. FISH**

When necessary, inventory and monitoring of fish would establish baseline information on the populations of various species. For activities involving oil and gas exploration and development, agencies and disciplines would jointly create an issue-based, long-term monitoring program. This program would include monitoring and assessing the effectiveness of prescribed mitigating measures by means of limnological, biological, and physical habitat studies. Public-participation recreational and subsistence fisheries would also be monitored. See the subsistence discussion in paragraph G. below for a discussion of how fish inventory and monitoring and subsistence inventory and monitoring are related.

## **D. HAZARDOUS MATERIALS**

The BLM would conduct and maintain an inventory of lands to identify currently unidentified hazardous materials sites and locations of past spills or dumps. The inventory/research process would include searching records, and interviewing local residents and government personnel. The BLM would also monitor oil and gas exploration and development activities to ensure compliance with permit requirements.

## **E. PALEONTOLOGY**

Inventory and monitoring of paleontological resources would be conducted to ensure that every important site is preserved. Inventories related to development activities would focus on specific locations, while inventories related to building a database of known sites would focus on more general areas--usually those along the Colville and Ikpikpuk rivers--where concentrations of paleontological specimens are known to exist. After a site is discovered through inventory/survey, it is evaluated to determine its level of importance. Many sites would be useful in the research, education, and interpretation that help to preserve the cultural heritage of North Slope residents.

## **F. RECREATION**

Commercial recreational use would be monitored for adherence to permit stipulations. The BLM would also monitor general recreation use that may occur within the Planning Area and on the adjacent rivers and sites where BLM has management jurisdiction. Monitoring would focus on both the impacts of recreation on other surface resources and the effects of activities, such as oil and gas exploration and development on recreational values. As part of the monitoring program, BLM may conduct visitor-use surveys to ascertain issues or areas of concern.

## **G. SUBSISTENCE**

Inventory and monitoring would help to conserve healthy populations of fish and wildlife resources that are important for subsistence purposes. Data would be collected for caribou, moose, fish, furbearers, and various

waterfowl. Incidental sightings of muskoxen and grizzly bears would provide data on these species. Data on population trends and distributions for all species and sex and age composition for caribou and moose would be of primary interest. Inventory and monitoring would also assist in better understanding the relationship of species to their habitat and the amount of habitat needed for individuals or breeding pairs.

For many residents of the North Slope, subsistence is the most important issue addressed in this document; concern about the possible effects of the management actions being considered in this document was a consistent theme during public meetings. One major recommendation that came out of a subsistence workshop panel held in Barrow and Nuiqsut as part of the planning process was the development of a subsistence-monitoring program. The inventory approach described here is a major part of that program. Under Alternatives A through C, the BLM would work with the Subsistence Advisory Panel and the NSB to develop a program to monitor the effects of oil and gas development on subsistence users.

## **H. VEGETATION**

Inventory and monitoring are important strategies in meeting the objective of identifying key habitats for various wildlife species (such as waterfowl) and conserving populations of rare plant species. The BLM completed a digital land-cover classification of the study area in 1998 (Ducks Unlimited, 1998). This database will be analyzed in conjunction with other data on observed occurrence of wildlife species and known rare plant locations to identify possible correlations. This information will also be used to identify critical habitats, potential habitat expansion areas, or areas that are likely to sustain rare plants. These areas could then be sampled to determine the validity of the correlations and interpretations. Monitoring of vegetation would be conducted, through either remote sensing or on-the-ground studies, to detect any change over time. Site-specific surveys to locate populations of rare plants would be carried out ahead of any potential surface development.

## **I. WATER RESOURCES**

Inventory and monitoring would help to provide the data necessary to minimize undue and unnecessary degradation of water resources within the Planning Area and adjacent watersheds. Inventories would identify the water-resource availability and requirements for the Planning Area and adjacent watersheds. Hydrology and limnology data would be correlated with critical aquatic habitat areas for fisheries and waterfowl. Both fieldwork and geographic information system (GIS) mapping would be necessary. Field studies would take the form of in-stream flow and stream-gauging in high-resource-value areas and the causes of change in water quality would be identified when possible.

## **J. WELL SITE MANAGEMENT**

Previously drilled oil and gas exploration wells would be inventoried and evaluated to determine whether they should be plugged or left open to support ongoing research. Geographic positioning system (GPS) locations would be needed along with records of the location of wells in relation to major physiographic and human structures.

## **K. WILDLIFE**

Inventorying and monitoring of species are essential to managing lands for healthy wildlife populations. Federal, State, and NSB agencies focus their separate and joint inventory work in the Planning Area on certain species based on each agency's mission and the results of public interest assessment. Ongoing inventories in which BLM is a participant include caribou calving and the composition and movement of the Teshekpuk Lake herd, raptor breeding along the Colville River, and land birds breeding in the Umiat area. Funding permitting, BLM might participate in future inventory and monitoring of population demographics of spectacled eiders and Steller's eiders, moose, and muskoxen.