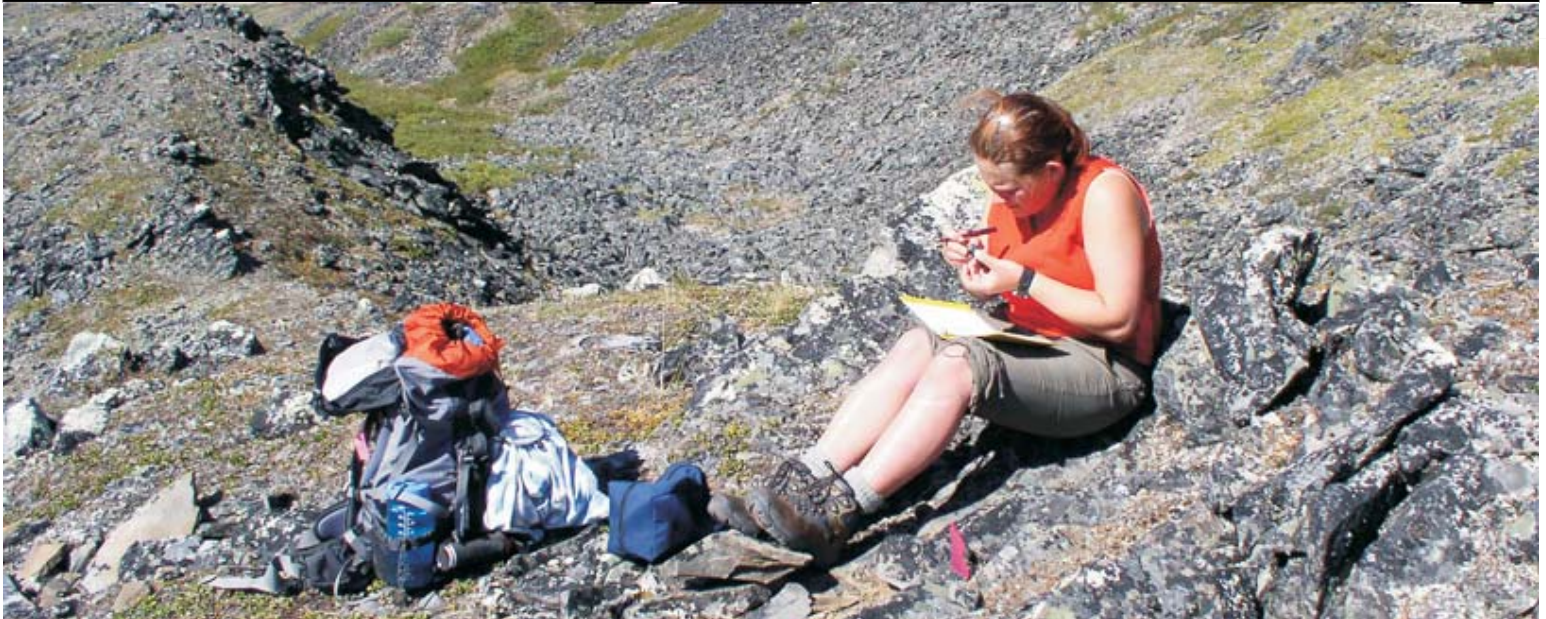




# Wilderness Research

*in Alaska's National Parks*

National Park Service  
U.S. Department of Interior



*Archeologist conducts fieldwork in Gates of the Arctic National Park and Preserve  
(NPS Photo)*

## Scientists: Heading to the Alaska Wilderness?

### Introduction

The following information has been prepared for scientists who wish to conduct scientific activities in designated wilderness areas in Alaska's National Parks and Preserves. These brief introductory guidelines are intended to help scientists gain an initial understanding of the different expectations that working in wilderness brings to the evaluation of scientific research proposals. They are not intended to be an all inclusive guide, but simply a starting point for building an understanding and appreciation of the National Park Service (NPS) wilderness management responsibilities and how research fits into those responsibilities. For more in-depth information on doing science in wilderness, you can contact the park or regional wilderness coordinator.

### How to Apply for Permission to Conduct Research in Alaska's Parks

Approval for scientific research, monitoring, or collecting in Alaska's parks (in both wilderness and non-wilderness areas), requires an application for a Scientific Research and Collecting Permit and submission of a study plan or proposal that describes the nature, purpose, and value of the project in detail. These permits are issued by the Superintendent on behalf of the park. If the proposed research involves archeological investigations, the applicant must also obtain an Archeological Resources Protection Act Permit signed by the Regional Director.

### What is Wilderness? How is working in Wilderness different?

Alaska's national parklands contain some of the continent's wildest places. A majority of these lands have either been officially designated as wilderness under the Wilderness Act of 1964 or are managed as wilderness. The primary purpose of these special lands is to protect the nation's wilderness legacy for both present and future generations. Wilderness is managed to retain its natural and primeval character.





Archeological research camp in Gates of the Arctic National Park and Preserve. (NPS Photo)

There are four equally important qualities that define wilderness character:

*Untrammeled*—Wilderness is free from overt human control, constraint, and manipulation.

*Natural*—Ecological systems in wilderness are largely unaffected by modern civilization.

*Undeveloped*—Wilderness is essentially without permanent improvements or modern human occupation.

*Solitude or primitive and unconfined recreation*—Wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation.

In Alaska, the fact that wilderness lands are also part of the ancestral homelands of Alaska's Native people adds another layer to their spiritual character and value.

Scientific use is among six specified public purposes of wilderness identified in the Wilderness Act. The NPS is interested in working with researchers to identify research that will not only answer important scientific questions but ultimately aid in the protection of these areas. The NPS encourages research in wilderness when the benefits of the investigations outweigh the negative impacts to other wilderness values. The best opportunities for finding a proper balance between the benefits of science and impacts to wilderness emerge when land managers and scientists collaborate well in advance to identify outcomes that are beneficial to both scientific inquiry and wilderness values.

## Minimum Requirement Analysis

The NPS, like other Federal Agencies that are responsible for administering wilderness, may conduct or permit certain activities that are normally prohibited in wilderness if the activities are “necessary to meet minimum requirements for the administration of the area for the purpose of [the Wilderness] Act.” (Sec. 4(c) of the Wilderness Act) In order to meet this test, the NPS uses a Minimum Requirements Analysis that carefully weighs the impacts and benefits of the activity to wilderness values. Examples of activities that are normally prohibited include the use of motorized equipment, helicopters, and the installation of structures or facilities.

A Minimum Requirements Analysis (MRA) must be conducted by the park managers prior to the approval and permitting of any projects (including scientific investigations) proposing to employ activities or equipment that are usually prohibited by the Wilderness Act. This is a two step process.

(1) The first step is to determine whether or not a proposed research project is appropriate or necessary for the administration of the wilderness area in question and does not pose a significant impact to the wilderness resources and character.

(2) The second step, if the project is found to be appropriate and necessary in wilderness, is to select the methods, techniques, or activities that will have the minimum impact to wilderness qualities, resources and experiences and still get the job done.

The MRA process and findings must be rigorously documented by the park managers as a record leading up to a decision to issue a research permit.

The management of wilderness is held to a high standard by both law and policy.



Denali researcher conducts ground survey of Dall's Sheep (NPS Photo)



## Recommendations and Tips for Researchers Planning to Apply for Scientific and Collecting Permits in NPS Wilderness in Alaska

Communicate as early as possible with the local park managers about what you want to do. Do not wait until after your proposal has been funded. Early communication is the **best single way** to ensure success and provides the chance to learn more about the specific requirements of doing research in

- Make initial contact with the managers in all of the parks that administer wilderness that you are interested in working in. Do not assume that all areas manage wilderness in exactly the same way as the requirements imposed on scientific researchers may vary from park to park in accordance with each park's unique legislative mandate and resource base. Become familiar with how the park you wish to work in manages wilderness.
- Discuss your research interests and sampling design with the local managers before submitting proposals for funding, and consult with them often as you develop your research plans. Experience has shown that working with the park early ultimately saves both park staff and the researcher significant time and frequently leads to improvements because local knowledge informs the project design early on. Do not assume that a permit will be given just because you already have funding, even from the National Science Foundation or another prestigious funding source.
- Ask if there are any potential problems with any aspect of the research, including location, timing, access, number of people, type of equipment, type of work, placement of site markers or monuments, or purpose of the research. This discussion should center on how to minimize the impact to wilderness character while still accomplishing your research objectives. If you can reduce impacts to the minimum necessary to carry out the research, your chances of timely approval will increase.
- Ask for what you need to accomplish the work, but also indicate the measures you've considered to minimize potential impacts. Take the time to provide as many details as you can about your research plans at the start of the application process. Greater detail reduces the likelihood of misunderstandings and increases the chances of success.
- Ask if the local park managers have any research or other needs that you could help with while you're in the backcountry. For example, a manager might ask you to report if you see a certain rare species, to provide photographs and GPS coordinates of unexpected fossils or archeological discoveries, or to remove unwanted debris from an area when your research crews come out of the wilderness.
- Ask about local park administrative and permitting requirements, or other local conditions that you need to be aware of or sensitive to.
- Ask the park managers if they would like you to prepare a small poster, brochure or weblink about your work that can be used to let wilderness visitors know what you are doing, as well as the general location and when you will be there so others may avoid this area if they want to. Ask whether there are opportunities to present or share any aspect of your research with agency staff or visitors.
- Ask the park managers how they would like you to let them know when you are entering the wilderness, where you will be working, and when you leave the wilderness.



## Educate Yourself on Wilderness Requirements

Make sure that you understand the special requirements for working in wilderness and why these wilderness lands have been established.

- Understand the legal requirements of the Wilderness Act and agency policy for conducting science activities inside wilderness. This includes understanding that the National Park Service's primary management responsibility is to preserve wilderness character. This information is available on <http://www.wilderness.net>.
- Understand the legal prohibitions against using motorized equipment (such as drills), mechanical transport (such as wheeled vehicles), use of helicopters, and installations (such as data loggers and permanent plot markers), and under what conditions exceptions may be allowed.
- Ask yourself how your scientific research would benefit the wilderness you would like to work in. If you believe there are benefits to wilderness and to the park make sure you can identify them.
- Design and plan your work in such a way that meets the “minimum requirement” tenet in the Wilderness Act. Make sure you can make an effective argument that you are employing the minimum equipment, transport, staff, and scientific techniques necessary to successfully accomplish your work.
- Review available information about previous research in the park. If the investigation that you are planning to conduct is similar to earlier studies take the time and effort to help park managers understand how your research is different and why it is still valuable. Information about other studies can be found using the “Search IARs” tab at: <https://science.nature.nps.gov/research/ac/ResearchIndex>



Researcher attaches a radio collar to a wolf in the Denali National Park (NPS Photo)



## Make Sure You Articulate the Scientific Value of Your Research



Fireweed (NPS Photo: Page Spencer)

The NPS in Alaska encourages scientific studies and research that help park managers understand and protect the parks' natural and cultural resources and wilderness character, provide for quality visitor experiences, and sustain traditional ways of life. It also welcomes research that addresses important and far reaching scientific questions that have great value for the nation or even the world when that research can only be successfully conducted within the borders of a national park or preserve. Nonetheless, because of its central conservation and preservation mission, the NPS also sets high standards for research, particularly on sensitive wilderness lands. Here are a number of questions that should be addressed in your application for a park Scientific Research and Collecting Permit.

1. Who will do the work? What are their qualifications?
2. Where in the park will the work be carried out? Be sure to include good maps and provide GPS coordinates if available.
3. Why must the research be accomplished in wilderness rather than in non-wilderness areas?
4. Would the results address an urgent or important stewardship issue in the park, and if so, how?
5. Would the results be applicable to current or future stewardship issues in the park?
6. How might the results specifically improve stewardship of the park's wilderness?
7. How broadly will the results benefit science? Would the benefits be limited to the park, the State of Alaska, the nation, or the world?
8. Is the information likely to benefit science over the short-term or long-term?
9. Who could be expected to benefit from the results (other scientists, park visitors, general public, other resource agencies)? How will managers use it?
10. What is the breadth of scientific inquiry? Is it looking at one component of the environment or many interrelated aspects?



## Tips and Thoughts for Planning Your Fieldwork

You will be working in a unique place that requires special skills, attitudes, and being considerate of other wilderness visitors or users (including subsistence users or other researchers). You should be prepared to answer in depth questions and work with managers regarding your research methods and logistics for the project.

- Make sure that you and your crews have the gear and experience (or training) to work and live in wilderness. If your research requires backcountry travel, are you intending to camp overnight? If so, how many nights? How many people? Where? When and how long in one area? How do you propose to get there? Is everyone aware of and trained in Leave No Trace principles?
- If your research plans call for the use of motorized transport, provide detail on the various kinds of transport you will be using as well as the number of trips and proposed routes of travel and make sure that you can justify your choices. Non-motorized access is the preferred approach when it can accomplish project objectives.
- Are you proposing to use motorized tools on your project? When? Where? How long? What steps have you considered to reduce the amount of this use to the minimum necessary to accomplish your project?
- If study plans include marking study sites, why is it necessary? What other alternatives were considered for documenting and relocating study sites and why won't they work? How is the benefit to the understanding of the area from the use of the installation greater than the impact to wilderness character? Where exactly will you place markers, what type are they (providing photos can be helpful), how many, and for how long?
- If you intending to mark or radio-collar animals, why is it necessary? What other alternatives were considered, and why will they not work? Why is the level of information gained from marking/collaring important or critical to the needs of the park or science in general? How many animals will be marked? For how long? What type and color of marker/collar?
- Are you proposing to install instruments or devices, such as weather stations, stream gauges, cameras, etc.? Why are these installations needed? Would they replace, be consolidated with, or minimize future need for other installations? What other alternatives were considered, and why would they not work? Provide maps, GPS coordinates, and photos of equipment and sites of proposed installations, photos of comparable installations, etc. where possible. What is the proposed duration of the installation and how would it be installed? What design features and other measures would be taken to minimize visual, audible, and maintenance impacts of the installation? How would they be maintained or serviced, and how often? When, how, and by whom would they be removed?
- Will you dig holes or disturb the ground surface? Ground disturbance can trigger the need for Section 106 compliance with the National Historic Preservation Act of 1966. What kind of ground disturbance do you propose and where? How many holes, depth and width? Would the soil or top layer be replaced? How will the impact be mitigated?
- Are you intending to collect specimens or objects? Why is the collection of these specimens or objects necessary? Why does this collecting have to be done in wilderness? What other alternatives to making new collections did you consider (can you use reference specimens from somewhere else)? Where, when and how do you propose to collect specimens and how many? What kind of disturbance will take place as a result of sample removal and how do you intend to mitigate it? Do you have a permanent repository for the collection?
- Be prepared to clean up and remove all evidence of your camping and your research to meet local requirements unless specifically permitted to leave certain items.
- Be ready and willing to answer questions from any wilderness visitors or park staff who you may encounter.



## Summary

Wilderness areas are special places deserving of our highest standards of protection, and we are privileged to be able to use them for science, recreation, subsistence and other allowable purposes. As scientists, you have an opportunity to contribute to better understanding of wilderness and its qualities, resources, history, uses, and natural and human-influenced processes. Federal law and policy requires wilderness managers to thoroughly review proposals for scientific and administrative activities in wilderness to ensure that the proposed activities are necessary, appropriate, and have minimal impacts. Scientists can facilitate the review process and increase the likelihood of a successful decision by contacting park managers at the earliest stages of project planning, and by providing detailed study plans with their research permit application.



*Brown Bear in Katmai National Park and Preserve (NPS Photo)*

Park contact information is available at:  
<https://science.nature.nps.gov/research/ac/parks/ParkInfo>).

