



IN REPLY REFER TO:

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United States Department of the Interior

NATIONAL PARK SERVICE
Mount McKinley National Park
Post Office Box 9
McKinley Park, Alaska 99755

November 21, 1975

Memorandum

To: Mount McKinley Mountaineers
From: Mount McKinley National Park
Subject: Mountaineering Environmental Ethics

Attached is an excerpt from the recent and ongoing Denali Environmental Project (DAEP).

Its main purpose is to give you, the mountaineer, guidelines to use during your upcoming expedition in relation to mountaineering waste removal and disposal on Mount McKinley. This is something that all groups must be a part of if it is to be a successful program.

Mainly we would like you to be sure and properly take care of all trash generated by your party if you would like to assist in cleaning up 'Denali' all the better. Ideally nothing should be left on the mountain except properly disposed of human excrement. All packaging materials and supplies should be burned or carried off the mountain.

If you have any questions or misunderstandings of the objectives of this program please contact us.

Gary Brown
Chief Park Ranger

I AN OVERVIEW

The Denali Arctic Environmental Project was initiated in an attempt to contribute to a new ethic in mountaineering and wilderness use--a consciousness that a wild area is not something to be conquered by man, but a natural phenomenon to be lived with, appreciated, and exploited only in the sense that its values may be used to enlarge man's human experiences. Central to this consciousness is a desire to leave a mountain or any natural landscape in a condition "untrammelled by man, where man himself is a visitor who does not remain."

As the highest point on the North American continent, Mt. McKinley was selected as the target for the initial clean up of the project. The West Buttress Route is today the most popular and easiest approach to the summit. The irresponsibility of previous expeditions in the pollution of this route, one of earth's most frequented high places, is a deplorable episode in an otherwise noble pursuit.

In 1971, seven McKinley climbers from Oregon attempted the climb of the West Buttress. Before the climb, they stated their desire to carry all their litter off and to leave nothing on the mountain. They were successful in this endeavor and the idea of a large-scale clean-up was born.

Throughout the 1972-73 winter, schools throughout the Northwest engaged in winter climbs and excursions with particular emphasis on environmental concerns as a part of the Denali Arctic Environmental Project (D.A.E.P.)

During the spring of 1973, two expeditions were placed on the West Buttress Route of Mt. McKinley as a



part of the D.A.E.P. DAEP I spent 21 days on the mountain from April 27 to May 18, 1973, and reached an altitude of 17,200 feet. DAEP II spent 23 days on the mountain from May 29 to June 20, 1973, and was successful in reaching the summit. Both expeditions collected, burned and carried out litter found on the West Buttress Route in addition to developing and testing various expeditionary mountaineering environmental practices.

Two major areas of litter remain on the mountain. There are numerous dumps throughout a narrow glacial passage ranging in elevation from 12,000 to 13,000 feet. DAEP found generally bad weather and an unlikely camping area near the first locale known as "Windy Corner", and despite a strenuous effort over several days, could only collect a small part of the litter in the second area at 17,200 feet. The DAEP has demonstrated that these problems, if difficult, are solvable. It also demonstrated that it is possible to live on a mountain for extended periods under severe conditions and to gain the summit while maintaining sound environmental practices. But the DAEP has also demonstrated that environmental problems attendant to mountaineering can not be solved by one expedition. It will take the concerted effort of all mountaineers to solve present and prevent future garbage and litter problems in the mountains.

The following includes (1) a report which identifies common camp and consequent litter areas found on the West Buttress Route of Mt. McKinley and the environmental action in which the DAEP was successful; (2) initial environmental practices report; (3) specific recommendations to Mt. McKinley National Park Service; and finally, (4) a proposal for a continuing environmental mountaineering program in the future.

II

MCKINLEY WEST BUTTRESS LITTER PROBLEMS: DAEP ACTION

Landing Camp A surprising amount of litter, abandoned equipment, and food are in the landing camp area, particularly around the two radio camps. Much of the litter is covered by snow and visible only during certain snow conditions. The DAEP collected and burned all visible garbage around the radio camps. Fresh snowfall covered much of the littered area and prevented a complete clean-up. Additional garbage and litter will undoubtedly surface later in the year. Additional clean-up in the area would be facilitated by its proximity to the landing strip. Litter may sometimes be left in the landing area when parties depart the mountain in full aircraft. Pilots serving the landing area should be encouraged to carry out litter whenever space permits.

Main Kahiltna Glacier (6700 to 11,000 feet) Continuous movement of the glacier and frequent snowfall serve to reduce accumulation of litter in concentrated areas. Most of the litter encountered appears to be left by parties immediately ahead on the route. The DAEP collected and burned all such litter that was found along this route. Permanent environmental damage in this area appears minor. Parties climbing the mountain can easily ensure that those who follow have a clean and enjoyable route by collecting and removing all evidence of their passing.

Below Windy Corner (12,000 to 13,000 feet) Assorted dumps exist at approximately 20 different places. Almost all contained broken or burned green plastic garbage containers. Food (most unusable), garbage, residue from burning, skis, gas cans, plastic rope, and

poles plus some human waste were found at the dumps. Much of the debris in this area is encrusted in ice and must be chopped out. A large portion of this litter is so ice encrusted that it can not be easily burned. A cooperative effort by the Park Service, Alaska Mountain Guides, National Guard, and expeditions like the DAEP will be necessary to adequately deal with the problems in this area.

14,000 feet Most caches and garbage left in this area are deeply buried and will probably never be found again. Again, the litter encountered appears to have been left by parties immediately ahead on the route. The DAEP collected and burned all such litter. Other parties can easily follow similar practices.

West Buttress Ridge (16,000 to 17,000 feet) Garbage along the ridge is isolated and not extensive. The DAEP collected the litter from two dumps, packed it to 14,000 feet, and burned it. Any remaining litter is isolated and should be fairly easy to remove.

High Camp (17,200 feet) Litter, garbage, human waste, abandoned food and equipment have accumulated in a concentrated area over a period of years and now presents the most serious environmental problem on the mountain. The accumulation is most severe in and around the permanent ice cave at this site. A large pit in the cave contained a dump of litter, garbage, food (much unusable or opened), fuel cans (most empty), plastic, oxygen bottles, abandoned equipment, and cans of frozen human waste. Nearly the entire area surrounding the cave is strewn with litter, garbage, and human waste. Numerous piles of human waste surround the cave entrance. Other sites at 17,200 feet contained abandoned items

of equipment including fuel cans, pickets, tents, parachutes, food, and were strewn with scattered garbage and litter and human waste. The University of Oregon McKinley Expedition of 1971 found a similar situation in May of '71 and spent one day cleaning this area. The DAEP spent two full days and parts of two other days chopping garbage, litter, and human waste out of the ice, collecting the same, and burning as much as possible. Much of the litter was so ice encrusted that burning was not possible. The DAEP cleaned the garbage, litter, and waste from the ice cave and consolidated the usable food. Participants were only able to pack a minor part of the collected garbage from this altitude. Four sacks of consolidated garbage remain at the site and significant amounts of garbage and waste remain frozen in the snow and ice. Altitude and weather severely hinder cleanup operations in the high camp area. Further, most garbage collected in the area must be packed to a lower elevation for air evacuation. An extremely powerful expedition, exceeding in numbers by many times that of the DAEP, will be necessary to deal adequately with the problem. The seriousness of the environmental problem at the high camp and the difficulty of dealing with the problem provide a sad demonstration of the need for all climbing expeditions to engage in sound environmental practices.

Despite the DAEP effort, the solution to the problem of garbage, trash, and litter on Mt. McKinley remains for the future. It is clear that no one expedition can ever hope to cope with the problem. It is a task that must concern every expedition that climbs on Mt. McKinley. As the use of Mt. McKinley, and especially the popular West Buttress Route, increases, environmental deterioration

may spoil the magnificence and grandeur of this great peak unless nearly every expedition that climbs on the mountain practices greater environmental care. At least, every expedition should endeavor to leave their route clean and unmarked. Ideally, every expedition should endeavor to clean up, where possible, the trailings of thoughtless others who have gone before. All of the major routes on Mt. McKinley have now been climbed at least once. But with a concerted effort by all who climb on Mt. McKinley, there is no reason that every climber can not enjoy the "Great One" in a splendid state of virginity.

III

DAEP ENVIRONMENTAL PRACTICES REPORT

We believe that most mountaineers, once conscious of the environmental problems associated with high altitude mountaineering, will act to deal with these problems by adopting and practicing sound mountaineering environmental practices. Yet there is little in the environmental or winter camping literature to guide the mountaineer in dealing with many of the problems. The following recommendations have evolved from the experiences of several environmental expeditions on Mt. McKinley and on numerous lesser peaks. The recommendations are not considered definitive, but it is hoped that they will stimulate thought and discussion and contribute to better mountaineering environmental practices on the part of all mountaineers.

A suggested wilderness mandate:

Leave Nothing on the Mountain. This is a simple and sound suggestion, yet it is surprisingly hard to follow. Most expeditions, whether successful or unsuccessful, find they want to depart a mountain with speed. An expedition must make a personal commitment to follow this mandate and then stick to that commitment. Success in this regard is more likely if an expedition plans for and executes the ascent of a mountain so that complete evacuation of all food, equipment, and litter is facilitated. Participants in DAEP moved the necessary food, personal equipment and spare equipment up the mountain to successfully gain the summit in addition to carrying out extensive clean-up activities. Furthermore, through careful planning and preparation they were able to carry everything off of the mountain without hardship, including a substantial amount of litter left

by others. The following are positive suggestions to facilitate the solution of food, litter and human waste problems encountered by expeditions.

Food - Repackage food so that the packaging can be easily burned. The DAEP utilized freeze-dried food whenever possible. The food was found to be easy to repackage, easy to prepare, tasty and lightweight to carry off of the mountain. The food was rehydrated as needed and the need to dispose of uneaten, rehydrated food was minimized. Few canned goods were utilized in order to minimize the number of empty tins to be carried out.

Food Sacks - Pack food in containers that can be easily burned or carried off of the mountain. The DAEP utilized large sacks of 6 oz. waterproof nylon to pack food. The sacks fit easily into pack bags and were found to provide adequate protection against weather and animals. Further testing of the sacks is required however. The sacks served as garbage and litter containers when empty and unused sacks were easily stuffed and transported off of the mountain.

Litter Collection - Keep litter dry. The DAEP kept all expedition litter dry in plastic bags until it was burned. Damp or frozen litter found on the mountain was placed in separate bags. An entire bag of dry litter can be burned with as little as a half cup of gas. Wet or frozen litter requires much more gas to burn and may not burn at all.

Litter Burning - Burn litter during the ascent. The DAEP found that about two hours are required to completely burn three days of accumulated garbage. Moreover, litter burning was in fact an enjoyable task during pleasant windless periods. Conditions and

haste during the descent may preclude burning. The DAEP found that by burning all possible litter, the total amount of expedition garbage to be carried off the mountain including all burning residue, fuel cans, and broken equipment was reduced to 3-4 sacks weighing about 25 to 35 pounds. Litter from each camp can be cached with spare food and fuel and picked up on the descent.

Spare fuel - Carry extra fuel for burning litter. The DAEP found three gallons (per expedition) to be sufficient to burn all expedition litter, plus all of the other litter collected on the route.

Burning Method - Two different methods were found to be adequate for burning.

1) An incinerator was made from a gallon fuel can (or a five-gallon can where these had been left as garbage by previous parties). Garbage was collected in large plastic bags which had previously held unused food. A small amount of gas was poured into the sack and allowed to soak all items held within. A fire was started in the incinerator and a hand full of soaked garbage was burned at a time until everything was gone. The remaining burned debris was collected in the plastic sack and amounted to about 1/25 of the bulk and weight of the unburned garbage.

2) A snow hole was dug and tin foil wrappers from freeze-dried food were placed in the bottom and sides. The hole acted as the incinerator. The same process as above was followed. This tin foil prevented the fire from burning a deep hole in the snow and allowed us to collect every piece of debris. By poking and holding the tinfoil with a wand, even it would burn at the end of the fire.

With each type of incinerator it was possible to completely destroy all evidence that a fire had been built and a campsite was left with nothing remaining except tracks, clean snow, and perhaps a tent site.

Burn Toilet Paper - Collect and burn toilet paper with other litter. The DAEP found toilet paper frozen into the snow in many locations. Once frozen, the paper appears to be long lasting and difficult to burn. Snow was found to be a satisfactory substitute for toilet paper.

Bury Waste Deep - Urine and feces are a litter problem in the snow. The DAEP found it difficult to get clean cooking snow in some areas because the accumulation of waste is so severe. Feces can be collected in plastic bags and dumped into crevasses well away from camp areas. The DAEP found this to be the only satisfactory solution at most camps. A central latrine, dug very deep for depositing urine and feces when crevasses are not available is a minimum requirement everywhere else. The DAEP found that a pit at least five to six feet deep provided protection in high winds and sufficient depth even after some wind drift had blown in.

Carry on Descent - Common bivouac sacks are excellent descent towing bags. Most expeditions are willing to ferry loads on the ascent but not on the descent. The DAEP found that all litter, unused food, equipment--everything taken onto the mountain--could be carried off of the mountain in one load by utilizing bivouac sacks with coated nylon bottoms to drag an additional 50 to 75 pounds behind each climber in addition to what could be normally carried in a back pack. The most effective method found was to first

place foam pads (2 inch thick - 6 feet long variety) on the bottom of the sack. On top of this went bulky but light objects and finally heavy objects on top of everything. This method of packing allowed the sack to be dragged easily as a sled without creating a deep furrow in the snow. With extra effort it could even be dragged uphill.

Leave no Caches - Mt. McKinley National Park directives against air drops and expedition landings are clear attempts to minimize the amount of equipment and food which expeditions may leave on the mountain and its approaches. A group may have only what it can carry from outside the park boundaries. Surely they can carry out what they carry in.

To date there have been no overt directives against leaving caches on Mt. McKinley. However some climbers feel that safety caches of food, fuel and equipment may aid others in an emergency or in a rescue situation. Many items have been deposited on the West Buttress Route with these intentions. Unfortunately, hardly any caches survive in usable form on the mountain. The wind blows parts away, snow buries others and ravens peck apart bags of food. Furthermore, locating a reported usable cache is extremely difficult. In the guise of a cache one finds broken skis, tangled rope, half empty and watery gasoline cans, torn tents, and frozen sleeping bags. It appears that some expeditions have left this garbage - "just in case" someone else may find a use for something. It is very unlikely that any presently existing cache or garbage dump will ever serve a safety or rescue function and the depositors must always know this.

In short, caches do not serve their function! Any

unchecked, unregulated cache system will encourage garbage dumping by tired climbers who no longer desire to carry extra food and equipment items which have little value at the time. Even valuable items are often left if a climber does not want to carry an extra load or some extra pounds. However, these are never useful caches and should not be encouraged in any form. Everything which an expedition brings to a mountain may be carried off. The lowest cost, most easily managed environmental program is one which puts all litter and safety responsibilities on the climbing expeditions and their members.

IV
RECOMMENDATIONS TO NATIONAL PARK
SERVICE, MT. MCKINLEY NATIONAL PARK

1. Include a statement of environmental problems on Mt. McKinley in the Park Service publication "Climbing Problems on Mt. McKinley."
2. Make permission to climb in the National Park contingent upon agreement by the climbers to remove all their equipment and litter from their route and leave nothing on their route.
3. Require all expeditions to file an environmental report regarding problems noted and corrective action taken, if any.
4. Publicize the nature and seriousness of environmental problems caused by climbers on high arctic peaks including McKinley.
5. Organize and support the clean up of seriously damaged areas within the National Park including the evacuation of garbage and litter from high altitude areas as budget permits.

V
THE FUTURE

DAEP is just the beginning. DAEP will continue and hopefully other groups will join in. But the ultimate goal of DAEP lies beyond "garbage collection". Remedial measures are never satisfactory. Our goal lies in prevention--in reducing or stopping entirely the environmental deterioration of our mountain and other wilderness. We are now in an age when mountaineers can no longer put reaching the summit above all else. Our belief is that the first-class ascent on any climbing route, no matter how easy or difficult, must leave no trace of passage. We all long for the quality of the first ascent..."...the untrodden, virgin, trackless, pure, unclimbed..." First ascents are becoming rare. But we can all still enjoy the quality of the first ascent. We see no reason that 100 or even 1000 or more parties can not enjoy the challenge, the experience, the excitement, and the splendor that the first party finds on a mountain route if all cooperate to make this possible.