

Non-Native Mountain Goat Management Undertaken at Olympic National Park

By Bruce B. Moorhead

After extensive research and public review, a Decision Record was issued on March 18, 1988, by Supt. Robert S. Chandler of Olympic NP, outlining a program to eliminate non-native mountain goats (*Oreamnos americanus*) from most of the park and to control their numbers elsewhere. This report briefly describes the goat problem, the new management initiative, and progress made in 1988.

The Problem

About a dozen mountain goats from Alaska and Canada were released in the Olympic Mountains in the 1920s, 10 years before the park was created. There is no prior record of mountain goats in the Olympics. A detailed aerial census in 1983 revealed a widespread population of approximately 1,200 animals; more than 80 percent – about 1,000 goats – were within the national park.

The Olympic Mountains have long been isolated from other ranges. The fauna is less diverse than in the nearby Cascade range; a number of mountain-dwelling mammals found elsewhere in Washington but absent in the Olympics are bighorn sheep, grizzly bear, lynx, wolverine, golden-mantled ground squirrel and pika.

The introduced mountain goats now occur throughout the Olympic range, but in particular in subalpine and alpine plant communities that comprise about 30 percent of the park. Nine endemic plant species and varieties have been identified in these mountains; most occur in goat habitat. Studies over the last 10 years have documented goat impacts on a number of subalpine communities and endemic species. Soil erosion due to goat wallowing also has been measured.

The Management Program

The new program goals are to eliminate mountain goats from the park interior and to control their numbers along the eastern boundary. A priority will be to remove animals from the core of the park, where most of the population now occurs. Alongside the eastern boundary, goats are managed by the Washington Department of Wildlife (WDW) to sustain an archery hunt annually in Olympic National Forest. Within a specified near-boundary zone, goats will be reduced but not eliminated in the park to a level that reverses habitat damage and inhibits recruitment to the interior population.

Live-capture will be used exclusively to manage the population in the first three years of the program. Captured animals will be turned over to the WDW for relocation in Washington, or other western states and possibly Canada. All live trapped animals will be turned over to the Washington State Dept. of Wildlife for release in native habitat areas of Washington or provided to other states for release on native range. Consideration also will be given to transferring some goats to qualified zoos and other wildlife organizations, as appropriate.

Field Testing Extensive

Various restraint and handling procedures for goats have been field tested in the park since 1980, including capture and relocation of over 230 animals using drop-net, netgun, and chemical immobilization techniques. Helicopter support has been essential in such opera-

tions. Management of goats by fertility control, or sterilization, also has been tested. Available treatment methods, however, were not found to be widely applicable in the mountainous circumstances. The park staff will continue to monitor the technology of wildlife fertility control and its possible application to the problem.

After three years, progress in managing the population by capture and relocation will be assessed. If it is no longer feasible to capture goats, those remaining in

the park interior may be removed through a shooting program by park rangers or other federal wildlife control agents. Live-capture will remain a preferred method where possible.

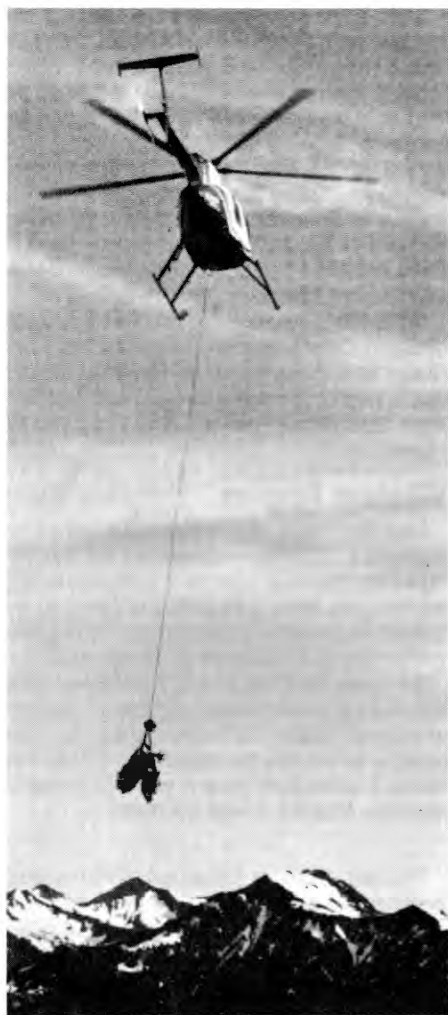
A technical advisory committee has been established to monitor the overall conduct of the program. Included are representatives from major interest groups and agencies involved in the issue. The committee also will serve as liaison with interested organizations and agencies. It will meet annually with the



Medication is administered by Natural Resource Specialist Cat Hawkins and Research Biologist Doug Houston to a captured mountain goat at frontcountry staging area. (NPS photo by Janis E. Burger)



Author readying goat for transport crate. Leg hobbles and blindfold are removed prior to loading; floor of crate is lined with snow as coolant and water source during transport. (NPS photo by Janis E. Burger)



Captured goats in helicopter transit to frontcountry staging area. Note special hauling bags that hold animal upright during flight to allow exhalation of rumen gases and prevent bloating. (Photo by R.W. Olson)

park staff to review program results and make recommendations on possible modifications.

Progress in 1988

Eighty goats were removed from the park in capture and relocation operations from May 16 to July 19, 1988. Captures were carried out by a team of three park rangers and a pilot with a Hughes 500-D helicopter. Most of the goats (72) were captured by chemical immobilization through darts fired from the helicopter. Eight animals were captured with a netgun fired from the helicopter.

Captured animals were "sling-lined" in specially designed hauling bags by helicopter to a frontcountry staging area where they were treated for injuries, given a standard protocol of medications, placed in wooden crates (packed with snow as coolant), and trucked as soon as possible to release sites. Seventy-three goats (91%) were successfully released elsewhere in Washington and Utah. Seven goats (9%) died or were destroyed due to major injuries incurred during capture operations. Minor lacerations and bruises were evident on 31 of the animals shipped (39%). No injuries were apparent on 42 animals (52%).

Although the capture operations spanned 65 days, capture attempts were possible on only 33 days (51% of the time involved). And successful captures

occurred on only 16 days (25%). Unsafe flying conditions (weather) forced shutdowns on 20 days; weekends-holidays, logistical delays, and conflicting ranger or helicopter duties (e.g., search and rescue) shutdown operations on another 29 days. Such problems suggest a rather limited "window of opportunity" for goat captures during even the most optimal period of the year.

Over 1,500 staff workhours were required to plan and capture 80 animals, or about 19 hours per goat. Each capture required approximately 0.9 hours of helicopter flight time. Total park costs (personnel, aircraft, drug supplies, etc.) were at least \$68,000, or > \$850 per goat.

A critique of the capture operations suggested a number of relatively minor planning and equipment changes that could assist in future efforts. All in all, the program was considered a successful step in a direction consistent with the National Park mission.

Moorhead is Wildlife Management Biologist at Olympic NP.