



1998 ACTIVITIES

This pamphlet describes the activities of the Resource Management (RM) division of North Cascades National Park Service Complex (NOCA). As *Division Chief, Bruce Freet* integrates the efforts of Cultural and Natural Resources, Wildland Fire, and Research and Monitoring Branches. The people of RM conduct studies that provide important information about the Complex's natural and cultural resources. Staff listed below are supported by numerous volunteers.

NATURAL RESOURCES

Dan Allen (Branch Chief, Sedro Woolley)
Leigh Smith (RM Specialist, Marblemount)
Scott Stonum (RM Specialist, Stehekin)

Air Quality Monitoring - The North Cascades air quality is Class I - or most pristine. The Clean Air Act requires that standard be maintained with no degradation of air quality-related values. In order to assure that North Cascades air remains pure, we are establishing baseline conditions and monitoring at weather stations in Marblemount and Stehekin. As part of the National Acid Deposition Program, the NPS has conducted weekly monitoring of the acidity and chemical composition of rainfall in Marblemount and Stehekin for 16 years. Additional field studies involving certain NOCA high altitude lakes have yielded additional baseline information. We are also involved in a three-year study to determine the severity of airborne pollutants in the North Cascades airshed. A station in Marblemount monitors ground-level ozone and other indicators of air quality. Contact Leigh for more information.

Hazard Tree Management -NOCA campgrounds and facilities are surrounded by trees of varying ages and conditions of health. Annual hazard tree inspections of all development zone sites minimize these potential hazards. Trees are assessed and information is entered into a database

which is upgraded annually. Trees with serious problems may be limbed, topped, felled, or the target for the tree may be moved, or the facility closed. Felling trees is the last resort. Some diseased or dying trees are topped and turned into snags, which become valuable habitat for a host of insects, birds, mammals, and amphibians. Contact Leigh for details about this leading program.

Non-Native Plants -Numerous invasive species of plants exist within the boundaries of NOCA. With no natural controls, their populations can expand at alarming rates, and threaten native species by outcompeting with them for space, sunlight and nutrients. RM staff are committed to checking the spread of these plants, including knapweed, rush skeletonweed, Japanese knotweed, and Dalmation toadflax. Control strategies include intensive hand pulling, mulching, and numerous experimental techniques, including low-pressure steam, filter fabric, burning, reseeding, and, in the case of rush skeleton weed in Stehekin, applying herbicide. Contact Scott or Leigh for more information, or, to offer your help.

Compliance -All members of the RM staff work with other NOCA divisions to insure that projects disturbing ground, water, vegetation, and other features follow state and national laws and regulations. Compliance includes writing of Environmental Assessments (EA), Categorical Exclusions, and Hydraulic Permit Applications, as well as other documents. EAs have recently been prepared, or are currently being prepared for projects at Thunder Lake, Goodell Campground, Thunder Knob, Stehekin River, and Gorge Overlook. Contact Dan Allen for more details.

WILDLAND FIRE

Janet Kailin (Fire Management Officer, Marblemount),
Darrell Frost (Fire Program Clerk, Marblemount),
Andris Vezis (Supervisory Forestry Tech., Marblemount)
Carl Ryder (Prescribed Fire monitor, Marblemount)
Peter McBride (Fire Effects Monitor, Marblemount)
Mike Meyers (Fire Effects Monitor, Marblemount)
Tara Picken (Fire Effects Monitor, Marblemount)
Loretta Duke-Cowan (Firefighter, Stehekin)
Mya Archambault (Firefighter, Stehekin)
Jennifer Weldon (Firefighter, Marblemount)
Jason Schmidt (Firefighter, Marblemount)
Maxine Franklin (Desolation Lookout)

Fire Management - We aggressively suppress all human-caused fires, but there is a broader range of response to

lightning-caused fires. At one end of the scale, fires that threaten life or that do not meet prescribed conditions are aggressively suppressed. At the other end of the scale, wildfires may be monitored while they burn themselves out. Contact Janet, Carl, or Andris for more information.

Prescribed Fire -Fire management staff continue to conduct prescribed burns in the Stehekin Valley. These burns will reduce accumulated fuel loads and reintroduce fire into the forest ecosystem. Contact Janet or Andris for more

Fire Effect Monitoring - Long-term fire effects monitoring plots have been placed in prescribed burn units in the Stehekin Valley and San Juan Islands NHP. The plots are being studied before and after prescribed burns to determine the effects of fire on vegetation and fuel loadings. This information will help us refine prescribed burn techniques. Contact Janet or Peter for more details.

CULTURAL RESOURCES

Jesse Kennedy (Branch Chief, Marblemount),
Camille Evans (Curator, Marblemount),
Bob Mierendorf (Archeologist, Marblemount)

Archeological Inventory -The system wide archeological inventory program records and documents as many of the significant archeological sites in the Complex as possible. Archeological crews have surveyed nearly 20,000 acres and documented numerous prehistoric and historic archeological sites. Currently, 260 prehistoric archeological sites have been identified, dating back over 8,500 years before the present. Historic archeological sites include mines and mining camps, sawmills, homesteads, and a "lost" hotel. Contact Bob or Jesse for more information

Archeological Testing - A small number of prehistoric sites may be nationally significant. These sites are assessed according to significance criteria and nominated for the National Register of Historic Places. Some sites will also undergo excavation to reconstruct the history of human use of the park. There are no plans to test sites in summer 1998. Contact Bob for more details.

Buckner Homestead Stehekin -This site is listed on the National Register of Historic Places as a cultural treasure. The site includes a historic orchard where the last elements of a once common genetic strain of apple grow, over 17 buildings telling the story of pioneering life, fields and pastures, a unique irrigation system, forests that include riparian habitat, and prehistoric archeological sites. Management of the Buckner Orchard includes the day-to-day

maintenance, watering, pruning, and fertilizing of the orchard trees. Long term efforts entail planting new trees to maintain the unique genetic material now growing in the orchard. Contact Scott Stonum or Jesse for more information.

Museum and Archives -The NOCA museum collection is composed of specimens and objects that document the natural and cultural resources of the park. Much of the collection is the result of research projects within the complex including, plant and animal specimens, a geology collection, artifacts from mines, sawmills, and other pioneering enterprises of the region, and prehistoric site surveys and excavations. Field notes, photographs, maps, and other resource management records are integral parts of the collection. A visit is well worth your time. Contact Camille to set up a tour.

Historic Structure Inventory and Monitoring -The cultural resources branch is responsible for the inventory and monitoring of the many unique and nationally recognized structures within the park lands. All of these structures are regularly inventoried and their condition monitored to ensure that these protected structures are managed in the most efficient and cost effective manner. Call Jesse for more information.

RESEARCH AND MONITORING

Reed Glesne (Branch Chief, Aquatic Ecol., Sedro Woolley),

Bob Kuntz (Wildlife Biologists, Sedro Woolley)

Roger Christophersen (Wildlife Biologist, Sedro Woolley),

Kevin Drake (Biological Tech, Sedro Woolley),

Ron Holmes (Biological Tech., Sedro Woolley),

Brenda Cunningham (Biological Tech. Sedro Woolley),

Amy Hill (Biological Tech., Sedro Woolley)

Stan Zyzkowski (Biological Tech., Sedro Woolley),

Ashley Rawhouser (Biological Technician),

Pat Buller (Biological Tech, Marblemount),

Anne Braaten (GIS Specialist, Sedro Woolley)

Jon Riedel (Geologist, Marblemount),

Joanie Lawrence (Physical Science Tech., Marblemount),

Amphibian Population Study - In 1996, a three year project was begun that will investigate the Complex's amphibian distribution in relation to habitat types in three/four different watersheds. This summer, Ron Holmes and two SCA volunteers will continue this program with sampling in the Thunder Creek and Bridge Creek watersheds.

Spotted Owl Inventory and Monitoring -The spotted owl inventory and monitoring program began in 1993 and is intended to inventory potential spotted owl habitat within the

Complex, locate activity sites, index the owl's relative abundance, determine productivity at all activity sites and to monitor all activity sites found during the initial survey. Approximately 70% of the Park Complex's potential spotted owl habitat areas have had initial surveys completed, and 7-8 spotted owl activity sites identified. Other owls detected include barred owl, northern pygmy owl, northern saw-whet owl, great horned owl, and western screech owl.

Arthropod Study - In 1996 RM personnel began an environmental monitoring program to investigate the arthropod species habitat associations in the Big Beaver Creek Research Natural Area. The study's objective is to determine arthropod community structure in nine different riparian habitat types and to assess the value of arthropod data for use as indicators of environmental integrity.

Fish Population Survey - The fish population assessment surveys of NOCA's streams and rivers began in July 1994 and will end September 1998. This inventory of stream fish populations will describe the fish's distribution, relative abundance and size structure. Initial significant findings indicate that Dolly Varden/bull trout were not observed in a river drainage where they were once abundant. However, brook trout, a non-native species, were found at several survey sites.

Salmon Spawning Channel Assessment -The National Park Service (NPS) and the Washington State Department of Fish and Wildlife are cooperating on a project that assesses the effectiveness of salmon spawning channels and mitigation and restoration of habitat impacts in the Skagit drainage. Work includes counting and monitoring adult salmon spawners, their redds, and the carcasses. Carcass availability and wildlife use of carcasses are documented throughout the year. Salmon smolt out migration counts and other fish species observations are documented from March to July.

Chilliwack Watershed Study- A two-year cooperative effort between the NPS, USFS and BC Ministry of Forests is being initiated in summer 1998 to assess the condition of stream habitat in the Chilliwack Watershed. The other agencies are interested in the Chilliwack as a relatively undisturbed system. Data obtained from this study will help guide restoration of impacted streams in the US and Canada. The NPS will use this watershed as one of several Long Term Ecological monitoring sites. In late summer 1998, NOCA and USFS staff will be mapping landforms and measuring stream habitat. Contact Reed or Jon for more details.

Bat Surveys - We know very little about species type, range

and abundance of bats at NOCA. This summer we will initiate a pilot project to develop monitoring strategies for the future that will focus on habitat associations along Ross Lake and a few other selected areas. Contact Bob K. for more details.

Cavity Nesting Birds -This summer we will study the effects of Stehekin Valley fire management activity on cavity nesting birds. Contact Bob K. For more information.

Harlequin Duck Surveys -These ducks are a species of concern. Surveys are conducted on a monthly basis through the nesting and summer seasons from a raft while floating down the Stehekin River, and on the Skagit River. The number of adult and juvenile Harlequin Ducks are counted and the results are compared to past survey results. Ask Roger for more information.

Ecological Impacts of Stocked Trout on Naturally Fishless High Lakes -This study was initiated in 1993 to help managers understand the impact of fish-stocking to naturally fishless high alpine lakes. Objectives of this study include determining the effects of trout on zooplankton and salamander abundance in west slope lakes along a gradient of increasing fish predation intensity. This study will continue in summer 1998. Contact Reed for more details.

Erosion Control -Erosion control projects on the Stehekin River, Lake Chelan and Ross Lake are an ongoing effort. The goal of this program is to use native material, including plants, logs and rocks to stabilize shorelines in lieu of expensive, ineffective and unfriendly rock rip rap, concrete and metal. Rock barbs, bioengineering, and other innovative approaches are being applied to sites throughout the park. Contact Jon for more information.

Glacier Mass Balance Study -The more than 300 glaciers in NOCA are a defining and critical resource. Glacial meltwater feeds the labyrinth of lakes and streams in the Complex, providing buffering capacity during the annual summer drought. They are also important indicators of climate change. In 1993, a monitoring program was initiated on four glaciers, including Silver, Noisy, North Klawatti, and Sandalee. At least three trips are made annually to each glacier to measure the amount of winter accumulation and summer melt from the surface of these glaciers. Data collected to date provides invaluable information on the climate of NOCA, and on the amount and timing of meltwater released by glaciers. Contact Jon for more information.