CSS 496 -- Monitoring Human Impacts in Protected Areas & Wilderness

Monitoring Program Exercise - Step One
Description of Area (Data Base Review)

Due Tuesday 2/28

Purpose: The purpose of this step is to collect available relevant data before collecting new field data. This reduces monitoring costs.

Assignment: Select a geographic area you are particularly interested in. The area can be any wildland area (e.g., developed campground, state park, roadless area, national reserve, or wilderness). Select a small portion of your area to concentrate on (e.g., one drainage, one lake basin, one management unit). The area should be small enough so that it has fairly homogeneous environmental and visitor characteristics.

Write a brief description of your area's biophysical resources and visitor characteristics. Information that may be included:

Historical impacts
Natural role of fire
Limnological studies
Vegetation communities
Soil types
Climate meteorological information
Wildlife species abundance and distribution
Trail development
Campsite development
Visitor use amounts and patterns
Visitor characterization--opinion surveys

Maps of the area may be useful. Some information can be obtained by contacting the managing agency. Cite any references you use.

Example of Step One Assignment

Step One - Description of Area

Alaska Basin Zone - Jedediah Smith Wilderness, WY, Targhee National Forest

Acreage: approximately 5000 acres
Elevation: 9400-10,000 feet

Vegetation

The Alaska Basin (AB) area is a subalpine basin with scattered clumps of whitebark pine and subalpine fir interspersed with meadows composed of sedges, rushes and wildflowers. Some of the common wildflowers are elephantshead, paintbrush, bisort, and Parry's primrose. The area is closed to campfires due to the scarcity of firewood and is closed on horse camping due to the lack of forage and presence of numerous wet meadows.

Geology & Soils

Geologically the Tetons are a very young mountain range created by a series of faults. Glacier-scoured granite outcrops are the prominent feature in AB. Schoolroom glacier, a small remnant glacier from the Little Ice Age, is located just north of the area. AB is ringed by both granite and limestone peaks. The Wall, Battleship Mountain, Peak 11094, and Mount Meek are limestone, while Buck Mountain, Veiled Peak, and the central Tetons are granitic. The portion of Teton Creek which drains the south side of AB runs along the contact between the limestone and granite. The soils are shallow, rocky, and not well-developed.

Climate

Alaska Basin is typically snow-covered from October to mid-July. The area receives over 500 inches of snow annually. Snow can occur during any month. Summer thunderstorms are common. Prevailing winds are from the southwest.

Water

Alaska Basin contains 10 small lakes. Two creeks drain the basin to form the South Fork of Teton Creek. Water is abundant throughout the summer. The lakes are ice and snow-covered until July.
Limited water sampling done in 1980 and 1981 revealed high fecal coliform counts in the head of Teton Creek, however the results are inconclusive due to the small number of samples. Giardia lamblia may be present in AB water. Some visitors have attributed intestinal sickness to impure drinking water in AB. Campers are required to camp at least 200 feet from lake shores and 100 feet from stream banks, although illegal camping does occur.

Wildlife and Fish

The most common species seen by visitors to AB are the yellow-bellied marmot, pika, and golden-mantled squirrel. Less frequently seen are black marmots (a sub-species indigenous to the Tetons) and coyotes. Mule deer and black bear are occasionally seen. Bighorn sheep, once abundant, are infrequently seen. It is estimated that the Teton population now numbers only ~100 individuals (Whitfield 1983). Bighorn sheep extensively use the high ridges above AB for winter range. Common bird species include Clark's nutcrackers, rosy finches, hummingbirds, golden eagles, and hawks. Bald eagles are sometimes seen.

The small lakes in AB never naturally supported a fishery. However, the Wyoming Game and Fish Department stocked two of the larger lakes in AB with exotic eastern brook and rainbow trout. These lakes are no longer being stocked, but the trout are surviving. Most are ~6" long.

Fire

Fire probably has not played a major role in forest development in AB. Fires in this high elevation environment usually involve only one clump of trees struck by lightning and rarely have the potential to exceed 10 acres. Even where the timber is more extensive, the stand-replacing fire frequency is probably 200 years or more (Fischer & Clayton 1983).

Historical Human Uses

There is evidence that the Shoshone Indians established summer camps in the AB area to hunt for bighorn sheep. Mountain men traveled through the area in the early 1800s. In 1972, the Hayden Geological Survey camped in Teton Canyon, mapping and exploring the area. In the late 1800s, the AB area was extensively grazed. Some of the AB trails were built by sheepherders in order to move flocks to new areas. AB has been closed to domestic livestock grazing since the 1940s. Mineral prospecting occurred in the early 1900s. Lead and silver ore were discovered near AB in Death Canyon, and some ore was hauled out by mule. No mineral claims exist today in the AB area. In 1917, the Clawson Irrigation Company dynamited two lake outlets in AB and built headgates in an

effort to obtain more water during dry years. The effort proved unsuccessful, but the scars are still visible. Currently, recreation is the chief use of AB.

Visitor Use and Characteristics

Alaska Basin receives more visitor use than any other area in the Jedediah Smith Wilderness due to the area's high scenic qualities and its proximity to Grand Teton National Park. The majority of backpack routes in Grand Teton National Park (GTNP) include travel through or camping in AB. Alaska Basin has often been called the bedroom of the park. Permits are not required to camp in AB, whereas they are required to camp in GTNP. Visitor sampling data collected between 1976 and 1980 indicate ~7,500 visitor days of use occurs in AB. As much as 75 percent of this use originates from GTNP. Most of the campers are from out of state. During the first two weeks in August it is not unusual to find 50 people camping in AB each night. The majority of use is by hikers and campers, although some day horse use does occur. Use by large organizational groups also occurs. The Treasure Mountain Boy Scout camp located in Teton Canyon contributes a significant amount of day use to the area. Visitor use is just as heavy during the week as on the weekends. Visitor interviews conducted from 1976 to 1980 found that 80 percent of the visitors considered solitude important to their experience, and 57 percent stated that they disliked meeting large groups (Whitfield 1982). Park permit data shows that backpacking use has been declining slightly the past few years (Brattain, Lowe and Merigliano 1987).

Campsite and Trail Development (Refer to map)

Approximately 8.0 miles of Forest Service system trail exists in the AB zone. Due to low trail maintenance budgets the past five years, much of the trail network is experiencing erosion or bog problems. Another 4.0 miles of abandoned trail exists which was never rehabilitated and is still visible. Metal signing exists at all trail junctions. Regulatory signs are posted at the entrance of AB and at GTNP boundaries. Thirty-six campsites were inventoried between 1978 and 1980. No campsite assessments have been done. Although campfires are now prohibited, many fire scars are still visible.

References

Brattain T., C. Lowe and L. Merigliano. 1987. Jedediah Smith Wilderness Management Program: Year-end Report. USDA For. Ser. Targhee National Forest. Teton Bason District Unpubl. Report.

Fischer W.C. and B.D. Clayton. 1983. Fire Ecology of Montana Forest Habitat Types East of the Continental Divide. USDA For. Ser. Gen. Tech. Rep. INT-141.

Whitfield, M.B. 1982. Jedediah Smith Wilderness Management Plan. USDA For. Ser. Targhee National Forest. Unpubl. Report.

Whitfield M.B. 1983. Bighorn sheep and man in the wilderness of the Teton Range, Wyoming. MS Thesis. Idaho State University, Pocatello.