

**Monitoring Program Exercise - Step Two**

Identify human impacts, area concerns and monitoring goals.

**Due TH 3/9**

Purpose: By identifying all the human activities that impact area conditions, you will be better able to design a comprehensive monitoring program. Clear goals and objectives that define what you are trying to achieve by monitoring conditions increase cost effectiveness, reduce useless data pile-up and maximize the use of collected information in decision-making.

Assignment:

For the area you described in step one, turn in a **typed** report that includes the following information.

- I. Human activities that have in the past impacted area conditions, are currently impacting conditions, or in the future may impact conditions. Describe how these human activities are impacting conditions and which impacts are considered serious.
- II. Identify the conditions you want to achieve in your area (overall management direction).
- III. Define monitoring goals. A goal is defined as, "a concise statement which expresses the desired outcomes the monitoring program is designed to achieve." A goal is normally a broad, general statement which is not quantifiable.

Cite any references you use.

Example of Step Two Assignment

Alaska Basin Zone - Jedediah Smith Wilderness, Wy., Targhee National Forest

I. Human Activities that Impact Conditions

1. Grazing - Domestic sheep grazing occurred in AB from the late 1800s until the 1940s. Although grazing impacted vegetation communities in other parts of the Jedediah Smith Wilderness plant species composition in Alaska Basin does not appear to have been significantly altered based on comparisons with similar subalpine lake basins which were not grazed. However, domestic sheep grazing played a major role in creating an unnatural abundance and distribution of bighorn sheep by permanently displacing bighorn sheep from traditional ranges (Whitfield 1983).
2. Fish-Stocking - Two lakes in Alaska Basin were stocked with exotic eastern brook and rainbow trout by the Wyoming Game and Fish Department. These lakes are no longer being stocked, however the trout are surviving despite the scarcity of food. It is unknown how fish stocking has affected the natural aquatic system.
3. Hunting - Two permits were issued each year for bighorn sheep rams greater than 3/4 curl. Mule deer, elk and black bear are also hunted. Hunting certainly affects population dynamics of these species, especially for bighorn sheep whose population is estimated at ~ 100 animals.
4. Fire suppression - Although fire probably has not played a major role in determining vegetation communities in Alaska Basin, recent studies indicate that in WBP/SAF forest types fire suppression may result in an unnatural dominance of subalpine fir over white bark pine (Arno 1986).

5. Air pollution - The nearest potential source of industrial air pollution is more than 75 miles to the southwest (Whitfield 1982). However, smoke from slash burning on adjacent forest land and from wildfires occasionally impairs visibility. It is unknown whether acid precipitation is impacting aquatic systems. Acid precipitation impacts have been documented 100 miles away in the Wind River Range.

6. Manager-created developments - Approximately 12 miles of system and abandoned trail exists in the Alaska Basin Zone. Much of the trail system is improperly located through wet meadows which creates muddiness. Trails constructed on slopes without water bars have become eroded and rocky. Two sections of trail have erosion gullies more than two feet deep. Abandoned trails have not revegetated due to continued erosion. Multiple trails have developed as visitors pick routes to avoid muddy, rocky, or eroded trails. Trail impacts are probably the most serious visible impact in Alaska Basin. Small metal signs are posted at eight locations in Alaska Basin. All trail junctions are signed. The large number of signs reduces visitors' self-reliance and challenge, however the signing is consistent with GTNP where most of the visitors are coming from.

7. Recreation use - Heavy recreation use has caused the following known and potential impacts:

- a. The presence of campsites - 36 sites have been inventoried but no assessments have been done. Bare soil exists on many of the sites.
- b. Fire scars - Although campfires have been prohibited for nearly 10 years, illegal firerings still occur and old fire scars are still visible.
- c. Water quality - Recreation use has caused fecal contamination of drinking water sources. It is unknown if erosion from campsites and trails has impacted aquatic systems.
- d. Vegetation - It is unknown if visitor use, packstock use, or managerial activities have introduced exotic plants in the Alaska Basin Zone.
- e. Wildlife - Recreation visitor use probably causes harassment of bighorn sheep. Bighorn sheep flight distances of more than two kkm have been observed in response to human disturbance (Whitfield 1983). Harassment of bighorn sheep is especially critical during the winter. Recreation use has probably caused unnatural concentrations of opportunistic feeders such as marmots and Clark's nutcrackers around campsites.

Note: In Step II and Step III below, feel free to list as many different "management directions" and "monitoring goals" as you can think of. Later you will narrow it down to just a few to develop further.

## II. Desired Wilderness Conditions - Management Direction

Alaska Basin is managed for moderately high recreation use. It is recognized that a "true" wilderness experience cannot be obtained in Alaska Basin from late July to mid-August. Challenge and self-reliance are not emphasized in the Alaska Basin experience. The presence of trails, signs and campsites is acceptable. However campsites must remain undeveloped. Desired wilderness conditions include:

1. Natural processes such as fire operate unhindered by managers.
2. Campsites are not visible from trails or lakeshores.
3. Erosion is controlled on all trails. No multiple trails exist.
4. Drinking water is free from human fecal contamination.
5. Aquatic ecosystems are not impacted by recreation use, fish-stocking, or acid precipitation.

6. The bighorn sheep population shows an improving trend in numbers.
7. Marmots and Clark's nutcrackers exist in natural abundancies and distributions.
8. Air quality meets the standards for a Class I airshed.
9. Visitors experience solitude while at their campsite.

### III. Monitoring Goals

1. Document the extent of soil loss and muddiness on all system and nonsystem trails.
2. Determine if recreation use is altering the abundance or distribution of marmots and Clark's nutcrackers.
3. Document the presence of campsites, especially in relation to trails and lakeshores.
4. Document changes in overall campsite condition.
5. Determine the role of fire in maintaining white bark pine.
6. Document whether recreation harassment of bighorn sheep is altering population abundance or distribution.
7. Document changes in drinking water quality.
8. Document change in lake ecosystems.
9. Determine if visibility impairment or acid precipitation is occurring.
10. Determine if visitors' recreation experience is consistent with the management objective to achieve campsite privacy.
11. Document the effectiveness of the minimum impact education program.
12. Document visitors' perceptions of their recreation experience in relation to the wilderness experience.
13. Determine the presence and extent of exotic plant species.

### References

- Arno, S.F. 1986. Whitebark pine cone crops: a diminishing source of wildlife food. *Western J. of Appl. For.* 1(3):92-94.
- Whitfield, M.B. 1982. Jedediah Smith Wilderness Management Plan. USDA For. Ser. Targhee Nat'l. Forest. Unpubl. Report.
- Whitfield, M.S. 1983. Bighorn sheep and man in the wilderness of the Teton Range, Wyoming. MS Thesis. Idaho State University, Pocatello.