

Monitoring Sites

Snow Measurement Sites

The Wilderness Act of 1964 does not directly address snow measurement sites but does contain direction that is relevant to this activity.

" and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness; "...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act,â€ there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area."

"Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character."

"Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use."

Management Practices

Weather monitoring, especially snowfall and water flow, has often involved placing electronic equipment in high elevation headwaters locations or in streams. Snow measurement (or Sno-Tel) sites exist in wilderness areas operated by the Natural Resource Conservation Service or other agencies. Downstream farmers and ranchers have found this information essential. Remote sensing stream monitoring gauges have also been used to warn of flash floods.

Maintenance of structures or installations can generate proposals for use of motorized equipment, aircraft which should be addressed using a Minimum Requirements Decision Guide or similar analysis. The continued need for installations within wilderness should be addressed to determine if a data correlation process could be implemented to relocate the facility outside wilderness.

Installations

Management Practices

Cell phone technology and use has become so widespread that many visitors carry cell phones as emergency insurance. Proposals to build cell phone towers in wilderness

citing the need for cell phone coverage for emergencies are not uncommon. In addition, some units have proposed construction and/or maintenance of radio repeater facilities in wilderness to insure adequate communications for employees, contractors, and volunteers in wilderness for safety purposes.

Cell phone towers in wilderness are not constructed for visitor use while in the wilderness. Instead, managers make every effort to provide information to visitors on the inherent naturally occurring risks of wilderness use. Satellite phones or rescue beacons may be an alternative for some.

Adequate communications for personnel working in wilderness is essential to meet safety objectives. Managers typically use one or more systems of 2-way radios, cell phones, satellite phones with maps of known 'dead spots' and routine check-in procedures to insure necessary communication capabilities.

The construction of cell phone towers in wilderness to provide service outside of wilderness is not allowed.

There is a variation of this issue which involves personal use of cell phones, satellite phones, walkie-talkies, GPS units and a variety of other electronic devices which can distract from the wilderness experience of others. These items, considered 'personal use' items, are not prohibited by law or agency policy, even if they contain small motors.

Water Resources

The Wilderness Act of 1964 states that:

"Within wilderness areas in the national forests designated by this Act, (1) the President may, within a specific area and in accordance with such regulations as he may deem desirable, authorize prospecting for water resources, the establishment and maintenance of reservoirs, water-conservation works, power projects, transmission lines, and other facilities needed in the public interest, including the road construction and maintenance essential to development and use thereof, upon his determination that such use or uses in the specific area will better serve the interests of the United States and the people thereof than will its denial;..."

"Nothing in this Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from State water laws."

Management Practices

A common practice in the west early in the 1900's was to reservoir lakes. This involved finding a suitable high elevation lake with a natural dam that could be built up and a natural outlet that could be lowered to allow more water to be stored for release in the summer irrigating season. This system also often involved ditches to transmit irrigation water out of its natural drainage to be routed where a rancher or farmer wanted it applied.

Existing reservoirs, ditches, water catchments, and related facilities for the control or use of water can be maintained or reconstructed if they meet a public need, or are part of a valid existing right. These water developments may require maintenance, per the Dam Safety Act, if they are located upstream from populated areas. Motorized equipment and mechanical transportation for the maintenance of water development structures is not allowed unless it was used for this purpose before the area was designated wilderness and it is determined to be the minimum necessary tool or technique. Dam maintenance, stabilization, and some removal operations have been accomplished using traditional skills and non-motorized skills tools.

Watershed restoration is permitted only when human activities have caused soil deterioration or other loss of wilderness values, where watershed conditions could cause unacceptable environmental impacts or threaten life or property outside the wilderness, and where natural revegetation is insufficient. Such restoration activities are rare but have been implemented to mitigate the effects of fire or to address non-native invasive plant issues.

Non-Native Insects

There are two general management approaches for handling non-native insects in wilderness: no action and action. The approach taken is a product of the Minimum Requirements Analysis. Wilderness managers and specialists need to determine if it is necessary to take action against non-native insects such as the emerald ash borer, hemlock wooly adelgid, and gypsy moth.

No Action for Non-Native Insects

This management approach is likely to be taken for the majority of non-native insects that are not invasive (that is, they are not causing, or are expected to cause, environmental harm that degrades wilderness character). Keep in mind, however, that with landscape-scale changes in environmental conditions, a non-invasive species may turn invasive. In addition, the "No Action" alternative may be chosen when the impact of taking action on the wilderness is worse than the impact of allowing the invasive species to remain. In those situations the invasive species has become so

pervasive that it could not be significantly reduced, and it might be better for wilderness character as a whole to allow it to become the new normal.

Action for Non-Native Insects

Wilderness managers may determine that taking action against non-natives is the best solution -- trammeling an area might be preferred in order to protect the natural quality. Keep in mind that it is extremely rare for these species to be **only** within the wilderness. If action is taken, how effective can the managing agency be in keeping re-infestation from occurring?

Impacts of Action/No Action for Non-Native Insects to Wilderness Character

	No Action	Action
Untrammeled	no effect	will degrade this quality due to manipulating the “earth and its community of life”
Undeveloped	no effect	may degrade this quality if motor vehicles, motorized equipment, or aircraft are used
Natural	will degrade this quality by the increase in non-native organisms	will preserve this quality by removing non-native species may degrade this quality if non-target, native organisms are affected
Outstanding Opportunities	may vary by site	may vary by site may degrade this quality if motor vehicles, motorized equipment, or aircraft are heard or seen
Other Features of Value	may vary by site	may vary by site

Native Insects

There are many insects native to the United States that can seriously damage vegetation, such as the several different species of bark beetles, budworms, and sawflies. As with non-native insects, there are two general management approaches: no action and action. Again, these management approaches are a product of the Minimum Requirements Analysis. Wilderness managers and specialists need to determine if it is necessary to take action against native insects.

No Action for Native Insects

This management approach is used most often when dealing with native insect species, particularly in wilderness where natural conditions are favored. Action taken to reduce impacts to vegetation is very limited.

Action for Native Insects

Action has not typically been taken to prevent the spread of native insects in the past. This is likely to remain the norm, unless new laws regarding insects in wilderness are passed. Two exceptions to this might be:

- 1) in cases where adjoining, non-Federal land will be impacted by the insects;
- 2) or, where rapid, permanent landscape-scale changes in environmental conditions (such as climate change) lead to a native species turning invasive

Again, keep in mind that it is extremely rare for these species to be only within the wilderness. If action is taken, how effective can the managing agency be in:

- 1) keeping the native species from getting to adjoining lands by other vectors;
- 2) or, keeping re-infestation from occurring?

Impacts of Action/No Action for Native Insects to Wilderness Character

	No Action	Action
Untrammeled	no effect	will degrade this quality due to manipulating the “earth and its community of life”
Undeveloped	no effect	may degrade this quality if motor vehicles, motorized equipment, or aircraft are used
Natural	will preserve this quality	will preserve this quality by removing non-native species may further degrade this quality if non-target, native organisms are affected
Outstanding Opportunities	may vary by site	may vary by site may degrade this quality if motor vehicles, motorized equipment, or aircraft are heard or seen
Other Features of Value	may vary by site	may vary by site

Disease

Plant diseases can be caused by pathogens including:

- fungi (such as the non-native causing *chestnut blight*, the native *elythroderma*, or several species of *rusts* - both native and non-native)
- bacteria (such as the native causing *ash yellows*)
- water molds (such as the non-native causing *sudden oak death*)
- parasitic plants (such as the several native species of dwarf mistletoe)

No Action for Diseases

This management approach is almost always used when dealing with native diseases in wilderness, where natural conditions are favored. Because of the difficulty in controlling most diseases, "no action" easily may be the most feasible alternative for non-native diseases as well.

Action for Diseases

Taking action to control non-native diseases may be best to preserve wilderness character if disease-caused mortality threatens other components of the wilderness ecosystem or in cases where adjoining, non-Federal land will be disproportionately impacted - and control is feasible.

It is conceivable (but by no means certain) that rapid, permanent landscape-scale changes in environmental conditions (such as climate change) may lead to a native disease becoming a detriment to wilderness character.

Impacts of Action/No Action for Diseases to Wilderness Character

	No Action	Action
Untrammeled	no effect	will degrade this quality due to manipulating the "earth and its community of life"
Undeveloped	no effect	may degrade this quality if motor vehicles, motorized equipment, or aircraft are used
Natural	will degrade this quality by the spread of disease	will preserve this quality by removing non-native disease may degrade this quality if motor vehicles, motorized equipment, or aircraft are heard or seen
Outstanding Opportunities	may vary by site	may vary by site may degrade this quality if motor vehicles, motorized equipment, or aircraft are heard or seen
Other Features of Value	may vary by site	may vary by site

Managing Special Provisions: Aircraft and Motorboats

Common Issues and Mistakes

Administrative vs. Public Use:

The public can only use aircraft or motorboats if the use was permitted prior to an area's wilderness designation or if there are specific provisions listed in the area's wilderness legislation. Administrative uses can be allowed only if they are the "minimum necessary," regardless of whether they had or had not been used prior to designation.

ANILCA:

Though ANILCA has several aspects that make it different from the rest of the wilderness in the United States, the Wilderness Act Section 4(c) still applies to management actions in areas created by ANILCA. On the other hand, the motorboats and airplane provisions of ANILCA do not apply to any wilderness outside Alaska. In addition, some of the ANILCA allowances apply only to the public and other agencies - the land-managing agency may apply restrictions to itself that do not apply to other agencies or the public. Check your agency's policy to be sure.

Visitor Information:

Many visitors are not informed about legal aircraft and motorboat use in wilderness. This is particularly true when dealing with overflights -- the land-management agencies don't control airspace in most areas. Complaints about overflights in several National Park wilderness areas are common, even though these flights are perfectly legal. This confusion extends to military overflights and even commercial take-off and approach routes over wilderness. A lack of formal entry points to wilderness makes it difficult to provide visitors with information about what they should expect in terms of motorboat or aircraft use in the area.

Commercial Service Providers:

Outfitters can land in wilderness areas on any airstrips that are available to the public (or use motorboats where use by the public is allowed), subject to the terms and conditions of their permit. They also can be authorized to participate in airstrip facility or boat trail maintenance.

Facility Maintenance

If a special provision is made for aircraft or motorboat in a wilderness area, landing strips, helispots, and docks can be authorized under certain conditions. For public use, these structures must have been in existence prior to an area's wilderness designation (unless authorized in the enabling legislation).

When maintaining small structures such as docks, the federal agency is not bound by the exact structures in existence at the time of designation. Managers may change the number and location of docks to improve wilderness character.

Maintenance on motorboats and aircraft facilities is carried out following a Minimum Requirements Analysis and typically results in the work being carried out without motorized equipment.

Standard maintenance for airstrips and helispots include:

- Clearing (trees, brush, etc.)
- Mowing
- Leveling/grading (typically using horse-drawn implements), or other earth-moving activities (such as filling holes in the runway)
- Boundary markers and wind socks

These airstrips and helispots may have trails that lead to them. The trails are maintained in the same manner as other wilderness trails.

(For more information like this, take the online course, *Managing Special Provisions: Aircraft and Motorboats*. Go to the training page on wilderness.net to find information about the course.)