

Locating and Designing A.T. Shelters and Formal Campsites

Adopted by the Appalachian Trail Conservancy Stewardship Council in 2007

[Note: Page references below are to the document by Jeffrey L. Marion entitled *Camping Impact Management on the Appalachian National Scenic Trail*.]

Guidance for Locating and Designing A.T. Shelters and Formal Campsites

This section provides more specific guidance on topics like shelter/campsite capacity, location, site design, shelter/campsite design, sanitation, maintenance, and visitor-use management. Generic guidance is provided where possible, but the A.T. crosses diverse environments, from pristine wilderness, to backcountry, to highly accessible frontcountry. The type of setting or area should influence the type and design of facilities, so this section begins by discussing how overnight site design might vary by environmental setting.

The ATC's "Trail Experience" statement provides a "shared vision" of the desired A.T. visitor experience that the Trail community seeks to provide. While the "Trail Experience" statement is helpful, it applies equally to the entire A.T., including frontcountry, backcountry, and wilderness settings. *Frontcountry* areas are close to paved roads and developed areas and are highly visited. *Backcountry* areas are more distant from paved roads and developed areas and environmental settings are more natural. *Wilderness* areas are either federally designated or managed as Wilderness Study Areas. When designing a shelter or formal campsite, Trail clubs should consult with ATC and their land-management partners to determine which type of area the proposed development falls within, and then consider the following guidance. Adherence to this more explicit guidance can help promote more consistent decision-making for each type of area along the A.T.

Shelter and Formal Campsite Capacity

Design the shelters and campsites to:

- ✓ *Minimize crowding and conflicts*—Limit new shelter capacities to 15. Consider constructing two separate shelters when higher visitation requires additional capacity that cannot be accommodated by campsites. Limit total overnight camping capacity from co-located shelters and campsites to the following: Frontcountry—35; Backcountry—25; Wilderness—15. Capacity limits may be increased based on documented, site-specific management considerations.
- ✓ Capacity estimates for shelters can be calculated at one person per 15 ft²; capacity for campsites is best estimated by observing the typical number of campers in the area on high, but not peak, use nights.
- ✓ Locations that currently exceed capacities can be improved by applying campsite ruination or closure techniques described in *Camping Impact Management* [pp 99–102]
- ✓ Accommodate expanding overnight visitation by constructing well-designed formal camping areas rather than new shelters (shelter numbers increased 14 percent from 1971 (N=237, 8.6/mile) to 2006 (N=271, 8.02/mile). Include a

justification explaining why a shelter is preferable to campsites with proposals to construct new (and in Wilderness, replacement) shelters.

Shelter and Formal Campsite Location

Preferable locations for shelters and formal campsites are:

- ✓ *Near permanent sources of clean water*—A permanent source of clean water is a nearly essential requirement. The highest mid-slope location within a drainage that retains flowing water during drought periods is best. Springs are preferred over small streams, but they must have a dependable flow history over several years. Land within the drainage above the site should be in public ownership and have no human habitations or grazing. Locate shelters and campsites more than 200 feet from water sources unless no suitable option exists.
- ✓ *Remote from motorized access*—Locate at least two miles from roads, including ORV-use areas, to deter vandalism and use by nonhikers.
- ✓ *Out-of-sight from the A.T.*—To preserve a more primitive trail experience, locate facilities just beyond sight of the A.T. whenever possible. Trailside locations reduce solitude for both hikers and campers.
- ✓ *In mid-slope positions*—Avoid ravines and depressions that can be seasonally wet and subject to cooler temperatures and lack of sun exposure. Similarly, ridge tops can be windy and prone to lightening strikes. Flat valley bottom or ridge top locations have poor drainage and allow the rapid proliferation and expansion of campsites and trampled areas. Placement on small flat areas within mid-slope positions enlists the sloping topography to concentrate foot traffic on the intended use areas or create gently out-sloped benches for shelter and camping sites using side-hill construction practices described in *Camping Impact Management* [pp 99–102].
- ✓ *Trampling resistant and expansion proof*—Minimize the loss of vegetation from trampling by choosing locations that: 1) have limited expansion potential due to topography, rockiness, or dense vegetation cover; and, 2) have very sparse vegetation cover or grassy cover instead of broad-leafed herbs (e.g., sunnier locations). See *Camping Impact Management* [pp 94–97] for additional guidance.
- ✓ *Protective of visitor safety and sensitive natural or cultural resources*—Avoid locations close to waterfalls and mountain, ridge, and cliff tops. Provide at least a 200-foot riparian buffer between the facility footprint and shorelines and stream banks, and build trails to provide access to the water. Avoid locations near sensitive natural and cultural resources, especially known cultural resource or natural heritage sites, to promote resource protection.

Site Design

Design the site to:

- ✓ *Prevent erosion*—Anticipate traffic patterns and design the site and trail layout to avoid the proliferation of visitor-created trails and erosion. A linear layout of the

shelter and campsites along the contour promotes use of provided trails. Shelters and campsites should be clearly marked with side-trail signs. Refer to additional site design guidance in *Camping Impact Management* [pp 99–101].

- ✓ *Protect water sources*—Design and maintain water-access trails to prevent erosion. Route water-access trails to a durable access point that avoids traffic above the collection point and erosion at any location. Where necessary, protect springs by constructing a covered stone water box with an outlet that allows easy filling of water containers.
- ✓ *Promote solitude*—Where two shelters are built on a site, or where campsites are co-located with shelters, locate them outside the view-shed of the front side of shelters. Where possible, provide a minimum of 30 yards of separation between shelters, between campsites and other campsites or shelters, and between the A.T. and these facilities.
- ✓ *Promote visitor safety*—Face the shelter opening away from prevailing winter-season winds, preferably to the south and east. Regularly inspect the proposed site for hazard trees and have them removed.

Shelter/Campsite Design

Design the shelter/campsite to:

- ✓ *Emphasize primitive, rustic qualities*—Use rustic architectural designs and primitive materials for shelters, e.g., sides consisting of logs, rough-cut wood, or natural stone and non-glare roofing. Use of planed, dimensional lumber should be minimized. Limit the visibility of shelters by using roofing or paints with natural colors. Where possible, hide concrete footers by facing them with natural stone.
- ✓ *Emphasize resource protection in shelter designs and facilities*—Use the minimal design necessary to concentrate sleeping and cooking activities in a small shelter “footprint.” Features such as large covered decks, windows, hanging chairs, showers, and wood stoves are considered inconsistent with the intended A.T. Experience and should be avoided. In Wilderness, shelter designs and associated facilities should be reduced to the absolute minimum required for resource protection. See *Camping Impact Management* [pp 102–105] for further discussion.
- ✓ *Maximize lifespan and minimize maintenance*—Provide separation between the ground and wood, and use pressure-treated lumber. In the south, use metal flashing at key places as a termite barrier. Provide adequate overhangs to keep wood sides dry and overlap roofing to prevent rot in supporting wood. Slope the land uphill from the shelter to divert water flow around the shelter area and install broad and deep drainage channels armored with rock to capture and divert roof water.
- ✓ *Minimize fire danger*—Where fires are allowed, fire rings should be small. Provide no more than one fire ring at a shelter. Consider using firmly anchored metal fire rings/grates of a small diameter to discourage dangerous and fuel-

consuming bonfires. Avoid or minimize use of substantial masonry work. At campsites, consider ice-berging large rectangular rocks to permanently define and anchor fire site locations. Consult with the local Fire Marshall for approval where necessary, and note that fires are prohibited in some states and parks. Emphasize Leave No Trace practices with respect to fires.

- ✓ *Minimize campsite proliferation/expansion*—Employ side-hill campsite design practices where possible, or use site closure/ruination practices to deter these problems in flatter terrain (see *Camping Impact Management* [pp 99-102]).
- ✓ *Minimize use of tent platforms*—Tent platforms are less natural, expensive, and require on-going regular maintenance. Where possible, employ side-hill campsite designs to create gently-sloped tent pads; in rocky areas obtain soil from wind-thrown tree root balls or borrow pits.
- ✓ *Ensure food protection from wildlife*—Install appropriate facilities where necessary to prevent wildlife from obtaining human food. Examples include bear poles, cable systems, or steel food-storage boxes.

Sanitation

Toilet facilities should:

- ✓ *Be located in well-drained soils*—A toilet site should be more than 200 feet from all water sources and the shelter or campsites, and preferably downhill. Perform a percolation test by digging a hole and filling it with water. The hole should drain readily within a short time. Look for areas with deep soils and water tables (>4 ft), where the digging is easiest.
- ✓ *Follow applicable state and ATC guidance*—Consult and follow all state regulations for pit toilet use. Consult the ATC publication [Backcountry Sanitation Manual](#) (ATC and Green Mountain Club 2002) for further guidance and options.
- ✓ *Protect human and wildlife safety*—Pits and bins receiving human waste should be inaccessible to wildlife and flying insects, with openings only through a covered and screened vent stack and waste entry hole with a self-closing lid. Retired privy sites should be filled with soil and mounded at least 12 inches above grade to allow for settling.

Maintenance

Perform routine maintenance to:

- ✓ *Minimize soil erosion*—Maintain trails within the site and to the water source to minimize soil erosion. Water-source trails are often too steep and have fall-line alignments. If alternate alignments are impractical (*i.e.*, visitors won't use them), then install sufficient tread hardening to limit erosion. Inspect shelter/campsite areas carefully for signs of erosion and install grade dips or water bars to avoid further erosion.

- ✓ *Limit fire danger*—Clear wind-thrown trees and other flammable materials away from the shelter. Keep fire rings away from the shelter overhang.
- ✓ *Maximize facility lifespan*—Check all wooden structures annually for signs of mold and rot and repair roofing or paint to prevent further deterioration. Inspect and repair other damage as needed.
- ✓ *Remove hazard trees*—Check for and remove hazard trees from shelter and designated camping areas. Hazard trees are dangerous to remove. This is an excellent job for your agency partner.
- ✓ *Preserve the natural appearance of facilities*—Use clear or semi-transparent flat (non-reflecting) paints with natural colors to preserve wood in shelters.
- ✓ *Maintain clean site appearances*—Dig out all fire grates, remove trash and scatter coals/ash in off-site areas. Pick up all litter and discarded food; clean the shelter.

Visitor Use Management

Manage visitor use to:

- ✓ *Avoid or minimize resource and social impacts*—Communicate Leave No Trace practices.
- ✓ *Minimize use of regulations*—Preserve visitor freedom by employing educational options first and regulations if problems are not resolved. Potential regulations to consider include limiting camping in shelter areas to shelters and formal campsites, prohibitions of campfires, and hanging food bags in bear country.