

**PA Highlands Trail Network
Signage and Stewardship Guidelines**



Appalachian Mountain Club and PA Highlands Trail Network Steering Committee

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Pennsylvania Highlands Trail Network

Signage and Stewardship Guidelines

This Guide describes options for signage and maintenance along the Pennsylvania Highlands Trail including information on the following:

1. History of the Pennsylvania Highlands Trail Network
2. Pennsylvania Highlands Trail logo and blaze
3. Interpretive signage opportunities for natural and cultural resource themes representative of the Pennsylvania Highlands region
4. Trail Stewardship
5. Co-aligned Trails of the PA Highlands Trail Network

About the PHTN and the Guidelines

The Pennsylvania Highlands Trail Network (PHTN) extends the existing 130 mile New York – New Jersey Highlands Trail into Pennsylvania, crossing the Delaware River at Riegelsville.

The Highlands Trail is envisioned to follow the length of the Pennsylvania Highlands region - a distance of approximately 300 miles, including portions of 13 counties. The Pennsylvania Highlands Trail trunk route will cover about 281 miles from its easternmost point at Riegelsville to the intersection of the Mason Dixon Trail and the Appalachian Trail. The Appalachian Trail continues south through the South Mountain portion of the Pennsylvania Highlands for another 48.8 miles to the Maryland-Pennsylvania border.

Approximately 280 miles of the Highlands Trail will follow and be co-joined with several existing trails. Some 48 miles of trail gaps have been identified, with a significant number of gap-miles expected to be completed over the next few years. Other sections of trail gaps could temporarily be closed by establishing interim trail routes along lightly traveled roads. More details about planned and existing trail routes within the PHTN and how they will connect can be found by exploring the interactive trail development map on pahighlands.org.

Prior to signing, dedicating and promoting sections of the Highlands Trail, a set of basic signage guidelines will help ensure consistency along this large landscape trail route that intersects and co-joins with several existing trails, each having different owners and/or managers, and with each having its own identity and set of signage protocols. The PHTN Signage and Stewardship Guidelines provide the information needed to mark the Highlands Trail effectively and efficiently while ensuring that the identity and standards of co-aligned trails will not be compromised.



The Appalachian Mountain Club has coordinated and consulted with the various trail owners and managers throughout the development of the PA Highlands Trail Network. These guidelines have been developed with their input and with the oversight of the PHTN Steering Committee.

Key recommendations were also drawn from several sources, most notably: US Forest Service Trail Construction and Maintenance Notebook; PA DCNR Guidelines for Marking Recreational Trails; East Coast Greenway Trail Manual; and the Virginia Department of Conservation and Recreation – Trail Development and Management Manual (Chapter 9 User Information and Education). A list of these sources can be found in the Appendix section.

Summary Description of PA Highlands Trail Types and Users

The Pennsylvania Highlands Trail Network (PHTN) is being developed as an extension of the existing New York – New Jersey Highlands Trail into the Pennsylvania Highlands. While the New York – New Jersey Highlands Trail is described as a “rugged footpath,” some sections are co-aligned with multi-use trails such as the Columbia Trail, which runs through portions of Hunterdon and Morris Counties. The PHTN is envisioned to follow a similar pattern, with longer sections of co-aligned multi-use trails interspersed with sections of hiking trails or “rugged footpaths.”

The entirety of the PHTN, including trunk, loop and spur routes, will include virtually every trail type, from natural surface footpaths to paved or crushed-stone multi-use trails. For example, the Highlands Trail is planned to co-locate on a portion of the D&L Trail, which is a crushed stone towpath along the Delaware Canal, and is a combination of asphalt or crushed stone sections of trail along the Lehigh Canal Towpath. The Horse-Shoe Trail, another PHT co-aligned trail, alternates between sections of crushed stone, natural surfaces, and both paved and gravel roads.

These planned PHTN co-alignments provide for a range of non-motorized trail uses, primarily hiking and walking, mountain biking, road biking, and horseback riding. These uses are allowed in various combinations, with hiking being the only use that is allowed universally on every trail.

As the PHTN passes through various co-alignments in the trail network, there may be a need for additional signage to reflect changes in trail type or user restrictions. Information about trail types and user restrictions for trails that are designated as part of the PHTN can be accessed through the interactive map located on the pahighlands.org website.



General Guidelines for Marking the Highlands Trail

AMC will work with each trail owner or manager to discuss their trail's signage standards, determine overall signage needs, and establish a plan to mark the Highlands Trail. It may be necessary to collaboratively conduct field surveys to identify and record locations of critical areas for PHTN signage, such as locations where trails intersect, or transitional points where user restrictions apply or trail type changes.

The primary purpose of marking any trail is to guide trail users along the route. Identifiable trail markers provide assurance to travelers that they are proceeding along the intended route and direction, which is particularly important where the trail is meandering, where the tread is not obvious, or at trail intersections and forks. Assurance signage may also be helpful where there are long straight stretches of co-aligned trail and trail users would benefit from occasional assurance that they are still following the Highlands Trail.

Trail markers can also serve an important 'branding' function by raising public awareness about a trail's identity, although a balance needs to be struck between trail branding and functional need for directional signage. To avoid confusion or compromising the identity of a co-aligned trail, trail markers identifying the Highlands Trail should be placed with the host trail's marker or blaze.

The US Forest Service (USFS) offers the following advice for frequency and effectiveness of signage: *"Consistent with the plan, signs and markers should be esthetically appropriate, visible, in useful locations, and well maintained. Install no more signs than necessary."*

The USFS advice should be used as the guiding philosophy for the PHTN with the understanding that signage needs in a remote setting will differ greatly from an urban setting.

The Pennsylvania Department of Conservation and Natural Resources 'Guidelines for Marking Recreational Trails' provides great detail about marking trails, although the focus is on rural areas within state parks and forests: *"When the trail is conspicuous, place one blaze for every five minutes of hiking time, or about six per mile in each direction (800 to 1000 feet apart). Where you run into hard-to-follow sections, often in transitions between field, forest, balds, and other environments, blaze more frequently. Be careful not to over blaze. Too many single and double blazes can mar the primitive character of the trail. This is a special concern in wild and natural areas, where blazing should remain minimal, or six per mile. Elsewhere, you should place blazes so that no more than one is visible in either direction. In other words, except near trail junctions, keep blazes at least 150 feet apart. You may degrade the primitive trail experience by blazing too often."*



Following these basic guidelines and using a flexible approach will serve the interests of both the PHTN and host co-aligned trails, and serve as guidelines for any new section of the Highlands Trail that is not co-aligned with another trail.

Highlands Trail Logo Marker and Trail Blaze

Two options for marking the Highlands Trail route are: 1) Plastic diamond-shaped trail marker with teal colored logo and; 2) Standard painted rectangular teal trail blaze.



The Highlands Trail logo is based on a designed created by the National Park Service for the New York-New Jersey Highlands Trail. This logo, where appropriate, will also be used to identify the Pennsylvania Highlands Trail.

The Highlands Trail marker is 3x3 inch diamond shaped plastic with teal image and white background. These markers may be used at intersections with other trails or simply as a reminder that the trail user is still following the Highlands Trail (on a co-aligned trail route). The plastic trail marker can be used when higher visibility is desired and when aesthetic considerations are not as high, for example, on a trail section that is located in an urban or suburban setting. The marker can be easily affixed to a tree or post using aluminum nails.

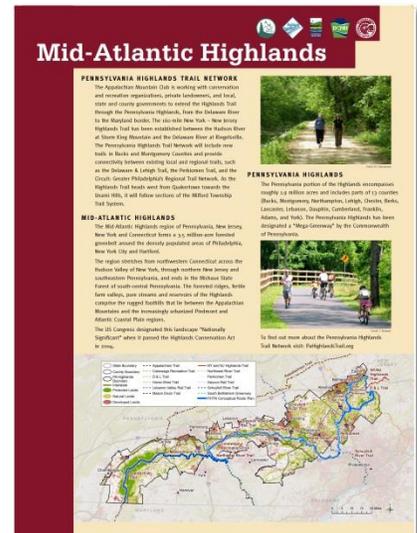


Painted trail blazes may be preferable for other sections of trail, particularly in more remote areas. A painted trail blaze should use the teal color and follow the standard rectangular design (6 inches in height and 2 inches in width).

For more detail about painting trail blazes please refer to the PADCNr's 'Guidelines for Marking Recreational Trails' (Pages 7-10). To obtain Highlands Trail markers contact AMC at ibrunner@outdoors.org or call (610)-868-6906.

Highlands Trail Interpretive Signage Themes

In addition to meeting wayfinding and directional needs, kiosks and signs can be used to educate trail users about natural and cultural resources found along the trail, or to direct trail users to nearby points of interest.



There are distinct themes common to the Pennsylvania Highlands region, and to the larger Mid-Atlantic Highlands, which present opportunities for interpretive signage and kiosks along trails and adjacent public settings. The proposed PA Highlands Trail ties together many of these themes across the region from the Delaware River to the Susquehanna River, and on to the Maryland border. A dominant theme for the Highlands region is the importance of its forested areas, which provide many important benefits and ecological values such as protecting drinking water supplies and providing wildlife habitat and corridors. These values have been deemed important enough to prompt the US Congress to designate the four-state Highlands region in Connecticut, New York, New Jersey and Pennsylvania as “Nationally Significant” when it passed the 2004 Highlands Conservation Act.

The Pennsylvania Department of Conservation and Natural Resources (PA DCNR) has recognized the Pennsylvania Highlands as a “mega-greenway,” and four of the state designated Conservation Landscapes fall either completely or partially within the Pennsylvania Highlands, including the Lehigh Valley Greenways, Schuylkill Highlands, Susquehanna Riverlands, and South Mountain.

The Highlands Trail runs through portions of three National Heritage Areas within the Pennsylvania Highlands, including the Delaware and Lehigh National Heritage Corridor, Schuylkill River National Heritage Area, and the Journey Through Hallowed Ground National Heritage Area. National Heritage Areas are designated by Congress as places where natural, cultural, and historic resources combine to form a cohesive, nationally important landscape.



The potential for developing watershed-based themes for interpretive kiosks exists along most of the planned route of the Highlands Trail, as it will cross major waterways including the Delaware, Lehigh, Schuylkill and Susquehanna Rivers, as well as numerous smaller waterways such as the Saucon, Perkiomen, Swatara and Conewago Creeks. Several areas along the PHTN route cross critical headwaters areas for streams like the Tohickon Creek (Saucon Rail Trail extension), French Creek (Hopewell Big Woods Trail), and Swatara Creek (Furnace Hills).



The Pennsylvania Highlands geology is the underlying factor that shaped the topography and influenced historic patterns of settlement, land uses, industry, agriculture, and transportation.



Although the geology of the Pennsylvania Highlands is complex, two types of rock dominate the landscape of the erosion resistant, largely forested hills and ridges: diabase (basalt), and granitic gneiss and quartzite.

The boulder strewn diabase areas in particular have created natural limitations for agriculture and land development. Not surprisingly, these areas feature large contiguous woodlands such as Hopewell Big Woods and Unami Hills, and while relatively sparsely populated, these areas have a rich history as recreational and vacation destinations going back to the late 19th century. The more notable diabase areas like Ringing Rocks County Park, Nockamixon State Park-Haycock Mountain-Top Rock, Unami Hills, Spring Mountain/Stone Hills, and French Creek State Park - St. Peters Village see significant recreational use and tourist visitation.



Iconic Highlands geology seen at Ringing Rocks County Park

The high iron content and mining history found along the gneiss and quartzite rock ridges like South Mountain, which runs parallel to the Lehigh River in Bethlehem and Allentown, provided the raw material for the region's industrial legacy of iron and steel. This legacy is reflected in the names of towns, historic sites, and parks found throughout all thirteen of the Pennsylvania Highlands region's counties, such as Durham Furnace, Coventry Forge, Hopewell Furnace, Johanna Furnace, Cornwall Furnace, and Pine Forge Furnace.

The unique combination of forests, rocky hills, historic sites, industrial towns, and fertile limestone valleys makes for compelling stories to be told through interpretive signage and even complimentary online tools, with the potential of enhancing the experience of trail users. Examples of existing resource-based interpretive signage include the recently installed "Allentown Formation Rock Outcrop" kiosk produced by Lehigh University Earth and Environmental Sciences Department in partnership with AMC and the Saucon Rail Trail Oversight Commission and installed in 2014. The kiosk was installed along the Saucon Rail Trail, which is a planned co-aligned trail of the PHTN, to highlight and interpret a prominent limestone rock outcrop. This geological interpretive theme could be repeated along other PHTN co-aligned sections of trail, such as the Monroe Fault National Natural Landmark located along the D&L Trail in Durham Township, and vistas that include both South Mountain and the Bethlehem Steel Blast Furnace found along the South Bethlehem Greenway.

The Hopewell Big Woods Trail Exhibit Station is being developed by the Schuylkill Highlands Conservation Landscape (Natural Lands Trust) in partnership with AMC and the National Park



Service. This kiosk series will explore the relationships between past depletive uses of the forest for the iron industry at Hopewell Furnace juxtaposed to the present status of the Hopewell Big Woods as one of the Pennsylvania Highlands region's largest contiguous forests providing people with high quality recreational opportunities.

AMC and the PHTN Steering Committee are exploring opportunities for interpretive kiosks at other locations along the PHTN, like Ringing Rocks, a popular diabase boulder field that is located in one of Bucks County's most popular parks and can be accessed along a high quality trail developed by AMC's trail crew. Contact AMC to learn more about interpretive kiosks including thematic content, production costs and information about firms that produce signage and kiosks.

Trail Stewardship

Just as the diversity of trail types run the gamut across the PHTN -- from rugged and narrow footpaths to smooth 12-foot wide asphalt trails -- trail maintenance is undertaken by a variety of municipal, county and state staff, or by nonprofit groups such as Friends of Nockamixon State Park, Horse-Shoe Trail Conservancy, Mason Dixon Trail Association, and the Appalachian Mountain Club.

Although a variety techniques, tools and resources are applied across this diverse trail network, the common standard of trail stewardship, regardless of trail types is, simply put: Proper maintenance is necessary to ensure that trail users can safely access and enjoy their outdoor experiences.

Keeping trails open and safe is hard work and requires proper tools and training. The same can be said for construction of new trails, or rerouting a section of an existing trail.

Organizations like the Appalachian Mountain Club, the Appalachian Trail Conservancy, the New York-New Jersey Trail Conference, and the International Mountain Biking Association provide volunteer training and have specific guidelines for sustainable trail development and construction.

There are many excellent resources covering the topics of trail building and maintenance and some of the best of these are included in the Appendix.

AMC is forming a PA Highlands Trail Crew in 2015 and will be providing training on a variety of trail building and maintenance topics. For more information visit pahighlands.org or call AMC's Mid-Atlantic office at (610)868-6906.



APPENDIX

List of Sources for Marking Trails

Guidelines for Marking Recreational Trails - Pennsylvania Department of Conservation and Natural Resources http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_007076.pdf

East Coast Greenway Trail Signage Manual
http://www.greenway.org/pdf/trail_signage_manual.pdf

Trail Construction and Maintenance Notebook (Federal Highway Administration- US Forest Service)
http://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/00232839/page11.cfm

Handbook For Trail Design, Construction, and Maintenance (National Park Service)
<http://www.nps.gov/noco/parkmgmt/ncttrailconstructionmanual1.htm>

Regional Trails Signage Guidelines (Metro Sustainability Center Portland Oregon)
http://theintertwine.org/sites/theintertwine.org/files/file_attachments/Intertwine%20Regional%20Trail%20Signage%20Guidelines.pdf

Virginia Department of Conservation and Recreation Trail Development Manual - Signage
http://www.dcr.virginia.gov/recreational_planning/documents/excerpt-from-trail-development-manual.pdf

List of Sources for Trail Building and Maintenance

Managers of natural surface trails may find the resources listed below to be useful for sustainable trail development, maintenance and volunteer training.

American Trails – National Trails Training Partnership (Resources and Library)
<http://www.americantrails.org/resources/trailbuilding/>

AMC Adopt-A-Trail Handbook
<http://www.outdoors.org/pdf/upload/vol-adopter-handbook-2.pdf>

AMC's Complete Guide to Trail Building and Maintenance
<http://amcstore.outdoors.org/books-maps/books/outdoor-skills/amcs-complete-guide-to-trail-building-and-maintenance-6851938544588423408>

PA Trail Design & Development Principles: Guidelines for Sustainable Non-Motorized Trails (DCNR)
http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_20028130.pdf

Top Ten List for Green/Sustainable Trails – PA DCNR



http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_012675.pdf

Trail Construction and Maintenance Notebook (Federal Highway Administration- US Forest Service)
http://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/00232839/page11.cfm

Sustainable Trail Development (International Mountain Biking Association)
<http://crgov.com/DocumentCenter/Home/View/1430>

PA Highlands Trail Network – Trail Co-Alignments

- D&L Trail
- Delaware Canal Towpath, Delaware Canal State Park
- Lehigh Canal Towpath
 - City of Easton
 - Bethlehem Township
 - Freemansburg Borough
 - City of Bethlehem
- South Bethlehem Greenway and Monocacy Way, City of Bethlehem
- Saucon Rail Trail
 - Hellertown Borough
 - Lower Saucon Township
 - Upper Saucon Township
 - Coopersburg Borough
- Ringing Rocks Trail, Bucks County Parks Department
- Nockamixon State Park Trail System
- Richland Township – Hunters Crossing (Homeowners Association)
- Milford Township – Barrel Run, Unami Trail
- Perkiomen Trail, Montgomery County
- Schuylkill River Trail, Schuylkill River Heritage Corridor and Montgomery County
- Hopewell Big Woods Trail (planned)
 - PA-DCNR French Creek State Park
 - National Park Service Hopewell Furnace National Historic Site
- HorseShoe Trail, HorseShoe Trail Conservancy
- Lebanon Valley Rail Trail, Lebanon Valley Rail Trail Association
- Conewago Trail, Lancaster County Parks
- Northwest River Trail
 - Columbia Borough
 - Marietta Borough
 - East Donegal Township
 - Conoy Township
- Mason Dixon Trail, Mason Dixon Trail Association

