NATIONAL CONSERVATION LANDS

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

National Scenic and Historic Trails Inventory, Assessment, and Monitoring

Volume 2: Field Guide, BLM Technical Reference 6280-1

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This Field Guide is provided to help implement the policies and purposes set forth in the National Trails System Act; the Federal Land Policy and Management Act; and other applicable laws and policies as appropriate for inventory, assessment, and monitoring (IAM) of National Scenic and Historic Trails (NSHT or National Trails).

1.1   How to Use the Field Guide

Volume 2: Field Guide provides step-by-step instructions for an interdisciplinary team (ID team) to maximize the use of existing programs, skill sets, and data standards for efficiency. This document supports implementation of the policies described in Bureau of Land Management (BLM) Manual 6280 – Management of National Scenic and Historic Trails under Study or Recommended as Suitable for Congressional Designation.

In concert with Volume 1: Methodology, this Field Guide is built upon BLM policy and is designed to guide IAM efforts of BLM staff as well as other Federal, State, or local agencies; Tribes; contracting firms; trail organizations or associations; and trail volunteers. With these audiences in mind, the document is written to maintain the value and transferability of a standardized methodology.

Checklists outline integrated methods for the scenic, historic/cultural, recreation, and natural landscape elements to improve efficiency and consistency in documentation methods and data management practices for National Trail inventories.

[1] All BLM manuals, handbooks, or technical references noted in this document are available online at https://www.blm.gov/learn/blm-library/agency-publications/technical-references. The BLM manuals may provide examples for other agencies, or other agencies may have similar guidance.

[2] For information regarding policies for BLM administration and management of National Trails and trails under study, including trailwide comprehensive plans, resource management plans, and proposed actions, see BLM Manuals 6250 and 6280.

The ID team works collaboratively to identify National Trail segments, inventory analysis units, and inventory points

1.2 Preparing for the Field

1.2.1 Identifying National Trail Segments

A trail segment should be of sufficient length to reasonably inventory, manage and subsequently monitor resources, qualities, values, and associated settings for the foreseeable future (20+ years, the life span of most land use plans). Managers should consider data gathering time, data entry time, expense, extent of resources, trail continuity and integrity, area uniqueness or anticipated or relative significance, and resource sensitivity.

For an NHT, National Trail Segments can include fragmented sections of National Trail. It is preferable to contain high potential historic sites or high potential route segment(s) in their own distinct segments; however, due to the extreme length of some route segments in certain field offices, this may not be feasible.

While there is no minimum or maximum number of segments allowable for a jurisdiction, consider reasonable representation — the number of segments needed to best represent the respective whole trail length found within the boundaries of the respective jurisdiction. Coordination with adjacent jurisdictions is also strongly encouraged for efficacy and edge-matching.

Segmentation Checklist

- ✓ Update the Designated National Scenic or Historic Trail dataset (polyline).
- ✓ BLM Field and State offices are required to track and report the total number of segments identified for each National Trail, and the number of associated public land miles (linear) by field office.

1.2.2 Conducting Visibility Analysis

For all National Trails, use a GIS-based modeling technique to delineate the extent of the trail's viewshed from each National Trail segment. A visibility analysis identifies the extent of what can be seen from the trail and conversely from where the trail is visible from adjacent areas.

Where needed, sampling points should be placed at regularly spaced intervals (typically 0.25 mile) along the National Trail segment; at high points; and/or in areas agreed upon by the ID team to ensure there are no gaps in the visibility analysis. At least one sampling point should be located on each BLM parcel. The visibility analysis will identify what landscape features are visible or "seen," "not seen," as well as how frequently landscape features are seen (most to least prominent based on locally determined tolerances or thresholds).

Use a 10 meter Digital Elevation Model (DEM) files for analysis, unless another DEM resolution is recommended by the local GIS specialist. The height of the viewer should be 5 feet.

Visibility Analysis Checklist

- ✓ Create a Visibility Analysis dataset (raster/polygon). Save all data and metadata used for the analysis including all input data, interim data products, and resulting data.
- ✓ BLM Field and State offices are required to report the total number of inventory analysis units (IAUs) identified for each National Trail, and the number of associated public land acres (geographic) by field office.

1.2.3 Delineating Inventory Analysis Units

Land areas undergoing the inventory are divided into IAUs to organize and focus efforts for each National Trail segment. IAUs are delineated by the ID team by analyzing natural, man-made, or jurisdictional boundaries in relation to the viewshed. This may include considerations such as distinct trail segments, breaks in landform, trail easement beginning and end points, and/or roads. Within each inventory analysis unit, relevant trail resources, qualities, values, and associated settings and the primary use or uses are to be identified. High potential historic sites and/or high potential route segments merit particular attention.

The width of an inventory analysis unit should encompass the maximum extent of potential influence or merit, and serve as the broadest possible interpretation for appropriate maximum outdoor recreation potential for the specific trail and/or the protection of resources, qualities, values and settings relating to the period of significance. This allows for future development of a reasonable range of alternatives in land use planning efforts, and ensures that an area of potential adverse impact can be appropriately addressed in a NEPA analysis.

IAU Checklist

- ✓ Create a IAU dataset (polygon).
- ✓ BLM Field and State offices are required to report the total number of IAUs identified for each National Trail, and the number of associated public land acres (geographic) by field office.

1.2.4 Selecting Inventory Points

Inventory points (IPs) are used for documenting and evaluating each landscape element as part of the inventory process. The ID team should take into consideration suitable IPs may already exist (e.g., existing visual vegetation, or wildlife monitoring points). If this is the case, these points should be used.

Photo documentation of inventory points along the Old Spanish Trail.

If no IPs exist, the ID team will consider whether potential IP locations can include:

- ◊ Developed existing recreation and interpretive use areas
- ◊ Critical points that reflect how a trail visitor interacts with the trail, such as overlook points, access points, trailheads, switchbacks, resting places, and pullouts
- ◊ Natural topographic breaks, major landforms, and locations of changes in landscape form
- ◊ Areas with sensitive resources, qualities, values, and associated settings

When selecting IPs, the ID team should also consider secretarially designated National Recreation Trails (including National Water Trails), Side and Connecting Trails, or auto tour routes that facilitate public access to the trail itself, or that provide opportunities for vicarious experiences (BLM Manual 8353).

IPs can also be used to determine visibility as part of the visibility analysis to help to define the boundaries of the IAU(s). Both the physical state (trail) and viewshed (setting) condition are documented at each IP for as many landscape elements as practical. This data is essential for facilitating future trend analysis and for tracking changes to the trail and setting.

SELECTING IPs FOR NATIONAL HISTORIC TRAILS

For National Historic Trails, IPs should be located:

- ◊ At National Trail-related National Register of Historic Places-eligible and -listed properties
- ◊ At other significant historic trail-related features such as river crossings, graves, and inscription sites
- ◊ At high potential historic sites and high potential route segments
- ◊ Along auto tour routes and trails that facilitate public access and opportunities for vicarious experiences (potential connecting or side trails)

1.2.5 Use of NSHT-IAM GPS Data Dictionary

Field data collection are to be accomplished by using GPS data collection units supplemented with field notes and extensive photo documentation. To aid in the collection and management of data during field activities, the field inventory team should use a standard data dictionary with data logging devices to capture data associated with each landscape element.

Trail segments and other identified resources should be recorded according to the National Landscape Conservation System Data Standard and future NSHT Data Standards; Federal Geographic Data Committee Metadata Standards; Federal Trail Data Standards; and the National Standard for Spatial Data Accuracy.

NSHT-IAM GPS Data Dictionary Checklist

- ✓ Install appropriate landscape element data dictionary on GPS data collection devices
- ✓ Walk through data dictionary inputs with inventory team
- ✓ Verify that GPS data collection equipment is fully charged and functional each day

1.3   In-Field Documentation

1.3.2 Photo Documentation for Inventory Points

In concert with the four landscape elements, photo documentation at each IP includes a complete and comprehensive high-resolution panoramic photo capture process using GPS-enabled cameras. There should be a minimum of 30 percent overlap of each photo at a normal focal length so photos can be stitched together after the field inventory process. Take a full 360-degree series of photos beginning in a north-facing direction with the photographer moving in a clockwise fashion and ending facing north at each IP. Photos of the IPs are intended to capture landscape character-defining features, noncontributing cultural elements, and other features that are relevant to the trail.

Photo Documentation Checklist

- ✓ GPS-enabled camera capable of at least 16 megapixel resolution
- ✓ Minimum of 30 percent overlap for each image
- ✓ Start and end in north-facing direction
- ✓ Move in a clockwise direction
- ✓ Record photo information in GPS data collection device

Interdisciplinary team conducting integrated Landscape Element inventories.

Landscape Element 1 – Scenic

(Manual 6280 Section 3.5.E.1-2)

When conducting scenic inventories, use an approved or adopted methodology such as the BLM Visual Resource Management Program and Handbook H-8410-1. The following discussion relies on the BLM Visual Resource Management program as an example. A typical inventory of visual resources includes a visibility analysis and delineating visual distance zones, documenting scenic quality, and conducting an analysis of public sensitivity. These components relate to the nature and purposes, resources, qualities, values, and associated settings of the National Trail.

PRE-FIELD – SCENIC

NATIONAL TRAIL VISIBILITY AND DISTANCE ZONES ANALYSIS

Using the visibility analysis prepared to support IAU delineation, identify what areas are commonly seen using distance zone thresholds defined in the BLM Visual Resource Management program. For consistency across programs, it is recommended that the viewshed analysis and visual distance zone delineations follow similar protocols as those identified in BLM Manual H-8410-1.

> Refer to the Visual Resource Management Program's Visual Resource Inventory Handbook H-8410-1 for for definitions of terms related to scenic resource analysis, and for methods to delineate distance zones.
> Refer to the forthcoming NSHT Resource Inventory Data Standard Report and Implementation Guide for information on how enter the records into the NSHT geodatabase.

Pre-Field Inventory Checklist

✓ Apply visibility analysis methods outlined in BLM Handbook H-8410-1.

✓ Delineate the viewshed into, foreground/middle ground, and background areas based on the following parameters:

- Foreground/middle ground zone: 0 to 5 miles; and the background zone: from 5 to 15 miles
- Areas not visible from the National Trail are designated as seldom seen
- Visibility should be based on what can be seen and sometimes be seen, or to 15 miles, whichever distance is shorter

✓ Record the results in the NSHT geodatabase following the same standards as the BLM Visual Resource Inventory.

> Refer to BLM Handbook H-8410-1 for guidance on documenting visual sensitivity, delineating sensitivity level rating units, and for rating sensitivity. Refer to the forthcoming NSHT Resource Inventory Data Standard Report and Implementation Guide for information on how enter the records into the NSHT geodatabase.

SENSITIVITY LEVEL ANALYSIS

The public's concern for scenic quality associated with the National Trail must be sufficiently captured. Records about public visual sensitivity are collected as part of the Visual Resource Management Program's VRI.

Pre-Field Inventory Checklist

✓ Determine if existing VRI data is sufficient based on the minimum information necessary to help safeguard the nature and purposes of the trail. If not, refer to the Visual Resource Inventory Data Standard Report and Implementation Guide to add to the sensitivity level analysis record.

✓ Gather data from a variety of sources to help inform concern for scenic quality associated with National Trail.

✓ Use sensitivity factors to delineate sensitivity level rating units within IAUs.

✓ Evaluate, rate, and categorize sensitivity level rating units by public sensitivity levels.

✓ Document findings following BLM Visual Resource Inventory Data Standards.
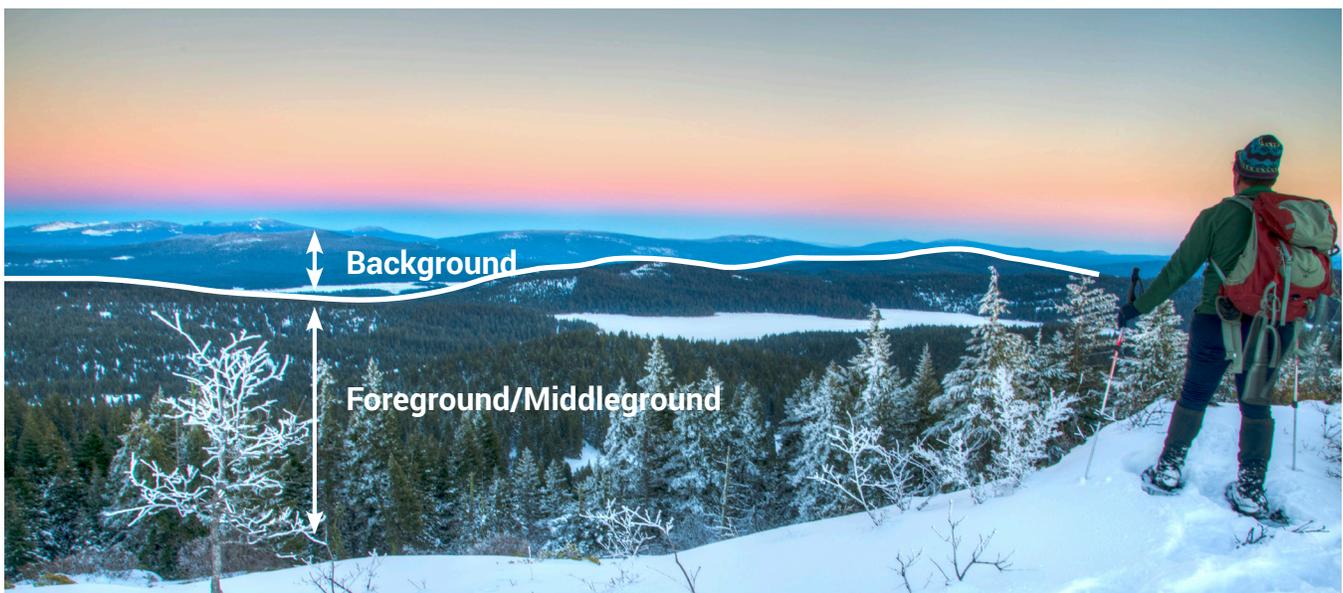
Distance Zones help us understand relative visibility

SCENIC QUALITY

Records detailing the scenic qualities and visual characteristics must be sufficient to help safeguard the nature and purposes of the National Trail. Records describing public land scenic qualities are collected as part of the Visual Resource Management Program's VRI. If a VRI for the National Trail exists and overlaps the IAU, confirm that the records properly and sufficiently captures the scenic qualities for the National Trail. If the existing VRI does not properly and sufficiently capture scenic qualities for the National Trail, an intensification effort is recommended. Refer to BLM Handbook H-8410-1 guidance for information on how to assess scenic qualities, delineate scenic quality rating units, and rate scenic quality. Refer to the forthcoming NSHT Resource Inventory Data Standard Report and Implementation Guide for information on how enter the records into the NSHT geodatabase.

Pre-Field Inventory Checklist

✓ Determine if a VRI exists, and if so, whether it is sufficient; if not, apply scenic quality methods identified in BLM Handbook H-8410-1.

✓ Delineate scenic quality rating units within IAUs following methods identified in BLM H-8410-1.

✓ Identify IPs within each scenic quality rating unit to evaluate scenic quality. These locations must be coordinated to coincide with other landscape elements as part of future monitoring efforts.

✓ Upload IAUs, scenic quality rating units, IP locations, and National Trail alignment to GPS-enabled device for navigation and documentation purposes. In lieu of an electronic device, identify and delineate the above on hardcopy topographic maps using a scale that is relevant to the landscape to be inventoried.

FIELD – SCENIC

The standard fieldwork protocol requires the evaluation team to eye-witness each scenic quality rating unit during in-field analysis to gather information according to the BLM H-8410-1 using Form 8400-5 Scenic Quality Rating Summary. The inventory team needs to maintain a set of observations and impressions about each scenic quality rating unit. Prior to leaving each scenic quality rating unit, the team is to review their notes, fill out Form 8400-5 Scenic Quality Rating Summary, and arrive at a final rating for that scenic quality rating unit.

Field Inventory Checklist

✓ Evaluate scenic quality from predetermined IPs using BLM Forms 8400-01 and 8400-5.

✓ Evaluate overall score for a given scenic quality rating unit based on impressions and documented characteristics from each IP.

✓ Document each IP location using a GPS-enabled device, noting assigned scenic quality rating unit number, IP number, and photograph numbers.

✓ Document each IP with 360-degree photograph(s). Start in a north-facing direction and move clockwise to record photos in a sequence that can later be used for reference and monitoring.

✓ Document findings as part of the Visual Resource Management Geodatabase following BLM Visual Resource Inventory Data Standard Report August 16, 2010.

Figure 1. Form 8400-5 Scenic Quality Rating Summary

DATA SHARING AND REPORTING – SCENIC

At the conclusion of the inventory:

- ✓ Document collected scenic information as part of the NSHT database following appropriate NSHT data standards.
- ✓ Submit 360-degree photographs and other files within the inventory record to the State NSHT program lead.

Thorough documentation of each landscape element is important.

Landscape Element 2 – Historic and Cultural

(Manual 6280 Section 3.5.E.3 – 4)

When conducting historic and cultural inventories per BLM Manual 6280 and BLM Manual 8110 Identifying and Evaluating Cultural Resources (BLM 2019), the minimum requirements are a Class I inventory and National Register of Historic Places determinations for National Trail-related historic properties. A Class III inventory, or other survey method according to the BLM/State Historic Preservation Office (SHPO) protocol as required by existing programmatic agreements, is required for significant properties or surface-disturbing activities. A Class III inventory includes a survey report with associated maps, photographs, and logs and site forms as they relate to the nature and purposes, resources, qualities, values, and associated settings of the National Trail.

> Refer to BLM Manual 8110 for definitions of terms related to historic and cultural resource analysis.

PRE-FIELD – HISTORIC AND CULTURAL

Before conducting fieldwork, a cultural resources Class I inventory of previously conducted cultural resources surveys, historic context studies, and previously recorded archaeological sites, buildings, and structures is to be undertaken to identify the presence of locally, regionally, and nationally significant National Trail-related historical resources.
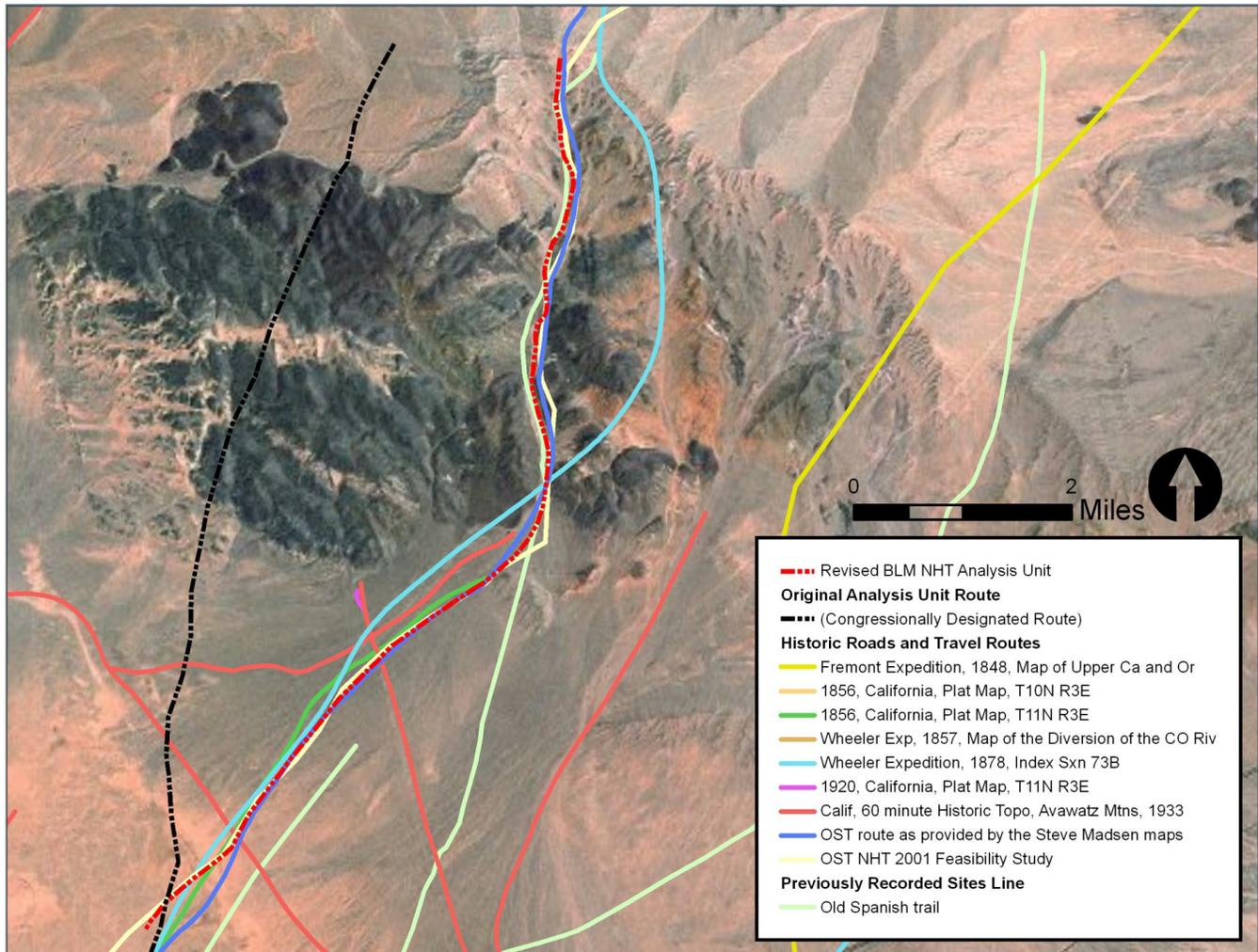
Where the exact location of a NHT segment is not well known and in many places, no physical trail resources have been recorded to date, trail traces from historic maps and aerials should be georeferenced and digitized, or spatially plotted, into a GIS database. GLO Plat Maps, historic topographic maps, as well as maps depicting the trail at a reasonable scale or accuracy can be useful for field inventory efforts, such as the topographic atlas maps created from surveys conducted by George M. Wheeler in the late 1800s.

To convert map data into GIS, 1) georeference available maps and aerials; 2) digitize historic roads and travel routes from the maps; and 3) create a project geodatabase to organize and store the digitized data. The geodatabase can include source points that can be hyperlinked to location-specific PDFs of the historic documents; a feature class containing historic roads or swales identified during aerial imagery analyses; and feature classes of previously recorded sites found through records searches. The geodatabase contributes fundamentally to:

- ◊ Refining the documented location of the trail route
- ◊ Contributing to predictive modeling efforts to assess alternative trail alignments
- ◊ Guiding cultural resources field survey sampling strategies, and
- ◊ Providing support for the historic setting component of the study.

Pre-Field Inventory Checklist

- ✓ Identify the extent of the Class I research radius by determining if a research radius of 0.5 mile or 1 mile is an appropriate level of pre-field investigation (based on the number of previous surveys and previously recorded sites).
- ✓ Review existing records at the appropriate archaeological records office, SHPO, and BLM field office.
- ✓ Overlay the IAU and trail alignment with the Class I shapefiles to identify specific areas with data gaps (survey areas) that must be supplemented with field data collection.
- ✓ Submit a Fieldwork Authorization Form to the appropriate BLM field office prior to survey.
- ✓ For NHTs, make reasonable efforts to locate and verify the location of heritage resources including the historic trail trace.

Legend:
- ▪▪▪▪ Revised BLM NHT Analysis Unit
- **Original Analysis Unit Route**
- ▪▪▪▪ (Congressionally Designated Route)
- **Historic Roads and Travel Routes**
- Fremont Expedition, 1848, Map of Upper Ca and Or
- 1856, California, Plat Map, T10N R3E
- 1856, California, Plat Map, T11N R3E
- Wheeler Exp, 1857, Map of the Diversion of the CO Riv
- Wheeler Expedition, 1878, Index Sxn 73B
- 1920, California, Plat Map, T11N R3E
- Calif, 60 minute Historic Topo, Avawatz Mtns, 1933
- OST route as provided by the Steve Madsen maps
- OST NHT 2001 Feasibility Study
- **Previously Recorded Sites Line**
- Old Spanish trail

Locate and verify NHT's or other historic resources by analyzing, georeferencing, and digitizing previous maps and research. Even with the availability of historic maps, the digitized route alignment varies by several miles. Note that the Congressionally Designated Route to the far left is removed from other documented locations and not a practicable travel route. At times, such as for the Spanish Canyon in California above, there is a convergence suggesting more of a corridor than an exact route, which probably reflects how the trail was actually used in many locations.

FIELD – HISTORIC AND CULTURAL

Following completion of the Class I research, a Class II or III pedestrian field inventory can be implemented. The Class II or III inventory locates and verifies these significant National Trail-related properties and assesses their eligibility for listing in the National Register of Historic Places. In areas where few or no cultural resources surveys have been conducted, a Class II probabilistic inventory may be warranted in select locations to assess the character, density, diversity, and distribution of significant cultural resources. For unverified NHTs corridors, prior to any other field inventories, make a good faith attempt to locate trail traces and sites that historic documents and archival research suggest are significantly associated with the historic trail, but which have yet to be definitively identified on the ground. A Class III inventory may then be necessary in select locations following the Class II inventory and in consultation with the appropriate SHPO.

NHT CONDITION ASSESSMENTS

Assess the comparative character of each NHT²'s visible remnants (trace) using the FTDS National Historic Trail condition categories (see Appendix B on the FTDS website, https://www.nps.gov/gis/trails/ and BLM Manual 6280, Appendices 4 and 5).

At an IP located on the NHT[2]:

1. Identify the trail trace.
2. Standing at a central location along the trace, take a minimum of 2 photos - one photograph in each direction along its length to illustrate the trail condition at this location.
3. Note the condition and assign the appropriate NHT category for the trail as observed at this location.
4. GPS the trail trace as a line feature for a 100-foot distance in each direction from the IOP to provide a sample condition. Enter condition information into the GPS Data Dictionary or field form. If more than one condition is present, document each as a separate line.
5. Be sure to take notes about your condition assessment at each IOP, especially for "borderline" cases, or if you have questions.
6. Assign a condition class (I-VI) in the field using the following system (see definitions following protocol).

> There are six condition categories for the NHT segments:
>
> ◊ **NHT I** - Location is verified and evident and is unaltered from its historic state
> ◊ **NHT II** - Location is verified and evident and there are minor alterations to the historic state
> ◊ **NHT III** - Location is verified but not evident
> ◊ **NHT IV** - Location is verified but trail has been permanently altered
> ◊ **NHT V** - Location is not verified or approximate
> ◊ **NHT VI** - Location is verified but the trail has been reconstructed to its historic appearance

DEFINITIONS

NHT I - The trail route has been verified by comparing current existing conditions documents with historic documents.

AND

The trail appears virtually unchanged since historic times and shows no evidence of being impacted by subsequent use or alterations by other improvements.

Wagon Trails: The ruts, swales, scaring, or tracks are still evident. Some erosion or slight restoration may have occurred, but the appearance of the trail is as close to the historic condition as could be expected.

NHT II - The trail route has been verified by comparing current existing conditions documents with historic documents.

BUT

The visible trail remnant shows minor evidence of alteration by subsequent use, development, or natural events. The use of the trail may have changed over time, but the original trail is evident and appears mostly unchanged.

Wagon Trails: Trail may have been or is being used as an unimproved two-track road but the overall character of the trail/road is similar to the historic condition.

NHT III - The trail route has been verified by comparing current existing conditions documents with historic documents.

BUT

Due to weathering, erosion, vegetative succession, development, etc. trail traces are insignificant, although some evidence remains. Historic trail may have passed through forests or meadows, across hard surface or rock, over sandy or loose soils, through ravines or washes, or over other environments that are not conducive to holding a trail trace.

Wagon Trails: Some evidence may remain such as rust marks, grooves, and polish on rocks; rope burns on trees; and hub scrapes on rocks or trees, but the trail tread is no longer evident.

NHT IV - The trail route has been verified by comparing current existing conditions documents with historic documents.

BUT

Little or no archaeological evidence remains and the trail has been permanently altered or obliterated by human-caused or natural events leaving no evidence of its original appearance. Trail may have been altered by road construction (widening, blading, grading), or below-ground developments such as pipeline installation, utility corridor development, building construction, etc.

Wagon Trails: The historic appearance is no longer retained, usually due to an improved road being built on top.

NHT V - The trail route's location has not been verified accurately by comparing current existing conditions documents with historic documents.

AND

The trail is either so obliterated or unverifiable that its location is only approximately known. In many cases, the trail has been destroyed entirely by development, such as highways, structures, agriculture, or utility corridors. The trail may be inundated beneath a reservoir, or there may not be sufficient historical evidence to accurately locate the trail.

NHT VI - The trail route has been verified by comparing current existing conditions documents with historic documents.

BUT

The trail segment has been deliberately reconstructed at its original location to appear as it did historically. To achieve this classification, the reconstructed trail must be in the location of the original trail.

Example: The reconstruction of a tow path or lock alongside an historic canal. This seldom happens with wagon trails except in association with larger reconstructed or rehabilitated historic sites (for example, C&O Canal or Historic Williamsburg).
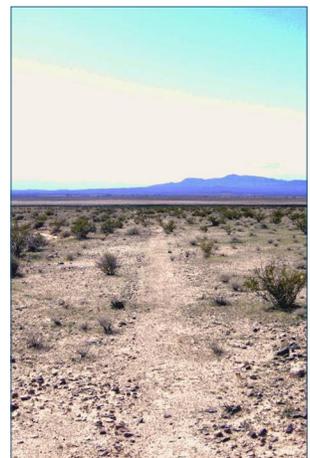
Document the comparative character of visible trail remnants observed at the time of mapping for all NHTs. The NHT Condition Categories only encompass the condition of the trail tread, and do not reflect the scenic or historic character or integrity of the NHT setting or surrounding landscape.
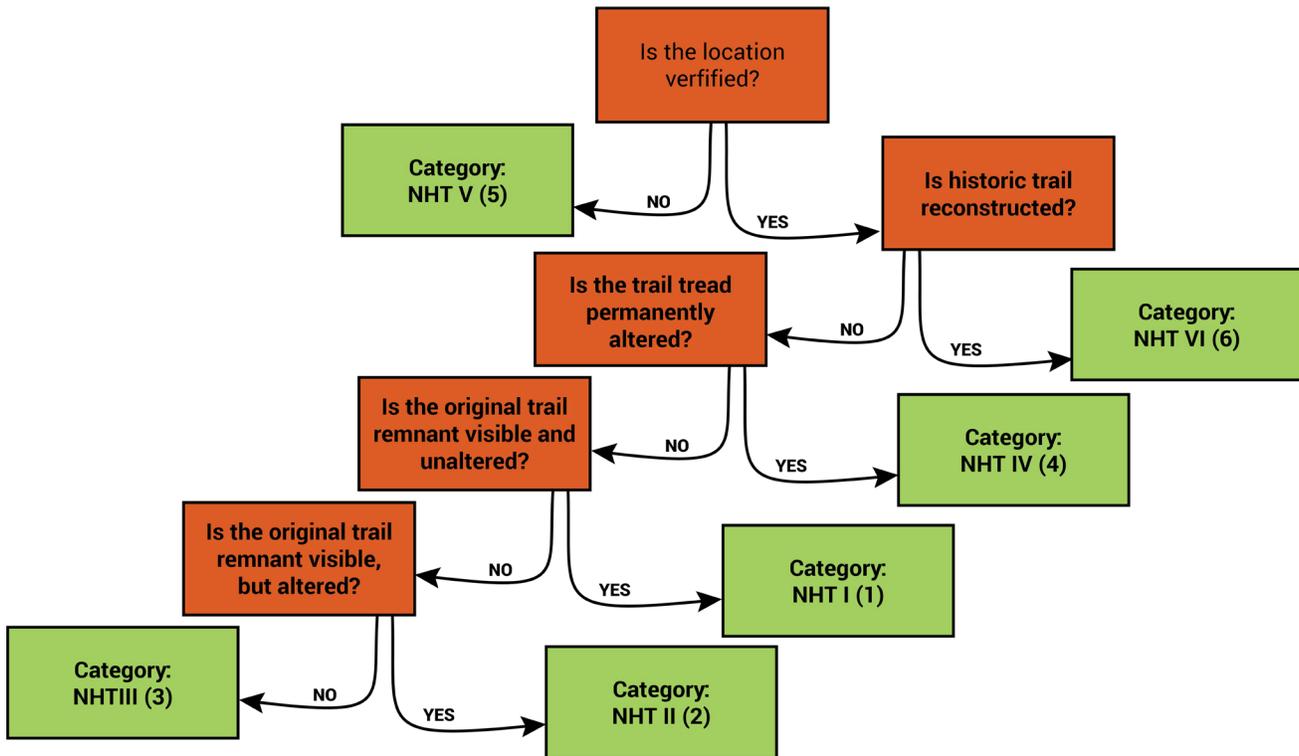
Decision tree for assessing NHT Condition Categories.

Field Inventory Checklist

- ✓ Determine survey methods according to the BLM/SHPO protocol required by existing programmatic agreements or, in cases where programmatic agreements are not in use, consult with the appropriate SHPO.
- ✓ Compile a team of cultural resources specialists who have been trained to collect data using the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716, September 29, 1983).
- ✓ Field survey equipment includes at minimum a clipboard, field logs, compass or GPS unit, pencil, high-visibility vest or shirt, and a camera.
- ✓ Documentation includes at minimum a field map of the identified cultural resource with associated Universal Transverse Mercator coordinates; a completed photograph log; and a completed inventory or site form describing the resource and its condition in detail. At IPs, take several photographs of the resource from multiple vantage points, paying attention to setting, design, and condition.
- ✓ If archaeological sites or standing buildings or structures are encountered, request archaeological site numbers from the applicable repository and resource numbers from the SHPO. Provide shapefiles or other locational information to these institutions.
- ✓ Following conclusion of fieldwork, prepare a survey report with associated maps and photographs in accordance with professional standards as established by both the BLM and the SHPO.

DATA SHARING AND REPORTING – CULTURAL

At the conclusion of the inventory:

- ✓ Along with the survey report, cultural GIS data collected is submitted to the BLM Field Office (and the State Historic Preservation Officer, if required by State law), for integration with the BLM/SHPO State and national BLM cultural resources database
- ✓ Data standards for cultural data vary by State. GIS data submitted adheres to the BLM/SHPO standards required for the State(s) in which fieldwork was completed.

Landscape Element 3 – Recreation including Recreational Travel

(Manual 6280 Section 3.5.E.5-6)

When conducting recreation and travel inventories per BLM Manual 6280 and BLM Handbook 8320 Planning for Recreation and Visitors Services, the minimum requirements are National Trail-related current recreation demand, visitor descriptions, current supply, recreation use infrastructure and opportunities (including interpretation or education), travel systems and opportunities, and physical, social, and operational recreation settings.

> Refer to BLM Handbook 8320 Planning for Recreation and Visitor Services for definitions of terms related to recreational analysis.

PRE-FIELD – RECREATION

Recreation inventories rely heavily on existing desktop data sources that are manually collated from multiple sources and scales. These sources include narrative, spreadsheets or databases, photographs, and mapping. The best available data (as referenced in the Methodology) are often maintained as statewide databases or online by other public land managers and service providers. These can be referenced in the inventory record (such as downloaded source datasets and hyperlinks), provided the key findings are assessed and locationally documented for future monitoring. To focus the inventory, the ID team should develop a set of indicators relevant to the nature and purposes, primary use or uses, and/or RQAVSs, as well as those key to management opportunities and impacts specific to the National Trail. This exercise narrows the breadth of comprehensive data review and reduces the costs associated with collecting it, but more importantly, the evaluation identifies the types of data for which long-term assessment and monitoring will be desirable.

Pre-Field Inventory Checklist

✓ Identify indicators for recreation demand and visitor demographics (including the sources for relevant data). Indicators could include:

- Visitor use trends and/or the number of visitors/visits
- The types of visitors
- Where visitors are coming from
- The types of activities in which visitors participate
- The National Trail-related primary use or uses
- What the participants and affected communities want from National Trail resources
- The existing economic benefits of tourism

✓ Identify current recreation supply within the IAU, working with the appropriate public land management agencies to learn:

- What other service providers (including businesses, universities, and nonprofit organizations) are currently doing to achieve National Trail objectives
- What management practices are employed by public agencies to achieve National Trail purposes
- GIS points, feature attributes, and photos are collected as needed
- Inventory travel systems in accordance with BLM route inventory standards and route classifications

✓ Map and/or describe the existing recreation setting characteristics along the trail corridor using the following data:

- Physical (remoteness, naturalness, visitor facilities), including:

  - Travel management data (e.g., roads, trails)
  - Location of structures (e.g., historic features, fences, energy development)
  - Location of visitor facilities

- Social (contacts, group size, evidence of use), including:

  - Surveys, if available
  - Direct observation along trail/corridor

- Operational (type of travel allowed, information, regulations), including:

  - Travel management data
  - Location of sign, interpretive exhibits, visitor centers
  - Location of use restrictions

- Determine if the existing recreation setting characteristics are providing the desired recreational opportunities and vicarious experiences using:

  - Anecdotal data
  - Visitor surveys
  - Focus groups (in person or virtual/online)
  - Social media data

- Outcome-focused management surveys are a new tool used during land use planning and, if completed, are helpful in determining desired experiences and benefits. Information associated with outcome-focused management surveys could provide input on the desired experience, e.g. visitor services are provided a minimal levels (basic maps, staff infrequently) is the desired backcountry setting to provide vicarious experiences.

✓ Map access, connectivity, and manageability opportunities, including potential connecting and side trails. Include a map and description for each identified opportunity.

✓ Map cultural modifications, other developments, and facilities. Inventory these cultural modifications to a level of detail sufficient to determine potential effect within the IAU.

✓ For NHTs only, locate within the IAU:

- Interpretive or educational opportunities
- High potential historic sites and high potential route segments
- Opportunities for public use, enjoyment, and vicarious experiences
- Federal Trail Data System category NHT[3] recreation and/or interpretive trails, roads, or sites, including those assisting with potential auto tour routes and connections to specific trail sites and segments

✓ For NSTs only, identify opportunities for maximum outdoor recreation potential consistent with the nature and purposes of the National Trail within the IAU.

FIELD – RECREATION

Where data gaps remain, intensification of facility and social science (visitation and activity data) is needed to supplement existing agency reports. Section 3.5.E.5.i of Manual 6280 acknowledges flexibility in inventorying recreation and demand. This type of data could be collected via observations, trail registration logs, intercept questionnaires, etc.

Intensification of all other recreation demand indicators (e.g., demographics, visit duration, economic benefits); satisfaction; and the associated experience and benefits involve some form of survey technique. Look for opportunities to partner with universities and research institutions that routinely collect recreation, travel, and tourism data as part of their ongoing services. If desired, additional studies could be completed to determine the preference for desired recreation settings. See Handbook 8320 Planning for Recreation and Visitor Services for detailed information.

Field Inventory Checklist

For facility assessments:

- ✓ At IPs, assess trail tread width and depth; social trails; evidence of campsite use (overuse); signs; litter; and human waste
- ✓ At IPs co-located with recreation use facilities, conduct condition assessments per Facility Asset Management System (FAMS) Condition Assessment Plans
- ✓ Assess travel route and maintenance levels through onsite inspection, remote sensing or traffic counter data

For visitation and activity data:

- ✓ Working within the Recreation Management Information System (RMIS) or equivalent, establish data collection at identified IPs to supplement data gaps

For social science surveys, obtain approval of all human surveys conducted by Federal employees from the Office of Management and Budget. Techniques can take various forms, including:

- ✓ Small group discussions and stakeholder Interviews (phone or in-person)
- ✓ Public meetings
- ✓ Questionnaires (intercept, mail-in, phone)

DATA SHARING AND REPORTING – RECREATION

At the conclusion of the inventory:

- ✓ Input visitor and site data collected for recreation sites into the Recreation Management Information System (RMIS)
- ✓ Enter information collected at visitor facilities into the Facilities Asset Management System (FAMS), Inventory, and Deferred Maintenance Report.
- ✓ Add route inventory updates to the Ground Linear Transportation Facilities (GLTF) database and transportation management plan

These baselines serve as the basis for future comparison to determine future unauthorized use and accomplishment of recreation settings.

Landscape Element 4 – Natural

(Manual 6280 Section 3.5.E.7 – 8)

A natural resources inventory strategy should focus on those resources identified as supporting or promoting the nature and purposes or recreation experiences, including vicarious experiences, for National Trails. The inventory methodology follows the minimum inventory requirements for the applicable BLM resource program or standard dataset. For example, if threatened or endangered species support the nature and purposes or recreation experience for the National Trail, their potential to occur within the trail corridor is to be documented via an Information for Planning and Consultation report using the U.S. Fish and Wildlife Service's online web tool (https://ecos.fws.gov/ipac/) as well as local Natural Heritage Element Occurrence data sources.

The following discussion relies on the BLM AIM program as an example and other programs or resources may be used as applicable. Where possible, the selected methods should also be consistent with a BLM standard data set and associated protocols. For example, BLM Assessment, Inventory, and Monitoring (AIM) datasets (see https://aim.landscapetoolbox.org/ or Toevs et al. 2011) include repeatable methods specific to land and water resources, including vegetation, associated habitats for wildlife, and the supporting ecological components of soil and water.

PRE-FIELD – NATURAL

Prior to entering the field, compile all of the overlapping BLM field office or district office's AIM GPS points and other applicable resource database records that contribute to the nature and purposes of the trail that have been collected within the IAU. Compare them against the National Trail alignment to determine how much supplemental field data collection is needed to capture the trail corridor's soil, vegetation, water, wildlife, air, riparian, forest, rangeland health, habitat, and noxious or invasive species inventory requirements, as well as any additional characteristics which support the trail's nature and purposes.

For NSTs only, identify the geographic extent of the natural landscape elements that influence the trail experience and contribute to resource protection documents within the IAU. Sources could include U.S. Environmental Protection Agency (EPA) Level III Ecoregions and Natural Resources Conservation Service Ecological Site Descriptions. Ecological Site Descriptions help to capture the physical representations (desert, marsh, grassland, mountain, canyon, river, forest, or other areas) that are relevant to the National Trail's nature and purposes, and topographic maps and aerial imagery for landscape-defining characteristics such as prominent or distinctive geographic features and aspects.

Pre-Field Inventory Checklist

- ✓ Download all existing BLM AIM points and associated information from BLM data sources, as well as any additional relevant datasets that were identified as contributing to the nature and purposes of the National Trail.
- ✓ Overlay the BLM AIM points and other contributing datasets with the IAU and trail alignment to identify specific areas with data gaps that need more information.
- ✓ For NHTs only, document the landscape-defining National Trail-related landmarks or landscape features identified by the original trail users.
- ✓ For NSTs only, overlay the IAU and:

  - EPA Level III ecoregions to document the extent of each physical representation
  - Natural Resources Conservation Service Ecological Site Description boundaries to document the extent of each Ecological Site Description type
  - Topographic base maps and aerial imagery to document the significant landforms and features such as peaks, drainages, and landmarks that define the natural landscape

FIELD – NATURAL

If it is determined during the pre-field inventory that there are areas with data gaps, such as large unsurveyed areas containing no existing BLM AIM monitoring locations or other supporting datasets that contribute to the nature and purposes, additional data must to be collected in the field as part of the intensification effort. The purpose of field data intensification is to document the present condition of natural resources that contribute to the resources, qualities, values, and associated settings of the trail as they currently exist on the ground using methods that support long-term monitoring. For example, for consistency, AIM should be used to supplement the existing data and quantitatively identify conditions in the IAU.

Field Inventory Checklist

✓ Using GIS, identify specific survey locations within the pre-field data gaps, including IPs.
✓ Document the GPS coordinates for each new monitoring location and IP and load the points into a GPS field unit.
✓ Compile a team of resource specialists who have been trained to collect data using the BLM AIM protocol.
✓ At IPs, follow the field data collection method that best documents the natural resources, qualities, values, primary use or uses, and settings (e.g., single transects for linear features as described in AIM, page 7; line point intercept when plant cover is of interest or tree density as described in AIM, if tree cover and forest health is of interest).

- **Step 1:** Identify each natural element (e.g. vegetation, soils, riparian health) that is significantly contributing to the nature and purposes of the National Trail.
- **Step 2:** Identify which core method protocol from AIM will be utilized in the field to monitor the resource.
- **Step 3:** Load the database for AIM onto the field tablet and/or print the appropriate protocol monitoring form(s) to record data in the field.
- **Step 4:** Navigate to the first IP using a handheld GPS device.
- **Step 5:** Follow the monitoring and data recording steps for each core method using the appropriate protocol for AIM or other method for each selected natural resource that significantly contributes to the nature and purposes of the trail.
- **Step 6:** Review the data collected for accuracy, consistency, and completeness before leaving the IP location.

DATA SHARING AND REPORTING – NATURAL

At the conclusion of the inventory:

✓ If recorded on paper following AIM protocol, enter each monitoring form into the Database for Inventory, Monitoring, and Assessment Microsoft Access database on a desktop computer. If not, enter the data using the appropriate format for the protocol that was used and save in the National Trail record following guidelines in the Data Standard Recommendations report.
✓ Conduct quality control on all data entry following the procedures outlined on Pages 58 – 60 in Volume I of the AIM Manual.
✓ Upload all core method data collected in the field using the AIM protocol to the national database where AIM data is stored and accessible by all field offices.
✓ Upload all other natural resource data collected in the field that supports the nature and purposes of the trail to the National Trail eGIS data portal.

The ID team assesses inventory results in two ways—individually by landscape element, and then combined and assessed cumulatively. These two types of assessments help the ID team clearly understand, describe, and portray the location; amount of the National Trail resources, qualities, values, and associated settings; and the relationships to the primary use or uses of the trail. The ID team will evaluate condition relative to the nature and purposes of the National Trail. They will also describe the geographic context that supports or detracts from the nature and purposes of the trail.

When desired conditions are not achieved, the assessment needs to identify the cause and opportunities to improve management where possible. Both the assessment and monitoring should identify incidents of substantial interference, incompatible activities, or adverse impacts, including opportunities for restoration and resource protection. A monitoring form is to be prepared for each incident and reported to the field manager and documented in the case file; the same is true for efforts to resolve incidents of substantial interference or adverse impacts through the appropriate administrative or legal process. Where necessary, the monitoring lead can coordinate with the National Trail administering agency on substantive incidents to seek input regarding options for resolution.

At a minimum, inventory results are to be integrated across landscape elements and key findings should be summarized. A template for this summary is presented for NSTs and NHTs in Tables 1 and 2.

Assessment Checklist

- ✓ Describe the quality and extent of National Trail resources, qualities, values, and associated settings relative to the nature and purposes of the National Trail, both individually and cumulatively.
- ✓ Describe uses of the National Trail and how they relate to condition.
- ✓ Summarize key findings in Tables 1 and/or 2.
- ✓ Report incidents if needed.
- ✓ Recommend monitoring objectives and approaches based on the findings of your assessment (Table 3). In many cases, these may overlap with inventory and assessment approaches.
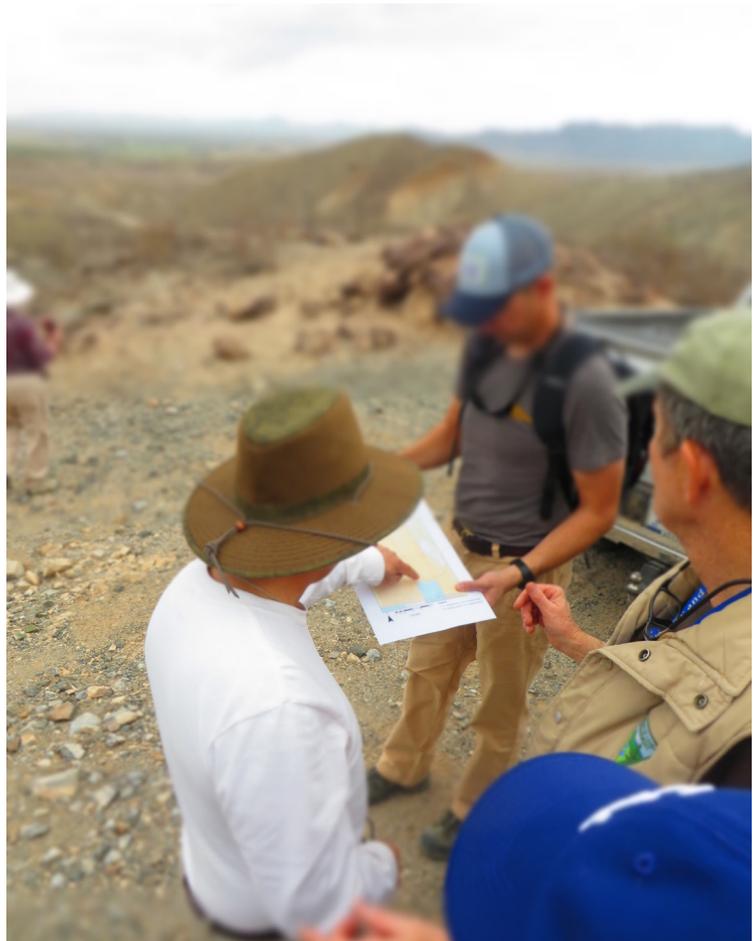
ID team coordinating along the trail.

Table 1. Assessment of NST Landscape Elements

National Scenic Trails	Inventory Findings Summary (to be prepared by the ID team. Specifically identify locations or conditions within an IAU that support or detract from the nature and purposes and opportunities for resource protection.)	Scenic	Historic/ Cultural	Recreational	Natural
a. The presence of unique landforms and the degree to which the landform exhibits significant characteristics of the physiographic region		X			X
b. Sustainable and premier trail-related opportunities				X	
c. High scenic values		X			
d. Relative freedom from intrusion		X	X	X	
e. Natural conditions, scenic and historic features, and primitive character of the trail area		X	X	X	X
f. Sustainable trail and resource conditions				X	X
g. Opportunities for high−quality, primitive nonmotorized recreation experiences (e.g., settings), including capability to provide campsites, shelters, and related public use facilities and continuous and sufficient public access				X	
h. Absence of highways, motor roads, mineral rich areas, energy transmission lines, commercial and industrial developments, range fences and improvements, private operations, and any other foreseeable activities		X	X	X	
i. Human health and safety				X	X

Table 2. Assessment of NHT Landscape Elements

National Historic Trails	Inventory Findings Summary (to be prepared by the ID team. Specifically identify locations or conditions within an IAU that support or detract from the nature and purposes and opportunities for resource protection.)	Scenic	Historic/ Cultural	Recreational	Natural
a. The presence and intactness of the original trails or routes of travel of national historic significance.			X		
b. The presence and intactness of the historic route and historic remnants and artifacts.			X		
c. Sustainable and premier trail-related opportunities.		X	X	X	X
d. Selected land and water-based components.		X	X	X	X
e. Opportunities to maximize vicarious experiences and resource protection.		X	X	X	X
f.(1). Presence of High potential historic sites: opportunities to interpret the historic significance of the trail during its period of major use and to identify and protect (NTSA Section 3[a][3]) the visible historic remnants and scenic quality and to provide relative freedom from intrusion (NTSA Sec. 12[1]).		X	X	X	
f.(2). Presence of High potential route segments: opportunities for afford high-quality recreation experiences, identify, and protect (NTSA Section 3[a][3]) the scenic integrity of the trail setting, and afford opportunities for vicarious experiences (NTSA Section 12[2]).		X	X	X	X
g. Opportunities for a developed trail to meet objectives.				X	
h. Properties potentially eligible for the National Register of Historic Places.			X		
i. Human health and safety.				X	X

Key: NTSA = National Trails System Act

The assessment should recommend monitoring objectives and frequency, such as the acceptable level and types of change to baseline conditions, and which indicator data should be collected for the resources, qualities, values, associated settings and the primary use or uses (see Table 3).

Table 3. NSHT Monitoring Table Template

Landscape Element	Objective	Indicator	Method or Technique	Location	Unit of Measure	Frequency
Landscape Element 1 *(example)*	*Cite RMP goal, objective or other outcome)*	*Indicator value from IAM data set*	*IAM data set using standardized, repeatable methods per a specific data standard*	*IP #, IAU, or Unique Identifier in <file name> GIS database*	*Number of sites, areas, acres, linear feet of indicator or disturbance*	*Frequency of monitoring*
Scenic	VRM Class II	Change in existing character of landscape, exceeding a low level of change	Visual contrast rating documentation; site visits; remote sensing	VRM Class II Areas	Acres of landscape that experience moderate to high levels of change to characteristic landscape; percentage of altered viewshed.	As projects are implemented in VRM Class II areas
Historic	Protection of NRHP-eligible sites	NRHP-eligible sites	Site inspection	IP #	Number of sites and/or area (acres/linear feet) of disturbance	With project permitting or as needed
Historic	Protection of High Potential Historic Sites	New disturbance to vulnerable sites and archaeological, historic, or cultural	Comprehensive monitoring utilizing archaeologists, law enforcement, rangers, and site stewards	Cultural sites identified on maps, brochures, or other media that bring the site into public awareness; sites that are known to be popular for public visitation	Number of sites and/or Area (acres/linear feet) of disturbance	Annually or as needed
Recreational*	Maintain desired backcountry settings	Evidence of use	Site inspection	IAU #	Areas of alteration uncommon. Little surface vegetation wear observed. Sounds of people infrequent.	Annually or as needed
Natural	Protect surface water resources	Wetland/springs/riparian condition	Aquatic AIM and/or PFC and/or Spring Stewardship Institute protocol	All identified wetlands/springs/riparian areas	Stream miles and acres along with rating	Every 3 to 5 years

* See Appendix 3 of the Planning for Recreation and Visitor Services Handbook (BLM H-8320-1) for examples.

Key: GIS = Geographic Information System; IAM = inventory, assessment, and monitoring; IP = inventory point; NRHP = National Register of Historic Places; NSHT = National Scenic and Historic Trail; VRM = Visual Resource Management

Monitoring is conducted in the field and focuses on the resources, qualities, values, and associated settings and the primary use or uses that have been identified through inventory as supporting the nature and purposes of the National Trail. Monitoring builds off of the information gathered and assessments made as part of inventory and assessment process wherever possible—using the same ID team, the same data collection methods, and the same assessment indicators. For example, monitoring of the scenic landscape element inventory should be completed from the same IPs for consistency over time. Similarly, all monitoring efforts are to use Federal Trail Data Standards and other formally established data standards for each landscape element.

A standard data dictionary, field crew calibration exercise, and training protocol should be in place to allow for consistent data collection among different staff members as described under Sections 2.5 and 7.0 of Methodology.

To simplify monitoring planning, a standardized monitoring form for the trail sites and segments can be implemented. A sample monitoring form is included in Appendix B.

As indicated in Section 6 of the Methodology, the ID team should complete the following tasks:

✓ **Monitor** indicators for each landscape element, with sufficient locations and frequency to inform each of the following within the National Trail areas:

- Resource management plans
- Approved projects
- Resource uses or surface disturbing activities that occur along the National Trail
- Acquired lands and interests in lands
- Visitor use and associated visitor capacities

✓ **Prioritize** monitoring efforts internally with other BLM programs, such as grazing permit renewals, resource management plan goals and objectives, and national monument management to ensure that monitoring occurs regularly, systematically and is not duplicated between programs.

✓ **Coordinate** monitoring efforts with tribes, affected agencies, partners, interested parties, SHPOs, and the Advisory Council on Historic Preservation.

✓ **Train and provide financial assistance**, including volunteer support, for IAM activities. Training and financial resources can be provided to interested Tribes, other agencies, partners, or interested parties, in accordance with applicable law.

✓ **Share** monitoring data with tribes, affected agencies, partners, and interested parties in accordance with formally established data sharing agreements and protocols.

✓ **Adjust** management decisions based on monitoring results, including amending land use plan decisions or adjusting implementation actions, subject to valid existing rights.

An important outcome of monitoring is to identify incidents of substantial interference, incompatible activities, or adverse impacts.

APPENDIX A. LIST OF ACRONYMS

AIM	Assessment, Inventory, and Monitoring
BLM	Bureau of Land Management
EPA	U.S. Environmental Protection Agency
GIS	Geographic Information System
GPS	Global Positioning System
IAM	inventory, assessment, and monitoring
IAU	inventory analysis unit
ID team	interdisciplinary team
IP	inventory point
NHT	National Historic Trail
NRHP	National Register of Historic Places
NSHT	National Scenic and Historic Trails
NST	National Scenic Trail
SHPO	State Historic Preservation Office
USGS	U.S. Geological Survey
VRI	visual resource inventory

NATIONAL SCENIC AND HISTORIC TRAIL MONITORING FORM

National Trail Name: _____ Date: _____

Resource Name: _____

Name and Position of Person(s) Conducting Monitoring: _____

Is this a High Potential Historic Site or High Potential Route Segment (HPSS)? Yes ☐ No ☐

Inventory Analysis Unit, Inventory Point, Management Corridor, Site and/or Segment Monitored (circle one):

_____

UTM coordinates (if applicable): _____ Legal Description or GPS Coordinates

_____

Number of Units/Sections Monitored: _____

Acreage and/or Mileage Monitored: _____

Condition of resources, qualities, and values, and associated settings and the primary use or uses of the trail:

Scenic:

_____

Historic and Cultural:

_____

Recreation:

_____

Natural (including biological, geological, and scientific):

_____

Uses and Activities Observed:

_____

Condition of Access Routes and Signs (if applicable):

Repair/Maintenance Needs:

National Trail Resource Disturbance, Impacts, or Issues Present: Yes ☐   No ☐

Nature of Disturbance, Impact, or Issue:

Describe any potential incidents of substantial interference, incompatible activities, or adverse impacts:

Recommendation for response:

List the programs, including law enforcement, and BLM managers who the incident should be reported to:

Summary and recommendation to Field Manager:

Resolution:

Previous AIM Vegetation Monitoring Data Available: Yes ☐   No ☐

New AIM Vegetation Monitoring Form Attached: Yes ☐   No ☐

Cultural Site Revisit Form Attached: Yes ☐   No ☐

Update to Visual Resource Inventory Needed: Yes ☐   No ☐   Form Attached: Yes ☐   No ☐

Map Attached: Yes ☐ No ☐   Photographic Evidence of National Trail Condition Attached: Yes ☐   No ☐

Additional Forms Attached: