Using ArcGIS Online to post data for National Trails
Current Status

- Most National Trails are already publishing some version of their centerline on ArcGIS Online.

- Multiple depictions of different trails exist out there though, making it hard to identify which is the ‘official’ version and/or the most up-to-date version.

- Information associated with each data set also varies in terms of spatial accuracy, map scale, attributes, and associated information available.

- Some are shared with the public, some are only shared internally (with select staff)

- Some trail data is fully downloadable, others are not.

- Some data contains FGDC compliant metadata, others do not.
Our Vision

• We think that ArcGIS Online is a great platform for sharing geographic information about National Trails with managers, partners, and the public.

• ArcGIS Online can be used, not only to share individual trail data, but to bring all National Trail data together.

• If setup correctly, multiple organizations can access trail data on ArcGIS Online without any one person or entity having to manage all the data, request periodic updates, or deal with the headaches of ‘merging’ it together to form one dataset.

• Multiple organizations may link to the data without having to go to one specific organization or one specific host (website, data portal, etc) to acquire the data.

• Data hosted on ArcGIS Online is dynamic, meaning any updates made to the data are immediately ‘live’ (shown), and can continue to be managed exclusively by each trail entity.
Some Existing National Trail data on ArcGIS Online

Each trail depicted here is stored separately on ArcGIS Online and managed separately by its respective trail managers.
Some Existing National Trail data on ArcGIS Online

Information about each trail may be viewed separately
Some Existing National Trail data on ArcGIS Online

If actually logged into ArcGIS Online (with an ESRI account – either organizational or free) additional functionality is available.
Data posted includes a name, date last modified, and type of layer...
Information associated with the Appalachian Trail

Description

The Appalachian National Scenic Trail (A.T.) is a footpath over 2,180 miles in length that traverses the Appalachian Mountains from Maine to Georgia. It passes through 14 states, approximately 241 jurisdictions, and links some 75 national and state parks and forests. Virtually every mile is within easy access of a major population center and some portion of the trail is within a day’s drive of 2/3rds of the U.S. population.

The idea for the trail was conceived in 1921 by forester Benton MacKaye. In 1925, he formed the Appalachian Trail Conference (now called the Appalachian Trail Conservancy), a private not-for-profit organization whose mission is to preserve, protect, and manage the Appalachian Trail. By 1937, an Appalachian Trail footpath was complete and open for all to enjoy. In 1968, Congress passed the National Trails Act that created a system of national scenic trails and placed the Appalachian Trail under the administration of the National Park Service. While officially part of the National Park System, the Appalachian Trail has continued to be managed largely by the Appalachian Trail Conservancy, in conjunction with 31 affiliated trail maintaining clubs, who work with the National Park Service, Appalachian National Scenic Trail Office, USDA Forest Service, and numerous state parks, forest, and wildlife management areas as part of a unique cooperative management system.

A description of the data can also be entered
Information associated with the Appalachian Trail

A link to the actual layer is included
Access and Use Constraints

Although a large portion of this data is quite accurate, the information depicted is for general reference purposes only. These data are not legal documents and not intended to be used as such. It is the responsibility of the user to use this information appropriately and consistent with the limitations of geospatial data and with these data in particular. The National Park Service Appalachian National Scenic Trail Office, Appalachian Trail Conservancy, agency partners (including other units of the National Park Service, the USDA Forest Service, and USFWS), and associated trail-maintaining clubs shall not be held liable for improper or incorrect use of the data described and/or contained herein.

The information contained in these data are also dynamic and may change over time. The National Park Service and Appalachian Trail Conservancy give no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data. The National Park Service and Appalachian Trail Conservancy also provide no warranty expressed or implied regarding the utility of the data on another system or for specific applications or purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data.

It is strongly recommended that these data be acquired directly from official sources and not indirectly through other sources that may have changed the data in some way or not using the most current depiction.

Access or Use Constraints may also be associated with the data
Information associated with the Appalachian Trail

Data can be opened in a Map Viewer, Scene Viewer, or ArcGIS Desktop
Information associated with the North Country Trail

This layer shows the portion of the North Country trail that is available from that organization as a GIS layer

by FTKaran
Last Modified: May 23, 2013

Description

The North Country Trail (NCT) connects America’s red plaid nation, wandering 4600 miles through America’s rugged northern heartlands. Stretching across seven states, this longest National Scenic Trail is brought to local communities through the dedication and hard work of volunteers. From New York to North Dakota, North Country Trail hikers can find adventure right nearby. While only a few have attempted to thru-hike the whole trail in one shot, thousands find their way onto a section of the NCT each year. Spring, summer, fall or winter, the trail offers something for everyone. Winter camping and snowshoeing, long-distance trail running, a saunter through quiet spring meadows or vineyards, crossing salmon-filled rivers, a weekend with the grandkids...you can find what you’re looking for on the North Country Trail, and right nearby. This trail can be rugged and welcoming, remote and festive.

This is another example of some posted data
Information associated with the North Country Trail

Description

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For a direct link to download the NCT data, see http://northcountrytrail.org/trail/data/

Details

1 ratings, 4,752 views

Source: Feature Service

Created: May 23, 2013
Size: 9 MB

Owner

FTKaren

Tags
Ohio, New York State, Michigan, Pennsylvania, North Country Trail, hiking

Credits (Attribution)
No acknowledgements.

This is another example of some posted data
Information associated with the North Country Trail

This is another example of some posted data
Information associated with the North Country Trail

It too can opened in a Map Viewer, Scene Viewer, or ArcGIS Desktop.
ArcGIS Online Trail Data can be added directly to ArcMap

When you click Open in ArcGIS Desktop, data is added directly to the Desktop GIS software (if installed on your machine)
Importance of posting as a Feature Layer
ArcGIS Online ‘Feature Layer’ Data

Example of data posted as a ‘Feature Layer’
ArcGIS Online ‘Feature Layer’ Data

Posting as a ‘Feature Layer’ allows a user to fully explore and utilize the data when added to ArcGIS Desktop software.
ArcGIS Online ‘Feature Layer’ Data

This includes such things as being able to ‘Open Attribute Table’ or to ‘Label Features’
ArcGIS Online ‘Feature Layer’ Data

It also allows a user to ‘Export Data’ or a different format.
ArcGIS Online ‘Feature Layer’ Data

And provides access to the layer’s ‘Properties’
Access to ‘Properties’ allows a user to adjust elements associated with the data, such as changing the Symbology.
ArcGIS Online ‘Map Image Layer’ Data

Example of data posted as a ‘Map Image Layer’
ArcGIS Online ‘Map Image Layer’ Data

No Options except to View
- No Attribute Table
- No Labeling
- No Data > Export
- No access to Properties

This is because it is a Map Image Service, similar to just an image.

With a ‘Map Image Layer’ a user can only view the data
ArcGIS Online ‘Map Image Layer’ Data

Nothing can be adjusted.
Again, this is because it is a Map Image Service, similar to just an Image.

‘Map Image Layers’ cannot be adjusted
With a Feature Layer, you can make the data downloadable, in several formats, directly within ArcGIS Online.

‘Feature Layers’ can be exported directly from ArcGIS Online to various formats. This helps users that don’t have ArcGIS Desktop.
Downloaded data can be added to ArcMap as a file, rather than a service, allowing additional flexibility and functionality.
Additional Functionality with ArcGIS Online ‘Feature Layer’ Data

Metadata associated with the file can be directly accessed via Catalog

With a downloaded file, a user may view all information associated with that file, including such things as metadata.
Additional Functionality with ArcGIS Online ‘Feature Layer’ Data

Here is an example of FGDC compliant metadata associated with a downloaded file from ArcGIS Online.

- **Item Description - at_centerline**
  - **Description:**

  - **Summary:**
    - This data set was developed to provide a depiction of the Appalachian National Scenic Trail in an usable and easily transferable format between parties so that it can correctly be represented on digital and printed maps; to assist staff members, agency partners, and trail-maintaining clubs with trail and land management duties; and to help local planning agencies, telecommunications companies, and other groups with planning activities, such as siting new developments that could have a substantial impact on the scenic quality of the Appalachian Trail.

  - **Description:**
    - This data set represents the most current depiction of the Appalachian National Scenic Trail centerline. Locational information used to create this data set were obtained from Global Positioning Systems (GPS) survey data collected between 1999-2014 using mostly Trimble GPS equipment.

  - **Credits:**
    - National Park Service Appalachian Trail Park Office and Appalachian Trail Conservancy
Additional Functionality with ArcGIS Online ‘Feature Layer’ Data

Metadata can also be accessed directly from ArcCatalog.

Metadata may be printed or exported directly from ArcCatalog (for those that have ArcGIS Desktop installed).
In Summary

• Data posted on ArcGIS Online may include:
  • A Description of the Data
  • Access & User Constraint Information
  • A Link to the Actual Data, which can be opened in either a web map OR in Desktop GIS

• Data published as a Feature Layer allows users to:
  • Fully explore data (open attribute table, label, etc)
  • Export to shapefile and other formats
  • Change symbology and other properties
  • View FGDC compliant metadata associated with downloaded or exported data

• Data published as a Map Image Layer can only be ‘viewed’
• Data not shared ‘publically’ can’t be viewed by partners or the public
We Recommend

• Everyone publish an official version of their trail data ‘publically’ – where anyone can view it – that excludes any sensitive data you don’t want others to see.

• Description, Access & User Constraints, and other information should be populated fully.

• Data should be published as a ‘Feature Layer’.

• Downloadable data should include FGDC compliant metadata.
We Recommend (continued)

• An official data steward, responsible for posting “official” data for each trail, be identified and established. Their name should be shared with other Trail users and we should link exclusively to their data.

• Updates should be made periodically to the online data so it remains current, and an agreed upon frequency for updates (6 months? once a year?) should be discussed.

• Data Standards – including map scale, file size, metadata and documentation, and data attribute information – should be discussed and we should strive for some agreement and standard used among all trails.

**NOTE:** The data standards piece does not have to be completely figured out to move forward with the rest of this proposal.