

Using ArcGIS Online to post data for National Trails

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There have been many discussions over the past 5 to 10 years about creating a GIS dataset for all National Trails. That is, one data collection (be it a data Layer, GeoDatabase, etc) that would contain spatial information for all National Scenic and Historic Trails – a “one stop shop” if you will. Today, the need for one National Trails GIS dataset is more important than ever, especially in light of the National Trails System 50th anniversary quickly approaching. The National Trails System will receive much more attention from the public, non-profits, and other federal, state and local governments. Therefore, having publically available data is essential in order to better tell our trail-by-trail and system-wide story, engage more users, and gain more exposure from potential partners.

In addition to the National Trails System 50th Anniversary, recent developments have perpetuated the need to have all of the National Trails in one location. As a result, all of the National Trails spatial centerline data has been aggregated into one central location, a step previously seen as a challenge to this national initiative. However, there are still some challenges to acquiring, maintaining and hosting a national layer. Some of the major challenges include: acquiring an accurate depiction of all national trails (e.g. many trails are a work-in-progress and do not have all of their sections mapped, while others are mapped but only at a very coarse scale); acquiring data without having to periodically contact trail GIS specialists, superintendents or friends groups; agreeing on some standard set of attributes and getting everyone to format their data in that way so data from different trails can be ‘merged’ or combine together; file size limits and other challenges encountered when working with large datasets; figuring out how to efficiently acquire and incorporate updates to the data collection on some routine basis; and overall time and resource (i.e. capacity) limitations.

With the advent of the ArcGIS Online platform, it is now possible to post GIS data in a location and format that allow others to easily utilize without a lot of effort or coordination. Instead of having to directly contact an individual or organization to acquire data – which not only requires the user’s time but also someone to physically package the data and email or send it out – a user may now simply click on a link and add someone else’s data to an online map or to their desktop GIS software without necessarily having to contact anyone. This opens up a whole new avenue for sharing information and, assuming the information is updated routinely and the data link does not change, it eliminates the need to periodically reach back out to someone to acquire updates.

One method to produce a single data collection for all National Trails would be to utilize the ArcGIS Online platform. The idea or vision for this would be to create an online map that would link to all the respective trails and their data. The map itself would just be a viewer which would allow users to see and access data about National Trails. There would be no unique or combined dataset to manage, eliminating many of the challenges of working with large data sets, and there would be nothing to update except the map viewer itself, assuming each trail maintains their own data

In order for this approach to work, several things would need to occur:

- There would need to be a depiction of each trail available on ArcGIS Online and someone would need to identify the “official” data source to use, because many of the trails currently have multiple depictions out there.
- There would need to be a commitment by each trail to record the date of their information and to periodically update their online data, so that what is linked to in the map viewer is current.
- Any data posted would have to be public in order for people to effectively use it with the ArcGIS Online platform. There are ways to share information on ArcGIS Online with only certain people, but with the amount of non-governmental groups involved with the National Trails and the way data would need to be referenced, all data would have to be shared with everyone (i.e. the public).
- There would need to be some discussion and agreement about data standards, particularly in regards to map scale and file size, so that there is some consistency among the data and so map functionality is not drastically affected. There would also need to be some discussion and potential guidance on how to best document the data (i.e. produce metadata) in ArcGIS Online, that meets FGDC standards and ensures that trail data being viewed or downloaded is being used appropriately and avoids issues such as sensitive areas, property boundaries, potential proprietary data, etc. And, there should be some discussion and agreement on some common data attribute standards. However, the data standards piece does not have to be completely figured out to move forward with this proposal; it can continue simultaneously while the other aspects are being implemented.

If this approach were to be adopted, the following steps are recommended:

- 1) Establish an official “data steward” for each trail. This person would be responsible for posting the “official” data for a particular trail (or trails) and the National Trail System group would link exclusively to their data.

- 2) Get some commitment from each data steward that they will periodically make updates to the data as changes occur. Since update frequency will likely vary per trail - based on number of changes, staff capacity, etc – a minimum update interval (such as once a year) could be agreed upon.
- 3) Agree upon some standards for this information, particularly in regards to map scale and file size, so there is some consistency among the spatial data and so map functionality is not drastically affected when all trails are added, but also with how the information is shared (for example, everything needs to be public and, ideally, all layers should be open to symbolization and to downloading). There also needs to be some guidance on how to document the information properly in ArcGIS Online (i.e. metadata), so that users may identify where the data came from, who put it together, where to get more info, etc. Many of the trails have done already done this and could serve as examples.
- 4) Continue the discussion on data attribute standards and how to get all the trails to use the Federal Trails standard, or at least some subset of this information. Please note: data attribute standards do not have to be completely figured out to move forward with the rest of this proposal; it can continue simultaneously while other aspects are being implemented.