

# USFS National Basemap

The [USFS National Basemap](#) was created to provide a seamless, and fully symbolized set of vector datasets whose data coverage include the contiguous United States, Alaska, Puerto Rico, and Hawaii. This basemap incorporates features of transportation, communication, fire history, hydrography, land ownership, boundaries, infrastructure, and others. These datasets have been published as a series of feature services and are accessible to members of the NIFC ArcGIS Online Organization.

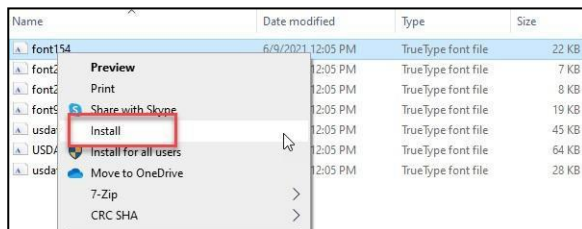
The process of obtaining this basemap with appropriate symbology consists of:

1. Installing special fonts
2. Downloading the vector datasets for an area of interest (AOI)
3. Applying layer files to the downloaded vector datasets

## 1. Installing Special Fonts

Some of the symbologies in the basemap use special fonts. Fonts are graphical representations of text composed of different sizes, weights, colors, and styles. If the fonts are not installed, some of the symbologies will not appear correctly.

To install, open the fonts folder, right click the font in file explorer, and select “Install.” Do this for each of the fonts.



If the fonts don't take in ArcGIS Pro, they can be manually added by copying and pasting the fonts to this folder: C:\Your\_install\_path\_to\_Pro\Resources\Fonts on your machine.

## 2. Downloading Vector Datasets

The [Feature Layer Download tool](#) was created to simplify the data download process; it can be obtained directly from [this link](#). For a user-specified list of feature services, the tool downloads vector datasets published as feature layers, and stores them as a series of feature classes in an output file geodatabase. This tool consists of 3 components:

- **Toolbox** (FeatureLayerDownload.tbx)
  - Contains the Feature Layer Download script tool
  - To use the tool, import the toolbox into your ArcPro Project.
    - Open ArcGIS Pro and in the Catalog Pane right-click the toolbox folder and select “Add Toolbox,” navigate to the downloaded toolbox
  - To run the tool, double click on the script tool inside the toolbox. If it does not automatically open, check your “Geoprocessing Window,” it might open there depending on how the default pro project is set up
- **Python Script** (FeatureLayerDownload.py)
  - The script that the script tool must reference. Place this in the same directory as the toolbox, and ensure that the script path is properly set in the script tool properties
- **CSV File** (FeatureLayerDownload.csv)
  - Contains a list of feature services and corresponding Item IDs. The tool iterates through these services looking for feature layers that intersect with the AOI Polygon Shapefile. If found, feature layers will be downloaded for the user specified AOI.
  - By default, this CSV file consists of all services needed to produce the USFS National Basemap. However, it can be modified to download feature layers from any published feature service.

**The download package of the FeatureLayerDownload tool also includes the special fonts, and layer files needed to generate the USFS National Basemap.**

### User Inputs:

1. Toggle for using ArcGIS Pro’s Active Portal to make feature service connections
2. ArcGIS Online Portal URL
3. ArcGIS Online Username
4. ArcGIS Online Password
5. Path to AOI Polygon Shapefile **(must be a Shapefile)**
6. AOI Subdivision Size (in Sq. Miles)
7. Output Coordinate System
8. Output Directory
9. Path to FeatureLayerDownload.csv
10. Toggle for downloading Elevation Contour data from the USGS
11. Toggle for downloading Wetlands data from the USFWS
12. Toggle for performing Offline License Check

Geoprocessing

Feature Layer Download

Parameters Environments ?

Connect to Feature Services using ArcGIS Pro's Active Portal?

No

Specify ArcGIS Online Portal URL

https://www.arcgis.com

ArcGIS Online Username

mpanunto\_nifc

ArcGIS Online Password

xxxxxxxxxx

Specify Path to Area of Interest (AOI) Polygon Shapefile

AOI.shp

Specify AOI Subdivision Size (Sq. Miles)

5000

Specify Output Coordinate System

NAD\_1983\_UTM\_Zone\_12N

Specify Output Directory (Must be empty)

output

Specify Path to FeatureLayerDownload.csv

ment\FeatureLayerDownload\FeatureLayerDownload.csv

Acquire Elevation Contour Data from USGS?

Yes

Acquire Wetlands Data from USFWS?

Yes

Perform Offline License Check? (RECOMMENDED)

Yes

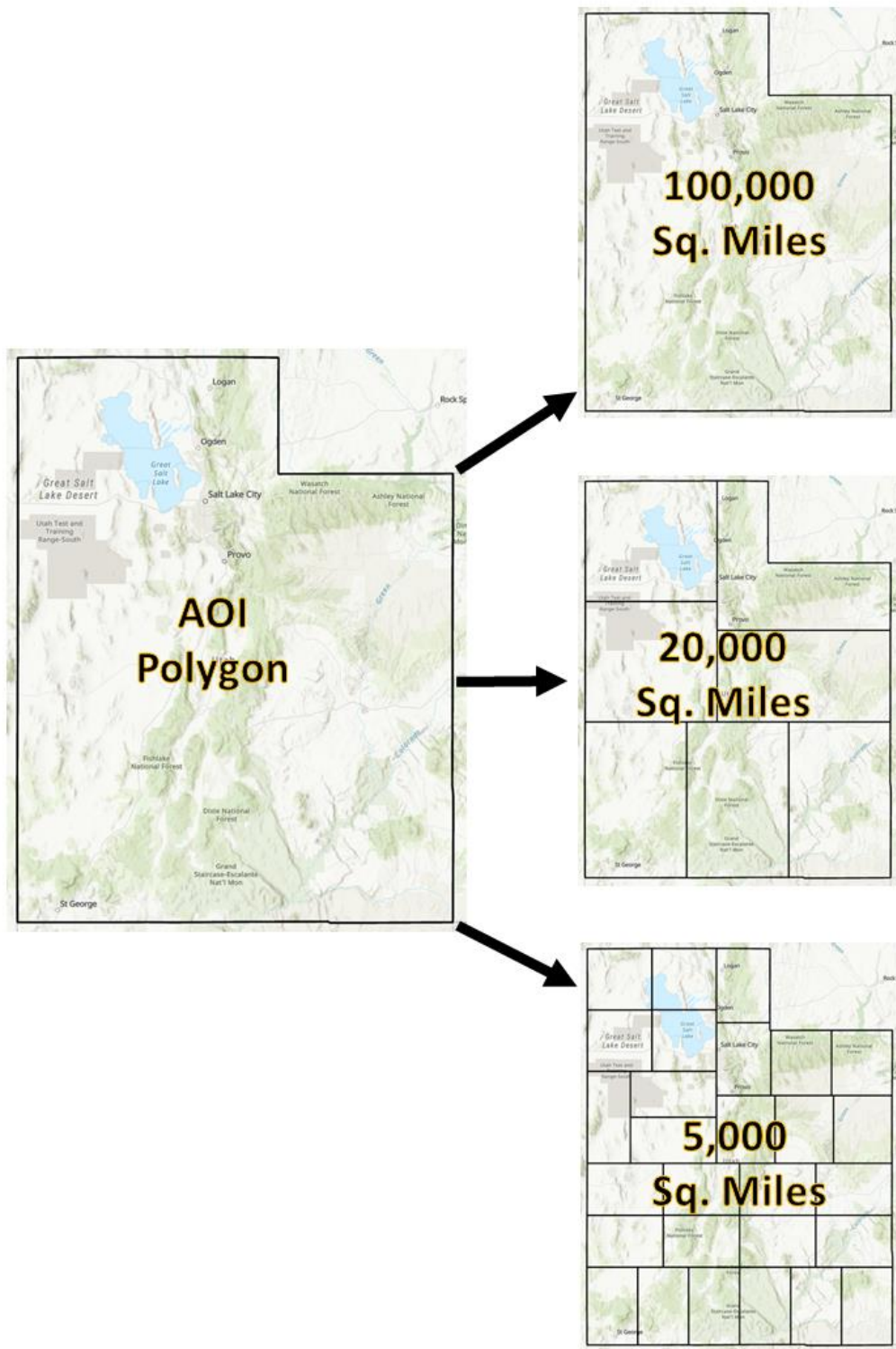
Run

**\*NOTE:** "Connect to Feature Services using ArcGIS Pro's Active Portal" provides users a simple way to aim the tool at services hosted in Organizations with more secure authentication schemes (such as SAML/Active Directory).

**\*NOTE:** The elevation contours and wetlands datasets were too large to publish as feature layers. The option to acquire these datasets directly from the USGS and USFWS is simply a workaround for this issue.

**\*NOTE:** There is a known issue with offline licenses becoming locked/corrupted when running this tool. Anecdotal evidence suggests it has something to do with the Active Portal being switched, while also having to terminate ArcGIS Pro from Windows Task Manager due to the tool becoming hung/stuck. If a license is offline, it is highly recommended to return the license temporarily while running this tool. The "Offline License Check" is simply an attempt to remind the user that their license is offline, and to return it if possible.

**\*NOTE:** The first version of the tool had difficulty downloading data for very large AOIs (state to GACC sized). To workaround this issue, the AOI can be subdivided into roughly equal sized features. High density datasets (Roads, NHDFlowline, PLSS, etc) will then be downloaded individually for each subdivided feature, and will eventually be merged into a single feature class. The degree to which the AOI is subdivided is dependent on the input value for the “AOI Subdivision Size” parameter. A value of 5000 Sq. Miles is the default, as this has worked well in testing.



### 3. Applying layer files

The USFS National Basemap layer file of interest should be added to a map to apply proper symbology after the data download ([Step 2](#)). There are two layer files:

1. Topo.lyrx
  - Provides symbology for a “Topo” style basemap, with standard topographic features.
2. SBS.lyrx
  - Provides symbology for a “Secondary Base Series” style basemap. This style is similar to that of the USFS Visitor/Travel Maps.

Add the layer file to the map project.

Once added, the individual layers must be re-sourced to the downloaded data. To resource all layers at once, click on one of the red exclamation marks, and choose the appropriate feature class in the output geodatabase. After re-sourcing one of the layers (NHDPPoint for example), all other layers should automatically re-source to their corresponding feature class in the output geodatabase. If red exclamation points still exist after the resourcing has completed, this indicates that there is no data availability for the layer in the user’s AOI.