NASA RECOVER 2.0 POST-WILDFIRE DECISION SUPPORT SYSTEM
PROTOCOL FOR INCLUSION OF MANUAL FIRE SUBMISSIONS

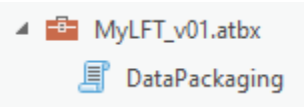
The automated RECOVER Large Fire Trigger (LFT) processes wildfires from the NIFC WFIGS service and includes all wildfire events occurring in the western United States burning an area of at least 1,000 acres. In most cases, this approach is satisfactory for land managers but there are some instances where data for a wildfire not automatically processed by the RECOVER LFT is requested or needed. This protocol describes the steps to (1) manually create a RECOVER Data Package, (2) move the completed Data Package to the web server, and (3) add the submitted fire to the RECOVER platform's web services.

Before proceeding with adding a requested manual wildfire submission be sure to check if the same fire polygon/package already exists in the RECOVER DSS and/or the NIFC WFIGS service. It is possible the fire exists in WFIGS but may not be large enough to be processed by RECOVER's Large Fire Trigger. Once this determination has been, proceed accordingly.

PART 1: MANUALLY CREATE A RECOVER DATA PACKAGE

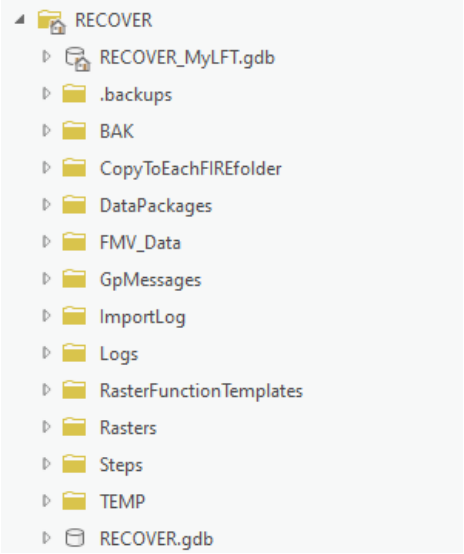
The following steps can be run on a local workstation with ArcGIS Pro.

1. Open the `RECOVER_MyLFT.aprx` ArcGIS Pro project (NOTE: this project file should exist within a copy of the RECOVER server and requires access to the vector and raster data sources used to assemble a Data Package).
2. From the Catalog pane, navigate into FOLDERS—RECOVER
3. Locate and expand the `MyLFT` toolbox (NOTE: be sure to use the most current version).

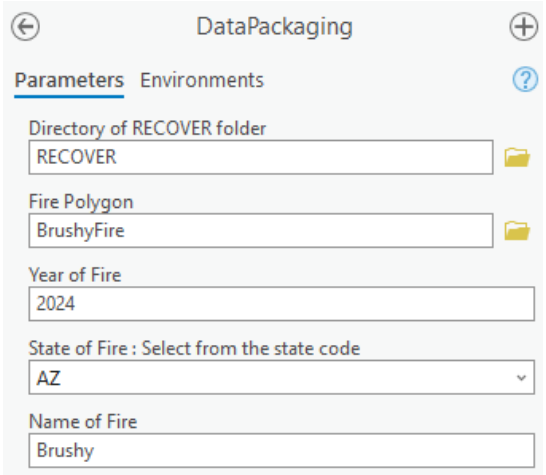


4. Double-click the `DataPackaging` script.
    a. There are several input parameters required. The first asks for the parent directory (or folder) where the RECOVER vector (`RECOVER.gdb`) and raster data (`Rasters` sub-folder) are stored. This should follow the server data structure[1]. In this example, it is the project's home directory (see the figure below).

[1] cf. https://usfs.box.com/s/qfsjwtwy9h6vwed5r2e58pojciicxihi



b. The second input asks for the polygon feature class of the fire event. A sample fire polygon named `BrushyFire` is available in the `RECOVER_MyLFT.gdb` geodatabase for testing.
c. Enter the Year of the fire using YYYY.
d. Select the State where the fire burned or where the majority of the fire burned. This parameter is used to properly name the resulting Data Package following NIFC and RECOVER nomenclature.
e. Last, give the name of the fire.
f. The completed geoprocessing dialog should look like the follow.



g. Click Run.
h. Processing will take a few minutes with time being a function of fire size and the subsequently larger spatial data layers being created.

5. The finished Data Package ZIP file can be found in the `DataPackages` folder (NOTE: you will need to use Windows File Manager to see this file).

PART 2: MOVE THE COMPLETED DATA PACKAGE TO THE WEB SERVER

To complete the following you will need permission to write files to your organizations web server. At Idaho State University's GIS TReC all RECOVER Data Packages are stored within the spatial data library accessible at https://giscenter-sl.isu.edu/AOC/AOC_Research/recover2/. This part of the tutorial assumes you have sufficient permissions and also have a mapped network drive to the web server.

6. Return to the Catalog pane in ArcGIS Pro.
7. From the current `MyLFT` toolbox, open the `MovePackage` script.
8. Choose the source zip file created earlier (HINT: this will be found in the Data Package folder).
9. Choose the Destination folder. This normally will be your web server.

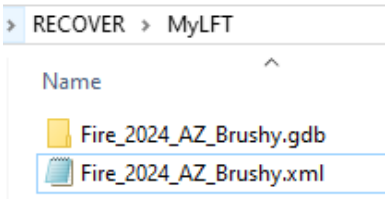
   NOTE: This process will MOVE the file to the server. In other words, the copy on your local computer will be removed (deleted) as part of this process.

10. Click Run.
11. Once completed, you may close ArcGIS Pro.

PART 3: INCLUDE SUBMITTED FIRES IN THE RECOVER WEB PLATFORM

To successfully complete the next series of steps you will need permission to access the RECOVER server(s).

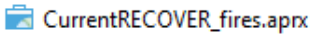
12. From Windows File Manager locate the XML Workspace Document created in Part 1 of this tutorial. You will find this file in the `MyLFT` sub-folder.



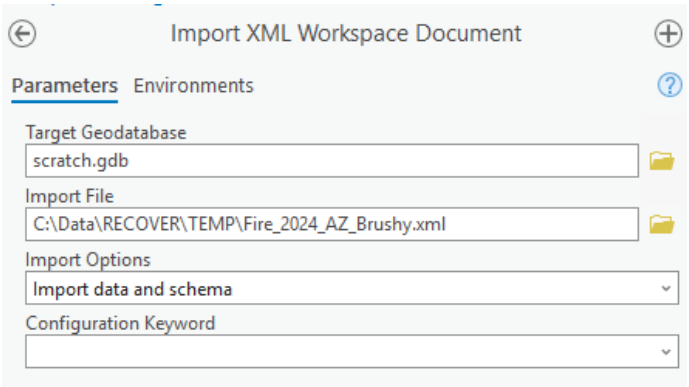
13. Copy and paste this file to the RECOVER server (HINT: I like to place these files in the TEMP sub-folder of the RECOVER server).

Next, we need to add this fire polygon to RECOVER's hosted feature service. To do this:

14. Connect to the RECOVER server using Remote Desktop (or other similar access capability).
15. Launch the `CurrentRECOVER_fires` ArcGIS Pro project (HINT: this project file is stored at the root of the RECOVER folder).



16. From the Catalog pane in ArcGIS Pro, locate the Scratch geodatabase (`Scratch.gdb`)
17. Right-click the scratch geodatabase and choose IMPORT—XML WORSPACE DOCUMENT.
18. From the Geoprocessing pane that opens complete the dialog box as shown below.



19. Click Run.
20. Review the imported polygon feature class in the map window.
21. Use the APPEND geoprocessing tool, to append the submitted fire to the `Wildfires_Current` polygon feature class (NOTE: This layer exists in the `RECOVER.gdb` geodatabase).

    NOTE: I recommend turning on the Enable Undo option before running append.

22. The RECOVER Large Fire Trigger (LFT) script is designed to eliminate as many data entry errors as possible. To identify the new submitted wildfire as a legitimate fire we need to edit a few attributes to ensure LFT does not delete this record. To do this, open the attribute table for the `Wildfires_Current` layer and then:
    a. Select the new record in the attribute table.

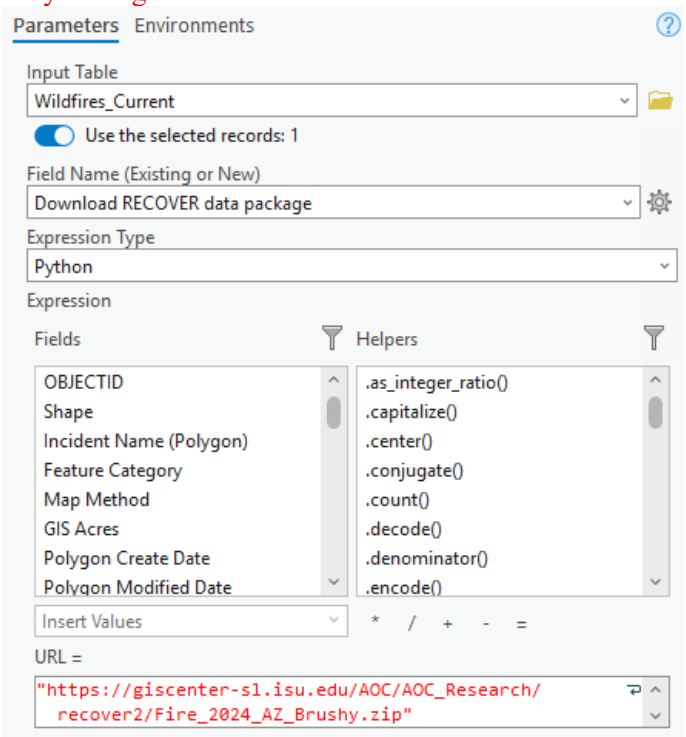
b. Populate the `Manual_Submit` (alias = Manual fire submission) field with the word "submitted" (HINT: to do this, use the Calculate Field geoprocessing tool).

   Be sure you are only editing the record for the new fire.

c. Populate the URL field (alias = Download RECOVER data package) with the correct download URL. This is the download/URL location of the ZIP file moved to the server in part 2 of this tutorial. For example, the GIS TReC's server prefix is: https://giscenter-sl.isu.edu/AOC/AOC_Research/recover2/
   The full URL includes the prefix + the name of the ZIP file (e.g., Fire_2024_AZ_Brushy.zip).

d. Using the Calculate Field geoprocessing tool, edit the URL field as shown below.

   Be sure you are only editing the record for the new fire.



e. Double-check the entry (HINT: I like to test the URL in a web browser before making this edit).

f. Click Run if everything checks out correctly.

g.

23. From the ArcGIS Pro menu, click the Edit menu.
24. If all edits were made correctly, click Save. If not, click Discard and start again.
25. When finished, close ArcGIS Pro.

END