

## Requesting Additional Data for your RECOVER Web Map

The RECOVER DSS Web Map Generator provides an opportunity to request additional datasets for each RECOVER web application. These additional datasets include Fire Affected Vegetation (dNBR), Debris Flow Probability, NDVI anomaly analysis, and satellite imagery acquired by the RECOVER Wrangler service. This help document provides an overview of these datasets/services and explains how they might be applied for post-fire management.

### Fire Affected Vegetation (dNBR):

The differenced Normalized Burn Ratio (dNBR) index is used extensively to assess the effect of a fire on vegetation using pre- and post-fire satellite imagery. Higher dNBR values indicate a greater fire effect on vegetation while lower values indicate a lesser effect. If requested, a dNBR image for the landscape within the fire's burned area will be provided; however, dNBR is prerequisite on having quality pre- and post-fire imagery and may not be immediately available if cloud- and obstruction-free imagery cannot be obtained.

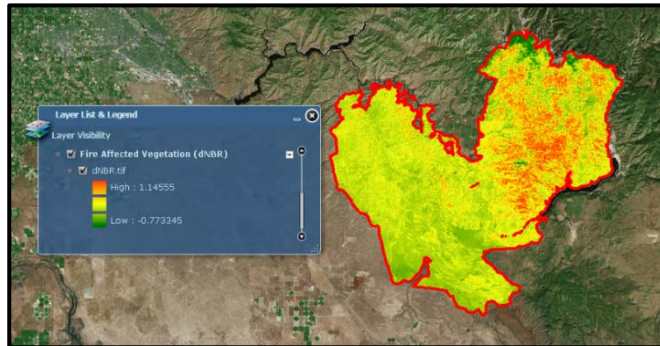


Figure 1. Example dNBR image. Pony Fire, Idaho. Higher affected areas are indicated in red while low affected areas are displayed in green.

### Debris Flow Probability:

Debris flow probability is calculated using a sophisticated model that indicates the probability of an area experiencing debris flow during a 5-year rainfall event following a wildfire (figure 2). This model is useful for determining where human and environmental resources (e.g. roads, streams) are at risk of being obstructed due to debris flow after an area has been devoid of vegetation following a wildfire. The debris flow probability model relies on data derived from pre- and post-fire satellite imagery and may not be available until quality imagery has been acquired.

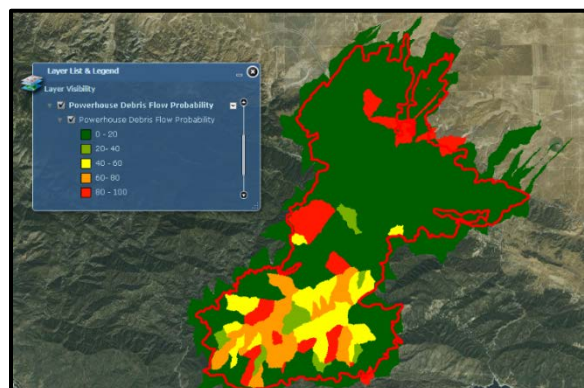


Figure 2. Example of a debris-flow probability layer.

### NDVI Anomaly:

The NDVI Anomaly dataset provides MODIS imagery showing where plant photosynthetic activity deviated from the long-term (since 2001) average within the burned area. In addition, two charts in PDF format are provided displaying 1) the MODIS 16-day composite NDVI trend compared to the long-term average, and 2) the NDVI departure from the long-term average (anomaly) during the selected year for the specified date (figure 3). The anomaly image allows you to visualize current year plant productivity relative to the long-term average while the charts let you see the NDVI trend within the burned area and how that trend compares to the long-term average.

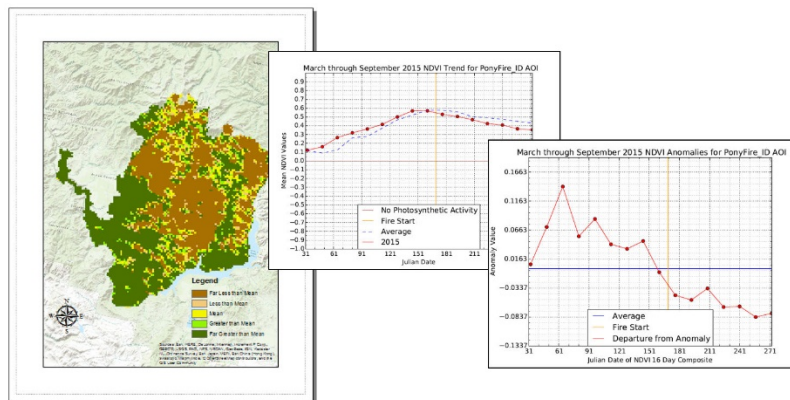


Figure 3- (left) Anomaly image showing how plant communities within the burned area compared phenologically to the long-term average. (Right) Time series charts provide another way to visualize NDVI trends for the specified year.

## RECOVER Wrangler:

RECOVER Wrangler is an automated service which acquires satellite imagery that will be made available to you, the user, via a data download from the site-specific RECOVER web application. Upon making a request for Wrangler imagery, Landsat vegetation indices (NDVI and NBR) and MODIS 16-day composite NDVI imagery products 6 months prior to the request date will be acquired. Daily MODIS imagery for the period 10-days prior to the request date will also be available. In addition, Wrangler will provide MERRA<sup>1</sup> data for the fire area as well. These data will be clipped to your fire's AOI and can be used to perform more advanced spatial analysis on your desktop workstation. Please note, if your area of interest comprises multiple Landsat/MODIS paths/rows, all imagery within your area of interest will be provided, but will not be mosaicked together.

## Accessing these data:

Once the datasets have been created they will be automatically included in the RECOVER web map application. Like all other data in the provided by RECOVER you can download these data to perform more advanced analysis on your desktop workstation. To download these data, expand the hamburger menu (☰) in the top-right corner of the web application and select "Data Download" (figure 4). To download Wrangler imagery, click the "Wrangler Download" link. Upon clicking either link, a zip file will be downloaded to your computer containing all GIS data and PDF reports from the RECOVER web map application.

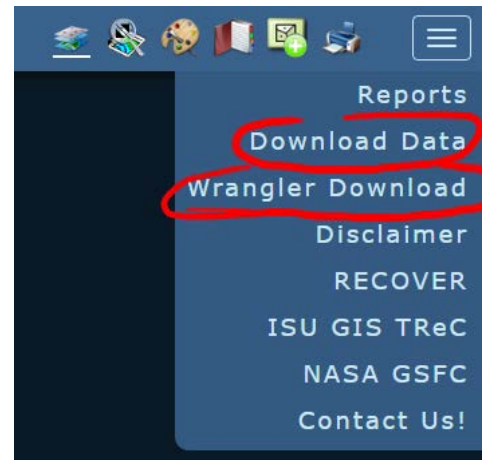


Figure 4. RECOVER's menu (found in the upper right corner of the web map) allows you to read reports and download all data to your computer.

<sup>1</sup> <https://gmao.gsfc.nasa.gov/research/merra/>