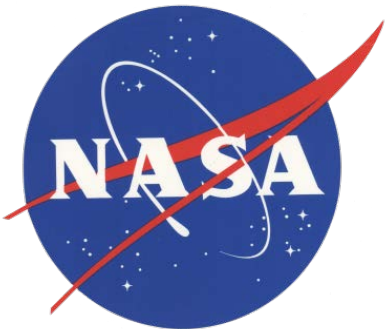


The NASA RECOVER DSS

Keith T. Weber¹, GISP and PI NASA RECOVER

Kindra Blair¹, John Schnase², Mark Carroll², Roger Gill², and Maggie Wooten²

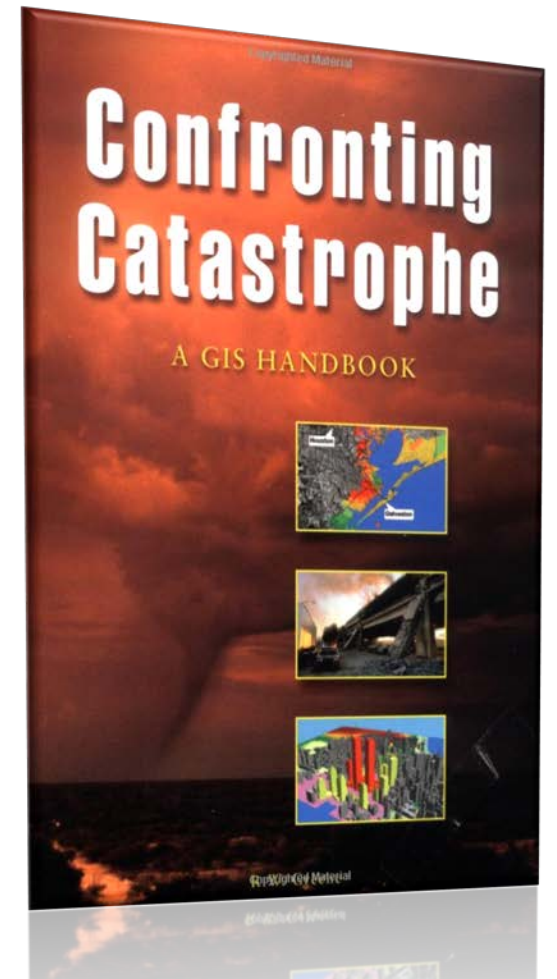
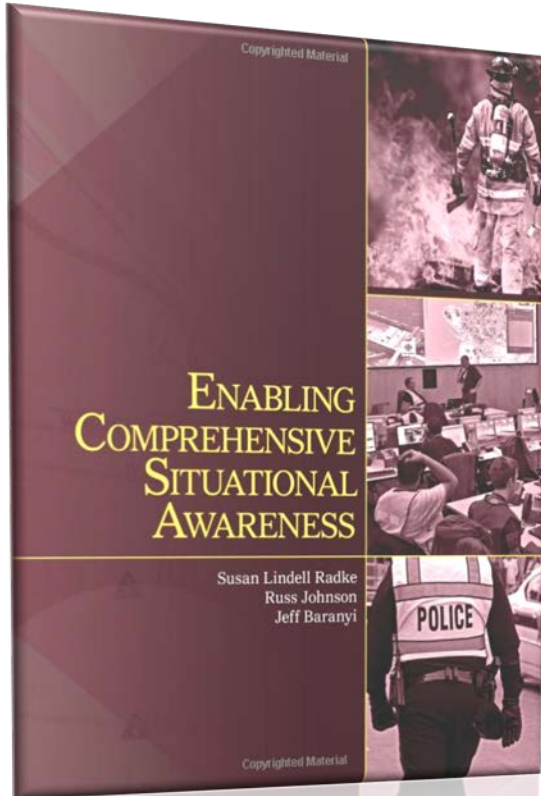


1- Idaho State University- GIS TReC

2- NASA Goddard Space Flight Center

Emergency Preparedness

- Maps: A high-demand item
 - Public, affected by the emergency
 - Responders



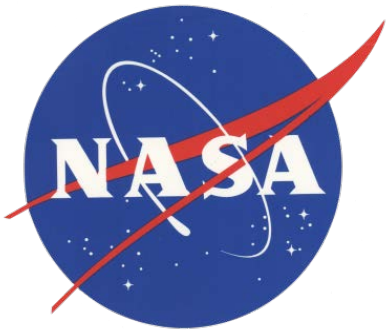
Emergencies in Idaho

- “Wildfires and flooding are the two most common natural hazards that Idaho communities face”

The screenshot shows the website for the Idaho Office of Emergency Management. The header includes the slogan "Prevent. Protect. Respond. Recover." and navigation links for Home, Contact Us, and Sitemap. A search bar is located in the top right. The main content area features a large image of a mountain landscape and a central article titled "20 Years of Idaho Disasters: A history of Idaho's major disasters from 1976-1996". The article text states: "Natural disasters in Idaho occur in many forms. Wildfires and flooding are the two most common natural hazards that Idaho communities face, but Idaho has also experienced damage from earthquakes, a volcanic eruption, and a man-made engineering disaster (the Teton Dam Collapse). While natural hazards impact the state every year, only a few events receive a Federal Major Disaster Declaration from the U.S. President. Federal disaster declarations began in the U.S. in the 1950s to aid states with responding to and recovering from the most devastating disasters. Since the program began, 23 major disasters have been declared in Idaho with 6 occurring between 1976 and 1996. In addition to major disasters declarations, two federal emergency and ten fire management assistance declarations have been issued for Idaho since the 1950s." A sidebar on the left contains a navigation menu with items: About Us, Response and Recovery, Hazardous Materials, Preparedness and Protection, Grant Management, IPSCC, Public Private Partnerships, How You Can Prepare, News Room, and Reservist. A right sidebar contains sections for Navigation and Related Links. The footer includes the Idaho State University logo and the text "Pocatello | Idaho Falls | Meridian | Twin Falls".

What is RECOVER?

- Customer-driven
- Secured, Decision Support System (DSS)
 - Rapid assembly of site-specific data
 - Delivered in a customized GIS analysis environment

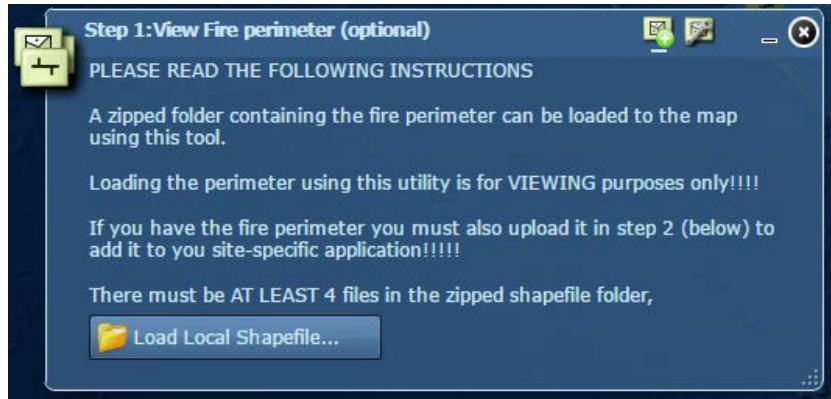


How Does it Work?

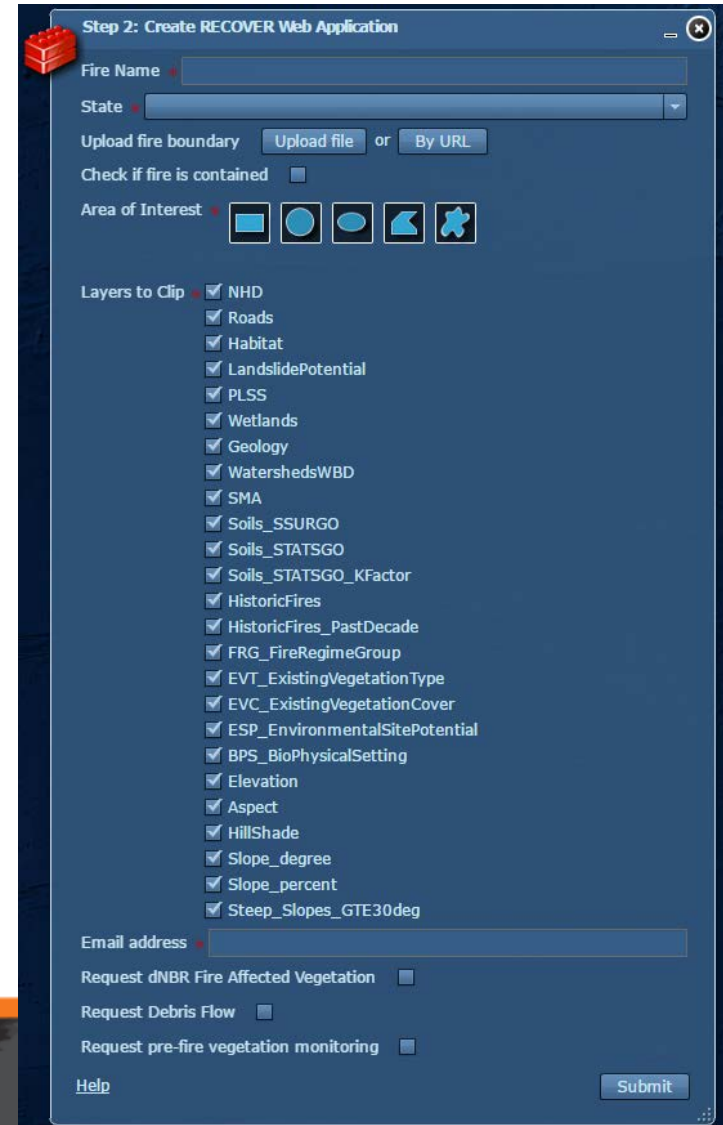


Generator

Step one



Step two






GIS Layers

- By default each RECOVER web map contains...
 - 25 base layers automatically clipped to the spatial extent of the event
 - Derived from authoritative sources
 - Site-specific reports

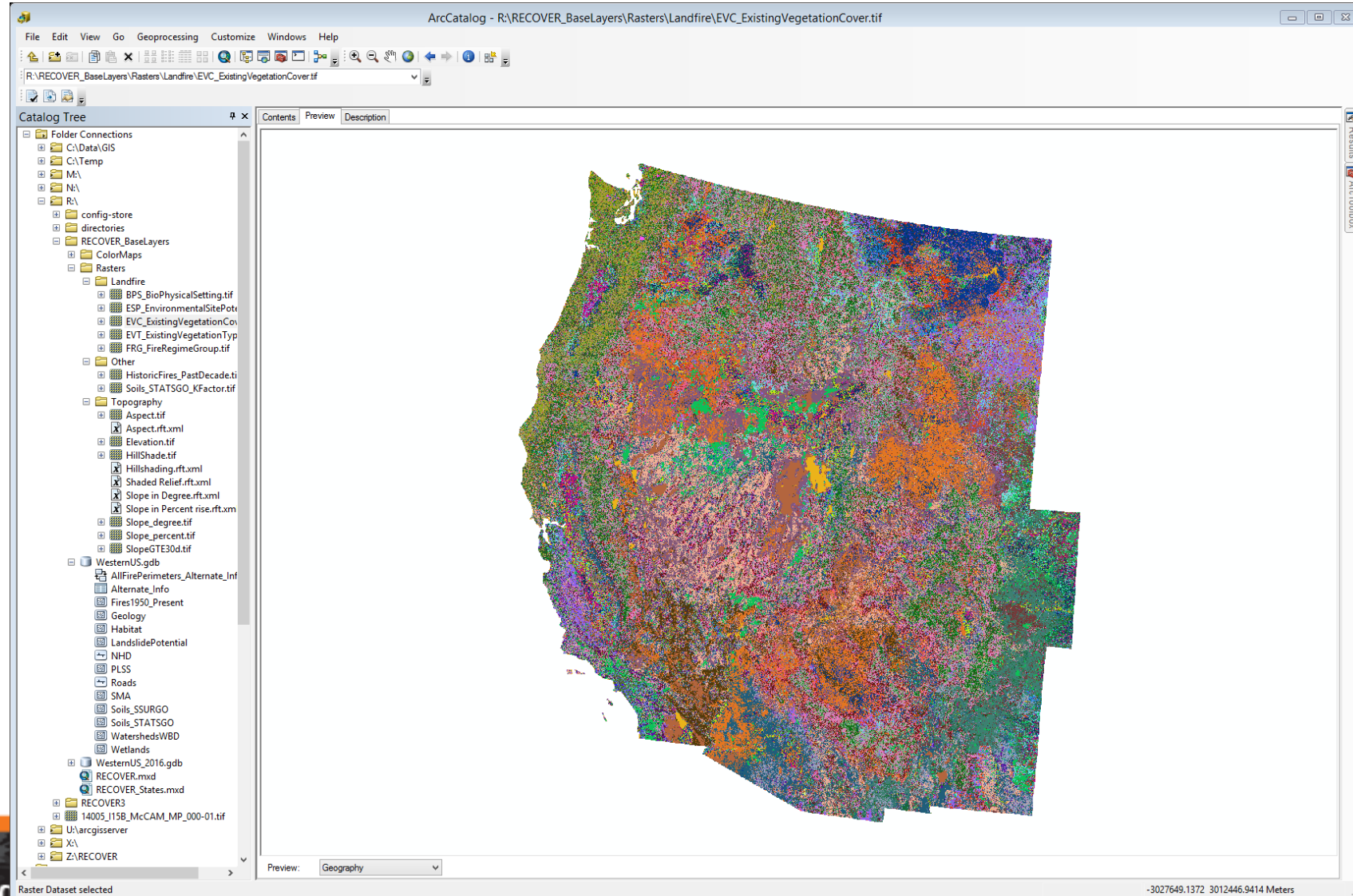
Naming convention of RECOVER Base Layer data

The following list describes the RECOVER base layers available to our partners along with the standard naming convention applied to the web services hosted at ISU's GIS TRnC (please note the exact name including capitalization and the use of underscores).

Geology	
Habitat	
LandslidePotential	
NHD	
PLSS	
Roads	
SMA	
Soils_SSURGO	
Soils_STATSGO	
Soils_STATSGO_KFactor	
WatershedsWBD	
Wetlands	
<u>Past fire datasets</u>	
HistoricFires	
HistoricFires_PastDecade	
FRG_FireRegimeGroup	
<u>Vegetation datasets</u>	
BPS_BioPhysicalSetting	
ESP_EnvironmentalSitePotential	
EVC_ExistingVegetationCover	
EVT_ExistingVegetationType	
<u>Topography datasets</u>	
Elevation	
Aspect	
Hillshade	
Slope_degree	
Slope_percent	
SlopesGTE30deg	

* The spatial reference system for these data is USA Contiguous Albers Equal Area Conic USGS version, NAD83, WKID: 102039

RECOVER GIS Base layers



Reports

Soda Fire - Summary Report

Administration Agency	Acres
BLM	227,635
BOR	196
PVT	42,824
ST	12,741
<i>Total Acres</i>	<i>283,396</i>

Soda Fire - Detailed Report

Admin. Unit Name	Area Symbol	Map Unit Symbol	Acres
Bureau of Land Management	ID665		
		BrB	
		GaB	
		NaB	
		NaC	
		QcB	
		QcD	
		QcE	
		VaD	
		VaE	
	ID675	1	
		100	
		11	
		112	
		121	

Ecological Site/Plant Association and Vegetation (ID)

Owyhee County Area, Idaho

[Composition of forest understory vegetation is based on canopy cover. Composition of rangeland vegetation is based on dry weight]

Map symbol and soil name	Ecological site or plant association	Common trees	Forest understory or rangeland characteristic vegetation	Composition	
				Forest	Range
<i>Pct</i>					
1:					
Acrelane	LOAMY 11-13 ARTRT/PSSPS (R025XY043ID)	---	bluebunch wheatgrass basin big sagebrush antelope bitterbrush other shrubs other perennial forbs other perennial grasses	---	50 20 5 5 5 5
Rock outcrop	---	---	---	---	---

USDA Natural Resources Conservation Service

Survey Area Version: 11
Survey Area Version Date: 08/13/2012




Page 1

Done in 5-minutes!



- Once submitted from our Generator, the web map will be ready in about 5-minutes

“Check Your E-mail”

 Reply  Reply All  Forward

Tue 3/28/2017 7:29 AM



recoverdss@gmail.com

Your RECOVER web map

To webekeit@isu.edu

Hello,

Thank you for requesting a NASA RECOVER web map for this wildfire. We sincerely hope this decision support system will be useful to you as you manage this fire. The URL to access the web map is:

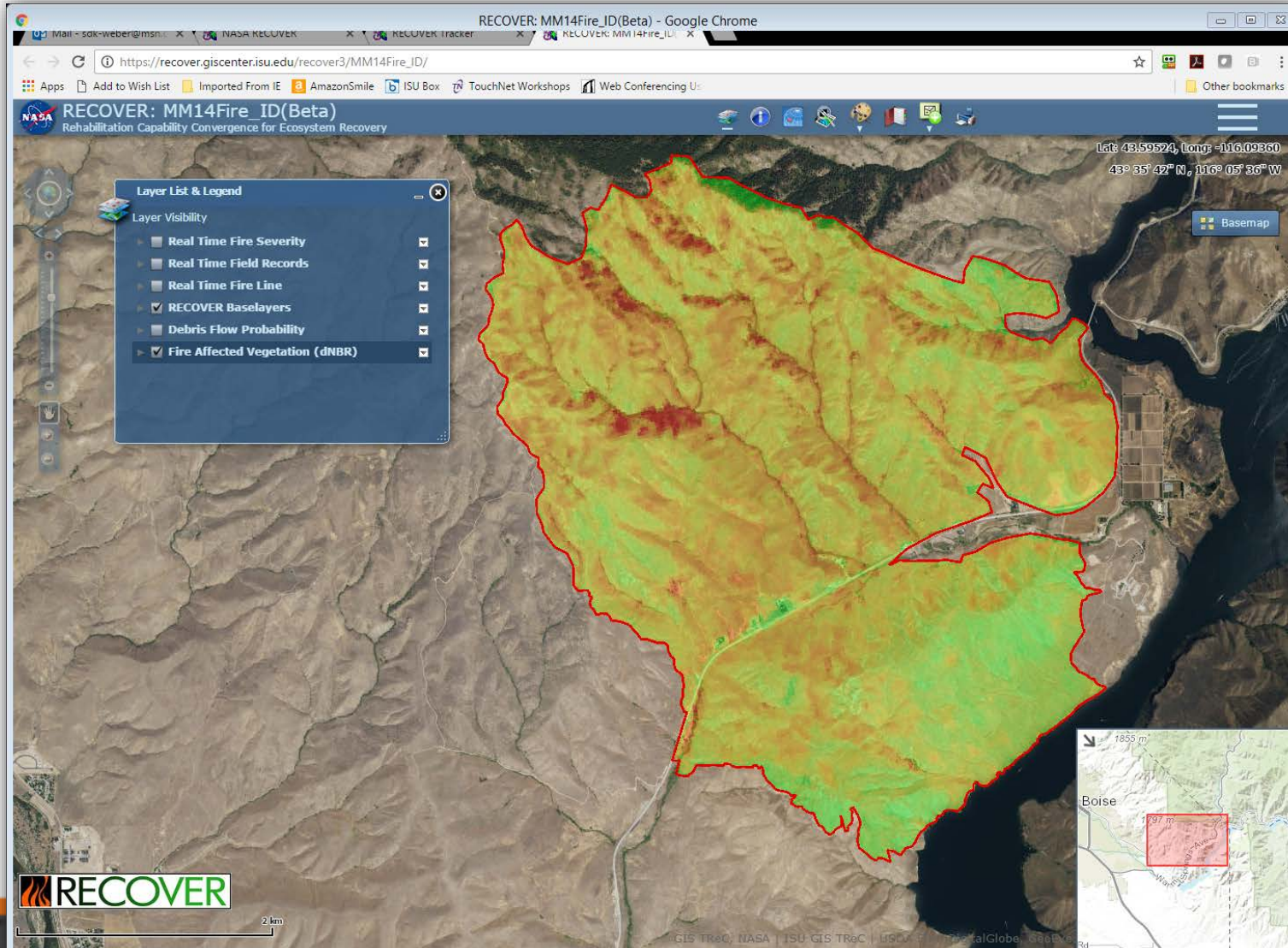
https://recover.giscenter.isu.edu/recover3/TestMar28_01Fire_ID

RECOVER is a powerful tool with many capabilities. To learn how to make better use of the RECOVER web map please refer to http://giscenter.isu.edu/research/Techpg/nasa_RECOVER/pdf/GettingFamiliarWithRECOVER.pdf

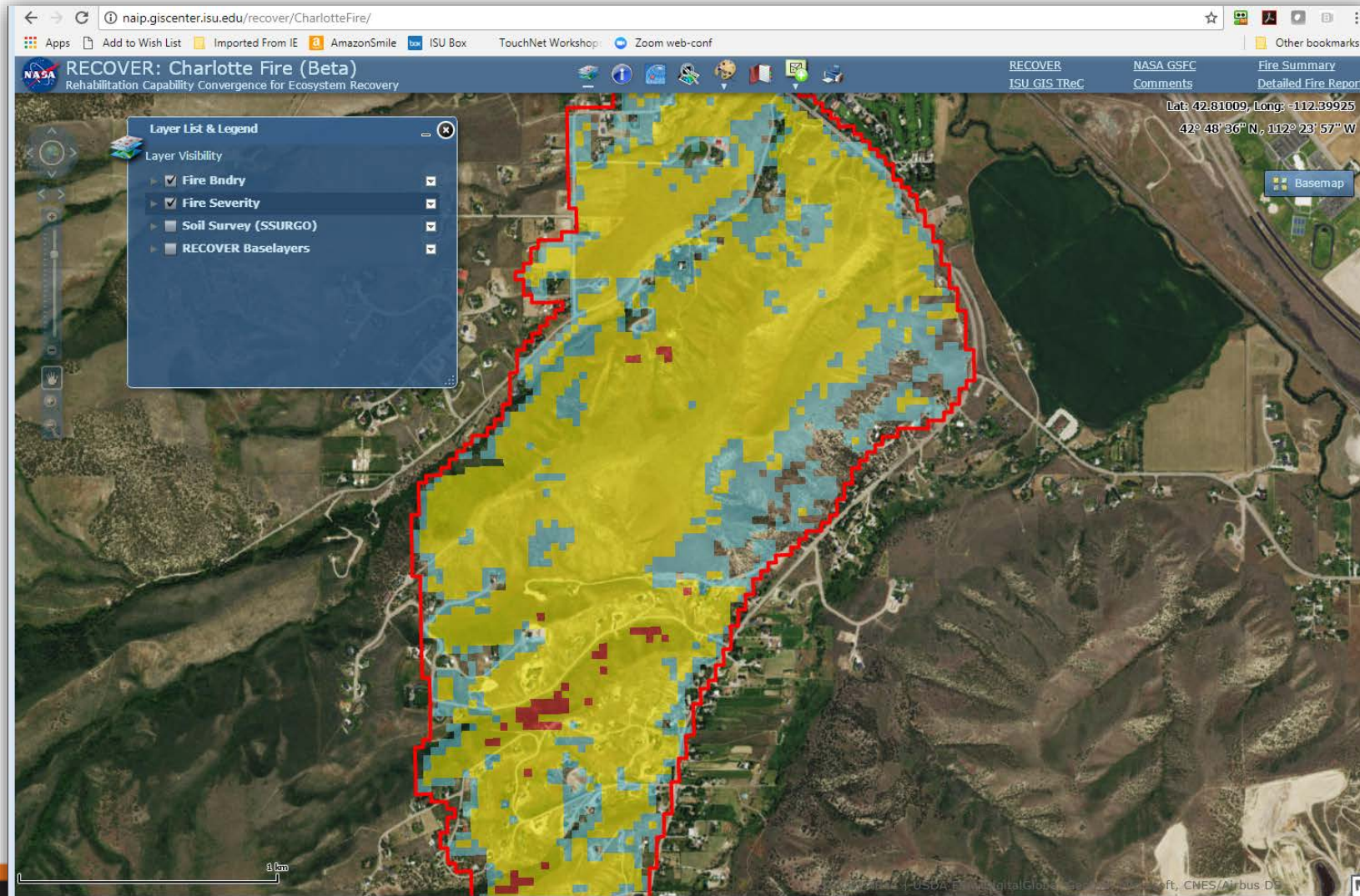
If you need a refresh of the web map because new data is available or the fire perimeter has changed please let us know and we can typically produce a new version for you within 15 minutes. If you would like to use these same RECOVER GIS layers for more sophisticated analysis within ArcGIS, you can do so by downloading the data directly from your web map and launching the ArcMap document found inside the MAPS folder.

Please note. Any additional data requested (NDVI, dNBR, debris flow) is provided for post-fire decision support and will not be processed until the fire is contained.

A RECOVER Web Map



And one from the Charlotte Fire



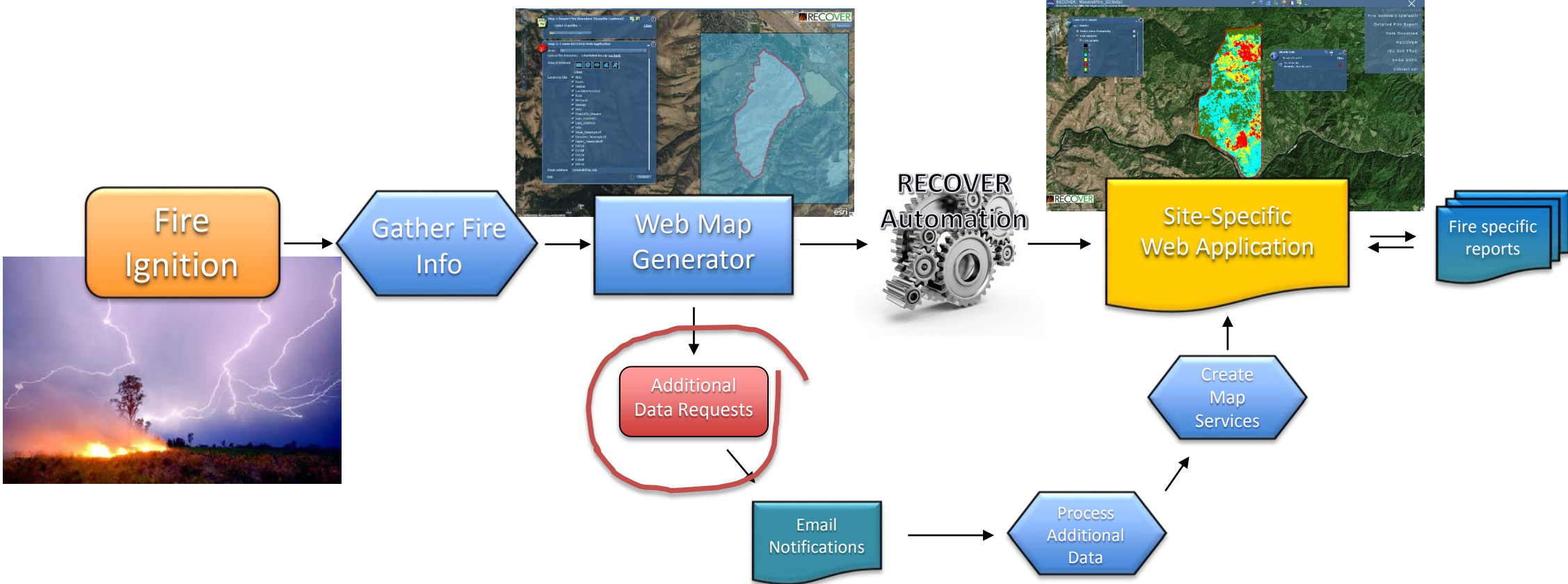
Another for the Powerline fire

The screenshot displays a web-based GIS application interface. The main map shows a satellite view of a landscape with a red outline indicating a fire perimeter. A 'Layer List & Legend' panel is visible on the left, listing various data layers such as 'HistoricFires_PastDecade', 'FRG_FireRegimeGroup', 'BPS_BioPhysicalSetting', 'ESP_EnvironmentalSitePotential', 'EVC_ExistingVegetationCover', 'EVT_ExistingVegetationType', 'Elevation', 'Aspect', and 'HillShade'. The 'HillShade' layer is checked. A summary report window is overlaid on the right side of the map, titled 'PowerlineFire_ID - Summary Report'. The report contains a table with the following data:

Administration Agency	Acres
BIA	48,399
BLM	2,731
FS	1,127
PVT	3,163
ST	123
Total Acres	55,543

The application is titled 'RECOVER: PowerlineFire_ID(Beta)' and includes the NASA logo. The browser address bar shows the URL: https://recover.giscenter.isu.edu/recover3/PowerlineFire_ID/. The summary report window title is 'PowerlineFire_ID_REPOR...'. The browser address bar for the report window shows the URL: https://recover.giscenter.isu.edu/recover3/PowerlineFire_ID/assets/reports/PowerlineFire_ID_REPO.... The RECOVER logo is located in the bottom left corner of the map area.

How Does it Work?

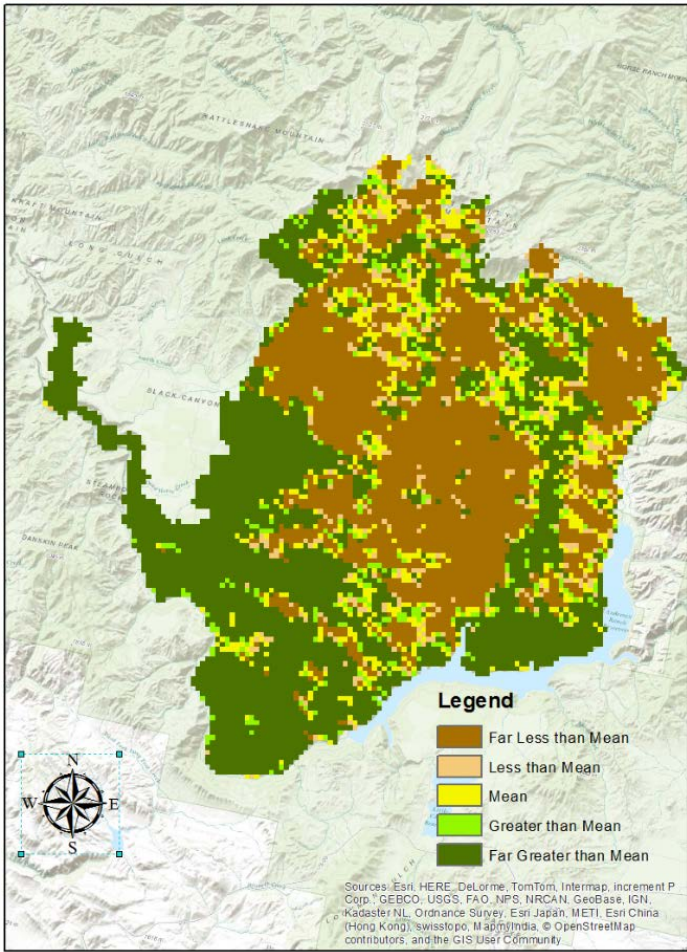


Additional data requests

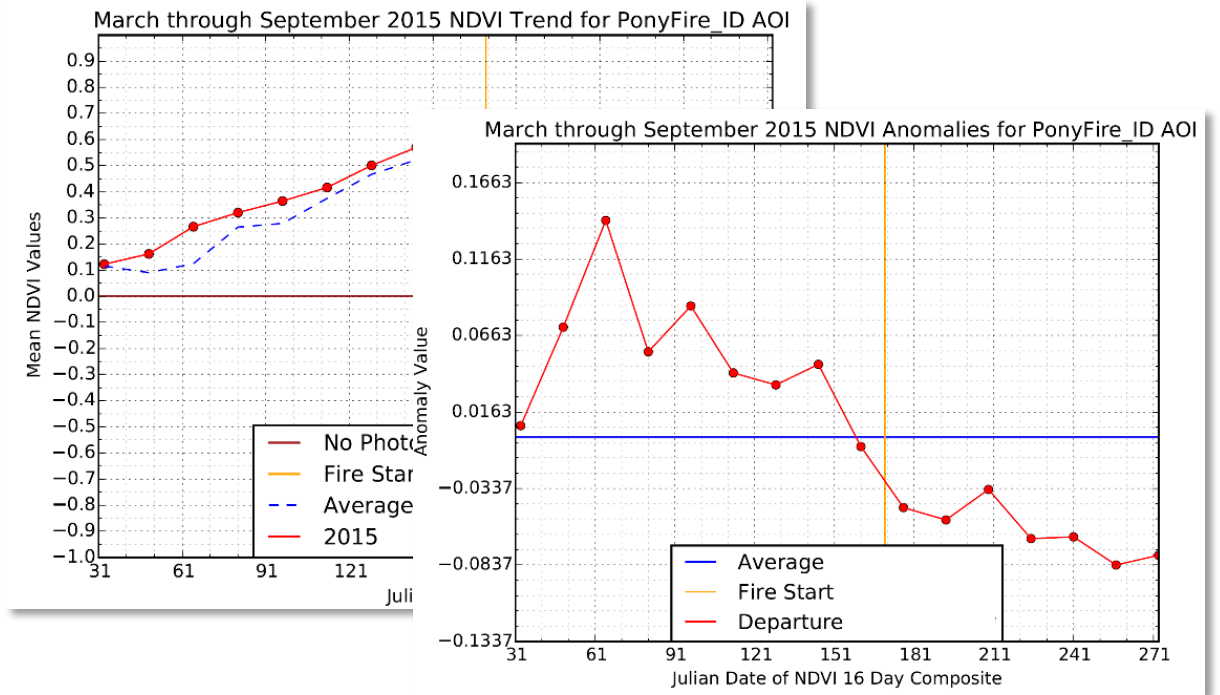
- Fire-affected Vegetation
- Debris-flow probability (AKA mudslide or landslide)
- Long term vegetation comparison
 - Uses 16-day MODIS NDVI imagery
 - Long-term average NDVI (2001-present)
 - Current fire season compared against long-term trend

NDVI Anomaly Data

Map layer



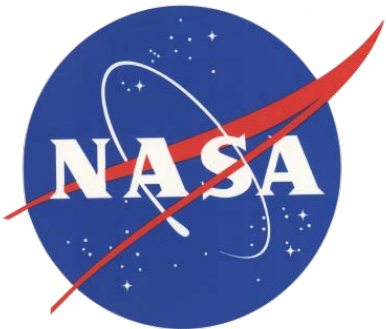
Charts



Emergency Preparedness

- Digital and online maps
- What about printed maps
 - Map books
 - Running cards
- Why?

Questions?



RECOVER is a NASA Applied Sciences sponsored project. K. T. Weber (PI), J. Schnase (Co-PI) and M. Carroll (Co-PI), Goddard Space Flight Center