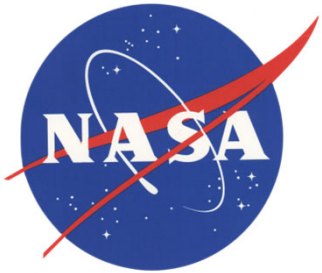# NASA RECOVER 2.0
Post-fire Decision Support System

Keith T. Weber, GISP (PI), ISU GIS TReC

Brad Quayle (Co-PI), USDA Forest Service GTAC

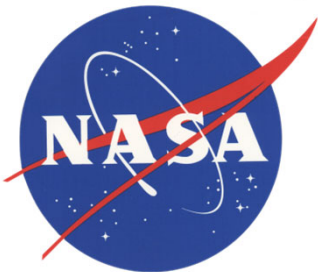# What is RECOVER 2.0?

- A Cloud-based, Smart-Map for Post-wildfire recovery planning and long-term monitoring

- Like the original RECOVER, it remains a Customer-driven, Customer-centric* Decision Support System (DSS)
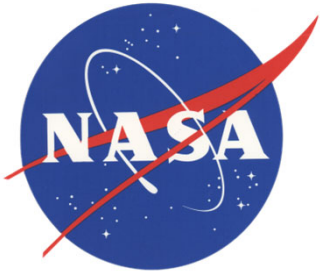
  * Our "customers" are agency/organizational wildfire and land managers at the USDA Forest Service, DOI BLM, NPS, as well as state agencies

RECOVER 2.0

- Made possible by a grant from NASA Earth Sciences Wildland Fire Management Program
  - David S. Green, PhD, Program Manager

Enhancements Provided by RECOVER

- Rapid data acquisition

- Cross-organizational collaboration
  - (breaking down silos)

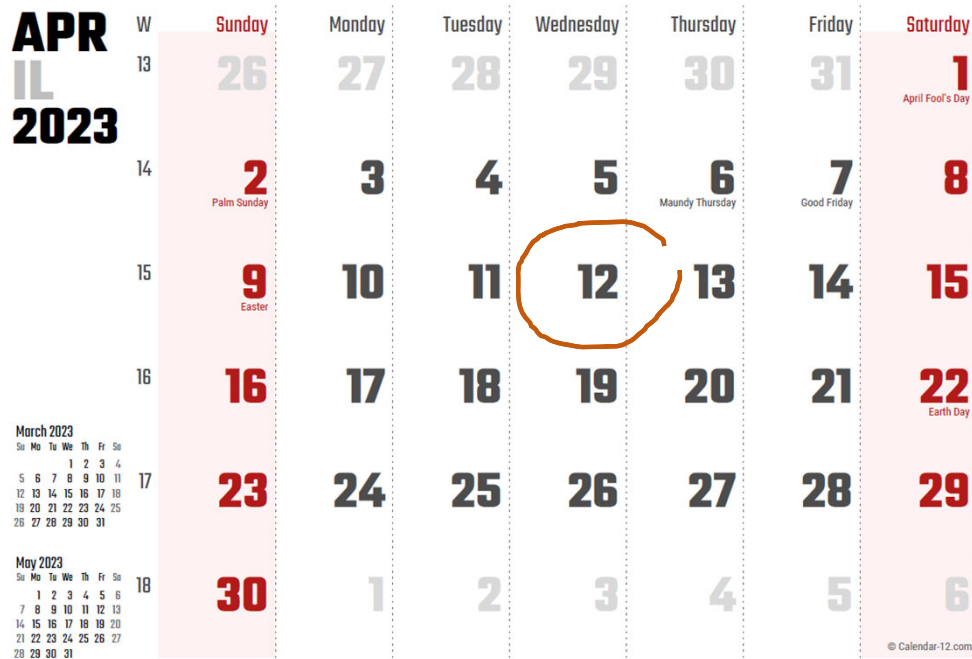- Common Operational Picture (uniform geospatial context)

RECOVER Online Workshop

- Wednesday April 12th

Meet the RECOVER 2.0 Team

- Keith T. Weber[1]
- Brad Quayle[2]
- Craig Baker[2]
- Ali Reiner[2]
- Cole Rosner[1]
- Austin Thompson[1]
- Madison Hatch[1]

Visit the RECOVER 2.0 webpage at
https://giscenter.isu.edu/research/Techpg/NASA_RECOVER2/

1- Idaho State University GIS Training and Research Center (GIS TReC)
2 – USDA Forest Service Geospatial Technology and Applications Center (GTAC)

ROAR

Data Architecture

- Covers the Western US

- Esri ArcGIS Online (AGOL) Cloud

- Uses existing, authoritative data as web services

- Provides data packages
  - Vector and raster data

GIS Base Layers

- RECOVER currently provides
  - 29 Base Layers automatically clipped to the fire extent[1] (envelope)

VECTOR DATA (fGDB)
Geology
Habitat
Historic/past fires
LandslidePotential
NHD Rivers and Streams
NHD Surface water bodies
WBD Watershed Boundaries
Post-wildfire debris flow models
State boundaries
County boundaries
PLSS
Roads
SMA
Soils STATSGO
Soils gSSURGO
Wilderness Status

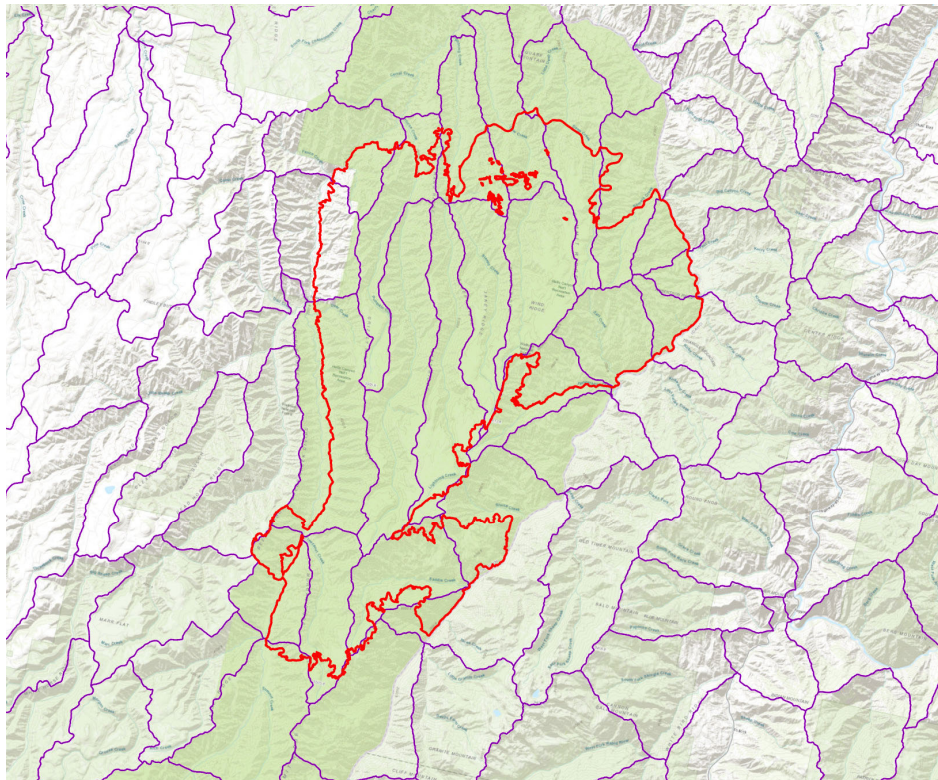| RASTER DATA |
| --- |
| Relative Ecosystem Resilience/Resistance |
| LANDFIRE BPS |
| LANDFIRE EVC |
| LANDFIRE EVT |
| LANDFIRE FVT |
| Elevation |
| Aspect |
| Slope_DEG |
| Slope_PCT |
| Steep Slopes >30% |
| Precipitation forecast |
| Weather satellite imagery |

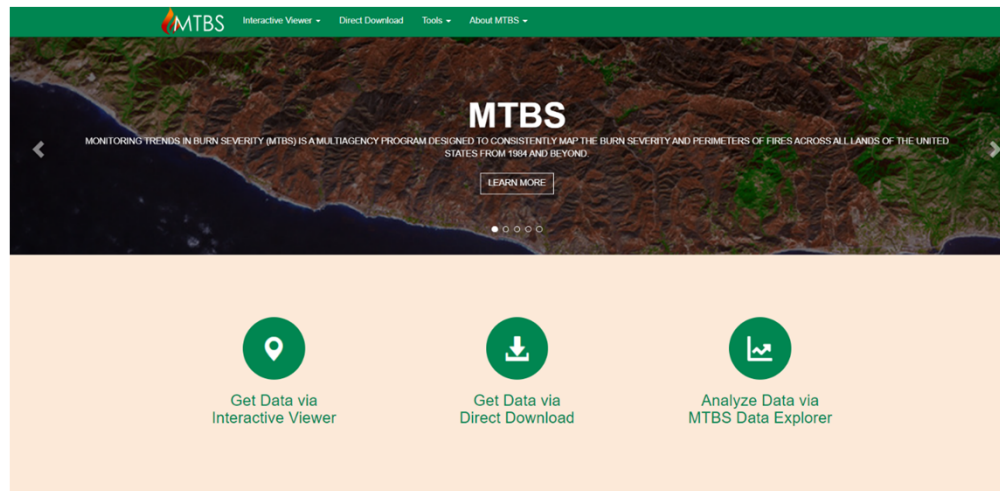1- fire extent + 5km rectangular buffer

ROAR

Update Coming!

- An alternative approach to defining the clipping extent

Plus...

- Fire severity layers dNBR (MTBS)
- Long-term monitoring data (proposed)

Other Spatial Data

- To suggest additional layers please let us know
  - webekeit@isu.edu
  - brad.quayle@usda.gov

Making RECOVER Even Faster

- Pre-emptive automation processing using our **Large Fire Trigger** automates data package development and updating
  - ArcGIS Python scripting
  - Output data package (ZIP)
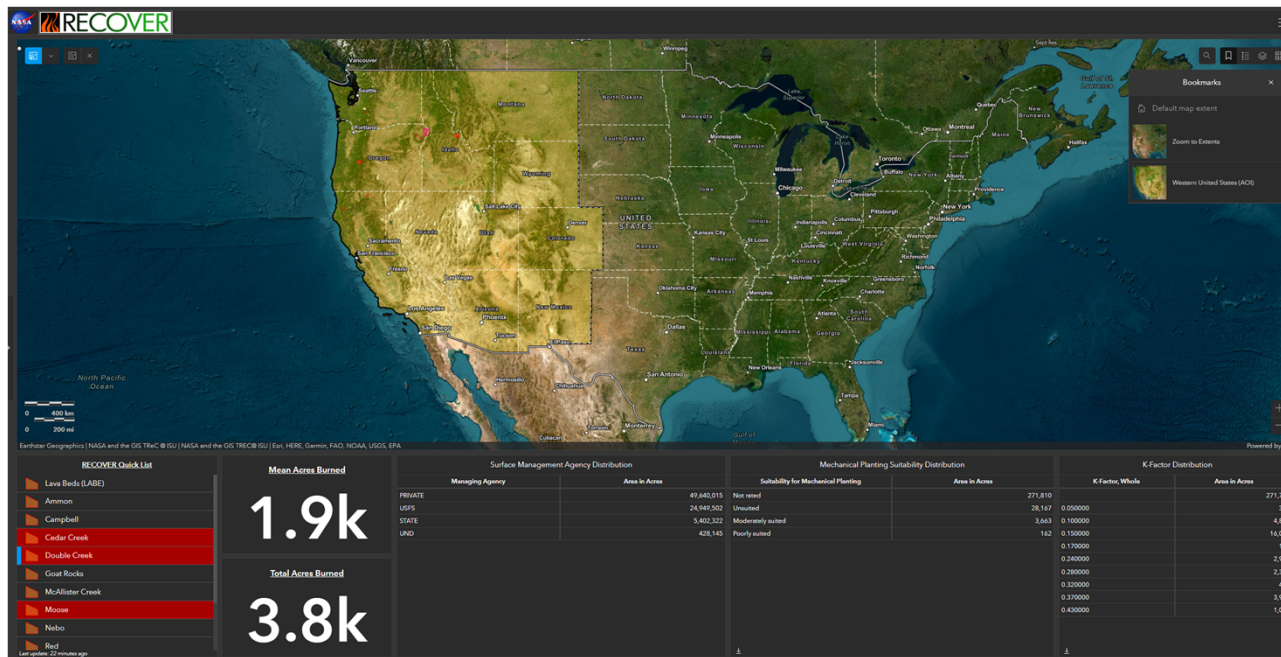 - Quick and easy download from RECOVER's dashboard

ROAR

RECOVER 2.0 Workflow

- A wildfire has occurred

- Visit the RECOVER dashboard
  - Select the fire from the RECOVER Quick List

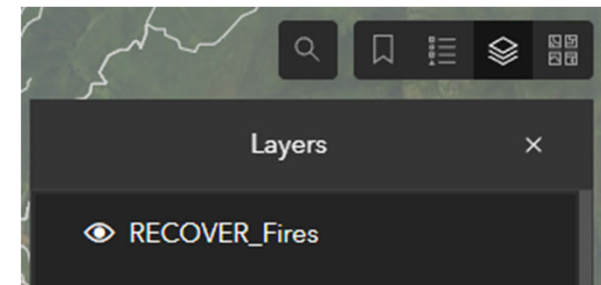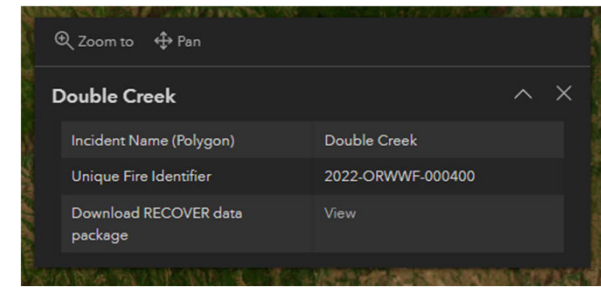# Interacting with RECOVER

- Click the fire polygon to reveal its pop-up
  - Optionally, download the Data Package

- Expand the Layers list to explore the fire area

29 Data Layers

- Currently, RECOVER provides 29 data layers from authoritative sources (USGS, NASA, NOAA, etc.)

- These are referred to as RECOVER Base Layers
  - Turn layers on/off to visualize these data
  - Click a feature to view attributes describing that feature or pixel
  - View the legend/key for all displayed layers

ROAR

Explore RECOVER in 3D

- Using the menu (upper-right corner), open the RECOVER 3D Viewer
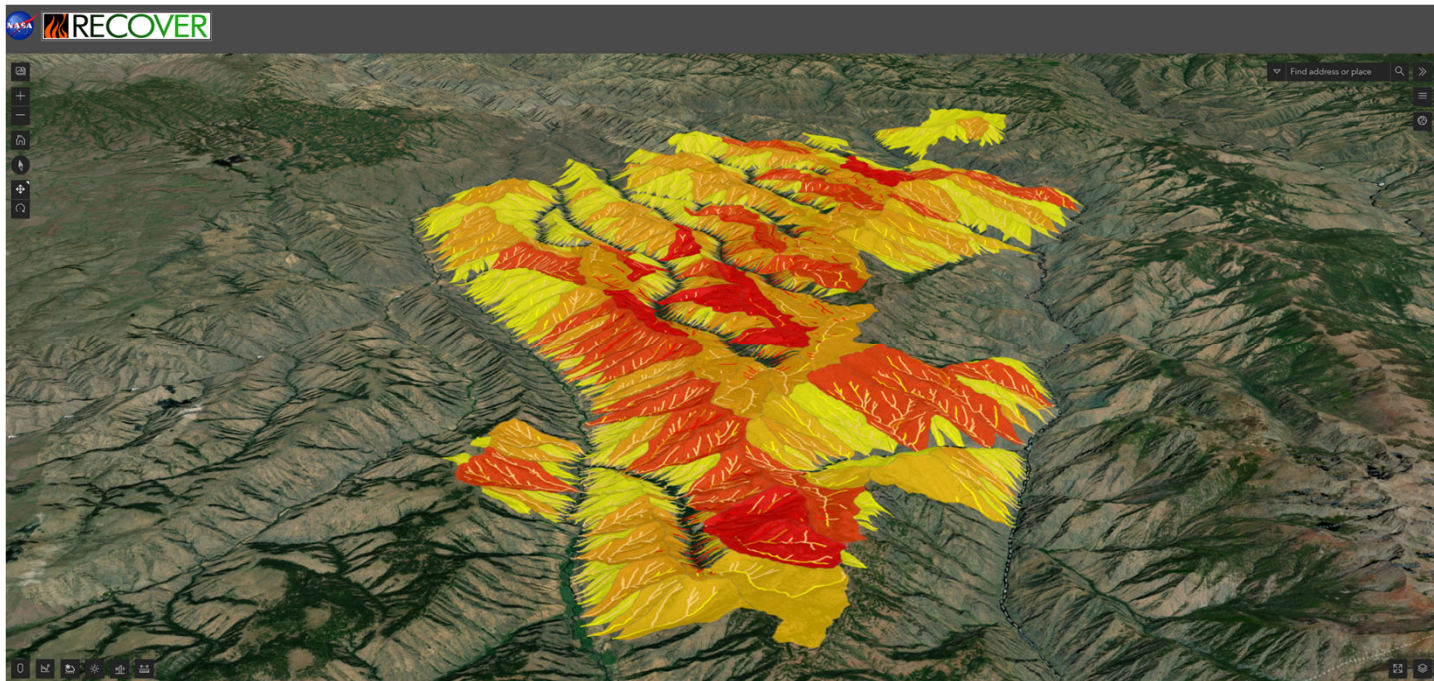
What if…

- A fire AOI is not shown in the dashboard?
  - We have new geoprocessing models to run SUBMITTED fires
- I have other data to add for a specific fire?
  - This is under construction but already possible
- Contact us! Using the RECOVER web page at

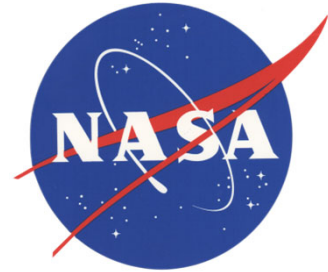https://giscenter.isu.edu/research/Techpg/nasa_RECOVER2/index.htm

Idaho State University

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Still Under Construction…

- Summary reports/Dashboard widgets
- Long-term vegetation monitoring post-fire (Regeneration Index RI)

Questions & Discussion?

webekeit@isu.edu