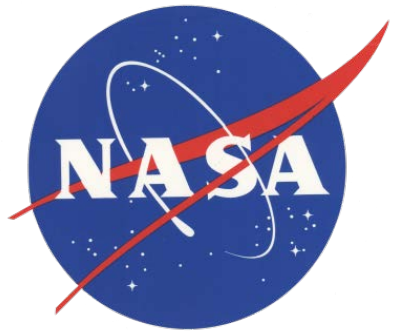


The NASA RECOVER DSS

Keith T. Weber¹, GISP and PI NASA RECOVER

Kindra Blair¹, John Schnase², Mark Carroll², Roger Gill²,

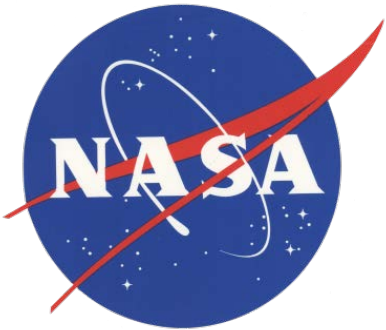


1- Idaho State University- GIS TReC

2- NASA Goddard Space Flight Center

What is RECOVER?

- Customer-driven, Customer-centric*
- Decision Support System (DSS)
 - Rapid assembly of site-specific data
 - Delivered in customized GIS analysis environment
 - Wildfire focus



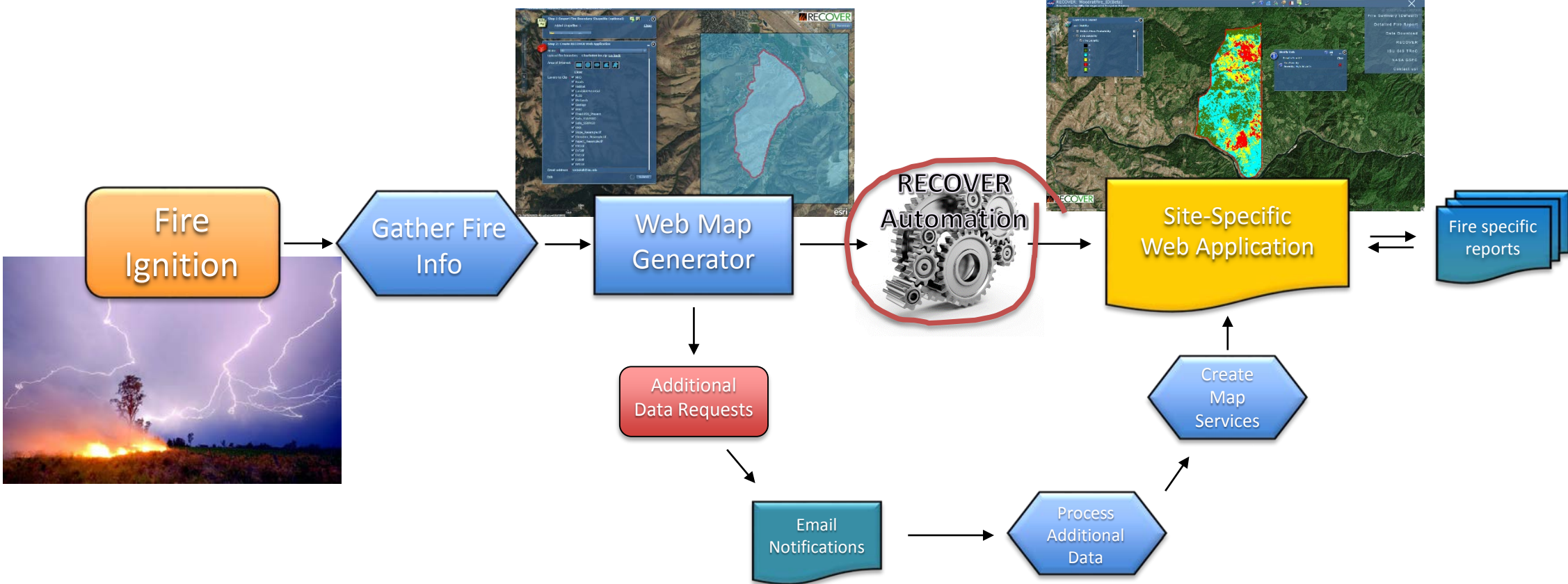
* Our “customer” is any wildfire management agency (BLM, NPS, USFS, etc.)

Data Architecture

- RECOVER covers the Western US
- Esri ArcGIS
- File Geodatabase
 - Vector and raster data
 - Automated Map Services (python)



How Does it Work?

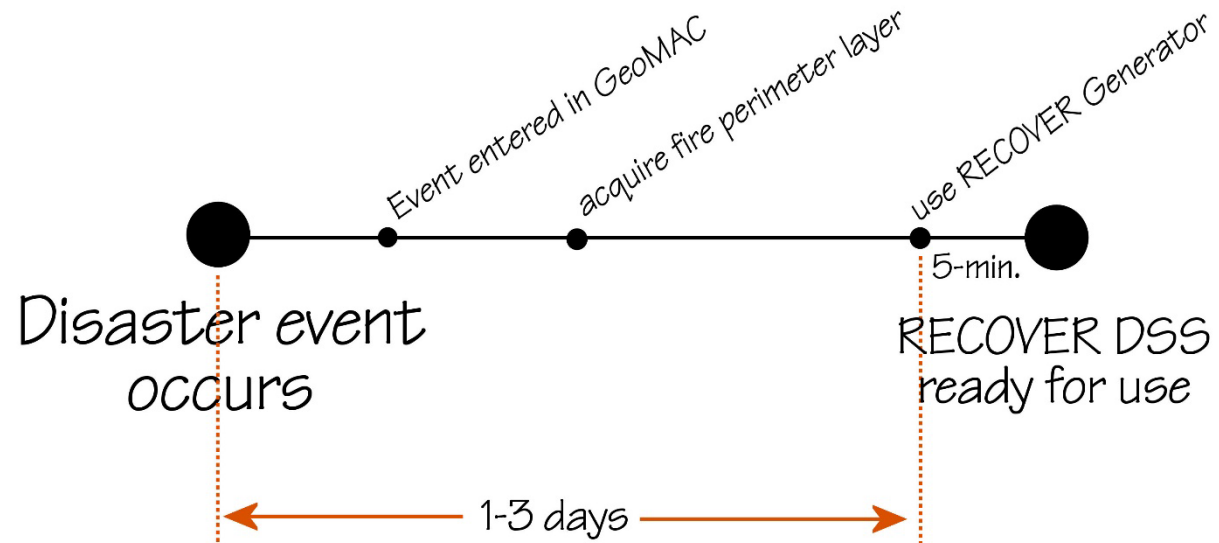


Done in 5-minutes!



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

Readiness...



- New automation processes will decrease response time by changing the trigger

GIS Layers

- By default each RECOVER web map contains...
 - 26 base layers automatically clipped to fire extent
 - Real-time data streams (Collector)
 - Fire-specific reports

FireLines	FirePoints
Aerial Hazard - Solid Red line	Aerial Hazard
Air Tanker Foam	Airstrip or Airport
Air Tanker Retardant	Camp
Completed Dozer Line	Drop Point
Completed Line	Fire Origin
Completed Line Break	Fire Station
Explosive Line	First Aid Station
Fire Spread Prediction	Heat Source
Hand Line - Solid black line	Heat Source - Outside of Line
Heat Line (RIN)	Helibase
Helitanker Foam	Helispot
Helitanker Water	Hot Spot
Other	IR Downlink
Planned Fire Break	Incident Base
Planned Fire Line	Incident Command Post
Planned Secondary Line	Lookout
Plow Line	Miscellaneous
Proposed Dozer Line	Mobile Weather Unit
Ridge / Geographic Feature	Mud Pit
Uncontrolled Fire Edge	Repeater
Unknown	Retardant Pickup
AssignmentBreaks	Safety Zone
Sector	Spot Fire
Division	Staging Area
Branch	Telephone
Zone	Unknown
	Water Source
	Wind Speed



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 TRC (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



Best fire datasets

Vegetation datasets

Topography datasets

USGS USA Contiguous Albers Equal Area Conic USGS version,

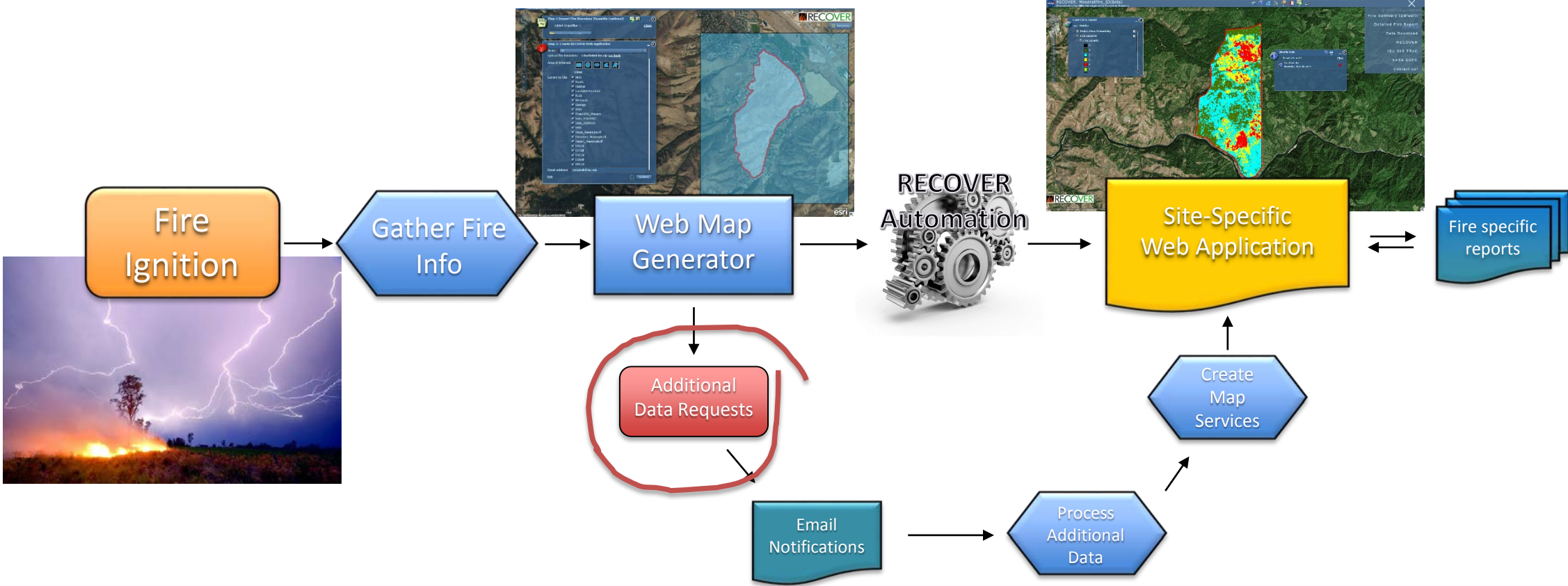
Fire-specific Reports

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	---	---	---	---	---

How Does it Work?

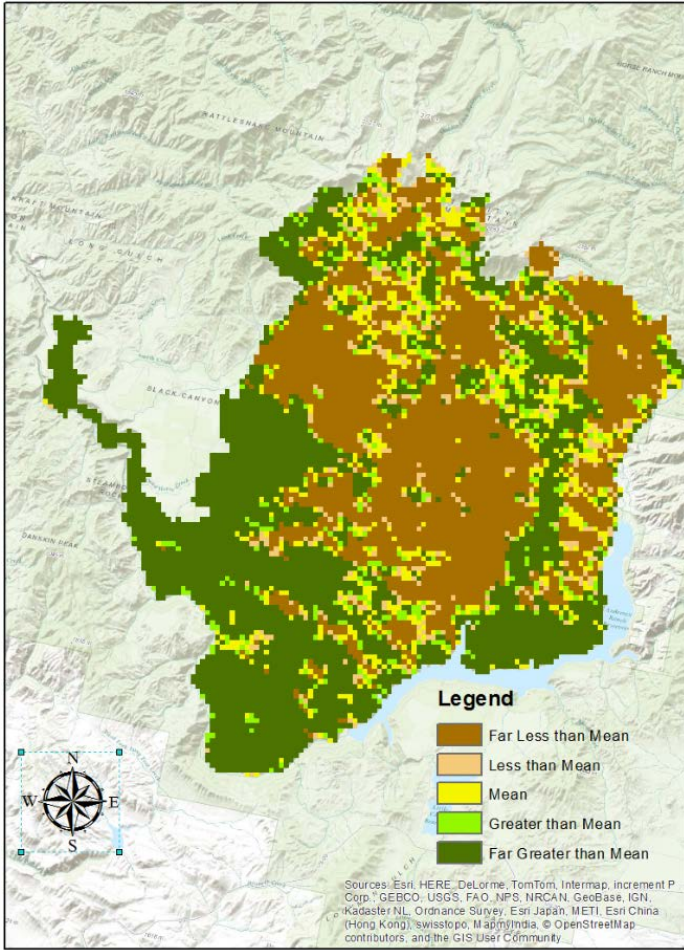


Additional data requests

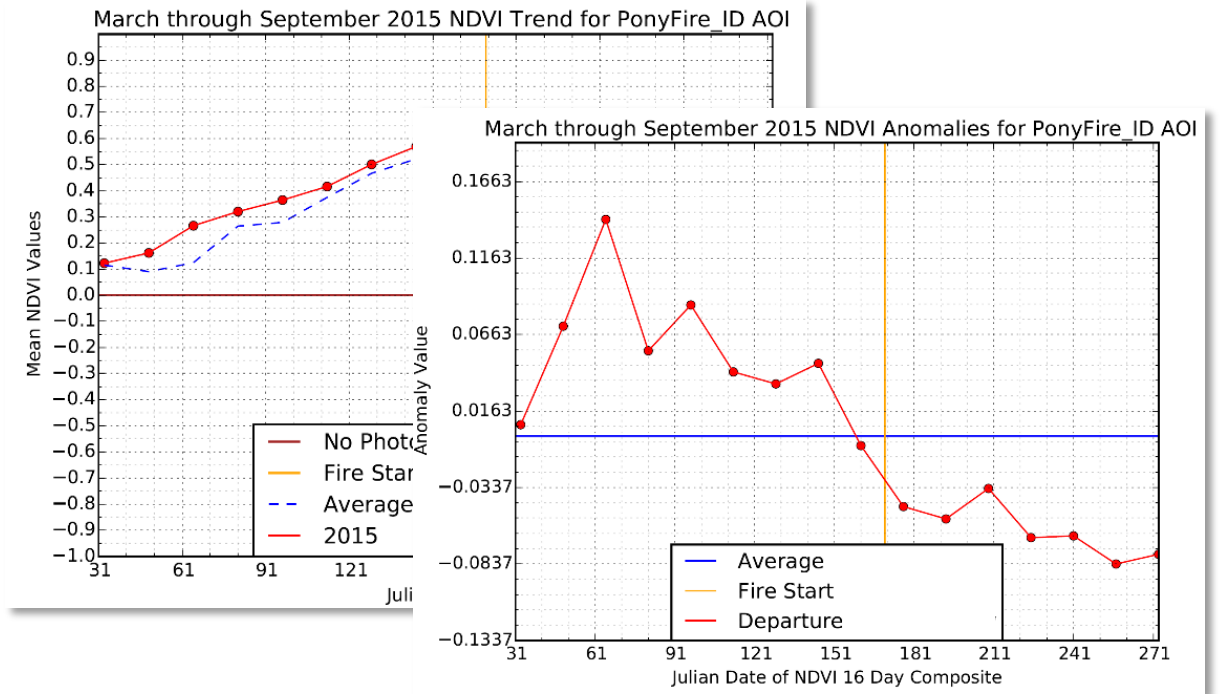
- Fire-affected Vegetation
- Debris-flow probability (AKA mudslide or landslide)
- NDVI vegetation anomaly
 - 16-day MODIS NDVI-composite imagery
 - Long-term average NDVI (2001-present)
 - Current fire season compared against long-term trend

NDVI Anomaly Data

Map layer

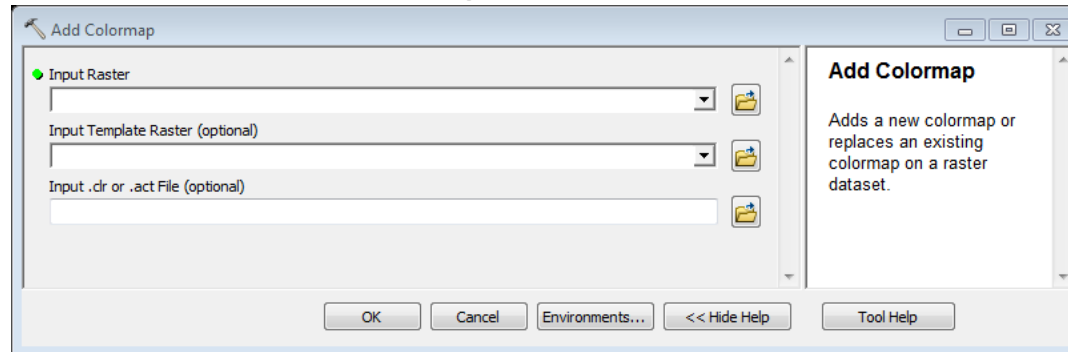


Charts



Transform Data into Actionable Information

- Help your data speak to the user
 - Authoritative source data
 - Common sense Colormaps (raster)

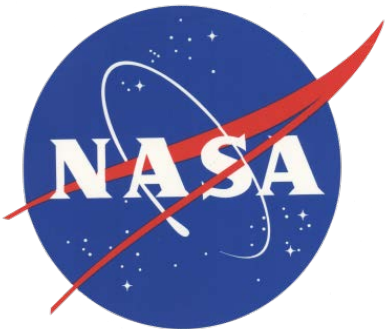


- Accepted symbology (Map service and Layer files)
- Meaningful units (m² or acres)

Listen to the Customer

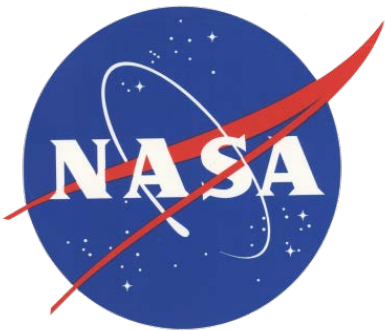
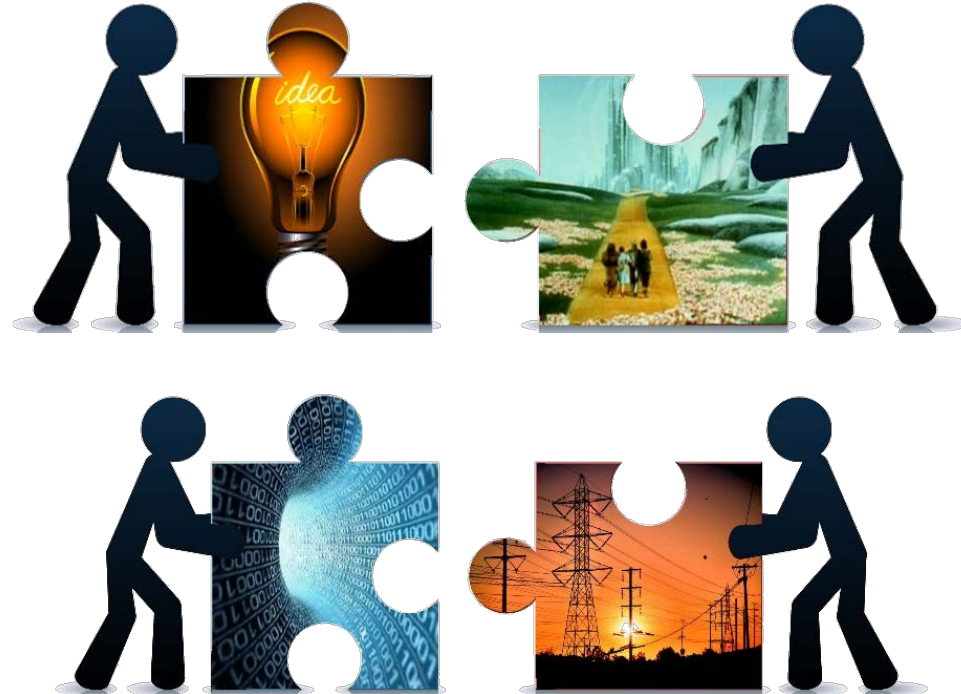


- “Make it mobile”
- “High-resolution is nice, but fast is critical”
– *NIFC*
- “Drowning in Data, but still thirsting for Information”
– *USFS RSAC*

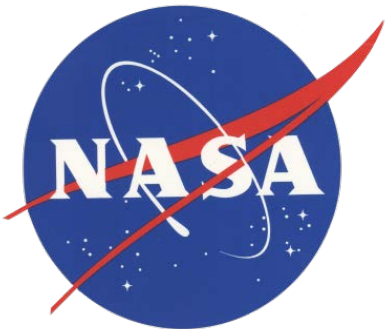


Assemble a Great Team

- Idea
- Plan
- Infrastructure
- Data
- **People**



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