RECOVER Briefing

NASA RECOVER
2015 NBAER Meeting
February 4th, 2015
NIFC, Boise, Idaho

What is RECOVER?

- RECOVER: Rehabilitation Capability Convergence for Ecosystem Recovery
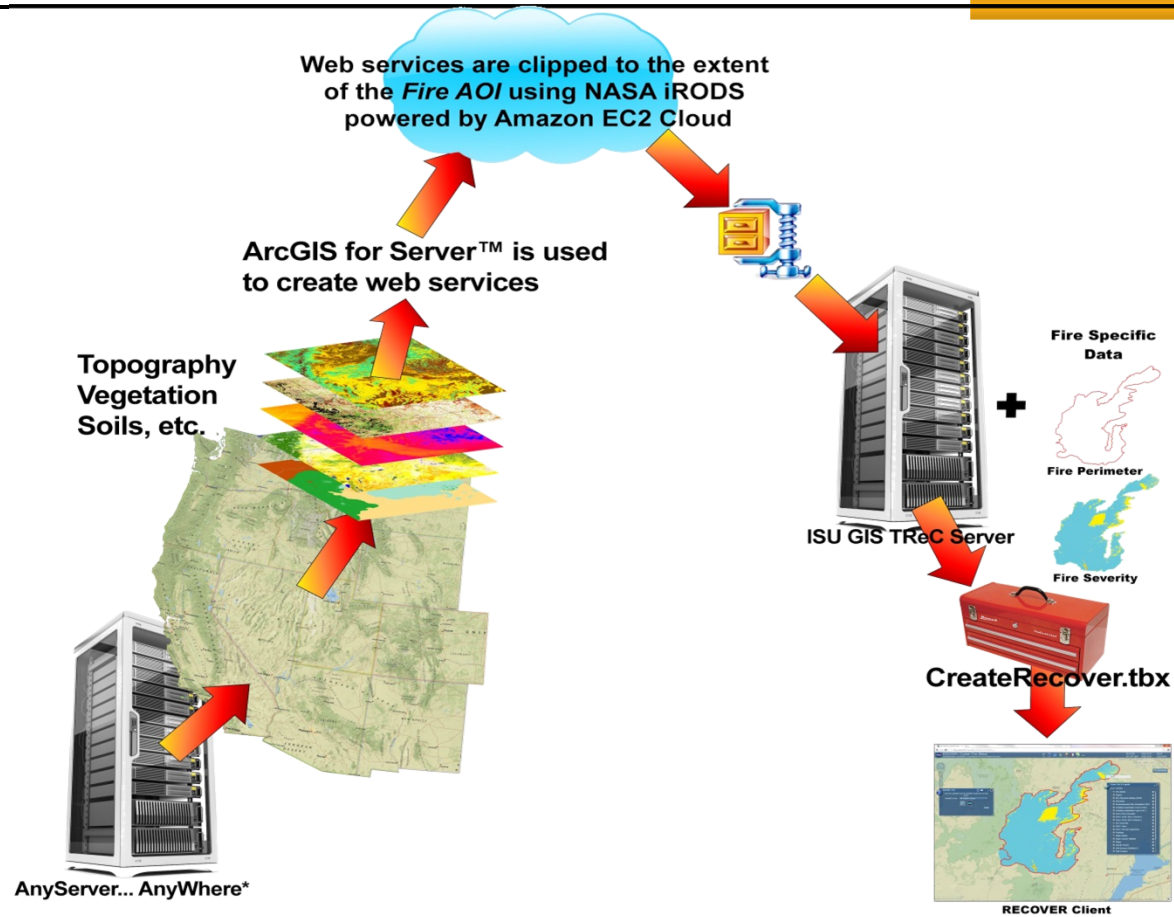- NASA Applied Sciences Program sponsored project

What is RECOVER?

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

* Our "customer" is the USDI BLM, Idaho Dept. of Lands, National Park Service, USFS, and other wildfire management agencies
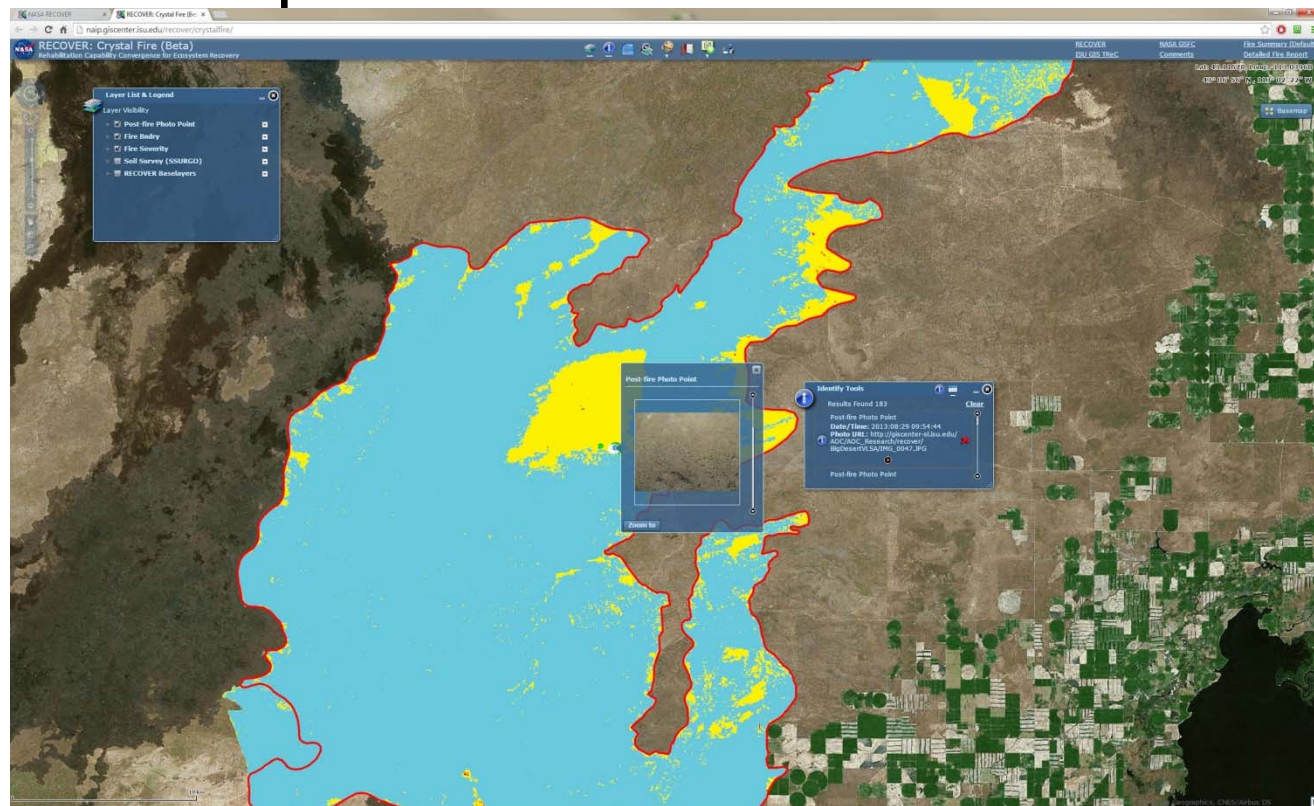
How Does it Work?

Web services are clipped to the extent of the *Fire AOI* using NASA iRODS powered by Amazon EC2 Cloud

ArcGIS for Server™ is used to create web services

Topography
Vegetation
Soils, etc.

AnyServer... AnyWhere*

ISU GIS TReC Server

Fire Specific Data

Fire Perimeter

Fire Severity

CreateRecover.tbx

RECOVER Client

Web Map RECOVER Client

■ User requirements…a web browser

Features of the Web Map

- Rapid display of geospatial data
- Users can:
  - Turn on/off layers of interest
  - Query layers (vector or raster)

Standard/Base Layers

Vegetation dataset services

- BPS_BioPhysicalSetting
- ESP_EnvironmentalSitePotential
- EVC_ExistingVegetationCover
- EVT_ExistingVegetationType
- fPAR
- NDVI

Fire dataset services

- FRG_FireRegimeGroup
- HistoricFires
- HistoricFires_PastDecade

Topographic dataset services

- TopographyElevation
- TopographyAspect
- TopographySlopeDEG

Other dataset services

- Geology
- Habitat
- LandslidePotential
- NHD
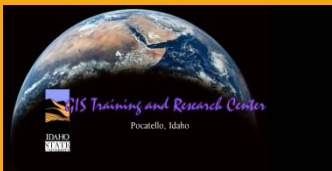- ROADS
- SMA_SurfaceManagementAgency
- Wetlands
- Watersheds

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

Data Sources

- RECOVER produces web services from *your* data

RECOVER and the TEUI?

The Terrestrial Ecological Unit Inventory (TEUI)
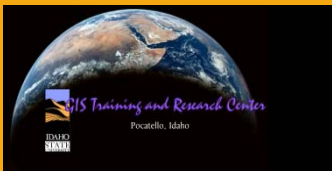
Geospatial Toolkit

TEUI

Geospatial Toolkit

User Guide v5.0

Version 2

- Use RECOVER data services for advanced analysis within TEUI and ArcMap

Features of the Web Map (cont'd)

- **Users can:**
  - Launch ancillary data (e.g., photos)
  - Open/download reports

Available Reports

- Basic fire summary
- Detailed Fire Report
- Ecological Type

Summary of burned Acres by land agency

AGNCY_NAME	SUM_Acres
BLM	200475
PRIVATE	12183
STATE	4793
NPS	2596

Detailed Fire Report

AGNCY_NAME	MUSYM	Acres
BLM		
	n/a	144929
	114	420
	115	2
	116	2486
	35	27795
	66	546
	67	105
	68	29
	70	10212
	72	55
	73	3
	83	9046
	84	1424
	85	2764
	89	657
	91	0
	PFD	1
	PsB	1

Ecological Site/Plant Association and Vegetation (ID)

Power 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
					Pct
35: McCarey	LOAMY 12-16 ARTRV/PSSPS-FEID (R013XY001ID)	---	bluebunch wheatgrass	---	30
			mountain big sagebrush	---	15
			other perennial grasses	---	10
			antelope bitterbrush	---	5
			arrowleaf balsamroot	---	5
			Idaho fescue	---	5
			lupine	---	5
			Nevada bluegrass	---	5
			other shrubs	---	5
			other perennial forbs	---	5
			prairie Junegrass	---	5
			western wheatgrass	---	5
Rock outcrop	---	---	---	---	---

USDA Natural Resources Conservation Service

Survey Area Version: 7
Survey Area Version Date: 08/14/2012

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Integrate Real-time Data

■ The RECOVER real-time service is part of the web map

FireLines

Symbol	Name
	Aerial Hazard - Solid Red line
	Air Tanker Foam
	Air Tanker Retardant
	Completed Dozer Line
	Completed Line
	Completed Line Break
	Explosive Line
	Fire Spread Prediction
	Hand Line - Solid black line
	Heat Line (IRIN)
	Helitanker Foam
	Helitanker Water
	Other
	Planned Fire Break
	Planned Fire Line
	Planned Secondary Line
	Plow Line
	Proposed Dozer Line
	Ridge / Geographic Feature
	Uncontrolled Fire Edge
	Unknown

AssignmentBreaks

Symbol	Name
	Sector
	Division
	Branch
	Zone

FirePoints

| Symbol	Name
	Aerial Hazard
	Airstrip or Airport
	Camp
	Drop Point
	Fire Origin
	Fire Station
	First Aid Station
	Heat Source
	Heat Source - Outside of Line
	Helibase
	Helispot
	Hot Spot
	IR Downlink
	Incident Base
	Incident Command Post
	Lookout
	Miscellaneous
	Mobil Weather Unit
	Mud Pit
	Repeater
	Retardant Pickup
	Saftey Zone
	Spot Fire
	Staging Area
	Telephone
	Unknown
	Water Source
	Wind Speed

Benefits of RECOVER
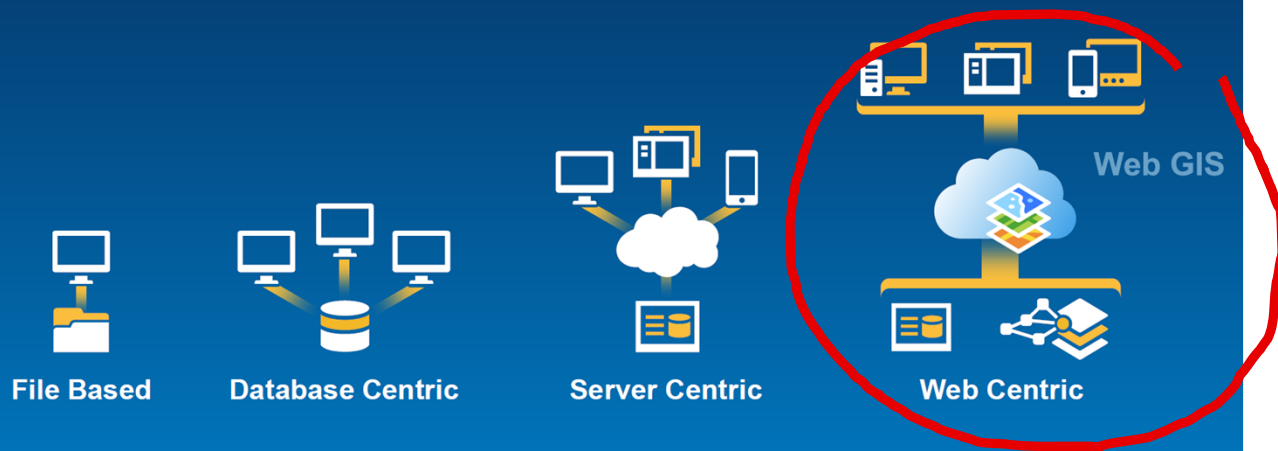
Future Plans for RECOVER

- Over the next few years we will…
    - Operationalize the RECOVER DSS (currently beta)
    - Expand the spatial coverage area to include the entire Western US
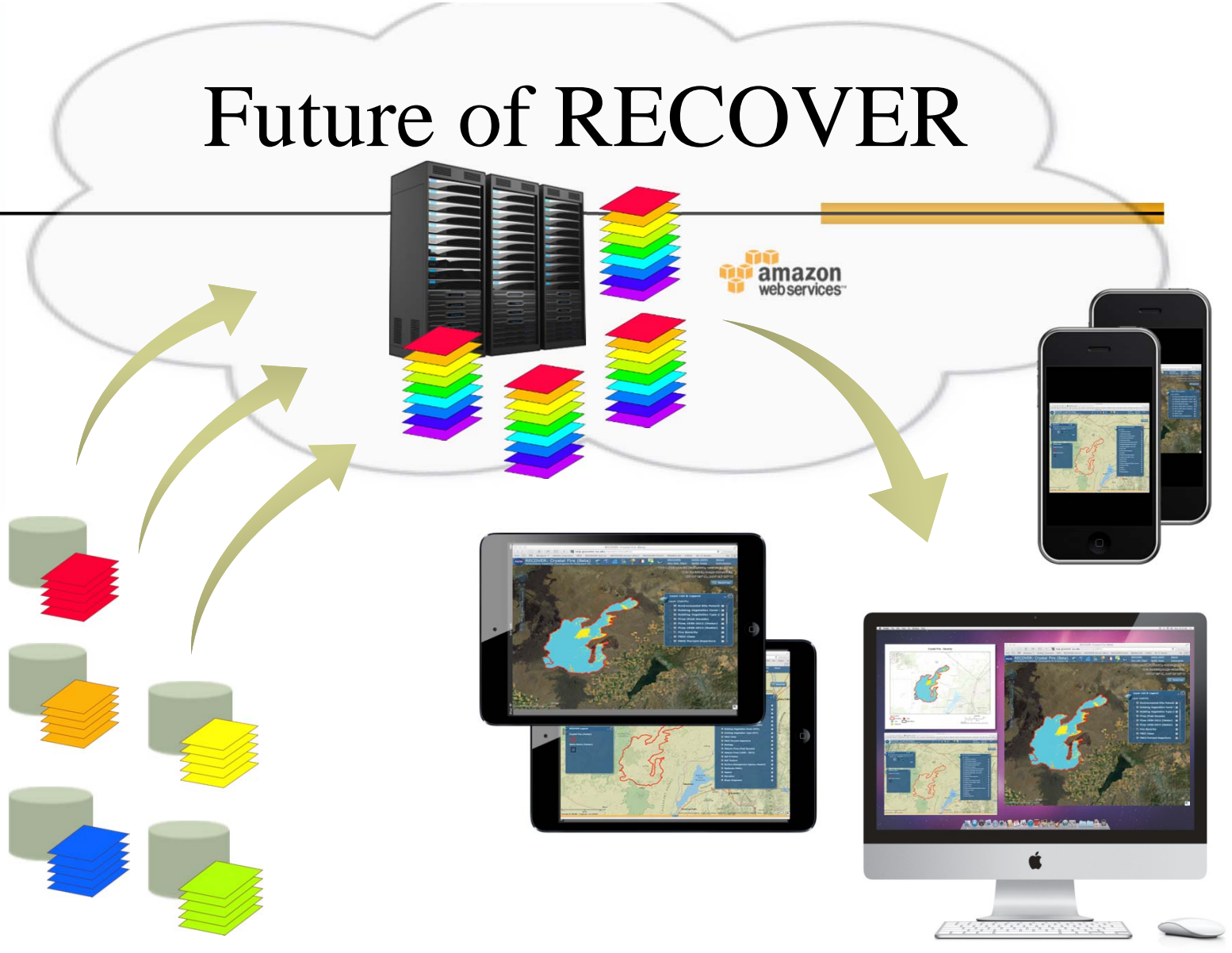   - Expand to new partner agencies
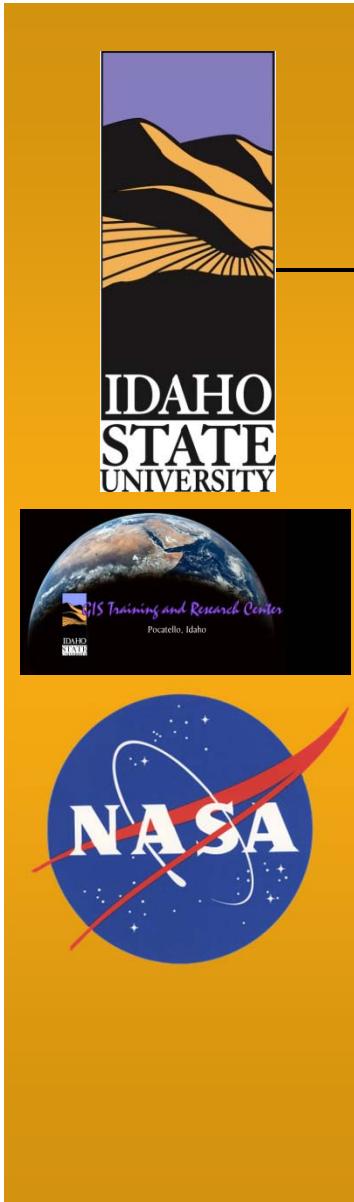
Future (cont'd)
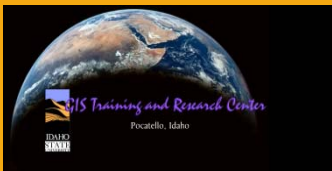
- Develop long-term monitoring
- Incorporate new data products:
    - SMAP
    - Research results from NASA DEVELOP
- Further increase RECOVER's performance and responsiveness
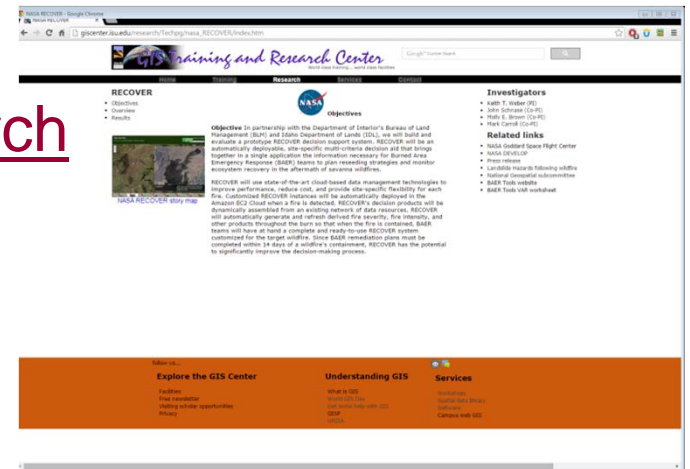
Future of RECOVER

There's More…

■ Visit the RECOVER project website:

http://giscenter.isu.edu/research/Techpg/nasa_RECOVER/

■ Click Results

■ Test drive a demo webmap

■ Connect to our services and use RECOVER data in ArcMap on *your* desktop

Questions?