



WELCOME

Esri Ocean GIS Forum

November 4–6, 2015 | Redlands, California

GeoPlanner Workshop

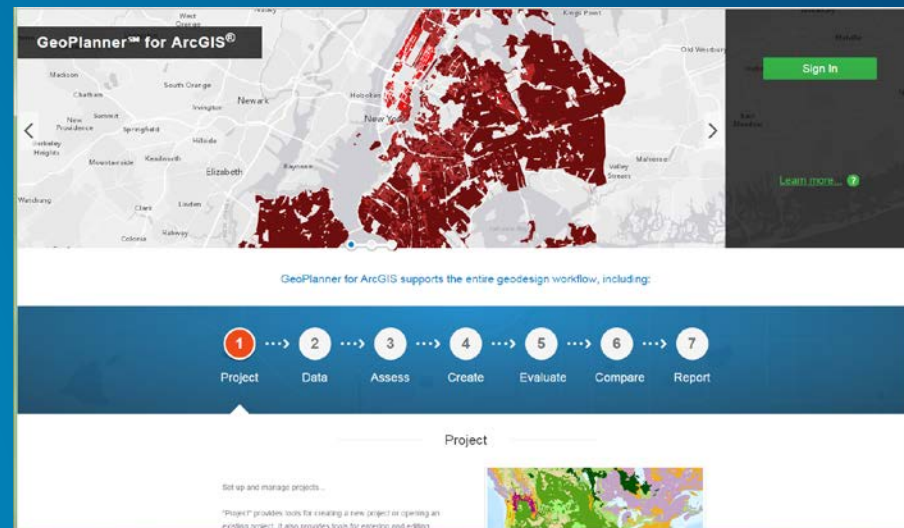
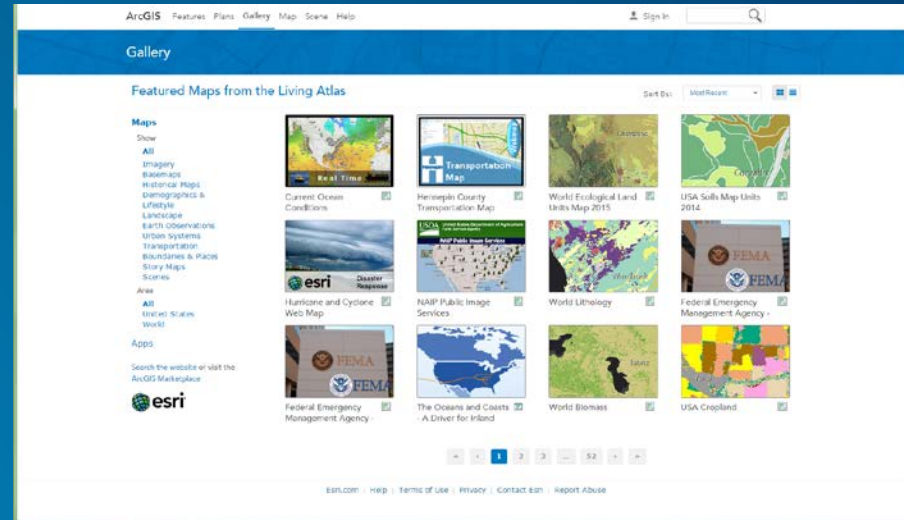
Esri Ocean GIS Forum

November 4, 2015

Pete Aniello and Rob Stauder

Purpose and Take-aways

- Learn how to:
 - Create services
 - Use services in ArcGIS Online
 - Use services in GeoPlanner
 - Analyze data in GeoPlanner
 - Share services and analysis results

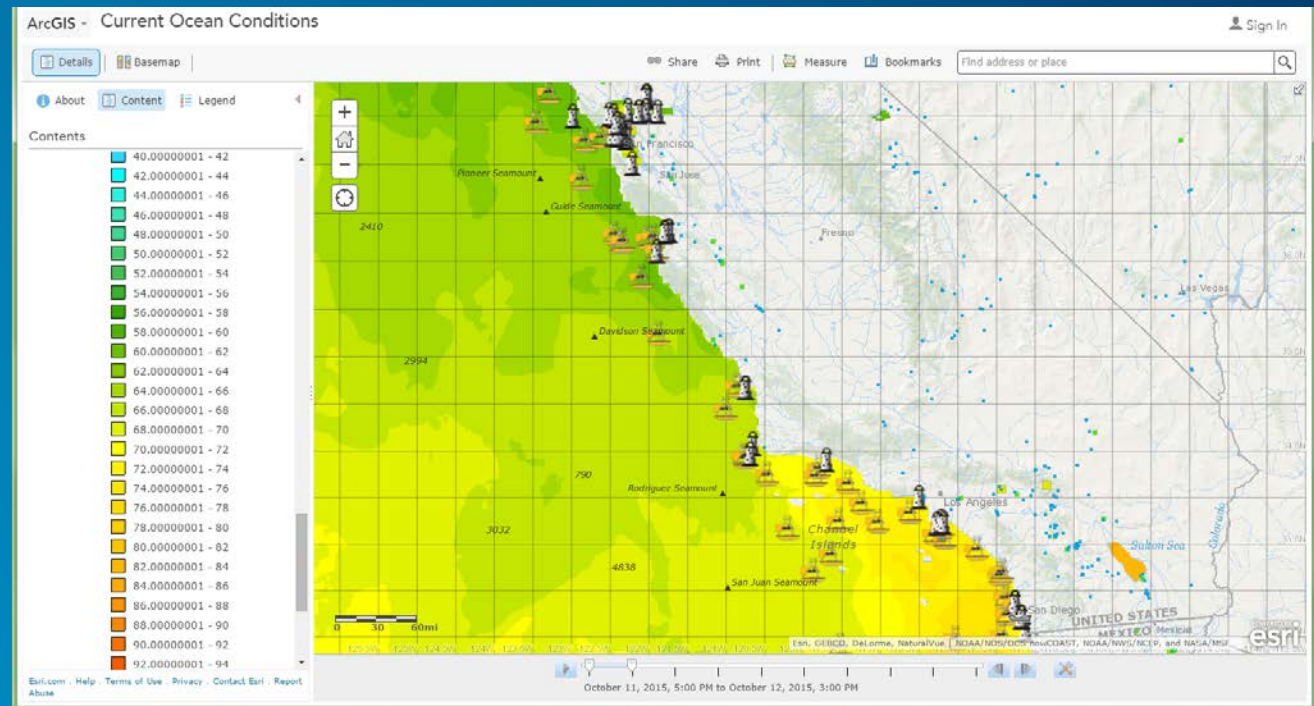


Web GIS and ArcGIS Online

Authoring and Sharing Content

ArcGIS Online

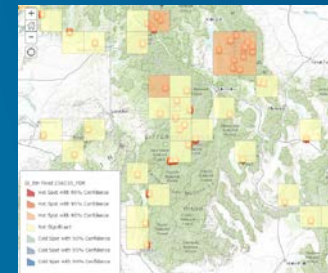
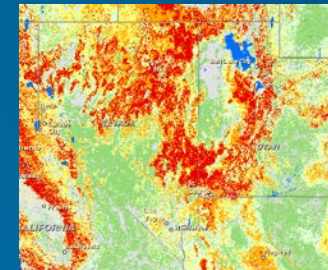
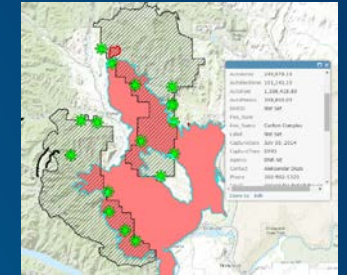
- Environment for creating, sharing, and accessing:
 - Maps
 - Supports animation
 - Data
 - Features
 - Rasters
 - Imagery
 - Documents
 - Tools
 - Applications
 - GeoPlanner
 - Story maps
 - Custom



Part of the ArcGIS Platform

Types of Services

- **Map services**
 - **Cached** (picture of the data, not the data itself)
 - **Feature Access** (vector data through the service)
- **Image Services**
 - Any raster data, not just images
 - Actual pixels through the service
- **Geoprocessing Services**
 - Tools as services



Services can be data, not just maps!

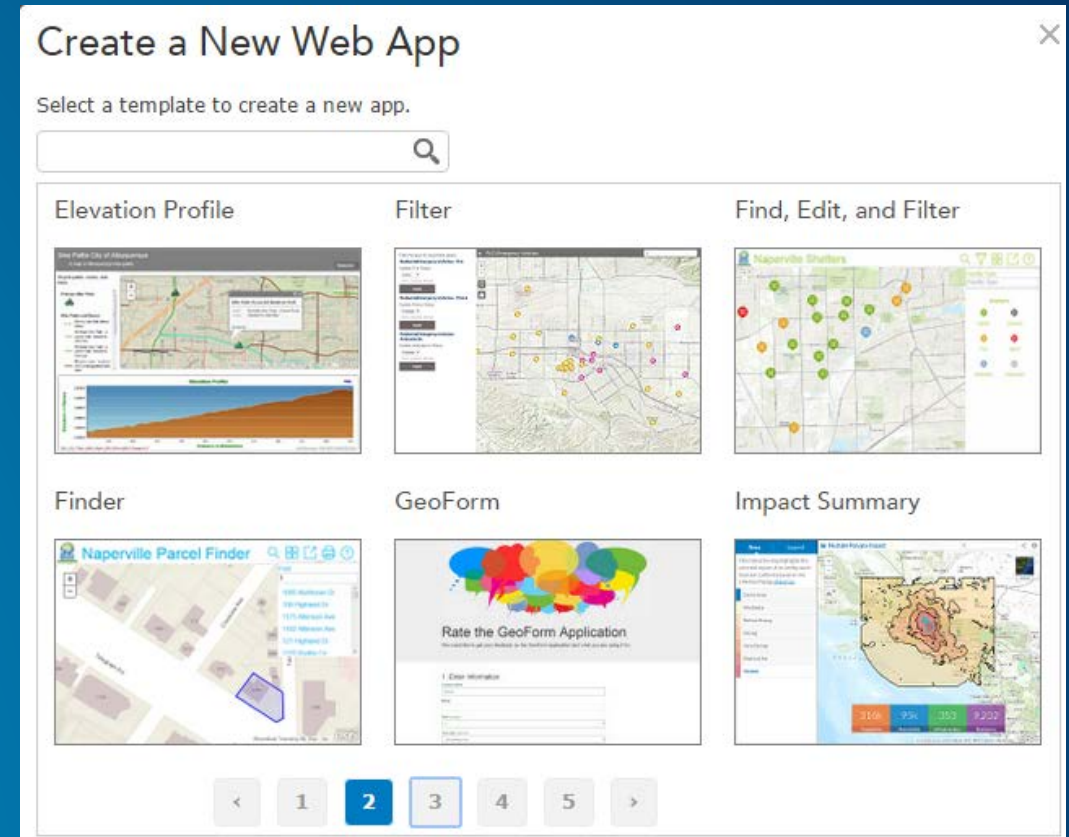
Authoring Services

- **Services can be authored in:**
 - ArcGIS Desktop
 - ArcGIS Online
 - ArcGIS Pro
- **Services can then be hosted from:**
 - ArcGIS Online
 - Your server(s)
 - Amazon servers
 - Esri custom hosting



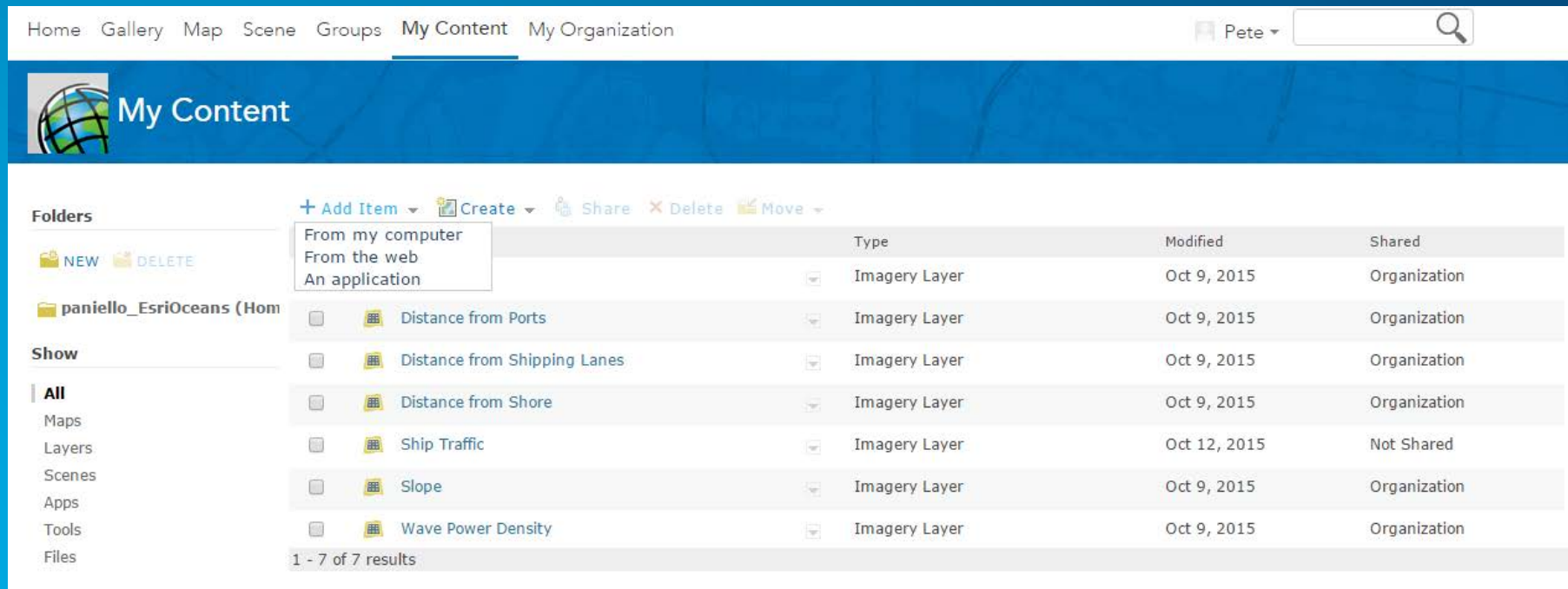
Web Maps and Apps

- Create web maps from services
- Create apps from web maps using templates
 - Story maps
 - Web App Builder
- Create custom apps using JavaScript
- Use Esri apps
 - GeoPlanner
 - Insights
 - Business Analyst
 - Community Analyst



Adding Items

- When you serve or create something, it becomes part of your content
- You can also add others' data, maps, and apps to your content
 - Requires creator's permission



The screenshot shows the 'My Content' page in ArcGIS. The navigation bar includes 'Home', 'Gallery', 'Map', 'Scene', 'Groups', 'My Content', and 'My Organization'. The user is logged in as 'Pete'. The main content area displays a list of items under the 'paniello_EsriOceans (Home)' folder. A dropdown menu is open under the '+ Add Item' button, showing options: 'From my computer', 'From the web', and 'An application'. The table below lists the items:

Type	Modified	Shared
Imagery Layer	Oct 9, 2015	Organization
Imagery Layer	Oct 9, 2015	Organization
Imagery Layer	Oct 9, 2015	Organization
Imagery Layer	Oct 9, 2015	Organization
Imagery Layer	Oct 12, 2015	Not Shared
Imagery Layer	Oct 9, 2015	Organization
Imagery Layer	Oct 9, 2015	Organization

1 - 7 of 7 results

Sharing Items

- You have control over who you share with

- Nobody
- Only your organization
- Groups you are a member of
- The public

The screenshot shows the ArcGIS Online interface for an item titled "Bathymetry". The item is an "Imagery Layer by paniello_EsriOceans" with a source of "Image Service" and a last modified date of "October 9, 2015". It has "0 ratings, 2 views" and social media sharing options for Facebook and Twitter. The "Share" dialog box is open, showing the following options:

- Share the item(s) with:
- Everyone (public)
- Esri Ocean and Coastal Environments
- These groups:
- Esri Ocean Forum 2015

At the bottom of the dialog, it states "These settings will replace the current settings." and has "OK" and "CANCEL" buttons. The background page shows the item's description, map contents, and properties.

Description
Bathymetric depth from SRTM 30, in meters

Map Contents
Bathymetry
<http://ec2-54-241-241-33.us-west-1.compute.amazonaws.com/arcgis/rest/services/Oceans/Bathymetry/ImageServer>

Properties

Shared with	Organization
Tags	bathymetry, depth, srtm, srtm30, ocean
Credits	USGS
Size	1 KB
Delete Protection	Disabled
Extent	Left: -179.99 Right: 179.99 Top: 89.55 Bottom: -75.53

Exercises

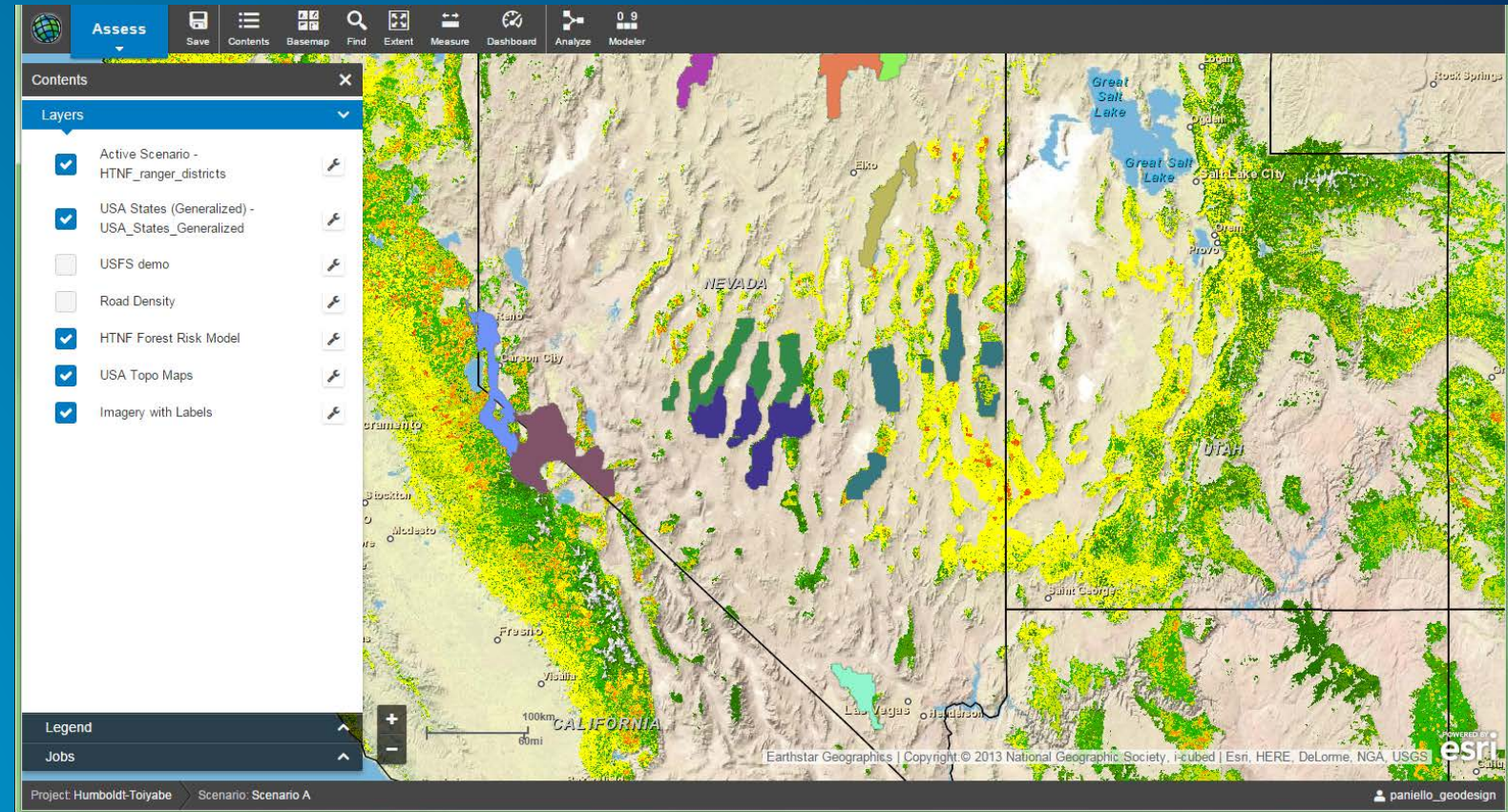
- **Get familiar with ArcGIS Online**
- **Create an image service**
- **Create a web map**

Getting Started with GeoPlanner

GeoDesign and Natural Resource Planning

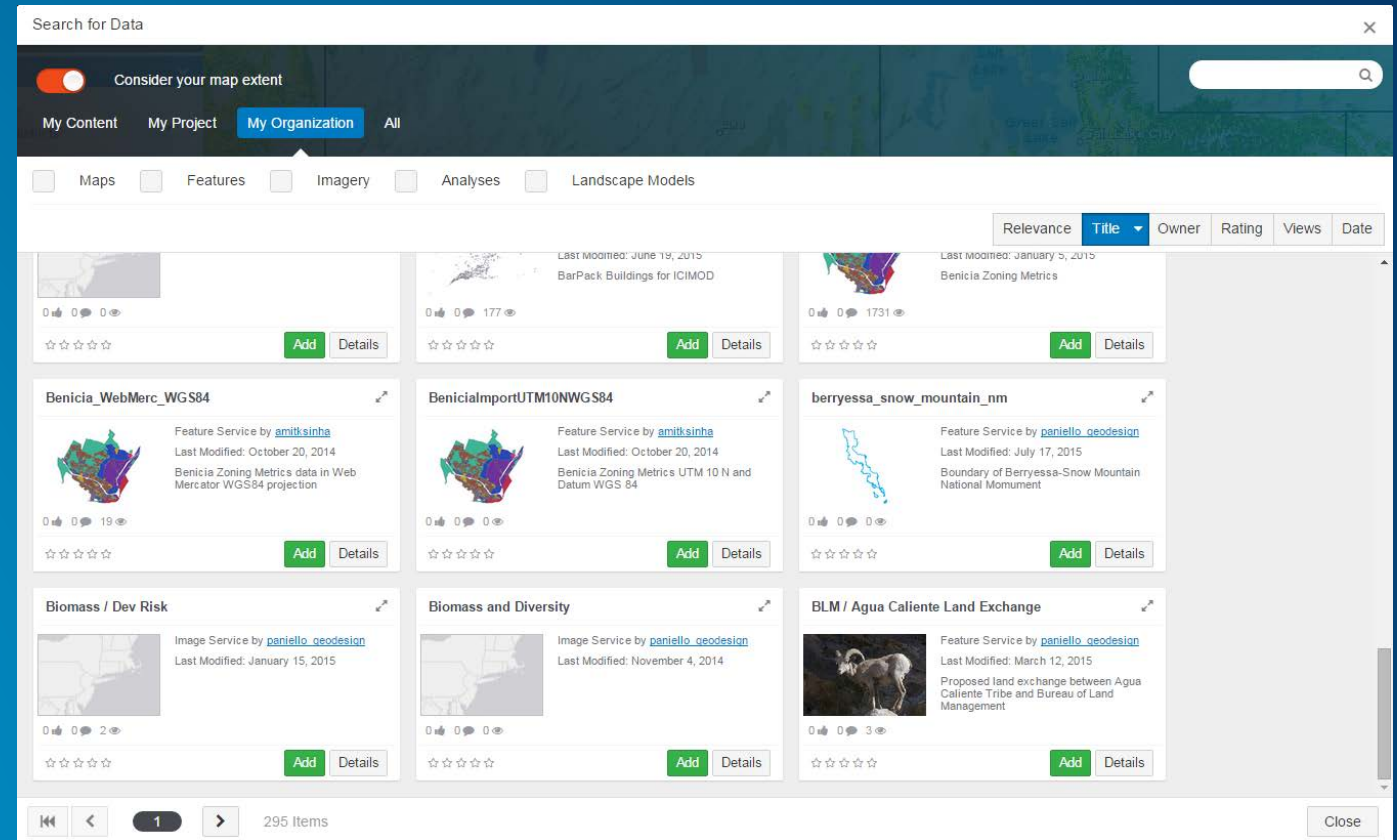
User Interface

- Process-driven
- Originally made for GeoDesign, but applicable to many other fields
 - Natural resource planning (forests, open space)
 - Oceans planning (energy infrastructure, MPAs)



Connection to ArcGIS Online Maps and Data

- Any data from ArcGIS Online can be added to GeoPlanner
- Different services can be used for different functionality
 - Basemaps: all standard from ArcGIS Online
 - Map services: background perspective
 - Feature services: analysis, dashboards
 - Image services: background or analysis



Project Creation

- Create a project using a template
 - Several out-of-the-box templates free from Esri
 - Create your own for specific use
 - Feature service into which you collect features

Create Project - Select a Template

My Content My Organization All

Relevance Title Owner Date

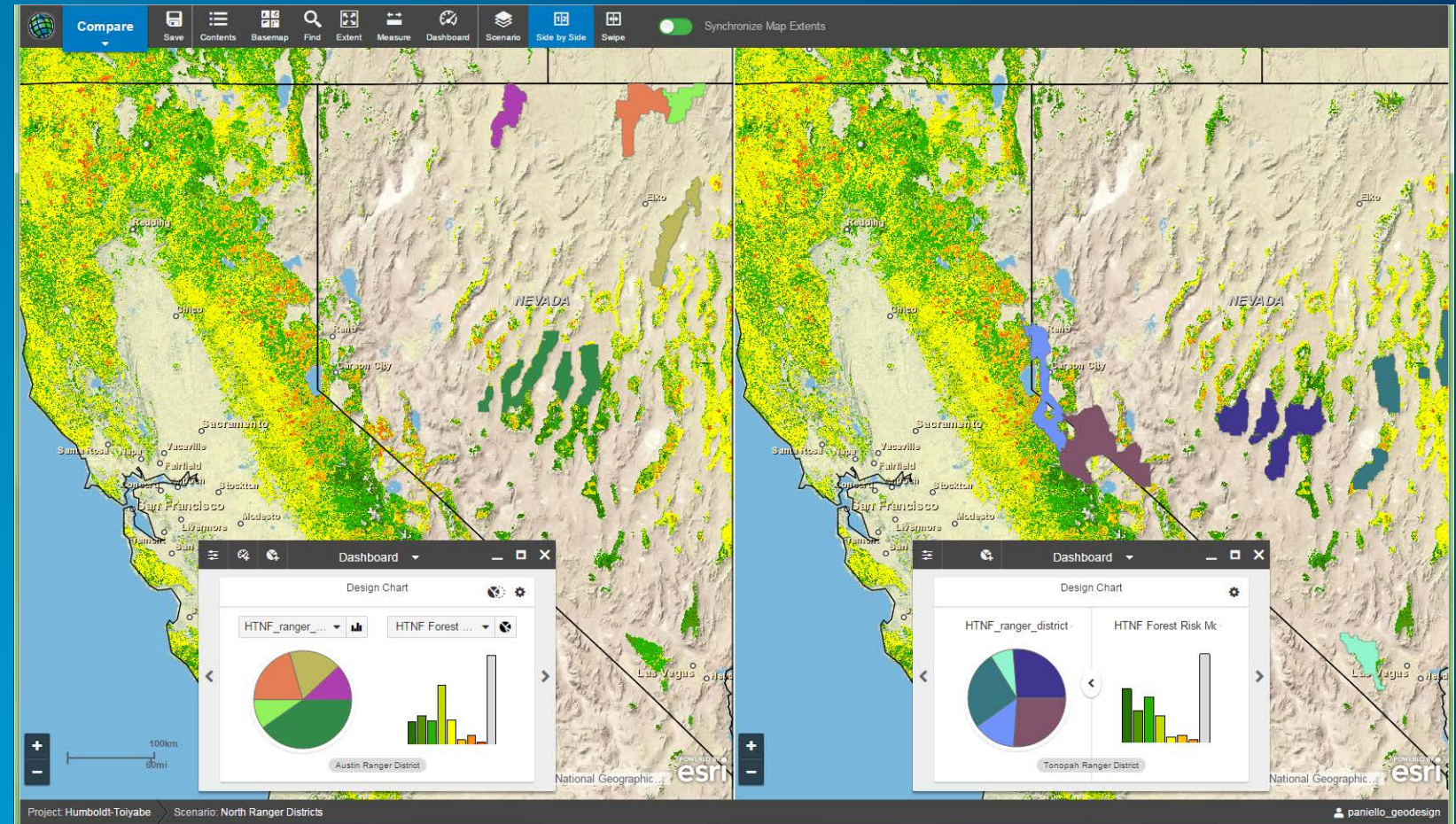
Template Name	Creator	Created	Image
Energy Umich Project Group	erschott_umich	August 12, 2015	no image
Energy Umich2	erschott_umich	July 28, 2015	no image
Fire Management Planning Template	SFoss_Sandbox	January 9, 2015	Fire icon
Forest Management Template	tlark_LNR	September 3, 2014	Forest icon
Forest Plan Group	hiaditi_Sandbox	July 9, 2014	Map icon
Forest Service Template	rstauder@geodesign	December 3, 2014	Trees icon
Gas Sketching GeoPlanner Template *Beta	ArcGISforGasBeta	May 20, 2014	Gas icon
Geodesign Framework - GeoPlanner Template	gleiss	July 20, 2015	Geodesign icon
Geodesign tech workshop	rstauder@geodesign	January 11, 2015	no image

86 Items

Cancel

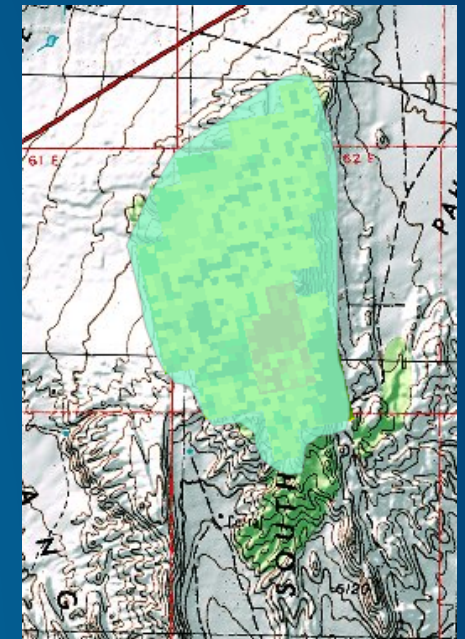
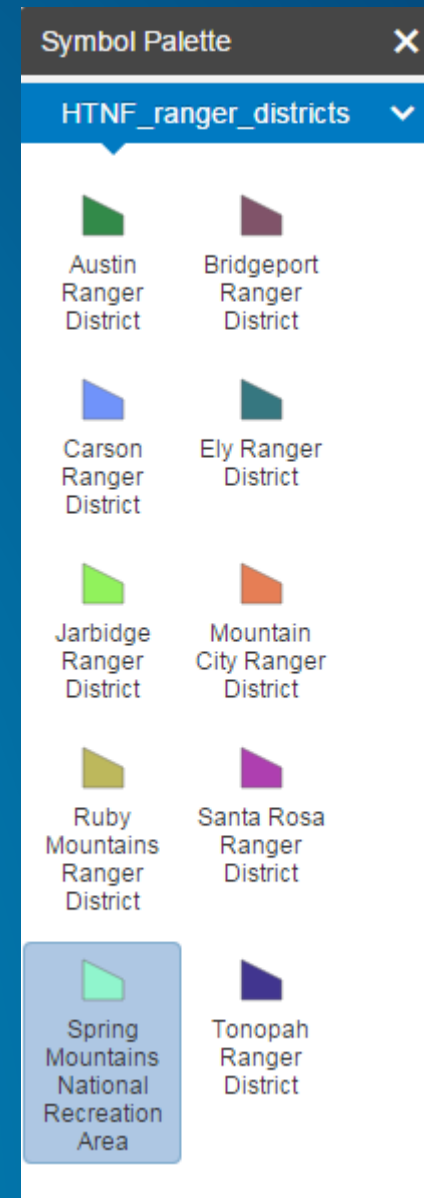
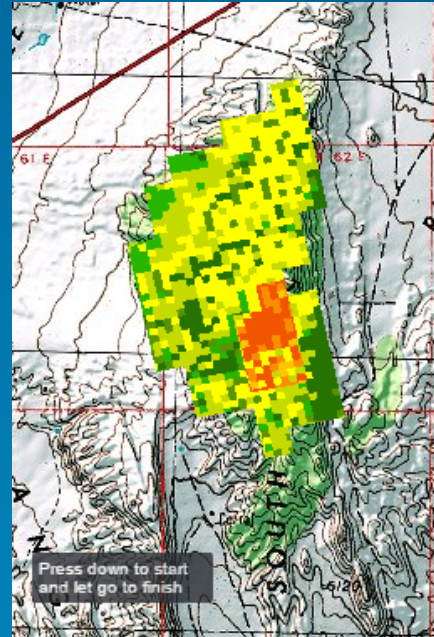
Scenario Creation

- Scenarios are different options for your plan
- Features can be drawn or copy-pasted into scenarios



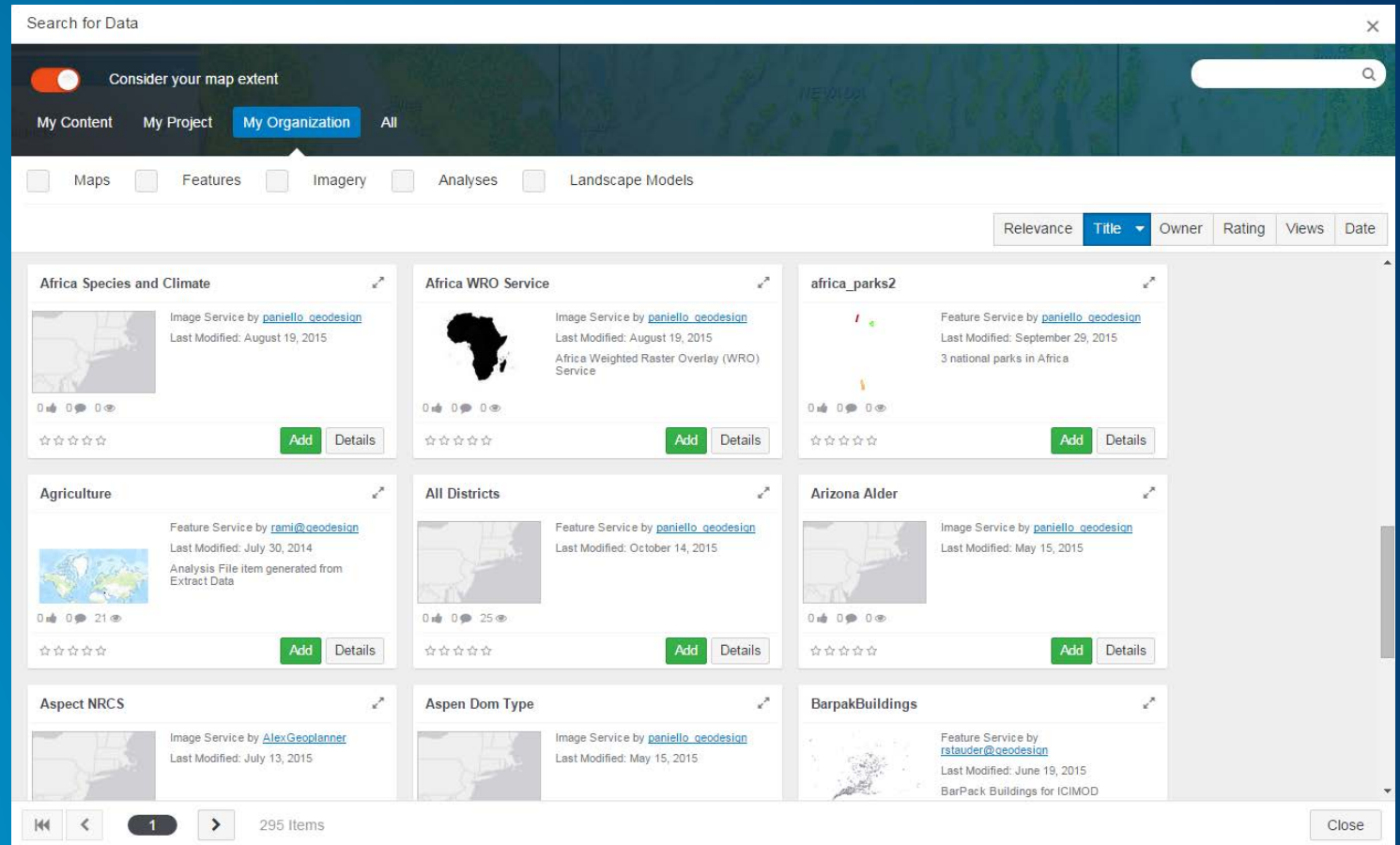
Drawing Features

- Features are drawn into a scenario using a symbol palette
 - Symbols determined by your template
 - Features are collected into your template
- Drawn features can also be copied/pasted into other scenarios
- Drawn features will also power dashboards



Adding Layers

- Any type of layer (as a service) can be added to GeoPlanner
- You have to have permission to the layer
 - You created it
 - It's public
 - Someone shared it with you
- Lots of filtering options

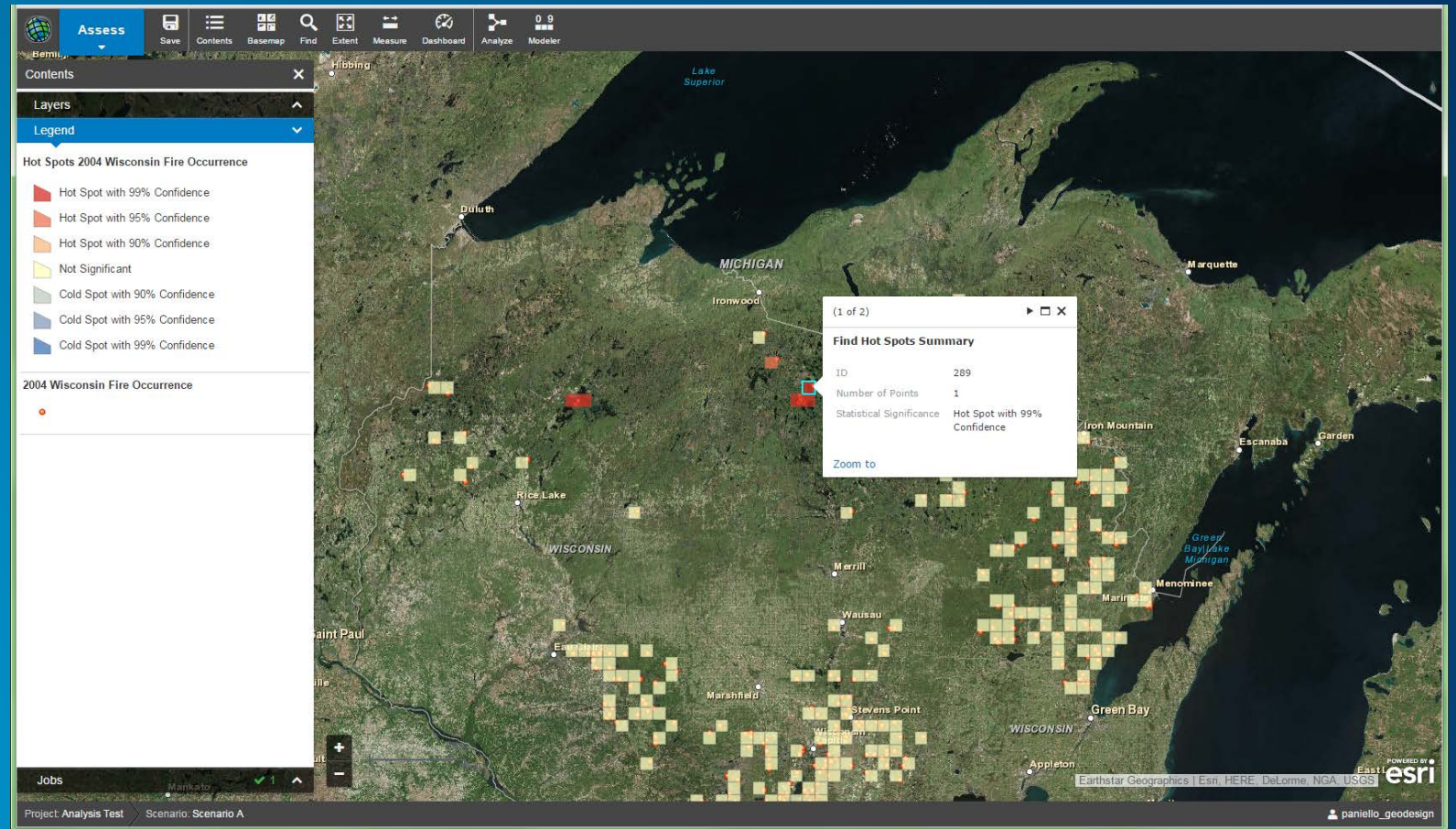


Analysis in GeoPlanner

Determine Where there is Potential or Risk

Analysis Tools

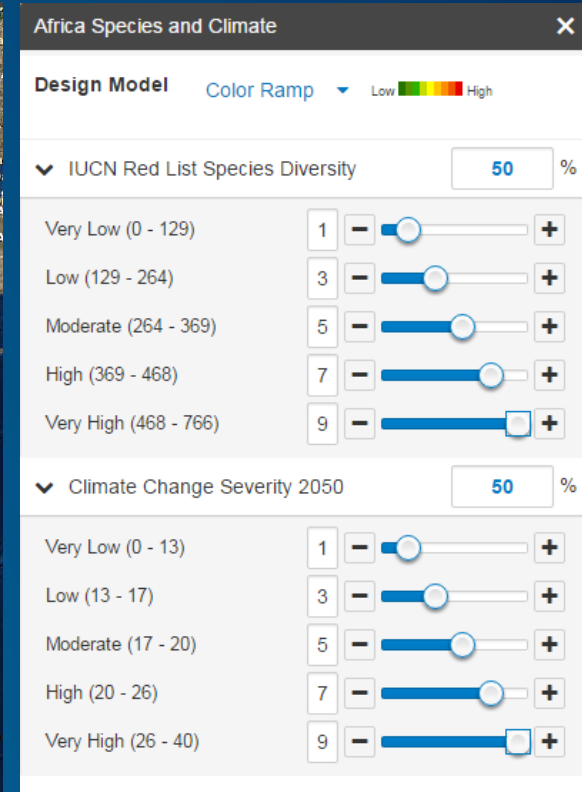
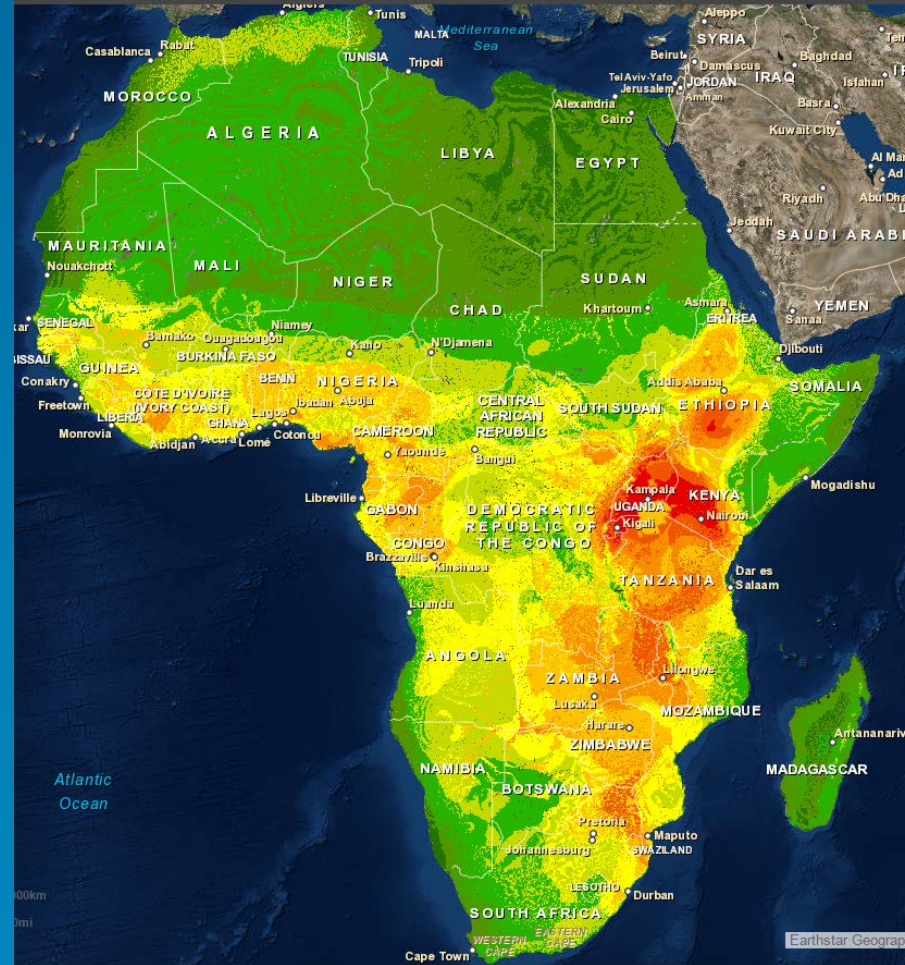
- Many of the same analysis tools that are available in ArcGIS Online
- Output is a view, or features saved to your ArcGIS Online account
- Background is geoprocessing, so not instantaneous



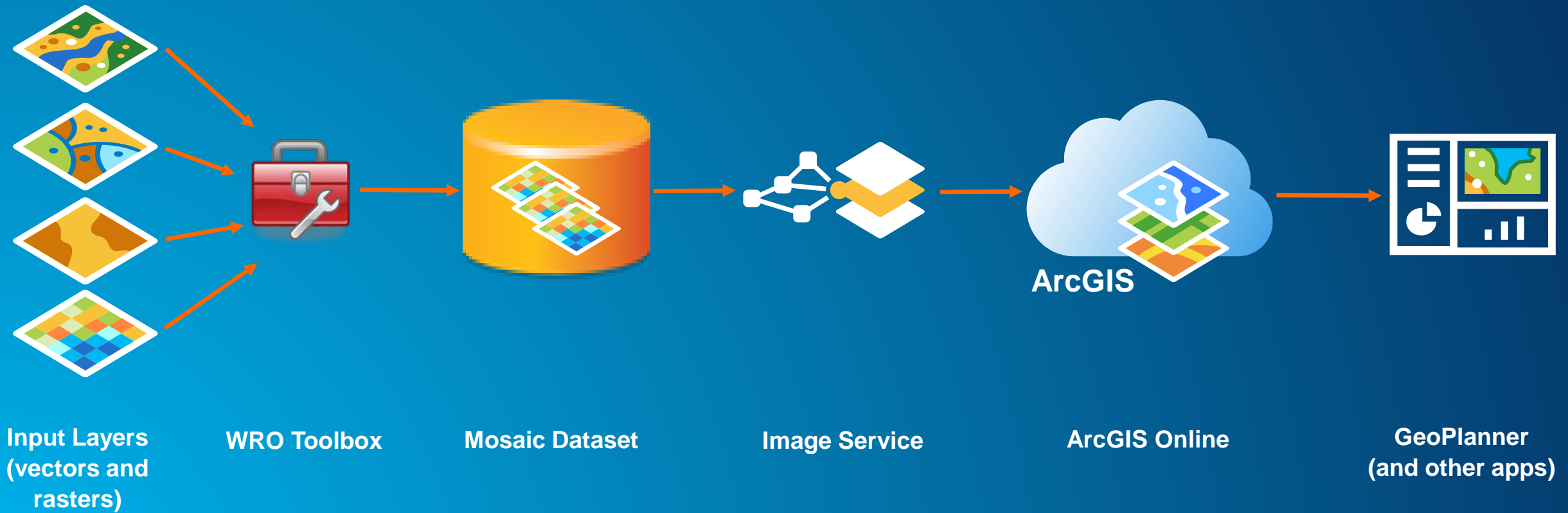
Wisconsin fire hotspots

Modeler

- Multi-criteria analysis
- Fast weighted overlay of raster data
 - Made possible by raster functions
- Answers a question; in this case: **“Where will areas of Africa with the most critically endangered species be most affected by climate change?”**

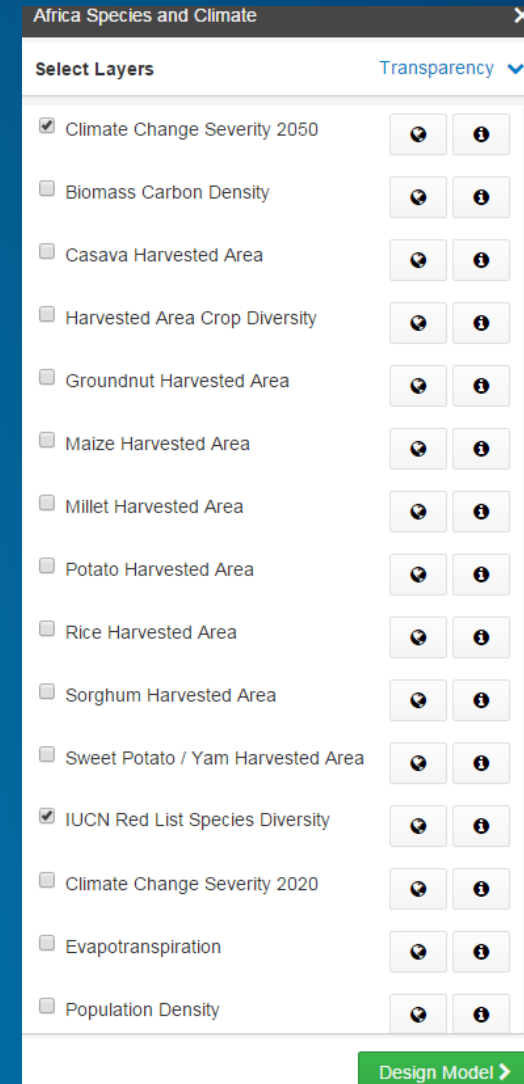


Data Preparation for Modeler



Weighted Raster Overlay (WRO) Services

- New type of image service
- Used to perform fast weighted raster overlay using raster functions
- GeoPlanner finds and uses WRO services to produce WRO models
- WRO models power dashboard in GeoPlanner



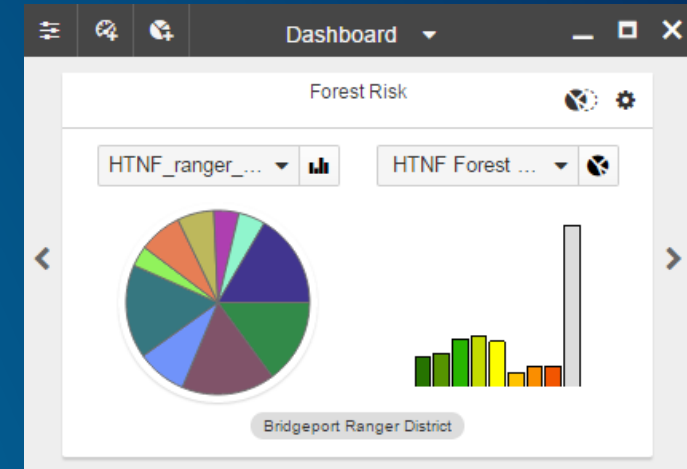
Configure Gauges

- **Charts:** Display weighted overlay analysis histogram by area

The 'Chart' configuration dialog box is shown with the following settings:

- Caption: Forest Risk
- Area Units: Acres
- Length Units: Miles
- Primary Chart:
 - Feature Layer: HTNF_ranger_...
 - Indicator: Area
 - Chart Type: Pie
- Secondary Chart:
 - Assessed Layer: HTNF Forest ...
 - Indicator: Area
 - Chart Type: Column

Buttons: Update, Cancel



Configure

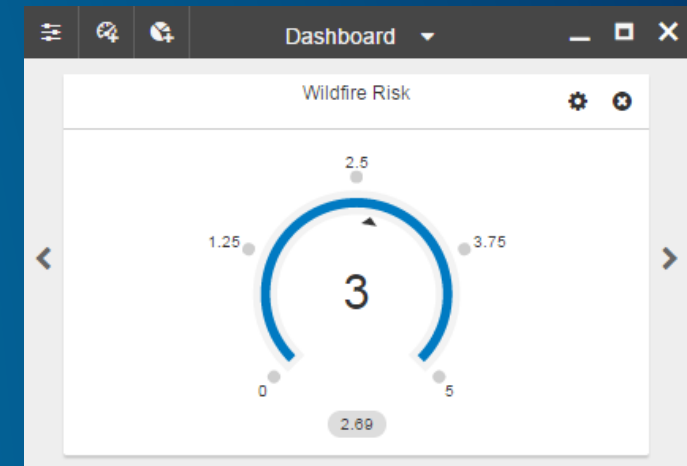
Display

- **Gauges:** Display status by attribute

The 'Performance Indicator' configuration dialog box is shown with the following settings:

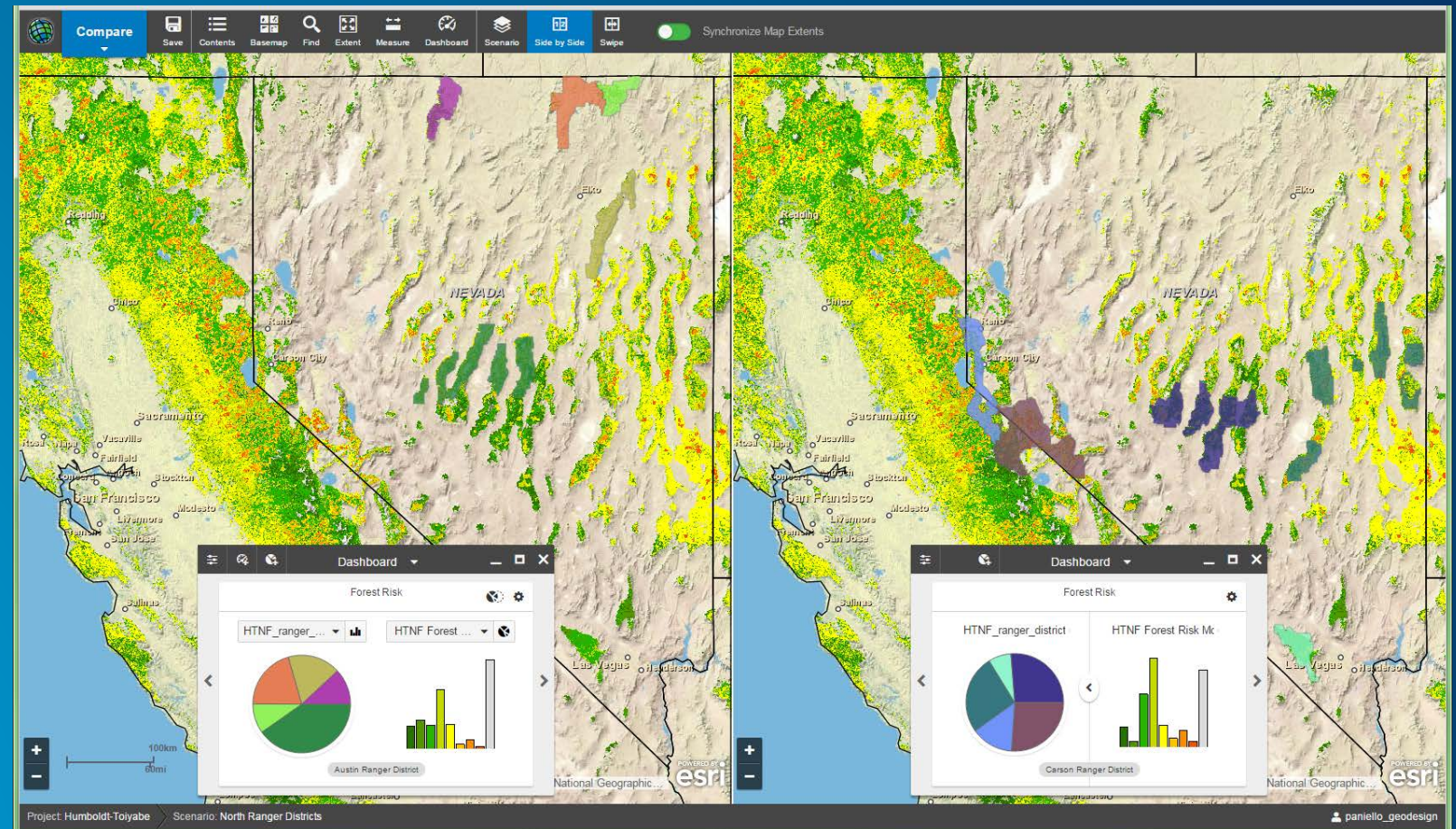
- Caption: Wildfire Risk
- Range: 0 L M H 5 L-H
- Target: (empty)
- Scenario Layer: HTNF_ranger_... Filter: (dropdown)
- Equation (per feature): [Wildfire_Risk] Average (dropdown)
- Example: [acres] * ([Field1] / 100)

Buttons: Update, Cancel



Scenario Comparison

- Compare two scenarios side-by-side
- Dual-screen or swipe
- Option to synchronize screens
- Can have gauges configured for each scenario

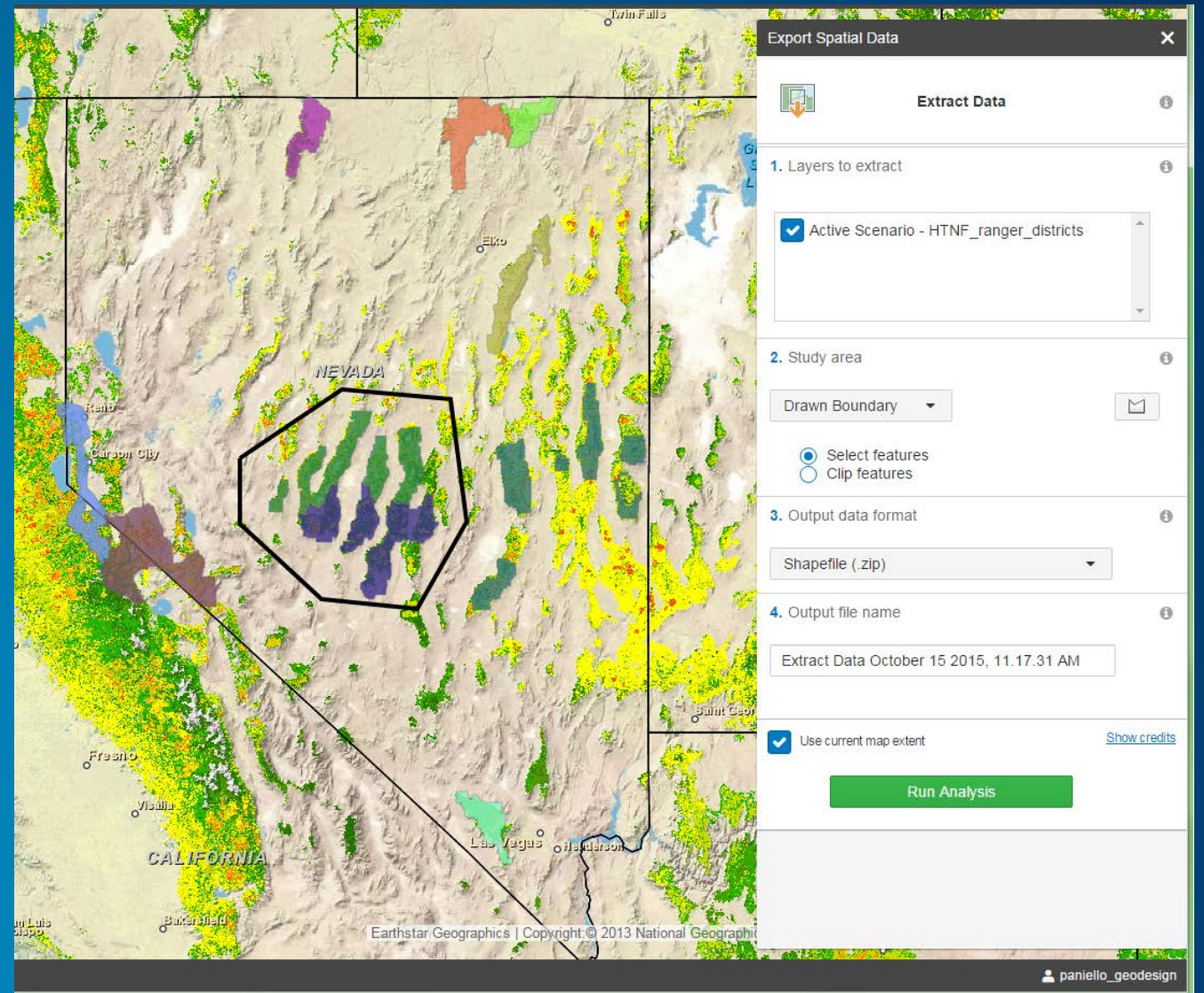


Sharing Results

Communicating Your Findings

Exporting Project Data

- All features or selection set
- .
- shp, .gdb, .csv, .kml
- Exported in a zip file available for download



Reporting

- Choose attribute(s) to report on
- Option to export as .csv
- Can also print map to PDF or graphics format

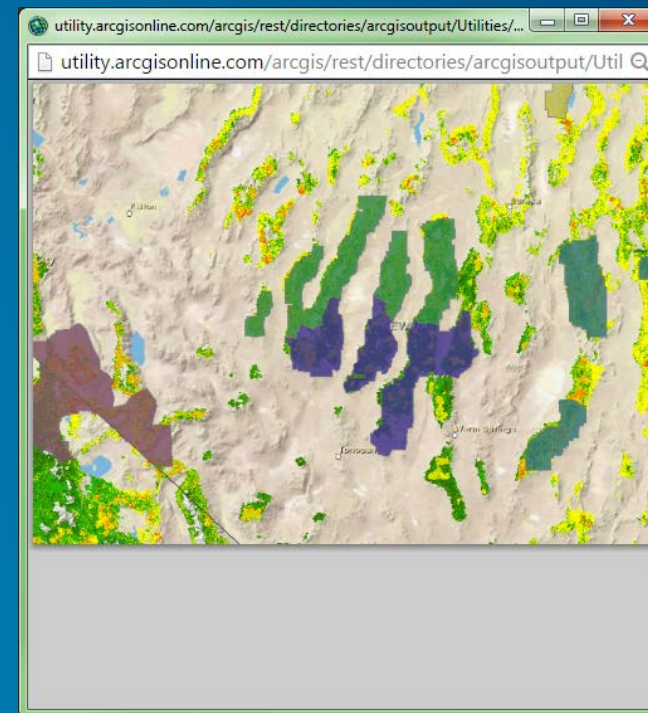
Performance Indicator ×

Select Scenarios [Select All](#) [Unselect All](#)

All Districts North Ranger Districts

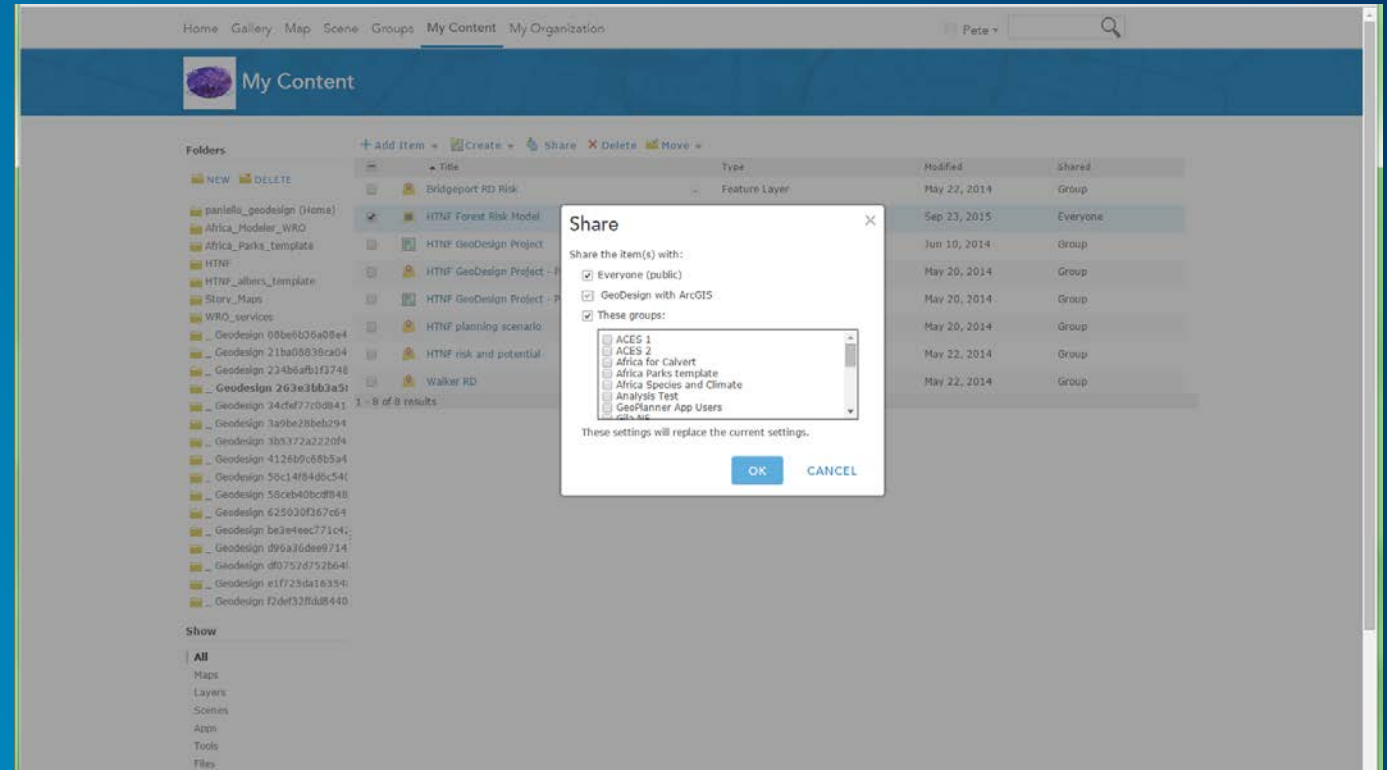
South Ranger Districts

[Get Report](#)



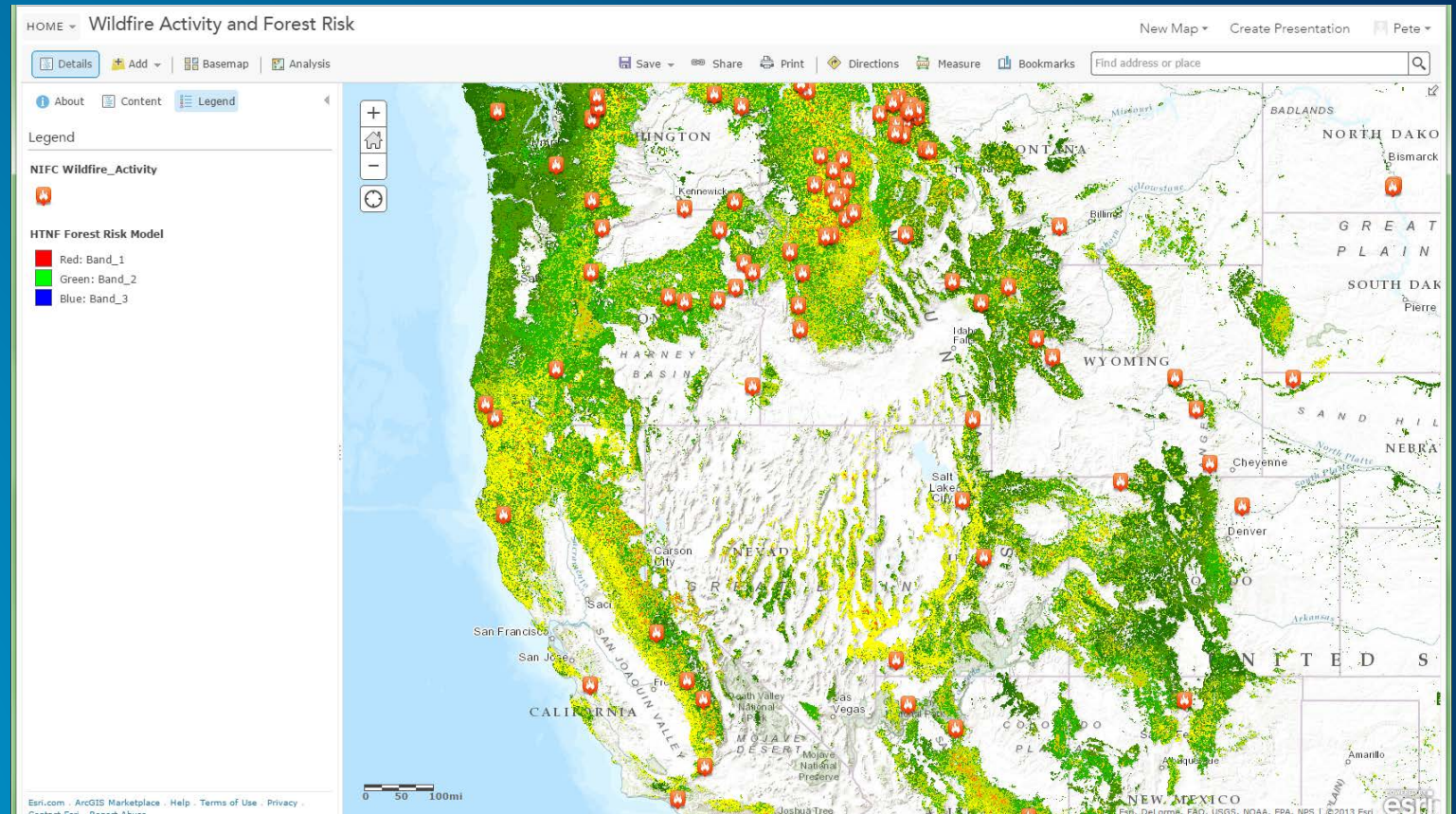
Sharing WRO Analysis Image Service

- Can share like any other item in ArcGIS Online
- Raster functions are attached to the service, so anyone who has access to the service is running the analysis any time they pan or zoom



Using a WRO Result in a Web Map

- WRO result is an image service
- Can be added to any web map
- Becomes part of web map
- Web map can then be shared
- Raster functions “follow” the web map



Thanks!

Questions:

paniello@esri.com

rstauder@esri.com



esri®