



Modernize Your Workflows with ArcGIS Online Content

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(all from Esri Redlands)

Technical Workshop

What we mean by “Modernize”

- **Directly Leverage Online**
 - **Data**
 - **Tools**
- **Desktop workflows become hybrid online/desktop workflows to:**
 - **Produce results most efficiently**
 - **Use the best tools for the job**
- **Our goal is to increase your awareness for using ArcGIS more effectively**

ArcGIS Online Content & The Living Atlas

Sean Breyer

The screenshot displays the 'Living Atlas of the World' gallery interface. On the left is a vertical navigation menu with the following items: Themes, All (highlighted), Basemaps, Imagery, Demographics, Lifestyles, Landscape, Earth Observations, Urban Systems, Transportation, Boundaries and Place, Historical Maps, and Story Maps. The main area shows a grid of featured content items, each with a thumbnail image, a title, and the author 'By esri_landscape'. The items include:

- USA River Map**: A map showing river networks with colored markers.
- Africa Climate**: A map of Africa with a color-coded climate overlay.
- Innortenburg, South Africa 3D City Base ...**: A 3D architectural rendering of a city.
- USA Salt Trench Inland Forest Routs**: A map showing forest routes in a salt trench area.
- USA Wetlands**: A map of the United States with wetland areas highlighted in pink.
- USA Woody Scrubs**: A map showing woody scrubland areas.
- Lowest Shaded Basemap**: A topographic shaded relief map.
- USA Forest Eye**: A map of the Atlanta area with a forest canopy overlay.
- USA Inlet and Disaster Risk**: A map showing coastal inlet areas and disaster risk.
- USA Land Cover 2011**: A map of the United States showing land cover data from 2011.

Living Atlas: Earth & Life on ArcGIS Online

Landscape Layers are part of the Living Atlas



Basemaps



Imagery and Observations



Demographics



Lifestyles



Urban Systems



Transportation



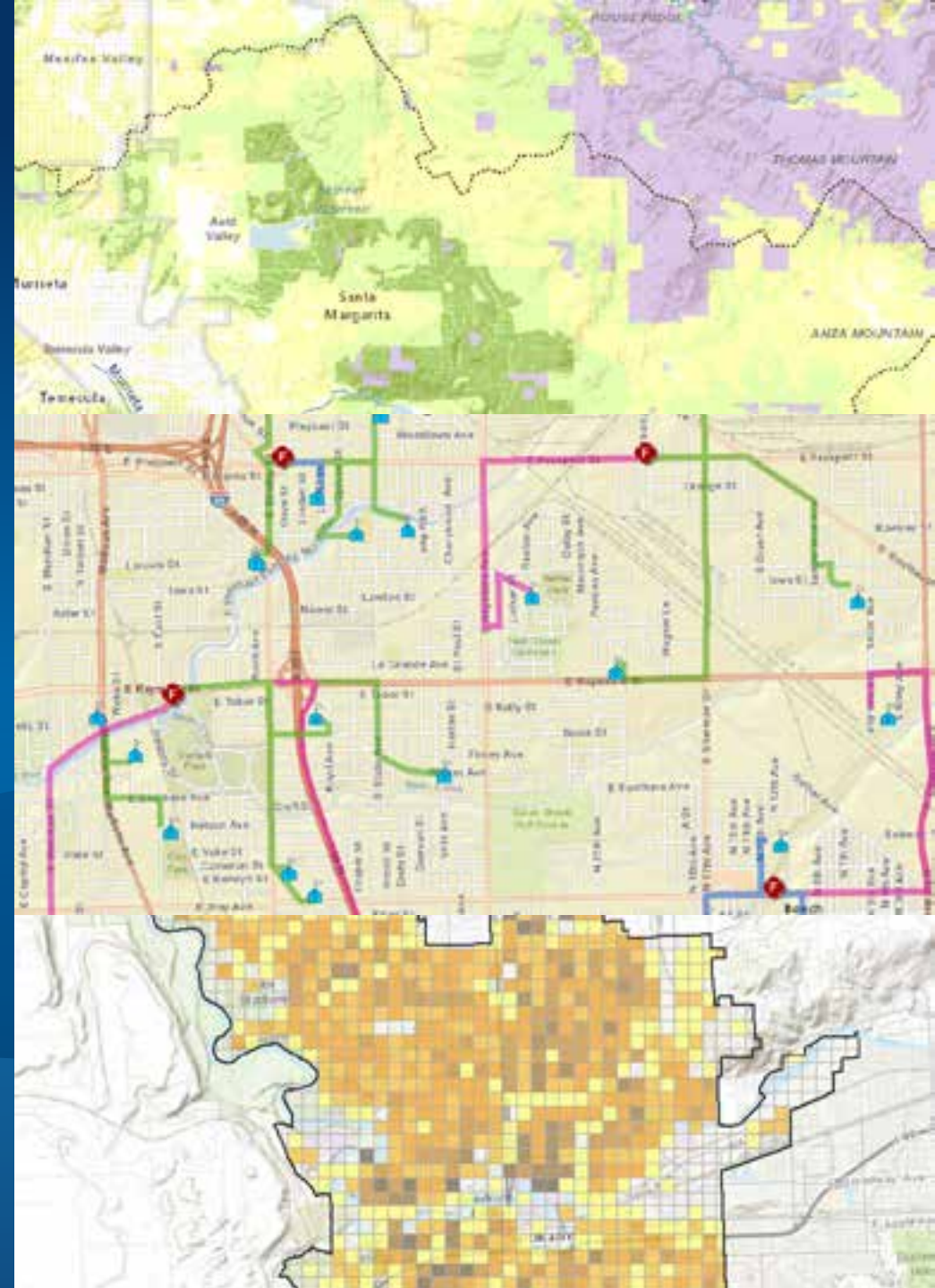
Landscape



Story Maps

3 Examples of Modernized Workflows

Charlie Frye



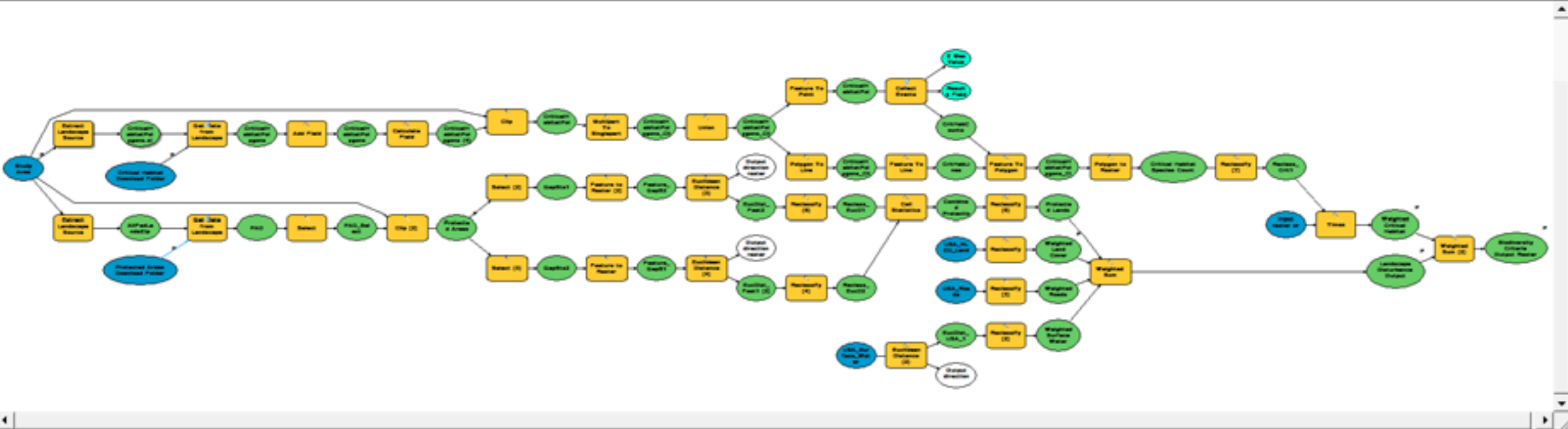
Biodiversity for Multi-species Habitat Conservation Planning

- **Problem:** Find areas with high biodiversity and low probability for disturbance near surface water
- **Workflow:**
 - **Vector:** Connect to the Extract Landscape Data tool and add it to the model
 - **Raster:** Add Service Layers to Model
 - Both are inputs to next processing steps
 - Run model

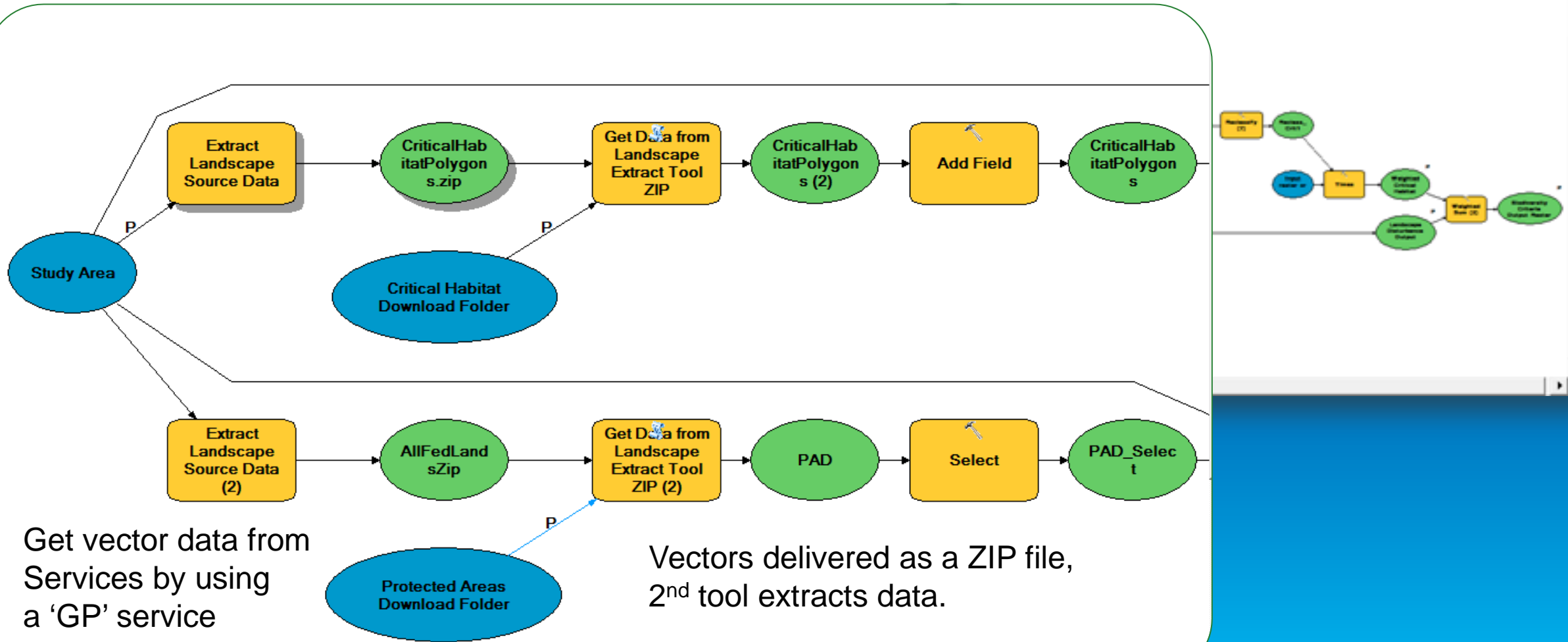


Output: Areas classed by suitability for conservation

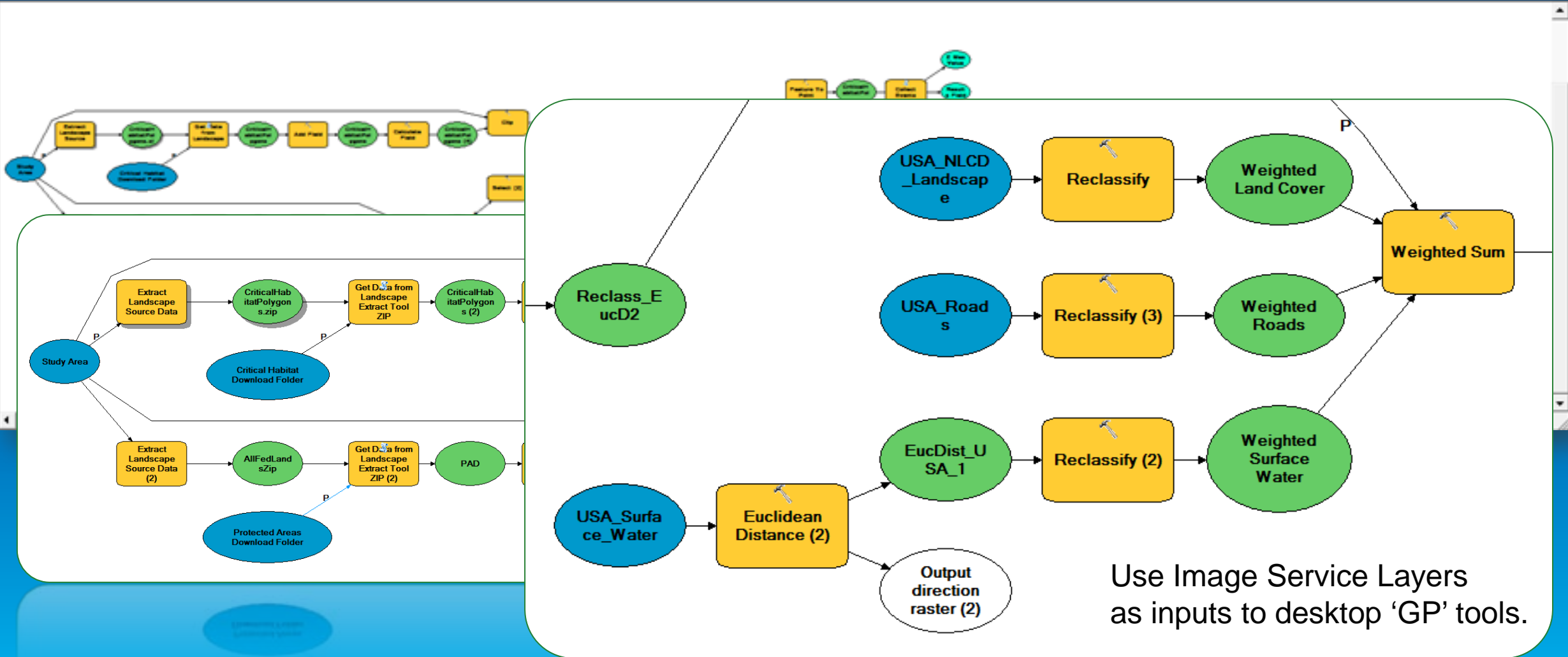
The Biodiversity Model



The Biodiversity Model



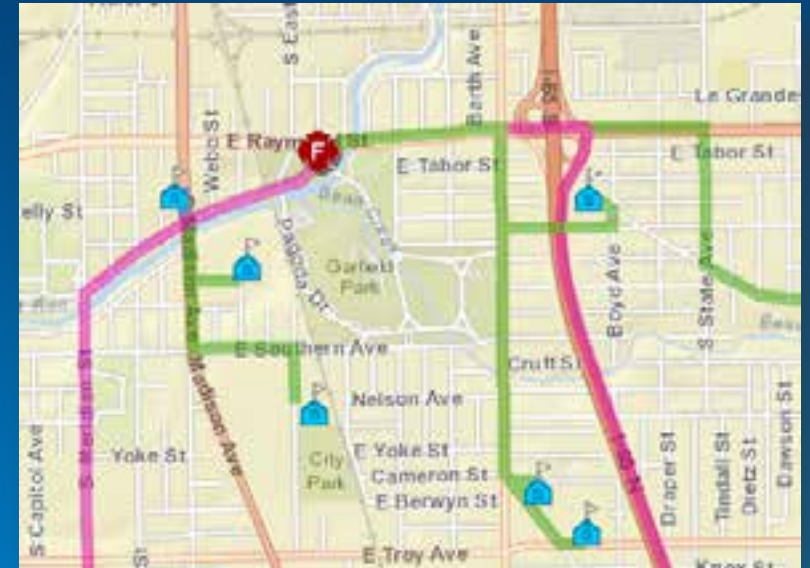
The Biodiversity Model



Use Image Service Layers as inputs to desktop 'GP' tools.

Proximity of Fire Stations to Schools

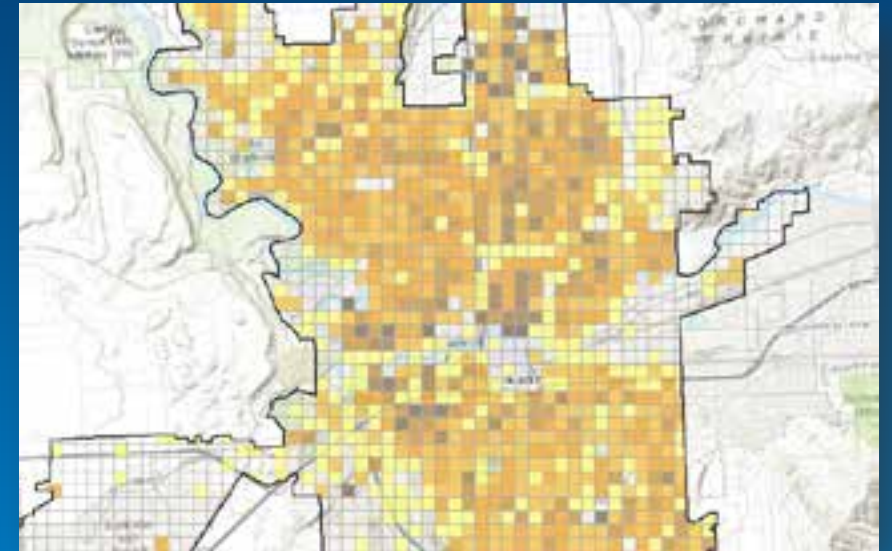
- **Problem:** Show that schools will have good response times from fire stations
- **Workflow:**
 - Upload school and fire station locations
 - Download results and edit data to add cartography attributes
 - Upload and publish results



Output: Show fire stations and routes to schools classed by response times.

Use Enrichment to Create Population Density

- **Problem:** Need population density layer with regular units
- **Workflow:**
 - Use ArcGIS Desktop Fishnet tool to create a grid of square polygons
 - Clip the grid with study area
 - Publish the grid as a Feature Service
 - Enrich the grid with population
 - Extract the grid as Geodatabase for later use in ArcGIS Desktop



Output: Population density for study area

Landscape Layers

Peter Aniello

Living Atlas: Earth & Life on ArcGIS Online

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Imagery and Observations



Demographics



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Urban Systems



Transportation



Landscape



Story Maps

What are Landscape Analysis Layers?

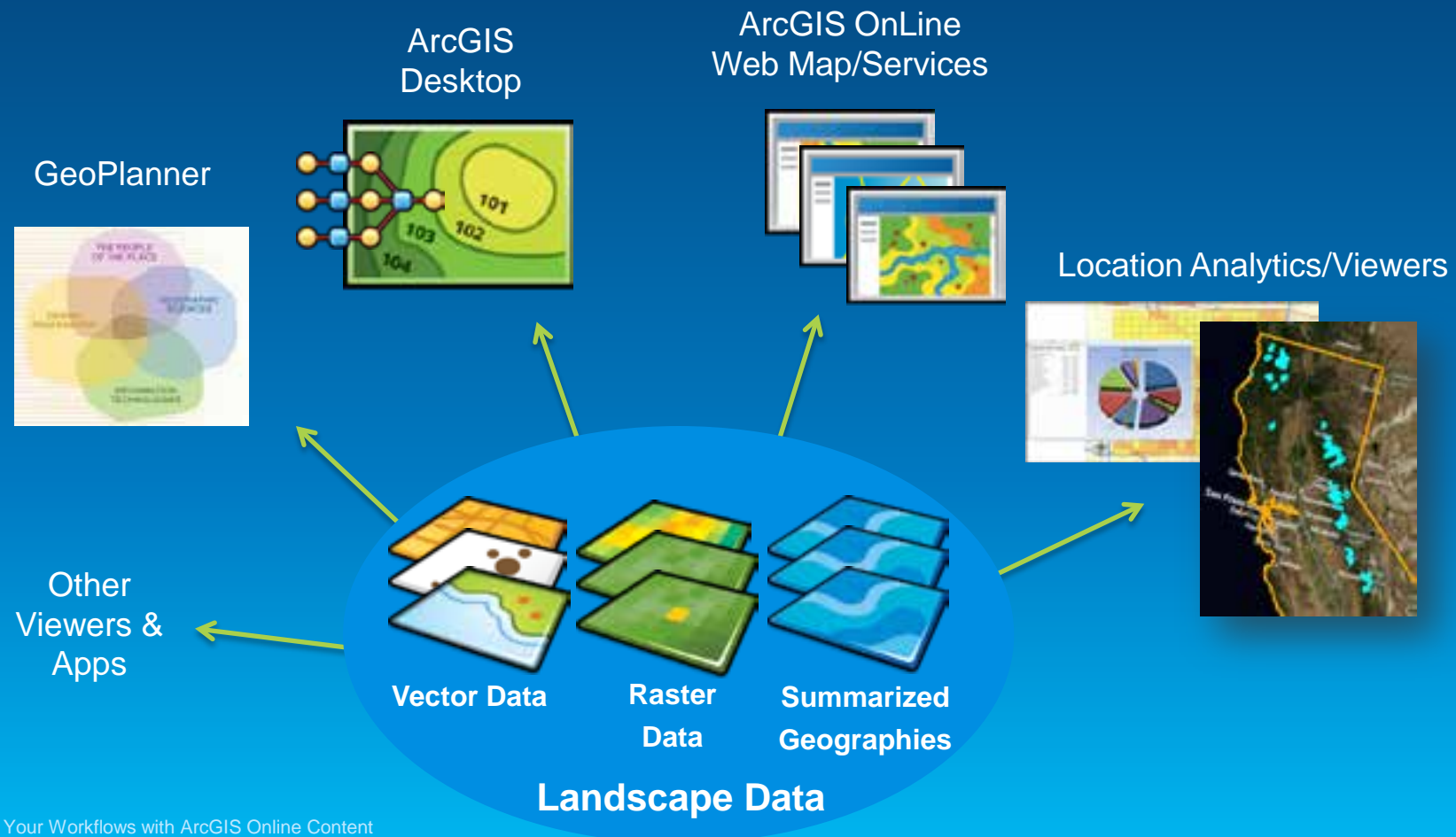
- **A streaming authoritative-source data library to support biogeographic analysis, natural resource management, land use planning and conservation**
 - Currently approx. 120 services for U.S
 - International coverage starting with Africa
 - Focused on national and regional scales

Provide content that supports ANALYSIS
as well as visualization



Landscape Analysis Layers Product Vision

Publication of useful data for landscape analysis and decision-making that works across the ArcGIS System



Organization of Landscape Data Layers



Climate



Ecology



Species
Biology



Ecological
Disturbance



Elevation



Environmental
Impact



Land Cover



Man-made
Hazards



Natural
Hazards



Oceans



Soils/Geology



Subsurface



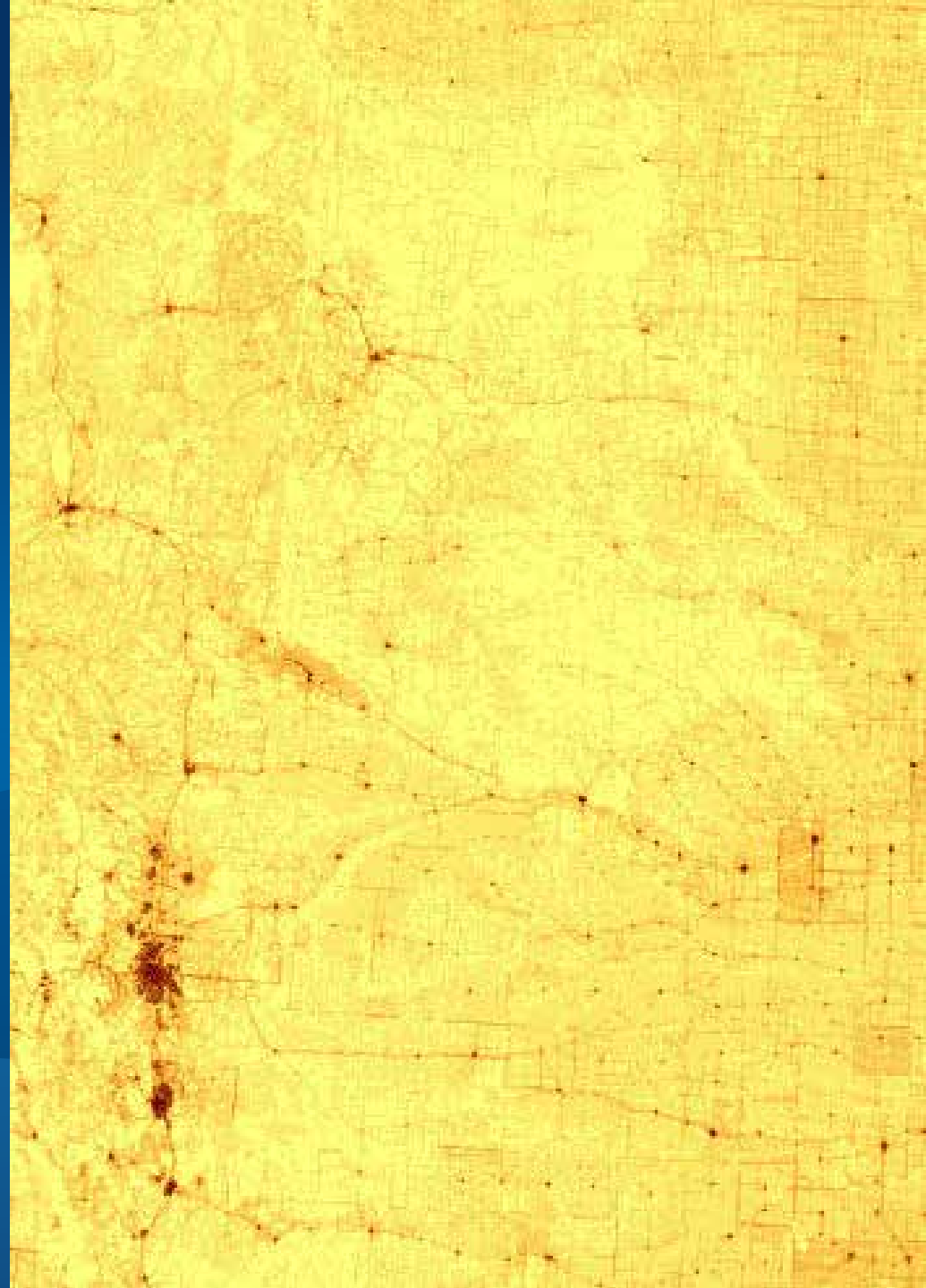
Water



Weather

Landscape Data in ArcGIS Desktop

Demo



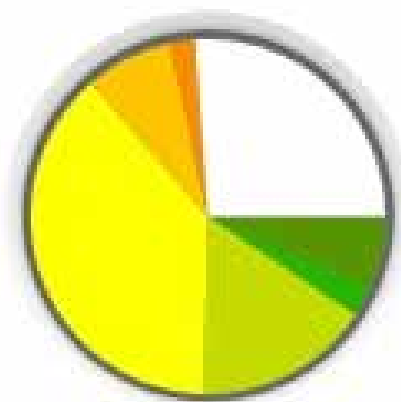
Landscape Data in GeoPlanner

Demo

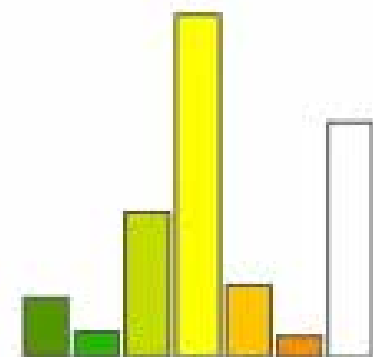


Charts

Gauges



Carson Ranger District
Forest Risk Model



Carson Ranger District
Forest Risk Model

Available Layers (U.S.)



Raster Map Layers:

- USA Critical Habitat
- USA Critical Habitat Atlantic Salmon
- USA Critical Habitat Bull Trout
- USA Critical Habitat California Condor
- USA Critical Habitat Chinook Salmon
- USA Critical Habitat Chum Salmon
- USA Critical Habitat Coho Salmon
- USA Critical Habitat Delta Smelt
- USA Critical Habitat Desert Tortoise
- USA Critical Habitat Marbled Murrelet
- USA Critical Habitat Mexican Spotted Owl
- USA Critical Habitat Northern Spotted Owl
- USA Critical Habitat Peninsular Bighorn Sheep
- USA Critical Habitat Sockeye Salmon
- USA Critical Habitat West Indian Manatee
- USA American Crocodile GAP Distribution
- USA Atlantic Puffin GAP Distribution
- USA Black Footed Ferret GAP Distribution
- USA Desert Tortoise GAP Distribution
- USA Gunnison Sage-Grouse GAP Distribution
- USA All Federal Lands
- USA BLM Lands
- USA Historic Sites
- USA Native American Lands
- USA NPS Lands
- USA Protected Areas
- USA Unprotected Areas
- USA USFS Lands
- USA USFWS Lands
- USA Wilderness Areas
- USA ArcticTern GAP Range
- USA Bighorn Sheep GAP Range
- USA California Condor GAP Species Range
- USA Canada Lynx GAP Range
- USA Common Loon GAP Range
- USA Mexican Spotted Owl GAP Range
- Ground Surface Elevation - 30m
- USA Soils Albedo
- USA Soils Bedrock Depth
- USA Soils Corrosion Concrete
- USA Soils Corrosion Steel
- USA Soils Crop Production
- USA Soils Drainage Class
- USA Soils Erosion Class
- USA Soils Erosion Hazard Forest Roads
- USA Soils Farmland Class
- USA Soils Flooding Frequency
- USA Soils Frost Free Days
- USA Soils Hydric Classification
- USA Soils Initial Subsidence
- USA Soils Range Production
- USA Soils Runoff
- USA Soils Tfactor
- USA Soils Total Subsidence
- USA Soils Water Table Depth
- USA Active Quaternary Faults
- USA Aquifers
- USA Coal Bed Methane Basins
- USA Coal Fields
- USA Cropland
- USA Development Risk
- USA Evapotranspiration
- USA Flood Risk
- USA Forest Type
- USA Hazardous Waste Sites
- USA Insect and Disease Risk
- USA Land Surface Forms
- USA Landcover GAP
- USA Mean Rainfall
- USA Mean Temperature
- USA National Conservation Easement Boundaries
- USA NLCD
- USA Oil Shale Basins
- USA Railroads
- USA Roads
- USA Surface Water
- USA Transmission Lines
- USA Wetlands
- USA Wildland Fire Potential
- USA Wildland Urban Interface
- USA Woody Biomass
- USA NLCD 2011
- USA Landcover Change 2006-2011
- USA Impervious Surfaces 2011
- USA Impervious Change 2006-2011
- USA Tree Canopy 2011

Vector Map Layers:

- USA Active Quaternary Faults
- USA All Federal Lands
- USA Aquifers
- USA BLM Lands
- USA Coal Fields
- USA Coalbed Methane Basins
- USA Critical Habitat
- USA Earthquake Risk
- USA Flood Risk
- USA Geology Units
- USA Hazardous Waste Sites
- USA Historic Sites
- USA National Conservation Easement Lands
- USA Native American Lands
- USA NHDPlusV2
- USA NPS Lands
- USA Oil Shale Basins
- USA Railroads
- USA Roads
- USA Soils
- USA USFS Lands
- USA USFWS Lands
- USA Wetlands
- USA Wilderness Areas

Provider-contributed Layers:

- National Insect and Disease Risk Basemap**
- Idaho Elevation and Derivatives**
- Fraction of photosynthetically active radiation (fPAR) for Idaho
- Idaho NDVI 2002 - present**

International Layers



- **Harmonized World Soils**
- **Topographic Moisture Potential**
- **Global Land Cover**
- **Surficial Lithology**
- **Hydro flow direction**
- **Isobioclimates**
- **Climate Change Severity 2020, 2050**
- **Mean Temperature 1950-2000**
- **Mean Precipitation 1950-2000**
- **Evapotranspiration**
- **Population Density**
- **Infant Mortality**
- **Global Crop Harvest Data**
- **Terrestrial Ecosystems**
- **Global Biodiversity Index**
- **Carbon Biomass**

Rolling out on a continent-by-continent basis, beginning with Africa

Additional Planned Landscape Content

International

- New Analysis Layers
 - Crop Diversity, IUCN Red List derivative
- 30m Hydro-conditioned DEM (Africa)
 - Flow Direction, Flow Accumulation, Synthetic Streams
- From LandSAT8
 - Land Cover, Land Use, Change Detection (Africa)
- Beta Landscape Databuilder (“landscape kit”) for distributors/partners/national mapping agencies
 - Workflows, Tools



USA Content

- 303d Impaired waters layer
- Point source pollution layer
- Natural Capital Project - InVest Sediment Retention analysis
- Natural Capital Project - InVest Nutrient Removal analysis
- Threats to Watershed (Report)



What's included in Landscape

- **Landscape layers**
 - Raster (as image services)
 - Vector (as web maps with feature access)
- **Geoprocessing Services**
 - Elevation-based (watershed, viewshed, others)
- **Web maps**
- **Story maps**
- **Sample Apps for Landscape (on Marketplace)**
 - Landscape Analyst
 - Landscape Modeler
 - Esri Insights



Contacts

- **Questions?**

Thank you...

- **Please fill out the session survey:**

Offering ID: 1407

Online – www.esri.com/ucsessionsurveys

Paper – pick up and put in drop box



Understanding our world.