



From Headwaters to Downtown

Informing Conservation and Restoration Priorities with Spatial Analytics and Ecosystem Service Valuation

Zachary Christin
Project Director

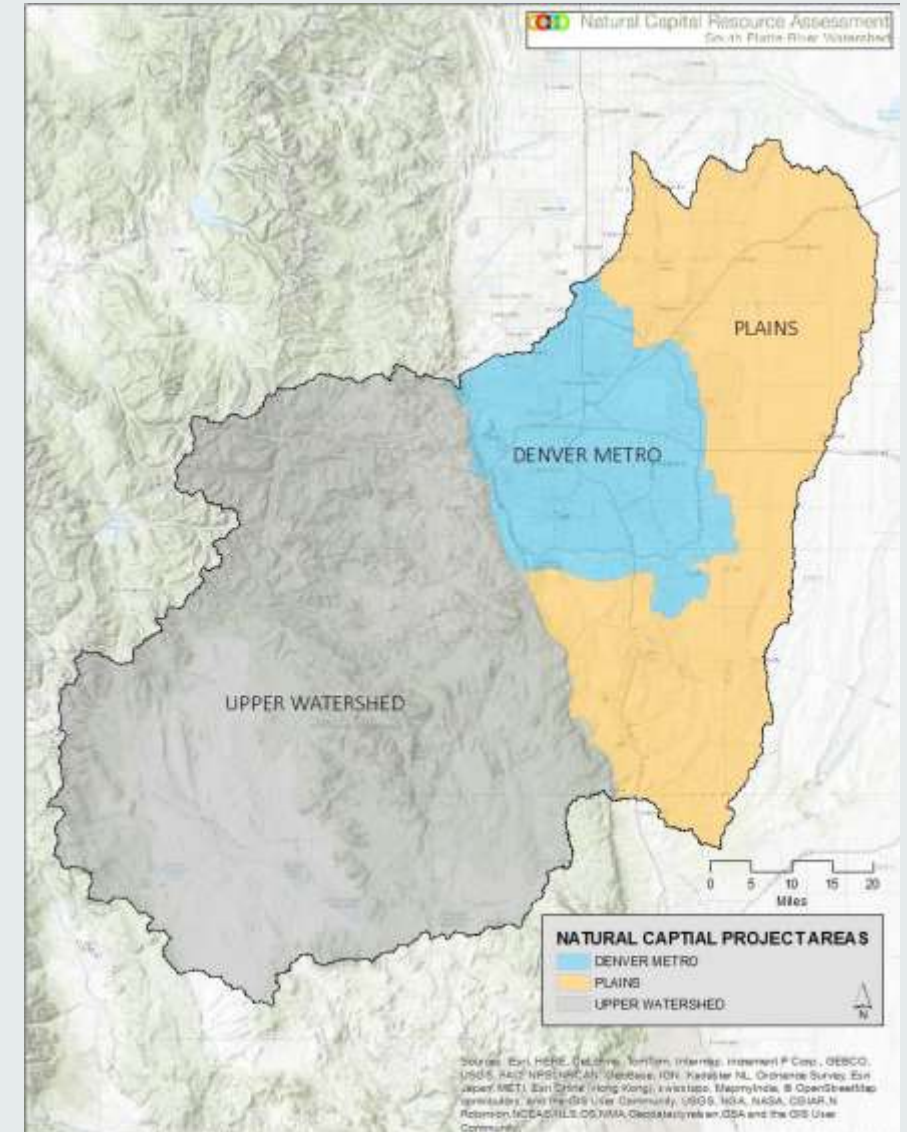
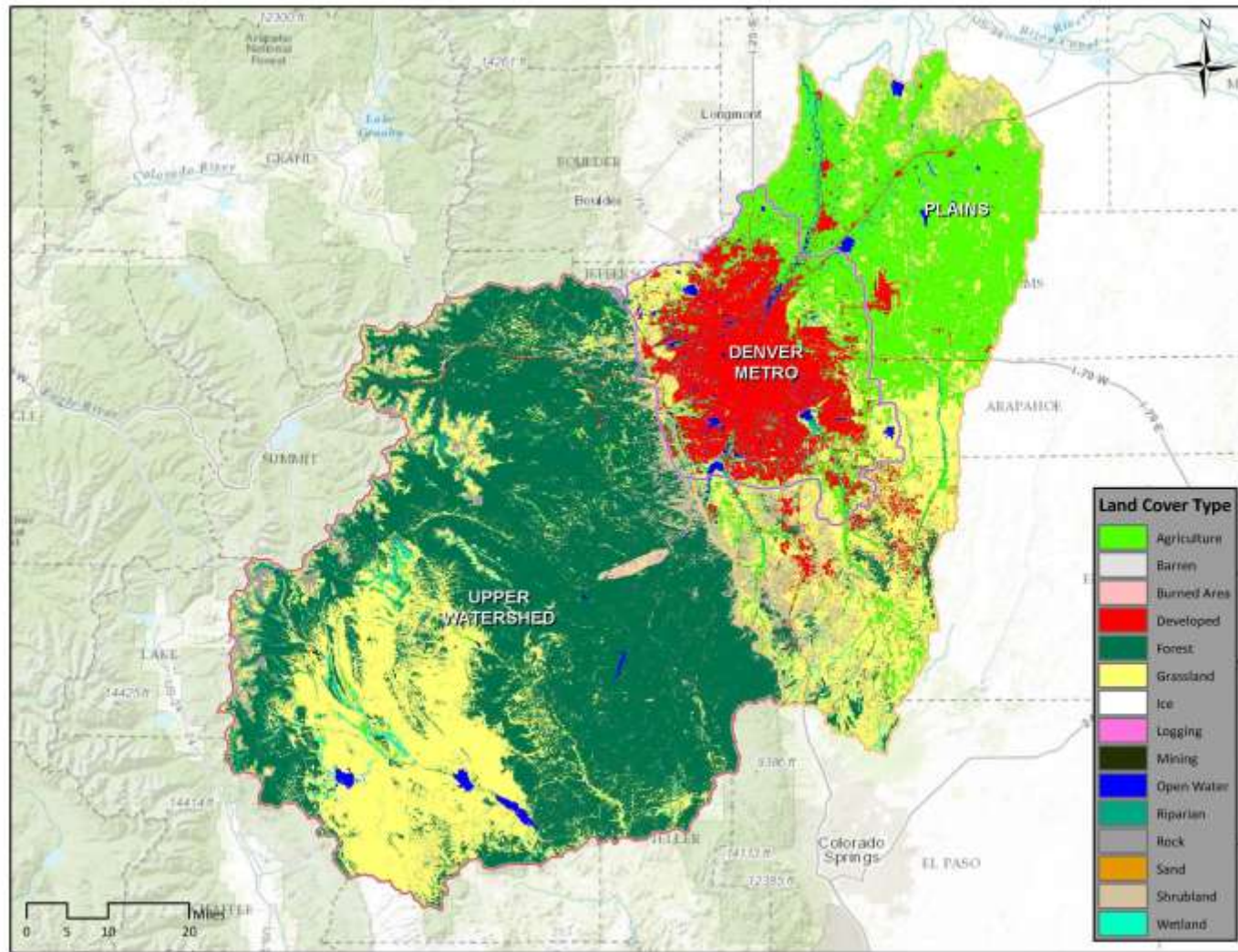
ACES Conference - December 7, 2016

About the Natural Capital Resource Assessment

- Bringing together stakeholders and datasets
- Prioritizing restoration
- Evaluation restoration plans



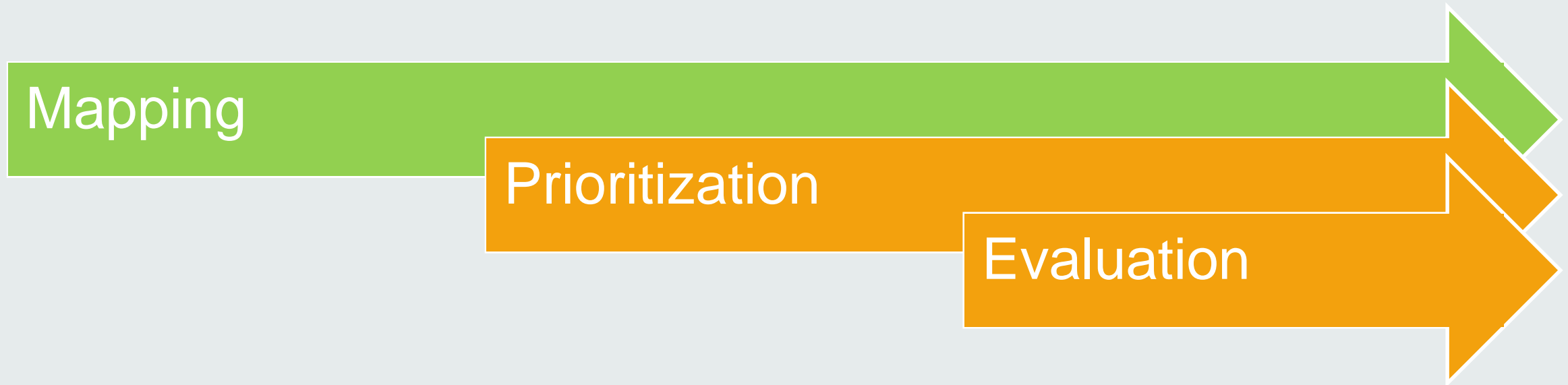
South Platte River Watershed



Ecosystem Service Framework



Process: Green Infrastructure Mapping



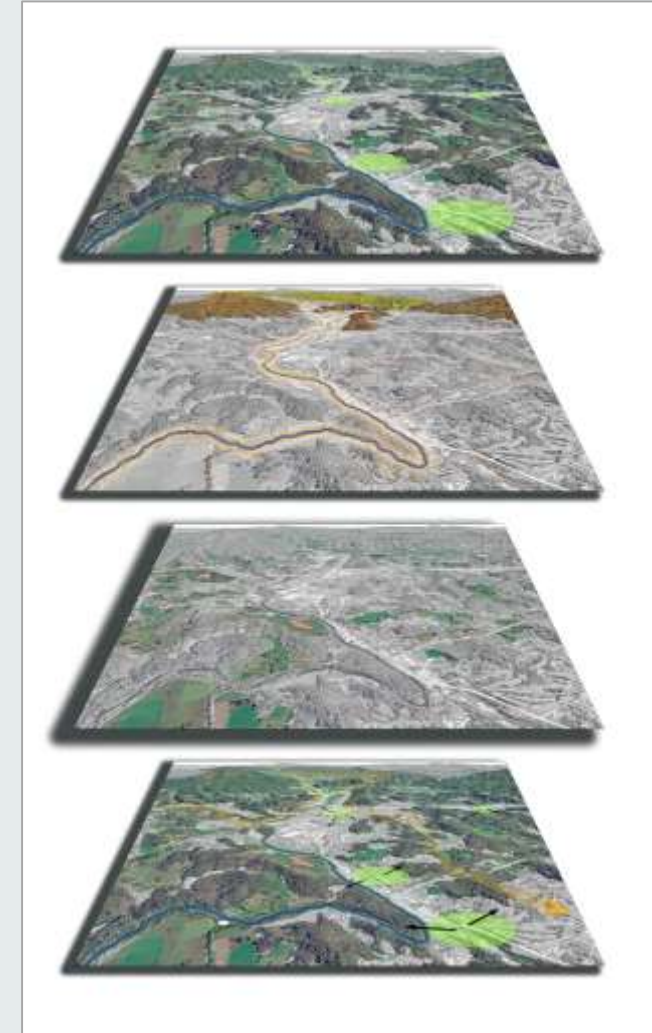
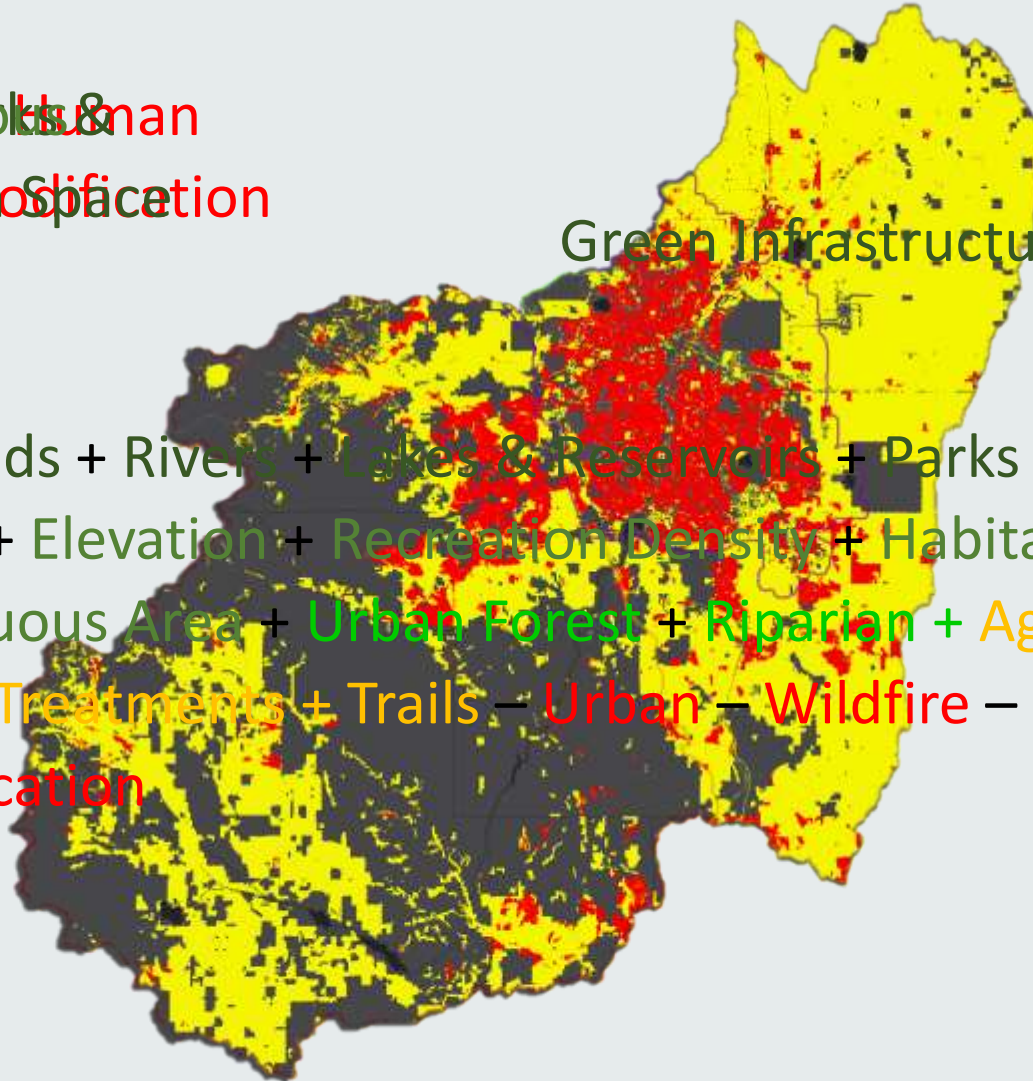
Mapping Green Infrastructure

GI Mapping Process – ArcGIS Methods

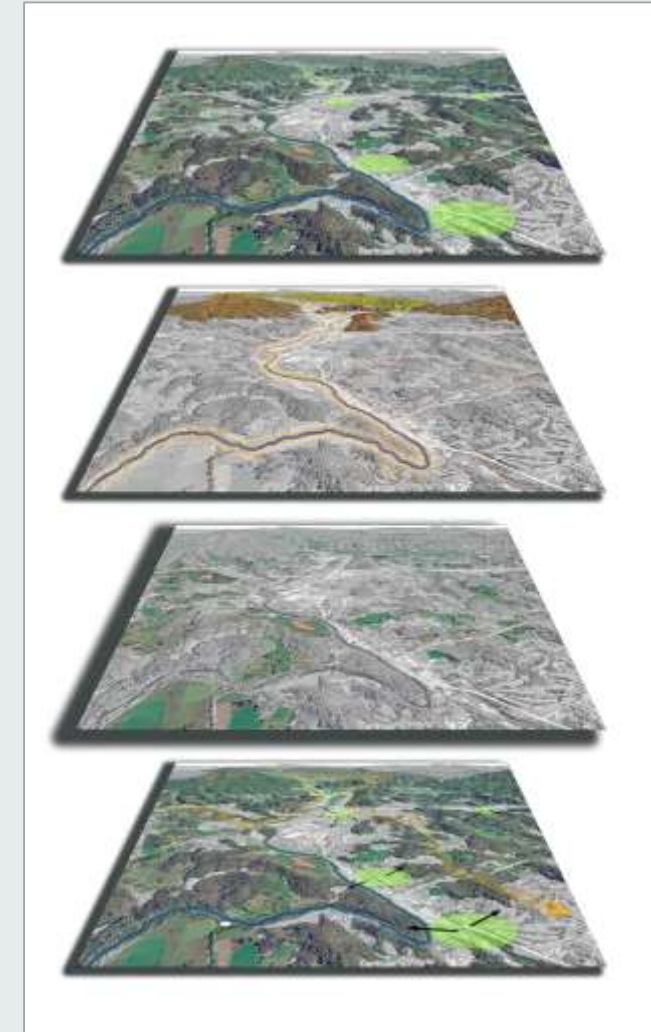
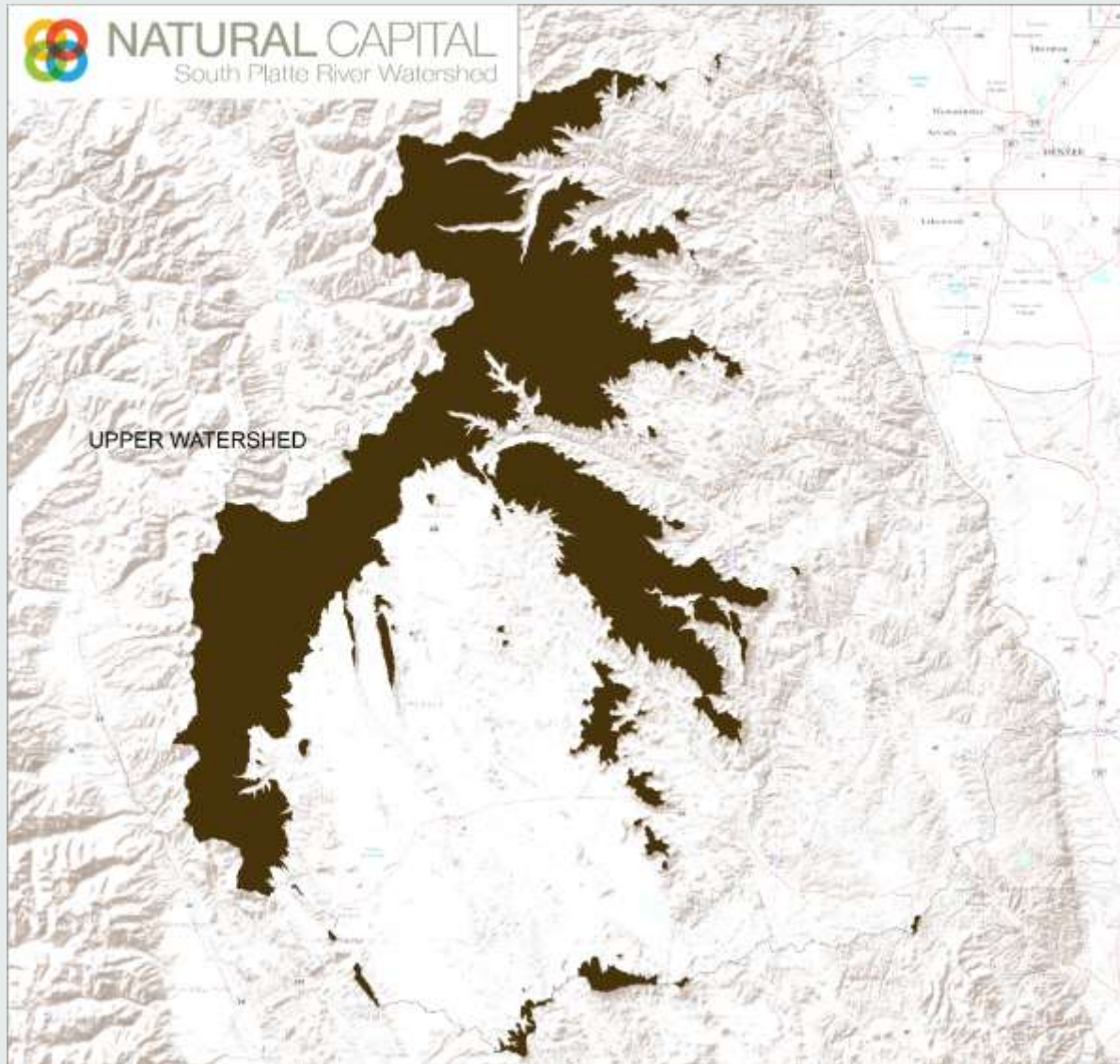
Contiguous
Parks &
Open Space
Human
Modification

Green Infrastructure =

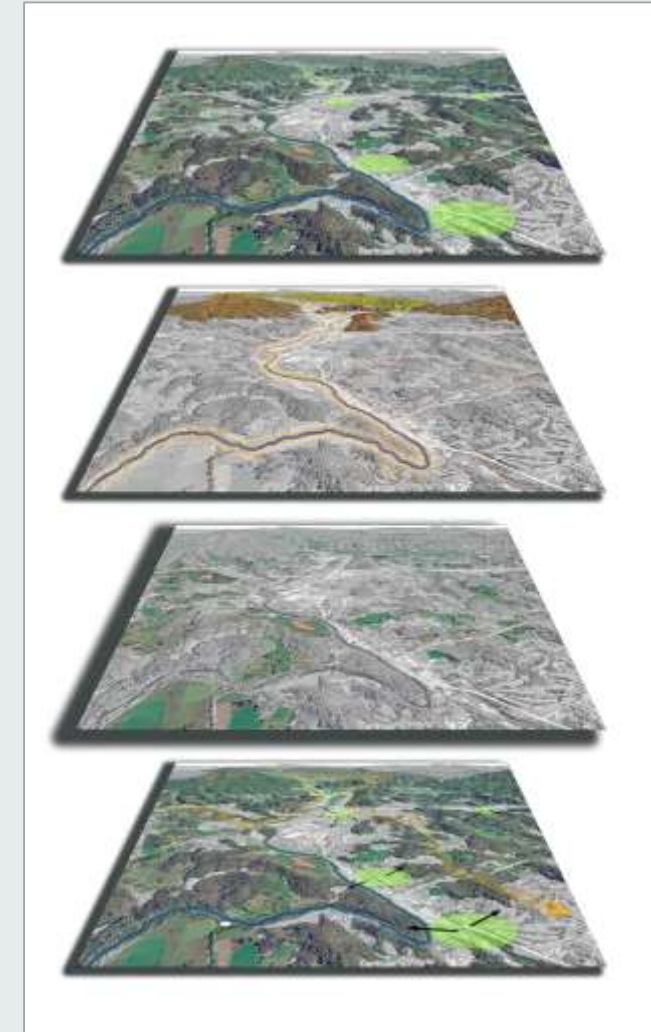
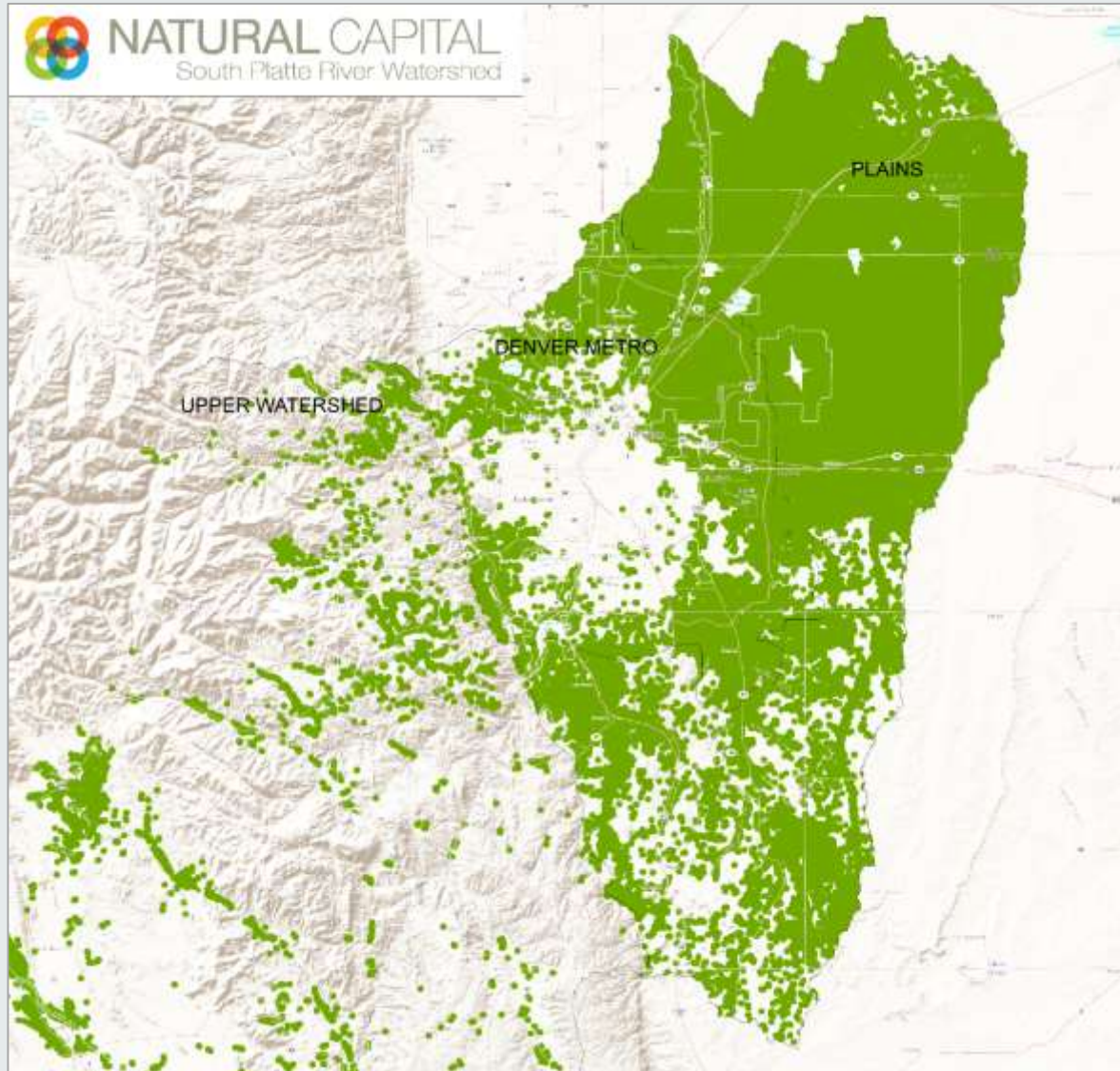
Wetlands + Rivers + Lakes & Reservoirs + Parks & Open
Space + Elevation + Recreation Density + Habitat +
Contiguous Area + Urban Forest + Riparian + Agriculture +
Forest Treatments + Trails – Urban – Wildfire – Human
Modification



Mapping Green Infrastructure



Mapping Green Infrastructure



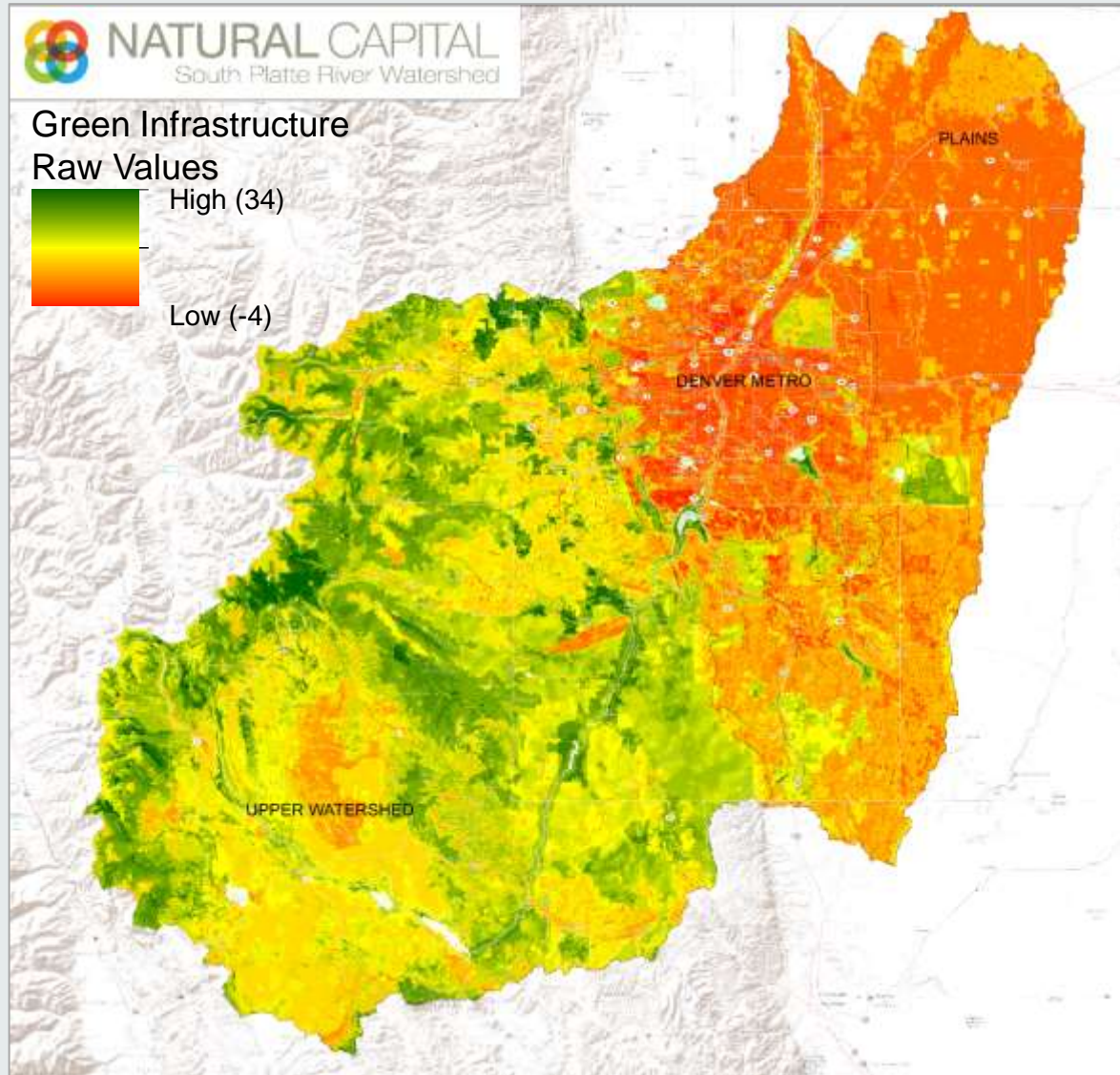
Mapping Green Infrastructure



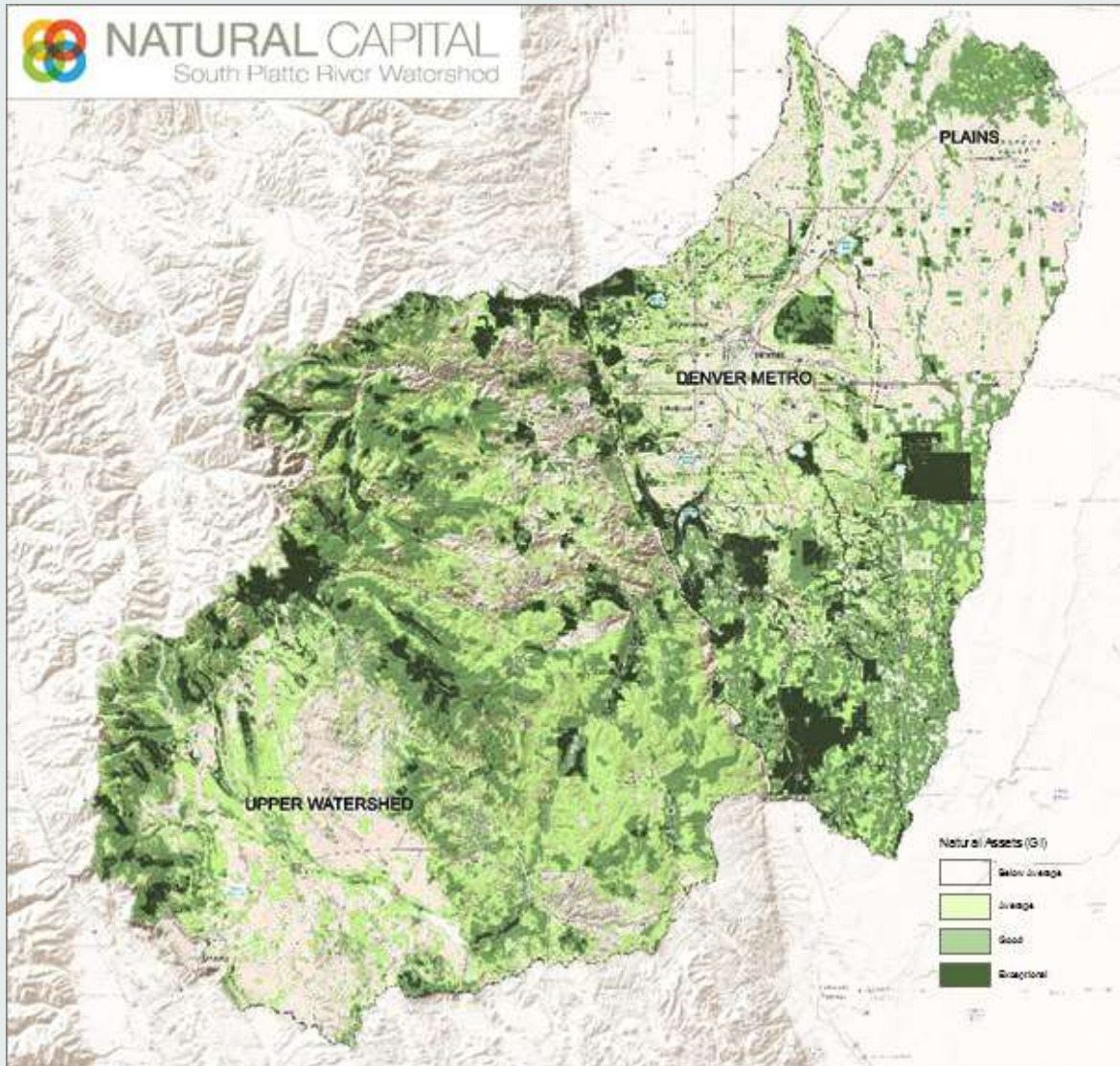
Ecosystem Services



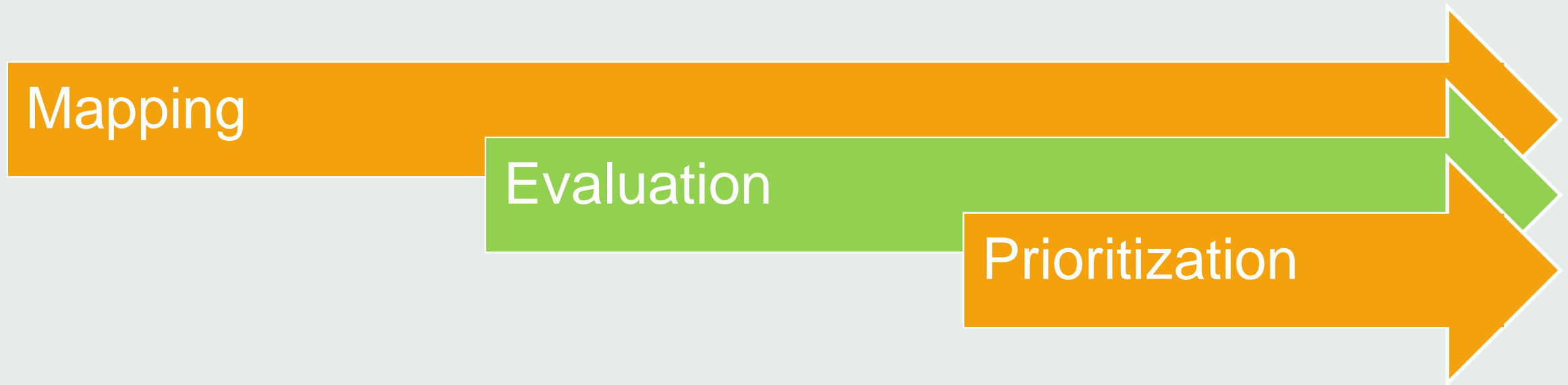
Mapping Green Infrastructure



Mapping Green Infrastructure

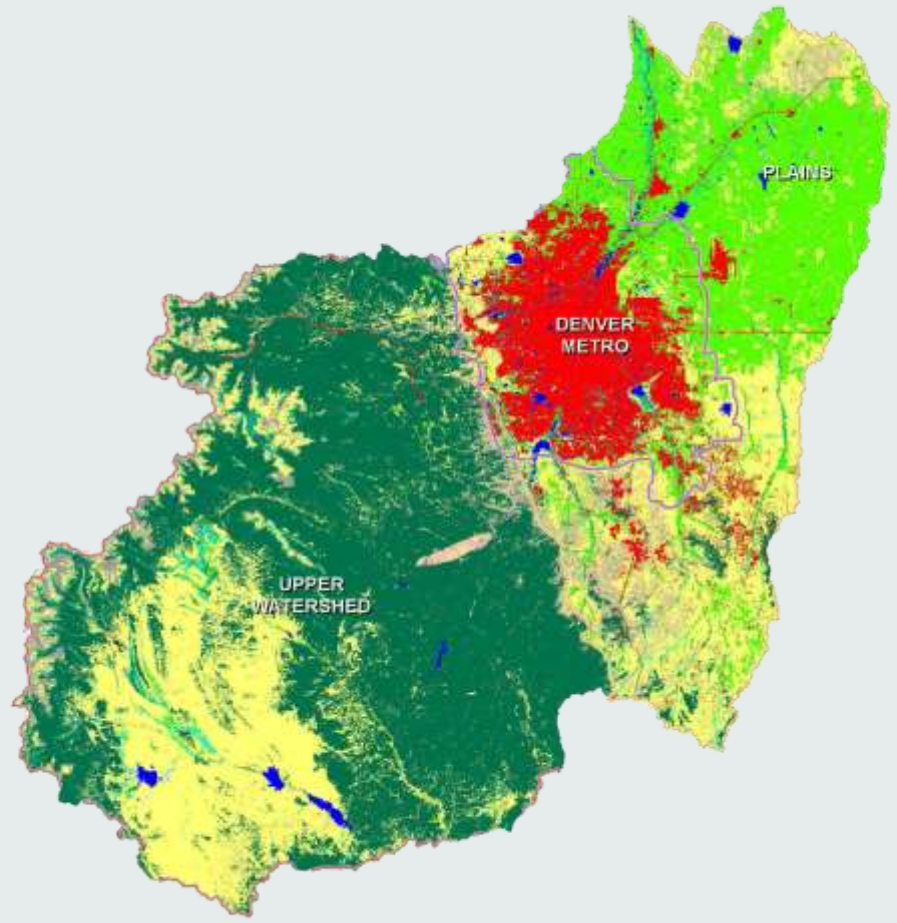


Process: Economic Evaluation



Economics Evaluation

Baseline GIS Data



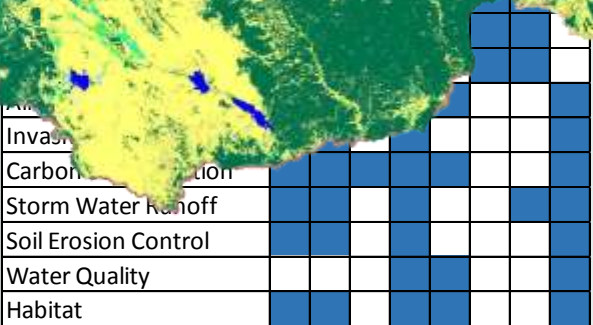
GIS Output

Land Cover	Attributes				Acreage
	Urban	Riparian	Floodplain	Agriculture	
Deciduous Forest					2,375
	x				65
		x			75
				x	24
	x	x			13
		x	x	x	2
	x			x	9

Economics Evaluation

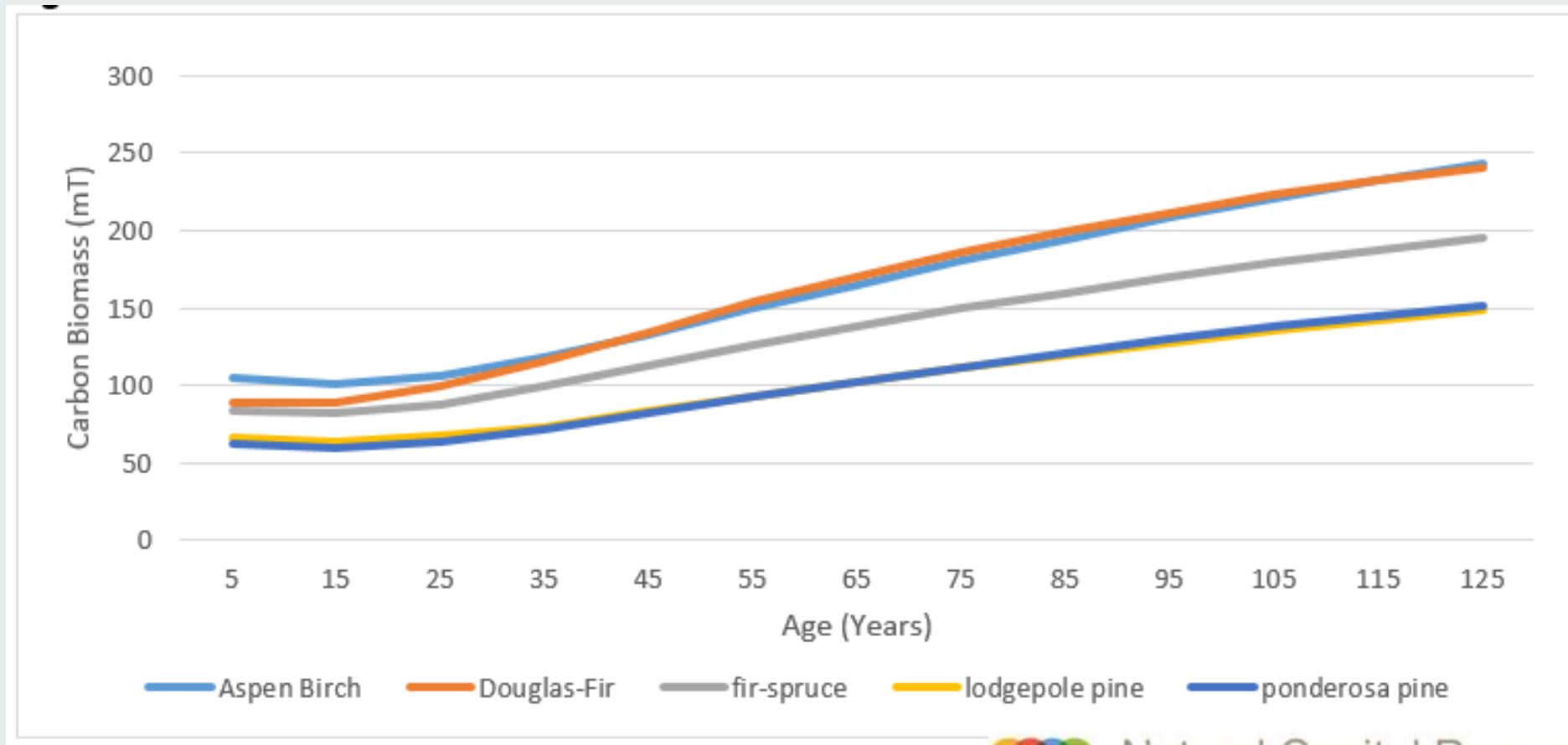
Ecosystem Services	Coniferous Forest	Deciduous Forest	Agriculture	Grassland	Wetland	River	Lake/Reservoir	Shrub
Aesthetic Information								
Recreation and Tourism								
Water Supply								
Air Quality								
Invasive Species Control								
Carbon Sequestration								
Storm Water Runoff								
Soil Erosion Control								
Water Quality								
Habitat								





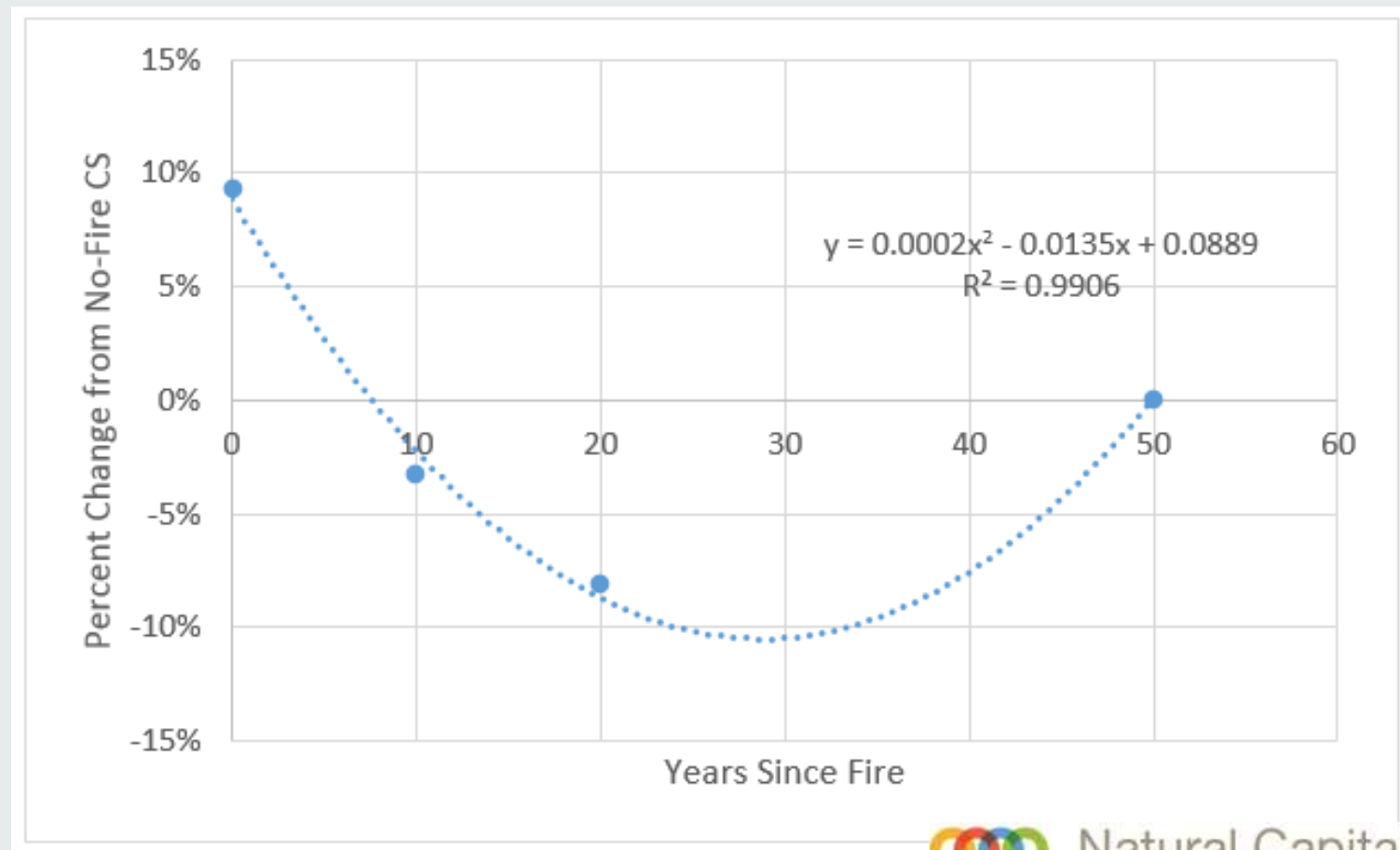
Economics Evaluation

Historic Wildfire - Carbon Sequestration

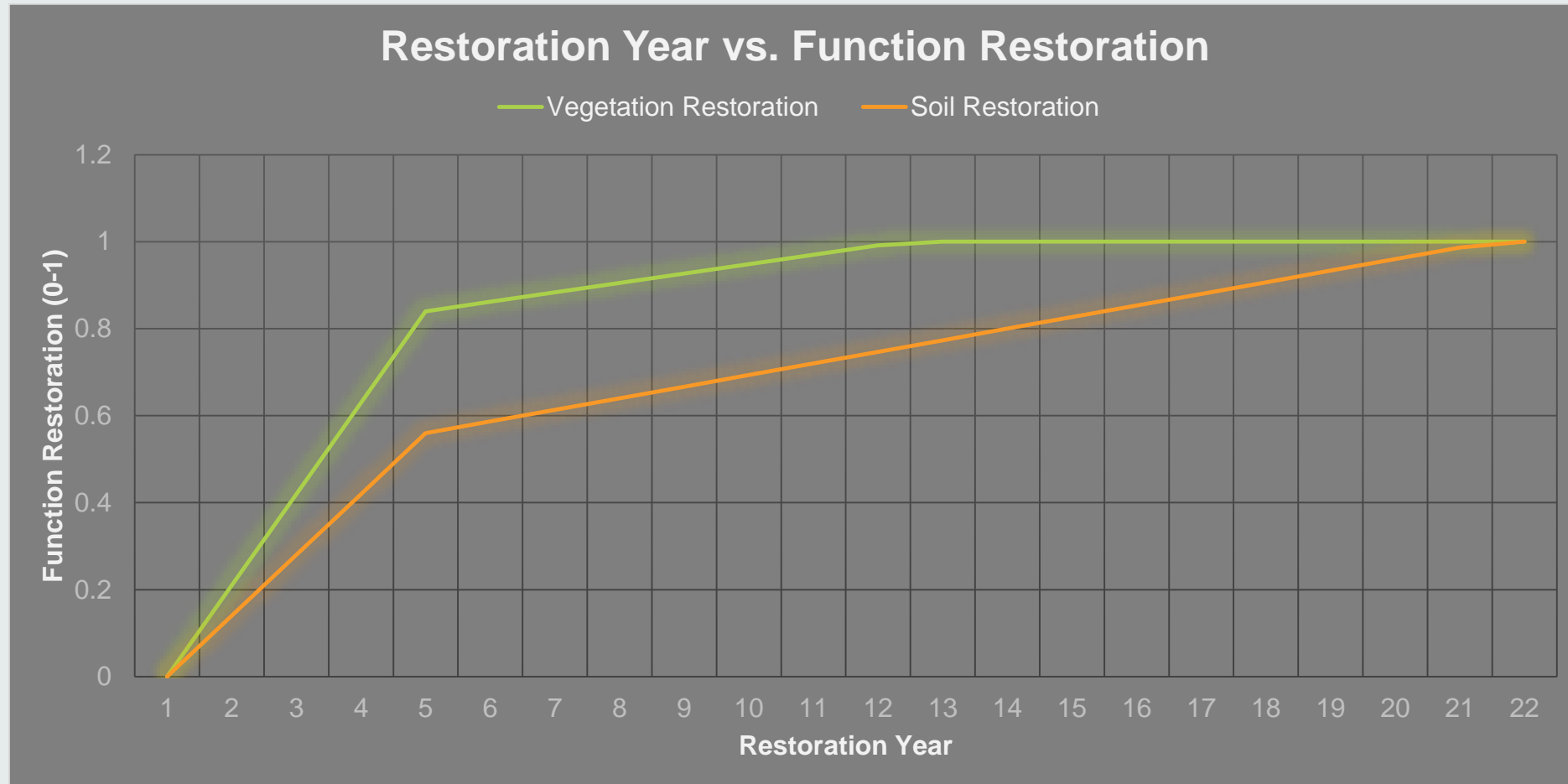


Economics Evaluation

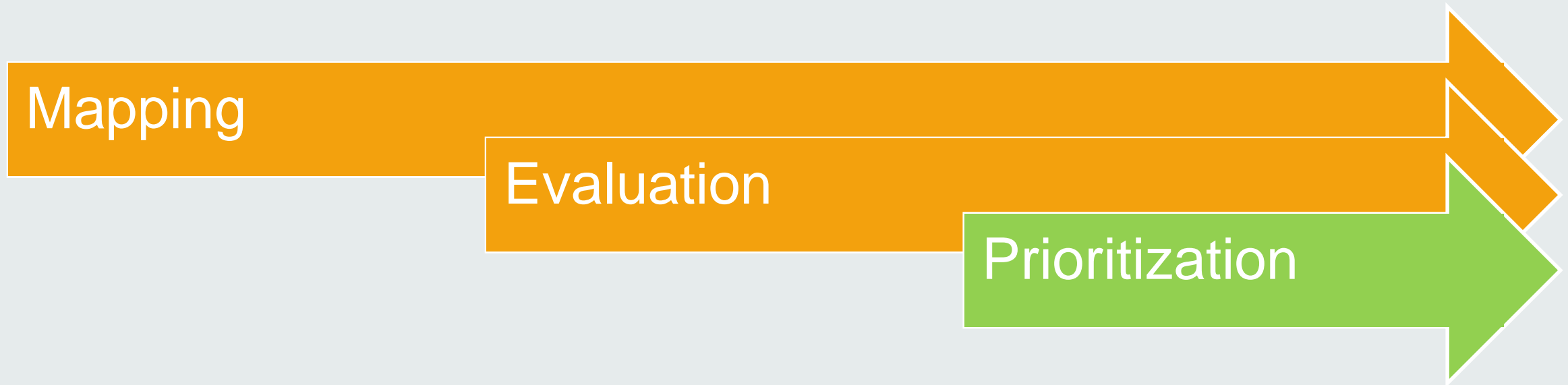
Historic Wildfire - Recreation



Economics Evaluation

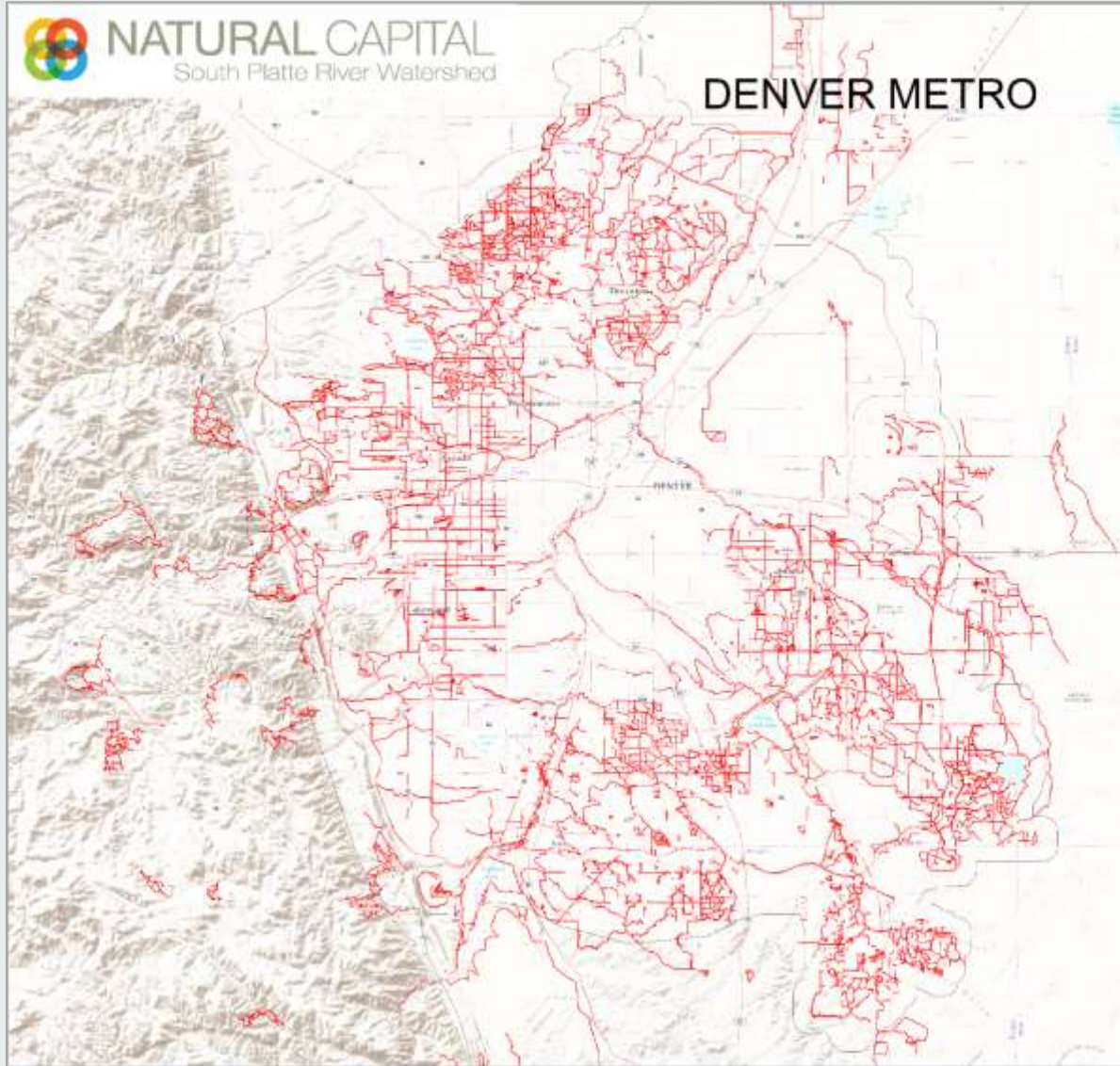


Process: Prioritization



Prioritization

Upper Watershed



- Clean Water: CSFS Priority Drinking Water Areas
- Healthy Waterways – TMDL 303d listed streams
- Access to Nature – Trust for Public Lands (TPL) Children's access to parks



Project Timeline

Thank you

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- January 2017
 - Finalize Prioritization
- January– Feb 2017
 - Economic Analysis & Prioritization
 - Incorporate stakeholder input & feedback
- Feb – May 2017
 - Draft Assessment Report & User Guide
 - Final Stakeholder Workshop

