

# SDG 6.6.1 Ecosystem Health

## *Integrated Watershed Condition Assessments*

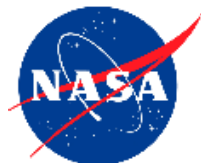


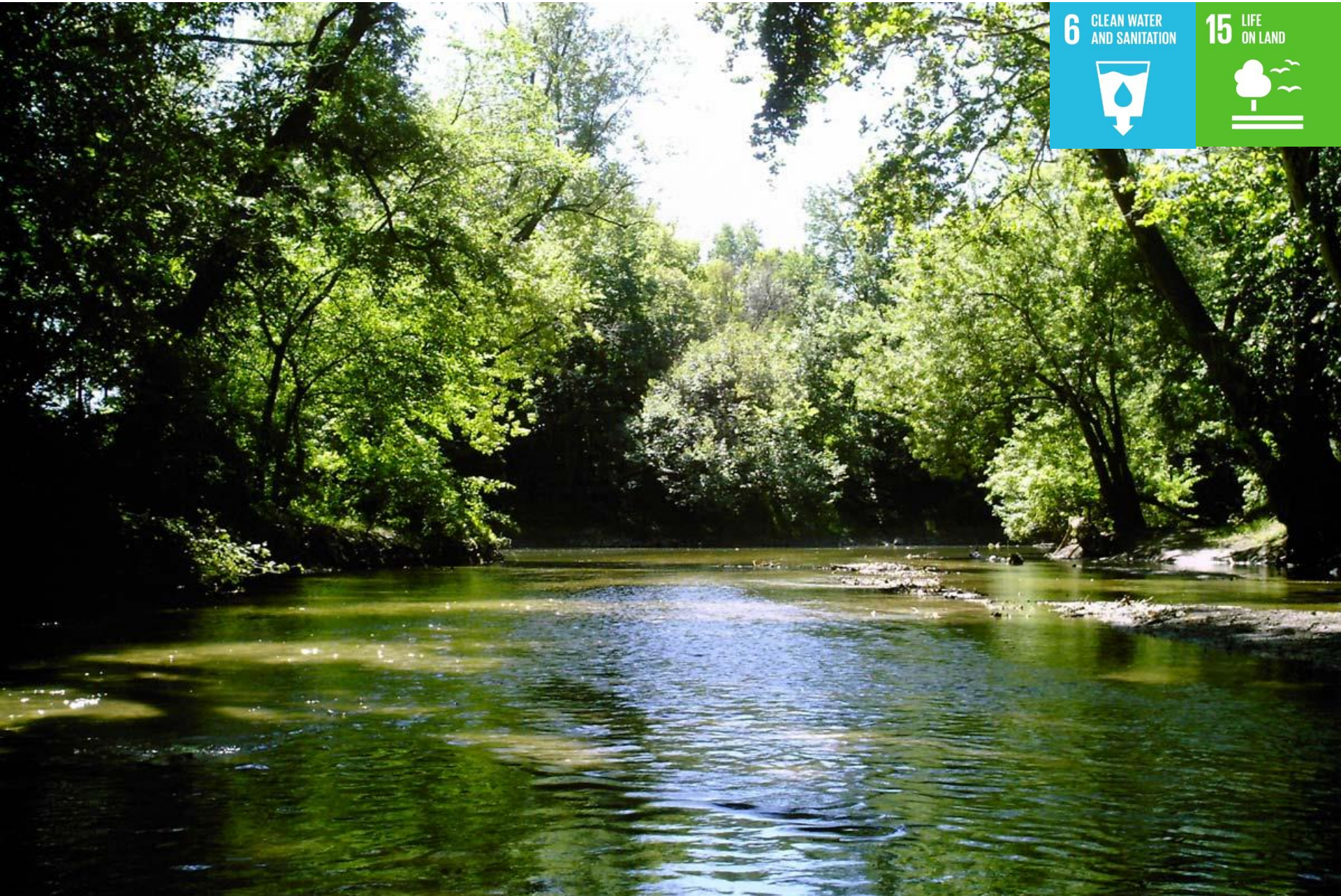
**Stockholm World Water Week 2018**

*Raha Hakimdavar, PhD*

*Presidential Management Hydrology Fellow // US Forest Service*

*Science Collaborator // NASA Goddard Space Flight Center*





6 CLEAN WATER AND SANITATION



15 LIFE ON LAND

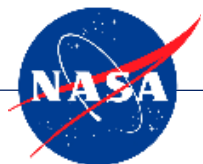
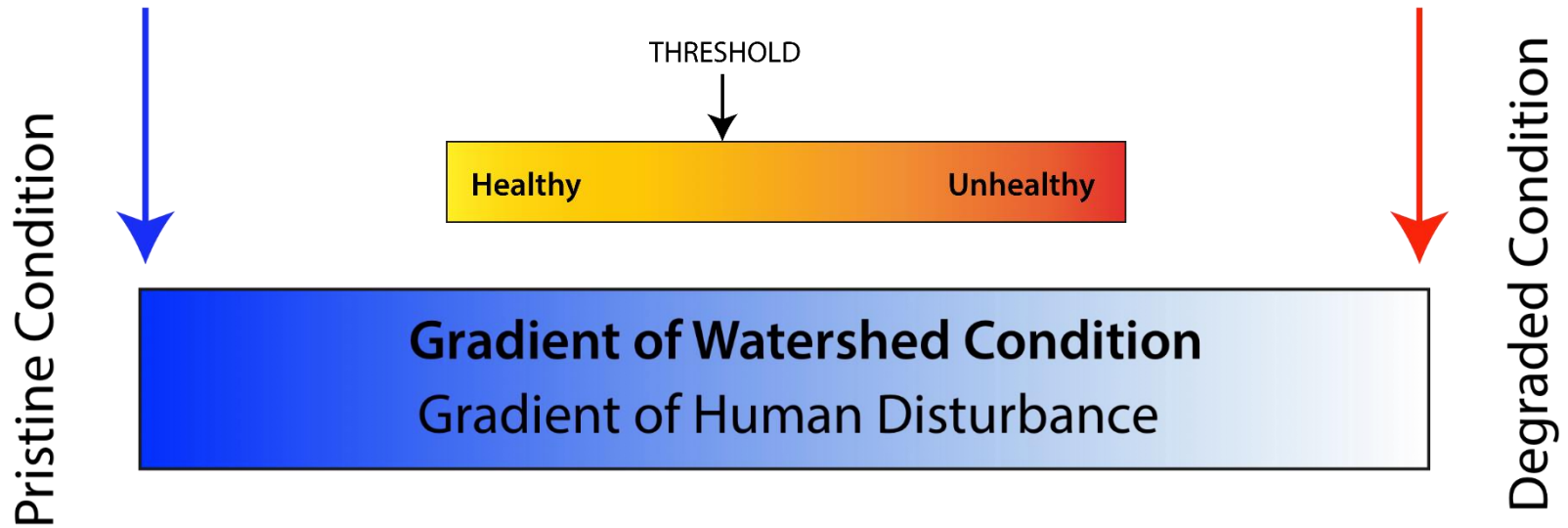




# Watershed Condition

Minimal Disturbance

Severe Disturbance



# Data Spectrum

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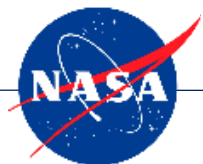
Broad purpose



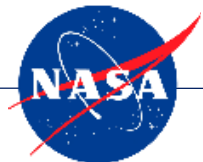
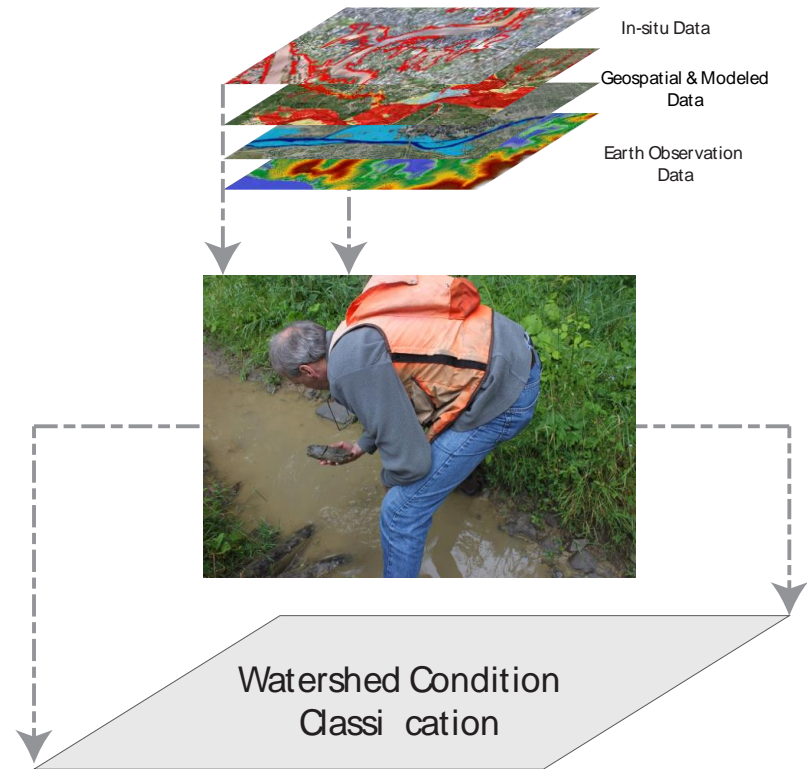
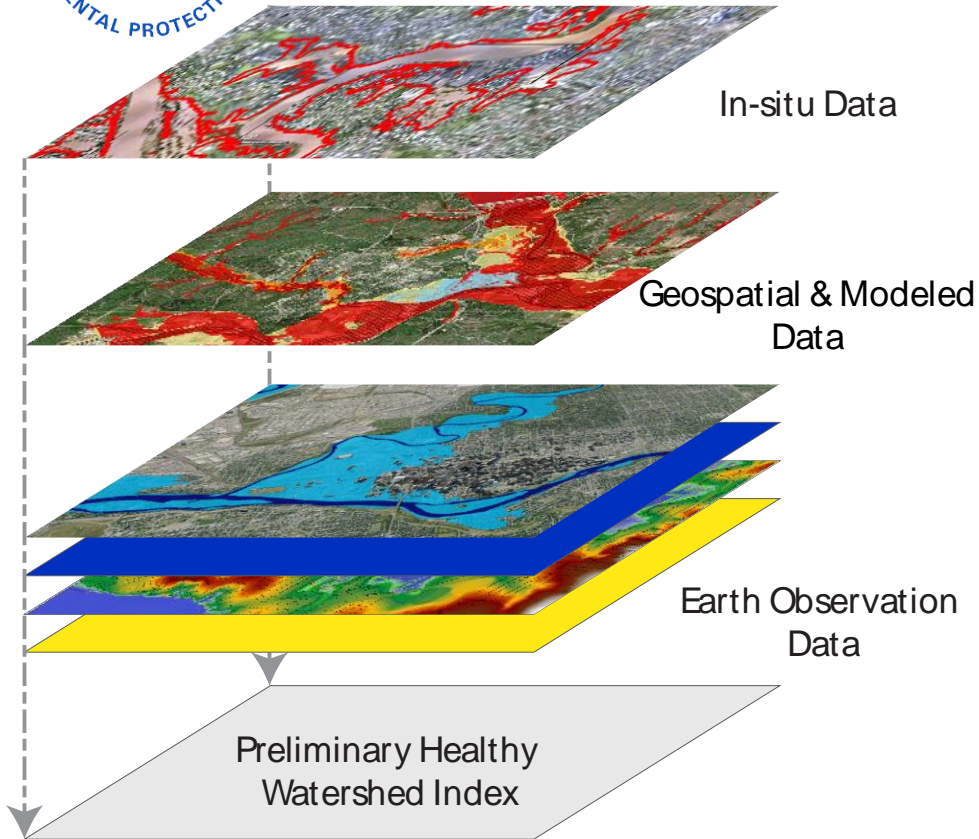
Narrow purpose

**Fully Data  
Driven**

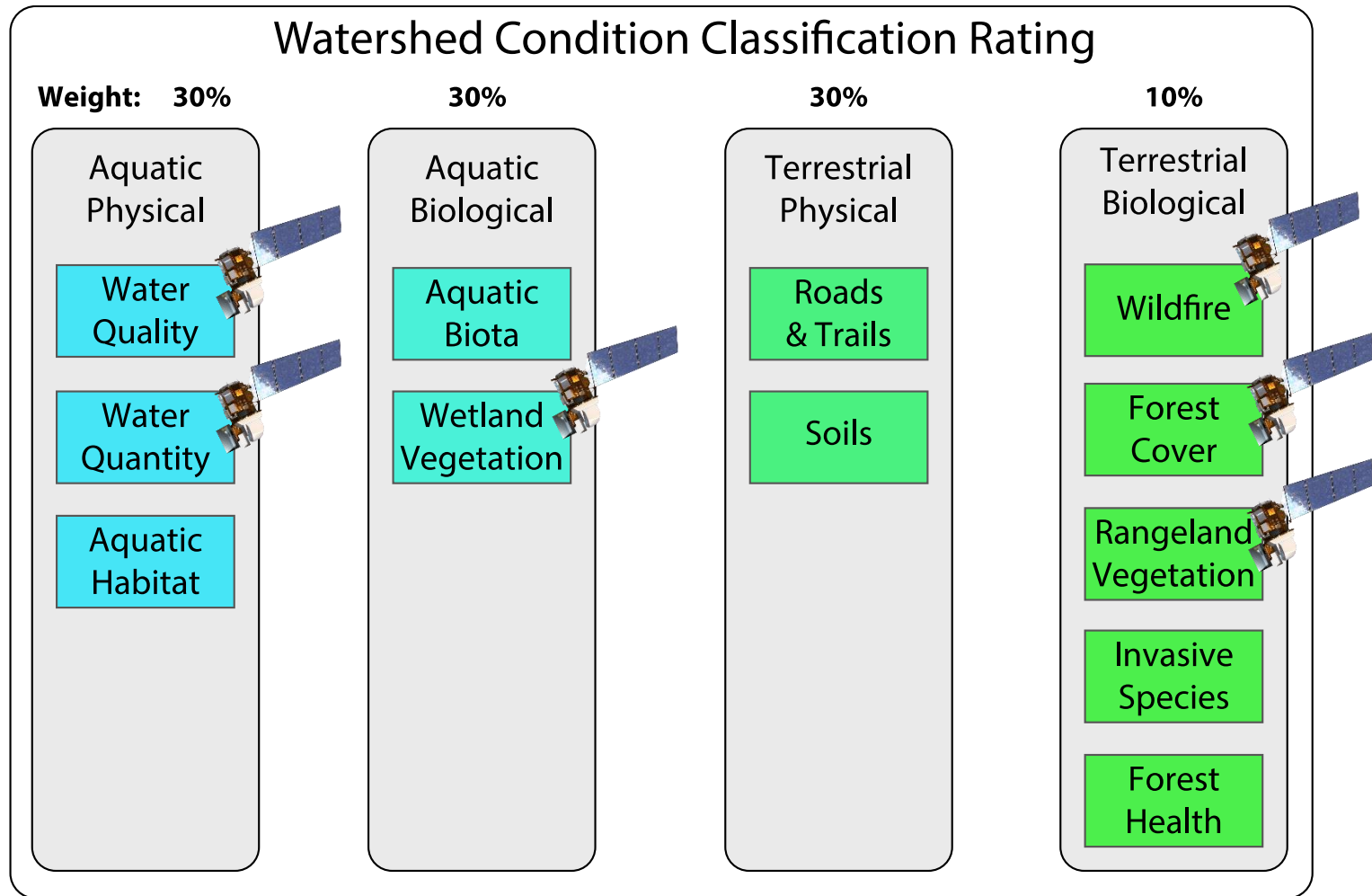
**Fully Expert-  
Knowledge Driven**



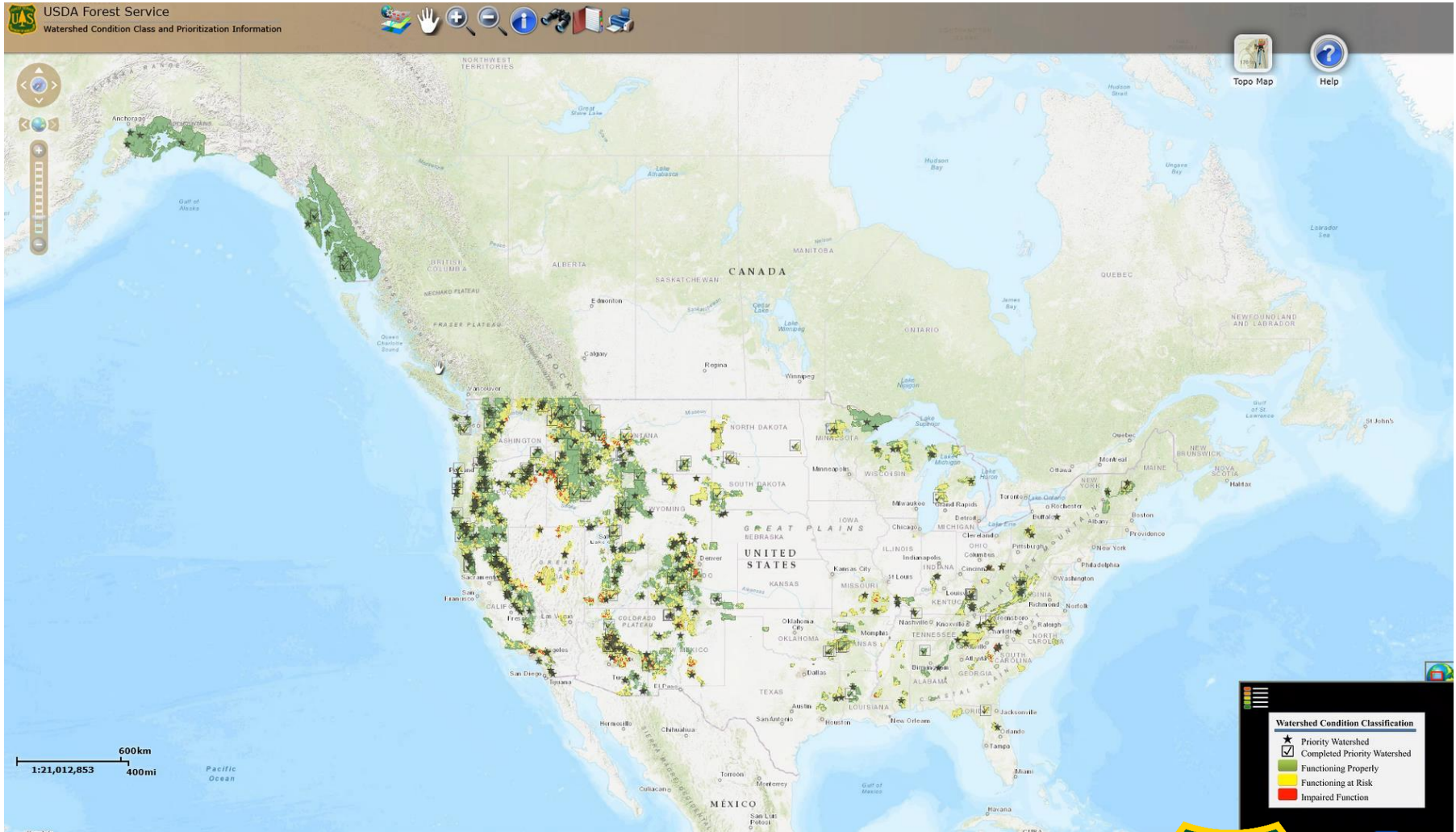
# Assessment Approaches



# USFS Watershed Condition Classification



# USFS WCC Viewer

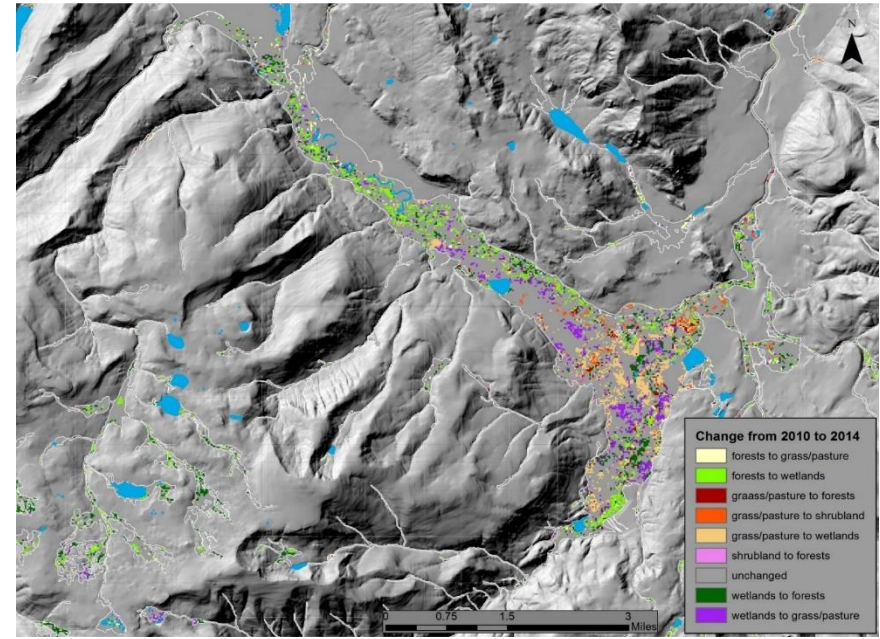
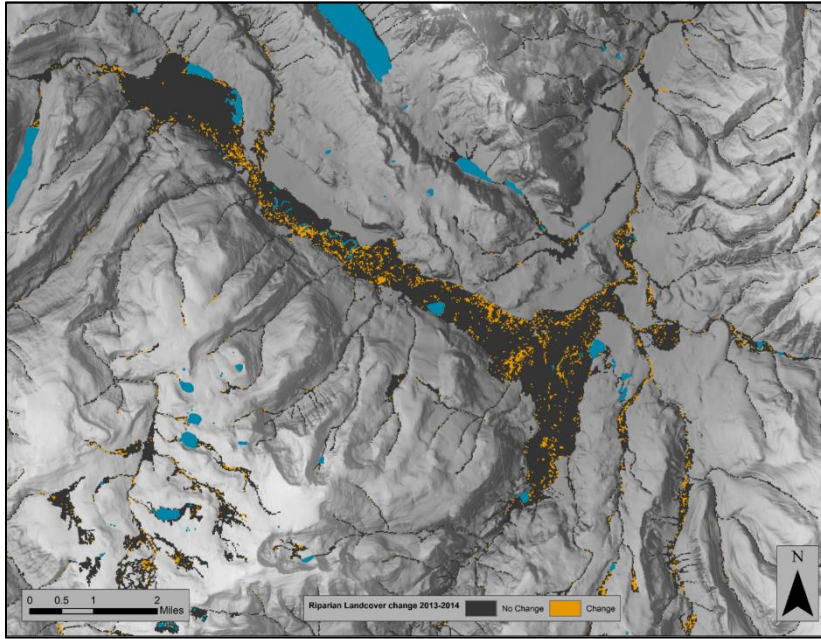


<https://apps.fs.usda.gov/wcatt/>





# Mapping Riparian Areas w/ EO

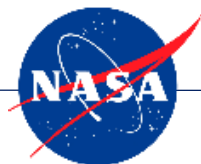
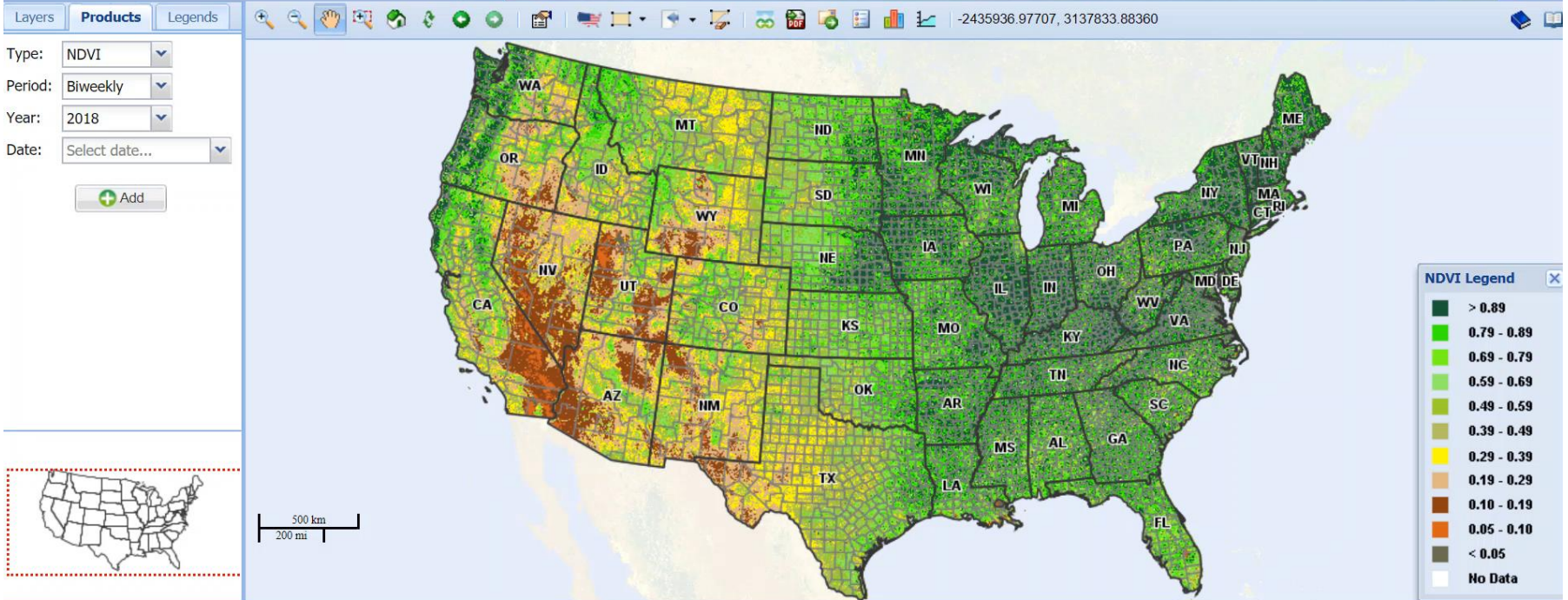


## Data Requirements:

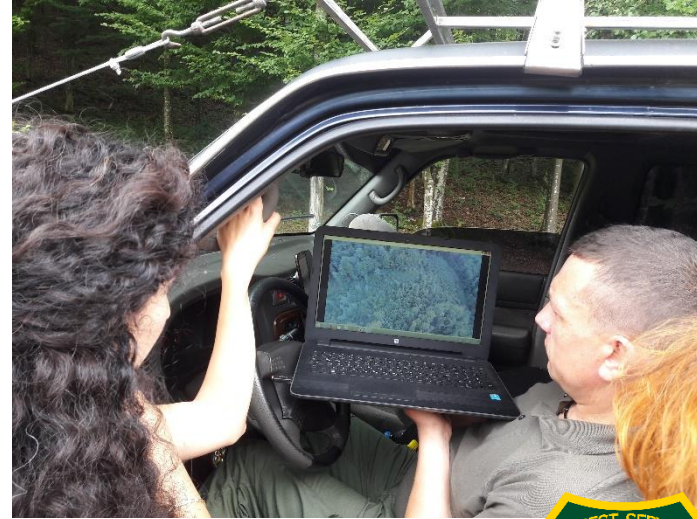
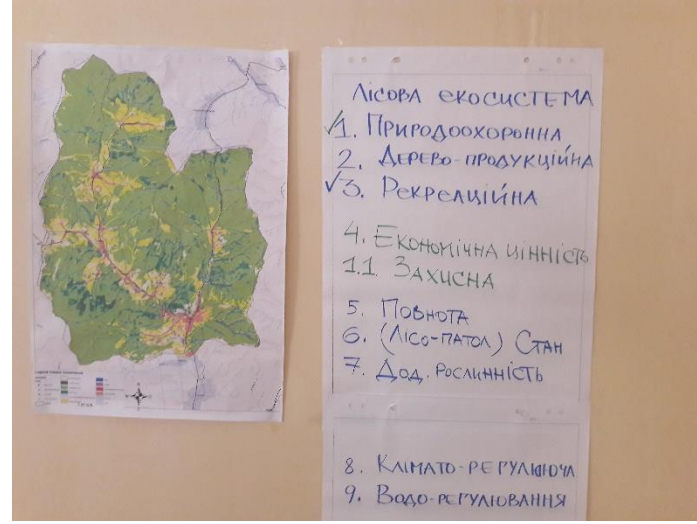
1. Stream data layer
2. Digital Elevation Model (SRTM 30m)
3. Land cover (Landsat/Sentinel)
4. 50 year flood height (model output or statistical methods)



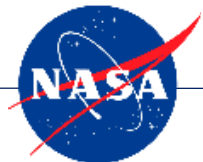
# Vegetation Condition & EO



# Global Adaptation



Polyana, Ukraine





# Data Spectrum

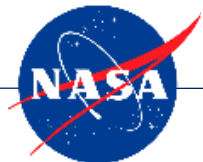
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Ecosystem Health Assessment



**Fully Data  
Driven**

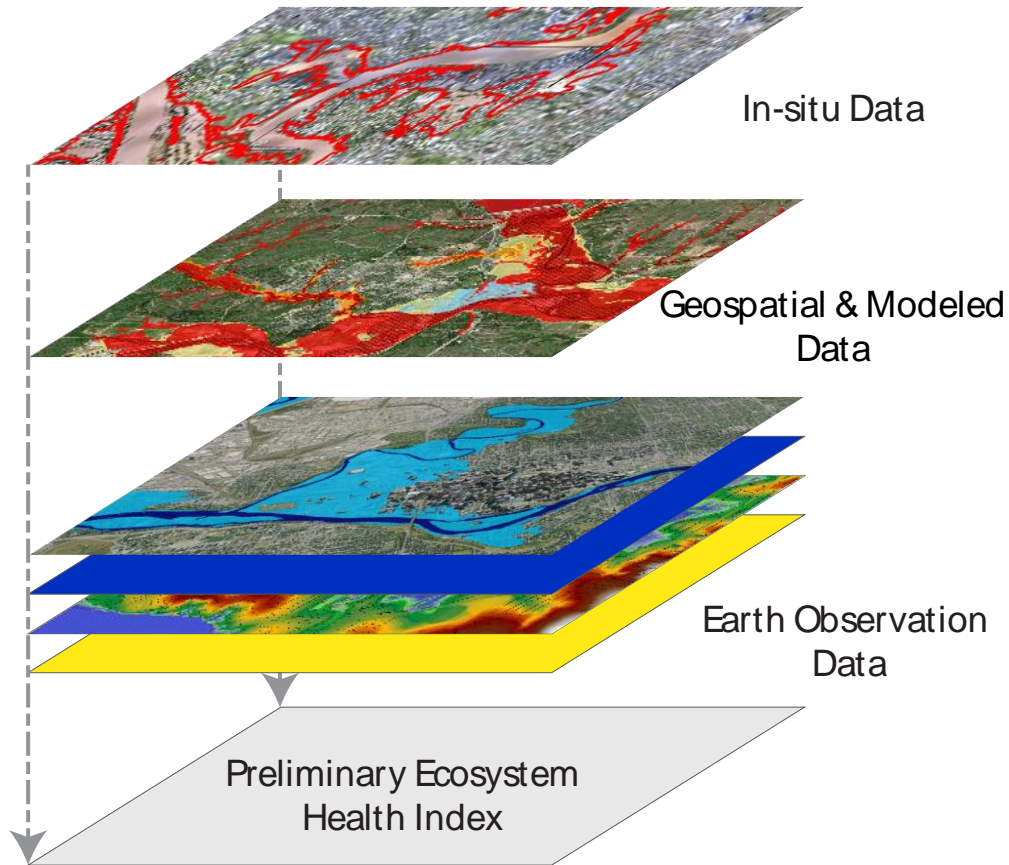
**Fully Expert-  
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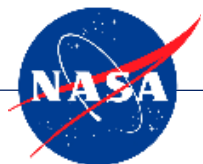


# Path Forward

## National Level (Aggregate) Reporting



## Sub-National Level Validation



# Ecosystem Health & SDGs

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**Indicator 6.3.2:** Proportion of bodies of water with good ambient water quality

**Indicator 6.6.1:** Change in the extent of water-related ecosystems over time



**Indicator 15.1.1:** Forest area as a proportion of total land area

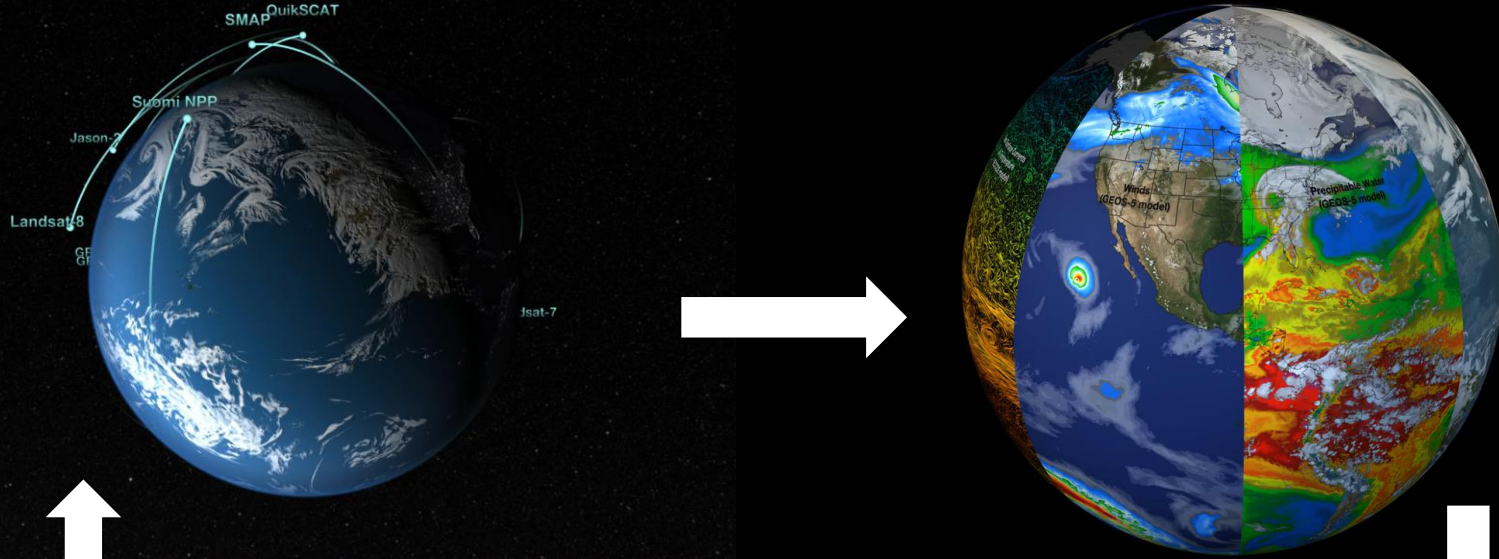
**Indicator 15.1.2:** Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type

**Indicator 15.3.1:** Proportion of land that is degraded over total land area

**Indicator 15.4.1:** Coverage by protected areas of important sites for mountain biodiversity

**Indicator 15.4.2:** Mountain Green Cover Index





NASA Goddard Visualization Studio

