STREAMLINING GIS FOR SPATIAL SCIENTIFIC DATA

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Summary

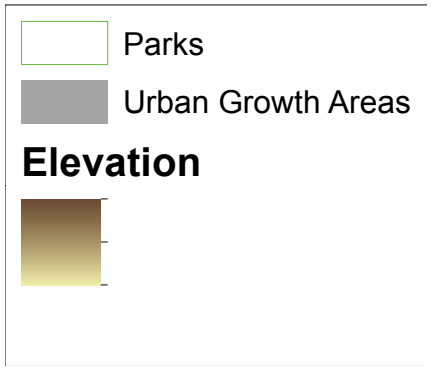
- What is GIS?
  - Why Use GIS
- Streamlining GIS to improve usability
  - Internal at CUW
    - Streamlining Data Management
  - General Utility
    - Streamlining Access to GIS
    - Streamlining Methods

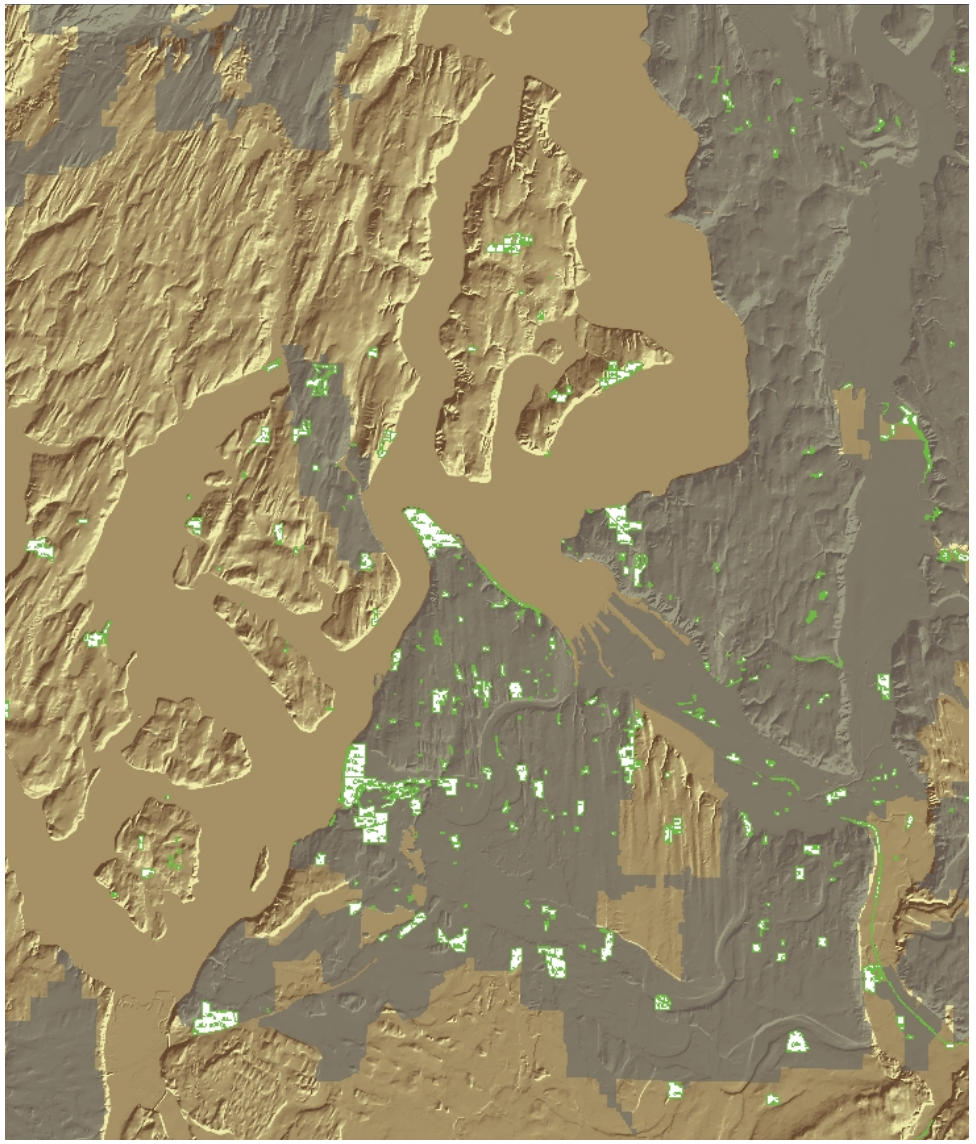
Part 1. What is GIS?

- A geographic information system (GIS) [that] lets us visualize, question, analyze, interpret, and understand data to reveal relationships, patterns, and trends. – ESRI
  - Allows its user to find out how topics of interest relate in the world.
  - Different methodology than other scientific research
    - Often relies on pre-existing data from other sources

Why Use GIS?

- Powerful tool for analysis
  - Spatial relationships
- Represent complex topics in a simplified manner.
- Provides framework for cross – disciplinary collaboration

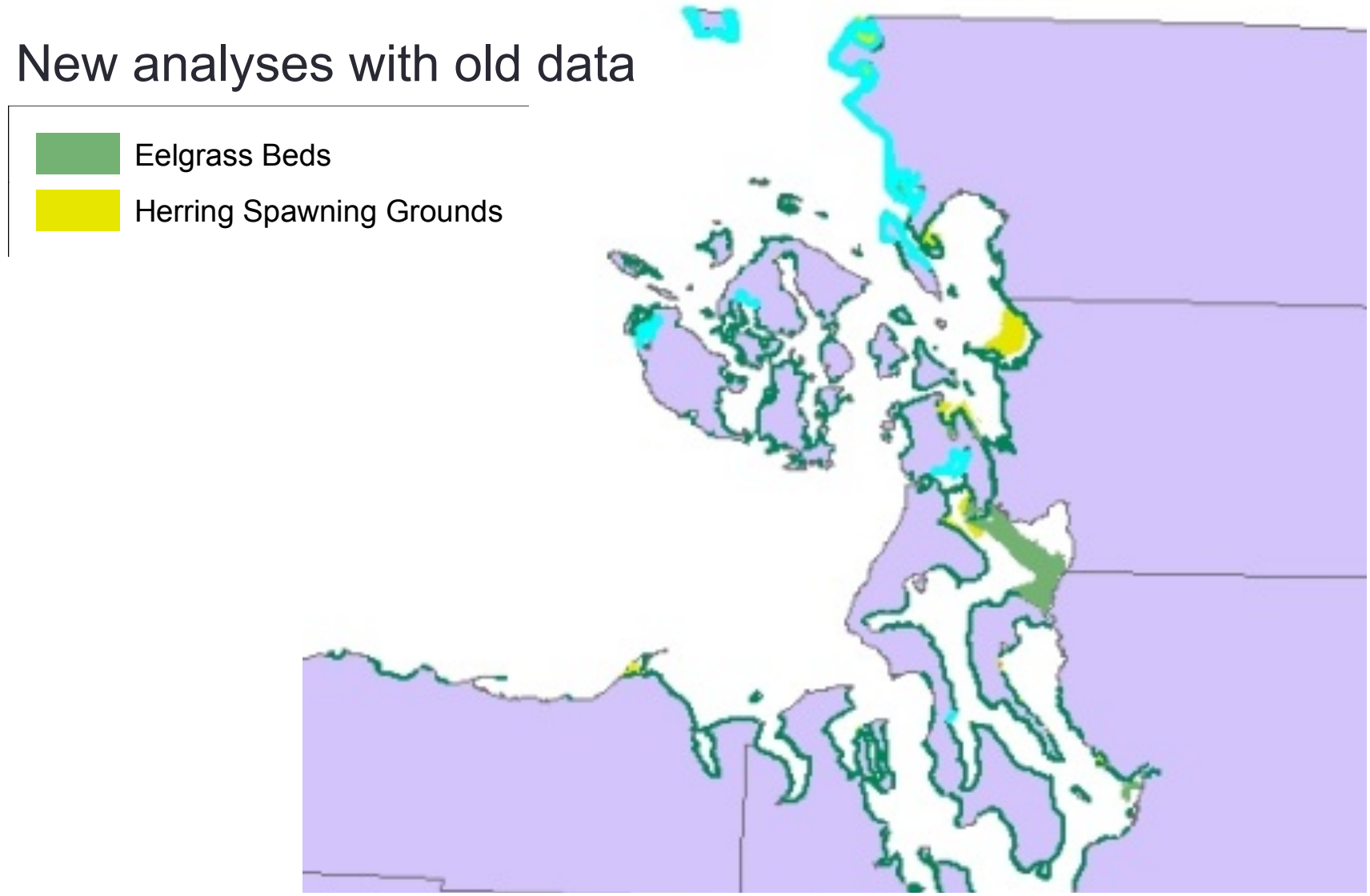




Pierce County UGA's and Parks

For example:

- New analyses with old data



Part 2.
Summer Internship: Streamlining GIS

Streamlining GIS

Goal: Improve utilization of GIS through

- Improving access to data
- reducing data redundancy
- Improving access to methods

- Why is use of GIS limited?
  - GIS data can be a massive burden on storage
  - GIS software is expensive, hard to use
  - GIS data exists in incompatible formats

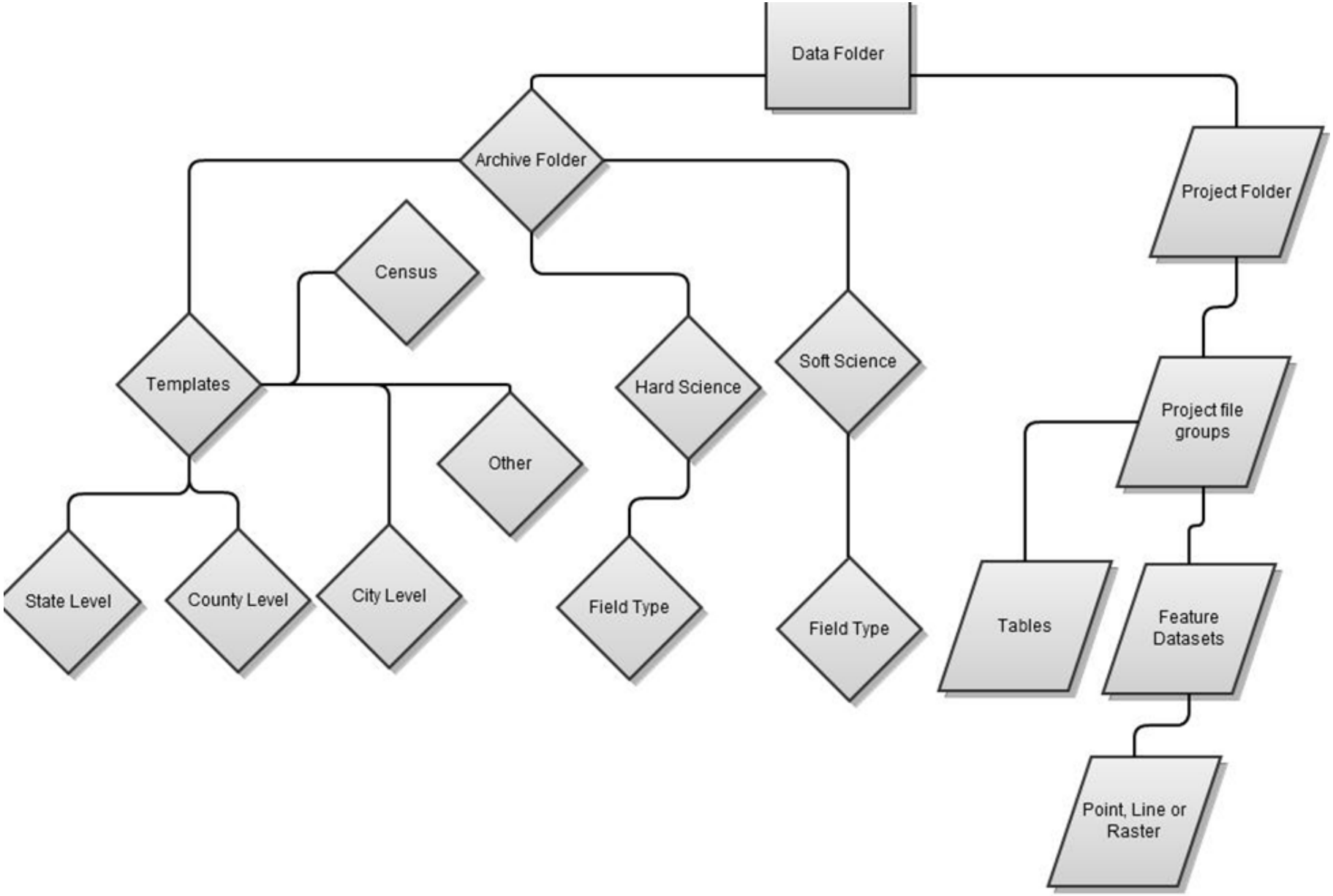
Summer Internship: Streamlining GIS

Streamlining Data Management
Streamlining Access to GIS data
Streamlining Methods

Streamlining Data –
Improving internal data management infrastructure

- Standardizing data categorization at the PSI
- Improving file organization
  - standardized folder structure
  - standardized file naming conventions
  - Standardized file layering in map packages
- Alleviating burden on online bandwidth
  - By reducing data download needs

Example of Possible Folder Structure

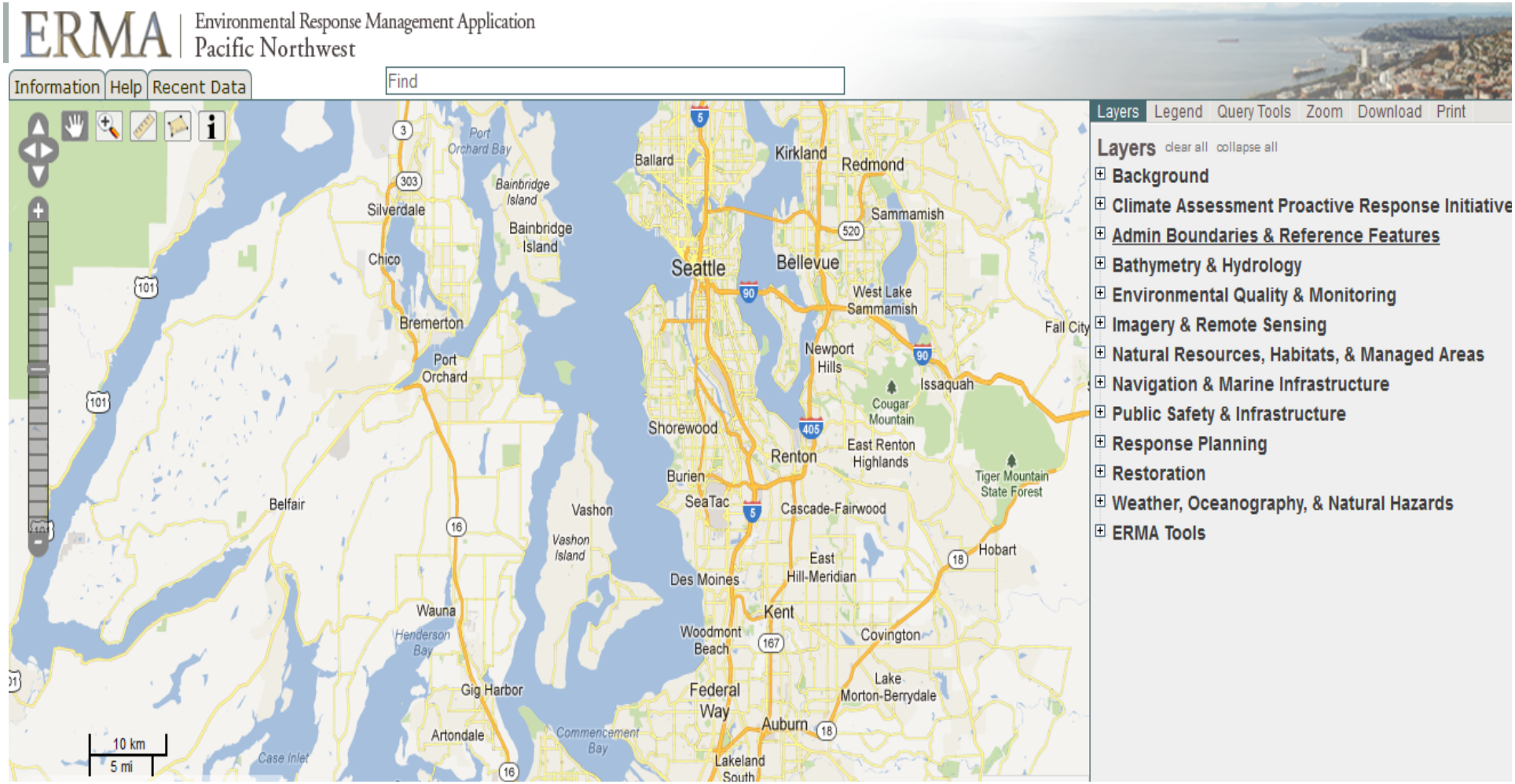


Streamlining Access

2 Projects:

- Stormwater NPDES mapping and upload to ERMA
- PSBC Water Flow Analysis – upload to ERMA

ERMA: increasing access to GIS data



ERMA is maintained and owned by NOAA

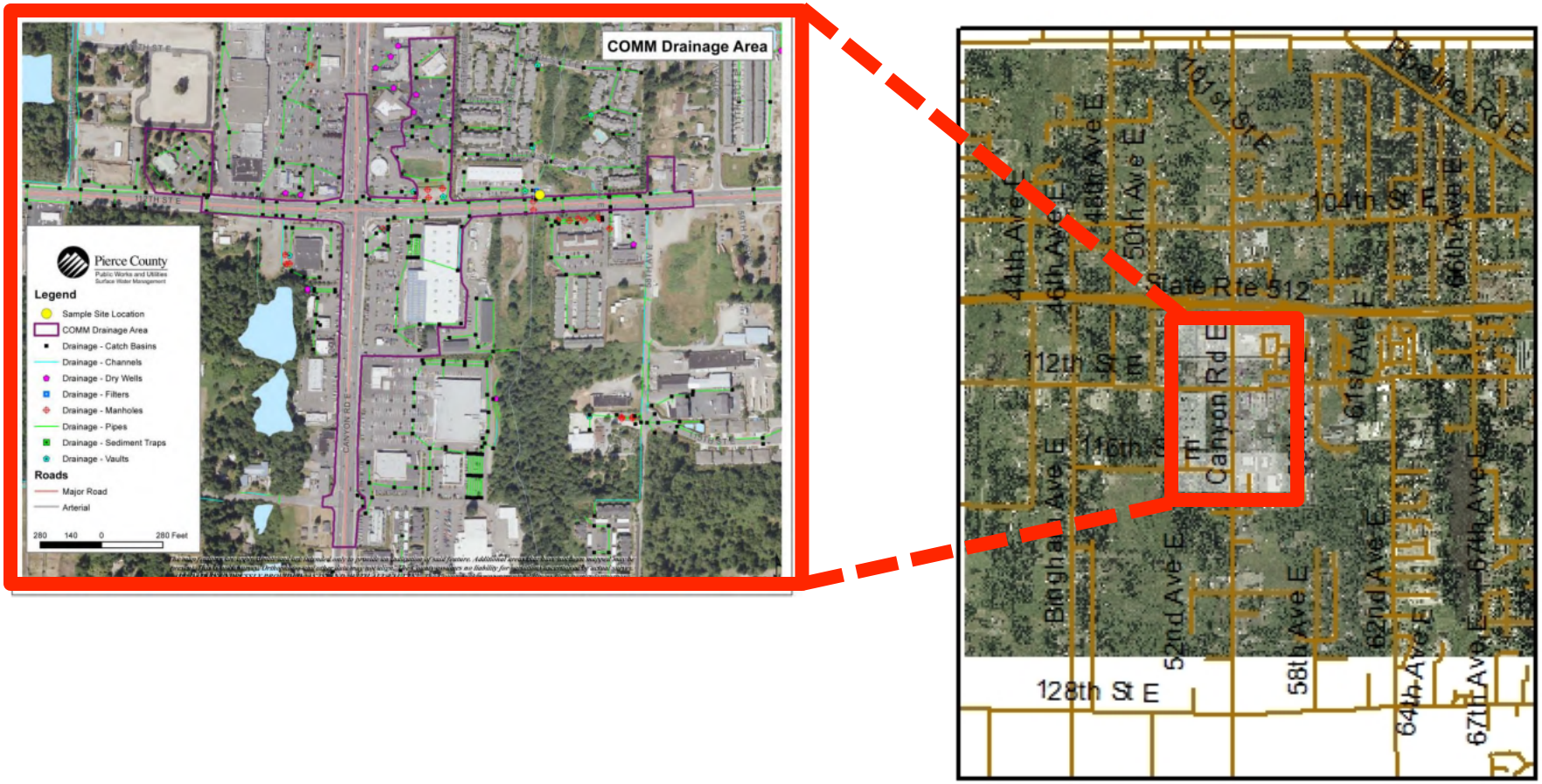
- Improved public access to data
- Result broadens research potential with data

Streamlining Access

Storm Water Project- NPDES

- Department of Ecology special condition S8.D for National Pollutant Discharge Elimination System Phase I Permits
- Monitoring Conventional Parameters, Organics, metals, Pesticides, Nutrients

- data often disorganized
- some sample sites had no coordinate reference
  - Georeferencing

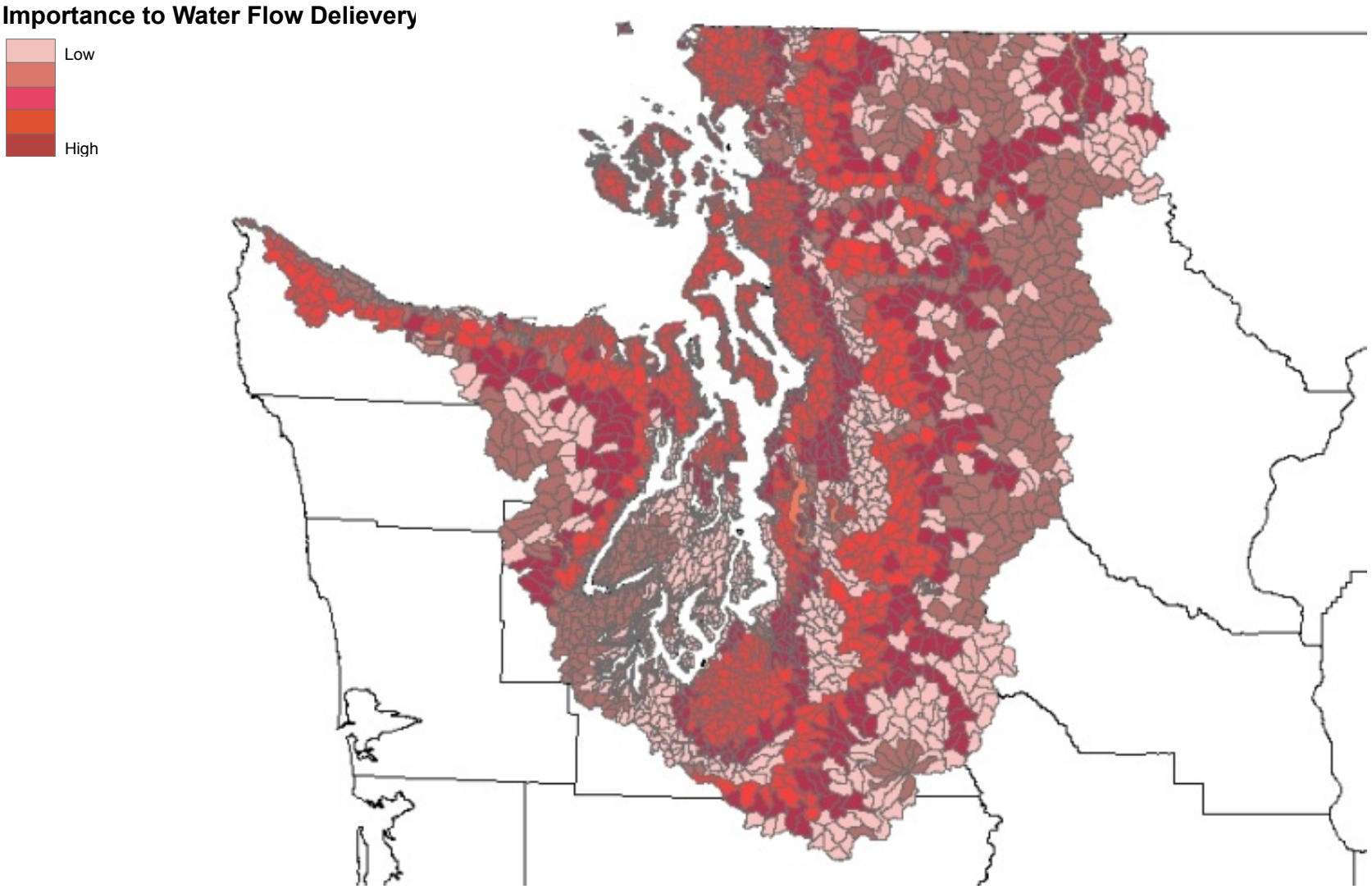


Streamlining Access

PSWC Water Flow & Water Quality – upload data to ERMA

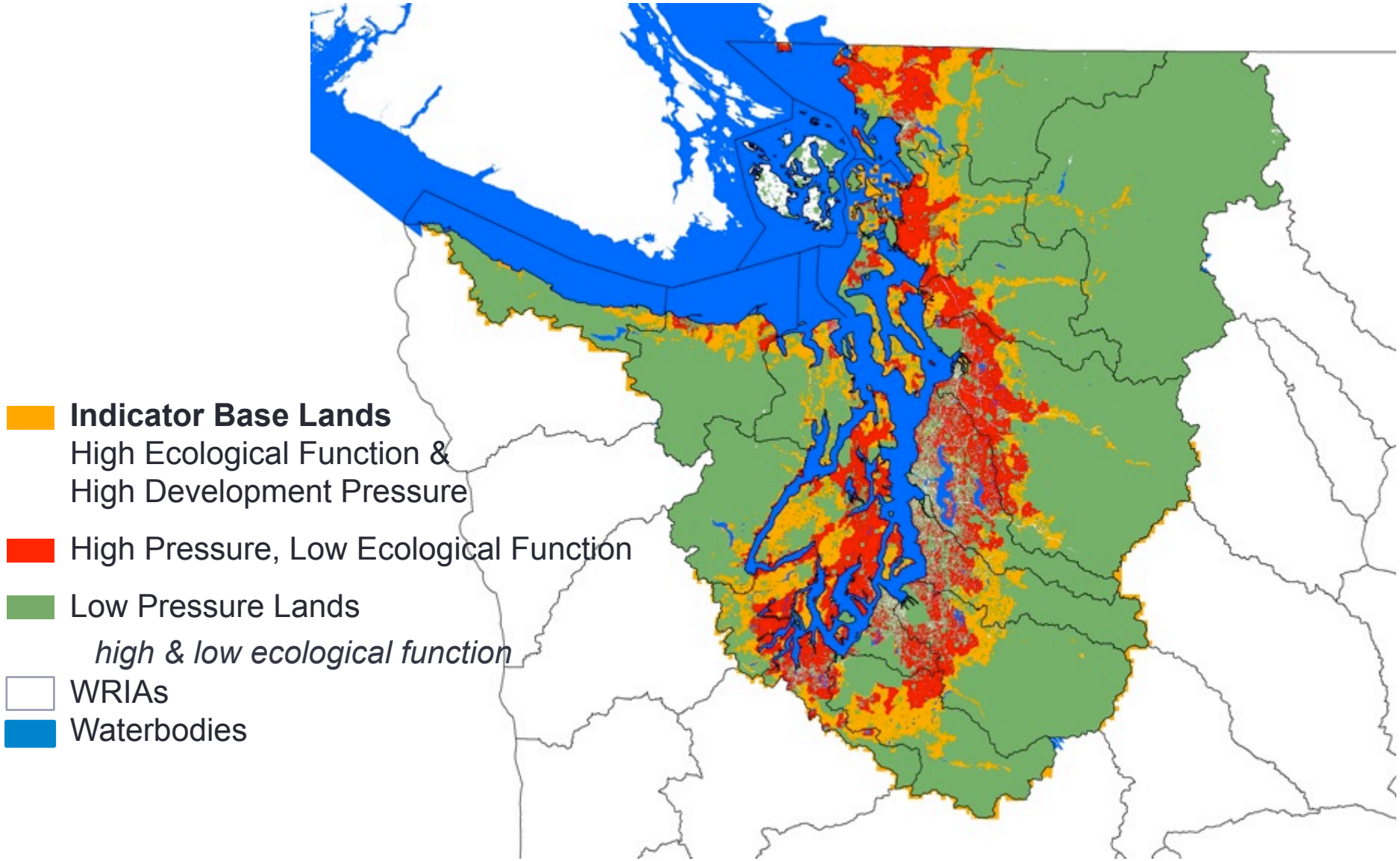
- Puget Sound Watershed Characterization Project
  - Analysis completed by Department of Ecology
  - Assessment of Water flow/ Water quality degradation and importance by watershed
- By placing data on ERMA, data are available to non-GIS users

Water Flow



Water Quality

Land Development/Ecological Importance Project



Map not to be used for local planning or decision making

Analysis: Ken Pierce, WDFW

Streamlining Methods

- Issue: Analysis has not been replicated
  - Compiled data
  - Reproduced analysis
  - Develop and document the methods
- To support future analysis for updating indicators

Conclusion

- Organizing internal data is an art
- Uploading and visualizing data online is time consuming
- GIS methods are different
- Great potential for GIS at CUW

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Questions?