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- *Presented By:*
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PetersonGIS
 - *In Conjunction With:*
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Hood Canal Coordinating Council

**In-stream Monitoring Database
Spatial Is Special**

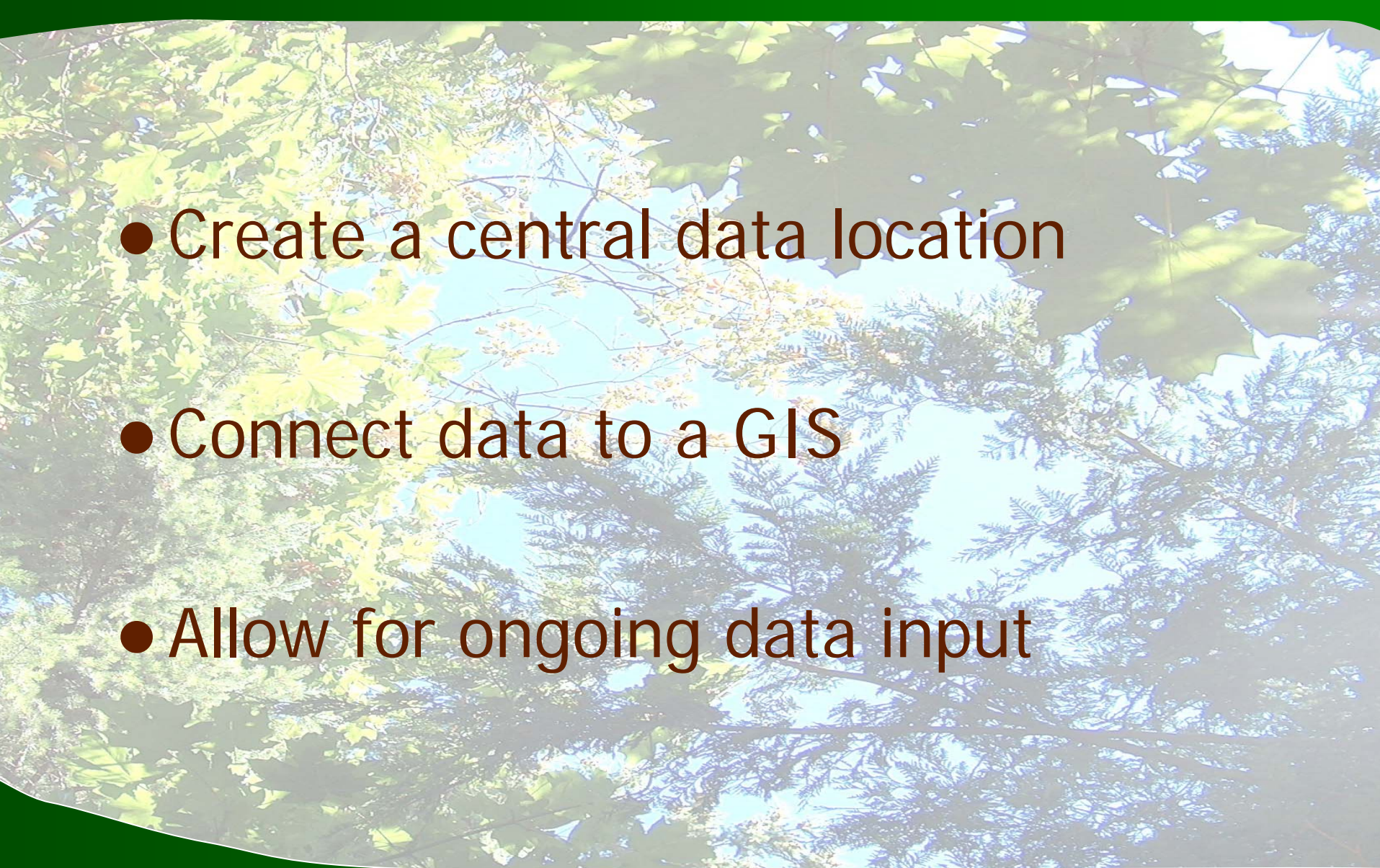
- Place
 - Pacific Northwest
 - Hood Canal Watershed



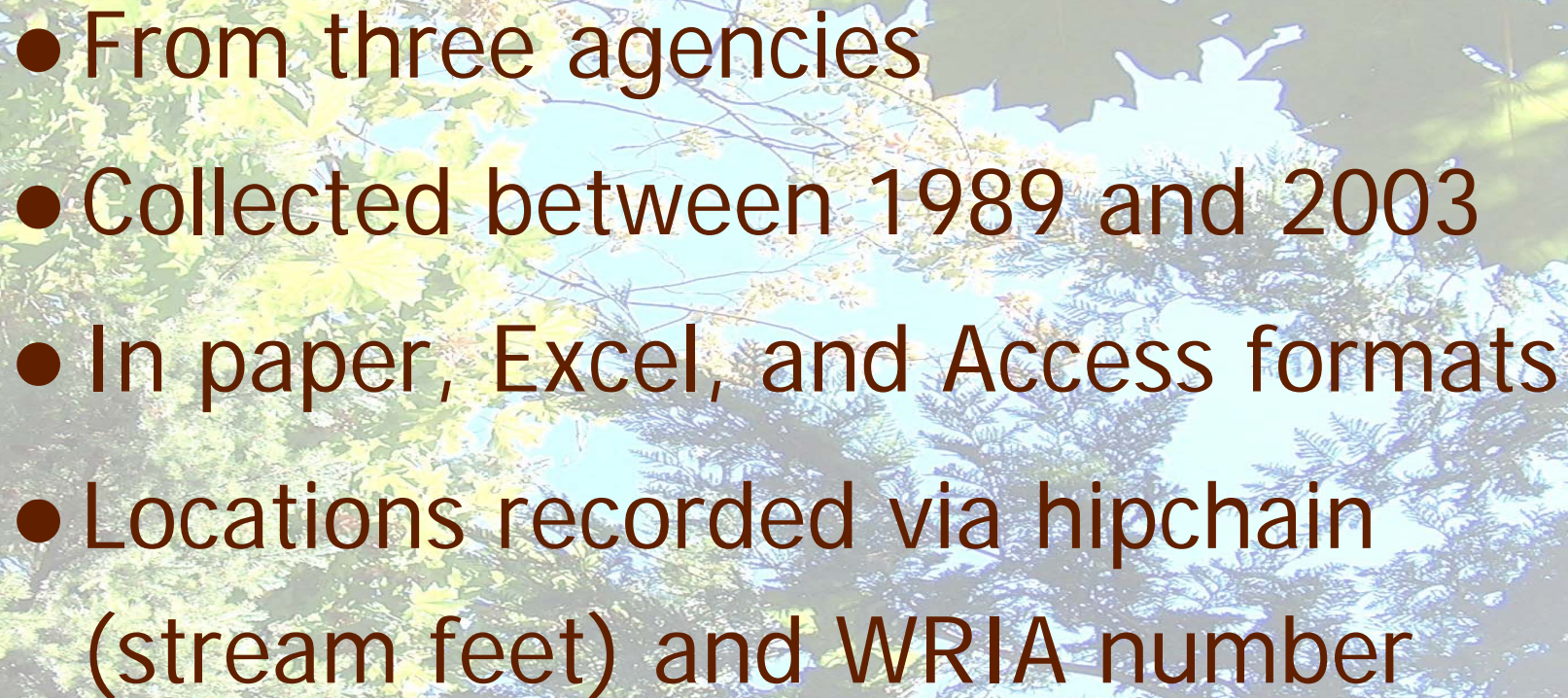
Overview

Distributed Data Problem Statement:

- Historic in-Stream data were:
 - In many agencies
 - In many formats
 - Aspatial
- These are research barriers for projects involving historical analysis and/or large geographic areas

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- Create a central data location
 - Connect data to a GIS
 - Allow for ongoing data input

Objectives

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- From three agencies
 - Collected between 1989 and 2003
 - In paper, Excel, and Access formats
 - Locations recorded via hipchain (stream feet) and WRIA number

Input Data Characteristics

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- Under two data collection protocols:
 - TFW Monitoring Program
 - HCSEG StreamTeam Protocol

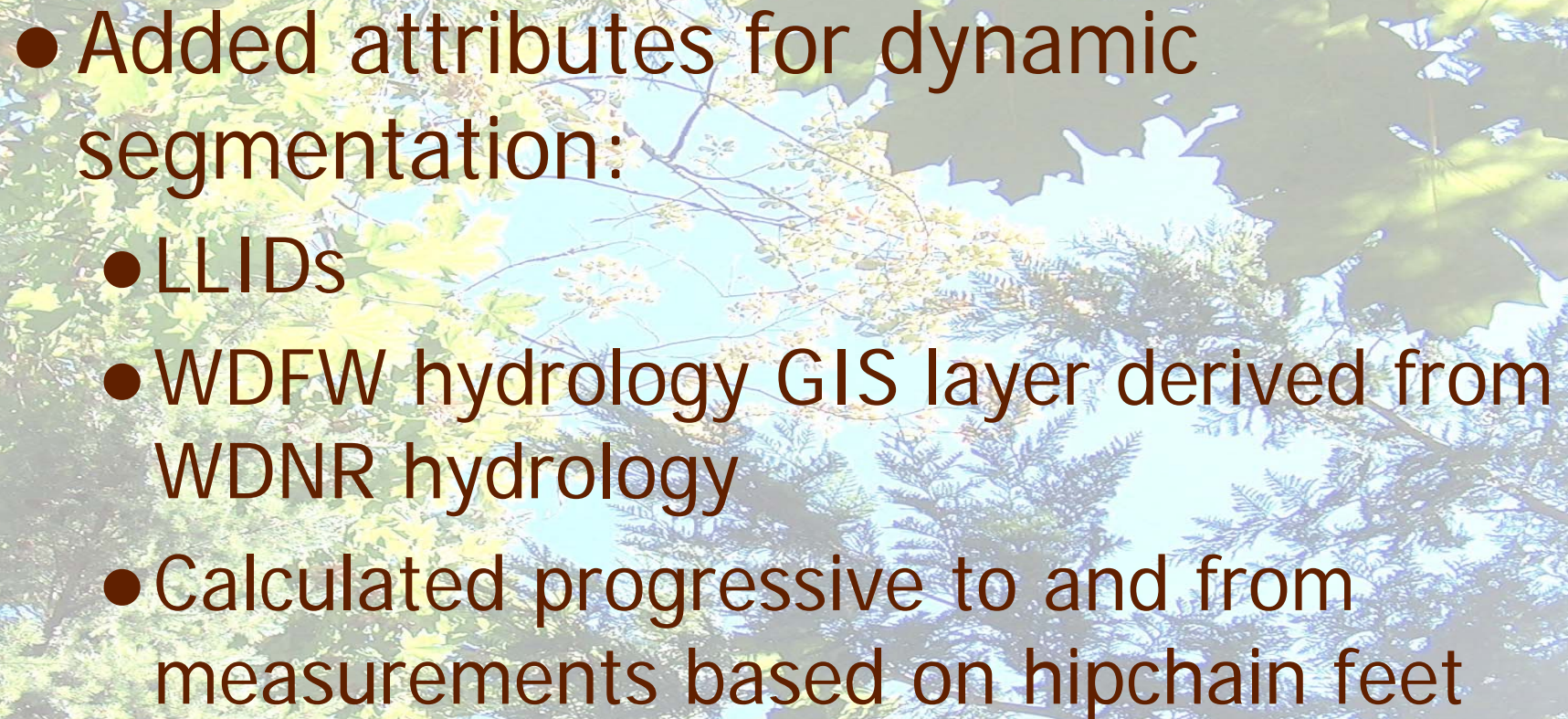
Input Data Characteristics

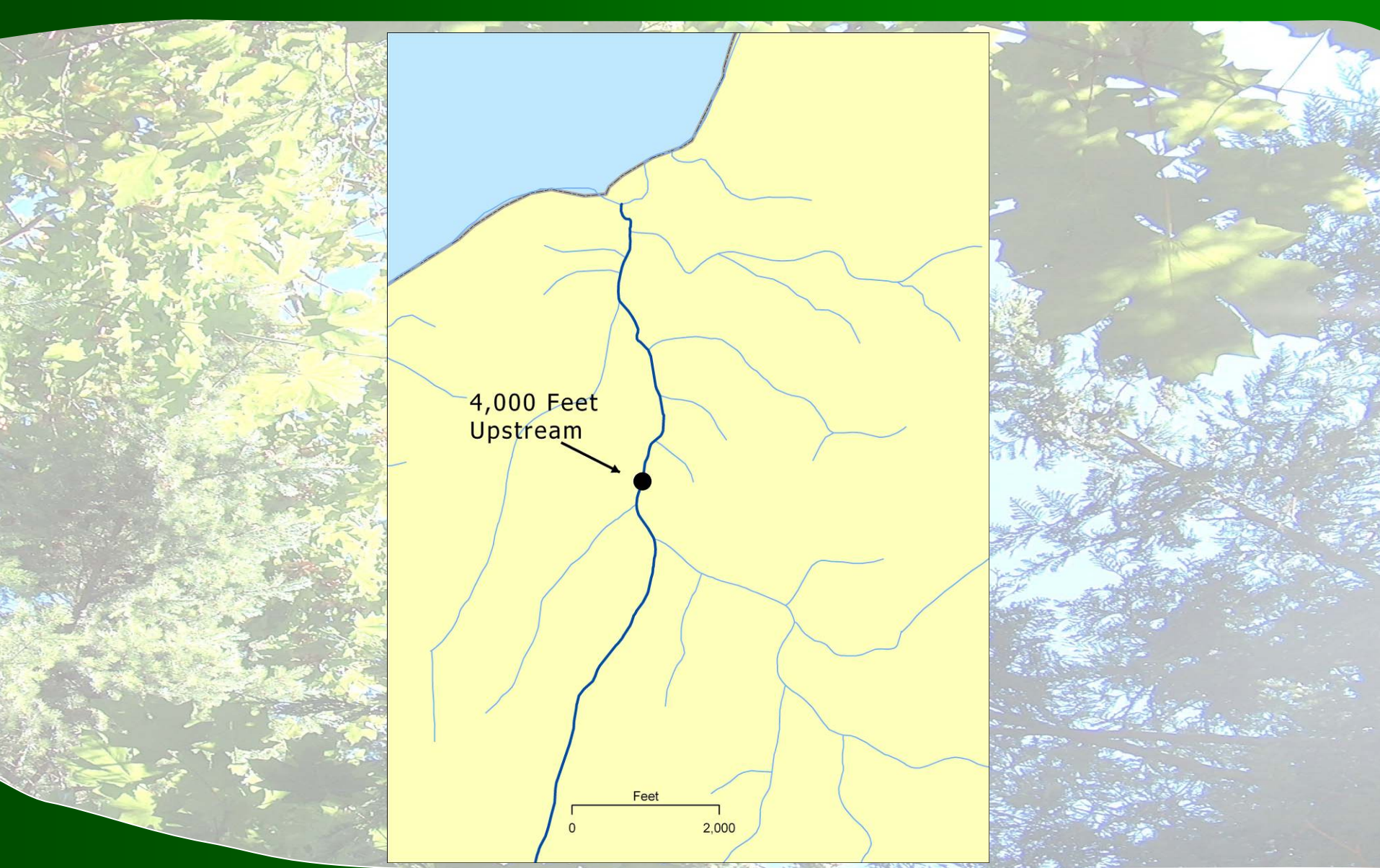
- Created vertical table structures

LocationValues	
PK	<u>LocationValueID</u>
FK2,I2	LocationID
FK1,I3	LocationParameterID
I4	TextValue
I6	NumericValue
FK3,I5	SurveyLocationID
	StreamID
	Note
	Date
I1	ImportID
	ValueCombo

LocationValues : Table							
	LocationID	LocationParameterID	TextValue	NumericValue	SurveyLocationID	StreamID	
	1259	18		1		16	
	1260	17	LGR			16	
	1260	16	R			16	
	1260	7		3168		16	
	1260	8		10560		16	
	1260	15		76		16	
	1260	18		1		16	
	1261	17	SCH			16	
	1261	16	P			16	

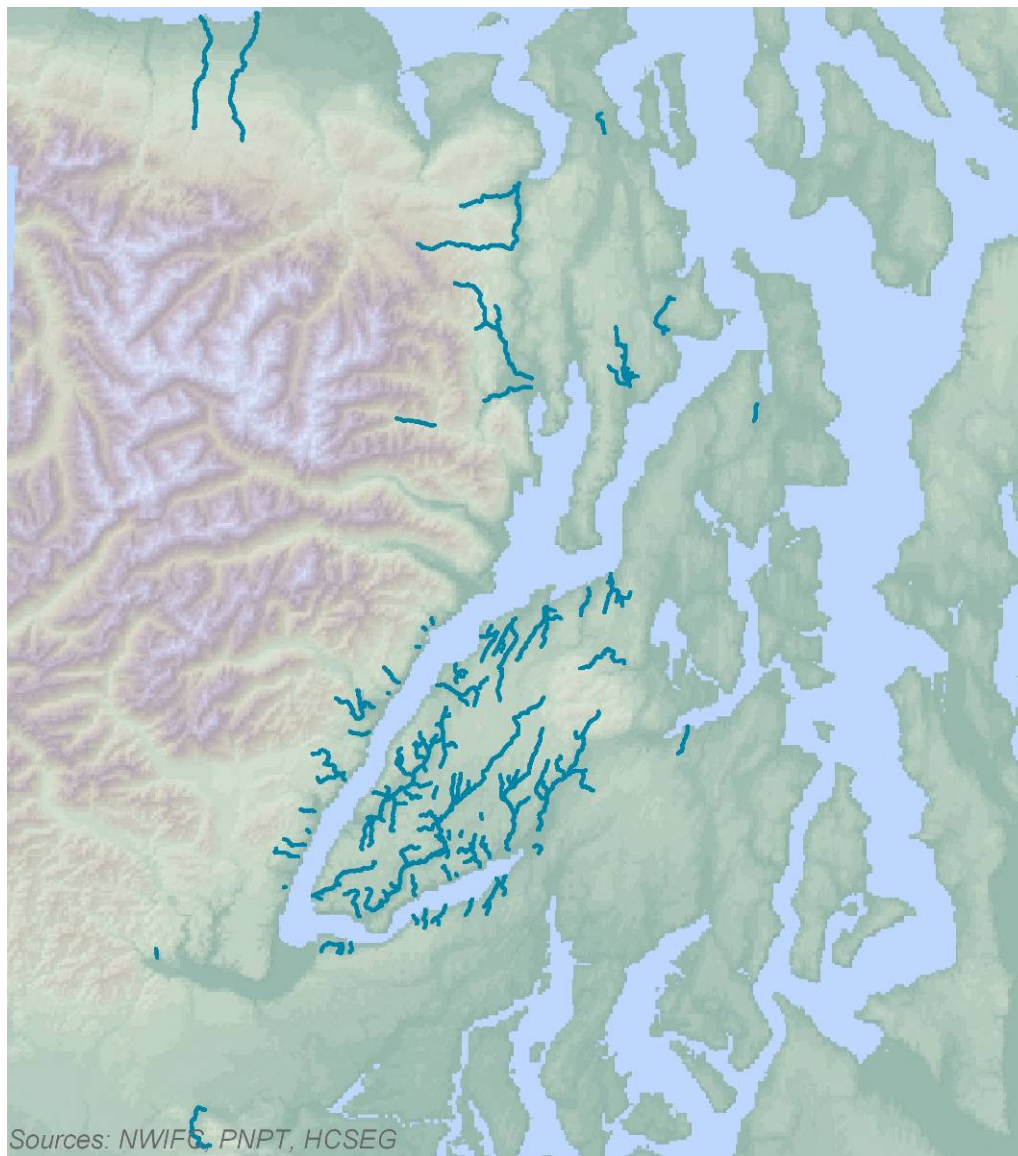
Record: 8177 of 274861

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- Added attributes for dynamic segmentation:
 - LLIDs
 - WDFW hydrology GIS layer derived from WDNR hydrology
 - Calculated progressive to and from measurements based on hipchain feet



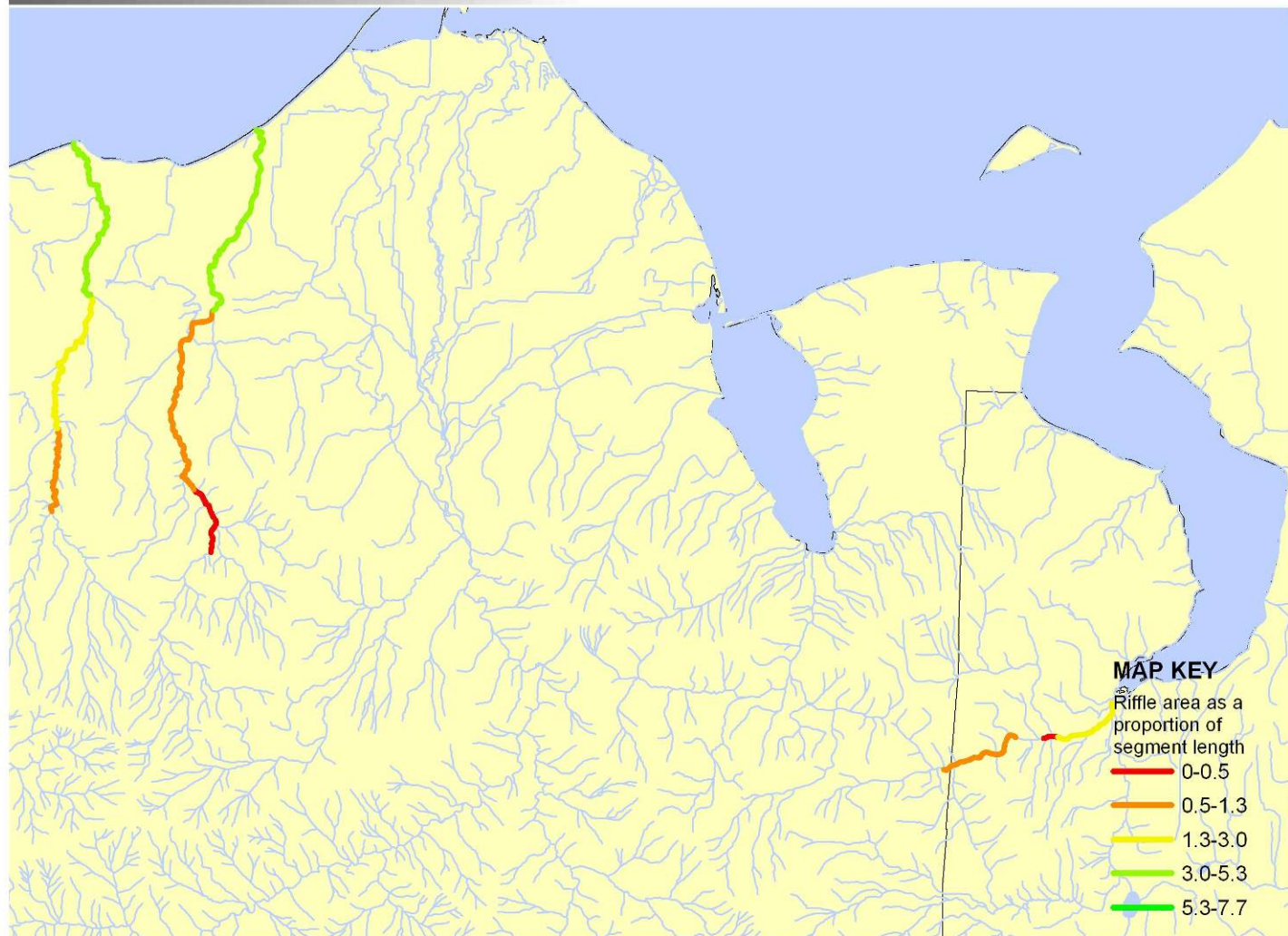
Dynamic Segmentation

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- Main Tables:
 - Habitat Conditions
 - Parameters
 - LocationParameters
 - LocationValues
 - Ancillary Tables:
 - Sources
 - DataModules
 - Etc.
 - Measurement Details
 - Protocols



Data Coverage

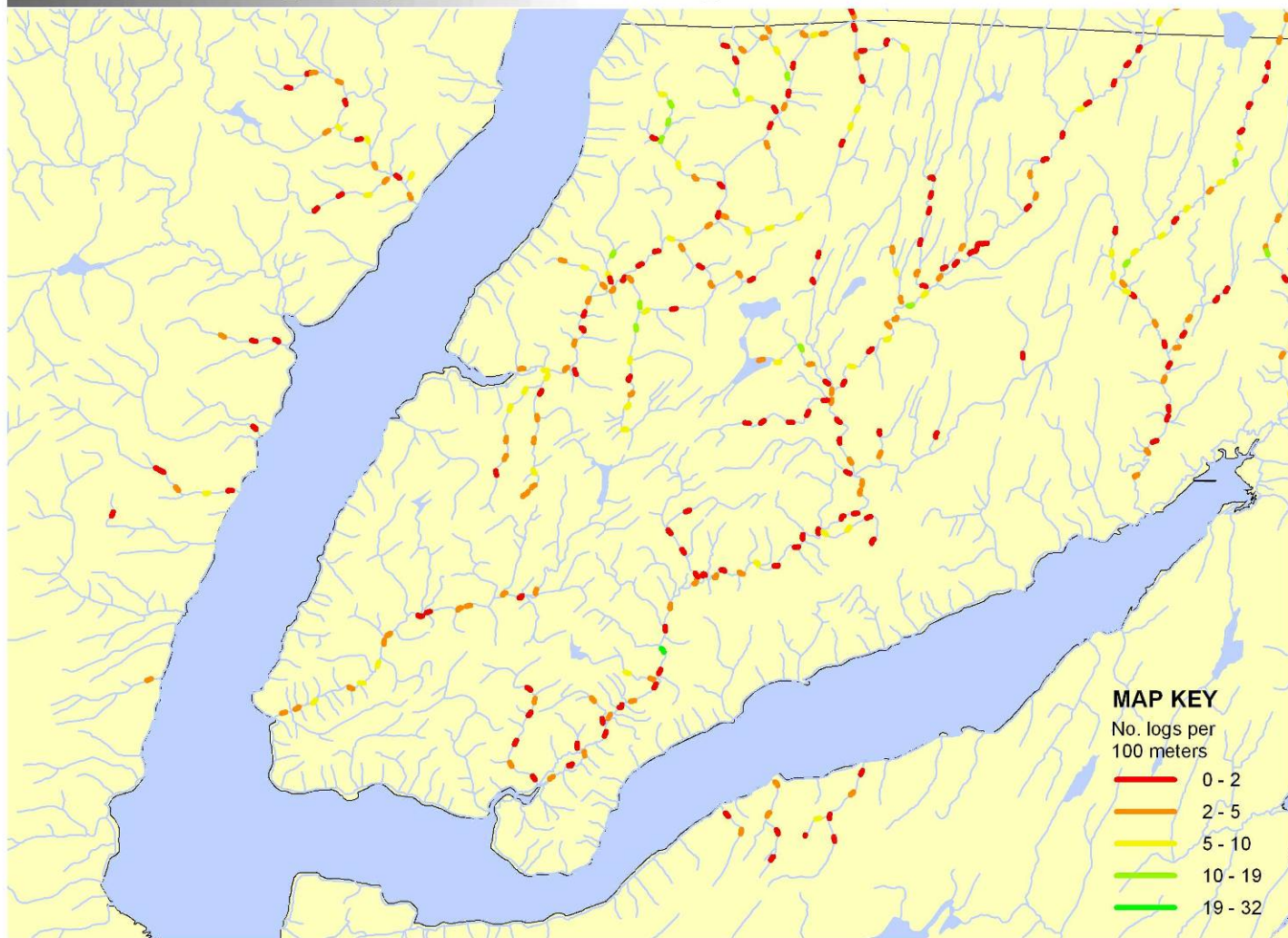
: Riffle Area by Segment



Source: PNPT habitat unit survey. Data are from 1992 - 1994 surveys.

Output Map Example

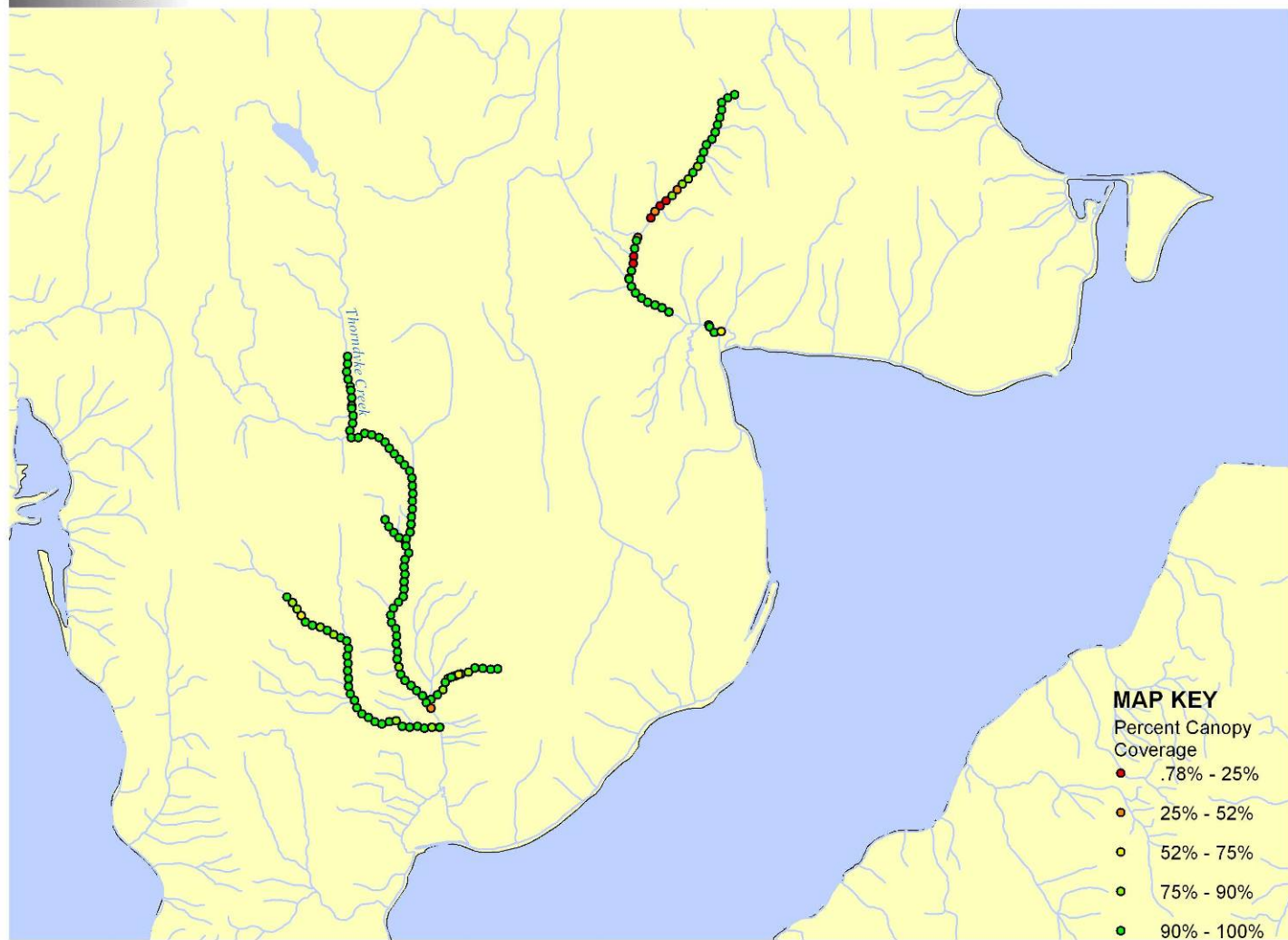
: Number of Large Logs Per 100 Meter Segment



Source: 1999 HCSEG format 1 large woody debris survey. Data are from 1998 - 2003 surveys.

Output Map Example

: Canopy Cover



Source: NWIFC habitat unit survey, reference points. Data are from 1989 - 1991 surveys.

Output Map Example