Evaluating progress and restoration planning in the Yakima Basin: a re-examine of the EDT Framework and Model

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We use models to ....

- Improve our understanding and provide insights into complex systems
  - Habitat and species survival
  - Progress towards goals
- Identify monitoring and research priorities
- Explore effects of alternative strategies
- Support decision-making

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Ecosystem Diagnosis &Treatment

- A watershed approach to restoration planning

- A framework for learning

- A repository of knowledge, information and operating assumptions

- A set of tools for comparing current, past, and future scenarios

- A locally managed expert system

Yakima Basin and EDT

- YKFP – Yakima Basin habitat and hatchery planning

- NWPPC – Yakima Subbasin Planning

- Bureau of Reclamation – Yakima River Basin Water Storage Feasibility Study

- Yakama Nation – Yakima summer Chinook reintroduction

- BOR/DOE –Integrated Water Resource Management Plan

Next Generation of EDT (EDT3)

- Transparency
  - Ability to share datasets, hypothesis, and results among interested entities
  - EDT computer code viewable and an open invitation to users to suggest improvements
  - Ability view the Species-Habitat relationships in the model

Next Generation of EDT (EDT3)

- Flexible
  - Ability refine or create new Species-Habitat relationships in the model
  - Ability to connect geometry sets across the species life history
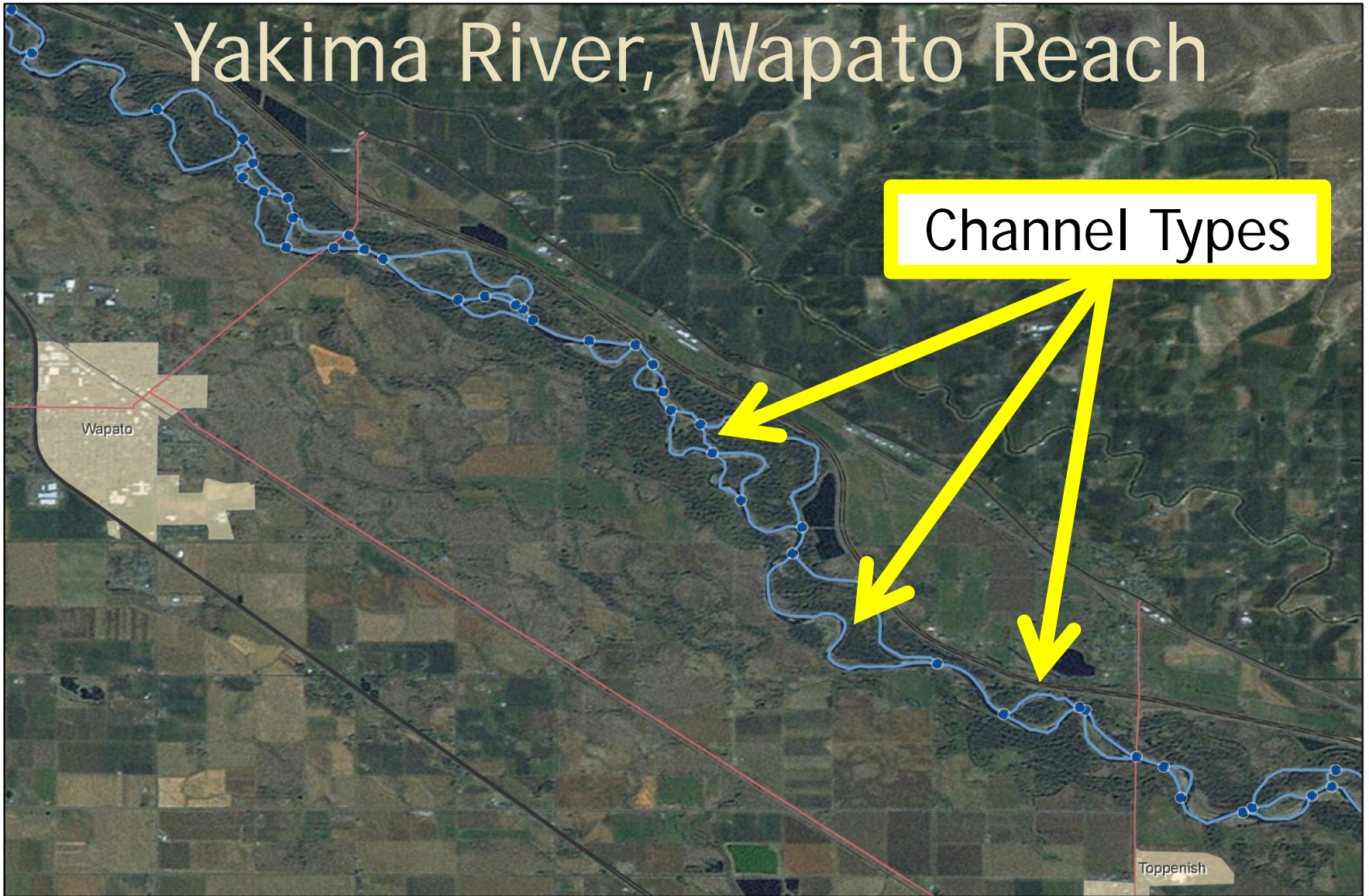
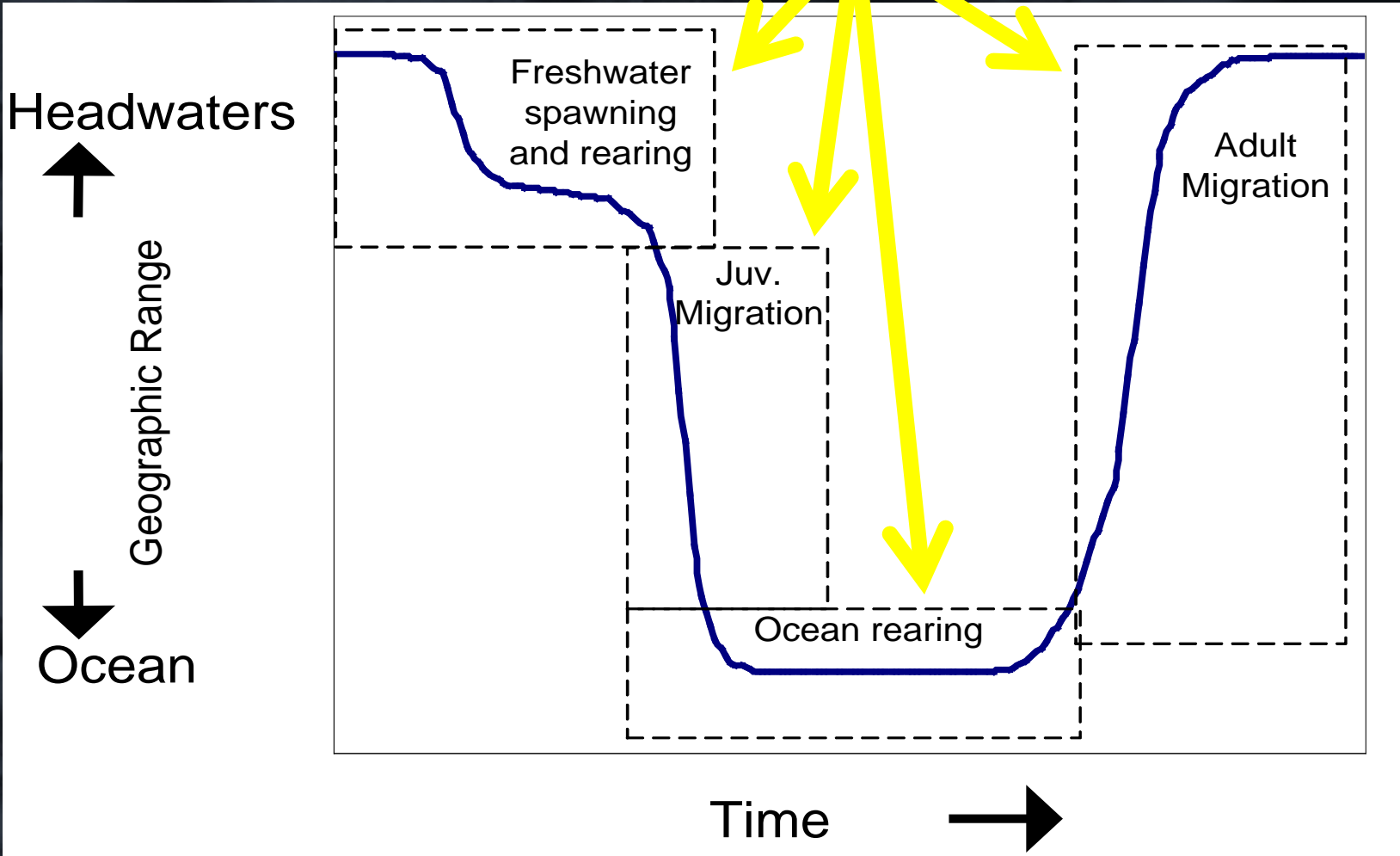# Next Generation of EDT (EDT3)

- **Modern Software**
  - Desktop Application, Web-services,
  - Integrated Software System
  - Windows 7 Compatible
  - GIS Integration

Yakima River, Wapato Reach

Channel Types

Geometry sets to describe different portions of life history

Headwaters

↑

Geographic Range

↓

Ocean

Freshwater spawning and rearing

Juv. Migration

Ocean rearing

Adult Migration

Time →

Ecosystem Diagnosis and Treatment

Filter

Project Bay Delta EDT

Public Private

- Global_Marine
- Global_Freshwater
- Global_Estuary
- Global_Terrestrial
- ▾ Geometry
  - Bay Delta Geometry
  - Chaining

Geometry

Attributes

Populations

Scenarios

Habitats

Reports

Bay Delta Geometry

Save Changes   Save as New   Clear

Show Map

Reaches   **Nodes**

ID	Reach Name	Description
1	Sacto. R Deep Water Sh Chan-0	Delta Smelt Geome
2	Liberty Cut-1	Delta Smelt Geome
3	Prospect Slough-2	Delta Smelt Geome
4	Shag Slough-3	Delta Smelt Geome
5	Cache Slough-4	Delta Smelt Geome
6	Barker Slough-5	Delta Smelt Geome
7	Lindsey Slough-6	Delta Smelt Geome
8	Cache Slough-7	Delta Smelt Geome
9	Cache Slough-8	Delta Smelt Geome
10	Cache Slough-9	Delta Smelt Geome
11	Cache Slough-10	Delta Smelt Geome
12	Miner Slough-11	Delta Smelt Geome
13	Steamboat Slough-12	Delta Smelt Geome
14	Sutter Slough-13	Delta Smelt Geome
15	Steamboat Slough-14	Delta Smelt Geome
16	Sutter Slough-15	Delta Smelt Geome
17	Sacramento River-16	Delta Smelt Geome
18	Sutter Slough-17	Delta Smelt Geome
19	Elk Slough-18	Delta Smelt Geome
20	Sacramento River-19	Delta Smelt Geome
21	Sacramento River-20	Delta Smelt Geome
22	Sacramento River-21	Delta Smelt Geome
23	Snodgrass Slough-22	Delta Smelt Geome
24	Snodgrass Slough-23	Delta Smelt Geome
25	Snodgrass Slough-24	Delta Smelt Geome

Reach Name
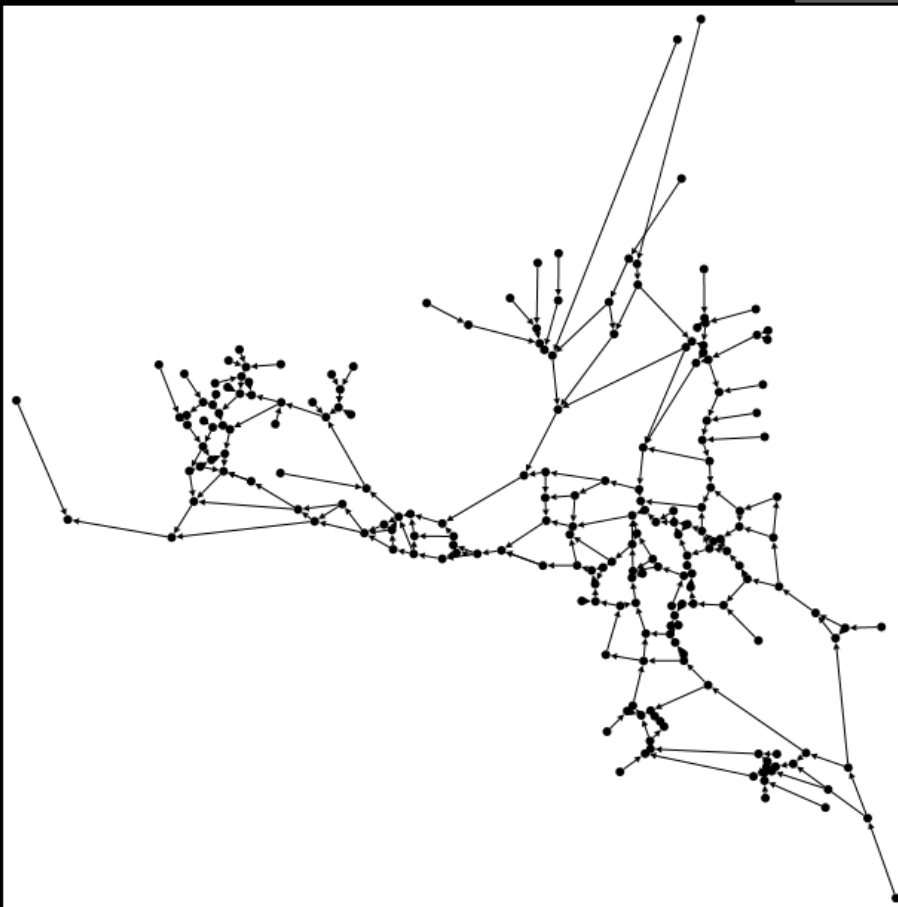
Description

Comment

Up Node

Down Node

Min. Length

ET

HUC

Delete Reach   Create Node

Create Reach   Revert Reaches

Refresh

None

Ecosystem Diagnosis and Treatment

Filter

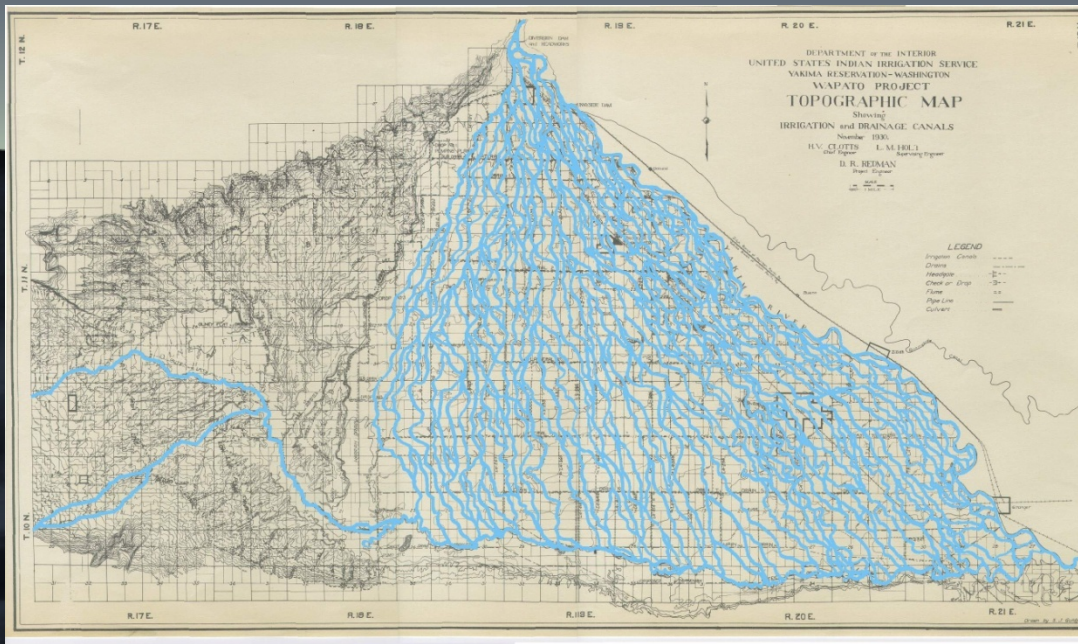Project: San Joaquin

Public | Private

- Performance
  - San Joaquin Template performance
  - Hits_Table
  - Life_History
  - Population_Attribute_Diagnostics
  - Diagnostic_Unit_Prioritization
  - Environmental_Attribute_Report
  - Life_Stage_Attribute_Diagnostics
  - Diagnostic_Unit_Attribute_Diagnostics
  - Reach_Attribute_Diagnostics

	Report Name	Description	Requirements	
Create	**Environmental Attribute Report**	Describes the change in environmental attributes in two or more environmental scenarios using Patient-Template analysis	Two or more lvl 2 or lvl 3 attribute sets	
Create	**Life History Report**	Describes the life history expressed by a focal species in an environment	Trajectory set	
Create	**Performance Report**	Describes the Lvl5 performance for a focal species exposed to an environment	Trajectory set and corresponding Lvl 2, 3, or 4 attribute set(s)	
Create	**Population Attribute Diagnostics**	Describes the Lvl3 sensitivity of one focal species to two environmental scenarios using Patient-Template analysis	Two lvl 2 or lvl 3 derived performance reports	
Create	**Life Stage Attribute Diagnostics**	Describes the Lvl3 sensitivity of each life stage of one focal species to two environmental scenarios using Patient-Template analysis	Two lvl 2 or lvl 3 derived performance reports	
Create	**Diagnostic Unit Attribute Diagnostics**	Describes the Lvl3 sensitivity of each life stage in each Diagnostic Unit of one focal species to two environmental scenarios using Patient-Template analysis	Two lvl 2 or lvl 3 derived performance reports	
Create	**Reach Attribute Diagnostics**	Describes the Lvl3 sensitivity of each life stage in each reach of one focal species to two environmental scenarios using Patient-Template analysis	Two lvl 2 or lvl 3 derived performance reports	
Create	**Diagnostic Unit Prioritization**	Describes the Lvl5 sensitivity of a focal species to two (restoration) or three (restoration-degradation) environmental scenarios at the Diagnostic Unit level using Patient-Template analysis	Two (restoration) or three (restoration-degradation) lvl 2, 3, or 4 performance reports	

- Geometry
- Attributes
- Populations
- Scenarios
- Habitats
- Reports

Server Status: ⬤   Login Status: ⬤

Yakima Basin and EDT

- Understanding the effect of habitat on species survival and abundance is key to achieving restoration goals

- Connect existing and new information to restoration planning

- Track progress

- Help develop and document working hypotheses

- Support decision making for future investments

Questions?