



Western Washington University  
**Western CEDAR**

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Salish Sea Ecosystem Conference

2014 Salish Sea Ecosystem Conference  
(Seattle, Wash.)

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May 1st, 1:30 PM - 3:00 PM

## **Watershed-based planning in the Salish Sea – advantages and disadvantages of using emerging decision support tools in local planning**

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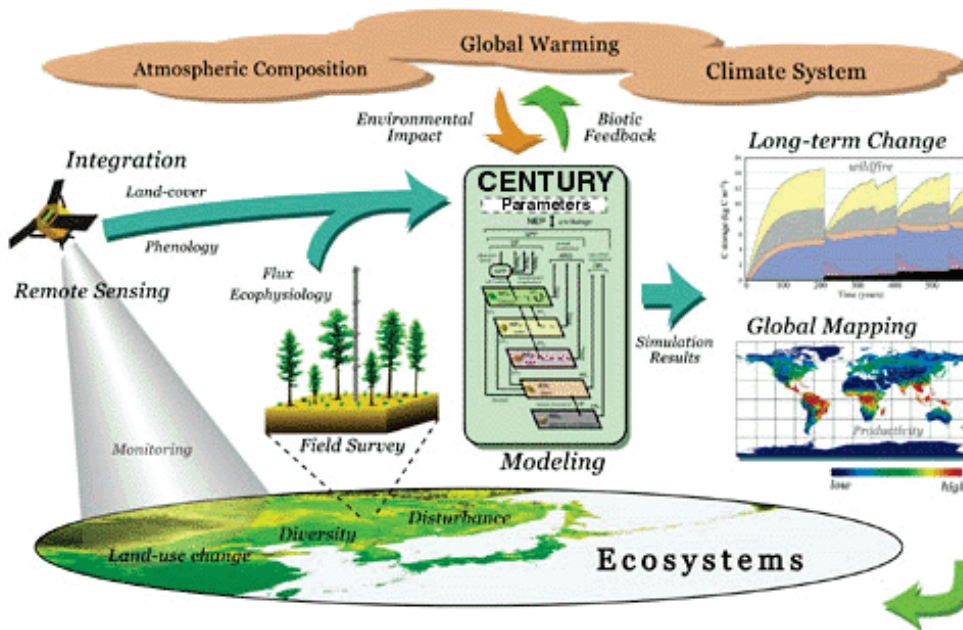
Peters, Douglas, "Watershed-based planning in the Salish Sea – advantages and disadvantages of using emerging decision support tools in local planning" (2014). *Salish Sea Ecosystem Conference*. 218.  
<https://cedar.wwu.edu/ssec/2014ssec/Day2/218>

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# Planning with Ecosystems

*Decision Support Tools  
Link Development Strategies to  
Ecosystem Context*





## Session Overview

### *Benefits and Risks of Planning with Relative Assessment Models*

Benefits can include improved water quality and reduced risks and costs.

Increasing access to information comes with risks of misinterpretation or confusion.

Large scale planning can require inter-jurisdictional cooperation.

Large geographic areas or populations require equally large efforts at communications.



# Understanding Watershed Processes helps Guide Future Development

- Identify and avoid development locations and patterns that are hard to correct
- Reduce cost of future infrastructure and streamline permitting
- Scientifically support comprehensive planning





# Potential Benefits and Risks of Watershed-scale Planning



## *Benefits*

- reduce risks of fire, flood and drought
- achieve a more sustainable ecosystem
- save on infrastructure construction & repair costs
- increase cooperation and cost sharing
- expedite Puget Sound recovery

## *Risks*

- need to change comprehensive plan policies
- need to change development regulations
- contradict private investment expectations
- result in inter-jurisdictional conflicts
- jeopardize political futures



# Planning Enables Infrastructure Investments

*We will build lots of new infrastructure in coming decades.*

- Sanitary and storm sewer systems & stormwater retrofits
- New and replacement housing & businesses
- Roads and bridges will need upgrades and replacements
- Regional hazards will destroy existing infrastructure
- People will still continue to move here

**We need to be smart about our infrastructure investments.**



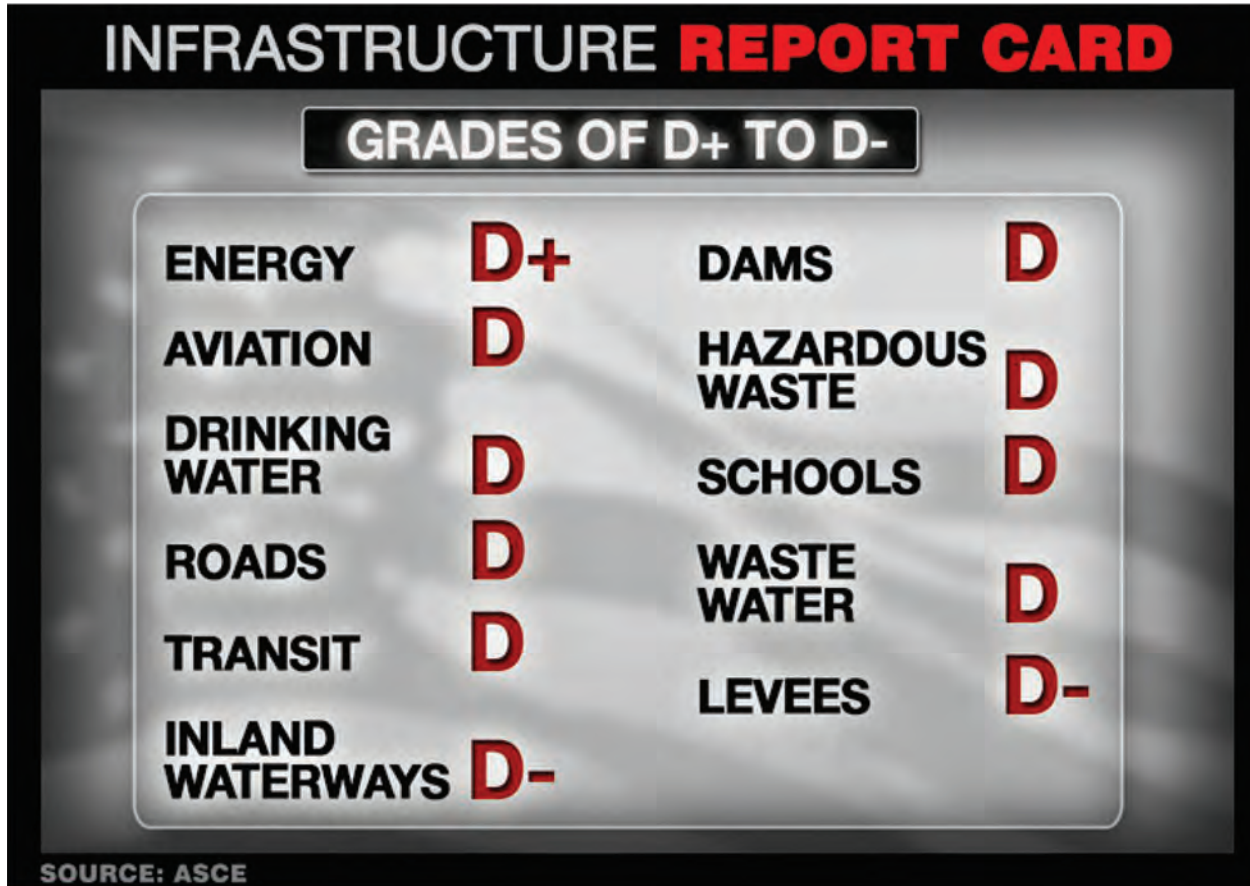
# Infrastructure is Critical & is All Linked Together



## 10 Critical Infrastructure Sectors



# Infrastructure Needs Attention!



Planning helps to set priorities among many choices





## *Watershed Characterization helps show the Linkages between these Ecosystem Processes*

- water flow assessment: delivery, storage, recharge, discharge
- water quality assessment: sediment, nitrogen, phosphorus, metals, pathogens
- freshwater habitats: hydro-geomorphic features, local AU habitats, accumulative downstream habitats
- terrestrial habitats: forests, wetlands, prairies, riparian

**Now how do we use it to plan our futures?**

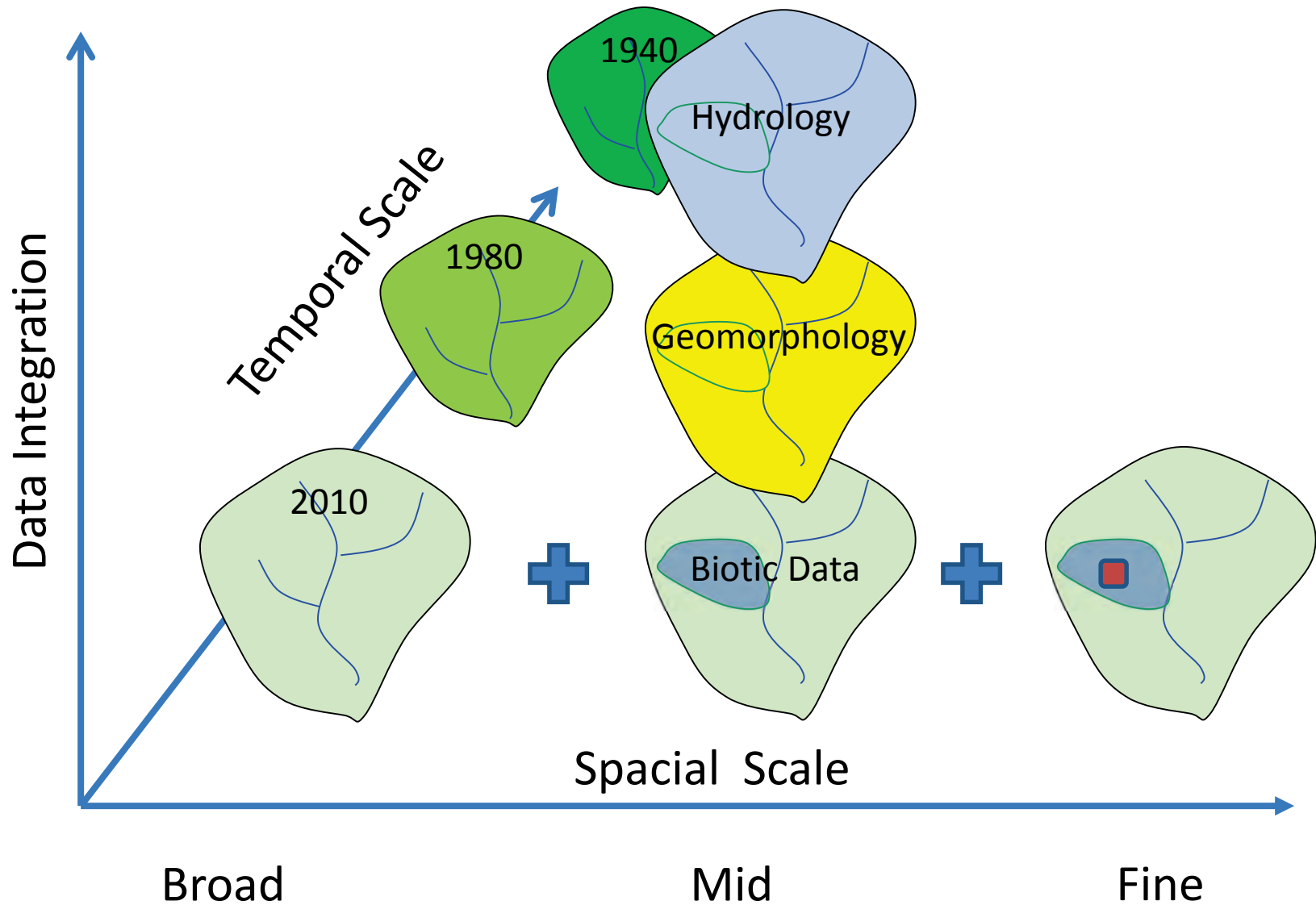


# Use information carefully, with full disclosure of modeling limitations

- Explore “what ifs”, but **always** explain your assumptions.
- Assessment models are tools, so make sure you know how to use them.



# Integrating Watershed Data Across Multiple Temporal & Spatial Scales



# Recognize that ecosystem information is based on both an 'original' landscape and human alterations

- Water flows downhill, and all land cover and infrastructure affects delivery, storage, recharge, & discharge processes.
- Water quality varies widely, with acute and chronic effects from land cover and infrastructure impacts.
- Freshwater habitats vary widely and directly with land use intensity. Some land use changes remove habitat value.
- Terrestrial habitats are often fragmented and amorphous; it may be hard to know what and where is vital to protect.

**Intact ecosystems are important to protect, and some are important to restore.**





# New Tools Can Reduce Uncertainty

Decision Support Tools serve as a framework for analyzing new information to reduce uncertainty.



**Modeling and assessments can help to set local priorities, and enable wise planning and infrastructure investments.**





**Department of Commerce**  
Innovation is in our nature.

## For more information

[Puget Sound Watershed  
Characterization](#)

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Watershed Characterization Technical Assistance Team