

## Ecosystem Services: The Gridlock Breaker



A session of the 2012 Washington State APA  
Conference  
Olympia, Washington  
October 12, 2012

Doug Osterman, Steve Hughes  
Tracy Stanton, Dave Batker  
Sarah Brace

## Four Types of Capital



Built Capital



Social Capital



Human Capital



Natural Capital

Loss of Natural Capital

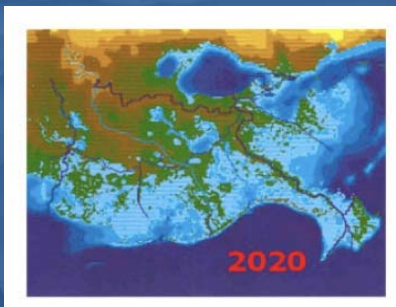


Figure 1. Track of Hurricane Katrina, August 23-29, 2005, showing spatial extent and storm intensity along its path (source: NOAA)



\$200 Billion

## 23 Ecosystem Services



© 2012 Earth Economics

### Goods

Water supply  
Food  
Energy  
Raw materials  
Genetic resources  
Medicinal resources  
Ornamental resources

### Regulation Services

Climate  
Gas  
Disturbance  
Water regulation  
Soil retention  
Soil formation  
Nutrient regulation  
Waste treatment  
Pollination  
Biological Control

EARTH  
ECONOMICS

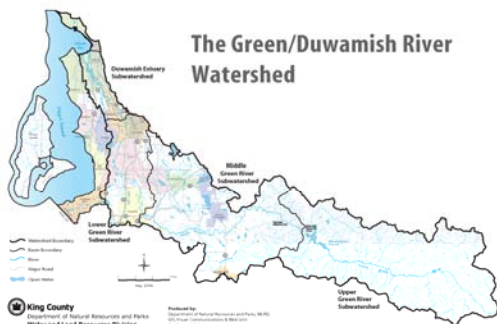
### Habitat Functions

Habitat  
Refugium  
Nursery

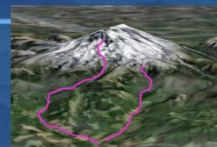
### Information Functions

Aesthetic  
Recreation  
Cultural & artistic  
Spiritual & historic  
Science & education

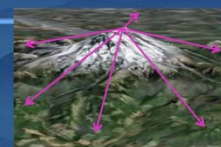
EARTH  
ECONOMICS



## Identifying carriers & ES flows



Flood Protection



Aesthetic viewsheds

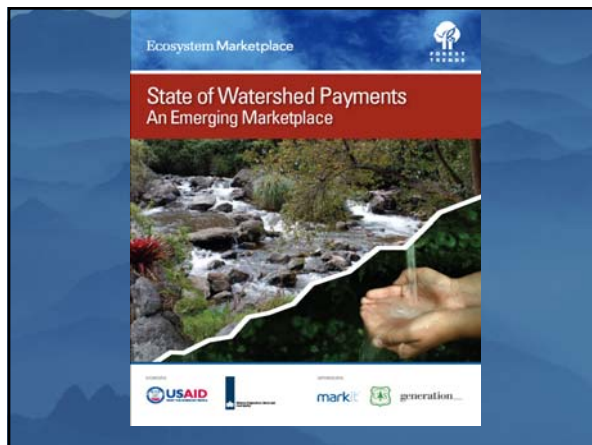
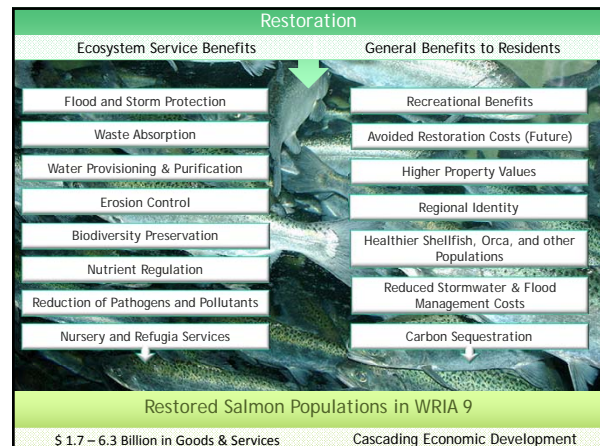


Carbon sequestration,  
some cultural values

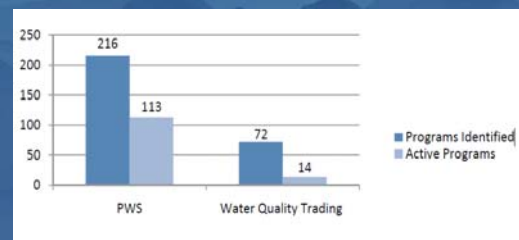


Recreation, aesthetic  
proximity, some cultural  
services

# Provisioning Assets Beneficiaries Impairments



## We tracked *payments for watershed services* and *water quality trading*



## Transaction Values in 2008

<u>PWS (113)</u>	<u>WQT (14)</u>
\$9.25 billion	\$10.8 million



## Forestry-Based PWS Examples

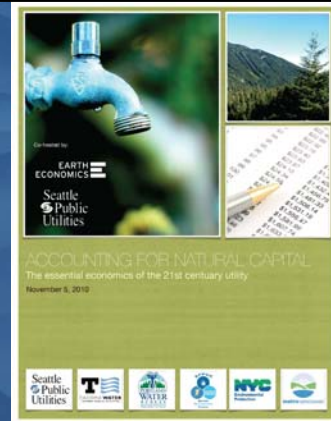
- WA DNR supported PWS pilot projects in Snohomish and Nisqually
- Source Water Protection in US and beyond (aka: Seattle, NY, Denver and Santa Fe)
- Milk producers in Brazil (avoided deforestation)





## Agriculture-Based WQT Examples

- WQ (temperature) in OR Tualatin River watershed
- WQ (nitrogen and phosphorus) in OH River Basin
- WQ (temperature) in OR Rogue River watershed



## Ingredients for Breaking Gridlock HOW?

- ACT NOW on urgent and timely issue (future growth)
- Leadership and vision at a watershed scale
- Engage stakeholders across silos
- Incentivize efficient and effective regulatory outcomes
- Watershed-wide funding strategy

## Opportunity for PES/PWS in WA

- Combination of regulatory and voluntary approaches
- Use existing infrastructure
- Include performance metrics into the program design
- Link to climate change adaptation

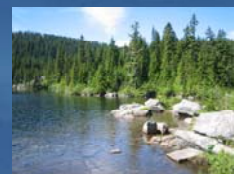
## Other Alternative Funding Approaches

- Watershed Investment District concept in WRIA 9
- Voluntary offsets:
  - Renewable energy certificates (REC Market)
  - Voluntary carbon offsets (VCM)
  - Watershed restoration certificates (BEF)
  - Storm water restoration certificates (new concept)

## Communications + Outreach

"Ecosystem" means something different to everyone.

How do we talk about Ecosystem Services?



## Ecosystem Services dilemma

Value of nature for  
itself?

or

Value of nature for  
human good?



## Virtual Loop

### NATURE



### HUMAN WELL-BEING



Reproduced from PSP 2012 Action Agenda

## Ecosystem Services

Business Community: save \$\$ in regulatory compliance

Conservationists: preserve ecological functions (clean water and air)

Resource managers: achieve regulatory outcomes with less \$\$

Resource Media

## Tools: InVest

A Planning tool

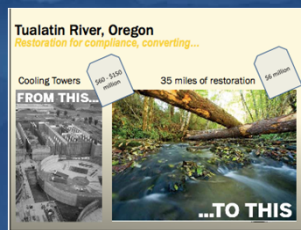
- How does a proposed forestry management plan affect timber yields, biodiversity, water quality, and recreation?
- Which parts of a watershed provide the greatest carbon sequestration, biodiversity, and tourism values?
- Where would reforestation achieve the greatest downstream water quality benefits?
- How would agricultural expansion affect a downstream city's drinking water supply?

The Natural Capital Project ([www.naturalcapitalproject.org](http://www.naturalcapitalproject.org))

## Tools: Case studies

Tualatin River, OR

- Avoided new hard structures
- Paid farmers
- Restored 35 mi



The Willamette Partnership

## Tools: Case studies

City of Portland

- Stormwater goals
- Ecosystem benefits



Environmental Services  
City of Portland

## Tools: Case studies

- Culvert removal
- Tree planting
- Rain gardens
- Eco roofs
- Land purchases
- Green streets
- Invasives removal
- Restoration of natural areas



## Tools: Case studies

- 2006 Hawaii resolution urging state reform  
"by thinking of the environment not as 'free good' but as a capital resource that will depreciate without appropriate care"



## The gridlock

### WRIA 9

- Competing land uses
- Lack of understanding of the technical and policy
- Conflicting and competing federal, state, and local policies, standards, and regulations

## Public Opinion

What do people want?

## Public Opinion

TNC\* study showed:

- 9 out of 10 voters recognize nature's benefits as extremely or very important.



\*The Nature Conservancy 2010

## Public Opinion

TNC study (continued)

- Voters support calculating \$ value of benefit.
- Voters *more* interested in non-\$ value of nature



## Public Opinion

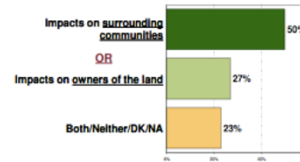
Reaction to alternative phrases to describe Ecosystem Services

Name	% Rating (Very Appealing)	Mean Score (Scale of 1-7)
Nature's Value	61%	5.5
Natures Benefits	53%	5.3
Environmental Goods	44%	4.9
Natural Infrastructure	34%	4.6
Ecosystem Services	32%	4.6
Nature's Capital	30%	4.2
Earth's Capital	29%	4.2

FM3 & Associates 2010

## Public Opinion

FIGURE 4:  
Choice of Primary Considerations in Land Use Decisions  
(Split Sample)



FM3 & Associates 2010

## Public Opinion

Evaluating the trustworthiness of messengers on Ecosystem Services

Group	Total Trust	Trust a great deal	Trust Somewhat	Suspicious	Never heard of /DK
Farmers/Ranchers	84%	45%	39%	14%	1%
Scientists	76%	28%	48%	21%	3%
Your state dept natural resources	74%	28%	46%	23%	3%
Conservation organizations	71%	31%	40%	25%	5%
Private landowners	63%	19%	44%	34%	3%
Timber company	36%	7%	29%	58%	6%
Business Analyst	32%	6%	26%	63%	5%

FM3 & Associates 2010

## Public opinion

2011 Active Media survey - statement:

"Most pollution entering local rivers and streams and Puget Sound does not come from industry or from anyone dumping pollution in the water. It comes from the streets and parking lots and highways, from our towns and cities and is carried into our waterways by rain running off the ground into water"

## Public opinion

*"If they had this statement in the little tab renewal thing, - if they had put this paragraph here and said "would you like to add \$5 to help clean up the streets", I would have checked it and paid the \$5. Without it, I would say 'no' "*

2011 Active Media survey participant

## Outreach Strategy

Target audience

Language



## Outreach Strategy



## Outreach Strategy

Message = Values + Threat + Solution



## Outreach strategy

1. Report progress -utility bills, fliers
2. Engage trusted messengers
3. Use appropriate language
4. ID target audience
5. Message with solutions



## Outreach strategies

6. Invest in outreach - early and continuously
7. Build social infrastructure to help support green infrastructure
8. Refer to multiple benefits



## Willingness to Pay

" We're a green state. We support green. I think that we would be willing to put forth a little more money to push our state even further green than it is "

Survey participant from Puyallup  
- Action Media 2011

## Resources

- Resource Media - [www.resource-media.org](http://www.resource-media.org)
- The Nature Conservancy - [www.tnc.org](http://www.tnc.org)
- Fairbank, Maslin, Maulin, Metz and Associates - [www.m3research.com](http://www.m3research.com)
- City of Portland - [www.portlandonline.com/bes/](http://www.portlandonline.com/bes/)
- Willamette Partnership - ([www.willamettepartnership.org](http://www.willamettepartnership.org))
- Action Media - [www.actionmedia.org](http://www.actionmedia.org)



## WRIA 9 Local Governments Working to Break Gridlock

- Creating Strong Relationships
  - 17 local governments “pay to play” in King County - pay annually, leveraging local, state, and federal dollars
- Investing in Priority Actions
  - Leveraging funding to implement capital projects and support programs, public outreach and education, and stewardship....and some planning
- Coordinating plans, policies, and regulations across jurisdictional boundaries



## WRIA 9 Local Governments Working to Break Gridlock

- 1994 King County Comprehensive Growth Management Plan *AND* regional fish, floods, & water quality strategy approved
- 1999 Chinook salmon listed as threatened
- 2001 Watershed governance structures in King County
- 2005 WRIA 9 Salmon Habitat Plan: *Making Our Watershed Fit for a King*
- 2006 All 17 local governments approve the Habitat Plan and Commit to 10-year implementation



## WRIA 9 Local Governments Working to Break Gridlock

### Fundamental Principle:

- Major Capital Projects that *Protect and Restore Ecosystem Processes*

### Together with:

- Smaller capital projects, education and outreach, regulations, and plans that *protect or enhance strategically identified habitat function* in degraded areas

## WRIA 9 Local Governments Work to Avoid Gridlock

Ecosystem Services valuation helpful as a complimentary step in planning for fish recovery: Prioritize, Design, and Sequence restoration actions to be effective at a watershed scale

### A Lesson Learned to Avoid future gridlock

- Create dedicated sustainable funding & watershed governance structure

## WRIA 9 Plan-Build-Restore-Educate



## WRIA 9 Local Governments Working to Break Gridlock

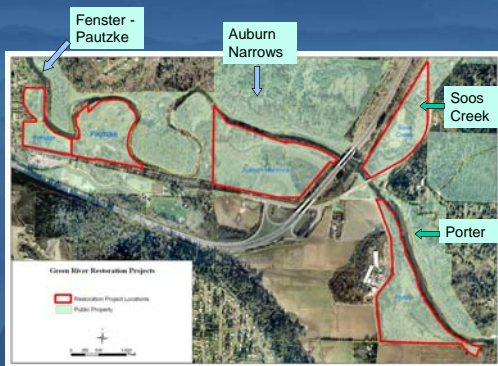
### Forward Looking Planning Strategies to Address Cross-Jurisdictional Issues

- Incentivize sustainable development
- Integrate planning, public works and parks
- Retrofit stormwater facilities
- Manage urban runoff at watershed scale
- Protect and restore bluff-backed beaches
- Increase public awareness and support
- Remove barriers to effective land use planning
- Reconnect the river to its floodplain

## Reconnect the river to its floodplain What Does Restoration Cost Here??



## What Does Restoration Cost Here??



## Strengths of Watershed Investment Districts

- **Governance and Decision Making** - Aligning politics to enable strategic planning and implementation of priority actions, break down silos, and facilitate creation of Ecosystem Service Markets
- **Funding Strategy** - Paying to plan across jurisdictional boundaries, fix problems on a watershed scale, & leverage state/federal funds
- **Education and Outreach** - Nurturing stewardship, education & public involvement early and throughout the planning process
- **Ecologic and Economic Recovery** - Making decisions based on science and Ecosystem Services valuation to clearly prioritize and sequence strategies across cross-jurisdictional boundaries

*Watershed Planning = Healthy Ecosystems = Healthy Economy*



*Questions*