



Agenda

- ◆ Follow-up From the Columbia River GMAP
- ◆ Water Management Performance Measures
- ◆ Improving Streamflows: A Discussion Focusing on Key Management Objectives of Ecology's Water Initiative

Presented By:

Ken Slattery

Joe Stohr

Brian Walsh

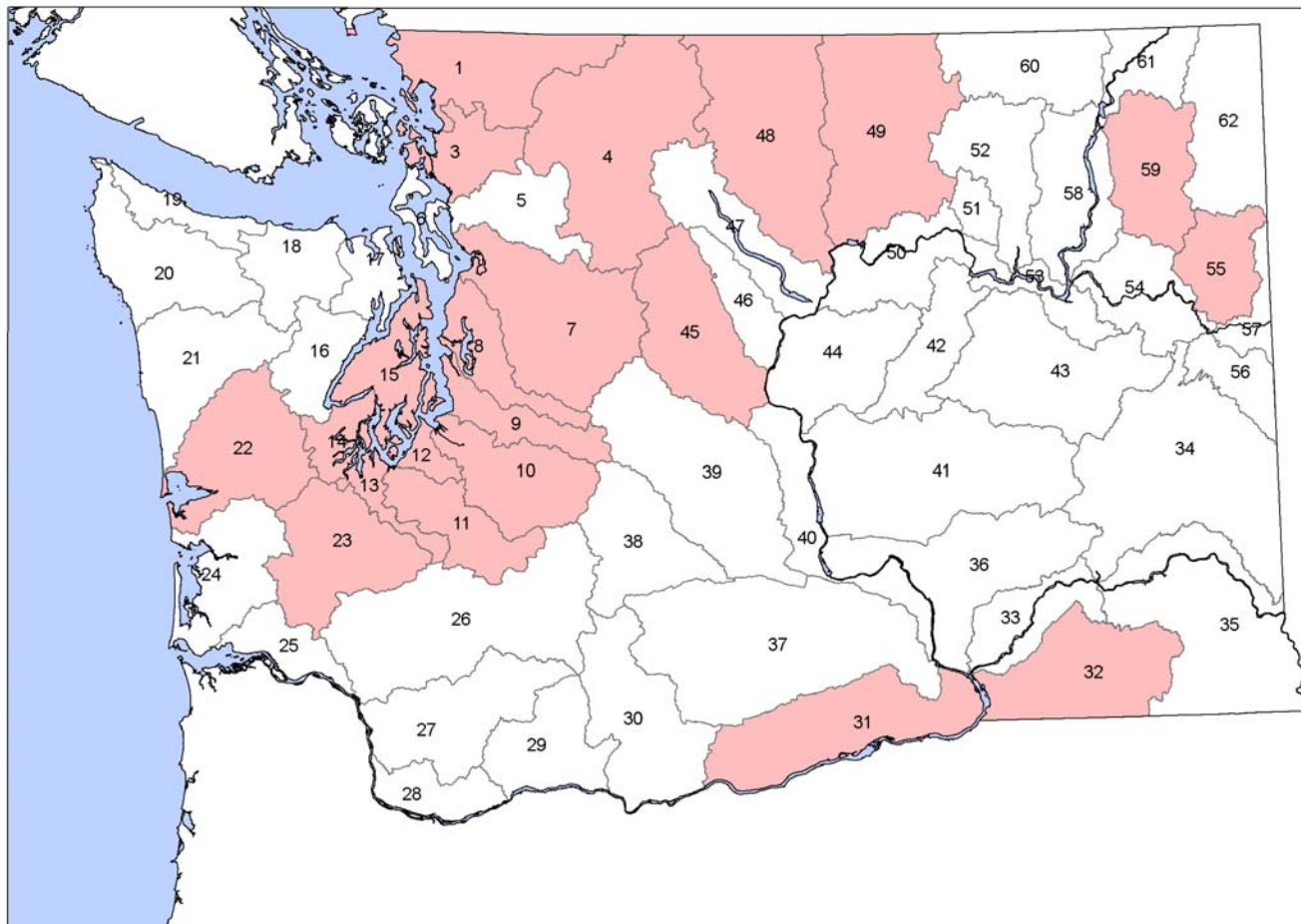
Gordon White




The Senior Management Team asked for clear messages on:	Status
Management of Hanford Reach	The Draft Columbia River Environmental Impact Statement addresses Hanford Reach
Use of conservation & storage vs. expectations (high expectation of immediate new water from conservation – consumption compared with efficiency)	We are having active communication with stakeholders on conservation and storage expectations
Verifying water rights & next steps (comparing what's on paper and actual use)	<ul style="list-style-type: none">• We are engaging locals in metering• We are mapping water rights



Strategy: Adopt New Flow Rules Map of instream flow rules pre - 2001



**Instream Flow
Schedule**

 Pre-2001

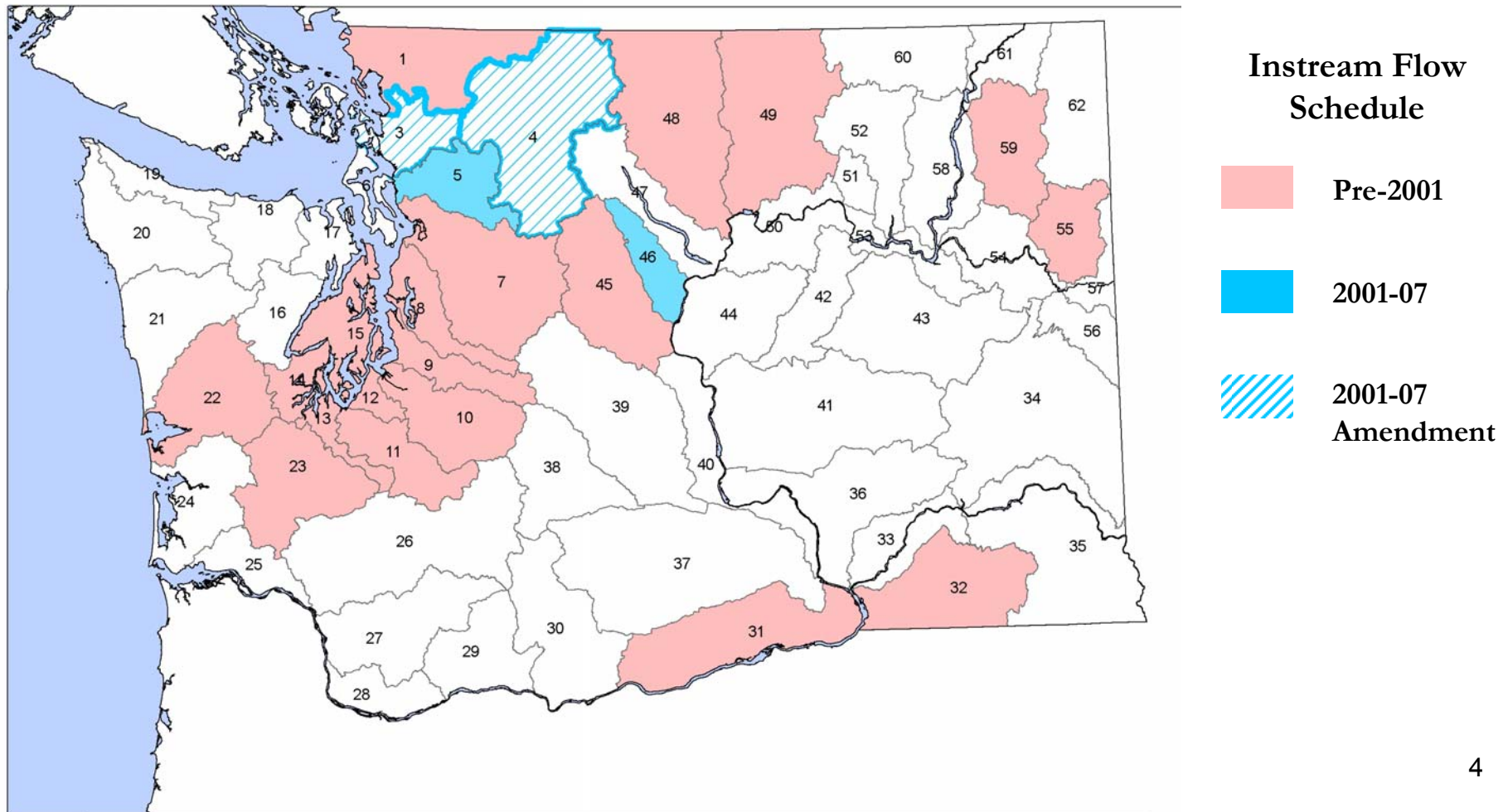


Water Management GMAP Performance Measures

April 2007

Strategy: Adopt New Flow Rules

Map of instream flow rules 2001 through June 30, 2007





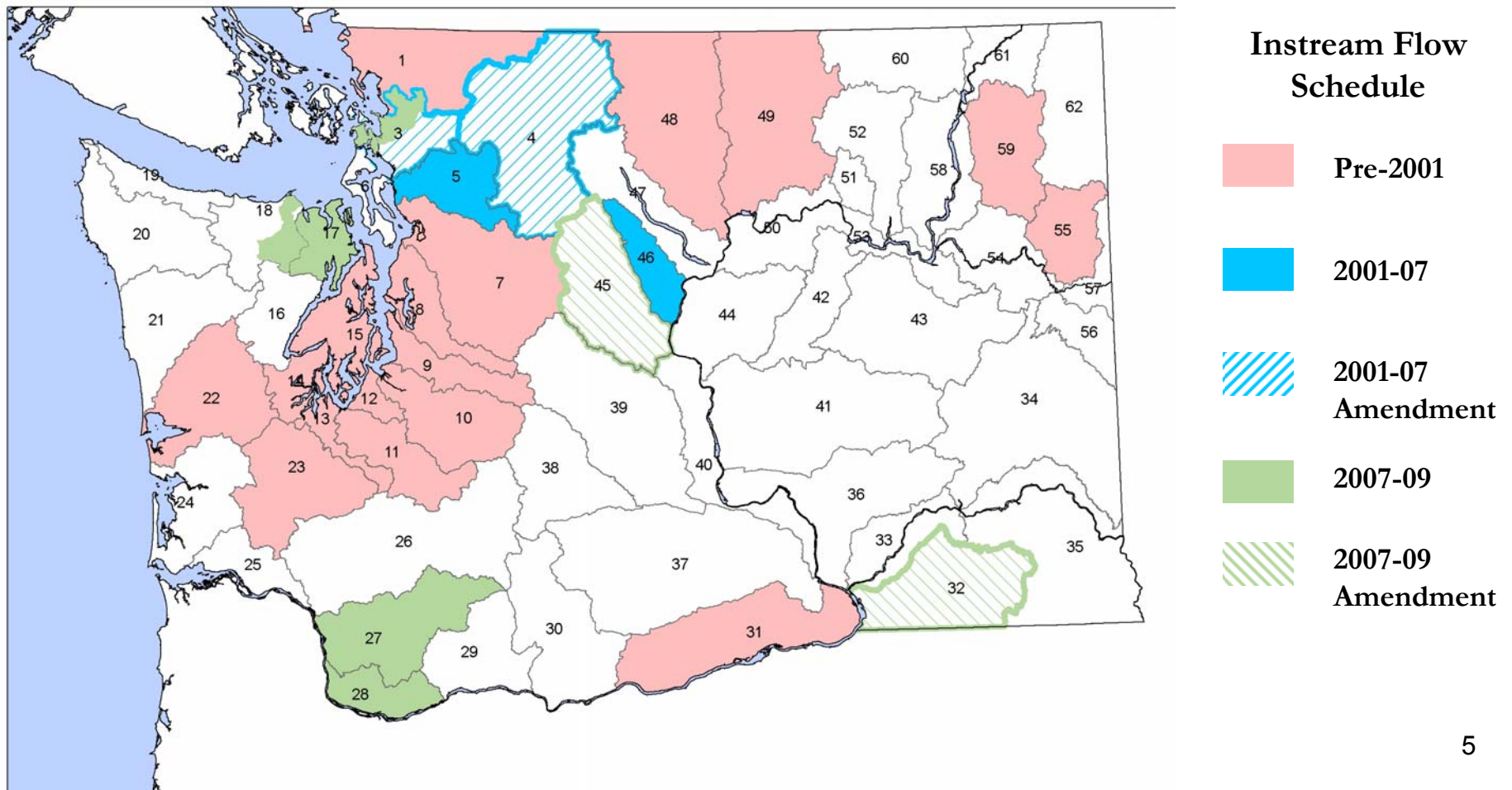
Water Management GMAP Performance Measures

April 2007

Strategy: Adopt New Flow Rules

Measure: Percent of Water Resources Inventory Areas (WRIAs) covered by instream flow rules

31% (24 WRIAs out of 62 statewide have rules (Instream flows or closures)





Resources committed:

(Ecology Water Resources, Shorelands and Environmental Assistance, and Department of Fish and Wildlife) FY 05-07

- 16 FTEs (\$3.2M) - Watershed leads and support
- 15.4 FTEs (\$3.3M) - Water Resources rule writers, scientists & support
- 5 FTEs – Department of Fish & Wildlife

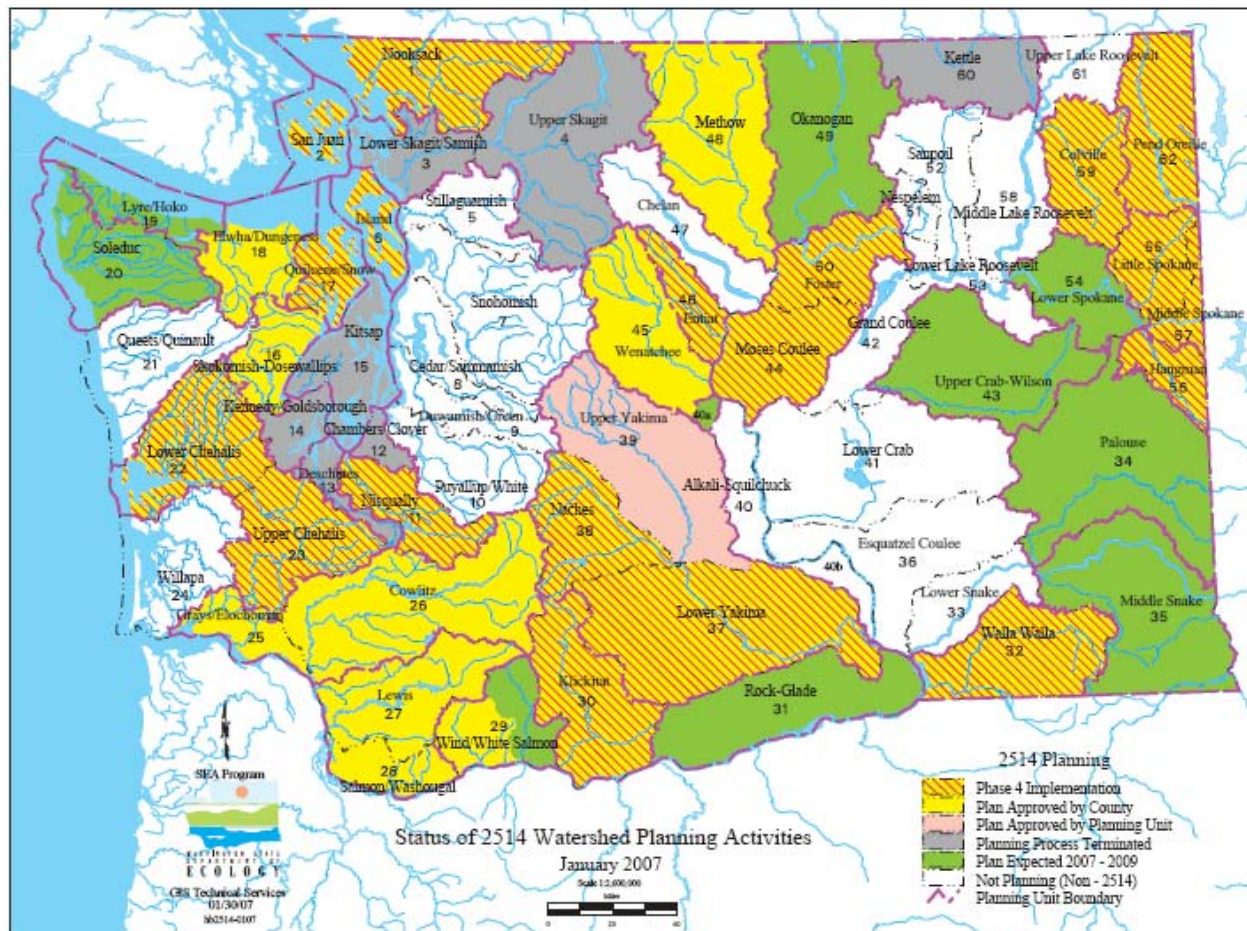


Water Management GMAP Performance Measures

April 2007

Strategy: Invest in Watershed Plan Implementation

Measure: Percent of Watersheds in Each Phase of Watershed Planning



Phase	May 06	Apr 07
Implementation (Phase 4)	16%	31%
Plans Approved by County	16%	13%
Plans Approved by Planning Unit	11%	2%
Planning Process Terminated	11%	11%
Plan Expected in 07-9 Biennium	16%	16%
Not Planning	29%	27%



Strategy: Enhance & Restore Flows Through Compliance

Measure: 16 major compliance actions by July 09

Current Status – 17 (and it's still early)

- ◆ Each Region has taken at least 2 actions.

Compliance actions have addressed:

- ◆ Illegal water use (no water right, using too much, acreage, purpose of use)
- ◆ Impairment of others (Complaint driven)
- ◆ Notifying those with interruptibles (e.g. Chehalis watershed)
- ◆ Well driller's license suspension (A rare occurrence)
- ◆ Failure to install measuring devices

Measure: 90% of water used will be metered in 16 basins by July, 2009

Current Status – 756 meters installed as of the end of January, 2007

- ◆ Expanding in Yakima, Lummi & Columbia
- ◆ Metering provisioning new rights, changes, etc.
- ◆ 05-07 80% goal met except for Walla Walla and Quilcene; 07-09 Action Plan goal of 90%
- ◆ **Priorities**
 - **56%** of compliance effort spent on metering versus other compliance efforts.
 - Over 50% of compliance to be spent on metering per court order



Strategy: Clarify the Water Picture

Measure: Establish 3 Tribal water right settlements by 7/09

Status: Lummi complete (pending Federal Judge Zilly decision)

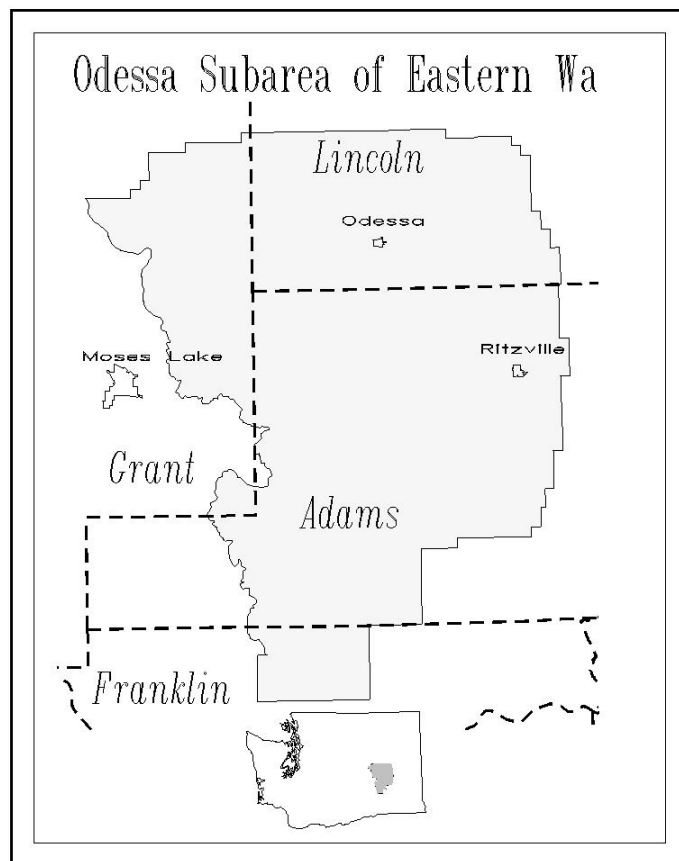
- ◆ Contract w/Conflict Resolution Center and Northwest Indian Fisheries Commission on process identification
- ◆ Quinalts and Tulalips interested
- ◆ Federal legislation under review

A point to ponder

- ◆ Pursue 09 legislation/budget to support Indian water settlements?

Strategy: Increase Water Availability in Eastern Washington

Measure: 7,200 acre feet of conserved water allocated to Odessa Sub-area permits by 12/31/07



Status:

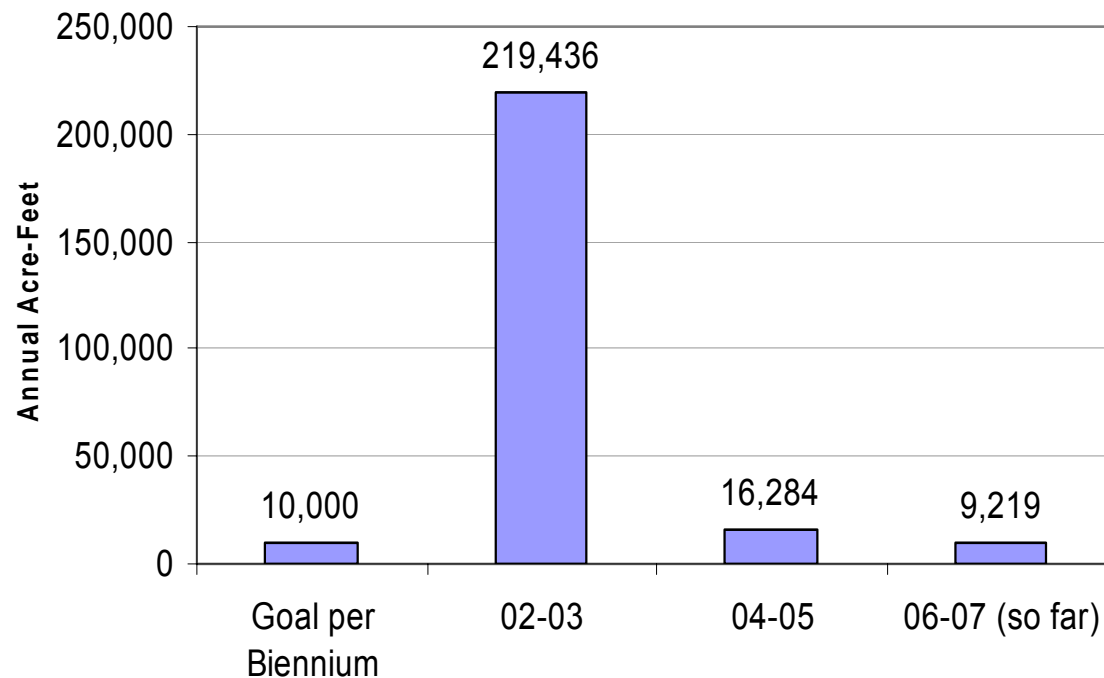
- ◆ On schedule
- ◆ Permits issued for water use to begin in the 2007 season



Strategy: Increase the Volume of Water Saved Statewide

Measure: Biennial total of 10,000 acre-feet

Annual Acre-Feet of Water Saved



Analysis:

- In 02-03; ~34K Columbia R. drought leases and ~181K Naches River with Bureau of Reclamation, among others

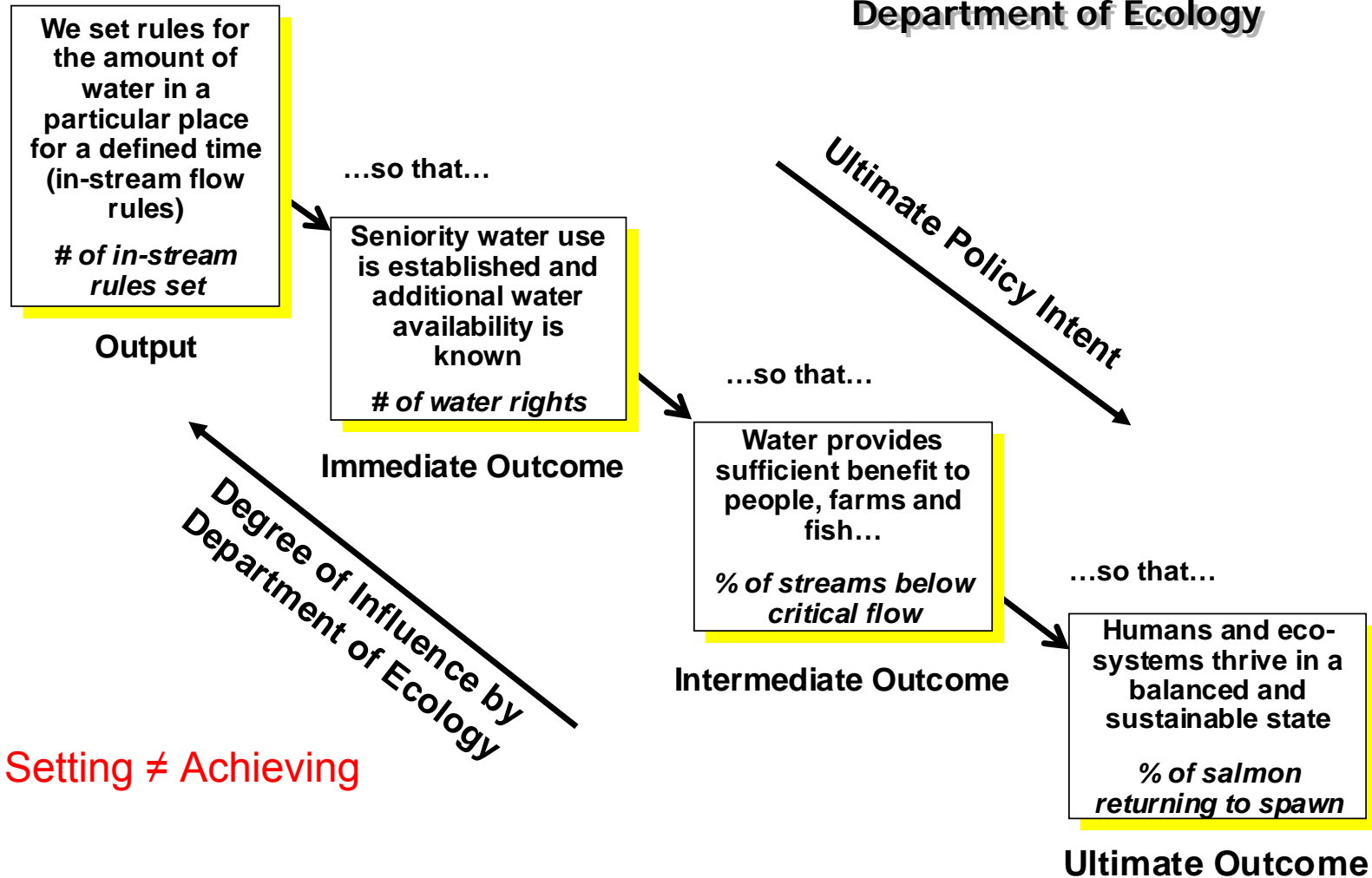
Action factors:

- Program needs willing participants
- Duration & location of water is important



Instream Flow Setting Logic Model

Department of Ecology



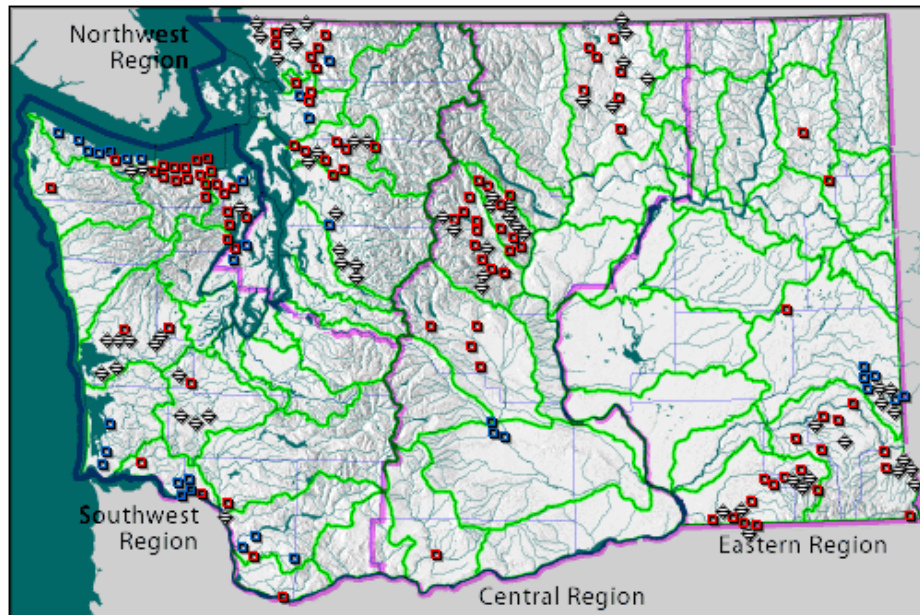


Water Management GMAP Instream Flow Management

April 2007

Stream Flow Data

- We monitor stream flow throughout the state in all 62 Water Resource Inventory Areas
- We expect flows this low only once every 5 years.

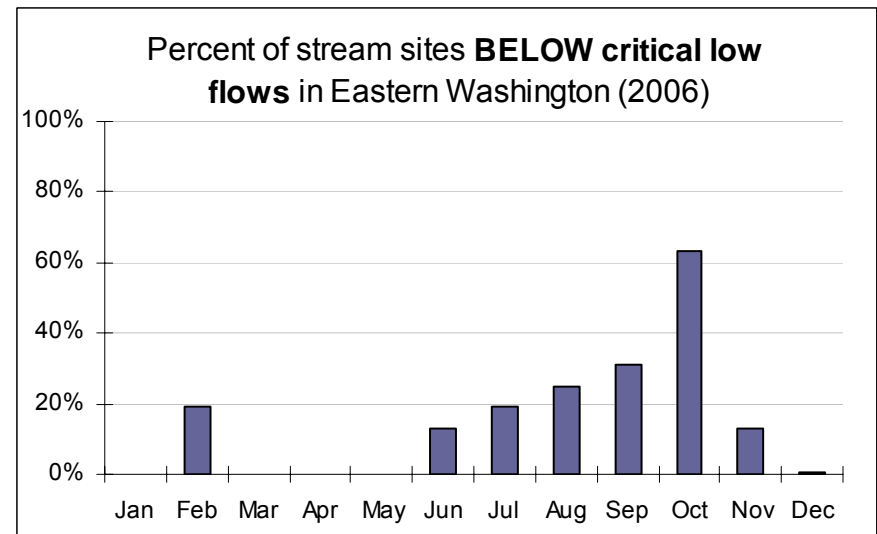
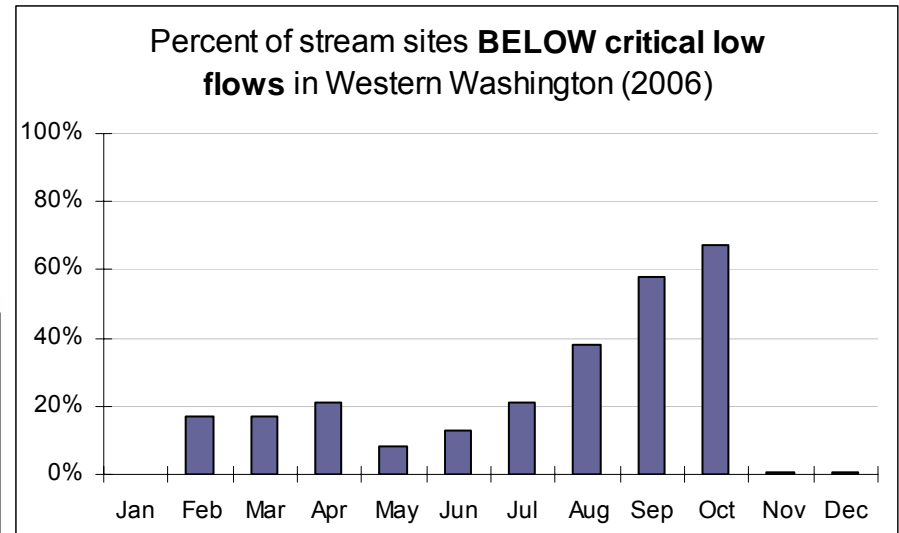


Washington State

196 stations (active)

KEY

■ Telemetry ¹ 99 stations	■ Stand alone ² 33 stations	◆ Manual stage height ³ 64 stations
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Managing Streamflow Improvements

Drivers

- ◆ Puget Sound
- ◆ Watershed Planning
- ◆ Salmon Enhancement
- ◆ Columbia River Water Management Program
- ◆ Climate change



Constraints

- ◆ Population growth and related water demand
- ◆ High costs associated with enhancing flows
- ◆ Lack of market for exchanges of water
- ◆ Climate change and reduced summer flows
- ◆ Impermeable surfaces/changed hydrology
- ◆ Need to integrate regulatory structures (WQ/salmon protection/WR)

Tools for Improved Management of Streamflows:

- ◆ Administrative/regulatory actions
- ◆ Water monitoring and measurement
- ◆ Storage
- ◆ Conservation/Re-use
- ◆ Water Trust Program
- ◆ Water Banking
- ◆ Compliance
- ◆ Education
- ◆ Coordination with other efforts



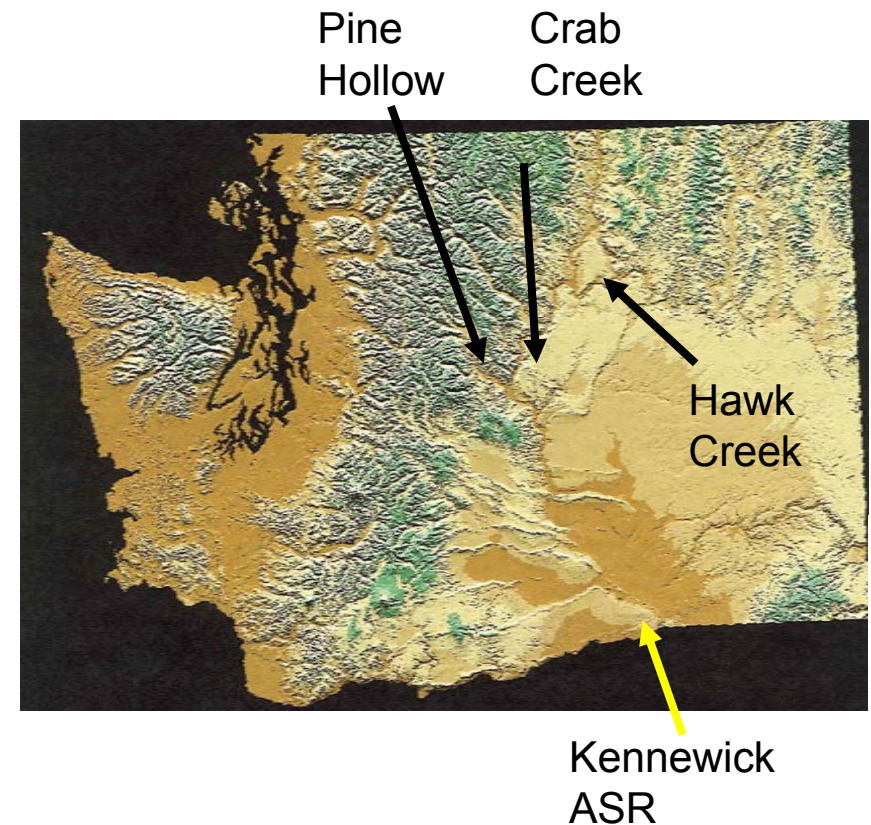
Administrative/Regulatory Actions with Costs

- Permit cost (at 12.5 decisions/ft).....\$8K
- Cost for a rule (estimate).....\$ Varies
- Cost for watershed plan (estimate)....\$1.2M
- Groundwater Studies (average).....\$3.2M



Stored Water

Facility	Volume in acre-feet	Construction Cost per acre-foot of stored water
Pine Hollow	24,000	\$2,145
Crab Creek (Columbia R off-channel storage)	2.65 million	\$720
Hawk Creek (Columbia R off-channel storage)	1.55 million	\$1,050
Kennewick Aquifer Storage & Recovery (ASR)	318 over 10 years	\$472
Zintel Canyon Dam	2,300	\$1,695
Wenatchee Heights #2 Reservoir	80	\$3,020
Roza Wasteway 6	65	\$13,280

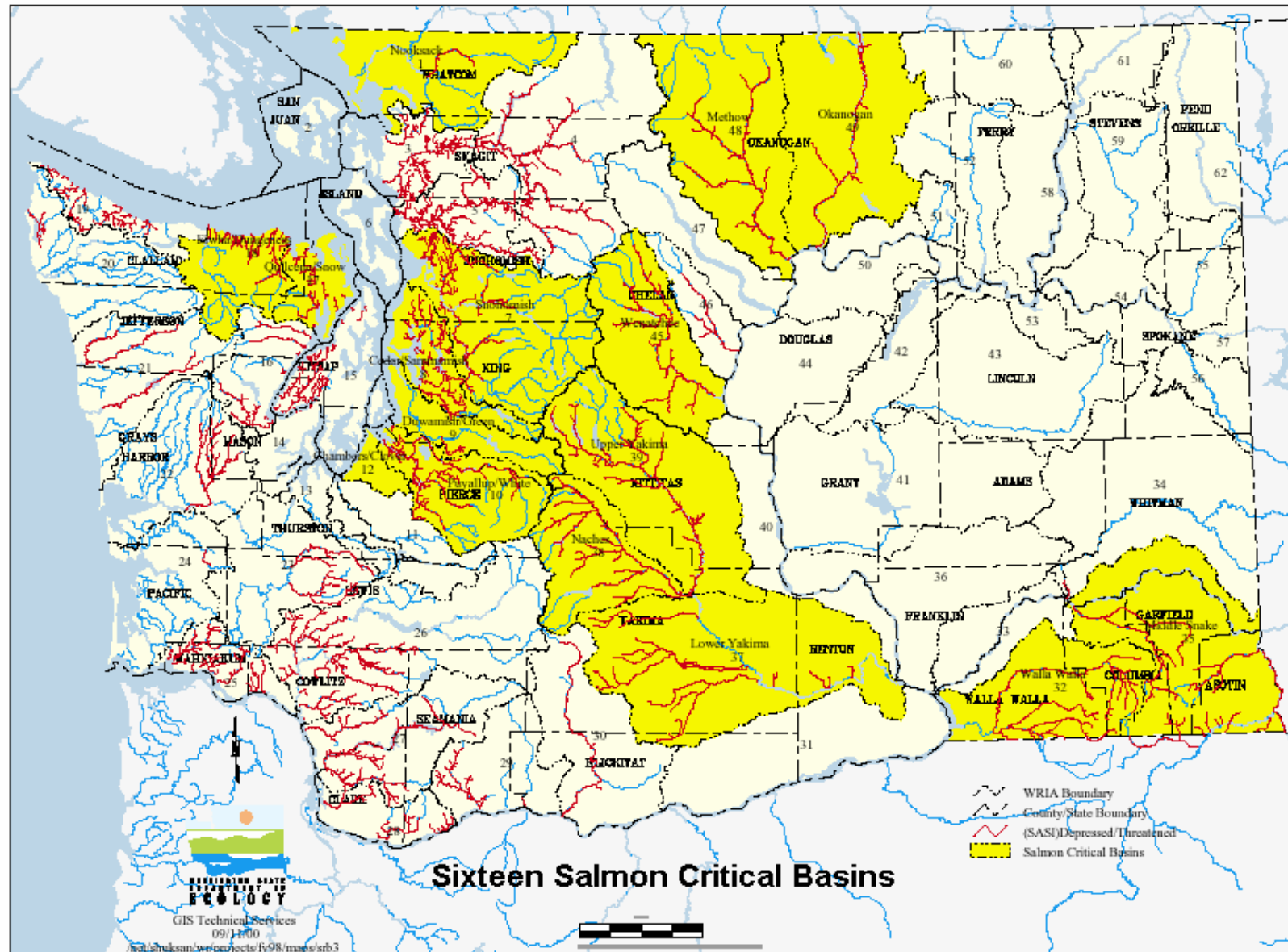


Data courtesy of David Cummings, Columbia River Water Management Program and 2001 Water Storage Task Force Report



Trust Program

- ◆ **A “TRUST” program is legal process to “park” water to put in streams. Some trust agreements have fixed terms and the water can revert to the donator.**
- ◆ **Trust water can be acquired via:**
 - ◆ leases,
 - ◆ purchases,
 - ◆ donations &
 - ◆ irrigation efficiency projects
- ◆ Trust program established in RCWs 90.38.040 (Yakima Basin, 1989 and 90.42.080 State Trust Program, 1991)
- ◆ Controversial and limited statewide application
- ◆ Difficult to acquire “permanent” water
- ◆ From 2002 thru 2006, we have entered into 218 trust agreements



Stream Flow Prioritization: Elwha/Dungeness WRIA 18



- US Forest Service
- US Wildlife Refuge
- US Parks/Recreation
- USFS Wilderness Area
- Bureau of Land Management
- US Dept. Defense/Energy
- Wa. Dept. of Fish & Wildlife
- Wa. Dept. of Natural Resources
- State School/Hospital/Prison
- Wa. Parks & Recreation
- City/County Watershed/Park
- Tribal Lands
- Incorporated City

- Low priority stream
- Medium priority stream
- High priority stream
- Soliman/Dahl Trout Spawning/Rearing area
- Other streams
- Canal/ditch/pipe
- USGS Stream Flow Gauge
- Ecology Stream Flow Gauge
- Water Right Purchase

- County
- Highway
- Local Paved Roads

WDNREcology - Major Public Lands 2002 1M
 WDFWecology - Hydrography, 2000 10K
 Ecology - WRIA, 2002 24K
 WDOT - Transportation, 2001 24K
 WDFW - Stream Flow Prioritization 2002
 WDFW - Spawning/Rearing Areas 2002 10K
 USGSecology - Stream Gauge 1:10K



WASHINGTON STATE
 DEPARTMENT OF
ECOLOGY
 GIS Technical Service
 12/13/02
 sj18/engla



Trust Program: Lease Agreements

- ◆ 81 lease agreements, ranging from 1 to 31 seasons in duration
- ◆ Only used in four WRIAs: Dungeness, Walla Walla, Upper Yakima & Methow

Dungeness WRIA 18	34 leases	1 – 8 miles seasonal improvements	Average of \$88/cfs-mi-day leased Range from \$664 - \$3 cfs-mi- day leased
Walla Walla WRIA 32	11 leases	Variable miles seasonal improvements	Only one lease with full cost information - \$0.57/cfs-mi-day leased
Upper Yakima WRIA 39	29 leases	Up to 71 miles seasonal improvements	Average of \$8.39/cfs-mi-day leased Range from \$34 - \$0.48 cfs- mi-day leased
Methow WRIA 48	7 leases		No cost data

WRIA = Water Resource Inventory Area
 cfs = cubic feet per second (a rate of flow)
 mi = mile



Trust Program: Irrigation Efficiencies

- ◆ Purpose: To provide incentives for irrigation conversions that place conserved water into salmon critical streams
- ◆ Partnership with Conservation Districts in four WRIAs to date: Dungeness (WRIA 18); Walla Walla (WRIA 32); Middle Snake (WRIA 35) and Upper Yakima (WRIA 39)
 - ◆ Dungeness: 11 projects at \$22/cfs-mi-day contracted (9 data pts.)
 - ◆ Walla Walla: 4 projects at \$ 5/cfs-mi-day contracted (1 data pt.)
 - ◆ Middle Snake: 22 projects at \$ 1.40/cfs-mi-day contracted (2 data pts.)
 - ◆ Upper Yakima: 22 projects at \$15/cfs-mi-day contracted (6 data pts.)

WRIA = Water Resource Inventory Area
cfs = cubic feet per second (a rate of flow)
mi = mile



Trust Program: Donations

<u>WRIA</u>	<u>cfs</u>	<u>Perm. or Season</u>	<u>No.</u>
Snohomish	1.0	5 permanent	5
Cedar/Sammamish	1.8	1 permanent	1
Duwamish/Green	0.08	1 permanent	1
Puyallup/White	0.40	1 seasonal	1
Kennedy/Goldsboro	9.66	1 permanent	1
Lower Chehalis	2.28	4 seasonal	4
Upper Chehalis	0.58	1p/1s/1 NA	3
Lewis	2.03	3 permanent	3
Salmon/Washougal	1.07	1p/1s	2
Wind/White Salmon	0.93	3 seasonal	3
Walla Walla	2.46	3p/2s	5
Upper Yakima	20.82 (1large single s)	2p/5s	7
Entiat	0.14	1 seasonal	1
Chelan	1.2	2 seasonal	2
Methow	4.58	14 seasonal	14
Okanogan	0.61	2 seasonal	2

WRIA = Water Resource Inventory Area
cfs = cubic feet per second



Trust Program: Purchases

<u>WRIA</u>	<u>CFS</u>	<u>Cost</u>	<u>\$/CFS</u>
Walla Walla	8.0	\$680,000	\$85,000
	6.14	Non-state funds	
	0.02	NA	
	0.72	NA	
	0.11	NA	
	1.44	NA	
	2.08	NA	
	1.77	NA	
Upper Yakima	28.8	\$816,000	\$28,333
	0.56	\$190,000	\$339,000
	1.82	Non-state funds	
	1.02	NA	
	0.62	NA	
	0.18	NA	

WRIA = Water Resource Inventory Area
 cfs = cubic feet per second



Water Banking

- ◆ Authorized only in Yakima River Basin?
- ◆ For use of trust rights to:
 - ◆ mitigate for water resource impacts;
 - ◆ future water supply needs;
 - ◆ any beneficial use, except return flows remain part of “Total Water Supply Available”
- ◆ New needs in additional basins developing – Dungeness, Walla Walla, Columbia, Wenatchee, Bertrand Creek, etc.



Compliance

- Web tools (demonstration by Chris Anderson)

http://www.ecy.wa.gov/programs/wr/instream-flows/irpp_wrp.html

- Stream regulation
 - Southwest Regional Office – new Chehalis
 - Central Regional Office – Methow, Okanogan, Wenatchee
 - Eastern Regional Office - Little Spokane; set-up for Colville
- Metering
 - 80% metered in 16 critical basins (except Walla Walla and Quilcene)
- Linking Department of Health's water system tracking system ("SENTRY" and the Ecology Water Rights Tracking System (WRTS))



Education and Outreach 05-07

- Education and outreach in each watershed planning unit
- 17 workshops & open houses
- 10 Public hearings
- 28 web actions (includes updates)
- 52 outreach products (Frequently Asked Questions, Focus sheets, news releases, news ads, e-mail notices)
- 7 legislative reports
- Annual report preparation



Quality Assurance Management

- ◆ Purpose: Assure effective use of funding to maximize environmental benefits and build credibility

- ◆ Watershed Advancement Group is considering:
 - ◆ 3rd party audits of data and project management
 - ◆ Internal focus groups to identify improvement areas



Challenges

- ◆ Resources vs. pace
- ◆ Links to GMA and land use decisions
- ◆ Improving Puget Sound flows while accommodating the equivalent of another 7? Tacoma's
- ◆ Implementing the outcome of ground water studies (e.g. exempt wells)
- ◆ Impact on flows with the use of inchoate municipal water
- ◆ Intergovernmental cooperation – (Tribes, federal agencies, state, local)
- ◆ Legal Precedence/Appeals of decisions and/or rules
- ◆ Demonstrated legislative support for new efforts – Will they stand with us when going gets tough



Next Steps

- ◆ Obtain significant new resources
- ◆ Build public and legislative support
- ◆ Manage public investment wisely
- ◆ Integrate climate change thinking into planning and management
- ◆ Keep coordination intact between watershed planning and instream flows (implementing phase 4 Watershed Plans)
- ◆ Coordination with other efforts (Water Quality, Endangered Species Act, Salmon Recovery, Central Puget Sound, etc.)
- ◆ Integration of conservation, efficiency, re-use, Low Impact Development, PEP, stormwater