

# INNOVATION IN FLOW RESTORATION AND WATER BANKING CASE STUDY: DUNGENESS WATER EXCHANGE

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AWRA- Washington  
State Conference

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# WASHINGTON WATER TRUST

Washington Water Trust works to improve and protect stream flows and water quality throughout Washington, benefiting agriculture, fisheries and wildlife by using innovative, market-based transactions and building cooperative partnerships.



# DUNGENESS INSTREAM FLOW RULE

## WAC 173-518

- Formally closes surface water allocations, with the exception of some high spring flows
- Sets instream flows on mainstem and small streams
- Requires new GW allocations to mitigate impacts to SW flows – including exempt wells
- Requires meters on all future uses
- Provides two choices for how to obtain mitigation:
  - submit your own plan to Ecology; **or**
  - use the Exchange



# DUNGENESS BASIN WATER EXCHANGE

## *THE FUTURE OF REGIONAL WATER PLANNING IN WA*

- Surface and groundwater rights are fully allocated
- SW flows insufficient for instream flow needs *and* economic growth
- New groundwater requests are threatening existing water users
- Late season low flows are limiting stream and fish health
- Economic growth potential is hampered by water scarcity



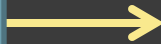
Photo: Brian Walsh

# HOW DOES A WATER BANK WORK?

## Water Bank as Broker

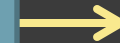
### Supply

*Sellers:*  
water right  
holders



### Typical Functions

- Certifies validity of water rights
- Sets rules/criteria for bank
- Sets prices
- Matches buyers and sellers
- Determines priorities for banking transactions



### Demand

*Buyers:*

- Mitigation for new water use
- Flow restoration

# DUNGENESS WATER EXCHANGE: SCOPE OF TRADING

## Potential Sellers

- Right holders
  - Irrigators
  - GW users
- Offsets
  - Reclaimed water
  - Recharge
  - Storage

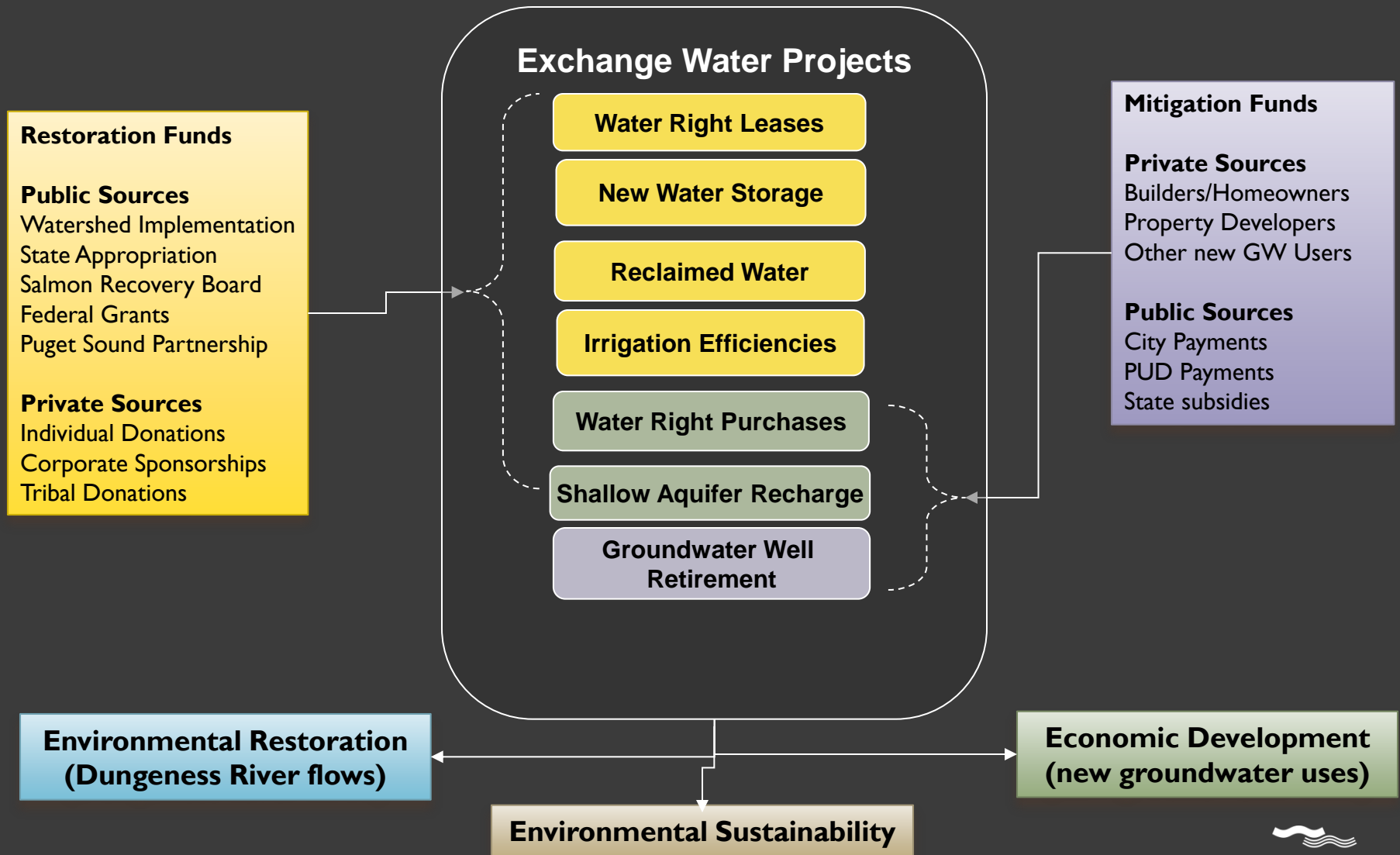
## Potential Buyers

- Restoration
- City
- PUD
- Small GW uses
- Exempt Wells



# DUNGENESS WATER EXCHANGE

## *AS ENVISIONED BY LOCAL LEADERS*



# EXCHANGE ADVISORY COUNCIL

WWT will be responsible for day-to-day management. A local advisory board will include:

- Dungeness Water Users Association
- Clallam County
- Jamestown S’Klallam Tribe
- Ecology
- Clallam PUD
- City of Sequim
- WA. Dept of Fish and Wildlife
- Clallam Conservation District



# DUNGENESS BASIN REVERSE AUCTION

- Partnership with the Dungeness Water Users Association
- Total funding available \$100K Ecology, \$100/acre maximum bid
- Must have irrigated last year and obtain approval from district or company



## Open Invite for Bids

How much are you  
willing to **ACCEPT**  
for your water?

- \$\_\_\_\_\_/ acre
- \_\_\_\_\_ acre feet

# DUNGENESS REVERSE AUCTION

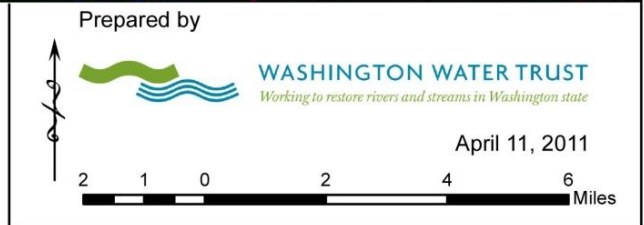
2009 Results totals:

- 10 bids received;  
9 accepted
- Acreage leased: 372.6
- Spent in leases: \$32,187
- Instream flow: 2.42 cfs



# DUNGENESS SUBBASINS

## Dungeness Watershed, Clallam County, WA



# MITIGATING IMPACTS IN SMALL STREAMS

- Small independent streams in the Dungeness present a challenge
- Finding water for water mitigation in small streams is very difficult due to lack of beneficially used irrigation water rights as a source of supply
- Consideration of other water management strategies to enhance flow is key to successful mitigation or restoration programs



# HOW DOES THE EXCHANGE GENERATE MITIGATION CREDITS?

- Acquire water rights from Dungeness Water Users Association: 175 acre feet
  - 30 AF instream late season
  - 145 AF aquifer recharge
- Implement aquifer recharge projects

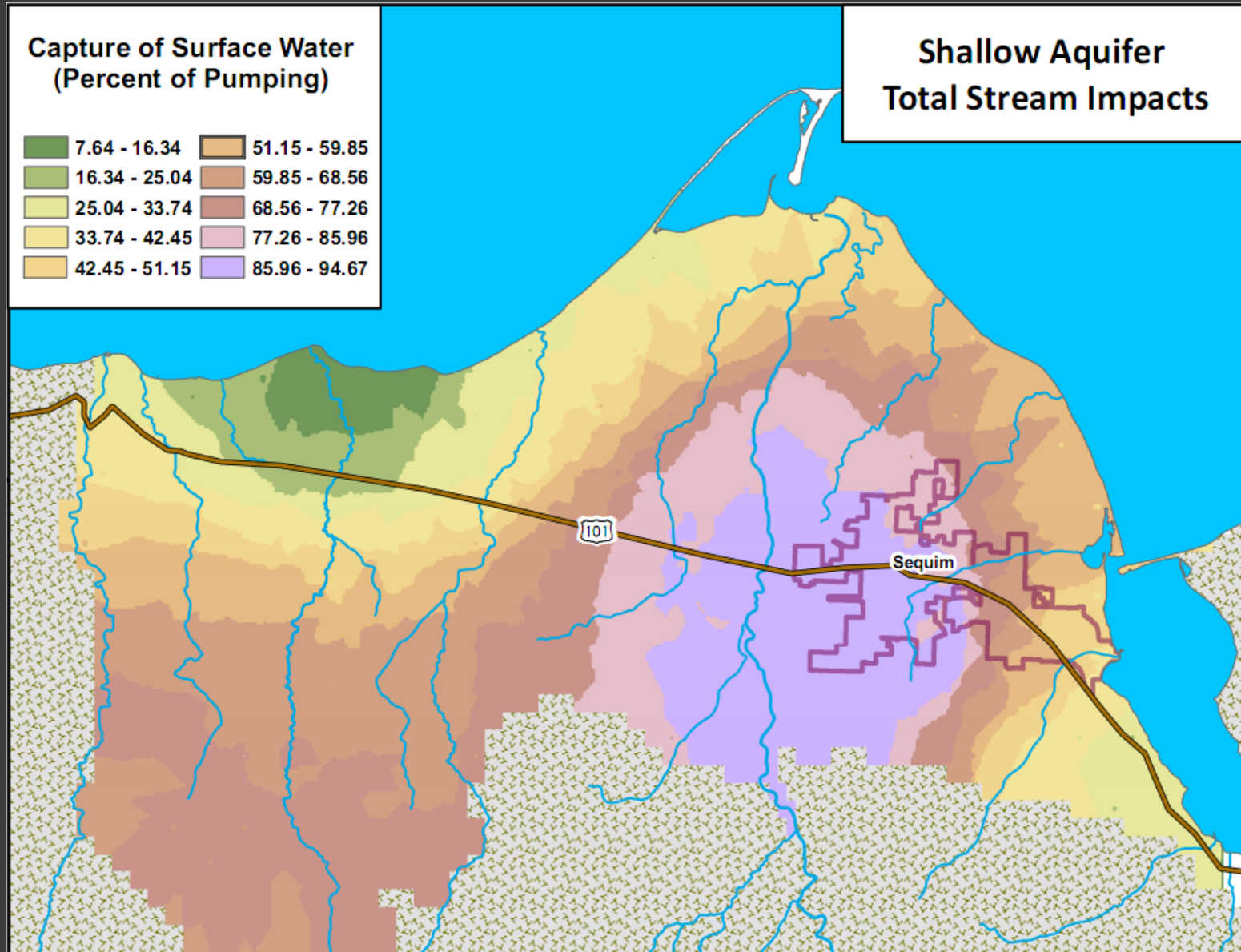


# AQUIFER RECHARGE PROJECTS

- To be implemented 2014
- Divert flow during spring runoff (2.2 cfs), convey via irrigation ditches
- 2 sites, east and west of the Dungeness River
- Possible use of perforated pipe for infiltration
- Use groundwater model to select sites and predict impacts



# DUNGENESS GROUNDWATER MODEL



# USING THE GROUNDWATER MODEL AS A TOOL

## PREDICTING THE AMOUNT OF SURFACE WATER CAPTURE

Parcel #	Bagley Creek	Bell Creek	Cassalery Creek	Dungeness River	Gierin Creek	Matriotti Creek	McDonald Creek	Meadowbro ok Creek	Siebert Creek	Total Impact (Shallow Aquifer)
43012340 0501000	0.002%	0.65%	21.3%	66.32%	9.8%	0.88%	0.044%	0.874%	0.002%	92.580%



# AVAILABLE MITIGATION PACKAGES

<b>Package Description</b>	<b>Average Amount of Indoor Use (GPD)</b>	<b>Average Amount of Outdoor Use (GPD)</b>	<b>Amount of irrigated lawn Area (Square Feet)</b>	<b>Amount of irrigated lawn Area (Acres)</b>
<b>Indoor Only Package: \$1000</b> (minimal incidental outdoor use only)	150	0	0	0
<b>Indoor with Basic Outdoor Package: \$2000</b>	150	89	2500 sq. ft. (approx. 50x50 ft)	.06 acres
<b>Indoor with Extended Outdoor Package: \$3000</b>	150	200	5625 sq. ft. (approx. 75x75 ft)	.13 acres

# STEPS FOR OBTAINING MITIGATION THROUGH THE EXCHANGE

1. Start the County building permit application process.
2. If you want to use outdoor water, contact the Exchange directly.
3. Contact a well driller and drill well (if one is not already drilled) to demonstrate adequate water is physically available.
4. Record all Mitigation Certificates on the specific parcel with the County Auditor.
  - The Mitigation Certificate will be attached to the specific parcel and cannot be transferred.
5. Deliver a copy of the notarized Mitigation Certificate to DCD.
6. Install a meter (as required by Ecology) as part of the plumbing system.

# MITIGATION ISSUED SO FAR

Since January 2013

- 13 Mitigation Certificates, all indoor only
- 1<sup>st</sup> outdoor mitigation certificate in process
- Stockwater and PUD mitigation in process



Photo: Peninsula Daily News

# LESSONS LEARNED

- Net instream benefit results from linking flow restoration and groundwater mitigation for exempt wells
- Finding water for water mitigation in western WA requires creativity
- Living and dying by the groundwater model has advantages and disadvantages
- Involvement of key players = critical to success (State & local)
- Start-up cost, time, effort = significant
- Public relations are a key to success

# THANK YOU! QUESTIONS?

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