

# WATER EXCHANGES TO MEET INSTREAM AND OUT OF STREAM NEEDS IN WESTERN WA

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AWRA- WA Section  
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# PRESENTATION SUMMARY

- Introduction to Water Exchanges
- Dungeness Water Management and Implementation of the Dungeness Water Exchange
- Development of the Skagit Water Exchange
- Lessons Learned



# 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.

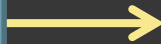


# HOW DOES A WATER BANK WORK?

## Water Bank as Intermediary

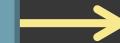
### Supply

*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



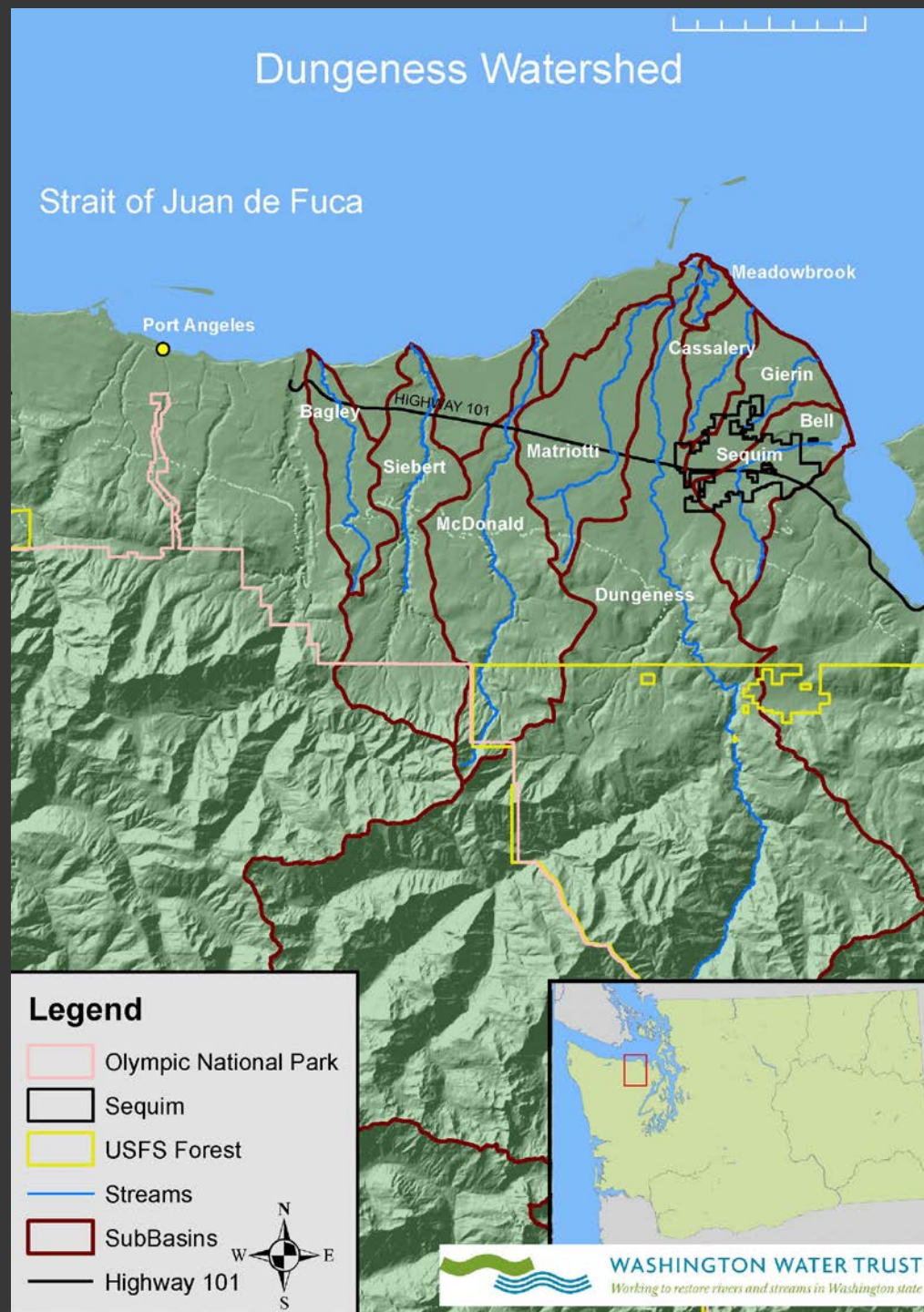
### Demand

*Buyers:*

- Mitigation for new water use
- Flow restoration

# DUNGENESS BACKGROUND

- 4 ESA Listed Fish
- Development Pressure
- 6,000 acres of irrigation
- 14 inches of rain annually



# DUNGENESS WATER RULE WAC 173-518

- Sets instream flows
- Closes rivers, streams water and ground water to new water uses
- All new uses must mitigate
- Requires meters on all new uses
- Provides two choices for how to obtain mitigation: Submit your own plan to Ecology or use the Exchange



# DUNGENESS SUBBASINS

## Dungeness Watershed, Clallam County, WA



(Source Photo: 2009 NAIP)

— Highway	Subbasins	□ Cave Frontal	□ Matriotti Creek
■ City	■ Bagley Creek	■ Dungeness Harbor	■ Mouth Dungeness River
— Rivers	■ Bear Creek	■ Gierin Creek	■ Pats Creek
— Parcels	■ Canyon Creek	■ Green Point Frontal	■ Pederson Creek
— county	■ Caraco Creek	■ Lower McDonald Creek	
— WRIA 18	■ Cassalery Creek	■ Lower Siebert Creek	

Prepared by



**WASHINGTON WATER TRUST**  
Working to restore rivers and streams in Washington state

April 11, 2011



2 1 0 2 4 6 Miles

# HOW DOES THE EXCHANGE GENERATE MITIGATION CREDITS?

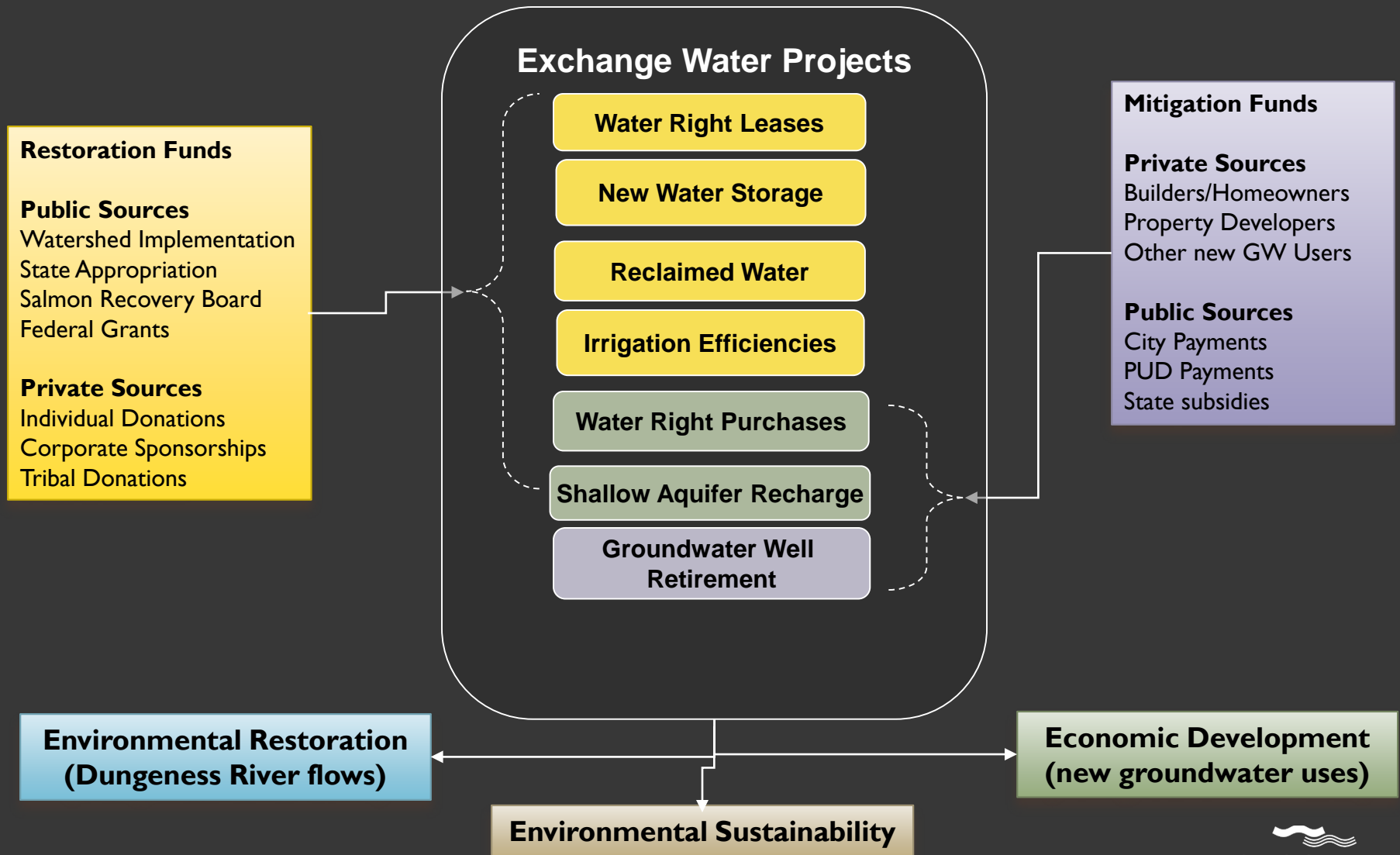
- Acquire water rights from Dungeness Water Users Association: 175 acre feet
  - 30 AF instream late season
  - 145 AF aquifer recharge
- Implement aquifer recharge projects





# DUNGENESS WATER EXCHANGE

## *AS ENVISIONED BY LOCAL LEADERS*



# EXCHANGE ADVISORY BOARD

WWT is responsible for day to day management. A local advisory board includes:

- 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

# STEPS FOR OBTAINING MITIGATION THROUGH THE EXCHANGE

1. Begin County building permit application process.
2. Fill out a mitigation app. and submit payment to DWE.
3. Contact a well driller and drill well (if one is not already drilled) to demonstrate adequate water is physically available.
4. Record and notarize Mitigation Certificates on the specific parcel with the County Auditor.
5. Install a meter (as required by Ecology) as part of the plumbing system.



# DOMESTIC 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

# STOCKWATER MITIGATION PACKAGES

Number of Stock	Pumping Volume in Gallons/Day	Pumping Volume in Gallons/Year	Pumping Volume in Acre Feet/Year	Cost
Up to 5 Animals	60	19,500	0.06	\$1,300.00
Up to 10 Animals	120	39,000	0.12	\$1,800.00
Up to 15 Animals	180	58,500	0.18	\$2,200.00

Note: The amount of water consumed by stock animals varies considerably depending on the type of animal, the size of the animal, the temperature and climate and whether the animal is lactating. WWT worked with Department of Ecology to consult scientific information from the USDA on stock water consumption and choose 12 gallons per day as a conservative average for stock water consumption.

# MITIGATION ISSUED SO FAR

Since January 2013

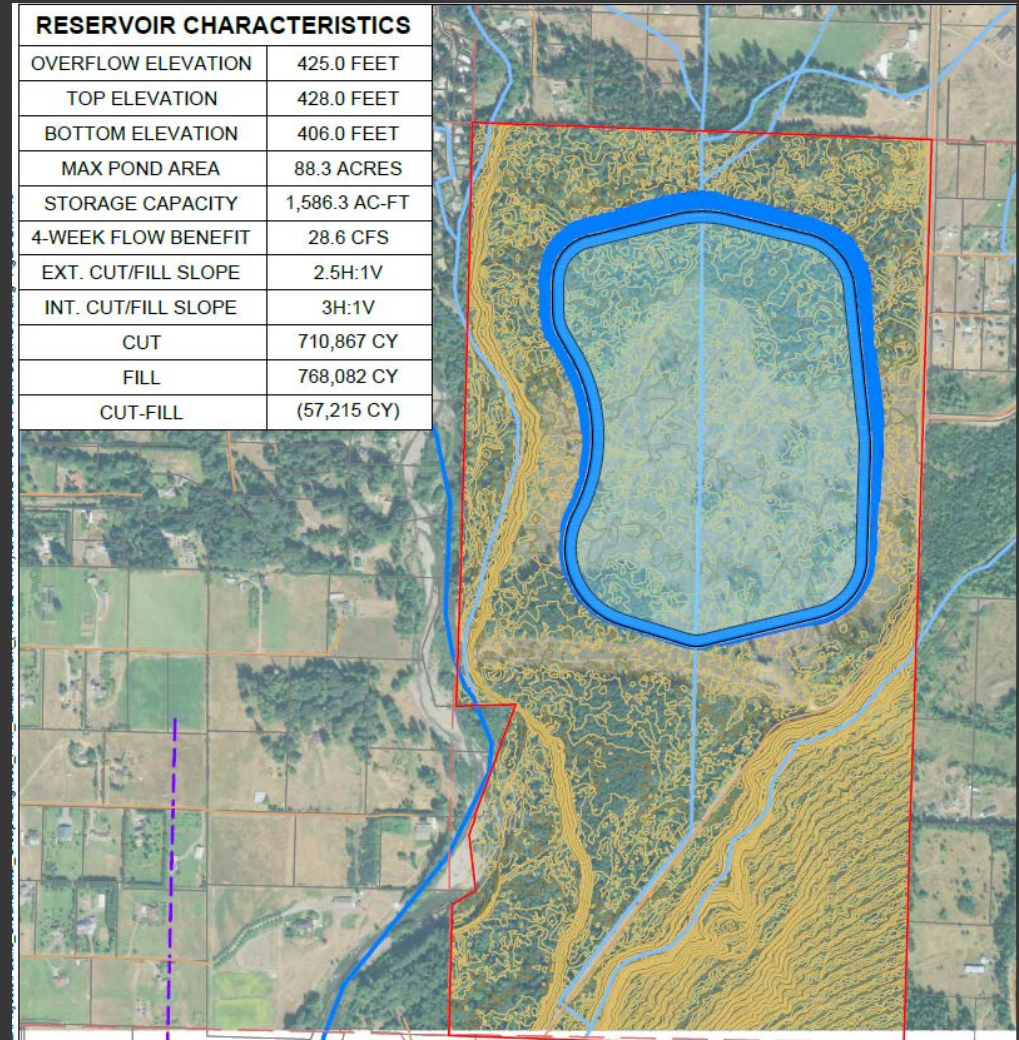
- 152 Indoor Mitigation Certificates
- 18 Basic Outdoor; 15 Extended Outdoor
- 3 Stockwater mitigation certificate in process
- 1 PUD Mitigation Certificate



Photo: Peninsula Daily News

# PROPOSED OFF-STREAM RESERVOIR

- Storage of winter high flow and stormwater
- Replace late season irrigation water
- Aquifer recharge
- ~88 Acres
- ~1500 Acre Feet of Storage



# SKAGIT BASIN CONTEXT

- Instream Flow Rule Filed 2001, 2006 Amendment with reservations, Swinomish Decision 2013
- 475 homes built w/o mitigation 2001-2013
- Fisher-Carpenter Basins near Mt Vernon, small streams with development pressure and limited prospects for mitigation
- 1 individual mitigation plan approved
- Fisher Creek aquifer recharge proposal- Upper Skagit Tribe



# DEVELOPMENT OF THE SKAGIT WATER EXCHANGE

- Mitigating water for water in small streams
- Instream Flow Rule only covers mainstem and Cultus Mt Streams
- Foster Decision- makes out of kind mitigation more difficult
- WWT/Ecology deepening understanding of SW-GW interaction by building on existing USGS model

# NOOKACHAMPS SUBBASIN MITIGATION

- WWT completed subbasin water rights analysis
- Acquired 34 AF in 2013
- WWT working to establish a water exchange in partnership with Ecology and others
- Anticipated Operational in 2017
- Will provide mitigation for reservation parcels and new development in the basin

# LESSONS LEARNED

- Matching supply and demand is critical
- Net instream benefit results from linking flow restoration and groundwater mitigation for exempt wells
- Finding water for water mitigation in western WA requires creativity
- Groundwater models have advantages and disadvantages
- Involvement of key players = critical to success (State & local)
- Start-up cost, time, effort = significant
- Integrating mitigation into the building permit process is key to success

# THANK YOU! QUESTIONS?

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