



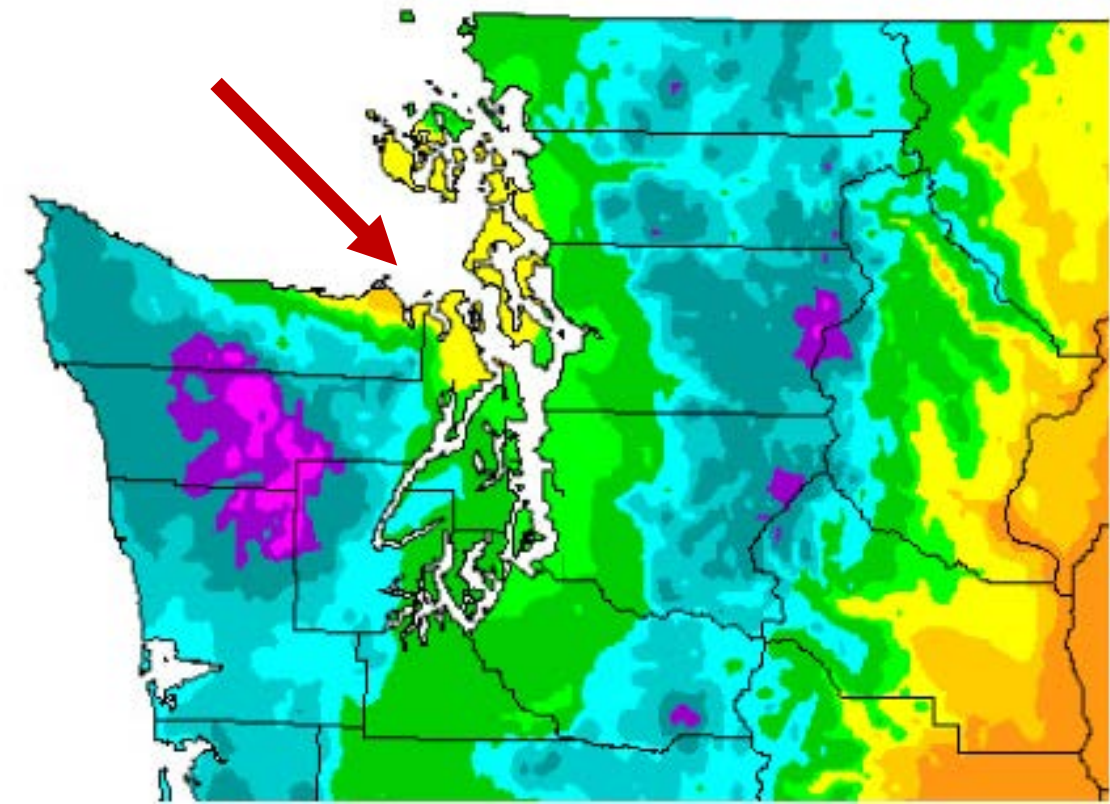
# Implementing the Dungeness Instream Flow Regulation January 2013 – June 2020

Michael Gallagher

Water Resources Program – Southwest Regional Office

June 8, 2020





# Dungeness River: Wide variation in flow

Dungeness River – Same Spot - 8 Months apart



On top of ~15 inches of precipitation per year

Same log for reference

Dungeness River at Old Olympic Highway Bridge – December 10, 2014 Flow @ ~ 5,000 CFS

Same Spot August 24, 2015 Flow @ ~60 cfs



# Regional Ground Water Flow System

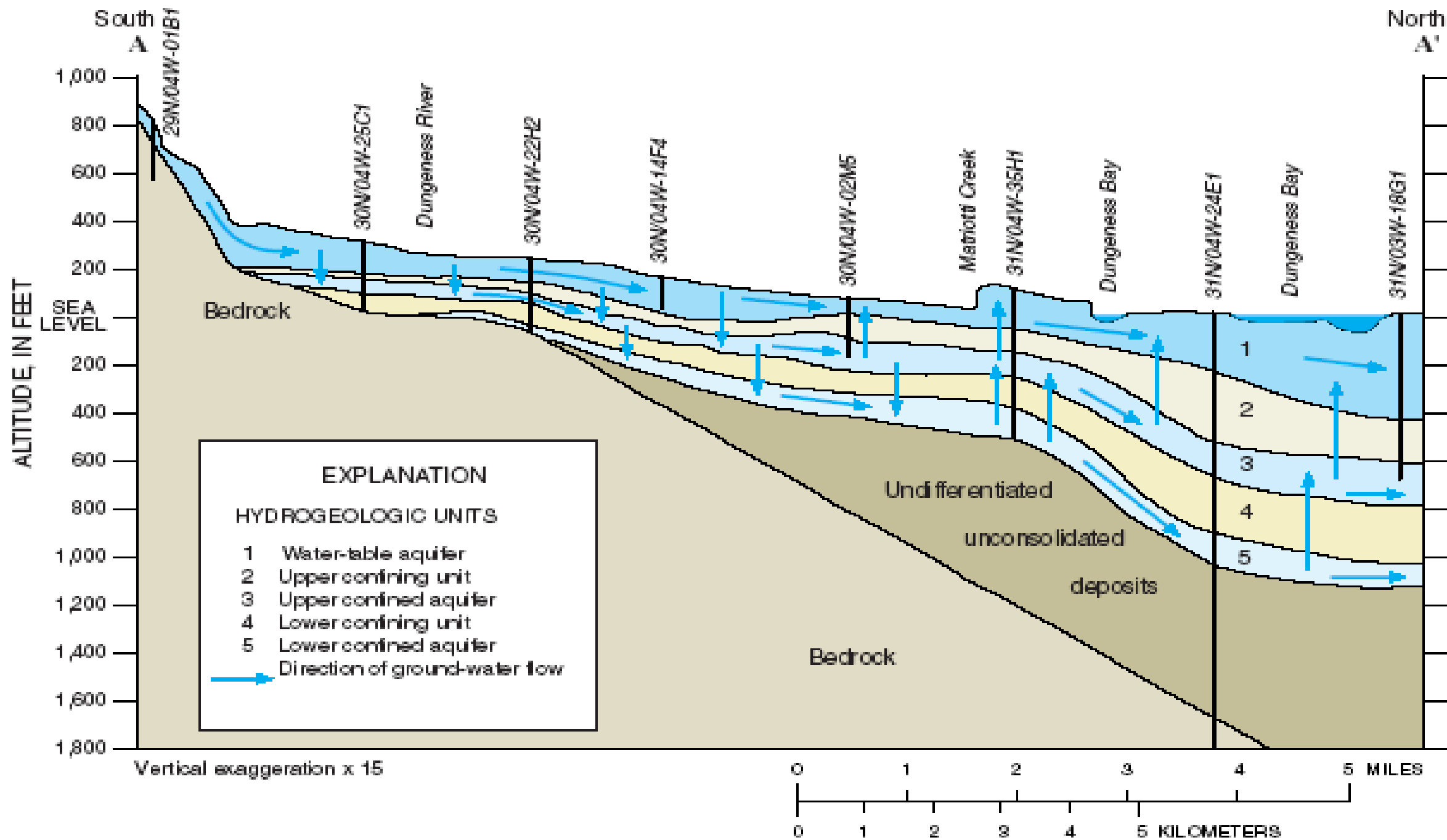
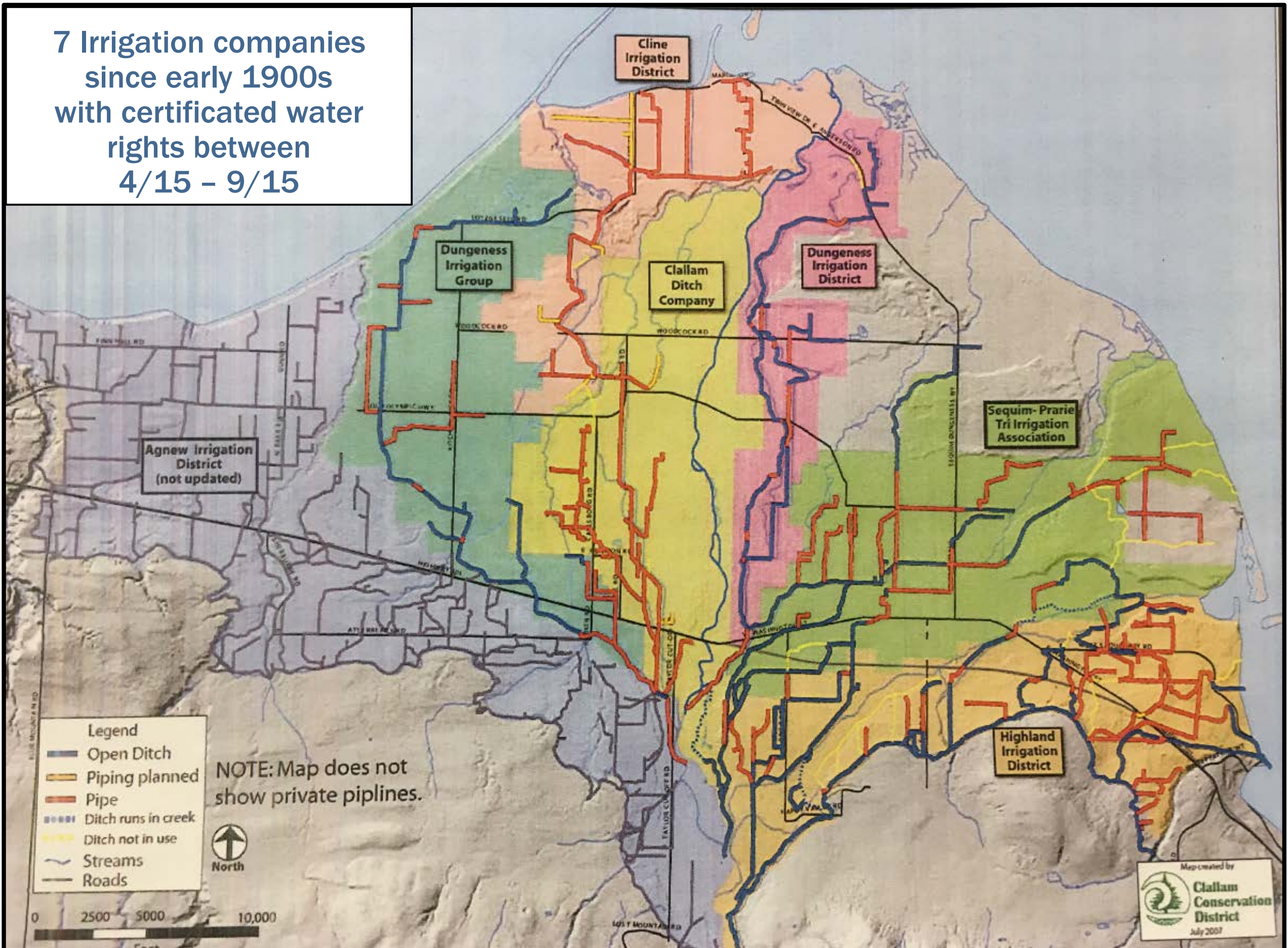


Figure 4. Hydrogeologic section showing the principal aquifer and confining units and directions of ground-water flow on the Sequim-Dungeness peninsula, Clallam County, Washington. (Modified from Drost, 1983) See [figure 1](#) for the trace of the section.



7 Irrigation companies since early 1900s with certificated water rights between 4/15 - 9/15



# Elwha-Dungeness Watershed Plan

- Approved under the Watershed Planning Act (Chapter 90.82)
- Adopted unanimously by Clallam County Board of Commissioners on **June 7, 2005**



# Plan recommendations for rule development



- Adopt by rule the recommended instream flow levels for streams and tributaries.
- Protect and continue to restore flows in the Dungeness mainstem.
- Negotiate measures to provide future drinking water while protecting late summer and fall stream flows.
- Develop aquifer and off-channel storage and conservation as sources of new water supplies and as a means to minimize effects on late season stream flows.
- Emphasize the need for new development to use existing public water systems



# Purpose of the Rule:



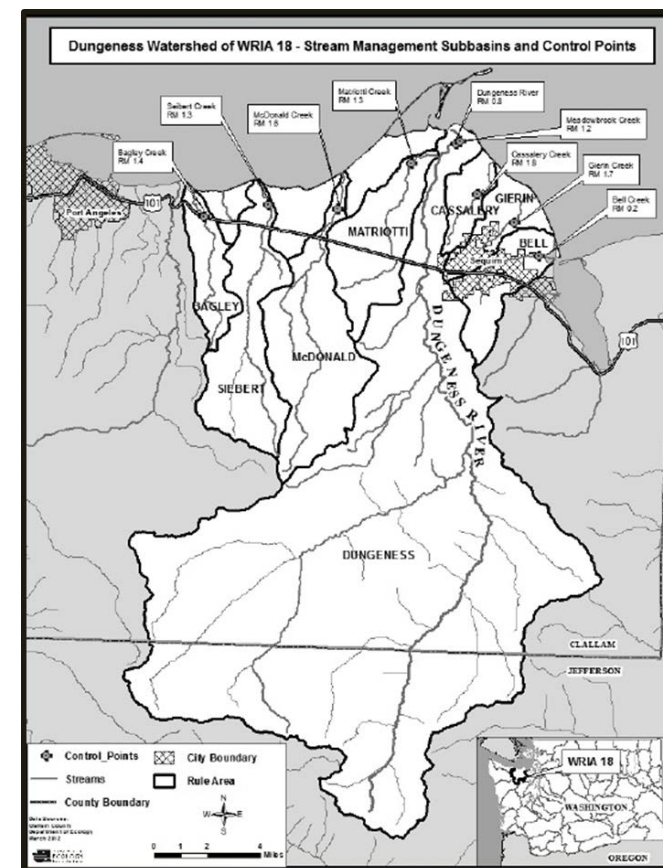
Protect existing water rights



Protect instream resources

## Dungeness Instream Flow Rule: Chapter 173-518 WAC

Jan. 2, 2013



Set up a framework for  
future water management



# The rule applies to any use and/or appropriation of surface and/or ground water after January 2, 2013

- New permit-exempt withdrawals are **not allowed** in areas where municipal water is available from city, PUD or water systems with adequate water rights in a timely and reasonable manner.
- If this option is not available, then new water users are required to mitigate\*

\***Mitigation** = offset or compensate for the impacts of the new water use. Mitigation may be achieved through the Dungeness Water Exchange (DWE), or individually via an accepted mitigation plan.

**To date, all new water users have “purchased” their mitigation via the DWE.**





# Reserve of water available for mitigation

- Reserves allow for domestic use where mitigation is not available
- Mitigation via managed aquifer recharge is intended to replenish reserves
- If a reserve is fully allocated, no new uses are allowed until mitigation is put in place

**Table V**  
**Maximum Depletion Amounts Due to New Groundwater Appropriation**

<b>Subbasin Management Unit</b>	<b>Cubic Feet Per Second</b>	<b>Gallons Per Day</b>
Bagley Creek	0.01	6,463
Bell Creek	0.0023	1,486
Cassalery Creek	0.0013	840
Dungeness River and Matriotti Creek	0.76	491,201
Gierin Creek	0.0109	7,045
McDonald Creek	0.003	1,939
Meadowbrook Creek	0.026	16,804
Siebert Creek	0.022	14,219



# Dungeness Water Rule

- Rule passed January 2, 2013
- 175 AFY purchased. 130 AFY for aquifer recharge of smaller streams. 45 AFY left in main stem.
- DWE offers mitigation for new uses

## More Background

The screenshot shows the Washington Water Trust website. The header includes the logo and tagline "Working to restore our state's rivers and streams." with a search bar. The navigation menu includes: HOME, WHAT WE DO, ABOUT US, NEWS, EVENTS, DUNGENESS WATER EXCHANGE (highlighted), RESOURCES, DONATE, CONTACT.

### DUNGENESS WATER EXCHANGE

- MITIGATION PROCESS
- DUNGENESS WATER EXCHANGE FAQs
- OFF-CHANNEL RESERVOIR PROPOSAL
- DUNGENESS DRY YEAR LEASING PROGRAM FAQs

### Dungeness Water Exchange

The Dungeness River is the lifeblood of the Dungeness Valley, providing water for fish, for farms and for families. But now the river is running low. The Dungeness Water Exchange was created through an historic collaboration between Clallam County, Department of Ecology, the Dungeness Water Users Association, the Jamestown S'Klallam Tribe, City of Sequim, Clallam PUD No.1, Clallam Conservation District, Washington Department of Fish and Wildlife, and Washington Water Trust.

These varied interests all recognize the importance of the Dungeness River. They created the Water Exchange to allow builders, homeowners and farmers to get the water they need to protect their investments while protecting the river for future generations. Put simply, the Exchange seeks to ensure that we put as much water back into the river as we take out.

#### DWE Mitigation Program-Costs and Quantities Unchanged by Hirst Legislation

You may have heard of the Washington State Legislature's recent passage of [legislation-SB 6091](#) to address the Hirst Supreme Court Decision. Watersheds are addressed differently in SB 6091, depending on whether they have implemented a watershed restoration plan, have an existing instream flow rule and whether that rule addresses permit-exempt wells. The Elwha-Dungeness (WRIA 18) is a watershed which has a watershed plan, as well as an instream flow rule which addresses permit-exempt wells and a mitigation program for new water uses with the Dungeness Water Exchange. The Dungeness rule, DWE mitigation program, mitigation water quantities and mitigation certificates costs remain unchanged as a result of SB 6091. The one area in which Dungeness Rule Area is impacted by SB 6091, is that mitigation certificates issued after January 19, 2018 will be part of the Metering Pilot Program. DWE will be in contact with all certificate holders affected by this provision. Thank you all for your participation in the DWE.

#### The Dungeness Water Exchange has two key programs: *restoration and mitigation*

- *Mitigation*: The Exchange mitigation program is a "water bank" that allows new water users to purchase a certificate that meets state requirements for protecting the Dungeness River. The money raised by the certificates will go to purchase water from willing sellers. That water will go back into the river instead of being used for out of stream needs. The Exchange balances the need for water today with the need for water tomorrow and creates certainty for farmers and homeowners so they know they have enough water to grow



# Mitigation through the Dungeness Water Exchange

- One time fee for indoor domestic, basic or extended outdoor and stock uses
- Tied to property, recorded with deed
- Price based on cost of water, mitigation project cost, transaction cost, and overhead
- Dungeness Water Exchange Advisory Council established to provide oversight
- Water Rights held in the State Trust Program



# Stockwater Mitigation

- Stockwater mitigation is only needed for new stockwater needs in the Dungeness watershed and does not apply to existing stock water users.
- Ecology concluded that stockwater mitigation is needed for ungulates only (cows, donkeys, goats, horses, llamas, pigs , sheep) and does not apply to poultry such as chicken and ducks or pets such as dogs and cats.
- Stockwater is available for a one-time fee for purchase from the Dungeness Water Exchange (DWE).



# Mitigation Packages Offered

Mitigation Package Description				
Package Description	Average Amount of Indoor Use (Gallons/Day)	Average Amount of Outdoor Use (Gallons/Day)	Amount of Irrigated Lawn Area (Square Feet)	Amount of Irrigated Lawn Area (Acres)
<b>Indoor Only Package</b> (minimal incidental outdoor use only) <b>\$1,000.00</b>	150* (average)	0	0	0
<b>Indoor with Basic Outdoor Package</b> <b>\$2,000.00</b>	150* (average)	89	2,500 (approx. 50 x 50 ft.)	0.06
<b>Indoor with Extended Outdoor Package</b> <b>\$3,000.00</b>	150* (average)	200	5,625 (approx. 75 x 75 ft.)	0.13

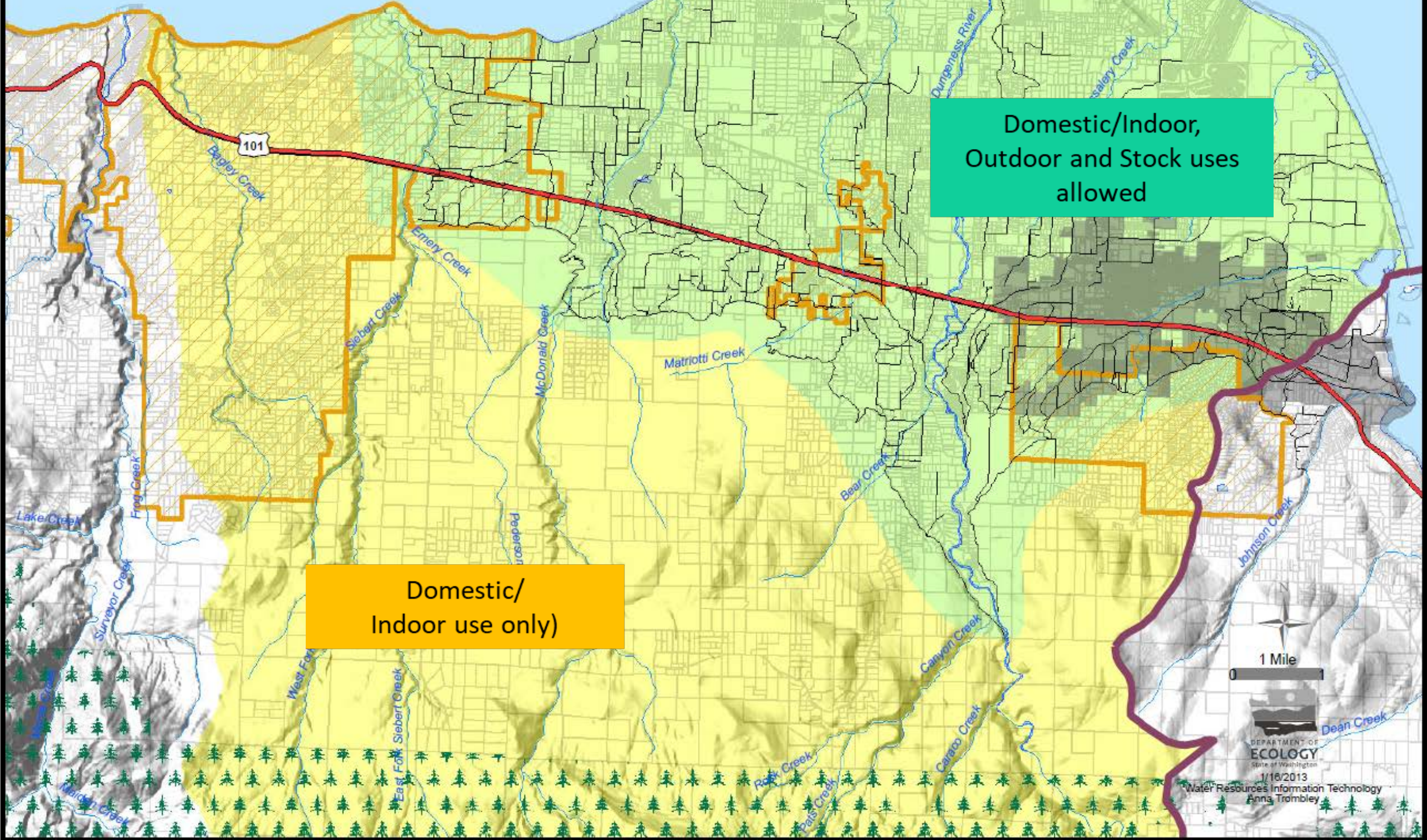
**Note:** The Exchange accounts for domestic mitigation using a standard average daily amount of 150 gallons (WAC 173-518-080 (b)). This is the annual amount of water that the Exchange and the mitigation certificate purchasers agree upon as the basis for their transaction. The amount of outdoor use is based on the amount of irrigation required for turf grass according to the Washington Irrigation Guide (20.80 inches/year). A larger amount of landscaping or garden area may be possible with the same number of gallons per day.

Stockwater Mitigation Packages				
Number of Stock	Average Pumping Volume in Gallons/Day	Average Pumping Volume in Gallons/Year	Average Pumping Volume in Acre Feet/Year	Price
<b>Up to 5 Animals</b>	60	21,900.00	0.067	\$1,300.00
<b>Up to 10 Animals</b>	120	43,800.00	0.134	\$1,800.00
<b>Up to 15 Animals</b>	180	65,700.00	0.202	\$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. The Exchange worked the Department of Ecology to consult scientific information from the US Department of Agriculture on stock water consumption and chose 12 gallons per day as a conservative average for stock water consumption.

# Likely Mitigation Availability in Dungeness Watershed

- |   |                                  |   |                                     |
|---|----------------------------------|---|-------------------------------------|
|  | Available for domestic use only  |  | Available for domestic & other uses |
|  | Clallam County PUD #1 boundaries |  | National Park & Forest              |
|  | Clallam County Parcels           |  | irrigation ditches                  |
|  | Sequim                           |  | WRIA 18 Boundary                    |
|  | Water Bodies                     |  | Rivers                              |
|   |                                  |  | Major Roads                         |



Domestic/Indoor,  
Outdoor and Stock uses  
allowed

Domestic/  
Indoor use only)



DEPARTMENT OF  
ECOLOGY  
State of Washington

1/16/2013  
Water Resources Information Technology  
Anna Trombley

# What is considered domestic use?



- “Use of water associated with human health and welfare requirements, including water used for drinking, bathing, sanitary purposes, cooking, laundering, and other incidental household uses.”

Incidental household uses include, but are not limited to:

- washing exterior windows,
  - car washing,
  - cleaning exterior of residential structures,
  - care of household pets, and
  - watering potted plants or hanging baskets attached to the residence.
- Domestic use **does not** include other uses allowed under the groundwater permit exemption -  
Outdoor irrigation of up to one-half acre of noncommercial lawn or garden, stockwatering, and industrial use.



# Mitigation Certificates Issued

## 7.5 years into the rule being in effect

- 365 indoor certificates issued @ .017 AFY = 6.133 AFY
- 50 basic outdoor certificates issued @ .09 AFY = 4.477 AFY
- 37 extended outdoor certificates issued @ .20 AFY = 7.754 AFY
- 7 stockwater (four “5 animal”, two “10 animal” and one “15 animal”) packages issued @ .067 AFY = 0.369 AFY
- 4 water rights PUD certificate issued = 2.953 AFY
- Total = 21.493 AFY Issued Mitigation Credits used
- Total Mitigation Water Available - 175 AFY
- About 40 years of supply remaining...

NB – each indoor mitigation certificate purchased at 150 Gallons per day, and assuming 90% septic return, is in a sense a 15 gpd consumptive water right, and offsets the reservation (spread across the Dungeness River and independent streams by that collective amount)





# Metering pilot

Clallam Conservation District WATER SCOPE clallam@waterscope.us Mon, Dec 2, 2019 3:19 PM

1 - 20 of 161 items

☆	Id	Consumer Name	Address	VN ID	Size (")	Billing Read	24Hr	Min Flow Rate (GPM)	Max Flow Rate (GPM)	Read Date	Conditions	
☆					R	16	0	0	0	12-02-2019		
☆					R	50453	128.65	0	1.38	12-02-2019		
☆					R	24225	63.06	0	2.29	12-02-2019		
☆					R	59591	203.34	0	3.83	12-02-2019		
☆					R	29004	281.87	0	3.87	12-02-2019		
☆					R	33262	73.34	0	3.66	12-02-2019		
☆					R	14759	98.97	0	4.65	12-02-2019		
☆					R	693	4.31	0	0.19	12-02-2019		
☆					R	13247	45.16	0	3.1	12-02-2019		
☆					R	11937	79.21	0	1.02	12-02-2019		
☆					R	11283	34.6	0	3.59	12-02-2019		
☆					R	10	NA	NA	NA	06-07-2019		
☆					R	15250	129.19	0	1.81	12-02-2019		
☆					R	22931	77.47	0	1.94	12-02-2019		
☆					R	22632	60.61	0	1.35	12-02-2019		
☆					R	24238	130.88	0	3.04	12-02-2019		
☆					R	601	NA	NA	NA	08-19-2019		
☆					R	74514	106.42	0	2.5	12-02-2019		
☆					R	37065	0	0	0	12-02-2019		
☆					R	22553	212.72	0	4.4	12-02-2019		

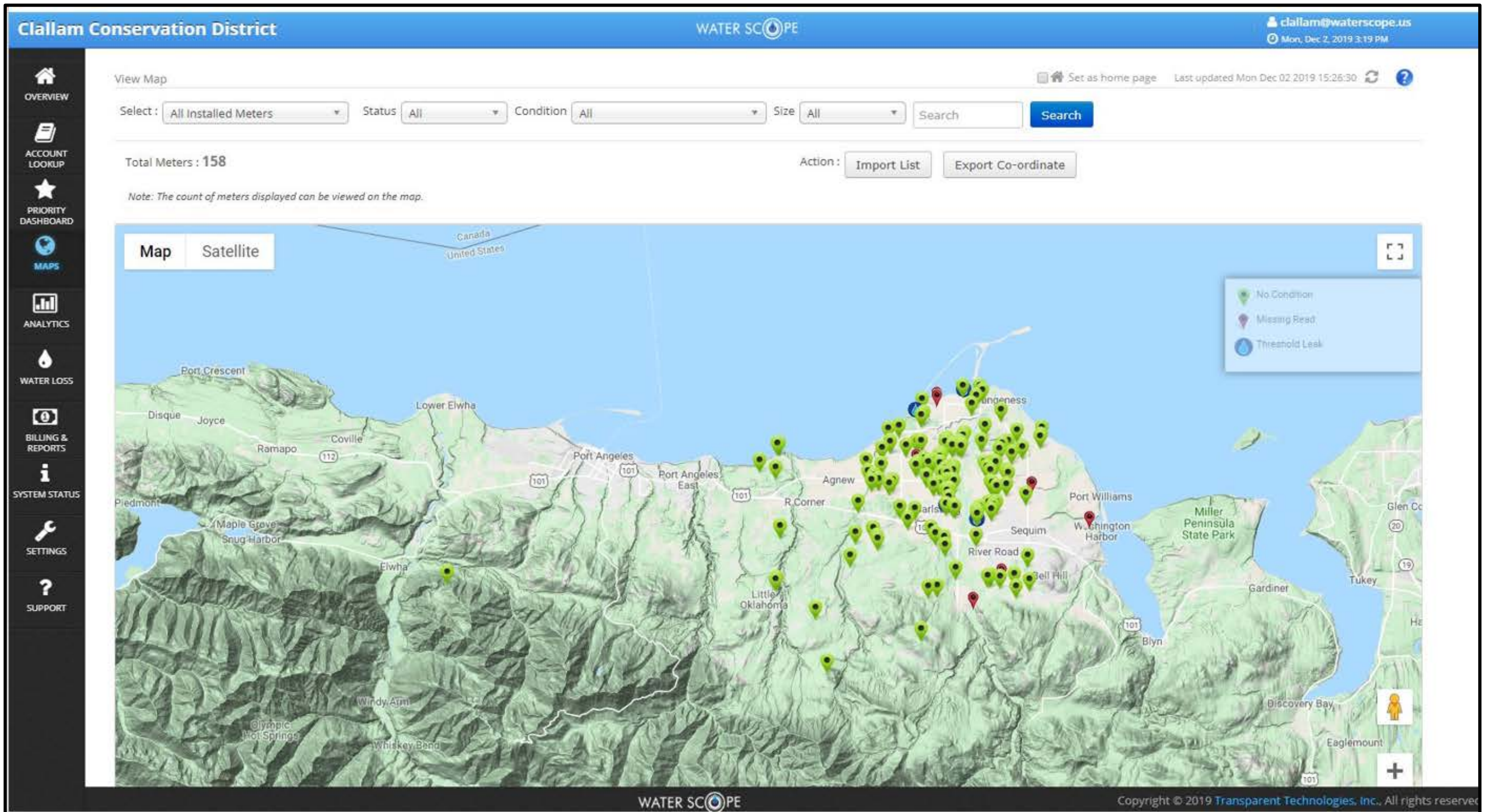
1 - 20 of 161 items

Names and addresses blacked out

Average 106 gallons/day



# Location of cellular read water meters installed by Clallam Conservation District (Under 10 year contract with Ecology)



# Six *Managed Aquifer Recharge* facilities to help augment flows in independent streams in Dungeness Valley and replenish reservation



# Sequim area Irrigators convey the water from the Dungeness River to the Managed Aquifer Recharge facility in the May-June timeframe when flows are high enough

## *2019 MITIGATION RECHARGE*

<b>District</b>	<b>Site</b>	<b>AFY</b>
Sequim Prairie-Tri Irrigation Assn	Silberhorn Rd	13.57
Sequim Prairie-Tri Irrigation Assn	River Rd	1.07
Agnew Irrigation District	Pinnell Rd	91.42
Dungeness Irrigation District	McComb Rd	11.97
Dungeness Irrigation District	Towne Rd	11.97
<b>2019 Total:</b>		<b>130</b>
<b>2018 Total:</b>		<b>114.21</b>
<b>2017 Total:</b>		<b>54.68</b>

## *2019 RESTORATION RECHARGE*

<b>District</b>	<b>Site</b>	<b>AFY</b>
Clallam Ditch Association	Jake Way	237.85
Sequim Prairie-Tri Irrigation Assn	<u>Silberhorn Rd</u>	.38
Agnew Irrigation District	<u>Pinnell Rd</u>	19.07
Dungeness Irrigation District	<u>McComb Rd</u>	38.59
Dungeness Irrigation District	Towne Rd	39.1
<b>2019 Total:</b>		<b>334.99</b>
<b>2018 Total:</b>		<b>131.90</b>
<b>2017 Total:</b>		<b>147.76</b>

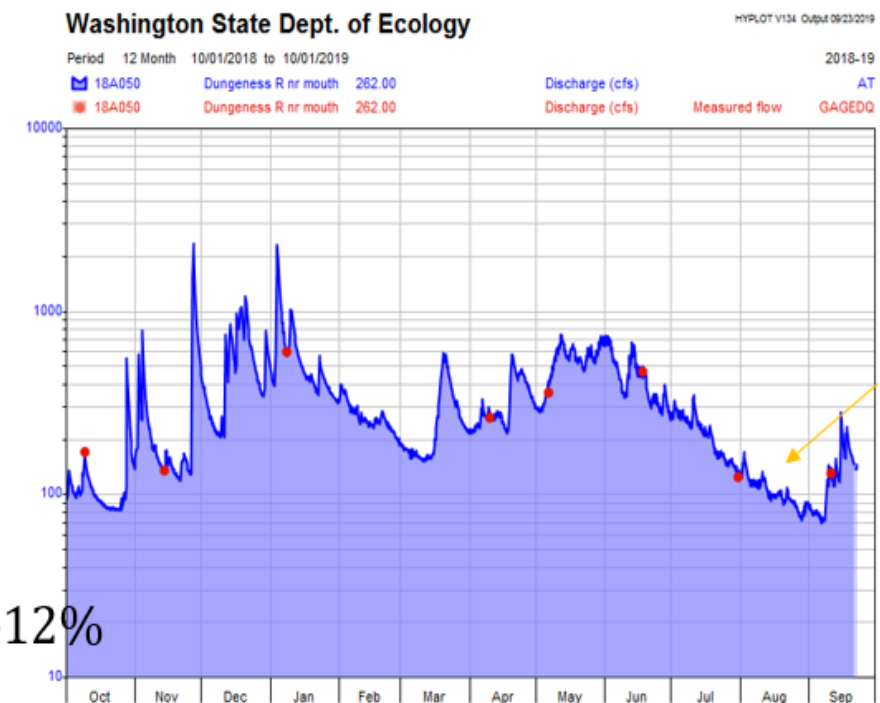


# In drought years or drier summers compensated farmer(s) not to irrigate for the last 30 days of the irrigation season—improved flows from ~6 to ~9 CFS during Aug 15 – Sept 15

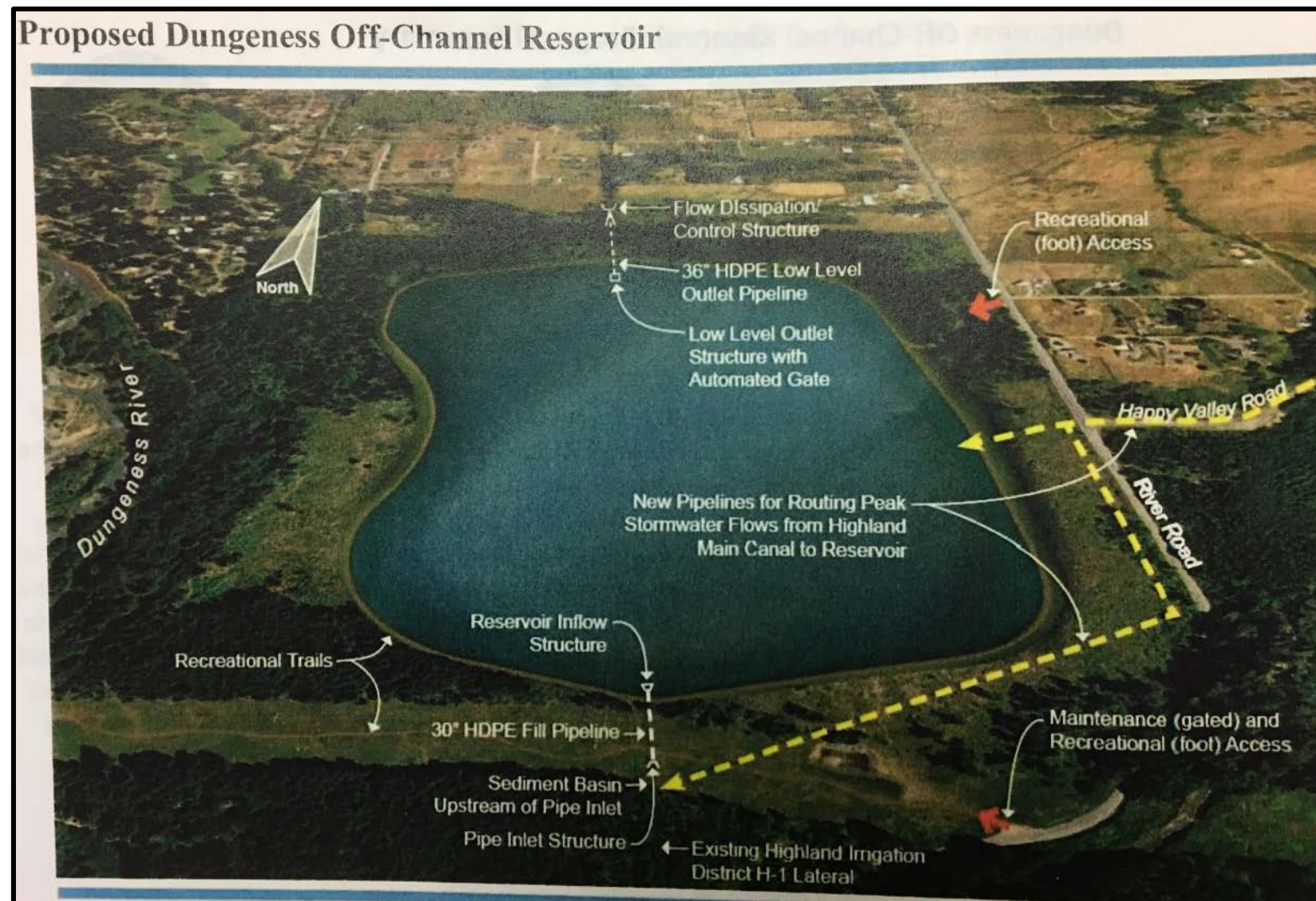
## Dungeness-Dry Year Leasing

<i>Instream Target Flow</i>	<i>105 CFS</i>
• <u>2015 Agreements</u>	5.6 CFS
August low flow	56 CFS
September low flow	69 CFS
• <u>2016 Agreements</u>	7.85 CFS
August low flow	99 CFS
September low flow	71.5 CFS
• <u>2019 Agreements</u>	8.85 CFS
August low flow	76 CFS
September low flow	69 CFS

- ▶ **Tools-Dry Year Forbearance Agreement**
- ▶ **Results-critical flow restoration in low water years, 10-12%**



# Secure funding for construction of an off-channel reservoir



- Off-Channel reservoir could provide up to 30 CFS of irrigation for irrigators on east side of river, thus keeping 30 cfs in the river during the critical low flow period of 4/15 – 9/15.
- Clallam County successful in obtaining a \$4m Streamflow Restoration Grant in 2019 for land acquisition, preliminary design and permitting
- Final design, construction and ongoing operations/maintenance costs will need future funding for the ~\$25m Off-Channel Reservoir Project

## Conclusions

- Dungeness Rule now in effect for over 7 years.
- Over 365 indoor domestic mitigation certificates issued.
- 87 outdoor mitigation certificates and 7 stockwater certificates issued.
- Six shallow aquifer recharge facilities are operational this past year,
  - taking river water via irrigation diversion in the late Spring to recharge the shallow aquifer at critical locations to help summer streamflow of several of the independent streams in the basin
- Cellular read meters installed by Clallam CD as part of the RCW 90.94.040 10-year metering pilot.
- Ongoing efforts to secure funding to construct an off-channel reservoir south of Sequim.





Ecology gage at Schoolhouse Bridge

**Thank you for your time!**

Any questions?

[ecology.wa.gov](http://ecology.wa.gov)

