

# Chehalis Basin Water Rights Assessment

## Pilot Project for Office of Chehalis Basin



Jason Hatch & Greg McLaughlin  
Washington Water Trust  
Chehalis Basin Partnership  
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# Overview

- Washington Water Trust
- Water Rights 101
- Chehalis Pilot Project
- Questions

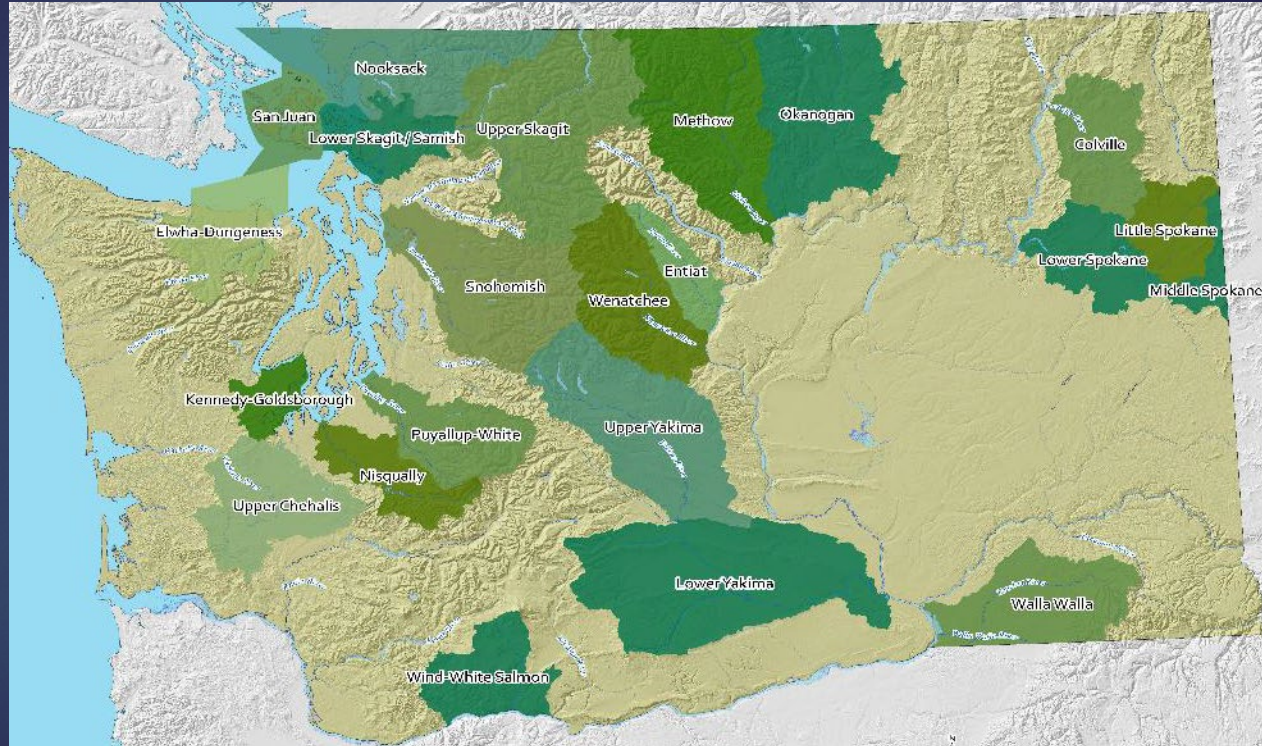


# Washington Water Trust

- Nonprofit organization
- Founded 1998
- Improve and protect stream flows and water quality throughout Washington, benefitting fisheries, wildlife and agriculture.
- Voluntary, cooperative, market-based strategies
- Work collaboratively with a wide range of partners
- Confidential, non-regulatory



# Where WWT Works





# Tools & Strategies

- ✓ Water rights assessments
- ✓ Dry-year “options”
- ✓ Source substitution
- ✓ Changing point of diversion
- ✓ “Reverse auction”
- ✓ Water conservation (efficiencies)
- ✓ Water banking
- ✓ Water lease/purchase

- ✓ New crop rotations
- ✓ New supply
  - Rainwater
  - Off-channel storage
  - Public water
  - Recycled water
  - Natural system storage



# Washington Water Law Basics

- Property rights to “use” public resource
- Prior appropriation (senior water uses first)
- 5-year “use it or lose it” rule (*However, there are 21 exceptions including when in “Trust”*)
- All surface (1917) and groundwater (1945) rights must be permitted except permit-exempt wells
- Generally new water rights are not available in WA

# Anatomy of a Water Right

- Original name on water right
- Purpose of use
- Season of use
- Instantaneous quantity (Qi)
- Priority date
- Point of diversion (PoD)
- Place of use (PoU)
- Annual quantity/water duty (Qa)

***Certificate of Water Right***

THIS IS TO CERTIFY:

That by virtue of a decree of the Superior Court of the State of Washington in and for Walla Walla County, made and entered on the 19th day of September, 1929, and recorded in Volume 18 of the Superior Court Journal of said County at page 1, from which decree no appeal was taken, and which decree determined the rights of all known claimants to the use of the waters of the Touchet River, a tributary of the Walla Walla River

F. D. SHARP  
Box 91  
Seaside, Oregon

is entitled to use, subject to provisions set forth in said decree, and the laws of the State of Washington, the waters of said Touchet River

for the purpose of irrigation of 110.0 acres of land.

That the amount of water to which said water right is entitled is limited to the quantity which is reasonably and actually necessary for the purpose aforesaid and shall not exceed 1.466 second feet from April 1st to Sept. 15th and 2.200 second feet from Sept. 15th to April 1st, with the following exception:  
After all rights scheduled in the above mentioned decree are filled, the surplus water is allotted in the order of priority in amounts sufficient to increase the rate to the quantity allotted for the period from September 15th to April 1st. The total diversion shall not exceed 6 acre feet per acre for any one year beginning September 15th.

That the date of priority of said water right is 1912; that the decree aforesaid establishes said right in Class Forty-one

That the point of diversion of said water right is as follows:  
The NE $\frac{1}{4}$  of the NW $\frac{1}{4}$ , Sec. 2, Twp. 9 N., Rge 35 E. W. M.

# Chehalis River Basin-Water Rights

- ▶ WRIA 22
  - ▶ 4,430 water right documents
- ▶ WRIA 23
  - ▶ 8,040 water right documents
  - ▶ 1,748 certificates/5,253 claims
    - ▶ 594 surface certificates with irrigation
      - ▶ 474 certificates with at least 5 acres
    - ▶ 473 GW certificates with irrigation
      - ▶ 381 GW certificates with at least 5 acres

- Certificates
- Permits
- Applications
- Claims



# Chehalis River Basin-Instream Flow Rule

- ▶ Instream Flow Rule: Chapter 173-522 WAC. 1976
- ▶ Senior and Junior Rights
- ▶ Curtailments 2015-2018

## STREAM MANAGEMENT UNIT INFORMATION

| Control Station No.<br>Stream Management<br>Unit Name | Control Station by<br>River Mile and Section,<br>Township and Range | Affected Stream<br>Reach Including<br>Tributaries                    |
|-------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------|
| 12.0200.00<br>Chehalis River<br>Conf. w/Elk Creek     | 101.8<br>14-13-5W                                                   | From confluence<br>with Elk Creek to<br>headwaters except<br>Elk Cr. |
| 12.0205.00<br>Elk Creek                               | 2.5<br>18-13-5W                                                     | From confluence<br>with Chehalis River<br>to headwaters.             |
| 12.0216.30<br>So. Fork<br>Chehalis R.                 | 0.3<br>24-13-4W                                                     | From mouth to head-<br>waters.                                       |

(2) Base flows established for the stream management units in WAC 173-522-020(1) are as follows:

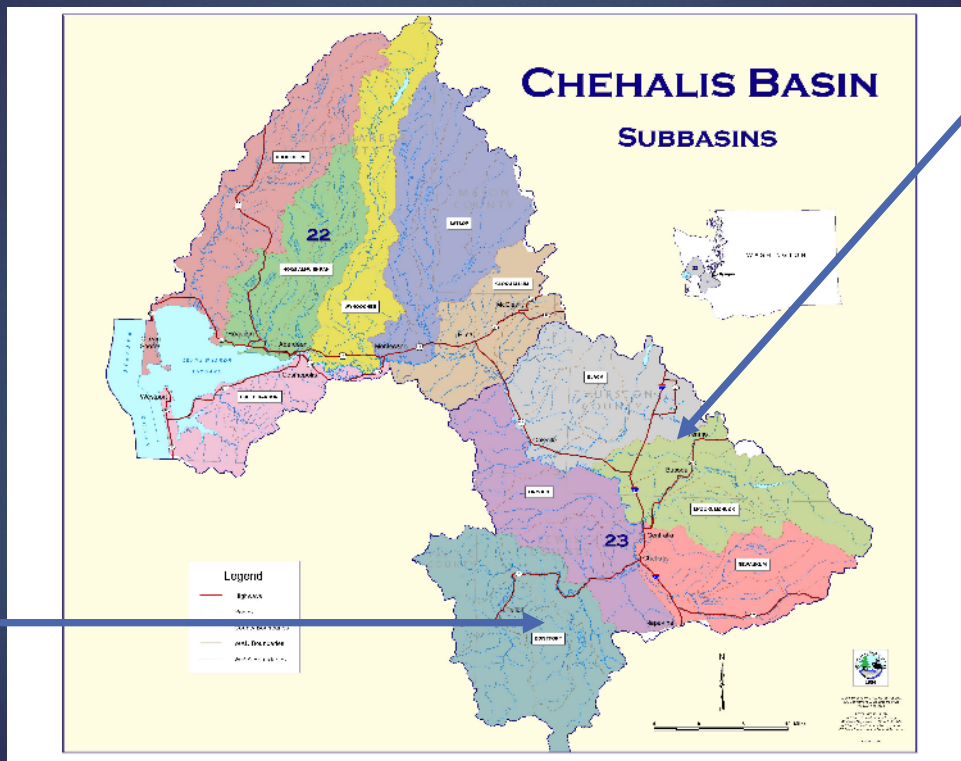
## BASE FLOWS IN THE CHEHALIS RIVER BASIN (In Cubic Feet per Second)

| Month | Day | 12.0200.00<br>Chehalis R.<br>at Elk Cr. | 12.0205.00<br>Elk Cr. | 12.0216.30<br>So. Fork<br>Chehalis R. | 12.0235.00<br>Chehalis R. |
|-------|-----|-----------------------------------------|-----------------------|---------------------------------------|---------------------------|
| Jan.  | 1   | 260                                     | 100                   | 200                                   | 700                       |
|       | 15  | 260                                     | 100                   | 200                                   | 700                       |
| Feb.  | 1   | 260                                     | 100                   | 200                                   | 700                       |
|       | 15  | 260                                     | 100                   | 200                                   | 700                       |
| Mar.  | 1   | 260                                     | 100                   | 200                                   | 700                       |
|       | 15  | 260                                     | 100                   | 200                                   | 700                       |
| Apr.  | 1   | 260                                     | 100                   | 200                                   | 700                       |
|       | 15  | 260                                     | 100                   | 200                                   | 700                       |
| May   | 1   | 195                                     | 76                    | 145                                   | 525                       |
|       | 15  | 146                                     | 57                    | 105                                   | 400                       |
| June  | 1   | 108                                     | 43                    | 75                                    | 300                       |
|       | 15  | 82                                      | 32                    | 55                                    | 230                       |
| July  | 1   | 62                                      | 25                    | 40                                    | 175                       |
|       | 15  | 46                                      | 19                    | 29                                    | 130                       |
| Aug.  | 1   | 37                                      | 16                    | 21                                    | 98                        |
|       | 15  | 31                                      | 14                    | 15                                    | 75                        |
| Sep.  | 1   | 31                                      | 14                    | 15                                    | 75                        |
|       | 15  | 31                                      | 14                    | 15                                    | 75                        |
| Oct.  | 1   | 39                                      | 15                    | 21                                    | 92                        |
|       | 15  | 49                                      | 17                    | 28                                    | 115                       |
| Nov.  | 1   | 88                                      | 31                    | 56                                    | 215                       |
|       | 15  | 150                                     | 56                    | 105                                   | 390                       |
| Dec.  | 1   | 260                                     | 100                   | 200                                   | 700                       |
|       | 15  | 260                                     | 100                   | 200                                   | 700                       |

# Water Rights Assessment Pilot Study

- Low flow limiting factor for fish
- Identify and quantify-out of stream water use (AG)

South Fork  
Upper  
Chehalis



## Scatter Creek

- Report of flow restoration projects in pilot streams
- Inform water supply opportunities for agriculture, commercial, municipal

# Pilot Study Process

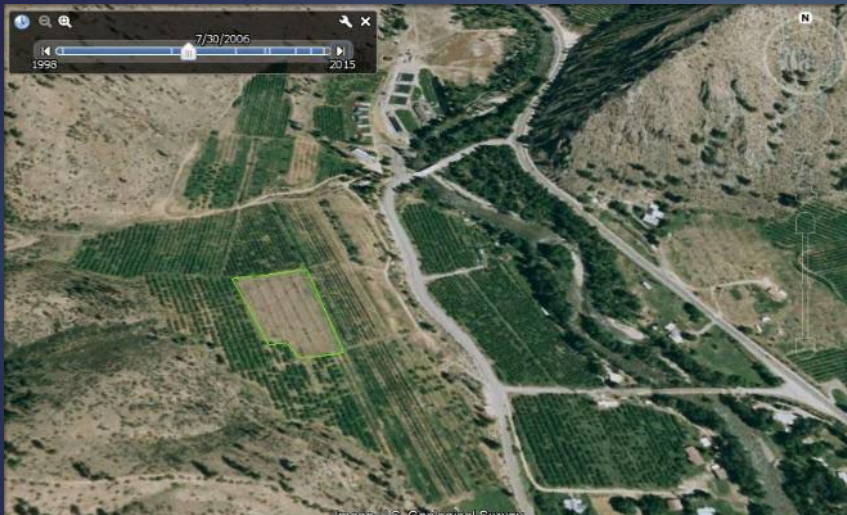
- Aerial photo analysis: 2008-2017
- 5 acres or more of irrigation
- WA ECY records—Place of Use (PoU)
- Parcel data
- History of use
- Purpose of Use—irrigation
- Certificates then claims (SW,GW)
- Prioritization
- Potential water rights and projects



# Water Rights Assessment

## *Aerial Photography View*

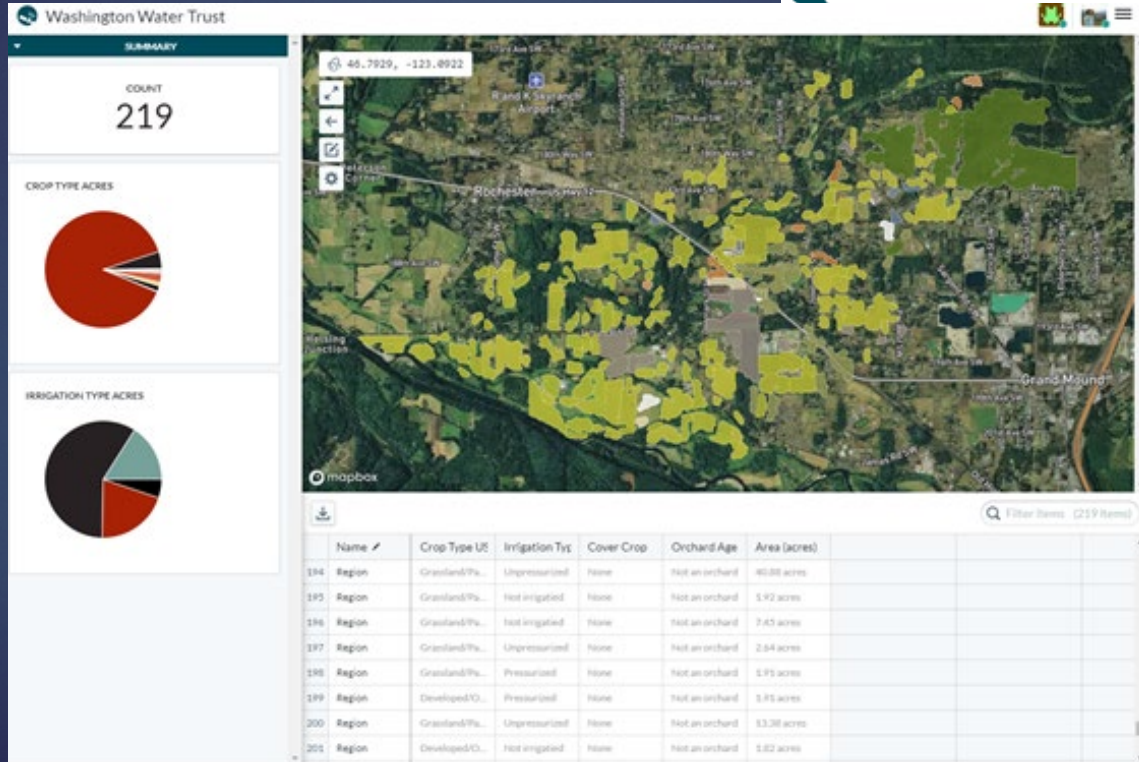
2006



2011

# Water Rights Assessment

## Aerial Remote Sensing of Water Use

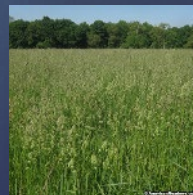


# Water Rights Assessment

## Consumptive use calculations

### CENTRALIA

| CENTRALIA                     | 46.72 LATITUDE         |      |      |      |      |      |      |      |      |      |      |      |        |
|-------------------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|--------|
|                               | JAN                    | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  | OCT  | NOV  | DEC  | TOTAL  |
| MEAN TEMPERATURE (F)          | 39.0                   | 42.6 | 44.6 | 49.4 | 55.4 | 60.4 | 64.8 | 64.3 | 60.2 | 52.3 | 44.4 | 40.7 |        |
| TOTAL PRECIPITATION (IN)      | 7.38                   | 4.98 | 4.73 | 3.01 | 2.03 | 1.78 | .84  | 1.46 | 2.22 | 4.13 | 6.44 | 7.71 | 46.71  |
| EFFECTIVE PRECIP (IN)         | .14                    | .74  | 1.56 | 1.97 | 1.46 | 1.30 | .67  | 1.08 | 1.55 | 1.62 | .45  | .09  | 12.63  |
| ALFALFA                       | BEG 5/10      END 11/8 |      |      |      |      |      |      |      |      |      |      |      |        |
|                               | JAN                    | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  | OCT  | NOV  | DEC  | SEASON |
| MONTHLY NET IRRIG REQUIRE(IN) | .00                    | .00  | .00  | .00  | 1.23 | 3.09 | 4.75 | 3.37 | 1.50 | .00  | .00  | .00  | 13.94  |
| AV. PAN FACTOR                | .68                    | .68  | .63  | .68  | .68  | .68  | .68  | .68  | .68  | .68  | .68  | .68  |        |
| CLOVER                        | BEG 5/10      END 11/8 |      |      |      |      |      |      |      |      |      |      |      |        |
|                               | JAN                    | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  | OCT  | NOV  | DEC  | SEASON |
| MONTHLY NET IRRIG REQUIRE(IN) | .00                    | .00  | .00  | .00  | 1.68 | 3.87 | 5.71 | 4.16 | 2.04 | .03  | .00  | .00  | 17.47  |
| AV. PAN FACTOR                | .80                    | .80  | .80  | .80  | .80  | .80  | .80  | .80  | .80  | .80  | .80  | .80  |        |
| PASTURE/TURF                  | BEG 5/10      END 11/8 |      |      |      |      |      |      |      |      |      |      |      |        |
|                               | JAN                    | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  | OCT  | NOV  | DEC  | SEASON |
| MONTHLY NET IRRIG REQUIRE(IN) | .00                    | .00  | .00  | .00  | 1.53 | 3.61 | 5.39 | 3.90 | 1.86 | .00  | .00  | .00  | 16.28  |
| AV. PAN FACTOR                | .76                    | .76  | .76  | .76  | .76  | .76  | .76  | .76  | .76  | .76  | .76  | .76  |        |
| APPLES W/CORR                 | BEG 5/4      END 11/8  |      |      |      |      |      |      |      |      |      |      |      |        |
|                               | JAN                    | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  | OCT  | NOV  | DEC  | SEASON |
| MONTHLY NET IRRIG REQUIRE(IN) | .00                    | .00  | .00  | .00  | 1.21 | 4.39 | 6.98 | 5.21 | 2.58 | .00  | .00  | .00  | 20.36  |
| AV. PAN FACTOR                | .40                    | .40  | .40  | .40  | .60  | .68  | .96  | .96  | .92  | .72  | .40  | .40  |        |



# Water Rights Assessment

## *Historic beneficial use (not yet)*

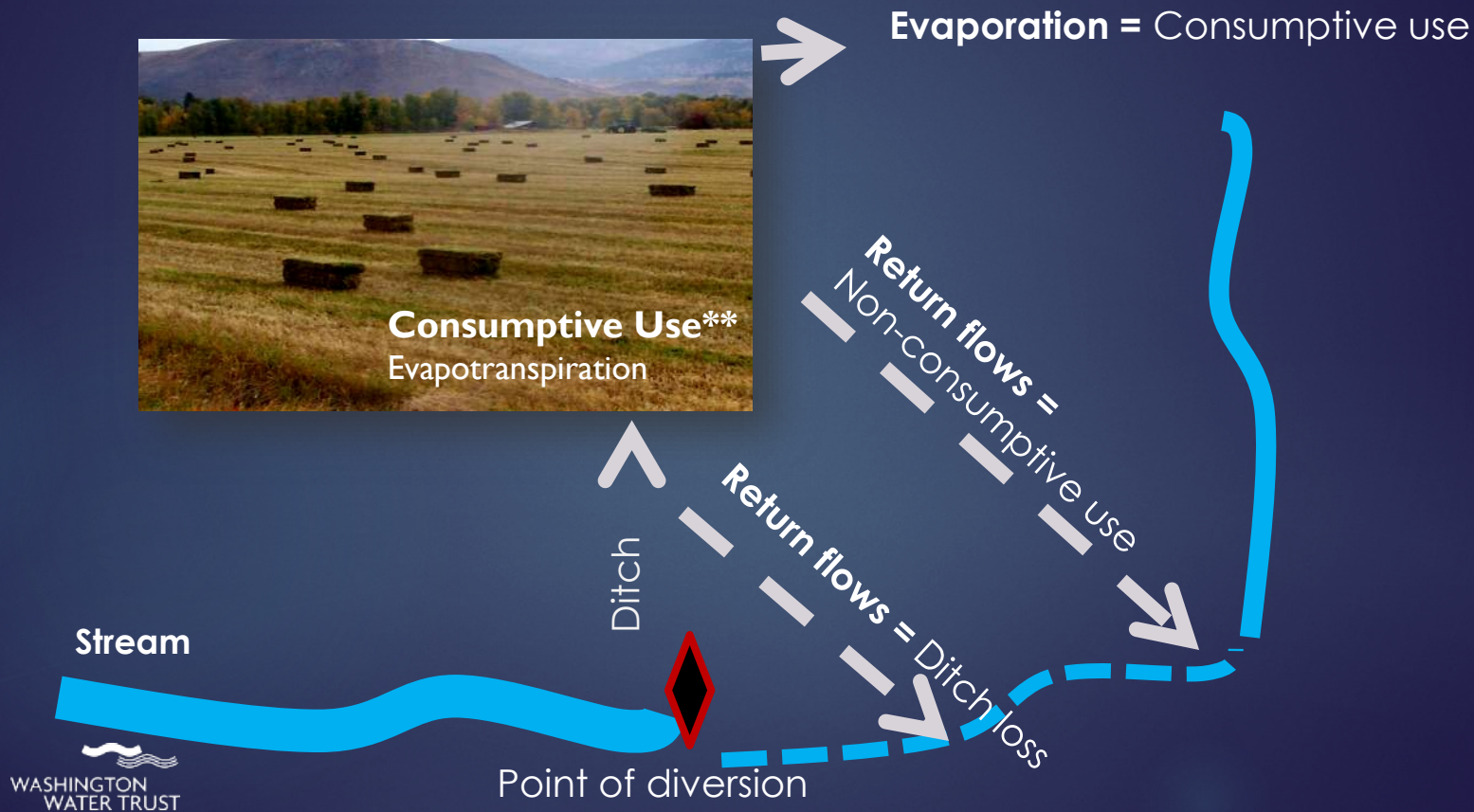
- Meter records (if possible)
- Pump records – convert from kwh used and pump specs
- Cropping/seed receipts
- Photographs of water use
- Affidavits of water use
- Season of use
- Aerial imagery (multiple years)
- Sufficient causes for non-use (drought, farm plan, etc.—21 reasons)



# Sample Project Development Map



# Water Rights and Instream Flow



# Trust Water RCW 90.38 & 90.42

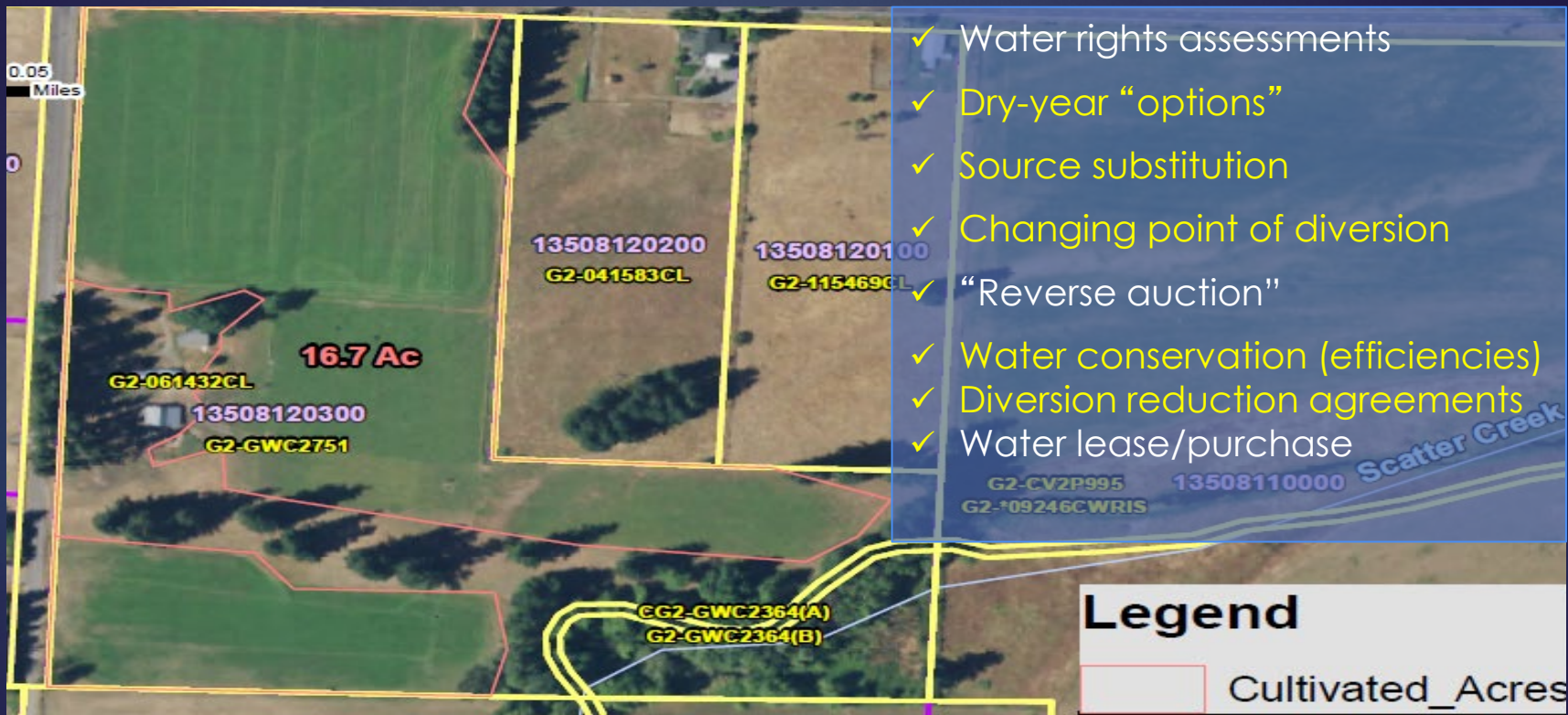
- Adopted 1989 and 1991
- Allows “use” of water for instream flow (w/o “lose it”)
- “Trust water” managed and protected by WA DOE
- Retains priority date (seniority)
- Expedited processing of water right changes (Hillis Rule)
- Temporary, permanent, partial, entire



## TRUST WATER RIGHTS PROGRAM

- Instream flow protection
- Water rights management

# Supporting an Instream Flow Strategy



# Questions?

**Jason Hatch, Project Lead**

jhatch@washingtonwatertrust.org  
360-328-3166

**Greg McLaughlin, Technical Lead**

greg@washingtonwatertrust.org  
509.844.4146

**Susan Adams, Executive Director**

susan@washingtonwatertrust.org  
206.755.7162

1530 Westlake Ave N  
Suite 400  
Seattle, WA 98109  
206.675.1585

[www.washingtonwatertrust.org](http://www.washingtonwatertrust.org)

