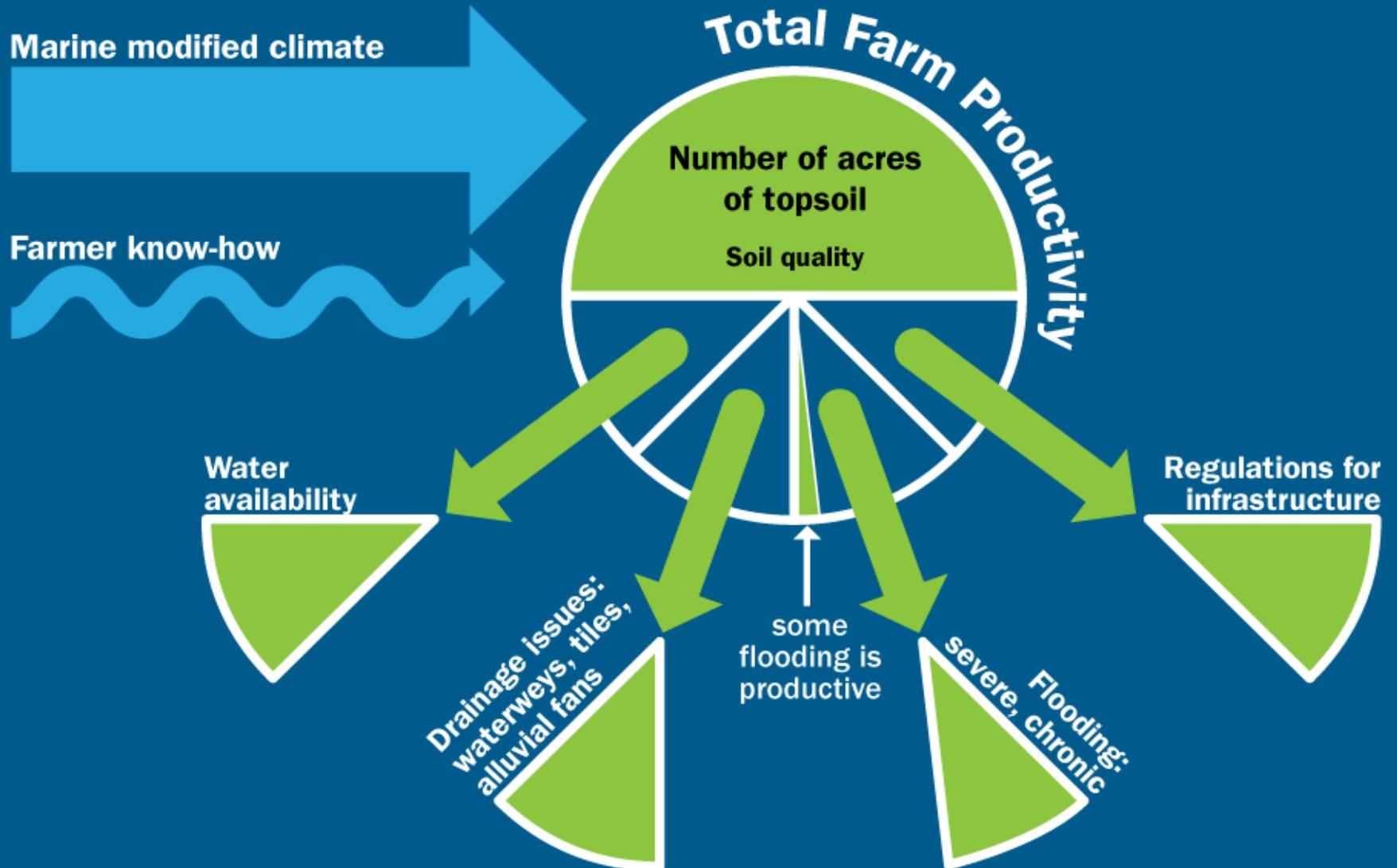


# Challenges and Opportunities



# Factors Affecting Farm Productivity



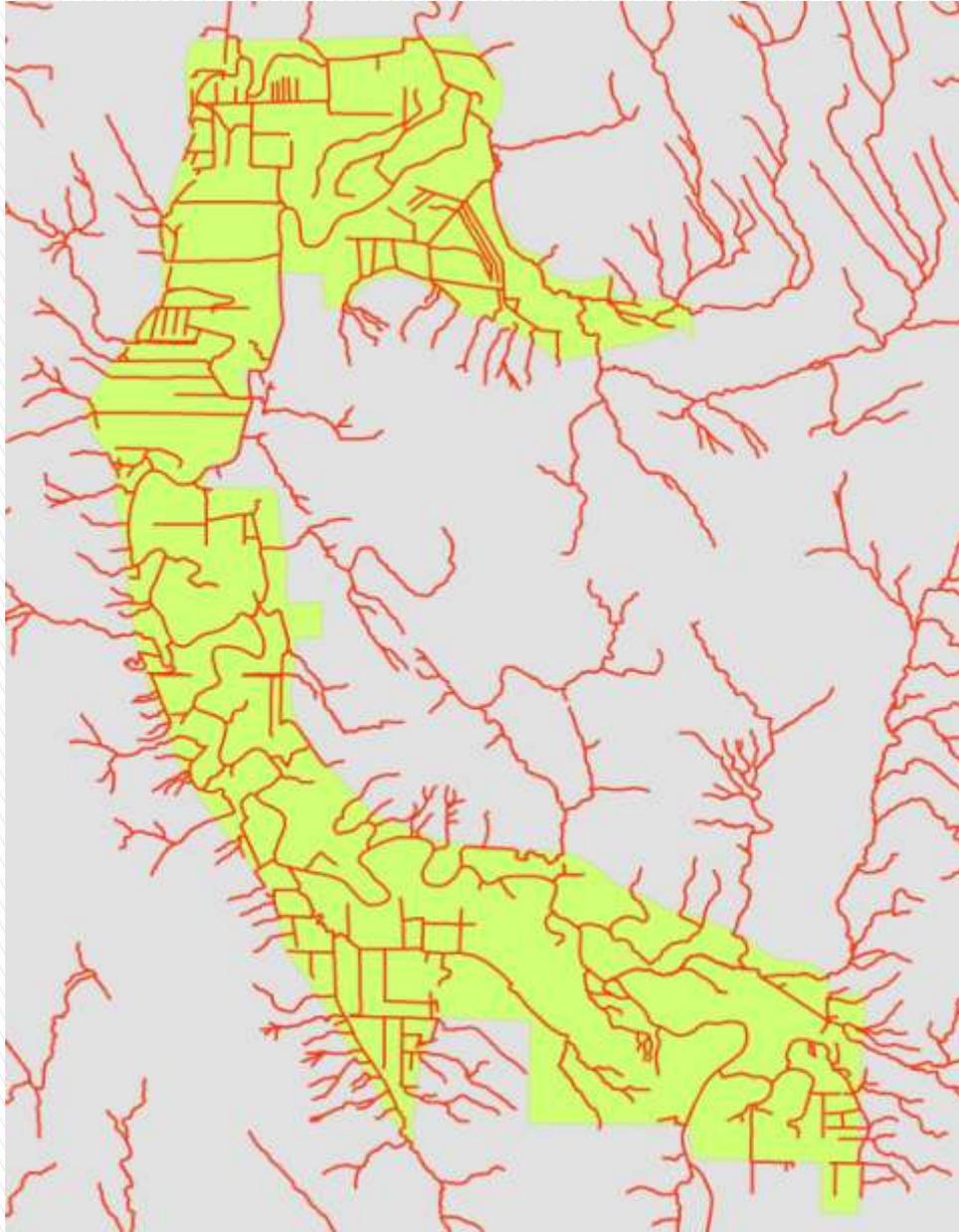
# Water Availability Challenges:

- Ag: Only some farms have water rights: very hard to procure.
- Ag: Riparian use: livestock watering allowed with controlled access/pump preferred.
  - Exemption for a well for livestock: 5,000 gal/day limit.
- Ag: Hort – the “new ag” – generally needs irrigation.
- Fish: Some water rights are tied to small streams and they can be low in summer.
- Fish: Pumps need to be fish friendly

# Water Availability: Opportunities

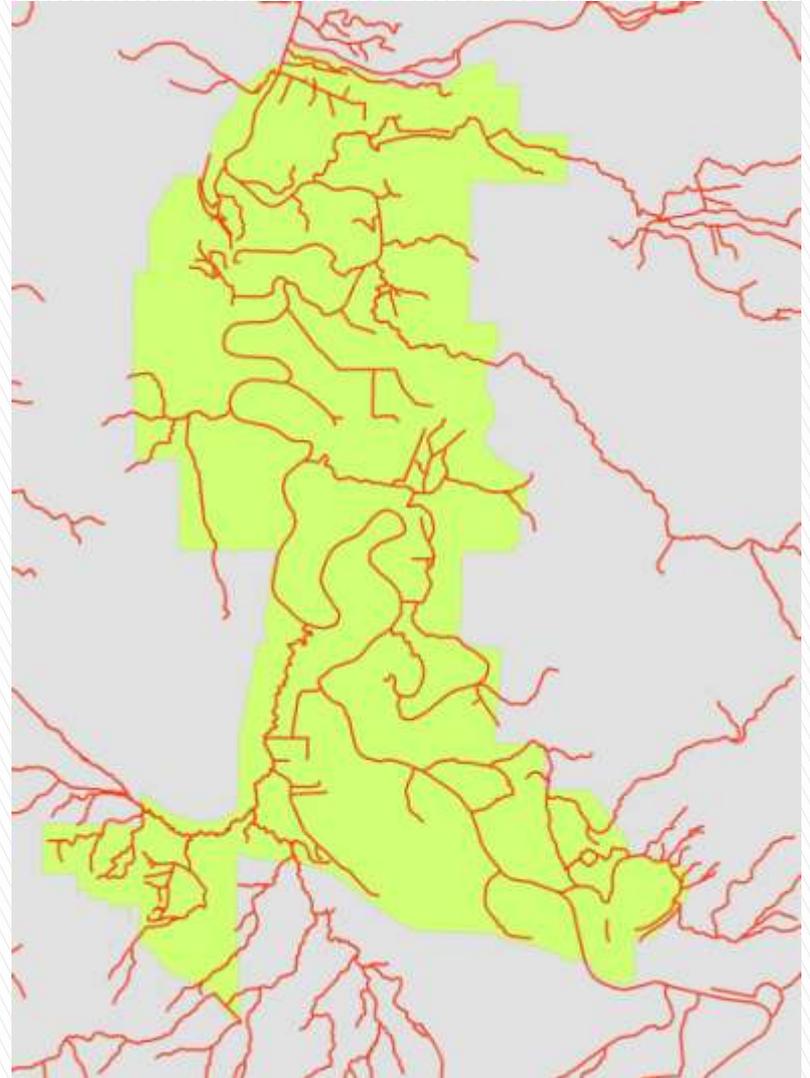
- Watershed Investment District being explored:
    - Water rights more easily exchanged
    - Opportunity to have multiple landowners negotiating over fish needs.
  - Capacity in river to move stream users to river.
  - Capture winter rainwater through creative solutions.
- 

North APD



Waterways in APD

South APD





# Drain Tiles – Post-Project



# Drain Tiles: Post-project



# 2011: Recent ADAP process



The ditches that drain agriculture areas are often used by endangered salmon and other fish; maintenance is highly regulated to protect fish and water quality.

**One stop shop permitting and standardized requirements**

**Developed easy to use manual**

**County provides:**

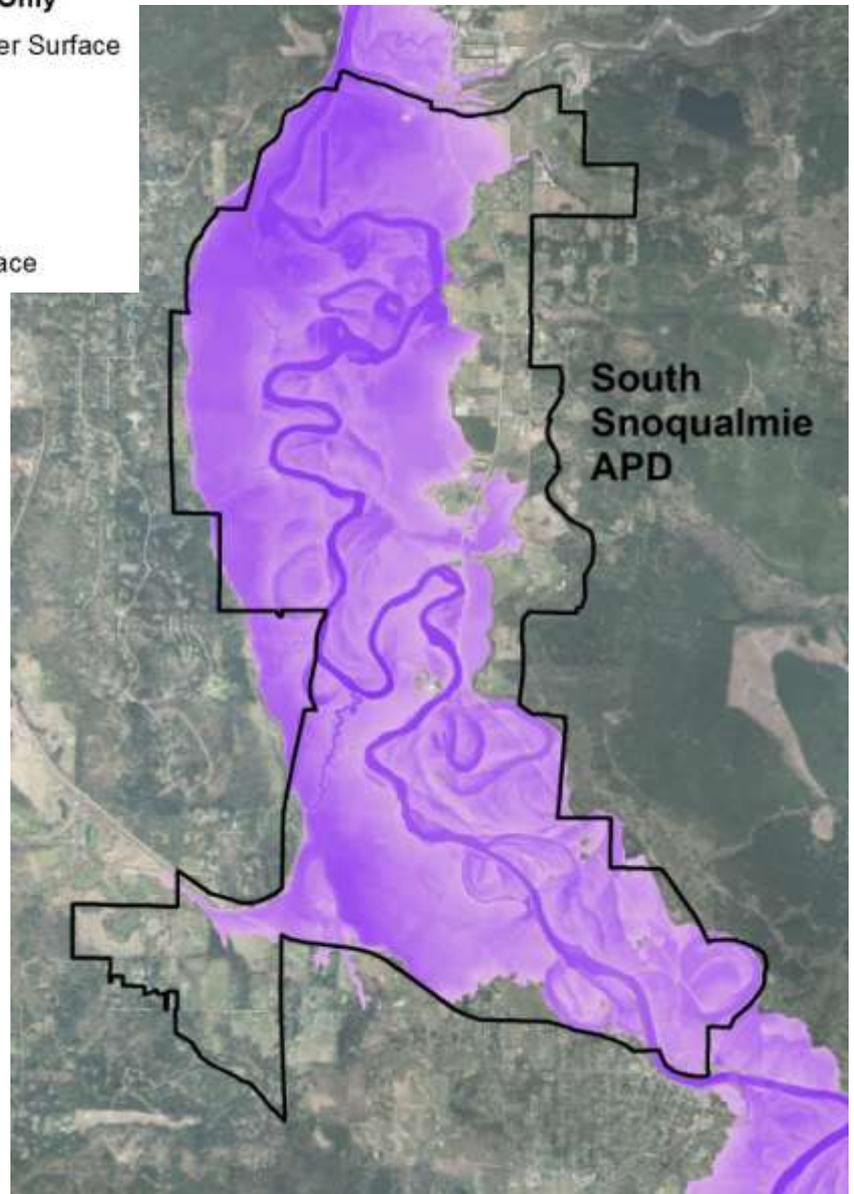
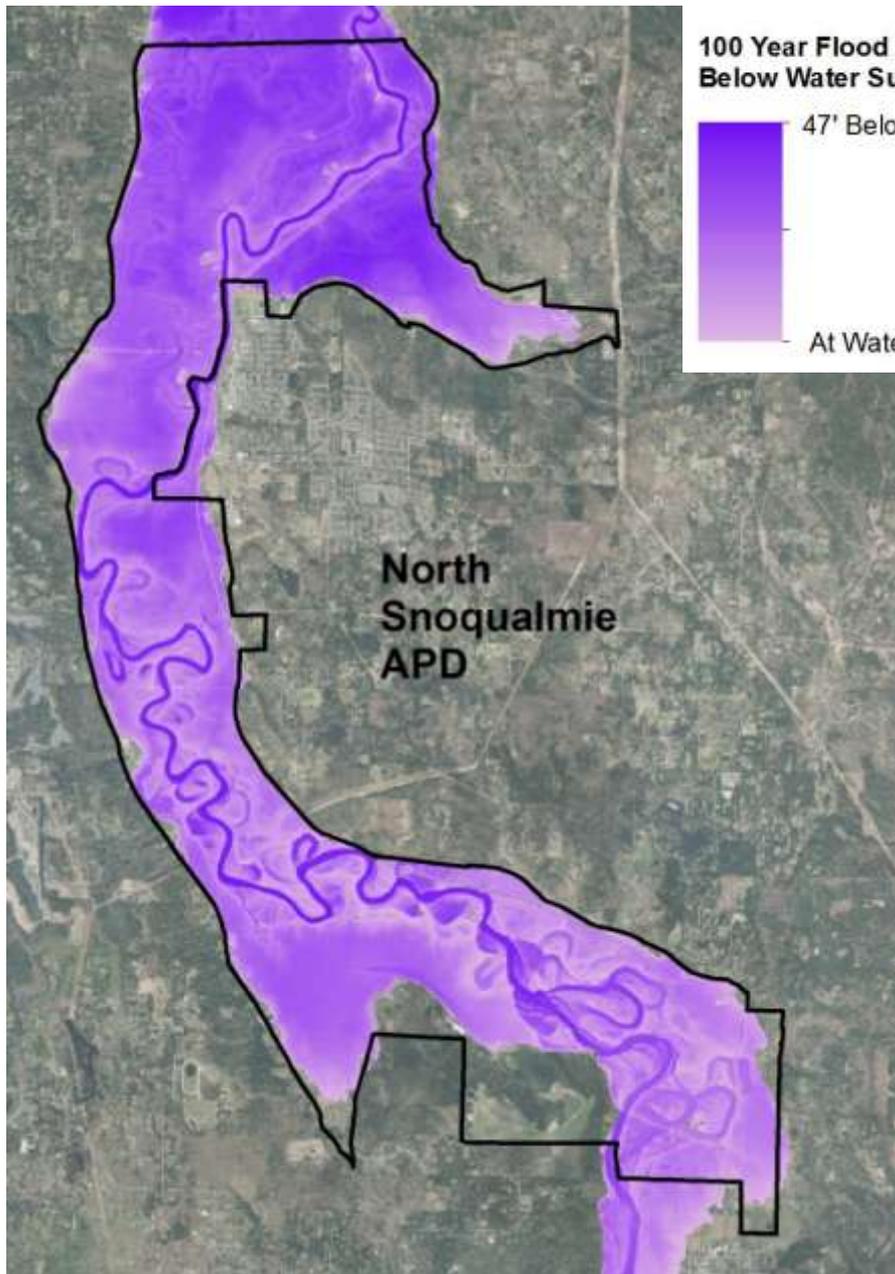
- engineering assistance**
- fish relocation**
- cost share for mitigation plantings**

**Expense is still limiting**

**Drain tile replacement allowed by County**

# Drainage: Opportunities?

- Mitigation needed for drainage maintenance is both an incentive and a requirement to improve riparian habitat.
  - Off site mitigation would allow planting resource to go to near term priorities
  - The equivalent of drainage districts could allow negotiation of bmp's, drainage guidelines, mitigation.
- 



**12,142 acres under water out of 14,579 acres total.**

# Living with Floods

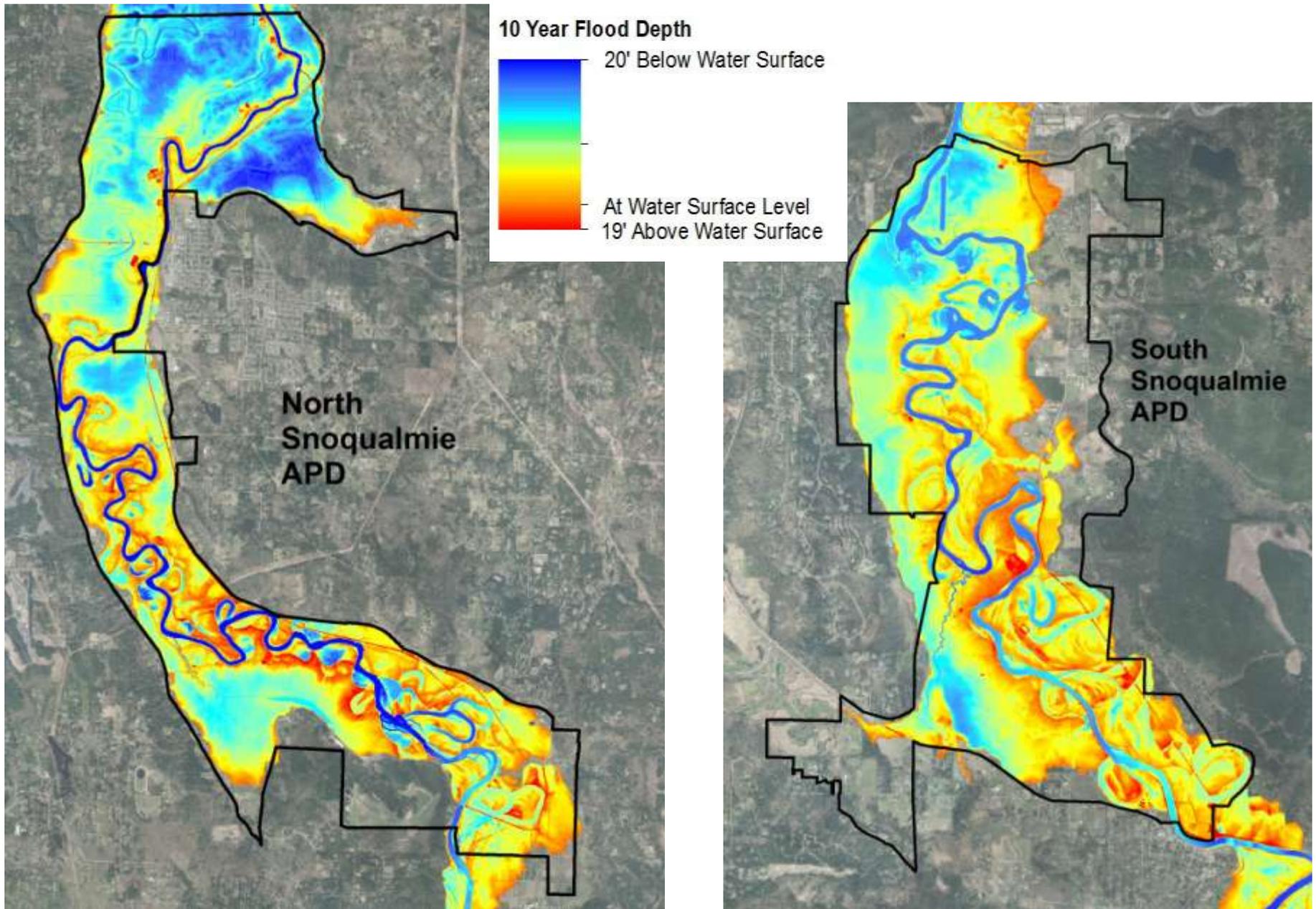
	feet	feet
500-year depth	20.2	6.8
100-year depth	17.6	5.8
50-year depth	16.1	5.2
10-yr depth	12.6	3.8
difference 100 & 50-year depths	1.5	0.6
difference 100 & 10-year depths	5	2

For Snoqualmie APD: approximate acres under water:

100 year flood: 12,142 acres under water

10 year flood: 11,426 acres under water

( 716 acres more under water in 100 year event than  
10 year event.



**16% above 0 elevation/water surface; 12% 0-3' ; 66% below 3'**



# Living with Floods



# Living with Floods



# 1954 Comprehensive Plan Study

“In the Snoqualmie Valley, dairying is practically the only farming enterprise. Some dairymen grow peas for canneries, using the vines as silage. Soil is suitable for vegetable crops, but because of the floods cannot be so used. Berries and fruit would be hazardous in this valley. On the better lands of the Upper Snoqualmie Valley and above Fall City several vegetable crops can be grown despite a shorter growing season.”

# Floodplain Restrictions –



- ▶ Floodplain is most of Snoqualmie APD
- ▶ No adverse impact: Zero-rise standard
- ▶ Absolute restrictions on fill – comp storage
- ▶ No new residences, farm pads, new buildings, manure storage structures

Several years of severe flooding highlighted the needs:

- Farms need reduction of flood risk
- Farms need to expand infrastructure

# Flood regs alleviated: 2007

- Ag accessory structures allowed
  - Effort on farm pads
  - Raising houses
  - Raises agricultural buildings
  - Small amounts of fill allowed for farm practices
  - Temporary farm worker housing enabled
- 

# Options: Agricultural Structure Elevations



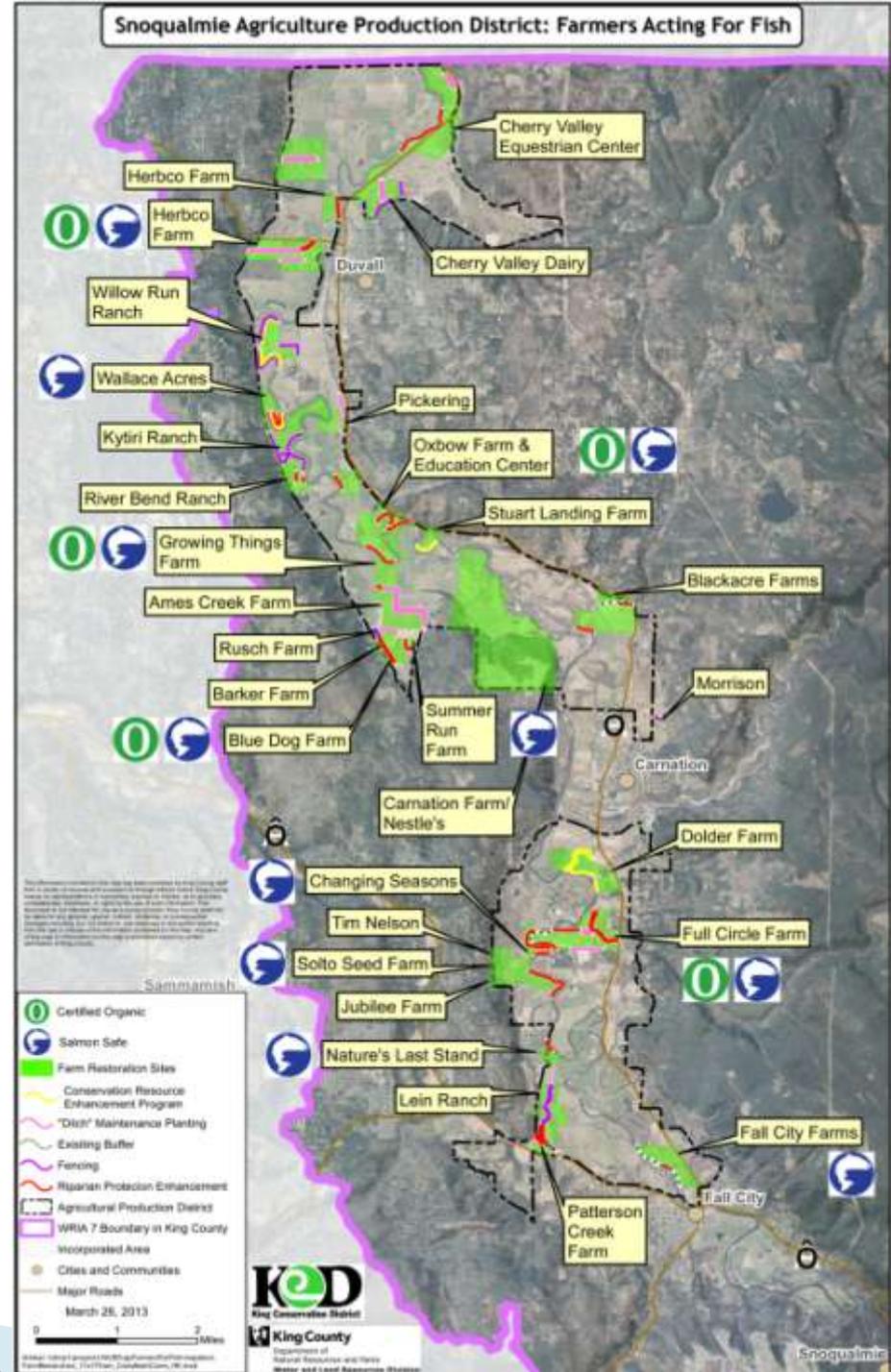
- Lift barn, then rebuild foundation with flow through vents
- Avoids fill
- Water flows under barn
- Challenges include: geotech, access

# Challenges: Regulations for On-Farm Infrastructure

- Flood
- Wetland
- Stream/Aquatic Area
  - Mitigation required
  - Agricultural drainage
- Health
  - Septic/Wells

# Voluntary Actions

- Environmentally conscious farmers
- Lots of support groups
- Lots of progress
- Lots of opportunity
  
- Priorities?
- Cumulative effects?



# Take Away

## ➤ Challenges for agriculture:

- ✓ Cumulative effects of diminished acreage.
- ✓ Regulatory restrictions impede viability.
- ✓ Agriculture always has challenges with water quality; water quantity – too much, too little.
- ✓ Many conflicts with fisheries and with long term protection of floodplain.

## ➤ Opportunities:

- ✓ Agriculture always has room for improvement, but limited resources.
- ✓ Stewardship ethic, sustainability goals, willing landowners.
- ✓ Mutual partnership between two endangered resources.