

# The Economic Importance of Water in the North Santiam Basin: Final Report

## Purpose of the Research

- ✓ Develop baseline economic information
- ✓ Inform planning decisions
- ✓ Support arguments for investment
- ✓ Describe relationships among uses and users
- ✓ Highlight common ground and opportunities

## What The Report Does

- Describes the economic value (i.e., benefits and costs) of water originating in the NSW.
- Uses available sources of data.
- Quantifies “order of magnitude” value, not precise estimates.
- Describes qualitatively some uses for which data were not available to support quantification.

## What the Report Does not Do

- Describe the economic activity (i.e., jobs, incomes, tax revenues) associated with water use.
- Perform an economic evaluation of a particular action or project.

## The “Economic Importance of Water”

### Framework:

1. What is the supply of water?
2. What are the uses underlying demand?
3. How does water yield economic value?
4. What trends affect water now and in the future?

## The Report Relies on Available Data

- Government reports and databases  
(e.g., U.S. Ag Census, U.S. Population Census)
- Willamette Water 2100
- Local Information  
(e.g., Municipal water use, water rights)
- Key-Informant Interviews  
(Ag, Recreation, Municipal, etc.)

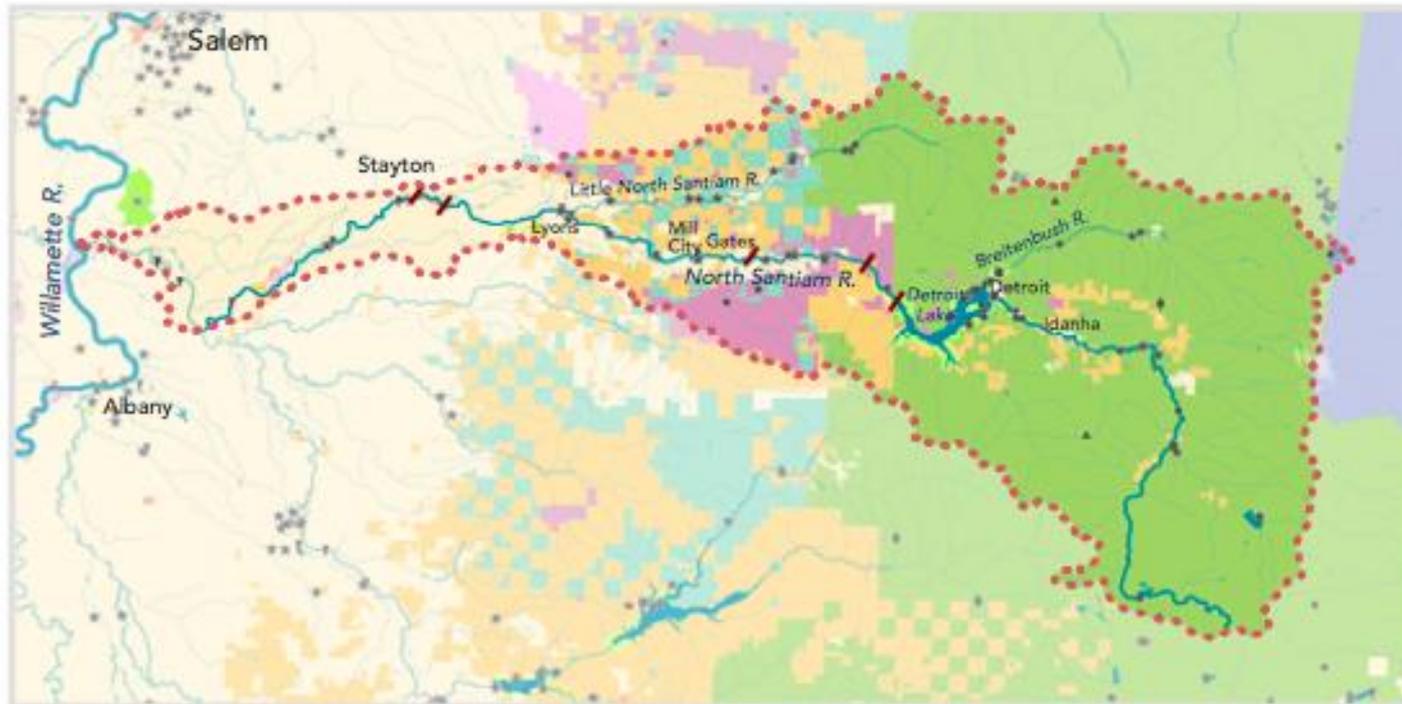
Description of Use	Scale of Quantified Value
Instream Flow for Aquatic Species	
Water-Related Recreation	
Aesthetics	
Electricity Generation	
Municipal and Industrial	
Irrigated Agriculture	
Cultural and Tribal	
Public Health and Well-Being	

Description of Use	Scale of Quantified Value (Per Year)
Instream Flow for Aquatic Species	\$62 Million
Water-Related Recreation	\$36.5 Million
Aesthetics	+
Electricity Generation	\$7.8 Million (Production Value) \$19.8 Million (Avoided CO2)
Municipal and Industrial	\$66 Million
Irrigated Agriculture	\$59.8 Million
Cultural and Tribal	+
Public Health and Well-Being	+

## Instream Flows for Aquatic Species

- Upper Willamette River Chinook (UWRC)
- Upper Willamette River Steelhead
- NOAA Survey of U.S. Households found WTP for recovery of UWRC (delisting in 50 years) of \$45.75 per year for 10 years.
  - Applied to Oregon Households
  - NOAA Biologists: NSW actions necessary, not sufficient for delisting.

## Recreation



Land Management and Recreation Sites in the North Santiam Watershed

Land Management

- U.S. Forest Service
- Bureau of Land Management
- U.S. Army Corps of Engineers
- Other Federal
- Indian

- Oregon Dept. of Forestry
- Oregon Dept. of Parks and Recreation
- Other State of Oregon
- Local government
- Private
- Private, industrial (e.g., timber)

Recreation sites

- ★ Campground
- ✱ Forest Service Facility
- ▲ Lookout
- Picnic Area
- † Trail Shelter
- ★ State, County, and City Parks
- † Boat Ramps

- ⋯ North Santiam Watershed
- Major dams

0 5 10 miles

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## Recreation

- Over 500,000 visits per year
- Average value (beyond what people spend on travel, gear, etc.) of \$73 per visit.
- Visitor demand correlates with reservoir levels: 1 ft drop = 2 percent decline in visitation.
- **Positive contributions of economic activity**
  - Canyon communities support recreation
  - Guide businesses, resorts, etc.

## Recreation

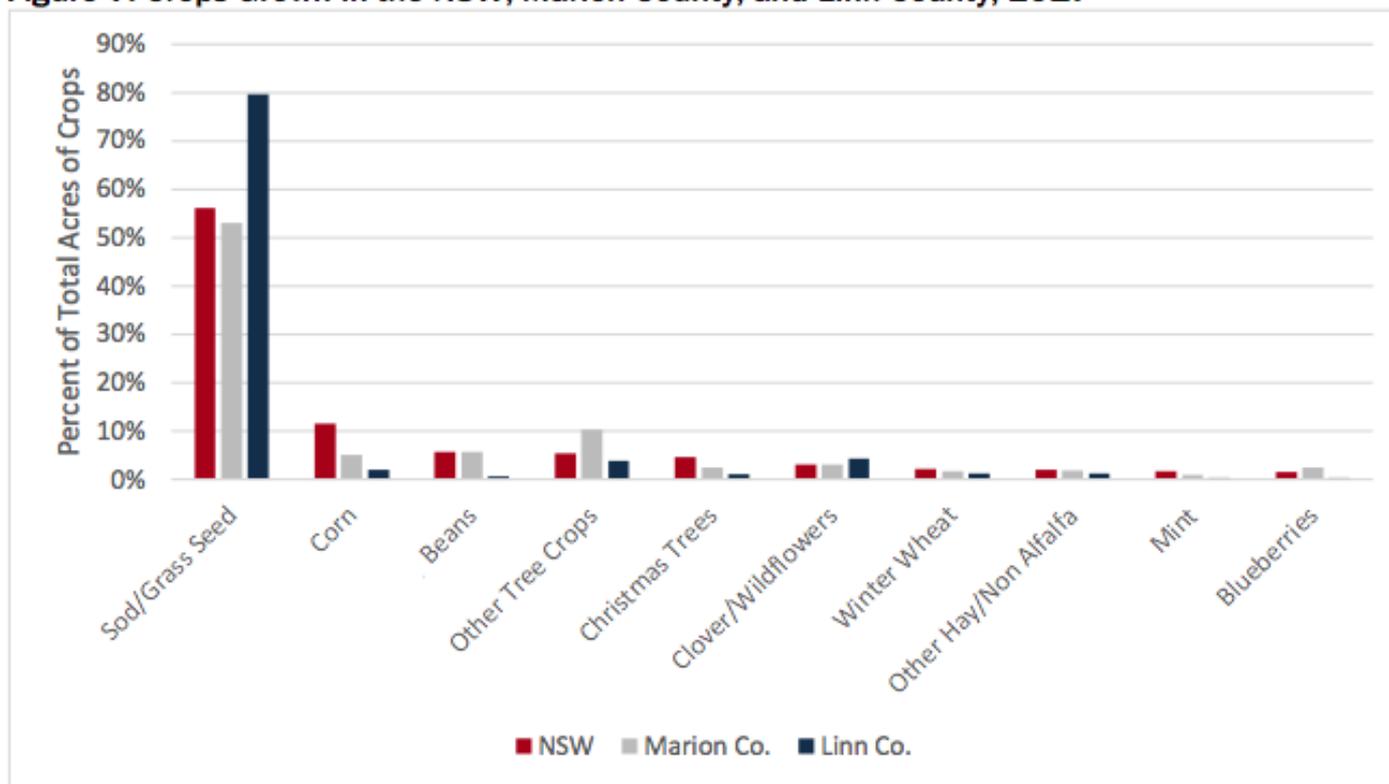
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## Municipal and Industrial

- Supports residential populations, institutions, businesses, and manufacturing, within NSW and downstream.
  - Corrections largest individual user of Salem water
  - Food processing sector key
- Willingness to pay for reliability.
  - Mandatory restrictions (outdoor water), household WTP up to \$42 per year to avoid.

## Irrigated Agriculture

Figure 7. Crops Grown in the NSW, Marion County, and Linn County, 2017



Source: ECONorthwest, with data from USDA CropScape 2017 (<https://nassgeodata.gmu.edu/CropScape/>)

Note: The category "Beans" is labeled "Dry Beans" in the CropScape data. However, interviews with local producers and NORPAC staff suggest that the primary bean crop in the watershed is fresh green beans, and dried beans are not produced in this area (personal communication with Mark Steele, NORPAC).

## Irrigated Agriculture

- Traditional unirrigated crops transitioning to irrigation. Hazelnuts and grass seed.
  - Increases in demand for water.
  - Increases in value of irrigated crops?
- Better water balance modeling and mapping may improve quantification.
- Values based on 2012 data. New data forthcoming.

## Aesthetic Use



## Aesthetic Use

- Reflected in markets for property.
- Enjoyment for visitors and employees.
- Premium in urban settings 10-30 percent.
- Less clear in rural settings.

## Important Themes

- Many uses are inherently complementary
- Sectors that use water rely on each other
- Distribution of benefits and costs are uneven: beneficiaries aren't necessarily bearing costs of management

## What Next?

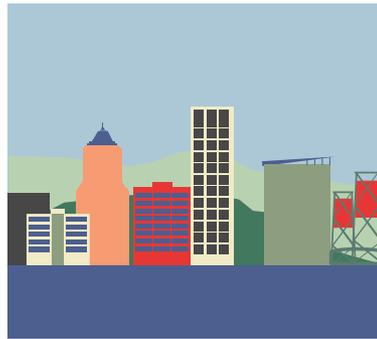
- Demonstrates value is considerable, and future trends may diminish value if not addressed. Plan and act now to protect value.
- Highlights opportunities for collaboration.
- Future research opportunities
  - Project-level analysis
  - Economic activity analysis (jobs, incomes, taxes)
  - Water balance refinement

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