



Drought Impacts to Washington Agriculture

Presented By: Jackie Hancock



Washington
State Department of
Agriculture

Washington farmers produce over **300** different commodities



Washington
State Department of
Agriculture

AGR-PUB 101-644 (11/17) Source: USDA National Agricultural Statistics Service. Image reflects the top 104 commodities in Washington. Need this publication in an alternate format? Call The WSDA Receptionist at 360-902-1976 or TTY 800-853-6588.



Washington
State Department of
Agriculture

WASHINGTON AGRICULTURE A GLOBAL IMPACT

APR
2024
EDITION

Top Export Markets

Source: WISER Trade, CY23

CANADA - \$1.3B

TOP IMPORTS:
Seafood, Apples,
Onions

JAPAN - \$1.2B

French Fries, Hay, Seafood

CHINA - \$857M

Beef, Seafood, Wheat

MEXICO - \$687M

Apples, French
Fries, Dairy

SOUTH KOREA - \$497M

French Fries,
Hay, Wheat

Top Export Products

Source: WISER Trade, CY23

FROZEN FRENCH FRIES - \$1.1B

TOP MARKETS:
Japan, Mexico, South Korea

FISH & SEAFOOD - \$1.1B

Canada, China, Japan

WHEAT - \$684M

Philippines, China, Japan

APPLES - \$683M

Mexico, Canada, Taiwan

DAIRY - \$563M

Indonesia, Japan, Mexico



Water Supply and Drought

- Impacts are variable
- Yield Reductions
- Quality Impacts



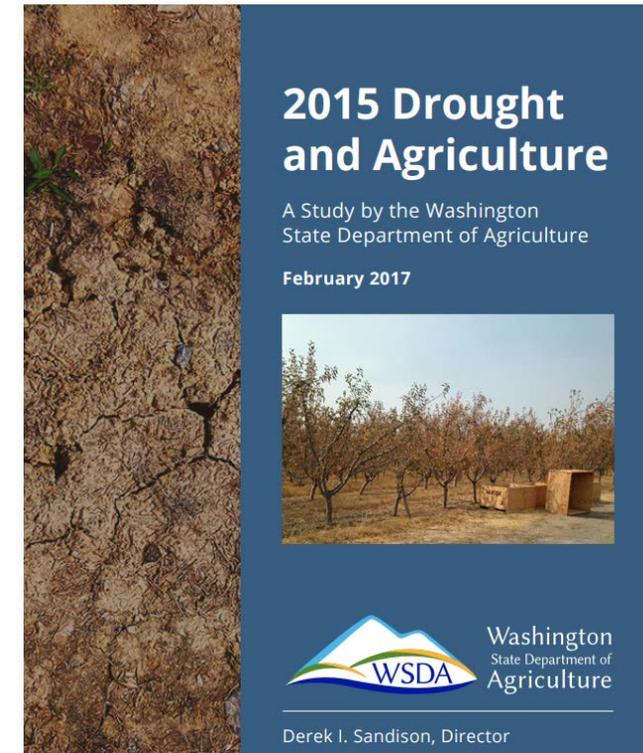
**2021 Drought
Reduces
Wheat Yields
by 40%**

2015

- Not limited to certain crops or regions
- \$633-773 million gross revenue losses
- Many impacts not quantifiable in study

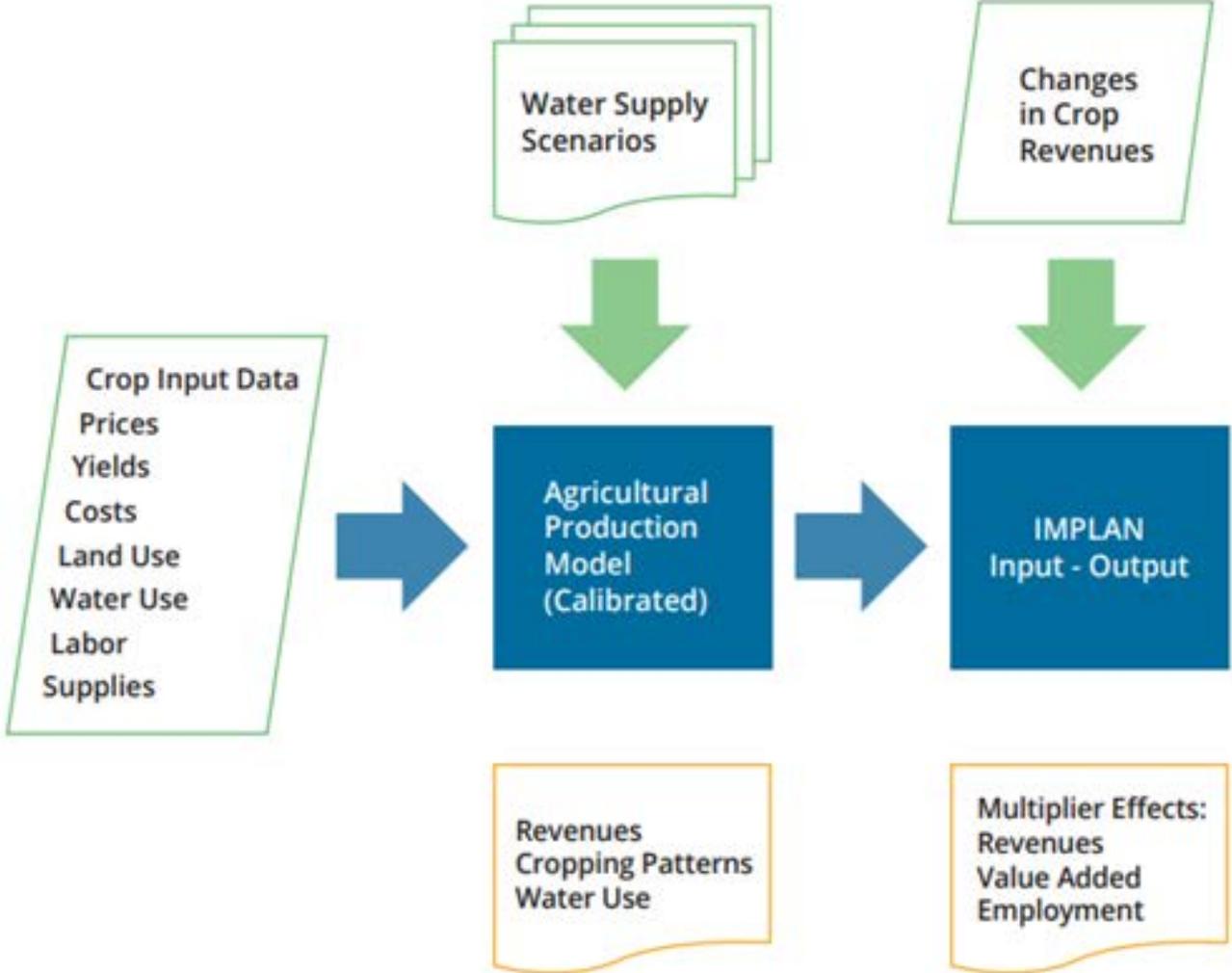


Economic Impacts of Drought on Agriculture



Model Framework

Figure 1 DAT Model Framework (Medellin- Azuara, et al. 2021)



Need and Implications- Model Application in Yakima

WATER SUPPLY IN THE YAKIMA BASIN



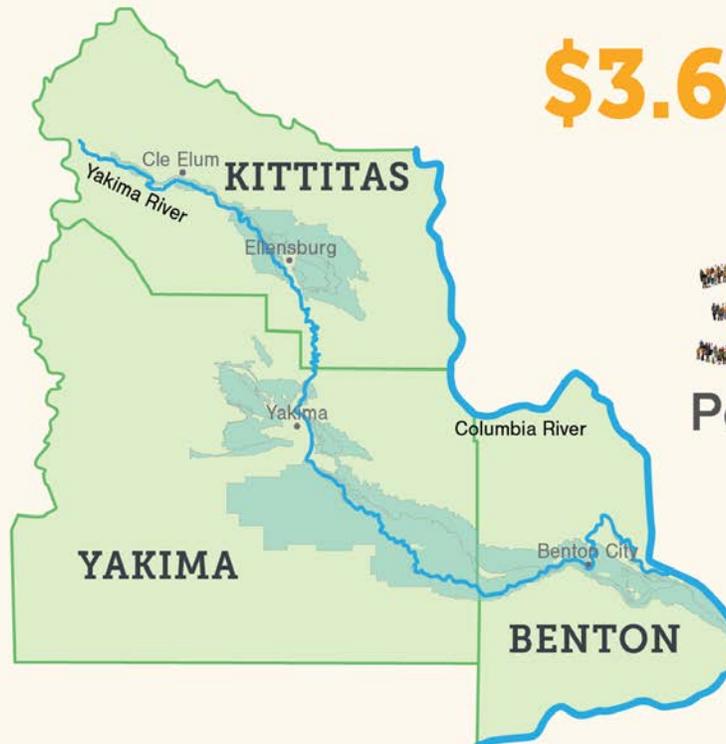
Uncertainty in water availability is a concern for all who rely on streamflow. The Yakima Basin Integrated Plan (YBIP[†]) works to secure water in drought years via surface water storage, groundwater storage, water conservation and market re-allocation projects.

What is the value gained from increasing water supply to 70% from 50%?

Agriculture in Yakima- Producer Value



In times of drought, many irrigators in the Yakima Basin do not receive their full water supply. These irrigators account for 58% of Yakima Basin agricultural value. This makes the region especially vulnerable to economic and environmental impacts of drought.



\$3.65 Billion

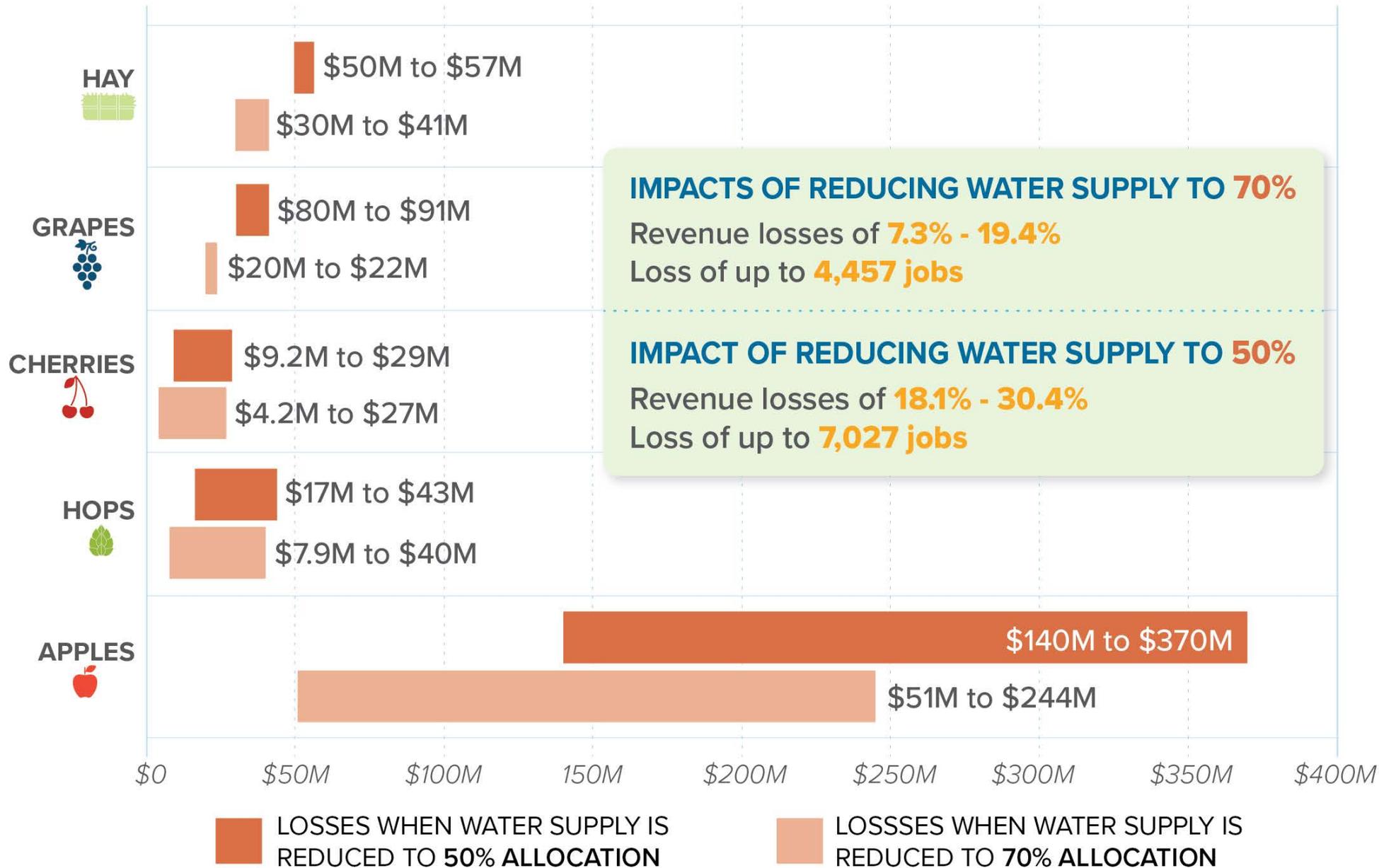
Total Revenue*

33,973

People Employed



Drought Model Results - Producer Losses



Total Economic Losses



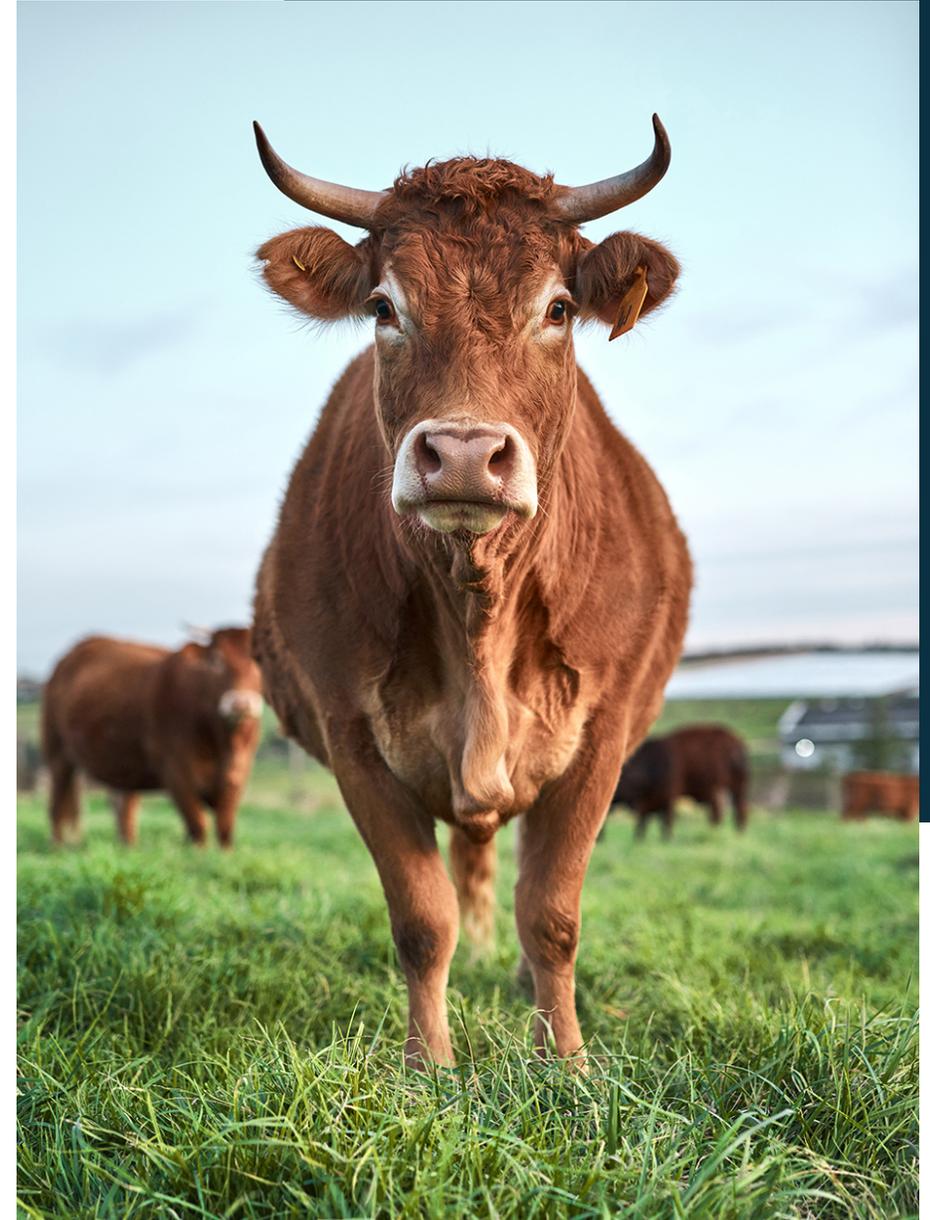
Total losses- losses to the whole region's economy. Direct, indirect, and induced



70% water
Up to \$704 million
Up to 6,539 jobs



50% water
Up to \$1.1 billion
Up to 10,309 jobs



Potential Savings from YBIP

If YBIP goal to secure 70% water supply for proratable users is met

| | Direct | Total Impact |
|---------------------------|---------------|---------------|
| Revenue (in millions) | \$235 - \$244 | \$390 - \$406 |
| Value-added (in millions) | \$165 - \$171 | \$261 - \$271 |
| Jobs | 2,471 - 2,570 | 3,626 - 3,770 |

Need and Implications



Droughts expected to increase in frequency and severity

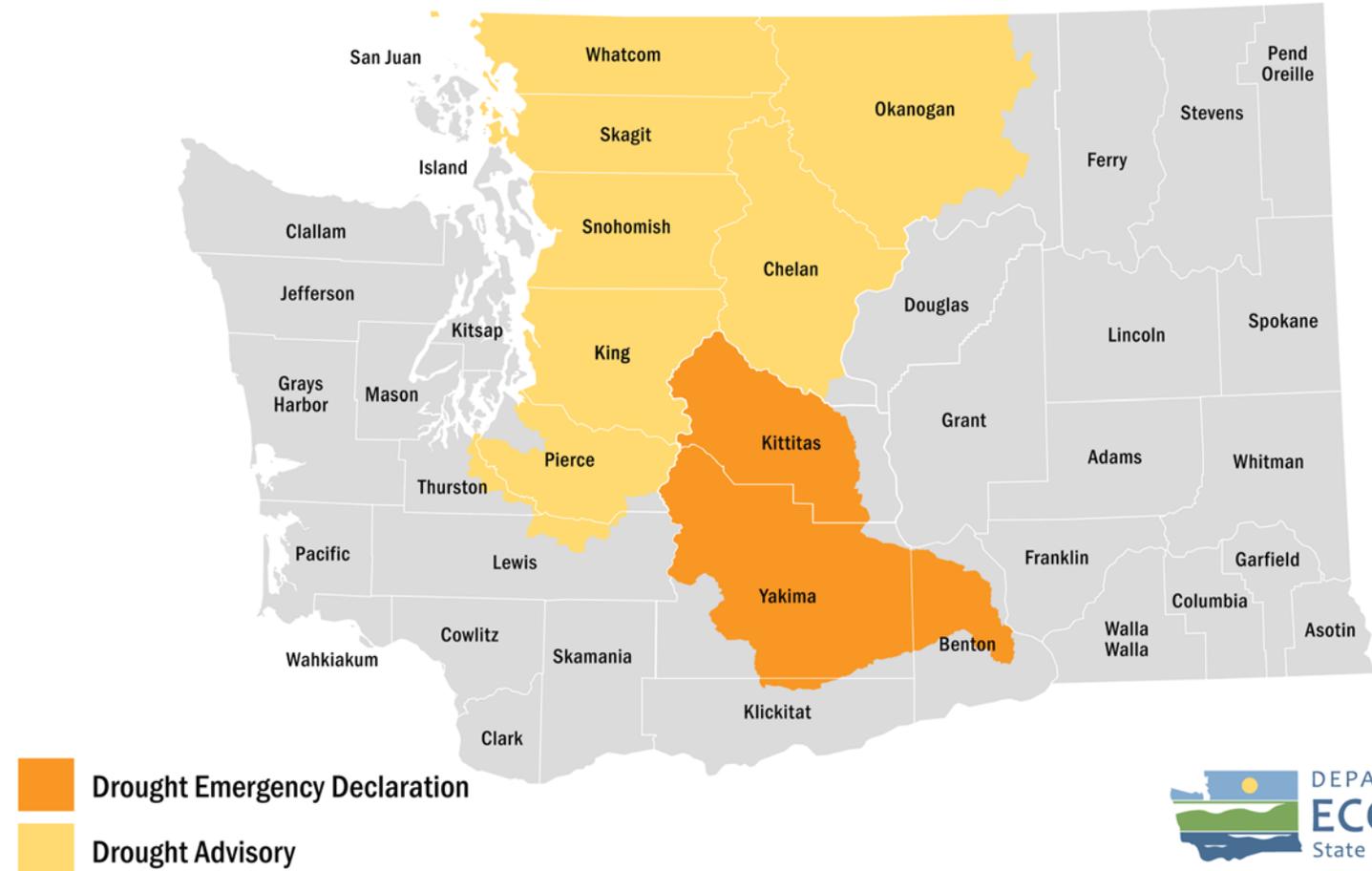


Ag sector value in terms others understand



Support infrastructure investments

Washington Drought Declaration and Advisory



Beyond Agriculture

The DAT does not provide insight into the impact of water supply changes on non-monetary factors such as fisheries, recreation, cultural and natural resources





Questions

Contact Us



Jaclyn Hancock

Water Resources
Scientist

jhancock@agr.wa.gov



Madi Roy

Agricultural
Economist

MMRoy@agr.wa.gov



Agr.wa.gov/agscience

