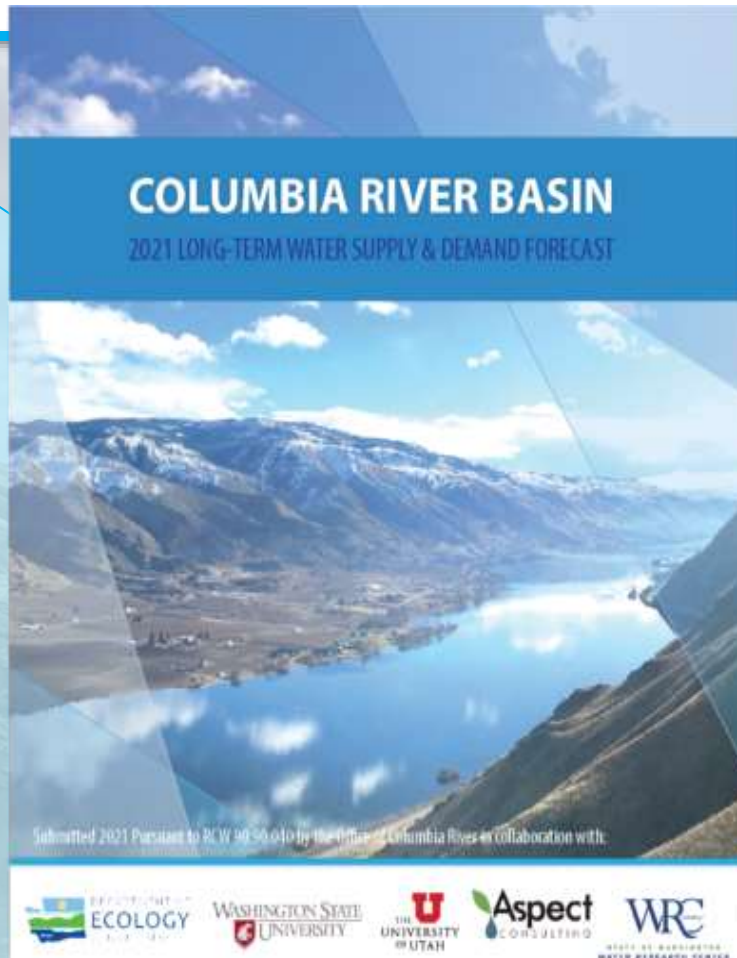


Thoughts on valuing water

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COLUMBIA RIVER BASIN LONG-TERM WATER SUPPLY & DEMAND FORECAST



- Every 5 years, the Washington State Department of Ecology's Office of the Columbia River (OCR) is required to submit a long-term (20-year) water supply and demand forecast to the State Legislature
 - The forecast helps improve understanding of where additional water supply is most critically needed, now and in the future
- Report links at <https://wrc.wsu.edu/>**

2021 Forecast - Trends

Climate Change

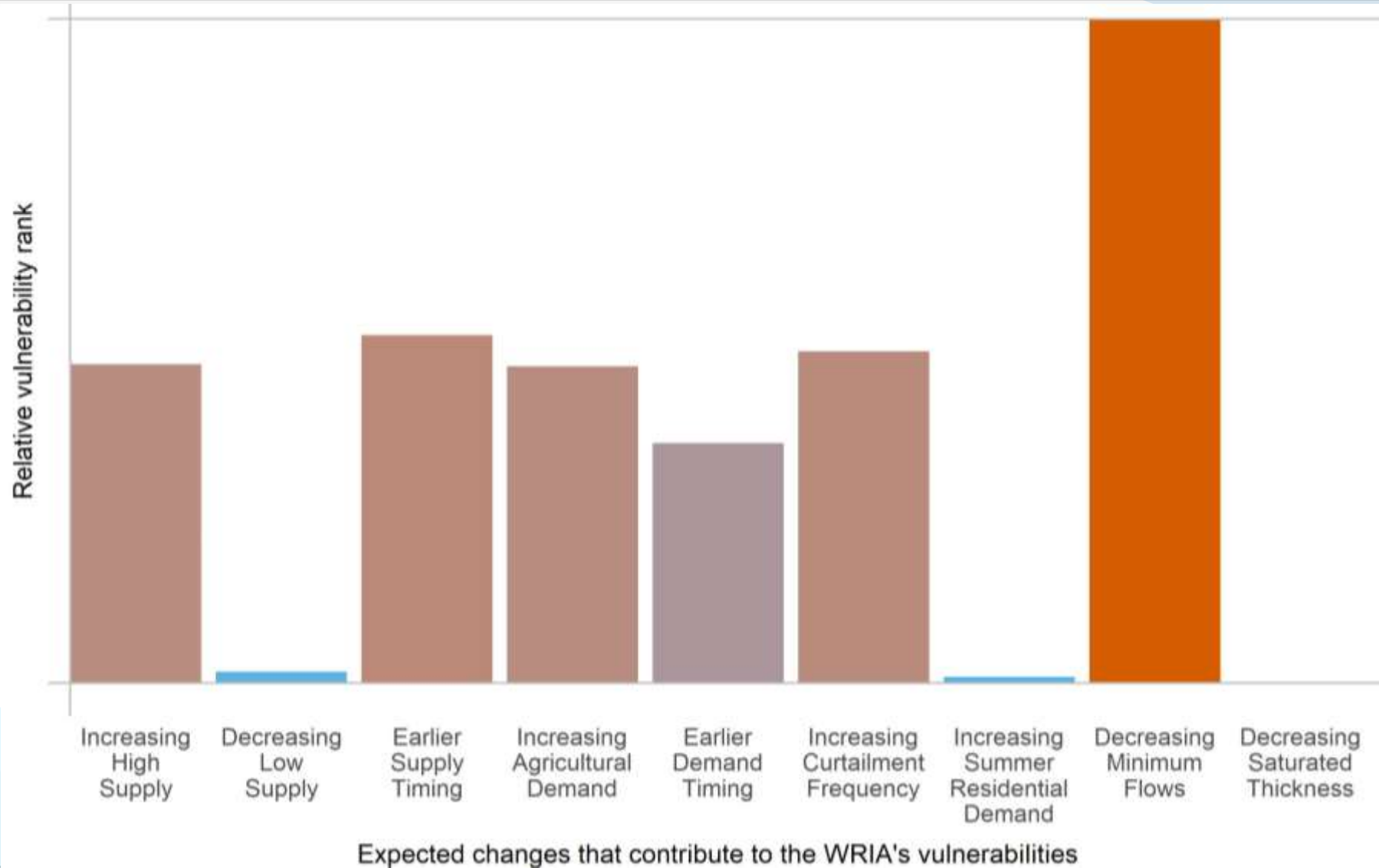
By the 2040s, Washington can expect:

- Higher temperatures
- Wetter, warmer winters
- More rain and less snow
- Reduced snowpack, especially at low and mid elevations
- Earlier snowmelt
- Warmer, drier summers, deeper droughts
- Greater heat stress
- More frequent extreme weather events

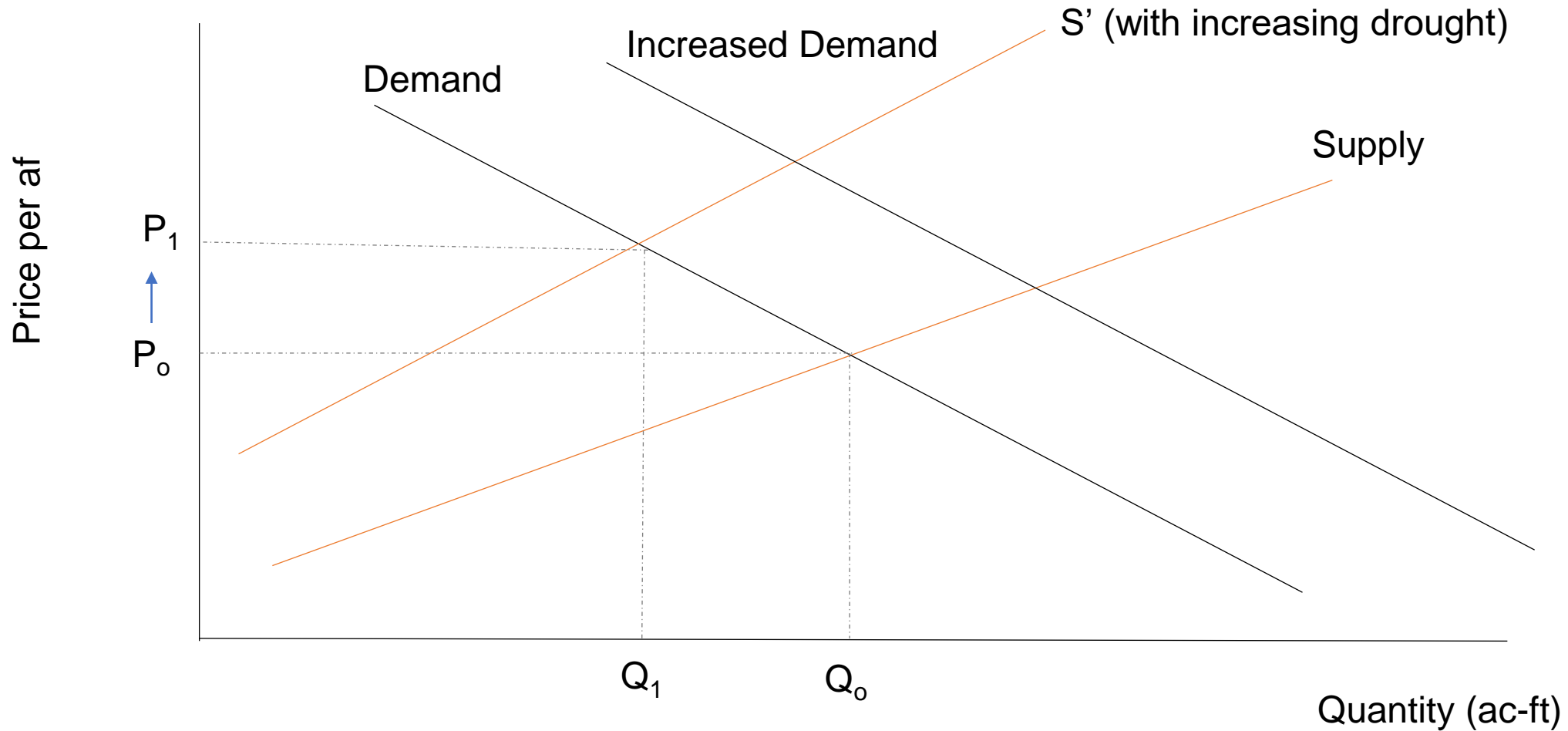
2021 Forecast - Key Takeaways

- **The Forecast suggests that eastern Washington is vulnerable to:**
 - Water supplies increasing earlier in the spring/winter, and decreasing late in summer/fall;
 - More extremes in water supply from year to year;
 - Declining low flows, affecting important fish species;
 - Areas of diminishing groundwater supplies;
 - Watersheds with increases in out-of-stream demands.
- **This combination of lower supplies at critical times and locally increasing demands leads to increasing frequency of instream flow deficits and resulting curtailments.**

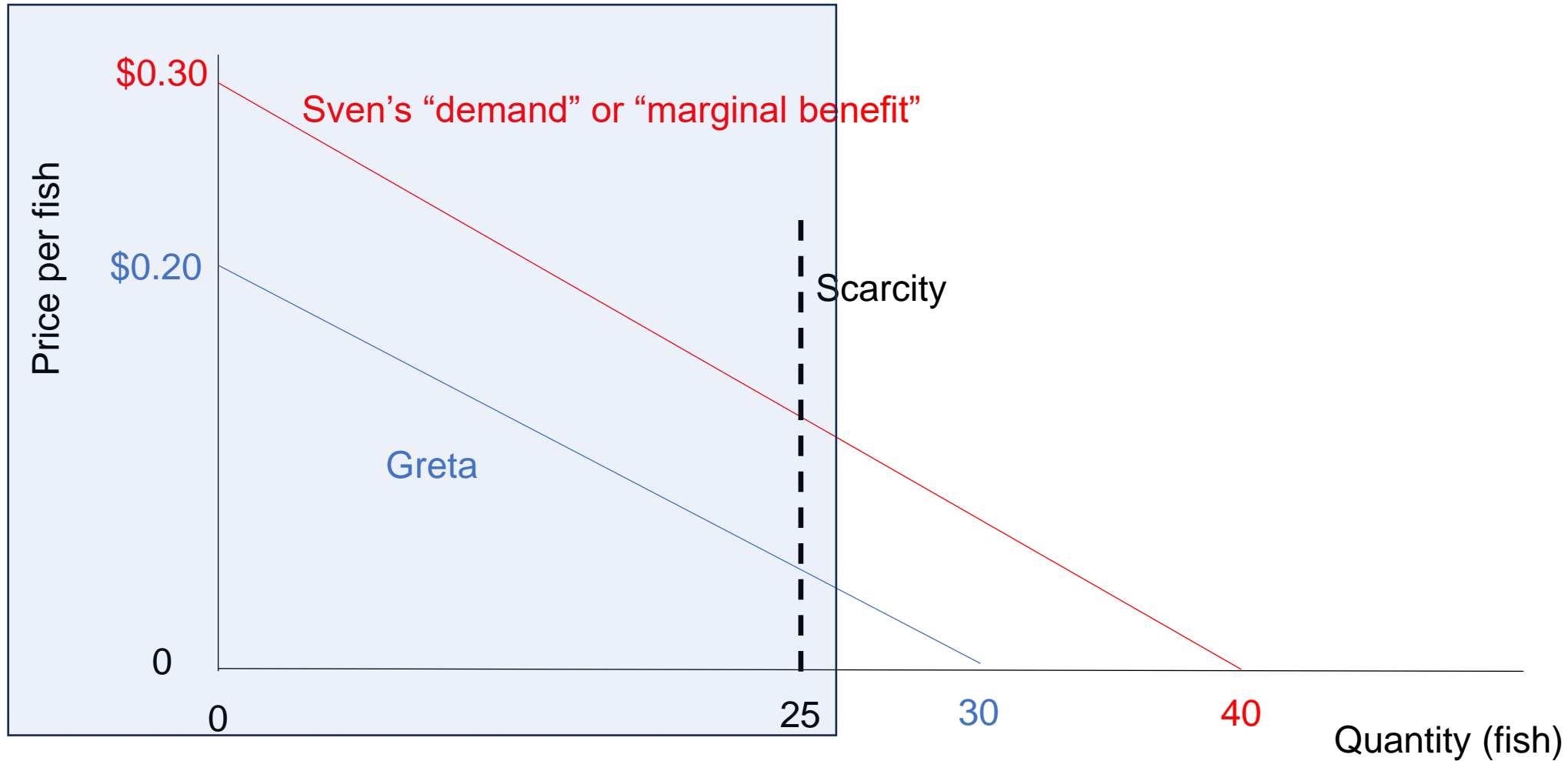
How vulnerable is Methow relative to other WRIsAs in Eastern WA?



Basic supply and demand for water rights



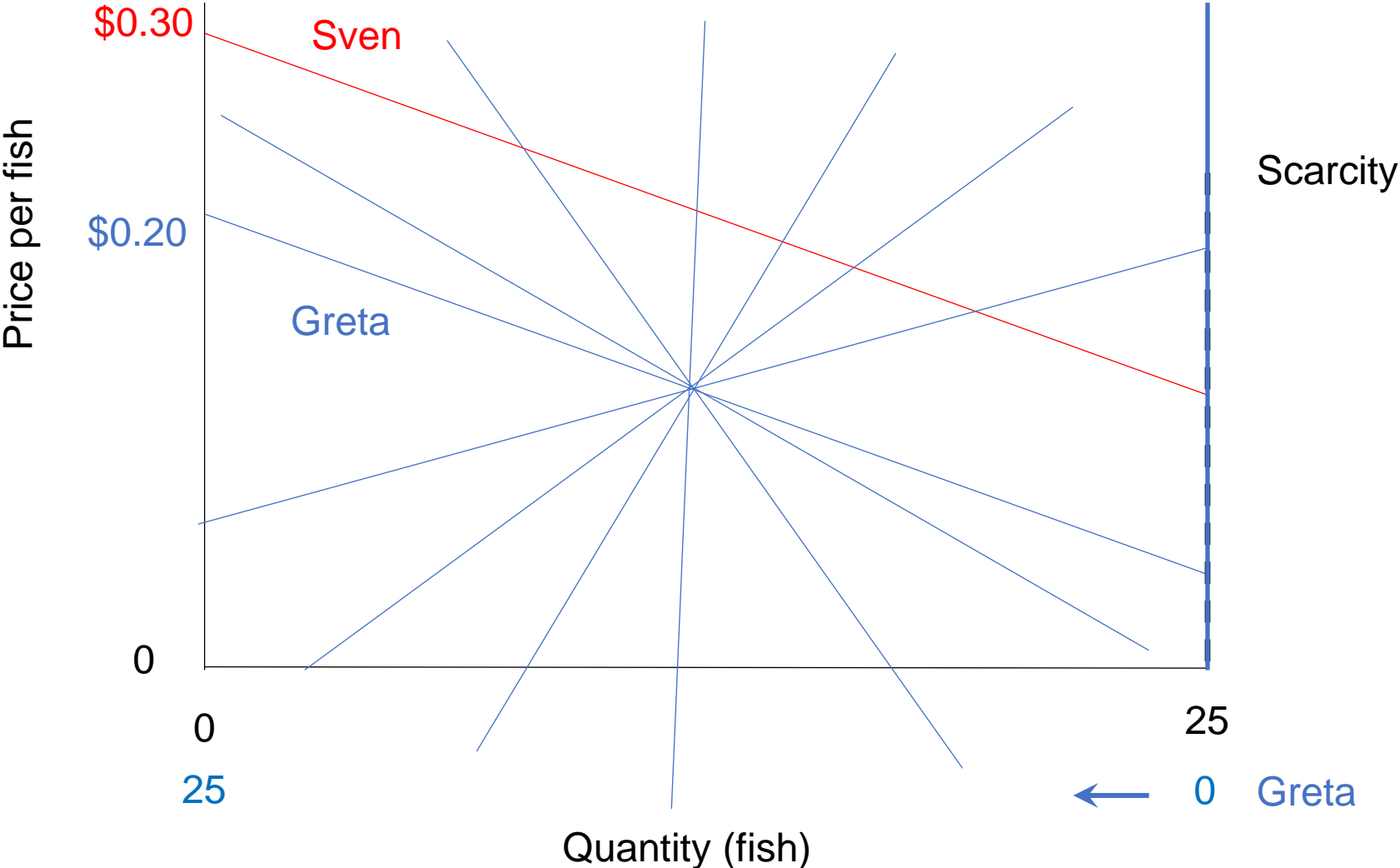
The logic of “reallocation”



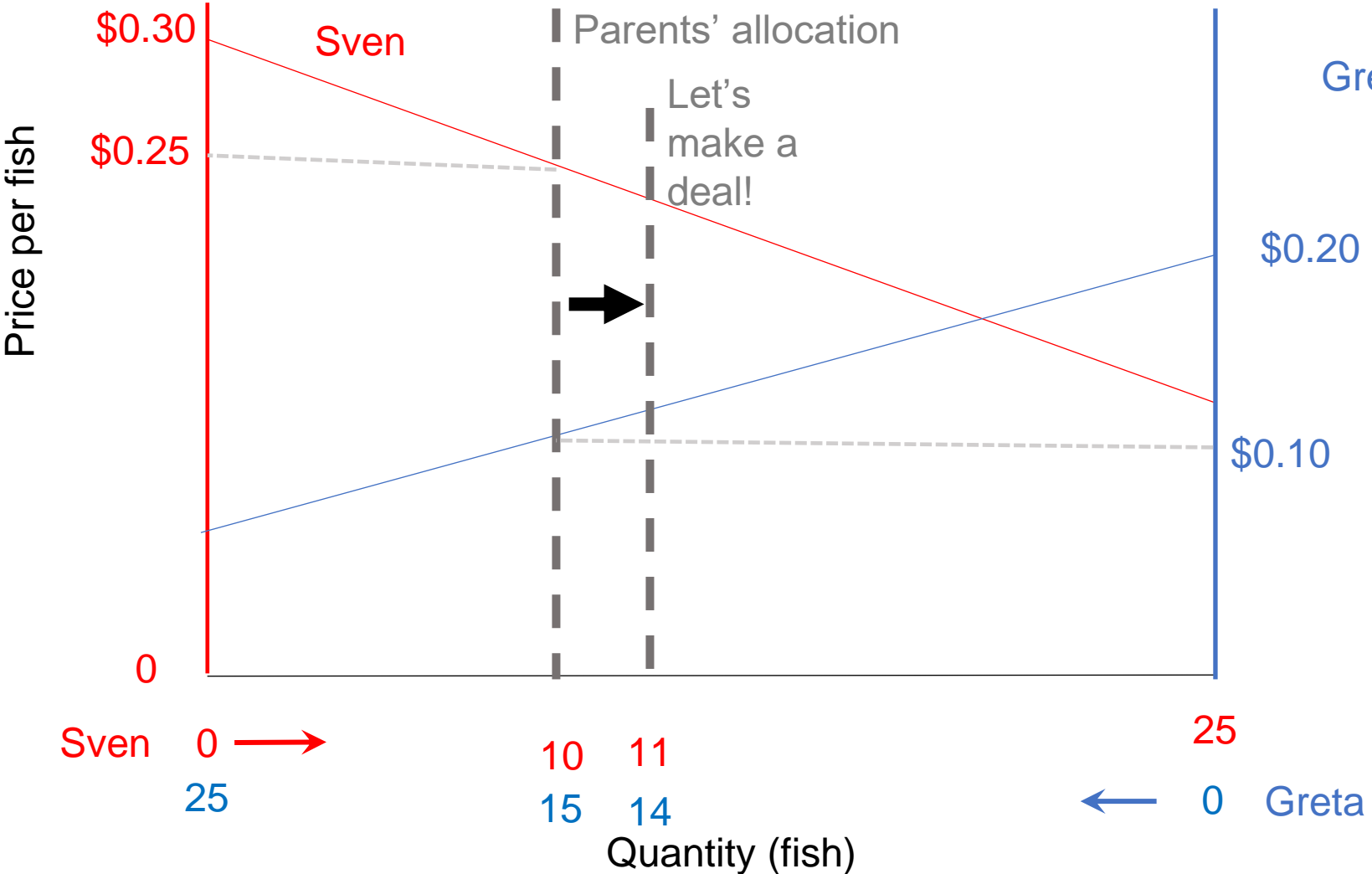
The logic of “reallocation”



The logic of "reallocation"

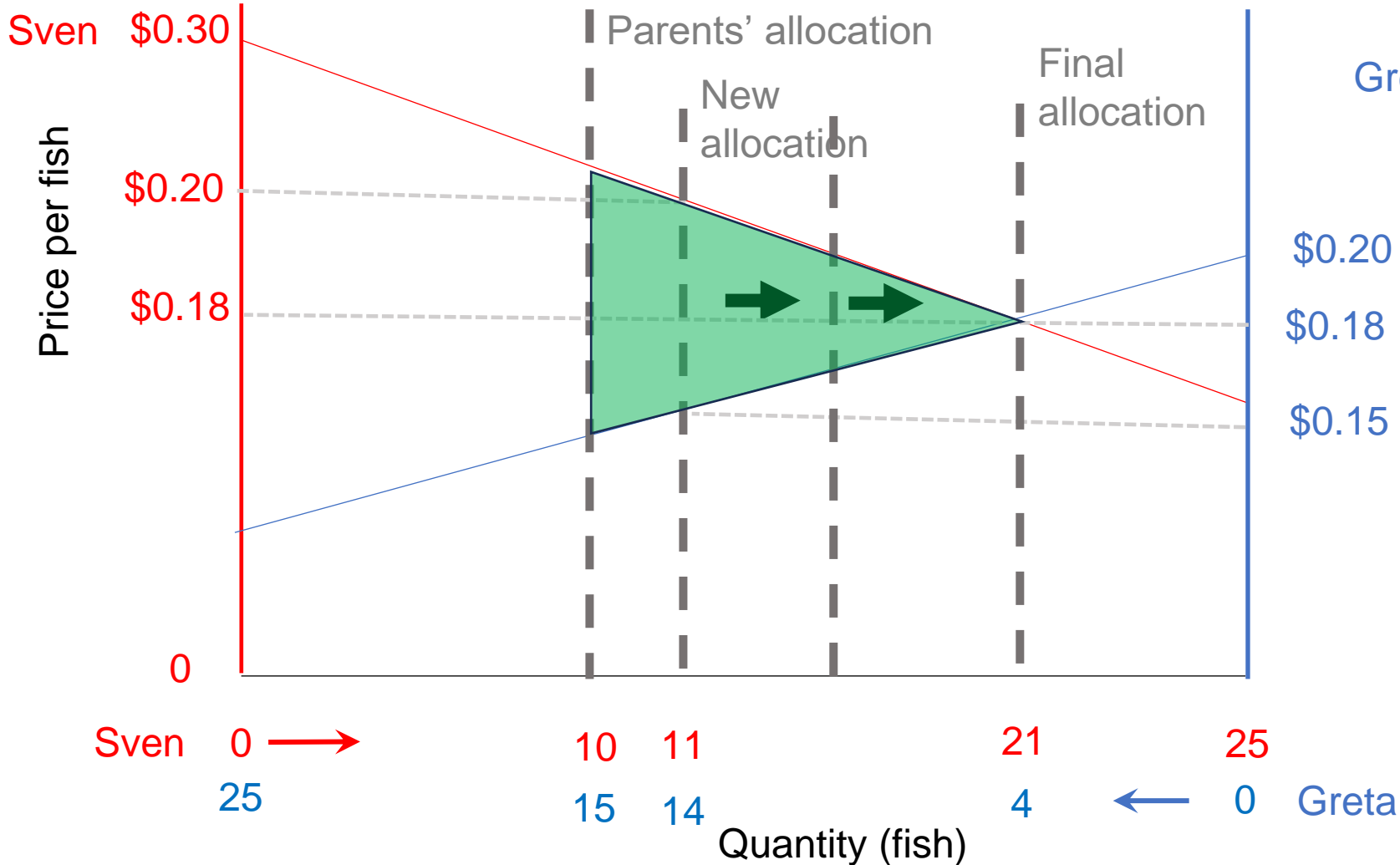


The logic of “reallocation”



The price they arrive at will be between \$0.10 and \$0.25, but will depend on their **bargaining power/ability**

The logic of “reallocation”



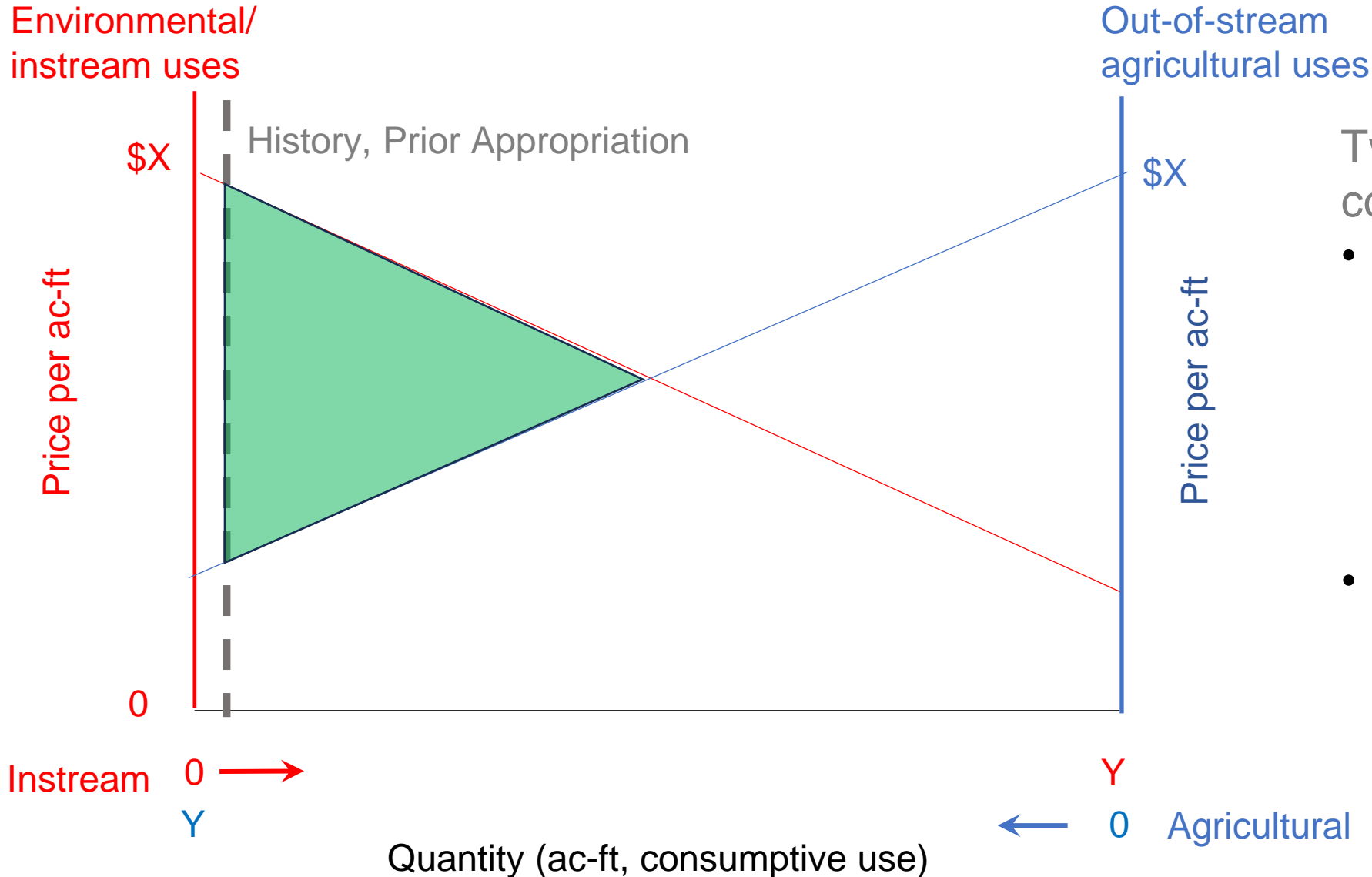
Economic “gains to trade”.

Both are better off.



Dividing up the triangle: **bargaining power and information**

The logic of “reallocation”: water rights



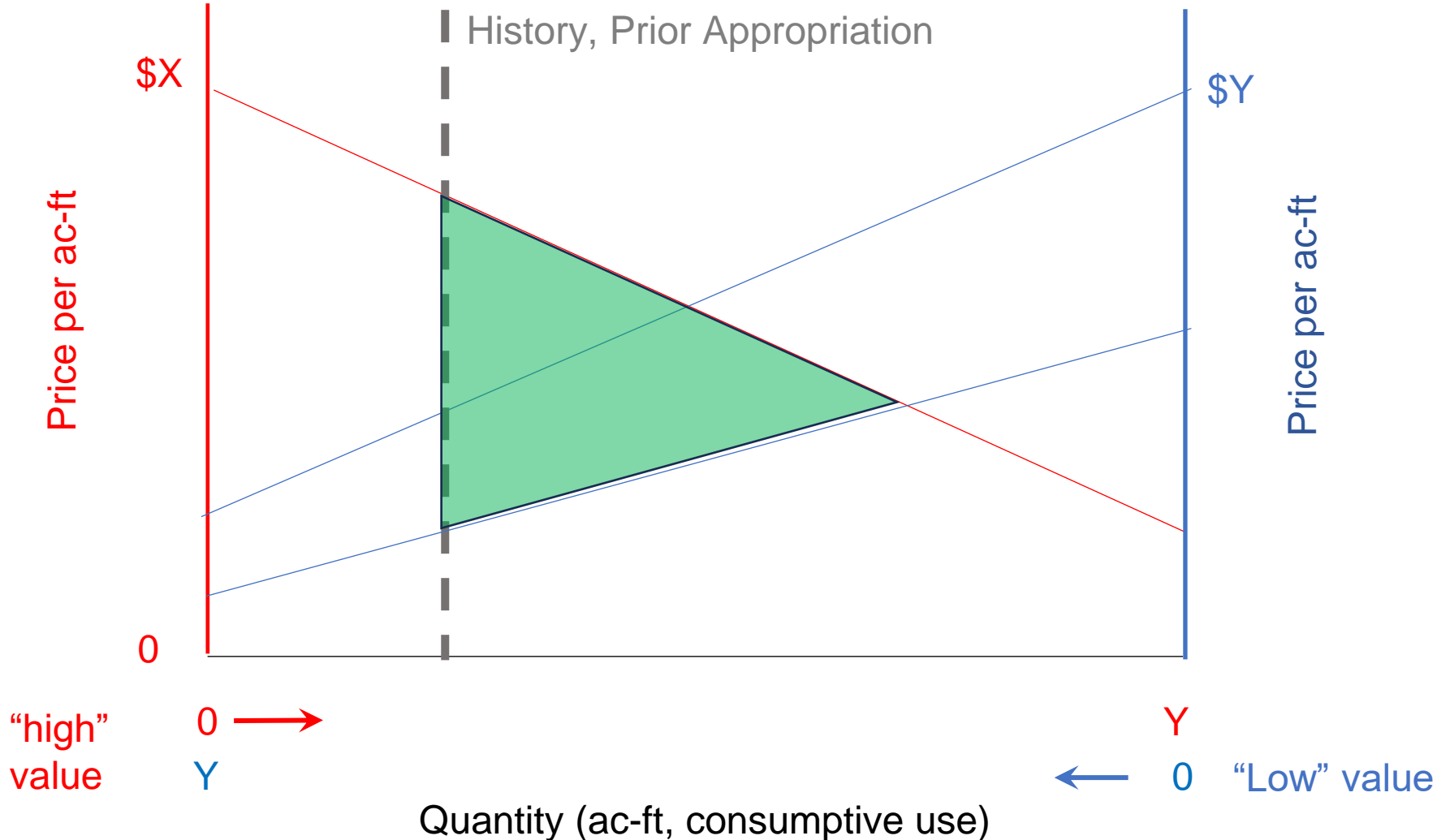
Two of many complications:

- Instream uses are public goods; who purchases? Does gov't or NGO budget reflect society's willingness to pay?
- Spatial matching: some water rights more valuable for fish than others

The logic of “reallocation”: water rights part 2

“Higher value”
agricultural use

“Lower value”
agricultural use



- More complications:
- Time dimension, preserving rights for future development needs.
 - Out-of-basin transfers, potential irreversibility
 - “Transactions costs”: finding each other and getting regulatory approval

Technology for trade: new tools and new rules for improved water use in agriculture and beyond



United States Department of Agriculture
National Institute of Food and Agriculture



It is difficult for water rights holders and farmers in districts to know what a “fair” price is...

- “By ‘fair’ price we mean a price that most buyers would expect to pay and most sellers would expect to receive.” How difficult is it to know what a “fair” price for a water right is in your Basin?
 - About 40% said “no experience, don’t know”
 - Among those with experience, **two thirds said it was “difficult” or “very difficult”** .

...and there is some support for a mandatory price disclosure policy

- 37% of water rights holders said a policy requiring price disclosure would make them more likely to participate in a market
- Respondents asked imagine a hypothetical referendum on a policy proposal to mandate price disclosure (as in real estate).
- **Percent voting for hypothetical program overall: 62%**
(89% Methow, 65% Walla Walla, 60% Yakima, 36% Okanogan)
- Is the constraint price disclosure or a small sample size of comparables for a very heterogeneous good?

Water rights and water markets bring up complex and sometimes conflicting views .

“Different people have different opinions about water markets and water transfers. Please evaluate the next two statements for whether you agree or disagree. There are no right or wrong answers.”

Water should be put to use according to the desires of the owners of water rights.

*Agree or strongly agree: **75%***

Water transfers that involve water leaving the County should be prohibited, regardless of how valuable the water may be to users outside the Basin.

*Agree or strongly agree: **64%***

*Agree or strongly agree to both: **49% overall***

Thank you!

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“Now imagine the State was considering **required price disclosure for all water transfers that involved a change in ownership**. This policy change, however, would apply to all water market transactions, not just those involving mitigation water banks. Suppose that the State wanted to put the policy change up for a referendum vote in the counties in your Basin. If more than 50% voted in favor of the policy, Ecology would require prices be disclosed for all water transactions, including leases, in the future. If 50% or less voted for the policy change, prices would continue to be private except for mitigation banks.

Even though this is a hypothetical question, please think carefully about how you would answer if this were a real, binding vote. Some people say they would vote in favor of the change because it would make it easier to get timely information about water prices in their basin and participate in markets. Some people say they would vote against the change because they value the privacy of the status quo.”

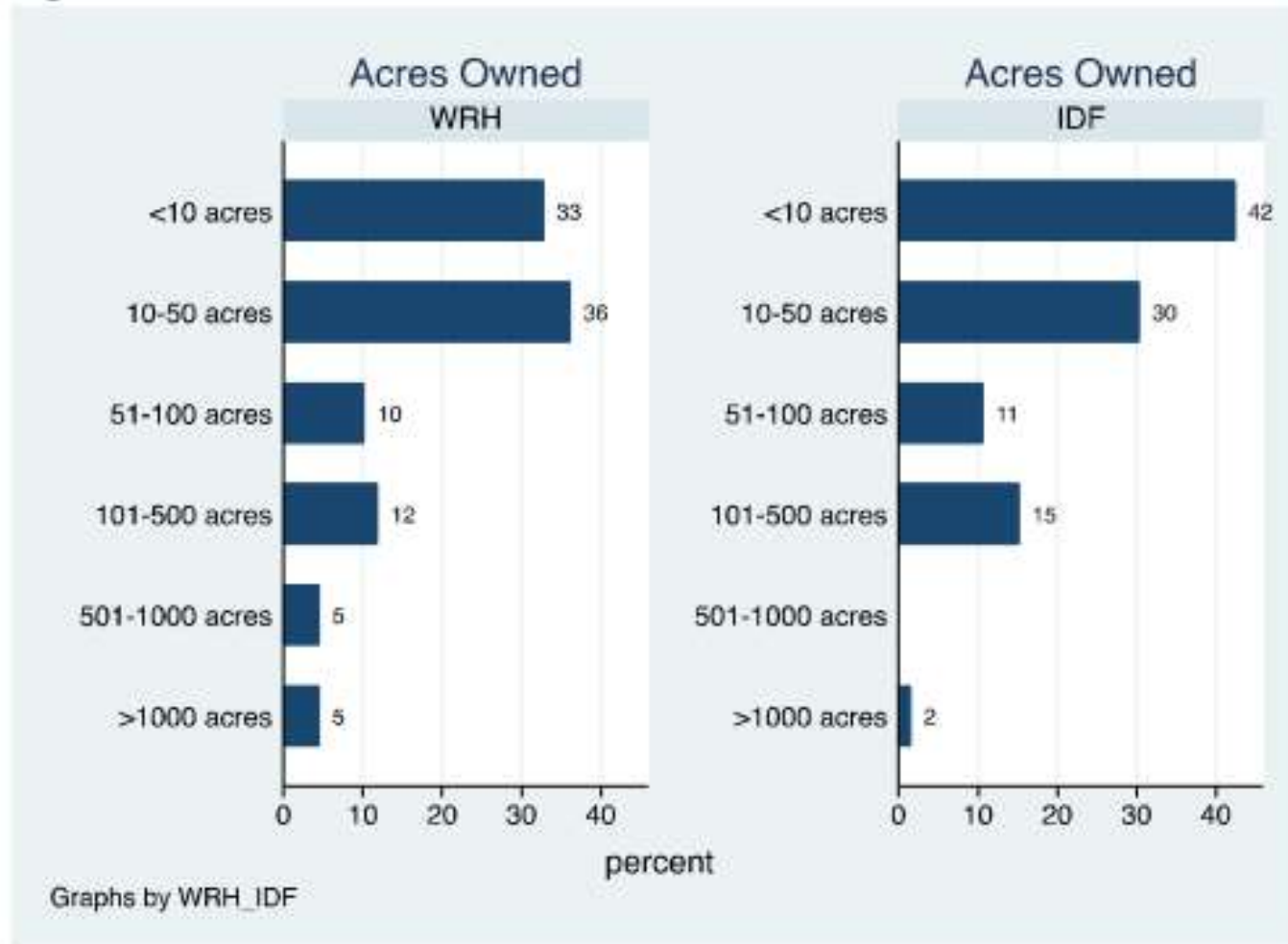
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Survey: The Basics

- Four basins: Okanogan, Methow, Yakima, Walla Walla
- Two groups:
 - “Water Rights Holders” (**WRH**) *in WRTS, ≥ 4 AF annual*
 - “Irrigation District Farmers” (**IDF**) , *landowners*
 - Survey weighted towards WRH (70% of contacts)
- When?
 - Feb-March 2020 pretest (then COVID delay)
 - Dec 2020 2nd pretest and Jan-March 2021 final
 - Results include all responses, **EXCLUDE** 2 volunteers
 - N=248, Response rate ~17%
- Main topics included forecasting, estimating consumptive use, experience with and attitudes towards water markets, views of water rules and regulations, demographics

Respondents: farm size



“acres in irrigated crops or pasture you own within the Basin”

Figure 1. Main crop grown by respondent, by Basin.

