

American Shad in the Columbia River

Dr. Charlene Hurst, Columbia River Management Unit Lead, Fish Program

Ryan Lothrop, Columbia River Fishery Manager, Fish Program

Quinten Daugherty, Fisheries Biologist, Fish Program

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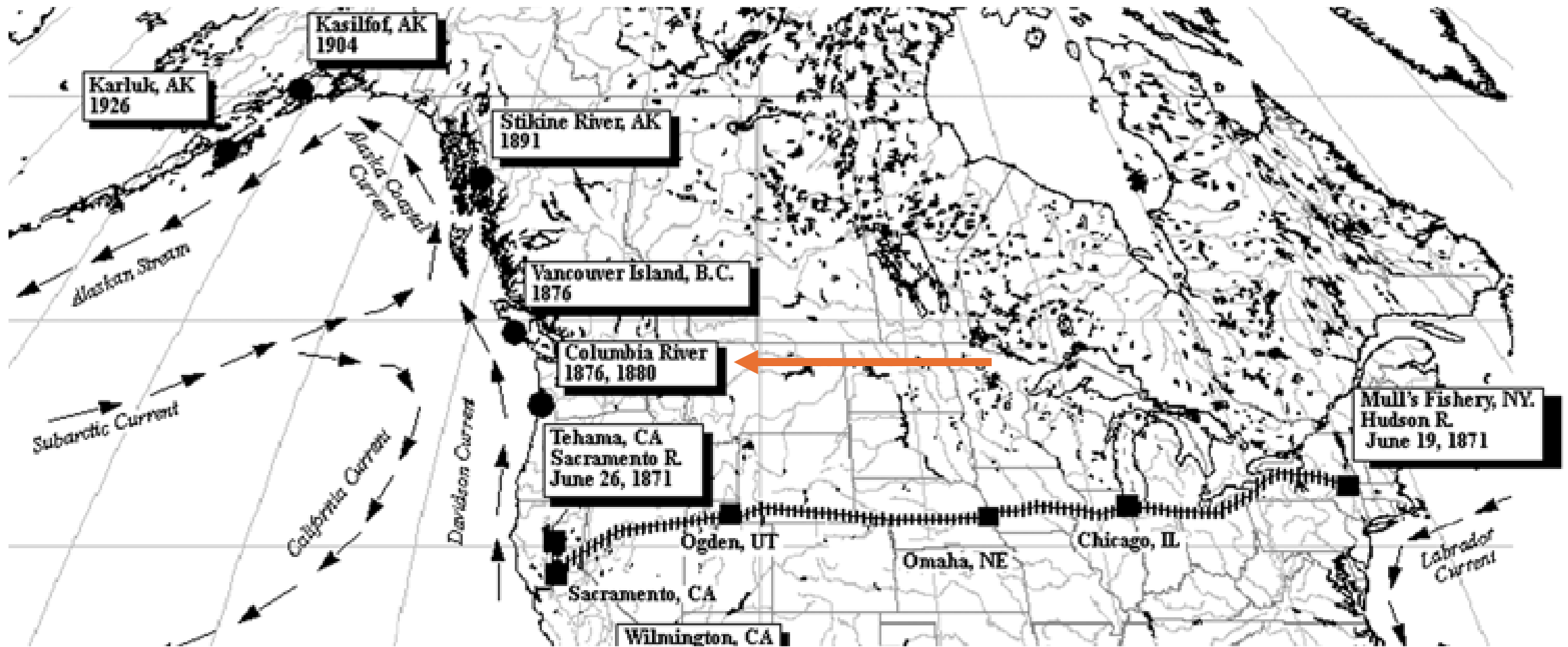
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Outline

- Background
- How might shad affect salmonids
- WDFW work with shad
- Possible options for further engagement

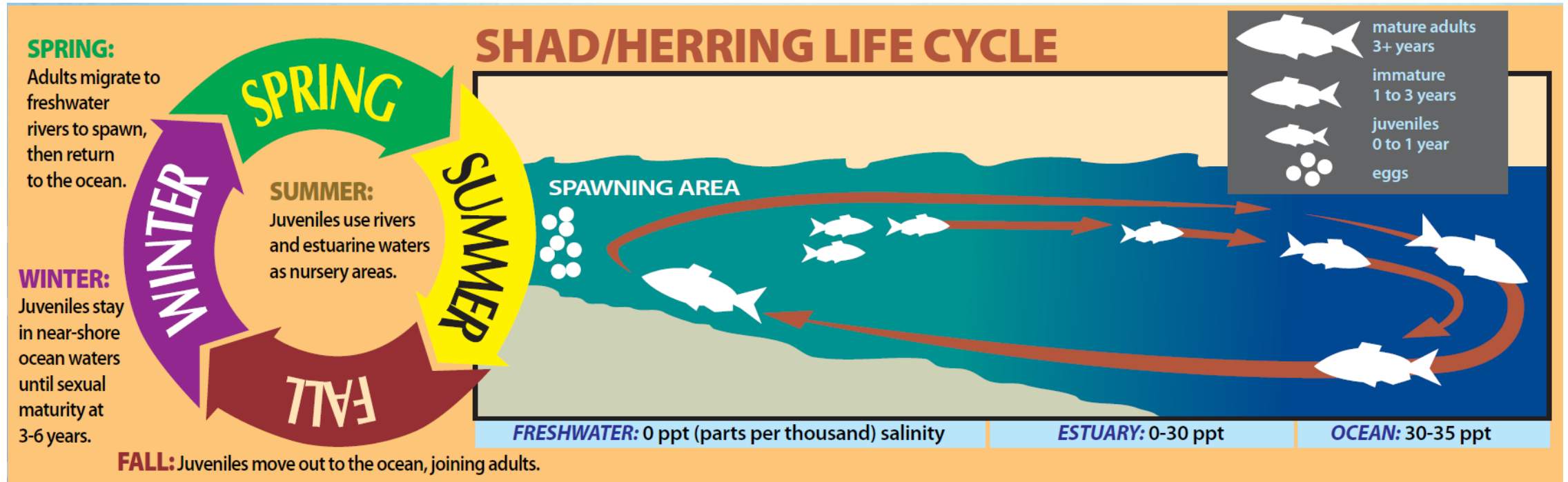
*Much of this pres. was informed by the ISAB, 2021 report to the NWPCC

Columbia River Introduction

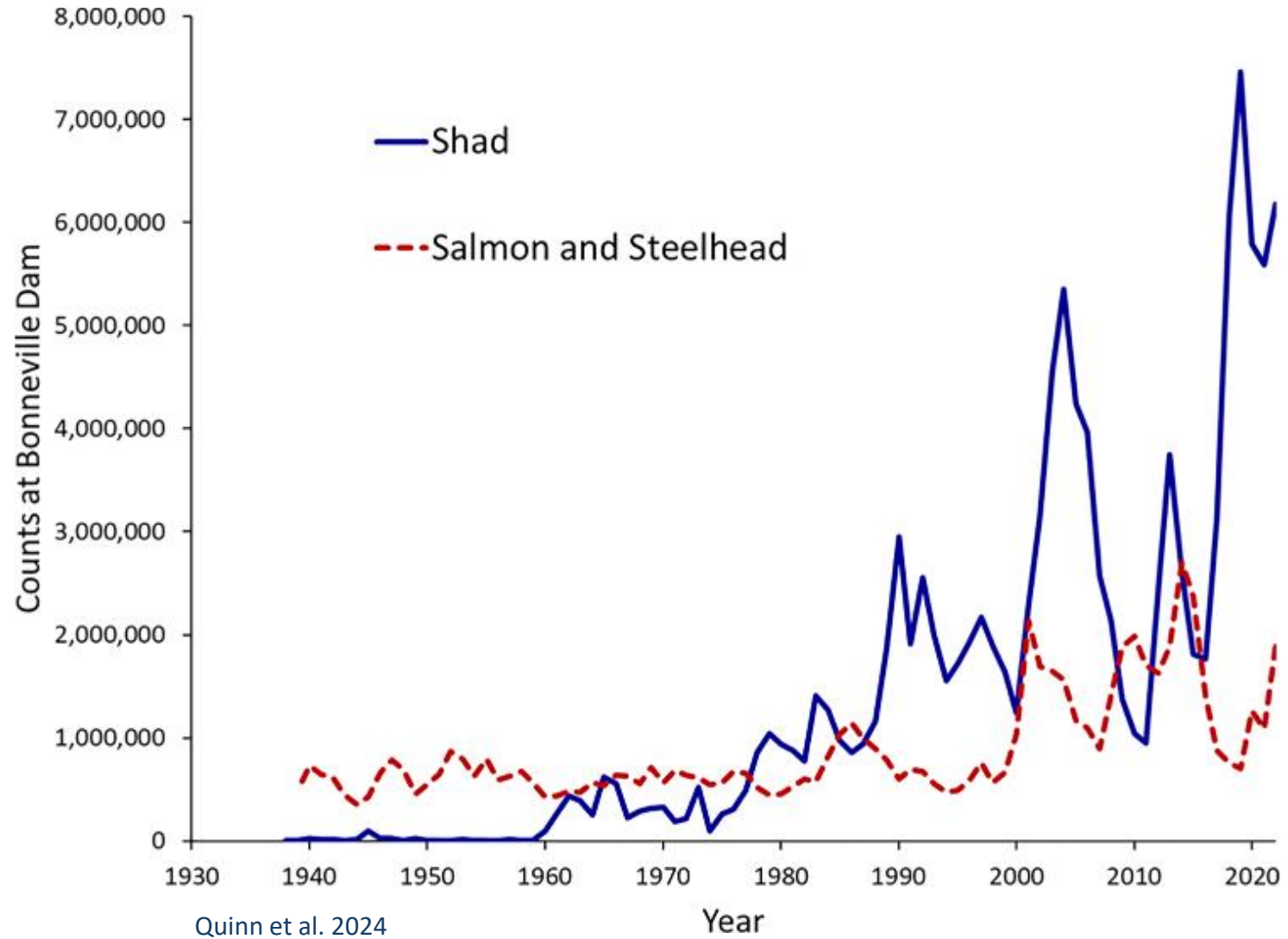


Hasselman et al. 2012

Life History



Abundance Over Time



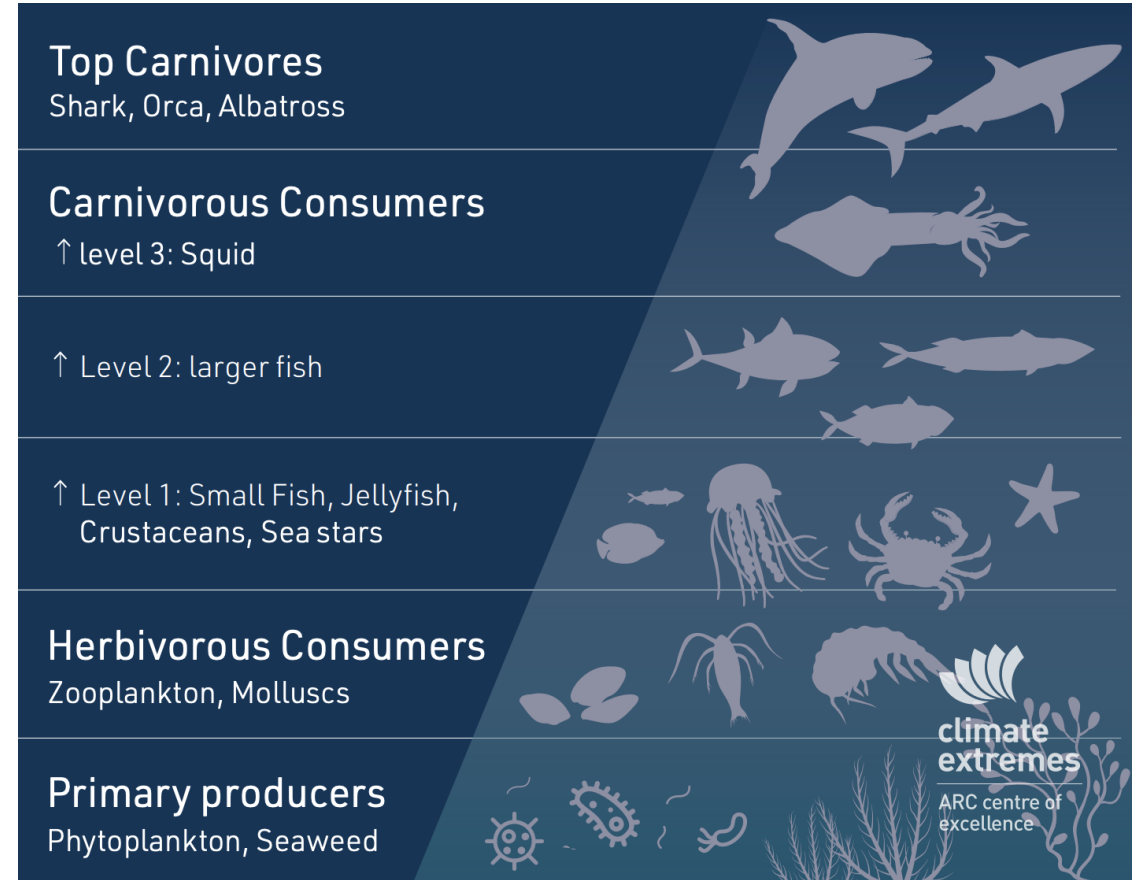
How might shad affect salmonids?

Freshwater Competition

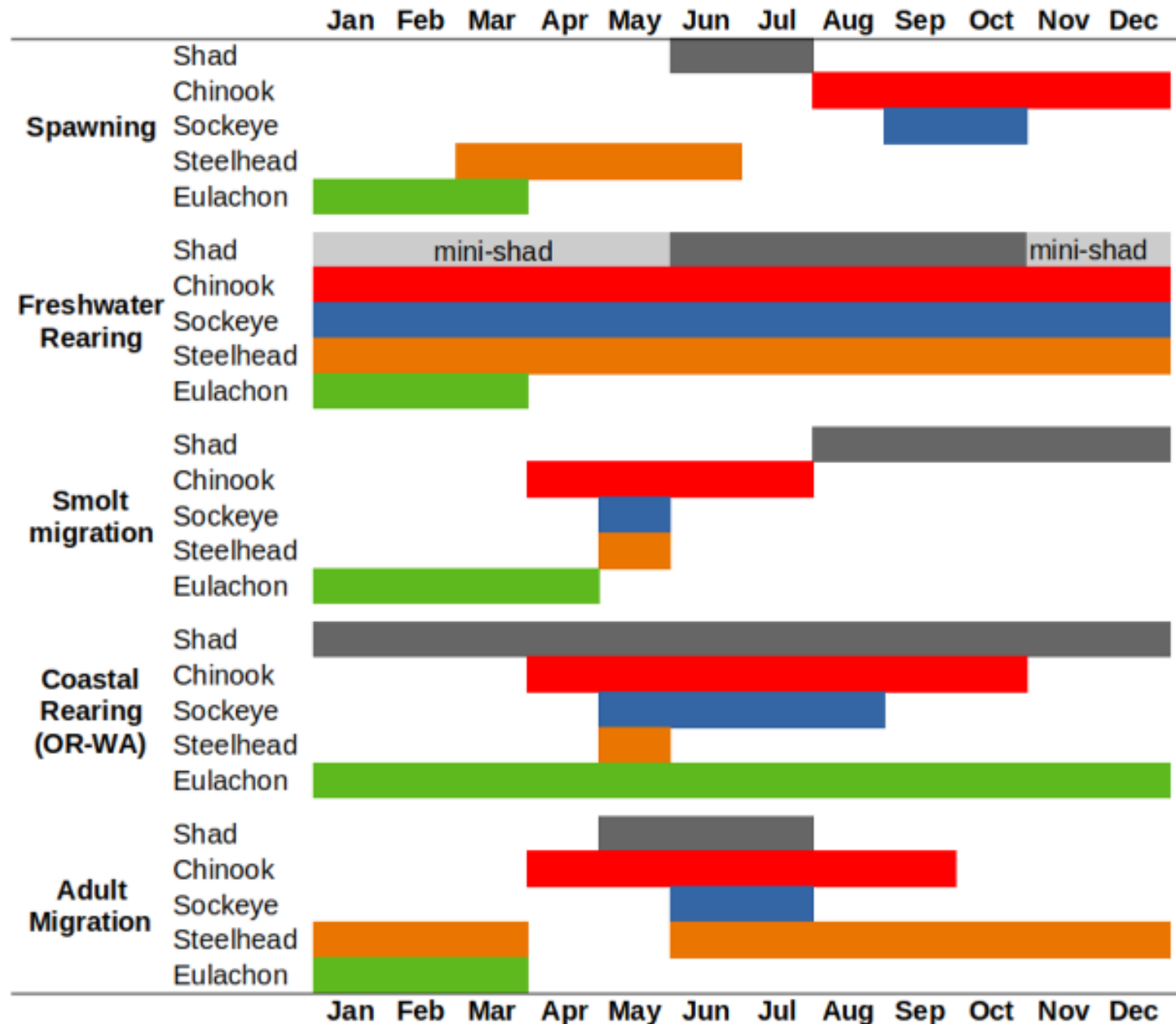
- Food with *primarily* juvenile salmonids
- Unlikely to strongly affect salmonid populations

Marine Competition

- Lack of diet data for shad
- Potential, but prey are the subject of other more abundant fishes (e.g., herring, sardine, anchovy)



Overlap with Salmonids

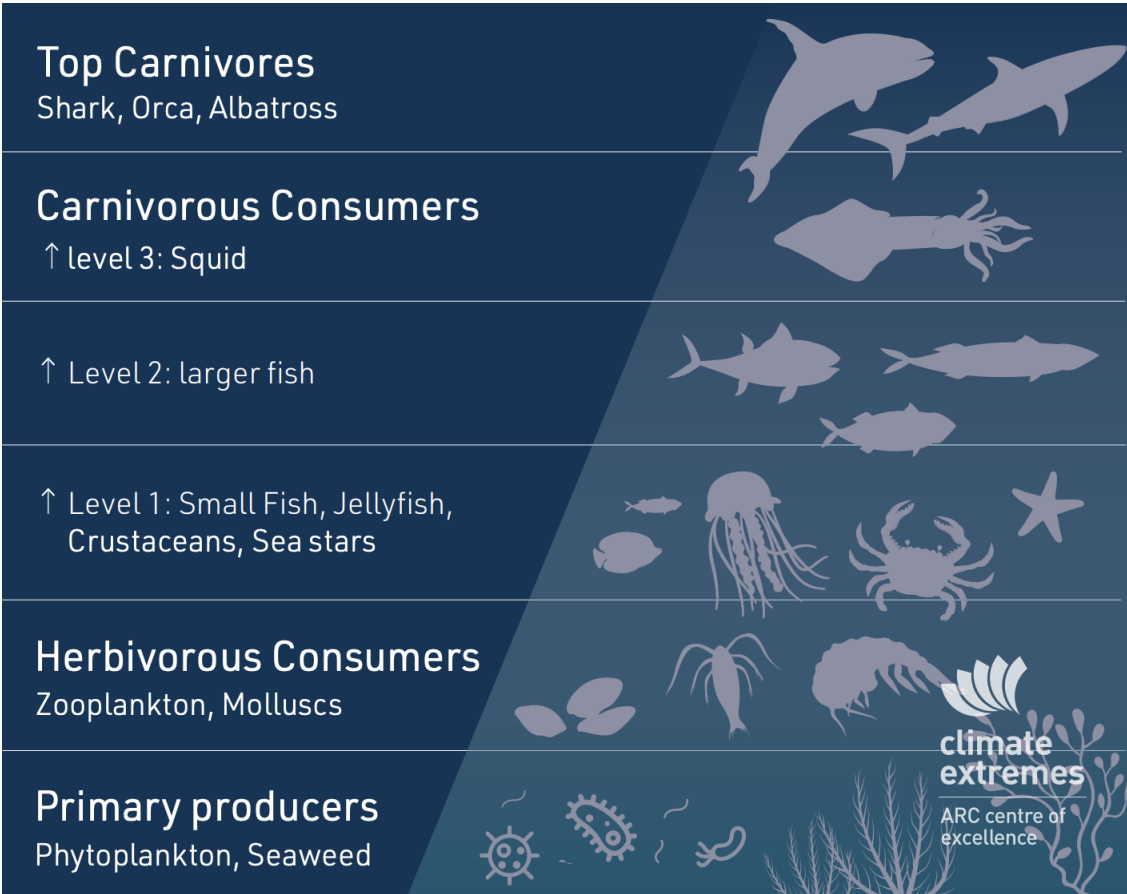


Quinn et al. 2024

How might shad affect salmonids?

Predator-Prey Interactions

- Shad could buffer against salmonid predation
 - Piscivorous fishes do not appear to prey heavily on shad
 - Avian predation is not well-known
 - Some studies suggest shad could be prey of pinnipeds



How might shad affect salmonids?

Nutrient Cycling

- Nutrients into Columbia River from shad are small compared to other sources
 - 1.3% increase in phosphorous during spawning season

Adults in ladders have caused problems with:

- Processing fish in collection facilities
- Dissolved oxygen levels in fish ladders
- The identification and counting of migrating salmonids

A contextual example: in 2019, about 30 times more shad (7.5 million) passed over Bonneville Dam than salmonids (250,000)



The Gorge Guide

WDFW Work with shad

Mainstem Recreational non-treaty shad fishery

- Downstream of Bonneville Dam
 - Opens May 16th and when spring Chinook is open
- Upstream of Bonneville Dam
 - Open year-round
- Uses hook-and-line
- 173,100 recent 5-yr average annual harvest
- 10,000-15,000 annual angler trips



WDFW

WDFW Work with shad

Commercial non-treaty shad fishery

- Opens May 10th in area 2S
- Uses drift gillnet with size, depth, and breaking strength restrictions
- 1,800 recent 5-yr average annual harvest
- Crab bait is the primary market

Ecotrust partnering with tribes and states on tribal commercial shad fishery

- Initial workshops March 14 and May 2



WDFW

PFMC fishery catch of shad

- Majority catch occurs off the Oregon and Washington coasts
- Considered incidental (e.g., pink shrimp trawl)
- 1.07 million pounds recent 5-yr avg.



WDFW

Possible Options for Further Engagement

ISAB Report Recommendations

- More robust understanding of shad biology
- Model development and use
- Further understanding of ecological effects
- Understanding the pros and cons of tools available to manage shad



American Shad in the Columbia River:
Past, Present, Future

INDEPENDENT SCIENTIFIC ADVISORY BOARD

ISAB 2021-4 | OCTOBER 22, 2021

Possible Options for Further Engagement

Continue Ecotrust Work

- Logistics
- Economics



WDFW

Possible Options for Further Engagement

Investigate use as
fertilizer/nutrient enhancement

- Logistics
- Economics
- Toxin assessment



WDFW

Possible Options for Further Engagement

Potentially explore classification as an invasive species

- Currently a “Food” fish
- 3 levels: 1, 2 or 3
- May limit shad management actions (e.g., fisheries)



WDFW



Questions?

Request this information in an alternative format or language at wdfw.wa.gov/accessibility/requests-accommodation, 833-885-1012, TTY (711), or CivilRightsTeam@dfw.wa.gov.