

KOOTENAI RIVER FISHERIES

2021 RESEARCH UPDATE



Ryan S. Hardy
Idaho Department of Fish and Game



Kootenai River White Sturgeon

Acipenser transmontanus



Burbot

Lota lota maculosa



Rainbow Trout

Oncorhynchus mykiss



Mountain Whitefish

Prosopium williamsoni



KOOTENAI RIVER WHITE STURGEON

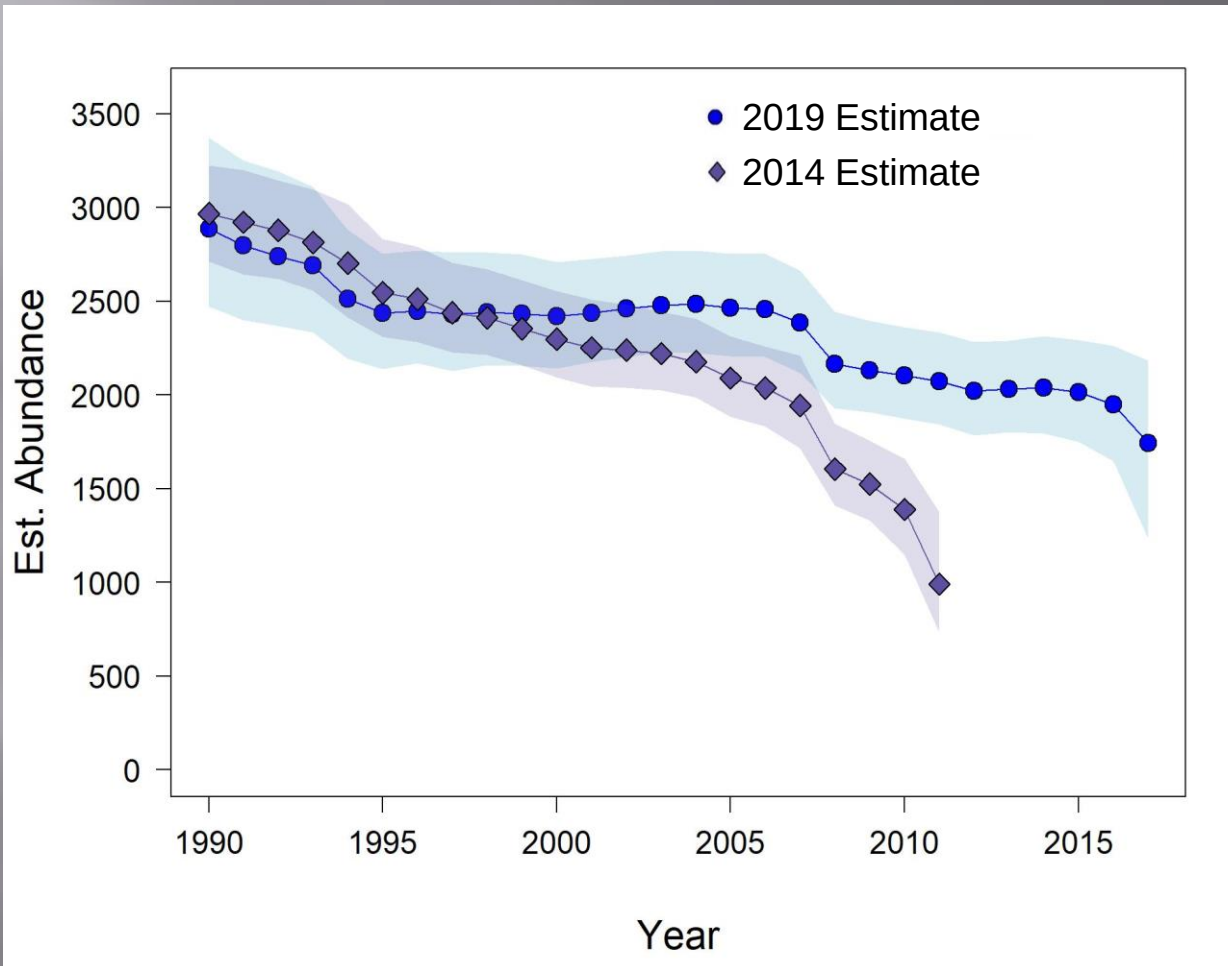


Limiting Factors

- Reduced nutrient input
- Change in habitat
- Altered spring discharge and temperature



Population Decline



Recruitment Failure



Recovery Actions

- ESA Listed
- Conservation Aquaculture
- Mitigation Activities
- Research and Evaluation



KTOI - Habitat Restoration



Kootenai River

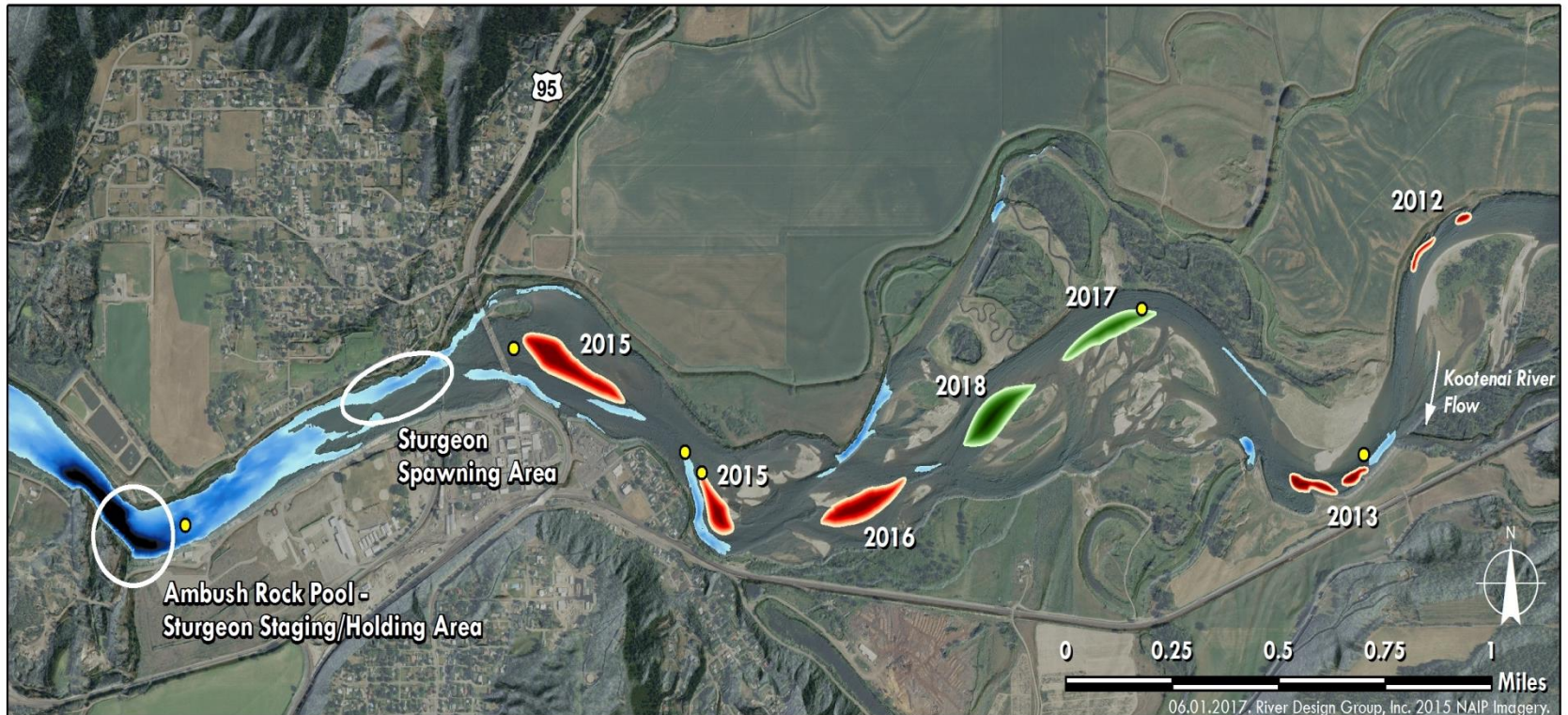
Habitat Restoration Program 2016 Pool Ladder Status

Features

Existing Pool

Constructed Pool

Proposed Pool



KOOTENAI RIVER WHITE STURGEON



KOOTENAI RIVER WHITE STURGEON



RESEARCH OBJECTIVES

- AGE SPECIFIC SURVIVAL
- EFFECTS OF TIMING AND SIZE
ON SURVIVAL
- JUVENILE ABUNDANCE
- GROWTH

EVALUATION BEGINS IN HATCHERY



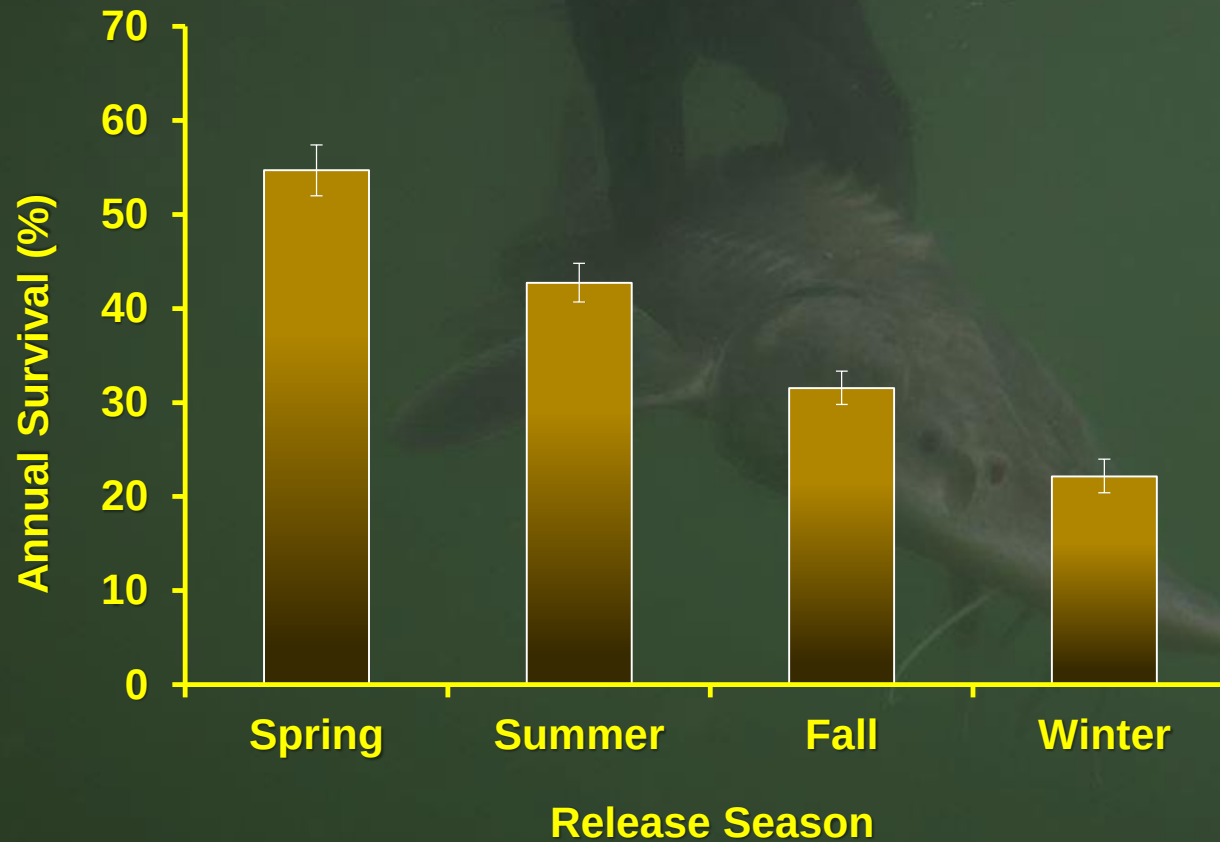
KOOTENAI RIVER WHITE STURGEON



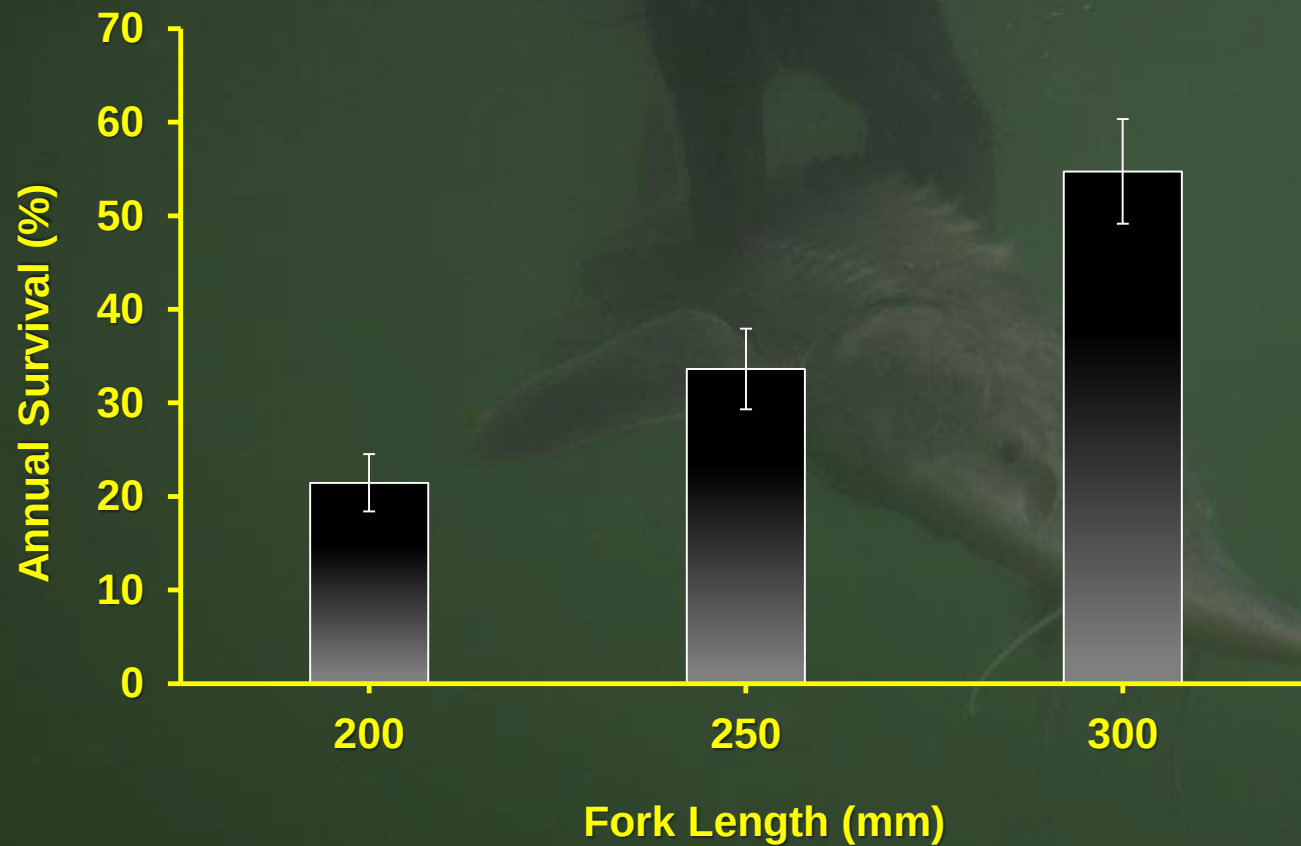
KOOTENAI RIVER WHITE STURGEON



AGE-1 RELEASE TIMING



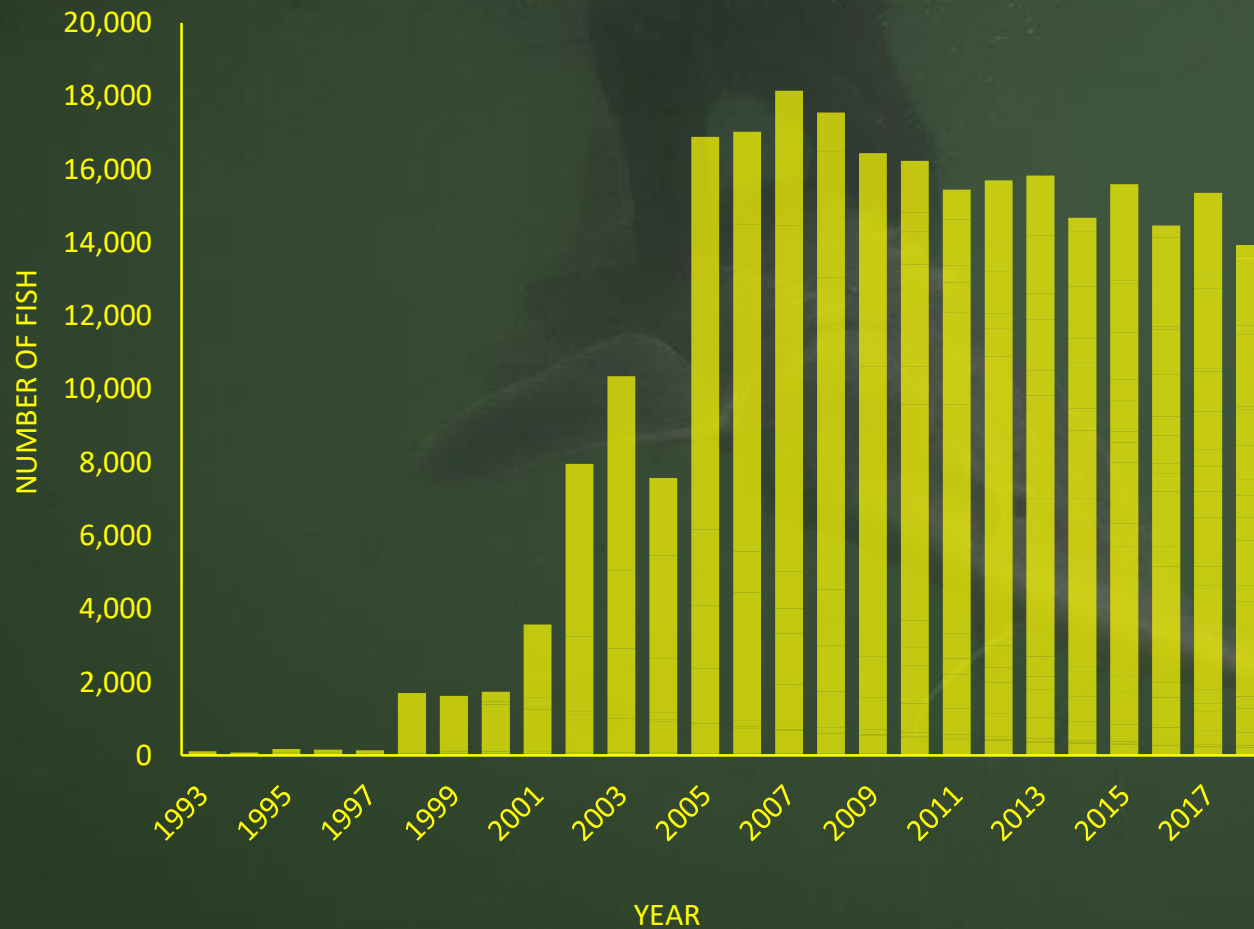
AGE-1 SIZE AT RELEASE



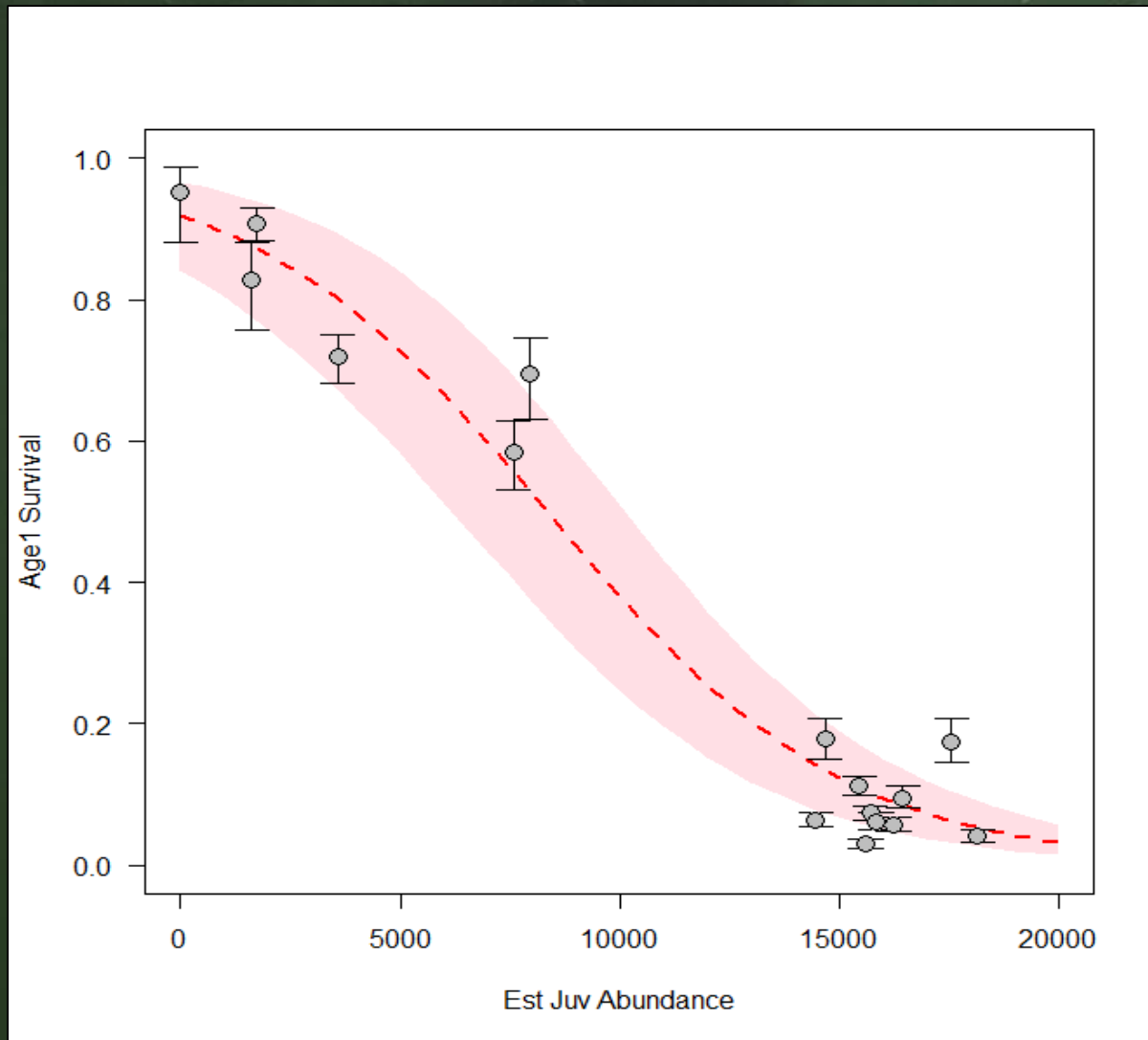
AGE-1 SURVIVAL



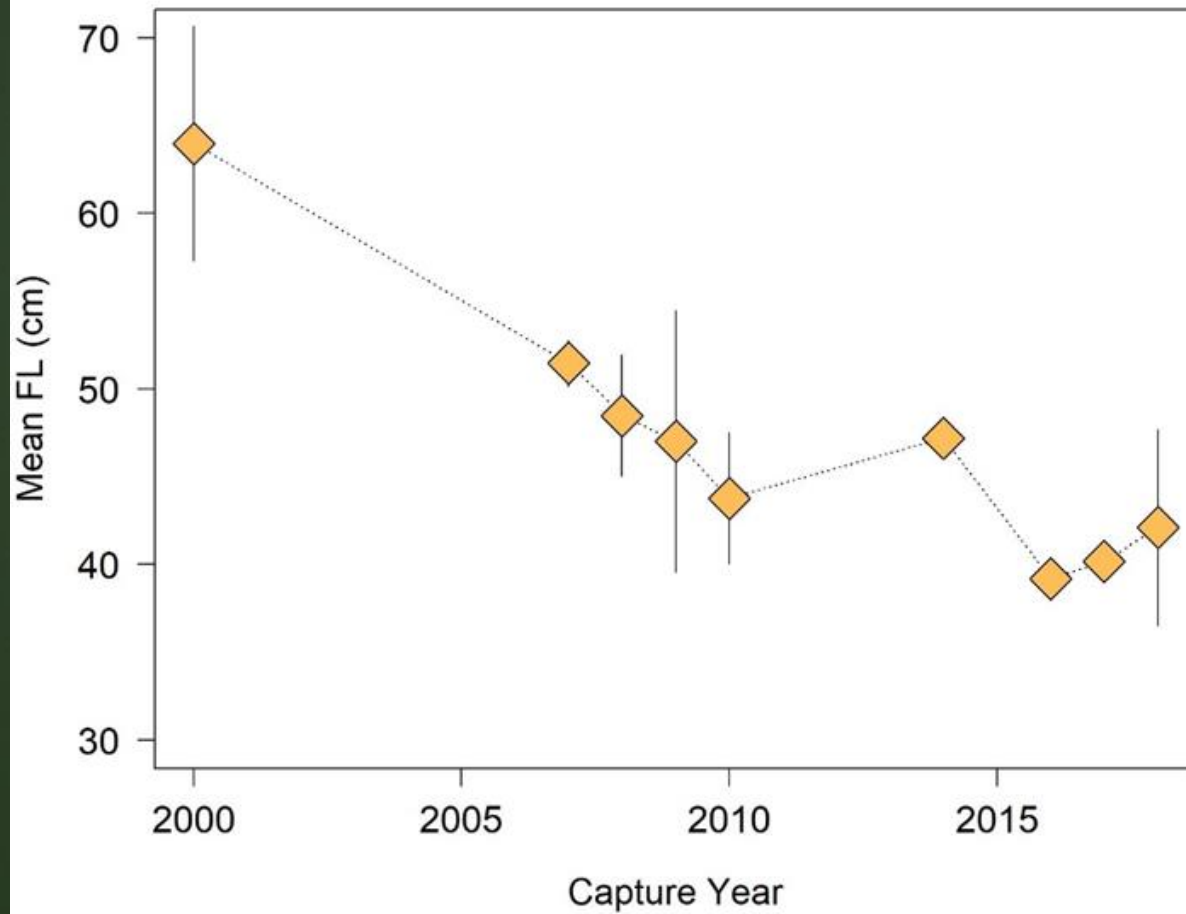
JUVENILE ABUNDANCE ESTIMATE



JUVENILE ABUNDANCE ESTIMATE



JUVENILE GROWTH



HATCHERY SPAWNERS



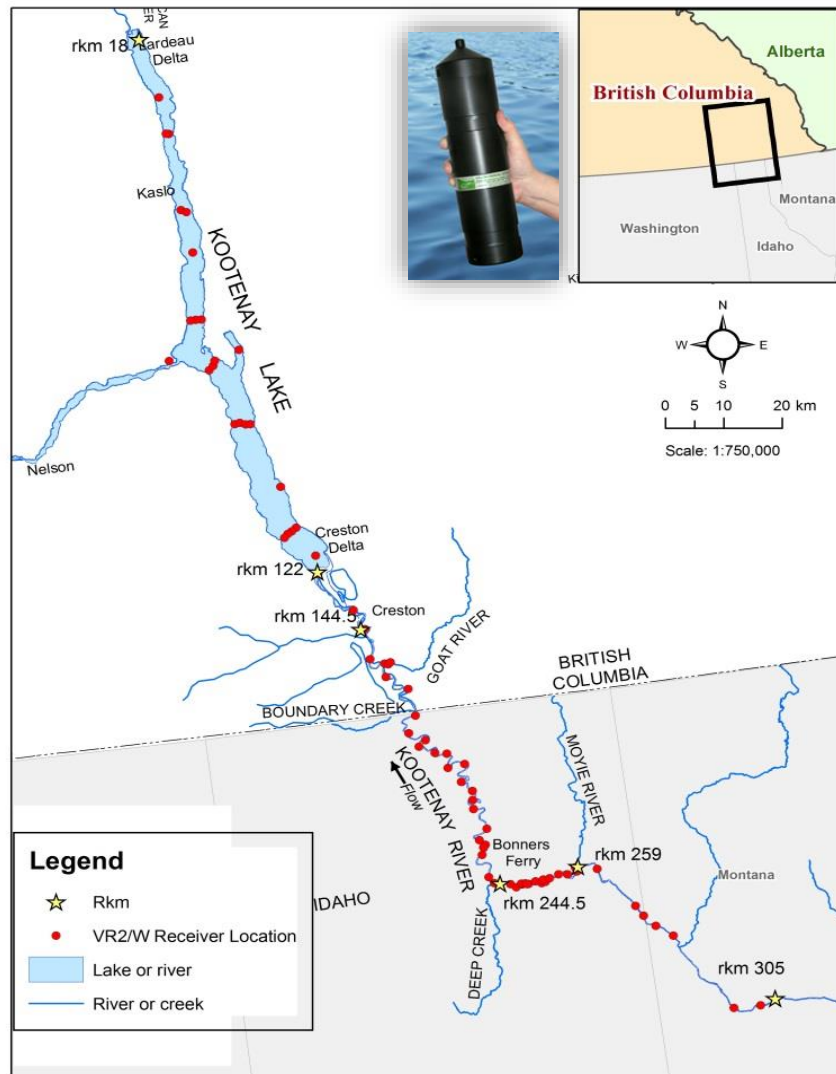
Abundance Estimates



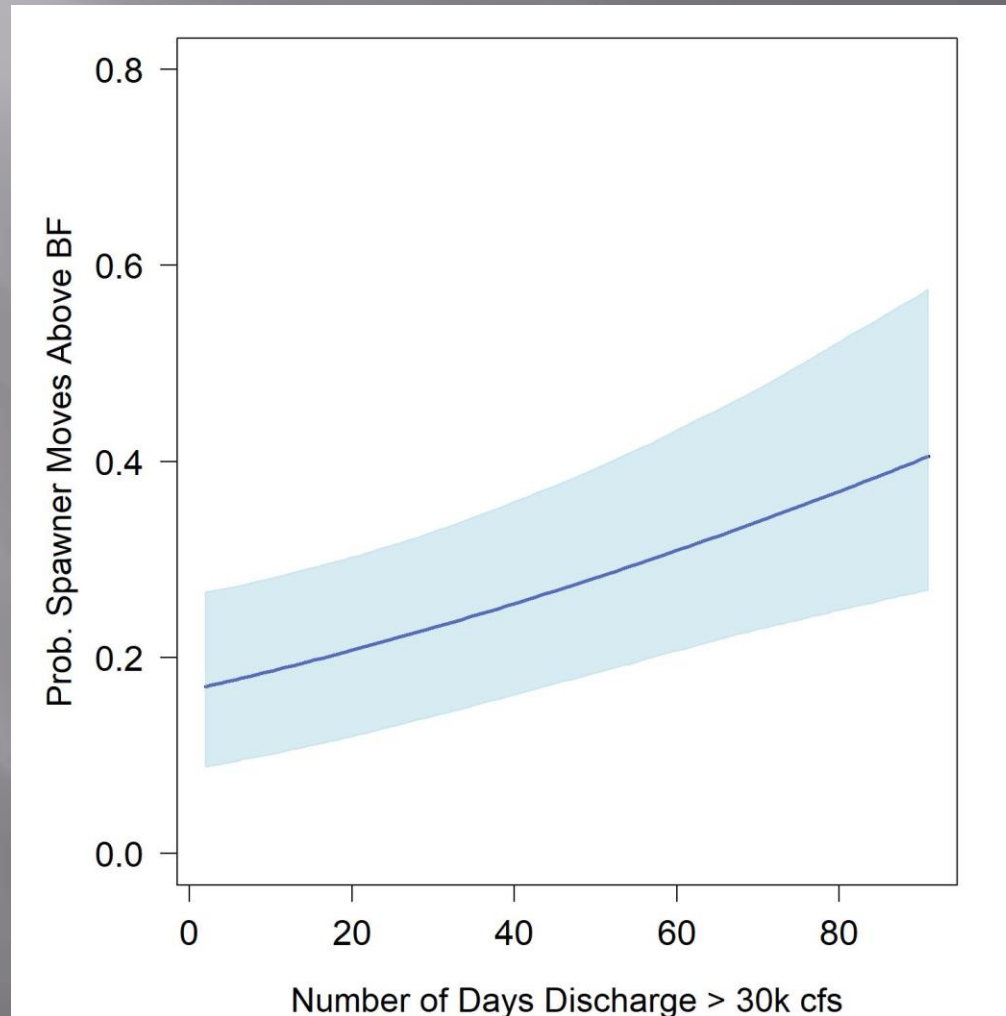
Evaluate Adult Movements



Movement Evaluations



Movement vs Discharge



Outlook

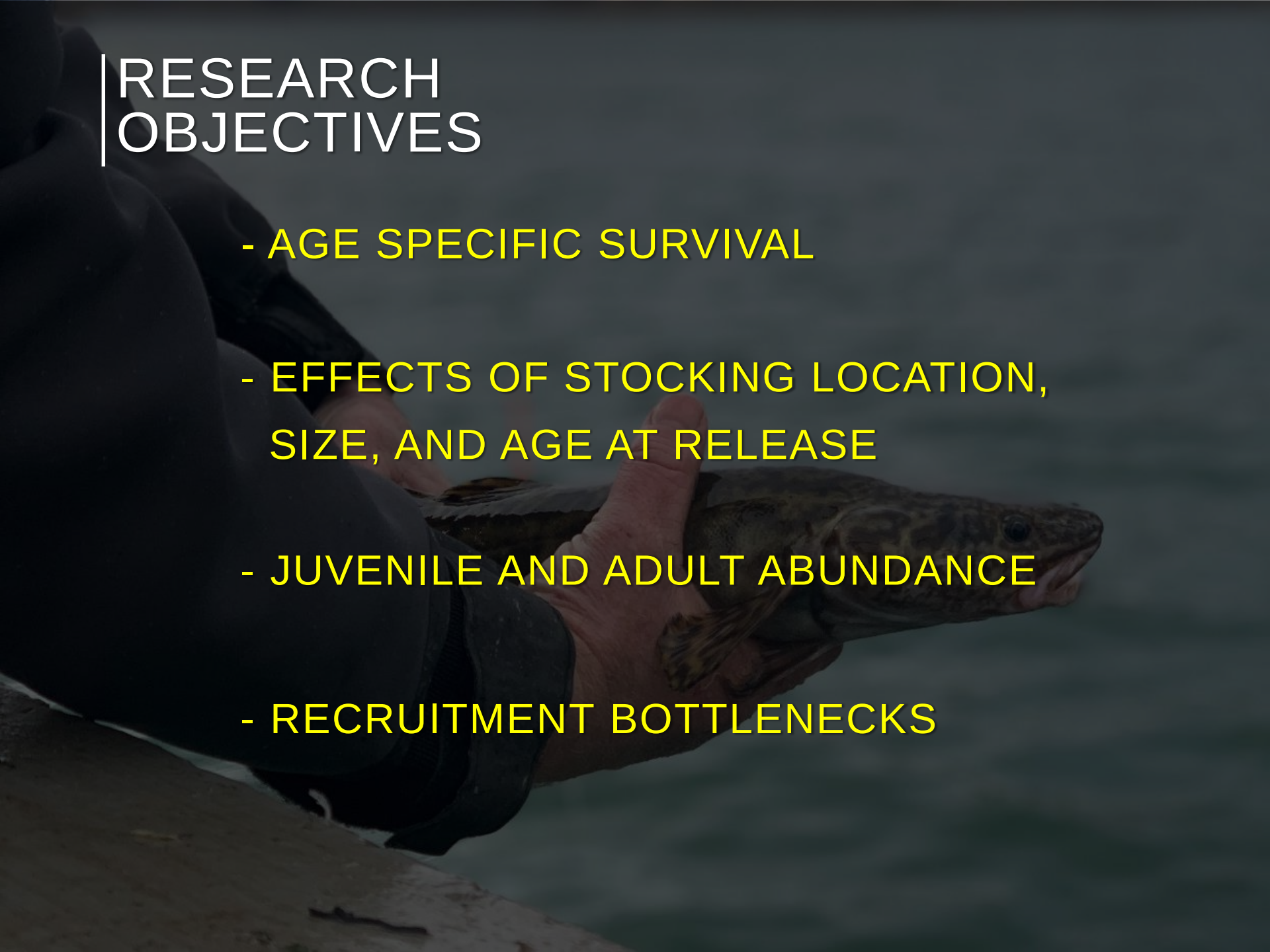


BURBOT



RESEARCH OBJECTIVES

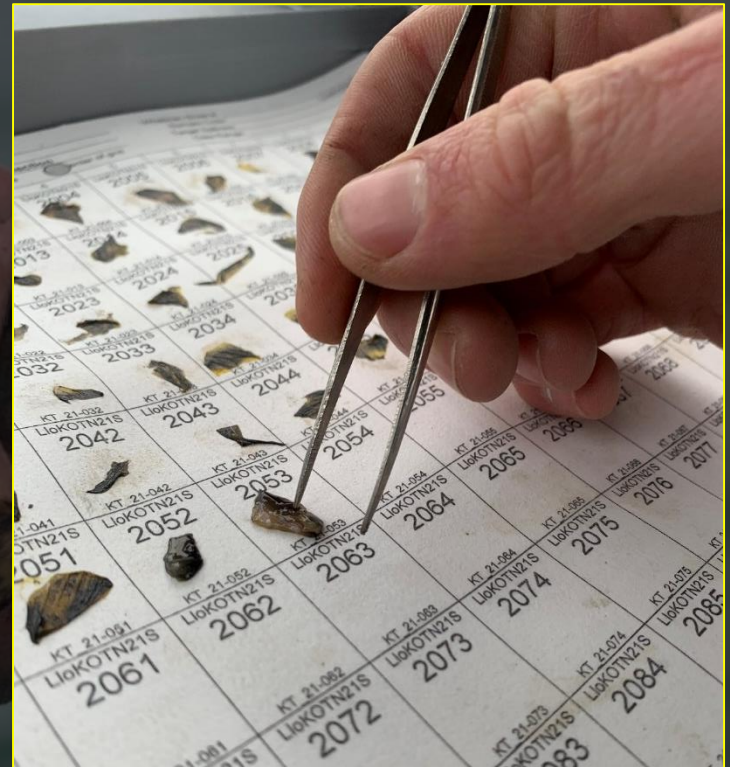
- AGE SPECIFIC SURVIVAL
- EFFECTS OF STOCKING LOCATION,
SIZE, AND AGE AT RELEASE
- JUVENILE AND ADULT ABUNDANCE
- RECRUITMENT BOTTLENECKS



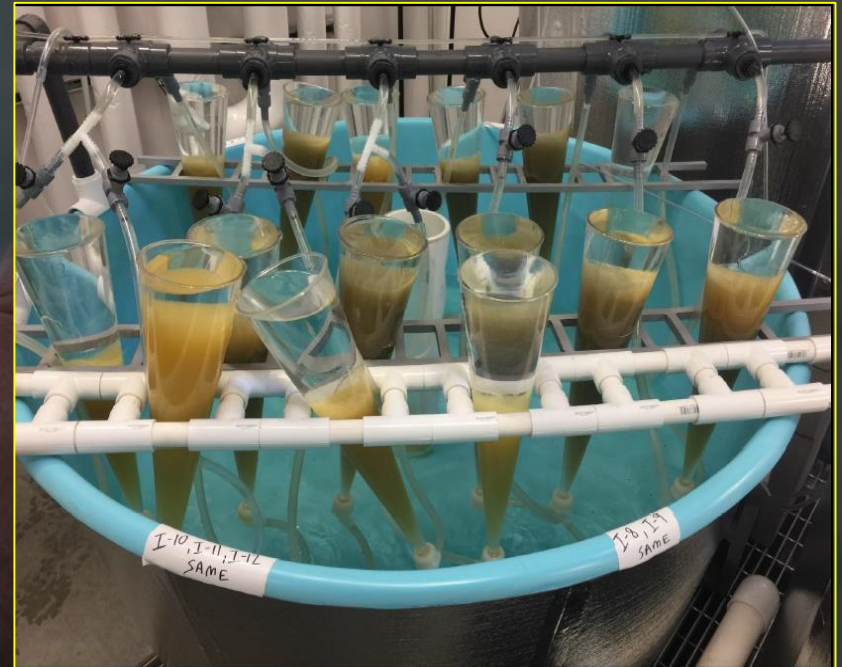
BURBOT



PARENTAL BASED TAGGING (PBT)



FAMILY SEPARATION IN HATCHERY



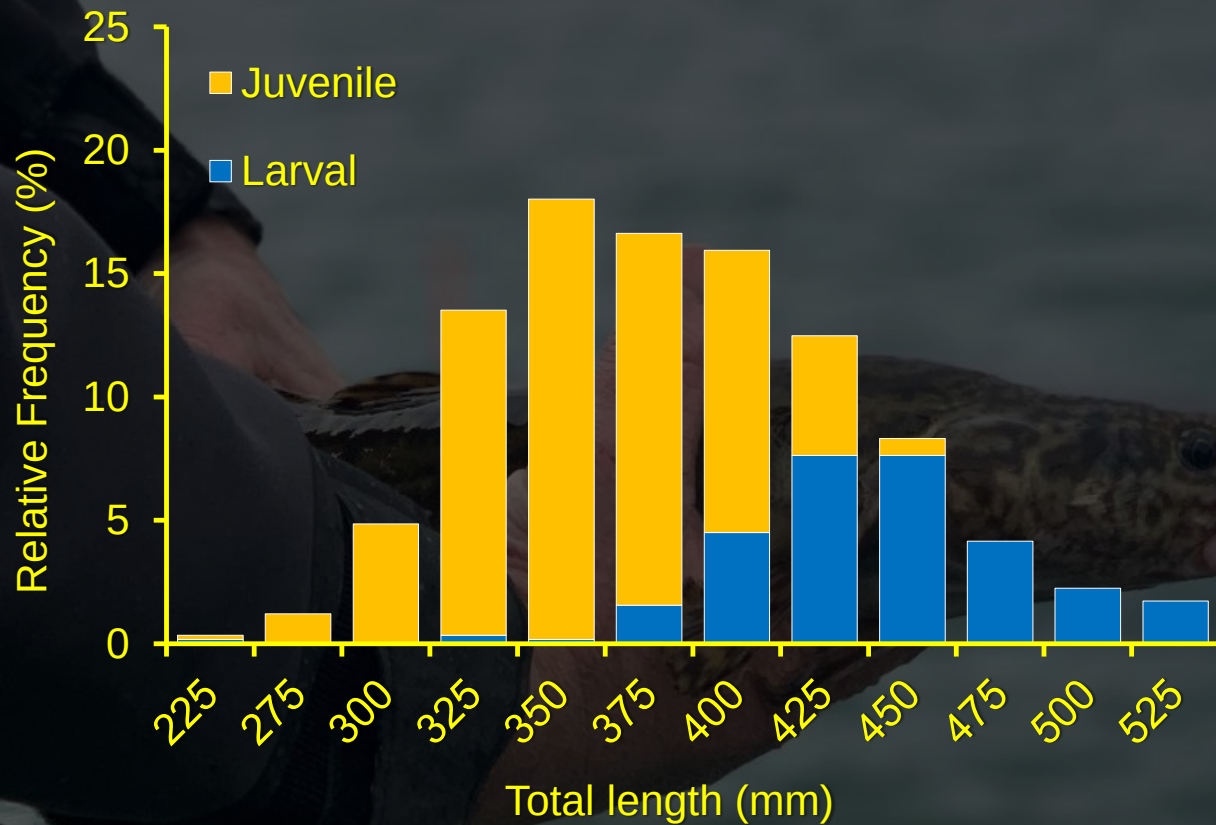
RESULTS – CATCH RATES



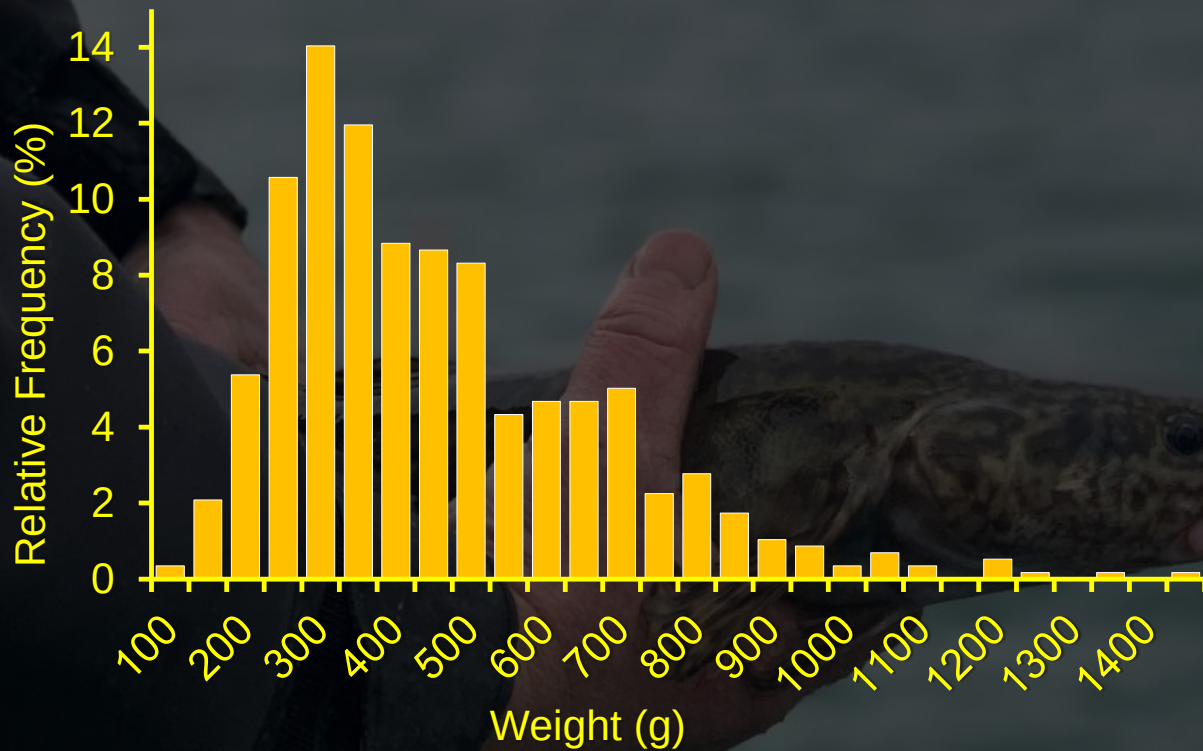
BURBOT GROWTH



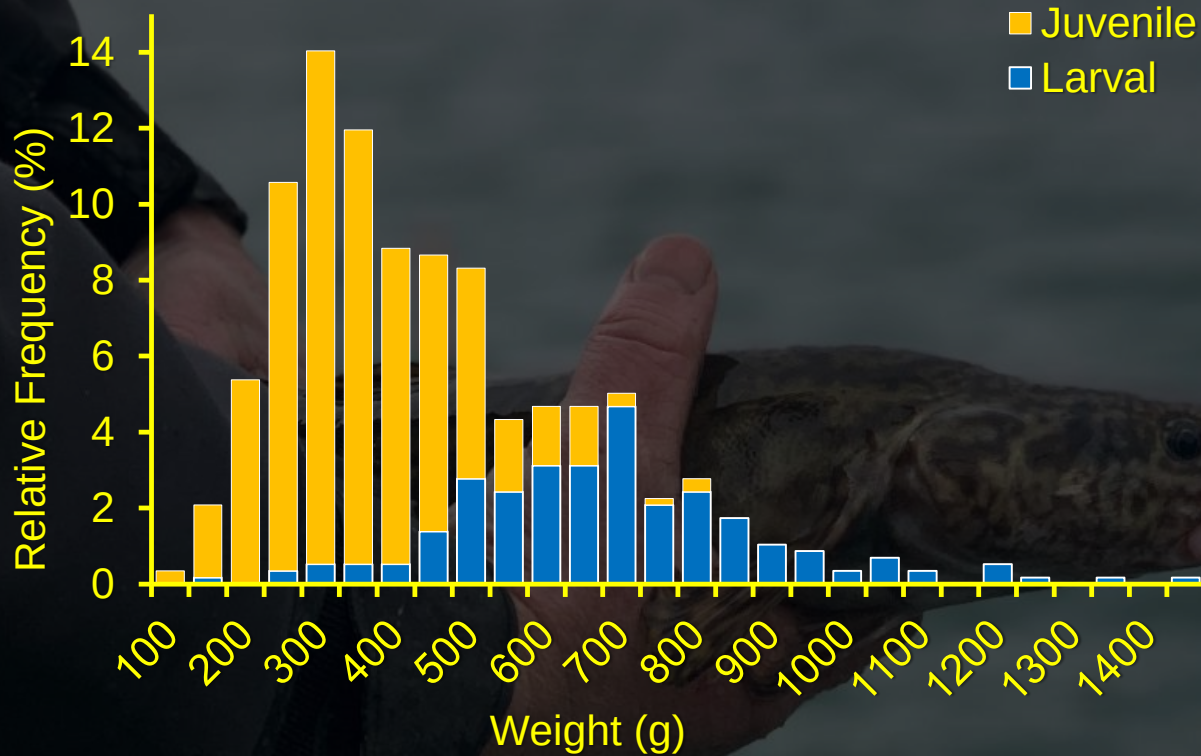
BURBOT GROWTH



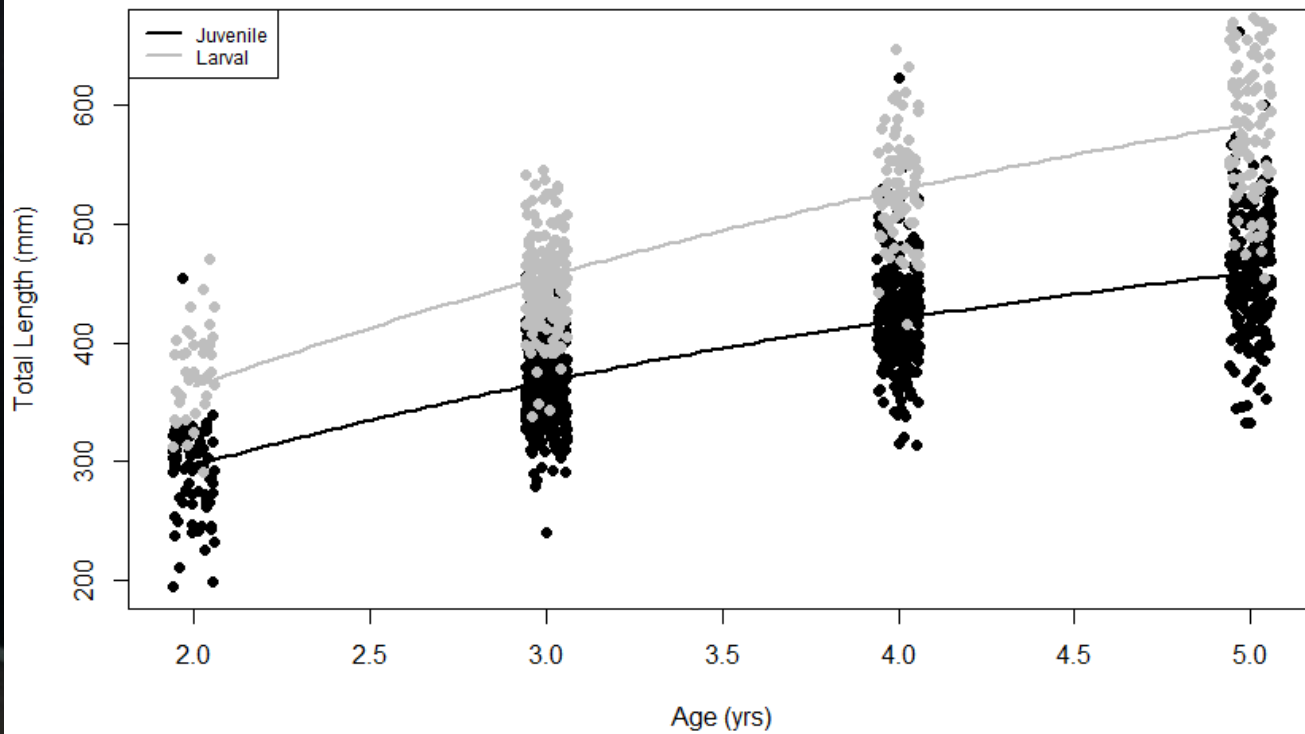
BURBOT GROWTH



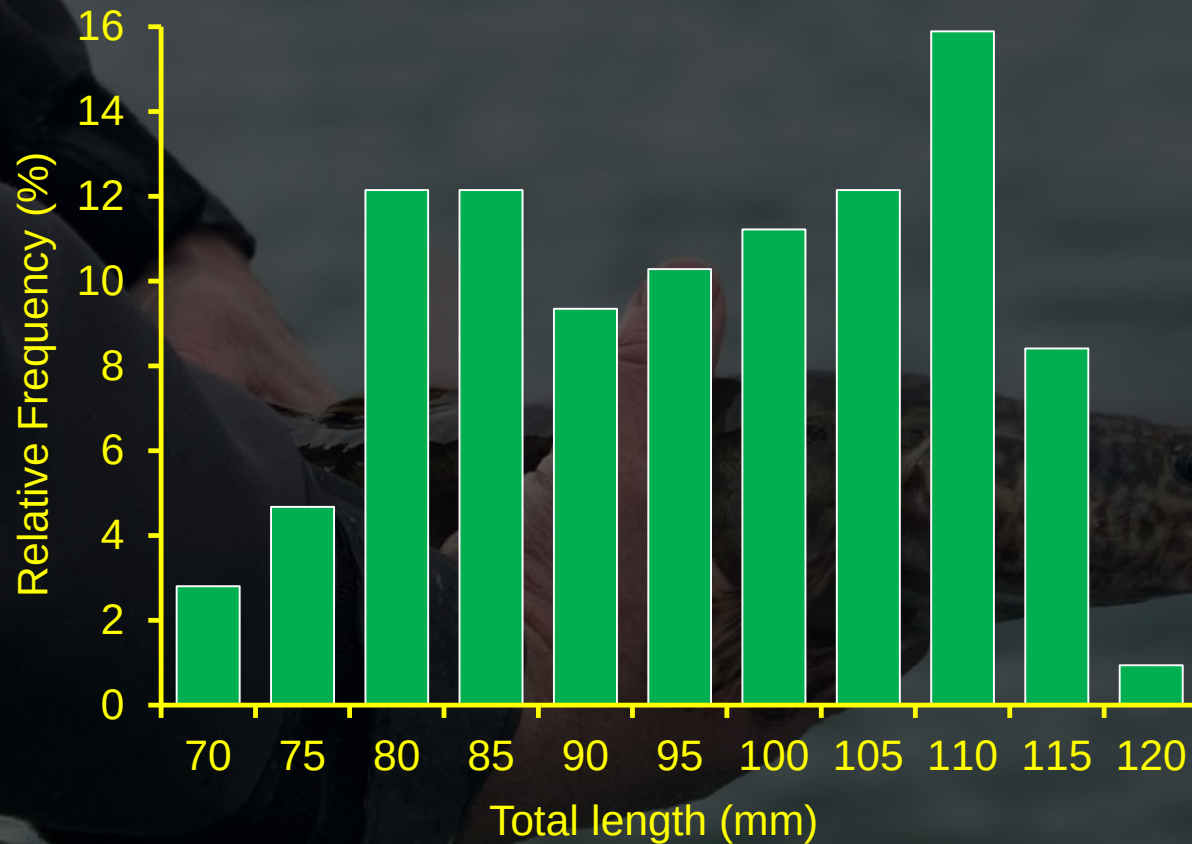
BURBOT GROWTH



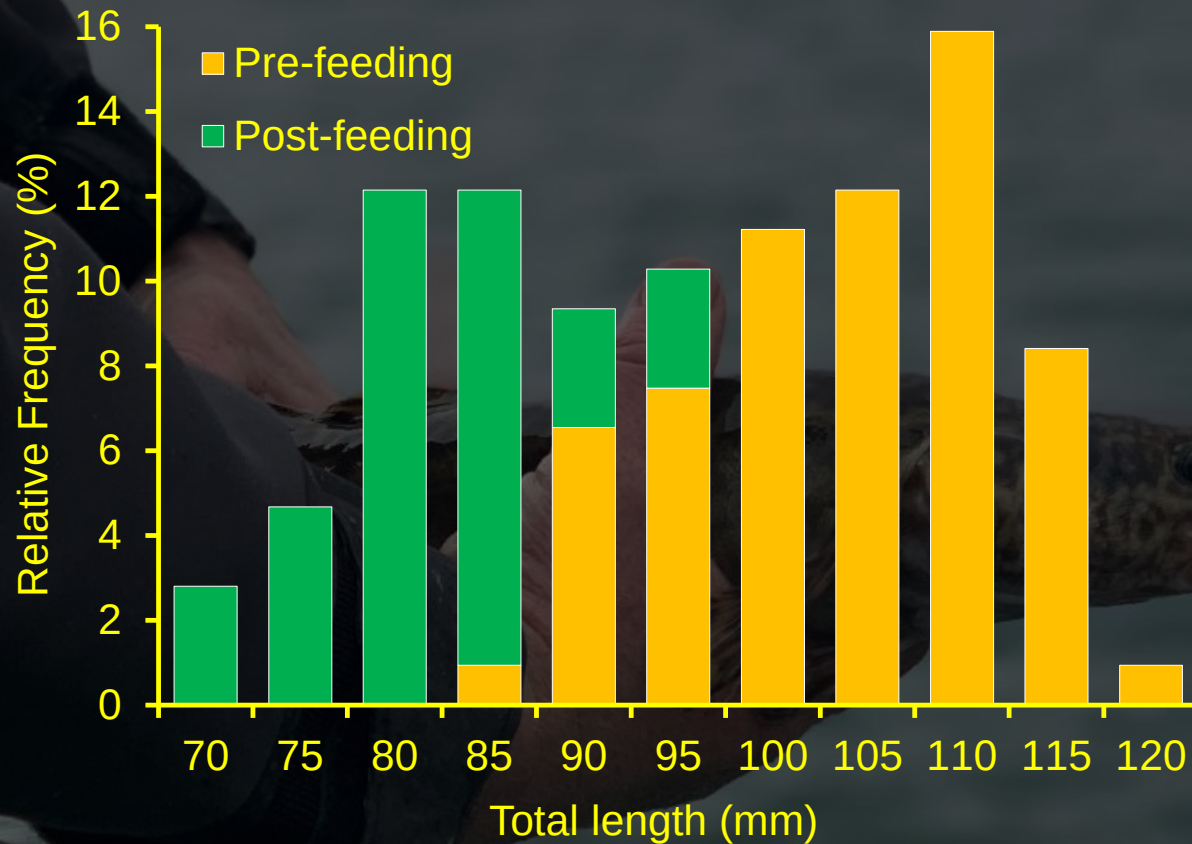
BURBOT GROWTH



BURBOT GROWTH



BURBOT GROWTH



NIMZ RANCH



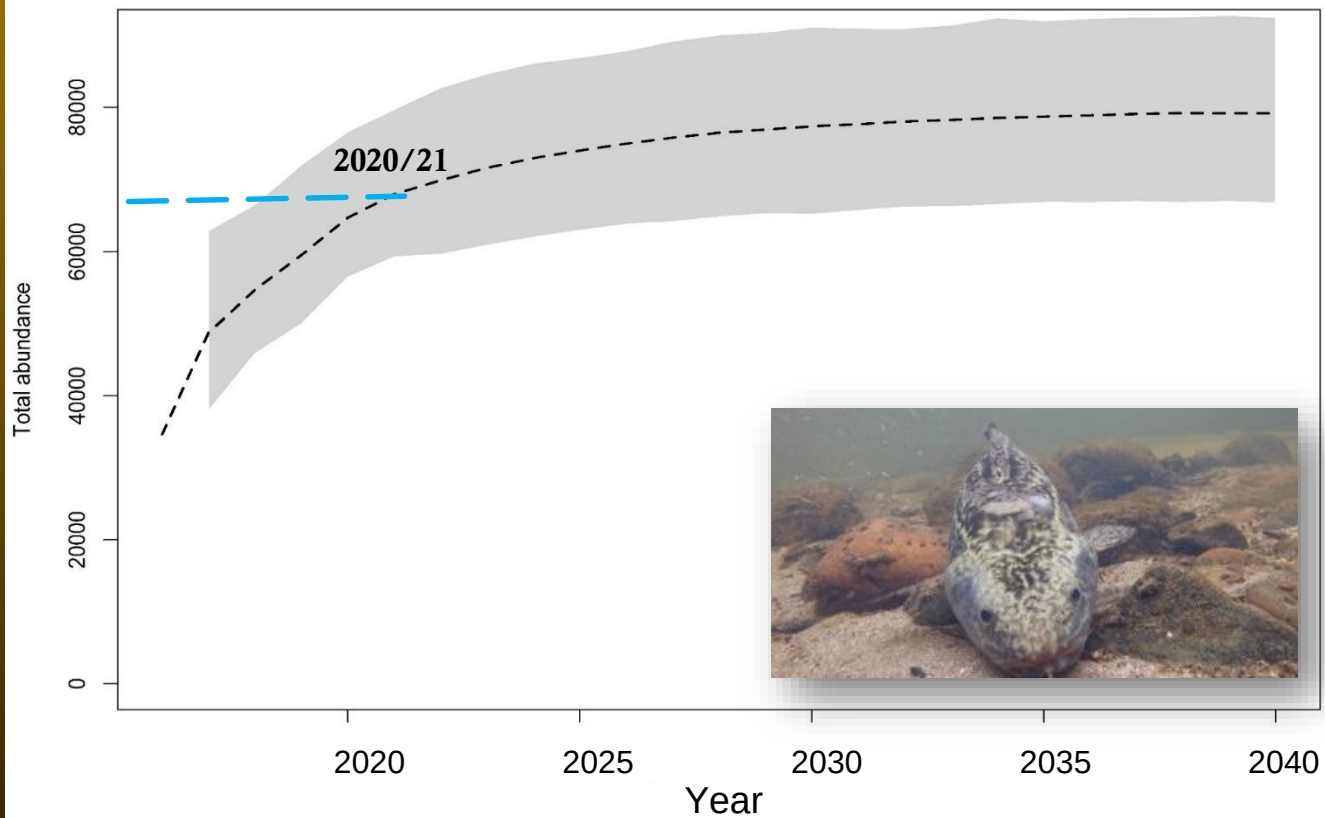
WILD RECRUITMENT



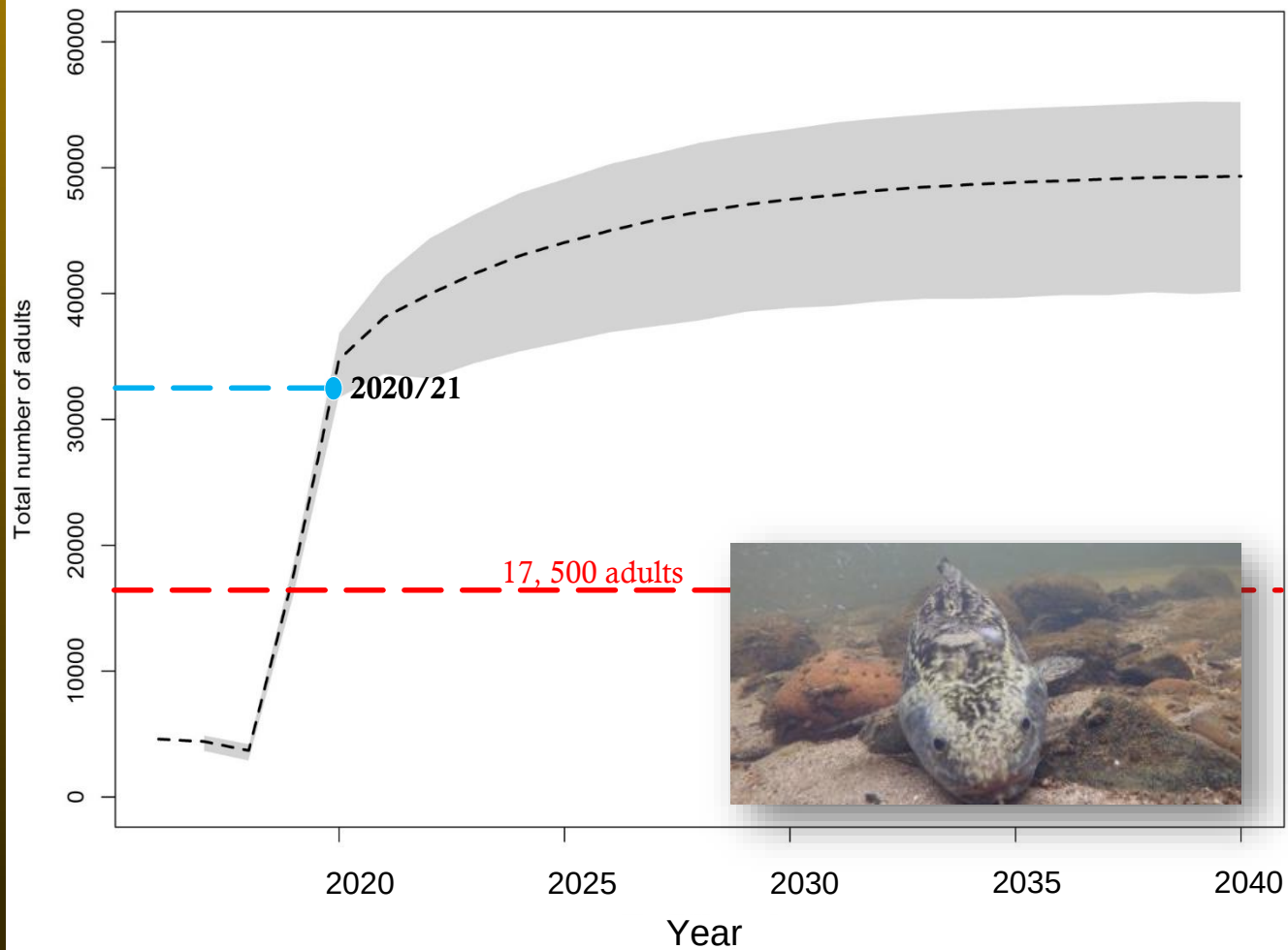
WILD RECRUITMENT



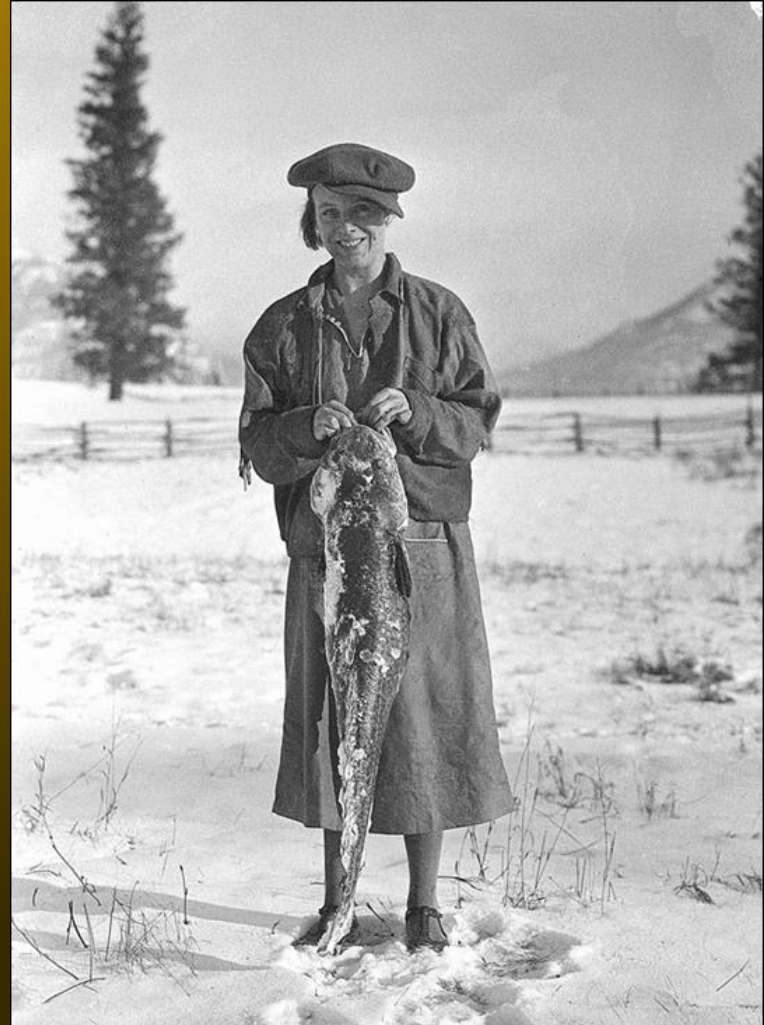
BURBOT ABUNDANCE



BURBOT ADULT ABUNDANCE



HISTORICAL BURBOT FISHERY



BURBOT FISHERY – REOPENED IN 2019



BURBOT FISHERY – REOPENED IN 2019



Nutrient Restoration Program

Nutrient Trapping



Reduced Algae



Reduced Aquatic Insects



Reduced Fish Numbers



Solutions

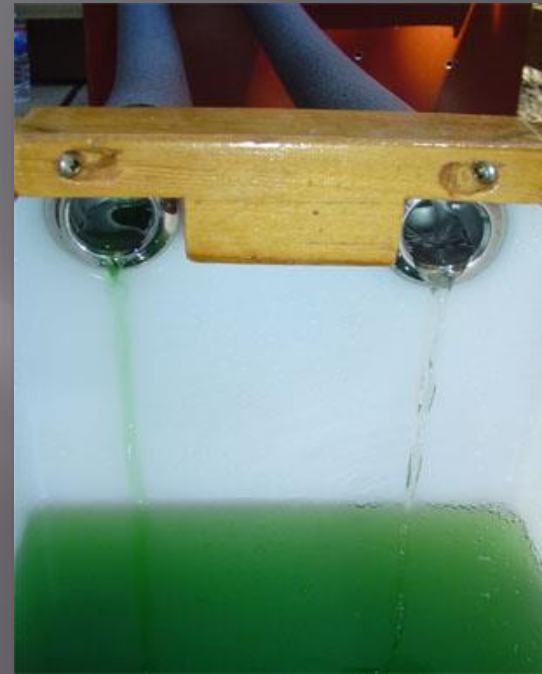


Project Objectives

- Increase primary and secondary production
- Increase numbers and size of fish community
- Improve recreational fishing



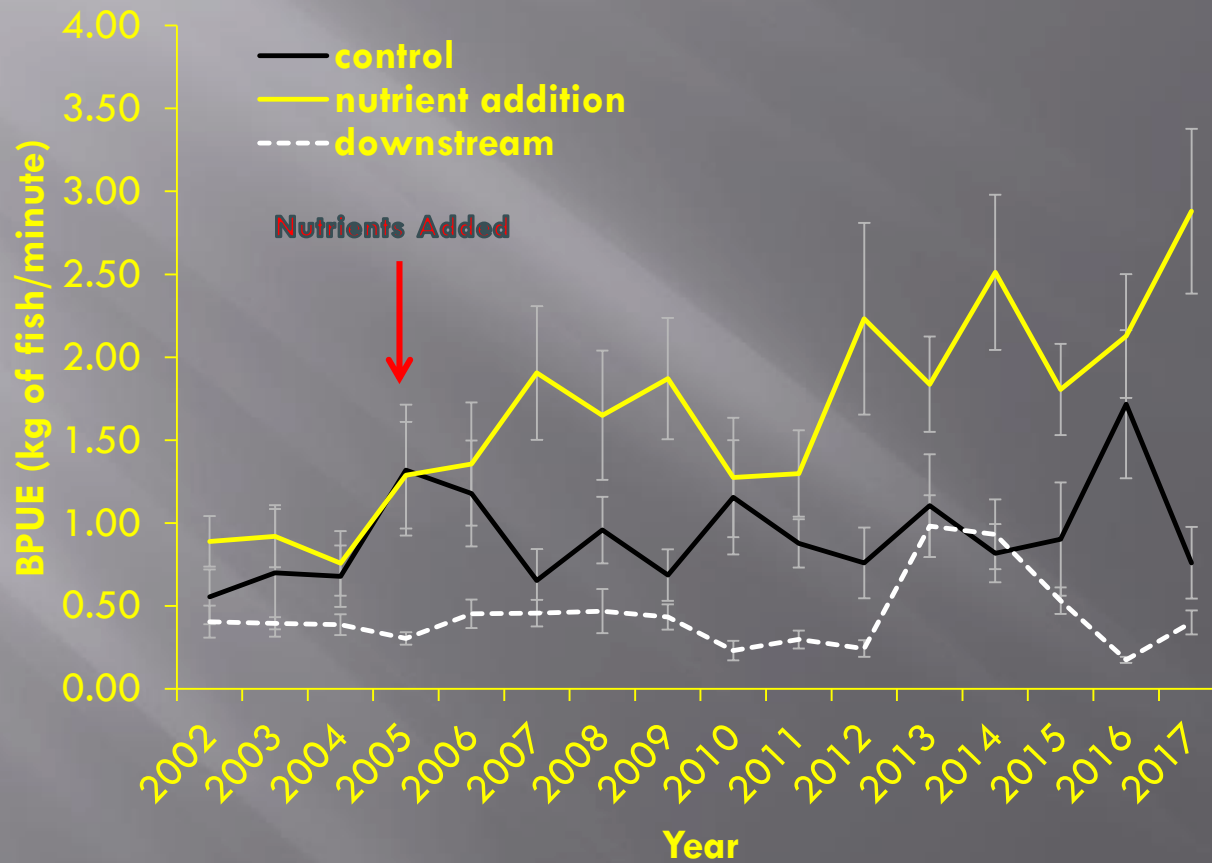
Nutrient Addition Program



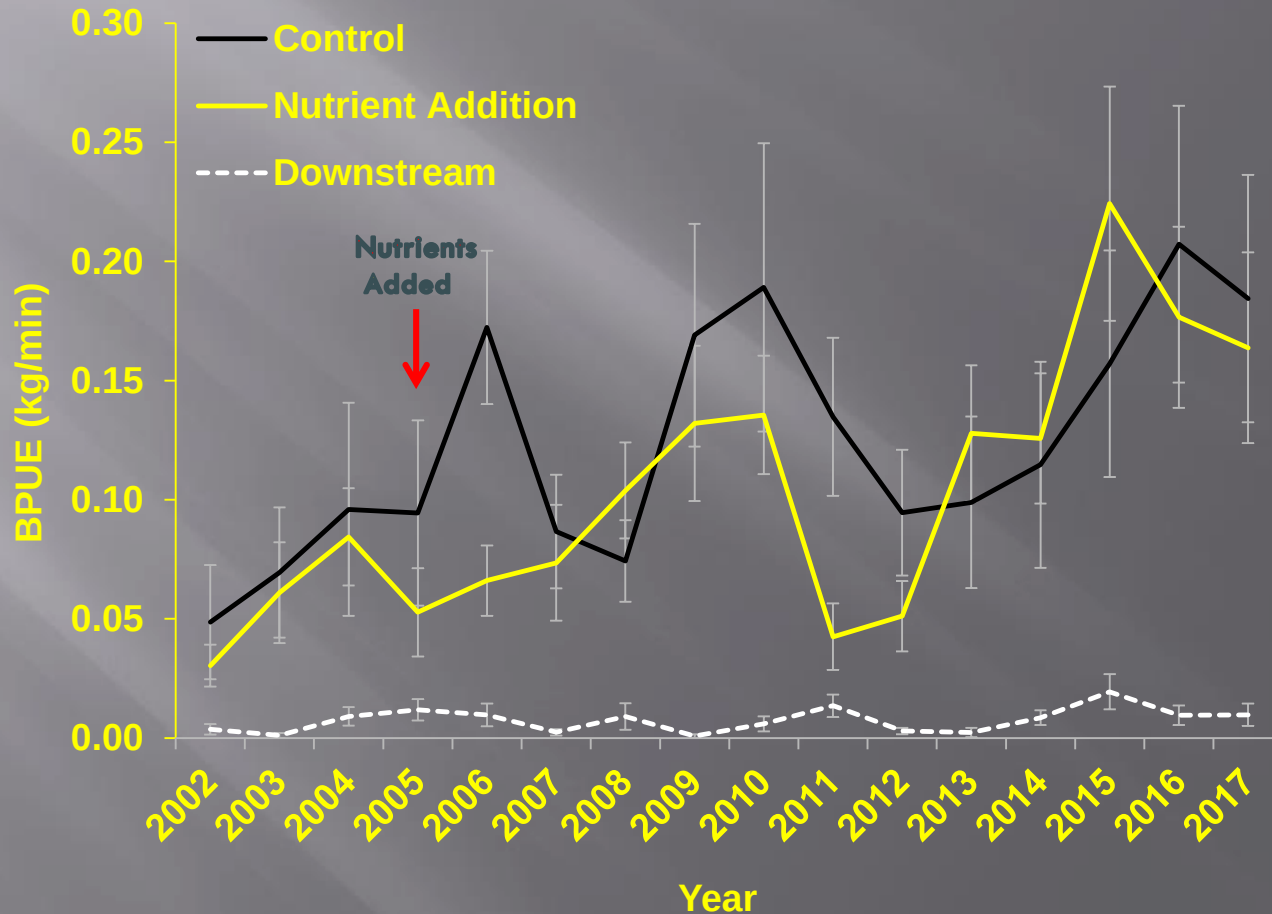
Nutrient Additions Begin 2005



Fish Biomass Results



Biomass – Rainbow Trout





Acknowledgements

