



University of Idaho

Aquaculture Research Institute

BURBOT CULTURE AT THE UNIVERSITY OF IDAHO

PAST, PRESENT, AND FUTURE

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BURBOT (*LOTA LOTA*)



I Only true freshwater Gadoid

I Circumpolar distribution above 40°N

I Highly fecund

I Reproduce at 2-4°C

I Similar water quality parameters as trout

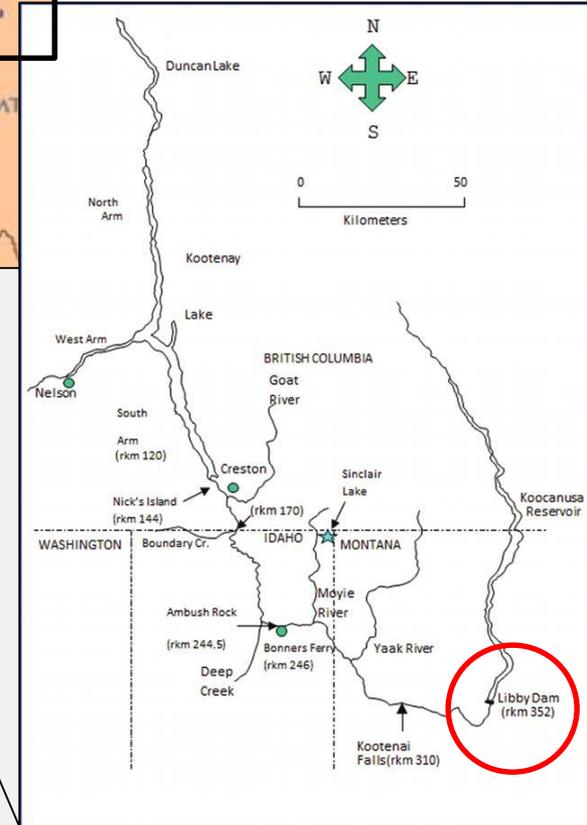
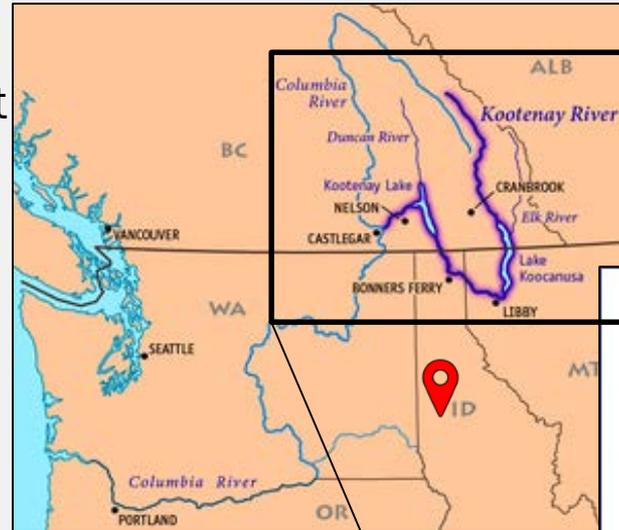
I Refractory to many salmonid pathogens

I Yield: Fillets, roe, liver, and leather

HISTORY OF BURBOT IN THE KOOTENAI



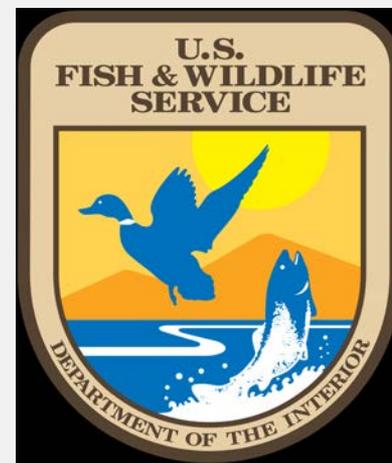
- I** The Kootenay Lake in British Columbia may have been the most robust burbot fishery in North America
- I** Burbot fishery collapsed in the Kootenai River System after construction of Libby dam in 1972
- I** Idaho burbot fishery closed- 1992





RESTORING BURBOT IN THE KOOTENAI

2003- A PARTNERSHIP BEGINS



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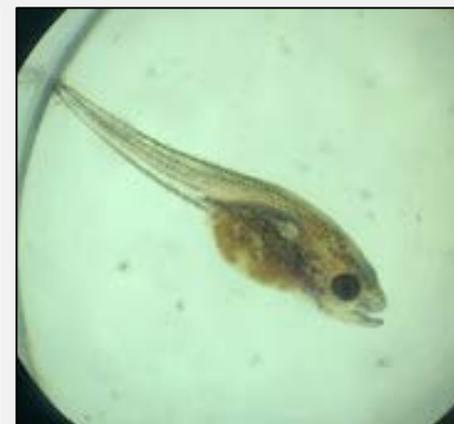
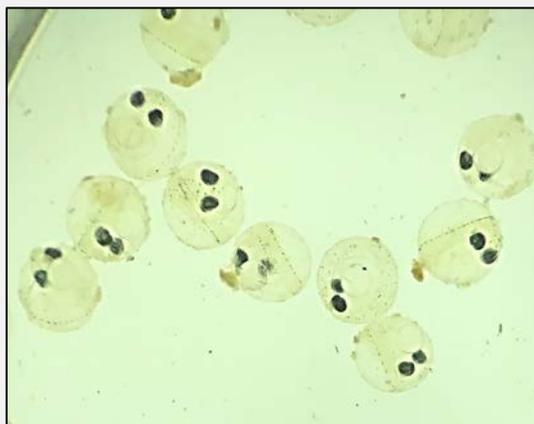
BURBOT CONSERVATION RESEARCH AT UI

EGG INCUBATION

I Egg incubation
(Jensen et al. 2008)

I Pathogen control
(Polinski et al. 2013)

I Embryonic development
(Egan et al. 2015)





BURBOT CONSERVATION RESEARCH AT UI

LARVICULTURE

I Temperature requirements

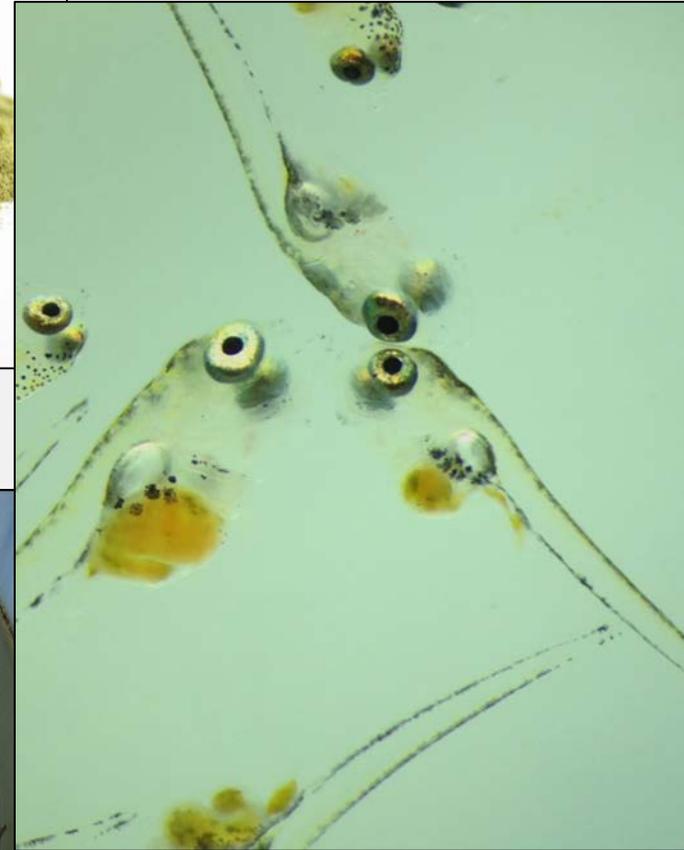
(Barron et al. 2012)

I Larval feeding regimes

(Jensen et al. 2011)

I Cannibalism suppression

(Barron et al. 2013)





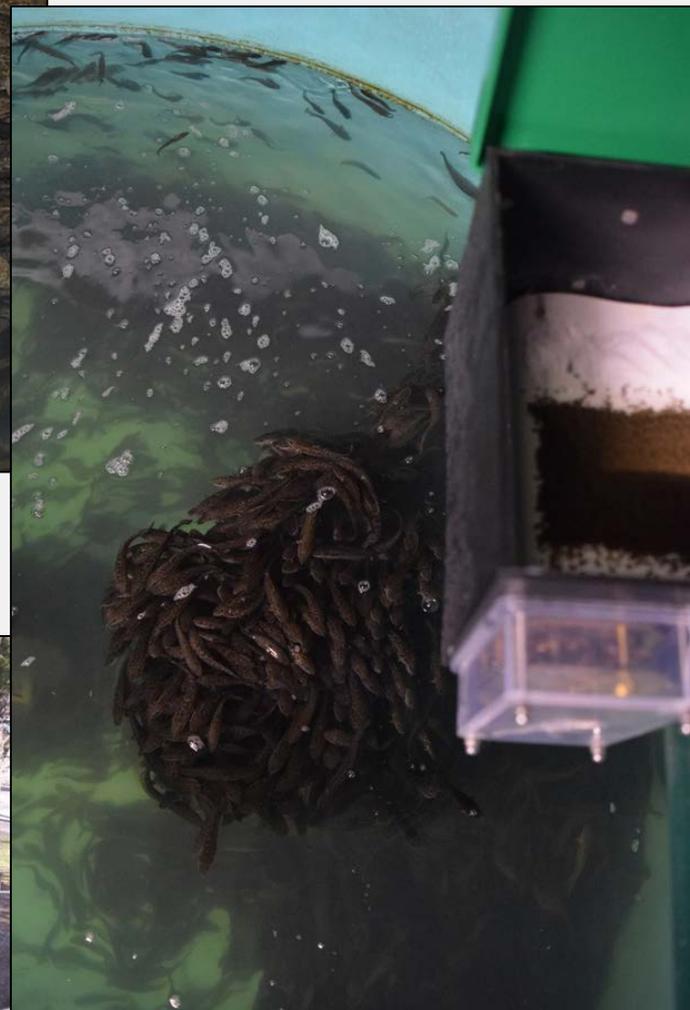
BURBOT CONSERVATION RESEARCH AT UI



JUVENILE CULTURE

I Tagging evaluation
(Barron et al. 2013)

I Stocking density and pond culture
(Barron et al. 2013)



INTERNATIONAL BURBOT CONSERVATION STRATEGY



A TIMELINE

- 1972 Libby dam completed
- 1992 Idaho burbot fishery closed
- Early 2000s Wild burbot population estimated at 50 in the Kootenai River
- 2003 International burbot conservation team formed
- 2009 Juvenile and larval burbot produced at UI and stocked in Kootenai River
↓
- 2014
- 2015 Twin Rivers Hatchery produces majority of larval and juvenile burbot stocked into the Kootenai River
↓
- 2019

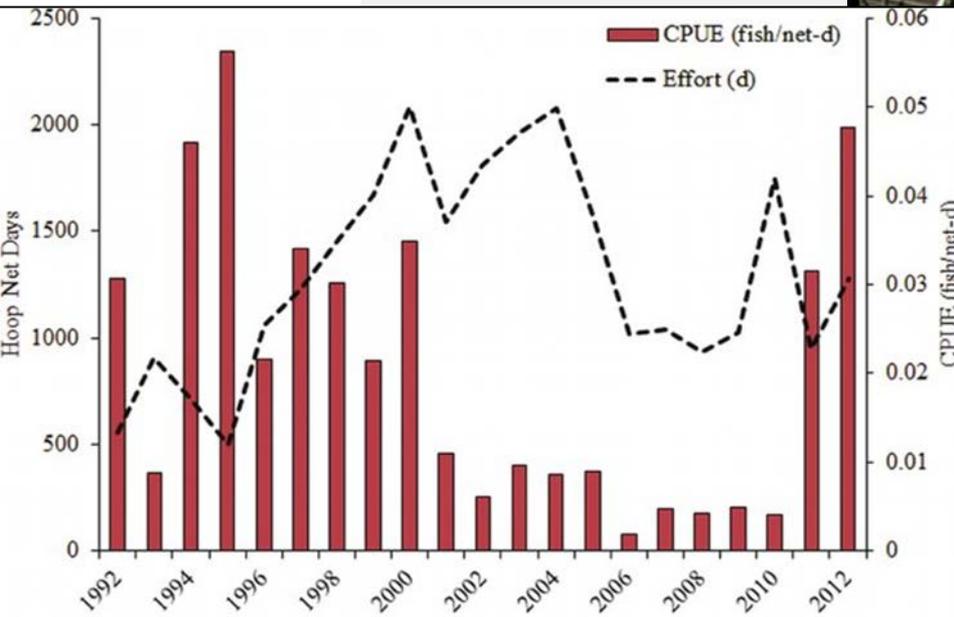
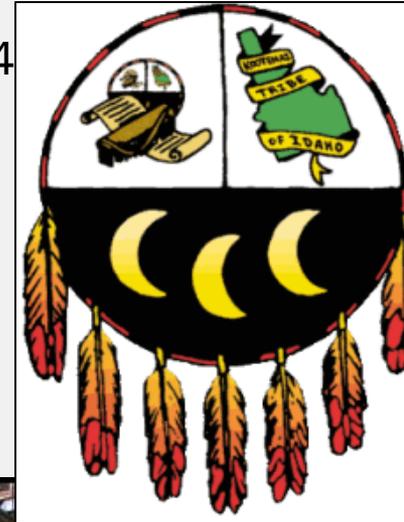


TWIN RIVERS HATCHERY

A BURBOT SUCCESS STORY



- I Funded by Bonneville Power Administration, hatchery completed in 2014
- I Began producing and stocking burbot larvae and juveniles in 2015
- I 14 million larvae and 1.5 million juveniles produced thus far
- I Burbot fishery opened in Idaho in 2019
- I Current harvestable burbot estimate in the Kootenai River-50,000



OPTIMIZATION OF BURBOT AQUACULTURE

CONTINUED BURBOT RESEARCH AT UI



I Soy as a fishmeal replacement

(Bruce et al. 2019, *unpublished*)

I Immunological assay development

I Economic analysis of burbot production

I Induction of triploidy

(Oliver et al. 2019)

I Marketability of burbot products

(Matuha et al. 2019, *unpublished*)

I Control of spawn time

I Microbiome research

I Larval weaning

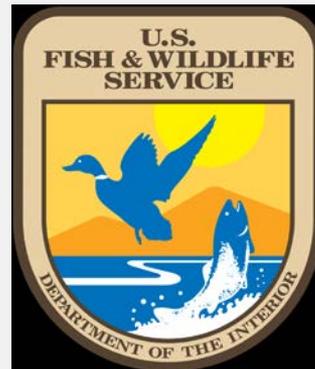
(Matuha et al. 2019, *unpublished*)



ACKNOWLEDGEMENTS

I Thank You!

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QUESTIONS?

