

# WSU's 2023 Dreissenid Mussel Early Detection Monitoring in the Columbia River

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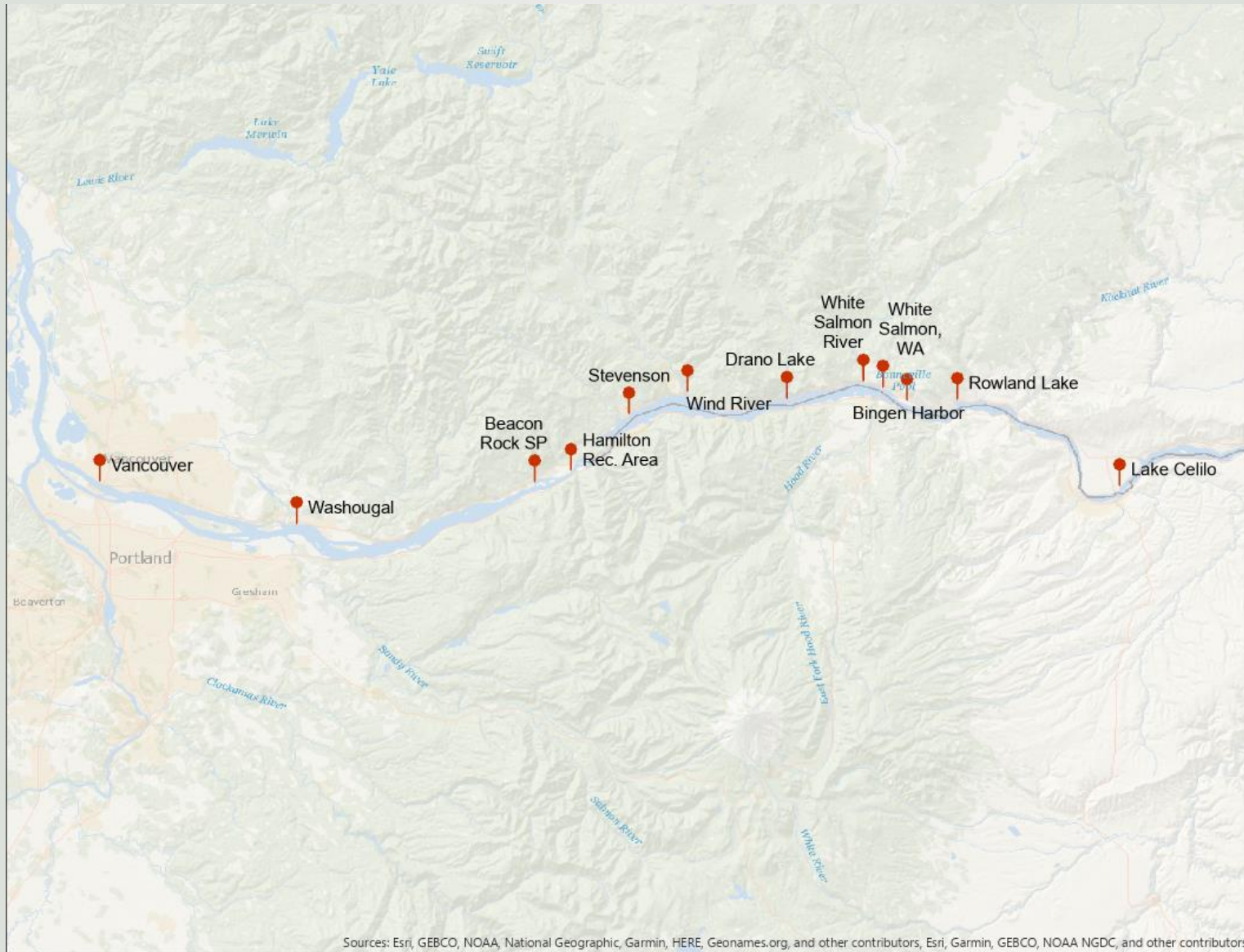
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# Location and number of samples to be collected in 2023 (Bi-weekly, May through October)

Sampling Location	Number of Net Samples	Number of eDNA Samples
Lake Celilo, WA	41	12
Rowland Lake	41	12
Bingen Harbor	41	12
White Salmon	41	12
White Salmon River at Underwood CUR	41	12
Drano Lake	41	12
Wind River	40	12
Stevenson	40	12
Near Bonneville Lock, Hamilton Recreation area	40	12
Beacon Rock SP	40	12
Washougal Marina	40	12
Vancouver, near Kaiser Memorial Park	40	12
<b>Total</b>	<b>486</b>	<b>144</b>

# Location of samples collected in 2022



# Annual allocation of samples by sampling method

FIELD COLLECTION METHOD	LABORATORY ANALYSIS METHOD	WATER BODY			TOTAL
		THE DALLES RESERVOIR	BONNEVILLE RESERVOIR	“LOWER” COLUMBIA	
Plankton tow	CPLM Microscopy	41	285	160	486
Water sample	eDNA	12	84	48	144
Plankton tow	FlowCam	9	21	18	48

# Results of 2023 Surveys: Dreissenid Veligers

***The Good News! Zero Detections!***  
***(Based on May samples only)***

FIELD COLLECTION METHOD	LABORATORY ANALYSIS METHOD	WATER BODY			TOTAL
		THE DALLES RESERVOIR	BONNEVILLE RESERVOIR	"LOWER" COLUMBIA	
Plankton tow	CPLM Microscopy	0	0	0	0
Water sample	eDNA	TBD	TBD	TBD	TBD
Plankton tow	FlowCam	TBD	TBD	TBD	TBD

## What went well and what posed difficulties?

Everything continues to go “as smooth as silk”  
– WSU has been doing this for many years now, so we are a “well-oiled machine.”

We see no difficulties going forward.

## Final Food for Thought:

**Can the Asian clam, *Corbicula fluminea*, be used as a model organism for better understanding possible invasions of other bivalves (e.g., Dreissenids) in the CRB and elsewhere?**

Rollwagen-Bollens, G. C., B. A. Bolam, S. M. Bollens, S. Henricksen, C. Sandison, and J. Zimmerman. 2021. Temperature-dependent functional response of the invasive Asian clam, *Corbicula fluminea*, feeding on natural phytoplankton. *Inland Waters*, 11: 250-256. <https://doi.org/10.1080/20442041.2020.1843933>

Henricksen, S., and S. M. Bollens. 2022. Abundance and growth of the invasive Asian clam, *Corbicula fluminea*, in the lower Columbia River, USA. *Aquatic Invasions*. 17: 36-56. <https://doi.org/10.3391/ai.2022.17.1.03>

Robb-Chavez, S, S. M. Bollens, G. Rollwagen-Bollens, and T. D. Counihan. 2023. Broadscale distribution, abundance, and habitat associations of the invasive Asian clam (*Corbicula fluminea*) in the lower Columbia River, USA. *International Review of Hydrobiology*. In Press.