



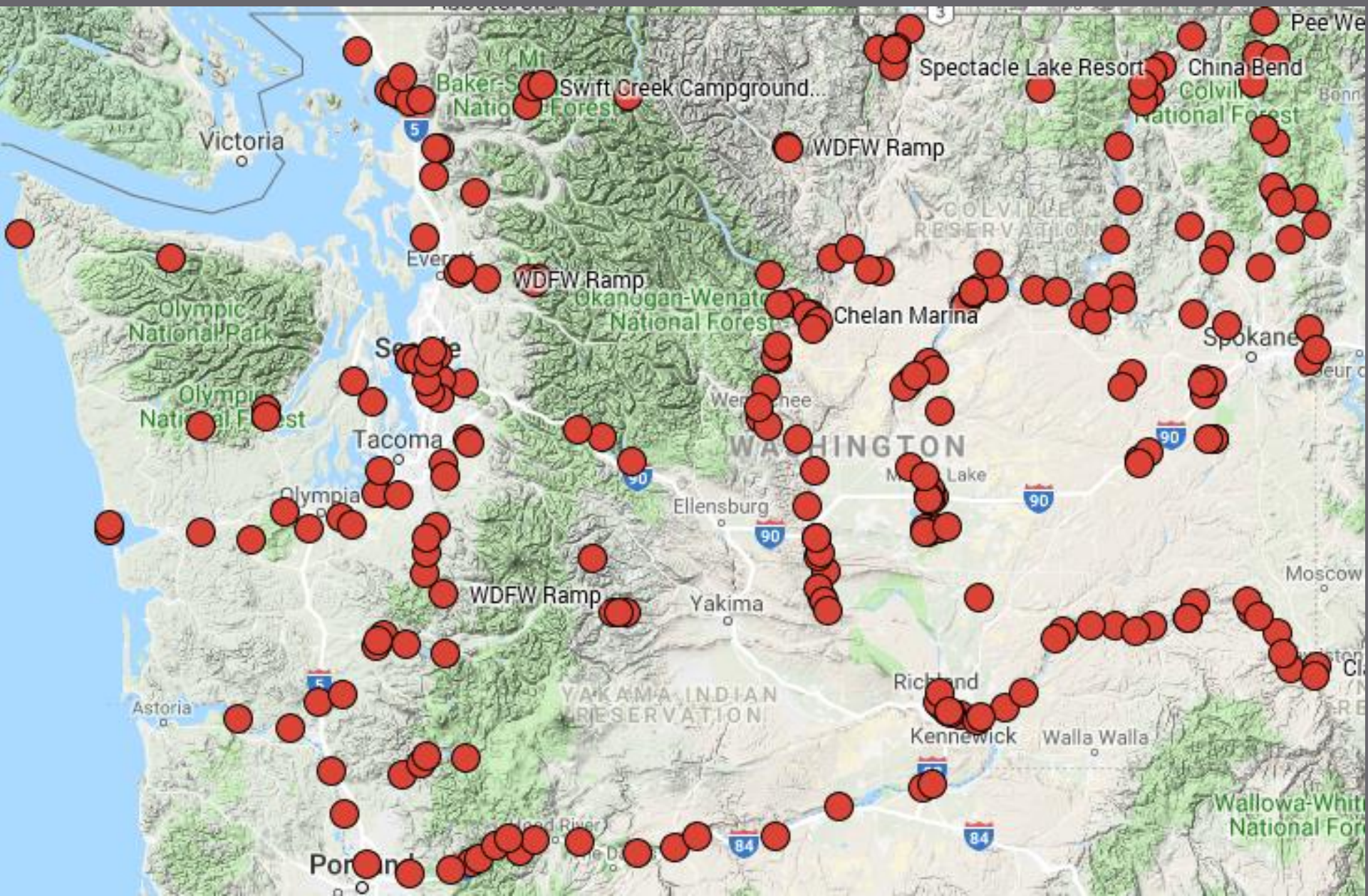
# Washington Department of Fish and Wildlife Zebra/Quagga Mussel Risk Assessment

Washington Department of Fish and Wildlife (WDFW)  
Aquatic Invasive Species (AIS) Unit  
Jesse Schultz

# Co-Partners

Sampler	Water Body	Reservoir
Chelan Public Utility District (PUD)	Columbia River	Rocky Reach/Entiat
Douglas PUD	Columbia River	Pateros
Grant PUD	Columbia River	Priest Rapids and Wanapum
National Park Service	Columbia River	Roosevelt
Seattle City Light	Pend Oreille River	Boundary
Spokane Tribe	Columbia River	Roosevelt
Snohomish PUD & City of Everett	Sultan River	Spada

# 2018 Sites



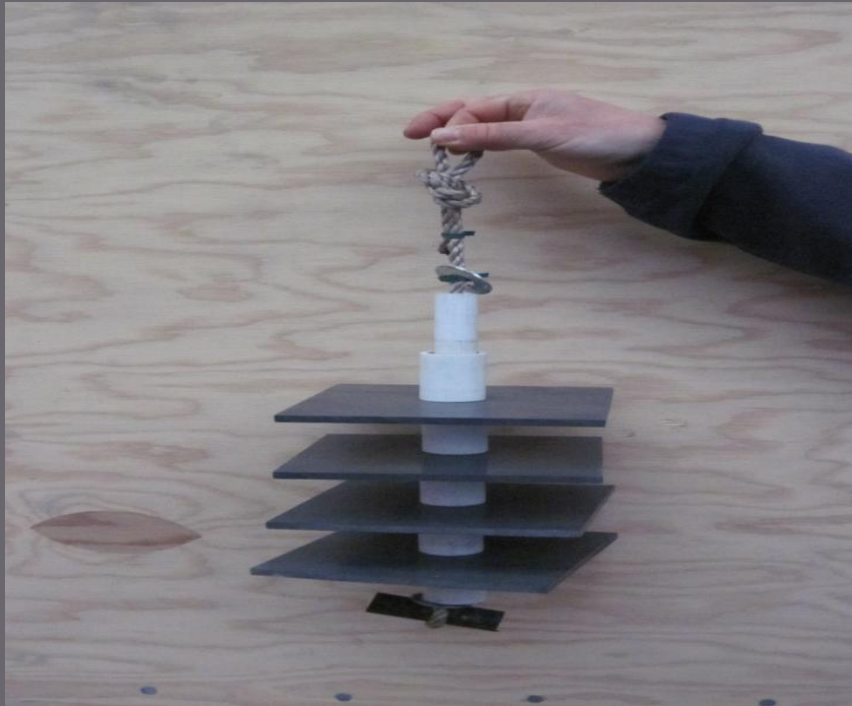


# Vertical and Horizontal Plankton Net Tows



- 2018, 514 vertical and 514 horizontal for a total of 1,028 at 225 sites
- 2019, goal of 550 vertical and 550 horizontal for a total of 1,100 at 250 sites
- Analysis conducted by private consultants Cameron Lange and Steve Wells

# Artificial Substrates/Collection Plates



- 2018, 620 monitored at 219 sites
- 2019, goal of 750 monitor at 250 sites

# Visual Shoreline



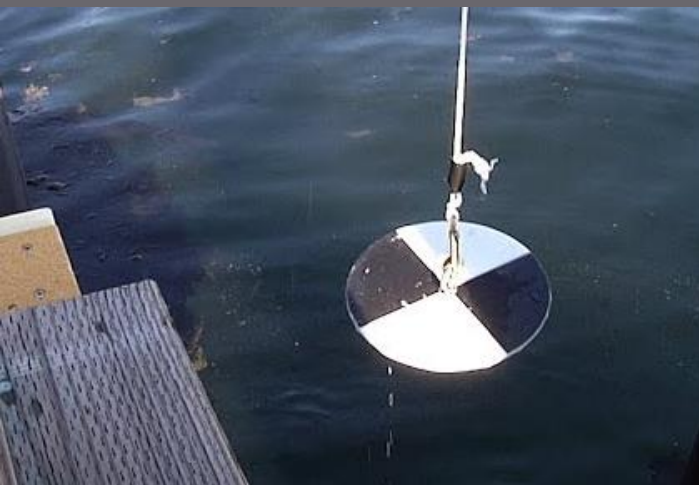
- 2018, 706 conducted at 230 sites
- 2019, goal of 750 conduct at 250 sites



# Water Quality



- Salinity
- pH
- Temperature
- Dissolved Oxygen
- Visibility



- 2018, 645 sets measured at 233 sites
- 2019, goal of 791 sets measured at 250 sites

# Calcium



- 2018, 642 samples at 233 sites
- 2019, 970 samples at 250 sites
- Conducted during the summer when calcium is at “highest” and spring when at “lowest”
- Analysis conducted by Eastern Washington University Carmen Nezat



# eDNA



- 2018, 222 samples and 222 negatives at 222 sites for zebra, quagga, and NZMS
- 2019, 250 samples and 250 negatives at 250 sites for zebra, quagga, NZMS, and northern pike (THANK YOU WISC)
- Smith Root Inc. ANDe backpack filter
- Analysis conducted by WDFW Genetics Lab Sarah Brown

# Ponar Grab Sampler



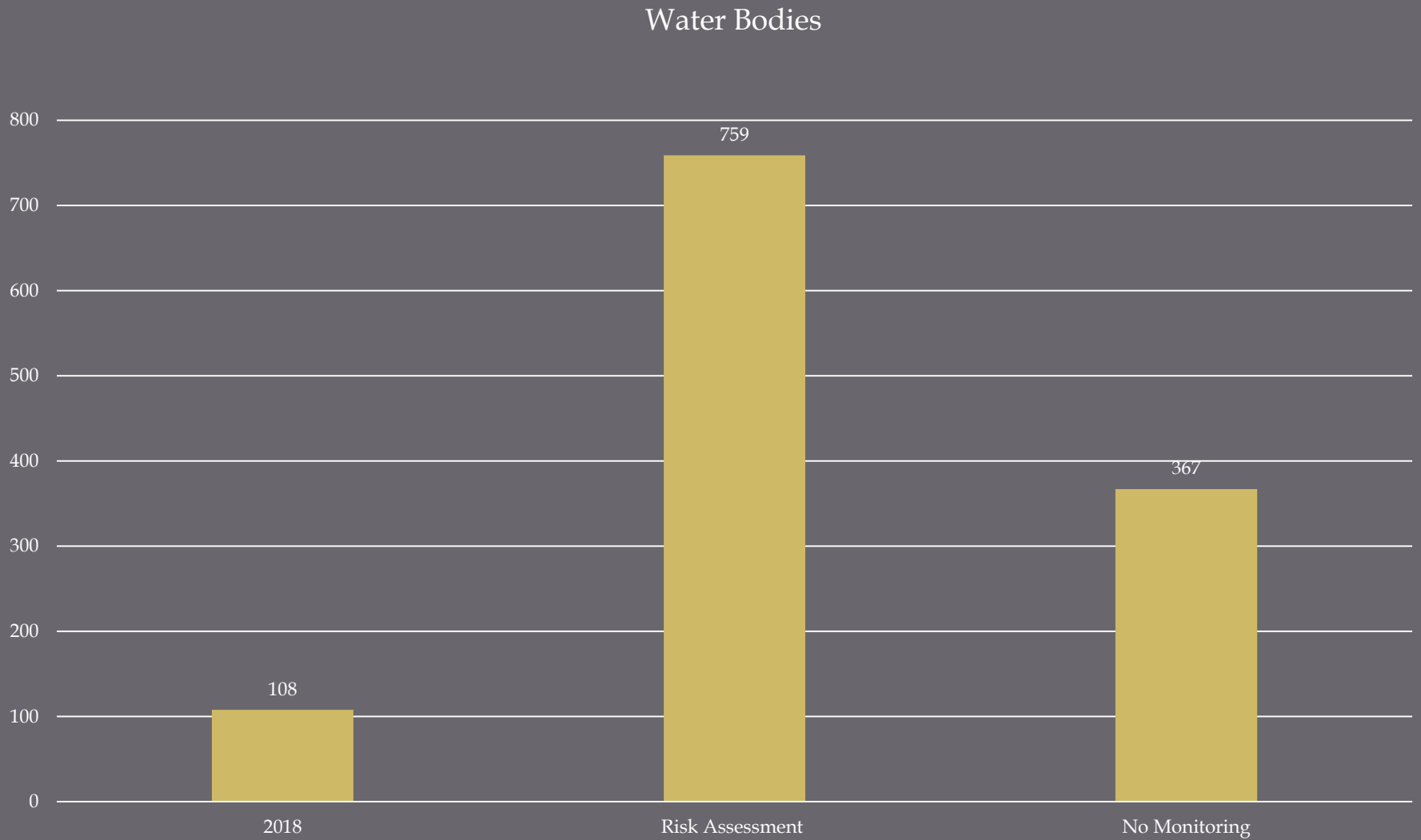
- Starting in 2019, goal of 750 conduct at 250 sites

# 2000-2006 Historical Horizontal Plankton Tow Data (571 Samples)

Sampler	Water Body	Reservoir
Chelan PUD	Columbia River	Rocky Reach/Entiat
Douglas PUD	Columbia River	Pateros
Grant PUD	Columbia River	Priest Rapids and Wanapum
Kalispel Tribe	Pend Oreille River	Box Caynon
King County	Lake Washington and Union	N/A
Spokane Tribe	Columbia River	Roosevelt
WA Dept Ecology	Misc Lakes	N/A

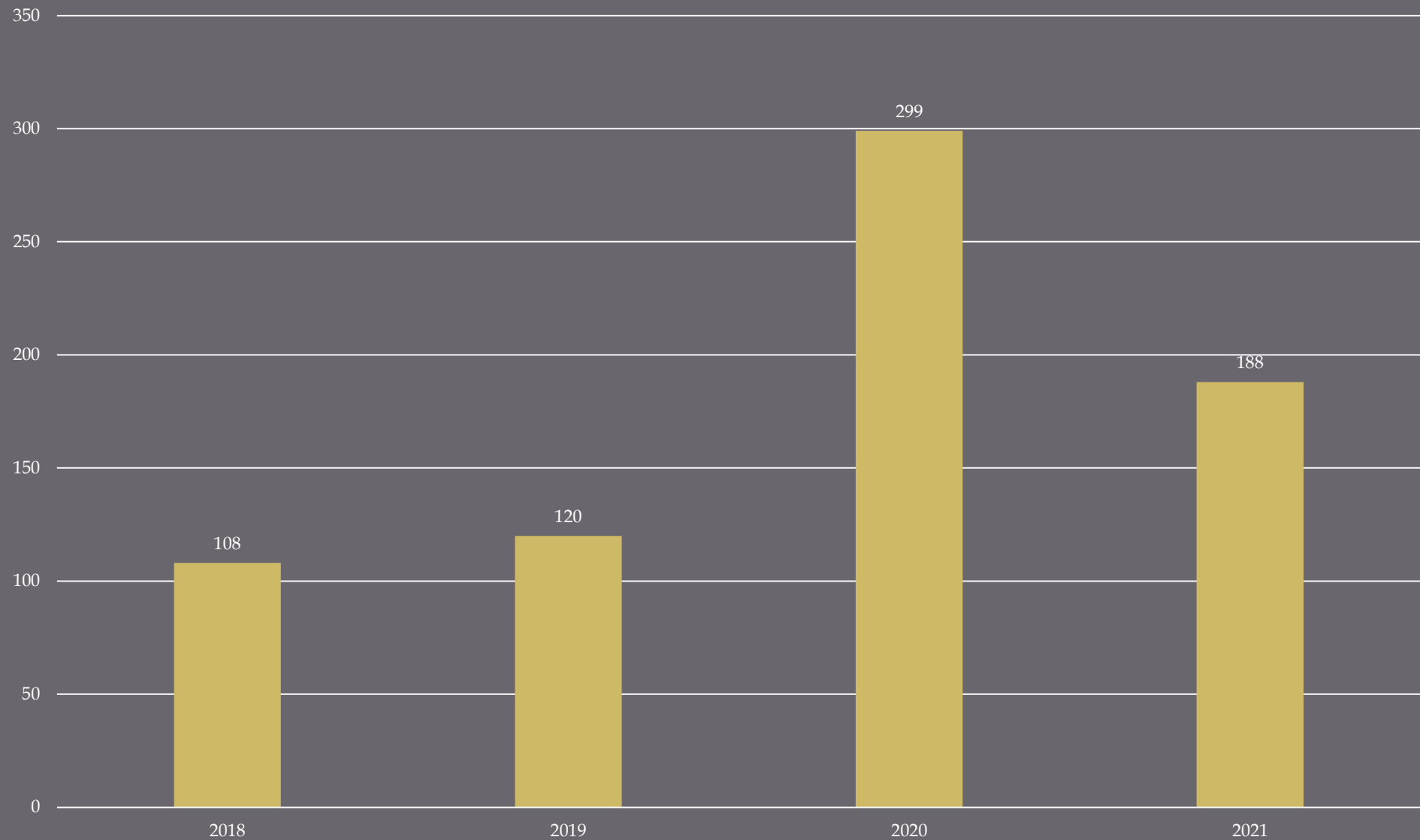


# Risk Assessment



# Risk Assessment

Planned Water Bodies Monitored



Rank	0 Point	1 Point	2 Point	3 Point	4 Point
Establishment					
Calcium (mg/L)	0-4 (1 every other year)	5-11	12-15	16-24	25 or more
Introduction					
Public	No (no monitoring)				Yes
# of Boat Ramps	0 (no monitoring)	1	2	3	4 or more
Boat Ramp Paved	No				Yes
Boat Ramp w/Dock	No	Yes			
Motorized Boats	No				Yes
Speed Limit	Yes				No
Moorage	No				Yes
Private Docks	No				Yes
Access Year Around	No	Yes			
Ease of Access		Foot	Ferry	Gravel road	Paved road
In Columbia River Basin	No	Yes			
Water Body Size		0-10	11-49	50-99	100 or more
Fish Stocked	No	Yes			
Hatchery/Net Pens	No				Yes
Fishing Tournaments	No	1-2	3-4	5-6	7 or more
Watersports Tournaments	No				1 or more
Boatyard	No				Yes
Hydropower/Flood Control	No				Yes
Irrigation	No				Yes



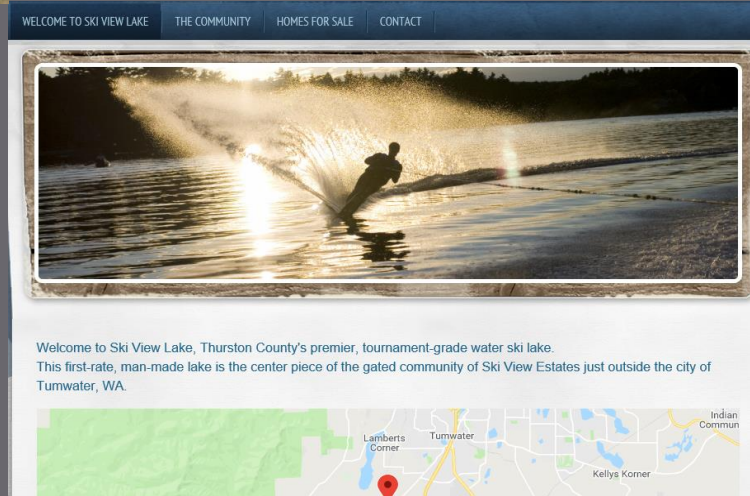
Bottom 10 Water Bodies			
Score	Water Body Common Name	County	Already Monitored
11	Lake Bradley	Pierce	No
13	Summit Lake	Stevens	No
13	Buck Lake	Okanogan	No
13	Carls Lake	Pend Oreille	No
13	Cooks Lake	Pend Oreille	No
13	Hummel Lake	San Juan	No
13	Lost Lake	Yakima	No
13	Snag Lake/Radar Hill Ponds	Pacific	No
13	Sportsman Lake	San Juan	No
14	Hutchinson Lake	Adams	No
Top 10 Water Bodies			
Score	Water Body Common Name	County	Already Monitored
58	Potholes Reservoir	Grant	Yes
58	Lake Bonneville	Skamania	Yes
59	Wanapum Lake	Grant	Yes
59	Lake Herbert G West	Walla Walla	Yes
60	Lower Granite Lake	Whitman	Yes

# Risk Assessment Surprises

- Previously high-risk water bodies scoring very low
  - Lake Wenatchee
  - Baker Lake
- Previously low-risk water bodies not monitored
  - Conconully Lake
  - Conconully Reservoir

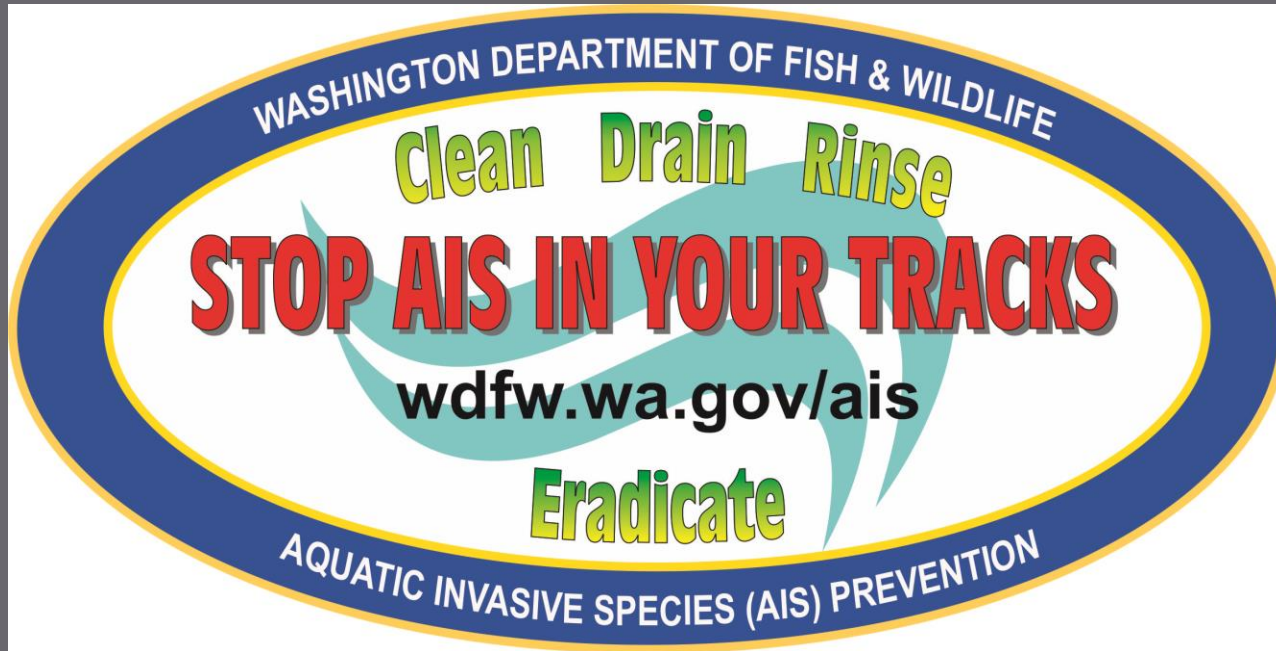
# Was Not on Radar

- Private manmade lakes for watersports
- Risk assessment found 21
- How to approach? Outreach and education first





# Thanks



**WDFW AIS Unit**

Jesse Schultz (360) 480-2105

Jesse.Schultz@dfw.wa.gov