



*Providing educational
resources, workshops
and networking for
lake and bay residents*



Goals of Monitoring

- Collect data that will be used to protect or improve water bodies
- Identify potential water quality problems by viewing trends over time
- Provide property owners with an opportunity to learn about aquatic ecosystems



**Bay
Watchers**
Lake Education Ambassadors

Goals of Program

- Provide community education on the Coeur d'Alene Lake watershed through workshops
- Empower citizen scientist volunteers to monitor long-term water quality trends and augment data collected by the Coeur d'Alene Tribe and Idaho DEQ
- Help provide knowledge and resources for neighbors to answer lake-related questions

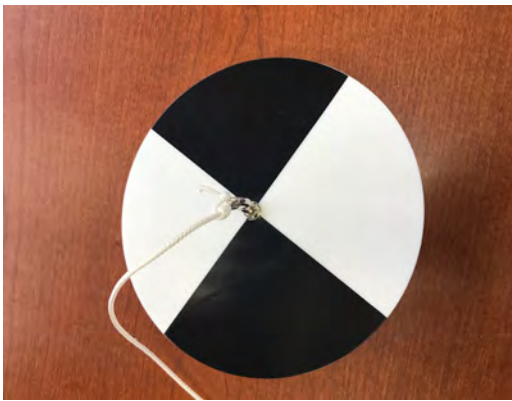


**Bay
Watchers**
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Monitoring Equipment



Temperature Logger



Secchi Disk



View Tube



Van Dorn



Turbidimeter



YSI Multi-Probe

Monitoring Timeline

SPRING

- Annual Meeting to review data
- Volunteers pick up Secchi disk, view tube, and temperature logger from U of I CDA
- Volunteers install temperature logger on dock

SUMMER

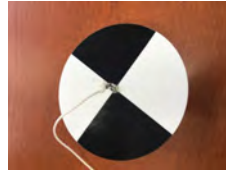
- Begin monthly monitoring with Bay Watcher Coordinator
- Volunteers measure Secchi depth on their own

FALL

- Complete monthly monitoring
- Volunteers pull temperature logger from dock
- Volunteers return Secchi disk and temperature logger to U of I CDA
- Volunteers submit all data forms to Bay Watcher Coordinator

Typical Sampling Event

Schedule a time to meet Citizen Scientist Volunteers at their dock or other location for pick up



Pilot boat to GPS location in their Bay for sampling



Document Profile Data up to 20 meters

Citizen Science Lake Monitoring Program



Site: _____

Sampler names: _____

Date: _____ Time: _____

Weather and % cloud cover: _____

Estimated wind speed and direction: _____

Estimated wave height: _____

Secchi disk depth with view tube: _____ (m) Without view tube: _____ (m)

Maximum water depth at site: _____ (m)

LAKE PROFILE

Depth (meters)	Temp (°C)	DO (%)	DO (mg/L)	Sp. Cond (µS/cm)	pH

What we measure

Secchi Depth with and without view Tube

The Secchi depth is a measurement of water clarity. Water transparency directly affects the amount of light penetration into a lake. Algae and suspended particles from erosion make the water cloudy and decrease the Secchi transparency in a lake.

YSI Probe Measurements

Dissolved Oxygen

Dissolved oxygen (DO) is a measure of how much oxygen is dissolved in the water - the amount of oxygen available to living aquatic organisms. DO is considered an important measure of water quality as it is a direct indicator of an aquatic resource's ability to support aquatic life.

pH

pH is a measure of how acidic/basic water is. The range goes from 0 to 14, with 7 being neutral. pHs of less than 7 indicate acidity, whereas a pH of greater than 7 indicates a base. The pH of water is a very important measurement concerning water quality.

Temperature

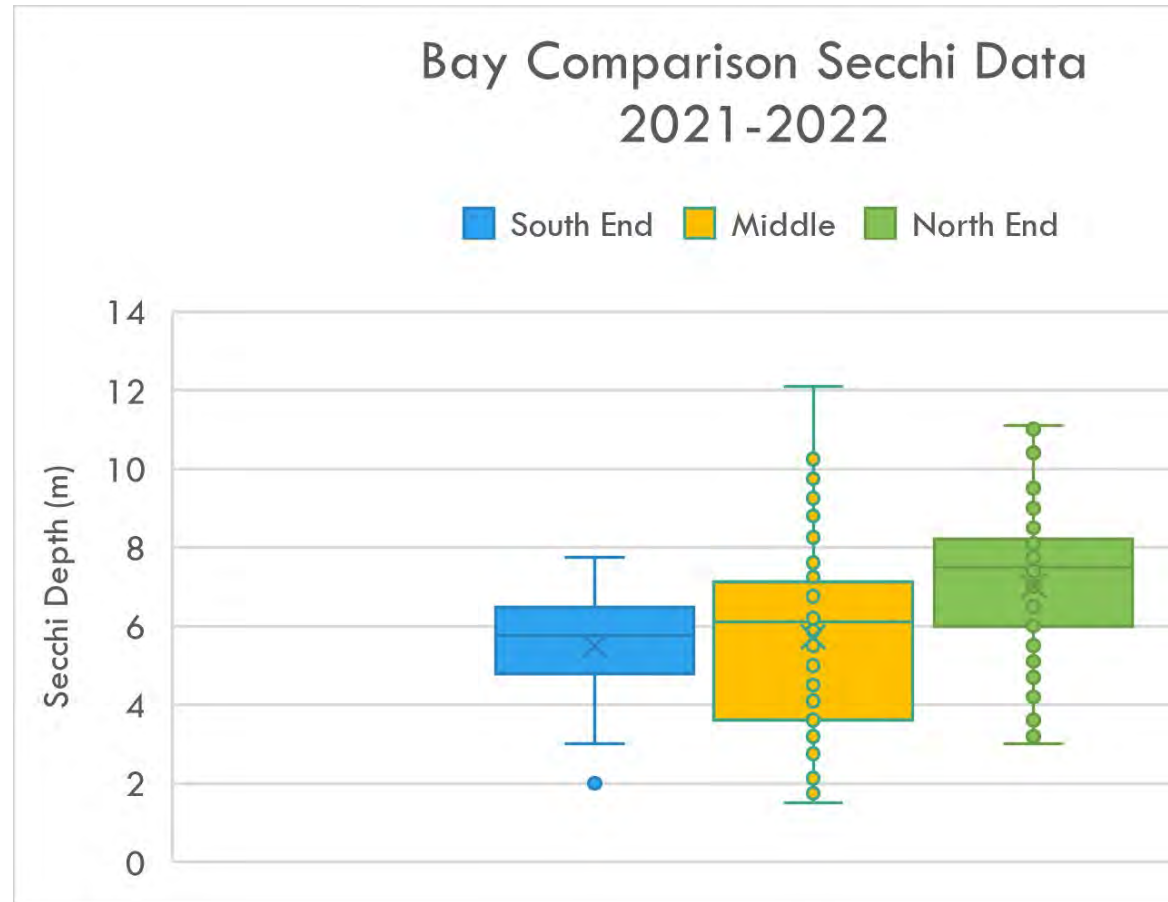
Temperature has a significant impact on water chemistry, and a number of phenomena can occur when a lake's water temperature and chemical properties reach certain thresholds.

Specific Conductivity

Measures how easily electricity flows through water. Salts dissolved in water can conduct (transport) electricity. Significant changes in conductivity outside normal seasonal ranges could indicate a source of pollution.

Preliminary Trends

More data needs to be collected in each bay to help determine if we are seeing any other significant trends.



2023 Season for Bay Watchers

Nutrient Testing - Phosphorus

We plan to start testing for Total Phosphorus this summer in several of our Bays.

Secchi Readings

Our volunteers plan to take more secchi readings on their own across the lake to help provide more data.

Participate in Boat Wake Study

Our volunteers will help a U of I grad student with her research on boat wakes and their effects on turbidity

Providing additional Educational Resources



Image Credit: UC Riverside

**Zebra & Quagga
Mussels**

Not Established...?



Image Credit: Colorado Parks and Wildlife

Flowering Rush

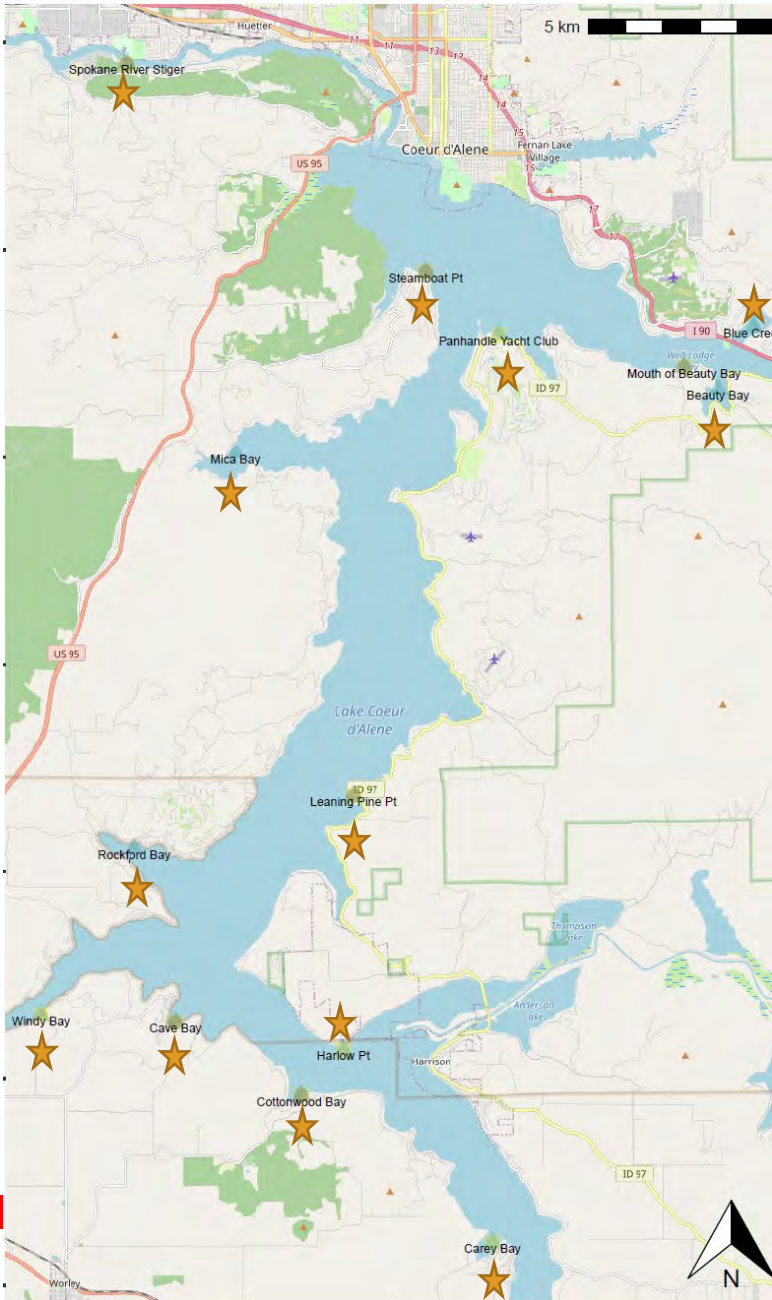


Image Credit: Wikipedia

Not Established...?



Virile Crayfish



Thank you to our 2022 Bay Watchers

Spokane River – Susan and Bob Stiger

Steamboat Point – Bryce Cyr

Panhandle Yacht Club – Jim Duff

Mouth of Beauty Bay – Wanda & Tim Quinn

Beauty and Blue Creek Bay – Barb and Bob McFarland

Mica Bay – Gabby Pfeiffer

Leaning Pine Point – Joe and Lynn Morris

Rockford Bay – Julie Fromm

Windy Bay – Nicole Kahler

Cave Bay – Steve Wilson

Cottonwood Bay, Harlow Point, and Carey Bay – Chris Kellogg



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