

Comparing Dissolved Oxygen and Temperature levels in the St. Louis and Baptism Rivers: How do Fish Feel?

What is dissolved oxygen?

Why does this matter to fish?

What about temperature-could this affect fish?

- Temperature affects growth, reproduction, and how active the fish are. If the water is really cold, the fish won't be active. If the water is warmer, fish will be active and can reproduce. Think about when fish spawn-it's usually when the weather is warmer.

Where does the heat come from? Where does the DO come from? (show diagram)

How can we get data for temperature and dissolved oxygen? (Introduce equipment, gather data, have students in groups: one graph DO, the other graph temperature)

Is temperature and DO related?

- Yes! As temperature increases, DO decreases. Compare it to soda pop: if a can has time to warm up, it isn't as bubbly. But a can right out of the fridge has a lot of bubbles.

So if DO changes with temperature, what happens when there's ice on a lake. Does this mean that there is a lot of DO?

- No, there isn't an exchange of air with water because the ice makes a barrier. This causes less DO in the winter when there is ice which can cause what are called "Winterkills" where large amounts of fish die off because there isn't enough DO.

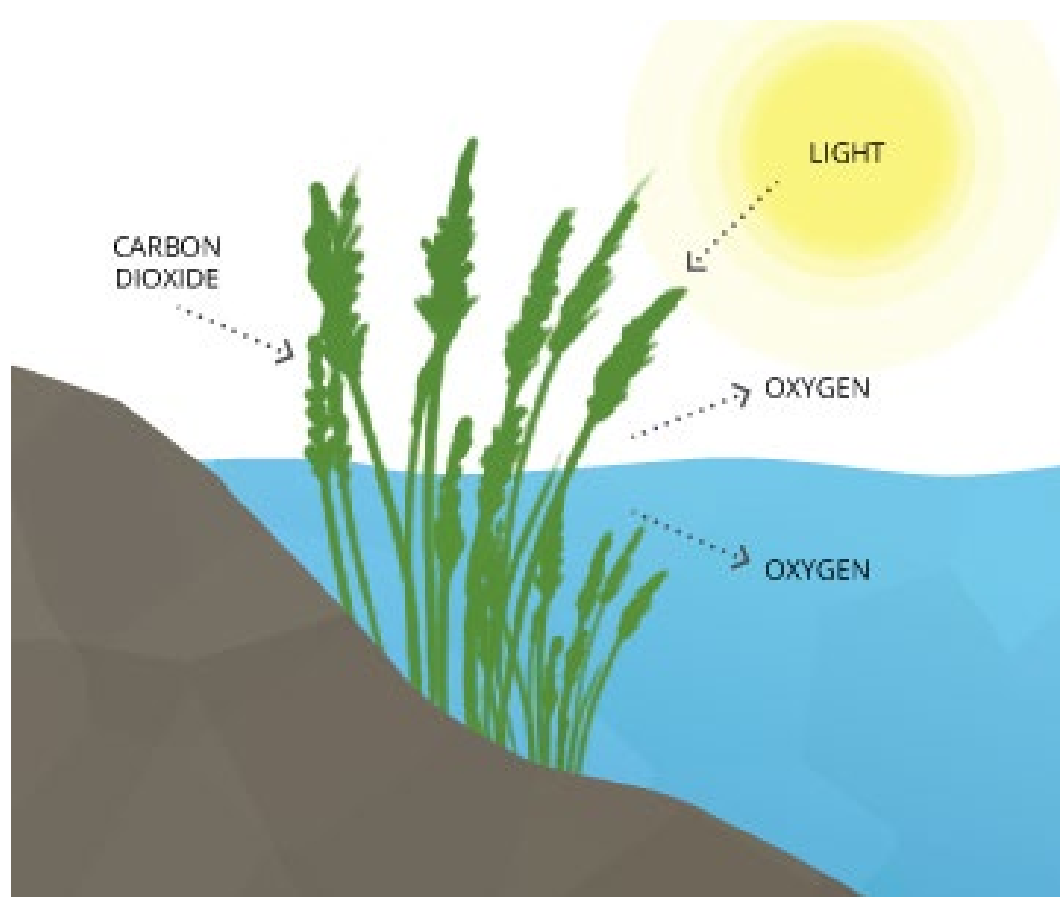
We know that fish need DO, but is it possible to have too much DO?

- Yes, it can cause gas bubble disease where fish will get bubbles in their bodies and eyes.

So how much is too much? How much is too little? Are the fish in the St. Louis and Baptism Rivers okay?

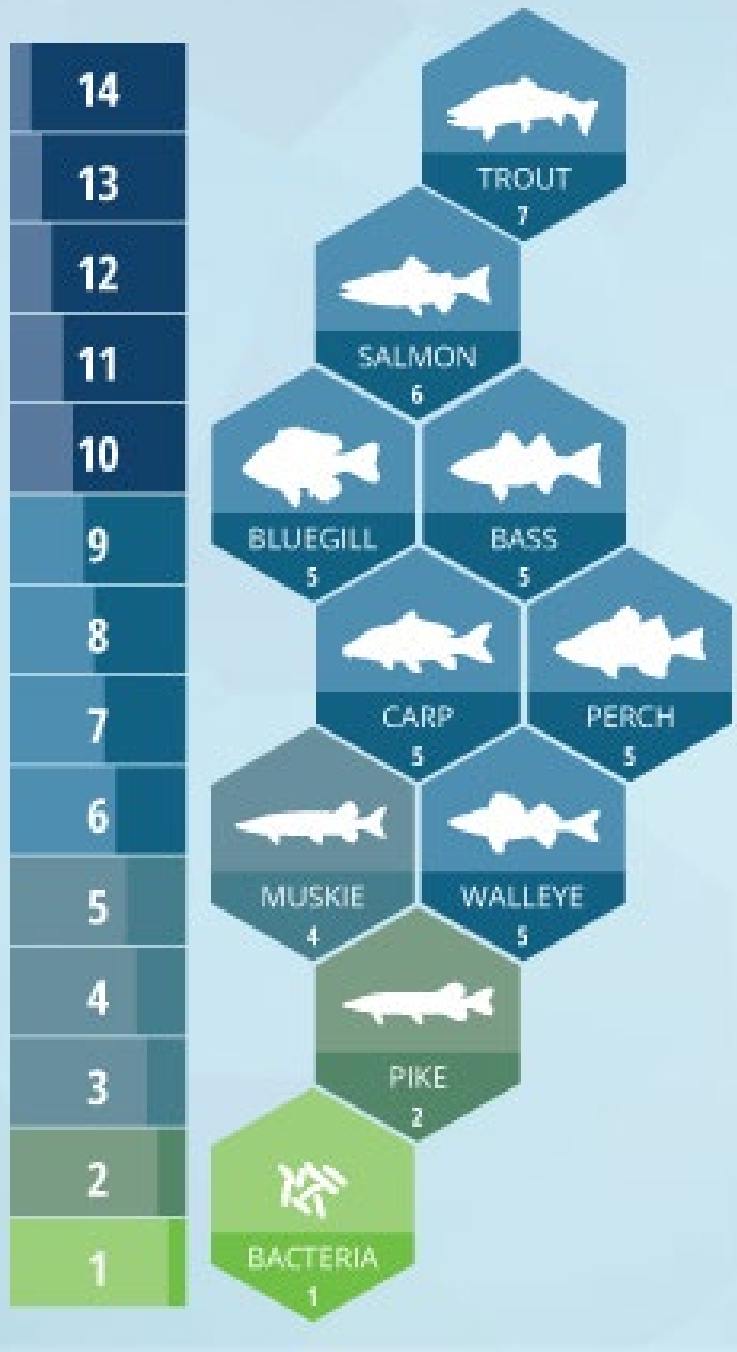
Can we tell what fish will live there by knowing the levels of DO? (Show fish/DO chart)

- Well, if the water is warm, that means there will be less DO, so we would expect to see Northern Pikes, Muskies, and Walleyes.
- If the water is cooler and the DO is higher, we could see Bluegill, Bass and maybe even Salmon!



Taken from <http://www.fondriest.com/environmental-measurements/parameters/water-quality/dissolved-oxygen/#11>

OXYGEN REQUIREMENTS mg/L



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2014 Temperature and DO for Pokegama River in the St. Louis Estuary

