

Alkalinity

Did you ever get an upset stomach? It happens when your stomach releases too much acid during digestion. One cure is an antacid tablet. An antacid tablet reduces the acidity and settles things down. Water can also become too acidic from things like acid precipitation or acid drainage from an old mine.

The **alkalinity** of water is its ability to resist a decrease in pH. It is known as buffering capacity. It measures the amount of **carbonates** in the water. Carbonates come from limestone and other rocks. Carbonates are the same as that antacid tablet in your stomach. They reduce the acidity of the water.

Why does it matter?

Water in an area with limestone will have a better buffering capacity to resist acid rain. These waterways are known as “limestone streams.”

Water in other areas may have a low pH if there is no limestone around. These waterways are known as “freestone streams.”



Former PFBC employee Sue Herzing taking a water sample from a lake.

Alkalinity (Calcium carbonate:) CaCO_3	
Freestone Streams	Limestone Streams
10 mg/l or less: Very sensitive to acid precipitation	75 mg/l or greater
10-20 mg/l: Somewhat sensitive to acid precipitation	
20 mg/l or greater: Not sensitive to acid precipitation	

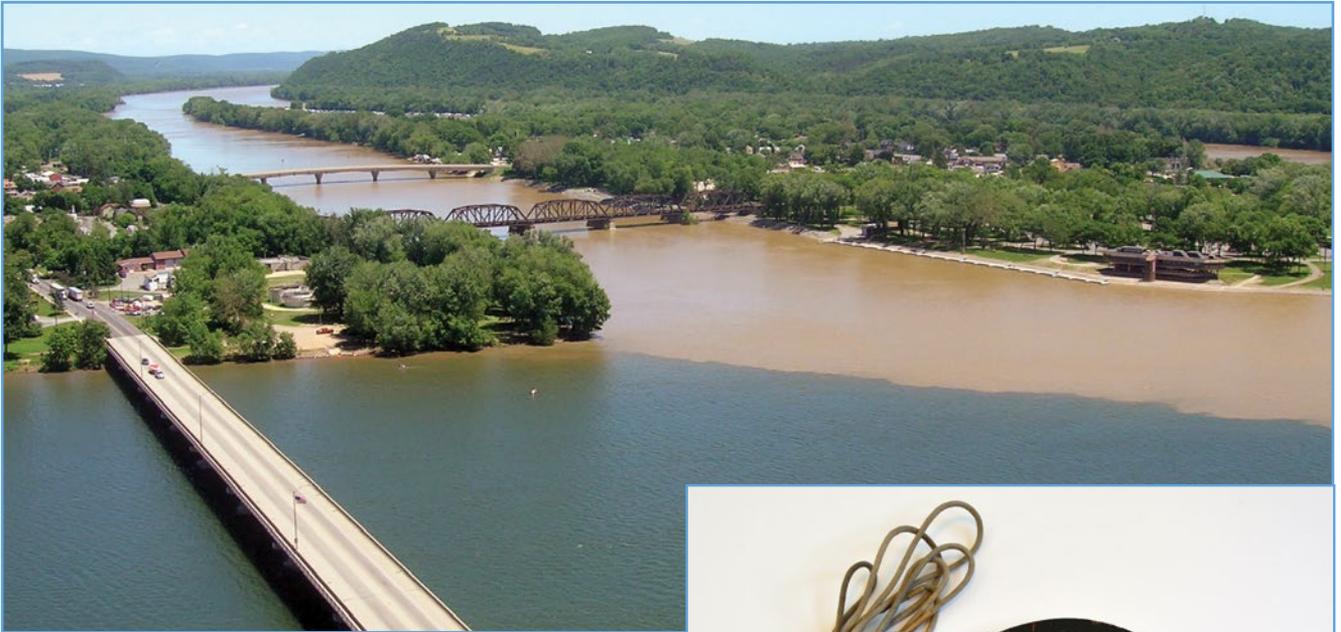


WCO Vance Dunbar taking a water sample to test the water quality of a stream.

Turbidity and Transparency

You may have noticed that some streams are clear while others seem murky. Water carries particles like sand, silt, clay, **plankton** and pollution. The

cloudy look from these particles and plankton is called **turbidity**. The clarity and how much light passes through is called transparency.



Clear and turbid branches of the Susquehanna River

Scientists have special tools to measure turbidity or transparency. A Secchi disk is one tool used in deep, slow-moving water. The depth when it becomes invisible is the Secchi depth. Shallow depth means unclear water, deeper depth means clearer water.

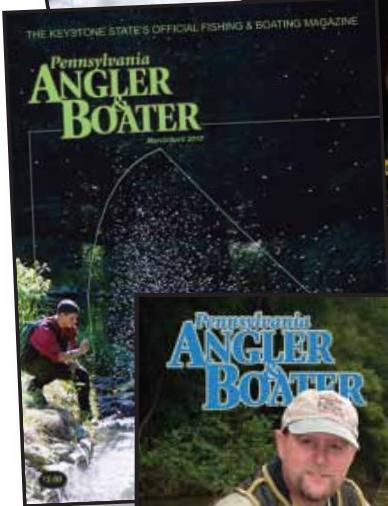
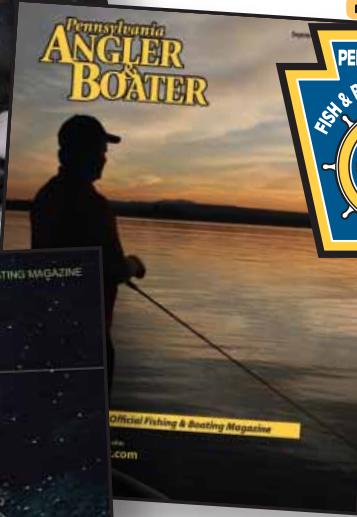
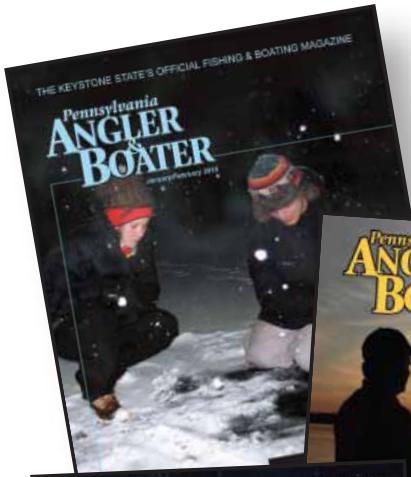


Secchi disk

Why does it matter?

Too many particles make it hard for fish to find food and avoid predators. Particles can block sunlight and affect plant growth. Also, particles absorb heat and increase

water temperature. High turbidity can indicate pollution, because pollutants and bacteria can attach to particles.



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