(WP-7) Copper Effects in the Aquatic Environment (v1)

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Why copper is bad:

The use of copper in killing algae, fungi and mollusks demonstrates that it is highly toxic to aquatic organisms.

Copper is moderately soluble in water and binds easily to sediments and organic matter.

Copper bio-accumulates, which means that the concentration of copper is higher in plants and animals than in the water or sediments in which they live.

Copper is often used as an algaecide. In addition to direct toxicity, algae are at the base of food chains and affect the amount of food available for aquatic animals, including zooplankton, insects, shellfish, fish and aquatic mammals.

Shellfish are responsible for filtering the water, providing at least four environmentally-beneficial ecosystem services: water filtration, nitrogen removal, carbon storage and plays an important role in the food chain. Without our shellfish our water becomes polluted easier. Shellfish can filter between 30 and 100 gallons per day. Shellfish are often killed by copper applications for plant and algae control. The adult shellfish are often killed but the fry are even more sensitive.

Copper, rather than kill bacteria often will stop bacteria's growth. This action can be responsible for the lack of decomposers of muck (organic matter) and denitrifiers in the water. This results in excessive nutrients (eutrophication) and organic sediments (muck) in the water.

Copper use for plant and algae control can negatively impact lake health when looking at the total aquatic environment.

Use of copper is expensive …. **and copper is one of the most toxic metals to aquatic organisms and ecosystems.**