

LAKE TURNOVER

By Nathan Wissenbach

How does lake turnover happen?

Lake turnover is a natural phenomenon that occurs during winter and spring due to rapid temperature changes. When a lake turnover occurs, it's a rapid mixture of the lake layers. There are three main layers in a lake. The top layer is called epilimnion, the middle layer is called thermocline, and the bottom is called hypolimnion. During the spring, the epilimnion layer is cooler than the hypolimnion layer and during late spring and early summer the epilimnion layer starts warming up. When the top layer is warmer than the hypolimnion layer you can have a lake turnover. In the fall this can happen as well. The epilimnion layer will become cooled and the hypolimnion is warmer and you can have lake turnover. Windy weather can influence lake turnover. Once the lake layer becomes the same temperature, the wind can help mix the layers by pushing the epilimnion layer to one side of the lake and down to the hypolimnion layer making the hypolimnion push to the top of the lake. A good analogy I read was a dog rolling on its back. The dog's back is the epilimnion layer and the stomach is the hypolimnion layer. The wind in this analogy is the dog rolling over.

What are the effects of lake turnover?

One of the effects of lake turnover is helping to bring dissolved oxygen to the bottom layer of the lake which helps with

decomposition of plant matter. If the lake turnover happens too quickly, it can cause a fish kill by depleting oxygen nearer the water surface. This is where the fish normally stays in the upper layer and if the lake turnover happens too fast it takes all the oxygen in that layer and brings it to the bottom and causes the fish to suffocate. Another effect can be an awful smell due to the decomposing plant matter at the bottom of the lake.

Lake turnover in a water system can cause turbidity in the raw water. If not caught soon enough, it can make water harder to treat and clog up the filters.

You can find more information about Lake Turnover here: www.lakes.grace.edu/4-ways-to-describe-turnover-and-how-it-helps-our-lakes/

www.thepondboss.net/blogs/lake-management/what-is-lake-turnover 💧💧

(Data Source – Lakeonline.com, droughtmonitor.unl.edu/CurrentMap.aspx, sgma.water.ca.gov/CalGWLlive/)

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