

## Stormwater Runoff | Why Should We Be Concerned?

The Watershed Management Plan prepared for Lake Wentworth and Crescent Lake Watershed stated that in recent years, there has been an increase in the amount of algae in both Lake Wentworth and Crescent Lake, and decreases in the levels of oxygen to depths greater than 40 feet. These low levels of oxygen, called anoxia, can release phosphorus bound to sediments to the water column, thereby making more phosphorus available to algae. One of the major threats to the water quality of Lake Wentworth and Crescent Lake is excess sediment and nutrients from untreated stormwater runoff throughout the watershed. A decline in water quality is a signal that current land-use practices are impacting the health and function of the lake system.

### WHAT IS STORMWATER RUNOFF?

In undeveloped areas, precipitation typically soaks into the ground. However, when buildings, parking lots, roads and other hard surfaces are added to the landscape, the ground cannot absorb the water. Water from rain or snow storms instead flows over streets, parking lots and roofs and generally makes its way either directly into a surface water body or into a storm drain, ultimately ending up in nearby streams, rivers, or lakes.

Because stormwater flows over hard surfaces directly into a water body or storm drain, there is no opportunity for soil and plants or a water treatment facility to filter out pollutants. The more developed an area is, the more stormwater runoff is produced due to the high amount of paved and hard surfaces.



*Untreated stormwater runoff from areas with impervious surfaces carries sediment, phosphorus, nitrates, and harmful chemicals to water bodies through storm drains and overland flow.*

### WHAT ARE THE IMPACTS?

The impacts of stormwater runoff are often worsened by human activities. Runoff from yards, roofs, and driveways can contain nitrogen and phosphorus, as well as pollutants from fertilizers and pet and yard waste. Uncontrolled stormwater flows can also cause erosion along the pathways of flow (ditches, creeks, stream banks, gravel roads, and steeply sloped areas), carrying sediment into rivers and lakes. According to the New Hampshire Lakes Association, more than 80% of the degraded water quality in our lakes and rivers is due to polluted runoff.

Nutrient pollution can have various effects on human health, the environment, and the economy. Nutrient pollution and harmful algal blooms cause major environmental damage, as well as serious health problems in people and animals. Nutrient pollution and algal blooms also take a toll on the economy, hurting industries and sectors that depend on clean water.

The New Hampshire Department of Environmental Services (NHDES) 2016 Annual Summary of NH Beach Bacteria Results rates the water quality in Lake Wentworth as “Fair” with only 89% of the samples collected meeting the statutory bacteria standards for beaches. There is no similar report for Crescent Lake, but since these two water bodies are connected and in the same watershed, water quality is likely to be similar. The “Fair” rating is an indication that current practices in the watershed are impacting water quality and, if not addressed, water quality will continue to deteriorate.

<https://www4.des.state.nh.us/OneStopPub/Beach/NH5699612016annualreport.pdf>

Many lakes in New Hampshire have deteriorated to a much greater degree and provide a warning of what the future fate of Lake Wentworth and Crescent Lake could be if actions are not taken. Below are the negative consequences of nutrient pollution which can be avoided with proper implementation of best practices for management of stormwater and other nutrient sources.

## HUMAN HEALTH

Nutrient pollution and harmful algal blooms create toxins and compounds that are dangerous for your health. There are several ways that people (and pets) can be exposed to

- Rashes
- Stomach or liver illness
- Respiratory problems
- Neurological affects

Cyanobacteria blooms were seen in several New Hampshire lakes during the summer of 2017 as a result of a buildup of excess phosphorus in the water.

## THE ENVIRONMENT

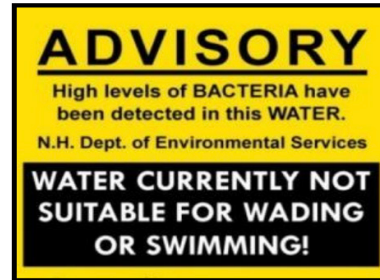
Nutrient pollution fuels the growth of harmful algal blooms, which devastate aquatic ecosystems. Algal blooms cause thick, green muck that impacts clear water, recreation, businesses and property values.

Harmful algal blooms sometimes create toxins that can kill fish and other animals. Even if algal blooms are not toxic, they can hurt aquatic life by blocking out sunlight and clogging fish gills. Nutrient pollution can also create dead zones, which are areas in water with little or no oxygen where aquatic life cannot survive. Also known as hypoxia, these areas are caused by algal blooms consuming oxygen as they die and decompose.

## THE ECONOMY

In addition to impacting human health and the environment, nutrient pollution can also have severe economic impacts on recreational fishing, businesses, and tourism.

Declining water quality in our lakes, as a result of nutrient pollution and harmful algal blooms, can have an economic impact on local communities through losses in tourism centered around swimming, fishing, and boating activities. Waterfront property values can decline because of the unpleasant sight and odor of algal blooms.



*Between 2003 and 2016, advisories like this were posted at Lake Wentworth State Park Beach on 6 occasions.*



*A cyanobacteria bloom on a NH Lake. Photo courtesy NH DES.*



*Algal blooms can reduce the ability of fish and other aquatic life to find food and can cause entire populations to leave an area or even die.*

