

## Nonpoint Source Impacts on Primary Headwater Streams

*Nonpoint source impacts to a few streams in a watershed may cause little cumulative harm, but when many headwaters in a watershed are polluted or impacted it presents a problem on a much larger scale.*

### Why protect headwater streams?

As the State's lead water quality Agency, Ohio EPA monitors the conditions of Ohio lakes, rivers and streams. The findings are conclusive that negative impacts from nonpoint source (NPS) pollution, especially sediment, nutrients and habitat disruptions, are problems that need to be addressed if we are to achieve the level of water quality set forth in the Clean Water Act and Ohio's water quality standards regulations. The majority of impacts occur in the upper parts of the watersheds of larger streams where the headwaters are located. The headwater streams referred to in this fact sheet are those with a watershed generally less than one square mile. On average, for every mile of named larger streams there are more than five miles of mostly unnamed, primary headwater streams in Ohio.



### The economic reasons for improving headwater stream management

Common sense tells us that water flows downhill, and thus when water is polluted near its origin, in the headwaters, the effects are felt downstream. Negative water quality impacts include contaminants reaching public drinking water supplies, sediment accumulation in lakes and less desirable fishing and swimming in lakes and rivers.

Another economically significant impact caused by the alteration of primary headwater streams and their drainage areas (catchment) is flood damage. The modifications made to remove water quickly from the small catchments of primary headwater streams put too much water and energy in larger streams. This causes more frequent and more damaging floods for neighbors downstream, excessive scouring of natural stream channels, and damage to bridges and other structures.

More holistic management of headwater streams and their watersheds makes economic sense.

### Ohio's Section 319 program and improved primary headwater stream management

The Clean Water Act Section 319 grant program is the main tool that Ohio EPA has to direct nonpoint source abatement efforts.

The focus of Ohio's Nonpoint Source program is identifying best management practices (BMPs) which reduce pollution from nonpoint sources and improving their water quality. Ohio EPA's approach to nonpoint source pollution control is evolving. It recognizes the importance of nonpoint source impacts in relation to headwater streams and larger water bodies within watersheds.

Presently, Ohio relies heavily on watershed management plans to identify and correct water quality problems caused by nonpoint source pollution. Those plans emphasize: identification of the nature, extent, and cause of water quality problems; development and implementation of plans to correct those problems; education and evaluation.

In view of the vulnerability of primary headwater streams to nonpoint source impacts, Ohio EPA strongly encourages local governments and organizations that apply for and administer Section 319 grant monies to give proper consideration to the principles of good headwater stream management in the watershed management plans submitted to Ohio EPA and in other areas of all funded projects.

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## Examples of local soil and water conservation district (SWCD) related initiatives that promote good primary headwater stream management

### [Resource protection ordinances](#)

Resource protection ordinances can be used to establish stream setbacks and control the development and land use within a selected distance from stream channels. The Summit County SWCD recently helped establish a county-wide ordinance that established setbacks from all stream channels in Summit County.

### [Sugar Creek TMDL](#)

Farmers and landowners, in cooperation with the Holmes and Wayne County SWCDs and Ohio State University Researchers, are working to protect the headwaters of the upper Sugar Creek watershed. This is a local, voluntary effort that helps fulfill the “implementation” aspect of Ohio EPA’s regulatory obligation to establish Total Maximum Daily Loads (TMDLs) in nonpoint source impacted watersheds.

### [Lake County SWCD](#)

The Lake County SWCD is inventorying all headwater streams in the county using the methodology developed by Ohio EPA. The information provides guidance for how to best protect the resources of the County in the face of on-going development.

### **Contact**

For more information, visit the Primary Headwater Habitat webpage at [epa.ohio.gov/dsw/wqs/headwaters/index](http://epa.ohio.gov/dsw/wqs/headwaters/index).