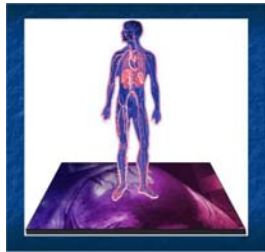

The Importance and Benefits of Primary Headwater Streams

January 2003

Collective Importance

Every river begins somewhere. That somewhere is its headwaters, the network of small streams that blanket the landscape of every watershed. Headwater streams with a watershed area generally less than one square mile are termed primary headwater streams. Over 80% of stream miles in Ohio are composed of these primary headwater streams.

Primary headwater streams are like the capillary system of a blood supply network - just as the health of the whole organism depends upon a functioning capillary system, the health of larger streams and rivers depend upon an intact primary headwater stream network.



Primary headwater streams can be ephemeral, intermittent or perennial. Ephemeral streams are those that contain flowing water only after major rain events or for very short times during the year. Intermittent streams flow only during the wetter periods of the year. Perennial streams contain water year-round. The collective health and functioning of the primary stream network have profound influences on the quality and value of larger streams, rivers and lakes.

The Importance and Benefits Provided by Primary Headwater Streams

Sediment Control

Primary headwater streams with vegetated buffers assist in reducing sediment delivery to larger streams.

Benefits - By reducing the amount of sediment, an intact network of functioning primary headwater streams can reduce dredging costs, flood frequency, reduce water treatment costs, and reduce the siltation of larger stream habitats.

Nutrient Control

Primary headwater streams reduce the amount of nutrients reaching larger streams. Excess nutrients are a common cause of pollution. Primary headwater streams also reduce amounts of other pollutants, such as herbicides.

Benefits - By reducing the amount of nutrients, an intact network of functioning primary headwater streams can improve recreational opportunities and reduce water treatment costs, human health risks and degradation of downstream waters.

Flood Control

Because of their close connection to groundwater, wetlands and subsurface water flows, primary headwater streams are important in controlling the flow of water to larger streams.

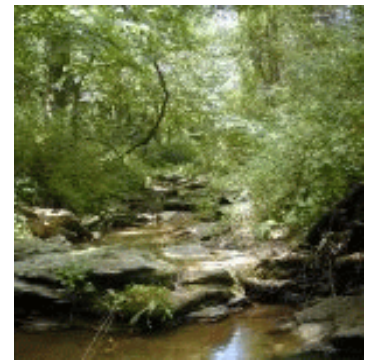
Benefits - By controlling the flow of water to larger streams, an intact network of functioning primary headwater streams can reduce local and downstream flooding, prevent excess erosion.

Wildlife Habitat Corridors

Primary headwater streams and their adjacent vegetation provide areas for wildlife habitat and add protection for fish and other animals living in the primary headwater streams and the

larger streams into which they feed.

Benefits - By providing habitat for wildlife, an intact network of functioning primary headwater streams can increase property values, increase or maintain biological diversity and improve opportunities for hunting and fishing.



Water and Food Supply

Primary headwater streams “nourish” downstream segments with essential supplies of water and food materials (both living organisms like insects and fish and decaying organic matter). Disruption of the hydrologic and biological processes of primary headwater streams takes a cumulative toll on the health of the whole river system.

Benefits - Proper functioning primary headwater streams can help maintain base flow in larger streams in times of drought. They are a key determinant in the overall condition of the river system.

For More Information

Visit the Ohio EPA Division of Surface Water web page:

<http://www.epa.state.oh.us/dsw/> or contact Bill Schumacher at (614) 644-2137 or by e-mail at bill.schumacher@epa.state.oh.us