

PA COUNCIL OF TROUT UNLIMITED
POLICY ON STREAM CHANNELIZATION
JANUARY 2007

Channelization, sometimes referred to as dredging, has a long history in PA, extending from the early colonial period right up to the present. The damage done to streams has been immense. Channelization eliminates complex stream features such as high quality pools, overhead cover and spawning areas. It results in wide, shallow, ditch-like channels that eliminate or reduce trout and other aquatic populations. Many streams that were channelized over a century ago have not yet recovered their normal structure.

Stream channelization refers to several types of channel modifications, usually done in an effort to provide flood protection. Channelization is intended to move floodwater more quickly downstream. The goal is to prevent streams from spilling over their banks onto their floodplains during high water flows. This is usually done in an attempt to protect manmade developments, including buildings and roads that have been built in floodplains.

Stream channelization may reduce or prevent localized flood damage; however, it has negative impacts on the stream environment. The spilling of streams onto their floodplains is a natural event. Stream channelization creates a false confidence and leads to increased pressure for development in flood-prone areas. To the extent that channelization is successful in keeping water out of the floodplain in a localized area, flood damage is almost certain to be increased downstream. The increased volume and velocity of water downstream exacerbates flooding and erosion; threatening homes, businesses, bridges and roads.

Stream channels are typically widened and/or deepened by moving heavy machinery directly into the streambed. Stream substrate and gravel bars are commonly dug out and removed. Stream banks are often excavated to widen the stream channel. Natural meanders are usually straightened in the process and boulders and woody debris removed. Stream banks are often lined with rip-rap, gabions, or even concrete, to prevent streams from readjusting to their natural channel form. All of these in-stream activities destroy food and cover for coldwater species.

The clearing of trees and shrubs from adjacent floodplains further damages streams and their riparian corridors. Removing riparian vegetation and the shade it provides increases water temperature. The lack of woody debris created by removal of streamside vegetation eliminates important elements of the trout food chain as well as cover for the fish.

Floodplains occupy only a small percentage of Pennsylvania land, but they are vital in maintaining water quality and the survival of the biota of streams and their riparian areas. Floodplains are in fact part of a river's bed and naturally transport a portion of a river's volume during intermittent high flow periods. As long as building in floodplains is allowed to continue, flood damage will increase and property owners will continue to exert political pressure to channelize streams. There are no federal or state statutes prohibiting building in floodplains.

Therefore the PA Council of Trout Unlimited recommends that the following be implemented by local, state and federal agencies to eliminate unacceptable channelization practices:

1. Channelization practices need to be greatly reduced or, ideally, eliminated in their entirety.

2. Environmental assessments should be conducted prior to the issuance of any permits for stream channel or floodplain modifications.
3. The Commonwealth of Pennsylvania must be encouraged to develop laws and regulations to discourage, and ultimately eliminate, development on floodplains.
4. The public is encouraged to promptly report channelization activities to their county conservation district, PA Fish and Boat Commission regional office or PA DEP regional office, in the event that enforcement action is needed. Those engaged in unpermitted channelization practices must be held responsible for the financial cost of restoring the natural habitat features.
5. New and replacement bridges and culverts should be adequately sized and designed to allow passage of flood flows and debris without the need for channel alterations.
6. On public resource lands, such as national and state forests, state parks, state game lands, PA Fish & Boat Commission properties, and county and municipal park lands, channelization should be prohibited in its entirety. Managing these public lands in ways compatible with maintaining healthy streams and riparian ecosystems would serve as an example for good land management on private lands.
7. Educational programs must be developed to inform all Pennsylvanians about the functions of stream and riparian ecosystems, the effects of stream channelization, the laws in place protecting against encroachment, and the consequences of breaking these laws.