Pennsylvania Fish and Boat Commission

Senate Environmental Resources and Energy Committee Hearing

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Testimony by:

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Good morning, Chairman Yaw, Chairman Yudichak and members of the committee. Thank you for the opportunity to participate in today's hearing. As a Commonwealth natural resource agency with a mission to: "*Protect, Conserve and Enhance Pennsylvania's Aquatic Resources and Provide Fishing and Boating Opportunities,*" the Pennsylvania Fish and Boat Commission (PFBC) provides comments to the Department of Environmental Protection (DEP) under the provisions of PA Code Title 25, Chapter 105, Dam Safety and Water Management. The DEP has regulatory oversight for all obstruction and encroachment activities in rivers, streams, and wetlands within the Commonwealth, and the PFBC acts in an advisory role to ensure the protection of our waterways and the fish, reptiles, amphibians and aquatic invertebrates that call them home.

Chapter 105 has a lengthy and important history and the regulatory provisions contained within can be traced to The Administrative Code of 1929, The Clean Streams Law, the Floodplain Management Act and the Dam Safety and Encroachments Act. These laws are the basis for water quality protection in Pennsylvania. In addition, under Section 2502 of the Fish and Boat Code, "*No person shall alter or disturb any stream bed, fish habitat, water, or watershed in any manner that might cause damage to, or loss of fish without the necessary*

permits". Thus, the DEP and PFBC share responsibilities in stream and aquatic protection, and in this instance, as it relates to flooding.

Today's hearing seeks to better understand the impacts of flooding and investigate activities before and after flood events that may help to alleviate the loss of property, infrastructure, natural stream functions and even human life.

Floods are a natural occurrence. Floodplains and floodways are dynamic as rivers and streams meander across the landscape. They enable groundwater recharge and improve soil fertility. Floods often trigger fish and amphibian reproductive cycles and migration/emigration activities. They are channel-forming events that increase stream habitat complexity and create or maintain habitats for fish, reptile, amphibian and aquatic macroinvertebrate communities.

Floodway and floodplain development has inherent risks. Initial development or fill in the 100-year floodway may lead to modified, unnatural stream channels. Continued development within the floodway ultimately leads to degradation of the aquatic community, physical stream habitat, and water quality. The PFBC recommends that permit applicants consider alternative options that do not impact the 100-year floodway, so residents can mitigate future risk to life and property, as well as help protect the quality of our freshwater ecosystems.

The PFBC reviews and comments on approximately 600 individual and general Obstruction and Encroachment Permit applications each year and recommends actions to protect fish communities, streams and wetland habitats. Comments may recommend structures to enhance fish passage and instream habitat, construction oversight, protection of instream spawning periods and minimization of sediment from construction activities.

"Stream cleaning" is a term often used to describe the use of heavy equipment to straighten, deepen or remove debris from a waterway. Acute and chronic impacts of "stream cleaning" activities on stream life and physical habitats include:

- Removal of gravel bars and/or debris which result in:
    - overly widened streams, minimized water depth and velocity, degraded macroinvertebrate and fish habitat, decreased sinuosity, and faster water flows.
- Channel deepening results in:
    - loss of floodplain connectivity, increased water velocities, increased sediment loads sent downstream, degraded fish habitat, smothered macroinvertebrates and fish eggs, decreased water retention time, and altered flow regimes.
- Equipment access to streams removes riparian vegetation, compacts the streambed, and reduces or eliminates fish and macroinvertebrate habitat. Traditional stream cleaning using heavy machinery creates incised channels. When a stream loses contact with the floodplain, high velocity damage results not only to the altered channel but to downstream properties as well.

The land and water are intimately connected. The PFBC advocates wise development and we believe that renewed emphasis should be placed on only allowing development suitable for flood-prone areas such as open spaces for agricultural operations, parks or athletic fields. Minimal development in these areas will provide valuable use to the surrounding community and minimize damage to life and property when flood events do occur.

Riparian buffer zones are critical to reducing bank erosion, providing natural "speed bumps" to run-off and allowing plants, shrubs and trees to grow, which

strengthens river banks to withstand high water events. Wise planning combined with enhanced riparian buffers leads to significantly reduced flood damage.

Business and homeowner relocation buyouts often follow major flood events, when they have already experienced devastation. To reduce the need for such programs, proper management of infrastructure and residential development in floodplains and floodways is critical. Incorporating GIS-based mapping with FEMA maps can inform land use planning with the best information available.

In addition to permit review, the PFBC operates a four-person, Stream Habitat Section which provides technical guidance in the design and construction of stream habitat devices, structures and best management practices. We work with landowners, volunteers, Conservation Districts, sportsmen's groups, the U.S. Fish and Wildlife Service, DEP, DCNR, non-governmental organizations like American Rivers, RK Mellon, the Western Pennsylvania Conservancy and many local watershed groups. Projects include instream devices such as deflectors, crossveins, and mudsills. We improve and fix eroded banks, runoff from feedlots, cattle crossings, and develop vegetated and forested riparian buffers. We also work with partners to remove unwanted, small dams which may worsen flooding if they trap additional debris or back up flows onto adjoining properties.

During and following a flood event, the PFBC offers assistance in several ways. First, our Waterways Conservation Officers are now trained in Swiftwater Rescue as cadets in training school. In addition, each region of Pennsylvania has a Swiftwater and Helicopter Aquatic Rescue Team (PA-HART) which works with the Pennsylvania National Guard to provide advanced water rescue capabilities and can be rapidly deployed through the Pennsylvania Emergency Management Agency (PEMA). Our field biologists also work with federal, state and local

governments to provide rapid review of emergency permits in the aftermath of flood events.

In summary, no one can fully predict how much rain will fall, how fast snow will melt or when river ice will back up. Catastrophic hurricanes, tropical storms and severe localized rain events seem to be occurring more frequently in Pennsylvania and may eventually overwhelm our attempts to plan and design around them. However, if we employ best management practices in land use planning and understand the physical properties of water and water flows, we can work with the natural processes of rivers and floodplains rather than against them. Humans, fish, aquatic species, and water quality all benefit when a stream or river can perform its naturally intended functions.

Thank you again to the committee for the opportunity to provide testimony today. I'd be happy to answer any questions at this time.