



# AMERICAN FISHERIES SOCIETY

## MONTANA CHAPTER



House Local Government Committee  
2009 Montana Legislature  
Helena, Montana

February 19, 2009

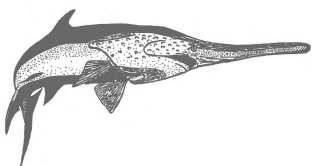
**RE: House Bill 455 – “An Act Creating the Big Sky Rivers Act;.....”**

Dear Representatives,

On behalf of the more than 350 members of the Montana Chapter of the American Fisheries Society (MCAFS) I appreciate the opportunity to voice our **support for House Bill 455** which would create stream side management areas and reasonable development setbacks for 10 of Montana’s rivers.

The American Fisheries Society (AFS), founded in 1870, is the oldest and largest professional society representing fisheries scientists in North America. Our mission is to improve the conservation and sustainability of fishery resources and aquatic ecosystems by advancing fisheries and aquatic science and promoting the development of fisheries professionals. AFS promotes scientific research and enlightened management of resources for optimum use and enjoyment by the public. The MCAFS was chartered in 1967. Our membership is comprised of professional fisheries scientists affiliated with state and federal agencies, universities, tribes and private industry, all dedicated to preserving and enhancing the fisheries resources of Montana. Without a doubt our organization represents the largest collective knowledge base regarding aquatic resources and issues affecting these resources in the state of Montana. Issues that may affect the health of our states aquatic resources, their management and conservation, and their perception and use by the public, such as House Bill 455 does, are very important to us.

The Big Sky Rivers Act (HB 455; Act) creates 250 foot wide streamside management areas on each side of 10 designated rivers or river segments in Montana, wherein the construction of homes and buildings with their related facilities would be restricted. The Act also limits the removal of riparian vegetation within 150 feet of river banks. There has and will be much discussion regarding the socio-political, property right, ecological, aesthetic, local governance, public trust, and regulatory implications of this Act. Our primary emphasis here is to provide you with some scientific information regarding the effects of riparian development and floodplain encroachment on our aquatic resources and their management and conservation. The bottom line is that streamside development has mostly negative consequences for aquatic ecosystem health. This Act is a good first step in reducing future effects from these types of activities.



Common activities associated with streamside development can lead to a cascade of events that have negative ecological implications. During construction of structures and subsequent creation of a designed and often manicured “viewshed” for floodplain developments there is typically a loss of riparian integrity. This loss includes a removal or reduction in riparian vegetation, installation of impermeable surfaces and septic systems, use of man-made chemicals, and disturbance of soils and stream banks. Ultimately these actions interrupt and harm natural processes necessary for a healthy aquatic ecosystem – large woody debris recruitment critical for invertebrates and fish is reduced or lost; sedimentation increases; nutrient and chemical inputs increase; stream shading is lost; and bank instability leads to increased erosion. Native streamside vegetation protects our streams and rivers by shading, acting as a filter, providing important organic inputs to the system, maintaining water quality, stabilizing stream banks, and providing instream habitat.

A second, potentially more damaging action occurs when home and property owners modify the natural channel or stream bank in order to protect their property. Rip-rap and other hard stabilizing structures have myriad effects on the hydrology and geomorphology of a river. Rip-rap transfers hydrology energy from protected to unprotected sections of bank and floodplain, often causing unnatural rates of bank erosion and requiring additional rip-rap by a downstream landowner. There are many examples of this in Montana. Stabilized streams often down cut, leading to abandonment of side- and backwater habitats critical to fish production and recruitment, as well as steeper, less stable banks; reduced groundwater tables, and changes in stream side vegetation. With stabilization, channel migration back and forth across the floodplain – an important process for the rejuvenation of instream and riparian habitat – is reduced or stopped. Numerous scientific studies have shown the negative response of fish populations after the installation of bank stabilization structures in otherwise relatively unimpacted aquatic systems. Such action often has ecological consequences over spatial scales much larger than the immediately treated area. Schmetterling et al. (2001) and Zale and Rider (2003) provide excellent reviews regarding the potential negative ecological consequences of channel modification – I would encourage you to review this and other relevant literature.

We all know that development has increased significantly in Montana over the past few decades. We also know that a preponderance of that development has occurred in valley bottoms near major rivers. I want to point out just a few examples of why MCAFS supports HB 455 and the benefits it will bring to some of Montana’s water ways. In Park County, MT, floodplain development has increased by 57% in the last 20 years. In Ravalli County, MT, about 12% of the banks along the Bitterroot River have been stabilized – primarily with rip-rap. In Missoula County, using 1999 data, 41.5 km of bank or 21% of 194 km surveyed along five major waterways had incorporated some form of rip-rap stabilization. Approximately 40% of the Yellowstone River between Laurel and Billings is now lined with rip-rap. Almost without exception these projects are implemented in order to protect homes or other structures.

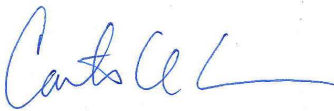
Existing county regulations such as set backs or floodplain regulations, which MCAFS support, are not always as effective as a more regional approach, such as that presented in this Act, might be. One MCAFS member pointed out that floodplain mapping is often based on elevation above water level, allowing building on high banks – banks that can be and are often undercut by high water and migrating channels. Another provided this example. Gallatin County has a 150 ft set back regulation, Broadwater County does not; thus one homeowner accessed a site along the Jefferson River via Broadwater County regulations to build a home on what is essentially an island in the river.

For these and many other reasons, it makes sense not to build immediately adjacent to a stream or river. There is much to be gained, and little lost by encouraging development outside of a protected zone along Montana's rivers. This zone, designated as streamside management areas in HB 455, if left unmolested will continue to perform the necessary ecosystem functions that helps provide us with the quality of life we value so highly.

The preponderance of scientific and research evidence suggests that implementing measures such as those considered in this Act will be beneficial for Montana's aquatic ecosystems; conversely continued streamside development will cause acute and chronic harm to the same. On behalf of MCAFS I hope you will give significant consideration and weight to this evidence.

**We hope you will support HB 455, the Big Sky Rivers Act.**

With warmest regards,

A handwritten signature in blue ink, appearing to read "Carter G. Kruse".

Carter G. Kruse, Ph.D.

President

Montana Chapter of the American Fisheries Society

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Schmetterling, D. A., C. G. Clancy, T. M. Brandt. 2001. Effects of riprap bank reinforcement on stream salmonids in the western United States. *Fisheries* 26:6-13.

Zale, A. V., and D. Rider. 2003. Comparative use of modified and natural habitats of the upper Yellowstone River by juvenile salmonids. Final Project Report. Montana Cooperative Fishery Research Unit.