

PRESENTER: Lyons, John

ADDRESS:

Wisconsin Department of Natural Resources;  
1350 Femrite Drive;  
Monona, WI 53716-3736 USA

INFORMATION:

Phone: 608 221-6328 FAX: 608 221-6353

E-MAIL:

lyonsj@dnr.state.wi.us

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AUTHORS:

Lyons, John, Weigel, Brian M., Paine, Laura K., Undersander, Daniel J.

AFFILIATIONS:

(JL) Wisconsin Department of Natural Resources, 1350 Femrite Drive, Monona, WI 53716-3736, USA; (BMW, LKP, DJU) Department of Agronomy, University of Wisconsin-Madison, 1575 Linden Drive, Madison, WI 53706, USA

TITLE:

Effects of two riparian cattle grazing regimes on habitat and fish communities in Wisconsin streams

ABSTRACT:

Traditional continuous cattle grazing in riparian areas often degrades stream habitat and fish communities. An alternative riparian practice, intensive rotational grazing, has been promoted as a way to better protect stream ecosystems. In 1996, we compared habitat and fish community characteristics among sites with continuous, rotational, or no cattle grazing (buffer strips) across 21 southwestern Wisconsin coldwater streams. When undegraded, these streams have a simple fish community with one or two salmonids and a cottid species. Degradation typically leads to increased diversity, with several catostomids and cyprinids joining the community. When we took into account upstream watershed conditions, we found that buffer strip sites were generally the best, with the least bank erosion, the most instream cover, the highest abundance of salmonids and cottids, and the highest index of biotic integrity (IBI) scores. Continuous sites were the worst. Rotational sites had erosion and cover characteristics similar to buffer strip sites, but trout and cottid numbers and IBI values more like continuous sites. Buffer strips appear to be the best practice for protecting southwestern Wisconsin coldwater streams, but rotational grazing also has habitat benefits, and may be a more acceptable practice for many farmers.

KEYWORDS:

Wisconsin, streams, fish communities, Salmonidae, Cottidae, Catostomidae, Cyprinidae, riparian, cattle grazing, index of biotic integrity