



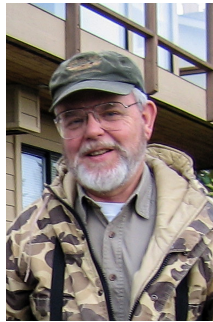
AMERICAN FISHERIES SOCIETY

ONTARIO CHAPTER

**American Fisheries Society**  
**Ontario Chapter**  
*Fall Seminar*

*Dr. Ray J. White*

*“Healing Sick Trout Streams: ecological restoration, not artificial restructuring of channels”*



Date: **Thursday, November 22<sup>nd</sup> 2018**

Time: **2:00 pm E.S.T**

Location: **Webex**

email **Brian Morrison** [brianmorrison@trentu.ca](mailto:brianmorrison@trentu.ca) to register

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Credit Valley  
Conservation  
inspired by nature

## Abstract

By the early 1900s, most trout streams in agricultural areas of Minnesota, Wisconsin, and Michigan (and Ontario?) lay in ongoing ruin, primarily due to streambank grazing by livestock, but also due to sediment eroded from plow land. Although timber harvest and wildfire had devastated streams of northern forests, forest regrowth tended to restore trout habitat in headwaters there by the mid-1920s. Government “stream improvement” programs began in 1933, were interrupted by World War II, and have expanded greatly since 1950. In work on scattered stream sections, the “improvers” excluded livestock but mainly built instream structures as trout habitat because they thought “it would take 50 years or more” for habitat to recover on its own. By 1964, we discovered that regrowth of protected streambank vegetation restores excellent trout habitat in less than 5 years. But even after publishing about this in 1967 – and after dairy farmers switched from pasturing to confined feeding in the 1970s, which relieved most streams from overgrazing -- we have kept on with channel structures as the main effort. Government agencies get positive trout population responses from this (until structures fall apart) and get more credit and funding for building things than for promoting vegetation. Thus, emphasis on artificial structures persists, ironically tearing up healed streambanks in the process. This is also the thrust among private firms that have entered the field. But in the last 30 years, ecologists and geomorphologists have found out how natural streams function, how they generate habitat -- if we let them. Therefore, we can concentrate on relaxing human-caused harm, and let nature do the healing via interaction of plants with water and soils. On many streams where this happened, shrubs and small trees helped create optimal trout habitat during initial stages of plant community succession but eventually became too dense. Canopy shade destroyed grasses and other low plants so that stream banks eroded, and trout habitat deteriorated. Before settlement by Europeans, primarily fire, but also grazing by wild animals had controlled woody vegetation and maintained the Midwest’s massive prairies and savannas. To restore toward those canopy-free conditions, given human land use, we must carefully simulate natural control of brush and trees. Riparian haying and light rotational grazing of beef cattle hold special promise for this. Crews also cut woody species at about 10-year intervals, but that’s expensive. Prescribed burning of riparian areas is being tried in a few places. It may prove less feasible than managed grazing except in riparian wetlands.