

Great Plains Prairie Stream



Otter Creek (C005) run/pool habitat near Ashland, MT



Rotten Grass Creek (C005) moderately degraded Great Plains stream



*Hanging Woman Creek (C005)
(Great Plains stream with vegetated pools)*

Aquatic Ecological System Type C005

View key to subtypes

Community Description

Summary:

This ecosystem is found throughout the drainages of the Northwestern Great Plains Ecoregion of Montana. Habitats are small to medium (3rd-4th order, <100 river miles long, average wetted width of 5m) perennial warm-water streams, or upstream reaches above Medium Prairie Rivers. In the low elevation (750-1000m) areas, these are low gradient, meandering streams with a typical stream morphology consisting of long runs and continuous standing pools (1-1.5 m depth). In the moderate gradient sections they may contain infrequently spaced riffles that may maintain wetted connectivity throughout the year. Riffle habitats may be absent in incised and degraded channel sections. Substrate characteristics are typically cobble/pebble riffles (when present) to silted runs and deeply silted pools.

Side-channel vegetation, undercut banks and woody debris in the lower reaches of these streams provide the most diverse fish habitat.

Fish Community:

The members of the resident fish community are dominated by the Core Prairie Stream Assemblage and occasionally members of the Medium Warmwater and Creek Chub Assemblages. A fairly clear Great Plains stream in far eastern Montana with weedy pools may contain brook stickleback, northern redbelly dace or brassy minnow, but for the typical turbid Great Plains stream, the community indicator species include fathead minnow, lake chub, flathead chub, white sucker, creek chub, and introduced species like black bullhead, carp and green sunfish. If the stream has gravel substrate in the riffle areas there will likely be longnose dace and if there are large cobbles or large woody debris, stonecat as well. A severely impaired C005 community will be dominated by green sunfish and other members of the Sunfish Assemblage including plains killifish, black bullhead and fathead minnow.

Macroinvertebrate Community:

This community consists of members of the Large Prairie River and Prairie Stream Assemblages in the riffle/run habitats with the Large River Slow Current Assemblage in the slow current areas, side-channels and vegetated pools. The community indicator species are characterized by the crustaceans (*Hyaella* and *Gammarus*), damselfly genera (*Coenagrion/Enallagma* spp., and *Enallagma civile*), many genera and species of the water boatman (Corixidae: *Sigara alternata*, *Sigara grosslineata*, *Trichocorixa*, *Trichocorixa nais*, and *Corisella*), snails (*Physella*, *Gyraulus*, and *Stagnicola*), mayflies (*Caenis* and *Callibaetis*), and caddisflies in the cobble riffles (*Hydropsyche morosa* group and *Cheumatopsyche*), and riffle beetles (*Dubiraphia* and *Microcylloepus*). The giant floater mussel (*Pyganodon grandis*) is common in the small Northern Glaciated Ecoregion streams, but is rarely encountered in the Powder River Basin streams.

Range:

The Great Plains Prairie Stream type occurs throughout the Great Plains region of North America within the Missouri River Drainage. In the Northwestern Great Plains of Montana, we have a diversity of this type including the Otter, Sarpy, Armells, Beauvais, Big and Little Porcupine, Cabin, Cedar, Sweeny, Sandstone and Hanging Woman Creeks.

Management:

Small dams, water diversions, stock ponds and introduced gamefish species have had the most significant negative impact on this community (Winston et al. 1991). Other threats include cattle intrusions to the riparian areas causing bank erosion and subsequent sedimentation and siltation. Anywhere dams occur, even small stock pond earthen dams, the downstream reaches are affected by altered water temperatures, unnatural water level fluctuations, and changes in sediment and nutrient transport.

Global Rank: G5

State Rank: S5

Global/State Rank Comments:

The number of quality occurrences in the state is common, but this native community suffers from fish introductions and community homogenization (in the far eastern Montana drainages). This community contains creek chub, plains minnow and Iowa darter, which are potential Species of Concern for Montana.