

**GRANT-PLATTE RIVERS
STATE OF THE BASIN REPORT**

VOLUME 8

UPPER GRANT RIVER WATERSHED NARRATIVE

(GP06)

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GP06 Map

UPPER GRANT RIVER WATERSHED (GP06)

The Upper Grant River Watershed is a 106 square mile watershed in west central Grant County. It is on the south slope of Military Ridge. The topography of the watershed is typical of the driftless region and ridges are narrow to broad with steep slopes that lead down to narrow valley floors that widen downstream. As a result, runoff of melt and stormwater is rapid, increasing the erosive potential of the runoff. The water quality and instream habitat problems in the watershed are directly related to this rapid runoff from barnyards and cultivated farm fields. Both excessive sediment and nutrient loading is affecting instream habitat and may be responsible for other water quality problems (Fix, 1998,1991).

There are 84 miles of streams in the watershed. The Upper Grant River watershed has the greatest amount of coldwater stream miles in the Grant-Platte basin with over 33 stream miles being classified as coldwater streams. Approximately 20 stream miles are classified as either warmwater sport fishery or warmwater forage fishery. Martin Branch and Rogers Branch are both listed as impaired waters as a result of non-point source pollution. The streams and the watershed as a whole have been ranked as a high priority with respect to non-point source pollution. The groundwater in the watershed has a high potential for contamination as a result of non-point source pollution.

Agriculture is the dominant land use and primary economic engine in the watershed. Over 83% of the land area in the watershed is cultivated or in pasture. Croplands in the watershed have been estimated to have an average annual soil loss of 7.6 tons per acre per year (Midwest Reclamation Planners, no date). There are fewer but larger farms and an overall trend toward a greater concentration of animals in the watershed.

Although agriculture is the dominant land use, there are three communities within the watershed boundaries: the **Village of Mount Hope** (174), the **City of Fennimore** (2,650), and the unincorporated community of **Stitzer**. Each of these municipalities have a wastewater treatment plant that discharges to surface waters in the watershed.

Despite the generally slow rate of growth in southwestern Wisconsin, the population of Fennimore has grown by about 11% since 1990. This growth rate is faster than the state average during the same timespan. Due to its location on top of Military Ridge and in the headwaters of three coldwater streams, Gregory Branch, Rogers Branch and Fennimore Fork (Lower Wisconsin Basin), without careful planning, sources of non-point pollution from the city have the potential to negatively impact these water resources. Documentation from around Wisconsin and the country has shown that sediment from construction sites and increased stormwater flow from developing areas can adversely affect water quality, fisheries and instream habitat. Fennimore will need to address these erosion control and stormwater management issues as it continues to grow.

Public recreational activities in the watershed are limited and fishing is the most accessible recreational opportunity. Until 1995, except for several state owned public easements along the Little Grant River, Martin Branch and Rogers Branch, the Borah Creek Fishery Area was the main public land for recreation in the watershed. In 1995, the City of Lancaster received a small grant to improve the 14.5 acre Klondike Park which lies along the Grant River just off of County Highway K. The grant provided funds to construct a walking trail, improve the restroom, and purchasing some accessible picnic tables. The City of Lancaster has some plans for future

improvements which would include improving the fishing area and stabilizing the shoreline along the river. Hunting on private lands is allowed with the permission of the property owner. There is good wildlife habitat, including in woodlots on the steeper slopes, in many parts of the watershed. Additional habitat could be provided if additional lands were enrolled in the CRP and CREP programs.

SURFACE WATER NARRATIVES

Borah Creek – Borah is a first order spring-fed coldwater stream. It joins with Rogers Branch to form the Grant River. About 3.8 miles is considered trout waters, with 2 miles of Class I waters (WDNR, 1980) and Exceptional Resource Waters (ERW). Agricultural non-point source pollution is the primary threat to water quality, fisheries and instream habitat. Excessive streambank pasturing and streambank erosion have historically been the primary sources of water quality and habitat problems. Barnyard runoff and cropland erosion are also potential pollution sources in some reaches (Fix, 1995-2000). The DNR has done habitat improvement work to help increase gamefish populations. A macroinvertebrate study conducted in the spring of 2000 found the stream to have good water quality (WDNR, 2000). Other early assessments showed good water quality and the existence of fair to good instream habitat (Fix, 1991). No fisheries or habitat assessment monitoring, however, has been done in the past five years. Public access is provided at the Borah Creek State Fishery Area in addition to some town road crossings.

Day Branch - Day Branch is a small spring-fed tributary to the Grant River near Lancaster. The stream is listed as a class II trout stream and is managed as a trout fishery although it is not identified as trout waters in the 2000 “Wisconsin Trout Fishing Regulations and Guide” (WDNR, 1980). Day Branch had a good brown trout fishery 25-30 years ago, however, degradation of instream habitat due to agricultural non-point sources of pollution has reduced the fisheries potential (Fix, 1991). The stream should be assessed to determine current conditions. Public access to the stream is lacking.

Grant River – The Grant River begins at the junction of Borah Creek and Rogers Branch and, in this watershed, extends to its confluence with the Little Grant River. The Grant River is a spring-fed and seepage stream with some cold and cool water tributaries. The upper three miles of the river are considered class II trout waters and this section of the stream has a steeper gradient than the downstream portion (WDNR, 1980). The river is considered a smallmouth bass stream from Grant County Highway A downstream (Smith and Ball, 1972). Non-point sources of pollution, specifically sediment and nutrient delivery to the stream are thought to be affecting instream habitat and water quality. Public access is limited to town road and county road crossings.

Gregory Branch – Gregory Branch has its headwaters within the City of Fennimore. It is a spring-fed stream. Approximately two miles of the stream are considered Limited Forage Fishery (LFF) water and the primary problems in this reach are lack of flow, poor habitat, and non-point sources of pollution (Schlesser, 1989b). Only a lower one mile reach of its 6.8 mile length is considered as class II trout waters (WDNR, 1980). An additional length could be considered trout waters if agricultural and urban point and non-point sources were better controlled and instream habitat were improved (Schlesser, 1989b).

The City of Fennimore wastewater treatment facility discharges to Gregory Branch. Two fish kills (1998 and 1999) have been attributed to this facility. The city has recently gone through a

major facilities upgrade to reduce phosphorus loading and add sludge storage. Currently, the facility has tertiary treatment of wastewater and is required to meet restrictive limits for biological oxygen demand (BOD), and total suspended solids (TSS) and also has to meet limits on ammonia and phosphorus. With the unfortunate exception of the two fish kills, effluent from the waste water treatment plant is consistently a high quality effluent and well below limits.

In addition to agricultural non-point pollution and point source discharge from the wastewater treatment plant, Gregory Branch is also threatened by urban non-point source pollution. Fennimore is a rapidly growing community. The population grew about 11% between 1990 and 2000 and is projected to grow another 7-8% between 2000 and 2010. Increased runoff from growing urban areas has been shown to have adverse effects on surface waters if not properly managed. Since the city is not required to have a permit for its stormwater runoff, it is up to the local government to address and enact effective stormwater management with the assistance of local, county and state agencies.

The improved health of the stream requires all stakeholders to work together to control all sources of pollution. One group has already taken the initiative to conduct citizen stream monitoring on Gregory Branch. The group monitors water clarity and temperature, dissolved oxygen, habitat and flow as well as the biotic health of the stream. Monitors found that last year, during the spring through the fall, the water was somewhat turbid and the biotic index ranged from fair to poor (Trout Unlimited, 2001).

Little Grant River – The Little Grant River rises near the community of Mount Hope and flows southerly to the Grant River. About six miles of the middle reach of the stream is considered as class II trout waters and a series of springs contribute to water quality of this reach. (WDNR, 1980). While general water quality of the Little Grant is good, there are reaches that have a history of habitat and water quality problems due non-point sources of pollution. Excessive streambank grazing resulting in bank slumping and erosion is a problem. Other problems are barnyard runoff and erosion from cropland. The DNR, in cooperation with some local landowners, has installed some instream habitat and bank stabilization measures. The DNR has also acquired some land easements for public access along some stream reaches.

The Village of Mount Hope operates a small wastewater treatment plant that discharges to a tributary to the Little Grant River near the headwaters. Department records show this facility is in generally good condition. The village is not growing rapidly, if at all, and construction site erosion and stormwater runoff are not considered problems at this time.

Martin Branch – Martin Branch is a spring-fed tributary to the Little Grant River. About two miles of the stream are considered as class II trout waters (WDNR, 1980). The remaining reaches are considered as forage fishery and warm water sport fishery reaches (Fix, 1991). Non-point sources of pollution affect instream water quality and habitat and the stream is listed on the state's list of impaired waters (303d). The sources of these problems are excessive streambank grazing, barnyard runoff and sediment from farm field erosion (Fix, 1991). No recent assessment of water quality or instream habitat has been done to determine current conditions. The DNR, in cooperation with some local landowners, has done some streambank and instream habitat improvements. The DNR has also acquired some public easements from local landowners.

Rogers Branch – Rogers Branch joins with Borah Creek to form the Grant River. It is a spring-fed and seepage stream beginning near the west edge of Fennimore. The stream is managed as a

trout stream for eight miles of its length (WDNR, 1980). Trout populations can be marginal, however, due to seasonal low flows and warm temperatures (Lyons, 2000). Historically, the stream has been affected by non-point sources of pollution such as barnyard runoff, excessive streambank grazing, and cropland runoff. Fish kills, which are thought to be related to non-point problems, have occurred (Fix, 1991). As a result of these problems, Rogers Branch is on Wisconsin's impaired waters (303d) list.

Monitoring was conducted on Rogers Branch as part of a study to determine the influence of intensive rotational grazing (Lyons, et.al., 2000a). Instream habitat was found to be fair to good. Macroinvertebrate samples collected in the spring of 2000 found Rogers Branch at Borah Road to have good water quality (WDNR, 2000). The water at this site was clear, and the bottom substrate was boulder, gravel and rubble. There were some mayflies and caddisflies which can indicate good water quality. The DNR should review whether this stream should remain on the state's impaired waters list.

RECOMMENDATIONS FOR UPPER GRANT RIVER WATERSHED

Non-point Source Pollution

- ◆ The **City of Fennimore** should develop a stormwater management plan and ordinance to control urban stormwater from currently developed and future development areas to nearby streams.
- ◆ The **City of Fennimore** should develop a construction site erosion control ordinance to control sources of sediment from developing areas from reaching nearby surface waters.
- ◆ The **Upper Grant River Watershed** should be considered by the DNR as a high priority candidate for non-point source pollution abatement.
- ◆ The DNR staff, in cooperation with the Grant County LCD, should identify and apply for grants through the Targeted Runoff Management (TRM) or EQIP programs to work towards non-point source pollution abatement on the following streams or stream segments; **Little Grant River, Grant River, Borah Creek, Rogers Branch, Martin Branch and Day Branch.**

Protecting and Improving Water Quality and In-Stream Habitat

- ◆ The DNR Waters Program staff, in cooperation with the Grant County LCD, should conduct basin assessment monitoring in the Upper Grant River Watershed. Particular streams on which to focus are the **Little Grant River, Grant River, Borah Creek, Gregory Branch, Rogers Branch, Martin Branch and Day Branch.**
- ◆ The DNR should monitor **Grant River** to track the presence of state endangered species.
- ◆ The following streams should be monitored to determine if they should be considered for addition to Wisconsin's 303(d) impaired waters list as a result of habitat impairments due to non-point sources of pollution: **Martin Branch, Little Grant River and Gregory Branch.**

- ◆ The DNR in partnership with local governmental agencies and local conservation groups, should identify opportunities to better protect riparian habitat on reaches of the **Little Grant River, Rogers Branch and Borah.**

Outdoor Recreation, Wildlife Habitat and Protecting Open Space and Farmland

- ◆ The DNR in partnership with local governmental agencies and local conservation groups, should identify opportunities to provide public access on reaches of the **Little Grant River, Rogers Branch and Borah.**
- ◆ The DNR should encourage the establishment of open space buffers around the **Dewey Prairie Natural Area** through educational and financial incentives.