Water Quality Objectives

The following water resource management objectives are recommended for the Otter Creek subwatershed:

1. Improve fish habitat to increase carryover of adult trout in Otter Creek.

2. Improve fish habitat by reducing sediment and organic loading to subwatershed streams.

Pollutants from Nonpoint Sources

Eroding Uplands (sediment and nutrients)

Roughly 53% of all the sediment reaching the water courses in the Otter Creek subwatershed is a result of upland erosion, chiefly from eroding croplands and grazed woodlands.

Eroding and Trampled Streambanks (sediment and direct habitat impairment)

Streambank erosion accounts for 21% of the total sediment load reaching the subwatersheds streams. Again, this direct sedimentation has a negative impact on quality cover that trout need to thrive.

Eroding Gullies (sediment and nutrients)

Gully erosion accounts for approximately 26% of the sediment reaching the water courses in the Otter Creek subwatershed, amounting to 1,750 tons per year. Most of the gullies occur in small drainage areas at or near the breaks of the ridges.

Animal Lots (oxygen demand and nutrients)

Manure from animal lots and winter spread fields are the most probable source of oxygen demanding substances having an impact on water quality. Nearly 807 lbs. of phosphorus is being delivered to water courses as a result of runoff from 23 animal lots in the Otter Creek subwatershed.

Winter Spread Manure (oxygen demand and nutrients)

Winter spread manure on "critical" or unsuitable acres poses a significant threat to water quality in the Otter Creek subwatershed. Approximately 278 acres of cropland are considered to be "critical", and where manure is currently being spread in the winter months. Spring rains and snowmelt wash manure and soil from the fields and into nearby streams and channels.

Viola Subwatershed (VI)

Subwatershed Description

The Viola subwatershed drains 10.7 square miles. There are no major streams in the subwatershed, so the main water resource of concern is the Kickapoo River. Several small valleys with intermittent streams empty directly into the Kickapoo. Most of the subwatershed lies in Vernon County, with just an area to the south and east of Viola which lies in Richland County. The Middle Kickapoo River Watershed ends in this subwatershed where the West Fork of the Kickapoo River empties into the Kickapoo about 1 mile northwest of the village of Readstown.

The subwatershed is primarily rural; however, almost the entire village of Viola is also within the subwatershed. Overall the land use is:

agricultural	33%
woodland	46%
wetland	4%
residential	3%
other*	14%

* grassland, quarries, etc.

Water Resources Conditions

See the section on "Water Resources Conditions" for the Kickapoo River at the end of this chapter.

Water Resource Objectives

The following water resource management objectives are recommended for the Viola subwatershed:

1. Reduce sediment and organic loading to the Kickapoo River.

Pollutants from Non-Point Sources

Eroding Uplands (sediment and nutrients)

Erosion from upland sources is responsible for 44% (or 738 tons of soil per year) of the sediment being delivered to the Kickapoo River. Soil and nutrients from eroding crop fields are the major sources of pollutants reaching the water courses in the Viola subwatershed.

Eroding and Trampled Streambanks (sediment and direct habitat impairment)

There are no major perennial streams other than the Kickapoo River in the Viola subwatershed. Bank erosion is a problem along the main Kickapoo River, but was not separated out for discussion in this subwatershed.

Eroding Gullies (sediment and nutrients)

An estimated 56% (or 945 tons of soil per year) of the sediment reaching the streams in the Viola subwatershed results from gully erosion.