

# DATA ANALYSIS AND INTERPRETATION OF THE LOWER LITTLE WOLF WATER QUALITY EVALUATION IN WAUPACA COUNTY, WISCONSIN

Miranda L. Graceffa<sup>1</sup>, Kelly R. Henderson<sup>2</sup>, and Nancy Turyk<sup>3</sup>

<sup>1</sup> University of Wisconsin-Stevens Point, Environmental Task Force Program, CNR Room 216, Stevens Point, WI 54481

<sup>2</sup> University of Wisconsin-Stevens Point, Environmental Task Force Program, CNR Room 216, Stevens Point, WI 54481

<sup>3</sup> University of Wisconsin-Stevens Point, Environmental Task Force Program, CNR Room 216, Stevens Point, WI 54481

## Biographical Sketch of Authors

Nancy Turyk is the Senior Research Specialist for the Environmental Task Force Program (ETF) at the University of Wisconsin-Stevens Point (UWSP). She coordinates and supervises a number of water quality monitoring projects throughout central Wisconsin. Kelly Henderson is an undergraduate at the UWSP College of Natural Resources (CNR) in the Watershed Management program and is employed with the ETF as a Research Assistant. Miranda Graceffa served as a project assistant for the ETF on this project and is also currently an undergraduate student in the UWSP CNR Environmental Education and Interpretation program.

## Abstract

The 152 square mile Lower Little Wolf Watershed is a WI-DNR Priority watershed as well as a USDA-EQIP priority area in central Wisconsin. Predominant Land uses that may affect water quality within the watershed include rural residential developments, row-crop agriculture, grazing agriculture, and wetlands. The UWSP Environmental Task Force Program, working jointly with the Waupaca County LCD and Fox-Wolf 2000, designed a study to assess water quality.

Thirteen Sites were monitored through collection of baseflow and eventflow samples, discharge measurements, and physical descriptions of each site. Siphon sampling devices to collect event samples were used in combination with baseflow grab samples collected from spring through fall 2001 to determine: 1) if inputs are being added through groundwater or runoff processes, 2) if there were specific times of the year that land use practices most affect water quality, 3) which subwatersheds have the greatest need for remediation. Nutrients, chloride, total suspended solids, fecal coliform, and triazine were tested at all sample sites. Sub-watersheds were delineated to identify land areas contributing to each site.

Results show elevated triazine concentrations in some tributaries as high as 12 µg/l during baseflow periods, while other tributaries have total phosphorus and total suspended solids concentrations during eventflow ranging from 0.025 to 1.7 mg/L and 1 to 892 mg/L respectively. County staff will utilize the information to target efforts in the most degraded areas of the watershed and compare current data with both historic and future water quality data to determine if BMPs have been successful in water quality protection. Results have been presented to citizens in the watershed.