

Project Title: Crop Residue Status and Soil Loss Outcomes Model

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SHANNON J. FISHER

WRC DIRECTOR; MN RIVER BOARD EXECUTIVE DIRECTOR, ASSOCIATE PROFESSOR OF BIOLOGY

Dr. Fisher received his B.S. (1994) from Northland College and his M.S. (1996) and Ph.D. (1999) from South Dakota State University. He was an Environmental Review Ecologist and Fisheries Biologist for the MN DNR for 5 years before starting with the Water Resources Center in April 2005. In addition to his WRC duties, he serves as the Executive Director for the Minnesota River Board (MRB) and as an Associate Professor of Biology, teaching Lake Ecology, Fisheries Biology, Research Methods, and Fisheries Ecology.

In his collective capacity, Dr. Fisher provides administrative support to the WRC/MRB staff, leads a delegation of local officials working to improve water quality in the Minnesota River Basin, advises student researchers, maintains stakeholder relations, instructs courses, coordinates conferences, and lobbies policymakers. These activities focus on the WRC/MRB mission to collect and disseminate water quality, watershed, and aquatic ecology information – with an emphasis on engaging students and educating our regional community. Dr. Fisher’s research interests include water quality impacts on stream and lake biota, riverine and fisheries ecology, impaired waters restoration, agricultural drainage, and shallow lakes management. Dr. Fisher is pleased to be involved with undergraduate and graduate students to prepare them for future positions in watershed, fisheries, and water quality work – in collaboration with the Department s of Biology, Chemistry and Geology, Geography, and Civil Engineering.

The Water Resources Center (WRC) at Minnesota State Mankato was created in 1987 and serves as a regional center for water quality research and education. The WRC has led more than 100 research and educational projects. Shannon Fisher, WRC Director and Minnesota River Board (MRB) Executive Director, has supervised dozens of projects, including a current Conservation Innovation Grant valued at \$1 million on water quality credit trading. Director Fisher is also responsible for a 319 projects entitled “Evaluation of Nutrient and Bacterial Transport from Manure Applied Lands” and “Evaluation of Artificial Drainage Roles in Altering Hydrology.” The WRC team completed the 2007 Tillage Transect Survey and has been leading state efforts in residue management research and implementation. Our work has converted an archaic collection system into an electronic GIS layer that facilitated watershed residue assessment, trends analysis, and increased accuracy. Rick Moore (co PI) completed research on strategies to bring residue management into an “outcome” based process to measure soil loss (and indirectly phosphorous loss) and serve as an improved tracking mechanism for local governments to assess residue management impacts on TMDL implementation plans – with measurable outcomes!

WRC Mission and Overview: The Water Resources Center was created in 1987 and facilitates a mission to gather, interpret, and distribute data of environmental significance to help citizens enhance the quality of regional lakes, rivers, wetlands, and groundwater. This is accomplished through faculty and student applied research, educational programming, technical assistance, and water resource planning. As a center for environmental research and information exchange, the WRC distributes data and provides support to those interested in improving water resources in southern Minnesota. The Minnesota River Basin Data Center website contains a vast amount of data drawn from a variety of sources and organized in an easily accessible manner. The website includes descriptive and Geographic Information System (GIS) data by watershed, summaries of watershed project accomplishments, and links to pertinent watershed information.

Beyond data collection and dissemination, the WRC provides support to local and regional groups with a strong partnership with the Minnesota River Board. WRC staff assist with planning and coordination, technical problem solving, as well as providing outreach and educational services. The WRC also maintains a certified laboratory that provides expert analysis for numerous lake and watershed assessment projects across southern Minnesota. This work has been instrumental in helping local groups define strategies to protect water resources of interest.