

Clean Water Research Program

Funded Research Projects



The following tables list the projects funded by the Clean Water Research Program. A more detailed description for each project is available at: www.mda.state.mn.us/cleanwaterfund/research. Projects were selected after a competitive Request for Proposal (RFP) process and review by an evaluation committee.

Project focus: Cover Crops, Perennials, or Vegetative Cover

Project Title	Recipient	Funds Awarded	RFP Year
The Minnesota Cover Crop Guide	Anna Cates University of Minnesota Extension	\$111,709	2018
Cover crop effectiveness in a series of farm BMPs, 2012-2019	Christian Lenhart University of Minnesota	\$64,286	2018
The Cover Crops, Water, and Nitrogen Nexus: How do they impact corn and soybean production and the environment?	Axel Garcia y Garcia/ Jeff Strock- Southwest Research & Outreach Center	\$450,223	2016
Dual-purpose cover crops and onsite retention of water and nutrients	Frank Forcella University of Minnesota	\$266,156	2014
Improvement of field pennycress germplasm for use as a winter annual cover and oilseed crop	James Anderson University of Minnesota	\$215,930	2014
Water quality enhancements in corn cropping systems through optimization of cover crop establishment technologies	M. Scott Wells University of Minnesota	\$243,910	2014
Optimizing establishment of corn in cover crops and living mulches to maintain yield while reducing nitrate losses	Julie Grossman University of Minnesota	\$232,244	2014
Winter Rye Best Management Practices to Reduce Loads of Sediment and Nutrient to Minnesota Surface Waters	Multiple Researchers University of Minnesota	\$249,008	2009

Project focus: Phosphorus, Nitrogen, or Sediment

Project Title	Recipient	Funds Awarded	RFP Year
Adjusting corn nitrogen rates using a preplant nitrate test to reduce potential for N loss in South-Central and Southeastern Minnesota	Dan Kaiser/ Fabian Fernandez University of Minnesota	\$258,000	2019
Evaluation of four irrigation scheduling methods and their impact on corn production and nitrate leaching in the Central Sands region	Vasudha Sharma University of Minnesota Extension	\$124,005	2018
Measuring and modeling watershed phosphorus loss and transport for improved management of agricultural landscapes	Jacques Finlay University of Minnesota	\$297,419	2015
Assessment of rate and timing of phosphorus application in corn-soybean rotations on the potential for phosphorus loss to surface waters and tile	Daniel Kaiser University of Minnesota	\$224,773	2015
Comparison of real-time N stress sensors and remote sensing from unmanned aerial vehicles for precision management of N fertilizer and improvement of water quality	David Mulla University of Minnesota	\$448,953	2013
An Integrated Sediment Budget for the Root River, Southeastern Minnesota	Patrick Belmont Utah State University	\$227,658	2011/2012
Sediment Budget for Greater Blue Earth Basin and its Response to Changes in Drainage and River Discharge	Karen Gran University of Minnesota- Duluth	\$180,000	2011/2012
Tracing Sediment Sources with Meteoric ¹⁰ Be: Linking Erosion and the Hydrograph	Patrick Belmont Utah State University	\$65,298	2008

Project focus: Conservation Practices

Project Title	Recipient	Funds Awarded	RFP Year
Improved design, performance, and implementation of saturated buffers	Gary R. Sands University of Minnesota	\$190,923	2017
Integrated landscape management for agricultural production and water quality	Jeffrey Strock Southwest Research & Outreach Center	\$365,780	2017
Optimizing Woodchip Bioreactors to Reduce Nitrogen and Phosphorus in Subsurface Drainage Water	Carl Rosen University of Minnesota	\$200,000	2016
Agricultural Best Management Practices (BMP) Handbook for Minnesota Update	Chris Lenhart University of Minnesota	\$65,600	2015
Nutrient Removal in Agricultural Drainage Ditches	Jeffrey Strock Southwest Research & Outreach Center	\$404,112	2013
Controlled Drainage and Bioreactor- Research and Demonstration Site	Kathy Smith Martin County SWCD	\$119,396	2011/2012
On-Farm Evaluation of Treatment Methods for Excess Nutrients in Agricultural Subsurface Tile Drainage	Dean Current - University of Minnesota (CINRAM)	\$312,248	2011/2012
The Agricultural BMP Handbook for Minnesota	Joel Peterson/ Tom Miller Emmons & Oliver Resources, Inc.	\$94,500	2010
Field Evaluation of Controlled Drainage and Woodchip Bioreactors in Reducing Contaminant Losses from Farmed Fields	John Moncrief University of Minnesota	\$237,760	2009
Evaluation of Nutrient Retention Basins for Treating Drainage from Agricultural Landscapes	Jeff Strock Southwest Research & Outreach Center	\$183,910	2008

Project focus: Conservation Planning

Project Title	Recipient	Funds Awarded	RFP Year
Real-time crop sensing and modeling for improved water quality	David Mulla University of Minnesota	\$100,000	2018
Ag BMP Assessment and Tracking Tool	Stephanie Johnson Houston Engineering Inc.	\$102,466	2010
Assessment and Selection of Sentinel Watersheds for Addressing Impaired Waters	Bruce Wilson/John Neiber University of Minnesota	\$106,125	2010
Identifying Priority Management Zones for Best Management Practice Implementation in Impaired Watersheds	Greg Wilson Barr Engineering	\$571,719	2010
Priority Setting for Restoration in Sentinel Watersheds	Chris Lenhart University of Minnesota	\$288,650	2010
Validation of the Minnesota Feedlot Assessment Runoff Model (MinnFARM) for use in Assessing TMDLs	Bruce Wilson University of Minnesota	\$67,700	2009
Evaluation of Best Management Practices in Impaired Watershed using the SWAT Model	David Mulla University of Minnesota	\$160,000	2007*
Targeting Best Management Practices to Critical Portions of the Landscape	David Mulla University of Minnesota	\$95,000	2007*

Project focus: Water Quality Sampling

Project Title	Recipient	Funds Awarded	RFP Year
Evaluation of Alternative Surface-Water Monitoring Protocols for Use in Agricultural TMDL Load Allocation and BMP Evaluation	Dennis Busch University of Minnesota	\$32,300	2009
Evaluation of Acetochlor Losses to Tile Drainage	Gyles Randall University of Minnesota	\$30,000	2008
Feasibility of an On-Farm Water Quality Program in Minnesota	Jim Anderson University of Minnesota Water Resources Center	\$48,500	2007*

Project focus: Microbiology

Project Title	Recipient	Funds Awarded	RFP Year
Analyzing and Optimizing Denitrification in Agricultural Surface Waters	Jessica Kozarek St. Anthony Falls Laboratory University of Minnesota	\$396,935	2013
Growth, Survival and Genetic Structure of E. Coli found in Ditch Sediment and Water at the Seven Mile Creek Watershed	Michael Sadowsky University of Minnesota	\$192,804	2008
Developing a DNA Marker for Bacteria from Cattle, Swine, and Poultry Manure	Michael Sadowsky University of Minnesota	\$240,000	2007*

*2007 projects were supported by one-time state funding prior passage of the Clean Water Legacy Amendment.