

Tracking Minnesota's Clean Water Fund Effectiveness

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Clean Water Council meeting

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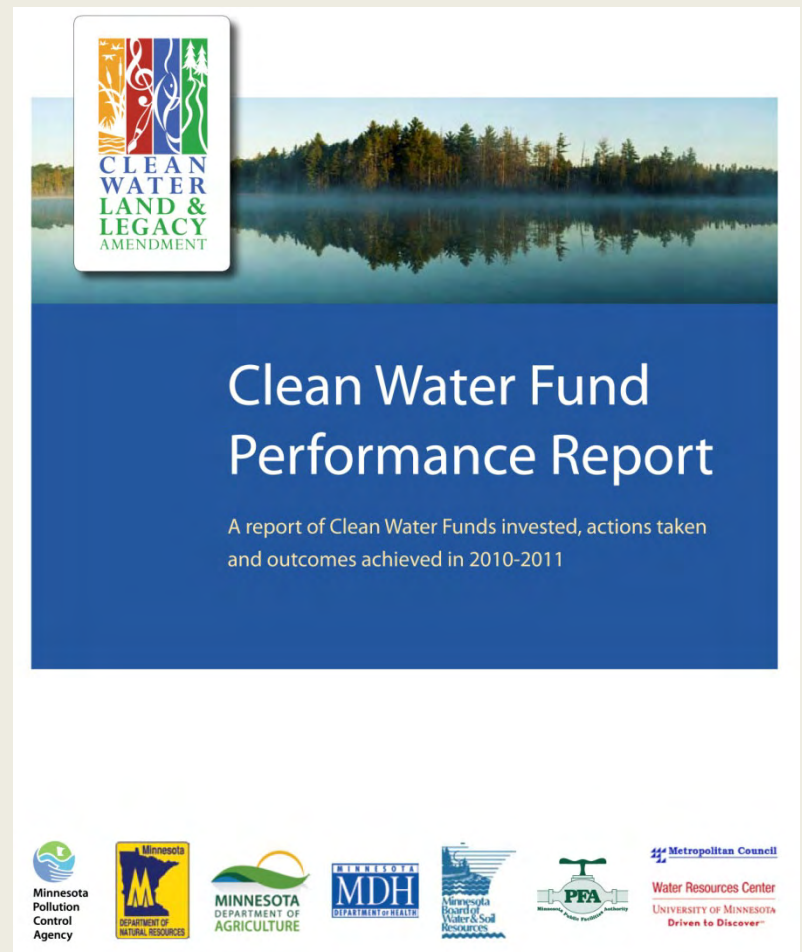
Clean Water Fund Tracking Framework



- ❑ Interagency effort
- ❑ Goal: clarify connections between investments, actions taken and outcomes achieved

Clean Water Fund Performance Report

- ❑ Grouped by investment measures, surface water and drinking water measures
- ❑ 18 nested investment, action and outcome measures
- ❑ Contextual information and highlights of work



Profile measures

Each profile includes:

- ❑ Measure type: investment, action or outcome
- ❑ Measure narrative
- ❑ Graphic to summarize measure's data
- ❑ Measure score for action and outcome measures



Mercury trends

OUTCOME

Measure: Trends of mercury in fish and mercury emissions in Minnesota

Why is this measure important?

Many Minnesota lakes and rivers contain contaminants, primarily mercury, which accumulate in fish and may pose a risk to humans as well as fish-eating wildlife. Because air pollution is the primary source of mercury, reducing mercury in fish requires large reductions in mercury emissions from sources in Minnesota and throughout the world. To evaluate if Minnesota waters are getting cleaner, mercury emission levels can be tracked over time through periodic emissions inventories and then measured against how fish mercury levels respond. Because of the large variation in mercury concentrations from year to year within and among lakes, long-term trends of mercury in fish are necessary to see if pollution control efforts are sufficient.

What are we doing?

The Minnesota Department of Natural Resources (DNR) is leading efforts to track mercury levels in fish. The DNR collects fish from approximately 150 lake and river sites annually throughout Minnesota and prepares samples for testing. Each year, thousands of walleyes, northern pike, panfish, and other species are tested; Clean Water Funding has expanded the number of sites tested each year by 80. The Minnesota Pollution Control Agency (MPCA), Minnesota Department of Health (MDH), and U.S. Forest Service provide input on where samples should be collected; the Minnesota Department of Agriculture's (MDA) laboratory analyzes the samples.

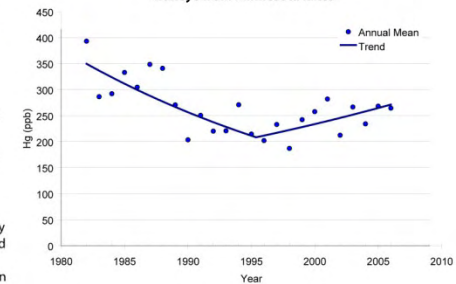
Decades of monitoring has shown that most fish contain some mercury, that the average mercury level generally increases from south to north in Minnesota, and that panfish have lower mercury levels than top predator fish. Sampling previously tested waters to look for trends in fish-mercury levels has been a priority in the last 15 years. Between 1982 and about 1996, a clear downward trend in mercury concentrations in northern pike and walleyes was observed.

However, that pattern was reversed and the 1996 to 2007 period shows a significant upward trend (figure below). The fish mercury trend analysis will be updated in 2012 and every five years thereafter.

What progress has been made?

To achieve the necessary reductions of mercury in the fish, Minnesota's Statewide Mercury TMDL established a goal of a 93 percent reduction in mercury input from all human sources. Minnesota receives 90 percent of its mercury pollution from outside the state. Rapid economic growth in Asia and India since 1990 has contributed to increased global emissions of mercury, despite mercury emissions in North America and Europe being cut to half since 1990. The United Nations Environment Program is negotiating reductions among all countries of the world. Minnesota is doing its part, and has taken significant steps towards achieving the identified mercury air emission reductions. Since 1990, removing mercury from latex paint, requiring mercury controls on municipal waste combustors, banning small onsite incinerators, mercury in batteries, and disposal of mercury-containing products has reduced mercury emissions in Minnesota by more than 70 percent.

Trend of mercury in northern pike and walleye from Minnesota lakes






Scoring criteria for actions, outcomes

Action Status Scoring Criteria

-  **We are making good progress/meeting the target**
-  **We anticipate difficulty** – it is too early to assess; or there is too much variability across regions to assess
-  **Progress is slow/we are not meeting the target**; or the activity or target it is not commensurate with the scope of the problems

Outcome Status Scoring Criteria

-  **Water quality is high** – we are on track to meet long-term water resource needs & citizen expectations
-  **Water quality needs improvement or it is too early to assess** – it is unclear if we will meet long-term water resource needs & citizen expectations; and/or water quality varies greatly between regions
-  **Water quality is under intense pressure** – long-term water resource needs and/or citizen expectations exceed current efforts to meet them


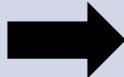




Report findings

- ❑ The state is on track with its investments so far
- ❑ Of the 18 measures, status and trends vary:
 - Six measures showed improving trends
 - Seven were too early to assess and
 - One showed a declining trend
 - The report does not include trend information for investment measures
- ❑ More progress reported on short-term actions taken than long term outcomes achieved




Investment measures

Measure	Status	Trend
Total dollars appropriated Appropriation levels will vary by biennium and strength of economy.	FY10-11: \$152.2M FY12-13: \$179.4M	N/A
Total dollars by watershed / statewide Nearly all 81 watersheds benefitted from CWF activities in FY10-11.	Most watersheds benefit.	N/A
Total dollars awarded Eighty-six percent for implementation activities.	\$68.7M awarded to non-state partners.	N/A
Dollars leveraged Required Clean Water match funds were met and exceeded.	\$68.3M leveraged; \$1.43 for every state dollar invested	N/A


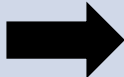






Surface water measures: actions

Measure	Status	Trend
Percent of major watersheds monitored Good progress. Monitoring schedule being followed and met.		
Non-point source BMP implementation Though funding has increased, total requests for projects approximately three times greater than available funds.		
Municipal infrastructure projects Good progress, though pace affected by uncertain municipal budgets and changing construction schedules.		







Surface water measures: outcomes

Measure	Status	Trend
Surface water health Water quality varies greatly by region; watersheds yet to be assessed will influence the statewide rate. Unclear if long-term goals will be met.	 Stream, lake swimming and stream aquatic life	N/A
Lake, stream and wetland water quality Lake clarity: Improving trends in more lakes than not. Stream fish: Fish health varies statewide. Wetland invertebrates: Statewide, most wetlands have good insect communities.	Lake clarity, wetland invertebrates 	N/A
	Stream fish 	







Surface water measures: outcomes

Measure	Status	Trend
Waters restored Great variability statewide; projects are making progress to improve water quality.		
Mercury trends Lakes and rivers are impaired due to high mercury concentrations in fish. Significant progress made to reduce mercury emissions in Minnesota, though global emissions are increasing.	Fish 	
	Minnesota emissions 	
Municipal wastewater phosphorus changes Wastewater sources continue to reduce phosphorus discharges.		

Drinking water measures: actions

Measure	Status	Trend
Source water protection plans Met target for FY10-11. On track to meet long-term target of every community public water supplier engaged by 2020.		
Nitrate monitoring and reduction activities Agencies are working with many local partners and continue to establish effective partnerships.		
Contaminants of emerging concern Target of 10 new guidance values for FY10-11 met; on track to meet FY12-13 target. Expanding outreach and education for citizens.		

Drinking water measures: outcomes

Measure	Status	Trend
Chemicals in Minnesota's groundwater Pesticides: Decreasing concentrations of five common pesticides; still frequently detected at low levels in vulnerable groundwater. Nitrate: Significant local variability; nitrate levels continue to exceed drinking water standards and are increasing in certain vulnerable aquifers.	Pesticides 	
	Nitrate 	N/A
Source water quality changes Collecting samples for comparison to study conducted 25 years ago.		N/A
Nitrate concentrations in wells Although nitrate levels in less than one percent of new wells exceed drinking water standard for nitrate, there is a slight increase in recent years.		

Next steps

- ❑ Release Clean Water Fund Performance Report every two years
- ❑ In the interim:
 - Continue to refine current 18 measures and consider adding others from Framework
 - Improve data management and reporting capabilities
 - Get feedback on current report and implement improvements

Contact us

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