



# 2021 MPCA Mercury Updates

## 2021 Statewide Mercury TMDL Oversight Committee Meeting

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# Committee meeting agenda

- MPCA mercury updates
- Taconite iron ore processing NESHAP
- Discussion: How do we get to the Statewide 2025 TMDL Goal?
- MATS retrospective
- 2020 mercury emissions inventory update
- Minnesota mercury emissions inventory methodology
- Mercury isotopes: A new tool for understanding mercury sources and cycling
- Questions & answers, open discussion

# What's the problem we are trying to solve?



## Mercury Impaired Waters

Mercury impairments in Minnesota are mainly based on fish tissue concentration



## Mercury Exposure

Mercury emissions eventually move into our ecosystem and bodies



## Fish Consumption Advisories

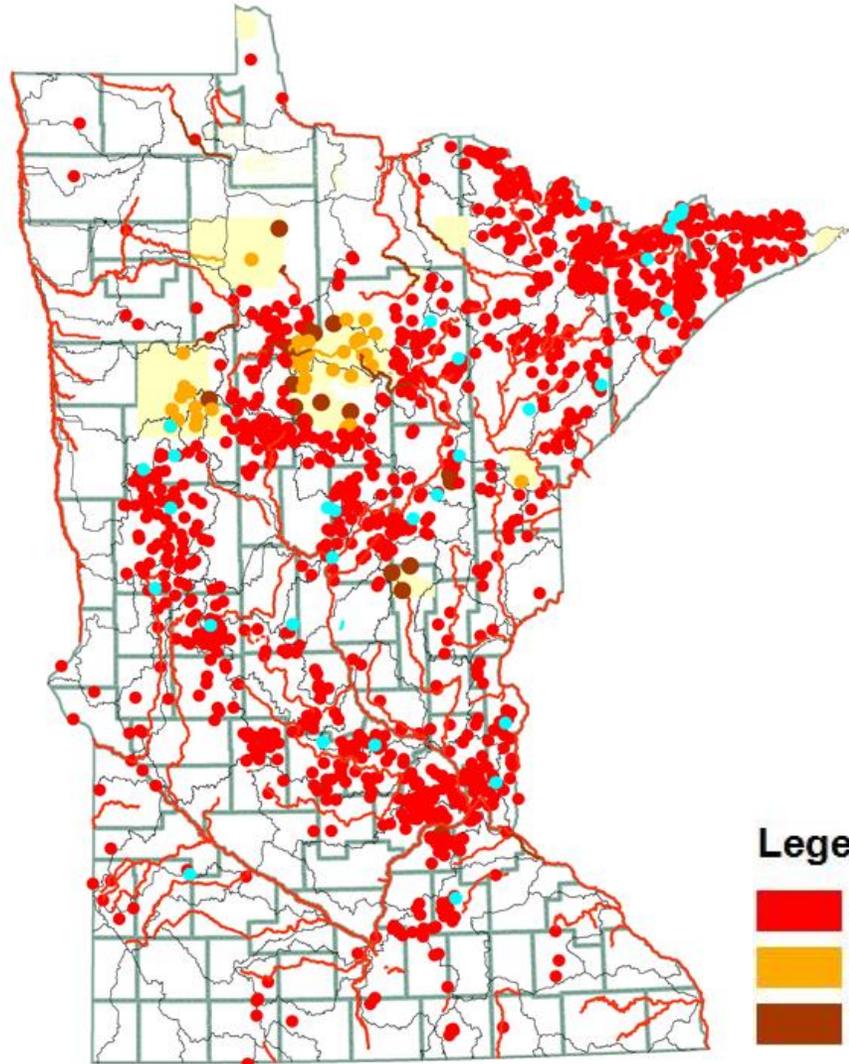
Minnesota Department of Health safe eating guidelines



## Mercury Reductions

Minnesota's goals to reduce the amount of mercury that ends up in our waters

# Minnesota's impaired waters list



- 2020 impaired waters list
  - 5,775 total impairments in 2,789 waterbodies
  - 1,653 mercury impairments in 1,245 waterbodies
- 2022 impaired waters list
  - A few new mercury impairments
  - Scheduled to open for public comment later this November

## Legend

- Mercury impaired waters
- Mercury impaired waters wholly within reservation boundaries
- Mercury impaired waters partially within reservation boundaries

# Minnesota's statewide mercury TMDL

- GOAL - reduce statewide mercury air emissions to 789 pounds per year
  - TMDL approved by U.S. EPA in 2007
  - TMDL Implementation Plan in 2009
  - Mercury Reduction and Reporting rule adopted in 2014
- Statewide TMDL Oversight Committee (2008 - Present)
  - Convened based on stakeholder recommendations
  - MPCA called for stakeholders to recommend source-specific reduction targets

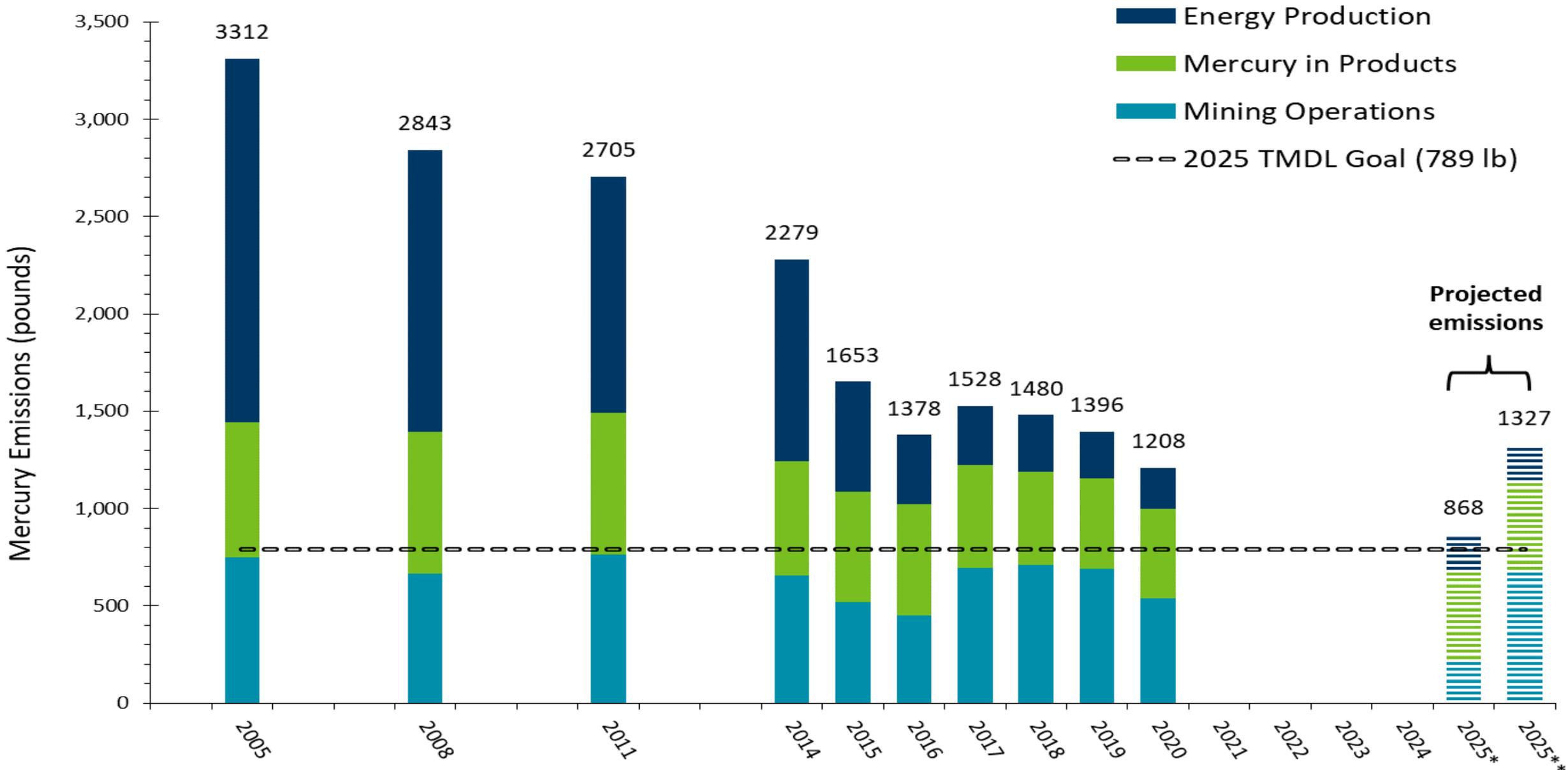
# Oversight group charge

- Meet during fall each year from 2009 - 2025
  - (at least once every 3 years after 2013)
- Review and evaluate progress toward achieving the Mercury TMDL goals
- Determine if additional measures are needed to meet these goals
- Provide advice to the MPCA on implementing the Mercury TMDL
- Review changes to the mercury emissions inventory
- Review other actions and scientific information that could affect implementation of the Mercury TMDL

# Mercury reduction efforts

## Minnesota's mercury reduction rule

- Mercury reduction plans
  - Industrial, Commercial, Institutional Boilers
  - Iron and Steel Melters
  - Ferrous Mining and Processing
  - Other Sources
- Performance standards
- Emissions inventories for mercury



\* This projection is based on the ferrous mining/processing industry in northern MN meeting the required 72% reduction specified in Minn. R. 7007.0502.  
 \*\* This projection is based on the ferrous mining/processing industry's proposed reductions in each mercury reduction plan applied to the baseline emissions as calculated by MPCA.

# Mercury reduction efforts

## Minnesota comments on EPA's Taconite Iron Ore Processing Standard

- Clean Air Act (CAA) and the National Emissions Standards for Hazardous Air Pollutants (NESHAP)
  - Requires EPA to promulgate NESHAPs for major sources of HAPs
  - Identifies HAPs, including mercury
  - Requires that EPA evaluate whether there are technology improvements every 8 years
- Taconite Risk and Technology Review (RTR)
  - Comments, petitions, and early stakeholder input/review
  - More detail in EPA's presentation today

# Mercury reduction efforts

## St. Louis River TMDL

- Took a step back to better plan and prepare the structure for the work
  - Developed a charter
  - Defined the roles of the technical advisory team and the public forum
- Website is up and will be updated soon with charter, also will provide links to documents and meeting minutes
  - <https://www.pca.state.mn.us/water/st-louis-river-watershed-mercury-tmdl>
- Hoping to still have first public forum meeting this year
  - Working on facilitation plans
- Technical Advisory Team has met twice
  - Discussed how to ensure technical work is useful for all (MN, WI, Fond du Lac)
  - Starting to develop ideas for modeling

# Regional & national mercury emissions

## Mercury reduction goals

	Mercury Emissions (pounds)						Goals	
	2005	2008	2011	2014	2017	2020	2018	2025
<b>Minnesota</b>	3,312	2,843	2,705	2,279	1,528	1,208	1,464	789
<i>(% reduction vs. 2005)</i>	<i>0%</i>	<i>14%</i>	<i>18%</i>	<i>31%</i>	<i>54%</i>	<i>64%</i>	<i>56%</i>	<i>76%</i>
<b>Regional</b>	22,170	16,970	14,328	12,389	5,715		9,755	5,232
<i>(% reduction vs. 2005)</i>	<i>0%</i>	<i>23%</i>	<i>35%</i>	<i>44%</i>	<i>74%</i>		<i>56%</i>	<i>76%</i>
<i>Minnesota</i>	3,312	2,843	2,705	2,279	1,528			
<i>Michigan</i>		4,545	3,915	3,864	1,316			
<i>Wisconsin</i>		3,315	1,631	1,405	848			
<i>North Dakota</i>		3,105	2,973	2,320	987			
<i>South Dakota</i>		269	269	226	116			
<i>Iowa</i>		2,893	2,835	2,295	921			
<b>National</b>	225,491	122,278	112,873	103,626	65,668		99,216	53,216
<i>(% reduction vs. 2005)</i>	<i>0%</i>	<i>46%</i>	<i>50%</i>	<i>54%</i>	<i>71%</i>		<i>56%</i>	<i>76%</i>
<b>Global</b>			4,321,055	4,850,170				

# Mercury reduction efforts

## Toxic Substances Control Act (TSCA) - Mercury Reporting Requirements

- Mercury reporting requirements
  - June 2016 - Frank R. Lautenberg Chemical Safety for the 21<sup>st</sup> Century Act
  - June 2018 - EPA publishes a final rule under the that required reporting regarding mercury or mercury-added products
- Mercury Inventory Reports (supply, use, and trade)
  - Preliminary 2017 report identified the data gaps based on publicly available information
  - 2020 was the first rule-required report and provided some recommendations
- Assists the U.S. in national reporting (e.g., Minimata Convention)

# Mercury reduction efforts

## Mercury Switch Recovery Programs

- National Vehicle Mercury Switch Recovery Program
  - Originally set to expire in 2017, was extended to 2021 based on its effectiveness
  - Involves more than 10,000 recyclers and reported to have removed/recycled over 6.8 million mercury switches containing more than 7.6 tons of mercury
- End of Life Vehicle Solutions Corporation (ELVS) Mercury Switch Program
  - Auto and Steel Manufacturers Association agreed to extend the ELVS switch collection program to July 1, 2027
  - Extension agreement did not include discussion with any of the other parties
  - Doesn't necessarily extend the MOU that is part of the national program requirement in the electric arc furnace area source rule

# Mercury reduction efforts

## Great Lakes Binational Strategy for Mercury Risk Management

- Canada-United States Great Lakes Water Quality Agreement
  - Commits Canada and the U.S. to prepare binational strategies for chemicals of mutual concern (CMCs)
  - May include research, monitoring, surveillance, and pollution prevention/control provisions
- Binational Strategy for Mercury Risk Management
  - Published June 28, 2021
  - 22 management options to address threats to the Great Lakes by reducing mercury releases
  - Five large categories of action
  - Also identified knowledge gaps that require further investigation

# Mercury reduction efforts

## Great Lakes Commission mercury committee

- Great Lakes Commission (GLC) created in 1955, granted consent in 1968
  - Recommends policies and practices
  - Collaboratively work on issues that no single community, state, province, or nation can solve alone
- Ad Hoc Committee on Mercury
  - Established to develop new Commission policy to replace the 2010 GLC Resolution
  - Focused on mercury monitoring, research, and reduction legislative priorities and other needs in the Great Lakes - St. Lawrence River basin
  - Presenting to the GLC at their annual meeting in October 2021

# Moving forward

- Greater emissions reductions are needed to meet the goal of the statewide mercury TMDL.
  - About 73% of our waters will reach the goal if the TMDL reductions are fully implemented
  - The remaining 27% need more work to resolve the higher mercury levels in fish
- Continue to promote mercury emission reductions within the state as well as regionally, nationally and globally
  - Several Canadian-United States efforts underway emphasize the importance of reductions, monitoring, and research
  - Successful programs are the result of collaborative efforts and can involve a wide variety of participants