

# Strategies, successes and challenges in addressing Contaminants of Emerging Concern

# Where would MN be without the Clean Water Fund ?

2006 – Clean Water Legacy Act passed to meet CWA responsibilities

2008 – Amendment establishing Clean Water Fund passed

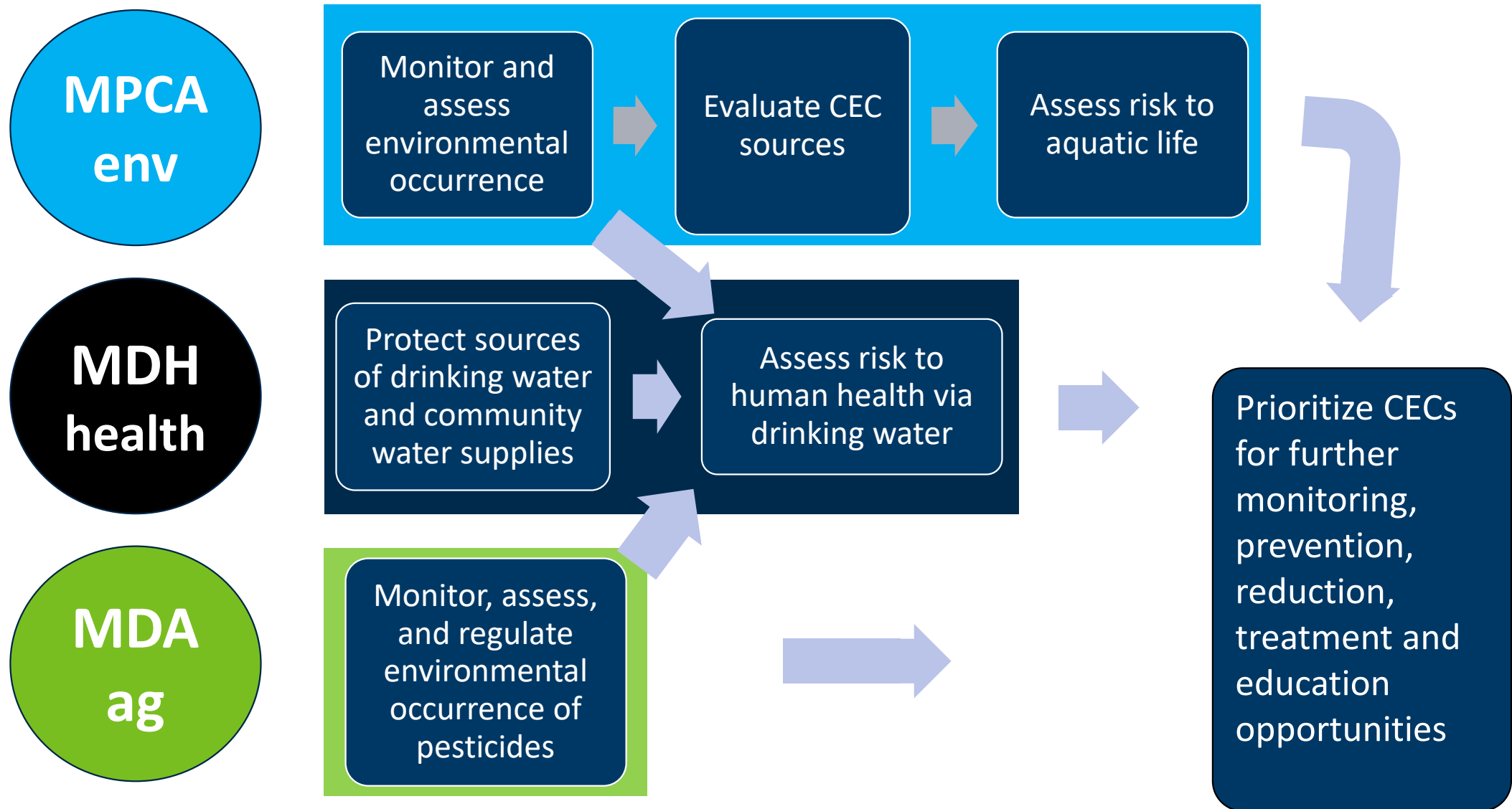
**0.375% of  
state sales  
tax for  
25 years**

(July 1, 2009 to July 1, 2034)

Amendment funding  
formula:

- Habitat 33%
- Water 33% (**Clean Water Fund**)
- Parks 14.25%
- Arts and Culture 19.75%





Minnesota agency roles re: CECs



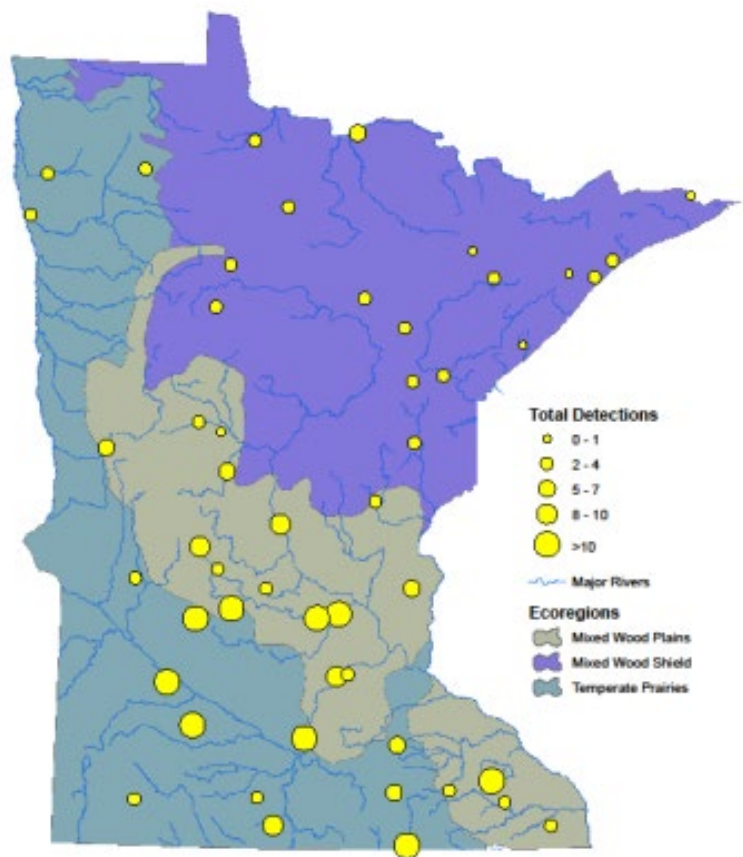
The background of the slide is a photograph of a beach. In the foreground, there is a sandy beach with some driftwood and rocks. In the middle ground, there is a body of water, likely a lake or a wide river, with a small wave breaking on the shore. In the background, there are green hills under a clear blue sky.

## Areas of Investment

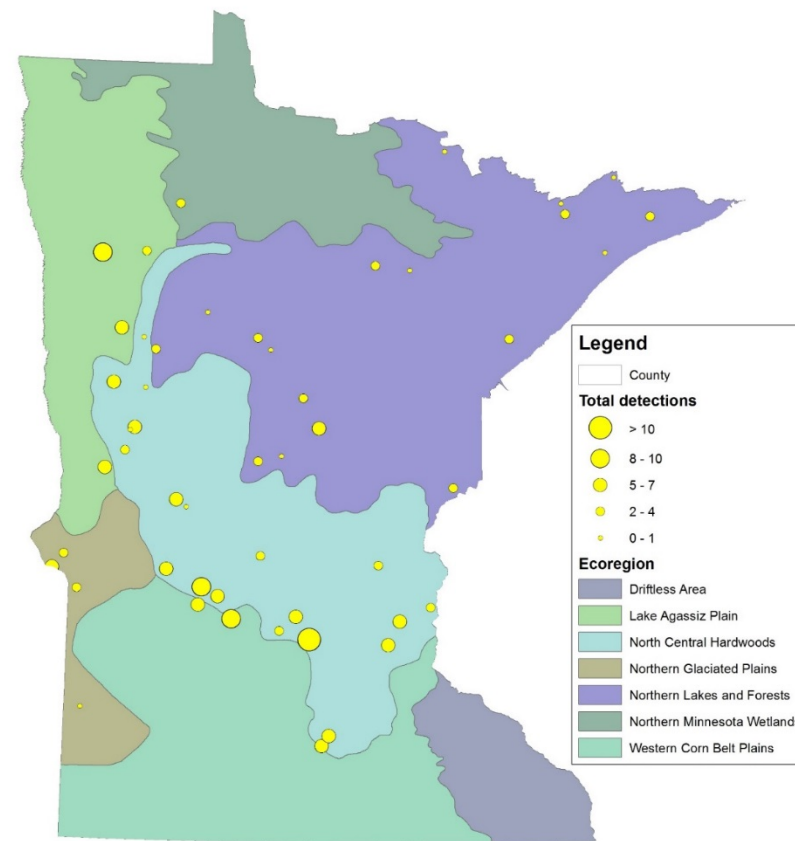
Long term  
statewide  
monitoring

Means to  
assess impacts  
to aquatic life

Focused  
investigations

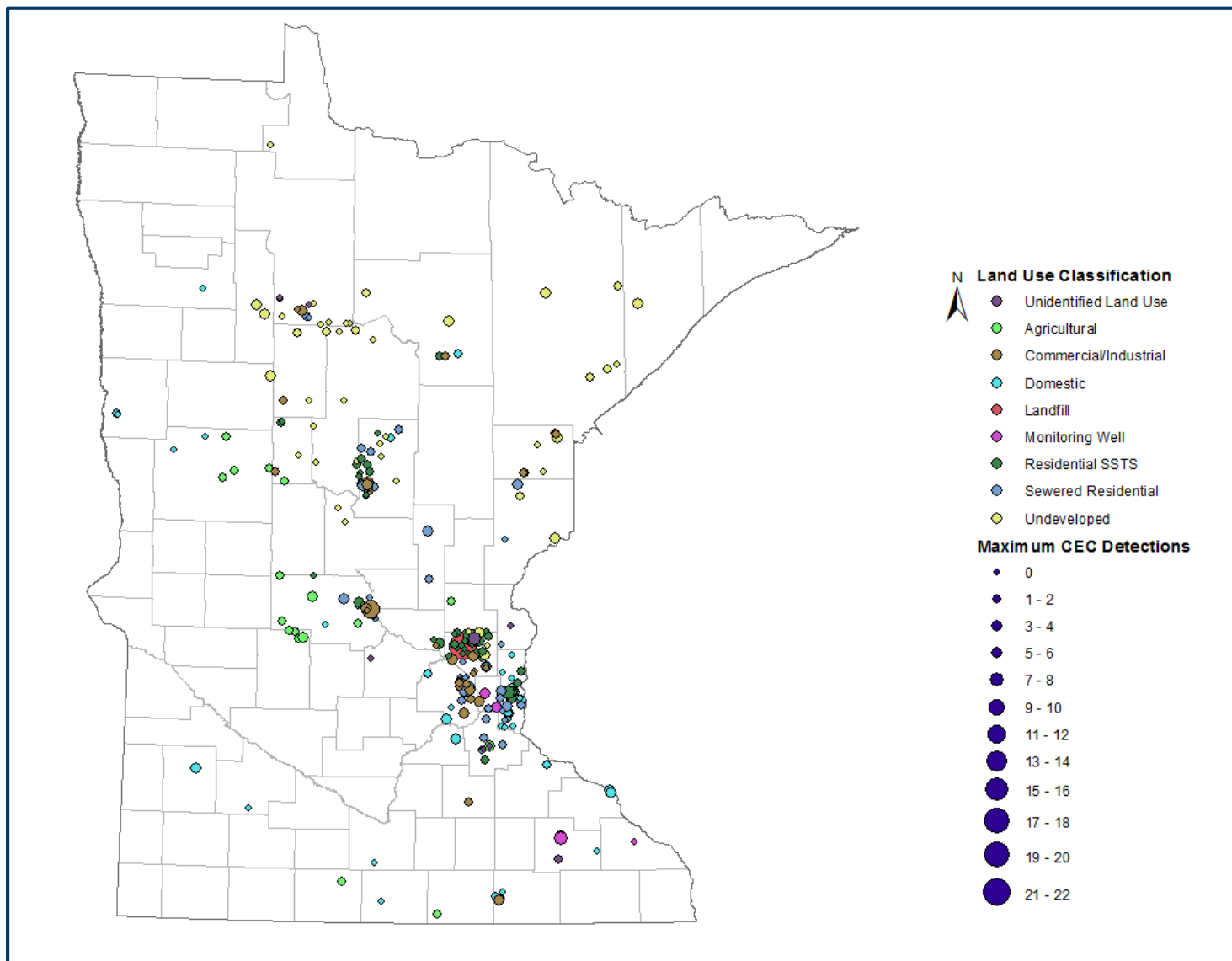


Rivers and streams 2010, 2015, 2020



Lakes 2012 and 2017

Long term monitoring: Piggy back on  
EPA National Aquatic Resource Surveys



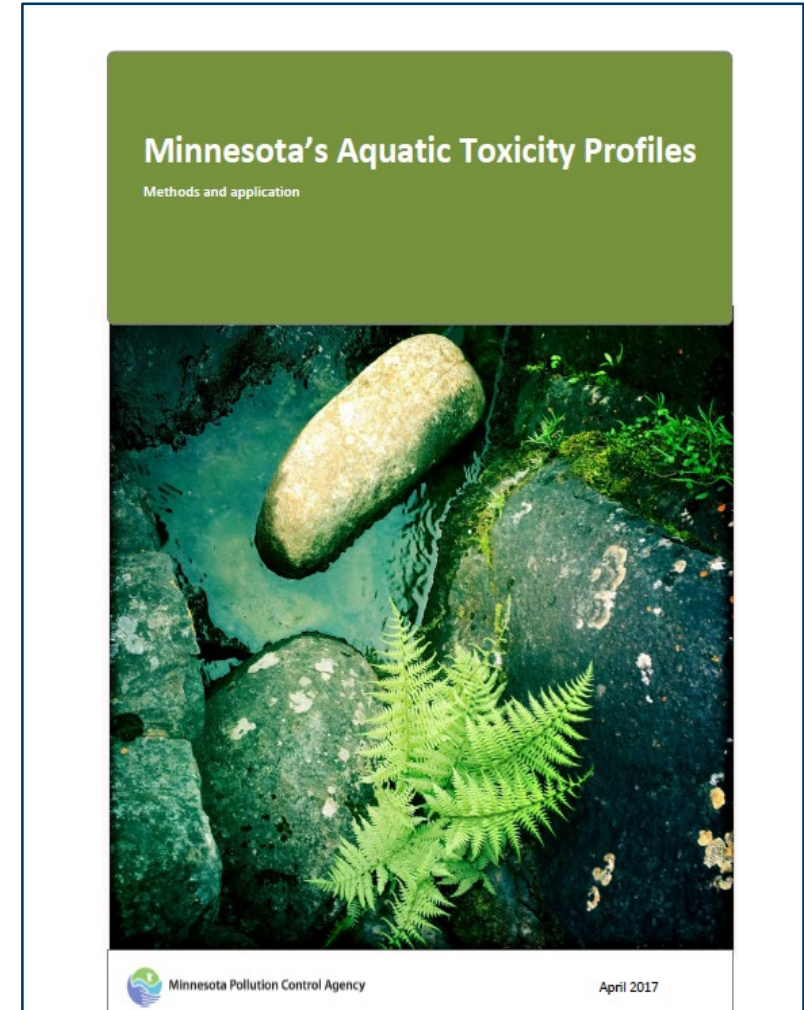
- About 270 shallow wells in MPCA's monitoring well network
- Monitored once annually to assess groundwater quality
- 40 wells per year monitored for CECs

Long term monitoring: CECs in Ground Water

# A means to assess risk posed to aquatic life by CECs



Published January 2015



Published April 2017



# Focused Investigations

- MPCA has investigated specific issues and some suspected/known sources of CECs to the environment:
  - Impacts of land use
  - Wastewater land application sites
  - Stormwater runoff – several studies
  - Precipitation
  - PFAS in leachate from food composting sites
  - Chlorination at WWTPs and formation of iodinated chemicals in rivers





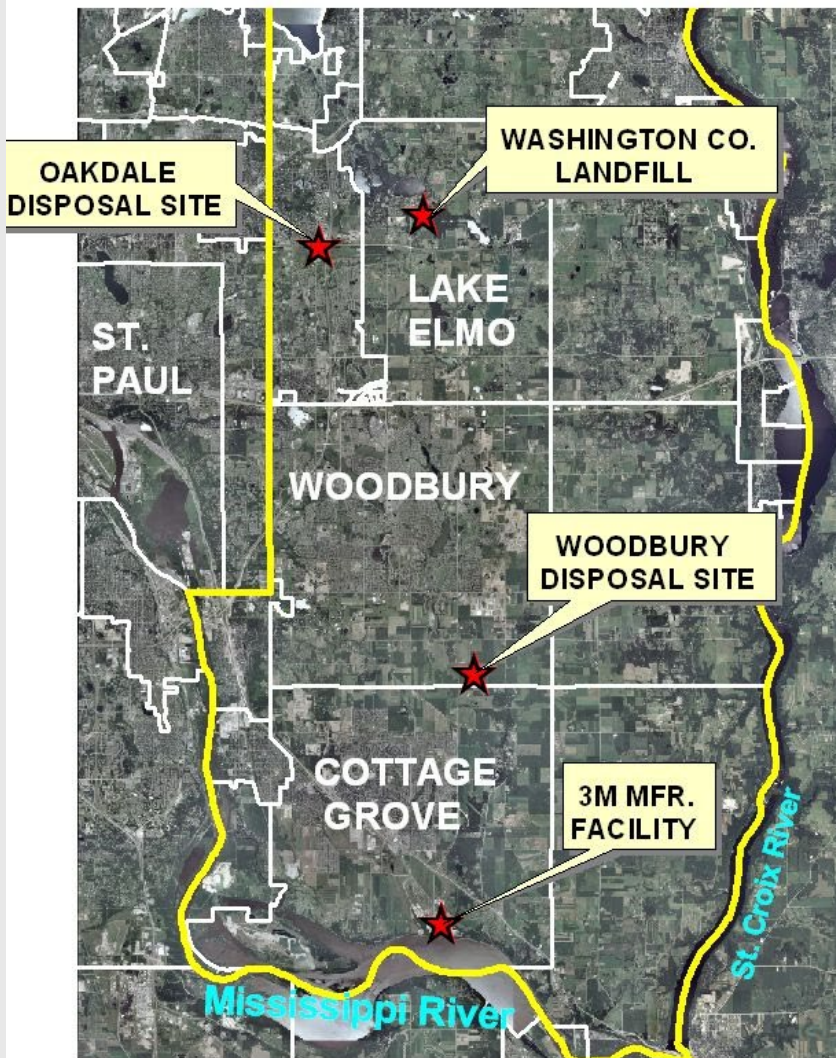
# Water quality standards for CECs

## Nonyl phenols:

- Began development of WQS using EPA's 2005 criteria:
  - Toxic and endocrine active
  - Widely detected in MN and associated with fish intersex characteristics
- Draft Technical Support Doc prepared by MPCA *10-14-2010*
- RESULT: environmental concs below likely WQS. No further action.



# Water quality standards for CECs



## LOCATION OF 3M SITES IN WASHINGTON CO. MINNESOTA



## PFAS

- one impairment for PFOS (water column) in Pool 2 of Mississippi River (SSC)
- 10 impairments for PFOS in fish tissue
- ~ 10 facilities (WWTPs, others) with monitoring for PFAS –
- MPCA issued updated SSC for PFOS in water & fish tissue for the TCMA in October 2020

# 2020 MPCA PFOS Water Quality Criteria

Class 1/2A or Class 1/2Bd	Class 2B/2D	Class 2 fish-tissue
<ul style="list-style-type: none"> <li>• drinking water</li> <li>• fish consumption</li> <li>• recreation</li> </ul>	<ul style="list-style-type: none"> <li>• fish consumption</li> <li>• recreation</li> </ul>	<ul style="list-style-type: none"> <li>• fish consumption</li> </ul>
0.05 ng/L	0.05 ng/L	0.37 ng/g
(30-day average)	(30-day average)	(90 <sup>th</sup> percentile of 5 fish minimum per water body)
<b>ADDITIVITY ENDPOINTS</b> Developmental, Adrenal (Endocrine), Hepatic (Liver) System, Immune System, Thyroid (Endocrine) (MDH 2019b)		



# Final thoughts

MPCA scientists are combining CEC investigations with the rich watershed-based data sets developed in MN because of the Clean Water Fund.

This provides an opportunity to more broadly look at links between CECs and environmental effects, and the relative importance of CECs vs. conventional contaminants to overall water quality and watershed health. An angle that sometimes seems missing in our investigations.

Thank you!

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