



Comprehensive Mercury Monitoring Program – Air

Fond du Lac Band of Lake Superior
Chippewa
Cloquet, Mn

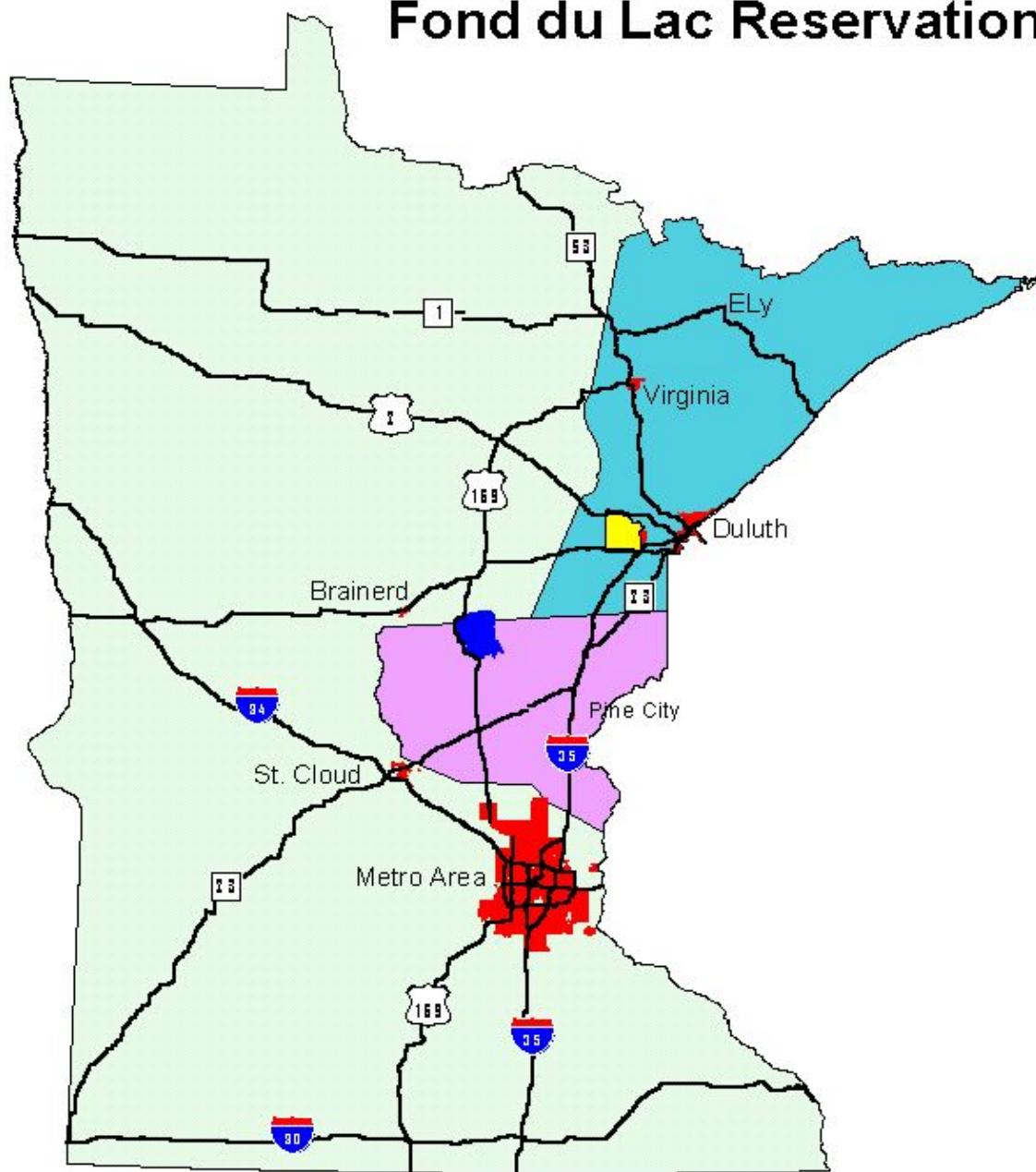
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Air Program Coordinator



Fond du Lac Reservation

- Located in northeastern Minnesota
- Rural area about 20 miles from Duluth/Superior
- Reservation layout
 - 101,000 acres
 - 45,000 wetlands, and 2,855 acres of lakes
 - 3,800 Band members
- Ceded Territories cover 8 million acres

Fond du Lac Reservation and Ceded Territories



Fond du Lac
1837 territory
1854 territory

0 40 80 120 Miles





Fond du Lac Air Program

- Established in 1999
- 2.0 FTE – 1 full time and 2 part time
- Have monitored for 6 pollutants
- 105 TAS status – comment letters
- Offer input into local, regional and national workgroups





Concerns with Mercury

- Boreal forest/wetland ecoregion is very sensitive to mercury deposition.
- Methylation occurs due to watershed characteristics.
- Bioaccumulates up the food chain



Mercury in Minnesota (Year 2005 Data)

- 3,341 lbs released in MN (down from 3600 lb in 2000).
- 98% was discharged to the atmosphere.
- Only 10-30% of deposition comes from in-state sources.
- 58% of mercury emitted comes from energy production (up from 51%).
- 22% is from “purposeful uses” (down from 28%).
- 20% is from materials processing (down from 21%).



Precipitation Deposition Site History

Site established in 1997 in cooperation with Glass and Sorensen at University of Minnesota – Duluth (UMD) and with Cloquet Forestry Center.

- Wet deposition monitor
- Cold vapor atomic absorption analysis
- Sample collected weekly

Updates at site

- Replaced old M.I.C. monitor with NTN monitor (2002) although not using NTN analysis
- Implemented methyl mercury analysis in Sept. 2000 and ended in March 2005



10 4:03PM

MDN78

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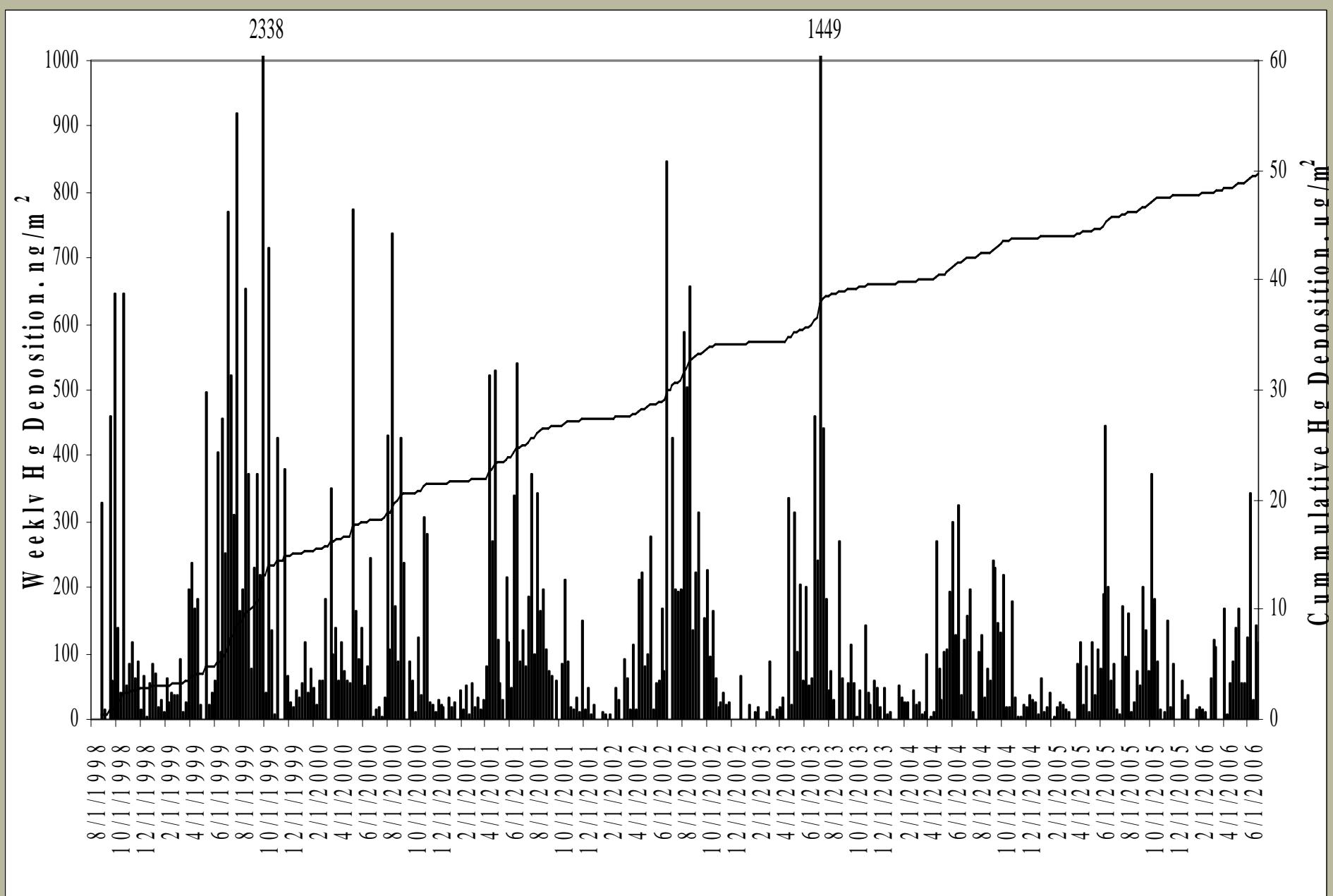
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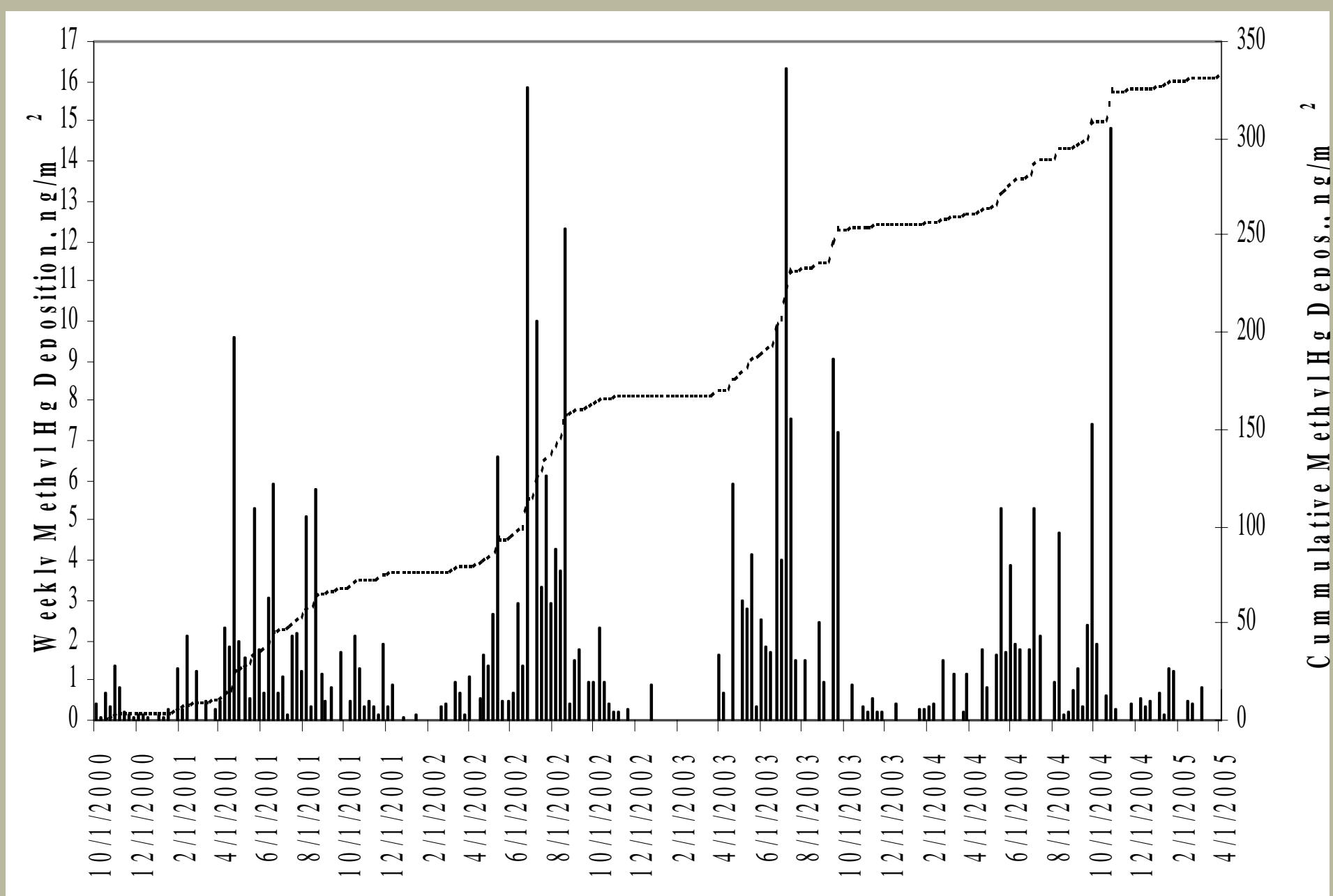




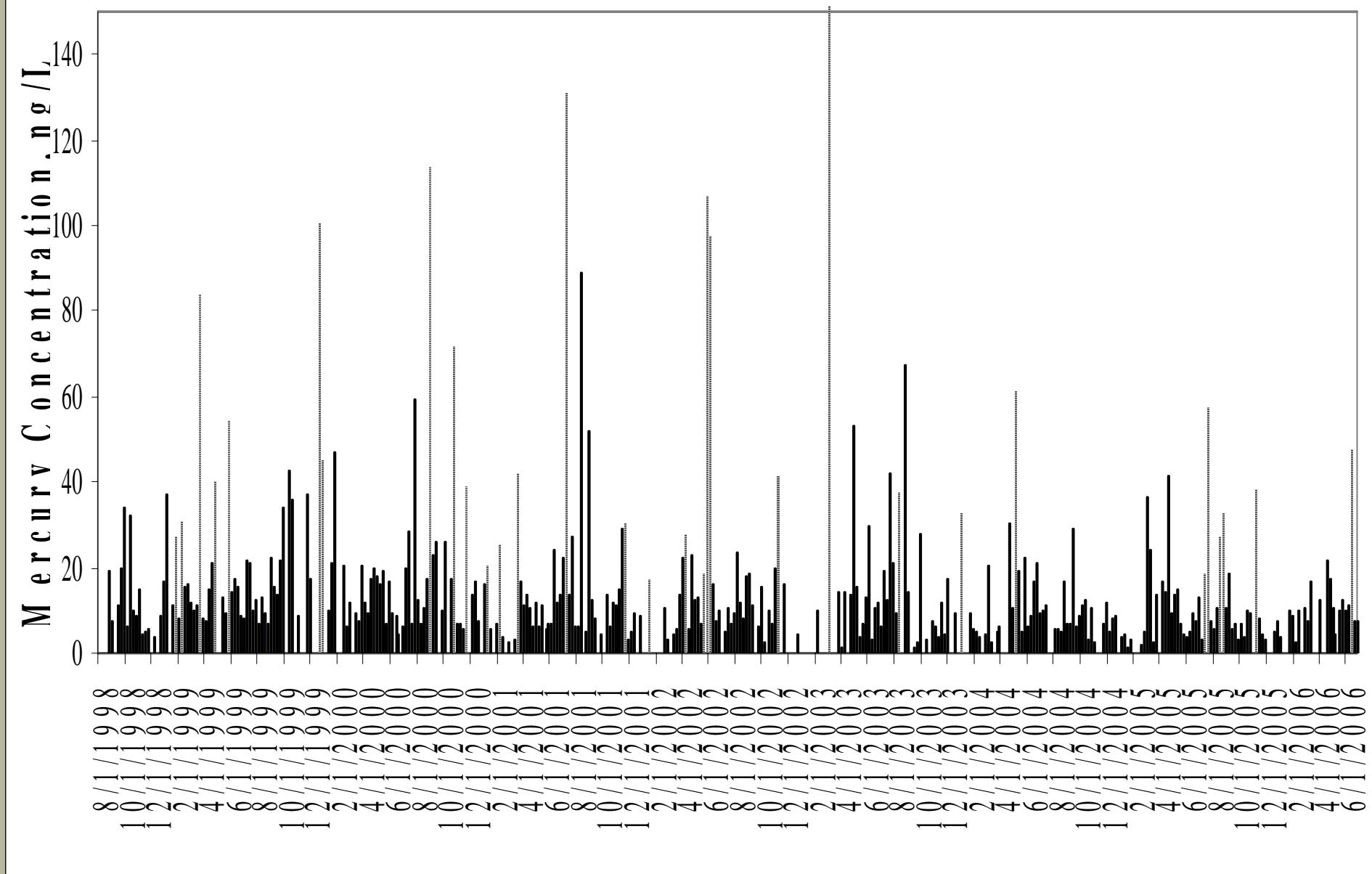




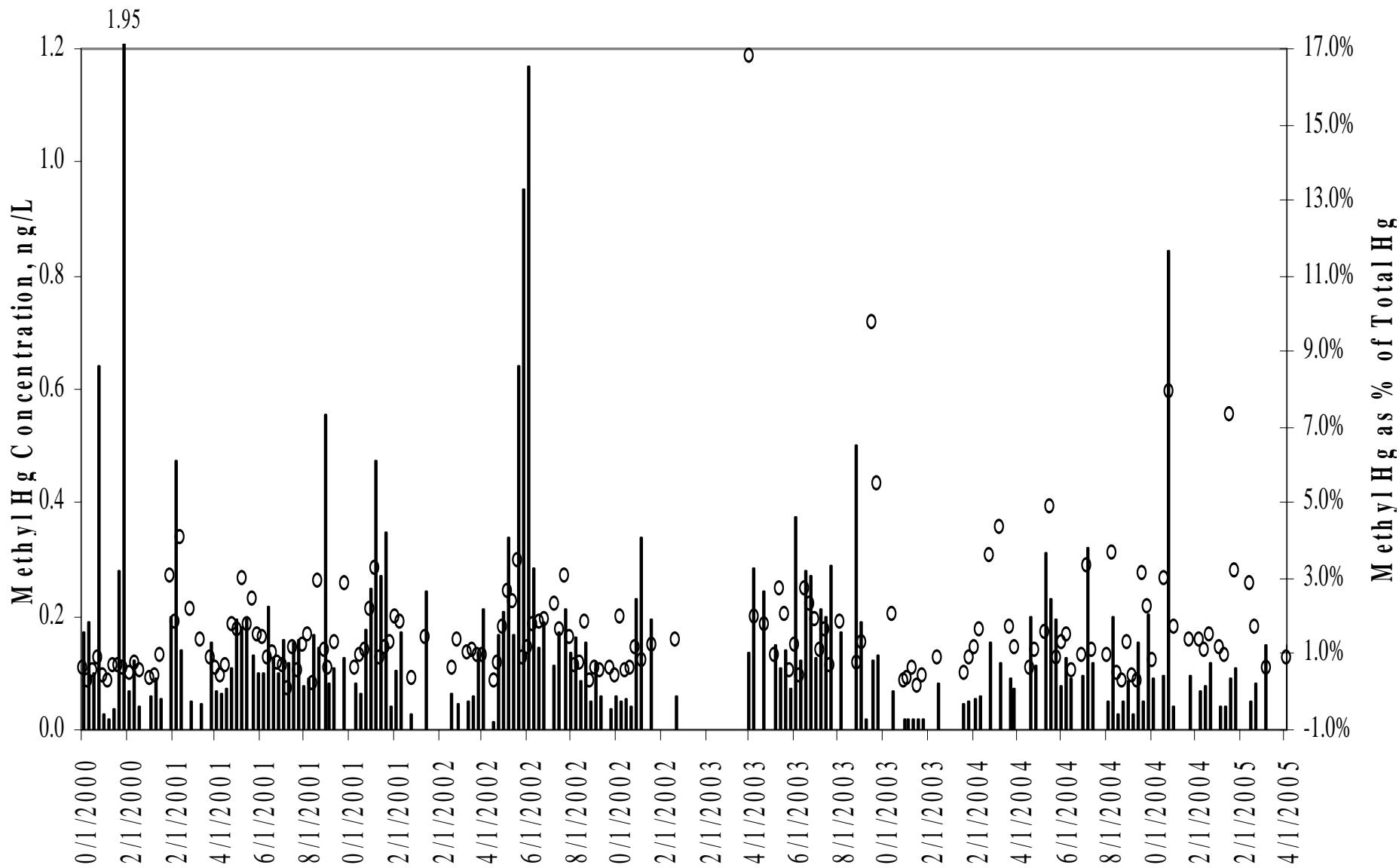
Weekly (bars) and cummulative (line) wet deposition of total Hg collected near Cloquet, MN.



Weekly (bars) and cummulative (line) wet deposition of MeHg collected near Cloquet, MN.



Weekly concentrations of total Hg in precipitation. Dotted bars represent events of less than 0.1 cm precipitation depth.



Bars indicate MeHg concentrations. Circles indicate ratios of MeHg to total Hg concentrations.



Future air developments

- More taconite plants coming online
 - Localized hotspots
- Secure funding
 - Tribe is paying for monitoring
- Restart methyl mercury monitoring