



From the Stream to the Internet and Board Room



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Outline

- Why we collect data
 - Data storage and access
 - Data use and interpretation
 - Making informed decisions
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Why Collect Data

Four General Types of WQ Monitoring

1. Condition
 2. Education & Awareness
 3. Problem Investigation
 4. Effectiveness
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Goals

- Monitoring programs should be designed to meet specific goals.
 - What do you want to learn? What questions do you want the data to answer? Does data already exist that can answer your questions?
 - Establishing goals is the 1st step in setting up a monitoring program.
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Data Use

- How will the data be used? What types of assessments will you conduct with the data? How will you answer the questions? If a model will be used, what are the data requirements?
 - The end use of the data should drive the entire monitoring process.
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Data Use

- What level of rigor is required? Data quality objectives are set based on the end use of the data.
 - Intended use of data vs. unintended.
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Condition Data

- Can be used to:
 - assess the status of the resource
 - assess trends in WQ
 - calculate pollutant loads
 - assess for correlations between constituents
 - assess for impairments

IF the program is designed to do so.



Data Storage and Access

- Water quality data is housed in many locations.
 - When programs are funded by the MPCA or EPA, they require that data be stored in the federal database called STORET (storage and retrieval)
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Data Sources

- The Internet - an enormous source of information about everything, is the place to start looking.
- <http://www.pca.state.mn.us/daa/eda/index.cfm>
- <http://climate.umn.edu/>
- <http://mn.water.usgs.gov/>
- <http://preview.dnr.state.mn.us/lakefind/index.html>
- <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>
- <http://www.rrbdin.org/tools/>
- <http://riverwatch.umn.edu/>
- <http://www.epa.gov/STORET/>



RRB Decision Information Network

- Decision Support System
 - “A DSS does not replace a decision maker. Rather, it places the decision maker at the center of the decision-making process so that information and timely assistance can be effectively utilized. As such, a DSS should allow people to combine personal judgment with the results of analysis.”
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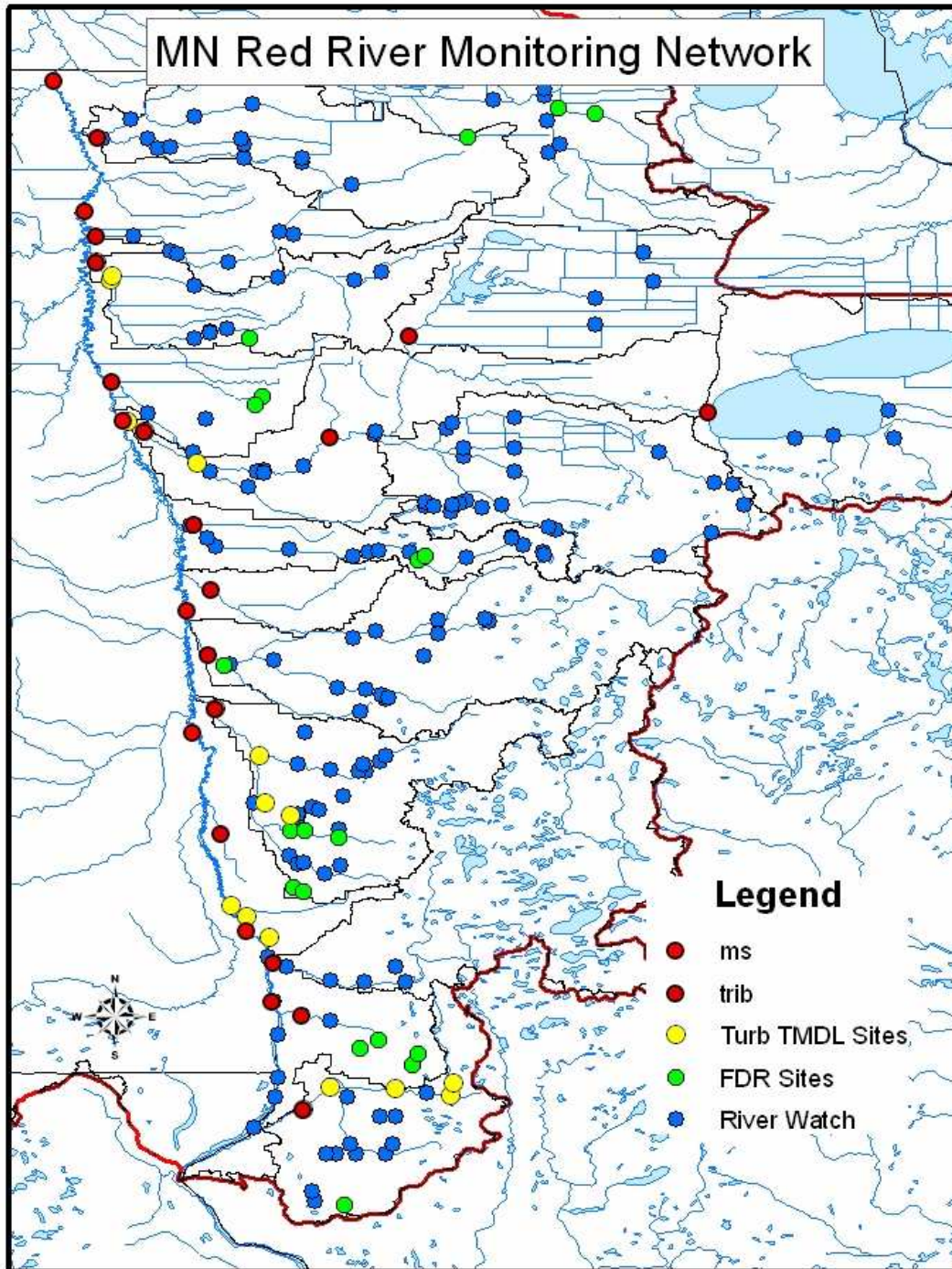
Sources of Data - Who Do I Ask?

- State and Provincial Agencies
 - Federal Agencies
 - Local Water Management Organizations
 - Consultants
 - University or other Research Centers
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Data Use & Interpretation

- Policy makers should have staff available to assist with finding, organizing and interpreting data.
 - Water management decisions can have positive or negative impacts to water quality.
 - The impacts can often be predicted through the review and assessment of existing data and modeling.
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Stream data coverage in MN from 4 programs. There are many more programs being conducted.

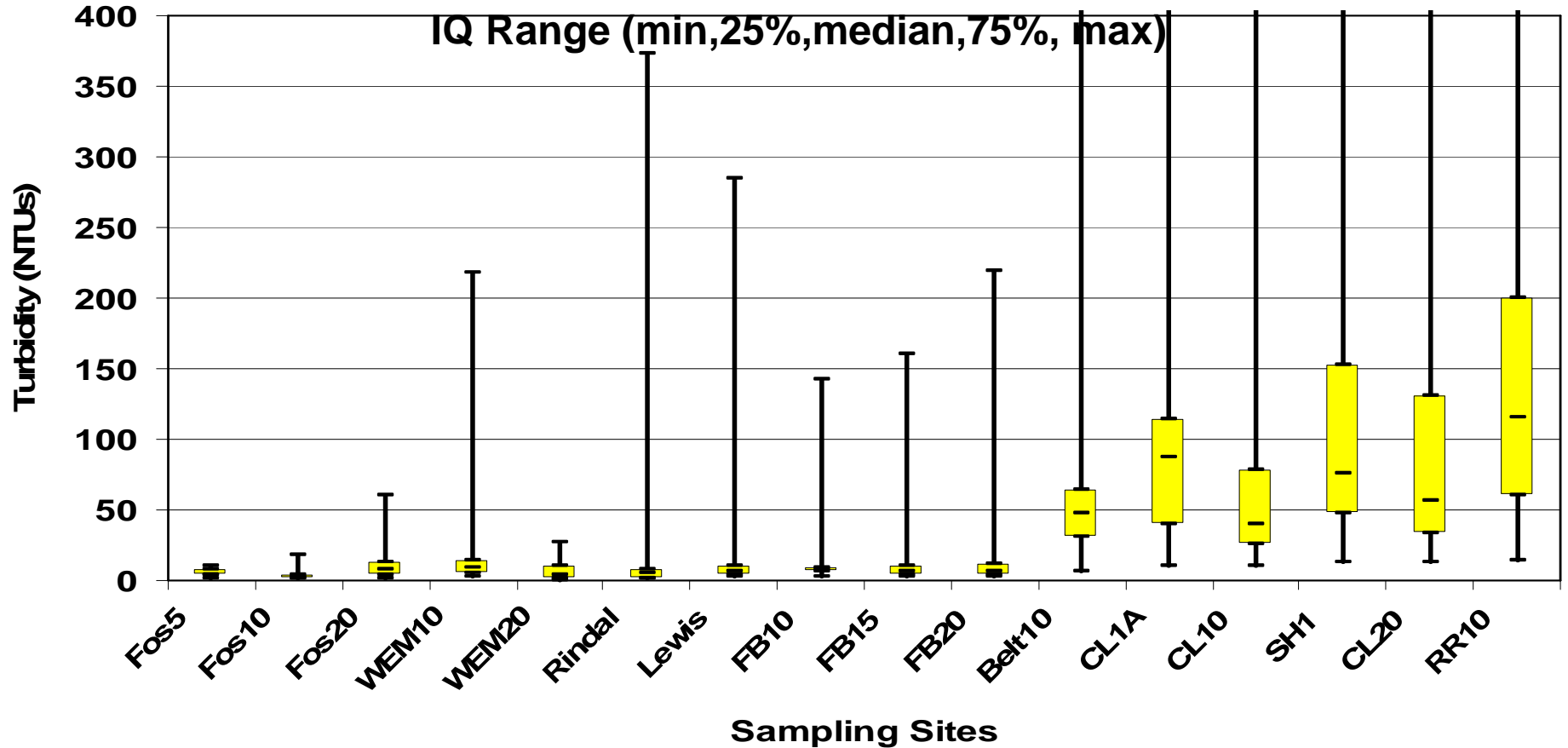


Sand Hill River Turbidity

Headwaters → Confluence w/ Red River

Shows River Watch data used for longitudinal study
to screen for point of impact - potential pollutant sources

Sand Hill River Turbidity, 1994-2005





The Process of Gathering and Using Data

- Develop Goals / Needs
 - Design Monitoring Plan
 - Collect Data (Implement Plan)
 - Prepare and Store Data
 - Data Assessment (Processing)
 - Draft Results
 - Develop Findings/Conclusions
 - Report Findings/Conclusions to Data User
 - Conclusions Used in Decision Making
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Data Rich Information Poor Syndrome

There is an enormous amount of data available that is not being used in critical decision making processes.

“Data is likely the most important part of any decision.”



Science & Policy – The Perfect Marriage?

- Scientists (most) understand that Policy decisions are based on a host of factors that may or may not include scientific data.
- Policy makers (most) understand that Science can often provide useful information to make informed decisions.
- “Information influences decisions in a perfect world.”



IN GOD WE TRUST,
ALL OTHERS NEED DATA
