

Lake Winnipeg: What have we heard?

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Our common history...

- Our relationship began 14,000 years ago when glacier action described a common drainage area.
- 180 years ago – “God is responsible for this.”
- 103 years ago - 1909 Boundary Waters Treaty – an elegant, forward thinking document.
- 23 Years ago – Organized The International Coalition, and subsequently Red River Basin Commission – held first Land and Water Stewardship Conference to engage grassroots level participation.

Some common themes...

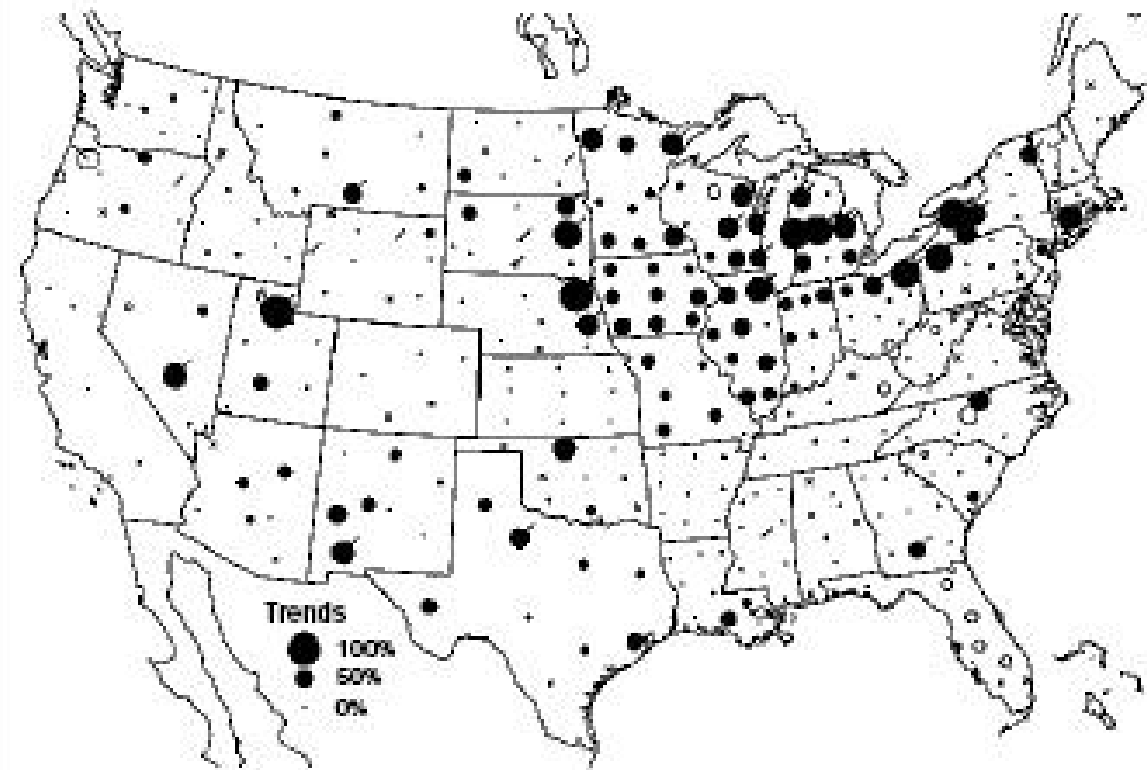
- “Extremes” are normal.
- The interactions between/among stresses are common and make necessary a comprehensive, ecosystem approach.
- Natural Resources Framework Plan is for the basin, not just for the RRBC.
- Good will, trust and respect are the basis for authority.
- Imagination is more important than knowledge.

Extremes are normal...

- Wet years
- Flood preparedness
- Drought planning
- Agriculture in the normal (extreme) years
- Weather events are commonly extreme here.
- Extreme weather events are likely in our future.

Figure 5

Linear trends in frequency of heavy precipitation events over the contiguous United States, 1931 to 1996.



United States climate division trends in frequency of precipitation events of 7-day duration exceeding a 1-year recurrence interval. Shaded circles indicate upward trends while open circles indicate downward trends. The magnitude of the trend is given in terms of the percent increase or decrease over the period 1931-1996 relative to the 1931-1996 mean. As indicated in the key, the magnitude of the trend is linearly proportional to the radius of the circle. A tail attached to the upper right indicates positive trends with local significance at the 5 percent level. A tail attached to the upper left indicates locally significant negative trends. An "x" indicates a climate division with no stations with complete records for the period 1931-1996.

Source: Kunkel et al. 1999a. Copyright held by the American Meteorological Society.

Historical data for 1931 to 1996 relative to mean for that period.

Black circles indicate increase in frequency of heavy precipitation events. (1 yr recurrence interval)

Size of the circle indicates magnitude of change.

Classes of stresses ...

- Over-harvesting of fish (Great Lakes System)
- Nutrient loading
- Land use practices
- Hazardous chemicals and physicals
- Harmful biologicals
- Hydrologic alterations
- Climate change

Lake Winnipeg Stresses

- Nutrient loading – N and P
- N and P concentrations have increased significantly over the past 30 years.
- Red River contributes 8% of water, 55% of P and 24% of N
- Observed anoxic conditions this summer.
- Everyone is a contributor; everyone is part of the solution.
- Interim goal of 10% reduction in 5 years.

Comprehensive approach

- Natural Resources Framework Plan
 - A guide for the basin to be used by all resource managers and decision makers
 - To track activities and accomplishments.
 - To celebrate successes and acknowledge the work that all partners accomplish.

Who is implementing the NRFP?

- Watershed Districts, Conservation Districts, Water Resource Boards
- Soil and Water Conservation Districts
- City, Municipal, County Governments
- Consultants, engineers
- State, Provincial and Federal Agencies
- Red River Basin Commission
- Lake Winnipeg Research Consortium
- Lake Winnipeg Foundation
- International Water Institute
- Red River Water Management Consortium
- Conservation NGO's
- Schools, Colleges, Universities, Researchers, Students
- Individuals
- Others

Good Will, Trust and Respect

- Effectiveness of Water Management Organizations
- What are the challenges in achieving these?

Imagination....



- Imagine significant improvements in water conservation
- Imagine reducing nutrient loading by 50% over the next 20 years
- Imagine a resilient agriculture that protects and provides ecosystem services.
- Imagine your role in managing our basin.
- Imagine..