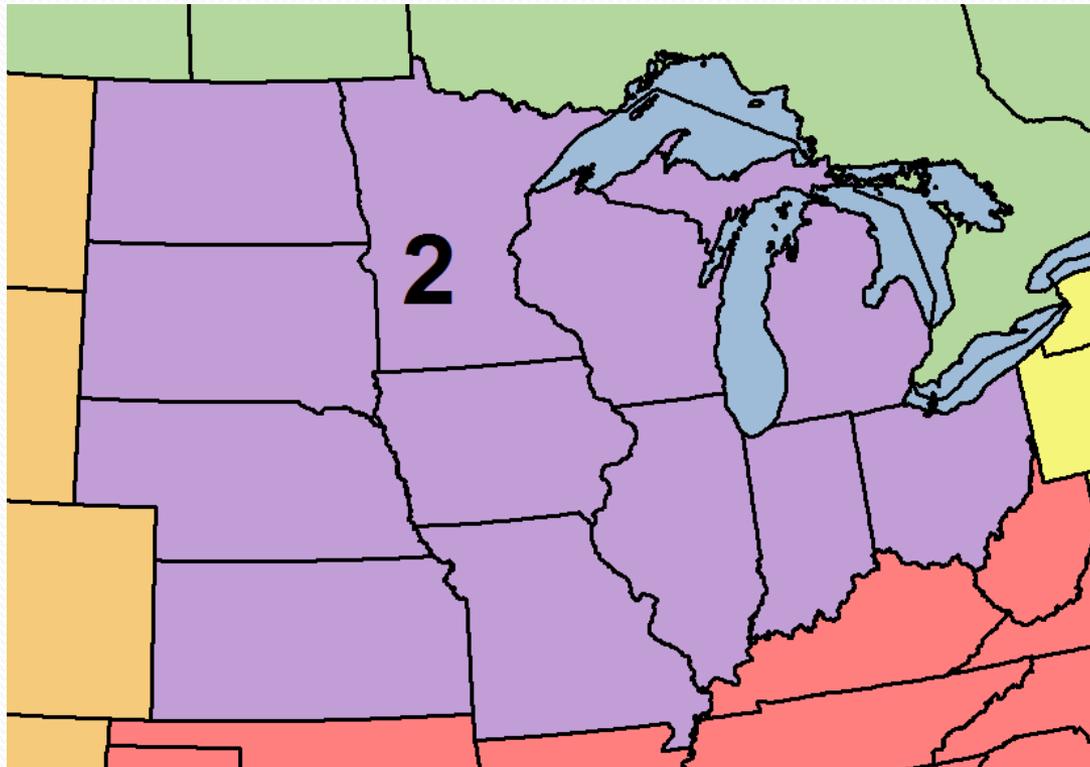


# IFC Region 2 Drought Planning Efforts



# IFC Region 2

- Consists of 12 states.
  - Iowa, Kansas, Michigan, Minnesota, Missouri, & Wisconsin
- Region is a mix of prior appropriation and riparian water law.

# Iowa

- Iowa Water plan updated in 2010.
- Includes subsection dedicated to water rights and allocation that also deals with drought. That section outlines that Iowa DNR needs too:
  - Establish rules that define water allocation priorities to guide the allocation process during droughts.
  - Establish emergency shortage priorities
  - Encourage local response to water shortages by requiring public water supplies to include provisions for restricting consumptive water use in their emergency conservation plans
  - Promote water conservation.
  - Improve the effectiveness of “Protected Flow” measures using best available science

# Kansas

- No formalized procedure
- The Governor or The Kansas Water Office (KWO) can declare a drought.
- If drought declared KWO solicits input from other agencies on drought impacts and potential steps.
- During dry periods KWO has lead efforts to develop a formal plan but nothing has been completed
- Stream flows tend to rank lower than reservoir levels.
- There were some minimum desirable streamflows (MDS) established in the 80's in some areas. Tend to be suboptimal.

# Michigan

- Michigan DNR does not have a drought plan, but do participate in the Water Use Advisory Council
- Water use is Regulated by the Department of Environmental Quality
- Have strict legislatively backed water permitting guidelines
- Permittee requests go through a water withdrawal assessment of individual and cumulative impacts to system
- All permits include conservation measures.
- Process meant to limit impacts and protect flows during all conditions
- No drought specific guidelines or rules.

# Minnesota

- MNDNR is authorized by 1990 legislation to establish and maintain a drought plan.
- Minnesota Statutes (MS), Section 103G.293 states:
  - "The commissioner shall establish a plan to respond to drought-related emergencies and to prepare a statewide framework for drought response. The plan must consider metropolitan water supply plans of the metropolitan council prepared under section 473.156. The plan must provide a framework for implementing drought response actions in a staged approach related to decreasing levels of flow. Permits issued under 103G.261 must provide conditions on water appropriation consistent with the drought response plan established by this section."
- Major participants: MNDNR – DNR Waters, Metropolitan Council, USACE, Water Users and Suppliers, Governor
- [https://www.dnr.state.mn.us/waters/surfacewater\\_section/stream\\_hydro/mississippi\\_low\\_flow\\_links.html](https://www.dnr.state.mn.us/waters/surfacewater_section/stream_hydro/mississippi_low_flow_links.html)

# Minnesota

- Plan divides state into 12 drought plan watersheds
- Establishes 5 drought phases / triggers driven by US Drought Monitor:
  - Non-drought: planning and strategy development
  - Drought Watch: inform Drought Task Force & increase monitoring efforts, implement voluntary reduction measures
    - Trigger: significant portion of a watershed in “Abnormally Dry” or “Moderate Drought” condition
  - Drought Warning: convene Drought Task Force, public suppliers reduce use to 50% above January levels
    - Trigger: significant portion in “Severe Drought” or for public suppliers Mississippi River gage near Anoka is at or below 2000 cfs for 5 consecutive days

# Minnesota

- 5 drought phases / triggers continued:
  - Restrictive Phase: implement MNDNR allocation restrictions, public suppliers reduce to 25% above January levels, & minimize non-essential use.
    - Trigger: significant portion in “Extreme Drought” or Anoka gage at or below 1500 for 5 consecutive days
  - Emergency Phase: Advise Governor on need to declare Emergency , reduce to January levels, limit water use based on highest priorities defined in statute.
    - Trigger: significant portion in “Exceptional Drought”, Anoka gage at or below 1000 cfs for 5 consecutive days, or highest priority water needs not being met.

# Missouri

- The Missouri DNR has a drought plan developed in 1995 and revised in 2002
- Indices used to determine drought:
  - Palmer Drought Severity Index (PDSI)
  - Crop Moisture Index (CMI)
  - Standardized Precipitation Index (SPI)
  - Streamflow percentiles
  - Recent precipitation amounts and percent of normal, e.g. 7---day, 30---day, 90---day

# Missouri

- Plan defines four phases of Drought
- Phase 1: Advisory Phase
  - Climate and Weather Committee monitors conditions and recommends Governor declares a Drought Alert
- Phase 2: Drought Alert
  - PDSI at least -1.0 and streamflows, reservoir, and groundwater levels below normal for several months. Declared drought alert activates Drought Assessment Committee.
  - Committee members include most state and federal agencies. Coordinate with and advise Governor.
  - Activate impact teams: technical experts from agency staff

# Missouri

- Phase 3: Conservation Phase
  - PDSI is -2.0 to -4.0 and streamflows, reservoir, and groundwater levels continue to decline
- Phase 2: Drought Emergency (Water Rationing)
  - PDSI is less than -4.0. Drought Emergency declared by Governor.

# Wisconsin

- No formal drought Plan
- Wisconsin's Department of Health Services has developed a drought tool-kit.
- <https://www.dhs.wisconsin.gov/publications/po/p00884.pdf>
- The tool-kit serves as a planning guide to help local governments, agency staff, and public deal with drought.
- Under Wisconsin's "Home Rule" principle drought preparedness and response are considered local activities.
- Local or county governments will be the lead during a drought event although they can request assistance from the state.