Water Blueprint

Background

The Water Blueprint was developed to inform NWT CIMP funding applicants of priority water-related monitoring and research for the program. The Blueprint also guides the NWT CIMP Steering Committee and staff on the allocation of NWT CIMP funds.

The Blueprint describes information that is necessary to understand cumulative impacts on water. NWT CIMP has adopted the Canadian Council of Ministers of the Environment (CCME) definition of cumulative impacts as a change in the environment caused by multiple interactions among human activities and natural processes that accumulate across space and time. As a product of the Mackenzie Valley Resource Management Act, NWT CIMP is focused on monitoring cumulative impacts that are relevant to land and water management issues in the NWT.

NWT CIMP is currently focused on geographic areas of past, current or proposed development. These are areas where cumulative impacts from human activities are most likely, and decision-makers will be interested in the results. The Water Blueprint is aligned with the priorities of the 2017 GNWT Knowledge Agenda and the Water Stewardship Strategy.

Along with "caribou" and "fish", the theme of "water" was chosen as a key monitoring and research priority in a survey of NWT environmental decision makers and regulators in 2011. The Water Blueprint contains water monitoring and research priorities of NWT land and water regulators and subject-matter experts. NWT Land and Water Boards and the Mackenzie Valley Environmental Impact Review Board provided NWT CIMP with broad priorities for monitoring of cumulative effects of human and natural disturbance on water in 2011. These priorities were revisited in 2014 and reconfirmed by NWT regulators.

NWT CIMP engaged over 30 subject-matter experts with direct involvement in water research and management in the NWT to refine these priorities into specific monitoring and research themes that can be addressed via the proposal process. Experts included staff from Indigenous renewable resource and co-management boards, Federal and Territorial government scientists, university researchers, and environmental consultants. NWT CIMP staff assessed and compiled the responses into the Blueprint. NWT water regulators and subject-matter experts, and the NWT CIMP Steering Committee reviewed the draft Blueprint. The Blueprint is reviewed and updated annually.

Water Monitoring Themes

Discussion as per the above resulted in three themes:

1. Compile and analyze existing data
2. Understand impacts of anthropogenic and natural disturbances on aquatic systems
3. Collect and analyze of baseline regional aquatic data in areas of development interest

Specific research priorities are listed under each theme. Some priorities could fall under more than one theme, but to minimize redundancy they are only listed once.

NWT CIMP Funding Priorities

1. **Compile and analyze existing data**
    a. Compile and analyze existing long-term aquatic monitoring data to assess:
        i. Cumulative impacts of natural and anthropogenic influences on aquatic systems
        ii. Spatial and temporal trends
        iii. Regional variability of aquatic health parameters
        iv. Predominant drivers of variability

2. **Understand impacts of cumulative impacts of anthropogenic and natural disturbances on aquatic systems**
    a. Identify cumulative impacts of disturbances on aquatic health
    b. Identify links between terrestrial and aquatic systems in areas impacted by disturbances
    c. Identify key aquatic ecosystem indicators of stress
    d. Determine resilience and ecological thresholds of aquatic ecosystems
    e. Determine impacts of specific development activities on aquatic health
    f. Determine potential impacts to community drinking water supplies

3. **Collect and analyze baseline regional aquatic data in areas of past, current, or future development interest**
    a. Collect regional baseline aquatic health data in areas of past, current or future development interest/other priority areas. Focus on understanding the predominant drivers of variability.
    b. Develop an increased understanding of seasonal variability in aquatic health parameters

Note: NWT CIMP defines aquatic health parameters as physical measures of surface water and groundwater (including water quality and quantity) and of biotic elements (except fish, please see the Fish Blueprint).