NWT CIMP Fish Monitoring and Research Blueprint

NWT CIMP focuses on three valued components: caribou, water and fish. Please see the other Blueprints if your project has the potential to overlap. For more information, visit our Action Plan and Funding Guides at www.nwtcimp.ca.

Background

What is the Fish Monitoring and Research Blueprint and how is it to be used?

The Fish Blueprint informs NWT CIMP funding applicants of fish-related monitoring and research priorities of key land and water regulators and subject-matter experts. It describes information that is necessary to understand cumulative impacts to fish.

For science projects to be considered for NWT CIMP funding, project submissions _must_ demonstrate that they meet Blueprint priorities. The Blueprint guides the NWT CIMP Steering Committee and staff on the allocation of funds. See the NWT CIMP Science Project Funding Guide for more information on the funding process.

Who developed the Blueprint?

NWT CIMP annually engages subject-matter experts with direct involvement in fish monitoring, research and management to update specific monitoring and research priorities. Experts include co-management boards, government scientists and the NWT CIMP Steering Committee.

NWT CIMP's Key Principles

NWT CIMP's principles guide us in meeting our mandate and inform project funding allocations. Applicants should be aware of these principles, and, where possible, align their proposals with them. Important principles that applicants should consider are:

- Monitoring cumulative impacts that are relevant to land and water use decisions is a strong focus.
- Indigenous Knowledge and scientific knowledge are equally important sources of monitoring information and data.
- Community-based monitoring and capacity building are supported in monitoring cumulative impacts.
- Effects- and stressor-based approaches are encouraged.
- Use of common and standardized data collection and analysis protocols is encouraged.

The Fish Monitoring and Research Blueprint

This section details specific locations, methods and topics of focus that are priorities for NWT CIMP.

Where: Geographic locations of study

NWT CIMP prioritizes research and monitoring in areas impacted by disturbances, or vulnerable to disturbances. These include:

- Areas of past, current or future development interest;
- Areas impacted by climate change related disturbances; and
- Areas vulnerable to impact by climate change.

<u>*How: Approach(es)*</u>

NWT CIMP supports several monitoring and research approaches. These include:

- Synthesis and analysis of existing research or monitoring data;
- Collection and analysis of new data, using standardized methodology when possible;
- Model development and/or implementation (e.g. empirical or physically-based models); and
- Collection and synthesis of Indigenous Knowledge.

<u>*What: Priorities*</u>

NWT CIMP's priorities are summarized below in Tables 1 and 2. To be considered for funding, the project proposal <u>*must*</u> identify one or more priority areas <u>*from each column*</u> in Table 1 OR identify one or more priorities from Table 2.

Table 1: Fish priority areas related to disturbances, fish related factors of interest, and scales of study

Many of NWT CIMP priorities can be grouped according to the statement: **"The impact(s) of** [*disturbance(s)*] **on** [*fish-related factor(s)*]**, at the scale of** [*scale(s) of study*]**."**		
Disturbances *(identify one or more)*	***Related factors*** *(identify one or more)*	***Spatial scale(s) of study*** *(identify one or more)*
• Human activities (e.g. road, mines, pipelines) • Climate change-related and/or natural disturbances (e.g. permafrost thaw, precipitation change, forest fires)	Aquatic ecosystem health: • fish populations • fish health • contaminants in fish • fish habitat	• Regional-scale (e.g. Dehcho, Mackenzie Delta, Ts'udé Nilįné Tuyeta) • Catchment-scale (e.g. Marian Watershed, Baker Creek catchment, community catchments) • Local/point-scale (e.g. a landslide, around a mine, a specific lake)

Table 2: Additional fish priorities

Additional Priorities
▪ Identifying key aquatic ecosystem indicators of stress or the components of the system most susceptible (and measurable) to change.   ▪ Identifying predominant drivers of variability, and their relative importance.   ▪ Increasing our understanding of processes driving disturbance-impact relationships.   ▪ Increasing our understanding of resilience and ecological thresholds in aquatic ecosystems.   ▪ Identifying mechanisms of contaminant movement through the food web and ecosystem.   ▪ Thresholds limiting abundance, distribution, or habitat use.   ▪ Establishing baseline conditions, seasonal variability, and/or long-term trends.

Note: When studying heavy metals in fish tissue, if it is determined that total arsenic concentration exceeds 3.5 ppm or the total mercury exceeds 0.5 ppm in fish tissue, NWT CIMP requires that the waterbody be identified to NWT CIMP and GNWT Health and Social Services. Researchers who are interested in establishing the relationship between total arsenic and the various species of arsenic within fish tissue should contact NWT CIMP for more information.