



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 key fish-related cumulative impact monitoring and research priorities of key land and water regulators and subject-matter experts. It describes information that is necessary to better understand cumulative impacts to fish and the relationships between people and 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 informs the Blueprint?

NWT CIMP engaged subject-matter experts with direct involvement in fish monitoring, research and management to update specific and high monitoring and research priorities. These are NWT CIMP's funding priorities for the duration of the current Action Plan (2021-2025). Experts engaged included co-management boards, government scientists and regulators, 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.
- Traditional 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 are encouraged.

The Fish Monitoring and Research Blueprint

This section details the locations, methods and topics of focus that are high 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.

How: Approach(es)

NWT CIMP supports several monitoring and research approaches including:

- 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
- Community-led collection and synthesis of Traditional Knowledge, including people-fish relationships.

NWT CIMP places a high priority on the use of Traditional Knowledge in environmental monitoring and research. Traditional Knowledge is an important source of knowledge to better understand each of the following priorities. Identifying cultural indicators and methods, changing people-fish relationships and traditional use mapping are monitoring and research approaches that could be considered. For additional information, refer to [Traditional Knowledge Monitoring Ideas](#).

What: Priorities

NWT CIMP's priorities are summarized in table 1 below and include disturbances from human activities and climate change. To be considered for funding, the project proposal *must* identify one or more priority areas *from each column*.

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

<p>Many of NWT CIMP priorities can be grouped according to the statement:</p> <p style="text-align: center;">“The impact(s) of [disturbance(s)] on [fish-related factor(s)], at the scale of [scale(s) of study].”</p>		
<i>Disturbances</i> <i>(identify one or more)</i>	<i>Related factors</i> <i>(identify one or more)</i>	<i>Spatial scale(s) of study</i> <i>(identify one or more)</i>
<ul style="list-style-type: none"> • Human activities (e.g. roads, oil & gas, forestry, mining, municipal infrastructure) • Climate change-related and/or natural disturbances (e.g. permafrost thaw, precipitation change, forest fires, flooding) 	<p>Ecosystem-based:</p> <ul style="list-style-type: none"> • identifying key indicators of stress that are susceptible to change • identifying predominant drivers of variability, and their relative importance • understanding processes driving disturbance-impact relationships • understanding resilience and ecological thresholds • thresholds limiting abundance, distribution, or habitat use • establishing baseline conditions, seasonal variability, and/or long-term trends <p>Fish health</p> <p>Contaminants in fish*</p> <ul style="list-style-type: none"> • identifying mechanisms of contaminant movement through the food web and ecosystem <p>Fish habitat</p> <p>People-fish relationships:</p> <ul style="list-style-type: none"> • identifying cultural indicators and methods that can be shared widely. • traditional use mapping • understanding how relationships with fish are changing 	<ul style="list-style-type: none"> • Regional-scale (e.g. Dehcho, Mackenzie Delta, Ts’udé Nilīné Tuyeta, Taiga Plains) • Catchment-scale (e.g. Marian Watershed, Baker Creek catchment, community catchments) • Local/point-scale (e.g. a landslide, greater area around a mine, a specific lake)

***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.