

Applications of IP3 Science: Fish and Fish Habitat, Present and Future

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Fish

Part of the land,
Part of the water.

Part of our economy,
Part of our environment.



Fish and fish habitat – functions

Stock Management –

- Management of “fisheries” – allocations, type of capture gear, spawning escapements
- Usually Agencies, but may be shared between governments and advisory bodies

Restoration and enhancement

- Intervention to increase the productivity of specific habitats for specific fish species;
- Wide range of funding sources & participating agencies, entities, organizations....



Fish and fish habitat – functions

Regulatory

- Environmental assessment, project review, permitting, licensing, monitoring, etc.
- Very wide & constantly changing range of agencies, governments, I- & ENGOs

Planning

- Land Use, Water Use, Municipal, etc;
- “To protect your rivers, protect your mountains”
Emperor Yu of China, 1600 BCE;
- Input from multiple agencies, interests, organizations, communities, institutions, individuals.....
- Indicates what is important.



Important fish to Yukoners – Lake trout



Important fish to Yukoners Arctic grayling



Arctic grayling



Important fish to Yukoners Chinook salmon



Important fish to Yukoners Chinook salmon



Fish habitat management

In recent past, “Place more than process”

- Water quantity;
- Water quality;
- Riparian areas;
- Steady-state – little or no temporal component;
- First documentation = baseline.



Fish Habitat Management

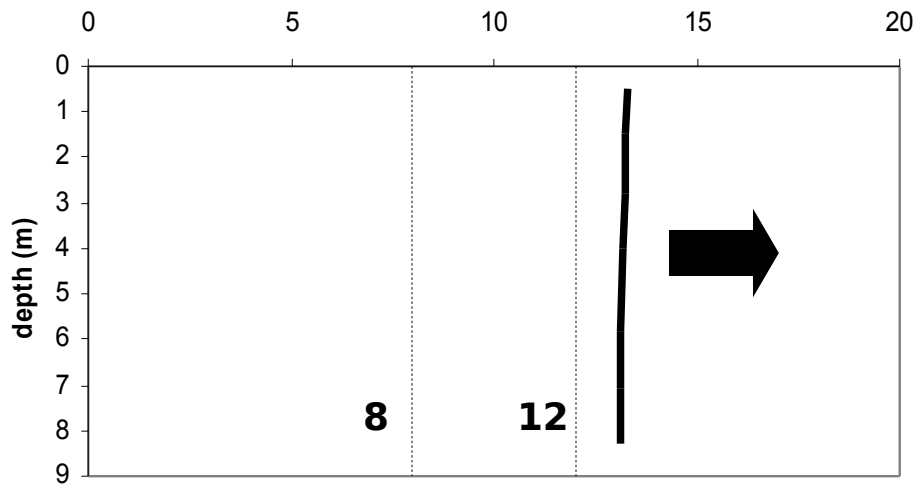
Current – increased/increasing consideration of process and change.

- Watershed & landscape effects;
- Geology & geomorphology;
- Weather, climate;
- Hydrology & geohydrology;
- Thermal regimes;
- Natural disturbance regimes;
- Temporal considerations.



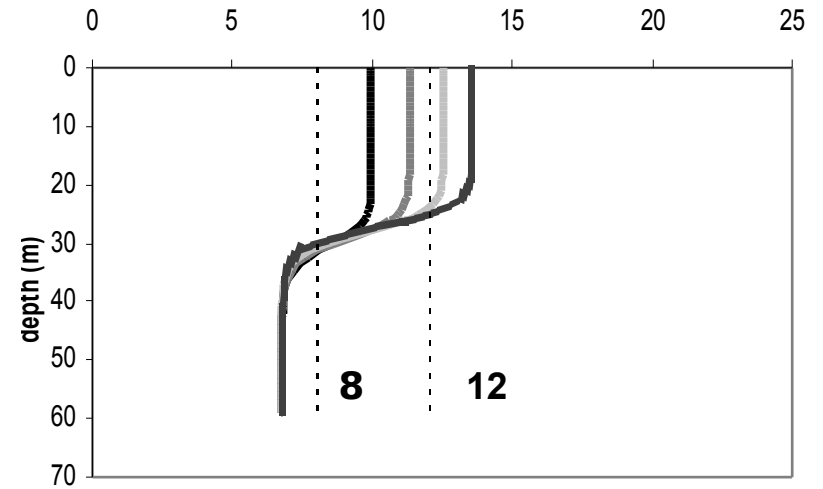
Alligator Lake (G1)

temperature (°C)



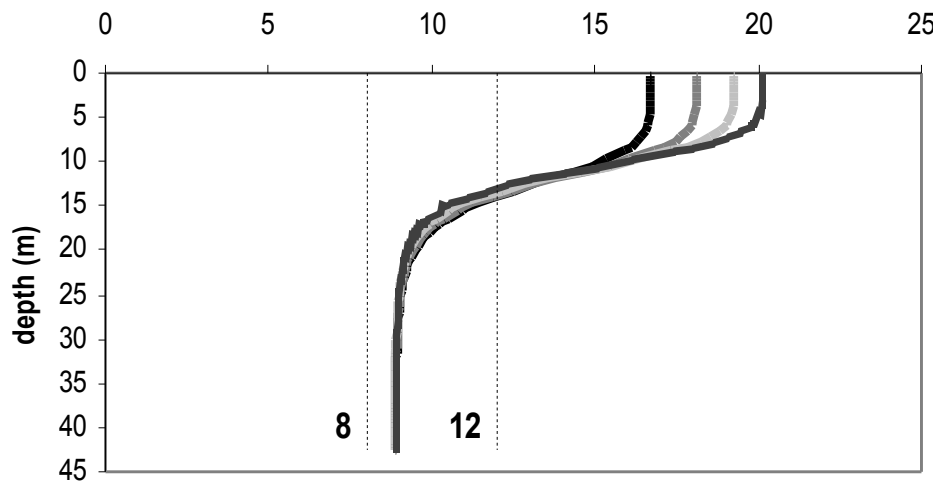
Bennett Lake (G2)

temperature (°C)



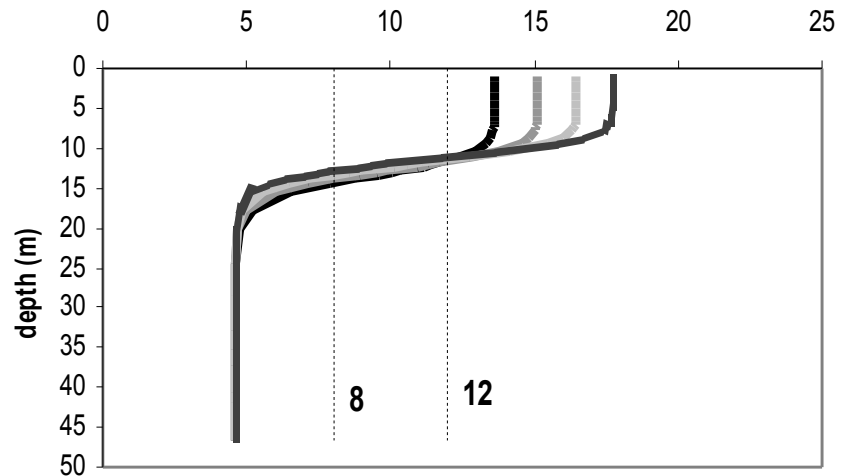
Little Atlin Lake (G3)

temperature (°C)



Granite Lake (G4)

temperature (°C)



Little Salmon Lake –



Ten Mile Creek slide - 2001



Klusha Creek – decreasing flows



IPY & the Present

Yukon

- Small population, and small cadre of Agency personnel;
- Key staff, generally of a single cohort;
- Limited continuity;
- Rapid administrative change – devolution, land claims, etc;
- Rapid technological advances;
- Emerging understanding of need to share information within and beyond Yukon.



IP3 & the Future – a (big) step on the way

- Coalescing of interests to develop and maintain an information planning, gathering, storing, and sharing strategy;
- Development of regionally valid long-term data sets in sentinel water courses and bodies adequate to describe trends;
- Communication of findings to users, decision makers, and the public in a form that they can understand (and accept).



IP3 & the Future Prediction

Allows societal planning for

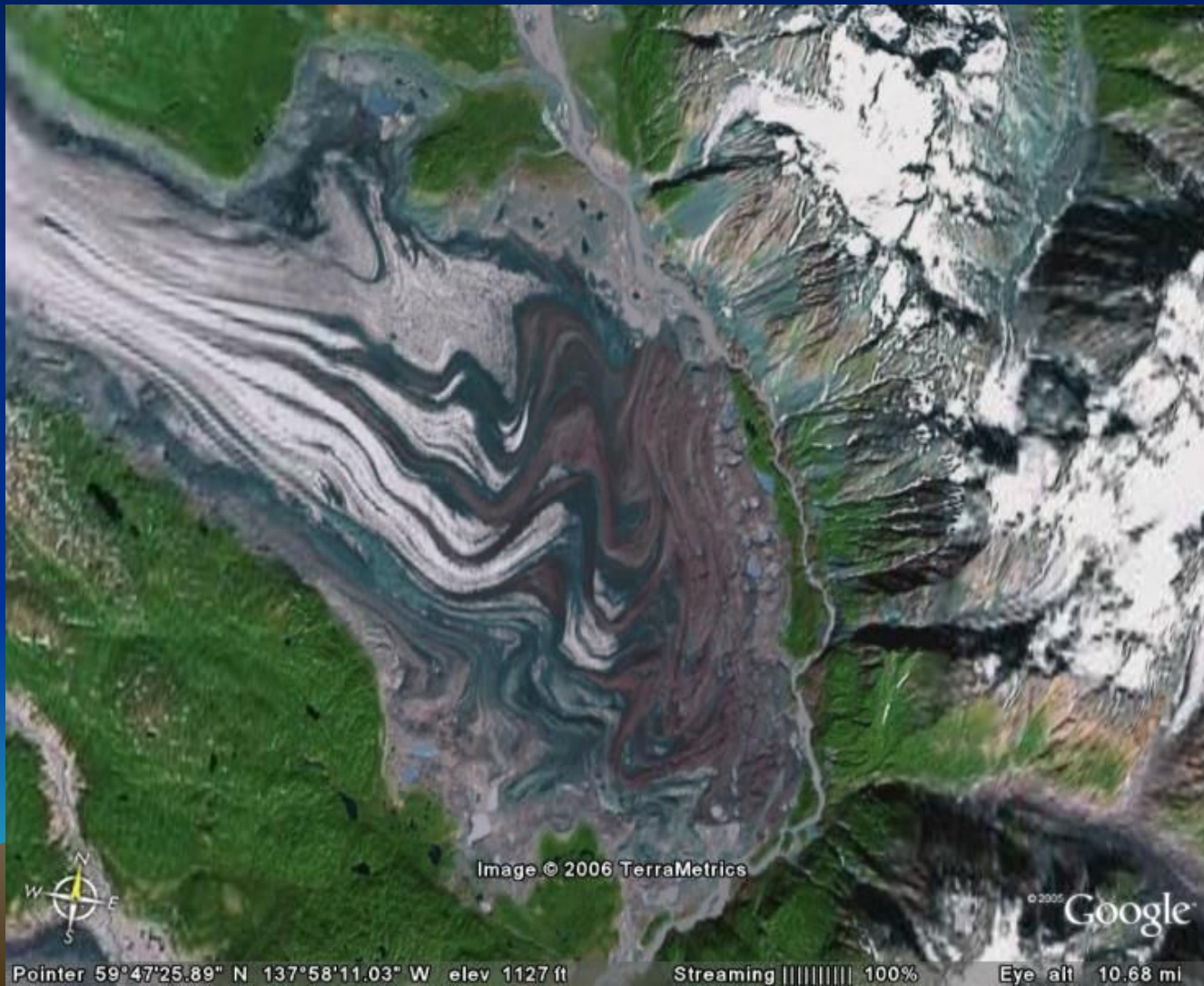
- Protection of economically or socially valued fish species, habitats & aquatic ecosystems.
- Investment in the restoration, enhancement or recovery of fish species and habitats.
- Development of management plans to reduce negative effects and to increase benefits resulting from changes in hydrologic systems.



Glacial Lake Melbern – future sockeye salmon habitat



Tweedsmuir glacier & Turnback Canyon



Turnback Canyon Obstruction to salmon - 2005



Turnback Canyon Surge - 2008



Tweedsmuir Glacier – mid-70's vs 07/08 surge marks



“Short” list of potential interested parties:

Agencies

Federal (Canadian)

**Fisheries and Oceans Canada
Parks Canada
Environment Canada
Indian and Northern Affairs Canada
Foreign Affairs Canada**

Federal (US)

**National Marine Fisheries Service
National Parks Service
U.S. Fish and Wildlife Service
United States Geological Society**

First Nation

Champagne and Aishihik First Nation

Provincial

**B.C. Parks, Min. of Water, Land
and Air Protection**

Territorial

**Environment Yukon
Energy, Mines and Resources**

State

Alaska Department of Fish and Game

Municipal

Village of Haines Junction

Entities

Pacific Salmon Treaty

Pacific Salmon Commission

Trans-boundary Panel

Yukon Land Claims

Yukon Salmon Committee

**Yukon Fish and Wildlife Management
Board**

Alsek Renewable Resource Committee

Alsek Designated Office

**Yukon Land Use Planning
Council/commission**

Organizations

Environmental

Canadian Parks and Wilderness Society

Yukon Conservation Society

Yukon Fish and Game Association

Industrial

Klondike Placer Mining Association

BC/Yukon Chamber of Mines



“We’re all in this together”
Red Green of Canada,
2000 CE

