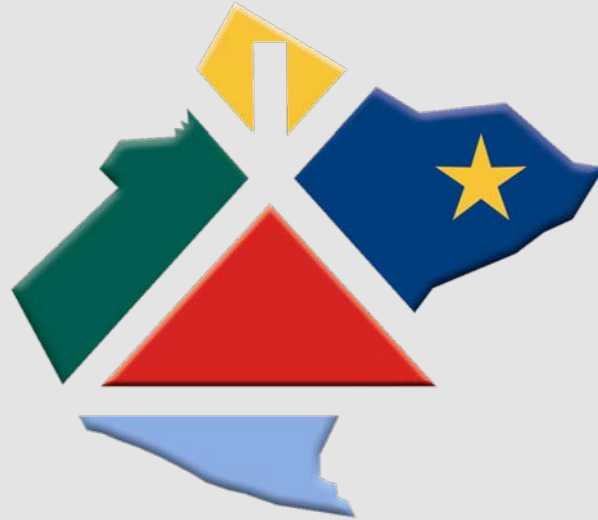


The Role of Monitoring from a Regulatory Perspective



Science in the Changing North Conference
June 15, 2009

presented by: Kathleen Racher, Regulatory Director
Wek'èezhìi Land and Water Board

Jurisdiction of the 4 Land and Water Boards of the Mackenzie Valley





What do the Land and Water Boards do?

The Boards regulate the use of land and water and deposit of waste into water.

```
graph TD; A[Regulate: to control or direct by a rule, principle or method] --> B[Land Use Permits]; A --> C[Water Licences];
```

Regulate: to control or direct by a rule, principle or method

Land Use Permits

Water Licences

How do we use monitoring?

Monitor: to watch closely for the purposes of control; to keep track of; observe.

The Boards use monitoring data to make sure that the water licence being adhered to and that it is effective in protecting the environment.

Regulating Water Use

A licence is required if the amounts you take may affect the environment and downstream users.

The Licence :

- tells the user how much water they can use and from which water source
- requires the user to monitor water quantities or flow and report them to the Board



Regulating the Deposit of Waste into Water

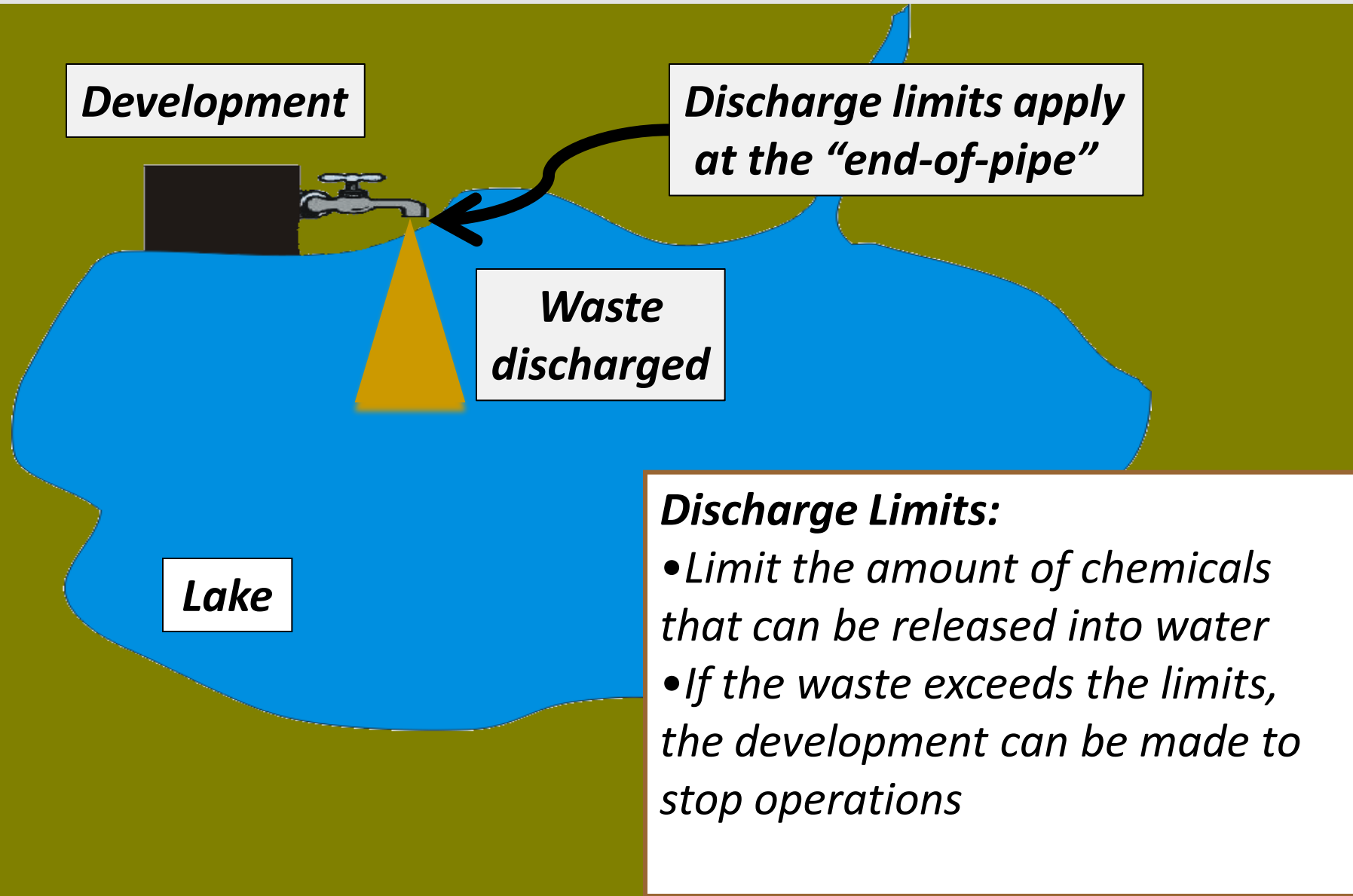
Waste is defined as:

“any substance, that if added to water, would degrade or alter or form part of a process of degradation or alteration of the quality of the water to an extent that is detrimental to its use by people or by any animal, fish or plant...”

- *NWT Water Act*



Water Licences contain rules for controlling waste and its release to the environment



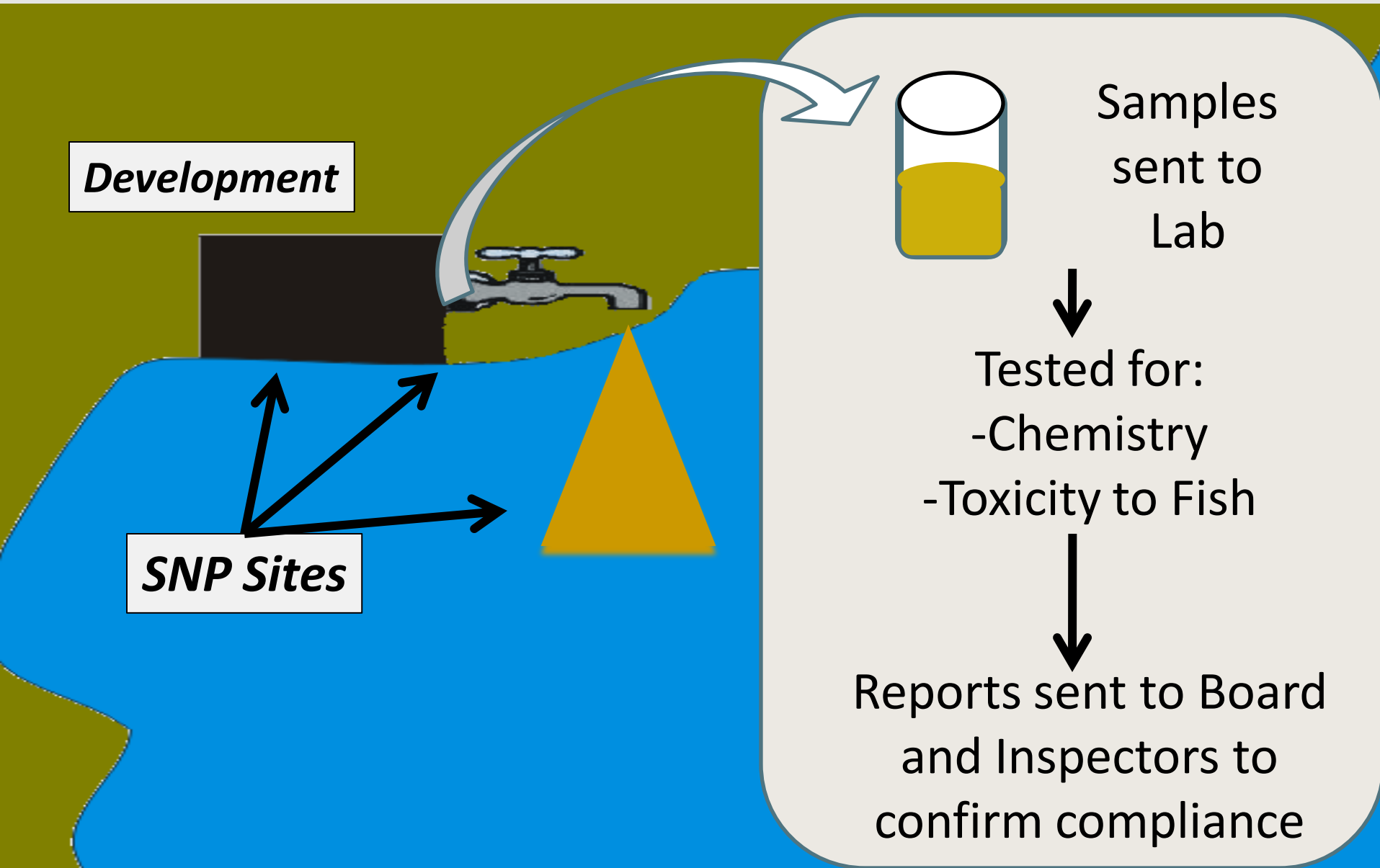
Discharge Limits in a Water Licence

All Discharges to Lake X shall meet the following limits:

Substance	Maximum Amount Allowed
Ammonia	2 mg/L
Arsenic	0.05 mg/L
Etc....	...

But how do we know our rules are being followed?

Compliance Monitoring – Surveillance Network Program (SNP)



But how do we know that the discharge limits we set will protect the aquatic environment?

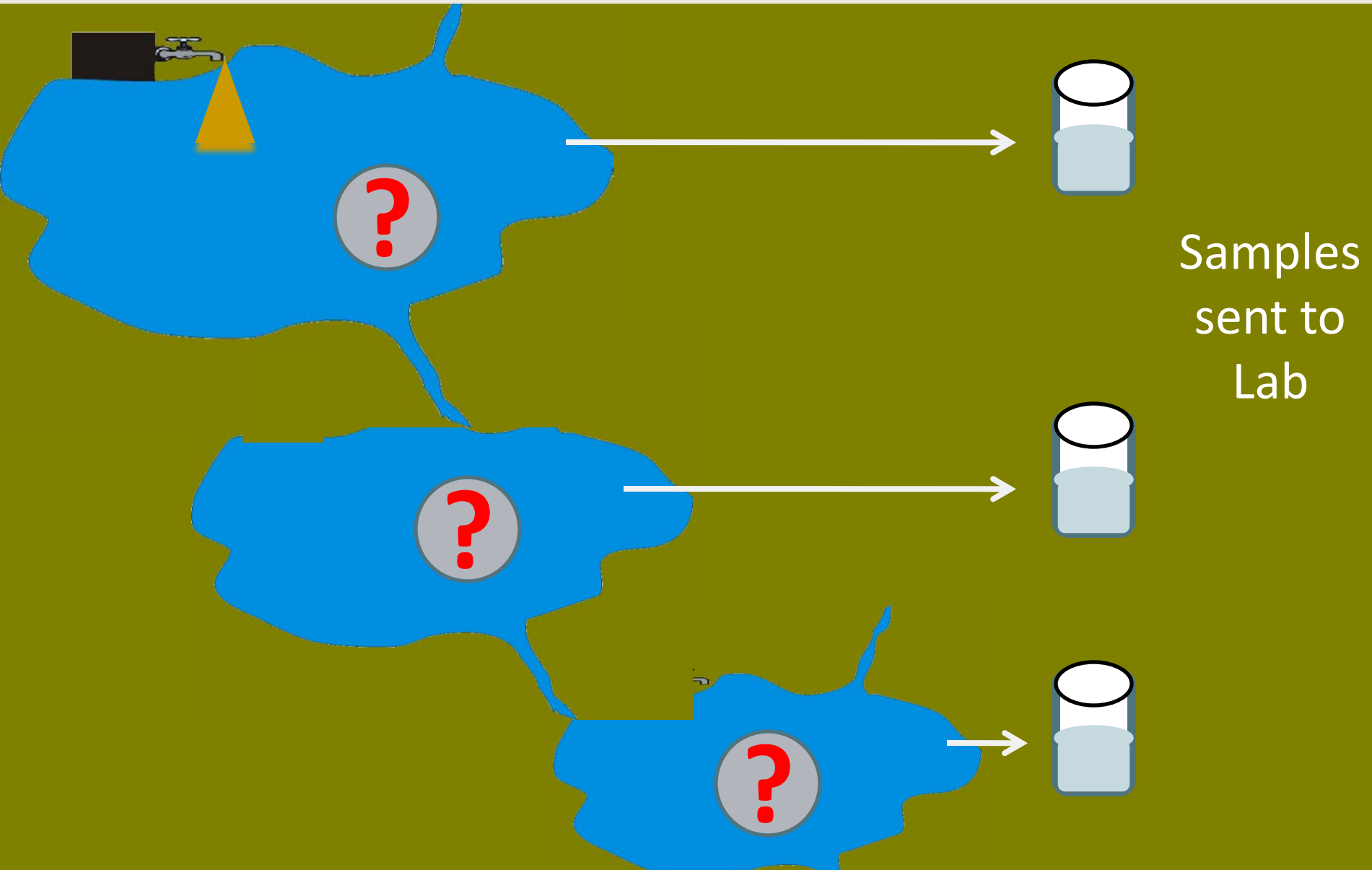
Development

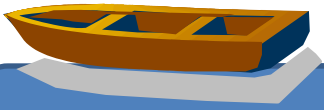


....the only way to be sure is to perform monitoring in the wider aquatic environment.



Aquatic Effects Monitoring Programs



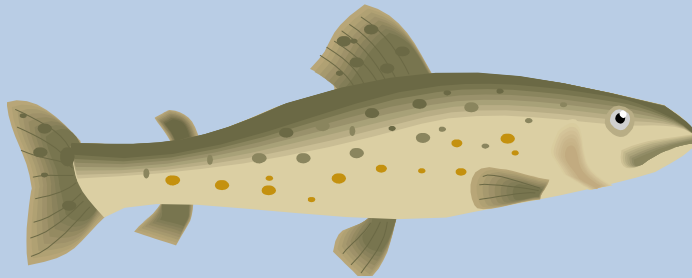


PHYTOPLANKTON

Organisms are monitored for:

- health
- abundance
- diversity
- accumulation of metals or other substances

TROUT



SLIMY SCULPIN

ZOOPLANKTON

BENTHOS

SEDIMENT



Purpose of Monitoring for the Boards

- To ensure compliance with the licence (SNP monitoring)
- To check and see how well the licence is protecting the environment (Aquatic Effects Monitoring Programs)

Overall, monitoring gives us the opportunity to
“do better”.

Monitoring Response Plans

Monitoring
Results

Trigger Level Exceeded

Management
Action

Changes over background	Low	-investigate sources -identify mitigation options
Trend toward a biological effect	Medium	Implement mitigations to stop trend
Biological effects are measured	High	Implement mitigations to reverse trend

Integrated Watershed Management

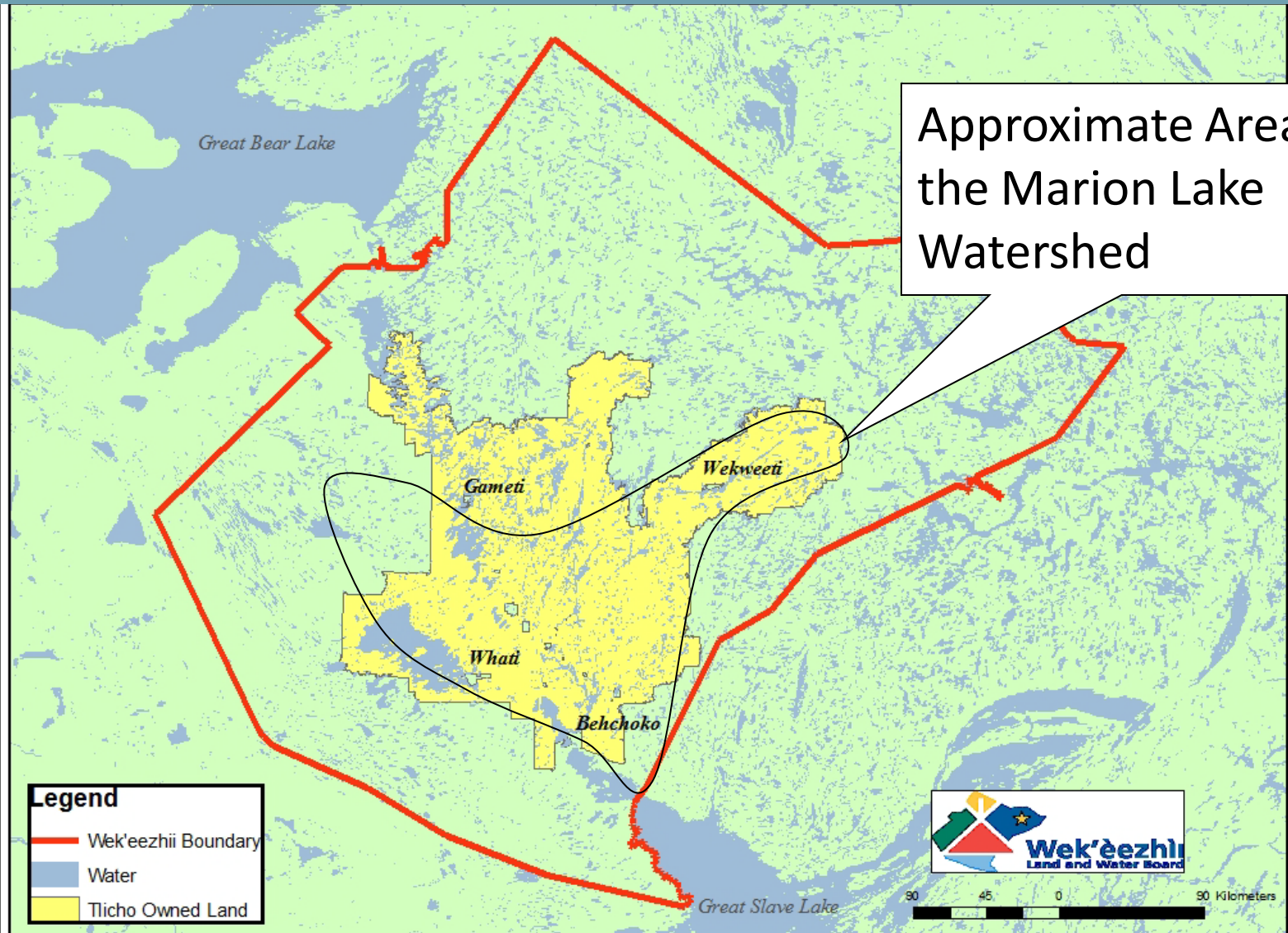
Wek'èezhìi Forum



- Tlicho Lands Protection Department
- Wek'èezhìi Renewable Resources Board
- Wek'èezhìi Land and Water Board

...to develop integrated management strategies between the land, water, and wildlife management agencies within the Wek'èezhìi Management area.

Marian Lake Watershed Monitoring and Management Program



Land and Water Boards



NWT Water Strategy

The Land and Water Boards have a lot of information and knowledge to share:

- monitoring data (water quantity and quality)
- toxicity test results
- northern-specific research
- public views on environmental protection
- experience in integrated resource management



Land and Water Boards



NWT Water Strategy

The Land and Water Boards are keen to be involved in a coordinated efforts to:

- define a common vision and guiding principles on how we value water
- development of water quality objectives
- prioritize northern-specific research
- Develop and maintain a forum for shared decision-making with respect to water



Photo: Tessa Macintosh



Photo: Tessa Macintosh



Photo: Courtesy Devik Diamond Mine



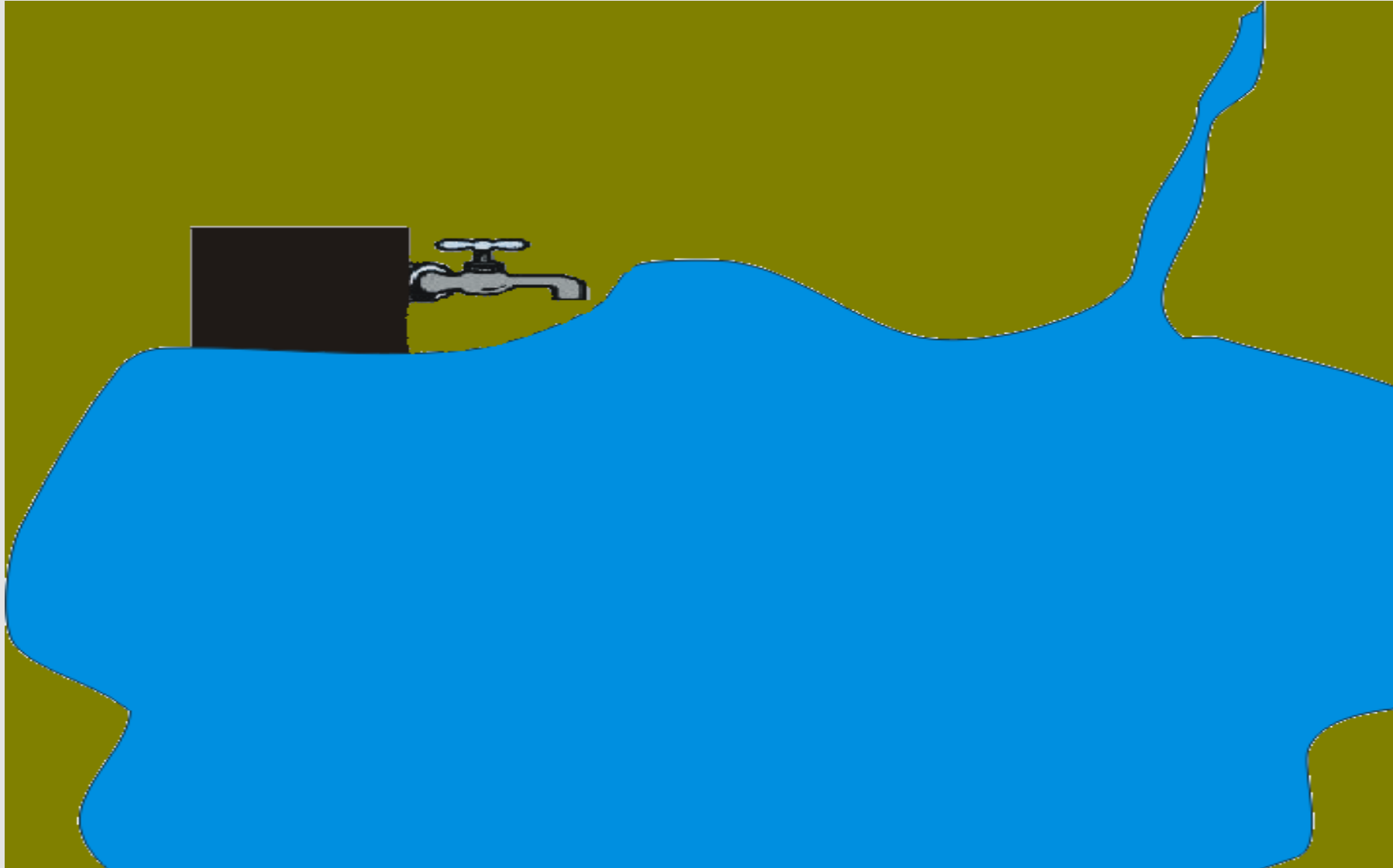
Photo: Independent Environmental Monitoring Agency
Photo: Ilhno Traditional Knowledge Project







Deposit of Waste into Water





Jurisdiction of the NWT Water Board



Mandate of the Land and Water Boards of the Mackenzie Valley

“The objectives of the Board are to provide for the conservation, development and utilization of land and water resources in a manner that will provide the optimum benefit generally for all Canadians and in particular for residents of the Mackenzie Valley.”

Land and Water Boards



NWT Water Strategy



Photo: Tessa MacIntosh



Photo: Tessa MacIntosh



Photo: Courtesy Devik Diamond Mine



Photo: Independent Environmental Monitoring Agency
Photo: Ilhcho Traditional Knowledge Project





Land and Water Boards



NWT Water Strategy

The Land and Water Board have a lot of information and knowledge to share:

- monitoring data (water quantity and quality)
- toxicity test results
- northern-specific research
- public views on environmental protection