

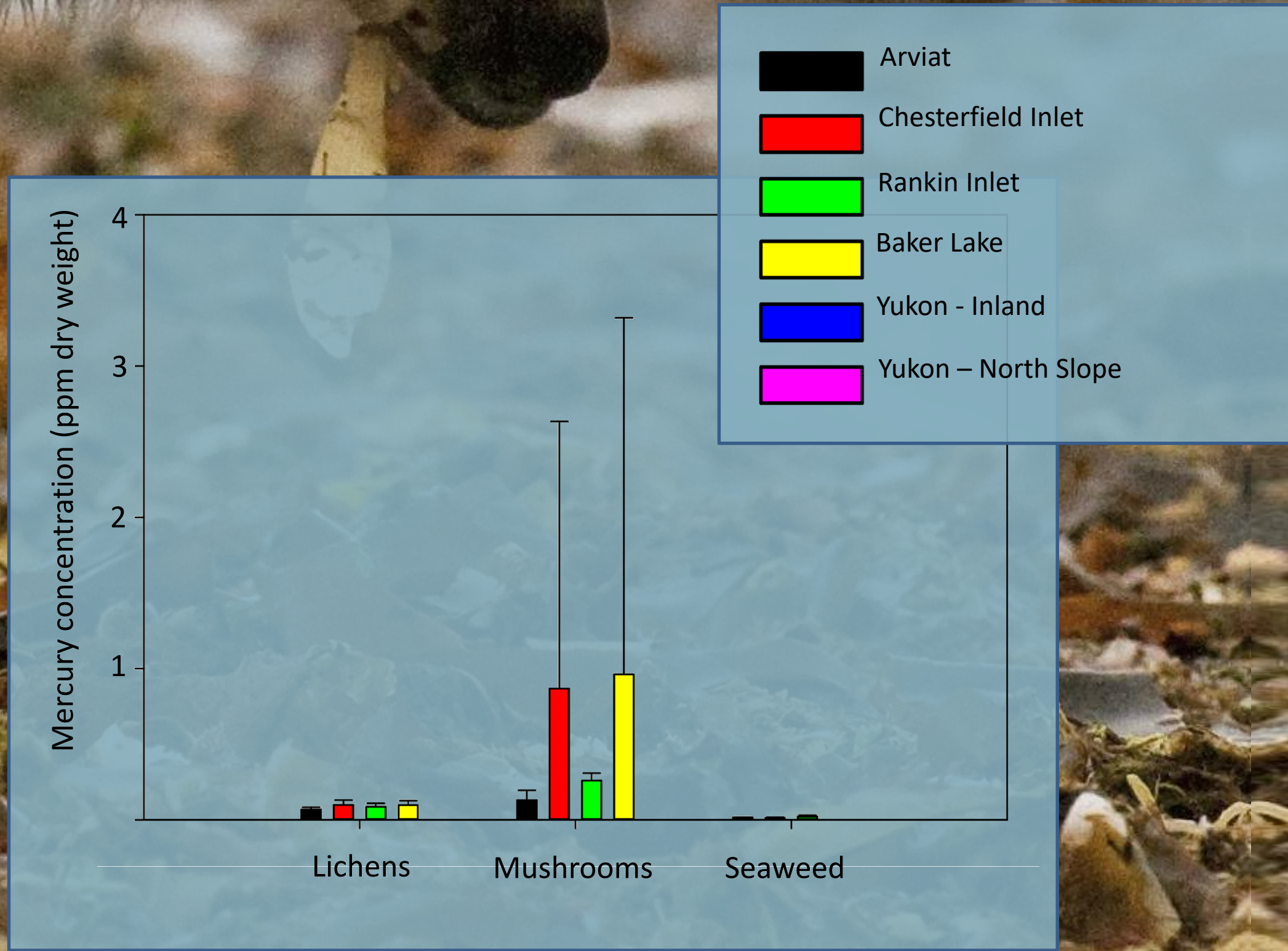
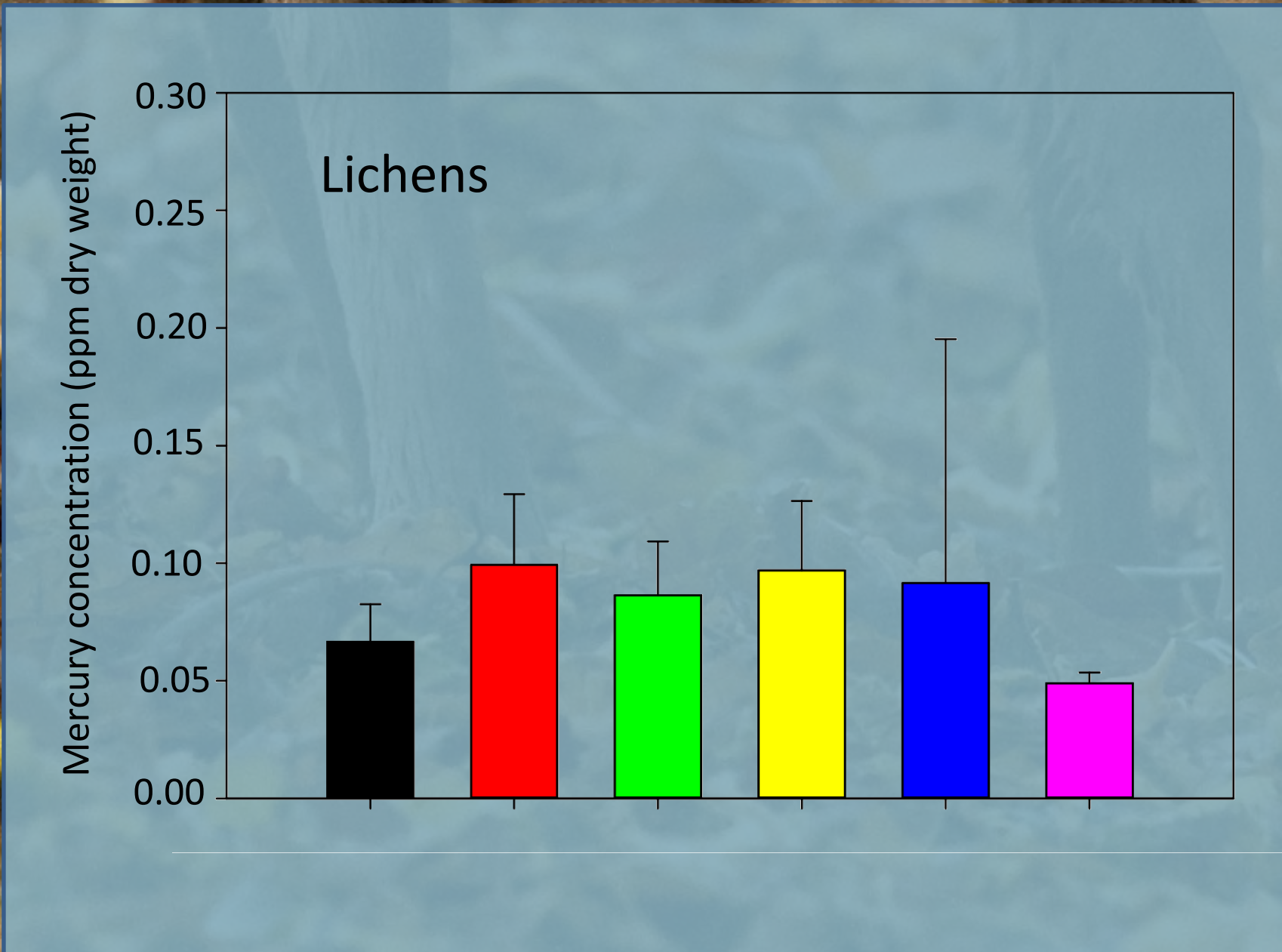
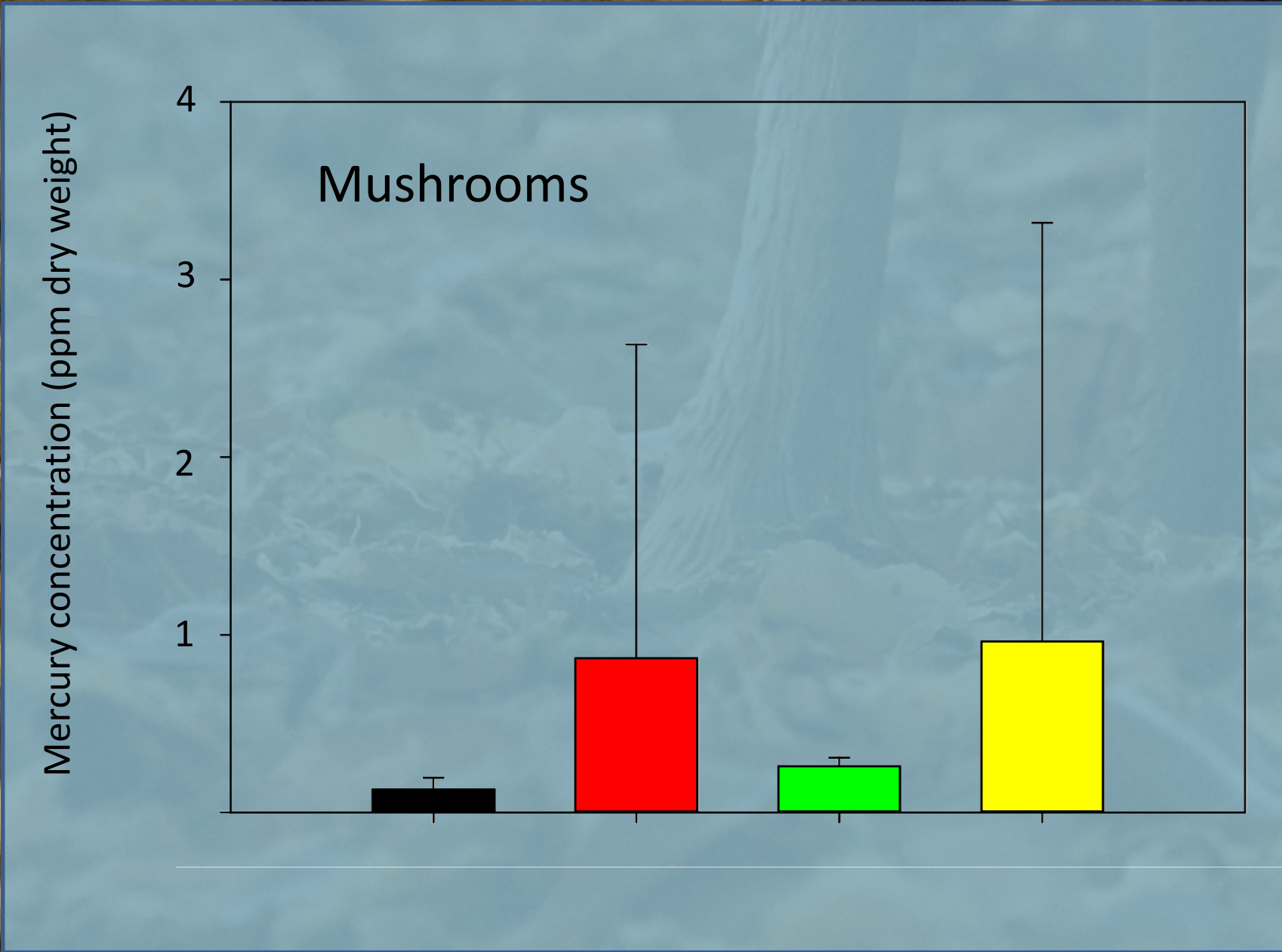
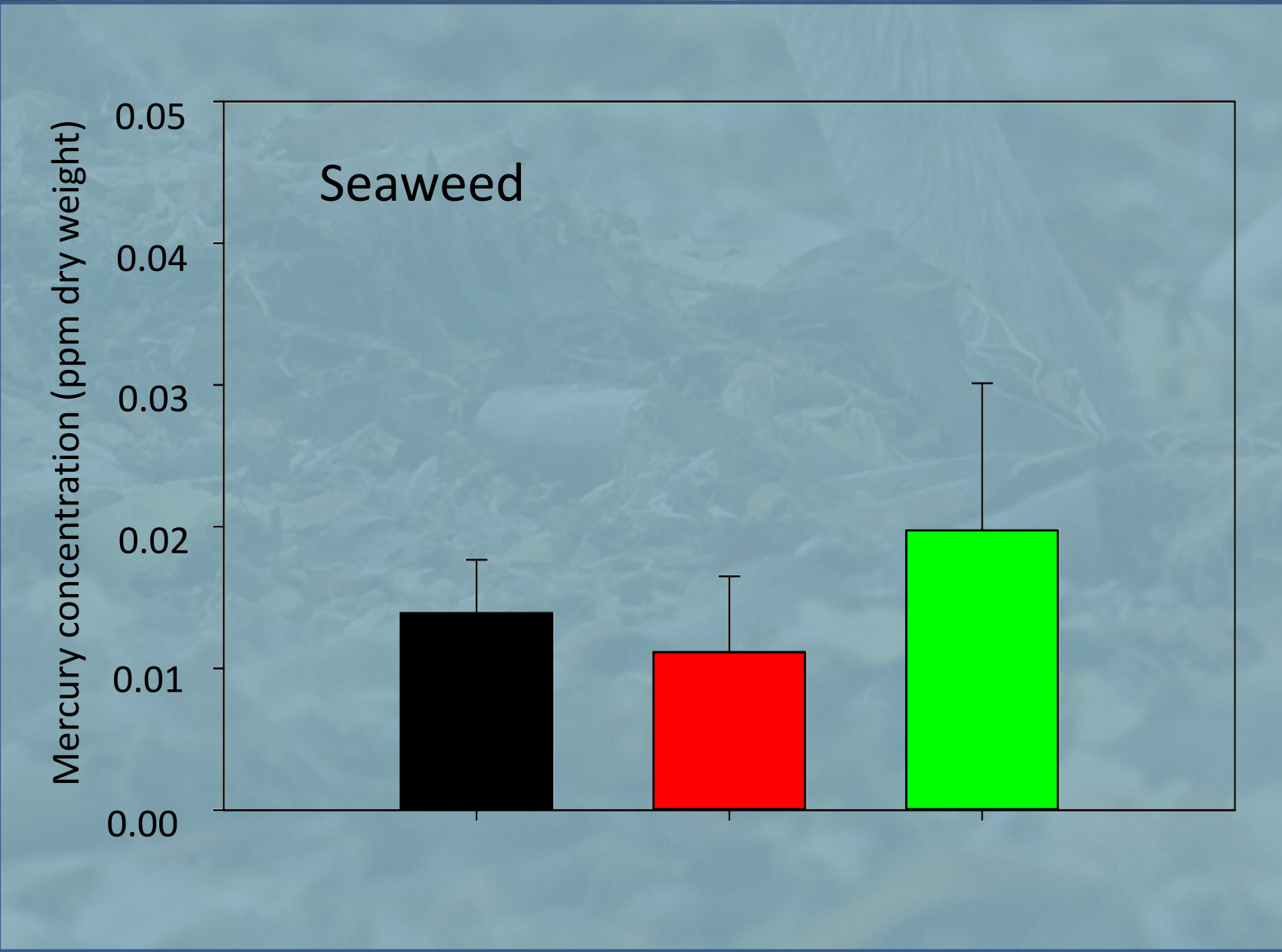
Introduction

Arctic caribou can have high levels of mercury in their kidneys and livers. Usually, caribou get most of their mercury from lichens, but elders in the Kivalliq region described the Qamanirjuaq caribou eating seaweed from the seashore. Since seaweed is known to accumulate some metals, the caribou could be getting additional mercury from this source. This project was designed to explore traditional knowledge held by hunters/elders from the Kivalliq region regarding caribou consumption of seaweed, and then to use that knowledge in designing collection protocols for seaweed in the five communities in the region. Lichens and mushrooms were also collected, to determine how much mercury is coming from those dietary sources.

Methods

Elders were interviewed in Baker Lake, Arviat, Chesterfield Inlet and Rankin Inlet regarding the behaviour and foraging habits of the Qamanirjuaq Caribou. Poor weather did not allow travel to Whale Cove, so no interviews or collections were done in that community.

Two species each of lichens, seaweed and mushrooms were collected from each of the four communities based on the advice of the elders. They were analyzed for total mercury by the National Laboratory for Environmental Testing (Environment Canada) using Cold Vapour Atomic Absorption Spectrometry.



Mercury in Lichen, Mushrooms and Seaweed

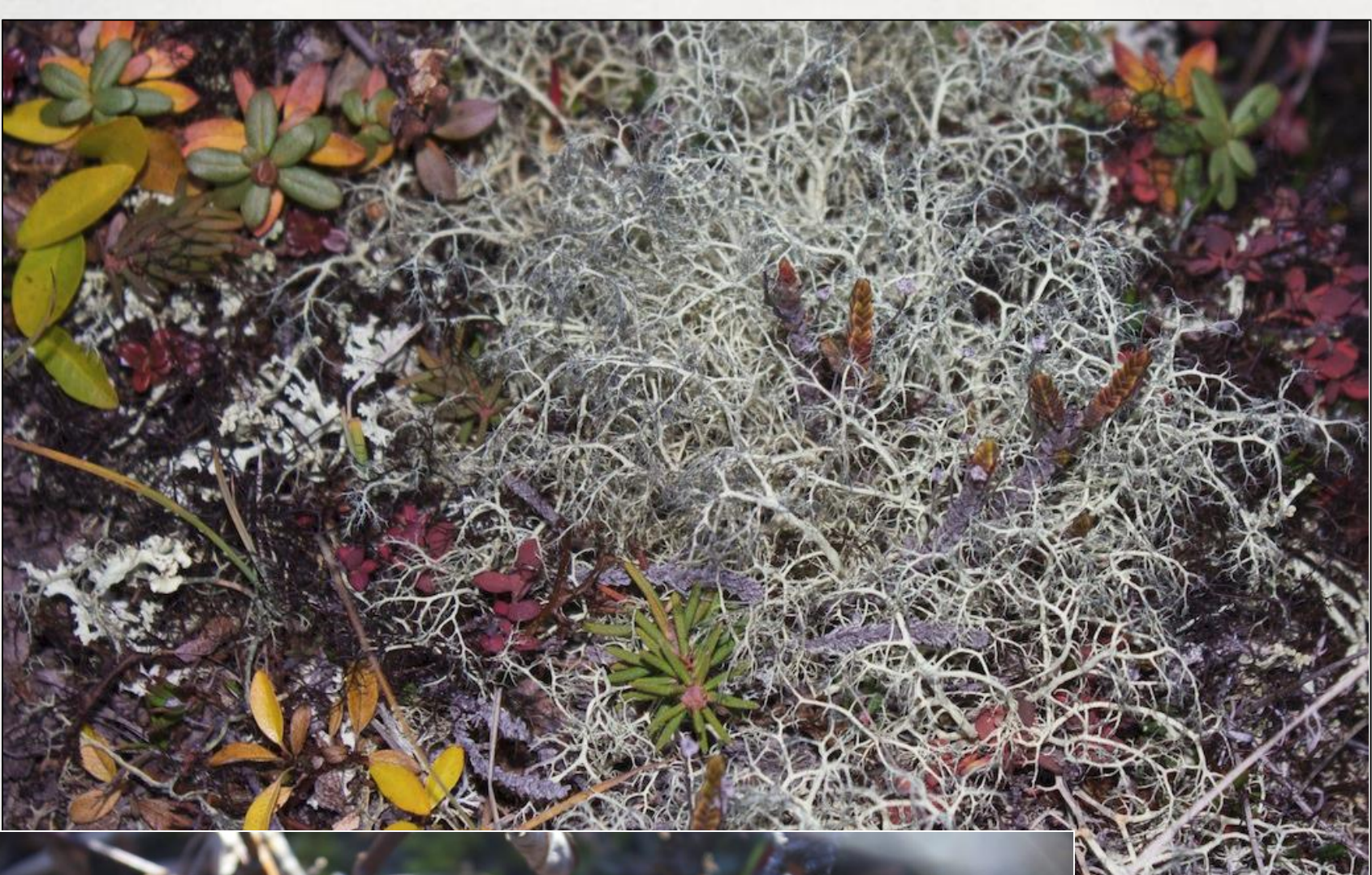
Mary Gamberg\*, Emma Kreuger, Keenan Lindell, Lars Qaqqaq, Derek Muir, Xiaowa Wang

\* Gamberg Consulting, Whitehorse, Yukon

Results and Conclusions

While mercury concentrations were highly variable in mushrooms, they were still significantly higher in mushrooms and lichens than in seaweed. Concentrations did not differ between species within a vegetation type (mushrooms, lichens and seaweed). Concentrations within vegetation types did not differ among communities and levels in lichens did not differ from the same species collected in two locations in Yukon (as part of a past project). This suggests long-range transport as a source of contamination.

Seaweed is not likely a significant source of mercury for the Qamanirjuaq Caribou.



Many thanks to the elders who offered their invaluable advice and wisdom to this project:

- Nancy Aupaluktuqmake
- Ivan Quinangnaq
- Irene Tiktaalaaq
- Onerk
- Amik Louis
- Mark Nanauk
- Rhoda Karetak
- Jerome Tattuinee
- Bobby Misheralak
- Nigel Kubluituk
- Louis Autut
- Andre Tautu
- Casimir Kutudluk
- Ilii Kimalarjuk

And to the translators:

- Linda Arloo
- Celina lootna
- Paula Rumbolt

This project was supported and funded by the Northern Contaminants Program, Aboriginal Affairs and Northern Development Canada.