

DISCLAIMER: The following is the output of transcribing from the video recording. Although the transcription is largely accurate, in some cases, it can be inaccurate. It is posted as an aid to understanding the video recording.

Archaeological investigations and Tsleil-Waututh Science: reconstructing pre-colonial ecosystems

Meaghan Efford, PhD in Oceans and Fisheries

Supervisor: Dr. Villy Christensen

Burrard Inlet is one of the most important bodies of water in what is now known as Vancouver, British Columbia, but it has also been the home of the ancestors of Tsleil-Waututh Nation since time immemorial. The original name of the Burrard Inlet is Tsleil-Waut, the singular form of Tsleil-Waututh, or *People of the Inlet*, in the Hun'qumyi'num language. As a part of Tsleil-Waututh Nation, the Tsleil-Waut holds a special place in the hearts of her people, and demonstrates the significance of cumulative effects on vulnerable ecosystems over time.

For my PhD project, I am creating an ecosystem model of what Tsleil-Waut would have looked like before European contact and the following colonization in approximately 1792. This model can be leveraged to support Tsleil-Waututh environmental management and stewardship, and can help illuminate and mediate the effects of industrial projects before they're built.

I am identifying, weighing, and counting fish, mammal, and bird bones from two important village sites in the Inlet: Tum-Tumay-whueton and Say-mah-mit. I'm using this archaeological data to build an ecosystem model and to understand how Tsleil-Waututh resource use and food harvesting and security has changed over the past 2000 years.

Tsleil-Waututh stewards and scientists can use this information to determine how traditional management and stewardship practices and techniques can increase the future productivity and health of the Inlet, and how the Nation's members can obtain at least 10% of food requirements from the Inlet by 2040.

My PhD project is part of Tsleil-Waututh Nation's Cumulative Effects Monitoring Initiative. One of our latest findings is that over 75% of Tsleil-Waut ecosystems and plant and animal resources have been lost to or damaged by urban development, industrial structures, contamination, and pollution. Because of this, I am also asking how these impacts have affected Tsleil-Waututh communities up until today, and what they need going forward into the future.

Tsleil-Waututh research ethics, protocols, community needs, and questions provide the scaffolding for this research. Archaeological material and Tsleil-Waututh science and community knowledge provide the data. Ecopath with Ecosim, the ecosystem modeling software, provides the tools. But it is the co-authored partnership, based in reciprocal and respectful relationships, that provides the environment in which this research is possible. Interweaving sciences and ways of knowing is the way forward in fisheries and ecosystem science. It can leverage a vast library of knowledges to improve ocean health, and the health and wellbeing of coastal communities like those in and around Vancouver, BC. Thank you.