

## Herring and Archaeology?

With so many environmental disasters facing us these days, sometimes it's hard to know where to put our energy to try to "make things right". For me, I am sometimes consumed by sadness about the world's loss of cultural and biological diversity. Because I work closely with First Nations communities, often in remote places, I am daily faced with how inter-twined and how significant these losses are.

In my current archaeological research, I am trying to actively blend my commitment to the preservation of heritage with conservation of the natural world. In particular, I am interested in incorporating archaeological evidence of resource use and management with indigenous and local ecological knowledge, as a framework for managing our resources today. These interests have recently converged in a study on herring with Tla'amin First Nation, on the Sunshine Coast.

Herring, a once abundant and important component of our coastal ecosystems, is severely threatened. In British Columbia, three of the five "management units" are now closed to fishing. Most Tla'amin and other coastal First Nations say that herring runs are too small to make it worthwhile to fish or collect spawn. They attribute this dramatic decline to over-fishing by seine boats in the 1980's, when there were so many boats in Tla'amin territory that "you could easily walk from boat to boat".

The past ecological and cultural importance of herring is echoed in the region's archaeological records, which indicate that in places like the Georgia Strait and the west coast of Vancouver Island it was herring – not the now more popular salmon – that was the primary food species. For many indigenous people, herring undoubtedly classifies as a "cultural keystone species", because of its fundamental cultural importance. Photographs, interviews, and oral traditions demonstrate that for generations, tons of herring roe and the fish themselves were gathered each spring and dried in abundance to be used throughout the year. Such abundance is also reflected throughout the coast by place names such as "*Tee Sho Shum*" for the main Reserve of the Tla'amin First Nation, meaning, "Milky waters from herring spawn".

Importantly, these white waters were the ecological signal that it was time to fish. Modern fishing practices involve harvesting *pre-spawn* fish at sea for roe which is exported overseas as a delicacy. At best, the male fish and the gutted females are ground into meal. In contrast, indigenous fishers gathered herring in the spring in bays *after* spawning. And although the roe was also collected and consumed, it was a fraction of the spawn that was deposited. At Tla'amin, community members are frustrated and insulted by the insistence of government fisheries managers that there was no long-term, sustained herring fishery in their bays. This flies in the face of local knowledge, place names, and preliminary archaeological work conducted by our team– all of which point to the long-term cultural importance of reliable and abundant herring stocks.

In our current research, we're bringing together fisheries ecologists, archaeologists and Tla'amin researchers to systematically study the past abundance and diversity of herring on the Sunshine Coast, and the long-term use and management of this important resource. We're mapping herring fish traps, digging cores in archaeological sites to determine past abundance of herring, and extracting DNA from these herring bones to determine genetic diversity of herring over time and space. Given the dramatic reduction of herring today, and the reluctance on the part of Dept. of Fisheries to seriously engage

in management which supports herring abundance and diversity, the *only* way to begin to document the spatial and temporal variability of herring is by combining indigenous knowledge and archaeological data. Our goal is to present these data to Provincial and Tla'amin fisheries managers with the hopes of improving future management of this ecologically and culturally foundational species. It's now or never. Now is good.