

# BEST-BSIERP *Bering Sea* PROJECT

UNDERSTANDING ECOSYSTEM PROCESSES IN THE BERING SEA 2007–2013

## Local and Traditional Knowledge of the Bering Sea Ecosystem DETAILS MATTER!

The Bering Sea is a complex and changing ecosystem. In the south-east, many species are in decline. In the north, it remains a productive ecosystem with abundant fish, seabirds, and marine mammals. The most rapid changes are occurring at the edge of the sea ice maximum, in the southern Bering Sea. Ice-associated species, such as bearded seals, are becoming scarce. Ice conditions are also changing in the northern Bering Sea, so we were surprised to find that hunters reported a thriving ecosystem. Of particular interest were descriptions

of “hot spots,” or areas with very high productivity. Around St. Lawrence Island, hunters noted several such locations, all of which are still productive, attracting an abundance of fish, seabirds, and marine mammals (see Figure 1). Overall, the results from local and traditional knowledge (LTK) are consistent with other findings from the Bering Sea Project.

### How We Did It

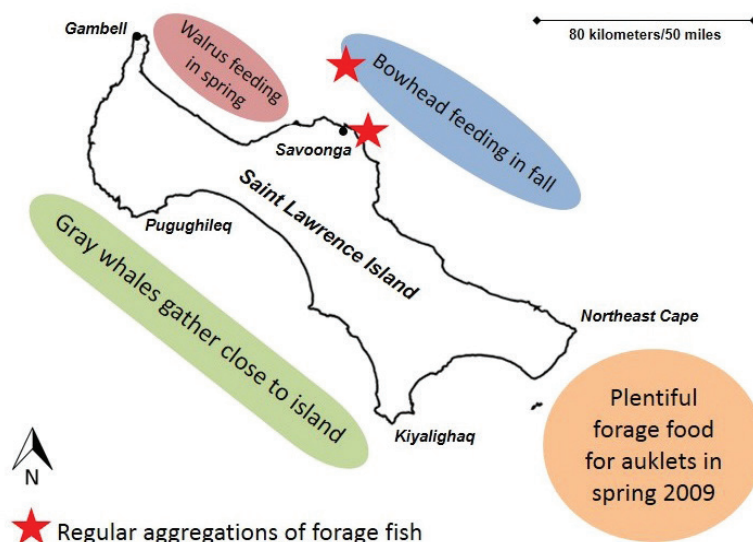
We interviewed experienced hunters and fishers in five Bering

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*Caleb Pungowiyi (gray shirt) and Chester Noongwook (red shirt) discuss LTK over a map of St. Lawrence Island.*

Fig. 1



*Specific locations associated with particular ecological features/actions in the vicinity of St. Lawrence Island as reported by Savoonga LTK participants.*

### The Big Picture

In search of local and traditional knowledge (LTK), we interviewed hunters and fishers from several Bering Sea communities. What they shared shed light on several aspects of the Bering Sea Project’s research. First, broad differences between the southern and northern Bering Sea had been noted in several other analyses of the ecosystem, and these differences were confirmed with LTK, supporting this interpretation. Second, observations about increased summer storms were contrary to the decrease that was predicted in the Bering Sea Project hypotheses, raising interesting questions for further study. Third, changes in abundance and distribution of species did not follow a simple pattern across the Bering Sea, but showed great local variation, indicating that the ecosystem is complex.



*Caleb Pungowiyi demonstrates how to net auklets from an old blind near Savoonga.*



*Caleb Puagowiyi holds a least auklet near Savoonga.*

Henry Huntington

Sea communities: Akutan, St. Paul, Togiak, Emmonak, and Savoonga. We discussed many aspects of the Bering Sea ecosystem, especially those related to the hypotheses driving the entire project. Most of the interviews were open-ended discussions, closer to a conversation than to a poll or a question-and-answer session. After the interviews, we wrote down what we had heard, and reviewed our report with the hunters and others in the communities. Then we made any necessary corrections and other adjustments before sharing the results within our group and with the Bering Sea Project researchers.

## Why We Did It

People who live on the shores of the Bering Sea, especially those who spend a lot of time hunting and fishing, have a deep understanding of the environment. In Native villages, this knowledge may have been accumulated over many generations, allowing people to hunt and fish successfully and safely. By documenting what Bering Sea residents know about their ecosystem, we can learn important local details about ecological processes and changes. And we can also check what we have learned from other types of studies by comparing what local residents are seeing with what

oceanographers, climatologists, biologists, and others are finding.

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