

BEST-BSIERP (Berin UNDERSTANDING ECOSYSTEM PROCESSES IN THE BERING SEA 2007-2013

Subsistence Harvests Show Continuity and Change HARVESTS REFLECT ECOSYSTEMS AND SOCIETY

Our work documented relatively high and diverse subsistence harvests, consistent with earlier research and confirming the continuing economic, social, and cultural importance of subsistence uses of wild resources. The research also found differences in subsistence use patterns compared to previous years' studies, such as harvest levels, harvest composition, and diversity of resources used. The nature of these differences varied among communities, with some increases and some decreases, suggesting local influences in addition to potential region-wide changes. Survey respondents identified a complex

range of personal, economic, and environmental factors when comparing subsistence uses in the study year with previous years. These factors included increasing costs of fuel and purchased food, commercial fisheries harvests and bycatch, more persistent storms and less predictable winds, and reduced sea ice. Such conditions affect resource abundance and locations as well as access to fish and wildlife populations, and may shape long-term trends. So far, as in the past, families and communities have adapted to changing economic, social, and environmental conditions, but

The Big Picture

Alaska's Bering Sea coasts and islands are home to Aleut, Yup'ik, Iñupiag, and St. Lawrence Island Yupik peoples. Their subsistence practices are essential to their cultures, heritage, and well-being, and are recognized by customary rights and by various laws and policies. An integrated study of the Bering Sea ecosystem is incomplete without understanding the people whose ways of life are part of the stunning ecological and cultural richness and diversity of the region. In addition, the findings of such a study are of great importance to those whose lives and livelihoods are most directly affected by changes in that ecosystem.

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Fig. 2



Fig. 1

Subsistence harvests of fish, wildlife, and wild plants, pounds usable weight per person, in the study communities in 2008. These substantial harvests provided between 170% (Togiak) and 500% (Savoonga) of daily protein requirements for community residents.

Akutan, Emmonak, and Togiak: total subsistence harvests in pounds per person in 2008 compared to previous study years.

SUBSISTENCE HARVEST, USERS AND LTK ECOSYSTEM PERSPECTIVE

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Jars of oil rendered from sea lion (left) and harbor seal, Akutan.

patterns is crucial to documenting how people use and interact with their environment, what those interactions mean for individuals and communities, and how social and ecological change may be affecting people.

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Traditional values continue to shape subsistence hunting and fishing activities in the study communities. As a resident of Togiak explained:

"My grandparents used to tell me that the things I got from this land and water don't belong to me. It was given to me to use and to respect it all the time. The first rule from my grandpa is take only what you can use. Even if there is abundance of whatever take only what you can use, what you can handle. Never waste, and respect the animals, so like with the fish, they can come back year after year after year."

A very active hunter and fisherman from Akutan described changing weather patterns that have impeded subsistence activities.

"Storms are more frequent and less predictable. For example, the usual pattern, up to a few years ago, would be a big storm with lots of wind that would stay a few days, then would clear for a few days before the next would come. Lately, the last couple of years, the storms seem to come back-toback and are mixed with each other. This makes it harder for us to get out and hunt because the storms make the sea too dangerous."

Sockeye salmon drying on racks, Akutan.

trends in the community and the ecosystem, and other topics that provided insight to help explain harvest patterns (example responses are shown in blue boxes below). In a fifth community, St. Paul, annual programs to document two key subsistence resources, fur seals and sea lions, were continued, revealing trends at an annual level.

Why We Did It

Hunting, fishing, and gathering have provided food for Alaska Native communities since time immemorial. They continue to play a major role in nutrition, culture, identity, and social connectivity within and among communities. Subsistence is thus a major part of human use of the Bering Sea ecosystem. Understanding subsistence





the future is less clear if such changes intensify or accelerate. Local community residents should be essential partners in future efforts to understand these complex processes that affect the natural resources of the Bering Sea.

How We Did It

To document and quantify subsistence harvests of fish and wildlife resources, comprehensive household harvest surveys were conducted in four Alaska Native communities on the Bering Sea: Akutan, Emmonak, Savoonga, and Togiak. The surveys used a detailed questionnaire to ask participants about their subsistence activities in the previous year (see Figs. 1 and 2). In addition, interviewers asked open-ended questions about factors affecting subsistence,



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