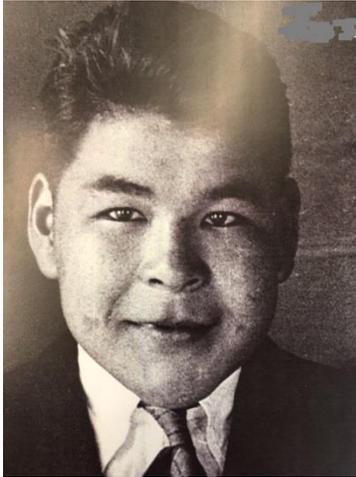


**FOOD FROM THE SEA: SEA LION SHARING GR: PREK-2 (LESSONS 10)**

**Elder Quotation:**

“During the summer outing we would take a whole quarter of sea lion and find a nice clean gravel beach and bury it down in about a foot of gravel and build a fire over it and it was covered with hide. Then everyone would gather around and we would have a feast.”



Bobby A. Stamp<sup>1</sup> (Born in 1926 to a French Canadian father and Dorothy Vlasoff from Nuchek. He moved to Chenega at the age of seven where he lived a subsistence lifestyle and was taught cultural values and lore by the village Elders. He died in 2005.)

**Grade Level: PreK-2**

**Overview:** Before the Russians arrived with their passion for acquiring sea otter pelts Native hunters focused their efforts on sea lions. Sea lions transform the energy they gain from eating into tremendous sources of protein for human consumption as well pelts ideal for covering bidarki frames and intestine casing ideal for rain parkas and more. The entire animal was used.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
D1: Acquire in-depth cultural knowledge through active participation and meaningful interaction with Elders.	Science C (3,4): A student should understand and be able to apply the concepts, models, theories, facts, evidence, systems, and processes of life science and should (3) develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms;	L1: Students should understand the value and importance of the Sugt’stun language and be actively involved in its preservation.

**Lesson Goal:** Students are introduced to the transfer of energy from the fish that sea lions feed upon to their own growth as well as a subsistence food for us.

**Lesson Objectives:** Students will:

- Discuss the transfer of energy along the food chain.
- Identify subsistence foods provided by sea lion.
- Learn the Sugt’stun or Eyak vocabulary listed below.

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:	Eyak:
Listen! (Directed to 3+)	<i>Niicugniluci!</i>	<i>Niicugniluci!</i>	
sea lion	<i>wínaq (pl: wínat)</i>	<i>wínaq (pl:wínat)</i>	k'umah
food	<i>neget</i>	<i>neget</i>	<a href="#">Giyah</a>
fish	<i>amartuq (1)</i> <i>amartuk (2)</i> <i>amartut (3+)</i>	<i>igallut (1)</i> <i>igalluk (2)</i> <i>igallut (3+)</i>	<a href="#">te'ya'</a>

**Materials/Resources Needed:**

- Access to web video projection screen
- Sea Lion/*Winaq* Handout (attached)
- Sea Lion Recipe Cards (Sea Lion Flippers; Sea Lion Neck (Bobby Stamp 24); Braided Intestines (Bobby Stamp 24); Kidneys (Bobby Stamp 24); Fried Sea Lion Liver (Qaqamiigux 114); Sea Lion Quarter in Earth Pit (Bobby Stamp 24,25); Sea Lion Roast (We Are the Land); Sea Lion Ribs (We Are the Land))

**Kit Library:**

- Stamp, Bobby A. *Chenega as I Saw it – It's People*
- Unger, Suanne. *Qaqamiigux: Traditional Foods and Recipes from the Aleutian and Pribilof Islands; Nourishing Our mind, Body and Spirit for Generations*

**Web Resources:**Sea Lion Facts

- Birth: Optional: <http://www.sealion-world.com/galapagos-sea-lion-gives-birth/> (1:46) Birth of sea lion in front of Galapagos tour group
- Following prey: <http://www.sealion-world.com/hunting-with-sea-lions/> (6:28) Video of young sea lions learning to follow prey Sea of Cortez, then adults hunting 'bait ball' of small fish. Last 30 seconds is of marlin and whale hunting same fish.
- Live Webcam (Canadian, available seasonally)  
<https://explore.livecams/oceans/orcalab-steller-sea-lion-haulout/>
- Physical Traits: <http://www.seaotter-sealion.org/stellersealion/index.html> seal vs. sea lion
- Physical Traits: <https://www.smithsonianchannel.com/videos/how-are-seals-different-from-sea-lions/35377> (1:14) Quick review of physical differences between seals and sea lions

Traditional Sea Lion Uses

- [http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view\\_article&articles\\_id=325](http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=325)  
(Article attached)

### **Teacher Preparation:**

- Review Activity Plan and practice Sugt’stun or Eyak vocabulary.
- Contact your Local Education Coordinator or local Tribal Council for a list of Elders that could share his or her expertise on how to hunt sea lion and its subsistence uses.
- Before the Elder or Recognized Expert arrives, please review with all of the students, ways to show respect for the Elder during their visit.

- Review sea lion data:

**Scientific name:** *Eumetopias jubatus*

**Family:** Steller sea lions are the largest of the otariids and the fourth largest of the pinnipeds, meaning “feather” or “fin” footed.

**Lifespan:** Males rarely live beyond mid-teens; females may live as long as 30-years.

**Length and weight:** The average adult male Steller sea lion is about 1,250 lbs. They grow up to 10-11 ft in length and weigh up to 2,500 lbs! Adult females are from 7.5-9.5 ft in length and weigh up to 770 lbs. At birth, Steller sea lions weigh 35-50 lbs and are about 3 feet in length.

**Body:** Steller sea lions have large, bulging eyes, and flat, square noses and long whiskers used to navigate underwater and find prey. The ears are visible and are turned downwards so that water does not enter them when the sea lions go underwater. When adult males age, they develop a “mane” of long, coarse hair. Steller sea lions are particularly agile on land and swim using their fore flippers. Males grow 2-3 times as large as an adult female.

**Food habits:** Steller sea lions are opportunistic and eat a wide range of fish including herring, pollock, salmon, cod and rockfishes, sculpin, Atka mackerel, capelin, as well as squid, shrimp and other fish. To survive, an adult sea lion needs to eat 5-6% of its body weight each day, but young animals need twice that amount. When males are defending their territories on the rookeries, they may go without eating for over a month! Interestingly, Steller sea lions do not need to drink water: the food they eat provides them with all the water they need. They do not chew their food; most is swallowed whole. Feeding often occurs in groups; often feed at night between 9 PM and 6 AM.

**Predators:** Include humans, sharks, and killer whales.

- <http://www.seaotter-sealion.org/stellersealion/index.html>

- Review attached article on traditional sea lion usage. (Turek, M. (2007, October). Traditional Uses of Steller Sea Lions. *Alaska Fish and Wildlife*.)

**Opening:** Food/*neget* is energy to help us grow and be strong. What do you eat that helps you to grow and be strong? (*Accept all answers but steer students towards nutritious foods.*) What food/*neget* do sea creatures eat to get energy to grow and be strong? (*Direct student answers towards concept of food chain: one species eats others to gain energy and in turn provides energy for another predator*). Today we’ll study sea lions/*wínat* and what food/*neget* they to gain energy to grow and what energy grown sea lions/*wínat* can provide for us.

## **Activity**

### **Class I:**

1. It's easy to recognize an otter or a whale but telling a seal apart from a sea lion/*wínaq* is a little tricky. Show Smithsonian video (1:14) listed above describing differences. Remind students to listen carefully (*Niicugniluci!*).
2. Explain that like a seal, a sea lion/*wínaq* is a sea mammal. A mammal is a creature that is born alive from its mother and doesn't hatch out of an egg. Humans are mammals. Whales, porpoises, otter, seals, and sea lions/*wínat* are all sea mammals. Because they are mammals, all of their babies are born alive. Because they are alive, they need food/*neget* to eat to get energy to grow. *Optional:* Show Sea Lion Birth video (1:46) listed above.
3. Baby sea lions/*wínat* can swim soon after they are born but still have to learn how to hunt for their food/*neget*. What do they hunt for? (Sea lions are opportunistic feeders. *Any smaller fish they come across.*) Fish/*Amartut/Iqallut!*
4. Show Sea Lion Hunting video (6:28) listed above. Discuss how sea lions/*wínat* are part of the food chain. Eating fish/*amartut/iqallut* gives them the energy to grow large and healthy. This food/*neget* energy is transferred to people when they eat sea lion/*wínaq* so they can grow and be healthy. [*Note: Sea lion meat and organs are great sources of protein and minerals, particularly selenium & zinc - important for strengthening the immune system.*]
5. Show Sea Lion World 'Hunting with Sea Lions' video (6 minutes)
6. Introduce Elder/Expert and remind students to listen carefully (*Niicugniluci!*)
7. Invite Elder to describe how a sea lion/*wínaq* is hunted and all the ways that the Sugpiat traditionally shared and used the sea lion/*wínaq*.
8. Sea lions/*wínat* provide people with energy as food/*neget*. But how do you prepare sea lion to eat? Distribute recipe cards to students (4-6 each) and invite Elder to comment on particular recipes of interest.
9. Distribute Sea Lion/*Wínaq* handout OR project same onto video screen and have students match their recipe cards to the appropriate part of sea lion diagram.  
*Optional:* Have students color in parts of sea lion used for recipes
10. Invite the Elder to encourage and correct student work.
11. Review concept of energy transfer through eating prey in the food chain from fish/*amartuq/igallut* to sea lion/*wínaq* to human.
12. Save some worksheets for display at final lesson.

### **Assessment:**

- Students can describe the transfer of energy from fish to sea lion to human.
- Students can connect sea lion components to their uses as subsistence foods.
- Students correctly pronounced the Sugt'stun or Eyak vocabulary words.

### Traditional Uses of Steller Sea Lions Archaeologists Document Importance of Stellers

By Mike Turek



A 19th century painting by a Russian artist depicts a Steller sea lion hunter near a haul out. Alaska State Library Historical Collection, PCA 139-48

**A**rchaeological digs at prehistoric sites in Alaska are revealing that

Steller sea lions were profoundly important to Alaska's Native people.

Sea lions were harvested for meat, oil and blubber. Bone and whiskers were used for tools, sinews for cordage, intestines and stomachs for waterproof containers and clothing, and the skins were used for baidarkas (kayaks). Unalaska sites have yielded implements and decorative pieces fashioned from sea lion bone.

In prehistoric archaeological sites, sea lions appear to have replaced walrus as a distinct marine mammal species in coastal areas of Alaska dominated by a Pacific maritime climate. These areas include the Pacific coast of the Alaska Peninsula, Prince William Sound, the tip of the Kenai Peninsula, the Kodiak Island archipelago, and the Aleutian Islands. Aleutian Island sites with sea lion remains date to 3,000 years b.p. - before the present - (Anangula Island) and 4,000 years b.p. (Chaluka Village). Sea lions appeared to be the principal sea mammal in the latter site, comprising some 10 to 20 percent of all sea mammal bones found.

From four well-preserved sites on southwest Umnak Island in the eastern Aleutians, about 70 per cent of the archaeological biomass (meat weight) was represented by sea lions. The Lower Alaska Peninsula and the Sanak Island

projects have generated data over 12 field seasons, documenting 300 ancient village sites spanning the last 6,000 years. Nearly 100,000 marine mammal, bird and fish bones have been collected. Archaeological sites have also been found on Marmot Island, home to Alaska's largest Steller sea lion rookery.

Long-term changes in the North Pacific and Bering Sea ecosystems have been the subject of scientific investigations relying on archaeological and anthropological analyses. Data indicate that there have been significant variations in the distribution of key species over the last 5,000 years. During cooler periods the harvests of sea lions appears to have been greater than during warmer periods. Archaeological evidence from the Medieval Warm Period, 900 to 700 years ago, includes very few samples of sea lion remains. After 1400 a.d., well into the Little Ice Age, evidence indicates that harvests rose to levels not seen in the previous 4,000 years.

Anthropologists have estimated that the approximately 25,000 Aleut living in the region 400 years ago probably required between 5,000 and 10,000 Steller sea lions per year to meet basic subsistence needs. Other estimates more than double that number.

Sea lion hunting occurred between the middle of September and November, after the fur seals left the rookeries for the season. Hunting was done on the rocks at night by moonlight, and selected animals were captured and herded into corrals. After several nights of corralling, two or three hundred animals were driven or herded overland by the hunters. Herding the animals could take from five days to three weeks. The sea lions were driven to a village before hunters killed them with sticks and spears.



A Steller sea lion pup and mother and a haulout in Southeast Alaska

Ivan Veniaminov, the Russian Orthodox missionary wrote of Pribilof Islanders in the 1830s harvesting as many as 2,000 Steller sea lions on St. George Island alone.

The Russian word, baidarka, referred to the Aleut's distinctively hatched, decked, skin boats. At the time of European contact, one and to a lesser extent, two hole baidarkas were common, the three-hole boat was likely developed by the Russians. Sea lion skins from sub-adult males were the preferred baidarka

covering. A single hatch baidarka required four to six sea lion skins which were replaced three to four times per year.

Although the Aleut population dropped significantly following the Russian invasion, the need for baidarkas in the sea otter industry kept the numbers of boats and sea lion skins high. Russian sea otter hunting expeditions required several hundred baidarkas, expeditions with 600 to 800 boats are mentioned in the literature.

According to George Dyson, baidarka builder and scholar, “Baidarkas were being built by the thousands in the Russian-American colonies for close to 100 years.” These skin boats were the key to Russian activity during the entire pre-American period. Almost anywhere they went, hunting, trading, or exploring, the Russians depended on the baidarka. Following the 1867 purchase of Alaska, the Americans took over the sea otter trade, which still required deck loads of baidarkas.

By the late 19th century the marine mammal populations in the Gulf of Alaska and Bering Sea had collapsed. Petroff, collecting data for the 1880 US census described much smaller sea otter hunting parties consisting of “from 4 to 20 (two-hatch) baidarkas.”

The collapse of the Steller sea lion populations in the late 19th century was so serious that the United States Government imported sea lion skins from California to Alaska so baidarka construction could continue.

Waldemar Jochelson, an ethnographer working in the Aleutians during 1909-1910 commented on the scarcity of marine mammals and skin boats, “The Atka Aleut still use skin-boats. . . . but the Attu Aleut have no skins to cover their boats. . . .” Wooden skiffs had now taken the place of skin boats.

In 1910 the last sea otter hunt was conducted in 12 two-hatch baidarkas. Due to the economic depression and costs for fuel baidarkas saw a brief revival in the 1930s. In 1933 the anthropologist, Birket-Smith described construction of baidarkas, “Six large skins of spotted seal were necessary [single hole baidarka], for a two-hole baidarka, nine, and for a three-hole twelve skins. Skin of young sea lions might also be used . . .”

Today, Michael Livingston, Aleut master kayak builder has experimented widely with kayak construction finding that the hide of the Steller sea lion is the best marine mammal skin for covering kayaks.

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