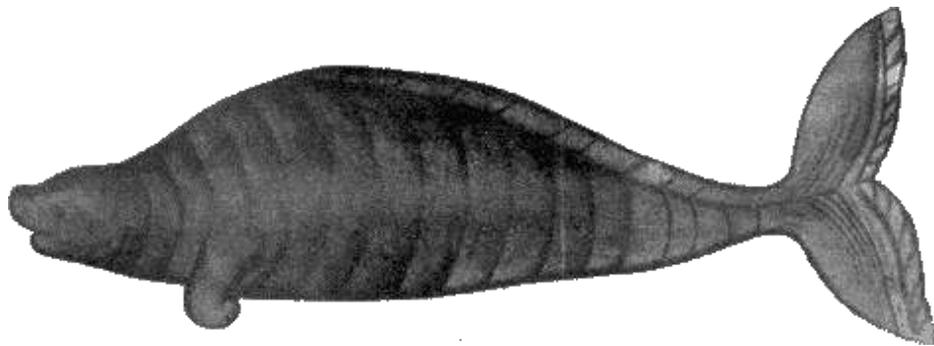


Climate change: a view through the prism of Steller sea cow extinction

BRIEF OVERVIEW OF 2010 FIELD WORK

Presented by

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Field work

The 2010 field season of this project began later than expected, and only one of the collaborators, Alexander Burdin, was able to participate in the field effort on Bering Island. He arrived on 20 July 2010. A 4-wheeler was rented in Petropavlovsk-Kamchatsky and was shipped with gas and other supplies to Bering Island. The 4-wheeler served as the main transportation platform for collected Steller sea cow bones. In addition, a tractor was rented for 4 days in order to collect bones in more distant bays.

A. Burdin spent one month in the field, which was less than planned (see “Problems” below). Weather conditions were also not conducive to field work, with only a few sunny (albeit windy) days in the middle of August. In total, 7 long trips were made by 4-wheeler from Nikolskoe village to Polovina bay on the east coast of Bering Island, and to Sarannoe lake, Northwest Cape (North coast), and Poludennaya bay (West coast).

Results

Overall, 18 Steller sea cow ribs were collected during trips along the beaches of Bering Island, and 31 additional ribs were discovered in storage at the Commander Islands Nature Reserve in Nikolskoe village and acquired from local citizens. They had been collected for different purposes, with souvenir carving the primary reason. We considered it important to sample these bones for the following reasons:

1. Collectors usually select bones with good quality that are dense, without damages, and have a good upper layer, and
2. Bones in relatively good condition are likely the most recent, representing the last generations of Steller sea cow prior to and during human contact. The more bones that can be analyzed from these generations, the more accurate the genetic variation of this species can be estimated.

In summary, 49 rib samples were collected and provided to Dr. Greg O’Corry-Crowe for genetic analysis. Presently, we are looking for support to process these samples and in this regard request the use of remaining field work funds for laboratory analysis.

Involving local students

One of our goals was to involve local high school students in the collection of bones in order to increase their interest in the history of the Commander Islands and in the exploration of the North Pacific, Aleutian Islands and Alaska. It is a dramatic history, and the extinctions of the Steller sea cow, Steller cormorant and near extinction of the local sea otter population can serve as examples to students of irresponsible resource management. These examples can then provide a context for a discussion of sustainable resource management in a changing environment.

A presentation about Steller sea cows, their extinction, and our project was made for the students and teachers participating in one of the collection trips. A. Burdin explained the

methods of the field project, including where and how to look for Steller sea cow bones, and how to describe the location of each finding (geographic coordinates, soil type, etc). As a result, in a day's trip along the Bering Island coast, participating students found 5 Steller sea cow bones, made descriptions of the locations, and stored the bones in an appropriate place. We believe it was an interesting learning experience for each participant.

Problems

Two main problems were encountered when initiating field work:

1. Because of difficulties in getting funds from UAF, there was not enough funding to organize the expedition as planned, and
2. As a result, field work began at a less desirable time, i.e., in late July instead of early June. By late July, all shore terraces were covered by dense and abundant grass that made it nearly impossible to look for bones in these locations.

We hope that in 2011 we can secure funds in time to start our fieldwork in early June.



Dense and high grass cover the shores of Bering Island in summer, making it difficult to look for Steller sea cow remains.



Often Steller sea cows bones are located on the bottom of small rivers and streams. Sometimes streams are the best place to find bones in the high grass season.



High school students from the village of Nikolskoe collected Steller sea cow bones on the beaches of Bering Island.



Steller sea cow bones collected on the beach on the east coast of Bering Island, close to Commander Bay, where Bering's second expedition landed. The bones were loaded onto a 4-wheeler for transportation to the village of Nikolskoe.