Severe decline in abundance on Steller sea lion rookery at Medny Island (Commander Islands), Russia

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Introduction

Yugo-Vostochny rookery is the major breeding site of Steller sea lions (SSL) on Medny Island in the Commander Islands located at the western end of the Aleutian Islands. Steller sea lion (SSL) abundance has stabilized at a low level or is slightly increasing in most regions of Alaska and Russia except the western part of the Aleutian chain. SSL continue to decline in the Commander (CI) and Near Islands (Western Aleutian Islands).

Material and methods

Field camps have been set up annually at Yugo-Vostochny since 1991 to collect observations of marked animals. Surveys include regular counts of individuals by sex and age groups, pup births and observed mortalities over the entire rookery (over 5 km long). Observations were carried out from fixed points located at a height of 25-30 meters above the SSLs using binoculars without disturbing the rookery. Count methods have remained unchanged throughout the 24 years of observation. In 2015, observations of the rookery were made daily from May 30 to August 7 by four researches.

Fig.1. Geographical location of Medny Island (Commander Islands). ★ -Yugo-Vostochny rookery.

Results and discussion

During pupping and mating periods (May 30 to July 10) a median of **176** non-pup individuals were present on the rookery (q0=112, q0.25=151, q0.75=192, q1=203; n =14) including:

- **115 females** (q0=50, q0.25=94, q0.75=126, q1=142; *n* =14);
- **48 mature males** (q0=28, q0.25=44, q0.75=52, q1=53; *n* =14);
- **6 juveniles** (q0=2, q0.25=5, q0.75=7, q1=10; *n* =14).

There were no cases of death of individuals 1+ years old observed.

A total of **153 pups** were born at the rookery and fourteen of them were born dead or died soon after the birth (**9.2%**). Pup mortality in 2015 was unusual high; two folds higher than average in the previous years.

Abundance of all age and sex groups declined compared to the same period in 2014:

- The number of **1+ years old** animals decreased by **28%**;
- The number of **females** decreased by **27%** ;
- The number of **pups** decreased by **6%**.

Declines are most likely caused by the low survival rates, reduced birth rates and dispersal of young mature females to other breeding locations (Altukhov et al. 2015) .

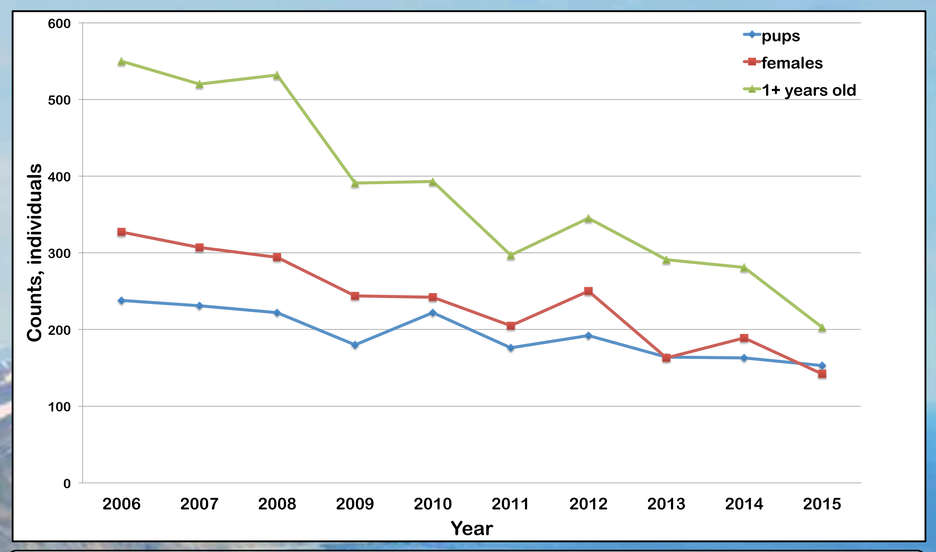

Fig.2. The decline in max counts on Steller sea lion rookery at Medny Island over the past 10 years (breeding season May 30 through July 10).

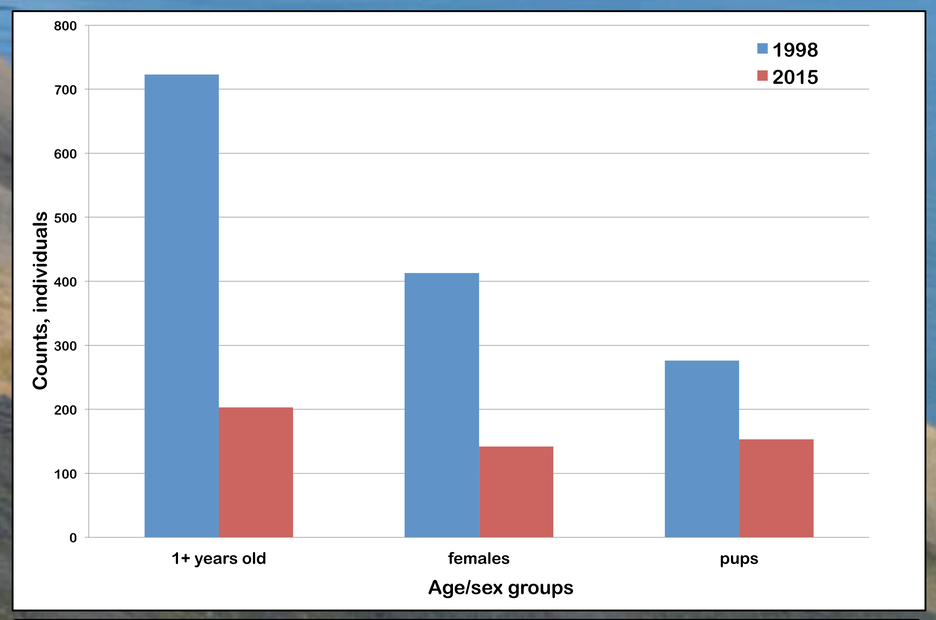

Fig.3. Steller sea lion breeding season (May 30 - July 10) counts by age class in 1998 and 2015 at Medny Island, Commander Islands, Russia.

Conclusions

Pup production at this rookery reduced by **35%** over the past 10 years (2006-2015), or **- 4.6% annually**.

The maximum number of pups born on Medny Island was recorded in 1998. Over the past 17 years:

- The pup number declined by **45%**;
- The non-pup abundance decreased by **72%**;
- The number of females decreased by **66%**.

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