

## Spatial use by Steller sea lions on Dolgaya Rock rookery in the Kuril Islands, Russia

Altukhov, Alexey V.<sup>1</sup>; Burkanov, Vladimir N.<sup>2,3</sup>

(1) *Moscow State University named by Lomonosov, Leninskie Gory 1/12, Moscow, 119234, Russia*

(2) *Pacific Institute of Geography DVO RAS, Kamchatka branch, Partizanskaya St. 6, Petropavlovsk-Kamchatski, 683000, Russia*

(3) *National Marine Mammal Laboratory (AFSC, NMFS, NOAA), Sand Point Way N.E. F/AKC3, Seattle, 7600, USA*

aaltukhov@gmail.com

Steller sea lions reproduce at traditional rookeries on which territorial relationships are established and necessitated in part by the need to optimize space usage on rookeries. The knowledge of the features and patterns of spatial use is important in understanding reproduction. Results indicate that the minimal distance between bulls remains stable both from year to year and during each years mating period ( $\bar{x}=9$  m., s.d.=4 m.). However, the minimal distance between females was observed to change through the breeding season. During the day of pup birth for each female the average distance to the next female averaged 7 m (s.d.=3). Interestingly, during the days following pup birth these distances began to decrease until the day of copulation, when the distance separating females was averaged to be 4 m (s.d.=2). The time period between giving birth and copulation on Dolgaya Rock averaged 12 days (s.d.=4). During this time, females usually moved within 2 m (s.d.=3) of their first observed location for each day, while the geometrical center of the spatial displacements during the days shifted on average about 1 m of that from the previous day. In total, females shifted 9-10 m from the place of pup birth to the location of copulation. Additionally, this critical distance is very similar to the minimal distance estimated between bulls. We observed that in only 29% of recorded cases did females mate with the male on whose territory she gave birth. Females returning to the rookery to reproduce displaced on average 11 meters (s.d.=7) from the precise location of the previous year's birth. However, these displacements are limited spatially, and occur typically within a 6 m radius (s.d.=3). According to our reckoning, mobility of females, is a very important factor determining mating behavior of sea lions.