

Juvenile Steller Sea Lions in Alaska: Development of Dispersal, Movements, and Resource Selection

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Reduced juvenile survivorship is believed to be one of the primary factors contributing to the decline of Steller sea lions (SSLs) in Alaskan waters. However, prior to 1998, little was known about the life history of juvenile SSLs due to the difficulty of capture. Previous studies were limited by small sample sizes and short deployment periods. Since 1998 a new technique developed to capture juveniles using SCUBA has greatly

increased sample size and our knowledge of juvenile SSL development. To gain a better understanding of daily movement patterns, home ranges, dispersal, and resource selection, satellite-linked-dive recorders (SDRs) were deployed on juvenile SSLs in the declining western stock (WS) and the stable/increasing eastern stock (ES). From March 1998 to September 2000, we deployed SDRs on 71 juveniles (31 males, 40 females) aged 1.64 to 22.4 months. Animal locations were computed using the Argos system and edited using swim speed and Keating error index criteria. A total of 11,853 locations were collected including 46% in location classes 1, 2, and 3. Deployment duration averaged 57 days (range = 3-181 days) in the ES (n = 58) and 53 days (range = 10-103 days) in the WS (n = 14). Home ranges (95%, 75%, and 50% fixed kernel) were computed using all locations per individual. Home range estimates varied in size from 7.5 km² for a 2-month-old male pup with a nine-day deployment length to 79,874 km² for a 19-month-old male with a 181-day deployment length. Maximum straight-line travel distance from capture haulout to final haulout used was > 1000 km. Resource selection was difficult to interpret because of uncertain weaning status of most individuals. However, juvenile SSLs appear to conform to central place foraging theory.

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