

**Calibrating Different Counting Methods and Modeling  
Recent Trends in the Western Stock of Steller's Sea  
Lions**

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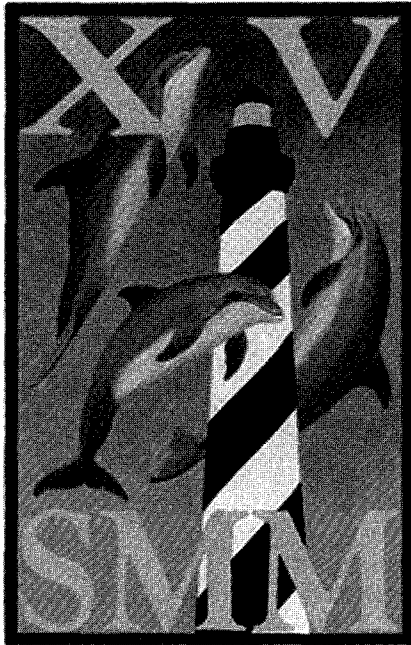
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Monitoring of the western stock of Steller's sea lions is accomplished by counting non-pup sea lions in aerial photographs of rookeries and haul-out sites during the breeding season (June). As with any monitoring method, problems arise in maintaining consistency as available technology and techniques improve. We used Bayesian hierarchical models (BUGS software) to incorporate the improvement of Medium Format (MF) vertical aerial photography in the analysis of adult population trends traditionally derived from oblique 35 mm aerial photographs, and present regional trends from 1991-2002. While the overall trend in that period was negative, parts of the range showed slight growth between 2000 and 2002. MF vertical photographs were a slight improvement over 35 mm oblique photographs in counting adult sea lions (~4%). Bayesian models offer convenient means of summarizing estimated trends through complete posterior distributions of derived variables, such as estimated counts of sub-areas, standardized to new or old methods, and compensating for missing data.

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