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Past exploitation of California sea lions did not lead to a genetic bottleneck in the Gulf of California

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Human exploitation can lead to genetic bottlenecks associated with reduced genetic variability and lower fitness. The population of California sea lions (*Zalophus californianus*) in the Gulf of California, Mexico, was hunted during the 19th and 20th centuries, potentially leading to a genetic bottleneck; however, even exploitation that leads to low population sizes does not always cause genetic bottlenecks. Understanding the genetic consequences of past sea lion hunts is critical to the conservation of the Gulf of California sea lion population, which is currently declining and is genetically distinct from other populations. We used available data from 10 amplified polymorphic microsatellite loci in 355 individuals from six Mexican colonies. Microsatellite data were analyzed using diverse approaches (BOTTLENECK and *M*-ratio) to determine if a genetic bottleneck had occurred. Our results indicate that human exploitation did not cause a genetic bottleneck in the sea lion population of the Gulf of California. Simulation analyses revealed that a reduction in genetic variability would have been detected if fewer than 100 individuals had remained after exploitation. We conclude that past exploitation was not as severe as previously thought and did not cause a genetic bottleneck in the Gulf of California sea lion population. Nevertheless, historical hunts specifically targeted adult males and this sexbiased exploitation may have influenced the population dynamics and overall fitness.

Palabras clave: macroalgas epizóicas, Variabilidad genética, explotación sesgada hacia machos, Pinnipedia

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