

ABSTRACT

This study examined and compared the spatial and temporal movement patterns of small cetaceans across continental and archipelagic settings to understand how geomorphological context influences their range and behavior. A total of 81 publications covering 16 species were reviewed, and data on depth, distance from nearest shore, and straight-line movement ranges were extracted and analyzed using non-parametric tests. Results revealed distinct spatial structuring between settings: archipelagic populations generally occurred closer to shore yet traversed greater distances across deep basins, while continental populations occupied broader, shallower habitats with more uniform depth distributions. Temporal analyses indicated diel and seasonal shifts in habitat use, shaped by local oceanographic conditions and prey dynamics. These patterns show that the steep topography and uneven productivity of archipelagic waters promote greater movement and stronger nearshore dependence among small cetaceans, in contrast to the broader and more gradual habitats along continental margins. These insights emphasize the need to account for geomorphological and oceanographic differences when developing adaptive, ecosystem-based management approaches, especially amid accelerating climate change.

Keywords: small cetaceans, movement ecology, archipelagic, continental shelf, spatial patterns, marine conservation