

# **BUILDING A MARINE LIFE OBSERVATION SYSTEM: LESSONS FROM THE TAGGING OF PACIFIC PELAGICS (TOPP)**

Block, B.A.<sup>1</sup>, Costa, D.<sup>2</sup> and Bograd, S.<sup>3</sup>

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## *Abstract:*

The Tagging of Pacific Pelagics (TOPP) program has developed the capacity to monitor the distribution, movement, and habitat usage of apex predators (sharks, tunas, seabirds, pinnipeds, cetaceans, turtles) in pelagic ecosystems of the North Pacific using the latest biologging technologies. With more than 4000 tag deployments to date on 23 species, encompassing several million water column profiles, TOPP scientists are pushing the frontiers of biologging science in areas of technological innovation, discovery, exploration, marine conservation and ocean observation. TOPP has provided nearly a decade of ecological and environmental observations from the North Pacific, demonstrating the capacity of large-scale biologging programs to play a critical role in global ocean observing systems. Future collection and assimilation of animal-derived data into circulation and ecosystem models will advance our understanding of how apex marine predators use their ocean environment, allowing predictions of distribution and behavioral changes associated with fisheries exploitation and a changing climate.

*Contact : Barbara A. Block, [bblock@stanford.edu](mailto:bblock@stanford.edu), <http://www.topp.org>*

*(1) Stanford University, Stanford, CA, USA*

*(2) University of California Santa Cruz, USA*

*(3) NOAA, SWFSC*