

Tracking marine animal travel

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Scientists are gaining a deeper understanding of marine mammal travel patterns using a large-scale tracking network. A new PLoS collection, created in conjunction with the Pacific Ocean Shelf Tracking (POST) Program and the Census of Marine Life (CoML), will highlight the variety of ways scientists are using this large POST network to trace marine animal movement in the Northeast Pacific Ocean. The PLoS POST Collection launches on August 31st.

POST provides a tool for researchers from agencies, universities and other organizations to track marine and diadromous animals along the continental shelf of the west coast of North America. An array of acoustic receivers are deployed in lines, situated in strategic positions along the coast, running perpendicular to shore and out to the edge of the shelf. The array currently extends over 3,000km, stretching from Alaska, through British Columbia and as far south as California. To date, nearly 16,000 individual animals, representing 18 different species, have been tagged.

"POST provides an incredible economy of scale for researchers wanting to track [marine animals](#) on the West Coast. Where they would normally have to buy, deploy and maintain a massive equipment infrastructure, POST makes it as simple as researchers just tagging and releasing the animals", said Jim Bolger, POST's Executive Director.

For the past eight years, independent researchers have been tagging animals with acoustic pingers that each emit a unique identifier. When a tagged animal crosses a POST line, it is detected by at least one receiver

in the line. As the animal makes its journey, each detection tells the story of the where and when of its movements along the coast. In some cases, researchers are even able to estimate survival of the group of animals tagged, as the lines are laid out in such a fashion that almost all of the tagged individuals are detected as they pass a line.

Bolger explains the impact of the project saying, "POST has brought scientists another tool to directly test hypotheses about where marine animals go, where they die and what factors are affecting their behaviour. And sometimes tracking the animals bring surprising results that turn conventional wisdom upside down."

The large-scale system is made available free of charge and the database, complete with value added mapping and visualization tools, serves as a clearinghouse for data gathered across the entire POST array and similar local networks. The web portal is not only useful for the scientists performing the telemetry studies, but also interested citizen scientists wondering what marine animals are doing in their neck of the sea.

The first publications in the PLoS POST Collection contain articles published in *PLoS ONE* and PLoS Biology and highlight some of the ways that this tool can be used to deepen our understanding of where animals go, and where they die, in the ocean. As POST evolves and the database grows, the information in hand will have even more power; where correlates to environmental data may reveal distribution and behavior changes relative to climate change, and a new perspective on species interactions and trends in movement patterns will be gained through meta-analyses of a massive data set. It is the hope of all involved that this collection inspires new and novel uses of the POST array, illuminating the world under the waves and contributing to the conservation and management of important species.

The POST Collection will be featured, along with other Census of

Marine Life collections, in the pilot version of the PLoS Hub for Biodiversity, to be launched later this year. This groundbreaking resource will aggregate relevant articles from a range of open-access sources including our own journal websites and PubMed Central. Please check out the call for articles to find out more about publishing your Biodiversity research in the PLoS journals.

More information: ploscollections.org/com1/post

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