

Integrating DNA barcodes into oceanographic data management systems: the BCO-DMO approach.

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The Biological and Chemical Oceanography Data Management Office (BCO-DMO; www.bco-dmo.org) works with investigators to serve data online from research projects funded by the Biological and Chemical Oceanography Sections and the Division of Polar Programs Antarctic Organisms & Ecosystems Program at the U.S. National Science Foundation as well as other funding sources, including Census of Marine Life projects.

BCO-DMO can deal with a wide variety of data, including but not limited to biological, chemical, and physical oceanography measurements, data from DNA studies, and experimental and model results. The repository routinely deals with CTD, biological abundance, meteorological, nutrient, pH, carbonate, PAR, sea surface temperature, heat and momentum flux, sediment composition, trace metals, primary production, and pigment concentration measurements, and with photographs, images, and movies. We generally recommend that the actual sequence data (DNA barcodes and genetic markers for species identification, and as well other types of genetic data) be submitted to GenBank with sequence accession numbers and the associated environmental data contributed to BCO-DMO. Direct links to the sequence repository can be created either within the co-located and related environmental datasets or as separate datasets. This ensures that the data are discoverable from BCO-DMO's website. It is important that the connections between the specimens and related environmental data be retained in order to preserve the chain of custody back to the identified specimen via the GenBank Accession Number. All data managed by BCO-DMO are publically accessible once released by the contributing investigators.

Key words: DNA barcodes, ocean data management, BCO-DMO, GenBank Accession number.

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