

Preface

Workshop date: XX XX 2025

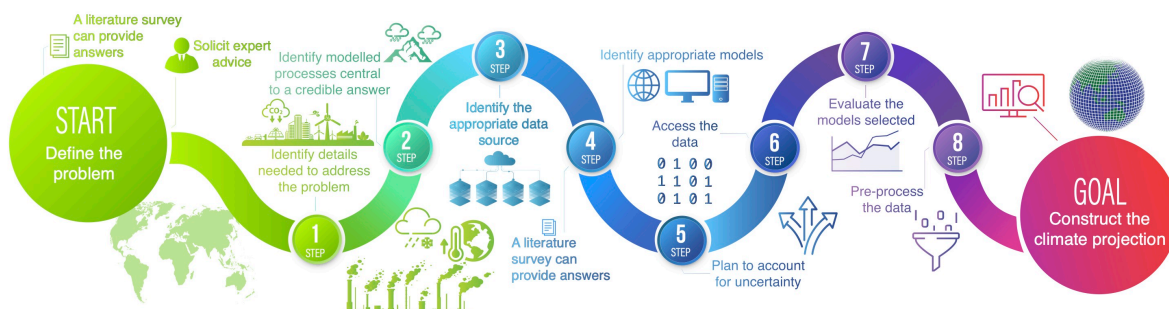
Location: Bodega Marine Laboratory

Instructors: Jessica Bolin, Mikaela Provost, Mer Pozo-Buil, Mary Fisher

R is undoubtedly the programming language of choice for many marine ecologists. However, navigating the complexities of downloading, processing and wrangling gridded oceanographic data within R can represent a steep learning curve. As climate-related projects continue to receive funding and the impacts of climate variability and change on our oceans become increasingly evident, **the ability to efficiently interact with, and use, Earth System Model (ESM) outputs for our research is more critical than ever.**

The aim of our one-day R course is to train students, researchers and faculty in skills needed to be proficient in creating projections of physical variables from ESM outputs, with the goal of using them for ecological applications. Specifically, we'll be creating projections of sea-surface temperature across three time periods out to 2100, across two climate scenarios, for the California Current region.

Our workshop is designed around Step 8 (pre-process the data) in the workflow of best practices for using ESMs for marine ecologists, as defined in Figure 1 within (Schoeman et al. 2023).



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Schoeman, David S., Alex Sen Gupta, Cheryl S. Harrison, Jason D. Everett, Isaac Brito-Morales, Lee Hannah, Laurent Bopp, Patrick R. Roehrdanz, and Anthony J. Richardson. 2023. "Demystifying Global Climate Models for Use in the Life Sciences." *Trends in Ecology & Evolution* 38 (9): 843–58. <https://doi.org/10.1016/j.tree.2023.04.005>.