

Summer 2019 California Current Ecosystem Survey U.S. – India Collaboration on CPS Fisheries Update

One of the nice benefits of collaborative research is learning small efficiencies from other researchers that we may have overlooked in our own work. On our first night of trawling during leg 3 of the cruise, Dr. Manjebrayakath demonstrated a technique for extracting otoliths that is somewhat different than that which most of our biologists have used here. Several of our volunteers and scientists have found his method to be very fast and reliable, and have quickly adopted it.



Dr. Hashim Manjebrayakath of the Centre For Marine Living Resources and Ecology, Cochin, India, onboard FSV Reuben Lasker

Dr. Manjebrayakath says that he has appreciated learning NOAA's biological data collection methods for trawling and CUFES. He is particularly interested in the CUFES because his institute recently completed the first installation on an Indian research vessel. Dr. Manjebrayakath has also enjoyed learning NOAA's acoustic data-collection techniques and processing methods, particularly those for the newer EK80 Echo Sounder.



Dr. Manjebrayakath works with NOAA volunteer Natasha Hunter to extract otoliths from Northern anchovy *Engraulis mordax*