Fishing has been a vital subsistence activity for Native Californians for millennia. As such, archaeologists have explored indigenous fishing practices to elucidate issues pertaining the colonization of the Americas, development of cultural complexity, gender, and many other research agendas. This presentation will focus on four interrelated projects that employed experimental archaeology to better understand fishing cultures in central and southern California. More specifically, we will discuss the replication of fishing tackle and the simulation of pre-contact fishing methods including hook and line, netting, and hand capture techniques. Finally we will debate experimental archaeology in the context of anthropological ethics.