Bioeconomic adaptive management procedures for short-lived species: A case study of Pacific saury (Cololabis saira) and Japanese common squid (Todarodes pacificus)

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Abstract

Short-lived fisheries stocks are subject to large fluctuations in abundance and respond rapidly to many factors including changes in oceanographic conditions, biological interactions and fishery exploitation. Management of such species requires a flexible, adaptive framework that responds rapidly to a changing environment, although such schemes are rarely operationalized. In this article, we develop a set of bioeconomic adaptive management schemes that respond to changes in economic conditions, stock abundance and catchability, using as case studies the fisheries targeting short-lived Japanese common squid (Todarodes pacificus) and Pacific saury (Cololabis saira). We suggest that such adaptive schemes have the potential to support the successful implementation of profit maximizing (MEY-based) harvest policies for borderline profitable fisheries targeting short-lived species.