

Kiran Solanki

Zonal allocation in mackerel

Mackerel (*Scomber scombrus*) is one of the most abundant and valuable of Scotland's commercial fish, with a first sale value of over £125 million in 2013 [1]. The fishery is part of a multinational fleet that exploits the North East Atlantic mackerel stock as it undertakes its extensive annual migration. Mackerel stocks collapsed in the 1970s due to overfishing [2]. The implementation of a management plan led to decreases in fishing mortality and increases in abundance, which led to mackerel occupying a larger area than ever before. Environmental changes have also caused an expansion in the spawning distribution [3], with changes in migration patterns being observed since the 1980s [4]. The expanding distribution of mackerel has led to conflicts between the European Union, Iceland, Norway and the Faroe Islands about the allocation of total allowable catches [5]. This has led to a need for a scientific assessment of the "zonal attachment" of the stock which could provide objective criteria to help address this issue. "Zonal attachment" is the share of a stock which is found in a country's economic zone weighted by the time that the stock spends in that zone over a year [7]. This is then used to determine the relative allocation of total allowable catches. This project aimed to explain this expanding distribution of mackerel, review a set of zonal attachment case studies, and to also create a set of working datasets which will then be used in an ongoing honours project to apply a zonal attachment concept to the mackerel stock.

References.

- [1]. Little et al. (2015)
- [2]. Jansen, T. (2014) ICES 71(2): 299-307.
- [3]. Jansen & Gislason (2011) CSR 31(1), 64-72.
- [4]. Iversen, S.A. (2002) ICES 215, 382-390.
- [5]. Jensen, F. (2015) Fisheries Research 172: 7-16.
- [6]. ICES WG WIDE (2015).
- [7]. Hannesson, R. (2013) Fisheries Research 140: 149-154.