



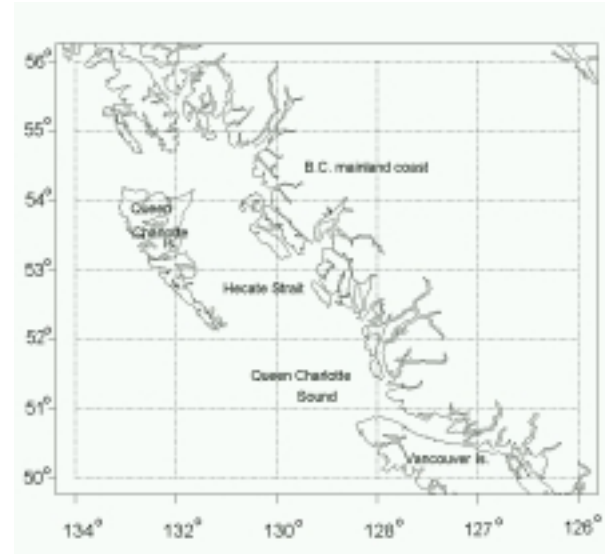
English Sole Hecate Strait (Areas 5C/D)

Background

English sole (*Parophrys vetulus*) is one of four important flatfishes caught in the commercial trawl fishery off British Columbia. While its range extends from Baja California to the Bering Sea, B.C. is the northern limit of commercial abundance for the species. The largest discrete stock in B.C. is found in Hecate Strait (Areas 5C/D).

English sole live as long as 21 years and recruit to the commercial fishery at about 4 years of age. They spawn annually, males beginning at 3 years of age and females at 4.

Directed fishing for English sole takes place primarily on fishing grounds in Hecate Strait, but to a lesser extent in Queen Charlotte Sound and off the west coast of Vancouver Island. The fishery for English sole was unregulated prior to 1990, when managers imposed annual quotas. In 1996 individual vessel quotas were applied. Abundance of the Hecate Strait stock has fluctuated over time due to changes in the ocean environment. The biomass of the stock underwent a prolonged decline between the early 1950s and mid-1960s, but had recovered by the mid 1970s. In 1997 the biomass was above the 50-year average.



Summary

- English sole biomass in Hecate Strait is now above the long-term average for the last 50 years.
- Fishing mortality for the stock is below $F_{0.1}$ and the risk of overfishing this stock is negligible at this time.
- The spawning stock biomass should remain at a relatively high level at the current exploitation rate.
- Maintenance of the spawning stock biomass is necessary to provide adequate recruitment so the stock can sustain itself under adverse environmental conditions.

The Fishery

Annual landings of English sole from the commercial trawl fishery have fluctuated between 100 and 2,600 tonnes between 1944 and 1998. The average annual landings of English sole between during this period has been about 800 tonnes. English sole are caught in a directed trawl fishery and are a component of the bycatch in the trawl

fishery for Rock sole and Pacific cod. The fishery for English sole involved both Canadian and United States vessels until 1977, when Canada declared extended jurisdiction over its offshore resources. Since then, the fishery has been exclusively Canadian. Landings of English sole from Hecate Strait have been declining in recent years as quotas were lowered because of a decline in stock abundance.

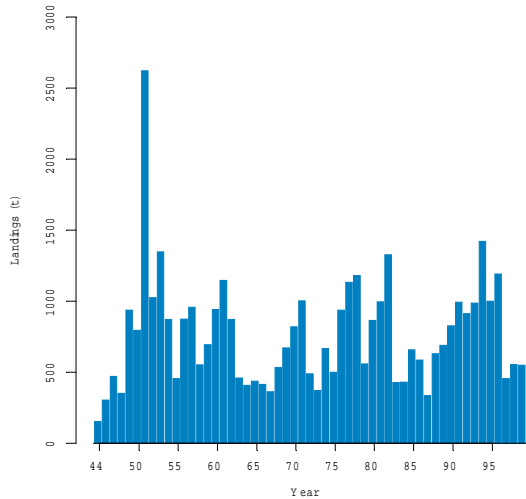


Figure 1: Annual landings of English sole between 1944 and 1998.

Resource Status

English sole abundance has fluctuated cyclically over the last 40 years, mainly due to variability in the ocean environment. English sole abundance increased steadily between 1962 and 1993. Since then, the stock has declined due primarily to a decline in the proportion of young fish recruiting to the population.

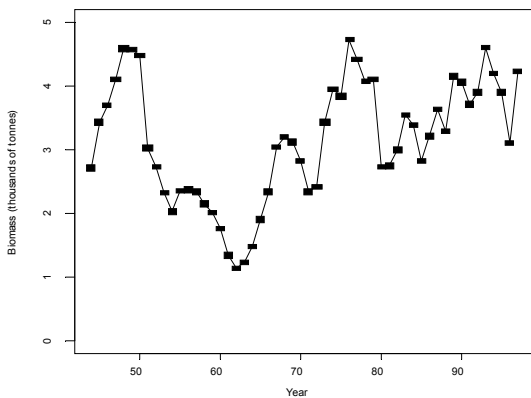


Figure 2: Biomass trajectory for Hecate Strait English Sole, 1944-98

Research trawl surveys have been conducted in Hecate Strait to assess the abundance of English sole and other groundfish species over the last 15 years. The survey catch-rate index (in terms of catch per unit of effort) for English sole increased significantly in the late 1980s, but declined between the early and mid 1990s. Abundance has stabilized since 1996.

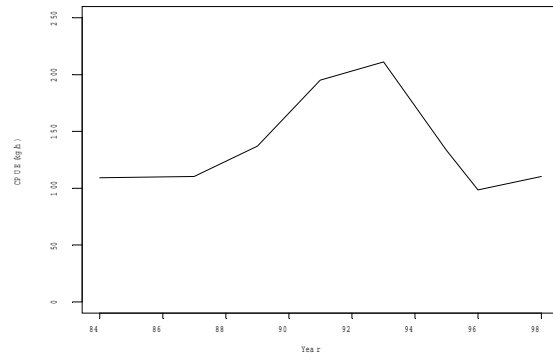


Figure 3: Research trawl survey CPUE index for Hecate Strait English sole, 1984-98.

Management Considerations

Management is based on a fixed exploitation rate corresponding to a fishing mortality reference point of $F_{0.1}$. This will allow the stock to maintain its spawning stock biomass and ensure a rate of recruitment that will sustain the stock in the long-term.

Outlook

Abundance has stabilized in recent years to lower allowable catches. No change in this trend is expected in the near future unless ocean conditions are favorable. Allowable catches of this species will be maintained at the current level until changes in recruitment and abundance are observed.

***For More Information
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