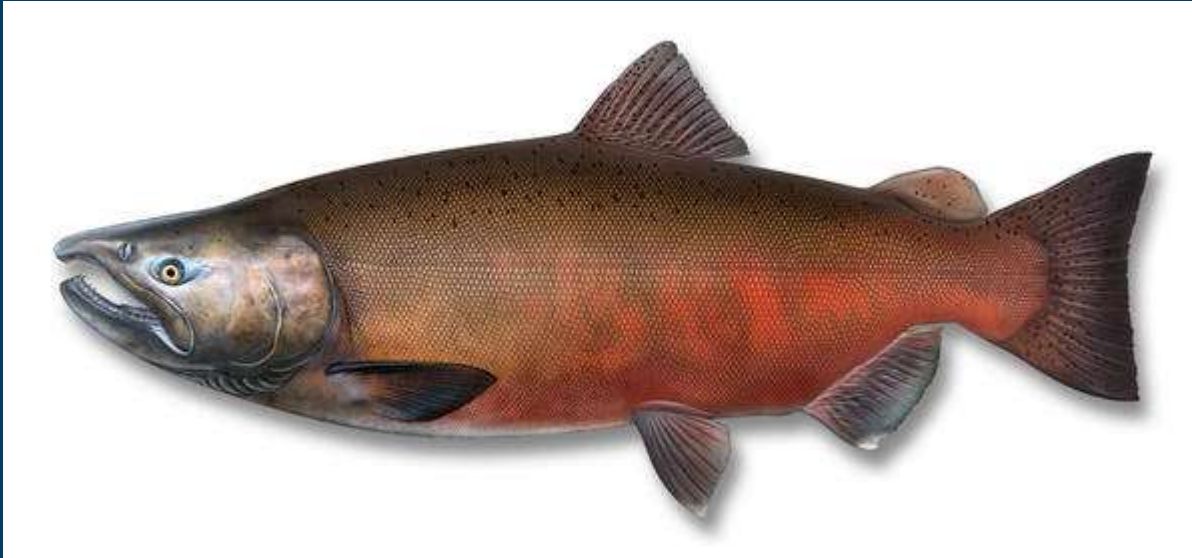




Salmon at Sea



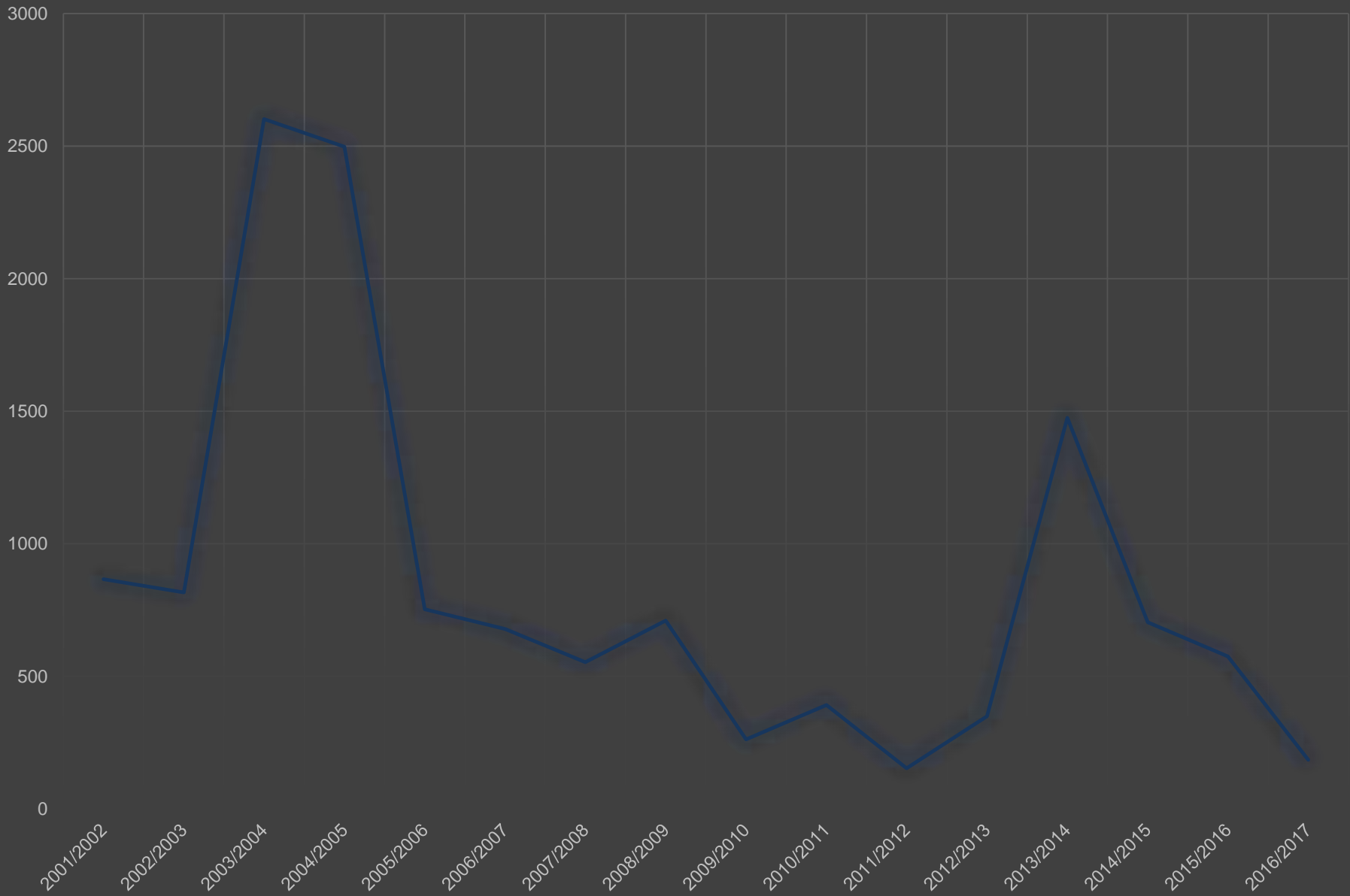
Growing and Protecting New Zealand



Salmon at Sea Agreement

- In the 1980s large numbers of salmon were caught at sea as catch of large commercial trawlers targeting red cod and barracouta.
- This resulted in conflict with amateur anglers and in 1988 the government responded by closing the SCA, the main area where salmon congregate before returning to ECSI rivers to spawn, to large commercial trawlers from early December to mid-February
- This worked and the salmon catches from commercial trawlers reduced significantly
- In 1991, there was an establishment of an agreement between commercial and amateur fishers. The Agreement aimed to minimise the salmon catch of the larger trawlers when they are targeting red cod and barracouta.
- Regulations control the trawling in the SCA

Salmon Catch ECSI 2001-2017



Origin of Salmon caught at sea

- During NIWA investigations into capture of salmon at sea by trawlers in the late 1980s, recapture of salmon tagged as juveniles in their rivers of origin indicated most of the fish caught at sea around Banks Peninsula and in the Pegasus Bight came from the Waimakariri, Rakaia and Rangitata rivers fisheries.

The commercial trawl fishery ECSI(FMA3)

- Since the 90's continued decrease in number of vessels
- 32 vessel historically reported Salmon catch, last year only 6 vessels
- During the 2000's trawl effort has been reasonably consistent
- Move toward smaller vessels in FMA 3
- On board technology has increased vessel efficiency
- Economics of RCO and BAR fishing marginal

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- FMA 3 shows cyclic variability of the main trawl target species RCO and FLA that changes annual effort (both these stocks have in-season assessments)
 - Change to the trawl fleet after TAC review of RCO and FLA in 2007
 - Recent changes to Digital Monitoring will improve reporting from trawl vessels, E-logs and cameras

Changes to Salmon at sea catches

- Increased natural mortality by predation (perhaps increasing predator populations)
- Fishing mortality (commercial has decreased)
- Lack of food. Based on the studies that have been done salmon seem to feed mostly on sprats and red euphausid.

Other observations

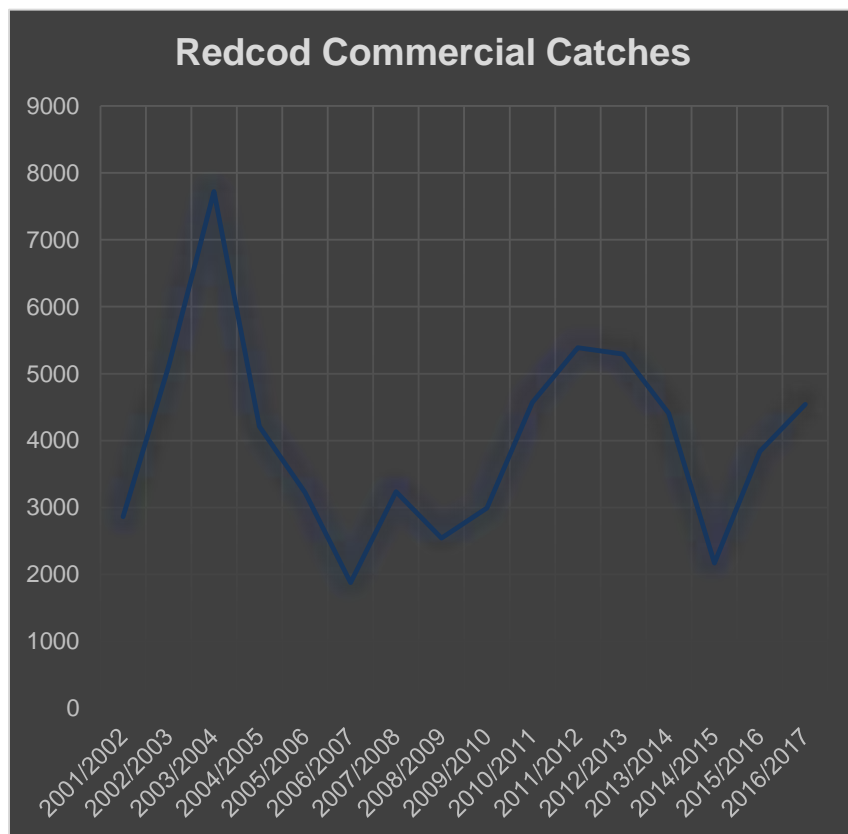
- Commercial fishers don't see the same krill aggregations
- Decrease in sprat populations (Habitat changes)
- Inshore squid catches have decreased since the 70's and 80's
- Fishing effort across the EEZ does not show any Salmon catches (where do the Salmon go?)

Pegasus Fishing (Comparison of Catch)

- Largest catcher in FMA 3 Inshore 2000 t per year , but only catch approx. 200kg of Salmon per year.

Salmon catch/Redcod Catch

Redcod



Salmon

