National Yellowtail Kingfish Policy

New Zealand Sport Fishing Council

September 2015

Goal

To maintain the world class recreational fishery for kingfish in New Zealand.

Objectives

1. Ensure there is an abundance of large kingfish around New Zealand to provide ecosystem services and high quality recreational fishing.

2. That kingfish stocks and the biomass of prey species on which they depend are maintained or increased.

3. The economic, social and cultural importance of non-commercial fisheries for kingfish is described and recognised.

Strategy

1. Promote the intrinsic value of large kingfish as part of a healthy marine ecosystem.

2. Promote a high value sport fishery for kingfish as a priority for fisheries managers and decision makers.

3. Promote conservative fishing methods including catch and release by recreational fishers and charter operators.

4. Reduce release mortality by using best practice fishing methods, and promote the use of non-offset circle hooks when targeting kingfish with bait.

5. Kingfish are an important species in fishing tournaments. Measure and release should be encouraged.

6. Tagged kingfish should be greater than 75 cm and measured, nose to tail fork, on release and recapture with the location accurately recorded.

7. Promote a bycatch-only allowance for commercial fishing and the use of Schedule 6 live release to remain within the TACC.

8. Promote a ban on set nets on deep reefs and offshore pinnacles regardless of fisher's stated target species.

9. The Ministry for Primary Industries must closely monitor and report annually kingfish catch by trawlers and purse seine vessels in New Zealand jack mackerel fisheries. Hot spots of kingfish catch need to be identified and protected by ensuring those vessels avoid these areas with the use of time/area closures, if necessary.

Background

Yellowtail kingfish (*Seriola lalandi*) in KIN 1 is a Group 3 stock in the draft Fisheries Plan for Inshore Finfish. Current biological parameters and status of stocks are summarised in the kingfish plenary report published by MPI. This report notes that kingfish is a high value species for all stakeholders. Estimates of current and reference biomass are not available. The stock is monitored with a five yearly catch at age survey of recreational catch from charter and private boats. The first of these was conducted in 2010. A repeat of this survey is currently underway.

Size at maturity

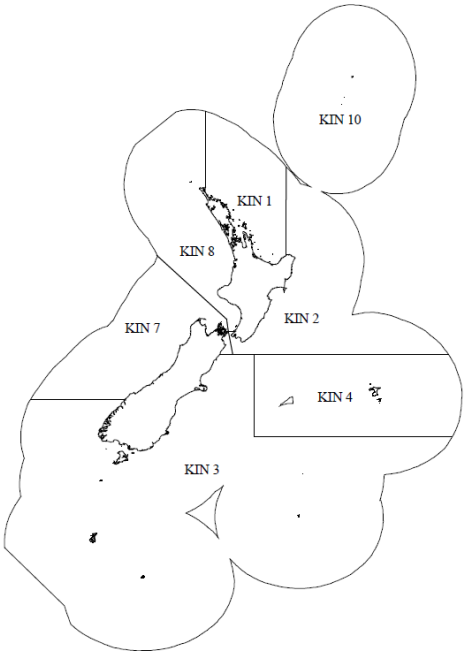
The growth rates and size at maturity vary between individual kingfish. The measure commonly used is the size where 50% of the fish are mature. For kingfish this is 83 cm for males and 97 cm for females. The study used kingfish from the east and west coast North Island and size range of fish at first maturity ranged 15 cm either side of the values above.

Recreational fishery

The yellowtail kingfish is New Zealand's premier small gamefish species. New Zealand has a reputation for the largest yellowtail in the world, and 25 of 26 world records are held by New Zealand anglers (the woman's 1 kg line class record of 2.25 kg was caught in Australia) (IGFA 2014). The all-tackle record is shared by two Bay of Plenty anglers who caught 52 kg specimens in 1984 and 1987. New Zealand's national records are kept by the New Zealand Sport Fishing Council.

The amateur fishing regulations allow a daily bag limit of three kingfish per person with a minimum legal size of 75 cm.

The National Panel Survey (NPS) in 2011–12 provide updated estimates of kingfish harvest for KIN 1 and nation–wide. The number of fish harvested is down on previous surveys (1994 to 2001 Telephone Diary Surveys) but the average size is larger, in part due to an increase in the MLS to 75 cm in 2004. The National Panel Survey estimates that 80% of the national amateur harvest of 660 t came from KIN 1 (Table 1). Rod and line was the predominant method and about 90% of catch coming off trailer boats and launches (Wynne-Jones et al. in prep). The NPS has kingfish as the third largest New Zealand recreational fishery by harvest weight behind snapper and kahawai. There is no estimate of kingfish harvest from the FMA 1 aerial overflight survey in 2011–12.



Kingfish Quota Management Areas

Table 1: Amateur harvest estimates of yellowtail kingfish by QMA from the National Panel Survey.

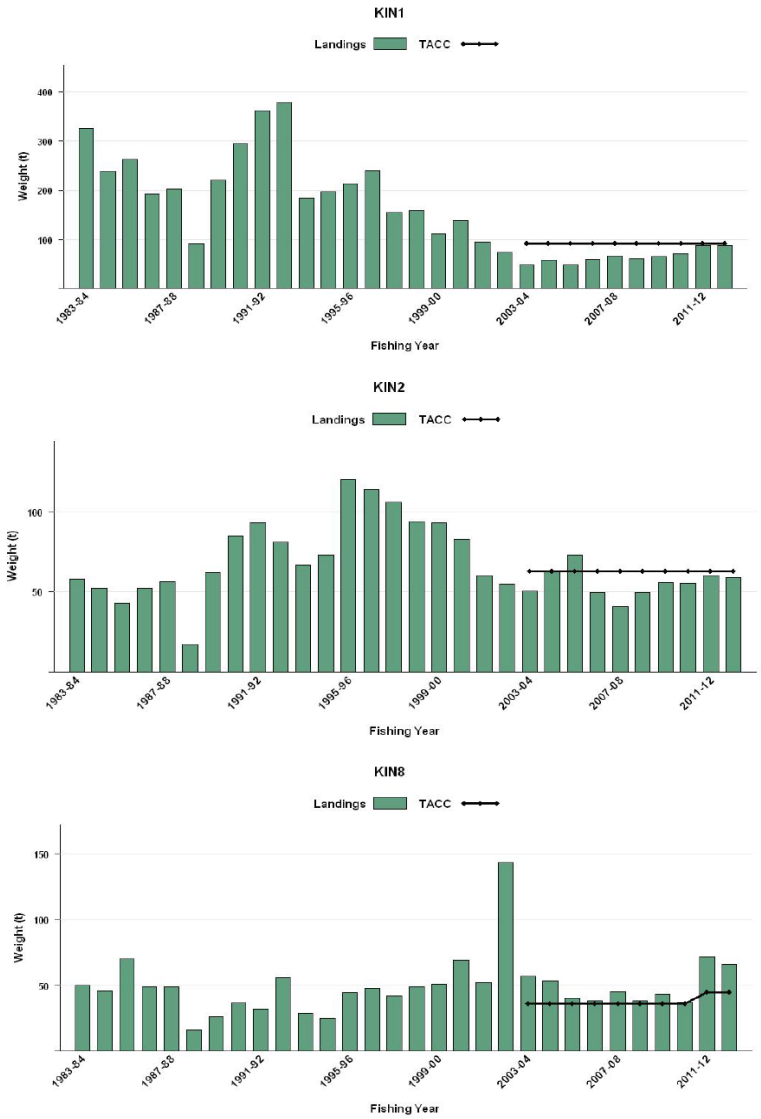
QMA.KIN	Fishers (n)	Events (n)	Harvest (n)	cv	Mean Weight (kg)	Harvest (tonnes)	cv
1	219	324	52056	0.13	10.28	535.30	0.13
2	28	35	4025	0.24	10.09	40.60	0.24
3	2	2	289	0.71	9.97	2.89	0.71
7	12	17	2079	0.38	9.97	20.73	0.38
8	35	46	6252	0.25	10.01	62.60	0.25
TOTAL	296	424	64700	0.11	10.23	662.12	0.11

Kingfish have been a major component of the New Zealand Gamefish Tagging programme for many years. New Zealand Sport Fishing Council purchase and distribute tags through their clubs at cost. Alongside the research objectives of recording growth and movement, tag and release offers anglers a method of formally recording their capture while contributing to the conservation of the stock. Over 21,000 kingfish have been tagged and released in the New Zealand gamefish tagging programme for around 1500 recaptures. While yellowtail kingfish are capable of extensive movements (trans-Tasman trips have been recorded in both directions) more than 80% of recaptures are made within 20 nmiles of release.

Commercial fisheries

Kingfish commercial landings are reported largely as bycatch of inshore setnet, trawl and longline fisheries. From 1991 to late 2003, targeting of kingfish (as a non-QMS species) was prohibited unless the species was identified on a fisher's permit. A few permit holders were authorized to target kingfish and most of their catch was taken using setnets.

The largest commercial catches generally come from KIN 1. Landings were relatively large in 1983–84, especially in KIN 1, and were probably due to the greater number of vessels in the fishery prior to the introduction of the QMS in 1986. In addition, there was increased effort and better reporting as fishers sought to establish a catch history for the main species in anticipation of the introduction of the QMS. Commercial catch by fishing year for three kingfish quota management areas are plotted below.



'e 1: Historical landings and TACC for the three largest KIN stocks. From top left: KIN 1 (Auckland East), KIN 2 (Central East) and KIN 8 (Central Egmont).

The total reported commercial catch across all FMAs peaked in 1992–93 at 532 t, with 73% of the catch from KIN 1. By 1993–94, the reported catch of kingfish over all QMAs decreased considerably, mainly because of the reduced catch from KIN 1. Kingfish was introduced to the Quota Management system in 2003 with a combined commercial quota of 200 t, a 20% reduction on the five year catch history.

About 30,000 tonnes of jack mackerel are caught off the west coast of the North and South Islands every year (JMA 7). A high proportion of this catch is taken by foreign charter vessels and the bycatch of kingfish often exceeded the Total Allowable
Commercial Catch for KIN 7 (15 tonnes) and KIN 8 (45 tonnes).

2010 catch-at-age project on recreational kingfish catch

A total of 2091 kingfish caught by recreational fishing methods were measured for the MPI project KIN2009/01 during 2010. Of these, 1287 (62%) were released. The target sample size of 1000 lengths and 250 heads from East Northland and the Hauraki Gulf was exceeded (1198 lengths and 285 otolith sets) between February and July. Anglers and skippers from Bay of Plenty collected 905 lengths and 175 otolith sets between February and November 2010.

Kingfish otolith samples were collected as a subsample of all kingfish measured and used to create separate age-length keys by sex for East Northland and Bay of Plenty. Otoliths were aged using thin sections with emphasis on accurately identifying the first growth ring.

The East Northland sample was dominated by young fish less than 8 years old, with few fish older than 12 years. The oldest and largest fish sampled in East Northland was a 156 cm fish (41.6 kg) caught in Bream Bay aged at 22 years.

Spatial differences in age composition were evident within the Bay of Plenty samples; with fish older than 15 years poorly represented in inshore areas when compared to White Island. The age structure of the Bay of Plenty inshore samples was nevertheless broader than those from East Northland. The oldest fish sampled in Bay of Plenty was a 170 cm fish caught at White Island aged at 24 years.

Catch curve estimates of total mortality (Z) differ between the two KIN 1 sub-regions; fewer older fish in East Northland implies a higher level of fishing mortality than for the Bay of Plenty. Assuming full recruitment as 5 year olds in East Northland produces a total mortality estimate of 0.77. Assuming full recruitment at 5 or 6 years in the Bay of Plenty produces a total mortality estimate of 0.34–0.42. The estimate of natural mortality is 0.20 for New Zealand kingfish, so in 2010 the total fishing mortality estimate was between 0.14 and 0.22 for the Bay of Plenty, which is within a sustainable range. The 2010 sample may not have captured the full size range of the population in Northland.

Offshore habitat at the Three Kings area was included in the 2014-15 catch at age survey and a broader age range of fish will be sampled in Northland.