



BlueWater
MARINE RESEARCH



2014 Yellowtail Kingfish Monitoring Report

Background

Kingfish are a highly valued catch for recreational and charter fishers around northern New Zealand. Without doubt, we have a world class kingfish fishery right here. The commercial catch was reduced by 20% in October 2003 and the recreational minimum legal size was increased from 65 cm to 75 cm (nose to tail fork) in January, 2004.

In 2010, recreational charter and private fishers around the upper North Island worked with us to monitor the status of kingfish stocks. This Government funded project provided a snapshot of the size and age of kingfish in the recreational catch. This target fishery catches a more representative sample of the population than commercial fishing methods. Annual growth rings in thin slices of the otolith (balance or ear bone) were used to age the kingfish and estimate an exploitation rate for each area.

The results of the 2010 project were intriguing. More teenage fish were found in the Bay of Plenty than east Northland. There were plenty of fish from Northland aged at 4 to 6 years old but few fish over 10 years old that year.

The Bay of Islands International Yellowtail Tournament has provided a valuable opportunity to measure a large number of fish at the same time every year and the data are starting to provide answers. This work is funded by fishers, not the government, through the support of the Bay of Islands Swordfish Club, New Zealand Sport Fishing Council and LegaSea.

Results from Bay of Islands Yellowtail Tournament 2010 to 2014

The Bay of Islands International Yellowtail Tournament is the largest kingfish tournament in New Zealand and has been running for 45 years, with both junior and senior teams representing fishing clubs from New Zealand and Australia. The size of fish in the landed catch was smaller in 2014 with a lot of fish in the 86 to 97 cm range (Figure 1).

In 2010, fish lengths had a peak at 96 & 97 cm (about 11 kg) consisting mainly of 5 year olds and slow growing 6 year olds (blue line in graph below). Overall fish were larger in 2011 with a peak at 102 & 103 cm (about 13.5 kg). In 2012 the peak moved 2 cm to the right (purple line) and again in 2013 with the reduced peak at 106 & 107 cm (average weight 15.9 kg) (orange line). In 2014 a small peak is seen at 110 & 111 cm (about 16.9 kg) which is in the right place if we are tracking an annual progression from 5 year olds to 9 year olds (Figure 1). However, 9 year olds ranged between 100 cm and 120 cm in the 2010 aging study, so we should not take this peak too literally.

The weather conditions in the 2014 BOI Yellowtail Tournament were pretty bad. Two days fishing were cancelled and the days that were fished, bar one, were marginal. This restricted where boats could reasonably fish. So the size distribution may reflect the size of kingfish available in the BOI at present rather than the usual fishing area. On the bright side, these fish may represent a new cohort entering the fishery, so it will be very interesting to watch this in future years.

No aging has been funded since 2010 but a new project is planned for next year. It seems that there has been strong recruitment from successful spawning events nine or ten years ago. This also coincides with the time that the TACC was reduced and the minimum size increased. It appears that these management changes may well have been successful. These fish appear to have stayed in coastal waters and grown 2 to 3 cm per year.

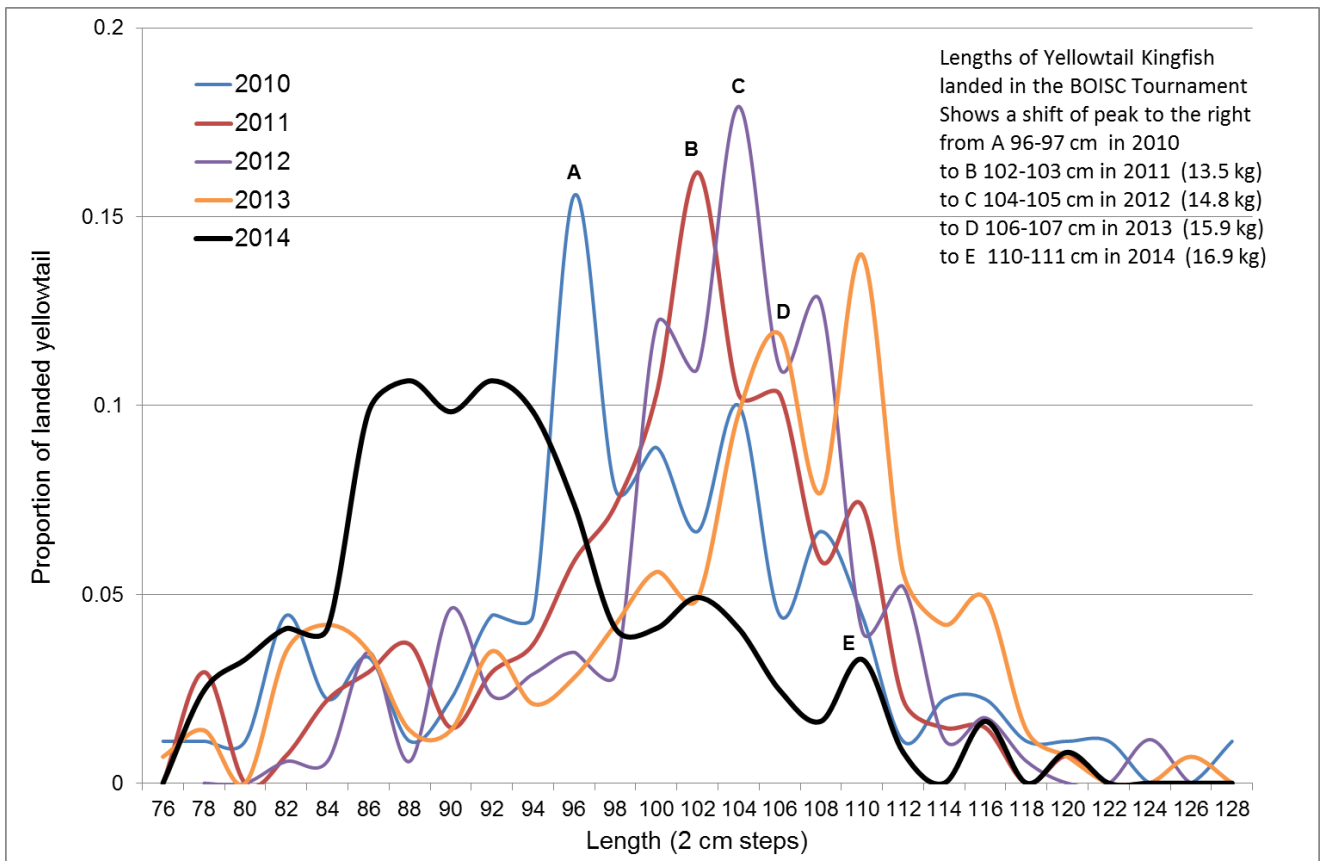


Figure 1: Plot of the proportion at length by year of yellowtail landed in 2010 (90 fish), 2011 (136 fish), 2012 (173 fish), 2013 (144 fish), 2014 (123 fish) during the Bay of Islands International Yellowtail Tournament. Does not include fish tagged and released.

We also observed huge schools of juvenile kingfish (25 – 35 cm in length) offshore in 2013, and have received numerous similar reports from throughout the north-east coast. One school encountered outside the Pinnacles off Tutukaka contained many thousands of fish, aggregated under a log. If these fish settle into the coastal population it is likely that excellent kingfish fishing will continue to be available in future years.

Movement of tagged fish

Kingfish tagged during the BOI Yellowtail Tournament over the last 10 years have provided 24 recaptures. These provide more evidence that while capable of long distance movements, most kingfish don't travel far. Seven of 12 fish tagged in the Bay of Islands were recaptured between Cape Brett and the Nine Pin. One fish went north to Stephenson Island and another as far south as Whangamata in the Bay of Plenty.

Tagging fish on release can provide more information about kingfish movement and growth. Please be careful with measurements and provide approximate Lat and Long for releases and recaptures.

Recapture location	Release Location			Average distance Nmiles
	BOI	Cavalli Is	Rocky Pt	
BOI	7	2	2	2.5
Cavalli Is	1	5	1	6
Rocky Pt	1			5
Whangamumu	1			12
Mangonui Harbour			1	40
Stephenson Island	1		1	30
Whangamata, BOP	1			160

Kingfish Projects

The 2010 kingfish age and growth project was funded by the Ministry of Fisheries (now the Ministry for Primary Industries) and conducted by Blue Water Marine Research, Stock Monitoring Services and NIWA. Report at <http://fs.fish.govt.nz/Page.aspx?pk=113&dk=23125>

The New Zealand Gamefish Tagging Programme is supported by the Ministry for Primary Industries and New Zealand Sport Fishing Council and managed by Blue Water Marine Research. A report is available at <http://fs.fish.govt.nz/Page.aspx?pk=113&dk=23505>

The on-going collection of length data to monitor kingfish in Northland is supported by the Bay of Islands Swordfish Club, New Zealand Sport Fishing Council, LegaSea, The NZ Fishing Competition and Fin-Nor to enable recreational fishers to gather useful information to help monitor kingfish stocks.

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