



Striped Marlin Satellite Tagging Results

New Plymouth Sportfishing and Underwater Club

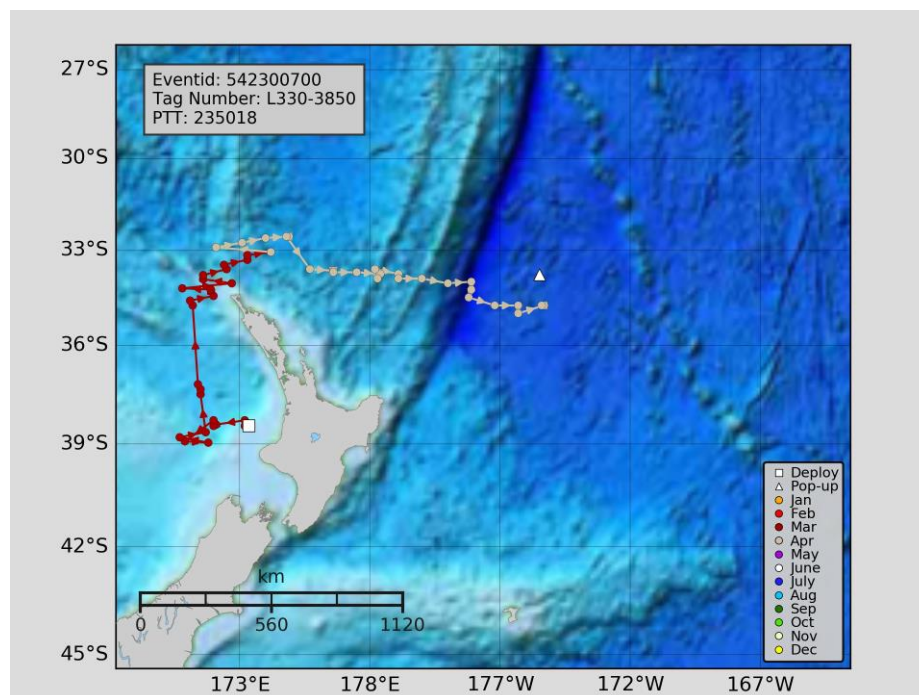
June 2023

Four of the hi-tech Popoff Satellite Archival Tags deployed in 2023 have surfaced and transmitted. Three of these tags have provided location, temperature, and depth information which has been analysed by Stanford University in support of the IGFA Great Marlin Race.

Thanks to the sponsors, fishers, and tagging committee's perseverance we finally have results from this project. One tag parted company from the marlin soon after it was deployed and there are still two tags on marlin that are due to pop-off and start uploading data in October this year.

The first track comes from a 70 kg striped marlin tagged by the crew on *Crusader*. The tag floated to the surface after 59 days. This tag was due to stay on the fish for 240 days but came off early. There is no indication that the fish was in trouble or died prior to the tag releasing.

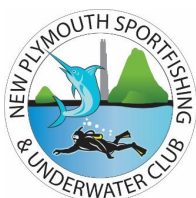
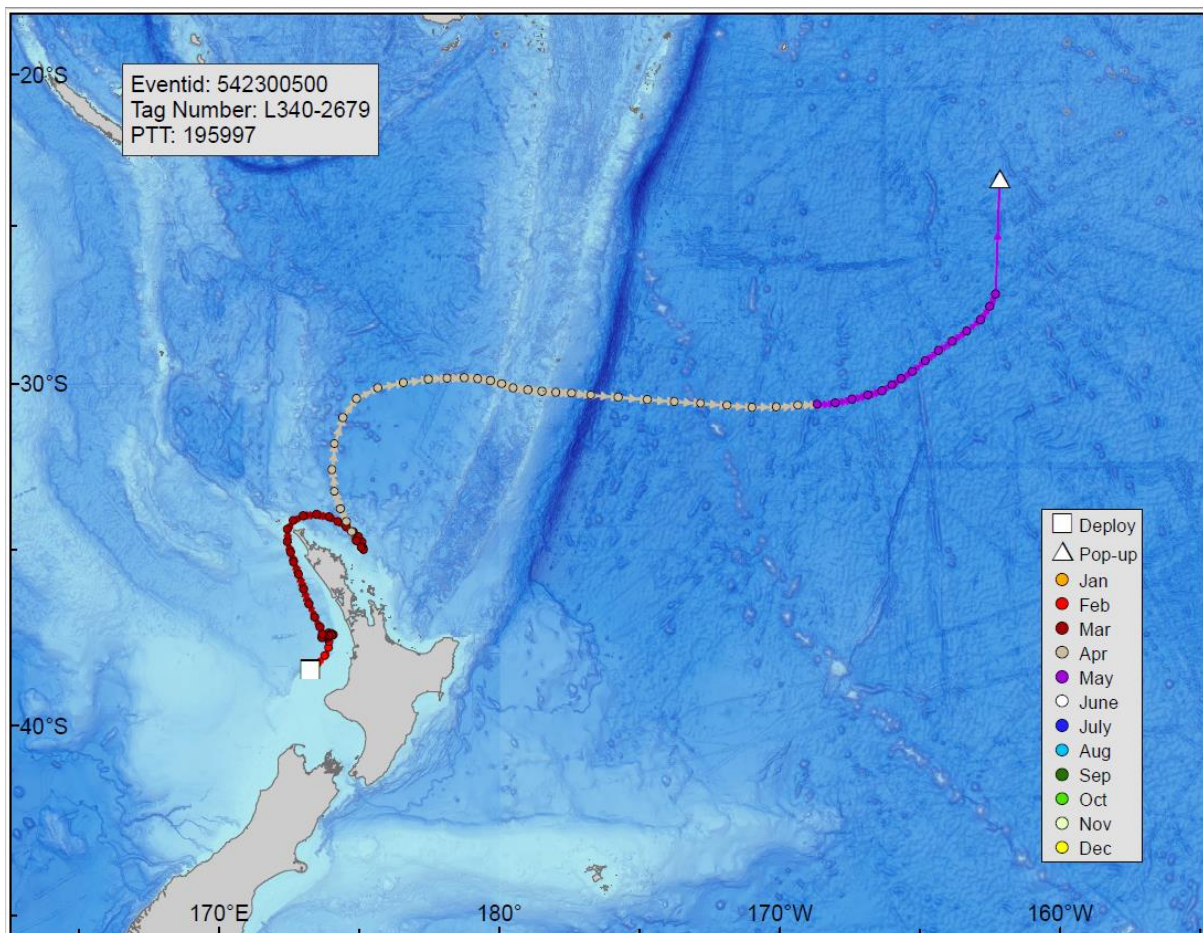
The tag locations that are estimated mainly from light levels and the time of dawn and dusk are approximate. They show the fish moving west after release then north for the rest of March (dark red track) before moving east during April to the location of transmission (white triangle). Surface water temperatures remained between 20° and 23° C for all of the track.



The second track comes from an 80 kg striped marlin tagged by the crew aboard *Trident* on 20 February 2023. The tag popped off as programmed after 85 days on 16 May 2023. This tag was a few years old and transmitted for a shorter time than usual. The track below was generated from a statistical state space model that used sea surface temperature and light level location to provide the most likely track.

This fish did not move far in the last week of February then stayed for several days off Port Waikato and Manukau in early March before Rounding North Cape. In April it headed north and then west (grey track) but at a more northern latitude to the first fish. It turned northeast in May and the tag transmitted at 23.426° S and 162.159 W southwest of the Cook Islands (white triangle).

There is a known spring/summer spawning area for striped marlin in French Polynesia and it is possible that these fish are returning to the area where they came from.

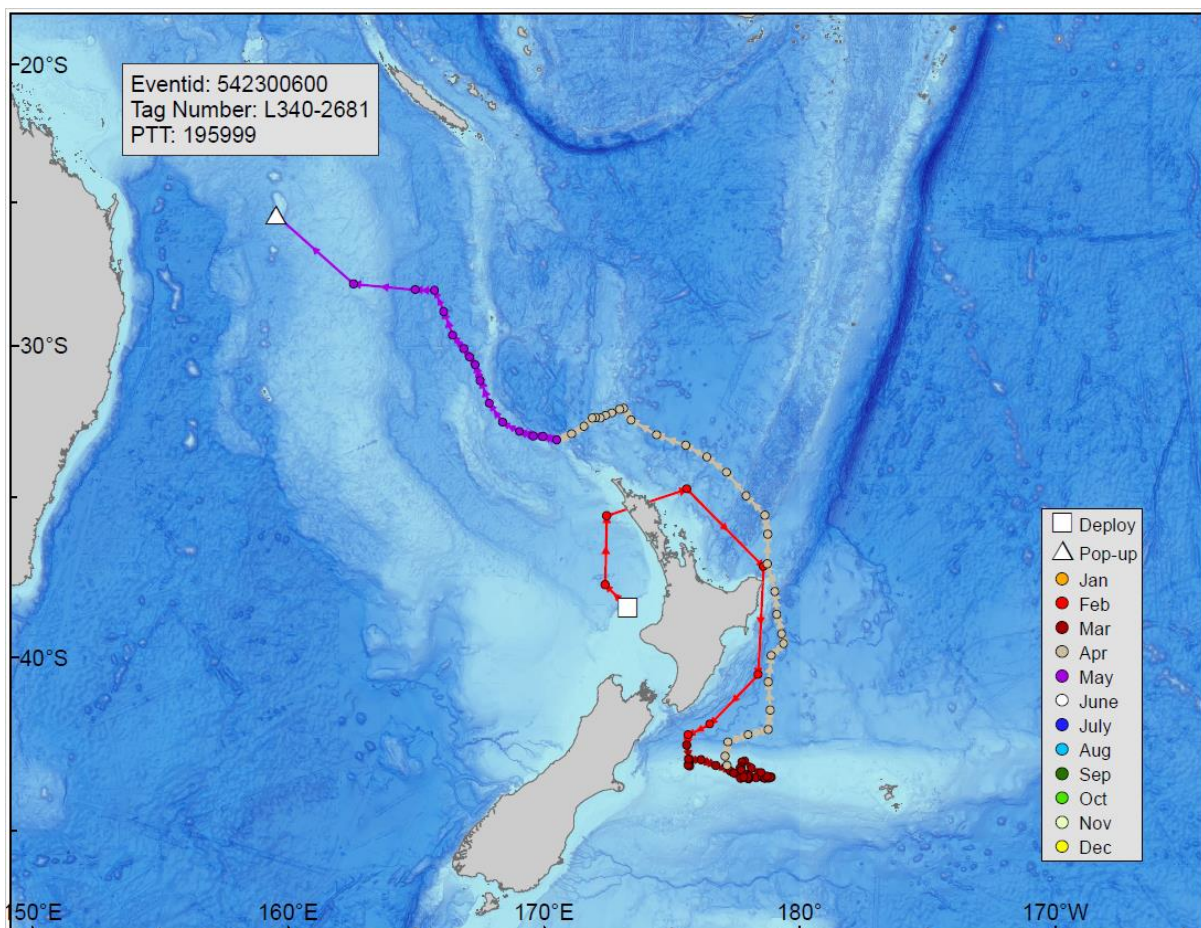


While the first two tracks are somewhat unexpected, as they show west coast fish leaving New Zealand to the east, the third is the star of the show so far.

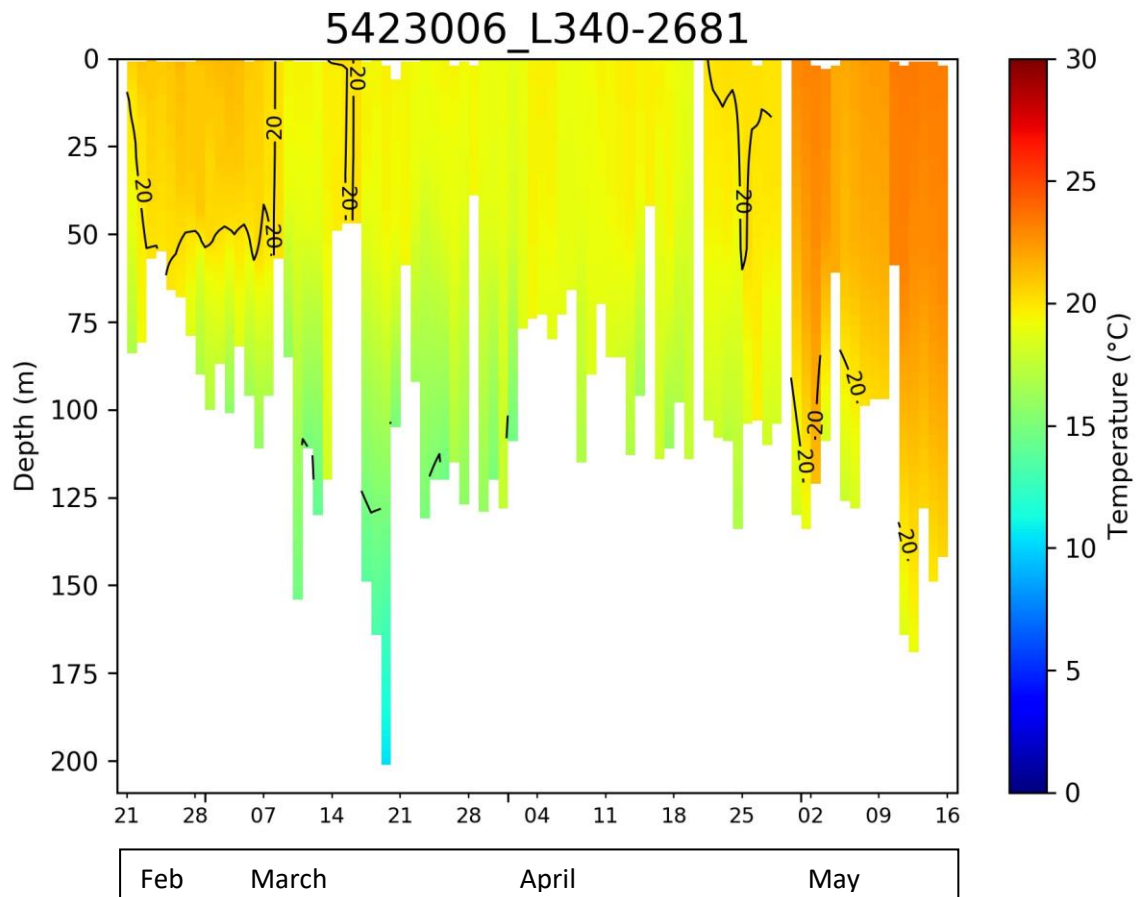
This striped marlin was 95 kg tagged by the crew on *Obseasion* on 21 February 2023. The tag popped off as programmed after 84 days, also on 16 May 2023. Again, the tag transmitted for a shorter time than usual, and a the most likely track was generated from a statistical model using sea surface temperature and light level locations. Location data was not available for the several days prior to the tag popping off.

The model shows this fish moving around North Cape and down the entire east coast of the North Island during the last week of February (red Track). In March the fish arrived on the Mernoo Bank and spent the rest of that month on the Chatham Rise. In April it headed north and then west when it reached the Three Kings Rise (grey track). It turned northwest in May and the tag transmitted at 25.45° S and 159.51° E (white triangle).

There is a known spring/summer spawning area for striped marlin in the Coral Sea between Queensland and New Caledonia. Many striped marlin with gamefish tags from New Zealand and Australia have been recaptured in this area.



The data collected by these tags can be used to summarise the daily maximum and minimum depth and the temperature of the water by depth. Below is data from the third tag. The water temperature and diving profile in February and early March is very similar to the first tag that headed north and around North Cape. The water temperature drops significantly in the second week of March and the diving depth increases. This indicates that the state space model may have underestimated the time taken for this marlin to reach the waters of the South Island. It is still a remarkable and unexpected journey.



Conclusion

- These tags have provided the first detailed tracks of striped marlin released on the west coast of the North Island. All three spent February and March in New Zealand waters and left during April.
- The first two tagged fish spent time off Taranaki or Waikato after being tagged while the third fish did a rapid circuit of the North Island.
- There were reports of striped marlin seen and caught off the South Island in 2023 and warmer sea temperatures and La Niña weather events may have contributed to this expansion of their normal range.
- The IGFA Great Marlin Race team will produce a final report when the remaining two tags have popped off and the data is analysed.

John Holdsworth
30 June 2023

