

Breeding Movements and Winter Dispersal of Black-fronted Terns (*Chlidonias albobriatus*)

By Fraser Gurney

Black-fronted terns are frequently seen in braided rivers around the South Island, but we have little idea of how they spend their days. In November and December 2020, 34 black-fronted terns were caught using drop-traps in colonies in the Ohau and Cass Rivers in the Mackenzie Basin. Each tern was fitted with a GPS device (Druid Technologies, China) that uses a Bluetooth/cellphone network system to upload their data, all while weighing less than 3% of an adult black-fronted tern. Receiving units were placed by both colonies to capture data from the devices and transmit to an online data centre. The GPS devices transmitted data during the black-fronted tern breeding season until the birds stopped returning to their colonies and moved out of range of the receiving units. The terns were banded and three underwing pin feathers were collected from each bird to use DNA to determine the sex of the individuals.

Black-fronted terns transmitted data for between two and 94 days before leaving their colonies. During this time, they entered 23 different habitats (LCDB v5.0), with the most frequented habitats being high-producing exotic grassland, depleted grassland, gravel/rock, river, and lake/pond. DNA analysis revealed that of the 34 birds captured 15 were female and 19 were males. During winter 2021, the receiving units were taken along the Canterbury coastline to try and relocate terns with GPS devices but none were able to be located. In September 2021 the terns began arriving back at their breeding colonies where they could reconnect with the returned receiving devices. Ten GPS devices were detected on returning birds, however limited data was able to be collected – likely due to feathers growing over a device's solar panels. The dataset is still being analysed and on completion will hopefully bring results that can be used to make a meaningful difference to black-fronted tern conservation. My thanks to the Department of Conservation, Birds NZ, Forest & Bird and Lincoln University for their ongoing support with this research.



24 hours (05-11-2020) of GPS points from a black-fronted tern nesting in the Cass River, the body of water is Lake Tekapo.



A black-fronted tern in the hand with its GPS device visible on its back. Photo courtesy of Adrian Paterson.