

# Natal dispersal and diving behaviour ontogeny in juvenile Emperor penguins *Aptenodytes forsteri* from Adélie Land

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The juvenile phase is a critical period for seabirds during which they have to care for themselves and develop skills for both foraging and anti-predator behaviours. The ontogeny of foraging behaviour and dispersion at-sea of post-fledging penguins remains however poorly documented. Emperor penguins are largely confined to waters that are covered at least seasonally by sea-ice. In this study, we were interested in documenting the natal dispersion movements of juvenile emperor penguins, and the ontogeny of their diving behaviour.

In December 2009, 6 SPLASH tags were attached to fledged penguins from the Pointe Géologie colony (66°78 S, 140°08 E), Adélie Land. These tags were programmed to transmit diving data histograms and location through Argos weekly.

The tags transmitted diving and location data during an average of 98 (24–253) d. Juveniles rapidly headed northwards and 4 of them reached latitudes as north as 55°S in the Polar Frontal Zone in mid-January and stayed there until mid-February. Then, the 2 still tracked juveniles headed southward, up to 65°S (mid-April). Afterwards, the last tracked individual showed a westward migration of 2700 km close to the Antarctic shelf slope, along the pack ice edge. Transmission ceased in August. Activity data from the first weeks showed that juveniles were readily capable of diving up to 150–200 m during 5 min, with the majority of dives below 10 m. During winter juveniles dived typically 80–100 times a day, 200 m deep during 6–7 min (up to 250 m and 9 min).

This study points out the importance of the Polar Frontal Zone area for emancipating juveniles. It also shows that they are dependent on the sea-ice edge during winter when their diving performances stabilize. Local sea-ice conditions may therefore not only affect the breeding part of the population but may also be fundamental for the survival of the juvenile emperor penguins.

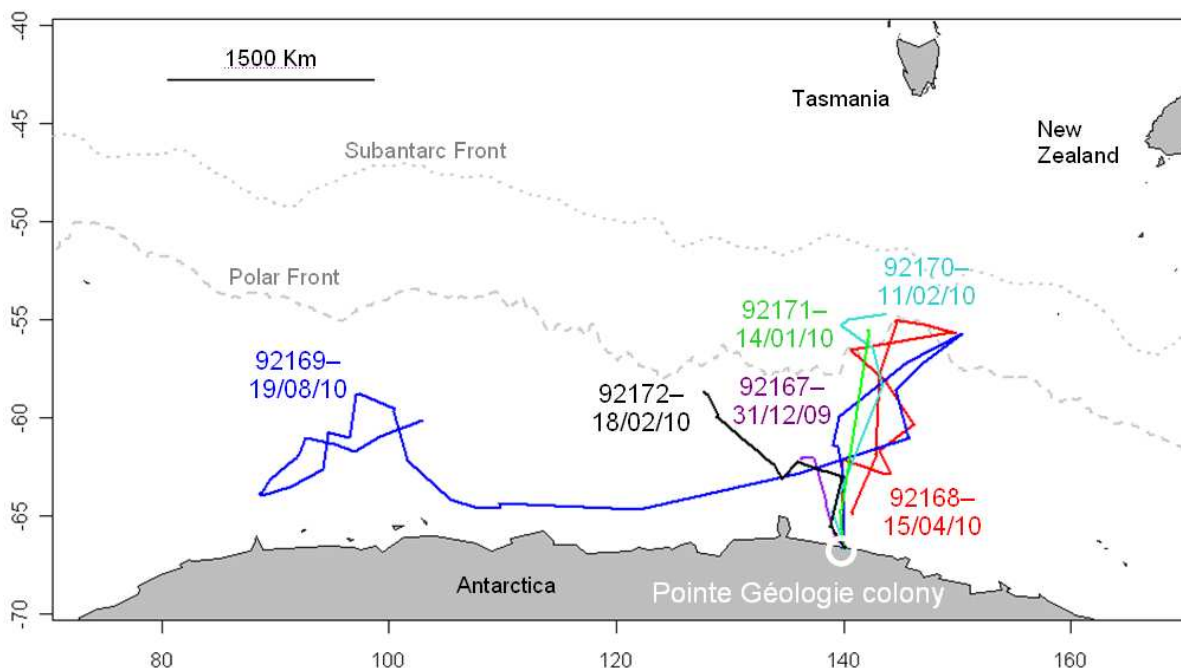


Figure 1. Post-natal dispersion of juvenile emperor penguins from Pointe Géologie colony.