

SHORT NOTE

Use of trail cameras to monitor Chatham petrels (*Pterodroma axillaris*) returning to Chatham Island following translocation

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In 2006, the Chatham Islands Taiko Trust constructed an 800 m predator-proof fenced enclosure at Sweetwater Conservation Covenant, Chatham I, protecting 2.4 ha of forest, to provide a secure breeding area for Chatham Island taiko (*Pterodroma magentae*). It soon became clear that the site offered wider seabird conservation potential.

Chatham petrel (*P. axillaris*) formerly bred throughout Chatham I, but became extirpated there approximately 600 years ago when the island was first colonised by Polynesian people (Millener 1999). Following the successful establishment of a small breeding population on Pitt I through translocation of chicks (Miskelly *et al.* 2008), it was decided to return Chatham petrel to Chatham I as per recommendations made in Taylor (2000). Therefore, between 2008 and 2011, a total of 200 Chatham petrel chicks were transferred from South East I (Rangitira I) to Sweetwater. Chicks were housed in artificial burrows, monitored and fed until fledging (for methods see Miskelly *et al.* 2008).

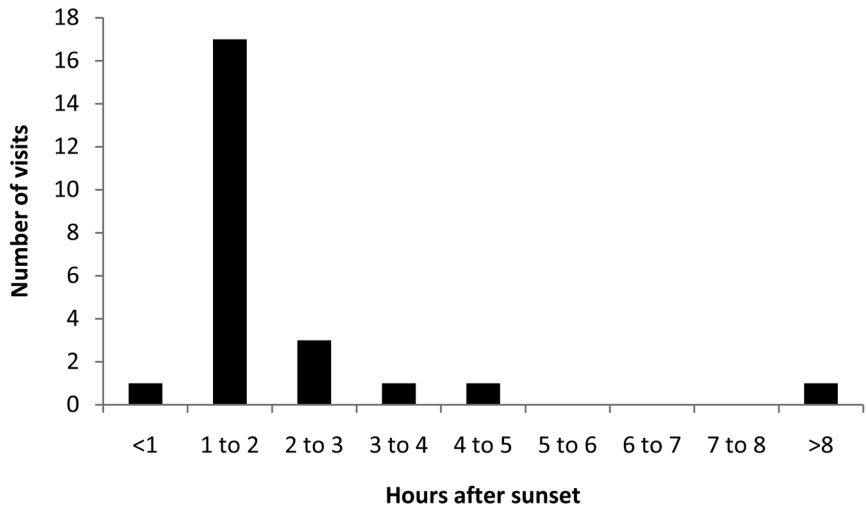
On 15 Mar 2012, a week-old Chatham petrel chick was found in an artificial burrow at Sweetwater. This is the first recorded breeding of this species on Chatham I, and represents the beginning of the re-establishment of the species back onto the main island. The parents of the chick had been translocated as nestlings in Apr 2008 and Apr 2009, respectively. Both parents had been recorded as visiting the same burrow where the chick was found for the first time in late Apr and early May 2011 as non-breeders. At the time of these first colony visits, one of the birds was just over 2 years old, reflecting the youngest age that adults are known to return to land (Taylor 1994).

To ensure that the chick was being regularly fed, we monitored this burrow using a Bushnell Trophy Cam® Trail Camera. Once positioned these cameras are motion activated, and infra red LED lights enable night images to be captured. The cameras are programmable to record still pictures or video onto an SD card; depending on camera settings they can operate for long periods on a single set of batteries. When used on targets such as burrow-nesting seabirds, where the burrow entrance is in

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Fig. 1. Arrival times of first Chatham petrel parent attending the chick at Sweetwater Conservation Covenant; represented as hours after sunset.



close proximately to the camera, most of the LED lights need to be taped over to prevent image burnout. Cameras were positioned 1-2 m from the entrance, and vegetation trimmed from within the cameras range to prevent non-target movement triggering the camera.

The burrow was constantly monitored from 18 Mar until the chick fledged on the night of 1 Jun, at an estimated age of 87 days, similar to the recorded 86.8 day chick rearing period on South East I (Rayner *et al.* 2012). During this time the Sweetwater chick was visited by one parent on each of 29 nights, and by both parents on 2 nights. During visits, the parent arrived on average 2:09 hours after sunset (range 0:39–8:11 hours, Fig. 1). The chick was not visited by its parents from 23 May until fledging, a desertion period of 9 days, close to the average of 10 days recorded by Gardner (1999) on South East I.

Trail cameras provide a low-cost, non-intrusive method for monitoring activity at seabird burrows, providing information to assess chick provisioning frequencies which do not require daily weighing of chicks. Information obtained show that transferred Chatham petrel chick-rearing behaviour is similar to birds at the natural (source) colony.

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