

Using conservation volunteers to assist in monitoring of nests of the critically endangered kakapo *Stigops habroptilus*, on Codfish Island, New Zealand

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SUMMARY

A volunteer ‘kakapo nest minder’ protocol was developed. Conservation volunteers enabled management of nests on an individual basis to a level where mortality of chicks was negligible. In 2002 they managed 24 nests which produced 26 kakapo chicks, of which 24 fledged. In addition significant cost savings were achieved using volunteers.

BACKGROUND

The National Kakapo Team was set up and tasked by the New Zealand Department of Conservation (DOC) to manage and bolster the population of the critically endangered kakapo *Strigops habroptalis*, a flightless endemic parrot. At the time all known individuals of the species had been translocated to offshore islands to reduce adult mortality due to predation by introduced predators e.g. stoat *Mustela erminea* and cats *Felis catus* associated with the mainland. Subsequent to these translocations, adult mortality had reduced to near zero but juvenile recruitment remained poor and the population looked set to decline into extinction. Review of available

data and anecdotal reports from past breeding seasons, revealed that failure at the nest was due to lack of female attentiveness, and egg and chick loss through predation by rats *Rattus* spp. The National Kakapo Team developed a response to ensure eggs and chicks had the best chance of survival.

The plan called for direct observation of all nests and interventions each time females were absent from nests. The ability to undertake this level of intervention using existing Departmental staff, or via paid contract or waged workers, was limited by funding. The use of conservation volunteers was the only viable option financially. However, many conservation staff held reservations about the

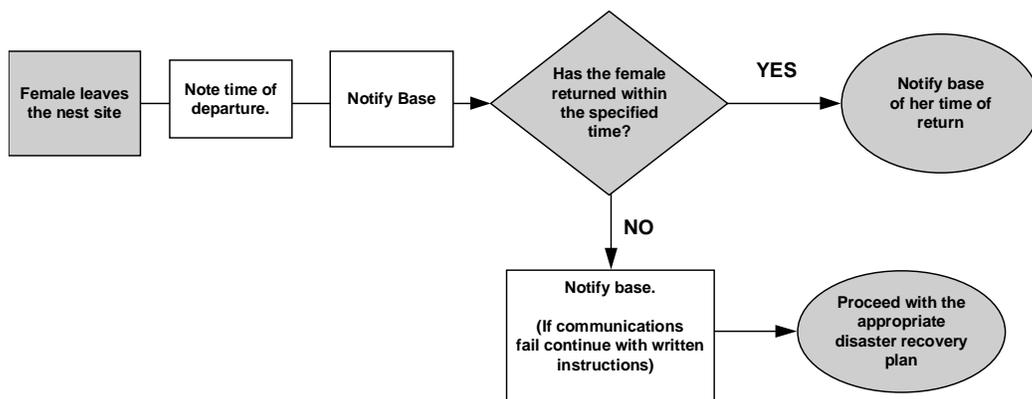


Figure 1. General procedure when observing nest sites containing kakapo chicks or eggs.

use of volunteers to undertake this 'delicate' work. A quality management system was thus developed to ensure appropriate supervision and training of volunteers so problems through inexperience, would not compromise kakapo breeding success.

ACTION

Volunteer 'nest minder' protocols: The first step was to establish a set of protocols for the volunteer 'nest minders' (a term developed for those undertaking this activity) prior to a breeding event. These protocols were developed from a set of scenarios, the general nest monitoring procedure can be seen in the 'Kakapo nest monitoring flow diagram' (Figure 1). These protocols covered all possible threats to kakapo eggs and chicks with clear actions to follow, dependent upon each circumstance. This procedure took approximately three months to develop using skilled staff familiar with the birds.

The 'devils advocate role' was essential in testing the robustness of these protocols and actions to ensure every possibility was covered, including the onset of sickness or disability of a volunteer while at a nest, which could compromise kakapo breeding productivity. An incident management system was adopted to ensure the correct application of actions at any given nest. Each time a specified event happened at a nest it was relayed to the incident manager (nest controller) by the nest minder and logged against time. Strict time parameters were set for each action undertaken and if the nest minder had not made contact within the allotted time the nest controller would initiate contact to check for problems. If a significant problem had developed or contact could not be made, a staff member would be dispatched to the nest site to check up on the activity. This system relied on good communication with each nest minder while at the nest site. Despite the remoteness of the kakapo habitat, cell phone coverage provided the ideal communications solution for the majority of nests. The extra cost which cell phones accrue in operation compared to two-way radio was warranted as it was found that most people were familiar with the operation of this technology and could use it intuitively. This reduced the level of complexity of the tasks set and allowed greater focus on the core activity of nest management.

Staff protocols: Additionally a procedure manual was developed for staff, their roles in kakapo nest management, and overseeing the work and well-being of volunteers. The two parts are essential to ensure a quality management system that reduces potential for *ad hoc* unplanned activities of a less certain outcome.

CONSEQUENCES

Over 200 people from around the world volunteered as nest minders and provided their time on Codfish Island in two-week periods. This equates to the annual work time of 11 persons. Other than a t-shirt and a photograph of a female kakapo in her nest, the volunteers received no payment. However, travel to and from the island, accommodation and food were covered by the project, as they are for staff when working in the field. Significant cost savings were achieved using volunteers.

The documentation of breeding season management and nest monitoring instructions, though initially developed to allay concerns about the possible lack of skills of volunteers, was an essential exercise whether volunteers were used or not. We believe that this should not be considered as a cost of using volunteers but a sound planning exercise for any management activity, particularly involving a critically endangered species.

Of the 200 plus volunteers managing 39 nests over four breeding seasons, only one incident involving the action/inaction of a nest minder occurred that could have had serious consequences. In this instance the volunteer fell asleep immediately outside the nest with a heating pad stationed over the eggs. Fortunately the female kakapo did not desert and the nest was successful. In another instance volunteer actions probably saved the contents of a nest when they were instructed to treat a nest with pesticide. The nest was wrongly noted down as containing dummy eggs under a sitting female but the astute volunteers recognised the mistake and acted accordingly ensuring the eggs were not disturbed. In 2002, one hundred and thirty volunteers managed 24 nests which produced 26 kakapo chicks of which 24 fledged over a five month period. Without this voluntary assistance the success of the 2002 breeding would have arguably been somewhat lower, possibly by one third.

Conclusions: Conservation volunteers enabled the kakapo programme to manage nests on an individual basis to a level where mortality of chicks was negligible. Despite the large number of individuals volunteering the quality of work produced was of a consistently high standard. We recommend that other high labour input conservation programmes that require intensive interventions consider the use of volunteers. Over four breeding seasons there was considerable cost savings with no loss of quality in the work undertaken.