

South Island Kaka Captive Management Plan 2010-2020



Photo: DOC



Department of Conservation
Te Papa Atawhai

FOREWORD

The draft South Island kaka Captive Management Plan, 2010-2020, has been prepared by Rose Collen on behalf of the Department of Conservation. It was prepared in consultation with Tony Pullar, the Department of Conservation appointed Captive Management Coordinator for South Island Kaka (Dunedin). Prior to the writing of the draft plan, comments were sought from captive holders and other stakeholders. The draft plan was sent out for formal consultation in September 2010.

This plan has now been approved by the Department of Conservation.

Marian van der Goes

Lead Conservator

Captive SI Kaka

South Island Kaka Captive Management Plan

1. INTRODUCTION

1.1 Taxonomy

South Island kaka	<i>Nestor meridionalis meridionalis</i>
FAMILY	Nestorinae
ORDER	Psittacidae
CLASS	Aves

1.2 Conservation status

South Island (SI) kaka is listed as “nationally endangered” in the Department of Conservation (DOC) threat classification system (Townsend et al. 2008), with the qualifiers:

- Conservation Dependent: The taxon is likely to move to a higher threat category if current management ceases;
- Partial Decline: Taxa undergoing decline over the majority of their range, but with one or more secure populations (such as on offshore islands). Partial decline taxa are declining towards ‘Relict’ status rather than towards extinction;
- Recruitment Failure: The taxon’s current population may appear stable but the age structure is such that catastrophic declines are likely in the future.

SI kaka meets criteria C for listing as nationally endangered: “Moderate population and high ongoing or predicted decline” because:

1. The total population size is 1000–5000 mature individuals; and
2. There is an ongoing or predicted decline of 50–70% in the total population due to existing threats, taken over the next 10 years or three generations, whichever is longer.

SI kaka are found in forested areas of the South Island (mainly in the west), becoming progressively more common from Nelson (where it is relatively rare) down the West Coast to Fiordland. South Island kaka are also found around Halfmoon Bay (Stewart Island), Ulva Island, and on Codfish Island (Whenua Hou).

All unmanaged mainland populations have sex bias, differing in severity (Waitutu 7 males : 1 female, parts of Fiordland 3:1, Hope Valley 2:1). This is due to the impacts of introduced predators on nesting females. Managed and offshore island populations have sex ratios closer to 1:1, with a large secure population on Codfish Island (Whenua Hou).

1.3 History in captivity

SI kaka were first brought into captivity in 1951 from Stewart Island, for public display at Dunedin Botanic Garden. Since then, individual kaka have been brought into captivity for various reasons when opportunities have arisen; often to house orphaned or injured birds that were unable to be released back into the wild, e.g.

birds accidentally caught in traps during the weka eradication on Codfish Island (Whenua Hou), or orphaned chicks rescued from nests in the wild (Nelson).

Dunedin Botanic Garden was the only holder of SI kaka until about 1995. Since then captive holdings have expanded to cater for further injured birds, with kaka sent to private holders in Invercargill, Te Anau Wildlife Centre, Invercargill Botanic Gardens, Orana Park and more recently, Isaacs Wildlife Trust (Peacock Springs) and Willowbank Wildlife Reserve.

From the time captive holding of kaka began, breeding of captive SI kaka was not encouraged, and was limited with the intention of keeping the captive population small and within a small number of holders. For the past five years (approximately), the focus of the captive programme has turned to increasing captive breeding to provide juvenile kaka for re-introduction at Orokonui Eco-sanctuary, a community-led ecosystem restoration project at Dunedin.

Success in captive husbandry and breeding

SI kaka have been bred successfully in captivity since the 1950s. Their dietary and husbandry requirements are fairly well known and straightforward, and with good husbandry practises kaka are not difficult to breed from. The main issue limiting breeding success in captivity currently is related to husbandry and housing standards, and the lack of clear guidance about minimum husbandry requirements.

Record keeping

A SPARKS¹ studbook has been maintained by the Captive Management Coordinator² since 1996. Before then the records kept for SI kaka were very sparse, and as a result hatch or capture dates are not known for some of the individuals currently held.

Origins of existing stock

Of the 22 birds currently in captivity, six are of wild origin - refer to Table 1.

Table 1. Origins of current captive SI kaka

Origin	Year	# of birds
Codfish Island (Whenua Hou)	1980's	2
Otago - Maori Hill, Dunedin	1986	1
Nelson (Rotoiti)	1994	1
Southland	1996	1
Stewart Island	~ 1999	1

¹ SPARKS: The Single Populations Analysis and Record Keeping System is a database management program used to produce studbooks. SPARKS produces a data set that can be imported by other programs such as PM2000 for genetic and demographic analysis on captive populations.

² A person appointed by DOC to co-ordinate the captive management activities for a protected species in accordance with a Captive Management Plan or Programme Outline.

Five of these birds plus one captive-reared female form the three pairs that have bred successfully in recent years. The sixth, a male from Stewart Island now held at Te Anau Wildlife Centre, was held by a member of the public for several years and developed behavioural problems (captive dementia) as a result.

The remaining 15 birds are offspring of the three breeding pairs, all hatched between 2004 and 2009. Four new pairings have been formed from offspring of two of the breeding pairs.

Current captive holdings

Table 2. SI kaka alive in captivity as at 4 June 2010

	Male	Female	Sex unknown	Total
<i>Willowbank Wildlife Reserve</i>	1	1		2
<i>Isaacs Wildlife Trust (Peacock Springs)</i>	1	1		2
<i>Dunedin Botanic Garden aviary</i>	3	2	2	7
<i>Orokonui Ecosanctuary, Dunedin</i>	1	1		2
<i>Te Anau Wildlife Centre, DOC</i>	3			3
<i>Invercargill Botanic Gardens</i>	2	2		4
<i>Bush Haven - Russell and May Evans, Invercargill</i>		2		2
Total	11	9	2	22

2. GOALS, OBJECTIVES AND CONTEXT OF CAPTIVE MANAGEMENT PLAN

2.1 DOC Captive Management Policy

SI kaka are held in captivity under Category 1 of the Department's 2003 approved Policy on Captive Management of Wildlife Absolutely Protected Under the Wildlife Act 1953³. The principles underpinning the Department's policy are in accord with IUCN policy.

The Department sets out criteria for holding protected species in captivity in the Captive Management Standard Operating Procedure (SOP)⁴.

The SI kaka captive programme falls under Category 1 "Captive management for direct conservation benefit", because it contributes to an ecosystem restoration project (Orokonui Nature Reserve). The project meets the following criteria for captive management for ecosystem restoration, listed in Appendix 4.1 of the Captive Management SOP:

- it is a DOC approved restoration initiative (e.g. there is an approved restoration plan for the site); and
- wild to wild transfers are not technically or economically feasible or would not offer as good a result; and
- captivity is of a strictly limited time period with a clearly defined exit strategy⁵.

³ <http://www.doc.govt.nz/upload/documents/about-doc/role/policies-and-plans/protected-wildlife-policy.pdf>

⁴ DOC system document reference [DOCDM-266180](#) (Available from DOC offices).

⁵ An exit strategy could include remaining individuals being released, included in an advocacy programme or grandparented. "Grandparenting" is defined as when the birds may be held in captivity, without breeding, until natural death occurs.

All holders of SI kaka are required to operate under the requirements of the Department's Captive Management SOP, this Captive Management Plan (CMP), and (once developed) a SI kaka husbandry manual and advocacy plan (if held on display).

2.2 Time frame of Plan

This Captive Management Plan covers the next 10 years (2010 – 2020).

2.3 Long-term goals

The overall goal of the Captive Management Plan is to support South Island ecosystem restoration projects, by providing captive-bred SI kaka for release into the wild to establish viable self-sustaining populations.

The restoration project included in this Plan is Orokonui Eco-sanctuary. It is expected that the captive kaka population will also be utilised for reintroductions to other restoration sites established during the term of this plan, for example Brook Waimarama Sanctuary (BWS), near Nelson. In each case the Department's Translocation SOP must be followed and an approved translocation proposal will be required.

The newly established SI kaka populations will be considered viable when there are approximately 20 breeding pairs established, and when ongoing recruitment equals or exceeds mortality long term. Several releases of captive-bred birds will be needed to achieve this.

2.4 Objectives of Captive Management Plan

The attainment of the above long-term goal requires a number of objectives to be achieved **during the life of this plan (10 years)**. The objectives are:

- Objective 1: Maximise productivity of the captive population for the purpose of providing SI kaka for reintroduction to ecosystem restoration projects
- Objective 2: Translocate captive-bred juvenile kaka for release at Orokonui Eco- sanctuary and other sites approved by DOC using "soft release" techniques, to establish viable self-sustaining populations
- Objective 3: Raise community awareness and support for SI kaka conservation and community ecosystem restoration projects
- Objective 4: End the SI kaka captive programme once Objectives 1 and 2 are achieved

It is anticipated that Objectives 1 and 2 will be achieved within the 10 year term of this Plan.

Objective 3 is secondary to, and must not negatively impact on, the other objectives of this plan. Objective 3 will only be implemented until Objectives 1 and 2 have been achieved.

If better techniques are developed for establishing populations of SI kaka in the wild, i.e. wild to wild translocation is proven more effective or offers as good a result, Objectives 1 and 2 will become redundant and the captive population will no longer be required.

3. CAPTIVE MANAGEMENT STRATEGY AND WORKPLAN

Within each of the captive management objectives there are a range of tasks to be completed.

Objective 1: Maximise productivity of the captive population for the purpose of providing SI kaka for reintroduction to ecosystem restoration projects.

Explanation

There are currently three breeding pairs of SI kaka in captivity, and a further four pairs that have been formed from the offspring of two of the breeding pairs. Any clutches of chicks that are produced by the four new pairs will be related to the others (cousins).

This small captive population needs to be managed in such a way as to maximise its genetic diversity and limit inbreeding, so that the birds produced for release into the wild have sufficient genetic diversity for the population to be viable long-term. PM2000⁶ analysis will be used to guide decisions on the best pairings to achieve maximum genetic variety. Advice should also be sought from genetic researchers and/or population ecologists.

Productivity of SI kaka in captivity could be improved by developing and implementing high standards for captive husbandry and housing. Currently the captive holders rely on a kea husbandry manual written in 1996 for husbandry standards. A husbandry manual needs to be written specifically for kaka, and this is a requirement of the Captive Management SOP. The husbandry manual will be developed with input and advice from captive holders, and once developed, captive holders will be required to follow the standards in the husbandry manual.

Husbandry manual standards will include a focus on producing good quality birds that will be well adjusted socially and fit for release into the wild. Keepers becoming too familiar with kaka in their care can lead to imprinted birds with generally dysfunctional behaviour towards other birds. For the same reasons, the preference for rearing of chicks is always by fostering to kaka parents rather than hand-rearing.

Captive facilities must minimise risk of disease by having meticulous hygiene standards and following the standards set out in the husbandry manual (once developed). The risk of Psitticine Beak and Feather Disease (Pbfd) is of particular concern. All captive stock must be initially tested to demonstrate freedom from infection with Pbfd. Results must be reported to the local DOC office. Conservancy TSO fauna staff and the DOC veterinarian (Kate McInnes, R&D, National Office) should hold the latest up-to-date protocols for testing birds for Pbfd, and transfer or release of parrots.

Tasks

- Ensure accurate records are kept on all individual SI kaka, including parentage, age, health records, weights/measurements, transfers, reproductive history and progeny etc., and maintain a SPARKS (or similar) studbook
- Using PM2000⁶ and advice from genetics researchers and/or population ecologists (suggest Ian Jamieson and Phillip Seddon, Otago University), determine the number of kaka needed in captivity and the best way to manage them to provide suitable birds for translocation to establish new wild populations.

⁶ PM2000 is a program that uses SPARKS datasets for genetic and demographic analysis of captive populations. Zoo Aquarium Association (ZAA) best practise is to use PM2000 analysis to manage captive breeding recommendations.

- Using PM2000, plan and manage the best breeding pairings of captive stock, with the focus on out-breeding, to achieve maximum conservation of genetic variability.
- Develop a husbandry manual with input from SI kaka holders, and distribute to SI kaka holders.

Responsibility: Captive Management Coordinator and Lead Conservancy TSO (Otago)

Timeframe: By September 2011

- If additional stock are needed to boost genetic diversity in the captive population, then develop a translocation proposal to harvest eggs from wild populations to foster to capable captive breeding pairs

Responsibility: Captive Management Coordinator and Lead Conservancy TSO (Otago)

Timeframe: Dependant on tasks above

- Maintain a disease-free captive population, by reducing risk of exposure through good hygiene practices and regular disease testing
- Test all captive stock for PBF
- Maintain high standards of husbandry, according to the kaka husbandry manual (once developed), to provide quality birds for release programmes

Responsibility: Captive holders and Captive Management Coordinator

Timeframe: Ongoing until Objective 2 completed

Objective 2: Translocate captive-bred juvenile kaka for release using “soft release” techniques, at Orokonui Eco-sanctuary and other DOC approved sites, to establish viable self-sustaining populations.

Explanation

Reintroductions of kaka have so far used “soft release” techniques (North Island kaka to Karori sanctuary, Mount Bruce Reserve, Maungatautari), where birds are held temporarily in an aviary at the release site to become accustomed to the area and feeding at feed stations, before being released. The birds are also offered daily supplementary food at feed stations after release. This has proven a successful technique for reducing dispersal and increasing survival.

Translocations are more likely to be successful when juveniles are transferred, because adult kaka have a strong homing instinct and flight capability. However captive-bred adults have also been successfully released into already established populations.

As at December 2010 there has been one release of six juvenile SI kaka at Orokonui Eco-sanctuary. Initial indications are that the release was successful, with a small population established and breeding within the reserve. With an increasing number of community-led ecosystem restoration projects starting up, there is scope for similar translocation projects elsewhere. In each case, a translocation proposal must be prepared and approved under the Department’s Translocation SOP.

Any birds destined for release must be held in quarantine prior to transfer and tested for PBFD as well as other diseases of concern, to ensure other birds, captive facilities and release sites are not exposed to disease. The quarantine and disease testing regime specific to the project, should be determined during development of the translocation proposal, by consulting with a wildlife health veterinarian.

The newly established SI kaka populations will be considered viable when there are approximately 20 breeding pairs established, and when ongoing recruitment equals or exceeds mortality long term. Several releases of captive-bred birds will be needed to achieve this.

The Department's Translocation Proposal Explanatory Notes⁷ recommends at least 30 individuals are transferred for each translocation project (i.e. the 30 can be released over several years), to reduce the likelihood of inbreeding and produce a genetically diverse and viable population. The SOP also recommends seeking advice from a geneticist or population ecologist as to whether supplementary translocations will also be needed in out years to prevent inbreeding.

For future ecosystem restoration projects beyond the term of this Plan (after 2020), the preferred option to set up new kaka populations will be to initially crop wild juveniles (and later, egg swaps) from Orokonui Eco-sanctuary (and other restoration sites), rather than maintaining a captive programme indefinitely for this purpose. Juveniles transferred from the sanctuary populations will be habituated to artificial feed stations and nest-boxes, which can then be used at the new translocation sites to help anchor and protect the translocated birds.

Tasks

- Support reintroduction programmes by producing juveniles for release
- Maintain good communication during planning for transfers, with other holders, the captive coordinator, and people at the release site
- Undertake rigorous disease testing and quarantine of birds destined for release before they are transferred

Responsibility: Captive holders and Captive Management Coordinator

Timeframe: Annually for each re-introduction project

- Translocate a minimum of 30 individuals per re-introduction project to establish viable populations

Responsibility: Captive holders and Captive Management Coordinator

Timeframe: Within the term of this Plan (2020)

- Seek advice from a genetic researchers and/or population ecologists about management of translocated populations (particularly Orokonui Eco-sanctuary) to prevent inbreeding

Responsibility: Captive Management Coordinator, Lead Conservancy TSO (Otago), Orokonui Restoration Project Manager.

Timeframe: Before July 2011 and prior to the development of any further translocation proposals.

⁷ DOC system document reference [DOCDM-358666](#)

Objective 3: Raise community awareness and support for SI kaka conservation and community ecosystem restoration projects.

Explanation

While SI kaka are held in captivity they may be displayed to the public for conservation advocacy. Public displays provide an opportunity for people to learn about the threats kaka face, and to build support for protection and conservation of threatened species in the wild, and restoration projects such as at Orokonui Eco-sanctuary.

This objective is secondary to, and must not negatively impact on, the other objectives of this plan, particularly Objective 1 to maximise productivity of the captive population. Display aviaries must be set up in a way that limits disturbance to nesting kaka.

All holders that have SI kaka on display must prepare a facility specific Advocacy Plan, which is assessed by the Community Relations Officer and approved by the Lead Conservator (Otago Conservancy). Advocacy Plans state the goals and objectives of the advocacy programme, the information and key messages to be presented and by what method. The template for Advocacy Plans is found in Captive Management SOP Document Templates⁸.

An Advocacy Strategy may be developed by the captive coordinator, to provide the advocacy goals, objectives and key messages for the species, for inclusion into the individual facility Advocacy Plans. An Advocacy Strategy would be developed with advice from the captive holders and Lead Conservancy, and approved by the Lead Conservator. Refer to the Captive Management SOP⁴ for more information about Advocacy Plans and Strategies.

Objective 3 is a secondary objective and only applies for the duration that kaka are held in captivity for Objectives 1 and 2. Once Objectives 1 and 2 are achieved, Objective 4 (below) will apply.

Tasks

- Provide captive holders with up to date information about wild kaka populations, and the ecosystem restoration projects/sanctuaries that the captive programme is supporting with translocations of captive-bred SI kaka.
- Develop an Advocacy Strategy in consultation with captive holders and Lead Conservancy

Responsibility: Captive Management Coordinator and Lead Conservancy

Timeframe: Ongoing
Advocacy strategy by June 2011

- Develop and implement an Advocacy Plan for each captive facility with SI kaka on public display

Responsibility: Captive holders

Timeframe: Development: by June 2011

Implementation: Ongoing until Objectives 1 and 2 of this plan are achieved

Objective 4: End the SI kaka captive programme once Objectives 1 and 2 are achieved.

⁸ DOC system document reference [DOCDM-92036](#)

Explanation

The current purpose for holding SI kaka in captivity is to contribute to ecosystem restoration projects. Once the primary objectives (Objectives 1 and 2) of this plan are achieved and the captive population is no longer needed for ecosystem restoration projects, the captive programme will be finished.

The exit strategy for the programme is to release individuals that are suitable for release and “grandparent”⁵ the remainder, which are to be held without breeding. SI kaka remaining in captivity that are on display may continue to be held on display until they die, provided the display meets the required advocacy criteria and standards.

SI kaka will not continue to be held in captivity solely for advocacy purposes because:

1. The Department’s Captive Management Policy does not support:
 - Removing protected species from the wild for conservation advocacy purposes (Policy point 2.2.4)
 - Holding threatened species in captivity unless approved as an action in a recovery plan (Policy principle 1.5.2 [5])
2. Protected species held only for advocacy purposes must only be taken from existing captive stocks (Captive Management SOP, Section 4.2 Criteria for holding: category 2 advocacy). The SI kaka captive population is too small and would need to be expanded by taking birds from the wild, to become self-sustaining long-term; an action not supported by the Department for advocacy purposes alone.

Tasks

- Evaluate which of the remaining captive birds are suitable (fit) for release, and include them in the final releases as part of an approved SI kaka translocation proposal.
- Hold the SI kaka that are unsuitable for release in captivity, **without breeding**, until they die of natural causes.

Responsibility: Captive Management Coordinator and captive holders

Timeframe: Once Objectives 1 and 2 are achieved, within the term of this Plan.

4. REFERENCES

Captive Management of Wildlife Absolutely Protected under the Wildlife Act 1953 – Department of Conservation approved policy 2003. (DOC system document reference [OLDDM-781413](#))
<http://www.doc.govt.nz/upload/documents/about-doc/role/policies-and-plans/protected-wildlife-policy.pdf>

Department of Conservation. 2002: Standard Operating Procedure for the Translocation of New Zealand’s indigenous terrestrial flora and fauna. Central Regional Office, Department of Conservation, Wellington. (DOC system document reference [DOCDM-251982](#))

Department of Conservation. 2008: Captive Management Standard Operating Procedure. National Technical Support Unit, Department of Conservation, Wellington. (DOC system document reference [DOCDM-266180](#))

Department of Conservation. 2008: Captive Management SOP - Document Templates. National Technical Support Unit, Department of Conservation, Wellington. (DOC system document reference [DOCDM-92036](#))

Miskelly, C.M.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Powlesland, R.G.; Robertson, H.A.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A. 2008. Conservation status of New Zealand birds. *Notornis* 55(3): 117-135.
http://www.notornis.org.nz/new_issues/Notornis_55-2008/Notornis_55_3_117.pdf

Townsend, A.J.; de Lange, P.J.; Duffy, C.A.J.; Miskelly, C.M.; Molloy, J.; Norton, D.A. 2008. New Zealand Threat Classification System manual. Department of Conservation, Wellington, 2008.
<http://www.doc.govt.nz/upload/documents/science-and-technical/sap244.pdf>