
SWIFT PARROT

RECOVERY PLAN

1997–2000



Tasmania

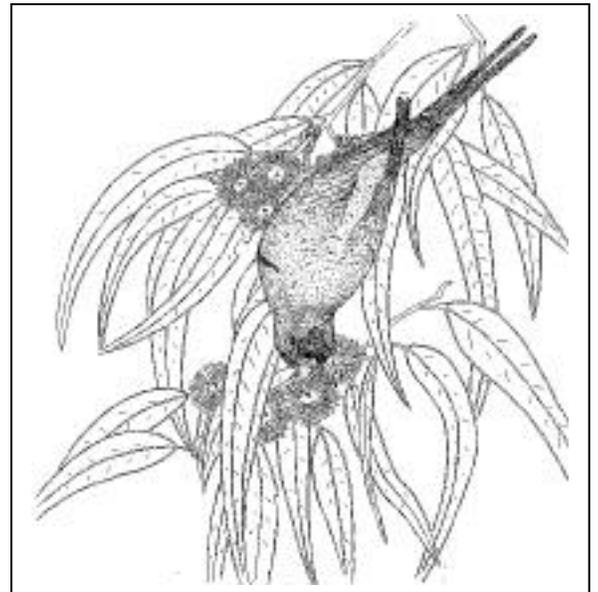
DEPARTMENT of PRIMARY INDUSTRIES,
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Prepared by **Raymond Breton**

SWIFT PARROT RECOVERY PLAN

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In conjunction with the Swift Parrot Recovery Team

Funded by Environment Australia

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FOREWORD

Since 1993 efforts have been made to research the ecology of the swift parrot and conserve its foraging habitat within its breeding range in Tasmania with the support of the community, private enterprise, conservation groups and all levels of government. Although this is the second recovery plan for the species, it is the first national plan and involves the governments of Tasmania, Victoria, New South Wales and the Commonwealth, together with Birds Australia and the World Wide Fund for Nature (Australia).

This recovery plan contains actions recommended for the period 1997-2000. The earlier recovery plan for the species in Tasmania (Gaffney and Brown 1992) has been implemented under the direction of the Tasmanian Swift Parrot Recovery Team. Implementation of the new plan will be coordinated by the national Swift Parrot Recovery Team.

This plan identifies, costs and schedules actions needed to implement strategies for the recovery of the swift parrot. It has been approved by the responsible ministers and wildlife conservation agencies of the three range states, Tasmania, Victoria and New South Wales and the Commonwealth. The plan may be modified subject to new findings, changes in species' status and completion of recovery actions.

Front cover illustration by Karen Richards.

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ABBREVIATIONS

ANZECC: Australian and New Zealand Environment and Conservation Council

Environmental domain: The area of suitable environment for a species as determined by the CORTEX modelling procedure

BA: Birds Australia

CSIRO: Commonwealth Science Industrial Research Organisation

EA: Environment Australia

ESP: Endangered Species Program

FT: Forestry Tasmania

HS: Healesville Sanctuary

IUCN: International Union for the Conservation of Nature and Natural Resources

NFP: National Forests Program

FPB: Forest Practices Board

NGO: Non-governmental organisation

NPWS: National Parks and Wildlife Service, New South Wales

NRE: Department of Natural Resources and Environment, Victoria

PVA: Population Viability Analysis

CORTEX: Species environmental domain analysis computer program

TASFORHAB: Habitat component database

TASPAWS: Parks and Wildlife Service, Tasmania

UT: University of Tasmania

UW: University of Wollongong

VOL: Volunteers

WWF: World Wide Fund for Nature

SUMMARY

Current Species Status

The swift parrot is listed as endangered under Schedule 1 of the Commonwealth *Endangered Species Protection Act 1992*; vulnerable under Schedule 4 of the Tasmanian *Threatened Species Protection Act 1995*; Schedule 2 of the New South Wales *Threatened Species Conservation Act 1995* and Schedule 8 of the South Australian *National Parks and Wildlife Act 1972*. In Victoria the species has been listed as a threatened taxon in Schedule 2 of the Victorian *Flora and Fauna Guarantee Act 1988*. The swift parrot breeds only in Tasmania. Its population is estimated to be fewer than 1,000 pairs and almost 50% of foraging habitat used within the breeding season has been cleared for agriculture.

Habitat Requirements and Limiting Factors

The swift parrot migrates to mainland Australia in autumn. During winter it is semi-nomadic, foraging for lerps and nectar in flowering eucalypts across Victoria and New South Wales, particularly in the box ironbark woodlands. In Tasmania, the breeding range of the swift parrot is largely restricted to the east coast within the range of Tasmanian blue gum *Eucalyptus globulus*. The swift parrot breeding season coincides with the flowering of blue gum and the nectar of this eucalypt is the main source of food for the parrots during breeding.

Woodlands and forests within the parrot's over-wintering range and the blue gum forests within its restricted breeding distribution have been fragmented and substantially reduced by land clearance for agriculture or urban and coastal development. Forestry operations and firewood collection have also altered the age structure of forests, resulting in the loss of older trees which provide a major food resource as well as hollows for nesting. The swift parrot also suffers from high mortality during the breeding season through collisions with man-made structures such as windows, wire mesh fences and vehicles.

Recovery Plan Objectives

The long term objective of the recovery plan is to improve the status of the species so that it no longer meets the IUCN criteria (IUCN 1994) for Endangered and can be downlisted to Vulnerable within 10 years. This would be done by increasing the population to more than 2,500 mature individuals.

Actions Needed

1. Identify foraging habitat.
2. Habitat management.
3. Reduce the incidence of swift parrot collisions with man-made structures.
4. Investigate the relationship between blue gum flowering and the breeding strategy of the swift parrot.
5. Population and habitat monitoring.
6. Public information and education.
7. Organisational support.

Estimated Cost of Recovery

Total cost (TC) and Endangered Species Program (ESP) funds required (= TC - other contributions). Other agencies contributing are TASPAAWS, NRE, NPWS. Prices in \$000s/year.

Actions	1	2	3	4	5	6	7	Total
1997	93.0	27.5	6.0	28.2	0	3.0	62.3	229.0
1998	78.0	17.5	0.5	22.6	13.0	3.0	63.0	197.6
1999	58.0	15.5	0.5	26.9	38.0	3.0	64.0	205.9
Total	229.0	60.5	7.0	77.7	51.0	9.0	189.3	632.5

Biodiversity Benefits

As a forest dependent bird the swift parrot is a high profile species associated with forest conservation in south-eastern Australia. It is the only member of its genus *Lathamus* and as such is of high conservation significance. The management and conservation of the habitat of the swift parrot, not only contributes to the protection of forest ecosystems, particularly the grassy Tasmanian blue gum and box-ironbark forests of south-eastern Australia but also benefits other threatened and uncommon species including the forty-spotted pardalote, regent honeyeater, brush-

INTRODUCTION

Description

The swift parrot *Lathamus discolor* (White) is a small fast-flying, nectivorous parrot which occurs in eucalypt forests in south-eastern Australia. Adult birds on average measure 23 cm in length and weigh approximately 77 gm. Bright grass green in colour, the swift parrot has patches of red on the throat, chin and forehead which are bordered by yellow. It also has red on the shoulder and under the wings and blue on the crown, cheeks and wings. A distinctive alarm call of kik-kik-kik (usually given while flying), a streamlined body, long tail and flashes of bright red under the wing enable the species to be readily identified.

Taxonomic Status

The genus *Lathamus* is monotypic. Allozyme studies place *L. discolor* in the Australian broad-tailed parrot group which includes *Platycercus*, *Barnadius*, *Purpreicephalus*, *Northiella*, *Psephotus* and *Lathamus* (Christidis et al. 1991). Although the swift parrot superficially resembles lorikeets in habit and form (nectar feeder with brush tongue), it is generally accepted that the similarities between the swift parrot and the lorikeets have arisen through convergence (Smith 1975, Forshaw 1981, Christidis and Boles 1994). Christidis and Boles (1994) propose that the swift parrot, along with the other broad-tailed parrots, evolved as part of a eucalypt-dominated "Bassian" biota of southern Australia.

Distribution

Swift parrots breed in Tasmania and migrate to mainland Australia in autumn (Fig. 1). During winter the parrots are semi-nomadic, foraging in flowering eucalypts mainly in Victoria and New South Wales. Small numbers of swift parrots are regularly recorded in the Australian Capital Territory and occasionally in south-eastern South Australia and southern Queensland.

The swift parrot returns to Tasmania during late winter and early spring with the first birds usually arriving in August. The breeding season coincides with the flowering of Tasmanian blue gum *Eucalyptus globulus*, the nectar of which is the main food source for the parrots during this time. In Tasmania, the breeding range of the swift parrot is largely restricted to the south-east coast within the range of blue gum. A small breeding population (less than 10% of the population) occurs in the north of the state between Launceston and Smithton.

After breeding, the east coast population of both adults and immature birds moves westwards to the Central Plateau and western Tasmania as blue gum flowering declines and other eucalypts begin to flower elsewhere, in particular stringybark *E. obliqua*, gum-topped stringybark/alpine ash *E. delegatensis* and white gum/manna gum *E. viminalis*. The parrots are nomadic

there is a suitable nectar source in the west and north of the state.

Swift parrots begin to leave Tasmania for the mainland from mid February and most have left by the end of April. Large pre-migratory flocks have been observed on the north coast between Launceston and Smithton. It is believed that swift parrots migrate through western Bass Strait during daylight hours without stopping (Brown 1989). Records suggest that they arrive on the mainland around Port Phillip Bay including the Mornington and Bellarine Peninsulas.

During winter, swift parrots occur mostly in Victoria and New South Wales (Fig. 1). In Victoria, they are found in the dry forests to the north and west of Melbourne and are dispersed along the inland slopes of the Great Dividing Range. They are rarely recorded south of the divide in East Gippsland.

In New South Wales, swift parrots are recorded mostly along the inland slopes of the Great Dividing Range but are patchily distributed along the north and south coasts including the Sydney region. Small numbers are regularly recorded in the Australian Capital Territory.

Swift parrots are occasional visitors to southern Queensland and south-eastern South Australia in the winter months between Adelaide and the South Australian/Victorian border. Most records in Queensland are from south of Brisbane, although birds have been recorded as far north as Rockhampton (Brown 1989). Like the regent honeyeater *Xanthomyza phrygia*, there has been a decline in the reporting rate for this species in South Australia (Lendon 1979, Franklin & Menkhurst 1988).

Abundance

A swift parrot population census was conducted during the 1987/88 breeding season, when 1320 pairs were counted (Brown 1989). A further census carried out in the 1995/96 breeding season, located 940 pairs (Plowman 1995). The population is currently estimated at 1000 pairs based on the 1995/96 survey results.

Habitat

During the breeding season, swift parrots in south-eastern Tasmania feed primarily on the nectar from the flowers of Tasmanian blue gum. In years of good blue gum flowering 80% of foraging records were recorded from this tree species (Brereton 1996). Coastal dry grassy blue gum forest is the preferred forest type used by foraging parrots during the breeding season (Brereton 1997). A broad range of patch sizes is used, however, the majority of foraging records are from remnant patches of blue gum forest less than 1 ha (Brereton 1996). This probably reflects the fragmented nature of the birds preferred foraging habitat rather than an actual preference for this patch size. They will also forage in single isolated trees on farmland.

The intensity of Tasmanian blue gum flowering varies

and vice versa. Tasmanian blue gum is a biennial flowering tree although some trees, particularly on poor, dry sites flower less often. There is evidence that the initiation of Tasmanian blue gum flowering is dependent on a cold period and that flowering intensity is affected by water stress (Brereton 1996). Prolonged dry periods may promote flowering in the following season. Initiation of flowering probably occurs in the winter of the previous year, buds first appear in the

summer and flowering occurs during the next spring. Flowering in any year is dependent on whether the tree flowered the previous season and the intensity of flowering is determined by the environmental conditions of the previous year. There is also evidence of an altitudinal gradient in flowering time. Trees at low altitudes flower earlier and for a longer period compared to trees at higher altitudes (Mike Moncur, Division of Forestry, CSIRO).



Figure 1: Distribution of the swift parrot in Australia

It is likely that this variation in flowering patterns of Tasmanian blue gum has a significant impact on the swift parrot breeding success. Blue gum honey production figures indicate that there have been only three breeding seasons in the last ten years when food supplies were abundant (Brereton 1996).

Nectar from the flowers of black gum/swamp gum *E. ovata* is an important supplementary foraging resource (Brown 1989, Brereton 1996, Brereton 1997). Swamp gum flowers in late winter and tends to be used by swift

gum is used extensively by the swift parrot in the north of Tasmania where Tasmanian blue gum does not occur naturally. However, blue gums have been planted widely as a street tree, in wind breaks, in gardens and in pulpwood plantations and are used by swift parrots when in flower.

Swift parrots nest in hollows in old growth trees across a range of eucalypt species. They prefer stringybark, white peppermint *E. pulchella* and Tasmanian blue

sites are located within 8 km of the coast, away from foraging areas and often occur in stringybark dominated shrubby dry forest or grassy blue gum dry forest on upper slopes and ridge tops (Brereton 1997).

Post-breeding habitat is mainly in the wetter forests in west and north-west Tasmania where summer and autumn flowering eucalypt species are abundant particularly stringybark, gum-topped stringybark, white gum, mountain gum *E. dalrympleana* and cabbage gum/snow gum *E. pauciflora*.

The principal over-wintering habitat on the mainland is the box-ironbark forests inland of the Great Dividing Range in Victoria and New South Wales. Lerp and nectar from winter flowering eucalypts are the main food sources in these forests. The most commonly used tree species are grey box *E. microcarpa*, red ironbark *E. tricarpa*, white box *E. albens*, mugga ironbark *E. sideroxylon* and yellow gum *E. leucoxylon* (Tzaros and Davidson 1996, Tzaros 1997). In lowland coastal forests of New South Wales, swift parrots also forage in flowering swamp mahogany *E. robusta* and spotted gum *E. maculata*.

The importance of lerp as a food source during the over-wintering period contrasts with its low incidence of use in Tasmania during the breeding season where it comprises only 5% of foraging records (Brereton 1996).

Life History

The first records of birds returning to Tasmania are in early August with most of the population arriving by mid-September. For the first few weeks after their arrival in Tasmania, swift parrots are mostly occupied with feeding. Large groups forage together in flowering Tasmanian blue gums and swamp gums and flocks of up to 70 birds are not uncommon (Brereton 1996).

Both sexes are involved in the search for suitable nest hollows which begins soon after they arrive in Tasmania. Nesting by established pairs starts in late September. Birds which are unpaired on arrival in Tasmania may not begin nesting until November after they have found mates (Brown 1989). Information from captive populations suggest that swift parrots are capable of breeding in their first year.

Gregarious by nature, pairs may nest in close proximity to each other. Nest sites may be re-used but not necessarily in successive years. The re-use of a nest site depends on the availability of food in that area.

The female occupies the nest chamber just before egg laying. She will not leave the nest until the chicks are hatched and sufficiently developed (Brown 1989). The usual clutch size is four eggs but up to five may be laid (Hutchins and Lovell 1985). The eggs are white, glossy and oval, rounded at both ends (Brown 1989). During incubation the male visits the nest site every three to five hours to feed the female. He perches near the nest and calls her out, either feeding her at the nest entrance or both will fly to a nearby perch

Young swift parrots fledge at about six weeks and the first chicks are usually seen outside the nest in early December. They remain in the nesting area and gather together in flocks before dispersing.

The presence of juvenile birds which appear to have recently left the nest in late January and early February suggests that double brooding may occur in some years (Brown 1989, Brereton 1986). Brown (1989) reported a second nesting attempt at Fern Tree in the 1987/88 breeding season, however it was unsuccessful. At a property near Devonport, two distinct arrivals of juveniles have been reported, firstly in mid-December and a smaller group of young in mid-February (Brown 1989). Double brooding has also been reported in captive birds.

Reasons for Conservation Status

The swift parrot is currently considered endangered nationally (Endangered Species Scientific Subcommittee), endangered in Victoria (CNR 1995) and vulnerable in Tasmania (Vertebrate Advisory Committee 1994), New South Wales (Threatened Species Conservation Act 1995), Australian Capital Territory (Nature Conservation Act 1980) and South Australia (Watts 1990).

The swift parrot is classified as endangered (IUCN 1994) for the following reasons.

- The population is small and may be declining. The adult population was estimated to be less than 1,000 pairs in 1995 (Plowman 1995).
- There has been a considerable loss of foraging habitat within the breeding range. Within its restricted breeding distribution, blue gum and swamp gum forests have been fragmented and substantially reduced by land clearance for agriculture and urban and coastal subdivision. It is estimated that 50% of the forests within the environmental domain of the Tasmanian blue gum used by the swift parrot during the breeding season has been cleared (Brereton 1997). Forestry operations have resulted in the loss of older trees which provide a substantial food resource and nest hollows. The loss of hollow bearing trees is a major threatening process for some forest dependent species (Gibbons and Lindenmayer 1995).
- There has been substantial loss of habitat in the over-wintering range. It is estimated that over 85% of Victoria's box-ironbark forests has been extensively cleared for agriculture and over 70% in New South Wales leaving only patches of natural vegetation within a mainly agricultural landscape (Traill 1993, Sivertsen 1993, Robinson and Traill 1996). These remnants have been heavily harvested for timber in the past and are often situated on soils of low fertility (Davidson, 1996). Much of what remains is subject to continued clearing and forestry operations. The other major mainland habitat, the lowland coastal forests dominated by swamp

New South Wales coast. Forestry operations have also led to the loss of old trees in these coastal forests. Stands of old growth spotted gum are extremely rare (Michael Saxon, NSW NPWS pers. comm.)

- Foraging habitat used during the breeding season and winter is poorly reserved. Potential swift parrot habitat within the range of Tasmanian blue gum is only 1% (approximately 60,000 ha) of Tasmania of which, 10% occurs in conservation reserves, 4% in other reserves, 6% on Crown land available for resource utilisation including forestry, and 80% on private land (Brereton 1997). In Victoria, only 5% of the box ironbark ecosystem occurs in conservation reserves (NRE in prep). Similarly, in New South Wales, only 5% of ironbark and woodland communities are reserved (Robinson and Traill 1996).
- Breeding success varies greatly from year to year depending on the intensity and extent of Tasmanian blue gum flowering. In years of poor flowering there appears to be little breeding in the eastern Tasmania population (Brereton 1996).
- The swift parrot suffers from high mortality during the breeding season through collisions with man made structures such as; windows, wire mesh fences and vehicles. On average 20 injured swift parrots are handed into the Tasmanian Parks and Wildlife Service each breeding season and it is likely that many dead or injured birds are not recovered.
- The swift parrot is the only member of its genus *Lathamus* and is cited as the only example of a nectivorous parrot to have evolved as part of a eucalypt dominated "Bassian" biota (Christidis et al. 1994). Thus, as an evolutionary significant member of the forest fauna of south-eastern Australia, it merits a high conservation priority.

Existing Conservation Measures

As a result of concerns by the then Tasmanian Department of Lands, Parks and Wildlife about the viability of the swift parrot population, a survey was carried out during the 1987/88 breeding season. The survey results led to a population estimate of fewer than 1500 pairs and were published in the report "The Swift Parrot: A report on its ecology, distribution and status, including management considerations" (Brown 1989).

Following this initial survey and consequent national listing of the swift parrot as vulnerable, a Recovery Plan: Research Phase was prepared in 1992 (Gaffney and Brown 1992). The plan was implemented by the Tasmanian Parks and Wildlife Service funded by the Australian Nature Conservation Agency's Endangered Species Program. It indicated that detailed information on the habitat requirements of the species, particularly during the breeding season, was required to prepare management prescriptions to conserve the Tasmanian blue gum resource.

The research plan was implemented between October 1993 and January 1996 and a conservation research statement prepared. This report describes the ecology of the swift parrot and identifies the main threatening processes operating in eastern Tasmania (Brereton 1996).

The swift parrot is listed in both State and Federal threatened species legislation. It is currently listed as:

- endangered in Schedule 1 of the Commonwealth *Endangered Species Protection Act 1992*;
- vulnerable in Schedule 4 of the Tasmanian *Threatened Species Protection Act 1995*;
- a threatened taxon in Schedule 2 of the Victorian *Flora and Fauna Guarantee Act 1988*;
- vulnerable in Schedule 2 of the New South Wales *Threatened Species Conservation Act 1995*;
- vulnerable in the Australian Capital Territory *Nature Conservation Act 1980*;
- vulnerable in Schedule 8 of the South Australian *National Parks and Wildlife Act 1972*.

The Commonwealth, Tasmanian, Victorian, New South Wales and Australian Capital Territory legislation includes measures that provide for the protection of habitat on Crown and freehold land. Victoria, New South Wales and South Australia also have in place land clearing controls which may both incidentally and deliberately protect the habitat of the species.

The forest industry and Tasmanian Parks and Wildlife Service are working together to identify and conserve habitat in Tasmanian blue gum forests. Interim prescriptions for the management of breeding and foraging habitat in both public and private forests have been formulated. These prescriptions have been published in the "Threatened Fauna Manual for Production Forest" (Jackson and Taylor 1994) and implemented under the Forest Practices Code (Forestry Commission 1993). They will be revised as new information comes to light.

The Buckland Military Training Area in eastern Tasmania contains both swift parrot foraging and breeding habitat and is subject to the provisions of the Commonwealth *Endangered Species Protection Act 1992*. Under the terms of the "Memorandum of Understanding between the Department of Defence and the Australian Nature Conservation Agency on the Implementation of the Endangered Species Protection Act 1992" (1995) the Department of Defence is obliged to avoid any action that contravenes a recovery plan. The Department of Defence has agreed to consult with the Tasmanian Parks and Wildlife Service on any management practice which may impact on the habitat of the swift parrot.

A brochure was published in 1993 by the forest industry in conjunction with the Parks and Wildlife Service (currently being revised) outlining the plight of the swift parrot in Tasmania. It encourages the community to

have appeared in the local and national media to raise public awareness of the problems the swift parrot faces and to encourage the community to become involved in the recovery process.

A program to plant Tasmanian blue gums on public and private land, involving nine schools in south-eastern Tasmania has also been established. The program involves students collecting and propagating seeds and planting the seedlings in their local communities. Tasmanian blue gums have been planted at coastal reserves near Swansea by students from Hobart and on Bruny Island by students from the local school.

Recent recovery actions involving the community have included winter surveys of the swift parrot population on the Australian mainland. The Victorian Department of Natural Resources and Environment has begun twice yearly statewide surveys (in late May and early August) to gather information on the distribution and movements of swift parrots in Victoria (Tzaros and Davidson 1996, Tzaros 1997). Birds Australia has helped organise volunteers for the 1996 winter survey, while in Tasmania, Birds Tasmania and volunteers have assisted with swift parrot surveys, most recently in the 1995 breeding season.

In New South Wales the habitat of the swift parrot has been specifically considered in the Deferred Forest Assessments conducted as part of the National Forests Policy. Whilst this process was being finalised at the time of writing this document, its objective was to defer timber harvesting from as much of the forest types preferred by the species (west of the Great Divide) as possible.

Strategy for Recovery

The ecological requirements of the swift parrot within its breeding range in eastern Tasmania are reasonably well known. However, the relationship between climatic cycles, the periodicity of Tasmanian blue gum flowering and the reproductive success is not well understood. Nor are the ecological requirements of the swift parrot in its mainland over-wintering habitat. These gaps in knowledge have been considered in formulating the recovery strategy.

The Recovery Plan covers a three year period. Six primary strategies underlie the actions described in the plan. They are:

1. Identification and mapping of foraging habitat within the breeding range but outside the natural range of Tasmanian blue gum and within the over-wintering range.
 - The breeding population in northern Tasmania will be surveyed to locate nest sites and to identify foraging and nesting habitat.
 - The foraging range of breeding swift parrots will be investigated to understand the relationship between breeding and foraging habitat. Results will be used to identify potential breeding habitat

- Surveys within the over-wintering range will concentrate on forest and woodland consisting of the winter flowering grey box, mugga ironbark, red ironbark, yellow gum, white box, spotted gum and swamp mahogany. The movement patterns of swift parrots throughout their winter migration, particularly where larger concentrations may occur on arrival and departure are unknown and need to be established to help identify important winter foraging areas.
2. Management of the foraging and nesting habitat within the breeding range and foraging habitat within the over-wintering range. Habitat retention will be the goal of habitat management programs throughout the range of the swift parrot. Re-creation of habitat through revegetation programs, although of help to the species, will not at the current rate, ensure its long term survival.
 - Prescriptions will be prepared for the conservation of Tasmanian blue gum forests within the breeding range at all levels of land tenure, including production forests on Crown and private land. Conservation of the swift parrot and its habitat will be included in the management of other Crown lands including parks and reserves. A strategy will be devised to ensure that the requirements of the swift parrot and its habitat are addressed in local government planning are addressed in local government planning.
 - Habitat management on the mainland will also require the development and application of prescriptions for the protection of habitat on all land tenures as previously outlined for breeding range habitat.
 3. Identification of areas and structures which are linked to swift parrot collisions. A public information and education program promoting solutions to reduce the number of swift parrot collisions will be undertaken.
 4. Investigation of the relationship between Tasmanian blue gum flowering and the breeding strategy of swift parrots. This will promote an understanding of the environmental and physiological factors which cause breeding success to vary greatly from year to year. The results will be used to determine which areas of blue gum habitat are more productive for swift parrots, these can then be targeted for protection and rehabilitation.
 5. Monitoring of the swift parrot population and its habitats.
 - A population census will be conducted during the life of this plan.
 - The effectiveness of management guidelines for the habitat of the swift parrot in production forests will also be monitored through a review of timber harvesting plans.

- Population Viability Analysis will be used to help identify critical factors within the population processes of the swift parrot for study, management and monitoring. PVA will also be used to evaluate the effectiveness of various management options.

6. Public information and education. Community involvement in the recovery process is critical to the success of the program.

A National Swift Parrot Recovery Team has been established including representatives from the Endangered Species Program of the Australian Nature Conservation Agency; the Wildlife Branch, Parks and Wildlife Service, Tasmania; the Flora and Fauna Branch, Department of Natural Resources and Environment, Victoria; NSW National Parks and Wildlife Service; Birds Australia and the World Wide Fund for Nature. There are three corresponding members of the recovery team: the Department of Environment and Planning, South Australia; Parks and Conservation Service, Australian Capital Territory and the Department of Environment, Queensland. They are not formal members of the recovery team but are kept informed on the recovery process and are involved in those actions which are relevant to their state, eg. winter surveys.

The recovery team will guide the implementation of the recovery plan, evaluate and review progress, and has the ability to modify actions if necessary. The team will review the effectiveness of the recovery actions on completion of this plan. It will also make recommendations as to the necessity of a new plan, and the actions to be included if one is required.

State operations groups have also been formed to implement state and regional actions. There are mainland swift parrot operations groups, comprising district and head office staff from the Victorian Department of Natural Resources and Environment and the New South Wales National Parks and Wildlife Service. There is also a Tasmanian Swift Parrot Operations Group which comprises a Parks and Wildlife Service representative and representatives from Forestry Tasmania, the Forest Practices Board, North Forest Products and the Tasmanian Farmers and Graziers Association. All State or regional teams report to the national recovery team.

The recovery team will work with other recovery programs which operate within the range of the swift parrot. It will communicate and consult with the Regent Honeyeater Recovery Team regarding actions required for the swift parrot in the box-ironbark forests on the inland slopes of the Great Dividing Range where the Regent Honeyeater occurs.

RECOVERY OBJECTIVES AND CRITERIA

The long term objective is to improve the status of the species so that it no longer meets the IUCN criteria (IUCN 1994) for endangered and can be downlisted to vulnerable within 10 years by increasing the population to more than 2,500 mature individuals.

The objectives of this recovery plan and the criteria for successfully achieving them are:

Specific Objectives	Criteria	Actions
1. Identify foraging habitat used during the breeding season outside the range of blue gum and within the over-wintering range.	⇔ 1. Identification and mapping of foraging sites. Foraging habitat used during the breeding season and within the over-wintering range should be identified and described.	⇔ 1. Identify the foraging and breeding habitat of the swift parrot.
2. Retain and enhance foraging habitat.	⇔ 2. Production of management prescriptions and strategies for the protection and enhancement of foraging sites and habitats.	⇔ 2. Manage the foraging and breeding habitat.
3. Increase the survival of adult birds by reducing deaths and injuries during the breeding season.	⇔ 3. Identification and elimination of at least 80% of known hazards and the reduction of the reporting rate of swift parrots killed or injured in collisions by 80%.	⇔ 3. Reduce the number of collisions of swift parrots with man-made structures.
4. Undertake research on the biology and ecology of the species to investigate the mechanisms that control the productivity of the population.	⇔ 4. Implementation of a program to monitor blue gum flowering patterns. Begin the research project to investigate the breeding strategy of the swift parrot.	⇔ 4. Investigate the relationship between blue gum flowering and the breeding strategy of the swift parrot.
5. Monitor the population and habitats.	⇔ 5. Completion of a population census and PVA. Review the effectiveness of management prescriptions in conserving habitat within production forest.	⇔ 5. Conduct population and habitat monitoring.
6. Inform and educate the community about the swift parrot recovery process.	⇔ 6. Implementation of an information and education program.	⇔ 6. Prepare a public information and education strategy.

The swift parrot is unlikely to be removed from national and state threatened fauna lists within the time frame of this recovery plan because of the sporadic nature of its main food resources. The swift parrot and its habitat will require longer term management beyond the life of this plan.

RECOVERY ACTIONS

The actions in this recovery plan are based on the current knowledge of the biology and ecology of the swift parrot. The research plan, which finished in 1995 and the results reported in 1996, provided the

(Brereton 1996). The mainland actions conform with those in Webster (in press) and NPWS (in prep). Actions will need to be reassessed as knowledge improves.

1. Identify Foraging and Breeding Habitat

1.1 Identify Breeding Habitat Outside**Range of Blue Gum**

There is a lack of knowledge about the ecology of the small breeding population found in the north of Tasmania between Launceston and Smithton. A survey will be conducted of the food sources and habitats used and its results used to identify and characterise foraging habitats. A project officer will be employed in the first year to initiate the survey and establish a network of volunteers to carry out surveys in the following years.

Funds are required to cover the salary of a technical officer, vehicle hire and data collection and collation. Costs of volunteer time and vehicle running costs are included.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	18 000	16 000	16 000	50 000

1.2 Determine Foraging Range of Breeding Swift Parrots

The foraging range of breeding swift parrots will be investigated by radio tracking to understand the relationship between breeding and foraging habitat. Results will be used to identify potential breeding habitat in the vicinity of known foraging sites and vice versa.

Previous experience with radio tracking of swift parrots indicates that a light aircraft is needed to locate birds with transmitters. The success of this action depends on it being carried out in a good blue gum flowering year when the chance of catching breeding birds is high.

Nest and nest site data will be gathered during the foraging range study and from other nests located during the life of the plan. Information about nest trees, orientation of nest hollows, aspect of nest site, nest site location and forest type will be required to update management prescriptions for the conservation of nesting habitat.

ESP funding is required for mist-nets, radio-transmitters, aerials and aerial mounts for the aircraft, aircraft and vehicle hire.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	13 000			13 000

1.3 Winter Surveys of Swift Parrot

Biannual winter surveys of the population will be carried out at known sites and areas of potential habitat in Victoria, New South Wales and South Australia. These will help identify foraging sites and determine the extent of the over-wintering habitat. The surveys will concentrate on forests and woodlands containing the winter flowering grey box, mugga ironbark, yellow gum and white box across inland areas of Victoria, New

woodlands dominated by spotted gum and swamp mahogany in coastal areas of New South Wales will also be surveyed for swift parrots. Other surveys will be conducted during winter in areas where birds have been observed. This action will help to locate sites for task 1.4.

The employment of a scientific officer, travel allowance, vehicles and consumables will be provided by NRE and NPWS. Costs of volunteer time and vehicle running costs are included.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	33 000	33 000	33 000	99 000

1.4 Identify Swift Parrot Foraging Habitat within Over-Wintering Range

Data from sites where swift parrots have been recorded feeding will be analysed to identify and classify winter foraging habitats. Currently, this data set is small and further intensive data collection is needed. A project officer (full-time for 6 months for each of two years) will collect habitat data where swift parrots are located by the winter surveys. Observations of foraging behaviour will be recorded as well as detailed habitat information including food source, forage tree, vegetation structure and floristics. Interactions with other birds, particularly the large honeyeaters, will be documented to determine whether there is any displacement of swift parrots.

ESP funds are needed to employ a scientific officer, travel allowance, vehicles and consumables.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	29 000	29 000	9 000	67 000

2. Habitat Management Within Swift Parrot Breeding Range**2.1 Define Foraging Habitats of Swift Parrot during Breeding Season**

Data from TASFORHAB plots within the environmental domain of the swift parrot will be analysed to define the Tasmanian blue gum and black gum habitats of foraging birds. Habitat data collected from the foraging range during the breeding season will be analysed using ordination and classification techniques. Gaps in the data set will be identified and filled by additional surveys if required.

The environmental domain analysis will be re-run using the CORTEX procedure and incorporating new data. The environmental domain will be spatially predicted and mapped. Maps of the swift parrot environmental domain will be produced in both digital and hard copy forms.

This action has been implemented as part of the Comprehensive and Regional Assessment (CRA) of

2.2 Revise Interim Management Prescriptions for Conservation of Habitat of Swift Parrot in Production Forests

Management prescriptions will be formulated for the foraging habitats (as defined in action 2.1) within the revised environmental domain in production forests in both state forests and on private land. The prescriptions will be included in the "Threatened fauna manual for production forests in Tasmania" and in timber harvesting plans as required by the Forest Practices Code (Forestry Commission 1993). The revised prescriptions will also apply to the Buckland Military Training area which is leased to Forestry Tasmania and managed as production forest.

The revised environmental domain will also be used to form a baseline from which changes to the habitat and numbers of swift parrots can be monitored.

This action has been implemented as part of the Comprehensive and Regional Assessment (CRA) of Tasmanian forests for the Regional Forest Agreement.

2.3 Management of Habitat of Swift Parrot on Private Land

Landholders with substantial areas of blue gum and black gum foraging habitat within the environmental domain of the swift parrot will be approached with offers of information and help to manage habitat on their land. Habitat management will focus on the retention and regeneration of forests but can only be successful with the co-operation of landholders. Under the Tasmanian *Threatened Species Protection Act 1995* there is provision for land management plans to be formulated aimed at conserving critical habitat and implemented under agreements between the landholder and the Parks and Wildlife Service.

Community groups will be encouraged and helped to apply for external funds to protect and enhance habitat on private land. The recovery team will give advice as to where rehabilitation efforts should be concentrated.

Landholders will be encouraged to re-establish original tree species after timber harvesting operations. Help from the forest industry and farmers groups will be sought to achieve this. Local provenance seed of the harvested trees should be used to reforest logged areas.

Help and advice will also be offered to the forest industry and landholders when drawing up whole farm plans for properties on which timber harvesting is carried out.

ESP funds are required for vehicle hire and to produce information packages for landowners regarding habitat management.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	4 000	6 000	3 000	13 000

2.4 Management of Habitat of Swift Parrot on Reserved and Uncommitted Crown Land

Those reserved lands within the range of the swift parrot which contain foraging and/or nesting habitat will be identified and management guidelines prepared for them. Uncommitted Crown land within the range of the swift parrot will be surveyed for habitat. Management of these areas will be reviewed to assess whether current activities impact on the swift parrot and its habitat. Guidelines for habitat management will be formulated for these areas.

ESP funds are required for vehicle hire and travel allowance.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	2 000			2 000

2.5 Management of Habitat of Swift Parrot by Local Government

Habitat within areas administered by local government will be identified in local area strategy plans and accompanied by management recommendations. Guidelines for the conservation of habitat affected by subdivision proposals will be prepared and distributed to local councils. These will include recommendations on how to minimise the impact of urban expansion on habitat and how to reduce the risk of collisions with windows and chain-link fences. Efforts will be made to have these guidelines incorporated into local government planning schemes.

The Tasmanian recovery team will encourage local government participation in the recovery process and the Local Government Association will be invited to join the Tasmanian operations group.

ESP funds are required for vehicle hire, travel allowance and the production of management guidelines.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	3 000	1 500		4 500

Within Swift Parrot Over-Wintering Range

2.6 Retain and Enhance Known Swift Parrot Foraging Sites

Administrative avenues will be used to protect and enhance known swift parrot foraging sites to ensure that they are maintained in the long term. Mechanisms to achieve this include threatened species legislation, vegetation clearance controls and voluntary measures such as conservation agreements, covenants and Land for Wildlife schemes.

Commonwealth land is also included in this action. Land owned or managed by the Commonwealth is subject to the provisions of the Commonwealth

Private landholders will be encouraged to seek funds from NRE's Land Protection Incentive Scheme. Land for Wildlife extension officers will provide advice to key landholders on managing their land for swift parrots. They will also help with the preparation of funding proposals for programs such as Landcare and Bushcare to protect and enhance habitat on private land. Advice on where rehabilitation efforts should be concentrated and what tree species should be planted to provide foraging habitat will be given.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	10 000	10 000	10 000	30 000

2.7 Prepare Management Prescriptions for Conservation of Habitat of Swift Parrot in Production Forests

Management prescriptions for the conservation of habitat in production forests (including forests used for firewood extraction) in Victoria and New South Wales will be prepared. These will also apply to production forests on Commonwealth land. Prescriptions will aim at maintaining an adequate resource of important eucalypt species in over-wintering habitats. These include grey box, mugga ironbark, red ironbark, yellow gum and white box in Victoria and New South Wales and spotted gum and swamp mahogany in New South Wales. The prescriptions will be updated as more detailed data becomes available from actions 1.3 and 1.4.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	8 500		2 500	11 000

3. Reduce Incidence of Swift Parrot Collisions with Man-Made Structures

Swift parrot collisions with chain-link fences, windows and vehicles are a significant cause of mortality in adult birds in Tasmania. A database for collisions will be established to record information such as age of birds, cause of death or injury and survival. Injured birds are cared for at the Tarooma Wildlife Centre run by the Parks and Wildlife Service and fully rehabilitated birds are released into the wild. Birds which do not fully recover are given to the Healesville Sanctuary to join the captive population (action 4.3). Information from the database will be used to identify problem areas and structures for swift parrots (eg. chain-link fences). Solutions to prevent collisions will be investigated and published in a brochure to be made available to householders. For example, shade cloth has been used effectively to deter swift parrots from flying into chain-link fences. Monitoring of structures where remedial measures have been employed will be required each spring to ensure they are still effective.

ESP funds are required to produce the brochure.

Cost	6 000	500	500	7 000
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4. Investigate Relationship between Blue Gum Flowering and Breeding Strategy of Swift Parrot

The relationship between climatic cycles, the periodicity of blue gum flowering and the reproductive success of the swift parrot is not well understood. By investigating the relationship between blue gum flowering and the breeding strategy, an understanding of the environmental and physiological factors which cause breeding success to vary greatly from year to year will be gained. This information will be used to identify the most productive areas of blue gum habitat. These areas can then be targeted for protection and rehabilitation.

4.1 Investigate Breeding Strategy of Swift Parrot

The physiological and environmental factors which initiate breeding will be investigated and the impact these factors have on the reproductive success of swift parrots assessed. It is recommended that this action be carried out as a research project by a postgraduate scholarship student at the University of Tasmania. Blood samples will be taken from wild birds and birds held in captivity (see action 4.3) to assess hormone levels. These will be compared to the intensity of blue gum flowering to determine any link between the availability of the resource and the reproductive condition of the swift parrot population. The reproductive organs of dead frozen birds held by the Tasmanian Parks and Wildlife Service will be examined to determine their status in relation to the flowering resource at the time they died. The results from action 4.2 will also help implement this action.

The project will be supervised jointly by Dr. Sue Jones (Department of Zoology, University of Tasmania) and Dr. Lee Astheimer (University of Wollongong). The recovery team will help with the selection of study sites, bird trapping and the provision of volunteers for field work if required.

ESP funds are required to cover research costs including vehicle hire, travel expenses and hormone assays.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	12 000	12 000	16 000	40 000

4.2 Investigate Flowering Patterns of Blue Gum

The intensity of Tasmanian blue gum flowering appears to be a major factor affecting the reproductive success of the swift parrot. Long term records of the flowering patterns of blue gums are important in understanding the relationship between flowering and breeding success. The flowering cycle of blue gum is poorly known, although the Co-operative Research Centre for Temperate Hardwood Forestry (CRCTHF) at the University of Tasmania has been monitoring flowering in some southern nonulations since 1993 on a monthly

recovery process to link with this work to ensure continuation of the CRCTHF experiment and extend the range of sites being investigated. In collaboration with the CRCTHF, it is proposed to establish litter traps at additional sites covering the full geographic range of blue gum in Tasmania. Monthly and annual opercula (bud cap) counts will be passed to the swift parrot recovery team.

ESP funds are required for the purchase of additional seed traps, vehicle hire and the collection and sorting of samples.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	15 000	9 500	9 500	34 000

4.3 Captive Population

The recovery effort aims at the effective management of the wild population and at present there is no need for a captive population to supplement wild stocks. However, Healesville Sanctuary in Victoria has established a captive population of swift parrots from aviary stock and injured wild birds. The recovery plan recognises the advantages of having a small captive population. These include providing opportunities to:

- collect blood and other samples for assessment of hormone and genetic status;
- compile detailed breeding observations which are difficult to obtain in the wild;
- trial research techniques such as the attachment of radio transmitters, colour marking methods etc.

The captive population also provides birds for use in developing techniques of captive husbandry and intensive manipulation while offering a restocking source should the wild population continue to decline.

A species management plan for the swift parrot has been drawn up and Healesville Sanctuary intends to produce a husbandry manual during the life of this plan.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	1 200	1 100	1 400	3 7000

5. Population and Habitat Monitoring

5.1 Conduct Population Viability Analysis for Swift Parrot

Population Viability Analysis is a process for incorporating information about the population dynamics of a species into a model which can be used to examine and test various hypotheses about the viability of small populations (Lacy 1996). PVA will be employed to help identify critical factors within the population processes of the swift parrot for study, management and monitoring. PVA will also be used to evaluate the effectiveness of various management options.

Data on the life history of the species will be collected and collated to enable a PVA to be conducted. Information from this task will be used to guide the actions of the next recovery plan. This task will be carried out by the swift parrot project officer in conjunction with the recovery team.

ESP funding is required for data collation and to run a PVA workshop.

Year	Yr 1	Yr 2	Yr 3	Total
Cost			6 000	6 000

5.2 Swift Parrot Population Census

A population census will be carried out at the end of the recovery plan, during the 1999 breeding season, and prior to the preparation of a new plan. The census results will be used to assess how well the recovery plan has met the recovery criteria.

ESP funding is required to cover the salary of a technical officer, vehicle hire and data collection and collation. Costs of volunteer time and vehicle running costs are included.

Year	Yr 1	Yr 2	Yr 3	Total
Cost			32 000	32 000

5.3 Review Effectiveness of Management Prescriptions in Conserving Habitat of Swift Parrot in Production Forests

The effectiveness of the Forest Practices Code in conserving habitat will be reviewed. A retrospective study of coupes that have been harvested under the interim guidelines will be undertaken. Coupes will be re-visited and assessed for habitat after logging and a comparison made to what habitat was available before logging. This will determine whether the quantity and quality of habitat is being maintained. The remaining habitat should also be monitored for use by swift parrots.

Information about what habitat was present in a coupe prior to harvesting will be compiled from timber harvesting plans and the surrounding forest types. This project will be carried out with the help of the Forest Practices Board, North Forests Products and Forestry Tasmania. A database for habitat in production forest will be established. All timber harvesting plans containing the habitat of the swift parrot will be entered onto the database. Data will include the area of the timber harvesting operation, the area of affected habitat and what actions were taken to protect habitat.

The results of the review will be incorporated into management prescriptions for the swift parrot in production forests.

ESP funds are required for vehicle hire, travel allowance and data acquisition.

Year	Yr 1	Yr 2	Yr 3	Total
Cost		13 000		13 000

6. Public Information and Education

This action includes liaison with managers of private and public land, the forestry and farming industries, swift parrot operations groups, bird watchers and the general public. Liaison with landholders and managers will be undertaken by the swift parrot coordinator, extension and threatened species officers and by community based swift parrot groups.

A newsletter will be used to keep all participants informed of progress and developments in the recovery program. A brochure informing the public of the plight of the swift parrot in its breeding area in Tasmania is available. The Department of Natural Resources and Environment in Victoria has also published a swift parrot brochure.

The public information and education program involves all participants in the recovery process including government agencies, the forestry and farming industries, researchers, interest groups, funding bodies and the broader community. Promotion of the recovery process is primarily the role of the participating government agencies and NGOs but will be coordinated by the swift parrot project officer.

Successful implementation of the recovery plan depends on communicating the actions described in the plan to the farming community, the forest industry and the wider community. The community must also be kept informed of the problems facing the swift parrot and the achievements and progress being made with the plan. Community participation in the recovery effort, where appropriate and practicable, should be encouraged.

Promoting the swift parrot recovery process through all forms of media, including local television, radio and print media should continue. This will help inform the community, recruit volunteers and encourage private landholders to protect the habitat of the swift parrot. Promotion will be carried out by all of the recovery team.

6.1 Swift Parrot Newsletter

A biannual newsletter is necessary to support the volunteer network and groups which are involved in swift parrot recovery actions and to maintain the interest of the general public in the recovery program. It will be written, designed and produced by the project officer in cooperation with the Recovery Team and mailed to volunteers and groups involved in the recovery. Costs of printing and postage cover 1,000 copies by 2 double sided folded A3 pages in black and white.

ESP funds are required for the production and mailout of a newsletter.

6.2 Establish a Community Based Swift Parrot Network

Networks of volunteers and groups will be necessary to help with population censuses, identification of foraging and breeding sites, collection of information about food sources and habitat rehabilitation projects. Volunteers will play an important role in the implementation of tasks 1.1, 1.3, 4.1, and 5.2. Birds Australia will be central in implementing this action through the Threatened Bird Network program. Funds are required to help establish the support network in the three states covering the range of the swift parrot.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	2 000	2 000	2 000	6 000

6.3 Prepare Media Strategy

The swift parrot has attracted extensive media coverage particularly in Tasmania. An integrated strategy for press releases covering each of the three states is needed to report on the progress of actions, particularly the winter surveys, population censuses, breeding, and habitat restoration. Each state will nominate contacts for swift parrot “stories” and good quality illustrations will be made available. This task requires consultation and coordination between the states and carries negligible costs.

Year	Yr 1	Yr 2	Yr 3	Total
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7. Organisational Support

7.1 Swift Parrot Recovery Officer

A project officer will be appointed to coordinate implementation of the recovery plan. The project officer will be required to liaise with government agencies, farming organisations, the forest industry, community groups, bird study organisations and academic institutions. The project officer will carry out some of the actions in the plan, coordinate the implementation of all actions and report to the recovery team.

ESP funds are required to employ a full-time project officer. Included in the costing is \$6,000 per annum for travel and expenses.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	57 300	58 000	59 000	174 300

* Includes 28% on costs

7.2 Recovery Team

Government agencies will meet any costs associated with attendance of their representatives at recovery team meetings. In cases where NGO representatives are required to attend a meeting, their travel expenses and other valid costs will be reimbursed from the recovery plan budget.

ESP funds are required to cover the costs of NGO representatives.

Year	Yr 1	Yr 2	Yr 3	Total
Cost	5 000	5 000	5 000	15 000

IMPLEMENTATION SCHEDULE

Task	Description	Priority	Feasibility	Responsible Party	Year			Total (\$000)
					97	98	99	
1 Identify foraging and breeding habitat								
1.1	Identify breeding habitat outside the range of blue gum	2	100%	TASPAWS	18.0	16.0	16.0	50.0
1.2	Determine the foraging range of breeding birds	1	80%	TASPAWS	13.0			13.0
1.3	Winter surveys	1	100%	NRE, NPWS	33.0	33.0	33.0	99.0
1.4	Identify foraging habitat within the over-wintering range	1	100%	NRE, NPWS	29.0	29.0	9.0	67.0
								229.0
2 Habitat management								
Breeding range								
2.1	Define the foraging habitat used during the breeding season	1	100%	TASPAWS				
2.2	Prepare management prescriptions for production forests	1	100%	TASPAWS				
2.3	Habitat management on private land	1	80%	TASPAWS	4.0	6.0	3.0	13.0
2.4	Habitat management on Crown land	1	95%	TASPAWS	2.0			2.0
2.5	Habitat management by local government	1	100%	TASPAWS	3.0	1.5		4.5
Over wintering range								
2.6	Retain and enhance known foraging sites	1	80%	NRE, NPWS	10.0	10.0	10.0	30.0
2.7	Management prescriptions for production forests	1	100%	NRE, NPWS	8.5		2.5	11.0
								60.5
3 Reduce the incidence of collisions								
3		1	80%	TASPAWS	6.0	0.5	0.5	7.0
								7.0
4 Investigate the relationship between blue gum flowering and breeding								
4.1	Investigate the breeding strategy	1	80%	TASPAWS, UT, UW	12.0	12.0	16.0	40.0
4.2	Investigate the flowering patterns of blue gum	1	100%	TASPAWS, UT	15.0	9.5	9.5	34.0
4.3	The captive population	2	90%	HS	1.2	1.1	1.4	3.7
								77.7

5 Population and habitat monitoring								
5.1	Population Viability Analysis	1	100%	TASPAWS, NRE, NPWS		6.0		6.0
5.2	Population census	1	100%	TASPAWS			32.0	32.0
5.3	Review effectiveness of prescriptions for production forest	2	100%	TASPAWS		13.0		13.0
								51.0
6 Public information and education								
6.1	Newsletter	1	100%	TASPAWS, NRE, NPWS, BA, WWF	1.0	1.0	1.0	3.0
6.2	Swift parrot recovery network	1	90%	TASPAWS, NRE, NPWS, BA, WWF	2.0	2.0	2.0	6.0
6.3	Prepare a media strategy	1	100%	TASPAWS, NRE, NPWS	0	0	0	0
								9.0
7 Organisational support								
7.1	Coordinator	1	100%	TASPAWS	57.3	58.0	59.0	174.3
7.2	Recovery team	1	100%	TASPAWS,	5.0	5.0	5.0	15.0
								189.3
Totals					229.0	197.6	205.9	632.5

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