

# Flora & Fauna Guarantee Action Statement

#43

This Action Statement was first published in 1993 and remains current. This version has been prepared for web publication. It retains the original text of the action statement, although contact information, the distribution map and the illustration may have been updated.

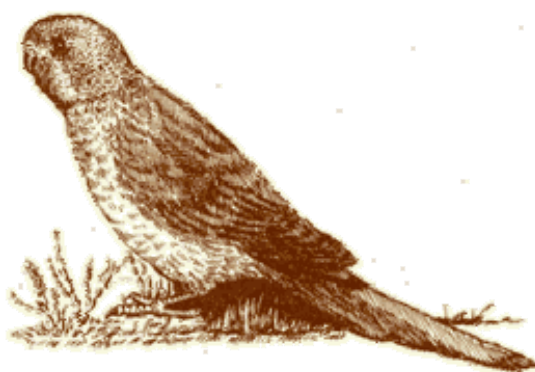
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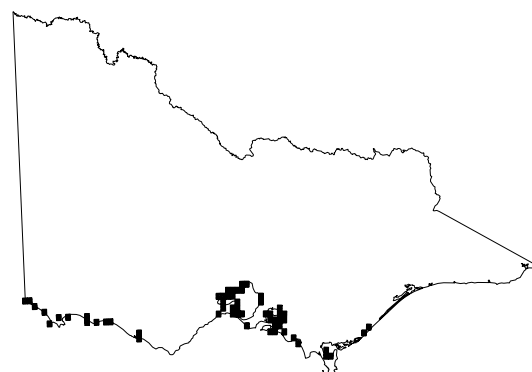
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## Orange-bellied Parrot *Neophema chrysogaster*



Orange-bellied Parrot (*Neophema chrysogaster*)



Distribution in Victoria (DSE 2002)

### Description and Distribution

The Orange-bellied Parrot (*Neophema chrysogaster* Latham 1790) is one of seven species of the genus *Neophema*. Adults are bright grass-green with deep royal-blue flight feathers showing as a narrow blue edge to the folded wing. The male has a broad blue frontal band across the forehead which is less obvious in the female and absent in juveniles. The underparts are bright green and the abdomen and undertail yellow. An orange patch between the legs is bright in the male, paler and less extensive in the female, and small or absent in juveniles. The orange is often not visible at rest. The bill is grey in adults and yellowish in juveniles. When flushed, the parrot makes a distinctive high-pitched, metallic 'buzz' alarm call. The flight call is a high-pitched, rapidly-repeated 'tzeet... tzeet... tzeet...' (Forshaw 1981).

The breeding range of the Orange-bellied Parrot is confined to coastal South-west Tasmania from Birchs Inlet, Macquarie

Harbour, south to South West Cape, including Port Davey and Bathurst Harbour, and then east from South West Cape to Louisa Bay. The main concentration is around Port Davey and Bathurst Harbour south to Cox Bight (Brown & Wilson 1984). The Orange-bellied Parrot is an annual migrant between South-west Tasmania and mainland Australia. The migration journey begins in March when the adults move along the west coast of Tasmania, across to the Hunter group of islands, to King Island and then to mainland Australia.

Juveniles follow a few weeks later. From the arrival on the mainland in late March they disperse as far west as Lake Alexandrina in South Australia and east to coastal South Gippsland.

The main concentrations are at three sites around Port Phillip Bay and the Bellarine Peninsula (Starks et al. 1992). These are the Murtcaim Wildlife Area, Lake Connearre (Hewish & Starks 1988), and Swan Bay, including Swan Island. The birds return to Tasmania during September and October.

## Conservation Status

### Current status

ANZECC (1991) Endangered

Garnett (1992) Endangered

Sac (1991) Threatened

The Orange-bellied Parrot has been listed as a threatened taxon on Schedule 2 of the Flora and Fauna Guarantee Act 1988.

### Reasons for Conservation Status

The population has declined steadily since the 1920s and Orange-bellied Parrots are no longer found in New South Wales or west of the Murray River in South Australia.

The Australian population is now estimated to be fewer than 200 individuals, with perhaps 40-50 breeding pairs. Judging from the annual winter surveys conducted on the mainland since 1979, the population appears to be stable (Menkhorst et al. 1990, Starks et al. 1992).

The species is threatened by:

- loss and alteration of winter habitat, in particular destruction of its saltmarsh feeding grounds, by industrial and urban development, agricultural practices and recreation;
- its small population, making it extremely sensitive to sudden catastrophes such as disease and storms during migrations across Bass Strait;
- predation by introduced predators, especially foxes and cats;
- competition from introduced seed-eating birds; and
- loss of genetic variation because of its small population size.

In its final recommendations, the Scientific Advisory Committee (1991) has determined that the Orange-bellied Parrot is:

- significantly prone to future threats likely to result in extinction; and
- very rare in terms of distribution and abundance.

### Major Conservation Objectives

Conservation objectives recommended by the Orange-bellied Parrot Recovery Team (Stephenson 1992) are to:

- establish a healthy, self-sustaining wild population of Orange-bellied Parrots requiring no input of captive-bred stock or other management effort;
- achieve a stable wild population of 250 Orange-bellied Parrots with sufficient secure habitat and food supply throughout their current range by 1996;
- achieve a stable, viable, wild population of at least 400 birds by the year 2000; and
- protect, improve and increase areas of habitat including saltmarsh and other vegetation such as *Chenopodium glaucum* utilised by parrots.

## Management Issues

### Ecological Issues Specific to the Taxon

The Orange-bellied Parrot is an annual migrant to coastal Victoria between March and October. Up to 70% of the known population occurs at a few sites in western Port Phillip Bay but small numbers are regularly reported from Corner Inlet, Western Port and Discovery Bay.

In Victoria, Orange-bellied Parrots inhabit mainly saltmarshes. They also feed at times in adjacent wet pasture and weedy areas and, at Queenscliff, on a golf course. On migration in western Victoria they feed on the seeds of strandline plants on beaches. In saltmarshes, a succession of plants flower and set seed through the winter and the parrots switch their feeding from one to the other according to food availability. The most important food plants in Victoria are *Sarcocornia quinqueflora* (Beaded Glasswort), *Frankenia pauciflora* (Southern Sea-heath) and *Suaeda australis* (Austral Seablite) during autumn and early winter; and *Sclerostegia arbuscula* (Shrubby Glasswort) and *Halosarcia halocnemoides* (Grey Glasswort) in mid to late winter (Loyn et al. 1986, Yugovic 1984). In at least some years there is a shortage of seed in the saltmarsh during a critical mid-winter period and the parrots feed on seeds of a variety of weedy species in adjacent areas. These include *Chenopodium glaucum* (Glaucous Goosefoot), *Atriplex hastata* (Hastate Orache) and *Arctotheca calendula* (Cape Weed) (Loyn et al. 1986).

At the Murtcaim Wildlife Area the parrots also feed on seeds of *C. glaucum* and other weeds growing in sewage filtration paddocks of the Werribee Treatment Complex. On Swan Island, parrots feed on introduced grasses on the fairways of the golf course.

In South Australia parrots feed on *Cakile maritima* (Sea Rocket) and *Acaena anserinifolia* (Buzbies) growing on beaches as well as *S. quinqueflora* saltmarshes.

The distribution, abundance and life history of the species have been well researched (Brown & Wilson 1982, 1984; Loyn et al. 1986, Menkhorst et al. 1990, Starks et al. 1992). Monitoring of the population has focused on surveys of known habitat when the parrot is overwintering on the mainland. In recent years recruitment has been estimated from observations of juvenile parrots visiting gardens at Melaleuca in South-west Tasmania and information on survival is flowing from a program of colour-banding an annual sample of juveniles. Breeding success has been high in recent years yet no apparent increase in the population has been detected by the annual winter censuses. It is probable that not all the factors influencing the survival of the species have been determined.

While almost all areas utilised by Orange-bellied Parrots are reserved for conservation or are the subject of co-operative conservation agreements between landholders, there are many potential developments which could contribute to habitat loss in the future. These include: expansion of Avalon Airfield, construction of a new port at Point Lillias, relocation of Coode Island chemical storage facilities, and shell-grit extraction. Should these developments proceed, careful planning, including the establishment of appropriate buffer-zones, will be necessary to ensure that the conservation objectives are not compromised.

Apparently suitable habitat for Orange-bellied Parrots occurs at many locations in Victoria, such as Jack Smith Lake, Corner Inlet, Western Port, French Island, Western District lakes, Port Fairy, Nelson and Discovery Bay Coastal Park, and small numbers of parrots have been recorded at many of them, particularly during migration. It may be important to protect these sites to provide feeding and resting places during migration and to allow for future population expansion.

Creating areas of suitable habitat close or adjacent to the main overwintering sites may also be important to allow for increases in the population. Saltmarsh could be created on dredging spoil dumps, saltworks, and old shell-grit extraction areas. *Chenopodium glaucum* could be grown more extensively at the Werribee Treatment Complex. Past depletion of saltmarsh habitat, particularly around Port Phillip Bay, may be limiting the recovery of the Orange-bellied Parrot if the remaining habitat is unable to produce enough food. Carr et al. (1991) showed that habitat degradation through rabbit and stock grazing and trampling significantly reduced seed availability of saltmarsh species.

It is necessary to find and protect roosts. Roost sites are not known for the parrots at Lake Connewarre, but at Swan Bay a number of sites are known.

The impact of predators on parrots is not known, although foxes and raptors are usually abundant.

The small size of the population makes the species susceptible to a possible lack of genetic variability (Brown et al. 1985, Menkhorst et al. 1990) and vulnerable to catastrophic random events such as bushfires, epidemics, or storms during migration.

The continued co-ordination of the recovery effort between Victoria, South Australia and Tasmania is critical for the species. Any breakdown in the link of breeding habitat, migration and overwintering habitat could be disastrous. Efforts in Victoria must be complemented by continuing efforts in the breeding habitat in Tasmania.

## Wider Conservation Issues

The Orange-bellied Parrot Recovery Team, representing the federal and three state governments and bird conservation organisations, has operated successfully for almost nine years, providing an excellent model for management of other endangered species (Menkhorst et al. 1990, Stephenson 1992).

The remnant saltmarsh communities on which the Orange-bellied Parrot depends are significant in their own right. Measures to protect the Orange-bellied Parrot, such as reservation or pest plant and animal control, directly protect these communities. Saltmarsh is important in stabilising the coastline, and may have a role in nutrient recycling and in break-up of pollutants.

Other wildlife will benefit from habitat protection, disturbance restriction and pest animal control.

The Orange-bellied Parrot has a high public profile and is prominent in campaigns to halt or change development adjacent to or near areas of apparently suitable saltmarsh habitat.

Under the Recovery Plan (Brown & Wilson 1984), the Tasmanian Department of Parks, Wildlife and Heritage has monitored and enhanced breeding habitat. The Tasmanian Wilderness World Heritage Area in South-west Tasmania has been extended to encompass Orange-bellied Parrot habitat. There is considerable uncertainty about the parrot's exact habitat requirements, but at present the safe minimum standard, as determined by the experts in the field, requires protecting all remnant saltmarsh.

## Social and Economic Issues

There are significant social and economic issues associated with the conservation of the Orange-bellied Parrot, mostly related to public access to and future development of sites. All of the regularly-used sites in Victoria are near densely populated coastal areas. Consideration of these issues is not new.

The plight of the Orange-bellied Parrot came to prominence in Victoria in 1978 when ICI Australia proposed to use land at Point Wilson for a petrochemical complex. Economic considerations at the time resulted in the development being shelved indefinitely.

Consideration of Orange-bellied Parrot requirements has influenced both government and private sector decisions about other significant projects on the western shores of Port Phillip Bay. Given the size and nature of some of the projects involved, this demonstrates a willingness to protect the species and secure habitat.

- An airfield on Swan Island, suitable for Hercules aircraft, was proposed and abandoned in the early 1980s because of its potential impact on Orange-bellied Parrot habitat. On Swan Island (Commonwealth land), the protection and management of habitat has depended on co-operation and good will since this land is not covered by state planning controls.
- Coastal development at Queenscliff has been affected by the need to protect Orange-bellied Parrot habitat. An extensive marina proposal within Swan Bay was abandoned in 1987. Restrictions on the siting and design of future harbour developments are aimed at limiting any disturbance to habitat in Swan Bay, including Sand Island and Rabbit Island.
- Recently, applications for extraction of shell-grit have been refused at Point Wilson and Lake Victoria, Point Lonsdale, in order to avoid significant destruction or loss of habitat. Past extraction of shell-grit has caused loss of suitable habitat adjacent to Swan Bay. Economic losses will only occur if the cost of extracting shell-grit is higher at alternative sites.

Other potential developments which may conflict with habitat protection for the parrot include the planned expansion of Avalon Airfield, where noise and water pollution may adversely affect the species. Controlling these off-site effects may incur added economic costs.

- The Port of Melbourne Authority (PMA) has begun planning for a new port at Point Lillias to meet the needs of Melbourne and Geelong. Construction is not expected for another 25-30 years. The proposed in-

filling of salt marshes and the intertidal zone required for the port would be detrimental to habitat. CNR has documented relevant environmental values for the Ports Land Use Plan being prepared by PMA. The total economic cost will need to include the costs necessary to reconcile port construction with habitat protection at Point Lillias, or to locate the new port elsewhere.

- Point Wilson has been recommended as the new site for chemical storage facilities. Incorporating into the construction project buffer zones and other protective measures might offer some protection to the Orange-bellied Parrot. The cost of this is not known.
- The potential expansion of the food plant *Chenopodium glaucum* at the Werribee Treatment complex may slightly reduce options and area available for sewage treatment. Proposed changes in treatment are now evaluated for effects on the Orange-bellied Parrot, and Melbourne Water may need take these effects into account in their planning.
- Protection of habitat at the Avalon or Laverton saltworks is linked to the current system of check banks and water flows. Protecting this habitat and trying to re-establish saltmarsh communities will constrain future management options for these sites.
- Public access to the Murtcaim Wildlife Area at Point Wilson is restricted to control the level of disturbance to parrots and to protect fragile saltmarsh and coastal ecosystems from trampling. A permit system, administered by Melbourne Water through the Werribee Treatment Complex, restricts casual access to the area, but still allows any keen person to visit.
- The number of bird watchers and tourists observing Orange-bellied Parrots could expand considerably. Continued control on opportunities for birdwatchers and tourists is necessary to ensure that visitor numbers do not become excessive, resulting in disturbance of the parrots and habitat. Business opportunities exist for bird-tour operators to conduct properly managed and supervised visits.

Small but significant areas of saltmarsh habitat occur on private property, often adjacent to public land. Landholders could voluntarily restore and protect these areas for habitat. Beaded Glasswort can sometimes provide valuable feed to stock, but since these areas are marginal grazing land such action would have only small economic effects. Grants under the Wetlands Incentive Scheme, primarily for fencing, have been very successful in encouraging voluntary protection of habitat at Lake Connemara.

## Management Action

### Previous Management Action

#### Planning and Research

The history and direction of Orange-bellied Parrot recovery effort were documented by Menkhorst et al. (1990). Major achievements in Victoria are listed below:

**1978:** Research into use by Orange-bellied Parrots of the Point Wilson area commissioned by ICI Australia (Loyn & Chandler 1978, Carr & Kinhill Planners 1979, Lane et al. 1980).

**1978-present:** Annual winter census of Orange-bellied Parrots on mainland. Since 1984 conducted by RAOU under contract to the Department of Conservation and Natural Resources (CNR) and its predecessors and co-ordinated by the Orange-bellied Parrot Recovery Team.

**1979:** Research program initiated by the Tasmanian National Parks and Wildlife Service with funding from World Wildlife Fund (Australia) and input from government and non-government agencies.

**1980:** Formation of Murtcaim Wildlife Area Committee of Management comprising representatives from Fisheries and Wildlife Division, ICI Australia and the Board of Works (Werribee Treatment Complex). (The Murtcaim Wildlife Area includes land managed by ICI, CNR and Melbourne Water near Point Wilson.)

**1983:** Formation of Orange-bellied Parrot Recovery Team comprising representatives of the Department of National Parks and Wildlife Service Tasmania, CFL Victoria, South Australian National Parks and Wildlife Service, Australian National Parks and Wildlife Service, Royal Australasian Ornithologists Union and International Council for Bird Preservation. This committee is responsible for implementing the recovery plan, co-ordinating research and management and directing the recovery effort in all three states.

**1984:** Preparation of report 'Birds of Port Phillip Bay' by Ministry for Planning and Environment, Victoria (Lane et al. 1984). Numerous recommendations aimed at protecting Orange-bellied Parrot habitat.

**1984:** Preparation of 'Orange-bellied Parrot Recovery Plan' (Brown & Wilson 1984) by the National Parks and Wildlife Service, Tasmania, after consultation with the Fisheries and Wildlife Division, National Parks and Wildlife Service South Australia; and Australian National Parks and Wildlife Service (ANPWS).

**1986-present:** Orange-bellied Parrot Captive Breeding Program was begun with the capture of 10 juvenile Orange-bellied Parrots. By 1992, after six breeding seasons, a total of 88 Orange-bellied Parrots had been reared to independence from 17 birds taken from the wild (Brown 1988, Menkhorst et al. 1990). Captive-bred birds were successfully released to the wild at Melaleuca, South-west Tasmania, in October 1991 (11 birds) and October 1992 (14 birds).

**1987-1992:** Extensive research to determine the ecological requirements of *Chenopodium glaucum* (Carr 1987, McMahon & Carr 1988). In 1991 seed collected from the Austins Road Lagoon site at Murtcaim was used to commence establishment of new areas of *C. glaucum* within the Werribee Treatment Complex.

**1990:** Formation of Orange-bellied Parrot Victorian Working Group to give added impetus to the recovery effort within Victoria.

**1991:** Preparation of the 'Orange-bellied Parrot Recovery Plan: Management Phase' for the ANPWS Endangered Species Program (Stephensen 1992). This plan details management actions and costings for the five years 1991-1996, and funding for its implementation has been agreed to by the Endangered Species Unit of ANPWS.

**1991:** Completion of Management Plan for Swan Bay Marine and Wildlife Reserves.

**1991:** Research report on effect of grazing on saltmarsh vegetation at Murtcaim and Point Wilson completed by Ecological Horticulture (Carr et al. 1991). Results indicate significant loss of seed availability on major food plants from grazing.

**1992:** Completion of draft Interim Management Plan for Lake Connemare State Game Reserve.

Since 1985 major works have included fencing saltmarsh at Point Wilson, Murtcaim Wildlife Area and Lake Connemare to eliminate grazing by stock. Annual pest plant and animal control programs are carried out at the major overwintering sites.

## Intended Management Action

NB: These relate to Victoria only.

### Monitoring

- RAOU to co-ordinate the annual winter census of Orange-bellied Parrots to provide an annual estimate of population size and details of dispersion and habitat usage. Funds available from ANPWS for five years through the Recovery Plan.
- Provide boats and personnel to monitor parrot usage of Lake Connemare, Mud Island, Duck Island and Corner Inlet.
- Conduct surveys of potential suitable habitat so as to find any new areas utilised by parrots.
- Monitor flocks of parrots and record details of banded birds.

### Habitat

Provide sufficient secure habitat and food supply throughout the Orange-bellied Parrot's range. This will be achieved by protecting, expanding and enhancing habitat and food supply at known feeding sites. Protect new sites as they are found.

Specific actions include:

- Create stands of *Chenopodium glaucum* on Werribee Treatment Complex while continuing to manage the Austins Road site at Murtcaim for the species.
- Continue to give high priority to rabbit and weed control at Murtcaim Wildlife Area and Point Wilson.
- Continue to exclude grazing from areas of fenced habitat. During the 1992 to 1993 financial year fence habitat under threat from grazing or trampling (Swan Island Golf Course, Lake

Connemare southern shore, Swan Bay western shore).

- Advise landholders how to enhance habitat on their properties through the Land for Wildlife Scheme and other means. Provide incentives where appropriate.

### Liaison

Continue liaison with land managers on private and public land. These include Department of Defence (Swan Island and Point Wilson), ICI Australia, Cheetham Salt Pty Ltd, Melbourne Water (Werribee Treatment Complex), Queenscliff Golf Club, Port of Geelong Authority. Liaison with Tasmania will continue through the Orange-bellied Parrot Recovery Team.

### Planning Process

Continue input into the development planning and approvals process as appropriate.

### Veterinary Research

The development of a simple diagnostic test for 'Parrot Beak and Feather Syndrome' is necessary to assist with management of the captive population. Research under way at the University of Sydney to provide a diagnostic test should be supported.

### Predator Control

Conduct regular control of foxes and cats at Point Wilson, Murtcaim, Lake Connemare, Swan Bay and Swan Island. More effective control of foxes and cats may be important for the long-term protection of birds at the main overwintering sites. There are high numbers of foxes in most areas in spite of attempts to control them. New techniques for fox and cat control should be assessed for possible use.

### Genetic Diversity

Assist in all practical ways the collection of blood samples from captive and wild birds each year for analysis of genetic diversity in both the captive and wild populations. Assess the viability of the species in the long term from collected genetic information.

### Research

- Support continued research into food supply and habitat use at the main overwintering sites.
- Measure the nutritional value of winter foods and devise strategies to increase the availability of the most desirable food plants.
- During 1992 to 1993 undertake trials of saltmarsh establishment on suitable sites in western Port Phillip Bay.

### Roost Sites

Use radiotelemetry techniques to determine roosting sites of birds at the main overwintering sites.

### Human Disturbance

- Continue to control human disturbance of parrots at Murtcaim through the permit system administered by

the Murtcaim Wildlife Area Committee of Management.

- Investigate the opportunity to provide an appropriate site for viewing parrots.

## Management Committees

- Continue to provide two representatives from CNR to the Orange-bellied Parrot Recovery Team and attend its meetings.
- Continue to co-ordinate the Orange-bellied Parrot Victorian Working Group.
- Continue to participate in the Murtcaim Wildlife Area Committee of Management through the Geelong Region.

## Public Involvement

- Public participation in management for the Orange-bellied Parrot is provided through representation from non-government conservation organisations on the Recovery Team and Victorian Working Group. The use of volunteers is essential to the success of the annual winter census because of the wide coverage of habitat needed.
- Continue to make available the brochure produced for the Orange-bellied Parrot recovery effort and the field identification guide.
- Provide interpretative displays to the Queenscliff Golf Club to educate golfers and visitors to Swan Island.

## Other Desirable Management Actions

### Habitat Restoration

- Establish additional habitat adjacent or near to areas utilised by parrots to allow for expansion of the population.
- Protect apparently suitable habitat adjacent or near to areas utilised by parrots on public and private land.

### Captive Breeding

The transfer of part of the existing captive population to a mainland zoo should be arranged as soon as the Tasmanian facility is at its carrying capacity and producing adequate stock for the release program.

## Legislative Powers Operating

### Legislation

Conservation Forests and Lands Act 1987: provides for proper management of public land under the Act.

Crown Land (Reserves) Act 1978: provides for reserving areas as public land and for making a specific reservation status for existing public land.

Country Fire Authority Act 1958: provides for fire protection and suppression in country areas and requires that authorities take practical steps for the prevention of fires.

Dog Act 1970: provides for the control and impoundment of dogs.

Fire Authorities Act 1984: provides amendments to the Country Fire Act 1958.

Flora and Fauna Guarantee Act 1988: provides for the protection of flora and fauna in Victoria and the declaration of critical habitat.

Mineral Resources Development Act 1990: provides regulations over exploration and mining activities to minimise impacts on the environment.

Planning and Environment Act 1987: provides for the protection of native vegetation and regional planning controls in all planning schemes.

Vermin and Noxious Weeds Act 1958: provides for the control of vermin on public and private land.

Wildlife Act 1975: regulates the taking and possessing of wildlife.

### Licence/Permit Conditions

Capture or trapping requires a permit from the Director of Flora and Fauna, Department of Conservation and Natural Resources. Permits have been issued to staff at the Wildlife Branch, Arthur Rylah Institute, for mist netting so as to fasten transmitting devices to some birds to locate roost sites. Permits will only be issued where there is a net benefit to the species.

### Consultation and Community Participation

Community consultation and participation involves liaison with landholders, involvement on Recovery Team and Victorian Working Group, assistance with population surveys, and predator control. All relevant CNR regions are included on the Victorian working groups.

Community involvement in the recovery effort has been very strong since the program began. The annual population census relies entirely on contributions from over 100 volunteer bird observers. Volunteers are also used to monitor the presence of banded birds, including captive-bred and released birds, at a feeding station at Melaleuca in South-west Tasmania.

The reporting of sightings to the Atlas of Victorian Wildlife is valuable for monitoring the population.

### Implementation, Evaluation and Review

Regional Managers in regions that include coastal areas where the Orange-bellied Parrot occurs (Portland, Geelong, Melbourne, Dandenong, Yarram) will be responsible for overseeing the implementation of this action statement.

The Victorian Working Group is responsible for the implementation of the recovery plan. Evaluation will be carried out by this group and the Recovery Team. The action statement will be reviewed by 1997 or upon the preparation of an updated recovery plan by the Recovery Team.

### Contacts

#### Species Management

CNR:

Flora and Fauna Branch

Geelong Region

Dandenong Region

Colac Region

Portland Region

Yarram Region

***Other:***

Royal Australasian Ornithologists Union  
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Tasmania  
Australian National Parks and Wildlife Service-Endangered  
Species Unit  
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## Further information

Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website: <http://www.dse.vic.gov.au>

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