Department of Sustainability and Environment

Action Statement

Flora and Fauna Guarantee Act 1988 No. 174

Blue-billed Duck

Oxyura australis

Description and Distribution

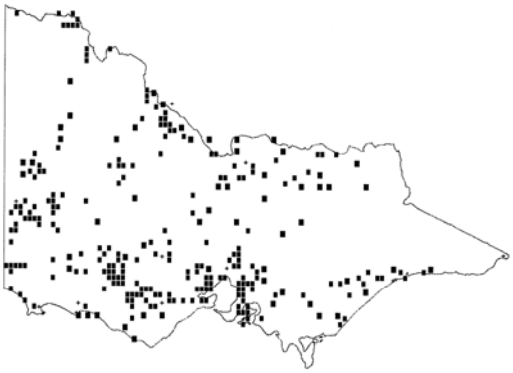
The Blue-billed Duck *Oxyura australis*, also called Stiff-tail or Diving Duck, is a small, compact duck with a large round head and a short neck (Marchant & Higgins 1990). It is about 40 cm in length and has a weight of about 850 g. Blue-billed Ducks are in the tribe of stiff-tailed ducks whose tail feathers are spiny in appearance and capable of erection (Frith 1977) which includes the Musk Duck *Biziura lobata*. It is the only member of the genus *Oxyura* in Australia. This genus is cosmopolitan and contains six species, four of which (including the Blue-billed Duck) are under some threat.

There are two populations of the Blue-billed Duck, one in south-east and the other in south-west Australia. These appear to be isolated from each other; however, no subspecies are recognised (Blakers *et al.* 1984, Marchant & Higgins 1990).

Male and female Blue-billed Ducks have different plumages. The adult breeding male has a black head with a chestnut to brown body and wings and a distinctive blue bill. Its non-breeding, or eclipse, plumage is similar to that of the adult female. The adult female is medium grey in colour with lighter barring to the head and body feathers, with the breast being lighter in colour. It has a dark bill. Immature birds are generally indistinguishable from the adult female. Species similar in appearance are the Musk Duck, Hardhead *Aythya australis* and Eurasian Coot *Fulica atra*.

The Blue-billed Duck is widely distributed in Victoria. The majority of records are usually of a low number of birds, and it has only been recorded in numbers greater than 100 birds on 25 wetlands

Blue-billed Duck *Oxyura australis*
(Photo: DSE/McCann)



Distribution in Victoria
+ before 1970, ■ since 1970
[*source: Atlas of Victorian Wildlife, DSE 2004*]

Victoria
The Place To Be

but such data may reflect visitation rates. Of these wetlands, 10 have records of more than 100 birds in only one year (DSE 2004). Most of these wetlands where large concentrations have been recorded are in western or northern Victoria. The Blue-billed Duck favours deep permanent water bodies. Significant areas include the Western Treatment Plant at Werribee, Lake Milangil near Camperdown and Lake Carchap near Natimuk.

The population size of the species is unknown, however it is likely that the top 10% of sites contain 90% of the population (A. Corrick *pers. comm.*). Therefore the wetlands containing over 100 birds are collectively likely to support most of the population.

Blue-billed Ducks are secretive, preferring stable, deep, fresh well-vegetated wetlands for much of the year, particularly for breeding. These swamps often contain rushes or sedges but lignum *Meuhlenbeckia* spp. or *Melaleuca* swamps are also used. In winter, flocks congregate on large, open, fresh to saline wetlands, including artificial areas such as sewage ponds when local populations may be supplemented by influxes of other birds, which may consist of largely juvenile and immature birds. Occasionally large flocks have been observed during summer (A. Corrick *pers. comm.*). Breeding and wintering areas are often shared with similar species (Marchant & Higgins 1990).

The breeding season varies, probably in response to water levels (Marchant & Higgins 1990), but is generally from August to February. Nests are usually solitary and usually within one metre of the edge of vegetation on the deep-water side. They nest in a range of swamps with a preference for mature cumbungi *Typha angustifolia* vegetation. Other vegetation in favoured wetlands includes lignum (inland) and spike-rush *Eleocharus* spp. Nests are deep, cup-shaped and domed, usually of dead cumbungi leaves, sometimes sparsely lined with down. Nest construction, incubation and parental care are undertaken only by the female. The clutch size ranges from 3-12 but more usually 5-6 eggs (Marchant & Higgins 1990). Nests are difficult to locate due to the secretive behaviour of the birds during breeding. Little information is available about breeding success (Marchant & Higgins 1990). Predation by Water-rats *Hydromys chrysogaster* is a factor in reducing success. It is possible that predation by the introduced Red fox *Vulpes vulpes* could also occur. There is no information on the depth of water required for nest construction and foxes are competent swimmers.

There are only 17 wetlands in Victoria where Blue-billed Ducks have been recorded breeding. Of these wetlands there are 11 where there has been only one record (DSE 2004). This probably also reflects low visitation rates.

Blue-billed Ducks obtain their food mostly by diving to depths of up to three metres. They prefer to feed within or beside tall, dense vegetation, and as far from the shore as possible when cover permits (Marchant & Higgins 1990). Both animal and plant material are taken in approximately equal amounts (Frith 1977). The most important plant foods are water-milfoil *Myriophyllum* spp. and duckweed *Lemna* spp. The aquatic larvae of midges (Chironomidae) are the most important animal food. The knowledge of the social organisation and behaviour of Blue-billed Ducks is incomplete (Marchant & Higgins 1990).

Conservation status

National conservation status

Blue-billed Duck has not been listed under the Commonwealth **Environment Protection and Biodiversity Conservation Act 1999**.

Victorian conservation status

Blue-billed Duck has been listed as threatened under the **Flora and Fauna Guarantee Act 1988**.

Blue-billed Duck is considered endangered in Victoria according to 'The Advisory List of Threatened Vertebrate Fauna in Victoria – 2003' (DSE 2003).

In its final recommendations, the Scientific Advisory Committee (SAC 1995) determined that the Blue-billed Duck is significantly prone to future threats which are likely to result in extinction.

Decline and threats

Since European settlement, much of the species' preferred habitat of deep freshwater marshes has disappeared or been modified by drainage, clearing, grazing, increased salinity and groundwater extraction (Marchant & Higgins 1990). There are only 25 wetlands at which more than 100 Blue-billed Ducks have been recorded at any one time in surveys conducted since 1987 (NRE 2000b). Even though the species is rare it has regularly featured in the list of most frequently shot non-game species (Holmes 1992, 1994; Loyn and Timms 1991a, b).

Increasing salinity in significant areas of the state could in the future modify some deep freshwater areas thereby reducing their suitability as preferred habitat (Halse 1987, Loyn 1989). Therefore, both habitat loss and habitat degradation are significant threats.

The Blue-billed Duck uses different wetland types in the breeding and non-breeding seasons. It is likely that many wetlands used for breeding are on

freehold land whereas significant non-breeding wetlands are mostly on public land. Drainage and increasing salinity will have an adverse impact on both these wetland types. Grazing stock on breeding wetlands will reduce the amount of available cover for breeding, and material for nest construction.

Duck hunting poses a moderate threat to Blue-billed Ducks due to disturbance and the risk of illegal or accidental shooting. Since the general phase out of lead shot, the threat to waterfowl from lead poisoning has declined.

The Blue-billed Duck is an endemic Australian species. It depends on the availability of deep freshwater wetlands with abundant cover, particularly for breeding. Since European settlement, there has been a significant loss of these wetlands in Victoria (Corrick & Norman 1980, Corrick, 1982). For example, in south-western Victoria, 66% have been lost and in the Gippsland Lakes Catchment and Snowy River areas 29%. Continuing loss or modification of these wetlands will further reduce the availability of suitable breeding areas for the species. Drainage, clearing and modification of wetlands is still continuing throughout the State (A. Corrick *pers. comm.*). There is insufficient data to determine any trends in population size since the turn of the century (Ahern *et al.* 1985).

The impact of European Carp *Cyprinus carpio* on wetlands is uncertain. Their feeding and spawning behaviour may modify these areas and cause them to be unsuitable for large numbers of Blue-billed Ducks as well as other species (Cadwallader & Backhouse 1983, R. Price *pers. comm.*).

The activities of commercial fishers, particularly eel fishers, may impact on the species. Fyke nets used for eel fishing are known to catch Blue-billed Ducks as well as other waterbirds. The use of mesh nets may also cause problems.

Wider conservation issues

A range of other waterbirds also utilises deep freshwater marshes, including other threatened species such as Freckled Duck *Stictonetta naevosa*, White-bellied Sea-eagle *Haliaeetus leucogaster* and Australasian Bittern *Botaurus poiciloptilus* (Corrick & Norman 1980); the Australasian Bittern in particular requires dense vegetation for roosting and breeding.

Catchment management programs which involve salinity mitigation and monitoring, and restoration of drained wetland areas will contribute to arresting the degradation and reverse the decline of those wetland types favoured by the Blue-billed Duck.

Three species of *Oxyura* are also under threat in other parts of the world. The White-headed Duck *O. leucocephala* is classified as vulnerable in Europe (Mace and Collar 1995), with a severe decline likely to occur due to the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites. The White-headed Duck, the Maccoa Duck, *O. maccoa* of Africa and the Colombian Ruddy Duck *O. jamaicensis andina* are all considered to be at risk, the latter as a result of development pressures (Callaghan & Green 1993.

Previous Management Action

The Blue-billed Duck has been protected under Victorian legislation since 1928 (**Game Act 1928, Wildlife Act 1975**).

A number of Reserves have been gazetted as Wildlife Reserves for the protection and management of wildlife (**Wildlife Act 1975, Crown Land Reserves Act 1978**). A significant percentage of these are wetland areas where Blue-billed Ducks occur, however, some are also open to hunting where disturbance takes place during open seasons.

In 1988 a Wetlands Conservation Program was developed as a part of the State Conservation Strategy (CFL 1988). This program detailed a number of actions for wetland conservation which would help a wide range of wetland-dependent species including the Blue-billed Duck. These actions included the completion of an inventory of Victorian wetlands (CNR 1993), the classification of a number of wetlands as 'high value' by a scientific committee (the capacity of wetlands to provide critical habitat for appreciable numbers of rare species such as Blue-billed Ducks, or to provide habitat at critical stages of the biological cycle being some of the criteria used), and the preparation of management plans for priority wetlands.

In 1990/91 a wetland incentives scheme was instigated under the *Wetland Conservation Program* and implemented for three years. Landholders could obtain assistance in the restoration, protection and management of wetlands on freehold land. Under this scheme about 100 wetlands were restored either by drainage control works or fencing to exclude stock. A number of these provide suitable habitat for breeding of Blue-billed Ducks.

Since 1987 annual *Summer Waterfowl Counts* have been held as part of the management of duck hunting in Victoria. The number of wetlands surveyed has varied each year from as low as 332 in 1987 (Martindale 1988) to 668 in 1990 (Peter 1990). The median number is around 600 birds. Blue-billed Ducks have been recorded and the top five wetlands ranked each year where they occur.

The Waterfowl Identification Test (WIT) was introduced into Victoria in 1990 as a compulsory prerequisite to gain a Game Licence to hunt ducks. To obtain a pass in the test, licence applicants must correctly identify the species and game hunting status of birds in sufficient sequences shown in a videotape presentation. The correct identification of Blue-billed Duck is one of the objectives of the test.

The use of lead shot for duck hunting is prohibited throughout Victoria with some minor exceptions. Total prohibition will come into effect on 1 January 2005.

Planning controls have been established for drainage of wetlands on freehold land.

Major Conservation Objectives

Long term objective

To ensure that the Blue-billed Duck can survive, flourish and retain its potential for evolutionary development in the wild.

Objectives of this Action Statement

Protect and maintain existing key populations of Blue-billed Ducks by:

- ensuring that key wetland areas (including important breeding sites) for the Blue-billed Duck are secured from further environmental degradation;
- collecting and analysing information on the distribution and abundance of the Blue-billed Duck;
- ensuring that significant aggregations of Blue-billed Ducks are protected on wetlands open to duck hunting, and
- initiating enhancement and restoration of wetlands to provide improved or additional habitat.

Intended Management Action

The intended management actions listed below are further elaborated in DSE's Actions for Biodiversity Conservation database. Detailed information about the actions and locations, including priorities, is held in this system and will be provided annually to land managers and other authorities.

Identify key sites

1. Identify and document key sites for Blue-billed Duck, particularly wetlands that consistently support large flocks.

   Responsibility: DSE (Biodiversity & Natural Resources Division), DPI (Regions)

2. Provide information and advice on the management of Blue-billed Duck and its habitat to Catchment Management Authorities, local government authorities, other government agencies and the public.

   Responsibility: DSE (Biodiversity & Natural Resources Division), DPI (Regions)

Habitat protection, enhancement and restoration

3. Protect, enhance and restore key sites for Blue-billed Duck in parks and reserves via preparation and implementation of management plans that specifically address Blue-billed Duck conservation.

   Responsibility: Parks Victoria

4. Protect, enhance and restore key sites for Blue-billed Duck in Melbourne Water-managed areas via preparation and implementation of management plans that specifically address Blue-billed Duck conservation.

   Responsibility: Melbourne Water

5. Encourage and promote the protection, enhancement and restoration of key sites for Blue-billed Duck on private land via a range of voluntary mechanisms, including covenanting through *Trust for Nature,* the *Land For Wildlife* scheme and the BushTender scheme.

   Responsibility: DPI (Regions), Trust for Nature

6. Incorporate actions to protect, enhance and restore Blue-billed Duck habitat into relevant Regional Catchment Strategies or their subordinate strategies via Biodiversity Action Plans. Implement these actions, according to priority, as resources become available, in conjunction with other agencies, community groups and landholders.

   Responsibility: Catchment Management Authorities

Protection for aggregations of Blue-billed Ducks

7. Continue to conduct annual Summer Waterfowl Counts with assistance from community groups, such as the Field and Game Association, Birds Australia and local Field Naturalist groups, with a clear objective of locating aggregations of the species.

   Responsibility: DSE (Biodiversity & Natural Resources Division), DPI (Regions), Parks Victoria

8. Protect aggregations of Blue-billed Ducks from disturbance and accidental shooting during duck season via hunter education programs and temporary closure of wetlands or parts of the wetlands where necessary.

   Responsibility: DSE (Biodiversity & Natural Resources Division), DPI (Regions)

Predator control

9. Encourage fox control by DPI, Parks Victoria and landowners around key breeding wetlands, while ensuring that the techniques used do not have impacts on other native species.

   Responsibility: DSE (Biodiversity & Natural Resources Division), DPI (Regions), Catchment Management Authorities, Parks Victoria

Community awareness and involvement

10. Prepare community awareness materials on Blue-billed Duck, including information on potential threats and appropriate habitat management.

    Responsibility: DSE (Biodiversity & Natural Resources Division), DPI (Regions)

Research

11. Encourage, facilitate and support research into Blue-billed Duck, including:

    - characterise breeding seasons, habitat and nest requirements from directed studies of breeding biology. Determine land status and security of breeding and non-breeding sites and potential threats or impacts to these sites.
    - determine regularity, seasonality and composition of large flocks and reasons for peaks, including studies of foods.
    - determine characteristics of wetlands where large flocks occur.
    - determine the distribution of Blue-billed Ducks in relation to wetlands of varying salinity.

    Responsibility: DSE (Biodiversity & Natural Resources Division)

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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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