

NSW SCIENTIFIC COMMITTEE

Rose-crowned Fruit-dove *Ptilinopus regina*

Review of Current Information in NSW

August 2008

Current status

The NSW Scientific Committee recently determined that the Rose-crowned Fruit-dove *Ptilinopus regina* (Swainson 1825) meets criteria for listing as Vulnerable under the NSW *Threatened Species Conservation Act 1995* (TSC Act), based on information contained in this report and other information available for the species. The Rose-crowned Fruit-dove is not currently listed under any other State or Commonwealth legislation.

Species description:

The Rose-crowned Fruit-dove is a small (23 cm in length), compact, short-tailed pigeon. It is mostly green, with grey foreparts, a pink-red crown with a yellow border, orange underparts, and a distinctive yellow tail tip. The grey breast has green-streaked spiky feathers, and there is a small mauve patch on the belly. It has a distinctive descending, accelerating call. The similar Superb Fruit-dove *Ptilinopus superbus* has a purple cap, orange hind-collar, a dark band separating the grey breast from the green flanks and white belly, a white tail tip, and a slow 'whooping' call. The larger and longer-tailed Wompoo Fruit-dove *Ptilinopus magnificus* has a plain grey head, a widening purple blaze from the chin to the belly, and yellow underwings.

Taxonomy:

Species: *Ptilinopus regina* (Swainson 1825) (Columbidae); an endemic Australasian species in an Australasian-centred genus extending to Malaysia and Polynesia. The nominate subspecies *P. r. regina* occurs in NSW and Queensland; subspecies *P. r. ewingii* (Gould 1842) occurs in the Northern Territory and the Kimberley of Western Australia. Other subspecies *P. r. flavicollis* Bonaparte 1855, *P. r. xanthogaster* (Wagler 1827) and *P. r. roseipileum* (Hartert 1904) are distributed among islands in Wallacea (eastern Indonesia).

Distribution and number of populations:

In NSW the species' core range is in the North Coast Bioregion and eastern escarpment of the New England Tableland, south to Port Stephens, with breeding recorded south to the lower Clarence Valley. Vagrants occur much farther south, frequently to Sydney and occasionally to Victoria and Tasmania. The species was found to be widespread and moderately common to common in the Richmond Valley (Gosper 1986; Gosper & Holmes 2002). However, data from a single area that sits within a region where the species is likely to be most abundant, give a limited view of overall abundance in NSW, and comparable data are lacking for other regions.

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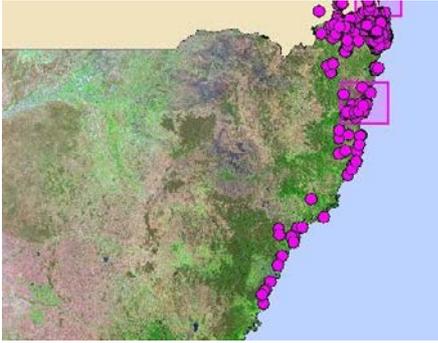


Figure 1. Records since 1980 of the Rose-crowned Fruit-dove (NSW Wildlife Atlas)

Ecology:

The general biology and ecology of this species is moderately well understood (Recher *et al.* 1995; Date *et al.* 1996; Higgins & Davies 1996; Moran *et al.* 2004; Gosper & Gosper 2008).

Key habitat requirements

The Rose-crowned Fruit-dove inhabits rainforests, especially with vines, and also nearby sclerophyll forests and coastal scrub with abundant fruiting trees or shrubs. The species occurs in small remnants and regrowth patches, and in Camphor Laurel-privet regrowth in farmland. It has a wider habitat and dietary tolerance than the larger, more specialised Wompoo Fruit-dove, which is more restricted to fig-rich rainforest (Higgins & Davies 1996). The Rose-crowned Fruit-dove is not restricted to lowland, larger and denser rainforest, or to northern lowland and basswood forests in winter (Recher *et al.* 1995), but also occurs in the same types as recorded by Recher *et al.* (1995) for the Wompoo, in other moist forest and woodland with abundant fruiting trees, and occasionally in parks and gardens with fruiting trees (Higgins & Davies 1996).

Breeding biology

The Rose-crowned Fruit-dove's nest is a flimsy platform of twigs and tendrils in a fork in a rainforest mid-storey shrub, sapling or vine. A clutch of one egg is laid in spring or summer. The incubation period is about 17 days, the nestling period 12 days, and the post-fledging dependence period lasts three weeks.

Diet

The Rose-crowned Fruit-dove feeds on fleshy fruits of rainforest trees, palms and vines, especially native figs, and of introduced weeds such as *Cinnamomum camphora* (Camphor Laurel), privets, *Phytolacca octandra* (Inkweed), *Solanum mauritianum* (Tobacco Bush) and *Lantana camara* (Lantana).

Social biology

The Rose-crowned Fruit-dove occurs singly, in pairs, in family groups of parents and a juvenile, or in small or rarely large groups at food sources.

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Territoriality/home range

The Rose-crowned Fruit-dove is assumed to defend the immediate nest site and feeding site against rivals, but apparently is not otherwise territorial. It ranges widely in search of food, and is locally dispersive over tens to hundreds of kilometres when not breeding.

Generation length

The generation length for the Banded Fruit-dove *Ptilionopus cinctus* is estimated as five years (Garnett & Crowley 2000). It is thought the generation length of the Rose-crowned Fruit-dove is similar.

Ability to disperse/susceptibility to population fragmentation

The Rose crowned Fruit-dove is highly mobile and dispersive or migratory; it can traverse the agricultural matrix if there are stepping stones of forest remnants or stands of Camphor Laurel.

Number of mature individuals:

The NSW population of the Rose-crowned Fruit-dove was estimated as 1 600-2 000 birds (Recher *et al.* 1995), but this may be an underestimate as the species is cryptic. The NSW population of the more conspicuous Wompoo Fruit-dove was estimated as 7 000 birds (Recher *et al.* 1995), so it is likely that the number of Rose-crowned Fruit-doves exceeds this figure because the latter is smaller, less detectable and occurs at higher densities, particularly in fragments and regrowth which the Wompoo seldom inhabits (Moran *et al.* 2004). Furthermore, the habitat tolerance of the Rose-crowned Fruit-dove is wider than allowed for in the population estimate of Recher *et al.* (1995). The Rose-crowned Fruit-dove has adapted to Camphor Laurel-privet regrowth in cleared land (Gosper 1986), and therefore has a resource base which hypothetically would allow for increased abundance during the last few decades (see below). In recent surveys it was the second-most abundant frugivorous pigeon, after the Brown Cuckoo-dove *Macropygia phasianella*, in fragmented rainforest in south-east Queensland (Moran *et al.* 2004).

Threats:

The Rose-crowned Fruit-dove was formerly hunted as game, but has not been hunted for decades. Current threats to the species include clearing and fragmentation of lowland rainforest, logging of hardwood forest with a rainforest understorey, fire in rainforest remnants, and weed invasion. However, the species can eat the fruits of some weed species. It was classified as a 'decreaser' on the basis that it was significantly more common in extensive rainforest (2.81 birds per count) than in fragments or regrowth (2.00 birds per count) (Moran *et al.* 2004). Removal of Camphor Laurel food sources and habitat patches which serve as stepping stones for the fruit-dove's flight patterns is a potential threat, unless these are replaced by native rainforest species in a phasing-out strategy that retains connectivity. The Rose-crowned Fruit-dove sometimes collides with glass windows and doors.

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'Clearing of native vegetation', 'High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition' and 'Invasion, establishment and spread of Lantana' are listed as Key Threatening Processes under the TSC Act in NSW.

Extreme fluctuations:

There is no evidence of extreme fluctuations in this species.

Population reduction and continuing declines:

The Rose-crowned Fruit-dove was assumed to have declined with historical clearing of lowland rainforest and heavy hunting pressure. It is no longer hunted, rainforest is regenerating in parts of the North Coast, and Camphor Laurel and privet (*i.e.* food sources and stepping stones) are invading many cleared areas. Therefore, the historical decline is suspected to have been halted and reversed, by relaxing of mortality factors and an increase in habitat and resources.

Core distribution and reporting rates for the Rose-crowned Fruit-dove in NSW were generally similar between the first and second national bird atlases in 1977-1981 and 1998-2002 (Blakers *et al.* 1984; Barrett *et al.* 2003), suggesting no significant decline in 20 years (four generations). It was recorded in nine one-degree grids, at mostly low reporting rates (less than 11% of surveys per grid) except for two grids at moderate reporting rates (less than 40% of surveys per grid) during Atlas 1, and in seven grids at low reporting rates (less than 10% of surveys per grid) during Atlas 2. Ecologically similar species (other fruit-doves or fruit-pigeons) showed stable or increasing reporting rates, rather than declines, in NSW and nationally over this period.

National reporting rates of the Rose-crowned Fruit-dove and Wompoo Fruit-dove increased significantly, with no regional variation, by 104% and 76% respectively (Barrett *et al.* 2003).

In NSW, reporting rates for the White-headed Pigeon *Columba leucomela* increased significantly by 306%, and the Brown Cuckoo-dove, Emerald Dove *Chalcophaps indica*, Wonga Pigeon *Leucosarcia melanoleuca* and Topknot Pigeon *Lopholaimus antarcticus* showed no significant change or regional variation in reporting rate (Barrett *et al.* 2007). NSW reporting rates for the Rose-Crowned Fruit-dove were not statistically compared, presumably because of insufficient data for this cryptic species, but a similar and indicator species, the Wompoo Fruit-dove, increased in reporting rate by 77% in NSW, with no regional variation (Barrett *et al.* 2007). The Wompoo is more visible and detectable, and also more specialised and ecologically demanding, than the Rose-crowned Fruit-dove (Higgins & Davies 1996). The Rose-crowned Fruit-dove is more abundant than the Wompoo in south-east Queensland (1.88 vs 1.21 birds per count), particularly in fragments (2.00 vs 1.00) and regrowth (0.81 vs 0) (Moran *et al.* 2004).

Some of the NSW DECCW Recovery Actions for the Rose-crowned Fruit-dove, relating to community awareness, protection of habitat and corridors, creation of new reserves and regeneration of rainforest, may have influenced the apparent increase in sightings over recent years.

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Extent of Occurrence (EOO) & Area of Occupancy (AOO):

Disregarding vagrants, the Rose-crowned Fruit-dove's current core EOO is about 60 000 km², based on occurrence in six 1-degree grids (each about 100 km square) (Barrett *et al.* 2003), or an area of about 500 x 120 km from the Queensland border to Port Stephens and inland to the escarpment of the Dividing Range. AOO is unknown, but is estimated at roughly 6 000 km² even if only 10% of EOO is occupied. AOO was about 50% of 10-minute grids (each *c.* 10 x 15 km) sampled in a *c.* 1-degree grid in the Richmond Valley (Gosper 1986), but this proportion may decline towards the south of the species' core EOO.

Severe fragmentation:

The Rose-crowned Fruit-dove's habitat is inferred to have been severely fragmented in the past, but the situation has improved with regeneration and replanting of rainforest remnants, and the growth of Camphor Laurel and privet in cleared areas. It occurs more commonly than other specialised frugivorous pigeons in fragments and regrowth in south-east Queensland (Moran *et al.* 2004). The species is partly migratory, capable of dispersing hundreds of kilometres as inferred from vagrants in southern NSW, Victoria and Tasmania (Higgins & Davies 1996). Therefore, its population is not severely fragmented.

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Explanatory note

Between 2007 and 2009 the NSW Scientific Committee undertook a systematic review of the conservation status of a selection of plant and animal species listed under the Threatened Species Conservation Act. This species summary report provides a review of the information gathered on this species at the time the Review was undertaken.

The Scientific Committee's report on the Review of Schedules project and final determinations relating to species that were either delisted or had a change in conservation status can be found on the following website: www.environment.nsw.gov.au .

The Committee gratefully acknowledges the past and present Committee members and project officers who ably assisted the Committee in undertaking the Review of Schedules Project. Information on the people involved in the project can be found in the Acknowledgement section of the project report entitled "Review of the Schedules of the Threatened Species Conservation Act 1995. A summary report on the review of selected species" which is available on the abovementioned website.

This species summary report may be cited as:

NSW Scientific Committee (2008) Rose-crowned Fruit-dove, *Ptilinopus regina*. Review of current information in NSW. August 2008. Unpublished report arising from the Review of the Schedules of the Threatened Species Conservation Act 1995. NSW Scientific Committee, Hurstville.