

SPECIES PROFILE

Yellow-crowned Amazon

Amazona ochrocephala



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I. Summary

The Yellow-crowned Amazon parrot (*Amazona ochrocephala*) has a wide distribution and can be found in Bolivia, Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Guyana, Panama, Peru, Suriname, Trinidad and Tobago and Venezuela.

The *Amazona* species complex has been described as a 'taxonomic headache'. There are eleven described *Amazona ochrocephala* subspecies, and there are similarities in appearance with other *Amazona* species and overlapping distribution with the Blue-fronted Amazon (*A. aestiva*). The species hybridises with Green-cheeked Amazons and is suspected of hybridising with other *Amazona* species.

The Yellow-crowned Amazon is considered an agricultural pest in some parts of South America and the species takes cultivated crops such as maize, corn, green bananas, mangoes, lemons, avocados, lucerne and walnuts.

The species is known to have established following release of captive stock in California, New York, Texas and Florida. Yellow-crowned Amazons were released in Hawaii but failed to establish.

Climate modelling based on the species' distribution suggests a moderate likelihood of the species establishing in Tasmania.

The Yellow-crowned Amazon is listed as 'Least Concern' under the IUCN Red List and has an extremely large range, although the population shows trends of decreasing. The Yellow-crowned Amazon is listed as a 'Species taken to Suitable for Live Import' under the Australian *Environment Protection and Biodiversity Conservation Act 1999*. It is a 'controlled animal' under the Tasmanian *Nature Conservation Act 2002*.

The Vertebrate Pest Committee assessed the Yellow-crowned Amazon as an 'Extreme' threat.

2. Introduction

2.1 NAME AND TAXONOMY

The Yellow-crowned Amazon forms part of the 'Yellow-Headed Amazon complex'. The species has been described as a 'taxonomic headache', in part due to variability in appearance, and overlapping distribution and physical similarities with the Blue-fronted Amazon (*A. aestiva*) (Eberhard & Bermingham 2004).

Kingdom:	Animalia
Phylum:	Chordata
Class:	Aves
Order:	Psittaciformes
Family:	Psittacidae
Genus:	<i>Amazona</i>
Species:	<i>A. ochrocephala</i>

Sub-species or variety (if applicable): Eleven subspecies are recognised: *A. o. tresmariae*, *A. o. auropalliata*, *A. o. panamensis*, *A. o. ochrocephala*, *A. o. nattereri*, *A. o. xantholaema*, *A. o. parvipes*, *A. o. caribaena*, *A. o. hondurensis*, *A. o. belizensis* and *A. o. oratrix* (Eberhard & Bermingham 2004) (refer to Figure 2).

Common names (including any industry or trade names): Yellow-crowned Amazon, Yellow-crowned Parrot.

Known hybrids: The species hybridises with Green-cheeked Amazons (*A. viridigenalis*) (Lever 1987) and is suspected of hybridising with other *Amazona* species.

Close relatives: Blue-fronted Amazon (*A. aestiva*), Green-cheeked Amazon (*A. viridigenalis*), Yellow-naped Amazon (*A. auropalliata*), Yellow-shouldered Amazon (*A. barbadensis*), Yellow-headed Amazon (*A. oratrix*) and Tres Marias Amazon (*A. tresmariae*) (Eberhard & Bermingham 2004; Lever 1987; Urantowka et al. 2014).

2.2 DESCRIPTION

There is significant variation in the appearance of distinguishing characteristics, and may share the same features as the Blue-fronted Amazon and the three species in the 'Yellow-Headed Amazon complex' (Eberhard & Bermingham 2004; Ribas et al. 2007; Urantowka et al. 2014).

Del Hoyo et al. (1994) describe the Yellow-crowned Amazon as 35-38cm and weighing 340-535g. The species is green with the forehead and mid-crown yellow, often with some yellow around the eye. The cheeks and ear-coverts are bright green with the region from the hind-crown to the mantle green and very lightly edged with black. The bend of the wing and speculum are red, the

carpal edge is yellow, while the flight feathers are tipped with blue and the tail tipped yellow and basally red on outer feathers. Immature birds are duller with less yellow and red on head and wing.

Eberhard & Bermingham 2004 suggest that characters used to identify the various subspecies include plumage (in particular, extent and position of yellow on the head and thighs, and coloration at the bend of the wing), the pigmentation on the bill and the feet, and body size, although these characters may vary significantly, even among individuals from the same locality.

Differences between males and females and seasonal variation in appearance have not been noted. Blood tests or a laparoscope may be used to determine gender (Thompson 1995; Castillo & Eberhard 2006).

The species is unlikely to be confused with Australian species, although it may be readily confused with the Blue-fronted Amazon (*A. aestiva*).

2.3 CONSERVATION AND LEGAL STATUS

The Yellow-crowned Amazon is listed as 'Least Concern' under the IUCN Red List and has an extremely large range. The population shows trends of decreasing but the decline is not believed to be sufficiently rapid to warrant a more serious classification (BirdLife International 2012).

As Psittaciformes, the species is listed in Appendix II to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Appendix II species are species that are 'not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival' (CITES 2015).

In Australia, Yellow-crowned Amazons are listed as 'Species taken to Suitable for Live Import' under the *Environment Protection and Biodiversity Conservation Act 1999* and require an import permit under the Act.

In Tasmania, the Yellow-crowned Amazon is a 'controlled animal' under the *Nature Conservation Act 2002*. A permit is required to import this species.

3. Biology and Ecology

3.1 LIFE HISTORY

The Yellow-crowned Amazon is monogamous and both members of a pair contribute to nest defence and care for the young (Castillo & Eberhard 2006).

Breeding occurs between February-May in Mexico and Venezuela, December-January in Colombia, and January in Surinam. 2-3 eggs are laid, with incubation of 25-26 days (BirdLife International 2012). Eggs are laid in tree cavities and palms, with only the female in a male-female pair incubating the eggs. Males contribute to feeding (including allofeeding the female) and the female will leave the nest in the morning and afternoon to forage (Castillo & Eberhard 2006). Young are fed by regurgitation (Lever 1987). Young leave the nest between 59-86 days and breeding success in the species is generally low (Castillo & Eberhard 2006).

In general, parrots tend to have relatively small eggs, long incubation periods and asynchronous clutches. Hatchlings are featherless with closed eyes and cannot support their heads. They grow slowly and fledge after a considerable time in the nest (Bucher 1983 cited in Seixas & Mourao 2003). The species is not noted for storing sperm.

3.2 HABITAT REQUIREMENTS AND PREFERENCES

The Yellow-crowned Amazon occupies areas of tropical deciduous woodland, tall thorn scrub, humid gallery forest, seasonally flooded forest, dry forest, secondary riverine growth, mangroves, pine savannah, palm stands, cultivated land and some suburban areas (del Hoyo et al. 1994; Castillo & Eberhard 2006). The species is always found in the lowlands, with upper elevation limit of the species is 850m (del Hoyo et al. 1994; BirdLife International 2012).

All Amazon parrots are secondary cavity nesters (Forshaw 1989 and Ribas et al. 2007 cited in Berkunsky & Reboreda 2009). Yellow-crowned Amazons nest in hollow trees typically 4-15m up, often in dead wood. Termitarium may occasionally be used (del Hoyo et al. 1994).

3.3 NATURAL GEOGRAPHIC RANGE

The species has a broad native range, and can be found in Bolivia, Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Guyana, Panama, Peru, Suriname, Trinidad and Tobago and Venezuela (BirdLife International 2012).

Figure 1 shows the distribution of the Yellow-crowned Amazon. Figure 2 shows the distribution of the *A. ochrocephala* complex, with detail of the overlap with the Blue-fronted Amazon (*A. aestiva*).

The estimated range of the species is 6 630 000km² (BirdLife International 2012).

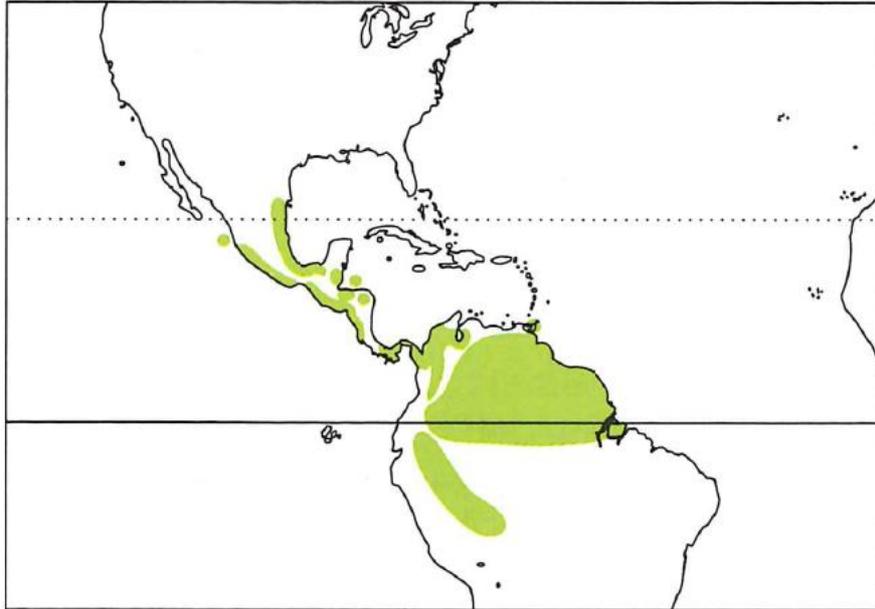


Figure 1. Distribution of the Yellow-crowned Amazon (from del Hoyo et al. 1994).



Figure 2. Distribution of the *Amazona ochrocephala* complex (from Eberhard & Bermingham 2004). The overlapping distribution of the Blue-fronted Amazon (*A. aestiva*) is shown by a hashed line.

3.4 INTRODUCED GEOGRAPHIC RANGE

Yellow-crowned Amazons have established in the USA following release of captive stock. A fire in 1961 in the Bel-Air distribution of west Los Angeles, California is thought to have destroyed many private aviaries and caused local owners to release their birds. Flocks of 2-3 birds are 'fairly common' and a colony of 2-20 birds is reported to have established (Lever 1987; Nilsson 1981 cited in Bomford 2003).

The species is reported to have successfully overwintered in New York. Small numbers were observed in the Rio Grande Delta in 1973 and a flock of 11 birds at Southmost Palms in southern Texas in 1976. The species has been observed in Miami, Florida where it has hybridised with *A. viridigenalis* (Lever 1987; Long 1981). *A. viridigenalis* is noted for damaging select cultivated blossoms and fruits (Menchetti & Mori 2014).

Yellow-crowned Amazons were released on Oahu in the Hawaiian Islands in 1969-1970 but failed to establish (Berger 1972 cited in Lever 1987; Long 1981).

The exact range of introductions is not known but appear to be localised.

Menchetti & Mori (2014) state that: "Small- to medium-sized, widely distributed species (e.g., *Agapornis* spp., *Amazona* spp., *Aratinga* spp., *Myiopsitta monachus*, *Psittacula* spp.) are the most adept at establishing non-native populations, because they are (i) more traded than others, (ii) commonly sold at relatively low prices, (iii) highly synanthropic and (iv) adapted to live in a variety of environmental conditions, i.e. latitude and habitat types."

3.5 POTENTIAL DISTRIBUTION IN TASMANIA

Using modelling by the Australian Government Department of Agriculture, a climate comparison between the species' distribution in South America and Florida (Eberhard & Bermingham 2004; Long 1981) and potential Australian distribution is shown in Figure 3. Modelling suggests that areas of northern and western Australia have similar climate which may support introduced populations of Yellow-crowned Amazons. Modelling suggests that Tasmania's climate is moderately similar, with climate match scores between 0 and 6.

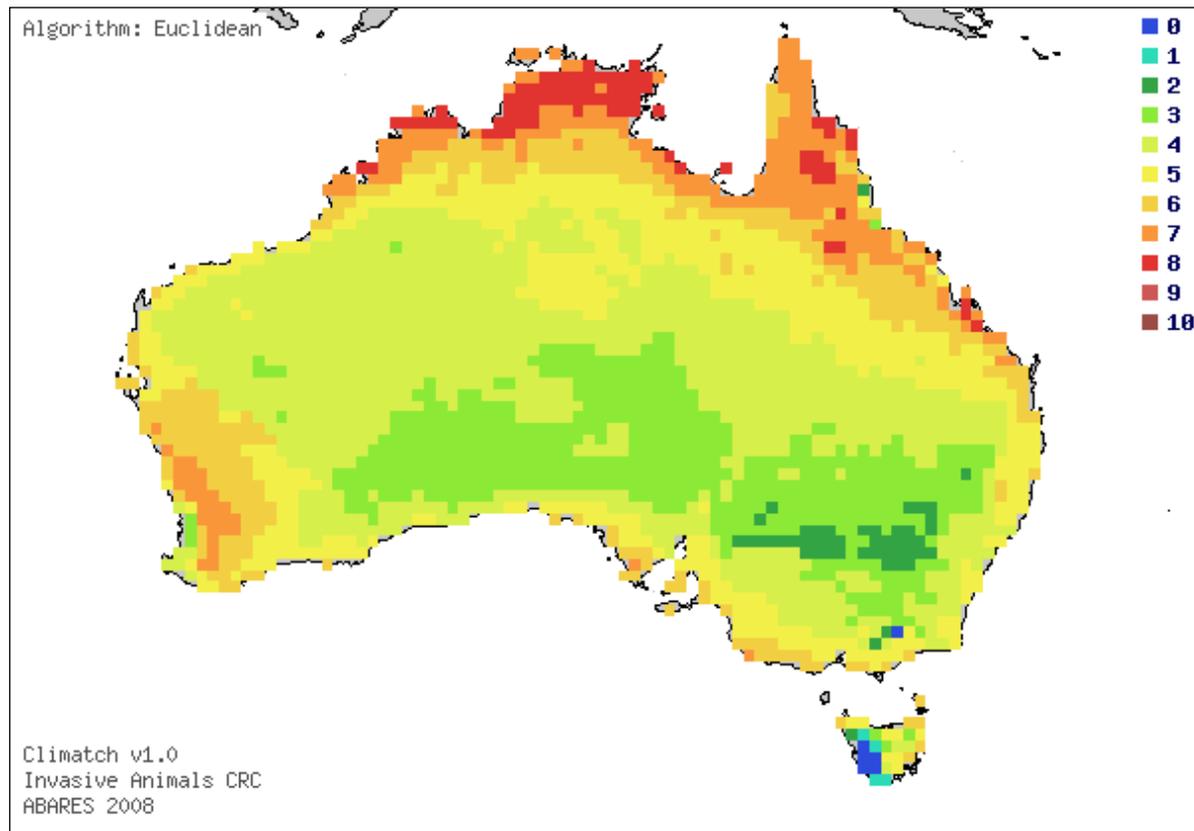


Figure 3. Climate comparison between the natural range of *A. ochrocephala* and Australia, where 10 is a 'perfect' climate match and 0 having a dissimilar climate. Tasmania shows a match between 0 and 6.

3.6 DIET AND FEEDING BEHAVIOUR

The Yellow-crowned Amazon is a herbivorous generalist that feeds on fruit, nuts, seeds, berries and flowers. Food-types consumed include *Pithecellobium*, *Acacia*, *Macuna*, *Zuelania*, *Bumelia*, *Solanum*, *Tabebuia*, *Erythrina*, *Ficus*, *Cochlospermum*, *Curatella*, *Terminalia* and *Euterpe* and other palms. The species also takes cultivated crops such as maize, corn, green bananas, mangoes, lemons, avocados, lucerne and walnuts (del Hoyo et al. 1994; Long 1981). The bark of Camphor trees (*Cinnamomum camphorum*) may also be eaten (Lever 1987).

Close relatives, the Blue-fronted Amazon (*A. aestiva*) and Yellow-headed Amazon (*A. oratrix*), are noted for consuming Common Ivy, Birch, Oak, Walnut, Pine, Pear, Apple, Cherry, Plum, Peach, Willow, Maple and Horse Chestnut trees (among other species) following introduction in Stuttgart, Germany (Martens et al. 2013).

3.7 SOCIAL BEHAVIOUR AND GROUPINGS

Amazons are recognised for their intelligence and ability to sing and mimic the human voice, with some trained individuals having a vocabulary of over a hundred words. Males are more aggressive than females, particularly during the breeding season, although the species is sought after for the pet trade and is unlikely to cause harm (Thompson 1995).

The species breeds in a pair, and may feed collectively in a flock (del Hoyo et al. 1994). A pair may defend its territory from other birds (Thompson 1995).

3.8 NATURAL PREDATORS AND DISEASE

The species is predated on by a range of species, including the Boa Constrictor (*Boa constrictor*); and poaching and destruction of habitat has contributed to reduced breeding success and the decline of the species (Castillo & Eberhard 2006).

In Tasmania, potential predators include the Tasmanian Devil (*Sarcophilus harrisii*), Spotted-tailed Quoll (*Dasyurus maculatus*), and large raptors such as the Wedge-tailed Eagle (*Aquila audax fleayi*) and White-Bellied Sea-eagles (*Haliaeetus leucogaster*). The species is likely to be predated on by domestic dogs and cats.

In their natural environment, the species is likely to be vulnerable to bot-fly (*Pilornis* sp. larvae, Diptera: Muscidae) in the nestling stage, and ticks and mallophaga (lice) as these parasites are frequently found in the Blue-fronted Amazon (a close relative) (Marini et al. 1996 cited in Seixas & Mourao 2003).

The species is a potential carrier of avian polyomavirus, and Psittacine Beak and Feather Disease which a common and potentially deadly disease of parrots and found in Australia (Dolz et al. 2013; Department of Environment and Heritage 2005). The species may also carry avian chlamydiosis which may transfer to humans ('psittacosis') (NASPHV 2010; Kaleta & Taday 2003).

3.9 THREAT TO HUMAN SAFETY

Yellow-crowned Amazons are sought as domestic pets. They are unlikely to cause serious injury requiring hospitalisation but may become more aggressive towards owners during the breeding season (particularly defensive males).

The species may carry avian chlamydiosis (called 'psittacosis' in humans) (NASPHV 2010).

3.10 HISTORY AS A PEST

The Yellow-crowned Amazon is considered an agricultural pest in some parts of South America and the species takes cultivated crops such as maize, corn, green bananas, mangoes, lemons, avocados, lucerne and walnuts (del Hoyo et al. 1994; Lever 1987; Long 1981).

The species is not known to cause modification or major habitat changes, and has not been noted for spreading rapidly following release in new environments.

3.11 POTENTIAL IMPACT IN TASMANIA

If established, the Yellow-crowned Amazon could potentially compete with native species for tree hollows. This includes threatened Tasmanian species, such as the Swift Parrot (endangered), Orange-Bellied Parrot (endangered), and Forty-Spotted Pardalote (endangered), and non-threatened native species such as Musk Lorikeet and Blue-winged Parrot.

The species has attributes that suggest it may impact on some cultivated crops grown in Tasmania, including lemons and Lucerne.

The species may also contribute to the spread of Psittacine Beak and Feather Disease.

4. Risk Assessment

4.1 PREVIOUS RISK ASSESSMENTS

In a previous risk assessment, the Vertebrate Pest Committee assessed the Yellow-crowned Amazon as an 'Extreme' threat (VPC 2007).

The species is included on the Department of Environment's *2007 Inventory of Exotic (non-native) Bird Species known to be in Australia* and is classified as 'high interest' based on pest and disease risk and the potential for illegal trade in the species (DoE 2007).

The Western Australian Department of Agriculture assessed two subspecies of the Yellow-crowned Amazon (*A. o. oratrix* and *A. o. auropiliata*) as representing too high a risk. The species is prohibited and listed as 'no entry, eradicate in the wild, and no keeping' in Western Australia (DoA 2004).

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