Parrots in the London Area

A London Bird Atlas Supplement

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Abstract

Parrots are widely introduced outside their native range, with non-native populations of several species occurring in Europe, including the UK. As well as the well-established population of Ring-necked Parakeet (*Psittacula krameri*), five or six other species have bred in Britain and one of these, the Monk Parakeet, (*Myiopsitta monachus*) can form self-sustaining populations. In the London area, four species have bred or attempted to breed, while two others have shown themselves able to survive outside captivity for long periods and a further two are reported widely and frequently as escapees. While the control programme for Monk Parakeet continues, it currently seems unlikely that any of these species will become as numerous as the Ring-necked Parakeet in the near future.

Introduction

There are approximately 356 species of parrots (Psittaciformes) globally. The native range of parrots is predominantly within the tropics and the southern hemisphere. These include parrot species which occupy temperate areas of the southern hemisphere including New Zealand, Tasmania and southern Chile and Argentina, and others which occupy mountain regions in more tropical zones. Excluding naturalised populations, the northern limit of parrot distribution appears to have been determined by natural features in Africa (desert), Asia (mountains) and Australasia (sea) and by human activity in the Americas; the Carolina Parakeet, which occurred as far north as New York, became extinct in the 1930s (Forshaw, 2010; Hume & Walters, 2012).

Parrots are popular as pets and many have escaped or been deliberately released outside their native range. Lever (2005) gives accounts for up to 35 parrot species which have become naturalised outside their native range, worldwide, as a result of escapes and introductions (see Appendix 1). Naturalised and escaped populations of parrot species are especially prevalent in the southern states of the USA; for example, Sibley (2000) describes 27 species which are encountered regularly in North America (see Appendix 1). Other localities with naturalised populations of parrots include parts of New Zealand and Europe. In Europe, there are up to 11 alien parrot species with established populations (aliens), while a further 41 species have been recorded (EASIN http://alien.jrc.ec.europa.eu/SpeciesMapper). The populations of these birds are very often associated with towns and cities (Lever, 2005; Butler, 2005). In Britain, there is just one parrot species, the Ring-necked (or Rose-ringed) parakeet *Psittacula krameri*, which is listed by the British Ornithologists' Union (BOU) as a self-sustaining introduced species (Category C). The other five or six[1] species which have bred at least once in the UK are currently classified as not self-sustaining (Category E) (Harrop, 2013). However, three of them, Monk (or Quaker) Parakeet *Myiopsitta monachus*, Blue-crowned Parakeet (or Conure) *Aratinga acuticaudata* and Peach- faced (or Rosy-faced) Lovebird *Agapornis roseicollis* have previously been recommended for inclusion in Category C (Dudley, 2010).

Importing parrots into Britain was legal from the early 1970s until 2005, when an EU-wide ban on the import of wild birds came into force (in response to avian influenza). Excluding Budgerigar and Cockatiel, a minimum of 554,000 individuals of approximately 260 taxon were imported to the UK between 1975 and 2005 (https://trade.cites.org/). The ten most numerous of these imports accounted for nearly 60% of the total, with the most numerous of these, the African Grey (including the Timneh sub-species) accounting for 16% of the total imports. The imported birds included approximately 26,000 Ring-necked Parakeet, 6,000 Monk Parakeet, 7,300 Blue-crowned Parakeet, 4,400 Alexandrine Parakeet *Psittacula eupatria*, 63,500 Senegal Parrot *Poicephalus senegalus*, 20,000 Blue-fronted Amazon (or Parrot) *Amazona aestival*, 12,000 Peach-faced Lovebird *Agapornis roseicollis* and 420 Red-rumped Parrot *Psephotus haematonotus*, see Appendix 2. Many parrot species are easy to breed in captivity and, despite the current import ban, the captive population of at least some of these species is expected to be stable or increasing. For example, Fletcher and Askew (2007) estimated that at least 802 captive bred Ring-necked Parakeets entered the captive population per year between 1990 and 2004, which might be roughly equal to the death rate for the population of 26,000 imported birds, since these can live up to 34 years in captivity (http://genomics.senescence.info). Young birds of many species, including Ring-necked Parakeet, Monk Parakeet, Blue-crowned Parakeet, Alexandrine Parakeet,

Cover: Ring-necked Parakeet at the London WWT. (Gehan de Silva Wijeyeratne)

1 The sixth relates to a possible breeding record of Red-rumped Parrot *Psephotus haematonotus* in Northamptonshire in 1998 (Ogilvie & RBBP, 2000).

Senegal Parrot and Blue-fronted Amazon remain more or less readily available to buy from breeders, while the smaller species can easily be bought in a pet shop.

Although deliberate release and further import of wild birds are both illegal, the captive populations remain a potential source for feral populations. Escapes or releases of several species are clearly a regular event. Extrapolation from 6 months of lost and found notices (hosted by the Parrot Society UK) indicates that a minimum of 400 captive parrots escape each year in Britain, including 168 birds which are recorded as 'found' (presumably re-captured, see Table 1). Around 17% of the reported escapes occurred in the London area.

Reports of escaped birds also appear regularly in county bird reports (NBN Gateway). There is not much correlation between the data derived from the lost or found notices and that derived from county bird reports, even when those species with free-living populations are discounted. For example, the African Grey Parrot is the species most often reported as lost or found, while it is one of the least frequently reported as an escape by birdwatchers, for instance, only two were reported to be at large by the bird watching community in the London area between 2006 and 2015 (LBR). There are several potential factors which may combine to explain the lack of correlation. These may include (i) varying inclination or ability (identification skills) to report particular species by both communities; (ii) varying lengths of time that different species survive after escaping/being released; (iii) the ease of re-capture; (iv) the low likelihood that deliberate releases will be reported as lost; and (v) the low likelihood of species with free-living populations being reported as found. For some species, these factors could lead to significant under-reporting of escapes. Indeed, Fletcher and Askew (2007) estimated that several hundred Ring-necked Parakeets may escape or be released from captivity every year in Britain which is substantially more than the number of any kind of parakeet reported as lost or found.

Parrots in the London Area

Self (2014) lists 29 species of parrots which have been reported at large in the London area (Appendix 3). A further two species were reported in the London Area during the London Bird Atlas Project, bringing the total to 31. Of these, up to 20 species were recorded in the 10-year period 2006 to 2015, with most of these species being non-breeding and

Table 1: Escaped parrots in Britain, extrapolated from lost and found notices (n=208)

Rank	Common name	Scientific Name	Origin	Proportion of reports
1	African Grey Parrot	*Psittacus erithacus*	Africa	33.8%
2	Parakeet	-	-	13.0%
3	Budgerigar	*Melopsittacus undulatus*	Australia	11.1%
4	Cockatiel	*Nymphicus hollandicus*	Australia	7.2%
5	Amazon	*Amazona* sp.	South America	6.3%
6	Conure	-	South America	4.3%
7	Lovebird	*Agapornis* sp.	Africa	4.3%
8	Alexandrine	*Psittacula eupatria*	Asia	3.9%
9	Cockatoo	*Cacatua* sp.	Australia	3.9%
10	Macaw	-	South America	2.9%
11	Eclectus	*Electus roratus*	Australasia	1.9%
12	Kakariki	*Cyanoramphus* sp.	New Zealand	1.9%
13	Sengal	*Poicephalus senegalus*	Africa	1.4%
14	Parrotlet	-	South America	1.0%
15	Monk Parakeet	*Myiopsitta monachus*	South America	1.0%
16	Barraband's	*Polytelis swainsonii*	Australia	0.5%
17	Caique	*Pionites* sp.	South America	0.5%
18	Lorikeet	-	Australia	0.5%
19	Pionus	*Pionus* sp.	South America	0.5%

Source http://www.theparrotsocietyuk.org/lost-stolen-and-found-parrots

Table 2: Species of Parrot recorded at large in the London Area 2006 – 2015

Category	Description		Common Name	Scientific Name
1	Breeding	Fully naturalised, increasing or stable	Ring-necked parakeet	*Psittacula krameri*
2		Annually, stable or declining	Monk-parakeet	*Myiopsitta monachus*
3		Occasionally	Alexandrine Parakeet	*Psittacula eupatria*
			Blue-crowned Parakeet	*Aratinga acuticaudata*
4	Non-breeding	Long-lived (more than one year)	Senegal Parrot	*Poicephalus senegalus*
			Blue-fronted Amazon	*Amazona aestiva*
5		Short-lived, frequent reports	Budgerigar	*Melopsittacus undulatus*
			Cockatiel	*Nymphicus hollandicus*
6		Infrequent reports	Sulphur-crested Cockatoo	*Cacatua galerita*
			Solomon's Cockatoo or Ducorps's Corella	*Cacatua ducorpsii*
			Galah	*Elophus roseicapilla*
			African Grey Parrot	*Psittacus erithacus*
			Eastern Rosella	*Platycercus eximius*
			Blossom/Plum-headed Parakeet	*Psittacula roseata/ cyanocephala*
			Peach-faced Lovebird	*Agapornis roseicollis*
			Sun Parakeet or Conure	*Aratinga solstitialis*
			Orange-winged Amazon	*Amazona amazonica*
			Yellow-crowned or Yellow-fronted Amazon	*Amazona ochrocephala*
			Green Parakeet	*Aratinga holochlora*
			Scarlet Macaw	*Ara macao*

infrequent escapes that may not survive for long or are soon re-captured, see Table 2.

Of most significance are those species which have shown themselves capable of breeding or surviving in the wild for long periods (more than one year), here or elsewhere in Britain, plus species which escape so frequently that birds are recorded in most years. An account for each of these species follows, along with maps of their occurrence, which may prove useful for future bird atlas projects, or perhaps historical reference.

Methods

The methods of data collection used in this study are mostly as described in the London Bird Atlas (LBA) (Woodward, *et al*. 2017), however, the approach to mapping is a little different. For the Ring-necked Parakeet two new maps have been produced using the existing London Bird Atlas dataset. For the other species, up to four maps were produced. The first type shows records and breeding evidence from all months of year from January 2007 to December 2013, rather than just the breeding and wintering seasons. The second type shows the number of years in which a species was recorded in a given tetrad for the 10-year period from 2006 to 2015. The third and fourth are standard breeding and winter season maps in the format of the London Bird Atlas and in the same period. The data used was a mixture of records submitted for the London Bird Atlas project and records submitted to the London Bird Report. When reviewing the maps, it is important to note that a 'dot' on the map may represent the presence of a single bird on a single day, rather than an established population.

Species Accounts

Opposite: Ring-necked Parakeet at the London WWT. (Gehan de Silva Wijeyeratne)

Ring-necked Parakeet

Psittacula krameri

The Ring-necked Parakeet is a native of the Indian sub-continent and parts of sub-Saharan Africa (Forshaw, 2010), but widely introduced elsewhere (Lever, 2005). Indeed, it is the most widely introduced parrot species, having successfully established breeding populations in 35 countries across five continents (Butler, 2003; Fera, 2009). There are several detailed accounts of the arrival of this species into the London area and its subsequent spread (e.g. Morgan, 1993; Hewlett *et al*., 2002; Wheatley, 2007). The Ring-necked Parakeet in England has been the subject of several in-depth studies, including on breeding performance (Pithon & Dytham,1999a), early population growth (Pithon & Dytham 1999b; 2002), population biology (Butler, 2003), potential impacts on agriculture (Fera, 2009), movements (Strubbe & Matthysen, 2011) and potential impacts on native species (e.g. Fletcher & Askew, 2007; Peck, 2013). These tell the story comprehensively, until 2013, which coincides with the end of the London Bird Atlas Project.

Our summary of the research is as follows:

- The birds present in Britain are thought to be a mixture of the two Indian sub-species *borealis* and *manillensis* (Pithon & Dytham, 2001).
- Following a period of relatively slow population growth, taking about 25 years to reach a population of 1,500, in 1996, there has been a period of more rapid growth, reaching a population size of approximately 30,000 in 2010, 14 years later, and this may now be stabilising in south-east England (Peck, 2013) or continuing to increase (BBS).

Figure 1: Percentage of occupied tetrads in each London borough and the parts of the surrounding counties which fall within the London area.

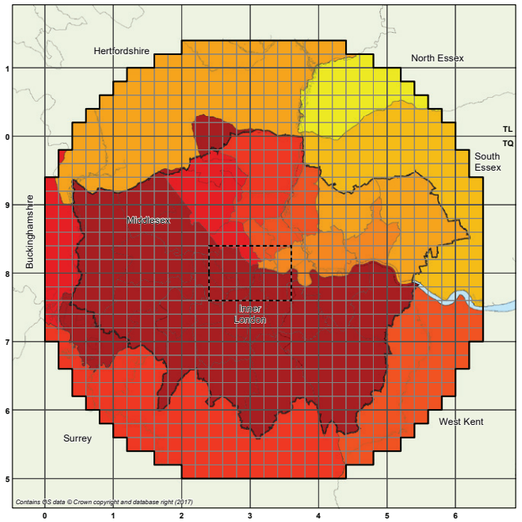
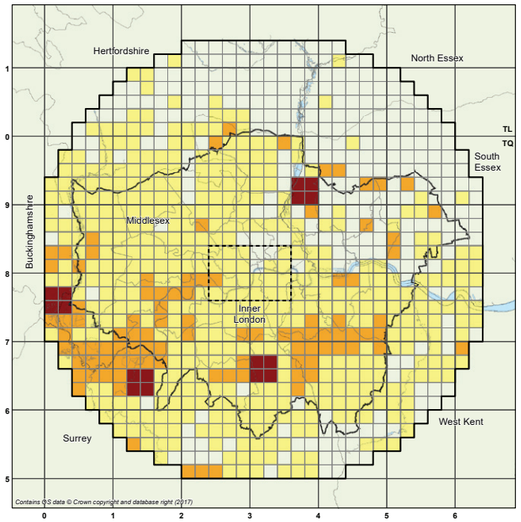


Figure 2: Change in distribution of Ring-necked Parakeet in the London Area from 1968 to 2013



- The population has spread relatively slowly; between 2003-08, the population of Ring-necked Parakeet expanded at an approximately linear rate of 4.2km per year (Fera, 2009) in England but it is still largely confined as a breeding species to an area of approximately 5,000km² encompassing parts of Greater London and adjoining areas of the home counties, plus a few other localities, after c.45 years as a breeding bird in Britain.
- Individual birds can have a relatively large home range, travelling 7km or more between roost sites and feeding and nesting sites (Butler, 2003; Pithon 1998, described in Fera, 2009).
- Potential threats to agriculture have been identified as this species is known to feed on commercially grown plants such as maize. However, incidents of serious damage to crops in Britain are currently localised and not commonplace (Fera, 2009).
- In sub-urban and urban areas, the fruits and seeds of non-native tree species, such as Horse Chestnut *Aesculus hippocastanum* (buds in spring), Apple *Malus* sp., Pear *Pyrus* sp., Sweet Chestnut *Castanea sativa*, London Plane *Platanus* x *acerifolia*, Cherry *Prunus* sp., Western Catalpa *Catalpa speciosa* (seeds in autumn) and Orange Whitebeam *Sorbus croceocarpa* (fruits in late summer) (Fera, 2009; pers. obs.).
- The fruits and seeds of native tree species, such as Beech *Fagus sylvatica*, Silver Birch *Betula pendula*, Blackthorn *Prunus spinosa*, Yew *Taxus baccata* and Alder *Alnus glutinosa*, are also known food sources (Fera, 2009; pers. obs.).
- The birds make extensive use of garden bird feeders (Clergeau, & Vergnes, 2011); however, it is not thought that the provision of such food is essential for over-winter survival (Butler, 2005).
- Potential threats to other species of bird have also been identified through competition for nest sites (Strubbe & Matthysen, 2009) and competition for some food sources (e.g. Mistletoe fruits, garden bird food) (Le Louarn *et al*., 2016; Peck *et al*, 2014). However, population level effects have not so far been identified through either mechanism (Newson *et al*., 2011; Peck, 2013).

The National Atlas (Balmer *et al*, 2013) shows how this species distribution is spreading outside our area and the London Bird Atlas provides more detail on the current distribution within the London area (to 2013). During the 2007-2013 period, the Ring-necked Parakeet was recorded in all of the Greater London boroughs and the surrounding counties although the rate of tetrad occupancy within each of these areas is very variable as shown on Figure 1. Some of the records away from core areas may relate to commuting birds or birds foraging at some distance from their roost or nest site, or possibly further releases of unwanted pet birds.

The combination of slow spread and population growth means that densities can become very high in the areas where this species is well-established. During timed counts for the atlas, this species was the most commonly recorded species, ahead of all native species of birds, in nine tetrads, based on the average count per hour of survey.

Monk Parakeet

Myiopsitta monachus

The Monk Parakeet is a native of central Bolivia and southern Brazil, south to central Argentina, where there are three sub-species, one of which occurs up to 3000m above sea level (Forshaw, 2010). Unlike other species of parakeet, the Monk Parakeet breeds communally in a nest made of sticks. Escaped or released birds were first recorded breeding in the wild in England in the 1930s, at Whipsnade (Marchant, 2016). In the London Area, there have been four distinct localities with regular sightings: (i) Borehamwood/Elstree; (ii) Mudchute/Isle of Dogs; (iii) Barnes/Chiswick; and (iv) Southall. There are also occasional records from elsewhere. The Borehamwood population was first recorded in 1993. Four birds were reported nesting in 1998, followed by 17 birds in 2000, 30 in 2001 (Hewlett *et al*, 2002) and 51 in 2006 (LBR), since when the reported numbers have fallen, with the highest reported count being just 13 in 2015 (LBR). The Mudchute population established later, in 2003. There were 25 birds reported in 2006, rising to 36 in 2010 and then falling to 20 in 2015. The Barnes population, perhaps just two birds, was extant from 1996 to 2002 (Hewlett *et al*, 2002) but appears to have died out. The Southall colony, up to eight birds (Self, 2014), appears to have only been present in 2008 and 2009. The reason for the decline in the first two of these colonies, and the loss of the fourth (Self, 2014), appears to be a control programme being carried out be Defra, resulting from fears of future economic and ecological impact (Tayleur, 2010). This began as a trial in 2008 and became a full control programme in 2011, with the objective of removing all birds. It involves capturing and re-homing adult birds, as well as removal of nests and eggs. The programme is without full public support. Resistance to it has included the protection of birds in some private gardens and on some local authority owned land. Because of this resistance, a small population remains in the wild and the control programme continues (until 2014 at least). There have previously been two other populations of Monk Parakeet in Britain, one in Tiverton, Devon, from 1987 to 1998, and another in Barnton, Cheshire from 1988 to 1993, both of which appear to have died out naturally. The Monk Parakeet is widely introduced elsewhere, being naturalised in at least 14 countries on five continents (Lever, 2005).

Figure 3: Distribution map of Monk Parakeet, all months 2007-13

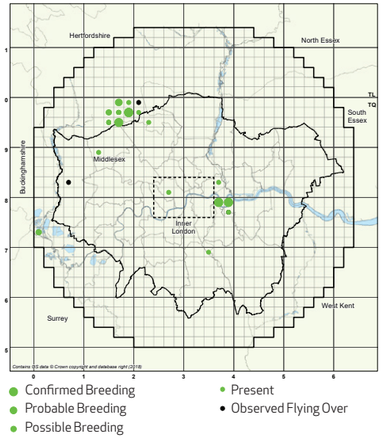


Figure 4: Frequency map of Monk Parakeet

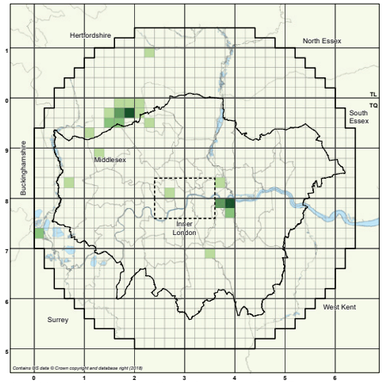


Figure 5: Breeding distribution map of Monk Parakeet

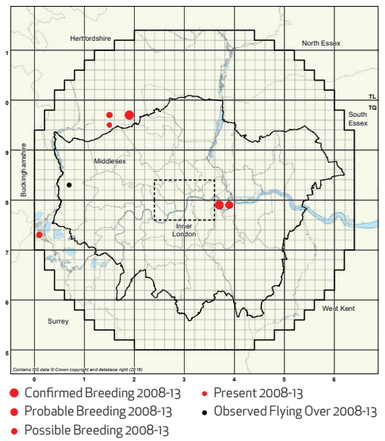


Figure 6: Winter distribution map of Monk Parakeet

Blue-crowned Parakeet

Aratinga acuticaudata

The Blue-crowned parakeet is a native of South America, where it occurs in three distinct areas, all outside heavily forested regions (Forshaw, 2010). Like most species of parakeet, it nests in holes in trees and it is a long-lived species, living for up to 31 years in captivity (http://genomics.senescence.info). It is larger than, and reportedly dominates, the Ring-necked Parakeet (at the location in London where both occur together) (Butler *et al*, 2002). It was first reported in the London area in 1997. Juveniles were reported in 1999 but it is unclear if these relate to further releases or successful breeding. Breeding was then confirmed in 2001 although the nest ultimately failed (Butler *et al*, 2002). There were no records of this species submitted to the LBR between 2005 (three reported in Beckenham) and 2010 (eight, also Beckenham), since when it has been reported annually (to 2015). It is not known how frequently, or if, this species now breeds in the London area; no evidence of breeding was reported during the current atlas period or subsequently (to 2015). The highest count reported in any year was of 15 in 1999 and 15 years later the highest count reported was five, so it does appear to have declined, with the remaining birds perhaps being survivors from the original release. The distribution of this species during the current atlas period is principally two or three adjoining tetrads, in South East London. This species does not seem to be too readily available in the pet trade and is expensive; factors which may reduce the likelihood that the population is being supplemented by escapes and releases. Small, apparently naturalised populations of this species also occur in Spain and North America, including Florida and California (Lever, 2005).

Figure 7: Distribution map of Blue-crowned Parakeet, all months 2007-13

Figure 8: Frequency map of Blue-crowned Parakeet

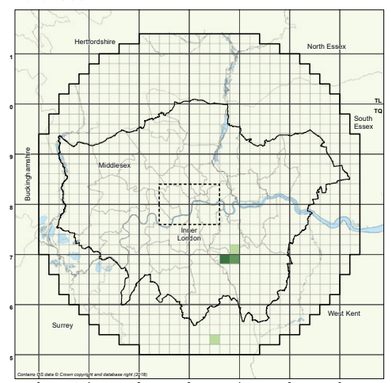


Figure 9: Breeding season distribution map of Blue-crowned Parakeet

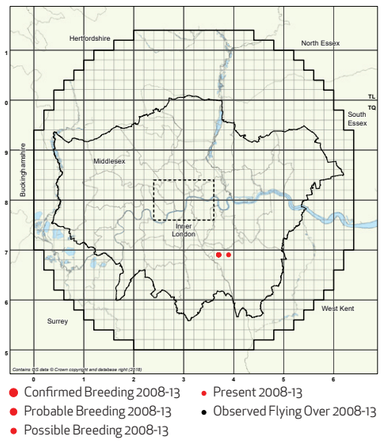


Figure 10: Winter distribution map of Blue-crowned Parakeet

Alexandrine Parakeet

Psittacula eupatria

The Alexandrine Parakeet is a native of the Indian sub-continent, Indochina and northern Thailand, overlapping with the natural range of the Ring-necked Parakeet (Forshaw, 2010). Like the Blue-crowned, it was first reported in the London area in 1997 and was first reported breeding in the London area in 2001 and then again in 2002. The taxonomic status of the breeding birds and whether nesting occurred in both 2001 and 2002 is a little unclear. Hewlett *et al* (2002) and Self (2014) report a pair of Alexandrine Parakeets breeding at Foots Cray Meadows in Sidcup in 2001. However, Butler (2002; 2005) describes a nest of hybrid Alexandrine Parakeets (apparently crossed with Ring-necked Parakeets) in 2001 in Kent (location not given) and two more nests made by hybrid birds in 2002, with a single male caring for both nests. Butler also reported pure Alexandrine Parakeets as present at the same time but not breeding. Ogilvie & RBBP (2003) appear to corroborate Butler in 2001, reporting a pair of hybrid Alexandrine x Ring-necked Parakeets breeding at Sidcup, Kent, which reared at least one young but they also report a male Alexandrine attending two Rose-ringed Parakeet nests nearby in 2001. In further contrast to Butler, they do not report any breeding in 2002 (Ogilvie & RBBP, 2004). So, we can be confident that at least one bird of Alexandrine parentage bred at least once in Sidcup in the early 2000s. Since then, this species was reported almost annually until 2006 (Self, 2014) including a count of three hybrids and three apparently pure birds in Lewisham in 2002 (Butler, 2003). During the current atlas period, this species was again reported to be breeding in Bromley, with birds recorded at the nest in May 2008 (although this record may not have been submitted to or accepted by the RBBP (Holling and RBBP, 2014)). Subsequent records of this species were made in 2010 (Coulsden and Bromley Common) and 2011 (London Wetland Centre) (LBR) but without any further evidence of breeding in the London area (to 2015). It is possible the individuals and breeding pairs, either pure or hybrid, go unreported on the assumption that they are Ring-necked, as the two species are superficially similar, they can roost together (Hewlett *et al*, 2002) and have similar breeding habits. The Alexandrine Parakeet remains available in the pet trade. A small breeding population also occurred in Merseyside in the late 1990s and naturalised populations occur in the Middle East (Bahrain, Saudi Arabia and UAE) and Japan (Tokyo) (Lever, 2005).

Figure 11: Distribution map of Alexandrine Parakeet, all months 2007-13

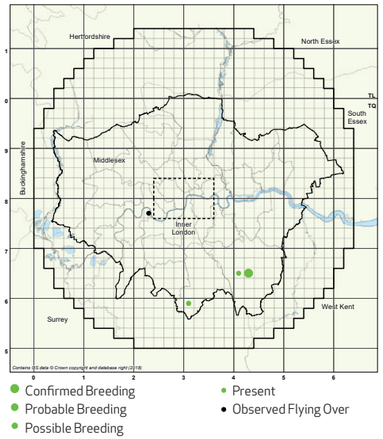


Figure 12: Frequency map of Alexandrine Parakeet

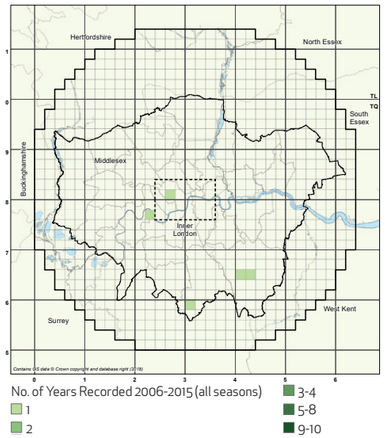


Figure 13: Breeding distribution map of Alexandrine Parakeet

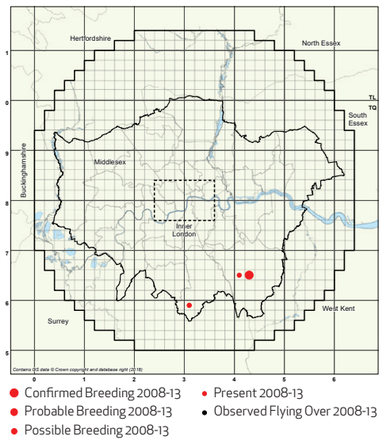


Figure 14: Winter distribution map of Alexandrine Parakeet

Senegal Parrot

Poicephalus senegalus

The Senegal Parrot is a native of West Africa, south of the Sahara (Forshaw, 2010). This species was first recorded in the London area in 1997 (Self, 2014) and up to three were present in Shirley from 2006 to 2011, with no subsequent reports, indicating that the birds have probably now died. There is no reported evidence that the birds bred during the five or six years that they were at large. There is also no evidence of any significant movement away from the Shirley area, which suggests that they were being fed by local people. Although an expensive purchase, this species is available in the pet trade. This species is not known to be naturalised outside its natural range (Lever, 2005) however Sibley (2000) reports that this species is seen regularly in North America but has not established a breeding population.

Figure 15: Distribution map of Senegal Parrot, all months 2007-13

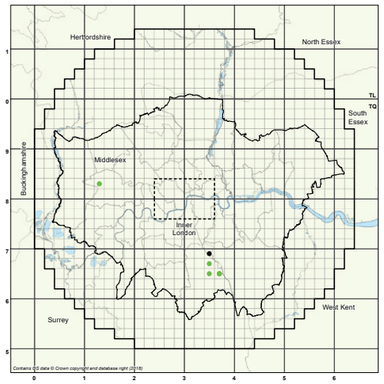


Figure 16: Frequency map of Senegal Parrot

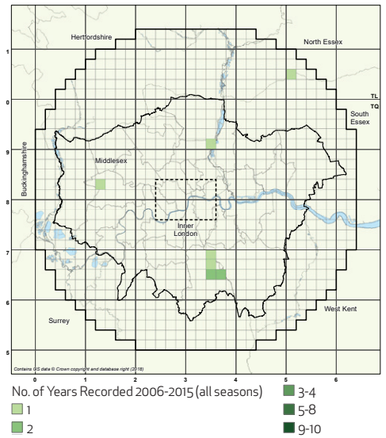


Figure 17: Breeding season distribution map of Senegal Parrot

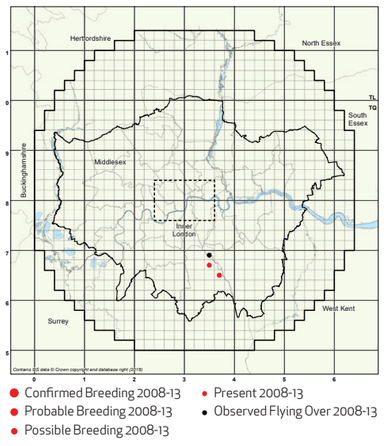


Figure 18: Winter distribution map of Senegal Parrot

Blue-fronted Amazon

Amazona aestiva

The Blue-fronted Amazon is a native of South America, including parts of Brazil, Paraguay, Bolivia and Argentina, where it occurs up to 1600m above sea level (Forshaw, 2010). There were up to two in the Ring-necked Parakeet roost at Hersham between 2000 and 2006 (Self, 2014). Then, there were no further records until January 2013, when a single bird was reported to be at large in Stoneleigh. It survived for at least 16 months, being last recorded in May 2014. It associated with Ring-necked Parakeets, and was recorded from several streets in the area, from gardens (Neil Batten, http://londonbirders.wikia.com/wiki/December_2013). There has been no reported evidence of breeding by this species in the wild in Britain and it is not one of the species listed by Lever (2005) as naturalised anywhere in the world. A naturalised population was however reported from Stuttgart, Germany although this population might be more accurately described as a population of principally Yellow-headed Amazon *Amazona oratrix*, together with Blue-fronted Amazon and hybrids of the two (Martens *et al*, 2013; Martens & Woog, 2017). Interestingly, these birds nest in large cavities within London Plane trees and tolerate a winter climate which is colder than in London. Sibley (2000) lists Blue-fronted Amazon as free-living, if not breeding, in North America and Butler (2005) described this species as breeding in Florida.

Figure 19: Distribution map of Blue-fronted Amazon, all months 2007-13

Figure 20: Frequency map of Blue-fronted Amazon

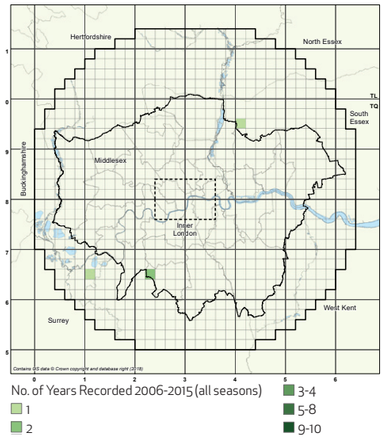


Figure 21: Breeding season distribution map of Blue-fronted Amazon

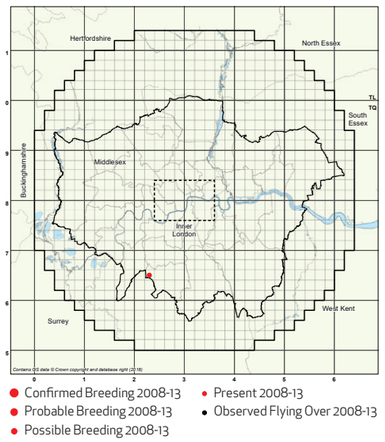


Figure 22: Winter distribution map of Blue-fronted Amazon

Peach-faced Lovebird

Agapornis roseicollis

The Peach-faced Lovebird is a native of southwestern Africa, where it occurs up to 1500m above sea level. Like the Budgerigar and the Cockatiel, it is a popular cage bird and is readily and cheaply available, along with several other species of Lovebird. Self (2014) reports surprisingly few records of this species at large in the London area, with just two records, one in 2003 and the other in 2007. There was just one further record in the London area during the current atlas period of a possible Peach-faced (observer uncertain of the bird's identity) and then three further records, one definite the others uncertain (to 2015). However, this species has bred elsewhere in the wild in Britain. A small colony was established in Dunbar, Lothian from 2002 until 2006, with breeding confirmed in at least two of those years (Holling and RBBP, 2011). This species has apparently become naturalised in North America, with populations in Arizona, USA (Forshaw, 2010; Butler, 2005).

Figure 23: Records of Peach-faced Lovebird and Lovebird Sp., all months 2007-13

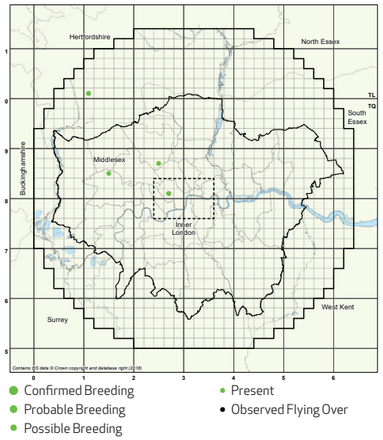


Figure 24: Frequency map of Peach-faced Lovebird and Lovebird Sp.

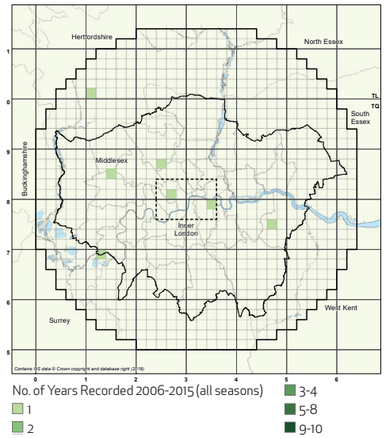


Figure 25: Breeding season distribution map of Peach-faced Lovebird and Lovebird Sp.

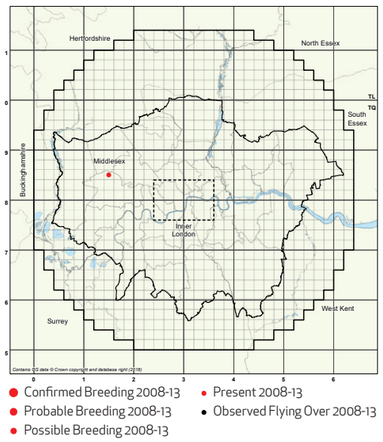


Figure 26: Winter distribution map of Peach-faced Lovebird and Lovebird Sp.

Budgerigar

Melopsittacus undulatus

The Budgerigar is a native of inland Australia, where it is found in open habitats of arid and semi-arid regions, often near water, forming flocks which feed on the ground (Forshaw, 2010). Self (2014) reports the occasional presence of free-flying pairs in the London area during the late 19th and early 20th century, with many records of single birds subsequently. During the current atlas period, this species was reported in all years especially from the well-watched wetland sites. As probably the most commonly kept parrot species, it is a frequent escape and there is no suggestion that any escaped birds survive in the London area for very long. Elsewhere, a semi-wild population occurred on the Scilly Isles from 1970 to 1976 but this has now died out (Butler, 2002) and there are naturalised population of this species in Japan, Florida and, possibly, the Canary Islands (Lever, 2005). There is no winter distribution map as there were no winter records during the atlas period.

Figure 27: Records of Budgerigar , all months 2007-13

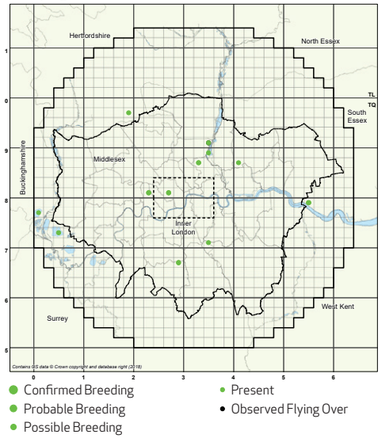


Figure 28: Frequency map of Budgerigar

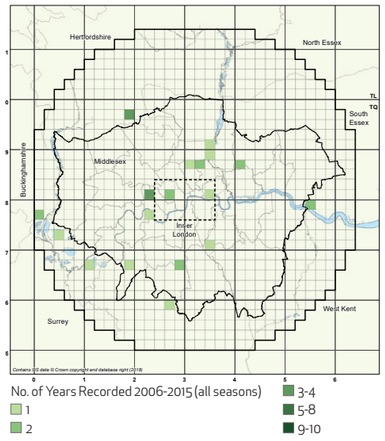
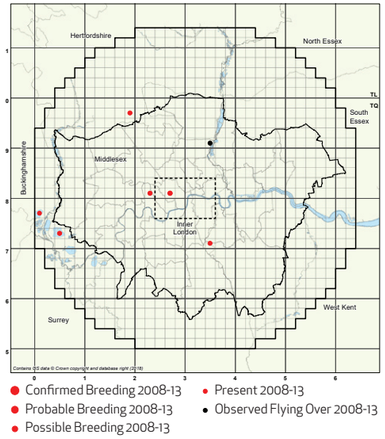


Figure 29: Breeding season distribution map of Budgerigar



Cockatiel

Nymphicus hollandicus

The Cockatiel is a compatriot of the Budgerigar in Australia, where it forms small to large flocks (Forshaw, 2010). Perhaps unsurprisingly as probably the second most popular of the parrot species as a pet, it is one of the most frequently reported escapes in the London area, where it was first reported in 1985 (Self, 2014). During the current atlas period, it was reported annually, with 47 reports made during 2007 to 2013 (all months). One report was of two birds and the remainder were single birds. Once again, these records came from the well-watched wetland sites. There is no suggestion that any of these escaped birds survived for very long. Indeed, there are no known naturalised populations of Cockatiel anywhere in the world (Lever, 2005; Sibley, 2000).

Figure 30: Records of Cockatiel, all months 2007-13

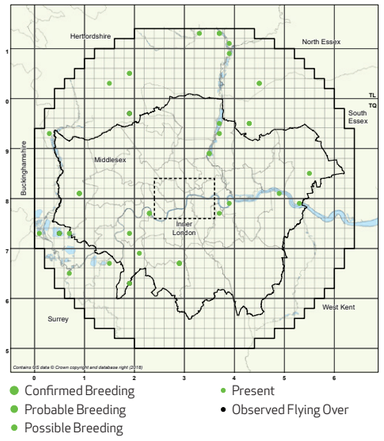


Figure 31: Frequency map of Cockatiel

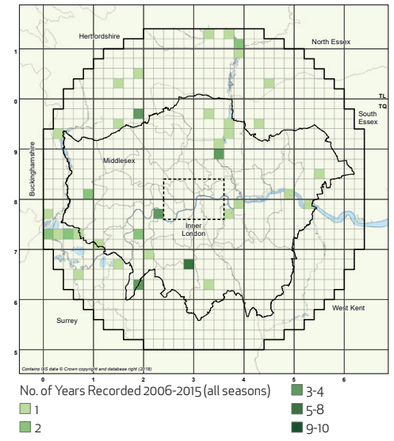


Figure 32: Breeding season distribution map of Cockatiel

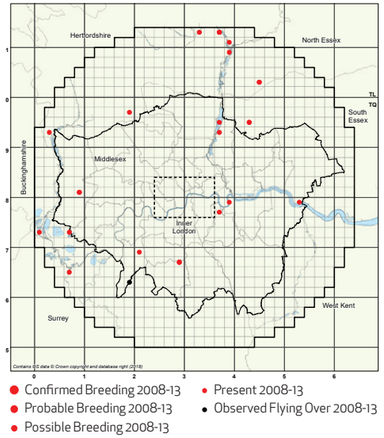


Figure 33: Winter distribution map of Cockatiel

Conclusion

Despite the frequency with which species of parrot escape or are released, there does not currently appear to be much prospect of any species of parrot following the Ring-necked Parakeet to become widespread and numerous in the London area. However, this may be dependent on the continued control of the Monk Parakeet. Continued surveillance and more reporting of escaped or feral birds is important, particularly with our changing climate.

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Appendix 1 Naturalised and Escaped Parrot Species of the World

Naturalised parrot species of the world, derived from Lever (2005), Sibley (2000) and Butler (2005).

Common Name	Scientific Name	Source
Galah	*Elophus roseicapilla*	L
Little Corella	*Cacatua sanguinea*	L
Tanimbar Corella	*Cacatua goffiniana*	L
Yellow-crested Cockatoo	*Cacatua sulphurea*	L
Sulphur-crested Cockatoo	*Cacatua galerita*	L
Kuhl's Lorikeet	*Vini kuhlii*	L
Red Shining Parrot	*Prosopeia tabuensis*	L
Crimson Rosella	*Platycercus elegans*	L
Eastern Rosella	*Platycercus eximius*	L
Budgerigar	*Melopsittacus undulatus*	L
Eclectus Parrot	*Electus roratus*	L
Ring-necked Parakeet	*Psittacula krameri*	L
Alexandrine Parakeet	*Psittacula eupatria*	L
Grey-headed Lovebird	*Agapornis cana*	L
Fischer's Lovebird	*Agapornis fischeri*	L
Yellow-collared Lovebird	*Agapornis personatus*	L
Blue and Yellow Macaw	*Ara ararauna*	L
Chestnut-fronted Macaw	*Ara severus*	L
Blue-crowned Parakeet	*Aratinga acuticaudata*	L
Mitred Parakeet	*Aratinga mitrata*	L
Green Parakeet	*Aratinga holochlora*	L
Red-masked Parakeet	*Aratinga erythrogenys*	L
Orange-fronted Parakeet	*Eupsittula canicularis*	L
Brown-throated Parakeet	*Aratinga pertinax*	L
Nanday Parakeet	*Nandayus nenday*	L
Monk Parakeet	*Myiopsitta monachus*	L
Green-rumped Parrotlet	*Forpus passerinus*	L
Canary-winged Parakeet	*Brotogeris versicolurus*	L
Yellow-chevroned Parakeet	*Brotogeris chiriri*	L
Hispaniola Parrot	*Amazona ventralis*	L
Red-crowned Parrot	*Amazona viridigenalis*	L
Lilac-crowned Parrot	*Amazona finschi*	L
Yellow-headed Amazon or Parrot	*Amazona oratrix*	L
Yellow-crowned Amazon or Parrot	*Amazona ochrocephala*	L
Orange-winged Amazon or Parrot	*Amazona amazonica*	L
Red-lored Amazon or Parrot	*Amazona autumnalis*	S
Blue-fronted Amazon or Parrot	*Amazona aestival*	S
Mealy Amazon or Parrot	*Amazona farinosa*	S
Yellow-naped Amazon or Parrot	*Amazona auropalliata*	S
White-fronted parrot	*Amazona albifrons*	S
Yellow-lored parrot	*Amazona xantholora*	S
Thick-billed Parrot	*Rhynchopsitta pachyrhyncha*	S
Dusky-headed Parakeet	*Aratinga weddellii*	S
White-winged Parakeet	*Brotogeris versicolurus*	S
Green-cheeked Amazon	*Amazona viridigenalis*	B
Peach-faced Lovebird	*Agapornis roseicollis*	B

L = Lever, S= Sibley, B = Butler

Species naturalised (alien) in Europe:

Common Name	Scientific Name	Locations
Yellow-collared Lovebird	*Agapornis personatus*	Spain, Germany
Blue-fronted Amazon	*Amazona aestival*	Spain, Germany, Poland, Sweden
Yellow-crowned Amazon, including Yellow-headed Amazon	*Amazona ochrocephala, Amazona oratrix*	Germany
Blue-crowned Parakeet	*Aratinga acuticaudata*	Spain
Red-masked parakeet	*Aratinga erythrogenys*	Spain, Germany
Mitred parakeet	*Aratinga mitrata*	Spain, Germany
Budgerigar	*Melopsittacus undulatus*	widespread but not breeding?
Monk Parakeet	*Myiopsitta monachus*	widespread
Nanday Parakeet	*Nandayus nenday*	Spain
Alexandrine parakeet	*Psittacula eupatria*	Spain, Germany, Poland, Belgium, UK
Ring-necked Parakeet	*Psittacula krameria*	widespread

Source: EASIN http://alien.jrc.ec.europa.eu/SpeciesMapper

NB: Yellow-crowned Amazon, Yellow-headed Amazon and Yellow-naped Amazon (*A. auropalliata*) are sometimes treated as conspecific and sometimes separate species, EASIN has both interpretations.

Appendix 2 The most frequently imported parrot taxon, excluding Budgerigar and Cockatiel, from 1975 to 2005

Rank	Common Name	Scientific Name	Numbers Imported
1	African Grey Parrot	*Psittacus erithacus*	66405
2	Senegal Parrot	*Poicephalus senegalus*	63565
3	Fischer's Lovebird	*Agapornis fischeri*	49256
4	Orange-winged Amazon	*Amazona amazonica*	39166
5	**Ring-necked Parakeet**	*Psittacula krameri*	26319
6	Timneh Grey Parrot	*Psittacus erithacus timneh*	21058
7	Blue-fronted Amazon	*Amazona aestiva*	19995
8	Meyer's Parrot	*Poicephalus meyeri*	12804
9	**Peach-faced Lovebird**	*Agapornis roseicollis*	12024
10	Yellow-crested Cockatoo	*Cacatua sulphurea*	11321
11	Plum-headed Parakeet	*Psittacula cyanocephala*	8133
12	**Blue-crowned Parakeet**	*Aratinga acuticaudata*	7310
13	Nanday Parakeet	*Nandayus nenday*	7309
14	Patagonian Conure or Burrowing Parrot or Parakeet	*Cyanoliseus patagonus*	6653
15	Blue-crowned Hanging Parrot	*Loriculus galgulus*	6570
16	White Cockatoo	*Cacatua alba*	6295
17	Yellow-collared Lovebird	*Agapornis personatus*	6287
18	Maximillian Pionus	*Pionus maximiliani*	6263
19	Maroon-bellied Parakeet	*Pyrrhura frontalis*	6144
20	**Monk Parakeet**	*Myiopsitta monachus*	6013
21	Yellow-crowned Amazon	*Amazona ochrocephala*	5496
22	Mealy Amazon	*Amazona farinosa*	5234
23	Blue-and-yellow Macaw	*Ara ararauna*	4677
24	White-eyed Parakeet	*Aratinga leucophthalma*	4593
25	**Alexandrine Parakeet**	*Psittacula eupatria*	4413
26	Tucumán Amazon	*Amazona tucumana*	4281
27	Mitred Parakeet	*Aratinga mitrata*	4220
28	Salmon-crested cockatoo	*Cacatua moluccensis*	3945
29	Red-breasted parakeet	*Psittacula alexandri*	3907
30	Red-fronted Parrot	*Poicephalus gulielmi*	3904
101	**Red-rumped Parrot**	*Psephotus haematonotus*	422

Species in bold have bred or probably bred at least once in Britain
Source: https://trade.cites.org/

Appendix 3 Escapes and introduced parrots of the London Area, derived from Self (2014) and the London Bird Report (to 2015)

Common Name	Scientific Name	Source
Galah	*Elophus roseicapilla*	S
Sulphur-crested Cockatoo	*Cacatua galerita*	S
Solomon's Cockatoo	*Cacatua ducorpsii*	LBR
Cockatiel	*Nymphicus hollandicus*	S
Red Lory	*Eos bornea*	S
Papuan Lorikeet	*Charmosyna papou*	S
Eastern Rosella	*Platycercus eximius*	S
Red-rumped Parrot	*Psephotus haematonotus*	S
Budgerigar	*Melopsittacus undulatus*	S
Superb Parrot	*Polytelis swainsonii*	S
Princess Parrot	*Polytelis alexandrae*	S
Alexandrine Parakeet	*Psittacula eupatria*	S
Ring-necked parakeet	*Psittacula krameri*	S
Plum-headed Parakeet	*Psittacula cyanocephala*	S
Blossom-headed Parakeet	*Psittacula roseata*	S
Peach-faced Lovebird	*Agapornis roseicollis*	S
Fischer's Lovebird	*Agapornis fischeri*	S
African Grey Parrot	*Psittacus erithacus*	S
Senegal Parrot	*Poicephalus senegalus*	S
Nanday Parakeet	*Nandayus nenday*	S
Patagonian Conure or Burrowing Parrot or Parakeet	*Cyanoliseus patagonus*	S
Monk Parakeet	*Myiopsitta monachus*	S
Blue-crowned Parakeet	*Aratinga acuticaudata*	S
Scarlet-fronted Parakeet	*Aratinga wagleri*	S
Mitred Parakeet	*Aratinga mitrata*	S
Sun Parakeet	*Aratinga solstitialis*	S
Military Macaw	*Ara militaris*	S
Blue and yellow Macaw	*Ara ararauna*	S
Blue-fronted Amazon	*Amazona aestival*	S
Orange-winged Amazon	*Amazona amazonica*	S
Yellow-crowned or Yellow-fronted Amazon	*Amazona ochrocepha*	LBR

Species in bold are naturalised somewhere in the world according to Lever (2005), Sibley (2000) or Butler (2002). S = Self.