

# Macaw Breeding and Conservation

by Joanne Abramson  
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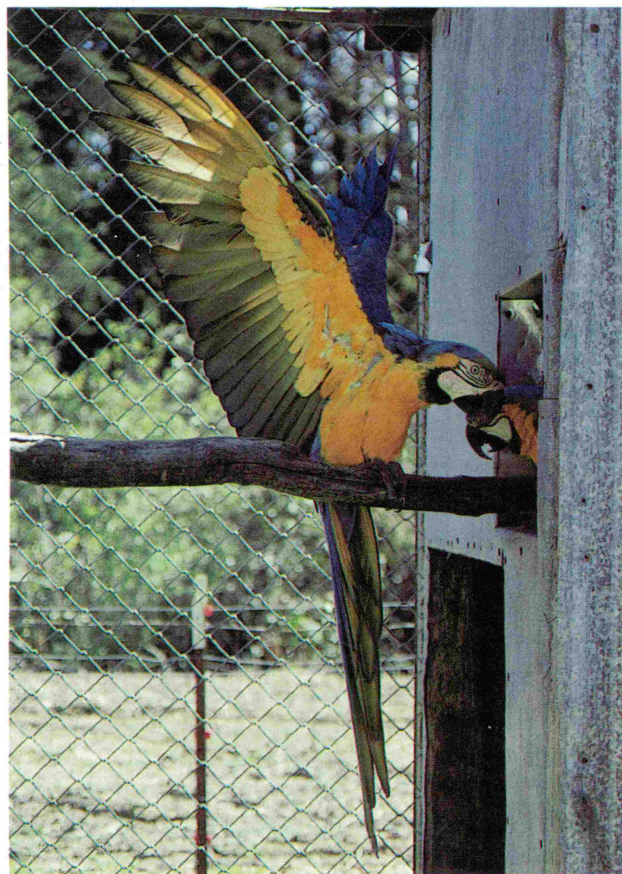
Photos by Joanne Abramson



*Hyacinth Macaws 19 and 22 days old sleeping on their backs. Though this might frighten a breeder, this is a normal position to find Hyacinths sleeping. Clutch mates are kept together for warmth, humidity and companionship. Macaws possess a unique sense of humor. For instance, even at this young age of 19 and 22 days, I have experienced Hyacinths enjoying trying to catch their handfeeder off guard by playing dead. Since handfeeders are basically brain dead from two hour round-the-clock feedings, this often works.*

The ingredients necessary to breed macaws in captivity are relatively simple; a healthy, compatible hen and cock of the species to be bred, an appropriate sized aviary (depending on the species of macaw), a well balanced diet, a nesting box, and time (patience helps).

Pioneer macaw breeders chose wild caught specimens as they didn't have the option of obtaining captive bred birds. The current trend, however, is to start with domestic bred macaws. Wild caught specimens take many years to settle down and breed, while the domestic stock breed in two to five years. In some of the rarer species, there have been few domestically raised birds, making it necessary to use wild caught specimens. In addition, wild caught specimens may be necessary on occasion for the enhancement of the species. To have a genetically sound breeding program for any given species, more than one pair of birds is required. A serious breeding program should have no less than three unrelated pairs and five pairs would be even better.



*Female Hyacinth awaiting her turn in the bath.*

*Courtship display of a Blue and Gold Macaw.*



## The Aviary


Our large macaws are housed in outside aviaries. After experimenting with several different sized aviaries, we settled on a structure 8 feet high by 8 feet wide by 12 feet long. There is one pair to each aviary. This was not an accidental design. The smaller size widths were not conducive to flying since the wingspan of most of the large macaws is over three feet and, in the case of the Hyacinth, the wingspan exceeds four feet. The width and length of the aviary allows them flight and exercise. The height was chosen after much experimentation with shorter sizes. We found that the six foot tall aviaries were too short for our initial wild caught breeding stock. The taller aviary allowed them to look down on us, giving them a feeling of security much like in the wild. Twelve feet in length is the minimum, 16 to 20 feet long is even better. The framework is made of welded 3/4 inch pipe with 11 gauge chain link fencing wired to the structure. A door 40 inches high and 30 inches wide allows access to

the inside of the aviary. The door size requires me to bend over to enter. But the birds, which sit on the perch at a claw height of six feet, do not attempt to fly out over my head. A four sided shelter (4 feet wide by 4 feet deep by 8 feet high) in the back corner of the aviary provides the birds with a private, weather protected spot for their nest box and feed. Most of our birds sleep in their shelter and use it to escape the hot afternoon sun as well as the rain. An entrance hole 16 inches by 16 inches allows them access to the shelter by walking on a perch. The lower portion of this eight foot high shelter structure is removed to allow me access to feed and check the nest boxes. There are no common walls; all the aviaries are single, free standing units. We can walk around each of the aviaries. The aviaries are located around the outside of a rectangle, with the flights in the front and the shelters in the rear. The birds are in full sight of each other and we put several pairs of each species grouped together in adjoining aviaries.

(Continued on next page)

MACAW DEVELOPMENT CHART

	Blue and Gold	Scarlet	Military	Buffon's	Green-winged	Hyacinth
Days to Hatch	26 days	26 days	26 days	26-28 days	26-28 days	26-28 days
Eyes Open	12-15 days	13-16 days	14-15 days	12-15 days	10-16 days	10-15 days
Banded 1/2" or 9/16"	12-17 days 1/2"	13-21 days 1/2"	15-19 days 1/2"	17-19 days 9/16"	11-18 days 9/16"	15-24 days 9/16"
Weight When Banded	300-392 grams	228-385 grams	280-315 grams	350-400 grams	285-468 grams	285-350 grams
Peak Weight	1150-1355 grams	1075-1345 grams	955-1095 grams	1265-1430 grams	1230-1435 grams	1455-1670 grams
Age at Peak Weight	47-59 days	47-62 days	49-55 days	55-60 days	51-73 days	58-77 days
Weaning Food Started	51-60 days	49-60 days	52-61 days	58-62 days	55-64 days	57-76 days
Perching	62-73 days	58-67 days	62-64 days	64-69 days	56-66 days	71-86 days
Fledged	78-82 days	75-82 days	76-81 days	78-82 days	83-88 days	93-103 days
Weaned	90-110 days	85-112 days	85-104 days	110-119 days	112-119 days	141-156 days



### PRE-PUBLICATION OFFER

A limited number of copies of the proceedings of the *First Mesoamerican Workshop on the Conservation and Management of Macaws* will be available April 1, 1991.

Thirteen original papers are included in the proceedings, including:

- Status of the Scarlet Macaw in Belize, *Rafael Manzanero*
- Status and Conservation of Macaws in Nicaragua, *Juan Martinez-Sanchez*
- Management and Conservation of the Scarlet Macaw in Carara Reserve, Costa Rica, *Michael McCoy*
- Conservation of Lear's Macaw, *Judith Hart*
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Young macaws are kept together until mates can be found for them. But, no more than four adolescents are ever kept together in this size aviary. Even the young macaws have nest boxes in their aviaries. We have found these immature babies frequently asleep in their nest box. This relaxed environment can only be an asset to them as they mature.

There are two ways to approach your aviary. One, you never walk in it and do all the feeding from the outside or two, you walk in it all the time. I walk in at least two to three times a week to feed, water and hang new perches. The birds adjust to whatever is routine to them. If they are not used to you going into the cage, then they will react on those few occasions that you do.

### **Nesting Boxes**

The difference between a bird collector and a bird breeder is an available, clean nest box. Our nest boxes for the large macaws are made from 30-gallon galvanized trash cans (40-gallon for the Hyacinths). We have an eight-inch hole welded open, an expandable metal ladder (1" by 1-1/2"), about eight inches wide and the full height of the container, welded inside from top to bottom, and two truck hooks welded on the outside back for easy hanging of the nest boxes. We do not use the can tops except on a few pairs with aggressive males. Large macaws have also successfully nested in oak barrels as well as 55-gallon plastic drums and both on the ground and in horizontal or vertical raised boxes. Small macaws have laid in L-shaped nest boxes (24" high by 18" base by 12" diameter) and again horizontal and vertical boxes have been used. The nest box is lined with dampened pine shavings and shredded eucalyptus leaves to about 1/4 to 1/3 high in the barrel. The birds eliminate the shavings down to a level with which they are content. The nest box is cleaned every six to eight weeks during nesting season, from January through September, unless the hen is actively sitting on eggs or young. We keep extra nest boxes and simply switch them. We have been amazed at what we have found in non-nesting birds' nest boxes. Sometimes bugs invade the nest box, and sometimes the birds themselves use them as a storage container. Hyacinths are famous for storing huge quantities of nuts in their nest boxes.

### **Diet**

Our macaws are fed a three-part diet. The first part consists of a seed mix of safflower seed, whole corn, pumpkin seed, alfalfa pellets, buckwheat, peanuts, pine nuts and Zupreem. Sunflower seeds are added to this mix in varied amounts depending on the time of the year. In the fall and winter when the temperatures drop, the high fat foods (sunflower seeds and nuts) are increased. Nuts make up the second portion of the diet with the same variety of the Hyacinth's diet below except for the macadamian nuts, which are fed only occasionally as a challenge for the macaws to open. The third portion of the seed-eating macaws' diet consists of a wide variety of fruits and vegetables which are fed daily to all the macaws. Apples, pears and plums are home grown and fed fresh when in season.

During breeding season the amounts of Zupreem, fruits, vegetables and nuts are increased, with several selections being given daily to hens with babies on the nest. Corn is a most notable favorite during this period. But despite their favorites, a variety is fundamental.

Some breeders feed a soaked seed, fruit and vegetable diet. This is also a healthy diet. Pellets are fine as a supplement, but I am not fond of an exclusively pellet diet. In my opinion, besides being boring, I feel they are too high in protein for a macaw's metabolism. Food toys such as whole sunflower heads are provided occasionally for fun. I expect them to eat some of it and also have fun destroying it.

Hyacinth Macaws are highly specialized in their eating habits, primarily eating palm nuts in the wild. Their diet is high in fats and carbohydrates and low in protein. Smuggling of these birds has reduced their numbers to far below acceptable levels. It is estimated that only 2,500 to 5,000 of them are left in the wild. Their low hatch rate adds to their problem of survival. In captivity, their diet consists of filberts, walnuts, macadamia nuts, almonds, Brazil nuts, peanuts and Zupreem. Occasionally pecans are also available and fed. The Hyacinths also get daily fruits and vegetables as stated above. Of these nuts, we feel the macadamia nuts are the closest to the palm nuts they eat in the wild. The Hyacinths open these nuts with amazing ease and truly relish them. These nuts are harvested throughout the year.

We prefer tame birds in our breeding stock, birds that will accept food from our hands. Generally, it is fairly easy to realize when the chicks have hatched by the change in the male macaw's aggressiveness when we approach the aviary. Lunging for your hand is a common occurrence. Care should be taken to leave the aviary with as many fingers as when you arrived! When breeding season starts, it is best to abstain from handfeeding the parent birds.

We use large water crocks that hold two to three gallons of water. Macaws love taking baths. During the breeding season the hen will soak herself in the water dishes and then climb back on the nest, presumably to humidify the eggs. In the dead of winter I have found water soaked macaws, especially Hyacinths, even on frost covered mornings. No ill effects have ever been observed from this unusual practice.

Pair bonded macaws are characterized by sitting close together on the perch, preening, feeding each other, and as nesting approaches, the breeder will notice frequent wing opening and wiping the perch with their beaks. Constriction and dilation of their eyes is common during this period.

Copulation occurs side by side. Hyacinths are real show-offs and don't seem to mind people watching. Most other species are not so brazen. Several of my producing pairs I have never seen copulate, and yet they produce young, so it must occur.

A variety of different sized eggs are produced by macaws. All of them are white, which would befit a dark tree hollow nest site. The Hyacinth, although the largest of the parrot species, does not have the largest egg. If infertility or dead in shell is a problem, cloaca cultures and Chlamydia titers are recommended.

### **Status in the Wild**

**Blue and Gold Macaw:** Appendix II. Still being imported into the United States. Their wild population continues to be decimated in the bird trade. Currently being raised in captivity in amounts that could sustain a ban on further importation.

**Blue Throated Macaw (Caninde Macaw):** Appendix I. Very small population of between 500 and 1000 birds in the wild. They are only found in a restricted area in Bolivia. They are being raised in limited amounts in the U.S. and elsewhere and are in need of further captive breeding to

sustain their numbers.

**Buffon's Macaw:** Appendix I. Sometimes confused with the Military Macaw. See *A.F.A. Watchbird* Oct/Nov 1986 and Dec/Jan 1990 for clarification. These birds are seriously declining throughout their range in Central America. Captive breeding is desperately needed.

**Green-winged Macaws:** Appendix II. Still being brought into the U.S. The wild caught birds have proven difficult to breed. Better success is possible utilizing captive bred birds for breeding.

**Hyacinth Macaws:** Appendix I. Current population is estimated at 2500 to 5000 total population. Illegal trade continues to decimate their population. Further captive breeding is necessary to maintain adequate amounts of birds.

**Military Macaws:** Appendix I. Disappearing and threatened throughout their range due to continued illegal trade. More captive breeding is currently needed.

**Red Fronted Macaws:** Appendix I. Recently discovered in the 1910s, only a small population estimated to be below 5000 remains in the wild. Serious avicultural attention needs to be given to this species.

**Scarlet Macaws:** Appendix I. Several different wing patch color variations have been noted. One with a wide band of yellow on the wing, one with emerald green as well as yellow on the wing, and a third variety with royal blue on the yellow wing patch. Breeding the variations separately would be appropriate.

#### Conclusion

Captive propagation allows the aviculturist a unique chance to contribute scientific data on macaws. Using computers to analyze weight records and other data, artificial incubation, photography and personal observation, aviculturists can contribute otherwise difficult-to-obtain information. The last 20 years has seen monumental achievements by private aviculturists in breeding most of the 17 species of macaws. The creative variety of breeding techniques has contributed to successful breeding. Continued advances in avian medicine create an environment ripe for future progress and success.

It is the hope of aviculturists to create genetically viable captive breeding stock, so that in the future, release of captive reared birds into an ecologically sound environment will be possible. ●

# Threatened Parrots of the Neotropics

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## Parrots as Problems

Parrots are colourful, vegetarian, playful and mimetic, so people find them attractive, easy to keep, companionable and entertaining. In popular consciousness, they are the most high-profile of birds, commonly featured in advertisements that seek to assert the tropical authenticity of a product, and often humourised in cartoon form to assure the conviviality of and complicity in the experience the product offers.

It is all the more curious, then, that scientifically parrots remain so little known. The truth is, however, that for all their colour and noise, parrots are highly cryptic (being mostly green) and capable of long periods of silence, feeding invisibly in the high crowns of trees, and when they fly it is often with such speed or over such distances as to prohibit further observation. These factors discourage rigorous study to obtain quantitative data; so we have many major gaps in our understanding of the ecology and biology of the family in general and almost all of its individual members.

The majority of the world's 330-odd parrot species are indeed found in tropical regions, and most of this majority are tropical forest dwellers, the lowlands being especially rich in species. Although dispersed widely through the Pacific Ocean and Old World in general, the parrots reach their maximum diversity in South America, Southeast Asia and Australia. ICBP's preliminary checklist of the threatened birds of the world, *Birds to watch* (1988), treated no fewer than 71 parrot species (21.5% of the family) as at risk of extinction, and listed a further 29 as near-threatened (birds in this second category were either genuine borderline cases or species considered most vulnerable to future decline). Hence no fewer than 100 (30% of the family's total 330 species) were identified as giving cause for concern or worse.

Threatened species lists are always subject to change, and that in *Birds to Watch* was intended for regular update. Subsequent information has led to some adjustments, involving

the deletion of Yellow-sided Parakeet *Pyrrhura hypoxantha* (an invalid species), the relegation of Yellow-faced Amazon *Amazona xanthops* to near-threatened status, the promotion from near-threatened status of White-headed Amazon *Amazona leucocephala*, and the addition of El Oro Parakeet *Pyrrhura orcesi*, Fuertes' *Hapalopsittaca fuertesi* and Fire-eyed Parrots *H. pyrrhops*, Blue-checked Amazon *Amazona dufresniana* and Alder Amazons *A. tucumana*. Currently, therefore, ICBP considers 42 neotropical parrot species at risk.

All but one of these species are distributed within six general areas, as follows. Central America (Mexico) holds four (Thick-billed Parrot *Rhynchopsitta pachyrhyncha*, Maroon-fronted Parrot *R. terrisi*, Red-crowned Amazon *Amazona viridigenalis* and Socorro Conure *Aratinga brevipes*); the Caribbean holds seven (Cuban Conure *Aratinga euops*, White-headed Amazon *Amazona leucocephala*, Puerto Rican Amazon *A. vittata*, St. Lucia Amazon *A. versicolor*, Red-necked Amazon *A. arausiaca*, St. Vincent Amazon *A. guildingii*, Imperial Amazon *A. imperialis*); the lowland forests of northern South America hold four (Golden Conure *Guaruba guarouba*, Pearly Parakeet *Pyrrhura perlata*, Blue-checked Amazon *Amazona dufresniana*, Yellow-shouldered Amazon *A. barbadensis*); the Andes of northwestern South America hold 11 (Golden-plumed

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