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MEET THE SCARLET MACAW

The Scarlet Macaw (*Ara macao*) is arguably one of the most beautiful birds in the world, and certainly one of the most successful members of the parrot family. Historically it could be found ranging from Mexico through Central America down into the Amazon Basin of South America to Argentina. Because of their beauty and intelligence they have been in demand as pets and as religious symbols for Native Americans for thousands of years.

But beauty and intelligence, as well as the relentless expansion of human populations into their ancestral lands, have led to their decline in the wild. Taking of their nestlings for the burgeoning pet trade decimated their young. Felling of the forests for timber and to make way for people, crops, and livestock decimated the flocks themselves. Where they once were commonly seen clinging on fruiting trees like huge red, blue, and yellow flowers, there is now only an occasional Rrrraak heard or a flying pair seen. Is there hope for this beautiful symbol of the natural world? Fortunately, despite the challenges, dedicated conservationists and bird lovers from many countries are working to preserve this species and the environment in which they live.

Scarlet Macaws are large birds, some measuring almost a meter long, half of that being their long pointed red tails. They can weigh a kilogram or more. Recent genetic studies have confirmed that the scarlet macaws found in northern Central America, now called *Ara macao cyanoptera*, are a different subspecies from those found in southern Central America and South America, the southern population maintaining the historical name *Ara macao macao*. *Ara macao cyanoptera* can be found in Mexico, Guatemala, Belize, Honduras and Nicaragua and is a bright orange-red bird with yellow and blue feathers on its wings, with bare white skin patches on its face. The South American Scarlet Macaw is also red with white face patches but it often has a narrow green bar between the yellow and blue on the wings. It is generally smaller than the Central American subspecies. But these are just the extremes; to most people they look pretty much the same, and in places such as Costa Rica and Panama the macaws belong genetically to the South American variety but they look very much like the birds further north.

Male and female Scarlet Macaws look similar to most people, although there are very subtle differences that experts can use to determine the gender of a specific



PHOTO BY STEVE HARTMAN

bird, especially if they are observed in a pair. Macaws and most other birds don't just see in red, green, and blue as people do. They are "tetrachromats"—they see in four colors: red, green, blue and ultraviolet. So two birds that look identical in our "trichromatic" vision may look very different to another bird who can also see different shades of ultraviolet. Some studies on budgies, the common household parakeet, have shown that male and female budgies are easily distinguished in the ultraviolet spectrum.

Scarlet Macaws in captivity typically reach reproductive maturity at about four years of age, but in the wild they probably mature physiologically a few years later, perhaps at six or seven years. It may then take a pair several years of practice before they learn how to raise chicks successfully in the dangerous and highly variable wild environment. Successful pairs usually form long-lasting pair bonds, but it is not clear that macaws "mate for life," as some authors suggest. For one thing, life in the wild is dangerous, even though macaws typically feed high in the forest canopy in small groups and with multiple eyes on the lookout for predators. Large raptors such as black and white hawk eagles and harpy eagles are known to kill macaws. The false vampire bat may kill macaws at night while they are roosting, and

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a Capuchin or White-faced Monkey may catch the occasional unwary macaw. This can mean that a mate may well fall victim to a predator or to an accident.

Based on re-bonding observed in captivity, scientists now believe that the surviving macaw quickly tries to find another mate. In some cases a breeding pair may decide they don't want to stay together anymore and split up and look for other mates. This happens especially with young pairs that are not successful in raising chicks even after several years of trying. The Tambopata Research Project rescued and raised two chicks that originally paired with wild mates. After several years, they both "divorced" their wild mates and formed a pair together. Is a "common background" helpful for successful pairing in macaws?

During the non-breeding season scarlet macaws congregate in fairly large mixed-age flocks, but during the breeding season the mature adults pair off and become territorial, defending their nests in tree cavities where they lay one to four white eggs. The female incubates, leaving the eggs for short periods to feed or be fed by her mate. After about 28 days the eggs hatch and both parents share the duties of feeding the chicks. Generally only one or two chicks survive to fledge (fly from the nest), even though more may hatch.

Youth, for a macaw, is a dangerous time and their parents must be on the lookout for raptors, snakes, and mammalian predators that may eat them. Africanized bees or other macaw pairs may take over the nest, drive the parents away, and kill the chicks,

or various types of mites and maggots may infest the young. If they survive the first three months of life and fledge, they must remain on the lookout for predators because they are still not adept flyers. Survival may require that they follow their parents until the next breeding season, learning what to eat, where to find food and water, and what creatures to fear. They also learn the proper manners for a wild scarlet macaw. Parents are their first role models, but then they learn from other macaws as they join the flock.

When people first tried breeding macaws and other parrots, they would often take chicks away from the parents as soon as they hatched and raised them away from others of their kind. Many of these birds later had difficulty forming pair bonds, breeding, and raising young because they had not learned the basics from watching adult birds. Macaws and indeed all parrots are very intelligent and lead complex lives that require a lot of learning to supplement what they know instinctively.

Scarlet Macaws are noisy, messy birds. They make loud, low, throaty squawks, screams and squeaks designed to carry long distances. In captivity they can live up to 75 years, but a more usual lifespan is 30–50 years. Their lifespan is probably closer to 30 years in the wild, although nobody knows for certain. In the forests and savannahs where they live they are primarily seed and fruit eaters. Some of the foods are large, hard seeds and seed pods that require their big, powerful beaks to break or tear open. One interesting adaptation to this lifestyle is that macaws (and all

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parrots) have a bone in their tongue that allows the tongue to be almost like a finger to help them manipulate food into the right positions for opening. Scarlet Macaws and all parrots drop more food than they eat, and thus, in addition to their noisiness, they would not be very suitable pets for people who are neat-nicks or who live in restricted indoor areas.

Scarlet Macaws generally live in humid lowland subtropical rainforests, in open woodlands, and in savannahs, and along rivers. If not persecuted, they seem quite agreeable to living in human disturbed landscapes. Their natural curiosity and intelligence make them adaptable, and they are quite willing to learn to eat non-native food items that people have planted.

In Costa Rica they are well known to feed on flowers and seeds of introduced teak, beach almond, oil palm, and flamboyant tree. In some parts of South America, many species of parrots, including Scarlet Macaws, have been observed eating dirt at exposed outcroppings of clay. A number of explanations have been proposed over the years, but Dr. Don Brightsmith of the Tambopata Research Project in Peru thinks that he may soon have the data to answer this intriguing puzzle.

What does the future hold for the Scarlet Macaw? Originally the range of the species covered more than 6 million square kilometers and their occurrence may have been nearly continuous from Mexico through Central America and into South America east of the Andes to Bolivia and Paraguay. For the more southerly population of *Ara macao macao* from Costa Rica south into South America, the outlook is cautiously optimistic. Significant populations still exist and in a few places such as Costa Rica, their numbers may actually be increasing. However, the state of the northern subspecies is critical. It is already extinct in El Salvador, and the fewer than 1000 individuals that remain are now in disconnected pockets of habitat in Mexico, Guatemala, Belize, Honduras, and Nicaragua. In these areas, the future of the species now rests in the hands of governments and of scientists and park managers, such as those working with the Wildlife Conservation Society in Guatemala.

This species can co-exist with people if it is not persecuted: if people don't steal nestlings, cut feeding and nesting trees, or shoot birds for food or feathers. The crucial elements for the survival of the Scarlet Macaw are those essential for tackling the problems of global climate change and sustainable economic growth: environmentally-friendly development so that people are not so poor that they need to steal chicks to make a little money; establishment of effective civil authority so that laws against poaching, illegal timber harvest and illegal settlement can be enforced; population stabilization so that protected areas are not overrun by settlers looking to make a living on a small plot of land of their own; and the preservation of areas of carbon-sequestering forests.

Sharing so many similarities with human beings, it's no wonder that, as in the case of humanity, the fate of the Scarlet Macaw is tied up with the fate of the planet.

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