THE MACAWS

Macaws are long-tailed, often colourful New World parrots native to Mexico, Central America, South America, and formerly the Caribbean. Many species inhabit forests, especially rainforests, but some prefer woodland or savannah-like habitats.

Large beaks, long tails, and relatively bare, light-coloured, facial patches distinguish the Macaws. A Macaw's facial feather pattern is as unique as a fingerprint.

The Hyacinth, Buffon's and Green-winged are the largest of the Macaw family, while the smallest member the Red-shouldered, or Hahn's Macaw, is no larger than some of the Conures.

Many of the Macaws are endangered in the wild and some species already are extinct, and Spix's Macaw is most probably extinct in the wild. The Glaucous Macaw is also probably extinct, with only two reliable sightings recorded in the 20th century. The greatest problems threatening the Macaw populations are the rapid rate of deforestation occurring in Central and South America and illegal trapping for the bird trade.

The diet includes seeds, nuts, fruits, palm fruits, leaves, flowers, and stems. Foraging for seasonally available foods occurs over a wide area, up to 100km (62 miles) for some of the larger species such as the Blue & Gold and Great Green Macaws.

In certain regions some of the foods eaten by Macaws in the wild are said to contain toxic or caustic substances which they are able to digest. There is a theory that Macaws in the Amazon basin eat clay from exposed river banks to neutralise these toxins. In the western Amazon region hundreds of Macaws and other parrots consume clay from exposed river banks on an almost daily basis. The Tambopata Research Center (TRC) in Peru, has studied the clay-eating behaviour of parrots at
Peruvian clay-licks. The researchers found the soils consumed at the clay-licks do not have higher levels of cation\(^1\) exchange capacity than that of unused areas of the clay licks and thus the parrots could not be using the clay to neutralize ingested food toxins. Rather, the Macaws and other bird and animal species prefer clays with higher levels of sodium\(^2\). Sodium is a vital element that is scarce in environments greater than 100km from the ocean. Salt-enriched (NaCl) oceanic aerosols are the main source of environmental sodium near coasts and this decreases drastically further inland.

Clay-eating by Macaws does not occur other than in the western Amazon region, even though Macaws outside the region consume some toxic foods such as the seeds of the Sandbox Tree\(^3\), *Hura crepitans*, which has toxic sap. It has been found that parrot species that consume seeds, with potentially higher toxicity, do not use clay licks more than those species in which flowers or fruit form the greater proportion of their diet.

Studies at TRC have shown a direct correlation between clay lick use and the breeding season. Nestling crop samples have shown their parents feed a high percentage of clay. The hypothesis that calcium, from the clay, eaten for egg development does not appear to be a reason for geophagy\(^4\) either as peak consumption occurs after the young have hatched.

\(^1\) The ability to absorb toxins.

\(^2\) Sodium is an essential element for all animals and some plants. In animals, sodium ions are used against potassium ions to build up charges on cell membranes, allowing transmission of nerve impulses when the charge is dissipated. The consequent need of animals for sodium causes it to be classified as a dietary inorganic macro-mineral.

\(^3\) Fishermen have been said to use the milky, caustic sap from this tree to poison fish. The Carib Indians made arrow poison from its sap.

\(^4\) Geophagy is the practice of eating earthy or soil-like substances such as clay, and chalk.