

The Magnificent Macgillivray (*Eclectus roratus macgillivrayi*)

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The Macgillivray Eclectus (*Eclectus roratus macgillivrayi*) is the largest of all subspecies of the Eclectus parrot. Its impressive size contributes to its stately beauty and its head, beak and tail appear significantly larger than those of all other Eclectus subspecies. Estimates of the Macgillivray's overall size difference vary from a fifth to one quarter larger than the second largest Eclectus subspecies, *E. r. vosmaeri*.

The *E. r. macgillivrayi* subspecies was named in honor of Dr. W. Macgillivray of Broken Hill, New South Wales. The name was first published in the January, 1914 issue of the magazine, EMU. Dr. Macgillivray sponsored several collecting expeditions in Australia as early as 1910. Although he was credited with the discovery of this Eclectus subspecies, many believe that the credit rightfully belonged to Dr. Macgillivray's employee, W. McLennon, a popular explorer of that time.

A colony of wild Australian Macgillivray Eclectus parrots occupies the restricted range of rainforest-covered hills and forest edges in the Iron Range National Park, Australia's largest tropical lowland rainforest. Dr. David Alderton in *THE ATLAS OF PARROTS* states that "*E. r. macgillivrayi* is known locally as the Rocky River Parrot and occurs in the eastern part of the Cape York Peninsula, Queensland, Australia, extending northwards from Massey Creek, to the Pascoe River, and inland as far as the McIlwraith Range."

Population and Status

The worldwide population of wild Eclectus parrots, including all subspecies, was estimated in 1998 to be above 300,000 birds by Tony Juniper and Mike Parr in the book, *PARROTS, A GUIDE TO PARROTS OF THE WORLD*. The Australian Macgillivray colony in the rain-forested Iron Range of eastern Cape York Peninsula is the only large population of the *E. r. macgillivrayi* subspecies in the world and its size is estimated at approximately 3,000 breeding birds.

The status of *E. r. macgillivrayi* was listed as near threatened in the "Action Plan for Australian Birds 2000" report by Stephen Garnett and Gabriel Crowley. The number of Macgillivray Eclectus parrots in the Iron Range colony was reported by Garnett and Crowley to be approximately 3,000 breeding birds. Although no specific confirmed threats to the population were noted in the report, the small population of the wild *E. r. macgillivrayi* and its limited habitat were factors that contributed to the listing of the Macgillivray as near threatened.

Threats to the Macgillivray

- Amethystine Pythons (*Morelia amethystina*), Goannas (*Varanus* sp) and other predators have been cited by various

sources as natural threats to the wild Australian Eclectus.

- The scarcity of nest sites and competition from the Sulphur-crested Cockatoo (*Cacatua galerita*) for the few suitable nest hollows are considered threats to the growth of the Macgillivray Eclectus population.

- Nest robbing for the pet trade has been reported but not confirmed as a threat. Several Australian Eclectus breeders who were questioned about the likelihood of Macgillivray smuggling expressed doubt that significant poaching has occurred because there are so few Macgillivray Eclectus parrots in Australian aviculture and because export of the birds is forbidden.

- The regular flooding of nest holes during heavy rains causes the loss of many pre-fledgling stage chicks. Even the largest chicks drown when heavy rainfall occurs before they are mature enough to leave the nest cavity.

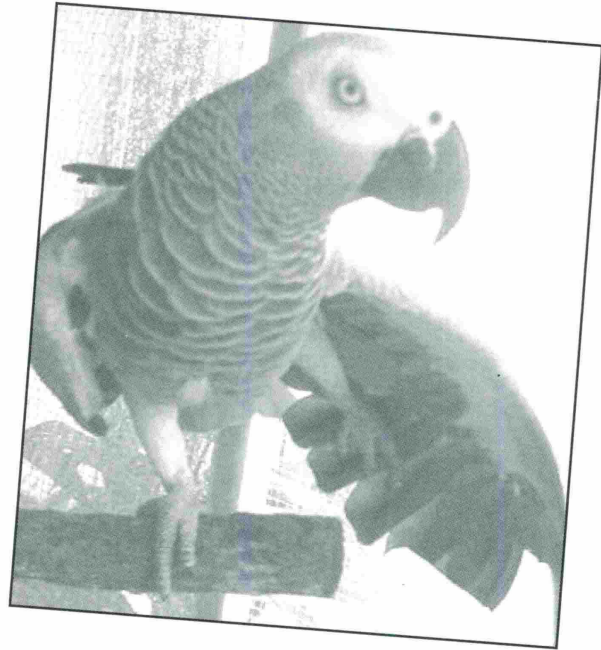
- Natural disasters are potential threats to the continued existence of the wild Australian Eclectus. Many of these losses are considered natural in the wild. According to estimates by several sources, only one of ten Eclectus eggs is successfully raised to the fledgling stage.

The Macgillivray Habitat

Until just over a hundred years ago, the Cape York Peninsula was known only to the indigenous Aboriginal people who have inhabited Australia for at least 40,000 years. It is a wilderness area of rich and diverse rainforest areas, rivers, creeks, and waterfalls. This special wild habitat of the Macgillivray is home to diverse fauna and flora that remains largely undisturbed by the intrusion of civilization.

Besides Eclectus parrots, the Cape York Peninsula is populated by Palm Cockatoos (*Probosciger aterimus*), Yellow-billed Kingfishers (*Halcyon torotoro*), Golden Bower Birds (*Prionodura newtoniana*), Northern Scrub Robins (*Drymodes superciliaris*), Trumpet Manucodes (*Manucodia keraudrenii*), Frilled Monarchs (*Arses telescopthalmus*) and other rare fauna and flora.

Directly north of the Cape York Peninsula are the hundred stepping-stone islands of The Torres Strait. These islands were notorious in the late 1860s for their savage inhabitants and their richness in pearls. The main industry in the islands of the strait today is fishing and the production of cultured pearls. The Torres Strait extends from the tip of the Cape York Peninsula to within five kilometers of the southern Papua New Guinea (PNG) coastline. The smaller but otherwise identical Red-sided Eclectus (*E. r. polychloros*) is found in Papua New Guinea which has inspired much speculation about the geographical history of the two subspecies. Is it possible that the smaller Red-sided Eclectus subspecies once migrated southward through the



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Note: The pictures are not Alice Cooper but an American bird with similar problems.

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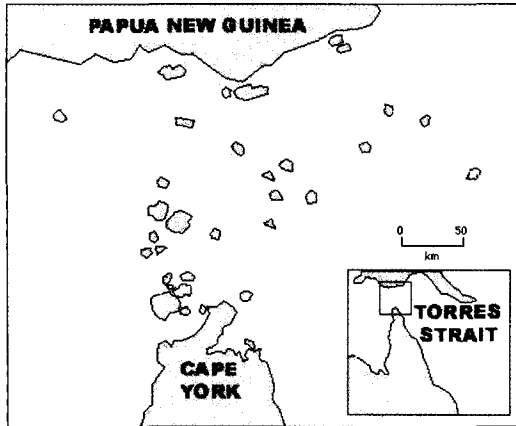


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islands of the Torres Strait to the lush rainforests of northern Australia? Might the food supply of the rainforest in the Iron Range be richer or more plentiful and therefore might it have contributed to the evolution of a colony of larger *Eclectus* parrots? Perhaps only the largest and strongest flyers from Papua New Guinea were able to make their way south to northern Australia, thereby creating a super-size *Eclectus*. We might never know whether this speculation is supported by historical fact, but it seems a possibility.

Figure 1: Torres Strait



Sexual Dimorphism

One of the most outstanding traits of all *Eclectus* parrots is their extreme sexual dimorphism. The males are predominantly green with shades that vary among subspecies from fluorescent yellow-green to deep blue-green. Females are predominantly red with shades that vary from crimson to burgundy according to subspecies and area of the body.

The subtle shading of the male Macgillivray's deep forest-green color is more blue than yellow. The head, neck and breast are covered with hair-like, silky feathers characteristic of the *Eclectus* species. Macgillivray males sport distinctive splashes of red on their flanks and under-wing coverts. The most striking physical feature of the adult male Macgillivray is the candy-corn colored beak. The upper mandible is a deep coral color at the base, gradually blending to yellow at the tip while the lower mandible is black. The tail is longer than all other subspecies (5.75 inches) and has a light yellow edging at the tip that is approximately one-half inch long. The length of the adult Macgillivray is 40 cm (15.75 inches).

The female Macgillivray is impressive due to her intensely red head, neck and crop area with a distinct bib, or line of demarcation, between the striking red of the upper body and the brilliant royal blue of the breast, mantle and lower belly feathers. The eye is surrounded by a thin line of blue feathers, which gives the appearance of electric-blue eye shadow. The Macgillivray female's beak is a deep, rich black. When compared to females of other *Eclectus* subspecies, the female Macgillivray's head looks significantly larger and her tail is considerably longer than that of

females of other *Eclectus* subspecies.

By the time they fledge, the young *Eclectus* parrots closely resemble the parent birds. The young male's upper mandible changes from black to coral/yellow during his first year while the female's beak remains black. Otherwise, their coloration perfectly mimics the adult birds as soon as they are fully feathered. The young Macgillivray *Eclectus*, whether male or female, is an impressive looking bird and often is mistaken for a mature parrot due to its size. The darker eyes of both male and female, as well as the brownish colored beak of the male, are the main characteristics that denote their status as immature birds. Observers who are unfamiliar with the species often cannot distinguish between immature and adult birds.

Captive Macgillivrays

Only a handful of Macgillivray *Eclectus* parrots are held in aviculture around the world, including Australia, their country of origin. Only a few imported Macgillivray pairs have been reported in the United States. Consequently, little is known about the specific characteristics of vocalization, personality, behavior, courtship, and parenting in domestic settings. An ongoing study of the wild Macgillivray flock in Australia is providing valuable insight into natural behaviors and characteristics of the *Eclectus roratus* species.

Eclectus owner and writer, Mary Nogare, shares: "Eclectus parrots appear to have the ability to skew the gender ratio of their offspring in response to pressures from their environment. These parrots have been observed to produce consecutive runs of one gender or the other, both in the avicultural setting and in the wild. One of the mysteries that the study of wild *E. r. macgillivrayi* at the Iron Range hopes to solve is the pressures that influence the gender ratio of *Eclectus* clutches. The limited availability of nesting hollows and the need for several males to support a single female and her chicks may play significant roles." (See "A Study in Skew," also in this issue of *Watchbird*.)

Eclectus Subspecies

E. r. macgillivrayi is one of ten *Eclectus* subspecies usually mentioned in reliable literature, but some experts do not recognize the Westermani *Eclectus* (*E. r. westermani*) as a valid subspecies. The *westermani* is known only from a few specimens from captive stock. Juniper and Parr (1998) suggest the possibility that the few known specimens of *westermani* *Eclectus* are actually aberrant individuals of *E. r. roratus* (Grand *Eclectus*). Others have speculated that the specimens called *westermani* were actually *E. r. riedeli* or *E. r. vosmaeri*.

The following list includes the common name of each *Eclectus* subspecies as well as its main place of origin. The Grand *Eclectus* is the nominate race and there are eight subspecies, or nine if *E. r. westermani* is recognized.

- *E. r. roratus* (Grand Eclectus from Moluccas Islands)
- *E. r. vosmaeri* (Vosmaeri or Vosmaers Eclectus from northern Moluccas)
- *E. r. solomensis* (Solomon Island Eclectus from Bismarck Archipelago and the Solomon Islands)
- *E. r. polychloros* (Red-sided Eclectus from Papuan Islands, New Guinea and associated islands)
- *E. r. macgillivrayi* (Macgillivray Eclectus from North Queensland, Australia)
- *E. r. biaki* (Biak from Biak Island)
- *E. r. cornelia* (Cornelia Eclectus from Sumba in the Lesser Sunda Islands-rare)
- *E. r. aruensis* (Aru Eclectus from Aru Islands)
- *E. r. riedeli* (Riedeli Eclectus from the Tanimbar Islands- rare)
- *E. r. westermanni* (Westermanni Eclectus – No recorded place of origin)

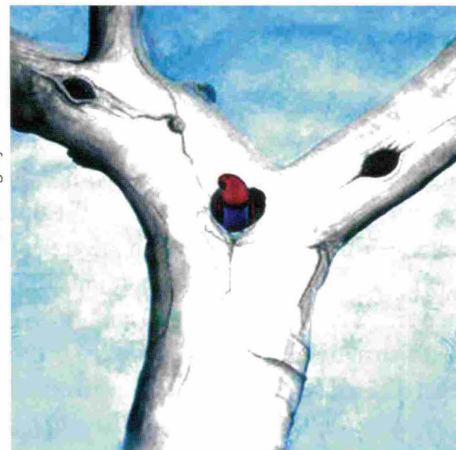
Joseph M. Forshaw in *PARROTS OF THE WORLD* describes *E.r. macgillivrayi* from the Iron Range as “noisy, conspicuous parrots. Single birds or pairs were occasionally seen resting in tall eucalypts in open country, but they were probably moving from one patch of rainforest to another. In the early morning, pairs and small parties left the roosting tree and moved out into the surrounding forest to feed. Larger flocks sometimes congregated to feed in fruit-laden trees. They were wary and when disturbed flew out from the opposite side of the tree, but before flying off, frequently circled back high overhead, screeching loudly. Return flights to the roosting tree commenced toward dusk and the parrots traveled in threes or fours, males generally flying in front of females. As each group came into the tree it joined in the screeching and squawking which continued until after nightfall. The birds are strong fliers and on long flights, such as to and from roosting trees, they fly high above the forest canopy. The flight is rather slow with full deliberate wingbeats interspersed with brief periods of gliding. In flight the wings are not raised above body level and the resulting pattern of wing movements is a good field characteristic.”

Forshaw continues, “In November I flushed a female from a nesting hollow in a tree beside the Claudie River, Cape York Peninsula, and in January noticed birds in attendance at what I was told were regular nesting trees, though, judging from the large numbers using roosting trees, breeding must have been almost finished by then; two recently fledged birds were collected from one roosting tree. From all parts of the range there are reports that nests are attended by groups of up to seven or eight birds of both sexes. There were four males and two females present at the nest I found at Iron Range in November.

“The nest is in a hole in the trunk of a tall tree standing near the edge of the forest or in a clearing in the forest.

It is invariably in a high inaccessible position... Macgillivray (1918) looked at a number of nests on Cape York Peninsula and estimated that the lowest was about 14 m. from the ground, the highest approximately 22 m. The entrance is usually about 25 to 30 cm. in diameter and the depth varies from 30 cm. to more than 600 cm. The two eggs are laid on wood chips lining the bottom of the hollow. Cain and Galbraith report that at the nest which they had under observation, the sitting female was fed at frequent intervals by the male; he would alight on a branch near the nest and call, whereupon the female would emerge and go to his perch to be fed, returning to the hollow immediately or sometimes after being preened by the male.”

Drawing by Susie Christian



A drawing of the old “Smuggler’s Tree” from which poachers took baby Eclectus Parrots in the past. They drove spikes into the tree to facilitate climbing. The old tree is still standing but the smugglers have disappeared.

The Smuggler’s Tree

Dale Thompson, a California aviculturist and successful Eclectus breeder visited “The Smuggler’s Tree” during a trip to the Cape York Peninsula in Australia. Thompson shares: “The Smugglers Tree had spike marks clear up to the top where bird smugglers had taken chicks out of nests in previous seasons. This was an enormous tree. It took five of us with outstretched arms to surround the trunk at its base. The tree, a Green Fig (*Ficus albipilla*) was over 120 feet tall. It stood out from the other trees, which were mostly of the same height. Instead of having branches full of leaves along the trunk, its leafy branches were at the very top of the tree’s crown. Thus, the area directly under the tree top was clearly visible. This is why I was able to observe the Eclectus.”

Dr. Rob Heinsohn from the Division of Botany and Ecology at the Australian National University, and Dr. Sarah Legge, who are conducting a study of the Macgillivray colony in the Iron Range reported in an article titled “Seeing Red: A Parrot’s Perspective” in the Winter 2001 issue of *NATURE AUSTRALIA* magazine that 75 per cent of the known Eclectus nest hollows are found in three major tree types – Figs (*Ficus* spp.), milkwoods (*Alstonia* spp.) and the Black Bean (*Castanospermum australe*). Heinsohn and Legge add that, “Our studies have confirmed that Eclectus, breed cooperatively in stable groups, a social system that is exceedingly rare among parrots. This mode of

breeding in which some birds help care for the young without contributing genetically, occurs in about three per cent of birds but has only been suspected in a couple of parrot species.” The five-year research project addresses issues of *E. r. roratus* such as sexual selection, cooperative breeding and sex allocation of offspring.

Dale Thompson shared that on his field trip in the early nineties to observe the wild colony of *E. r. macgillivrayi* in The Iron Range, “A bright-red female with an outstanding head flew directly from a nearby eucalyptus to the white tree at a height of about 100 feet. This large red parrot flew horizontally in the labored flights with which so many of us are familiar from our observation of *Eclectus* parrots in captivity. She flew directly to a natural hole in a large white branch and landed on the entrance with her tail bent close to the tree surface underneath to balance herself. She disappeared in less than a second. Boy, was that exciting! She acted just like a nesting female *Eclectus* in captivity rushing into her nest box. But this was in the wild, and this *Eclectus* was bigger than any I had ever seen. What a glorious sight to see this brilliant-red fire-brand disappear into a white tree branch. And to think that I had found it in the wilds of Australia.

“It turned out that two active *Eclectus* nests were in the tree along with at least six nest holes. From what I could determine over the next five days, at least two of the holes were connected. A female would enter one hole and exit another. It was hard to tell at first just how many pairs of *Eclectus* were nesting in the tree. It was not hard to figure out that the birds were in their incubation period and not in the baby-feeding stage. The *Eclectus* females never left or entered their nest holes when any commotion was going on above them. We knew this and waited during the quiet times to more carefully observe the *Eclectus* holes. The females spent from 42 to 115 minutes in the nests incubating eggs before leaving their holes. They did not spend much time out of the nest, 15 to 20 minutes, before they went back in to continue incubating their eggs.

“Two bright green males would approach the tree from the forest during the evenings. Their mates would hear them call and would exit the nests to see them and be fed. The males never went to the nest holes. I felt that they did not want to give away the locations of the nest entrances to predators. (However, I do know the males go to the nests for the feeding of small chicks and regurgitate food to their mates who then feed the babies.) Once when one female exited her nest and met her mate in a Eucalyptus tree about 75 feet away, she gave her mate a scolding and demanded food from him. He was reluctant before this, but this confrontation put him in high gear to feed her. It was so much like what I had seen in my captive pairs of *Eclectus*. The female bobbed in front of him then went high with her head, and you could see the male backing up with an almost falling-back stance.”



Rae Anderson's striking photo of a male *Eclectus roratus macgillivrayi* in the Iron Range feeding a female – maybe his mate, maybe not.

Thompson concluded, “The Smuggler’s Tree was the highlight of the Cape York trip because it was like a complete environment of many different avian species and behaviors. We spent most of the early mornings and evenings at the tree watching nature at its best. The sighting of the big red and green *Eclectus* was like a dream. I had always wanted to find an *Eclectus* nest in the wild, and finally I had.”

(Read the account of a recent visit to “the smuggler’s tree,” titled “Observations of *Eclectus roratus macgillivrayi* In Habitat,” by Rae Anderson on the next page.)

The Australian colony of *E. r. macgillivrayi* provides a rare opportunity for ongoing observation and study of one of the world’s most beautiful and fascinating parrot species in its natural habitat. It is indeed fortunate that funding was made available for the five-year study in Cape York of the behavioral ecology of *Eclectus* parrots by Dr. Heinsohn and Dr. Legge. *Eclectus* devotees eagerly await the findings of this important avian research project. ❖