Love Is Blue
By William Mullen
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When mating season rolls around, the Shedd Aquarium's Grand Cayman iguanas are decked out in the color of romance. Parents with young children who spot a bright blue iguana at the Shedd Aquarium in the next few weeks might consider discreetly hustling the little ones toward the seahorse exhibit or something else a little more innocuous.

Marley and Eleanor, a breeding pair of Grand Cayman blue iguanas, are going on display at the aquarium.

"In breeding season, when their reproductive hormones rise to high levels in March and early April, the color of the males changes to this amazing electric blue," said Chuck Knapp, a Shedd population biologist who is a world authority on iguanas.

Found only on Grand Cayman Island, a spot of land in the Caribbean south of Cuba, the species is thought to be the world's most endangered lizard. Fewer than 25 of the dragon-like blue iguanas, which can grow to 5 feet in length, survive in the wild.

Ten zoos and aquariums in the U.S. are trying to breed them in captivity to send offspring back to Grand Cayman Island for re-introduction into wild areas. The Shedd has built an elaborately engineered exhibit case as a part of the breeding effort.

Marley made his debut Thursday, and Eleanor will join him later.

Female blue iguanas also take on a more definite blue hue in the mating season, though a lighter, powdery color. The rest of the year, the skin of both sexes is a drabber blue-brown.

"The color change at the mating season, especially for the males, seems to be a way of attracting prospective female mates," said Knapp. "The males are very aggressive in the mating season. He will try to scare off other males by confronting them with these large-amplitude head bobs.

"When he presents himself to a female, he uses a different, short little vibratory head bob to see if she is receptive. If she is, she gives him a head bob in return."

It sounds simple, but efforts to breed the species in captivity in the U.S. have been spotty, at best, as the blue iguanas were almost gone in the wild before anybody began to study them in their natural state.

"There are a lot of variabilities in the natural world that might affect breeding that we just don't know about," said Allison Alberts, a conservation specialist at the San Diego Zoo.

"We're still learning what we have to provide them in captive situations to encourage breeding. We know nutrition is important. So are the right levels of ultraviolet light in the exhibit and the social situations you place the animals in."

When Grand Cayman Island was just a sleepy fisherman's enclave, the blue iguana was the biggest native land animal and had few predators to fear.

In the latter half of the 20th Century, however, Grand Cayman became an upscale center of luxury resorts and offshore banking, bringing more than 30,000 permanent human residents.

Threat grew

With the humans came pet dogs, cats and snakes. Feral dogs hunted down adult iguanas. Feral cats and snakes--not to mention introduced rat species--sought out iguana eggs and hatchlings. New homes, hotels and golf courses took over prime iguana habitats, and the lizards became common roadkill on newly built roads.

"In 1993 there were 200 to 250 of them left in the wild, but now we believe there are only 10 to 25 left," said Rick Hudson, a Ft. Worth zoo conservation biologist.

Almost every Caribbean island has its own iguana species, and the survival of most of them is nearly as tenuous, said Hudson, who with Alberts co-chairs a group of scientists overseeing Caribbean iguana conservation efforts.

"There are 16 iguana species in the Caribbean, and nine are ranked critically endangered," he said. "They won't survive without some form of conservation intervention. The Grand Cayman blue iguana is the most endangered of all of them."

A group of Grand Cayman residents, alarmed in the 1990s at seeing the island's largest animal plunging toward extinction, began a rescue effort, establishing two protected areas and building, with international help, a local breeding facility.

Now all the captive blue iguanas on Grand Cayman and in 10 U.S. zoos and aquariums are being treated as a single breeding population. There are 90 iguanas in the Grand Cayman breeding facility, and another 250 babies are being raised until they are old enough for release into protected reserve areas.

The genetic history of all the iguanas in Grand Cayman and the 40 iguanas in the U.S. has been determined and put on file so a committee headed by Hudson can oversee which ones are paired for mating to avoid inbreeding.

U.S. captive breeding efforts for blue iguanas fell apart in the 1990s when participating institutions discovered their early efforts were tainted by misidentification of species, producing hybrid offspring and accidental pairings of brothers and sisters.

Starting anew, the Shedd brought in Marley as a young adult in 1999, having obtained the female, Eleanor, as a hatchling in 1995. They had been housed in a basement habitat until now, and so far they have failed to produce fertilized eggs.

New habitat

The Shedd spent $235,000 building a new 1,200-square-foot exhibit in hopes of producing hatchlings. Taking up an entire wall in the aquarium's Tropical Waters Gallery, the blue iguana habitat, built to resemble a rocky Grand Cayman seashore, has several

features built to encourage breeding.

"They now will live directly under skylights," said George Parsons, the aquarium's collection director, "so that they will have the natural seasonal changes in sunlight to stimulate their natural cycles.

"We have installed ultraviolet lights to replace the natural ultraviolet rays blocked by the skylight windows. The temperature is maintained at 85 degrees in the air, and we have hot rocks strategically placed throughout the exhibit heated to 102 degrees, where they will like to sit and bask in the UV rays."

Except during the breeding season, wild iguanas live solitary lives. To keep Marley and Eleanor from getting on each other's nerves, the habitat has many projections and corners so they can stay out of each other's sight.

In nature, female iguanas bury fertilized eggs in the sand, then cover the burrow entrance to hide the eggs from intruders. The Shedd has built two cave entrances into the exhibit rockwork that lead to sand-filled nesting dens that officials hope Eleanor will one day use for her fertilized eggs.

To get them established in their new home, Marley will remain by himself in the new exhibit for a couple of weeks to acclimate himself; then he will return to the basement while Eleanor gets her chance. Before the end of the mating season, however, they will be on display together in the new exhibit.

The exhibit includes a 4,000-gallon pool stocked with life commonly found near the shore of Grand Cayman.

"As an aquarium, we of course feature aquatic life," said Parsons, "but we see the need to link up how these terrestrial and aquatic environments merge along shorelines, and how human presence can endanger them."

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