



A NEST OF POTENTIAL

Bird Department Uncorks Important Discovery

While necessity may be the mother of invention, here at the ABQ BioPark Zoo bird department, it was an invention of nest-cessity that provided a mother exactly what she needed.



Kingfisher nest log

Micronesian kingfishers, native to the island of Guam, fell victim to the rampages of the brown tree snake, a species from Indonesia, that likely arrived unintentionally on cargo ships at the end of World War II. By the 1970s, the hunting habits of these snakes caused birds on Guam to begin disappearing at an alarming rate, said Peter Shannon, curator of birds at the ABQ BioPark Zoo, and the problem only continued to get worse. The snake is mostly nocturnal and feeds on eggs, nestlings and female birds sitting on nests, he explained, but because these birds had not evolved with this type of predator, they had no natural defense strategies to survive. By the early 1980s, several bird species on the island were already functionally extinct because only males remained, and this is when zoos were approached by the U.S. Fish and Wildlife Service to step in and collect 29 kingfishers from the wild for a propagation program. A few years after that, said Shannon, the species was extinct in the wild, and control or total elimination of the tree snake continues to be a challenge.

Over the last 25 years, said Shannon, zoos have increased the captive population of Guam kingfishers, a subspecies of Micronesian kingfishers, to about 135 in 21 institutions, and continue to work at indentifying the best techniques for breeding them. One difficulty has been finding appropriate nesting logs, which must be soft and rotten so that the birds can hollow them out as part of their breeding ritual.



3 month old Micronesian kingfisher at the ABQ BioPark Zoo

In 2007, the ABQ BioPark began participating in the kingfisher program by taking in two brothers to help house some of the extra males in the captive population. In 2011, two females arrived in Albuquerque as potential mates.

“With the pending arrival of the girls, we had to come up with a solution to the nesting dilemma,” said Shannon. He looked at yoga blocks made of cork, but they were too hard. Then he found large blocks of cork used by duck decoy carvers and fashioned a type of “log” by placing several layers of these blocks into open-fronted plywood boxes. “With our potential nest logs in place, we introduced a female to each male and within days, both pairs had begun excavating perfect nest chambers,” he said.

One of the pairs soon produced two eggs, but, said Shannon, it is difficult to get kingfishers to raise their own chicks. In following the accepted management strategy, he explained, they allowed the parents to attempt to raise one chick and pulled the second egg for hand rearing. In this situation, the first chick did not survive, but the second egg hatched successfully in the incubator on July 15. “The chick was initially 4.3 grams-- a tiny little thing!” said Shannon, who was initially feeding it every 1-1/2 to 2 hours from about 7 a.m. until 11 pm. Because its eyes did not open until about two weeks of age, he tapped food items against its bill to elicit a feeding response. Feathers started to emerge about the same time as the eyes were opening, he said, and at 39 days old, the chick began picking up food on its own. At this stage, it also started learning how to fly, but landing took a while longer to master. By September 1, said Shannon, the chick was nearly independent.

The same parents subsequently produced a second clutch and while neither egg hatched, they began spending time in the nest log again as of September 1, which resulted in a second chick that hatched on September 28.

“Albuquerque has pushed the envelope on Guam kingfisher conservation a little bit further through this year’s efforts,” said Shannon, noting that other zoos have already begun to experiment with the cork concept. “If someone else can get it to work, this will remove a major obstacle to kingfisher reproduction in captivity,” he said. “If successful, there will be an endless supply of low-cost nest logs that can be custom built for any location and could be an important strategy when the time comes to return birds to a wild setting.”



Peter Shannon feeding a 7 day old kingfisher chick

A DOUBLE LAYER OF CONSERVATION

The cork that is being used to build nest “logs” for the Guam kingfishers here at the ABQ BioPark Zoo is promoting conservation not only by boosting breeding efforts for these highly endangered birds, but also by supporting an industry that preserves habitat. Peter Shannon, curator of birds at the ABQ BioPark Zoo, explained that cork is harvested from the cork oak trees in southern Europe where approximately every 10 years, the bark of these trees is peeled off and turned into items such as wine stoppers, flooring material, shoe heels and bulletin boards. This process does not harm the trees and moreover, the preservation of these cork forests provides a sustainable economic product in wildlife habitat areas that might otherwise have been destroyed and developed for other purposes.

