



# THE DANCE OF DEATH

## *A Falcon Is Laughing In The Jungle*

By Michael Tennesen

**I**t was about 7 a.m. when Megan Parker, a young raptor biologist, climbed down from her 75-foot-high tree blind. The tree protrudes above the jungle canopy in Guatemala's Tikal National Park which lies on the low, rolling, limestone hills near the Mexican and Belize borders. In 1990, the government declared Tikal and its adjacent territories a "biosphere." Today, its 221 square miles of dense tropical forest, along with similarly protected zones in adjacent parts of Mexico and Belize, comprise the largest contiguous protected area in all of Central America. Tikal National Park is to Guatemala what Banff National Park is to Canada or Yellowstone is to the United States.

Long protected, the wildlife within its boundaries is both plentiful and oblivious to human intruders. Coatimundis cross the trails in troops of 50 or more, halting all human traffic, while spider monkeys climb in the trees above. Everywhere, there are birds: Oscillated Turkeys, Red-lored Parrots, Aztec Parakeets and toucans. It is not impossible to go out in an afternoon and add 50 species of birds to your life list.

Parker's specialty is the Laughing Falcon, which she had been observing since dawn. Now, dressed in shorts, t-shirt and sneakers, she moved out of the jungle to the muddy dirt road that tunneled through the dense green foliage, and turned north. Then, she saw a flicker of yellow.

Up ahead, just around the bend, near a pool of water, a Laughing Falcon danced in the road. The bird is a moderate-sized raptor with a rich brown back, buff-and-black banded tail, and a cream-colored breast and head. A broad, black mask covers the eyes, narrowing as it wraps around the head. Its appearance has earned the bird its nickname, the Lone Ranger.

As Parker drew nearer, she realized that the bird wasn't dancing alone. Its deadly partner was a fer-de-lance, a pit viper whose poison attacks the vascular system, causing massive hemorrhaging. The snake's black, gray and brown diamond pat-



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tern helps it blend perfectly into the forest leaf litter. Unlike most venomous snakes whose poison attacks the central nervous system, the fer-de-lance's victims bleed to death. The only hospital in this rural part of Guatemala can't afford to stock a supply of the expensive anti-venom required to treat the

enticing the snake to strike, like a matador would a bull. The fer-de-lance has poor vision but uses an infrared eye or loreal pit above its nose to sense body heat and motion. But when the snake did not lunge for the Laughing Falcon's cape-like wing, the raptor started a more active pursuit.



**Displaying her characteristic mask, this adult female Laughing Falcon almost dares you to look away. Photograph/Craig J. Flatten.**

snakebite. So, researchers either carry their own or follow the customs of the country: "The Guatemalans say the remedy for a bite by a fer-de-lance is to cut off the bitten limb with a machete," says Parker.

But the Laughing Falcon was not afraid of the snake. Finding the snake basking on the road, the bird spread its wings and began to brush them against the ground,

Flapping its wings, the falcon lifted up into the air and jumped high over the deadly snake, landing on the other side. The reptile turned, following its every move. Gradually the bird built the tempo of the dance, jumping back and forth, until on the fourth pass, the snake turned a little too slowly. The Laughing Falcon extended a sharp talon, and with lightning speed, pulled the snake under it

and clamped its broad, deep, bolt-cutter-like beak behind the writhing reptile's neck and severed its spinal cord.

Because it feeds exclusively on snakes, the Laughing Falcon occupies a special niche in this jungle and enjoys a special relationship with its people. Its feeding habits make it better received by the locals who understand its unique ecological role. It is only one element of the diverse raptor community within this biosphere.

In this pristine jungle, Megan Parker works for the Idaho-based Peregrine Fund's Maya Project to complete her Master's degree in raptor biology. She is energetic, enthusiastic, and devoted to her work. The project's goal is to investigate the raptor community in this protected jungle tract. So far, it has studied the Orange-breasted Falcon, the Bat Falcon, the Barred Forest-Falcon, the Mottled Owl, and the Ornate Hawk-Eagle.

In 1990 Parker spent her first season observing the little-known birds, which are found in the tropical lowlands that stretch from southern Mexico to northern Argentina. Though its English name is the Laughing Falcon, *Herpetotheres cachinnans* is not of the genus *Falco*, to which the Peregrine Falcon, Gyr Falcon, Merlin, and American Kestrel belong. It does not have the stiff, narrow wings of a true falcon and does not engage in the aerial displays for which Peregrines and Gyrfalcons are famous. Instead, its wings are short; it uses its long accipiter-like tail to navigate through the dense forest. Phylogenetically, it is closest to the Micrasturs—the Barred Forest-Falcon and the Collared Forest-Falcon.

The Laughing Falcon is known not only for its ability to capture

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snakes, but also for its suite of unique calls that, in some instances, resemble a human laugh. Parker and her research team study these calls using a recorder and directional microphone. "When the birds are in the nest and undisturbed, they have a low chuckle that sounds like *ha ... ha ... ha.*' When a mated pair is out hunting, it uses short laughs '*ha, ha*' to locate each other. But when they are defending their nest, the birds use an hysterical cackle—short harsh laughs interspersed with descending laughs that are extremely loud."

Nesting birds often greet both dawn and dusk with a duet that starts with the female calling "*au-au-auuu*" and the male answering with a distinct "*wah-koh, wah-koh, wah-koh*" that builds in volume and tempo to a harmonic song that can be heard for miles. In fact, the local name for the bird is "guaco," which in Spanish is pronounced "wah-koh."

Parker's jungle day begins at 4 a.m. She heads out and climbs into one of the blinds before first light brings the jungle to life. Parker is now in her third year of study, and stays with the birds from February to early August.

Laughing Falcons usually nest in the jungle's tallest trees, the average being about 120-150 feet high. The nest is a fairly casual matter with epiphytes, bromeliads, and bark providing the substrate near the top of the tree. According to Parker, one nest was "simply a trampled area of epiphytes ringed by freestanding leaves that provide the only concealment, shading, and protection for the chicks."

The single egg is usually placed within the crook of a branch or some other open cavity, and is laid sometime between late February



**With the average Laughing Falcon nest being 60-90 feet high in the tree, Parker has a hard climb in front of her. Photograph/Craig J. Flatten.**

and early March. The Laughing Falcons produce only one mottled, reddish-brown egg. Birds in general tend to lay fewer eggs in tropical climates where the competition for food is greater, although one egg is not the norm. Parker thinks the Laughing Falcon may compensate for the single egg by increased parental attention in the single young.

Despite careful supervision, both egg and chick are susceptible to predators such as spider monkeys, snakes, and tayras—members of the weasel family that resemble pint-sized wolverines or

miniature bears. In "Animal Kingdom" in 1960, the well-known ornithologist Alexander Skutch reported studying a nest of Laughing Falcons "near the foot of a forested ridge in southern Costa Rica." There, he saw a tayra attack and kill a nestling falcon. He watched as the tayra ascended the nest tree and was fairly amazed at the bird's lack of defense. "Only when the tayra was on the verge of entering the hollow did the guaco (Laughing Falcon) bestir herself," he wrote. "Uttering a low, excited cry, [the bird] darted directly toward the beast, but when it



**Mario Lima and Megan Parker banding a San Antonio Laughing nestling in 1990. Lima may take over researching the Laughing Falcon when Parker leaves at the end of this year. Photograph/Craig J. Flatten.**

sarled and showed its sharp white teeth, she dropped away without having touched it.”

But aside from Skutch’s observations, little was known. Many of Parker’s findings have been firsts. With over 2500 hours of observation, Parker has found the birds very defensive. Several times she has been attacked by both male and female while climbing the nest trees to weigh the chicks. They stooped at her head and shoulders; once, a bird raked her

back, drawing blood. On a number of occasions, the birds struck her head, an experience she remembers as a loud, unnerving “thud.”

The female Laughing Falcon incubates the egg alone, and when the chick hatches, in early to mid-April, the male feeds the female and young solely on a diet of snakes, which he often brings back alive to the nest. “I saw males delivering five-foot-long, one-half-inch in diameter tree snakes,” says Parker, “and the female

would just suck them down like spaghetti.” In Parker’s first year of study she confined her work to six nests in primary-growth forest. What she found was a unique raptor which existed on a diet of 21 different snake species.

Parker observed the Laughing Falcons preying on seven different species of venomous snakes—including coral snakes, fer-de-lance and other pit vipers. Parker even saw the birds bring in three-and-a-half-foot-long boas that were two

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inches thick. The females would store the snake in the crook of a branch or over a tree limb; during the height of the nesting period, it was not uncommon to see several snakes draped over surrounding branches. At feeding time, says Parker, "The female would hold the snake down against a branch and then tear away large pieces of meat until she was full."

Laughing Falcons have thick scales on their feet, which Parker thinks may serve as shields from venomous snakes' bites. Speed is, perhaps, the falcon's best defense. Observing the flight of the Laughing Falcon is difficult—what Parker describes as "a flicker of light seen out of the corner of your eye. But I have seen them fly

into the nest. It is not a really graceful soaring bird like a kite or a buteo. It has deep wing beats. It really pumps." Parker saw Laughing Falcons bring in a number of imantodes, a foot-long, cryptic vine snake that moves

### **The male may bring three to four snakes to the nest each day.**

through the jungle with incredible speed. "The fact that they can catch this snake shows how developed their snake-search vision is."

While the chick is growing, the male may bring three to four snakes to the nest each day, which means the birds may cover a lot of territory. Parker attached small radio transmitters to several falcons and traced them through the jungle. One bird covered a home range of about 2500 hectares. Laughing Falcons hunt by moving through their home range, perching at various sites, and keying into movement around them.

But though the rural people may be aware of the presence of these birds, and even appreciate their song and color, few understand



**Parker settles on top of North Acropolis, one of the Mayan ruins within Tikal, for a full day of studying the Laughing Falcon. Temple Four looms in the background, often the base site for radio tracking the species. Photograph/Craig J. Flatten.**

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their role in the environment, or, more dangerously, how deforestation and pesticides are putting these animals at peril. In 1991, Parker moved outside the park to observe how the birds behaved in areas that included a mosaic of recently burned fields, secondary growth, cropland, orchards, and small islands of forest, where they encounter dangers that don't exist inside the jungle. One male Laughing Falcon was shot and found dead at the base of its nest tree. Sixteen days later, another male began bringing food to the female in the nest; the new pair remained together even after the nest tree was abandoned 15 days later, when the field below was burned.

Parker surmises that the dead male bird may have been killed by

a farmer who did not want biologists working near his land, or who saw the bird as just another hawk. "Some farmers will shoot any hawk. They think all hawks will attack their chickens," she says.

In the province of Peten, where Tikal is located, the soil is thin. "You scrape away the leaf litter, and you see there is only a thin layer of leaf and essentially no humus," says David Whitacre, the head of the Maya Project. "You get down to mineral soil very quickly." Decomposition of the soil by jungle insects is rapid, and the rain leaches away the rest of the nutrients.

The nutrients are instead in the forest, within the jungle biomass, inside the branches, leaves, and roots of the forest trees, plants, and epiphytes. But when burned, these

nutrients are released into the soil in the form of ash. So, the preferred method of agriculture is slash-and-burn. Farmers wait until the dry season, cut down the trees, let them dry and burn them off, and then plant their crops.

For the next three-to-five seasons, the land will be fertile. But after that, as weeds and insects build up, the fertility is diminished, and the field will be abandoned. If the field is allowed to regenerate, eventually it will return to primary forest, essentially as diverse as when it was first burned.

In an aboriginal system where human populations are low, slash-and-burn is a fine system. It creates a mosaic of successional stages in the forest. As long as there are large enough tracts of primary forest, there may still be animals, such as



**Megan Parker holds an adult female Laughing Falcon at La Escuela, in Tikal. Well illustrated in this view is the underwing pattern of this large falcon. Photograph/Craig J. Flatten.**

jaguars and eagles.

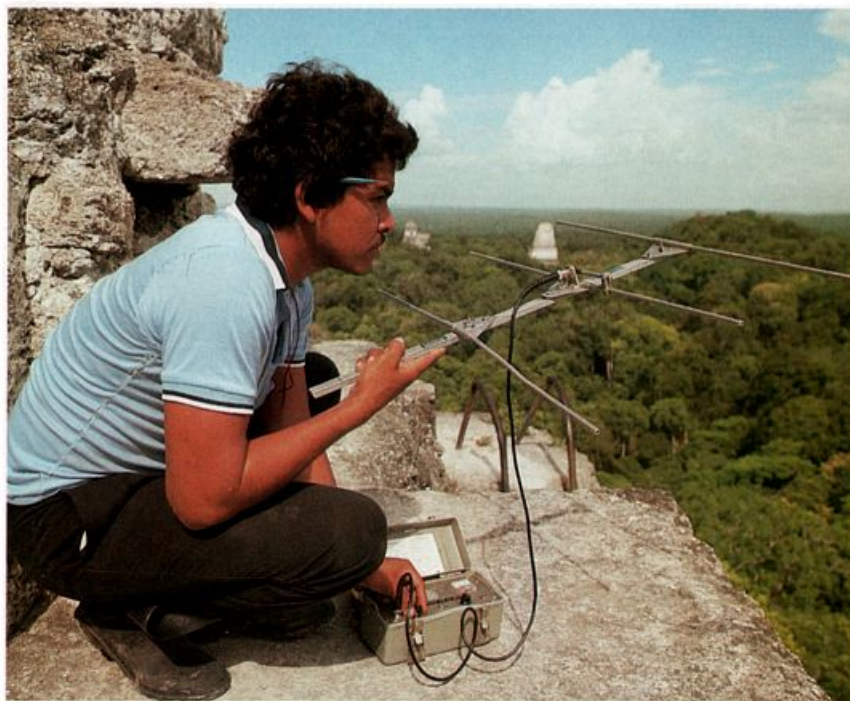
But when population densities get too high, the forest is cut before it matures. The soils grow increasingly infertile. Species disappear. "Ninety percent of what lives in the forest in Tikal," says Whitacre, "is not in the patchwork fields outside the park."

In March, April, and May there is a black cloud of smoke over the entire Province of Peten as the farmers convert the jungle into doomed agricultural fields. "Sometimes the smoke is so bad they have to cancel airplane flights, because you can't even see," says Parker.

But the Laughing Falcon seems to be surviving at least this stage of the onslaught. "Parker's studies may be the most important that we have undertaken," says Whiteacre. "By going outside the jungle, she is determining just how much disturbance the raptors can withstand. It may be that there is some combination of agricultural land and primary forest that will give us the biodiversity necessary to support Laughing Falcons and other forest creatures."

Parker's studies give some cause for hope. She has observed that the birds are surviving in smaller areas than inside Tikal. Outside the park, where the forest is receding, the Laughing Falcon has turned away from its jungle specialty and is learning to adapt to the current changes. Parker has found that though snakes were the main part of their diet, they also hunted rodents and lizards. Instead of a broader hunt over a large, contiguous area of jungle, they were hunting in spots, by lakes or watering holes, to which they returned over and over for their food.

Still, this will not guarantee a secure future for the Laughing



**On top of Temple Four in Tikal, Parker's colleague Julio Madrid is busy radio tracking a Laughing Falcon. Photograph/Craig J. Flatten.**

Falcon. "They need trees to nest in," says Parker, "and we don't know how much more disturbance to the habitat these trees can withstand. If things keep going the way they are, I'm afraid the country

**Few understand  
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could be converted into treeless grazing lands. And I doubt if the Laughing Falcon could survive that."

The Peregrine Fund is currently racing to try and answer some of the most urgent conservation ques-

tions. To help spread its ecological message, the Peregrine Fund has been recruiting rural people to become active participants in the raptor research conducted by the Maya Project. Parker says, "my eight Guatemalan colleagues are great. They are committed to their work, they show real appreciation for the opportunity and they gain a lot of prestige from working with the Peregrine Fund."

Parker will continue her research through the 1992 season, after which one of Parker's Guatemalan colleagues will assume the responsibility of the Laughing Falcon research.

It is hoped that the Guatemalans will find some of the answers that Parker has yet to discover and in the process, spread the message of ecology back to his village. Ultimately, if the jungle is to survive in Guatemala, it must be home-grown. Only then will the Laughing Falcon have the last laugh. ■