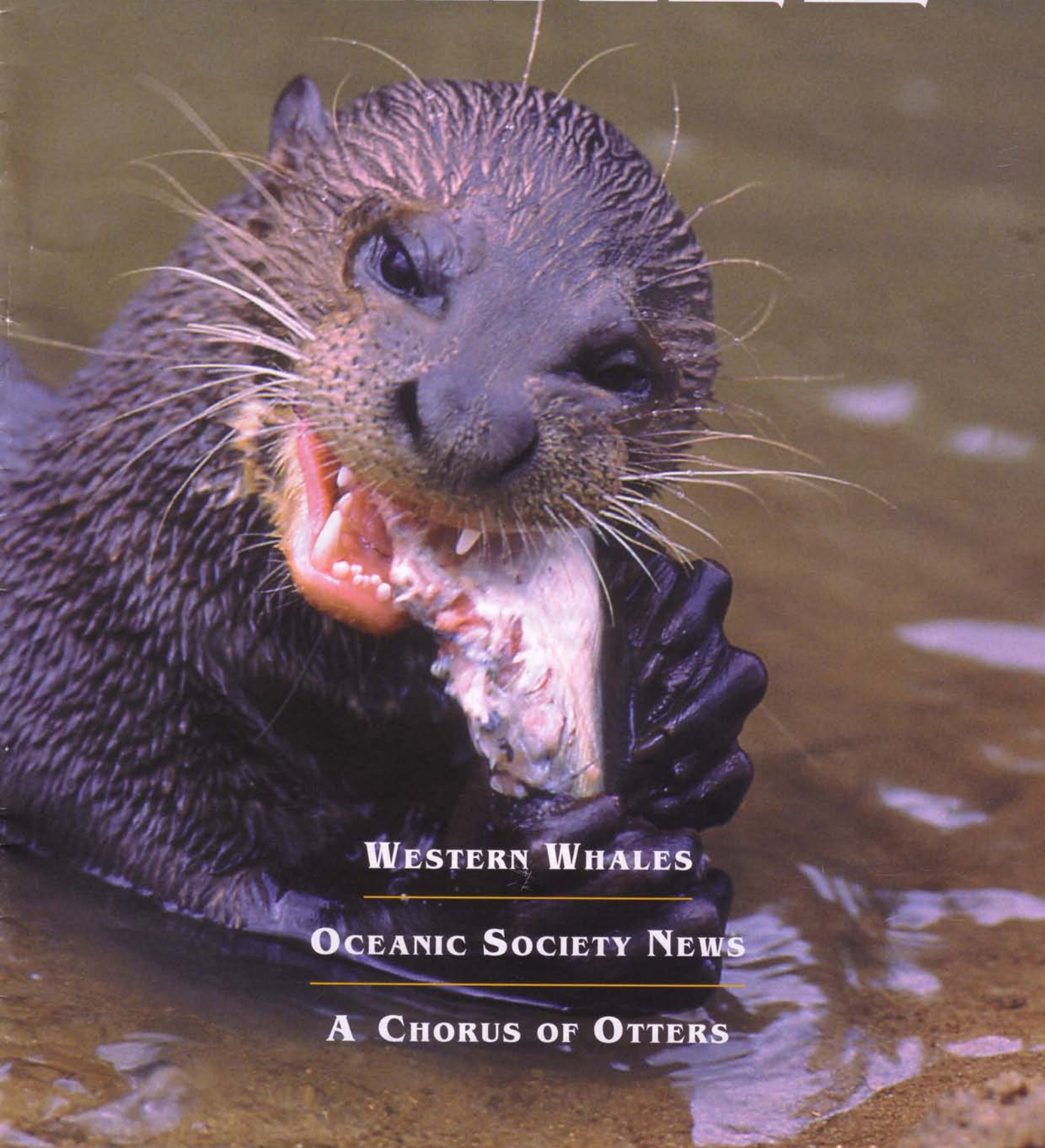


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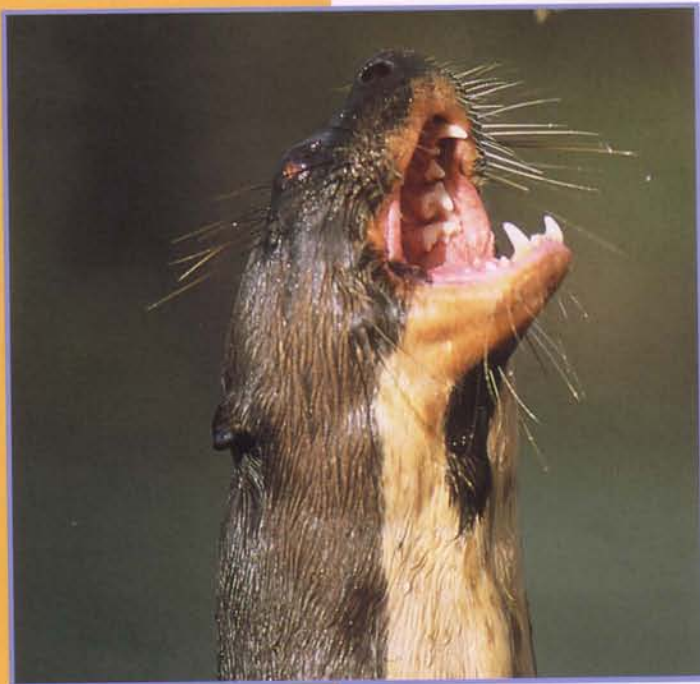
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WESTERN WHALES

OCEANIC SOCIETY NEWS

A CHORUS OF OTTERS



maybe this time they will get their favorite fish, a black uri as the local Makushi Indians call it.

I have come to southern Guyana to meet with Diane, who has legendary skills in rearing orphaned otter cubs.

Each otter has a personal set of brown and white blotches, a fingerprint of sorts. I concentrate on the white neck patch of the nearest otter wanting to make sure this is Pluto. After a few days of close observation of Diane's group of otters, The Group of Four as she calls them, I can recognize each

otter that way. Telling otters apart is a great asset in determining territory boundaries as the group travels up and down the river. Knowing every detail of the daily life and movements of the Group of Four is my goal.

The Guianan Region of South America ranks as one of the world's last great wild places. Occupying roughly the northeastern third of Amazonia, it is particularly noteworthy for its endemism, unique ecosystems, and exceptionally pristine state, as well as for its cultural diversity. This vast area has a human population of fewer than 2 million people (less than 0.8 people/km)—the lowest population density of any tropical rain forest region on Earth. Not surprisingly, it also has the highest percentage of intact tropical rain forest, with 80-90 percent still in pristine condition.

Along with the Amazon River in Brazil, the rivers and wetlands in the Guianas hold the greatest concentration of freshwater biodiversity in the world. With over 790 species

Giant otter in Guyana where the Oceanic Society, assisted by Nicole Duplaix, has set up a giant otter study site. Below: The Guianas are still relatively pristine, but a growing human population threatens otter habitat.

—Photos Nicole Duplaix



Silver ripples undulate across the glassy surface of the Rupununi River in Guyana. Four heads pop out of the water near a sand bar. "Pluto! Pluto! Pluto!" calls Diane McTurk and one of the giant otters swims closer and gives a friendly "Hah!" in return. Animals and humans in the boat stare at each other, equally delighted and curious. The otters are waiting for a hand-out,



Oxbow lakes beside the Upper Rupununi River in southwest Guyana are covered in Amazon water lilies. —Photo Nicole Duplaix

A CHORUS OF OTTERS

By Nicole Duplaix





Giant otters have distinctive throat markings enabling researchers to tell one otter from another.

Below: Diane McTurk with an orphaned otter she is rearing. —Photos Nicole Duplaix

of fish and a rich fauna of large aquatic vertebrates, such as endangered giant otters, manatees, arapaima, caiman and anacondas, the Guianas are a truly exceptional region.

However, fresh water-species and their freshwater biomes in the region are, on average, much more threatened than their terrestrial counterparts. We all know that the rain forests of the world, and their biodiversity, are fast disappearing but the rivers here have equally serious problems. They are used as convenient "highways" by the people living along their banks and as such are subject to human disturbance, exploitation and pollution.

While the sustainable use of economically important natural resources and the protection of endangered



species are stated objectives of the national conservation strategies of Guyana, French Guiana, and Suriname, all three now face increased pressure to exploit these resources for much-needed short-term benefits. Hydroelectric dams, mining pollution, deforestation, hunting, over-fishing with nets and heavy use of motorized boats will all take their toll

on the fragile watersheds of the region.

Today, villagers in the remote interior and Brazilians coming north across the border pan for gold. Largely unmonitored, this gold mining causes significant environmental and public health hazards from chemical and physical degradation. Large concentrations of sediments are deposited, high levels of mercury (used as an amalgam) escape into the air during the gold processing and seep into the watershed, and multiple pools of polluted water dot the land. Such damage at the top of many of the watersheds will cause severe long-term threats to the water quality of the rivers and creeks downstream and to all who depend on them. Mercury levels may skyrocket to ten times the norm in the uri—a

favorite fish of both people and giant otters. In a recent study in Guyana, up to 96 percent of the human hair samples taken from families living in a small gold mining community had concentrations of mercury of over 14ppm (6.4ppm is considered safe).

The giant otter (*Pteronura brasiliensis*), one of the larger carnivores of South America, is a member of the weasel family that has become extremely well adapted to an aquatic environment. Adult males measure up to six feet and weigh 50 to 60 lbs, while females are a little smaller. They live in large, noisy family groups and show little fear of humans unless they are actively hunted.

The largest of the world's 13 otter species, the giant otter has been eradicated from much of its former range in South America. Today, the Guiana ecoregion is its largest and safest stronghold. Because of their concentration in relatively intact populations and the remoteness of the tropical forests and rivers in the region, the IUCN Otter Specialist Group has identified the Guianas as a Priority Ecoregion to conserve giant otters. Recently, the Priority Setting Conservation Workshop for the Guianas also identified the giant otter as a critically endangered flagship species requiring long-term conservation efforts.

As a top predator of the freshwater food chain,



Pteronura is a useful "indicator species"—if the river ecosystem is healthy there will be otters about. However, otters require large home ranges and can disappear rapidly from even remote river systems because of their pronounced sensitivity to human activities, such as logging, and their vulnerability to mercury accumulation.

Until recently, this large, diurnal and gregarious animal made an easy target for pelt hunters. The combined effects of the demands of the fur industry in the 1960s and 1970s and habitat loss are responsible for *Pteronura*'s endangered status over much of its range in South America. In the Guianas where the indigenous people rarely hunt it, the giant otter enjoys relative security, particularly in the more remote, often uninhabited rivers. For this reason, in 1976, I chose Kaburi Creek in Suriname to begin the first detailed study of giant otters in the wild. Kaburi Creek is a tributary of the long Corentyne River that separates Guyana from Suriname.

I had already spent years studying other otter species in the wild and in zoos but nothing was known about giant otters except that their velvety pelt was so prized by the fashion industry that the species was listed as one of the 23 most endangered mammals in the world. Experts had predicted it would disappear in twenty years, so I volunteered to study it before it was too late.

At first I saw only fleeting glimpses of otters in the rivers I visited and I despaired



The velvety pelt of the giant otter was once so prized by the fashion industry that the species became among the most endangered in the world. —Photo Nicole Duplaix

of ever getting the data we needed to conserve them. Most of the time they dived into the river at my approach, their sunbathing interrupted. After months of patience, I began to get some facts. *Pteronura* in Suriname are seen in groups ranging in size from a pair to extended family groups of eight or more: two adults, two sub-adults and one to five cubs. I sometimes saw larger groups of 14 or more but these were probably two family groups traveling together. Solitary animals, usually sub-adults looking for a mate, sometimes passed through an area but seldom remained for long.

Even though the wild otters are elusive they leave signs behind. Each group clears a "campsite" along a stretch of bank and marks it with feces and urine, trampled into the mud in small circles. Churning up the sandy soil with their paws,

the group completely clears the leaves and saplings along the bank, leaving denuded spots, which contrast with the dense green vegetation on either side and are easy to spot—and smell.

The best sites, often perennial, are in key areas of the river, near "fishing ponds," on bends or close to shortcuts that avoid meanders in the creek. Larger sites may have a den in the bank, and some even have backdoors into the forest or leading to a swamp. Such sites are not chosen at random; they are often the only high ground areas along the creeks. One group may use and mark several campsites in its territory and use several dens to rear its cubs, switching from one to another for the night. Some sites are cleared then abandoned, whereas others in key locations near territorial boundaries are visited frequently.

Finally, after five months, the five resident groups of otters in Kaburi Creek accepted my presence and I could watch them day after day. At the height of the dry season in March, each group occupied a territory of about 1-2 miles in length and lived close to at least one of the floating grass island areas along the creek that are good fishing spots.

Like many carnivores, giant otters select their territory according to the abundance and the availability of their prey whose location may fluctuate seasonally. In Suriname *Pteronura* prefer slow-flowing clear black water creeks and rivers, particularly during the dry season when they prey heavily on fish that rest on the bottom in shallow water like the uri and catfish (kwikwi and jacky). A good territory should also have low sloping banks, made of clay



or sand, which is easy to dig, and plenty of cover. Cubs are born between August and October. The whole family sleeps curled up tightly together in the den chamber often no more than five feet long and 18 inches high. All these criteria are met in Kaburi Creek between mid-September and April, making it ideal dry season habitat.

The tight knit family does everything together. The parents and the sub-adults look after the cubs—quite a handful as the three-month old cubs learn to play and explore in the shallows, but they are rarely allowed to stray out of sight of an adult. Soon the cubs will catch small fish, even though they miss more than they eat and whine in frustration. Large caiman and anacondas are always a concern in the water as are jaguars or pumas on land. But the group, screaming and fighting as one, would put up a terrible fight to defend one of its members. And the massive strength of an otter's jaws together with its speed and swimming skills would make any predator hesitate.

When the rainy season starts in May, with its daily downpours, the water level in the creeks quickly rises over the banks. The fish migrate into the flooded forest and swamps to spawn, feeding on seeds, insects and fallen fruit. The otters with their five-month old cubs in tow follow their prey, and will not return to the river until mid-September. Though I would sometimes stumble across them by chance, I could not follow the otters into the tan-

gled and thorny undergrowth.

For two years my life was one with the otters of Suriname. It was a wonderful time. Then in September 2000, the Oceanic Society asked me to return to Kaburi Creek to assess current populations of giant otters as part of an initiative to attempt to have Kaburi and the sur-

rounding area declared a Nature Reserve. Since then I have returned to Kaburi Creek several times. Recently, concerned by the illegal gold mining operations in hitherto pristine rivers, I decided to return to the Guianas for three years, this time to train others to do the river surveys I had done so long ago. The giant otters needed help and I was quick to volunteer again. The Oceanic Society stepped in and convinced me that a regional training effort was needed—the giant otters of Guyana, Suriname and



Author Nicole Duplaix has been studying the giant river otters on Kaburi Creek in Suriname over a 25-year period. —Photo Ellen K. Rudolph

French Guiana all had similar problems. It was no longer an individual effort but a collective one: to set up a network spanning three countries. It was while we were struggling to bring together a group of biologists and people interested in the fate of the giant otter, that I met Diane McTurk. Diane has had singular success in rearing

when there were only a few scattered Amerindian settlements along the Rupununi River. There are no roads, no electricity, no stores. Karanambo Ranch is pretty much the same today, nearly a century later.

The Upper Rupununi River, located in southwest Guyana near the border of Brazil, is a large meandering river with high clay banks and long sand bars. Low scrub forest and gallery forest line its banks. Sometimes during the rainy season, the swollen river bursts through its banks and changes course, leaving isolated oxbow lakes behind.

Oxbow lakes can be small ponds covered in Amazon water lilies (*Victoria amazonica*), and floating grass mats such as those on Akuri Pond. The larger lakes, such as Buffalo Pond, are fishing spots highly favored by both the local Makushi Indians and otters. As in Kaburi Creek, there is also floodable swamp forest. Here, the thick clay soil drains slowly, leaving shallow clay pans that retain water well into the dry season.

In the larger Rupununi River near the Karanambo Ranch, the steep clay banks and sand bars along the river offer a dramatically different habitat to the Kaburi. The Group of Four use five dens, some with a steep and slippery access up an 8-foot vertical bank. Adults and cubs scramble up the bank at dusk, slipping and sliding in the mud to disappear into the den entrance until early the next morning.

Before swimming away just after dawn, they mark the



den entrances and access ledges with feces and urine. We could smell the rank and fishy odor of these 'mini' campsites as we approached. We found only one large otter campsite on the bank of Akuri Pond, and watched as the otters plowed through the lily pads, catching fish three-to-ten inches long, and then they came ashore and marked the latrine area before rolling themselves dry on the banks.

Diane introduced us to both the resident and transient otters in the Karanambo area. The resident group, The Group of Four was now the Group of Eight: composed of an adult wild pair (Anya and Zhivago) and their four surviving cubs (a fifth had disappeared) born in late October 2001, and a rehabilitated sub-adult pair (Persepone and Pluto).

Using the variation in white spots and blotches on their necks, the volunteers soon learned to identify the otters. After a few days, we could recognize the eight individuals in the resident group. Keeping our distance, we followed the group in a boat and watched The Eight for up to two hours at a stretch. It had taken me months to achieve this level of acceptance on Kaburi Creek but here, thanks to Diane's close relationship with her wild otters, we could observe them daily.

Every day I learned new things about the four cubs and their interaction with the adults. Though otters are shy and even Anya and Zhivago were cautious keeping their



Diane McTurk who has lived in southern Guyana most of her life, has had considerable success returning hand-reared otters to the wild.

—Photo Nicole Duplaix

four cubs away from us on the other side of the river, 40 yards away, we could watch them with binoculars and their antics kept us riveted for hours.

At feeding time, the cubs crowd around as the adults, propped on their elbows, eat their fish in the shallows, and the cubs whine, begging for tidbits. Twice a cub managed to snatch a fish away but the adult made no move to retrieve it. When they swam, the cubs stayed close to the leading adult, usually their mother, either in a cluster or strung out behind her in a line. Before setting off, Anya would make reassuring hum-cooing noises that appear to herd her offspring. Ten-foot black caiman, that could easily swallow a cub in one gulp, are not uncommon.

Pluto, the male sub-adult rehabilitated otter, was a very attentive "minder" of the cubs, bringing them fish after

he had fed, grooming them, herding them into the den, and generally being an excellent "baby sitter." Persepone, the female sub-adult, was also attentive but noticeably less so. Pluto and Persepone, cubs raised by Diane to adulthood, were accepted by the wild adults. The four of them, although unrelated, acted like an extended family group—a true measure of Diane's success in reintroducing hand-reared otters into the wild.

The group used three of their four dens in five days. One den was used for resting during the afternoon, another for sleeping at night.

After feeding, the otters often groom each other, resting on partially submerged tree limbs by the bank, again forming a tight cluster around the cubs. After a while the cubs may start playing together but remain within a few feet

of the adults. The otters then enter their den without pausing to rub themselves dry first.

We also surveyed the river immediately downstream from the ranch. We found excellent potential otter areas but no fresh traces, only seven abandoned campsites and two old dens that had not been used during this cubbing season. The resident otters had either moved away or, more likely, been shot. This is a prime area for commercial net fishermen and giant otters, which catch 6-8 lbs of fish each per day, are considered competitors by some fishermen.

The rivers near the Karanambo Ranch certainly offer ideal otter research conditions. The availability of resident groups that can be observed each day provides a unique opportunity for research. Diane and I hope that the Oceanic Society Expeditions volunteers who come to Karanambo Ranch share the excitement we feel every morning when we hear a chorus of giant otters fishing noisily upstream before swimming downstream to greet us. 🐾



DR. NICOLE DUPLAIX is the former Chairman of the IUCN Otter Specialist Group, and has 18 years' experience studying otters worldwide. She is author of the 2001 World Wildlife Fund report "Evaluation of the Animal and Plant Trade in the Guyana Shield Eco-region."