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Alter do Chão



The Tapajós River seen from the village of Alter do Chão. Photo by Bill Magnusson.

The Tapajós River flows into the Amazon River near the city of Santarém, and the Amazon's water backs up the Tapajós into a mouth lake or ria, 14 km wide. Santarém is the largest town between Manaus and Belém, but the township that existed before European and African colonization may have been even larger. A dry belt crosses the Amazon basin in the region of Santarém, and many areas are covered by open savanna rather than rainforest.

About 30 km upstream by road from Santarém, near the mouth of a small lake, is the Village of Alter do Chão. Originally inhabited by Tapajós Indians, it was colonized by the Portuguese in 1661. Many people still live by subsistence agriculture, but the village's main economic activity is tourism. The area around Alter do Chão is called the Caribbean of the Amazon because of its sandy beaches and sunny skies for much of the year. From a hill near the village you can see the patchwork of savanna and forest around the village. You can also see the shore of the Tapajós directly opposite the village, but you cannot see land on the horizon when looking upstream along the ria lake.

Tânia Sanaïotti studied birds in the savannas near Alter do Chão for her Masters thesis. Slightly built and very pretty, Tânia turned the heads of all the boys. Of Italian decent, Tânia had the habit of talking with her hands. When I was giving lectures, the other students would bet on the precise moment at which Tânia would interrupt the class by knocking all her books onto the floor. Even today, people clear drinking glasses and other breakables out of the way while Tânia is talking. Despite leaving a trail of broken ornaments in her wake, she is very competent in the field, and has studied many different types of organisms at Alter do Chão, including plants, frogs and caimans in her spare time.

Not being very socially competent, I was never comfortable in Alter do Chão, despite the fact that the local people were extremely friendly and hospitable. It

also took a long time to cross the bay in front of the township and walk into the savanna. Therefore, I camped behind a beach about 2km from the village, close to our principle study site for plants and birds. I was worried that someone might steal my equipment when I was in the savanna, so I hid the camp in the forest, where it couldn't be seen from the beach.

The first time Tânia went to Alter do Chão, she walked into the savanna in search of the rusty-backed antwrens she was studying. The savannas are not continuous, and the forest patches form a maze that is disorienting when you first try to cross it. Tânia got lost, walked two kilometers across the peninsula, and ended up 5km downstream of the camp in terms of distance along the shoreline. When she came onto the beach, she found a fisherman's hut and asked for directions to my camp. The fisherman, who I had never met, replied in Portuguese "Bill hides his camp in the forest behind the beach," and proceeded to give precise directions as to how to get there. So much for my trying to esconce my activities from the locals!

In the early days, I borrowed a boat to ferry gear to the camp. In most places in the Amazon, people get around in dugout canoes propelled by a single paddle. This allows a considerable degree of maneuverability, and the narrow canoes are good for travelling through flooded forest. However, they are unstable, and it is difficult for an inexperienced person to sit in one, much less paddle it around. Local children are often given their own canoe, only a meter long, when they are a few years old, so they do not lack experience or competence, but large, clumsy outsiders, such as myself, do not do well in dugout canoes.

Alter do Chão is the only place in the Amazon that I know of where the people use conventional rowboats, made of calked planks, and row facing backwards with two oars. This was good for me, because my father had spent much time trying to make me a competent oarsman, and the boats at Alter do Chão were

wide and could carry heavy loads. I enjoyed rowing across the wide expanses of the Tapajós, and would often spend several hours rowing even when a motor boat was available that could have gotten me to my destination in 10 minutes.

The people at Alter do Chão said that black caimans had lived in the lake in front of the village at one time, but they had been hunted out, and now I was unlikely to encounter anything but spectacled caimans. This made sense, because black caimans did not seem to reach high densities away from the sediment-laden white-water rivers, and large expanses of beaches would not provide refuges for hunted caimans. I was not particularly sad about the local extinction of the black caimans, because the sandy beaches were a paradise for tourists, and hundreds of children splashing around in the shallows with big caimans would not be a good combination.

I spent many nights walking the beaches between Alter do Chão and my camp or rowing close to shore, and never saw a caiman. However, close to the camp, the low dunes at the shoreward side of the beach enclosed an oval lake about 100 m long and 50 m wide. During the high-water season, the river water flowed over the dunes and filled the lake with water, fish and other aquatic fauna. At low water, the beach was over 100m wide, and the lake dried completely in some years. The local people took advantage of the fish concentrated in the lake as the water level fell, and would pass seine nets to rake out everything they could.

I didn't imagine that any large vertebrates could survive in the lake. However, one day, when the lake water was high, I was walking through the forest that bordered the landward edge and came upon a pile of dead leaves. It looked like the piles of leaves that jaguars use to hide their kills, but when I dug into it I found eggs. The spectacled caimans not only survived around the lake, they bred there. That night, Tânia and I rowed the boat along the beach to the lowest

point on the dunes, and dragged it into the lake. This wasn't easy, because the boat was made of planks of resistant tropical hardwood, which are very heavy. We inched the boat upwards with coordinated heaves that served mainly to drive our feet into the soft sand. Even going down the lakeward side of the dune wasn't easy, because the heavy boat dug into the sand.

Once into the lake, we could see about a dozen pairs of eyes reflecting in our headlights. All except one pair disappeared under the water soon after I started rowing, and I turned towards the red coals with Tânia leaning over the prow ready to catch the caiman. When we were almost on it, the caiman turned into a nightjar and flew away. It would have been easier to catch a bird than to catch the caimans in the lake by hand. I tried sneaking up on them from land, but I only caught a few small individuals that settled into the leaves in very shallow water. Their vulnerability in the shallow lake had made the caimans very wary.



Photo 13.1 Tânia Sanaïotti and Bill Magnusson at Alter do Chão.
Photo by Xavier Desmier.

One night, I walked across the dunes and saw the reflections from a dozen pairs of eyes close together in the shallows. I had to wade through deep water to get around dense bushes along the shore, and then slosh through shallow water with leaves and other debris to get to the caimans. By the time I was standing where they had been, they had disappeared, but there was a strong odor of rotting flesh. As I walked onto the bank I came across the bloated carcass of a dead rat, which had obviously been what had attracted the caimans, and that gave me an idea for a trap, similar to the one that Grahame Webb had used to catch the saltwater crocodile Puffett many years before.

Late in the afternoon, Tânia and I set a gill net in a semicircle enclosing an embayment in a shallow part of the lake. We staked the lead line onto the bottom, and the floats kept the net suspended in water about 70 cm deep. Low shrubs and small trees lined the bank, and we left a pile of rotting fish under them to serve as bait. About an hour after sunset, we approached the net from different directions, crouched over to move through the bushes, we kept our lights on the ground so as not to alert the caimans. The freshwater sponges that grow on the bushes during high water left spicules of silica that brushed down our backs and caused chafing and itching, but we concentrated on the ground directly in front as we crawled along.

When we were about 10 m from the bait, I looked up and saw a dozen eye shines near the fish. The caimans had swum over the net and were between it and the shore. Together, we ran yelling towards the caimans. The eyes disappeared, but the floats went down and we had six animals thrashing in the net, together with quite a few fish. None of the caimans were very big, and we measured, marked and released them all within a few hours, so happy with our catch that we were oblivious to the mosquitoes that feasted on us as we sat in the sand.

I thought that the method might not work after the caimans had been caught once, but it seemed that they had learned that they could be caught without being killed, and the bait was a powerful attractant. Nevertheless, their behavior changed. The next time we ran up to startle them, they dove, but the floats remained on the surface and there were no tugs on the net. It appeared that there were no caimans in the trap, but I could not see how they could have escaped. I walked up to the net and focused the headlight into the brown transparent water. A caiman swam past on the bottom, carefully pushing its snout into the net to see if it was loose, then backing off when it wasn't to try another part. It was followed by another doing the same thing. They had learned to probe the net with their toothy snouts without getting meshed.



Photo 13.2 Bill Magnusson setting a net for caimans in a small lake off the Tapajós River. Photo by Xavier Desmier.

I watched them try to lift the lead line for about 10 minutes, and I had to grab one by hand when it found a place where the net wasn't staked well and started

to slip under it. However, when they realized that there was a complete wall of net, the rest of the caimans just layed on the bottom beside the net and tried to remain inconspicuous. That didn't work, because we had powerful headlights and were determined to catch caimans. We just grabbed them by hand. However, I could see that the strategy would work with fishermen, who had no interest in caimans if they were not entangled in their nets, and whose kerosene lanterns would not let them see far into the murky water. Nylon fishing nets had been used intensively in the region for only a few generations, but already there had been selection for caimans that knew how to deal with them.

The data on the caimans at Alter do Chão would change my ideas about growth in crocodilians. Most researchers had used simple methods based on the relationship between growth rate and size to estimate ages of crocodilians. The mathematical models differed, but they were all variations on a generic model called the Richards' curve. Growth of the spectacled caimans at Alter do Chão did not conform to the Richards' model, and data collected by Zilca Campos would later show that those models were also not appropriate for several other species of caimans. Perhaps more important though, was that the caimans taught me just how adaptable crocodilians can be in places that are heavily used by humans if they just have a few natural or seminatural areas where they can take refuge.