

# CONSERVING OTTERS IN THE PANTANAL ECOTOURISM: BANE OR BOON?



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## AN ENORMOUS WETLAND

The Pantanal, a vast wetland shared by Paraguay, Bolivia, and Brazil, is known for its beauty and abundant wildlife. The Paraguay River winds through the region, flooding it during the annual rainy season. Swamps, lakes, forests, and grasslands provide additional wildlife habitat. In recent years, the Pantanal has become an increasingly popular destination for nature-loving tourists eager for a chance to see capybaras, caiman, howler monkeys, and jabiru storks.

For decades, cattle ranching has been the main economic activity in the region. As ecotourism increases, many ranches are doubling as hotels for paying guests. In addition to lodging, visitors need food, transportation, and wildlife guides to lead them through the wetland. The needs of the tourists generate jobs for the local population.

Ecotourism's potential to bolster local economies can encourage conservation in wild places threatened with development. When local communities see real benefits, in terms of economic growth, in preserving their wildlife habitat, they become the most effective advocates for sustainable environments.



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## OTTER HOMES

Otters alter their surroundings by creating resting sites and other special places, removing dry leaves, and trampling newly sprouted plants. When researchers compare the characteristics of sites used by otters to those of adjacent, unused sites, they learn how otters modify their environment.

human disturbance. In southern Peru, using otters as to amuse tourists has resulted in reduced habitat quality and less reproductive success. Wildlife viewing has caused problems for other species as well. In the Pantanal, some birds have abandoned eggs or young when disrupted by visitors. The giant otter and the neotropical river otter are both rare. If excursions to view them are not carefully controlled, wildlife enthusiasts could push them closer to extinction.

What regulations would allow sustainable tourism focused on otters to take place in the Pantanal? At this point, no one is sure. Effective regulations would prevent people from approaching **natal** dens, where otters raise their cubs, and other places important for reproduction. But so little is known about Pantanal otters that it is not clear where visitors should be allowed or excluded. Researchers Helen Waldemarin and Miguel Barroeta are working to change this. Their investigation of giant and neotropical river otters in the Pantanal will yield information about the biology and ecology of these little-known species. Armed with this knowledge, they can recommend conservation measures to those who regulate Pantanal waterways.

## OTTERS AND TOURISTS

The giant otter (*Pteronura brasiliensis*) is curious, noisy, and playful, and therefore an ecotourist's delight. It is **diurnal**, just like most tourists. When disturbed by a person, it is more apt to swim close and investigate than to slink off into the jungle. Giant otters also live in groups that have fixed territories. Tour guides who know an otter family's "address" can count on having something to show their clients. And, giant otters are large, so tourists don't have to squint through binoculars to see them. Adults can reach a length of 1.8 meters (nearly 6 feet). The Pantanal is also home to the neotropical river otter (*Lontra longicaudis*). Smaller than the giant otter, it is also playful and curious and fun to watch.

While otters are quintessential tourist attractions, they are also very sensitive to

## HABITAT REQUIREMENTS

Determining the habitat requirements for each otter species is a central part of Waldemarin's and Barroeta's investigation. Otters, like most other animals, are particular about where they live. Giant and neotropical river otters are semi-aquatic animals that inhabit river banks and lake shores. Neotropical otters live along the sea coast, as well. They hunt for fish and other prey in the water, but they also spend time on land. Each family group of giant otters or individual neotropical river otter inhabits a territory within which there are dens, resting sites, and latrines (rocks or logs on which otters deposit their waste). To understand habitat requirements, Waldemarin and Barroeta locate and observe these places.



## INVESTIGATING OTTER DIETS

What do Pantanal otters eat, and how important is each prey item in the overall diet? Does the giant otter's diet differ from that of the neotropical river otter, or do the two species compete for the same food resources? Waldemarin and Barroeta are eager to find out what the otters' diets consist of. Direct observations yield some information. When researchers happen upon otters that are feeding, they take data on what the animal is eating. But chance observations won't yield sufficient data—otters often eat when scientists aren't looking. Even when they are watching, scientists may not be close enough to identify prey.

Waldemarin and Barroeta, with the help of volunteers, gather additional data from otter **spraints**. Since otters use designated sites as latrines, spraints are not hard to find. Once found, spraints are put into plastic bags and labeled. Later, each will be placed in a **sieve** and washed with water. Any fragments that remain in the sieve are dried, separated, and identified in a rough sort of way: hair in one pile, scales or feathers in another. Later, with the help of specialists, these fragments will be identified more exactly.

Listing the items on each species' "menu" is a beginning. Waldemarin and Barroeta also want to know how important each prey item is. This requires some mathematics. They count up the number of spraints that contained a particular prey item and divide that by the total number of spraints. This yields the percent of dietary frequency. To learn whether giant and neotropical river otters are competing for the same food resources, the difference between the percentages of each prey item found in the two species' spraints is analyzed.

## REPRODUCTION IN RIVER OTTERS

Although the neotropical river otter is widespread in South America, and is found as far north as Mexico, very little is known about it. Basic information about its life cycle, such as how reproductive activity and the birth of cubs relate to the season, is unknown.

Waldemarin and Barroeta also investigate these matters using otter spraints. Spraints contain traces of hormones as well as indigestible food fragments. When chemical analyses are performed on spraint samples, the levels of various sex hormones, such as estradiol, progesterone, and testosterone, can be assessed. The otters themselves are not needed to obtain this data, so they are spared the stress of capture.

The habits of neotropical river otters allow a great deal of information to be gathered from their feces. Each animal uses its own private latrine area. Researchers can collect spraints from a particular spot and determine whether they were deposited by a male or female otter. If the research teams collect spraints



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from the same spot, over time they can know if the feces were deposited by the same individual. Through repeated collection and chemical analysis, changes in the hormone levels of particular animals can be monitored. This can help researchers identify places and times of year that are important for reproduction. Decisions about where and when to allow otter watching can follow. The habits of giant otters make it impossible to get this kind of information from their spraints. Since members of a family use a

communal latrine, spraints can't be traced to particular individuals.

### OTTER TOURISM

Characterizing and comparing the dens, resting sites and latrines that Pantanal otters use, and knowing more about their reproductive and feeding habits enables Waldemarin and Barroeta to determine the survival requirements for each species. Reliable information about what each needs to survive and thrive is an essential foundation for ecotourism.

### GLOSSARY

**diurnal** – active during the day.

**natal** – of or associated with the time or place of one's birth.

**sieve** – a utensil of wire mesh or closely perforated metal, used for straining and sifting.

**spraints** – otter feces.

### FIND OUT MORE

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#### Web Sites

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Giant River Otter/Frankfurt Zoo  
<http://www.giantotters.com/>

#### Key Words

Giant otter, Pantanal, Brazil, wetlands, conservation, neotropical river otter

Volunteers have joined this project through Earthwatch Institute. Read more about this study and other scientific field research at [www.earthwatch.org](http://www.earthwatch.org).



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