

# Oryx

## Using drones to survey the Amazon's river dolphins

By Miriam Marmontel, 24th October 2019

Imagine seeing a group of long-beaked dolphins as pink as the Pink Panther, breaking the surface to breathe. Now picture them swimming through thousands of murky, clear or black watercourses in the middle of the largest tropical forest. Welcome to the world of the pink and tucuxi dolphins, exclusively found in the Amazon and Orinoco basins of South America.



Launching a drone for surveying river dolphins.

These magnificent, witty and enigmatic animals have captured the imagination of Amazonian peoples for centuries. Pink dolphins are regarded as enchanted animals, and tucuxis are said to help fishermen. However, the proximity of these dolphins engenders both positive and negative feelings, and anthropogenic activities pose many threats. Dolphins may become entangled in fishing nets, injured for stealing fish from gear or culled for fish bait, and often become isolated by

man-made structures, encounter rubbish and pollutants in the water, and eat prey contaminated with mercury from illegal gold mining operations.

Dolphins are considered good indicators of freshwater health, showing early signs of distress or decline. To understand the intricacies of the dolphins' lives, their role in their ecosystem and their future, we have sought to determine population numbers over time and across the regions' watercourses, while taking into consideration the various threats and stressors they face.



Pink river dolphin surfacing.

We started with a large double-decker regional boat, a team of 12 and a 400 km trip by river, watching for dolphins from sunrise to sunset and collecting data on locations, species, numbers, angles and distances. This experience taught us much, notably that covering the extent of the Amazon by boat is not feasible, and that it is logistically very expensive, especially in Brazil's current political climate. We realized we needed to be more strategic and started experimenting to find a way to improve survey methods so as to sample more areas in a shorter amount of time and over the three types of watercourses.



Launching a drone for surveying river dolphins.

We started testing drones, a new form of technology that is increasingly being used by conservationists. Drones are also becoming more powerful, user-friendly and economical. When we began, we had no clue where to start when it came to monitoring methods: What altitude should we be flying at? What is the best camera angle? How long can we fly for? Almost 2 years later, we now know that drones are very effective for detecting river dolphins. We think the technology could be used by protected area managers to generate estimates of dolphin numbers across the region (as long as channels are not too wide). The next step will be adjusting the method to improve population studies of freshwater dolphins in the Amazon.



A drone over a dolphins group in the Mamirauá Reserve.

The growing threats to the Amazon, particularly over the last few months, means finding innovative ways to study and protect biodiversity and improve human wellbeing is critical. Although most eyes are on the forest fires, deforestation also erodes river banks, flushes debris and pollution into the water, and causes siltation. Dolphins are not only excellent bioindicators, but as charismatic species they can also help engage society in the protection of biodiversity.

All photos: Mauro Pimentel/AFP

The article [Effectiveness of Unmanned Aerial Vehicles for detection of Amazon dolphins](#) is available in *Oryx—The International Journal of Conservation*.



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