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New Dolphin Discovered in Brazil
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In the Amazon Basin in central Brazil, local legends claim that it is bad luck to kill a river dolphin—just looking one in the eye may cause a lifetime of bad dreams. But there's another reason to protect these large freshwater creatures: A new study finds that instead of two species in the basin, there are actually three. And each is rarer than anyone realized.

Amazon river dolphins, which can be pink or gray and have a longer beak than marine dolphins, are under pressure. Despite the taboo against killing them, in some areas fishermen cut them up for bait to catch bottom-feeding catfish. Hydroelectric dams fragment their habitat, and overfishing depletes their food supply. Population data on the animals is incomplete, so their true conservation status is unknown, but their numbers are far smaller than many common marine species of dolphins, whose populations are composed of hundreds of thousands of individuals. As scientists collect more genetic data, they are beginning to realize that there is not one river dolphin, but multiple species living in isolated basins in the Amazon.

Researchers officially announced the discovery of a third river dolphin in a study published online today in *PLOS ONE* [1]. The new species is named *Inia araguaiaensis*, after the Araguaia River Basin that it calls home. Scientists knew that river dolphins inhabited the region. But they suspected that the group might be its own distinct species because it is isolated from other groups of river dolphins in the Amazon River system by a series of rapids.

Researchers compared sections of nuclear and mitochondrial DNA from the three species to show that they each have evolved separately and are not interbreeding. They also compared two male and two female *I. araguaiaensis* skulls with skull measurements from the other species and found small differences in the number and shape of certain teeth, and a slightly wider skull. They examined so few specimens because finding dead animals is difficult. "These are occasional finds, so you cannot do a proper sampling design," says lead researcher Tomas Hrbek, an evolutionary biologist at the Federal University of Amazonas in Manaus, Brazil.

Hrbek and his team estimate that *I. araguaiaensis* has been isolated from the species in the main Amazon River Basin, called *I. geoffrensis*, for more than 2 million years. The two likely split when the mouth of the Araguaia River shifted to the east to empty into the Atlantic Ocean instead of the Amazon River. The habitat ranges of the two species potentially overlap in a small area downstream of the rapids where a narrow canal connects the mouth of the Araguaia River with the Amazon River delta. The researchers plan to conduct surveys of the area to see if both

species live there without interbreeding. “That would be conclusive evidence of biological species-level differences—a natural test,” says Scott Baker, a conservation geneticist at Oregon State University, Corvallis, who was not involved in the research.

Eric Archer, a cetacean geneticist at the National Oceanic and Atmospheric Administration’s Southwest Fisheries Science Center in San Diego, California, expects that the newly described species will be accepted by the research community. “The genetic lines of evidence are very strong,” says Archer, who was not associated with the study. He would like to see physical measurements of more animals, however, to catch the full range of variation. The species may even make different types of whistles to communicate, he says.

The discovery could have important conservation implications for the new species, Hrbek says. “Based on census data there are probably only a thousand individuals, which is a very small population size,” he says. “We looked at genetic diversity and it’s quite low compared to the other species,” he says. “It’s not a very rosy picture.”

Based on these findings, the researchers argue that *I. araguaiaensis* should be considered vulnerable by the International Union for Conservation of Nature, an organization that assesses whether plants and animals are endangered. “By recognizing that these are each three unique diverging lineages, the loss of any one of them is not replaceable,” Baker says.

Photo caption: ***Dolphin discovery****. Say hello to the new river dolphin species of the Araguaia River in Brazil,* I. araguaiaensis*.*

(Credit: Nicole Dutra)

Links:
[1] http://dx.plos.org/10.1371/journal.pone.0083623