

With satellite monitoring, South American dolphins tell us their story

First monitoring results from 2017 to 2019.

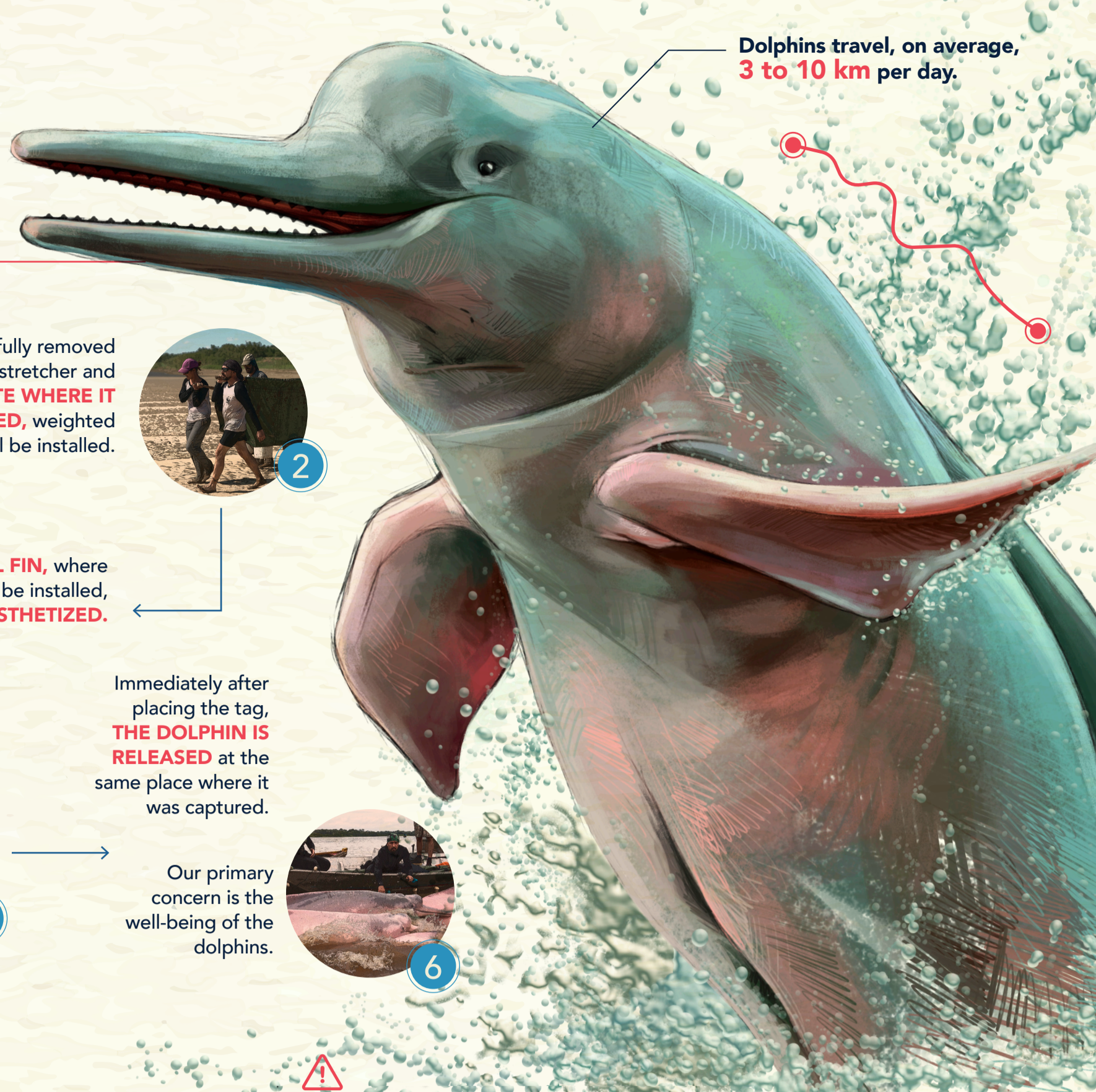
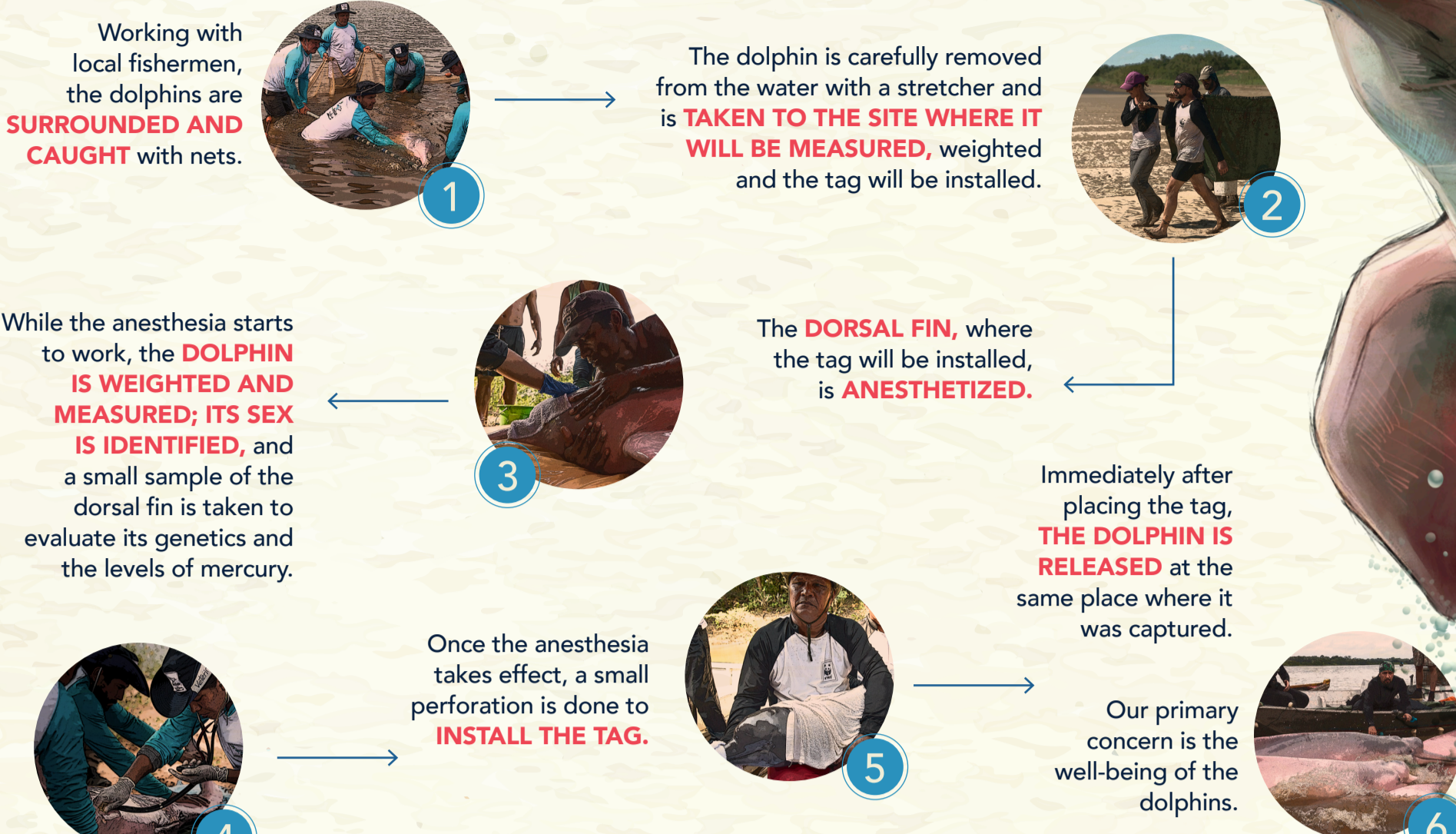
Since 2017, scientists from the South American River Dolphin Initiative (SARDI) have undertaken an unprecedented study: the first satellite monitoring of freshwater dolphins in Amazon and Orinoco basins, aiming to improve knowledge and conservation of their key habitats for reproduction, feeding and refuge, their movements and increasing threats that they face.

It's a regional effort led by WWF in Bolivia, Brazil, Colombia, Ecuador and Peru along with its partners Faunagua, Mamirauá Institute, Omacha Foundation, and Prodelphinus, which are part of the SARDI and work for the conservation of river dolphins and their habitats.

How was the satellite monitoring done?

Installing satellite tags on the dolphins' dorsal fins in an articulated effort between biologists and veterinarians - to ensure the well-being of the animals - accompanied by officials from the protected areas, environmental authorities and local fishermen who already know the territory.

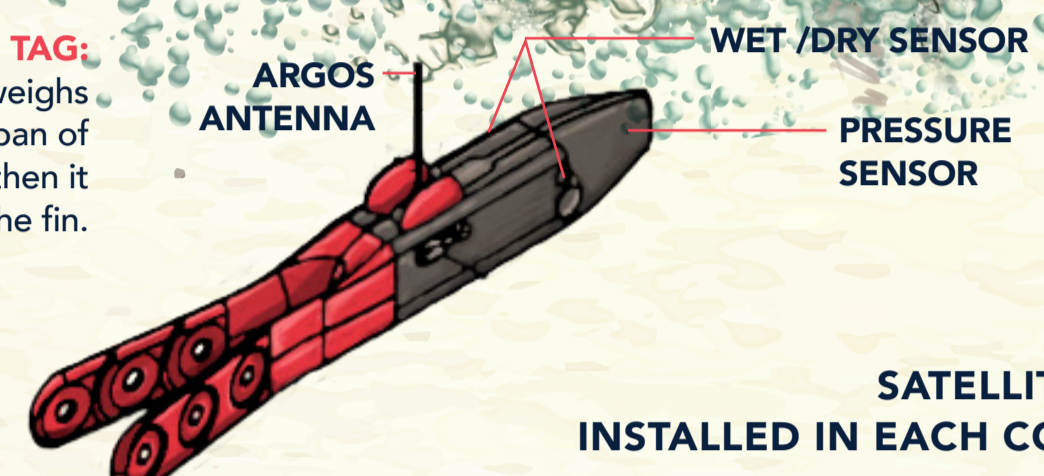
Step by step of the tagging process



They can weigh up to **200 kg** with males being larger than females.

Animals can measure **2.76 m** of max.

THE LIFESPAN OF THE TAG: The transmitter, which weighs **145 GRAMS**, has a lifespan of **5 TO 8 MONTHS** and then it releases itself from the fin.

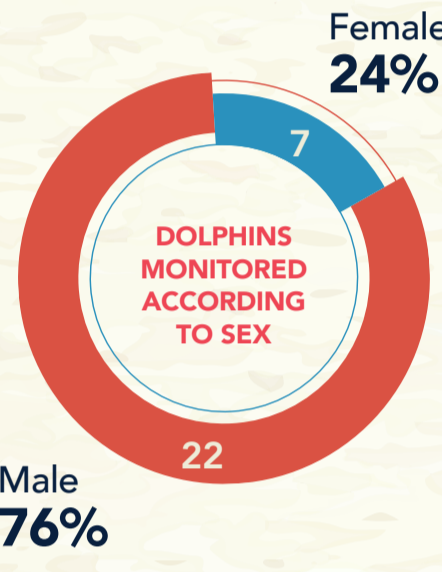


SATELLITE TAGS INSTALLED IN EACH COUNTRY

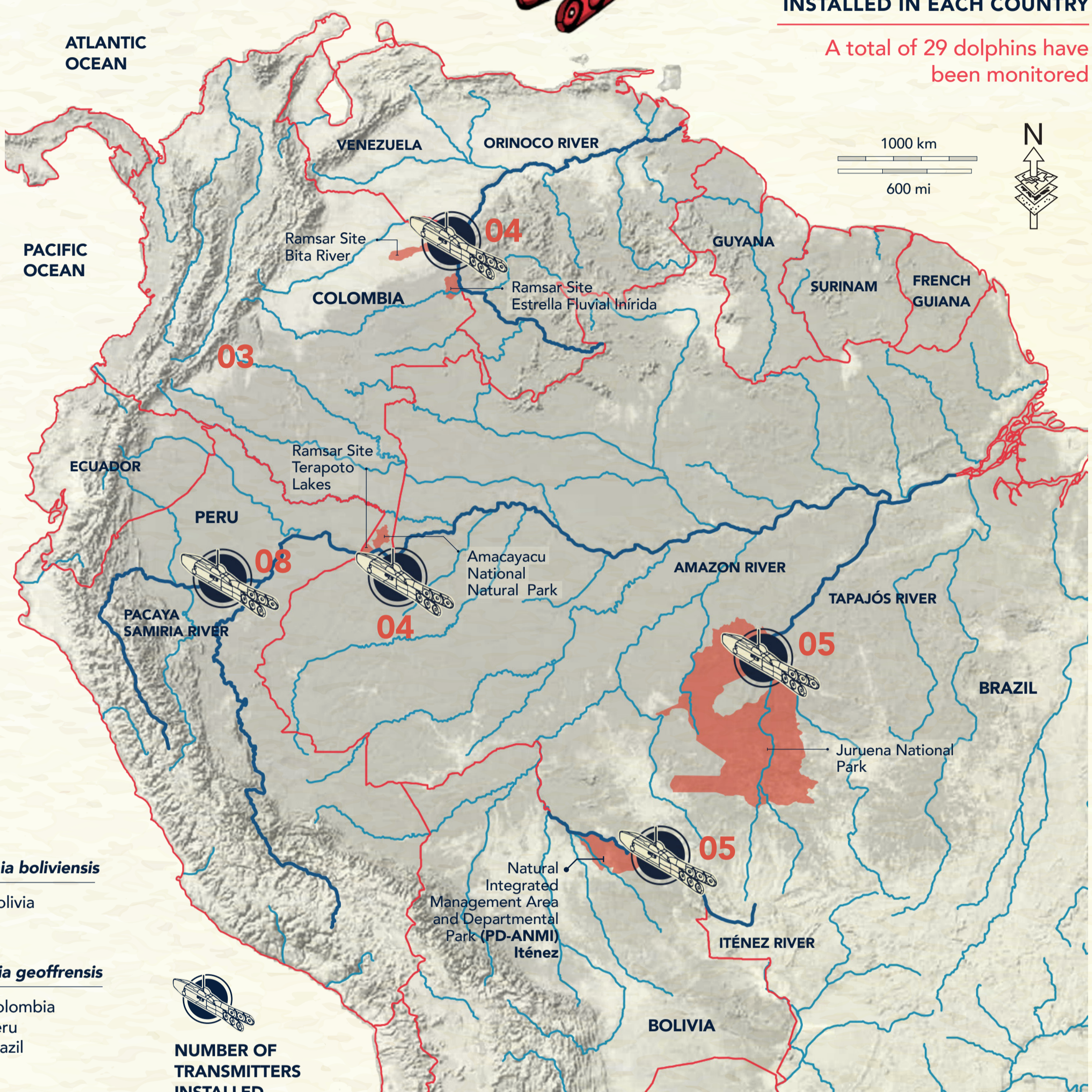
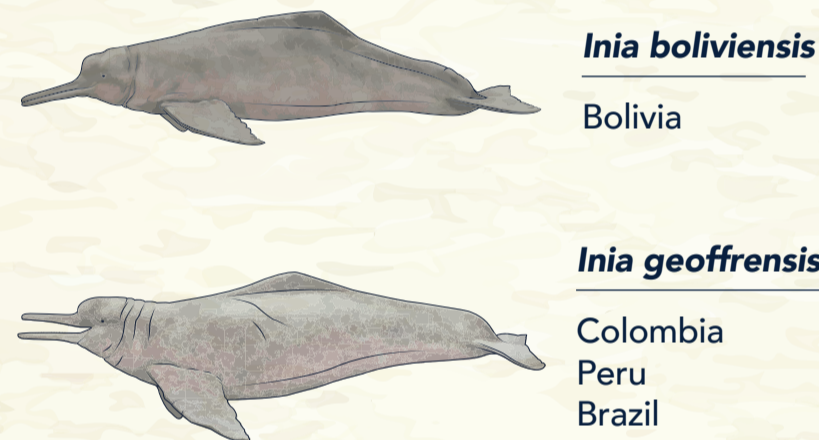
A total of **29** dolphins have been monitored

What is monitoring for?

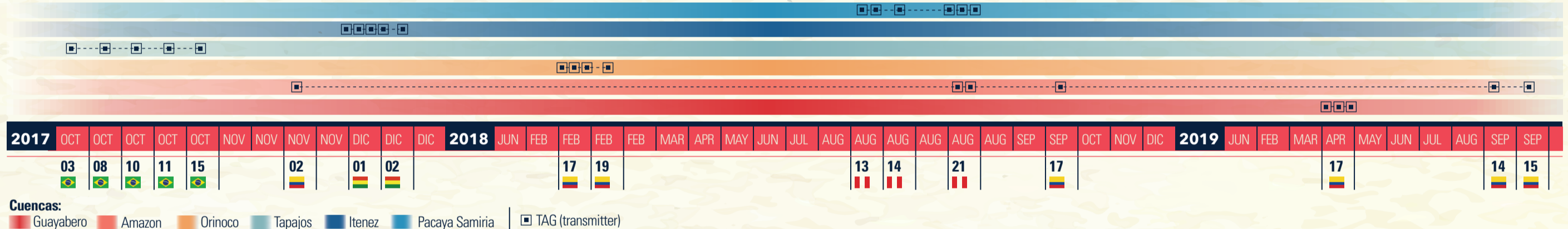
- To identify the strategic habitats of dolphins in the Amazon and Orinoco basins.
- To evaluate the importance of protected areas and Ramsar sites for the species.
- To understand the movement limitations of the dolphins caused by the dams



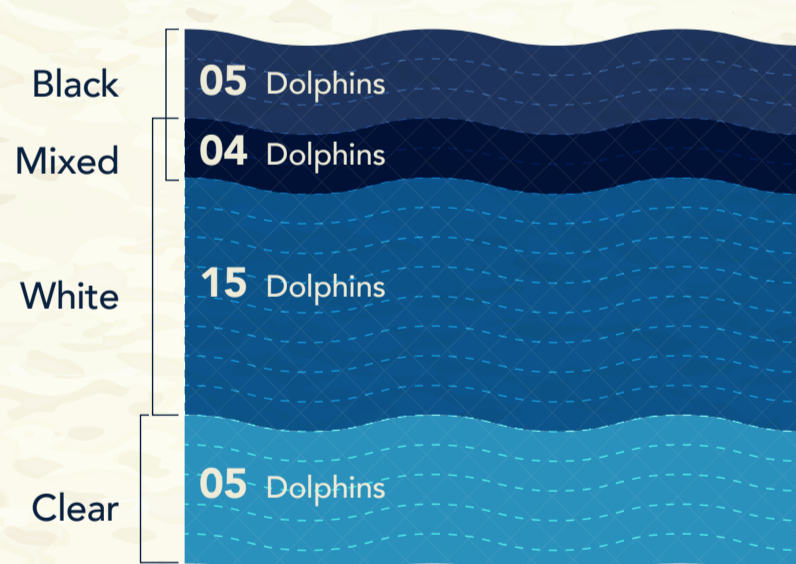
Species of river dolphins that have been monitored



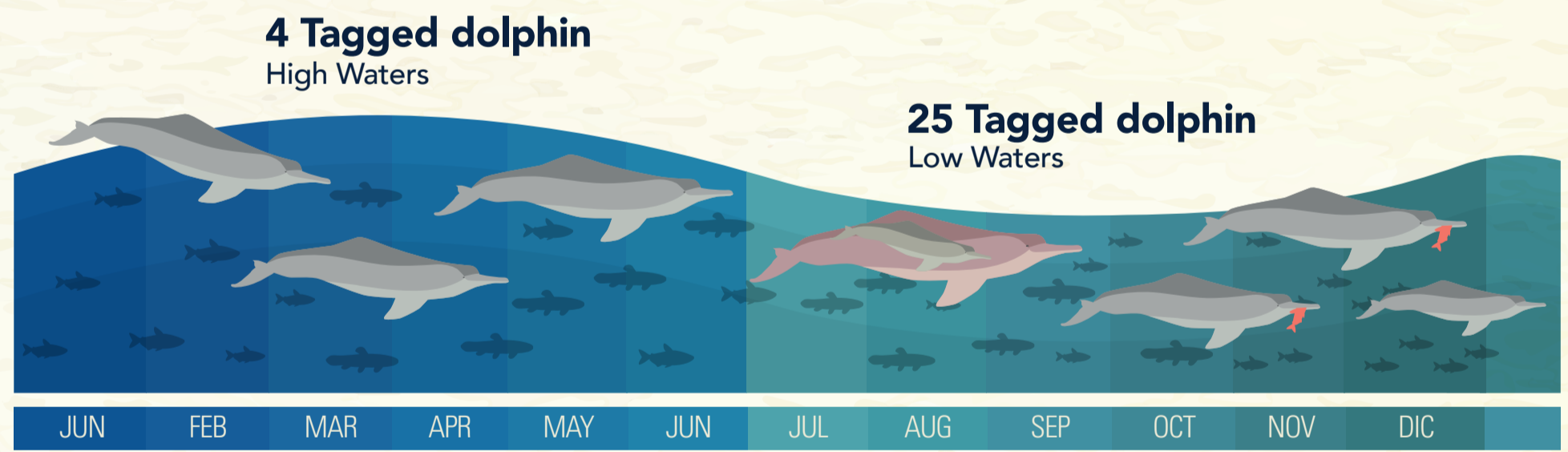
Satellite tagging timeline



Type of water



Dolphins tagged according to the river flood pulses



What lessons have we learned from satellite tagging?

- Females move less than males.**
The movements of males and females are different. Females move less, possibly due to the reproductive processes of pregnancy and care of the offspring. Males have more extensive movements in search of females to reproduce and fish to feed.
- They need different aquatic environments to live in.**
They need confluence areas (connection of rivers and water exchange), lagoons, river channels and tributaries, and even shallow areas near beaches, where they mate. They are sensitive to changes in these areas.
- Their movements are associated with this type of water they are in.**
There is a relationship between the types of water and the average displacements of the dolphins: those that live in white waters (Amazon and Pacaya Samiria rivers) move less because these areas are very productive wetlands and have more fish than black or clear waters. In Bolivia, the San Martí's river dolphins (clear waters) moved possibly in search of food and in Brazil, the Tapajós River dolphins (black waters) have average displacements.
- They have larger home-ranges than other mammals.**
The habitat of river dolphins is larger than other large land mammals' habitats: it's twice that of a jaguar and four times that of a tapir.
- Their displacements have no borders between countries.**
They use transboundary wetlands for food, shelter, and reproduction, so they need federal and regionally connected rivers. For this reason, these sites must have national and international protection categories of conserved Protected Areas. Some key places are:
 - Pacaya Samiria National Natural Park (Perú)
 - Ramsar Site Terapoto Lakes (Colombia)
 - Juruena National Park (Brazil)
 - Natural Integrated Management Area and Departmental Park (PD-ANMI) Iténez and Ramsar Site Blanco (Bolivia)

- The climate determines the life cycles of the dolphins.**
In the rainy season, the fish reproduction processes are activated, and they leave the tributary rivers towards the confluences, where the dolphins wait for them to feed, and they move accordingly to the rhythm of fish migrations and flood pulses of the rivers.
- Dolphins movements happen in groups.**
They behave like family groups such as the capybaras, which differentiates them from those of big cats like the jaguar, whose behavior is usually solitary.
- River dolphins also use the flooded forest.**
In high water season, they can move in the flooded forest and in low water they use the main channel of the river.
- Hydroelectric power plants: Today's energy solution is tomorrow's food problem?**
Dams isolate river dolphins and interrupt fish migrations, causing the reduction of their populations. These barriers block the natural flow of the sediments, the natural fertilizers of the forest, change the river flow and affect flood pulses of the rivers, which normally provide seeds and fruits for the feeding of fish.
- Illegal mining and mercury threaten life in the Amazon and Orinoco.**
100% of the dolphins tagged between 2017 and 2018 has levels of mercury, especially those in the Orinoco basin, where there is a large illegal mining arch near the Ventuari and Atabapo rivers on the Colombia-Venezuela border. Mercury is a metal used in the extraction of gold, pollutes water and air, threatening human health and livelihoods (fishermen) and biodiversity.

The next steps in monitoring

By 2022, SARDI expects to have at least 50 dolphins tagged with satellite tags to have evidence of the most widely used habitats, which are key to conservation in all the countries where they are distributed. Also, to show that the loss of connectivity of rivers caused by dams limits movements and access to key habitats of dolphins, fish, and other aquatic vertebrates.