REPORT TO YAQU PACHA – TONINHAS PROJECT / UNIVILLE

São Francisco do Sul, Santa Catarina, Brazil. June 2018.

The franciscana (*Pontoporia blainvillei*), or toninha (Fig. 1), as it is best known in Brazil, is a dolphin species endemic to the southeast coast of South America. Due to the intense accidental mortality in fishing nets, the toninha can be considered one of the most endangered small cetaceans in the world. With small size, cryptic coloration and discrete behavior, it is hardly seen in nature, which makes this species unknown even by the coastal populations where it occurs. Popularizing the toninha and defining strategies to reduce bycatch are the main challenges for its conservation.

Figure 1: Toninhas (*Pontoporia blainvillei*) sighted in Babitonga Bay, southern Brazil.

The Toninhas Project, performed by University of the Region of Joinville - UNIVILLE with the sponsorship of Petrobras, through the Petrobras Socioambiental Program, is conducting efforts of research, management and environmental education in the State of Santa Catarina, southern Brazil. One of the main places of activity is the Babitonga Bay, where exist the only known population of toninhas resident during the whole year in an estuarine environment, making possible to use of photoidentification method (Fig. 2). Dr. Marta Cremer, general coordinator of Toninhas Project, has carried out studies with this population since 1997. However, from 2011 to now, with the start of the sponsorship of Petrobras, it was possible to increase the scope of activities.

Figure 2: Toninhas Project's team carrying out photoidentification efforts in Babitonga Bay.

One of the main research lines of the Toninhas Project, which is in its third edition, is the Static Acoustic Monitoring (SAM). Using thirty-five C-PODs (Chelonia Limited) (Fig. 3.A and C), SAM experiments have been conducted to deepen the knowledge on the distribution, habitat use, acoustic behavior and population size of toninhas. This study integrates the doctoral thesis of the biologist Renan Paitach, who is also the research coordinator of the Toninhas Project. SAM is carried out in two locations: Babitonga Bay and in the Right Whale Environmental Protection Area, a marine protected area with 130 km of coastline. In both areas, the results will support the development of a fishing management proposal that will be developed in a participatory manner with the local communities. Twenty C-PODs were loaned by Swedish Agency for Marine and Water Management - Swam, by the intermediary of Dr. Mats Amundim of Kolmarden Djurpark (Sweden), a partner of the Toninhas Project and the second supervisor of the thesis. The remaining C-PODs were purchased with financial support of Chelonia Limited (UK). Yaqu Pacha is also one of the main supporters of the Toninhas Project and was indispensable for establishing other partnerships, as well as financing exchanges and technical training for the team. The national and international partnerships of the Toninhas Project are fundamental for achieving its objectives (Fig. 4).

A parallel experiment is being carried out with the C-PODs and already show many promising results: it is the use of an acoustic repellent called Banana pinger (Fishtek Marine) (Fig. 3.B). The equipment, which operates in approximately 30-hour on/off cycles, is positioned within a grid of C-PODs at different distances, which monitor the presence of toninhas and consequently the behavioral response to the sound emitted by

the pinger. A very clear effect on toninhas has been observed. When the pinger is on, there is an immediate withdrawal, which can be observed up to 100m away, but not more than that. When the pinger turns off, the toninhas return to the area in few minutes later.

Figure 3: Toninhas Project team performing the installation of a Static Acoustic Monitoring equipment (C-PODs - Chelonia Limited) in Babitonga Bay (A) and an acoustic repellent (Banana Pinger - Fishtek Marine) (B). One can observe the cages that were specially designed for protection and anchorage of the acoustic equipments (C).

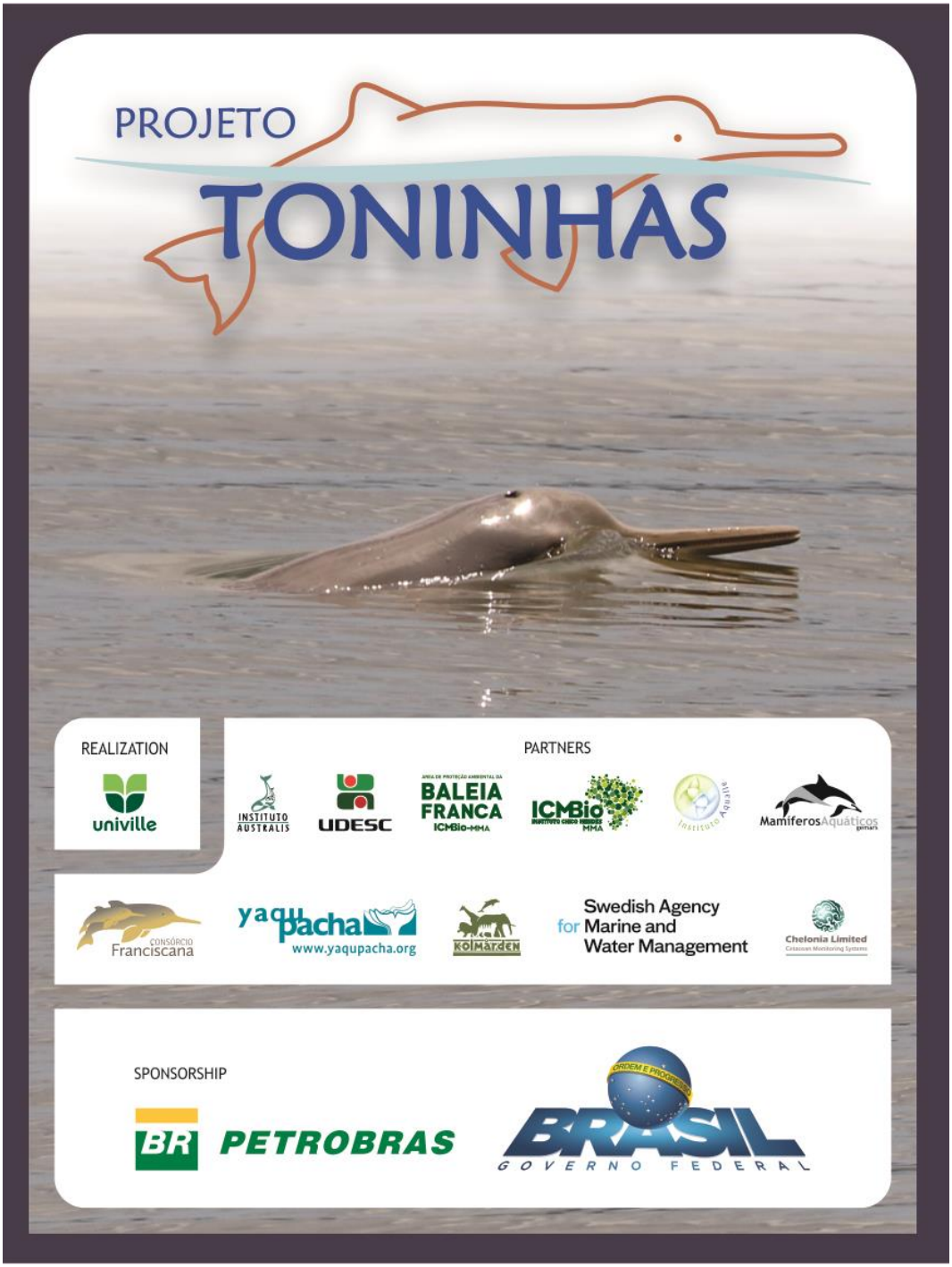

Figure 4: Banner of dissemination of Toninhas Project / Univille, Petrobras and its partners, used in exhibitions, lectures and other activities carried out in the community.

The Toninhas Project is also conducting studies of abundance and distribution using overflight in open sea areas, using the method of distance sampling (Fig 5.A). Mortality and reproductive biology data are being analyzed through the recovery of dead animals (Fig. 5.B). To estimate the total number of deaths, the project will carry out experiments with carcass drift, using replicas of toninhas, to estimate it through the number of carcasses on the beach.

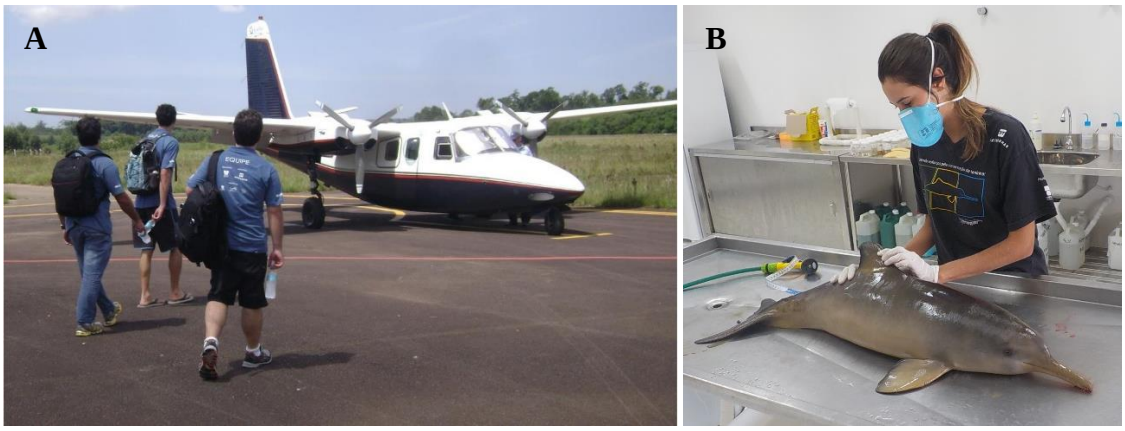

Figure 5: Technical overfly team (A) linked to the GEMARS - Group of Studies of Aquatic Mammals of Rio Grande do Sul, partners of the Project Toninhas / UNIVILLE; and necropsy performed on a toninha found dead on the beach (B).

Besides the research and management, the project has also been developing environmental education and communication actions. Awareness lectures are held in a space destined to receive visitor, named Babitonga Environmental Space, or at exhibitions in the community (Fig. 6). It is also developing an outreach program with repercussion potential for the entire area of occurrence of the species, with games for IOS and Android, kid's animation movies and various posts in social media (Fig. 7).

Figure 6: Environmental education activities carried out by the Toninhas Project to sensitize the community on the importance of preserving the toninha and the coastal ecosystems.

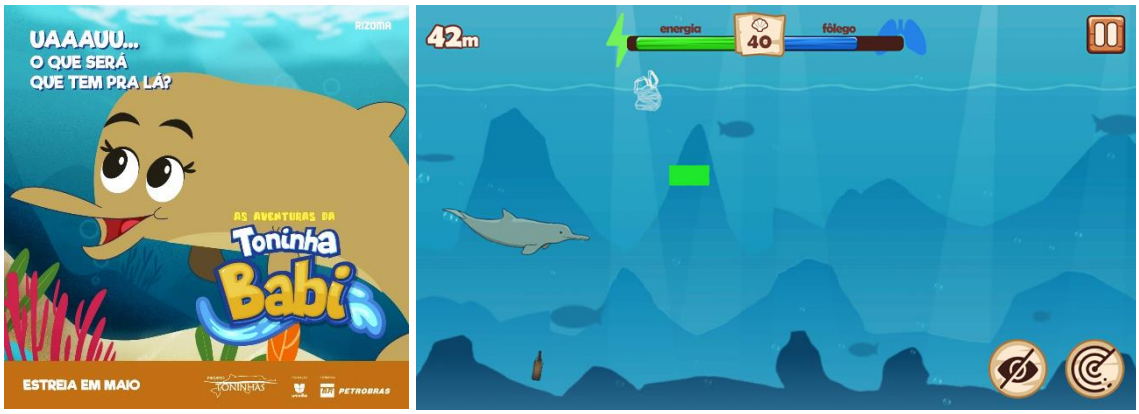

Figure 7: Layouts of the kid's animation movies and game demo for IOS and Android in development by Toninhas Project for dissemination and popularization of the toninha.