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Assessing the effectiveness of dolphin antipredation pingers to reduce the bycatch of Franciscana (*Pontoporia blainvillei*) in demersal pair trawl fishing

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The Franciscana *Pontoporia blainvillei* is considered the cetacean species most impacted by fisheries in the southwest Atlantic (Secchi et al., 2002). Although gillnet fisheries constitute the largest source of bycatch (Ott et al., 2002; Secchi et al., 2002, 2003), this dolphin is also caught in other fishing gears. In Uruguay, the Franciscana has been recorded as part of the bycatch of the industrial pair trawling fishery targeting mainly the Whitemouth croaker (*Micropogonias furnieri*) (Franco-Trecu et al., 2019). In collaboration with skippers of this fleets, an experiment to test the effectiveness of Anti-Predation Pingers (Marine Fishtek) to reduce the bycatch of Franciscana was started in late 2019. Here we present preliminary information on this ongoing experiment.

The fleet is comprised by 33 licensed vessels (mean length about 20 m) which operate within the Argentinean-Uruguayan Common Fishing Zone, mainly in the Río de la Plata and adjacent Atlantic coastal waters up to the 50m isobath. The experiment is being conducted from October 2019 in collaboration with skippers of this fleet. The pingers being tested are Dolphin Anti-Depredation Pinger (40 kHz; <https://www.fishtekmarine.com/product/dolphin-anti-depredation-pinger/>) from Fishtek Marine. These pingers emit higher intensity sound signals (175 dB) than deterrent pingers frequently used to reduce bycatch of dolphins and porpoises in fishing gears (<150 dB; (Dawson et al., 2013)). The experiment has been conducted in two vessel pairs; one participating vessel have formed the pair with five different vessels of the fleet and the other pair has been formed by the same two vessels during almost all the study period. To date, a total of seven individual fishing vessels have participated. The protocol considers a control treatment (trawl net without pingers) and an experimental treatment with pingers. Three pingers were attached at the headline (floatline), two at the extremes and one at the middle, with a spacing between pingers of about 20m. One vessel of the pair conducts trawl sets with pingers and the other without pingers. Trawl sets are usually alternated between vessels depending on the fish catch, completing each vessel on average seven trawl set per fishing trip (each lasting about a week). Data on bycatch of Franciscana were collected by

participating skippers. Data on date, location, fishing effort, depth and fish catch were reported to DINARA in fishing logbooks.

During November 2019 – December 2020 data from 35 pair-vessel trips (70 individual vessel trips) were obtained. During each trip, a member of the pair used the pingers; Therefore, the effort with pingers and without pingers was approximately equal. A total of nine Franciscana dolphins were captured in the experiment, eight of them in the control treatment and one in the experimental treatment, indicating a substantial reduction in the bycatch rate.

Our ongoing study shows promising results, suggesting that Dolphin Anti-Depredation Pingers (40 kHz; 175 Khz) reduces the bycatch of Franciscana in the Uruguayan pair trawl fishery. The analyses of available data at trawl set level (several hundred being processed) from fishing logbooks will allow to confirm if these devices have no effect on fish catch.

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