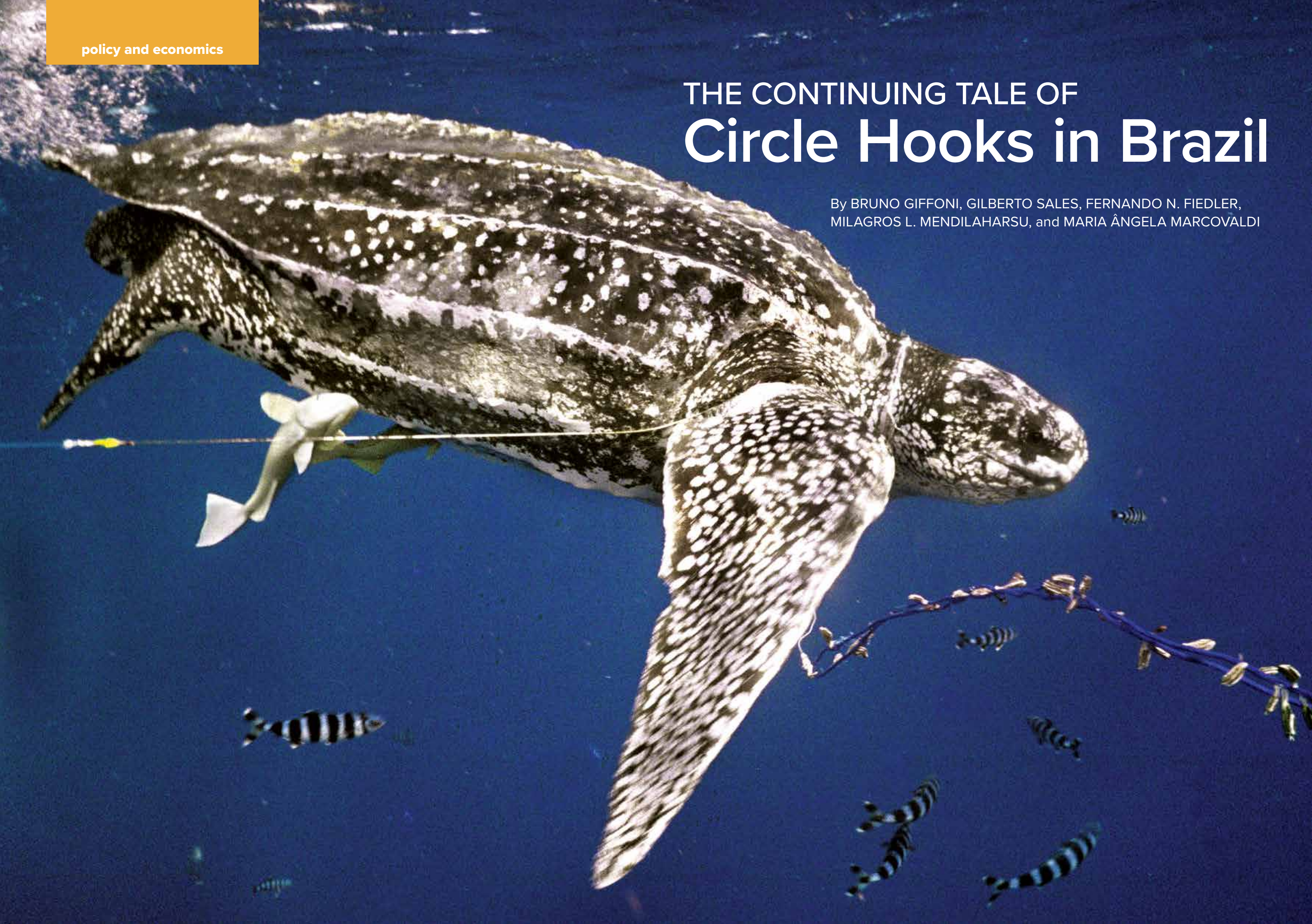


THE CONTINUING TALE OF Circle Hooks in Brazil

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Incidental capture of sea turtles in pelagic and coastal fisheries (also called bycatch) is arguably the greatest threat to sea turtles worldwide. Yet, until recently, there was practically no information regarding sea turtle interactions with longline fisheries in the southwestern Atlantic Ocean. The first studies about this topic were made public by Uruguayan researchers in 1998, the same year that Brazilian researchers presented a report about the incidental capture of loggerhead turtles by longline vessels in Brazil. At the time, Brazilian nongovernmental organizations (NGOs) and government agencies were at loggerheads (pun intended) about the magnitude of sea turtle capture by longline vessels. Although the government insisted that incidental capture was very low, Brazilian NGOs such as Projeto TAMAR asserted the opposite. However, very few formal studies supported either assertion.

Thus, in 2001, Projeto TAMAR undertook a national-scale program to assess bycatch levels in Brazil's national fisheries. After TAMAR's increased monitoring of the longline fleet, it became clear that longlining indeed posed a major threat to sea turtles in the southwest Atlantic Ocean; something had to be done. One of the more promising (though still imperfect) solutions to the bycatch problem was the circle hook, which can significantly reduce sea turtle bycatch when compared to the traditional J-shaped hook (see *SWOT Report*, vol. I, p. 24). Projeto TAMAR's bycatch assessment planted a seed, and what began as a study of the effectiveness of circle hooks grew into a national effort to ban the use of J-hooks on longlining vessels.

Understanding the need to promote a discussion about circle hooks among different stakeholders (e.g., scientists, conservationists, fishers, fisheries, managers, policymakers, and the general public) and the need to build a common set of goals among those stakeholders, Projeto TAMAR mobilized resources to develop and launch communication strategies. TAMAR began weekly informal talks with longline captains and crews anchored on Itajaí/Navegantes, one of the most important fishing harbor complexes in Brazil. TAMAR also developed and donated circle hooks and bycatch mitigation toolkits, which included dehooking tools, line cutters, and dipnets.

TAMAR held training workshops, conducted lectures, and led countless meetings with fishing associations and fishers, and it even produced informational videos about the effect of longline fisheries on sea turtles and about using circle hooks. The campaign was widespread and was covered by newspapers and on TV.

With public attention on the benefits of circle hooks, TAMAR elevated the discussion to the level of decisionmakers so they could make their voices heard in Brazil's national governmental forums for

tuna fisheries management. Next, Brazil's case was presented to the International Commission for the Conservation of Atlantic Tuna (ICCAT).

A hard-fought victory came in 2017 when the Brazilian government published Act 74/2017, which forbids the use of J-hooks on all licensed longline vessels that target swordfish and tuna. The act mandates the use of circle hooks and requires that vessels be equipped with onboard bycatch mitigation tools. The new legislation was cause for celebration. After 15 years of shaking hands with fishers, raising public awareness, and working with policymakers, Projeto TAMAR had helped enact real policy that will certainly reduce sea turtle mortality on longlining vessels in the southwest Atlantic. What's more, alliances were built along the way with decisionmakers and within the fishing industry, without whose voluntary participation the victory would have been impossible.

The regulations came into effect in 2018, thereby presenting a new set of challenges. With a projected spike in demand for circle hooks and mitigation tools, how can a market shortage of such items be avoided? How can regulators ensure that the new laws are being enforced? To confront the challenges, Projeto TAMAR has already contacted manufacturers and importers to inform them about a potential spike in demand, and TAMAR continues to spread the word about the benefits of using circle hooks (and the illegality of J-hooks) among fishers and the general public in fishing communities.

To add another layer of complexity to the southwest Atlantic's circle hook saga, the scientific community has never fully endorsed the advantages of circle hooks, mainly because those hooks have been shown to increase the bycatch of sharks. In Brazil, sharks—especially blue sharks (*Prionace glauca*)—are, sadly, a target species for the pelagic longline fishery. Further work about legal measures and ameliorative gear types is needed as part of efforts to protect not only sea turtles but also sharks and marine ecosystems as a whole from the devastating effects of longline fishing.

Although the passage of the J-hook ban is a hard-won success, the shark bycatch issue reminds us that there are no perfect solutions in conservation. In the end, success will depend on the same principles that have driven Projeto TAMAR's efforts thus far: (a) finding common objectives among diverse stakeholders and (b) mobilizing institutions through a solid and active network. ■

THIS PAGE: Circle hooks of different sizes: 18/0 (left), 16/0 (middle), and 14/0 (right). © PROJETO TAMAR. PREVIOUS SPREAD: This leatherback turtle was hooked by longline fishing gear targeting swordfish off the coast of Brazil. The blue rope attached to its flipper is from an earlier interaction with longline fishing gear targeting mahi-mahi. All gear was removed and the turtle was released in good condition. © PROJETO TAMAR. AT RIGHT: A fisherman releases a loggerhead turtle that was caught on its flipper by a J-hook in Brazil. © PROJETO TAMAR

