

The Nature Conservancy: using technology to protect tuna stocks

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Climate change, pollution, and overfishing are putting enormous pressure on the Pacific. Against this background, the eight island nations that make up the Nauru Agreement (PNA) - which controls 70% of tuna resources in the Western and Central Pacific - want to sustainably commercialize their tuna stocks, but face challenges to do so. To address these barriers, The Nature Conservancy is partnering with them - by conducting research, rolling out electronic monitoring technology, and informing environmental policy.

Accustomed to chaos, it is a stunning ecosystem that has proven remarkably resilient. But today, a combination of climate change, pollution, and overfishing is putting so much pressure on the Pacific that even the most adaptable species are struggling to survive.

For example, the Western and Central Pacific produces 60% of the world's tuna - nearly 3 million metric tons, worth almost \$7 billion each year. But, globally, over a third of tuna stocks are overfished or are at risk of being overfished.

A crash in this final stronghold of tuna would send the global seafood market reeling. Decreased supply would also take an enormous toll on Pacific economies, especially the parties to the Nauru Agreement (PNA). The eight island nations that make up the PNA control 70% of the tuna caught in the Western and Central Pacific, and several count on fishery revenues for the majority of their national non-aid income.

The effects of unsustainable fishing are rippling across the food web, with devastating results. Longline tuna vessels lay waste to innumerable sharks, sea turtles and seabirds each year - which could throw the entire ecosystem out of balance. A recent study, using data collected by the Palau government, found that one-third of the catch of local pelagic longline tuna vessels was made up of unwanted species.

HIGH TECHNOLOGY APPLIED TO FISHING TECHNIQUES

Regional governments and fishing companies want to operate sustainably, but need a viable alternative to the existing, harmful practices. Addressing this need, The Nature Conservancy - working with local partners - is driving innovation by conducting research, rolling out electronic monitoring technology (see box), and informing environmental policy.

The region lacks the critical science and compliance information needed to roll out more sustainable fishing rules and to ensure adherence. Currently, only 2% of the region's longline tuna vessels have independent on-board monitoring, and illegal, unreported and unregulated fishing largely goes unchecked. Aware of what is at stake, governments are working toward better management and monitoring solutions in their tuna fisheries.

To fill this gap, The Nature Conservancy is partnering with industry and governments to scale the use of electronic monitoring systems aboard the region's fishing vessels. Using a combination of on-vessel technology to collect fishing data, the electronic monitoring systems provide detailed information on tuna catches, interactions with at-risk species like sharks and turtles, and other on-board activities like safe-working conditions.

These tools offer actionable data that will help reduce poaching, make Pacific longline tuna fisheries sustainable - and stabilize the ocean ecosystem. In addition to increasing accountability, electronic monitoring makes it easier to collect core scientific data and to assess ecosystem health, ultimately helping PNA countries develop smarter regulations.

INCREASING GLOBAL COMMITMENTS TO ELECTRONIC MONITORING

In October 2018, the Federated States of Micronesia announced a shift to 100% transparency for its globally-significant tuna fishery through electronic monitoring, and challenged its fellow PNA members to follow suit through the Technology for Tuna Transparency Challenge. And in April 2019, all PNA members committed to the challenge. This is a win of historic proportions. What is more, commitments did not stop in the Pacific. In 2020, the Seychelles became the first Indian Ocean country to join the effort. Successes, lessons learned, and best practices from these projects are now being scaled to other areas.

Electronic Monitoring in Fisheries

Electronic monitoring (EM) entails onboard video cameras, GPS (location tagging), and sensors to automatically track catches 24/7 on fishing vessels. It replaces a single observer, noting in writing what species are caught and when. With EM, someone still has to review the footage, but much more data, which is more granular, is gained than is typical with observer monitoring.

Faced with a direct impact on profit, leading fishing companies understand their success lies in balancing profitability and sustainability. The industry has seen a proliferation of dock-to-plate transparency and traceability tools in recent years - all with varying degrees of success. Companies need granular information related to at-sea activities to verify their seafood products have been harvested legally, sustainably and without labor abuses - confirming that crews are not being subjected to unethical, unsafe working conditions, that tunas are not being high-graded, and that at-risk species brought in as bycatch are handled and released appropriately - and electronic monitoring is enabling collecting this information at scale.

Companies are seeing the benefit of moving to sustainable management models, recognizing the business imperative to ensure fish stocks are available for future harvests - and they are making their commitments known among their peers. Numerous global seafood suppliers have publicly committed to achieving 100% electronic monitoring, and with increasingly ambitious timetables.

These changes go well beyond company statements and lofty goals, to changes in industry behavior. Electronic monitoring data provides a powerful resource to drive accountability throughout seafood supply chains: it has been leveraged to drive behavior change from onboard vessels to within boardrooms. With new private sector initiatives in the seafood catch sector and supply chains, the data is helping the industry to walk a fine line.

Global fisheries are in trouble, yet the reality is that the industry has been flying blind. With technology onboard fishing vessels and robust policy initiatives and market incentives, transparency in the tuna industry is at hand.

