

Catalyzing the Growth of Electronic Monitoring in Fisheries: Learnings Since 2018

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Background on Electronic Monitoring

Every day, millions of fishing vessels ply the oceans to harvest seafood that helps feed the world's almost 8 billion people. The enormous challenge of protecting the productivity of the oceans while also safeguarding the livelihoods of the millions of people who work along the seafood value chain through traditional tools of data collection can be expensive and imprecise. The result is annual losses of \$83 billion USD in global fisheries from insufficient management, accompanied by a gradual decline in the health of fish stocks and the marine environment.¹

Electronic Monitoring (EM) can provide the detailed information fishery managers need to solve their data and compliance challenges. EM uses an integrated system of on-board cameras and sensors that record fishing activity and extract data. This powerful tool can enable more targeted, cost-efficient management strategies and create opportunities for seafood industry stakeholders to drive improvements in their operations and demonstrate legality and sustainability to the seafood marketplace.²

Progress Against 2018 Recommendations

In 2018, The Nature Conservancy and CEA Consulting released the report, "Catalyzing the Growth of Electronic Monitoring in Fisheries." The report presented an investment blueprint for driving more rapid adoption of EM. There has been noteworthy progress on most of the 2018 recommendations, and nearly all are still relevant opportunities. But investment has not been large enough nor development fast enough to put EM on track to break out of a business-as-usual growth scenario.

"It has been a positive year. We have been involved with EM since 2012 and we definitely see a change in mindsets, especially among fishing companies and fisheries managers."

—INTERVIEWEE

1. World Bank Group, "The Sunken Billions Revisited: Progress and Challenges in Global Marine Fisheries," 2017, <https://openknowledge.worldbank.org/bitstream/handle/10986/24056/9781464809194.pdf>

2. Philip Christiani et al., "Precision Fisheries: Navigating a Sea of Troubles with Advanced Analytics" (McKinsey & Company, 2019), <https://www.mckinsey.com/~media/McKinsey/Industries/Agriculture/Our%20Insights/Precision%20fisheries%20Navigating%20a%20sea%20of%20troubles%20with%20advanced%20analytics/Precision-fisheries-Navigating-a-sea-of-troubles-with-advanced-analytics-vF.ashx>

Progress Increasing Demand for EM

- Since 2018, EM pilots have demonstrated the capability of the tool to fill critical science and compliance data gaps.
- Growing confidence in EM is underpinning commitments to improve on-the-water monitoring.
- EM is being used to demonstrate sustainability in the marketplace, but market-based drivers for EM need to be amplified.
- New proof points are demonstrating the benefits to industry from improved management enabled by EM, but the link to improved economic outcomes needs to be strengthened.
- New use cases for EM in areas such as labor and transshipment are emerging but are still in the development and testing phase.

Progress Reducing the Costs of EM

- There have been great strides in artificial intelligence (AI) development, but it has not yet delivered tangible performance benefits or cost savings.
- While the market waits for product-ready AI, we are seeing innovation around how to achieve program objectives at lower cost, such as lowering video review rates.
- New mechanisms for driving efficient delivery of EM programs are being explored—such as third-party service delivery, multi-provider models, and “EM as a Service” contracts—but these models still need to be evaluated.
- EM service providers have developed lower cost EM systems targeted to smaller vessels, but little progress has been made driving hardware cost reductions for systems on larger vessels.



Length measurement using AI, Rhode Island.
Photo: Ayla Fox / The Nature Conservancy



Luen Thai Fishing Venture, Republic of the Marshall Islands.
Photo: Kydd Pollock / The Nature Conservancy

Progress Providing Technical Support to Regulators and Promoting Industry Leadership

- Several countries and seafood companies have made strong commitments to electronic monitoring (e.g., Thai Union, Federated States of Micronesia).
- A diverse assortment of working groups, conferences, and informal exchanges have taken place to share learnings and best practices.

Progress Against EM Growth Scenarios

In 2018, we put forth a handful of possible scenarios for EM development over the next 10 years. These ranged from a baseline scenario in which we estimated EM would grow to cover approximately 6,000 vessels, to a scenario in which the vision for EM was realized and was deployed on over 50,000 vessels. The dialogue around EM has evolved in the last year and a half. As one EM provider said, “It has been a positive year. We have been involved with EM since 2012 and we definitely see a change in mindsets, especially among fishing companies and fisheries managers.”

But the trajectory of EM adoption needs to be bent much further to deliver on its potential to provide granular data that can underpin science-based management for the world’s fisheries on a timescale that aligns with the accelerating threats from overfishing and climate change. Covid-19 disruptions to existing monitoring programs have also highlighted vulnerabilities in these programs and the ability of EM to provide continual coverage when human observers are unable to do so.

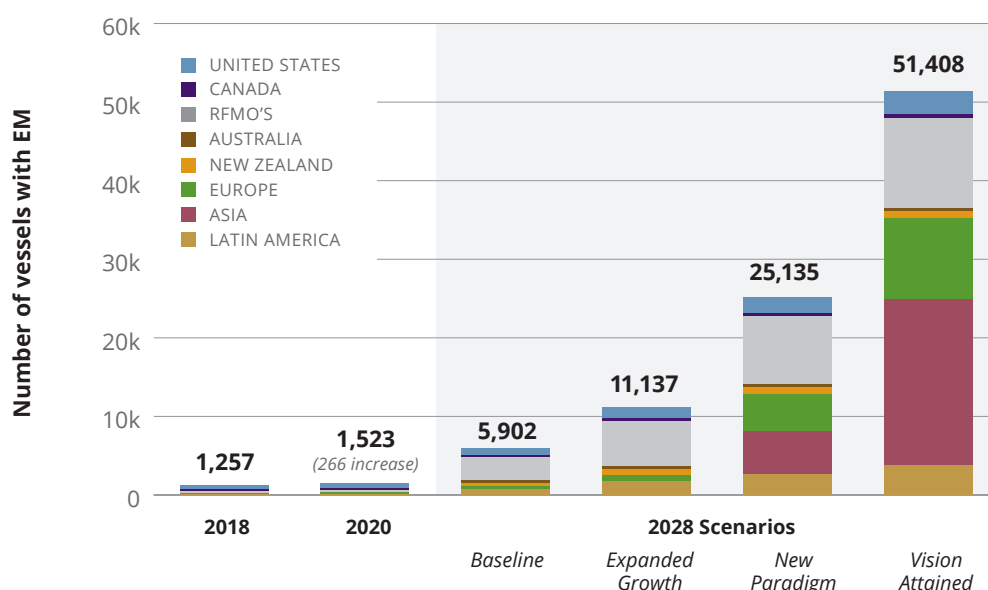
Based on EM deployments in the last 18 months, the world is still squarely in the baseline trajectory scenario. While there is no global database of EM systems, we estimate that about 250 additional systems have been deployed since the end of 2018 (Figure 1). The next few years may prove critical for scaling up the growth of EM in line with the expanded growth scenario. Serious deliberations or early implementations are underway for large programs such as the longline fleet operating in the Western and Central Pacific Fisheries Commission (WCPFC) Convention Area, Seychelles' longline and purse seine fleets, New Zealand's inshore and offshore fisheries, the Chilean semi-industrial fleet, North and Baltic Sea fisheries in Europe, Scotland's scallop fishery, the Maldives pole and line tuna fleet, and others. These fisheries represent well over 1,000 vessels that could have EM systems installed in the next couple of years.

Bending the curve on EM adoption will require greater leadership from governments and the fishing industry, accelerated product development from EM providers, additional effort from the NGO community to drive demand for increased accountability in fisheries and to provide support for EM programs, and targeted public and philanthropic investment. The seafood retail and foodservice industries will also need to amplify pressure on, and partnership with, their suppliers to ensure their commitments to sustainable seafood are driving change on the water.

FIGURE 1

Growth of EM systems from 2018 to 2020 and future scenarios for EM in 2028³

The number of EM systems are estimated based on literature review and expert interviews. Numbers are approximate and may not be comprehensive.



3. For a full description of EM growth scenarios, please see the original report. [“Catalyzing the Growth of Electronic Monitoring in Fisheries.”](#)