



Biography and Startup-Story

Biography

Dr. Christine A Ward-Paige is the founder and CEO of eOceans, and has been leading field, crowdsourced, and co-generated ocean science projects around the world for more than two decades. She has authored numerous top-cited articles in marine science and policy, contributed book chapters, and led research that was pivotal for influencing policy in marine policies and endangered species. She has worked for governments in Canada and the USA, and collaborated with industries, communities, and research organizations around the world.

Dr. Ward-Paige designed and developed eOceans' Platform-as-a-Service to reinvent the way ocean science is done, making it real-time and accessible to all and to fulfill the needs she and her colleagues have as marine scientists working to track a rapidly changing ocean and human impacts and interventions.

Problems to solve:

Dr. Ward-Paige wanted to solve three priority problems with the Platform:

Manual – Science is still manual. All biological and human-related (e.g., garbage or social value) data points are still recorded with pencil on paper in the field, then re-entered into a spreadsheet, and analyzed for one question at a time.

Siloed – Researchers have a hard time collaborating. Even within the same organization, or individuals within the same team within an organization. One person studies humpback whales and another studies orca whales, but both see the other species while out at sea, and few share those observations with each other. This extends to the public, where very few scientists have figured out how to work with the public and other stakeholders.

Slow – Climate change is rapidly changing the ocean and species distributions. At the same time, how humans use the ocean is rapidly growing and diversifying (i.e., the blue economy, which is a subset of the ocean economy, somewhat equivalent to the green economy). These manual and siloed science techniques are not sufficient to keep pace with these changes. Outdated science and management/policy threaten communities and ocean health.

Case studies:

eManta, eShark, eShark Thailand, Shark Sanctuary Evaluation, Great Fiji Shark Count, Marine Conservation Assessment, eSeal, eSeahorse, eTurtle, and others were case studies that informed the design and development of eOceans platform that it is today.



eManta

People love manta rays.

Tourists spend more than \$140 million per year in just 10 communities to see them. So, alarms rang when they started to disappear and eManta, a predecessor to eOceans, was created to help.

Observations from ocean exploring experts (people with more than two years of experience and 200 days at sea in one location) described i) where people saw manta rays in the wild, ii) where they saw them fished and landed, and iii) where they saw them being sold in markets. Comparing these observations with FAO catch data showed a major discrepancy. Only two countries reported catching and landing manta rays, but they were being caught and sold in markets around the world.

This discrepancy indicated that illegal, undocumented, unreported fishing (IUU fishing) was threatening manta ray populations, and was the information needed to get them on the endangered species list (CITES, Appendix II). Now it is required to demonstrate that they are sustainably harvested before they can be exported internationally.

Continued monitoring will help to understand the success of this intervention for protecting this valuable tourism industry.

eShark

In 2011, the dive tourism industries in both countries reached out to Dr. Ward-Paige because they had been following her PhD research and wanted help tracking their shark and ray populations. In both cases, sharks and rays are in-demand species for tourists to see them and both were finding it increasingly difficult to offer 'Shark dives' since sharks and rays were declining in numbers.

Christine worked together with the communities to set up Community Logbooks – in Thailand using an online form, and in Fiji using pencil on paper. The divers, guides and tourists, recorded all their observations from every dive. In Fiji alone, divers surveyed 592 sites, and made 146,000 shark observations on 30,000 dives. A relatively huge amount of data. Both teams continuously improved the data collection, quality control, analysis and dissemination procedures and after five years, co-wrote and published papers. Now, the tourism industries have the results they need to work with their communities and governments to design strategies that protect sharks and their industry.