EMERGING TECHNOLOGIES FOR MARINE SPECIES RESEARCH AND CONSERVATION

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Emerging technologies in various fields of marine research are increasing and improving the ability for data collection and analysis at both local and global scales. In the area of marine turtle research and conservation, new innovations based on current and developing information technologies are rapidly expanding opportunities to collect and analyze data faster and over larger scales than ever before. ProTECTOR, Inc. is a US-based organization focused on marine turtle research and conservation in Central America, currently using and developing both computer-based and mobile-based methods for collecting and analyzing sightings of marine turtles in Central America and around the world. To start this process, we developed a computer-based map that facilitates uploading turtle sightings photographs and metadata. This map is freely available to participating dive operators and citizen-scientists. Data mapped immediately through a web-based GIS allows us to use uploaded photographs in an automated photo-ID system. The system can automatically search hundreds of photographs and identify individual turtles. Results are then used to track home ranges, population dynamics, and other aspects of ecology. As an extension of this mapping system, we developed a mobile-based application that facilitates collection of similar data on a global scale. ProTECTOR Inc. is working in partnership with other agencies (WWF, TORSOOI, SWOT, and WildMe), to enable the uploading of turtle photographs and metadata into a global database to increase citizen-science participation, data collection and analysis, and build a global database of marine turtle photographs and metadata. This database will facilitate discovering new aspects of turtle ecology on a global scale.