SWOT TEAM UPDATE

SWOT Keeps Growing

A leatherback hatchling crawls to sea in Armila, Guna Yala, Panama. © MORRISON B. MAST

There is always more we can do to improve our work and to build toward a common vision. But sometimes we ought to raise our heads from the daily grind and cast our gaze to the past to gain perspective on the progress that has already been made toward that vision.

Looking back at SWOT's humble beginnings in 2004 when we launched our database with a year's worth of leatherback nesting data from beach projects worldwide, we can see clearly how much the SWOT database and online application have grown. From that first single-species SWOT map, which included just under 80 data records from 50 countries, the SWOT database has expanded to host almost 6,000 data records contributed by nearly 600 providers from more than 130 countries, including 3,000 distinct nesting sites globally for all sea turtle species.

But SWOT hasn't stopped at nesting sites. Our original goal was to create a database for all sea turtle species, all life stages, everywhere on Earth. We're happy to report here that we've made significant progress toward that lofty goal, but we are also looking for ways to keep growing.

In 2011, we developed the world's first globally applicable minimum data standards for nesting beach monitoring to identify datasets that could be used in future analyses of abundance and long-term trends (see *SWOT Report*, *Vol. 6*, 47). Nearly all data records in the SWOT database are now coded according to the minimum data standards. That same year, we added the first georeferenced data layers of global species distributions and published genetic stocks and regional management units (RMUs, or subpopulations) to the SWOT online

application hosted by Duke University's Ocean Biogeographic Information System–Spatial Ecological Analysis of Megavertebrate Populations (OBIS-SEAMAP, http://seamap.env.duke.edu/swot). Users can now view and interact with sea turtle biogeography data from the scale of individual nesting sites to population boundaries to global distributions—and back again—all in the same Web browser window.

We have also worked hard to make SWOT data available—under terms of use designed to protect data providers—to researchers whose work might advance sea turtle conservation as well as our understanding of sea turtle biology. We are currently undertaking a review of the past five years of data requests for SWOT nesting data and downloads of shapefiles (such as RMUs and genetic stocks) to assess applications and products based on SWOT data. This review will allow us to identify key data gaps at site and regional levels. We also will be able to prioritize future efforts to increase reporting rates among existing data providers and to include more data providers from currently underrepresented regions.

In a fantastic example of the collective power of the SWOT database, Dr. David Pike, of James Cook University in Australia, used SWOT nesting data in a recent analysis (published in *Global Ecology and Biogeography*) to determine environmental niches and nesting habitat suitability for all sea turtle species, globally (see figure 2). In return, Dr. Pike has graciously produced data layers of nesting habitat suitability for all species; these are now available alongside the aforementioned data layers on SWOT's online application. We look forward to other creative and useful applications of SWOT data in the future.

The most exciting news is that the time has finally come for SWOT to "get wet" and expand the database to include satellite telemetry data. The objectives of this effort will include a global meta-analysis of tracking data to identify "important turtle areas" that will inform conservation priority setting globally. It will also allow us to integrate telemetry data with other data types in SWOT's online database and thereby allow users to interact with all data types using SWOT's online application.

But this initiative will not be successful without willing data providers and key partners. In this vein, we are happy to announce that we have formalized a working agreement with Dr. Michael Coyne, executive director of Seaturtle.org, that outlines a promising and strategic partnership and features collaboration and cross-promotion to our respective users to advance the use of SWOT and Seaturtle.org tools and programs. In particular, we will be working together to encourage current and future users of the Satellite Tracking and Analysis Tool (STAT) to contribute their telemetry data to SWOT, and current and future SWOT data providers to consider using Seaturtle.org's Nest Monitoring tool to manage their nesting data.

Given the important and highly complementary roles that SWOT and Seaturtle.org play in making information from sea turtle monitoring projects accessible and useful to the broader community, this partnership will greatly benefit both organizations in the future. Stay tuned for more on these initiatives.

Although we are proud of the progress SWOT has made since 2004, the people who really deserve the credit are the SWOT Team members who voluntarily contribute their precious data to a collective effort to study and save sea turtles. Thanks to you, SWOT has become a truly global platform for presenting and analyzing sea turtle biogeography data, and SWOT's future looks very bright. ■

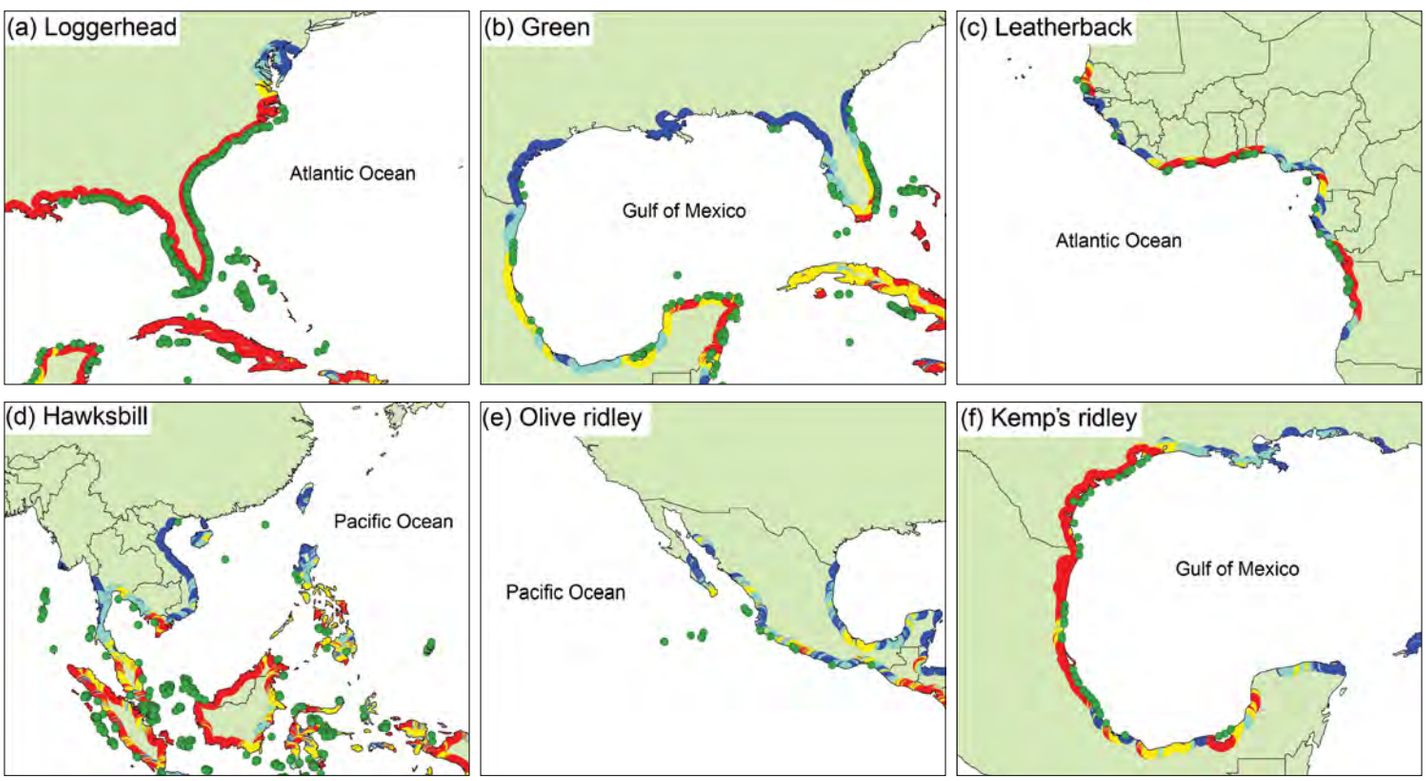

FIGURE 2. Maps show SWOT nesting locations for six sea turtle species in the Wider Caribbean region, and predictions of suitable nesting habitat for each species based on differences in environmental conditions of known nesting beaches. Note how well the predicted distributions agree with the actual distributions of nesting sites for each species. Map courtesy of Dr. David Pike, reprinted from: Pike, D. (2012) Climate influences the global distribution of sea turtle nesting. *Global Ecology and Biogeography*, DOI: 10.1111/geb.12025.