

Satellite Tracking and Analysis Tool: 211,110 Data Points and Growing



Michael Coyne - SEATURTLE.ORG & Duke University
Brendan Godley - Marine Turtle Research Group, University of Exeter at Cornwall

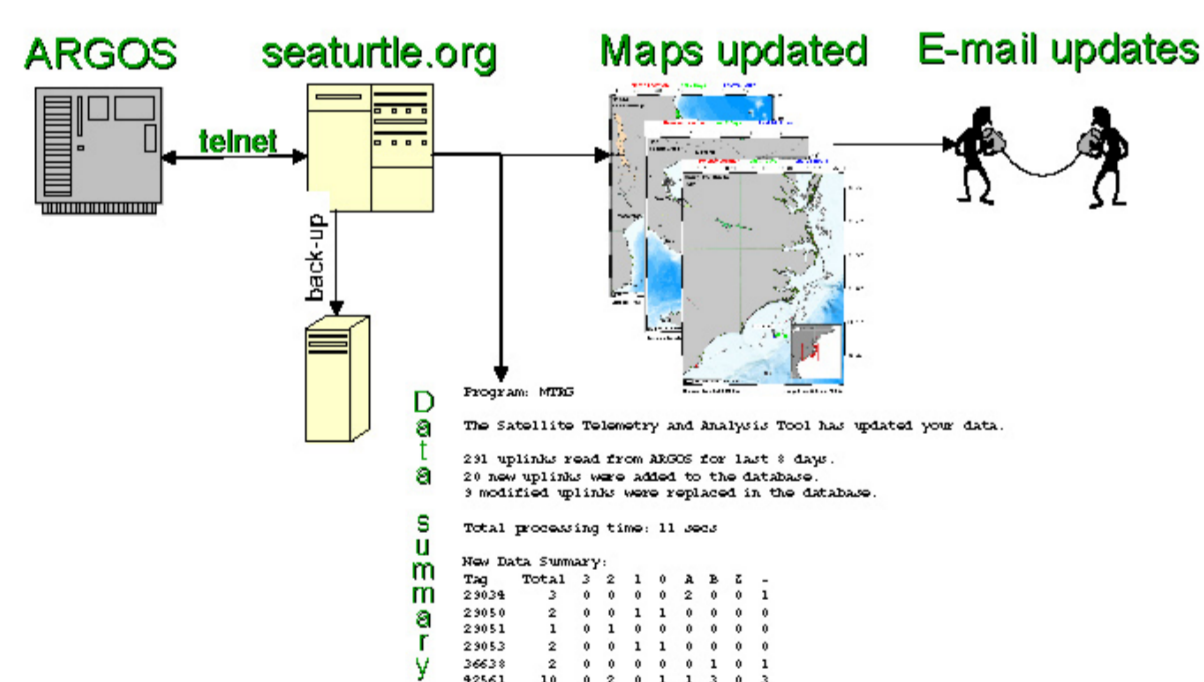
The Satellite Tracking and Analysis Tool (STAT) provides a number of benefits to those tracking marine vertebrates:

- Downloads and updates your ARGOS data while you sleep
- Summarizes, organizes and backs-up your data automatically
- Filters telemetry data through an iterative and intuitive interface, allowing you to see why individual locations were excluded
- Saves individual filter sets for future use
- Produces summaries and maps of animal tracks and environmental layers
- Allows you to easily share information with colleagues and funding providers, and to contribute summaries of your data for educational use



Archive and Import Data

Each day the SEATURTLE.ORG server logs into the ARGOS servers and downloads data for all participating programs. New data are added to a relational database and modified data values are updated. Database files are maintained on a RAID array to protect data integrity and backed up daily to an off-site location.



In addition, previously collected data can be imported into seaturtle.org's database so that it can be used in the STAT system. All archived data can be filtered and exported in commonly used data formats.

For more information or to start using STAT contact:

Michael Coyne
Phone: 301-221-9952
Email: tracking@seaturtle.org
http://www.seaturtle.org/tracking/

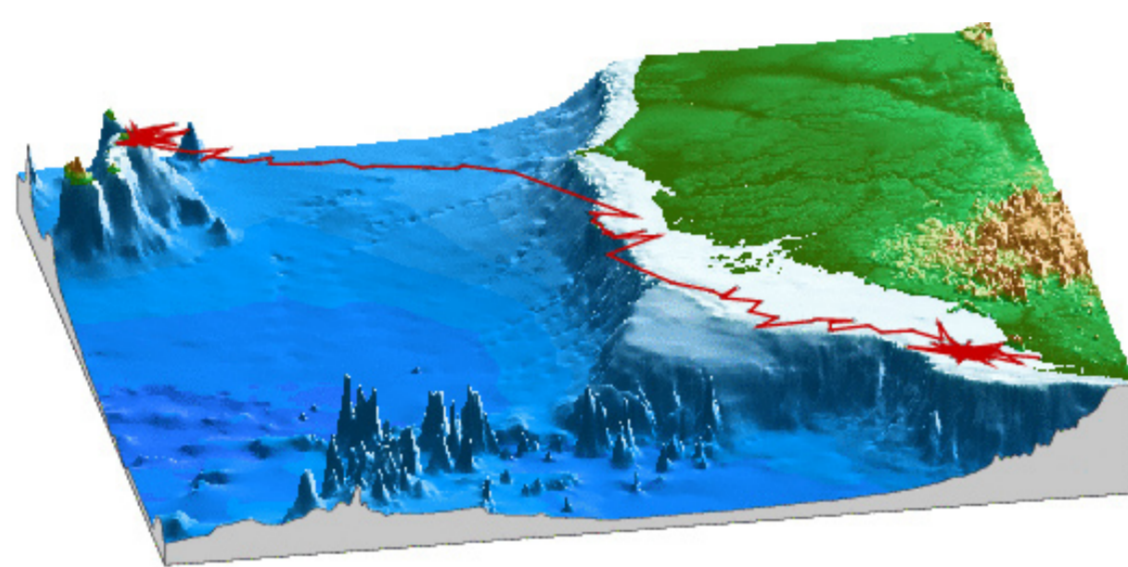
Photo Credits:

Green turtle - Janice Blumenthal, Marine Turtle Research Group and Cayman Islands Department of Environment; Northern elephant seal - David Hyrenbach, Duke University

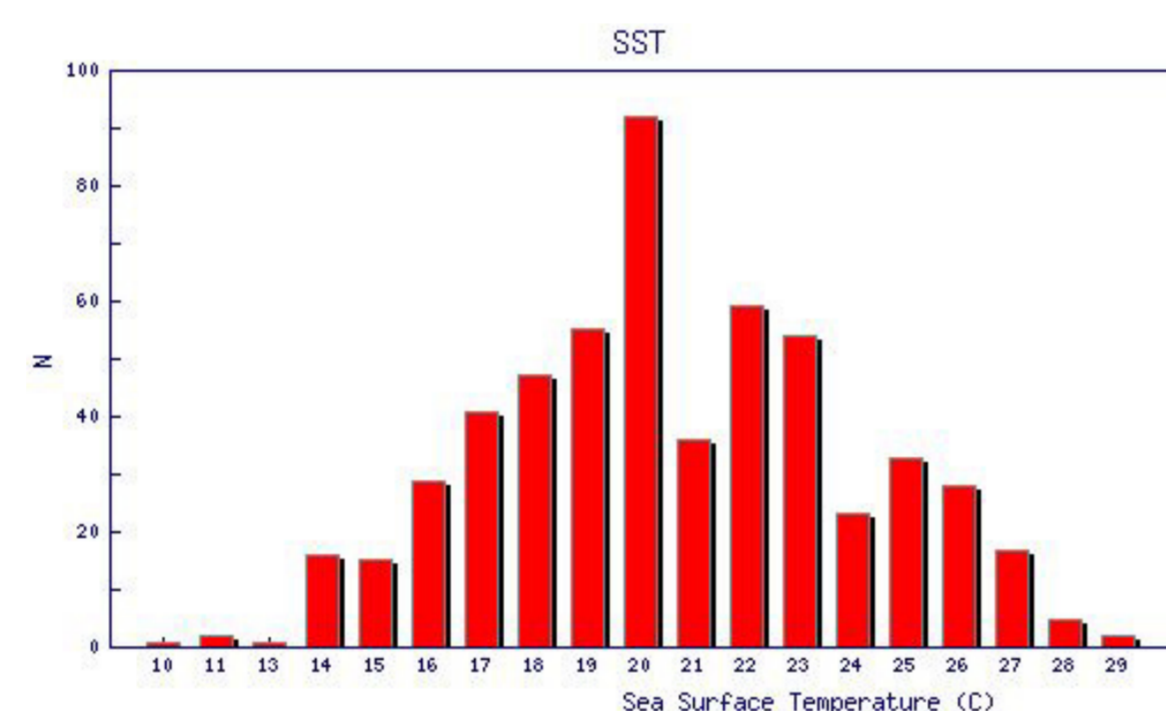
An Integrated System for Archiving, Analyzing and Mapping Marine Vertebrate Satellite Tracking Data

Automated Mapping

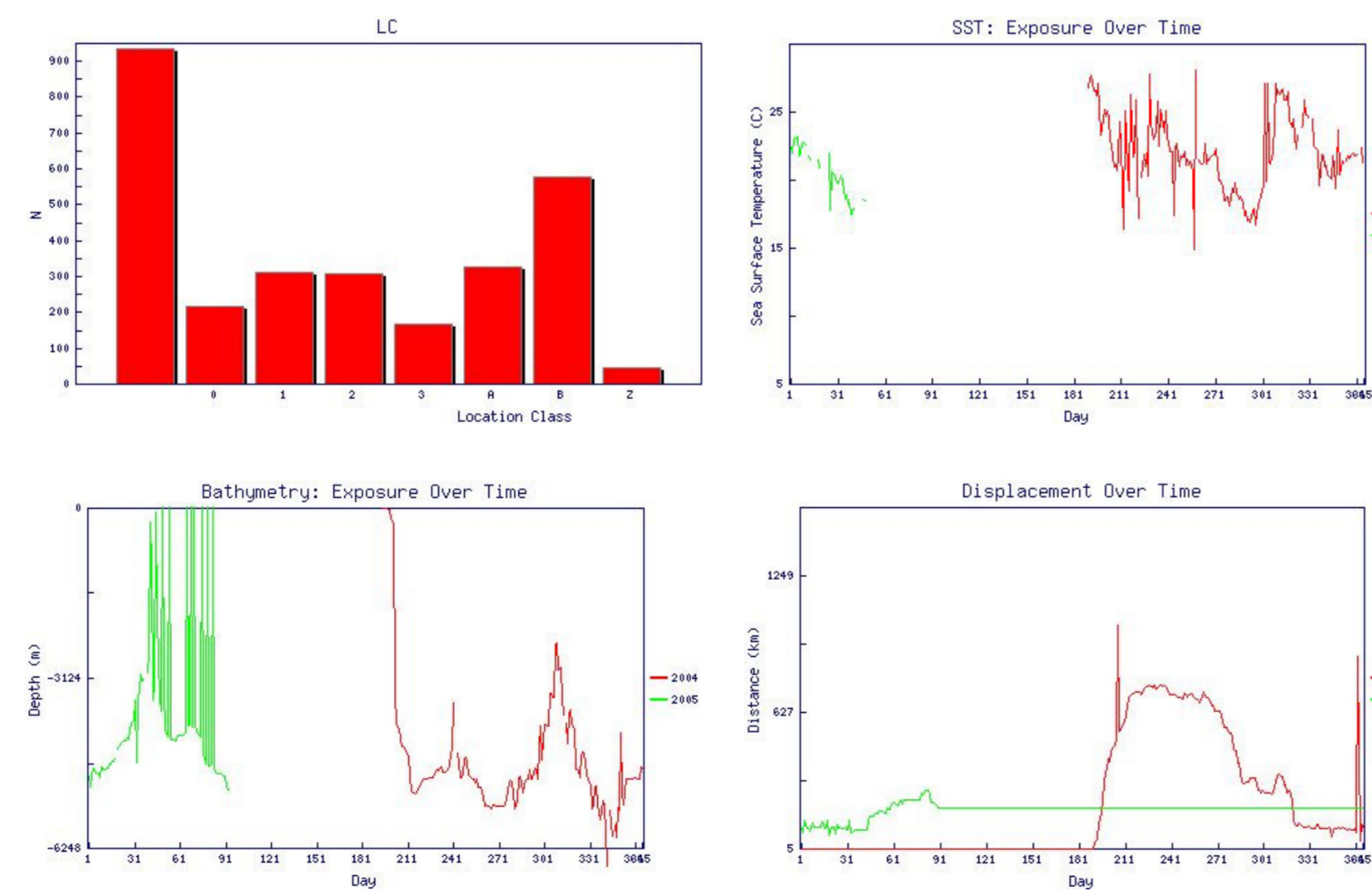
A suite of map products are updated each day that new data are available for each tracked animal. Automatically generated maps and graphs include a variety of print quality maps, animations of tracks through time, animated sea surface temperature, 3-D perspective, location class, distance between locations, time between locations, displacement distance from release and more!



Three-dimensional perspective view of satellite track draped over shaded bathymetric relief.

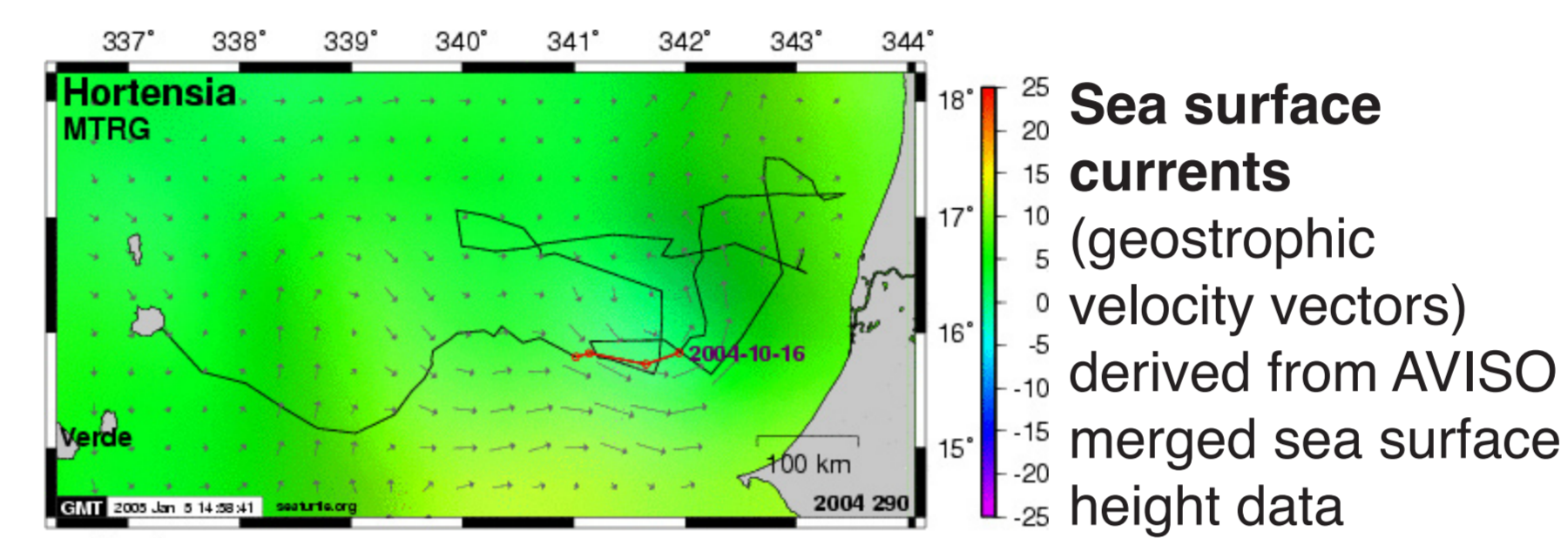


Automagically generated histograms and along-track graphs of SST and other derived variables are sampled for all reported locations.

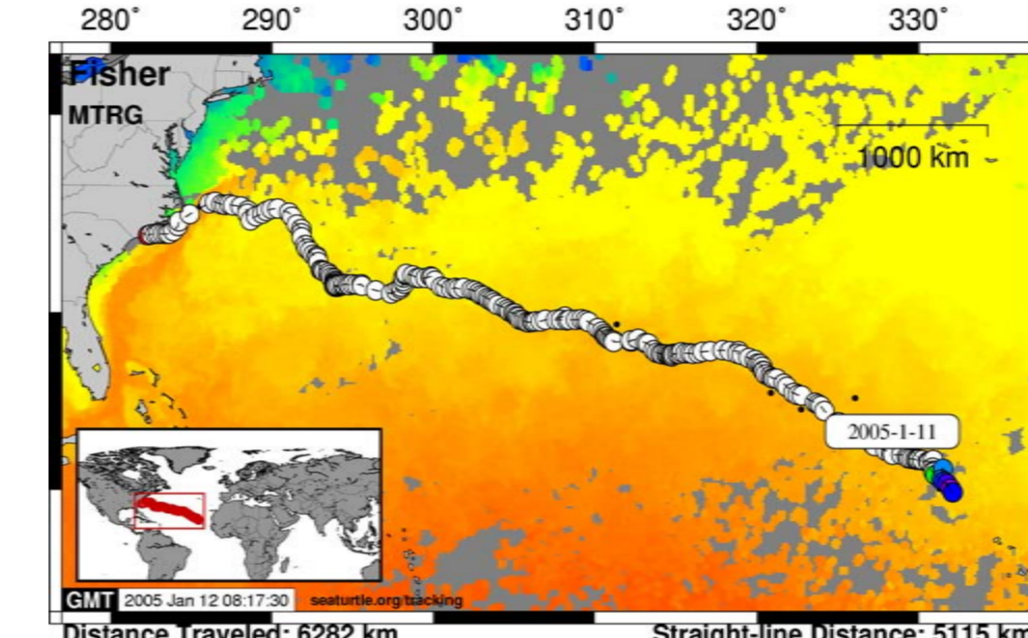


Environmental Data Layers

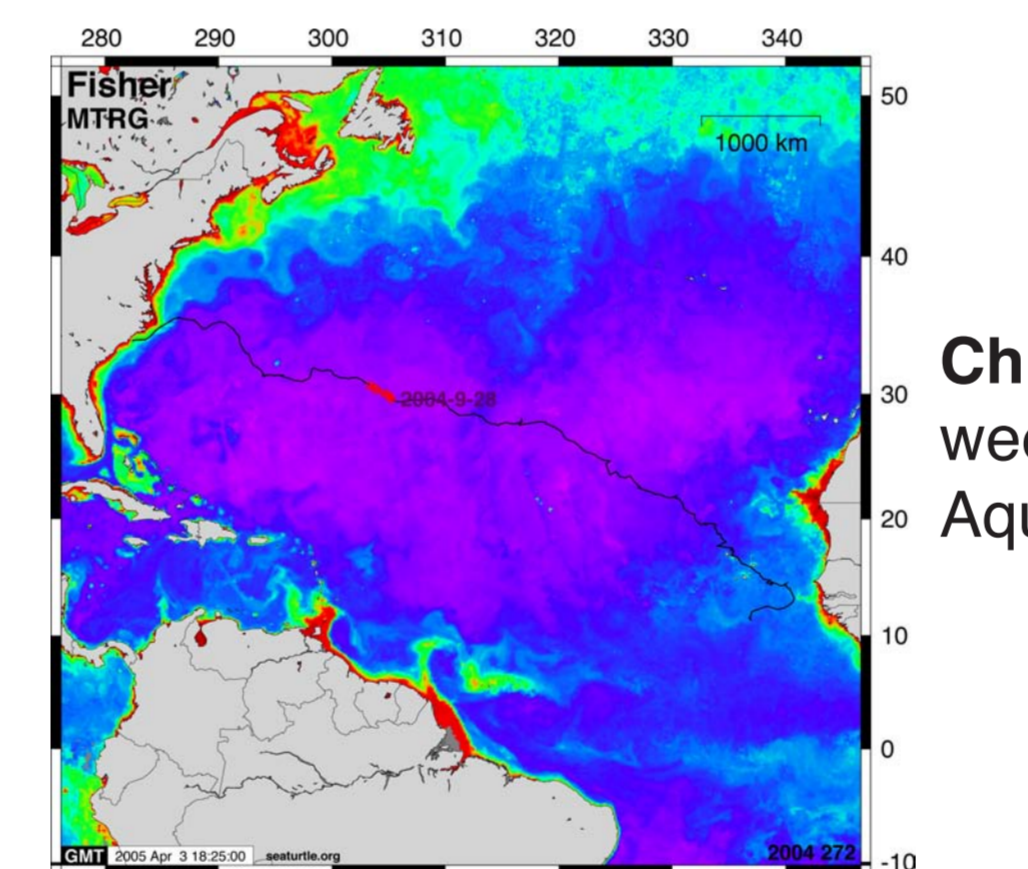
A variety of environmental data layers can be sampled for all reported locations, as well as, included in tracking maps and animations:



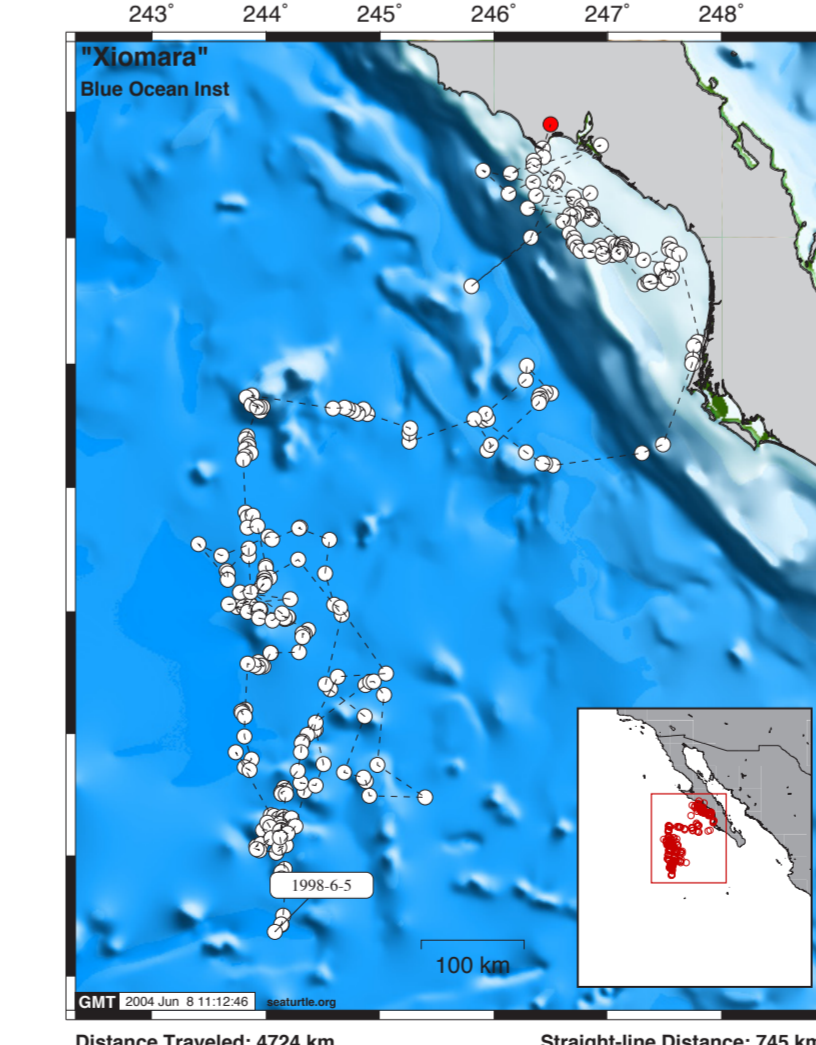
Sea surface currents (geostrophic velocity vectors) derived from AVISO merged sea surface height data



Sea surface temperature is gathered daily from the NOAA GOES and AVHRR satellite data



Chlorophyll is gathered weekly from NASA's MODIS Aqua satellite data archive.



Bathymetric grids and contours from the GEBCO global one minute dataset

Education and Outreach

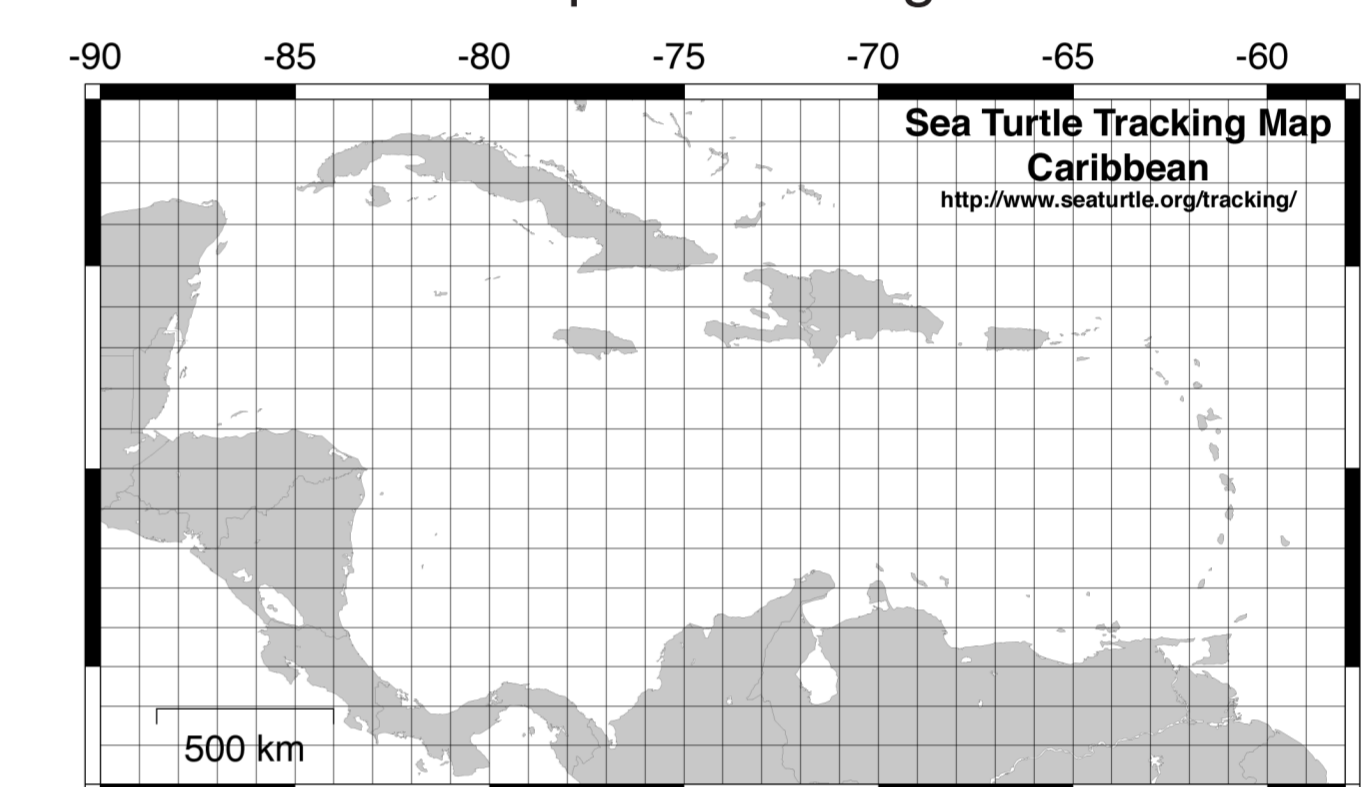
Public website: All, some or none of your tracked animals can be shared on seaturtle.org to inform and educate the public and colleagues about your projects. The tracking website currently receives more than 100,000 hits a month.

Currently Online:

- 39 Projects
- 173 Animals
- 101 Shared Datasets

Education: A limited subset of data from any tagged animal can optionally be shared with registered teachers for use in the classroom.

Downloadable map for tracking in the classroom.



Adoption Program

Organizations that share their satellite tracking maps on SEATURTLE.ORG are eligible to participate in the adoption program. All adoption logistics are handled by SEATURTLE.ORG and proceeds are shared with participating organizations.

Adoptions to date: 555
Total amount raised: \$24,490

A share of these funds have also been used by SEATURTLE.ORG to help fund new satellite tracking projects.

Organizations using the Satellite Tracking Analysis Tool:

- ARCHELON, the Sea Turtle Protection Society of Greece
- Banyan Tree Resorts Marine Lab
- Biomarine International
- Blue Ocean Institute
- Bonaire Turtle Tracking Program
- Charles Darwin University
- Conservation Biology, University of Berne, Switzerland
- Dubai Turtle Rehabilitation / Release Project
- Duke University Marine Laboratory
- Florida Cooperative Fish & Wildlife Research Unit
- Fur seal and seabird tracking
- Georgia Department of Natural Resources
- Islameta Group, Dept. of Ethology, Ecology, Evolution - University of Pisa
- Karen Beasley Sea Turtle Rescue and Rehabilitation Center
- Marine Turtle Research Group, University of Exeter at Cornwall
- MCS-Seychelles
- Moss Landing Marine Lab
- Mote Marine Laboratory
- NC Aquariums
- New England Aquarium
- NMFS National Marine Mammal Lab
- NMFS Office of Protected Resources
- Padre Island National Seashore
- Projeto Tamar
- SCDNR Marine Turtle Conservation Program
- South Carolina Marine Resources Research Institute
- TAMUG Sea Turtle and Fisheries Ecology Research Lab
- Texas A&M University at Galveston
- University of British Columbia-Marine Mammal Research Unit
- University of Puerto Rico Turtle Tracking Program
- VIMS Sea Turtle Research Program
- Murdoch University
- WWF Australia

Filter data by location class, speed, distance, depth, time, and angle. Save filter sets for future use, export and map on the fly.