Hundreds of pleasure boats equipped with sophisticated miniature environmental sensors forming a monitoring network transmitting real-time data on the state of the oceans and coasts to scientists might sound like a sci-fi scenario, but it is actually the brain child of an international initiative with an exotic name, YachtGOOS.

YachtGOOS is a recreational Global Ocean Observing System involving yachtsmen and women in a number of countries. It enables real-time, automated monitoring of the marine environment and covers diverse regions of the coastal and open ocean, leading the way in the use of state-of-the-art technology and environmental policy.

The data gathered will have a range of potential applications, including improved weather forecasting, marine ecosystem forecasting and coastal and fisheries management.

Researchers at Environmental Ocean Team (EOT), in collaboration with MyOcean Resources Ltd (project leaders), and Chelsea Technologies Group, ENEA and the National Oceanography Centre have already conducted pilot studies to test the feasibility of this initiative.

Last year the Lo Spirito di Stella catamaran set sail as part of the YachtGOOS initiative complete with a Chelsea Technologies' MINIpack CTD-F and successfully collected continuous surface measurements of salinity, temperature and fluorescence. This data is currently being analyzed by NOCS. MINIpack has been set to work again, this time on the board the Pogo40 Racer/cruiser Kaitek which is currently undertaking a four year expedition to circumnavigate the globe gathering data for oceanographic research as it sails. It has sailed to Trinidad de Tobago via Gibraltar and the Canary Islands, before continuing on to the Pacific.

The YachtGOOS initiative was conceived by Environmental Ocean Team (EOT), a company created to bring together the worlds of science and recreational sailing by using yachts as environmentally friendly platforms for oceanographic research, and to share findings with the wider public. EOT Director, Emilio Tesi said: “My dream has always been to connect the science with the adventure of travelling. As well as providing valuable data about the marine environment in many different parts of the globe, the Kaitek expedition will raise awareness of the human impacts on fragile ecosystems.”

Emilio Tesi went on to explain the reasons behind the project: "climatic change and environmental emergencies, such as storm surges and oil spills, reinforce the need for constant monitoring of our oceans. We saw this recently with the problems associated with the sinking of the ship Costa Concordia Giglio, and the loss of barrels of toxic substances from a cargo ship between Capraia and Gorgona."

Researcher Paolo Cipollini went on to say: "Scientists use mathematical models to predict the dispersion of pollutants, and these models need to be continually refined by comparison with data of current, temperature and other parameters measured sea. However, oceanographic cruises are very expensive, and satellite data needs to be calibrated with measurements taken at sea. Using recreational boats to collect this data combines scientific research with pleasure and is very cost effective."

The scope of the initiative is well summarized by John Allen (MyOcean Resources), one of the originators of YachtGOOS: "Do not forget that the sailors are among the most adventurous surfers: tools installed on their boats allow us to monitor remote areas of our oceans, often in conditions almost prohibitive."

The YachtGOOS initiative was presented at the "Observing Coastal and Forecasting Systems Today & Tomorrow" Conference, held in Livorno. The conference presented a poster on "YachtGOOS: A Recreational, Global Ocean Observing System" that describes the initiative, with authors John Allen (MyOcean Resources Ltd.), Emilio Tesi (EOT), Calum Fitzgerald (MyOcean Resources Ltd.), Matthew Unetti (EOT), Justin Dunning (Chelsea Technologies Group), Paolo Cipollini (National Oceanography Centre and EOT).

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