

About OTR

Ocean Trek Research™ began as an idea in the creative minds at Airborne Technologies Inc. Having spent the last decade providing innovative solutions in the airborne marine surveying environment, we recognized the need to develop advanced marine buoys and location-based services for the research, defense and commercial markets. After two years of dedicated research, design and sea trials, we launched our first range of buoys, the 200 series, and secured contracts with OrbImage and in NOAA research projects.

Mission Statement

Ocean Trek Research™ is a business and technology solutions-driven company dedicated to providing our customers with innovative and cost effective products. We are committed to being the world's premier marine buoy and location based service provider.

Our Philosophy

We listen carefully to our customers needs to create products and services of superior quality.



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Track this project's progress at www.oceantrekresearch.com
Learn more about the growing problem of marine debris at
www.highseasghost.net and www.algalita.org.



ocean trek research™

OTR-200

On mission in the North Pacific

OTR-200 SERIES

The low profile 200 buoy series from Ocean Trek Research™ is a rugged and extensible buoy design, available with a number of standard or customizable sensor configurations. The 200 series has an integrated communication and mapping capability including user preprogrammed reporting features or interactive TrekMap™ software control (view the buoy's location, add oceanographic data, alter the reporting frequency, poll for a new position, or turn on the recovery beacon).

Features:

- High Accuracy GPS Position
- INMARSAT D+ Satellite Network
- Internal Sea Surface Temperature Sensor
- Bi-directional Communications
- Long-Life Rechargeable Battery
- Solar Panel
- Fully Integrated with TrekMap™ Software
- High Intensity Recovery Beacon
- Standby, Operational and Recovery modes

Options:

- External Sea-Bird 39 temperature recorder
- Tether attachment (bridle line affixed to the buoy)
- Drogue attachment (reinforced hull mounting point)
- WOCE drogue (contact us for more information)
- Standard battery charger or 6 gang battery charger
- Communications cable
- Customize your buoys sensor package working with our experienced R&D team

Specifications:

Physical:

- 11" total height; 3.5" above water
- 20 lbs. positive buoyancy in sea water
- 27.5 lbs. (12.5 Kilograms) weight in air
- Pressure resistant to 15 meters depth

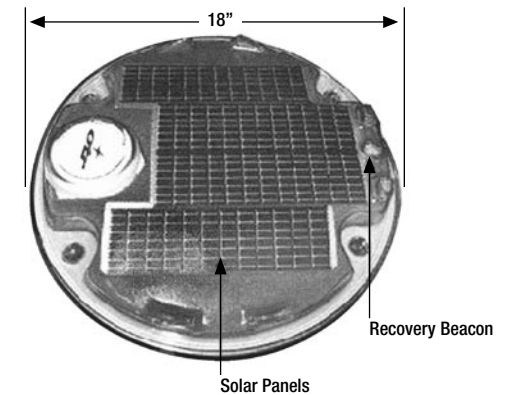
Electronics:

- INMARSAT D+ SAT101 Satellite Modem
- GPS 12 channel 8 sec hot/45 sec cold acquisition
- Internal sea surface temperature sensor
- Operating temperature -25° to 70° C; up to 95% humidity
- Private, digitally encoded burst signals
- Programmable
- Fully integrated with TrekMap™ software

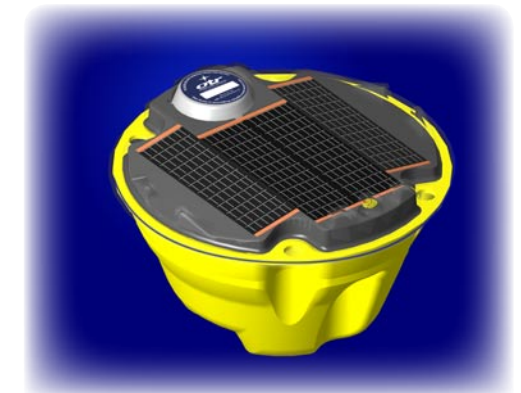
Battery:

Solar rechargeable 12 Volt, 26 Amp-Hr, sealed gel cells

Top View



Side View



GhostNet Debris-tracking Buoys Deployed

OTR 200 buoys are utilized in the North Pacific Gyre for GhostNet monitoring and tracking

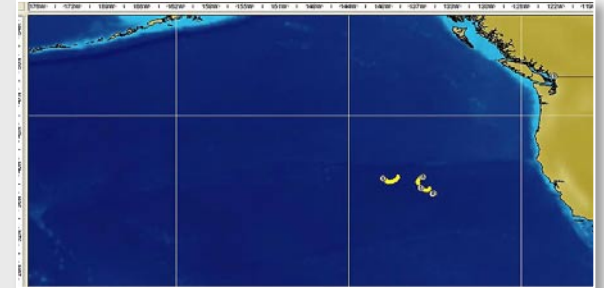
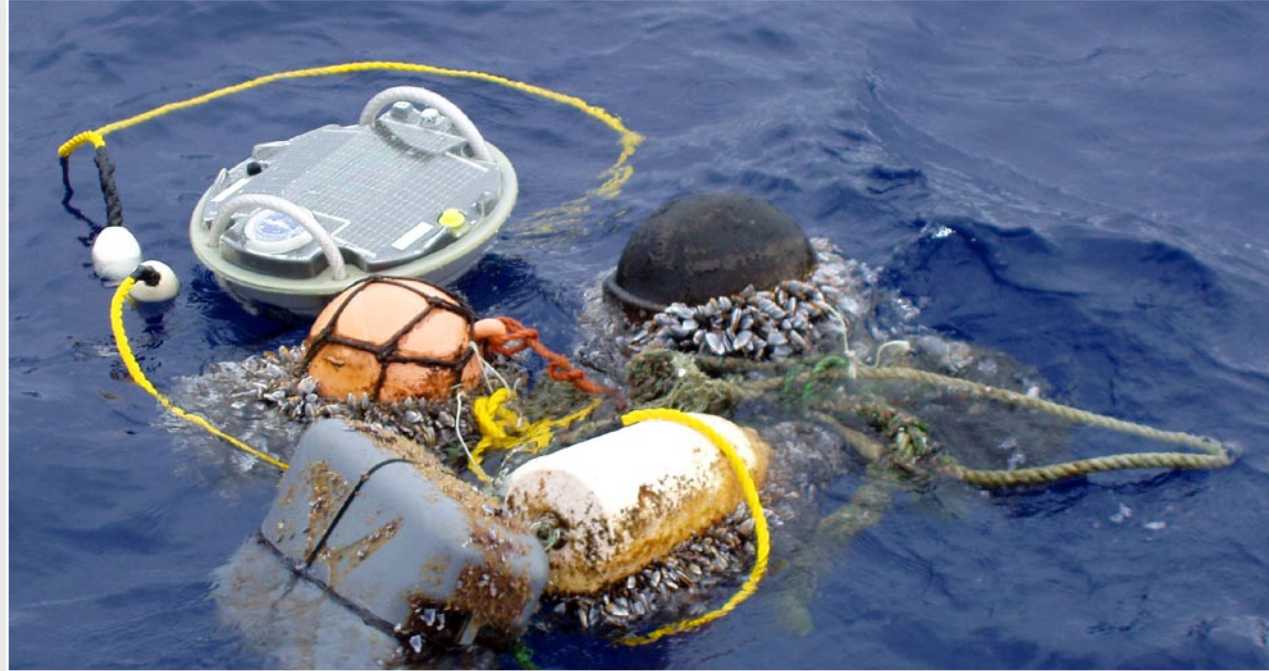
THE FIRST FOUR GHOSTNET DEBRIS-TRACKING buoys have been deployed in the open ocean under the Ghostnet Volunteer Ship program. The program is run by Airborne Technologies of Wasilla, Alaska with support from NOAA Fisheries (SWFSC and PIFSC), NOAA ETL, and NOAA NESDIS.

Captain Charles Moore of the RV Algalita (Algalita Marine Research Foundation) was supplied with the tracking buoys and the likely locations of debris before he left port for a cruise to the area of the Northeastern Pacific Ocean commonly known as “the Eastern Garbage Patch”. The likely locations of debris were identified from NOAA and NASA satellite data supplied by Live Access Servers at the Environmental Research Division of the Southwest Fisheries Science Center. Updates on oceanic and atmospheric conditions in the area of interest were transmitted to RV Algalita via satellite telephone throughout the survey in order to optimize sampling efforts.

The compact solar powered OTR 200 buoy transmits GPS position and other data twice daily via satellite. Messages are delivered in near real-time by email to researchers who monitor the debris movement. The researcher can send an email to the buoy to increase the message rate or turn on a high intensity light to aid in debris recovery efforts.

The tagged nets will be monitored until they can be removed from the ocean; comparison of the actual movements with environmental conditions derived from models and satellite data will allow the refinement of debris transport models in aid of eventual removal of the debris before it threatens essential coastal marine habitat and safe navigation.

Photos courtesy of Captain Charles Moore and Jody Lemmon, Algalita Marine Research Foundation, www.algalita.org.



Four OTR-200 Buoys were attached to marine debris in the North Pacific Gyre. The graphic above illustrates the tracks of the buoys over a four-week time period. The top image shows the buoys' position relative to the North American West Coast. The yellow lines indicate each buoy's track. The points along the tracks represent days. Position information is provided in the upper and left borders.

