

# case study | MARINE LIFE MONITORING

## MASSMO 1, SW England

AutoNaut has completed trials in conjunction with the UK National Oceanography Centre (NOC) for MASSMO 1 (Marine Autonomous Systems in Support of Marine Observations). Over the 13-day mission off south west England, a 3.5m AutoNaut “Gordon” weathered Atlantic storms to collect oceanographic data and track marine life.



A GoPro image, showing a Northern Gannet and the 25m towed array, during Phase 1 of the MASSMO mission

AutoNaut's track during Phase 1 of the MASSMO mission



### Marine Life Monitoring

A key aim of AutoNaut during MASSMO 1 was to detect and track seabirds, marine mammals and fish.

Sensors integrated into the AutoNaut included, in phase 1, visual camera and hydrophone array, and in phase 2 an acoustic fish tag receiver.

The Marine Biological Association of Plymouth (MBA) tagged tracking-devices to 85 fish shortly before the mission. The fish were released into the Marine Protected Area (MPA) outside Plymouth Sound and AutoNaut was charged with detecting and tracking using the VEMCO acoustic receiver. Several tagged fish were successfully recorded by the AutoNaut system to provide information on fish life-cycle biology and migration.

Consistent quality data was collected throughout – all whilst the AutoNaut weathered two Atlantic storms of 70mph winds and waves of over 7m.

*“The fleet encountered typically harsh weather conditions, and gathered a huge amount of valuable scientific and engineering data. Further exciting trials are planned – to test the capabilities of the vehicles and their potential for undertaking novel scientific research throughout the world’s oceans.”*

Dr Russell Wynn, Chief Scientist, NOC

### AutoNaut Specification and Payload

**Length:** 3.5m • **Beam:** 0.5m • **Displacement:** 120kg

**Power Generation:** 175Wp (Solar), 125W (Fuel Cell )

#### Sensor Payload:

- J+S 25m Narcine Passive Acoustic Monitoring (PAM) Towed Array
- AirMar 150WX Weather Station
- Campbell Scientific CS300 Solar Pyranometer
- Wetlabs ECO Triplet Puc
- 2 GoPro Hero 3+ Black cameras
- VEMCO VR2C

### Mission Summary

**Over ground:** • Distance covered 270nm (500km) • Average speed 0.93kts  
**Through water:** • Distance covered 340nm (630km) • Average speed 1.2kts  
• Weather 70mph • Wind 7m SWH • Total duration: 17 days

The AutoNaut successfully proved its seaworthiness and ability to collect a wide range of scientific data in challenging conditions.

# AutoNaut

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