

i3XO EcoMapper AUV

A unique AUV designed specifically for mapping water quality, water currents, and bathymetry.

Navigate challenging natural environments with a monitoring platform that will generate the highest-resolution data at a low cost and low risk to your personnel.



Key Features

- Reliable autonomous underwater vehicle with DVL navigation
- Flexible options for water quality, bottom mapping, water current profiling, and side-scan sonar
- Data logged continuously as vehicle moves through water column
- Deployable by one person
- Easy and fast mission planning
- 8 - 14 hour run times at speeds of 2 - 4 knots
- Built in Wi-Fi

Baseline Monitoring

- Detailed data on horizontal and vertical planes
- Reduce number of personnel on the water
- Reduce costs to run monitoring program
- Simultaneous bathymetric, water quality and current mapping, sonar imaging

Source Water Mapping

- Improve knowledge of raw water quality
- Early warning of algal blooms and low DO events
- Map sediment level and reservoir volume
- Reduce water treatment operating costs

Coastal & Ocean Research

- Surf-zone turbulence
- Benthic boundary layer studies
- Coral reef ecology
- Tidal inlet studies
- Fisheries research
- Physical-biological interaction

Bottom Mapping

- Depth sensor and acoustic sounder standard
- Side-scan sonar optional
- Requires < 1 m water depth

Point Source and Non-point Source Mapping

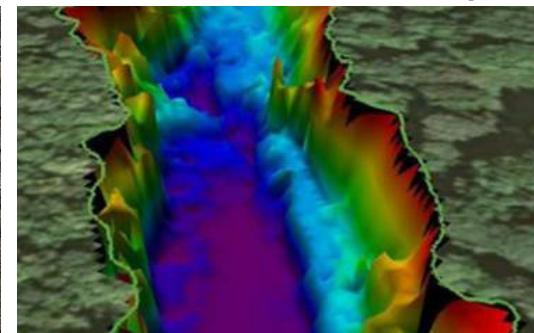
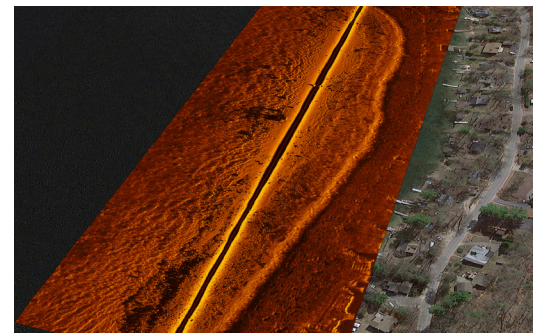
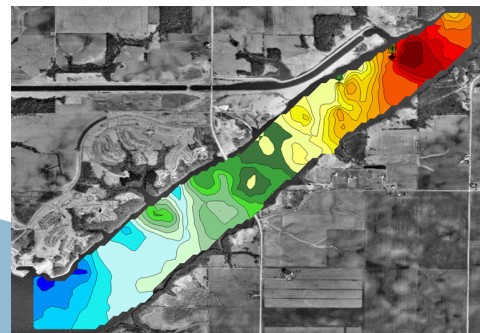
- Generate high-resolution map of plume
- Track movement of point source
- Map non-point source impacts to environment
- Monitor impacts by industry or development



Remote Control

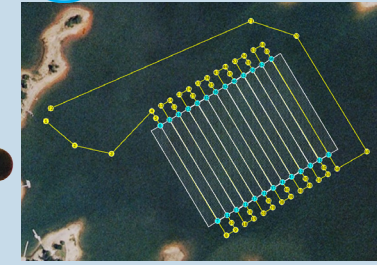


Data Graphs



5 Steps to an EcoMapper Mission

1



Using VectorMap software, create a point-and-click mission on a geo-referenced map.

GPS Readings		Power Readings		Compass Readings	
Current Latitude:	41.6329253	Capacity:	95 %	Magnetic Heading:	Deviation:
Current Longitude:	-71.1277355	Watts:	14 W	True Heading:	Variation:
True Heading:	180 °	Current:	-0.8 A	Roll Degree:	Pitch Degree:
Magnetic Variation:	0.0 °	Voltage:	16.2 V	Depth (DIT):	Depth (DIB):
Current Speed (Dth):	0	Run Time to E:	61.19s	Data Age (sec):	Data Age (sec):
Number of Sonar:	12	State:	Docking		
Data Age (sec):	0				

2

3



Place vehicle in water and start mission.



When EcoMapper is on the surface and within Wi-Fi range, view data and monitor progress, or take manual control over vehicle.

5



Retrieve EcoMapper at planned PARK location. Download data via Wi-Fi link; transfer data to preferred graphing software (software not included).



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i3XO EcoMapper AUV Specifications

i3XO EcoMapper AUV



Generate **high-resolution maps of water quality, currents and bathymetry.**

Dimensions	Length 60 - 85 in., Standard Tube Diameter 5.8 in. Weight 70 lb., Standard
Depth Rating	100 m (328 ft.)
Endurance	8 - 14 hours at 2.5 knot speed; configuration dependent
Speed Range	1 - 4 knots (0.5 - 2.0 m/s)
Communication	Wireless 802.11 g Ethernet standard (Iridium and Acomms optional)
Antenna Mast	Navigation Lights, with IR and Visible LEDs (programmable strobe)
Tracking Internal Data Log; Software	Programmable resolution
Navigation	Surface: GPS (WAAS corrected). Subsurface: RDI Doppler Velocity Log (DVL), 81 m range, depth sensor and corrected compass
Software	Vector Map Mission planning and data viewing SonarMosaic Creates GeoTiff images of side scan records and KMZ files for Google Earth BathyMosaic Creates GeoTiff images for bathymetry data Underwater Vehicle Console (UVC) Operation, run mission, remote control
Energy	800 WHrs of rechargeable Lithium-Ion batteries (Swappable selection)
Onboard Electronics	Intel Dual Core 1.6 GHz N2600 processor with MS Windows embedded; Up to 512 GB Solid State Drive for data storage
Propulsion System	48 V Servo Controlled DC Motor with 3-blade cast bronze propeller
Control	Four independent control planes (Pitch / Yaw Fins)
Charging	24 V External Connector with USB 2.0 Support

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