

**List of instruments and sensors that can be found on the SmartBay Underwater Observatory**

<b>Sensor/Instrument</b>	<b>What it measures</b>	<b>Why do we measure it?</b>
CTD Instrument	Conductivity	From this we can determine the salinity, or the amount of salt in the water.
	Temperature	We monitor water temperature at the seabed and water surface. We can monitor daily fluctuations and long-term trends.
	Pressure/Depth parameters	This allows us to monitor the water level changes in the bay over a tidal cycle, due to a storm surge or to monitor annual changes.
Eco FL Wetlabs Fluorometer	Turbidity	We can learn about the cloudiness/amount of suspended matter in the water which indicates water quality.
	Chlorophyll Fluorescence	Gives us information on the abundance of Phytoplankton in the Bay. Phytoplankton are microscopic plants suspended in sea water and are a source of food for marine mammals.
Dissolved Oxygen Sensor	Dissolved Oxygen	Gives us an indication of the amount of oxygen in the water, which relates to water quality or 'health' of the Bay.
pCO <sub>2</sub> sensor	Carbon Dioxide	This sensor measures the partial pressure of Carbon Dioxide in the seawater. This information can be used to detect biological processes and monitor oceanic uptake of CO <sub>2</sub> and the long-term effectiveness of CO <sub>2</sub> emission reductions.
Hydrophone	Underwater sound levels	Detects marine mammals and measures underwater ambient noise.
Video Camera	Video	To capture underwater video footage and observe marine life underwater.
Fish Tag Detector	Fish tag counts	Detects tagged fish in the vicinity, for fish stock and behaviour assessments.
Acoustic Doppler Current Profiler	Water current velocity and wave conditions	We use this information to understand the wave and current conditions in Galway Bay. We can monitor seasonal variations and understand extreme events better.