

Animation

RV *Investigator* – oceanographic research with the CTD (general)

[YouTube] ref: http://youtu.be/JOUt4_TRPO

Transcript

[Music plays and plankton appear on screen with text: Marine National Facility]

[Camera pans over a school of southern bluefin tuna]

[Image changes to show an animation of the RV *Investigator*]

[Text appears: RV *Investigator* CTD]

[Image changes to an aerial view of the RV *Investigator* and then moves down to the side of the ship where a door opens and the CTD comes out of the ship, suspended over the water on a mechanical arm]

[Camera zooms in on the CTD, and text appears: CTD stands for conductivity, temperature, depth. This device collects a wide range of data underwater to help scientists understand the characteristics of the ocean such as currents, its composition, and how it changes over time]

[Image changes back to the CTD suspended over the water and the mechanical arm lowers the CTD into the ocean]

[Image changes to show water sampling bottles on the CTD and text appears: Water sampling bottles close remotely to collect water samples at different depths]

[Image changes to show the underside of the CTD and text appears: The CTD unit gathers data using electronic sensors and sends data back to the ship]

[Image changes back to the RV *Investigator* and text appears: *Investigator* uses its thrusters to maintain position above the CTD]

[Image changes to show the RV *Investigator* stationary above the water and the CTD descending down through the water. Graphs appear to the right of the image and text appears: AS the CTD descends through the water column electronics monitor many ocean properties like light levels, pressure and temperature. Electronics also measure turbidity (how cloudy the water is with tiny particles)]

[Image changes to show an arrow indicating the depth of the water at 7 kilometres, the CTD returning to the surface of the water, and text appears: As the CTD returns to the surface sampling bottles are closed remotely, to capture water at specific depths. The water is then analysed to measure concentrations of nutrients like nitrate, phosphate and silicate. It is also analysed for concentrations of trace elements like iron, which is important for plankton growth. Onboard the ship, water samples can be analysed for the number and types of plankton]

[Image changes to show an aerial shot of the east coast of Australia surrounded by the ocean currents and text appears: CTD data collected has allowed scientists map where cold and warm currents travel in the ocean, and to discover the southward movement of the East Australia Current (EAC). As the EAC moves south, ecosystems are changing, bringing warmer water species to the seas around Tasmania]

[CSIRO logo appears with text: Big ideas start here www.csiro.au]

MNF: <http://www.marine.csiro.au/nationalfacility/>

Investigator blog: Investigator@CSIRO