

UNDERWATER SCIENTIFIC DIVING TOOLS AND TECHNIQUES

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Research Dive Unit



What Is Scientific Diving?

Scientific diving is a diverse field that covers many aspects of commercial diving, including:

1. Data collection
2. Sample collection
3. Installation, servicing, and cleaning of scientific instrumentation
4. Videography
5. Educational support

Which People Perform This Type Of Underwater Work?

1. Scientists
2. Environmentalists
3. Engineers
4. Police
5. Educators
6. Videographers
7. Aquarists

How Do These Divers Differ From Other Commercial Divers?

This is a very contentious issue

From a safety and efficiency standpoint, these divers should:

1. Be self-reliant
2. Appreciate the effort required in collecting the best possible data
3. Know that they have only one chance to collect a data set
4. Understand that scientific instruments are very sensitive and fragile
5. Know their own limitations

Techniques and Instruments Used In Scientific Diving



The best and safest technique is to avoid diving altogether, rather waiting until spring low tide exposes the relevant sites



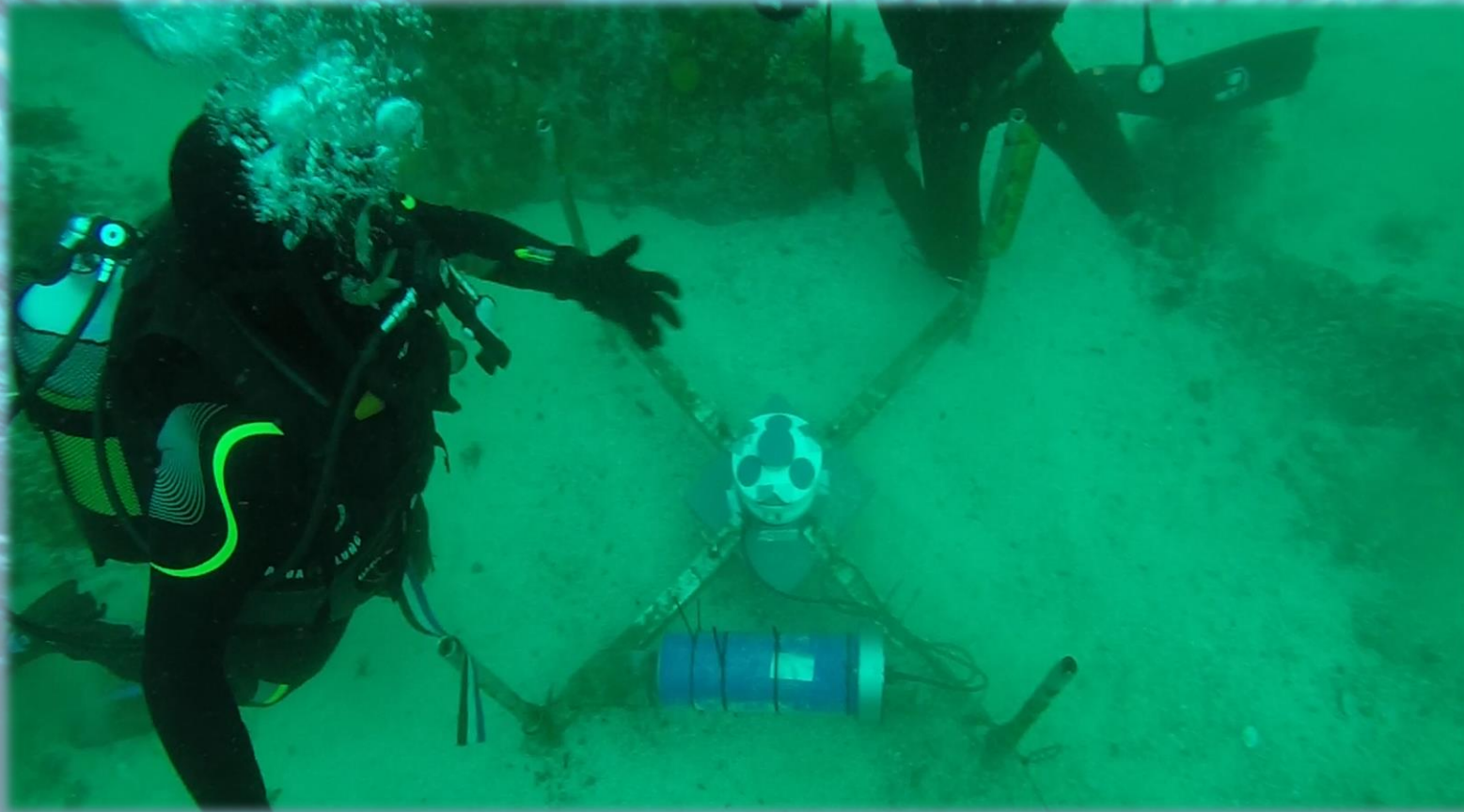
Eliminate the need to dive by using devices to deploy and retrieve instruments, such as acoustic releases

Pictures provided by the CSIR,
Stellenbosch

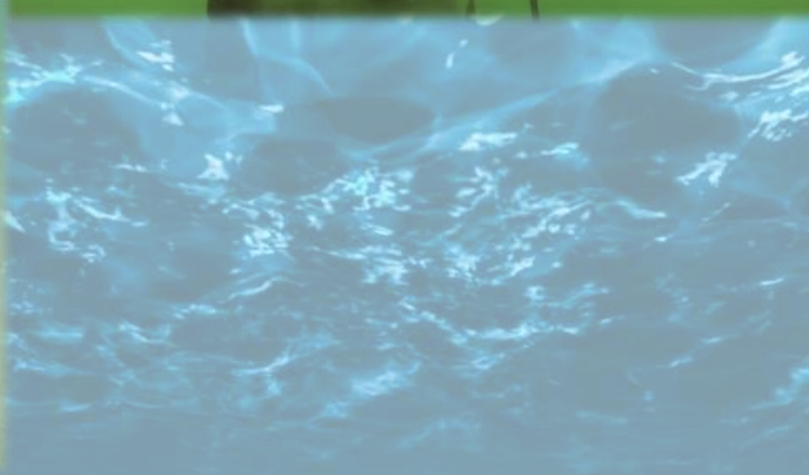
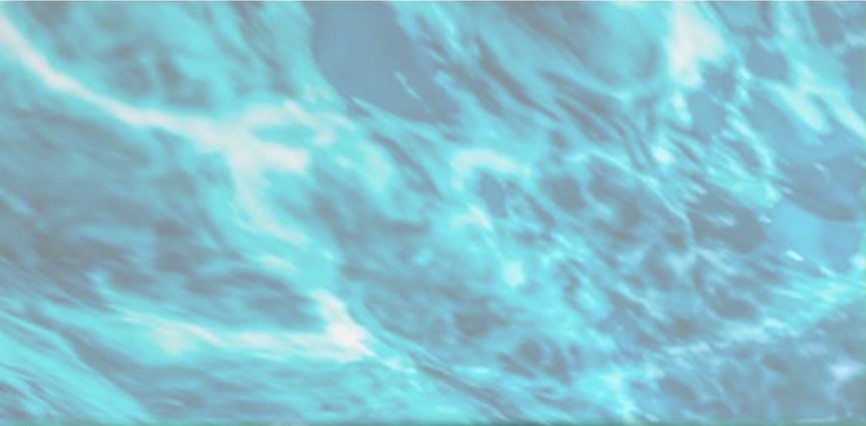


Acoustic releases attached to a buoy

Pictures provided by the CSIR,
Stellenbosch



Acoustic Doppler Current Profiler (ADCP) to
collect sea current and wave data



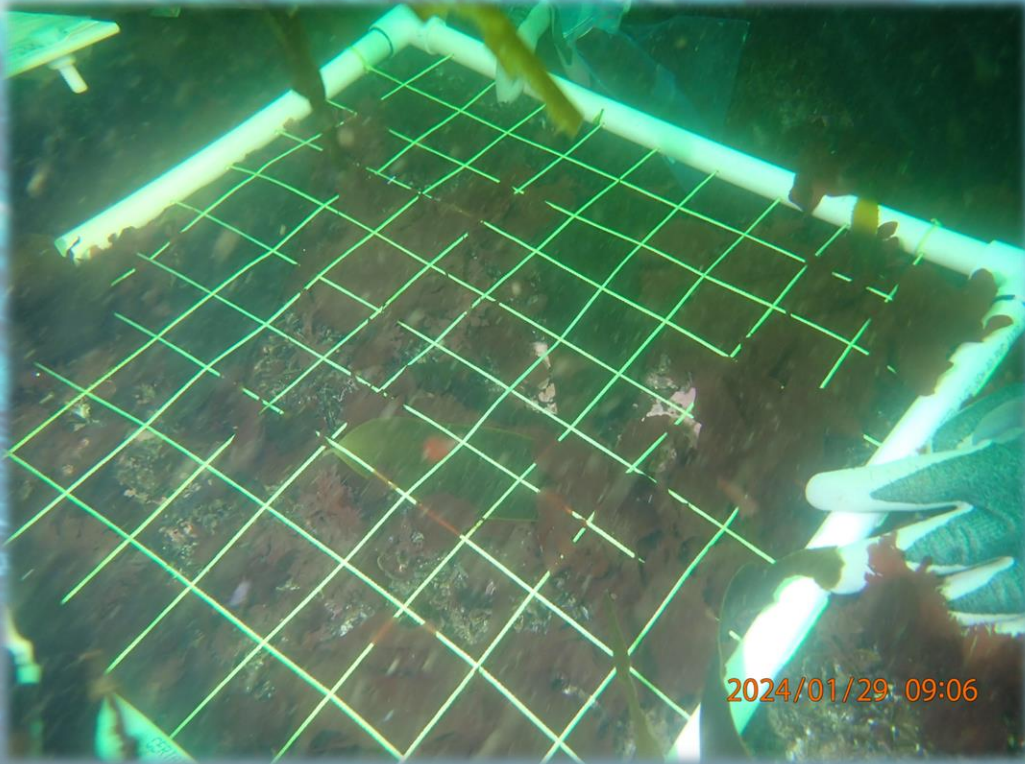
Using tubes to collect sediment samples

Pictures provided by the Anchor Environmental



Suction sampler to collect benthos samples

Pictures provided by Anchor Environmental



Collecting benthic data using a quadrat

Pictures provided by the Clara Steyn (PhD Candidate)
Stellenbosch University



Evidence

Search for evidence by SAPS divers using metal detectors and guided grid searches

Pictures provided by WC WPDS



Random sample collection

Pictures provided by the Steve Benjamin



Counting Crayfish on a transect line



Collecting water samples and taking pictures

Pictures provided by Anchor Environmental



Cleaning and inspecting wave rider buoys

Pictures provided by the CSIR,
Stellenbosch

With Special Thanks To
CSIR
Anchor Environmental
WC WPDS