



Hillarys School Excursion: Science of Sampling

Phase of learning

Senior Secondary (Years 11-12)

WA Curriculum

SS Biology – ATAR, SS Biology – General, SS Integrated Science – ATAR, SS Marine and Maritime Studies – ATAR, SS Marine and Maritime Studies – General

Region

West Coast

Summary

How does a fisheries scientist determine how many fish are in the sea?

This activity demonstrates a range of scientific sampling techniques used by the Department to help better understand and sustainably manage WA's aquatic resources. Students use real data collected by themselves and/or researchers to determine the health of iconic Western Australian fisheries.

How many different types of plants, algae and animals are down there? How many fish are out there to look at when you go diving or to catch when you go fishing?

Despite all of the discoveries that have been made, we still know very little about the marine environment, which is continually changing – with increases in sea temperature, salinity and acidity being experienced across the world's oceans.

The challenge for agencies (such as the Department of Primary Industries and Regional Development) in natural resource management is to be able to sustainably manage our marine environment and the organisms in it. In order to do this, they need to know as much as possible about the populations of marine organisms, how healthy they are and what effort is put into extracting them, as well as understanding the physical environment. This is where the science of sampling comes in to play!

The challenge of conducting science at sea and at depths, makes the world's oceans the most unexplored places on the planet. New technologies and scientific methods are enhancing our ability to find and document marine life, and are changing the way marine scientists operate. Fisheries and marine research scientists use a wide variety of techniques in trying to get a better picture of what's down there.

Some of these techniques are more traditional, such as snorkel or SCUBA diving; netting samples such as trawl, seine, or plankton; or analysing commercial catch returns and surveying recreational fishers. The use of satellite imagery and sonar also can be used to look at populations of fish and other marine animals, as well as providing more information about the physical environment.

One of the relatively new sampling techniques that fisheries scientists are using allows them to 'spy' on fish underwater! Baited Remote Underwater Video Systems (BRUVS) show us what fish are down there in the depths and how many there are – all by using underwater video cameras with a bag of bait!

Cost \$5.00 per student

Related resources

[Hillarys School Excursion: Aquatic Natural Resource Management](#)

[Poster: Abalone Life Cycle](#)

[Poster: Western Rock Lobster Life Cycle](#)

[Fact Sheet: Abalone](#)

[Fact Sheet: Western Rock Lobster](#)

Linked External Resources

[State of the Fisheries and Aquatic Resources Report](#)