

# Shellfish Monitoring Overview

## Outline

This topic allows you to investigate a soft-shore marine environment, and the impacts that humans have on these ecosystems. As part of this topic you will take part in the Hauraki Gulf Forum (HGF) Community Shellfish Monitoring Project. This contributes towards improved understanding of the state of the state of inter-tidal shellfish resources and biodiversity in the Hauraki Gulf Marine Park. This experience will give you the knowledge and skills to carry out your own investigations for two NCEA Biology Level 2 Achievement Standards:

2.2 'Research the interaction between humans and an aspect of biology'

2.4 'Investigate an interrelationship or pattern in an ecological population or community'

## Learning Outcomes

By the end of this topic you will be able to:

- define key terms: shellfish, bivalve, univalve, survey, monitoring, ecosystem, ecosystem services, biodiversity, environmental indicator, sustainable harvesting, sediment, transect, quadrat, abundance, density, natural variation, kaitiakitanga, rahui, bioaccumulation
- explain why shellfish are being monitored
- detail reasons why shellfish are important
- explain potential threats to shellfish populations
- detail abiotic and biotic factors that affect shellfish
- list what data will be collected in shellfish survey to allow a possible pattern or interrelationship to be identified
- describe and demonstrate basic sampling methods & equipment used: transects, quadrats, sieves, measuring device
- explain why accuracy in measuring and recording data is important, and where common sampling errors can occur
- describe human impacts on area being surveyed
- analyse data using appropriate data display
- interpret data display to describe the pattern or interrelationship being investigated
- explain and discuss the pattern or interrelationship identified with reference to
  - a) environmental factors
  - b) the biology of the organism
- develop a specific question to be investigated about human impacts on shellfish find a range of relevant resources relevant to the question
- write a report that
  - a) describes biological concepts and processes (e.g. bioaccumulation, shellfish as environmental indicators, ecosystem services)
  - b) describes the impacts of humans
  - c) discusses the current and future management options for the ecosystem and the implications of decisions made (socially, ecologically, economically)
  - d) references resources used and includes a bibliography