**Scientific knowledge and Māori knowledge about mussel biology**

**Levels:** 5-6  
**NoS achievement aims:** Understanding about science, Participating and contributing   
**Contextual strands:** Living world   
**Topic:** Rocky shore

**Rationale**

Living things need the right conditions to reproduce successfully and maintain sustainable levels. Māori traditions and Western science can work together to preserve populations that may be at risk.

**What you need**

* Access to information about:
  + resource bans (rahui)
  + the life cycle of the mussel – separate file
* A consequence map – separate file

Rahui: ban or prohibition on collecting resources; harvest ban. When a rahui is placed on a river, lake, forest, or harbour, people are banned from using some resources. For example, a rahui might ban people gathering shellfish from a beach, for various reasons. Many Māori tribes use the practice of rahui to conserve or replenish a resource.

**Focus**

* What is a rahui? What do we know about it?
* How would a rahui help the survival of green-lipped mussels?
* Why do we need to preserve natural resources?
* What conditions are needed to keep species surviving?
* What happens to natural resources that are not protected?
* Where do traditional ideas and customs related to the preservation of a natural resource come from?
* Where do science ideas and practices related to the preservation of a natural resource come from? What is the same and what is different about these two types of knowledge?
* Can traditional knowledge and science knowledge work together?

**Exploration**

1. Get students to prepare for their investigation into rahui and mussels by undertaking background research. For example, they could:
   * investigate reasons for imposing rahui
   * use kōrero/interviews with people involved in imposing rahui
   * research web resources.
2. Have students use their research to create a consequence map (see activity resources below) of positives and negative outcomes of placing a rāhui.

**Reflection**

* In what ways can traditional Māori knowledge about the organisms living in an ecosystem help scientists understand that ecosystem?
* Where/how could you find out about traditional Māori knowledge?
* Where/how could you find out about scientific knowledge?
* How can these knowledge systems support and enhance each other?
* How might over-harvesting of one or more living member(s) of an organism affect the balance of the whole ecosystem?
* How can we find out about the state of balance within an ecosystem?