Reef Management

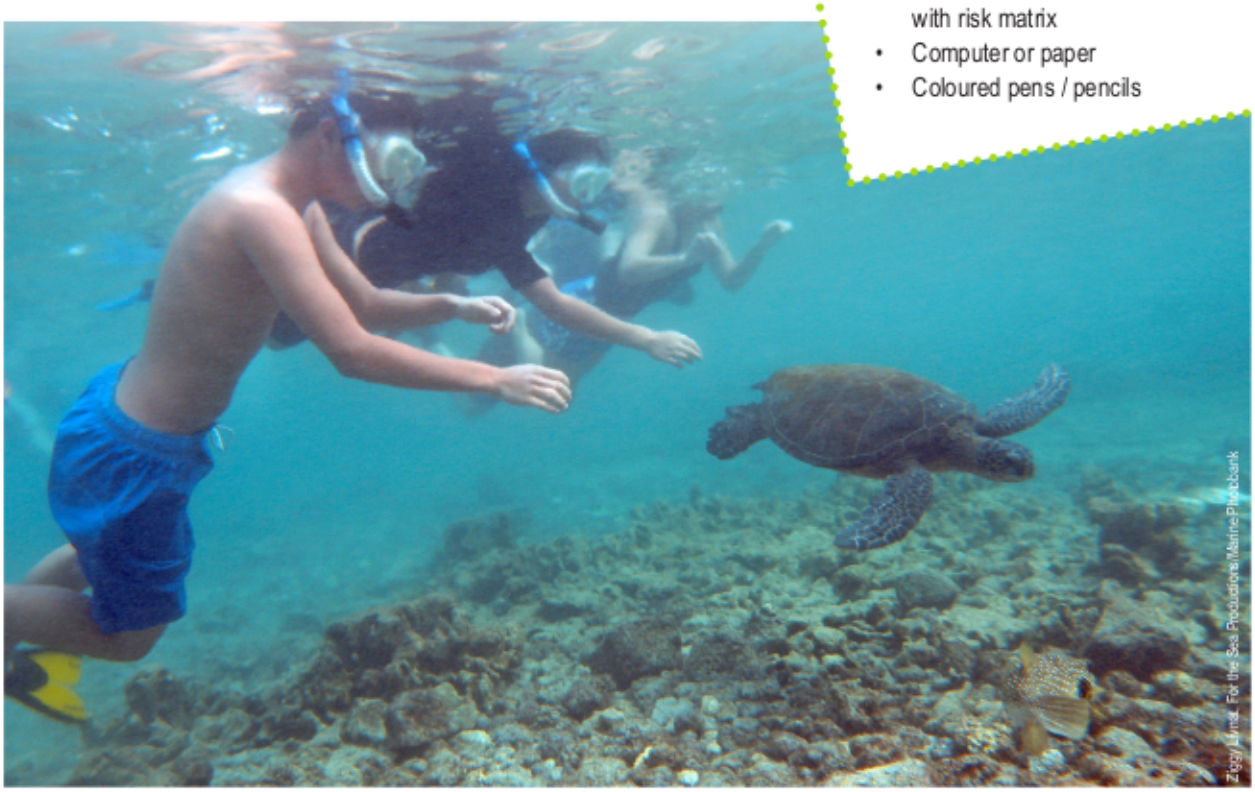
The aim of this activity is to develop and present a code of practice for visiting the reef and discuss the practical implications of its implementation. Imagining yourself as a reef manager, you will create a brochure or presentation including a short promotion of your reef, main activities for visitors and best code of practice you should follow in order to protect yourself, others and the reef environment.

Time

Four hours

Tools

- Risk assessment worksheet with risk matrix
- Computer or paper
- Coloured pens / pencils



Snorkeling tourists attempt to touch a protected green sea turtle.

Background

The millions of people visiting and working on reefs can benefit or degrade reefs, depending on how they behave. Reefs need effective management to remain resilient to existing and predicted disturbance. Reef managers and business operators on reefs are responsible for developing, communicating and enforcing best practices for reef visitors.

It makes sense to follow advice that will keep us safe and to look after the things we value. Look out for strong currents before swimming, wear a helmet when riding your bike, don't text while driving, don't feed the birds, apply immediate pressure to a bleeding wound. These are tested ideas (some enforced by law and some not) recommended to protect people, assets and the environment. When several ideas are written around a theme, such as tourism, they form a code of practice, or best practice.

Many reefs are only visited temporarily by tourists or researchers. Ecotourism is a way of protecting environments when travelling to them. Ecotoursim follows specific codes of practice to conserve the environment and improve the well-being of local people in natural areas through responsible travel. These practices should minimise impact, build environmental and cultural awareness and respect, provide positive experiences for both visitors and hosts, provide financial benefits and employment for local people and raise sensitivity to the host country's political, environmental, and social climate.

Classroom activity 1

In this activity you will develop a risk assessment for specific reef related activities in the field and in the lab. Complete the risk assessment worksheet provided, or one your school / group already own.

1. List at least eight activities you would do during a field trip to a reef.
2. Identify the main hazard involved with each (any situation that poses a level of threat to life, health, property or the environment).
3. Calculate the risk involved using the risk assessment matrix.
4. List the specific control measures you could use to bring each risk to acceptable levels.
   These can include:
   a. getting rid of the hazard or risk (e.g. the activity should not be done)
   b. replace with something less harmful (e.g. an alternate activity or method)
   c. separate people from the harm (e.g. keep a distance or restrict access)
   d. change behaviour or the physical environment, (eg re-designing equipment, change locations or timing, add warning signs)
   e. apply administrative arrangements (e.g. limit entry or time spent in a hazardous area, ensure immediate access to first aid kit)
   f. use personal protective equipment (e.g. foot protection or sun smart gear)

Risk assesment matrix

Consequence / Likelihood	One minor injury **Negligible**	One severe injury or multiple minor injuries **Marginal**	One death or multiple severe injuries **Critical**	Multiple deaths **Catastrophic**
Certain	High	High	Extreme	Extreme
Likely	Moderate	High	High	Extreme
Possible	Low	Moderate	High	Extreme
Unlikely	Low	Low	Moderate	Extreme
Rare	Low	Low	Moderate	High

Risk assesment table

Fieldwork activity	Hazards	Risks	Control measures to bring risk to acceptable levels
Snorkelling	Drowning	Moderate	Boat support
Collecting samples			
Reef walking			
Lab work			

Day tourism to the outer reef from Cairns, QLD, Australia.

Classroom activity 2

1. During this activity you will develop a brochure or power point presentation of best practices for reef visitors.
2. Identify the main activities reef visitors are likely to be involved in.
3. For each activity list 3-5 things people should do to keep themselves and the reef safe. Remember to think about how reefs may change throughout a year (e.g. some areas may need to be avoided during breeding seasons or evacuated during cyclones).
4. In your project you should also include:
   a. a brief description of the reef (location, size, access, accommodation)
   b. points of interest and importance (special wildlife or events, why this reef is important)
   c. local threats to the reef
   d. current protection status (is it a marine park, who owns or looks after it?)
   e. who is responsible for enforcing these practices and penalties that apply
5. Think carefully about the length, order and layout of your project to best communicate the code of practice you have developed. Devise a communication strategy of where you would provide details of the code of practice to reef visitors.

Field activity

1. For several or all of the activities you and your group are involved in, you will observe reef visitors (usually your classmates) and make a note of how a code of conduct was followed (or not) for each activity.
   a. pay attention to how the code of practice was communicated
   b. think about the consequences, for visitors and the reef, of following the code

Questions

1. What were the most typical things you saw, or expect would happen, in breach of the code of practice on reefs?
2. List some difficulties involved in establishing a code of practice for people visiting the reef.
3. Describe how you determined what was most important to include in the code?
4. What are some other methods you could use to choose what sort of activities should be included in a code of practice?
5. How can you minimise the following:
   a. anchor damage
   b. diving
   c. dynamite fishing
   d. coral bleaching
6. How would you enforce any regulations you put in place?
7. Who is currently responsible for this on the Great Barrier Reef? In the Maldives? On your local reefs?
8. What are some other methods you would use, as well as a code of practice, to minimise threats to reefs?

Research projects

1. Present a case study on a local natural area that is currently being protected through best practice.
2. Investigate two ecotourism accreditation programs available and how tourism operations benefit from having accreditation.
3. How much money should reef visitors have to pay towards conservation and management (if any), each time they visit? Justify your answer.

References

Reid et al. (2009) Coral Reefs and Climate Change: The guide for education and awareness. CoralWatch, The University of Queensland, Brisbane. (See Importance of Coral Reefs page 82 and State of the Reefs page 122)

GBRMPA (Best Environmental Practices); www.gbrmpa.gov.au
World Tourism Organisation; www.unwto.org
Ecotourism Australia; www.ecotourism.org.au
Project AWARE; www.projectaware.org
Reef Resilience; www.reefresilience.org/Toolkit_Coral/C1_Intro.html