



**Why should there be areas where we can't go fishing?** We need to catch fish for food and to make a living. However, the problem is that catch rates, say the number of fish caught in one hour, is decreasing.

**Why is this happening?** It could be that we have caught too many and there are not enough adult fish left to reproduce and replace the numbers that we catch. Or it could be that we have damaged the environment\* in which the fish live or the ecosystem\* of which the fish are a part.

Fisheries authorities and fishing communities are taking steps to manage ecosystems and fishing so that stocks of fish and invertebrates\* remain at a sustainable level. Fisheries can be managed in many different ways and these are discussed in Teachers' Resource Sheet 1: Fisheries management.

One of the fisheries management tools commonly used in Pacific Island countries is establishing no-take areas\* in which fishing is not allowed. In the Pacific, no-take areas may also be called fish reserves, *tabu* areas or marine protected areas. The term no-take area is preferred because its meaning is clear.

## What are no-take areas?

A no-take area is an area in which all fishing or harvesting of marine life is banned, ideally on a permanent basis.



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## Are there other types of restricted fishing areas?

Other types of closures include an area in which particular fishing methods are banned; for example, the use of nets may be banned even though other less damaging fishing methods, such as line-fishing, are permitted. Another is an area in which the catching of a particular species\* is banned; for example, the collection of sea cucumbers may be banned in an area even though the catching of other species is allowed.

In addition there are rotational closures\* in which a given fishing area is divided into smaller units which are fished in rotation; for example, if there are three smaller units, fishing is banned in the first area while the other two are open to fishing. The following year, fishing is banned in the second area while the other two are open to fishing – in this example each small unit would have one unfished year to regenerate every third year.

There are also periodic closures, such as those in which fishing is banned for a short time to protect fish during spawning.\*

Although these variations are important in managing particular fisheries, it is important to have some permanent no-take areas to provide long-term protection for ecosystems and the species that they support.

## What are the purposes of no-take areas?

Most scientists agree that no-take areas provide the following benefits:

- They protect habitats, plants and animals. In scientific terms, they conserve biodiversity\*.
- They enhance fisheries in nearby areas. They provide places in which fish can grow, breed and spread to other areas.
- They protect against environmental uncertainty such as global warming. They are more likely to contain less stressed habitats, which would be more resilient to environmental changes.
- They provide unspoilt areas for income generating ecotourism. Tourists will pay to see well-preserved areas of corals and coral reef fish (however, visitors should keep to marked tracks, or snorkelling trails, in order not to damage reef areas).

Point b) is the most important to many fishers who have to obtain seafood on a daily basis to feed their families. The basic aim is to ensure that there are undisturbed habitats and a sufficient number of adult fish to produce enough young to replace the numbers caught.

## How can no-take areas increase catches?

A fishing community's expectation is that a no-take area will eventually result in improved catches outside the no-take area. In reference to the figure below, the no-take area is represented by the heavy circle.

Fish in the no-take area spawn and produce small larval stages that either (A) settle and remain in the no-take area or (B) drift with the

currents to settle and grow outside the no-take area. Juveniles and adult fish also (C) move out of the no-take area as spillover, perhaps due to crowding.

A permanent no-take area is just one way of managing a fishery\* but it is an important tool in a toolbox of management controls, some of which are listed in Teachers' Resource Sheet 1: Fisheries management.

