

WHAT ARE MANGROVES?

Mangroves are woody trees or shrubs that grow in shallow intertidal margins of sheltered coastal and estuarine environments. In New Zealand there is only one mangrove species (*Avicennia marina* subspecies *australasica*, also known as Manawa). It is a native species that grows in estuaries in the northern part of the North Island. The limits of its range occur at Kawhia Harbour on the west coast and Ohiwa Harbour on the east coast. Although New Zealand mangroves can tolerate mild frosts, their distribution is thought to be mainly limited by cold temperatures. In Waikato estuaries mature mangroves are typically 2-4 metres tall.

WHERE DO THEY GROW?

Mangroves are adapted to grow in environments that are too harsh for most other plants to survive. They cope with daily inundations of seawater by filtering out most of the salt with their roots and secreting the excess from their leaves. They can live in waterlogged muddy sediments because their roots obtain oxygen through vertical snorkel-like 'breathing' roots called pneumatophores. The wide spreading horizontal root system also helps the plants anchor in soft mud. In late summer, mangroves produce small, sweetly scented orange flowers that then form fruit-like objects called propagules. The propagule (which is actually a young developing plant) drops off and drifts on the water, and if it comes to rest where the habitat is suitable, then a young plant will establish.

WHAT ARE THEIR BENEFITS?

Mangroves perform a range of environmental functions. Organic matter produced by mangroves form the beginnings of a food web by providing either fresh material for grazing insects, or dead plant material on which algae, bacteria and fungi can grow. This provides a rich source of food for creatures such as snails, worms, shellfish, small fish and crabs. In turn, these creatures become prey to larger fish and birds which live in and around the mangrove swamps. Mangroves provide habitat for a variety of plants and animals. Seaweeds often grow beneath the mangrove trees. Oysters, mussels and barnacles attach themselves to the mangrove's aerial roots. Many species of fish feed and shelter in the mangroves at some stage of their life.

Mangroves also provide habitat and a food source for a range of terrestrial organisms, including insects, spiders and non-wading birds. Many birds use mangrove areas in New Zealand, including the rare banded rail, marsh crane, fernbird and Australasian bittern. Mangroves form a protective buffer zone which helps to shield coastlines from storm damage and wave action. Mangroves also help to improve water quality by trapping sediment and contaminants such as zinc and copper.



MANGROVE EXPANSION

Sedimentation (i.e. the build-up of sediment) in estuaries is a natural process, but sediment inputs have increased markedly following the clearance of native forest and urban and rural development. This infills channels and raises the elevation of intertidal flats, allowing mangroves to spread. Areas suitable for mangrove growth may also increase if water flow within an estuary is changed, for example, a causeway can reduce tidal flushing and increase the build-up of sediments behind the structure.

Sedimentation allows mangroves to spread into and take over other habitats (for example, seagrass beds and mudflats). Some wading birds may be deprived of feeding and roosting areas as the mangroves spread, but this can also benefit other species which use mangroves. Spreading mangroves can also reduce the amenity value of estuaries by blocking public access and modifying views.



WHAT IS WAIKATO REGIONAL COUNCIL DOING TO MANAGE MANGROVE EXPANSION?

Waikato Regional Council recognises that mangroves are native vegetation, an important part of the natural coastal ecosystem, and that there can be environmental effects from removing them. We also recognise that it might be more appropriate to remove mangroves in some cases to protect the amenity values of estuaries. A resource consent from Waikato Regional Council is required to remove mangroves.

Removing mangroves may seem like a simple solution to the build-up of muddy sediments in estuaries. However, whether any or some of the mud moves, and where it ends up, will vary from estuary to estuary. Some mud may move if it is exposed to tidal or wind-driven currents, but it may just shift to other parts of an estuary, potentially smothering shellfish and seagrass beds. If mangroves are removed and the sedimentation problem is not addressed, new seedlings will continue to establish in the shallow areas of an estuary.

Waikato Regional Council is working to address sedimentation, which is the primary cause of mangrove expansion. We encourage landowners to use best management practises to limit the amount of sediment ending up in waterways and ultimately our estuaries. Advice and support is available from our staff on how to do this.

Our council also supports research by universities and other agencies into the ecological role of mangroves and mangrove management.

MORE INFORMATION

Contact

Call our coastal science team on 0800 800 401 or email info@waikatoregion.govt.nz.

Publications

View, download or order the following publications at www.waikatoregion.govt.nz/Publications/

Mangrove-habitat expansion in the southern Firth of Thames: Sedimentation processes and coastal-hazards mitigation, Waikato Regional Council Technical Report, 2008/13

Assessment of physical changes after mangrove removal: Whangamata Harbour 2008, Waikato Regional Council Technical Report, 2009/13

Web

www.waikatoregion.govt.nz/sedimentation

www.waikatoregion.govt.nz/coastal-habitats-indicator