



Section 4: Priority Waikato ecosystems

Marine and estuarine ecosystems

The coastline of the Waikato region covers approximately 1150 kilometres, and includes the exposed west coast, the Firth of Thames and the Coromandel Peninsula. Estuaries are among our most sensitive coastal places. They are home to a wide range of birds, fish and shellfish, and are of enormous environmental and economic importance. There are 35 estuaries in the Waikato region.

A number of different aquatic ecosystems are recognised within estuaries: seagrass beds, mangroves, saltmarshes, sand and mud flats, rocky reefs and shallow open water areas. Seagrass beds and mangroves provide shelter and food for a wide range of coastal and estuarine animals. Seagrass also binds land sediments and acts as a wave break. Salt marshes are often nurseries for juvenile fish, and are important breeding and feeding areas for birds. Intertidal sand and mud flats are home to marine worms, shellfish and crabs. These are important food sources for many fish and birds, and they also play a vital function in recycling nutrients.

The inner Firth of Thames is a productive habitat for cockles, pipi and fish, particularly benthic soft-sediment feeders such as yellowbelly flounder, dab flounder and short finned eel. Snapper and yellow-eyed mullet, pilchard, ahuru and grey mullet are also found within the inner Firth of Thames. Several species of shark feed in the area, most notably rig. In spring the females of several species including rig, hammerhead, bronze whalers and schools of shark utilize the upper Firth of Thames for birthing. Orca are occasional visitors to the shallows and common dolphins, including nursery groups, are observed regularly in the upper Firth. The Firth is also an important feeding ground for whales. Thousands of arctic nesting shorebirds, including the bar-tailed godwit, lesser or red knot, ruddy turnstone, eastern curlew and sharp-tailed sandpiper use the Firth as a wintering ground.



Estuarine ecosystem
Image courtesy of Blair Dickie

Subtidal environments include rocky reefs with associated macro-algae (seaweed) and fauna, and soft sediment habitats. Maui's dolphin (less than 150 in the wild) are found only on the west coast of the North Island of New Zealand. New Zealand fur seals are also found off the west coast. Currently there is only one marine reserve within the Waikato region, at Te Whanganui a Hei (Hahei), established in 1992.

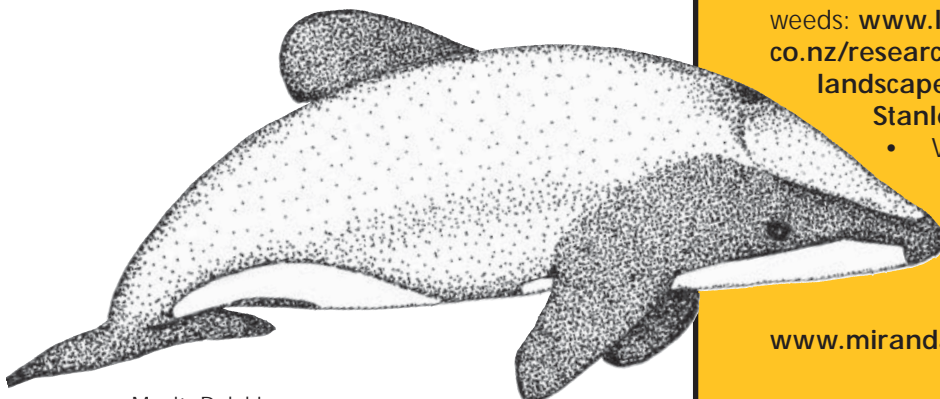
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Threats to marine life

Main potential threats to coastal and marine life:

- Coastal margin development - population growth and coastal settlement.
- Increased demands for recreational uses - such as boating and fishing.
- Habitat destruction from excavation and dredging for example for boat ramps and boat channels.
- Sedimentation from catchment and forestry development.
- Contaminants, such as nutrients and heavy metals, resulting from sewage, agricultural and stormwater runoff and discharge.
- Development in estuaries - such as marine farms and marinas.
- Over fishing.
- Introduction of invasive species such as *Spartina*.
- Rubbish from boats and antifoulants used on boats.
- Stock grazing down the estuarine waters edge.
- Long term climate changes including sea level rise.

Sedimentation and pollution pose threats to subtidal eel grass beds. Subtidal sea grass beds are important nursery habitats for juvenile invertebrates, fish and shellfish. Pollution and sedimentation can also adversely impact shellfish beds. Other specific threats related to marine organisms, especially the Maui's dolphin, include trawl fishing, boat strikes, entanglement in marine litter (especially plastics, nets and fishing lines) and persistent organic pollutants and heavy metals.



Maui's Dolphin

Which types of marine ecosystems are most at risk in our region?

- Subtidal eel (sea) grass beds.
- Intertidal eel (sea) grass beds.
- Salt marshes and saline wetlands.

How do I know what to do, and when?

It's important to practice good land management in our estuaries' catchments. This reduces run-off and leaching of nutrients and minimises erosion, leading to less sediment and infilling in our estuaries. For information on what you can do, see the table overleaf.

Marine and estuarine ecosystems hot tips

- Visit the Department of Conservation website to find out more about marine ecosystems and species: www.doc.govt.nz
- Read "Marine Reserves - A Guide for Prospective Applicants" to find out about supporting an application for a marine reserve in your area: www.doc.govt.nz
- Visit Environment Waikato's website for factsheets on marine and estuarine ecosystems, harbour and coastal wetland care groups and to find out more about animal and plant pests: www.ew.govt.nz
- Visit NIWA's website to find out more about marine and estuarine ecosystems: www.niwa.cri.nz
- To find out more about Maui's dolphin visit: www.mauisdolphin.org.nz
- Visit the Weedbusters website: www.weedbusters.org.nz
- Visit the Landcare Research website and read their factsheet on how to prioritise weeds: www.landcareresearch.co.nz/research/biodiversity/landscapesprog/workshops/Stanley_WeedSheet.pdf
 - Visit the Miranda Shorebird Centre on the Firth of Thames to learn more about shorebirds: www.miranda-shorebird.org.nz



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Choosing Actions: Marine and estuarine ecosystems

Assess needs/plan

Do this before anything else! Seek professional advice if you need to identify the management issues for your site. Write up a plan of action. Find out from Environment Waikato whether there is a harbourcare group in your area.

Seek funding

Complete this table to determine what actions are needed and how much each will cost before you apply for funding. You may need to obtain funding before you can start on the work. Call 0800 BIODIV for advice. Remember that marine ecosystems are generally public property. Seek permission from the authorities to undertake any works such as weed control or planting in estuaries.

Action and Priority	Comments
Reduce pollution 1 st Keep contaminants out of stormwater 2 nd Exclude stock from waterways 3 rd Dispose of rubbish wisely	<ul style="list-style-type: none"> Prevent pollutants getting into stormwater drains and flowing into estuaries and coastal areas. Wash your car, boat keels, motors and trailers on the grass, not on paved surfaces. Fix oil leaks. Don't put petrol, paints, solvents, and garden chemicals down stormwater drains. Have septic tanks pumped out regularly to prevent seepage into the coastal marine area. Follow Environment Waikato's on-site sewage rules for septic tank design. Fence off estuaries to prevent stock access. Prevent stock from polluting the streams and rivers which flow into the coastal marine area by fencing and planting waterways. Dispose of boat rubbish (especially plastic) and sewage on-shore, and maintain bilge pumps to reduce oil leaks. Don't dump rubbish in estuaries (including garden rubbish, which may include invasive weeds).
Reduce sediments 1 st Fence and plant stream banks and steep slopes 2 nd Minimise erosion 3 rd Control pests	<ul style="list-style-type: none"> Plant or leave a buffer strip of plants along streams and at the edge of estuaries to help stabilise the banks and trap nutrients. Fence gullies and waterways to prevent stock access. Retire unproductive land and allow it to regenerate into native bush. Don't cultivate steep land. Minimise earthworks on steep slopes and close to water, and use appropriate land management practices such as keeping stock off steep pasture when it is wet. Plant cover crops when land is left fallow. Remove wild goats and rabbits (they eat the vegetation that stabilises slopes).
Fish responsibly 1 st Respect set net bans 2 nd Minimise harvest 3 rd Report poaching	<ul style="list-style-type: none"> Don't use set nets in west coast harbours where Maui's dolphins are known to have been seen. If dolphins are seen near set nets, lift the net from the water immediately. Support organisations such as Forest and Bird when they call for submissions and funding to ban set netting and trawling. Respect harvest limits for seafood, they are designed to ensure there is plenty for everyone, now and in the future. Take only what you need. Contact the Ministry of Fisheries on 0800 4 POACHER (0800 4 76224) if you see set nets within the closed areas.
Respect marine mammals 1 st Report strandings 2 nd Don't harass mammals 3 rd Report sightings	<ul style="list-style-type: none"> Report dead or stranded whales or dolphins immediately to the Department of Conservation on 0800 DOCHOT (0800 362 468). Do not move the dolphin or any nets found in the area. Use a 'no wake' speed for boats within 300 metres of dolphins and whales. Don't try to swim with or feed any dolphins, seals or whales. Report sightings of Maui's dolphins to the World Wildlife Fund sightings network on 0800 4 MAUIS (0800 462 847) or submit a report at www.maisdolphins.org.nz. Report the location, number of dolphins and date/time of sighting. If possible, take a photo with the shore in the background.

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Action and Priority	Comments
<p>Control weeds</p> <p>1st Plant only natives 2nd Limit spread of weeds 3rd Remove weeds</p>	<ul style="list-style-type: none"> • Don't plant exotic species in estuaries. • Remove exotic plants and weeds from the motor and hull of boats and wash down to prevent invading weeds being transferred to the marine area. • Talk to the Department of Conservation about options for removing aquatic weeds such as spartina and paspalum. Control dryland weeds such as wilding pines and gorse at the edge of estuaries. Getting rid of some weeds can just encourage others! Get good advice on weed management.
<p>Protect sensitive areas</p> <p>Avoid sensitive habitats</p>	<p>Avoid trampling across saltmarshes, mangroves and seagrass beds. They are sensitive to trampling and can take a long time to recover.</p>
<p>Marine reserves</p> <p>Support proposals for marine reserves</p>	<p>People in communities where there are potentially important marine areas and values can support a proposal for a marine reserve through organisations such as Forest and Bird.</p>
<p>Monitoring</p> <p>1st Weeds 2nd Water quality</p>	<p>Take before and after photos of estuarine areas. Monitor intertidal areas for weeds such as paspalum and spartina. Check for improvement in water quality and record. Contact Environment Waikato for advice about monitoring.</p>

Whangapoua Harbour
Image courtesy of Environment Waikato

