

Tai Timu Tai Pari

Sea change

Hauraki Gulf Marine Spatial Plan

HAURAKI GULF MARINE SPATIAL PLAN

BIODIVERSITY AND BIOSECURITY

Biodiversity needs variety in ecosystems and habitats to exist, and protection from non-native pests and diseases. For this reason, healthy ecosystems, biodiversity and biosecurity are linked, and all are required for sustainability.

Ecosystems and habitats

The Hauraki Gulf Marine Park Act 2000 recognises that the Hauraki Gulf has a quality and diversity of biology and landscape that makes it outstanding within New Zealand.

The Gulf and its ecosystem developed in isolation over millions of years. The history of human occupation of the Gulf and its land catchment is relatively short, but the effects of human activities have been profound, particularly over the past 150 years or so.

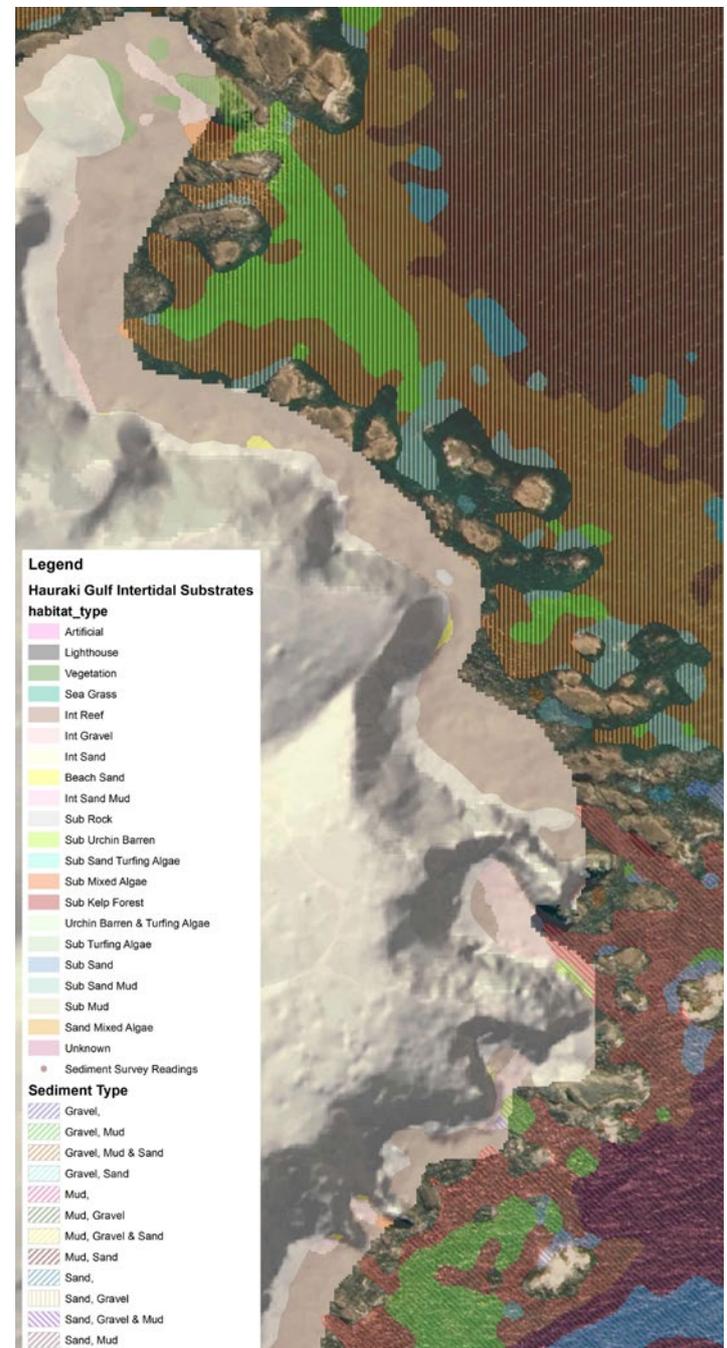
Environmental changes have largely been negative and uni-directional and nearly every part of the Hauraki Gulf has been modified by human activities. Key components of the natural ecosystem, such as subtidal mussel beds and fish populations, have effectively been lost or significantly reduced.

Only intact, healthy ecosystems can provide the complete range of benefits that humans want and need over a long period of time.¹

Just how important is the Hauraki Gulf for seabirds?

- The world's entire population of black petrels breeds on Great and Little Barrier islands.
- 98 per cent of Cook's petrels breed on Little Barrier.
- Over 20 species of seabirds breed in the wider Hauraki Gulf, including species endemic to northern New Zealand.
- About a third of the world's 350 seabird species have been seen in northern New Zealand waters.

Habitat: Substrate examples in the Gulf



¹ Hauraki Gulf Forum 2011 – State of our Gulf

Biodiversity

Biological diversity is commonly referred to as biodiversity. Biodiversity is everywhere – our flora and fauna, and their habitats, occur on both public and private spaces, and in urban, rural, freshwater and coastal areas.

The Hauraki Gulf Marine Park comprises a semi-enclosed shallow coastal area, studded with islands, and fringed with numerous harbours, bays and spits.

The Gulf includes a wide diversity of marine environments including estuaries, sandy beaches, mudflats, rocky reefs, kelp forests, seagrass beds, coral, sponge gardens, shellfish beds and mangroves.

The Hauraki Gulf Marine Park supports a rich diversity of marine species, including:

- Numerous species of fish. For example, 80 species of fish have been recorded in the coastal waters off north-eastern Great Barrier Island.
- Numerous species of shellfish and invertebrates. For example, a survey of only intertidal sites within the Gulf identified 728 species.
- Twenty-three species of seabird known to breed in the Gulf, with a further 25 species visiting.
- At least six species of cetaceans, including resident Bryde's whales and schools of up to 150 common dolphins.
- Fifteen species of diadromous fish, which spend most of their lives in freshwater, but include a marine stage in their life-cycle.²



Photo: Roger Grace

Biosecurity

Biosecurity is the protection of the economy, environment and people's health and social and cultural wellbeing from pests and diseases. It includes trying to prevent new pests and diseases arriving, and eradicating or controlling those already present.

Animal pests can kill our native wildlife and damage native vegetation. Invasive weeds can displace native plants and alter the habitat that native wildlife needs to survive. Marine pest species can be introduced from ballast water and biofouling.

A total of 139 non-indigenous marine species have been recorded in the Hauraki Gulf. Four arrivals in the past 10 years are notable for their potential to cause significant ecological and/or economic effects:

- Mediterranean fanworm (*Sabella spallanzanii*)²
- clubbed sea squirt (*Styela clava*)
- Asian kelp (*Undaria pinnatifida*)
- Japanese mud crab (*Charybdis japonica*).³

2-6 Hauraki Gulf Forum 2011 – State of our Gulf

7 Barlow, 1991

Once established, it is extremely difficult to eradicate non-indigenous marine species. Management is therefore focused on preventing the introduction and spread of species to locations where they do not presently occur.⁴

At least 27 of the 62 gulf islands that are larger than 10ha are free of mammalian pests⁵, providing safe homes for some of New Zealand's rarest species, including takahe, shore skinks, hibi and saddleback/tieke. The most likely way for pest animals and plants to reach the islands is by stowing away on or in footwear or gear, or on vessels.

Godwits

Photo: Roger Grace



Sustainability

Sustainability means different things to different people. From the perspective of ecosystems' science, sustainability and sustainable management require a broad view integrating historical, current and future ecosystem responses to human and natural changes. Achieving this requires ecosystem-based management – an approach that considers the entire ecosystem, including humans.⁶

Mauri

Mauri refers to the life force, spark of life or essence that is possessed by all living things.⁷

All life forms owe their health and continued existence to the mauri that they possess. When the mauri of something is strong, they thrive, and when it is weak they suffer.

Cockle beds

Photo: Roger Grace

