

2015
SUPPLEMENTARY
MATERIAL

BIODIVERSITY



Introduction

Biodiversity describes the variety and diversity of animal and vegetal species, including the places or ecosystems where they live. New Zealand's native biodiversity is unique. The high percentage of endemic species (those found nowhere else in the world) makes New Zealand's native biodiversity both special and highly vulnerable. Auckland is home to thousands of introduced plants. The majority of these do not harm the natural environment, human health or the economy. However, there are some that pose significant risk (see Auckland Regional Pest Strategy). These are known as 'pest plants' or more commonly 'weed species'.

Watercare is responsible for providing safe and reliable water, treating wastewater to a high standard and discharging it in an environmentally sustainable manner. Healthy ecosystems are essential for the effective delivery of these services.

As many of Watercare's operations are located in areas of cultural and ecological significance, we need to operate in a way that minimises harm and even protects and enhances these ecosystems.

Pest and weed control in water catchments

Watercare has nine water supply dams in the Hunua and Waitakere Ranges regional parks within Auckland Council park land. A lease agreement with the council allows us to use land in the Hunua and Waitakere Ranges for water storage to meet the potable water requirements for Auckland residents and businesses. As part of the lease agreement Watercare is required to undertake environmental management within the lease land. Environmental management includes, but is not limited to, weed management and pest control work.

Regional park status recognises the areas are important parts of Auckland's natural environment. The Waitakere Ranges gained status under the Waitakere Ranges Heritage Area Act 2008. The act recognises the natural and social value of the Waitakere Ranges. The catchment land for the dams is predominantly a mix of regenerating and mature native forest. The Hunua Ranges is the largest indigenous forested area in the Auckland region and is home to a variety of rare native flora and fauna. Some of the catchment land for the dams within the Hunua Ranges is also operational forestry. Hays Creek Dam, which Watercare owns, is the only dam not located within a regional park. It is slightly east of the Hunua Ranges.

An operational plan is defined yearly with Auckland Council's parks division to determine roles and responsibilities for weeding and pest control activities within the water catchments. It also outlines Watercare's main projects for the year, as well as those of the council.

Each water catchment is broken down into several areas. For instance, the exclusive area consists of the face of the dam and of the operational sites around the dam. The primary area is all land within 10 metres of the high water level. Each area involves different responsibilities for Auckland Council and Watercare. The closer to the water, the more Watercare is involved in weed and pest management to ensure there is no adverse effect on water quality.

In parts of the catchment located on the same slope but away from the reservoirs, Auckland Council does the weeding, planting and pest control. However, as water quality is paramount, Watercare must approve these activities to ensure there are no adverse impacts.

In addition to the existing manual bait application and traps, the recent 1080 drops by Auckland Council in the Hunua Ranges have introduced aerial pest control campaigns. Carrying out this operation in a water catchment area requires careful planning and the council worked closely with Watercare. Important measures were put in place to ensure the ongoing safety of Auckland's water supply including:

- The 1080 application was only carried out if the weather was suitable – a forecast of two/three fine nights and avoidance of heavy winds.
- Helicopters carrying out the application were not allowed to fly over the water storage dams. Watercare closely monitored this with staff on the ground.
- Helicopters carrying out the application used highly accurate satellite systems and custom-designed bait applicators to ensure pellets were not spread outside the operational boundary.

To ensure there was absolutely no risk to the public water supply during and after these 1080 applications, Watercare took its dams out of service. A rigorous testing regime was implemented, and the dams were not returned to service until all tests showed no sodium fluoracetate (1080) in the water and approval was given by the Medical Officer of Health.

SUMMARY OF BIODIVERSITY ACTIVITIES – 2014/15

Manukau Harbour

Mangere Coastal Walkway

Location

Along the coast adjacent to the Mangere Wastewater Treatment Plant.

Watercare's operations in the area

Wastewater treatment plant

Area

Approximately 13km of walkway and associated planting between 10 to 100m in width, provided for and maintained by Watercare

Ecological attributes

Provision of public walkways, bird roosts and native and marine habitat.

Our strategy

Maintenance of bird roosts and continued restoration of harbour environment. Continuous pest control through bait and trap lines reduce the numbers of predators near the bird roosts.

Condition of site at end of reporting period

Planting programme has been maintained to a high standard. The new bird roost adjacent to Pond 2 is now complete. Eroded sand and shells from the 'small shell' bird roost was restored by volunteers in May 2015.

Knowledge of endangered species present in the area

Multiple breeding pairs of conservation dependant New Zealand Dotterel use the bird roosts and surrounding land to raise their young. In the 2014-15 season there were at least five breeding pairs using the bird roosts and three chicks were confirmed to have fully fledged (although there may have been more). In addition, there were eight breeding pairs using the Pond 2 landfill as a nested area. The staff at Pond 2 adjusted their planting schedule to ensure they remained undisturbed for the season. It is not known how many of these fledged but there were multiple sightings of chicks in December and January which was a positive sign.

Any important event to report on regarding flora and fauna at the site?

The Goodbye Godwits event hosted by Ambury Park staff on the 7th of March 2015 was a huge success. Hundreds of ornithological enthusiasts came to Watercare's coastal walkway to view the thousands of birds which use the restored roosts.

Puketutu Island

Location

Manukau Harbour

Watercare's operations in the area

Wastewater treatment plant – biosolids

Area

110 hectares

Ecological attributes

Historically used for pastoral agriculture and as basalt quarry.

Our strategy

Former quarry on the island will be rehabilitated with biosolids and the island will be progressively converted to parkland.

Condition of site at end of reporting period

Began placing biosolids at Puketutu Island in December 2014

Oruarangi Awa

Location

Along the coast adjacent to the Mangere Wastewater Treatment Plant.

Watercare's operations in the area

Wastewater treatment plant

Area

Approximately 30 hectares.

Ecological attributes

Marine estuarine ecosystems being restored.

Our strategy

Estuary previously closed to the sea by the oxidation ponds restored to tidal influences. Continued restoration of the marine environment.

Condition of site at end of reporting period:

In 2013, a chemical dye spill caused by a local freight business was drained to the Awa via the stormwater system and resulted in substantial short-term damage to aquatic life with many organisms perishing. It appears that the chemical dye has largely dissipated from the estuary of the Oruarangi Awa through tidal influences but remains in the upper reaches of the river, which are under Auckland Council's management.

Any important event to report on regarding flora and fauna at the site?

Watercare is working closely with Auckland Council to ensure appropriate remediation is undertaken. The freight business's insurer has assessed the current situation and concluded that biological remediation has occurred and that no further work is needed in the stream. Auckland Council has rejected this conclusion and the matter is likely to be determined in court.

Onehunga

Bycroft Wetland

Location

Onehunga, Auckland

Watercare's operations in the area

Water treatment plant

Area

Approximately one hectare.

Ecological attributes

Home of rare and endangered moss species, indigenous vegetation and wildlife.

Our strategy

Maintain constant flow of water from Watercare facility.

Condition of site at end of reporting period

Watercare carried on maintaining the flow

Knowledge of endangered species present in the area

- Endangered moss species, Fissidens berteroi
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Hunua Ranges

Hunua Ranges

Location

South of Auckland

Watercare's operations in the area

Water supply lakes

Area

Approximately 10,500 hectares, mostly in native bush.

Ecological attributes

Native bush and wildlife habitat.

Our strategy

Allow for continuous water flow from dams to streams and implement fish trap and haul to allow fish movement.

Condition of site at end of reporting period

At all key flow monitoring sites, downstream from dams, environmental flows have been maintained. Trap and haul programmes have been successfully implemented and operated.

Knowledge of endangered species present in the area

- Galaxiid species
- Anguilla species
- Kokako
- Hochstetter frog
- Short jawed kokopu – found in Upper Mangatawhiri dam. Significant as it is the first record of this species in a lake environment.

Any important event to report on regarding flora and fauna at the site?

Extensive native riparian planting and weed control along 1.5km of the Mangatawhiri River in accordance with the Mangatawhiri River Riparian Management Plan.

Waitakere Ranges

Waitakere Ranges

Location

North west of Auckland

Watercare's operations in the area

Water supply lakes

Area

Approximately 5,000 hectares in native bush.

Ecological attributes

Native bush and wildlife habitat.

Our strategy

Allow for continuous water flow from dams to streams and implement fish trap and haul to allow fish movement.

Condition of site at end of reporting period

At all key flow monitoring sites downstream from dams environmental flows have been maintained. Trap and haul programmes have been successfully implemented and operated.

Knowledge of endangered species present in the area

- Galaxiid species
- Anguilla species
- Kokako
- Hochstetter frog
- Whitehead

Any important event to report on regarding flora and fauna at the site?

Further translocation and release of both kokako and whiteheads (Ark in the Park)

Pukekohe

Pukekohe oxidation ponds

Location

Adjacent to Waikato River

Watercare's operations in the area

Wastewater treatment plant

Area

Nine hectares

Ecological attributes

Home of birdlife as an extension of the adjacent wetland owned by Fish and Game

Our strategy

Unused ponds to be rehabilitated using flow of treated effluent. Lost wildlife habitat to be provided in operational wetland area.

Condition of site at end of reporting period

Disused ponds remain drained to ensure area does not support avian botulism. Programme being developed for longterm rehabilitation of the area. Artificial wetlands still in operation.

Any important event to report on regarding flora and fauna at the site?

Aerial spraying on pampas in 2014/15

Waikato River

Waikato RiverCare

Location

Along the banks of the Waikato River

Watercare's operations in the area

Water treatment plant

Area

120km of river bank with target of planting four kilometres per annum.

Ecological attributes

Riparian planting of along the Waikato River to enhance river water quality and create ecological diversity.

Our strategy

Watercare is continuing to take an ongoing interest in the appropriate management of the Waikato River catchment and is a financial member of the Waikato Rivercare Trust.

Condition of site at end of reporting period

Continuing financial support of this initiative and staff involvement (committee).

SUMMARY OF BIODIVERSITY ACTIVITIES – 2014/15

Region-wide

Auckland Volcanic Cones

Location

Eight volcanic cones distributed around the Auckland urban area

Watercare's operations in the area

Reservoirs for storage and supply of drinking water

Area

Each volcanic cone is set in parkland, with the largest being approximately 120 hectares in area. The cones are typically 100 to 150 meters above the adjacent urban area.

Ecological attributes

The cones are parks and heritage areas and are a defining feature of Auckland. However many of the cones not used for reservoirs have been quarried away for aggregate.

Our strategy

Watercare is working with stakeholders interested in the cones with a view to enhance the values of the cones while protecting its water supply assets.

Million metres stream project (Sustainable Business Network)

Location

Crowdfunding website making it easy and exciting to invest in the health of New Zealand waterways, bringing donors and planting projects together

Area

Nation-wide

Ecological attributes

Restore native bush on riparian margins and create ecological diversity.

Our strategy

Ongoing financial support to the initiative

Trees for Survival

Location

Educational and environmental programme focused on converting susceptible land and waterways to native bush.

Area

Nation-wide

Ecological attributes

Restore native bush and create ecological diversity.

Our strategy

Ongoing financial support to the initiative
