

Naturalisation of Parks Service Assessment

Purpose

To complete a service assessment to explore “naturalisation of parks opportunities” (i.e. edible gardens, food forests, pollinator pathways and natural meadows). This report is to assist in identifying potential trial sites for the four themed naturalisation opportunities within local parks in the Kaipātiki Local Board area.

Context

Kaipātiki Local Board Plan consultation has highlighted a desire by community representatives to advocate for naturalising local parks. Naturalisation could be achieved through food forests, access to other edibles, vegetable garden beds and natural meadows, which will support invertebrates, stormwater quality and pollination within parks.

The Kaipātiki Local Board area sits within the North Shore Section of the Tamaki Ecological District. The Tamaki Ecological District covers the Auckland Isthmus from Manurewa to Long Bay. It is one of the eight ecological districts in the wider Auckland Region.

Indigenous vegetation cover across the Tamaki Ecological District has been significantly reduced, and much of the remaining vegetation sits within the North Shore section, and accordingly has increased significance (North Shore City Ecological Survey, North Shore City Council, 2005).

North Shore, and more specifically the Kaipātiki Local Board area, contain the largest areas of continuous indigenous vegetation remaining in the Tamaki Ecological District. The largest of these include:

- Kauri Park to Birkenhead Area (Oruamo Headland) – 200ha
- Eskdale Bush – 72ha
- Kauri Glen – 30ha.

Soil type is important to consider in the context of this assessment, as it will lead to successful site selection. The dominant soil type of the North Shore is low fertility clay soils, which would have once been covered in Kauri forests. Kanuka and manuka communities have regenerated on soils where kauri forest was cleared or burnt. Breakdown of the resinous leaves and branches of the kauri forest has formed a hard impervious layer which restricts water and nutrient cycling through the soils.

More fertile alluvial soils are found in the low-lying streams and floodplain systems of the Wairau Valley, which would have historically been associated with kahikatea and broadleaved species.

Volcanic soils associated with Onepoto and Tuff Crater are widespread throughout Northcote, and coastal forest (dominated by pohutukawa) would have once been found on these soils.

In developing the naturalisation of parks opportunities, all trial sites have been identified with the significance of the local area in mind.

Scope

Local parks within Kaipātiki Local Board area; including civic spaces and co-locating to existing community facilities. The recommendations outlined in this report will focus on local parks, in particular as this aligns with decision making over local parks by the Kaipātiki Local Board.

Definition of each trial scope:

Natural Meadow

A meadow is an open habitat, or field, vegetated by grass and other non-woody plants. They attract a multitude of wildlife and support flora and fauna that could not thrive in other conditions. They provide areas for nesting, food gathering and pollinating insects. There are multiple types of meadows such as agricultural, transitional and perpetual. Meadows may be naturally occurring or artificially created. It is recommended that a meadow be created through a low mow or no mow maintenance regime.



Figure one: Meola Reef Reserve, Natural Meadow example.

Pollinator Pathway

The pollinator pathway movement originated in Seattle, Washington. These pathways have the objective to connect existing isolated green spaces and create a more hospitable urban environment for pollinators like bees with a system of ecological corridors of flowering plants by using existing urban infrastructure such as road space, rooftops or parks.



Figure two: Hakanoa Reserve, Pollinator Pathway example

Food Forest

The concept of a food forest has its roots in permaculture, a philosophy that advocates for managing agricultural landscapes in harmony with nature. The practice emphasizes perennial, low-maintenance crops that leverage natural nutrient inputs, drainage patterns and climate to achieve a self-sustaining, food-producing ecosystem. A food forest is quite literally a forest that produces food for people to eat. Nut and fruit-producing trees and shrubs are planted with herbs, vines and ground flora that produce fruits, vegetables, and edible greens and roots. Urban communities are increasingly taking up the practice as a way to activate underutilised public land, to work and combine urban agriculture goals with goals for open space, recreation, and community development.



Figure three: Stadium Reserve, Auckland Teaching Gardens Trust

Edible Garden

Edible gardens are considered a type of landscaping on either private or public land that are used to grow food. It has been considered a hybrid between farming and landscaping in the sense of having a growing garden to feed yourself. Grassed areas can often be replaced with fruit or vegetables.



Figure four: Auckland Botanic Gardens, Edible Garden example

Recommendations

This assessment included a review of possible sites in collaboration with input from Auckland Council's Senior Ecologist. The methodology for site selection included a review of reserves with nearby services such as local schools, highly used play spaces, existing community gardens and other highly used community facilities such as libraries.

Based on staff interviews and site visits with Community Facilities and Biodiversity staff, and the findings of this report, it is recommended that a single site is progressed initially:

Proposed trial sites are Monarch Park or Manuka Reserve (Site photos and proposed location attached as appendices. An area within Monarch Park is the preferred trial site, based on the following rationale

- Is north-facing
- Is an area that is separated by a concrete path and would provide a buffer area to the existing bush

The initial trial should include fruit trees and a natural meadow (no mow/ low mow area). In future years the further development of this trial can include edible gardens and food forests components such as vegetables, herbs and plants.

To create the meadow area, all Kikuyu grass shall be removed through a scrape back, native species of grass sown and wild flowers planted.

Pollinator Pathways are not recommended to progress until a time where an appropriate community group or volunteers are identified to assist with the management and maintenance of the pathway. Auckland Transport and the Ministry of Education are key stakeholders to progress this trial. The fruit trees and natural meadow will create an area for pollinators within the reserve.

Strategic Alignment

Kaipātiki Local Board Plan 2017

The Kaipātiki Local Board Plan recognises that the area's 540ha of reserve and local parks provide a unique collection of 'destination parks', 'primordial rainforest', 'sparkling waters' and widespread beautiful vistas. The plan establishes aspirational objectives and key initiatives for the community, with the following three outcomes established to guide works and help make Kaipātiki a better community for all:

Outcome 1: Our people identify Kaipātiki as their Kainga (Home)

Our people have a sense of belonging, are connected to one another and are proud to live in Kaipātiki.

Outcome 2: Our natural environment is protected for future generations to enjoy.

People can get to and take pleasure in the Kaipātiki coastline, green spaces and waterways. Our community acts as kaitiaki (guardians) of environment so that future generations can do the same.

Outcome 3: Our people are active and healthy

It's easy to make healthy lifestyle choices in Kaipātiki.

The proposed naturalisation opportunities should be measured against the following local board outcomes to ensure that local board budgets are appropriately delivering for Kaipātiki communities.

Auckland Plan

The Long Term Plan for Auckland refers to a region of abundance. A region desired by many, a diverse and vibrant region, providing natural environment contributing to our sense of identity and wellbeing. The Auckland Plan ensures that Auckland continues to grow positively through six key outcome areas:

- Belonging and Participation
- Maori Identity and Wellbeing
- Home and Places
- Transport and Access
- Environment and Cultural Heritage
- Opportunity and Prosperity.

To meet the vision of a world class city, the network of parks and open spaces will need to continually grow and improve. The naturalisation of parks opportunities contributes to this through providing quality open spaces that can meet a diverse need of local communities beyond the traditional recreational requirements.

Through enhancing the function of local parks, it will allow local communities to feel greater ownership over the parks and increase education. Sustainable park practices will benefit both present and future generations.

Auckland's Urban Ngahere (Forest) Strategy

Auckland Council has developed an urban forest strategy to protect and plant trees and vegetation to create liveable neighbourhoods. The Ngahere refers to the urban forest, which is important to recognise as more than simply trees and vegetation but also capturing the genealogy of all living things in a wider ecosystem. The benefits of the Auckland's Urban Ngahere can be grouped into four multifaceted areas being social, environmental, economic and cultural.

The strategic framework of the strategy is broken into three objectives the knowing, growing and protecting. Currently Auckland Council is in the knowing phase. The naturalisation of parks opportunities falls under the wider Ngahere strategy and will positively contribute to deliver of this strategy through the planting of trees.

Naturalisation of Parks Outcomes:

- Connecting people with nature, improving amenity and recreational experiences for reserve users
- Providing opportunities for nature play
- Providing a sense of community through creating spaces that are valued
- Increasing access to healthy foods through utilising open space
- Providing a unique park experience
- Offset of maintenance budget through operational savings
- Providing nesting and food gathering area for pollinating insects
- Increasing the overall biodiversity habitat
- Reducing the use of agrichemicals as part of parks maintenance regime
- Reducing mowing which will reduce carbon emissions in parks
- Reducing mowing also will reduce the amount of greenhouse gases released
- Sustainability: Reduced maintenance costs and increase species diversification.

To measure these outcomes, it is suggested that a mix of methods are used ranging from site observations, park user intercept surveys, online feedback forms and an ecological survey.

Matters for consideration:

- Trees to be planted with northern aspect in area where there is direct sunlight and in good soil type
- Trees that do not require pruning should be prioritised for planting
- Soil type to be confirmed prior to planting to ensure survival rate of trees
- Irrigation during the summer months is essential to ensure survival of trees
- Control of pests to be managed around fruit trees, both pest plants and animal pests
- Signage around tree plantings is recommended to encourage the public to collect fruit in a respectful manner. These can be installed after trees have been established
- Meadow trials are to be incorporated into the existing parks and to be introduced in a gradual manner, signage around the edge of the trial will be required to explain the purpose to the public
- Kikuyu has the ability to smother trees and cover pathways. It is not recommended to create a low mow or no mow ecosystem as it is a monoculture.
- Establishment period of plantings may require specific tree care above current maintenance contracts (Seasonal pruning, watering during dry periods).
- Spraying in certain parks may have to be altered due to the introduction of these trials. Operations and maintenance staff will work with contractors to ensure that there is sufficient setback to any trial area.

The planting period generally runs from March to October. Though this is highly dependent on the seasonal rainfall and groundwater levels during the calendar year. Newly planted trees will require sufficient water to survive and fully establish without the need of irrigation systems. Irrigation systems can cause the tree to develop dependence and ultimately will limit tree growth and survival rates if they are planted outside of the planting period.

Estimated length of time required before it is expected that a healthy tree will begin to produce fruit or nuts (These timeframes are indicatively only and may vary):

- Mandarin – 1-3 years
- Feijoa – 2-3 years
- Apple – 2-5 years
- Apricot – 2-5 years
- Peach – 2-4 years
- Nectarine – 2-4 years
- Orange 1-3 years
- Stone Fruits – 3-4 years
- Macadamia – 3-5 years
- Pecan – 2-4 years
- Walnut – 4-5 years.

A mix of both fruit and nut tree varieties will produce fruits and nuts at different times of the year depending on the type of tree.

Monitoring and Reporting

Prior to each trial site being established by Community Facilities a monitoring and reporting system shall be established specific to each trial. Key measure indicators shall be agreed between the local board and staff to determine success for each trial over time. This will include confirmation of a timeframe. This may vary from tangible measurements to community benefit outcomes which may prove challenging to quantify.

Management Principles

Contract Specifications (Community Facilities Operations and Maintenance)

Fruit Trees – Trees over 3 meters in height fall under the Ecological and Arboriculture contract, low level pruning (from ground level) to be carried out by Full Facilities (FF) Contractor (Ventia).

Edible Gardens- Could fall under FF contract, more specialised than usual streetscape and park garden maintenance. Will most likely require a gardener or community volunteers.

Natural Meadows – FF currently maintain the Butterfly Meadow located at Tuff Crater under the supervision of Auckland Council's Senior Ecologist Concern that

contractors were not originally prepared or had sound understanding of the requirements to properly manage the site.

Pollinated Pathways – High level of care is required, Track and Path Maintenance is carried out by the Full Facilities Contractor. However, previous examples of pollinated pathways in the region have been delivered in conjunction with Auckland Transport and Auckland Council with community volunteers providing the bulk of support.

Contract Specifications (Arboricultural and Ecological)

Current Arboriculture and Ecological contracts have two focus areas being general areas of ecology and high ecological areas that require further enhancement. This is a mixture of restoring the area and protecting the high value areas. This contract is currently delivered by Wildlands Ltd.

To adequately deliver each of the trial sites a specific maintenance regime should be established. This may require additional budget to deliver this maintenance.

Weed Management Policy

Auckland Council's Weed Management Policy has eight objectives which include: minimising agrichemical use, protecting and enhancing the environment and empowering the community to manage weeds.

Minimising agrichemical use facilitates alignment with the national trend of promoting environmentally sustainable outcomes. Reduction of agrichemical use may require changes to existing levels of service, but may be acceptable if stakeholders and the public are educated as to the relative benefits and cost-savings achieved.

Advocacy and education are essential to this trial and the weed management policy. The rationale must be publicised to change public perceptions and expected levels of service (e.g. long grass on roadsides may look messy but, in some situations, may be the most environmentally sustainable and cost-effective way to manage that environment). Changing people's perceptions on weeds can therefore deliver environmental benefits. It can also deliver cost savings in areas of low priority that can be transferred to target areas of higher priority.

Risks

The potential risks of each of the trials include:

- Vandalism of sites
- Community backlash to certain naturalisation opportunities such as Natural Meadows
- Unsuitable sites where trial fails, for instance the planting of fruit trees in poor soil leading to tree loss
- Lack of maintenance or community use leading to the site becoming overrun or unkempt

- Increase of pests, both plant and animal
- Kikuyu to take over area and create 'messy' area that is not visually appealing or ecologically beneficial.

Each of the identified risks will need to be managed by Community Facilities department or the appropriate external project manager. To mitigate each risk a reporting and monitoring structure will need to be established that has tangible benefit measurements. This should include community consultation/ feedback on each of the trial sites. In addition, a robust communication strategy is needed to ensure local communities are aware of the trials. This shall include on site signage and staff contact details.

Contacts and stakeholders

Pest Free Kaipatiki

Kaipatiki Project

Monarch Park Placemaking Group

Kaipatiki Community Facilities Trust

Auckland Council Botanical Gardens

Local Board members have requested that community groups and nearby schools are included in consultation to foster interest in the project and to keep the community informed. In particular the development of the written communication strategy.

Appendices

Appendix A

Auckland Botanic Gardens – ‘To mow or not to mow study’

Is it possible to reduce lawn mowing and still provide usable spaces that people like and think are attractive, that provide habitats for more plants, birds and bugs, and are better at soaking up rainwater? Essentially that’s the aim of our meadows research in conjunction with University of Auckland (and funded by the Friends of Auckland Botanic Garden). Long grass can be unattractive and worrisome e.g. in summer dry long grass may be a fire risk. Our research focuses on ways to encourage more plant diversity in a lawn, preferably smaller grasses and herbs, not long grass.

The methods we are testing, to see if we can encourage more short pretty plants in the lawn, are mowing at different frequencies (e.g. once a year, once every two months, once after flowering etc.) as well as seeing if we can lower the fertility of the soil. There is lots of evidence diverse ‘lawns’ are encouraged by low soil fertility. We are testing applying sugar, sawdust and woodchips to lower soil fertility.

Most people understand mowers give off pollutants. But fewer realise that even cut grass gives off greenhouse gases when it is cut (it’s that “cut grass” smell) and these gases contribute as much to greenhouse gases as the emissions from the motor of the mower. Recent research in Australia and the USA suggest emissions from the cut grass should be monitored as part of smog calculations for cities.

Most people mow their lawns to fit in with their neighbours. People notice when we don’t mow. Keeping the lawn clipped short is a way we fit in with our neighbours and communicate things like our pride and protection of property values. This is an active area of research around the world and shows the importance of social and behaviour change research to environmental issues in society. Research (mostly from overseas) says:

- having a well-maintained lawn improves the relationship between neighbours
- people who do not conform can be ostracized (or have their lawns mowed ‘for them’ in the middle of their night)
- most people (>80%) think that neighbours have expectations for their garden
- keeping lawns mowed is as important to some people as eating dinner with their family
- residents cite fear of neighbours disapproval as reasons for their lawn care practices.

Pictorial meadows are colourful naturalistic wildflower gardens, designed to look like wild nature. Planting pictorial meadows is one way you can replace lawns but they

aren't necessarily self-sustaining. We are keen to find a name for low mow and no mow systems and we quite like the term "freedom lawns".

'Cues to care' are effects created by mown edges and paths through low mow areas to signal to people that the "unmown" look is intentional and not a sign of neglect.

Appendix B

Site photos - Monarch Park





Appendix C – Proposed Site Location – Monarch Park

*Separate attachment