'THE ARK IN THE PARK'

Strategic Plan for an Open Sanctuary Cascades Kauri Park, Waitakere Ranges

Waitakere Branch
Royal Forest & Bird Protection Society Inc.

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Vision

From the ridges to the sea: restoration of the Waitakere Ranges to retain and enhance their natural heritage values.

Purpose

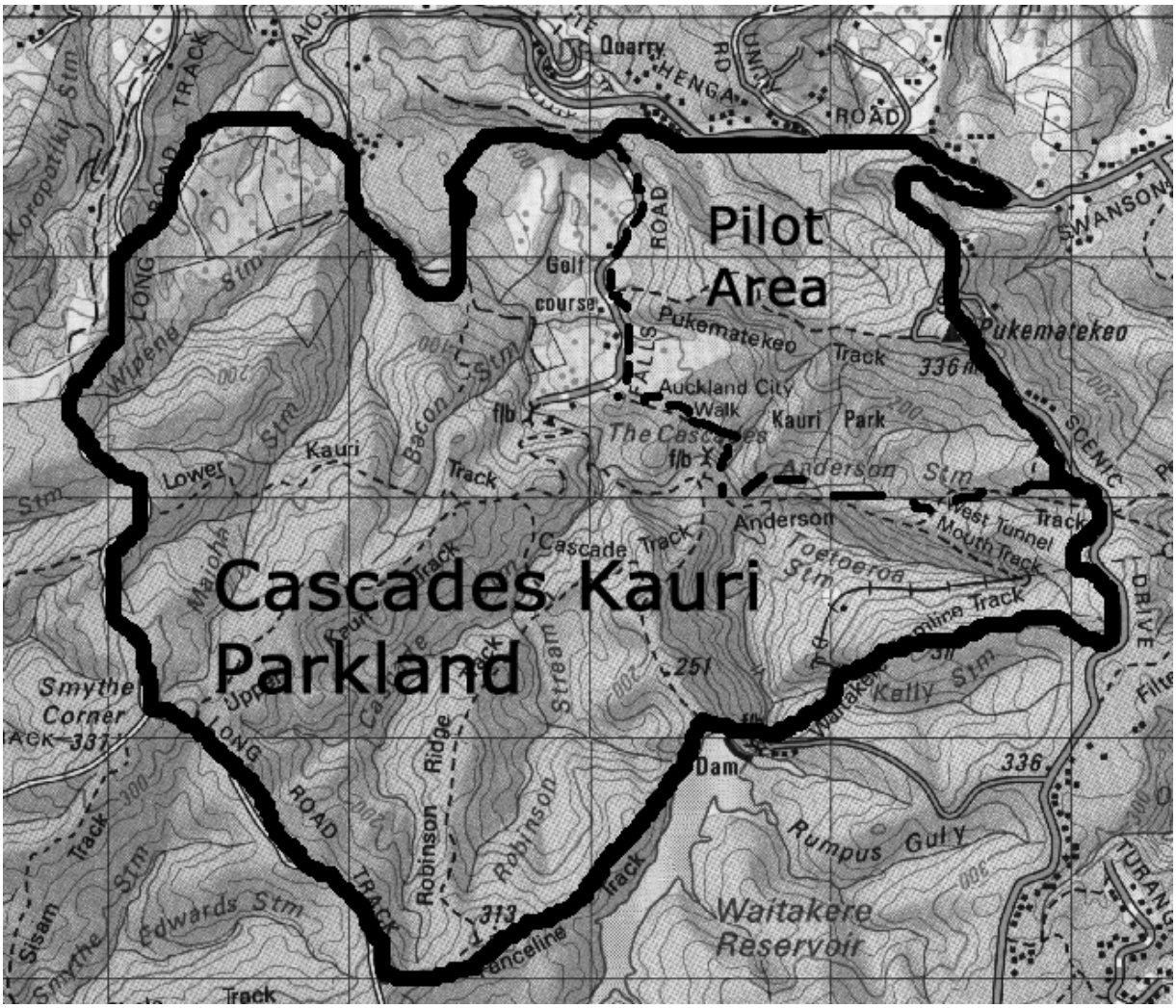
The purpose of this plan is to provide a strategy for an 'open sanctuary' in the area of the Cascades Kauri Park and Waitakere Reservoir catchment for the restoration of natural heritage, ecological processes and for the restitution of indigenous species.

All of the land within the proposed Ark in the Park Open Sanctuary is in the Waitakere Ranges Regional Parkland and the sanctuary builds upon the on-going pest and park management programmes of the Auckland Regional Council, in particular their possum control and goat eradication programmes over the past 5 years. These programmes have led to improvements in the health of indigenous ecosystems in the Ranges. Similar open sanctuary or mainland island projects around New Zealand have shown that this Open Sanctuary will potentially lead to significant ecosystem enhancement in the project area and provide opportunities for the reintroduction of native animals and plants that have become extinct in the Waitakere Ranges (see Table 1). The project is likely to enhance recreational experiences for visitors to the area.

This plan recognizes the need to plan proactively, identify key management tasks and consider appropriate consultation to achieve the vision. Stakeholder groups and the wider community have been consulted in the preparation of this plan over the past two years. Amendments have been made in relation to this input.

The project will add value to the existing ARC pest and park management programmes by providing more intensive control of pests and reintroduce locally-extinct species and this additional work will be funded by the Waitakere Branch of the Royal Forest and Bird Protection Society. The project will start with a pilot area of 250ha area in the Cascades/Kauri Park area, bounded by Scenic Drive, Te Henga Rd, Falls Rd and the Anderson Track. When the project and further funding is gained, the project area is proposed to spread clock-wise around from the Anderson Track Waitakere Dam Access Road, Fenceline Track and Long Rd (Figure 1) to encompass 800ha. All of this area is outside of the Waitakere reservoir catchment in the upper Waitakere River catchment and the Watercare-administered land. At a later stage the project intends to seek approval to extend the area into the upper catchment of the Waitakere River, extending the project area to 1,700ha.

Figure 1 **Location of the Ark in the Park Open Sanctuary area in the Waitakere River catchment. The total area is 800ha and the initial pilot area is 2-300 ha.**



Goals

Primary Goals:

1. To establish an open sanctuary (based on mainland island principles[1]) in the Cascades/Waitakere Reservoir area of the Waitakere Ranges Regional Parkland where:
    - The existing indigenous biodiversity is conserved and enhanced.
    - The re-introduction of "lost" species is achieved.
    - A restored dawn chorus is heard by future generations.
    - The community can participate in achieving the conservation goals.
    - The knowledge of our indigenous flora and fauna can be furthered.

Secondary Goals

2. Support and cooperate with other restoration and open sanctuary projects in the Waitakere Ranges.
3. Investigate other open sanctuary proposals in the Waitakere Ranges Regional Parkland.
4. Enhance visitor experiences through enhanced biodiversity and species restoration.

Actions

1. Submit an operational plan for the pest control operation in the Cascades/Waitakere Reservoir area. This should include plans for pest management methods, health and safety and volunteer co-ordination and monitoring.
2. Develop a restoration strategy.
3. Develop a funding strategy
4. Develop a communications strategy
5. Co-ordinate with other restoration projects in the Waitakere Ranges and New Zealand.
6. Work with the ARC and other organisations to develop a visitor strategy

Key Performance Indicators

The extent to which these goals are achieved will be measured by monitoring activities outlined in this Plan, as follows:

1. **Elimination or reduction in numbers of introduced pests and weeds.**
2. **Improvement in populations of native plants, invertebrates, frogs, reptiles, birds and bats (see Table 1).**
3. **Improvement in seedling survival and the health of native vegetation condition.**
4. **Reintroduction and establishment of native species lost from the Waitakere Ranges.**

[1] A Saunders & D A Norton 2001 Ecological restoration at Mainland Islands in NZ. Biological Conservation 99: 109-119.

5. **Strong support from the public for the project. (**The public response to the Project will be assessed at intervals. Data will be collected of the number of people visiting the site, volunteers involved in Project activities and numbers attending (and feedback from) public meetings. Surveys of changes in public opinion could also be undertaken.)

Governance Structure

ARC Partnership

The relationship between the Auckland Regional Council and the Waitakere Branch of the Royal Forest and Bird Protection Society Inc. for the 'The Ark in the Park' project will be defined through a Memorandum of Understanding. The MOU will be reviewed annually, in a manner similar to other ARC/community group partnerships.

Management

The Ark in the Park project will be managed by a sub-committee of the Waitakere Branch of the Royal Forest and Bird Protection Society Inc. that includes branch office-holders and invitees from Friends of Arataki and the Waitakere Ranges, Te Kawerau a Maki and people with specific technical expertise.

The Waitakere Branch's Ark in the Park sub-committee propose to establish a Technical Advisory Committee to provide advice to the management sub-committee. The Branch seeks the involvement of people with technical expertise from ARC, Universities and private consultants to assist the project.

The Committee has recognised that there is a need for the appointment of a manager for 'The Ark in the Park' project to oversee the project, its funding, accounting and financial needs. An Operations Leader will coordinate volunteers, field logistics and coordinate with ARC field operations at the site. It is envisaged that a separate Volunteer Co-ordinator will be appointed in the future.

Funding

The initial sponsors of the Ark in the Park project - Friends of Arataki and the Waitakere Ranges have raised funds from grant applications and fund-raising activities. The Waitakere Branch sub-committee will continue to fund-raise from these sources and it will also seek funding from the corporate sector and public appeals. The project will draw upon the considerable conservation fund-raising expertise and infrastructure of the National Office of RFBPS.

This funding will compliment the on-going ARC budget allocations for pest and park management in the project area. The operation of the project will require

some additional resources from ARC to ensure that council's functions are properly coordinated with the project.

Methodology

Weed Control and Monitoring

Most DoC mainland island work focuses on animal pest control and not weeds. However weed control is important for the protection of the ecology of the Waitakere Ranges. The main weed infestations in the area are along the forest edges and in disturbed sites within the forest, particularly near roads, major tracks and around building.

For 'The Ark in the Park', a weed management strategy will be developed to include:

1. A programme for eradication or control of each plant pest species identified in ARC's weed database.
2. Identification of any new weed threats.
3. Monitoring of the control and spread of weeds on a regular basis.

Particular attention will be paid to safety issues on Watercare administered-lands.

Animal Pest Control and Monitoring

Animal pests listed in the ARC management plan 1992 for the Waitakere Ranges are: possums, rats, rabbits, mice, stoats, feral cats, pigs, goats and wasps.

Since that time, the control of possums through Operation Forest Save has been very effective and possum numbers have been reduced significantly throughout the ranges. The eradication of goats has been achieved but pig numbers fluctuate and the ARC policy is now containment to minimal numbers [S.Hix, pers. comm.].

Monitoring the success of all the pest control/eradication attempts is crucial, because insufficient control of significant pests will compromise restoration programmes. Contingency plans will be need to control any increase in pest numbers detected.

Currently (2002) the Department of Conservation, Ministry for the Environment and Waitakere City Council are consulting on ways to minimise pesticide use. There is considerable public concern about the use of certain pesticides and the Ark in the Park project must be mindful of these concerns. The pest control strategy needs to consider how to control can be achieved with the minimum pesticide use and the minimum side effects on non-target organisms.

Monitoring and species re-introduction

The following tables identify suitable species for monitoring environmental and habitat improvement (Table 2), and list suitable candidates for reintroduction to the project area (Table 3).

Table 2 Species suitable for environmental monitoring:

Species	Comments
Northern rata – *Metrosideros robusta*	Now recovering in the Waitakere Ranges and will probably increase in abundance.
tree fuchsia – *Fuchsia excorticata*	
native snails	Changes in abundance will be monitored.
ground weta – *Hemiandrus*	
tui – *Prosthemadera novaeseelandiae*	The existing tui and pigeon populations will be useful indicator species for the project.
NZ pigeon – *Hemiphaga novaeseelandiae*	
tomtit – *Petroica macrocephala*	This species may have already started to recovery in the Waitakere Ranges.
grey warbler – *Gerygone igata*	These species are currently common within the Waitakere Ranges
fantail – *Rhipidura fuliginosa*	
North Island kaka – *Nestor meridionalis*	May become a permanent resident following pest control.
long-tailed cuckoo – *Eudynamys taitensis*	May re-established if Whitehead is released.

Table 3 Candidates for Re-introduction

Reintroduction Priority	Species
1	whitehead – *Mohoua albicilla*
2	North Island robin – *Petroica australis*
3	yellow-crowned parakeet – *Cyanoramphus auriceps*
4	bellbird – *Anthornis melanura*
5	Duvaucel's gecko
6	striped skink
7	giant weta
8	North Island kokako – *Callaeas cinerea*
9	North Island brown kiwi – *Apteryx australis*
10	North Island weka
11	brown teal
12	rifleman
13	NZ falcon
14	red-crowned parakeet

Information and Education

It is essential for the success of the Ark in the Park project that its objectives are clearly communicate to the public. This will need to be developed in concert with ARC's natural heritage and Waitakere Ranges information and education programmes. Waitakere Branch will be seeking external funding and corporate sponsors for developing the project's information and education material and dissemination. Issues that need to be covered in information sheets, web pages and an education programme include:

1. The Waitakere Ranges and their ecology – important flora and fauna.
2. The threats of animal and plant pests, and human activities to the ecology.
3. The open sanctuary concept.
4. Impacts of visitors, carrying capacity and visitor strategies.

The Arataki Information Centre and various Auckland Regional Council services will be important components of the education and information strategy.

Public Access

The Ark in the Park project does not propose to restrict visitor access in the project area. Nor does the project propose any development of additional visitor facilities in the project area.

Volunteers

It is envisaged that much of the work of the 'The Ark in the Park' project will involve the use of volunteers e.g. Tramping Clubs, Conservation Corps, UNITEC, Friends of Arataki and Forest and Bird, and other organisations and individuals.

Volunteer co-ordination will be a key component and this has been identified as a role for management of the programme. Experience in managing volunteers in other restoration programmes (e.g. Karori Sanctuary, Tiritiri Matangi) and the existing volunteer programmes on ARC parks will provide models and guidance in establishing a co-ordinated approach to volunteer management for the project. A draft OSH plan has been developed to comply with ARC and OSH policies.

The key programmes for volunteer involvement are:

1. Checking traps and bait stations
2. Monitoring vegetation changes
3. Monitoring invertebrate, bird and reptile populations
4. Revegetation and weeding projects
5. Bird introductions and their monitoring
6. Helping with displays and interpretation, including guided walks
7. Transport of volunteers.

Relationships and Linkages

Those involved in developing the Ark in the Park project recognise the need to establish relationships with all stakeholders. Where possible these relationships will be strengthened.

Iwi

Since its inception, 'The Ark in the Park' committee has recognised the importance of the manawhenua (customary authority) of Te Kawerau a Maki in the Waitakere Ranges. This Plan identifies the following principles:

1. 'The Ark in the Park' acknowledges the historical manawhenua and cultural heritage concerns of Te Kawerau a Maki in the Waitakere Ranges
2. Te Kawerau a Maki will be kept informed on all aspects of the project
3. Consultation will be undertaken with Te Kawerau a Maki to identify cultural heritage sites within the project area and ensure project activities do not adversely affect these sites.

To achieve this goal the Management Committee have invited the participation of Te Kawerau a Maki and to keep them informed of progress of the project.

Department of Conservation

The Department is prominent in mainland island restoration and large-scale pest control programmes and has expertise that would be of value to the Ark in the Park project. The Department also has a statutory role in approving wildlife translocation applications under the Wildlife Act 1953.

APPENDIX: Background: Issues considered in the development of the plan

The Waitakere Ecological District covers 29,157 hectares, stretching from sea level on the west coast and Manukau Harbour to an altitude of 474 metres. Within the Ranges there are three broad habitat types – forest-shrublands, freshwater wetlands and coastal estuarine areas. The Waitakere Ranges include the second largest contiguous forest block, after the Hunua Ranges, in the Auckland Region.

The Waitakere Ranges have been subjected to forest clearance from soon after human settlement with the arrival of the Maori people, but more particularly after the arrival of European settlers from the mid-nineteenth century to the mid-twentieth century. Initially the main tree harvested was kauri. The practice at the time was also to burn over the logged areas. From early in the 20th century logging stopped in many areas and several catchments were protected for water catchment purposes. In some parts of the Ranges there were attempts to clear the land for farming, especially in the northern and southern regions. Large numbers of exotic animal species such as possums, rats and cats, plus a large number of weed species were introduced.

Since the 1940s, the creation of the Centennial Memorial Park and several significant additions to this, there has been an increasing awareness of conservation issues in the Waitakere Ranges among the Auckland populace. In the 1980s, campaigns against weeds such as ginger were started by the late Bill Haresnape and this continues with local groups and the Waitakere Weed-free Trust. During 1998, ARC's Operation Forestsave successfully reduced the possum population of the Ranges and feral goats appear to have been eradicated also.

History of the Project

A number of individuals and groups have been involved in restoration projects in the Waitakere Ranges for a number of years.

The genesis of 'The Ark in the Park' concept came from meetings between members of Royal Forest & Bird Protection Society (RFBPS) (John Staniland, John Sumich, and Peter Maddison) and Waitakere Ranges Protection Society (WRPS)(Keith Strode-Penny). A steering committee was set up in May 1999 to develop the concept and to consider options for restoration in the Ranges. This included the possibility of establishment of an "open sanctuary", where with increased pest/predator control and targeted weed control, it would be possible to consider restoration of the Ranges and introduction of species historically "lost" from this system.

In August 1999, a day seminar was held at the Arataki Information Centre to discuss the restoration concept. Participants included representatives from Department of Conservation (DoC), Auckland Regional Council (ARC), Auckland Botanical Society, University of Auckland, The Karori Wildlife Sanctuary, Ornithological Society of New Zealand (OSNZ), Royal Forest & Bird Protection Society, Waitakere Ranges Protection Society and representatives of the local community. The concept was widely discussed and some valuable advice on how to proceed was gained.

In discussions with the ARC and others, it was suggested that a trust status would be helpful in progressing the Project. Similarly suggestions were made to limit the project area within the larger Centennial Memorial Park – hence the concept of 'The Ark in the Park'. The steering committee approached the committee of Friends of Arataki (FOA). The Friends enthusiastically welcomed the approach and the joint project between FOA, RFBPS and WRPS eventuated.

In early 2000, FOA commissioned Christine Zeiler to produce a scoping report to evaluate potential sites for bird release in the Ranges. This report – "Bird Release Sites in the Waitakere Ranges" - was published in August 2000.

A number of public and community meetings took place (December 1999 – April 2002) to discuss the issues and assess support for the project. FOA hand the project over to the Waitakere Branch of Forest and Bird and the branch are now seeking ARC's endorsement for the proposal.

Selection of Area

One consideration that came from the August 1999 seminar was that, to be effective, ecological restoration, including bird release in the Waitakere Ranges, should be in a defined area.

The main objective of the scoping report (Zeiler 2000) was to provide an "…overview of potential sites in the Waitakere Ranges for the release of robin, whitehead, bellbird, and kokako and to shortlist the three to four most suitable sites." The report was developed after consultation with staff at ARC, DOC and WCC and community and environmental/conservation groups.

In bringing together for consideration the options for the bird restoration project, Zeiler considered issues, such as:

- Ecological status; vulnerability; sustainability; landscape and geological issues
- Vegetation (including regeneration processes)
- Significant fauna
- Land ownership inside the potential sites
- Surrounding land ownership
- Public access – recreation and usage; management access and infrastructure; vandalism history
- Pest situation and control issues (e.g. pesticide pollution)
- Safety issues

Fourteen sites were evaluated and three of these were short-listed and the Cascades-Waitakere Reservoir site was selected as the priority site for restoration (Figure 1).

The area consists of some 1700 ha. of generally modified forest on dissected hill country, but includes a significant mature kauri forest remnant (adjacent to the Cascades). Podocarp/broadleaf forest dominates the Waitakere Catchment, but other areas of ponga-broadleaf forest, kanuka forest and young kauri forest exist. This area retains much of its original character, despite former logging. Hall's totara, kahikatea, miro and rimu are the

most common podocarps in this association. Other trees and large shrubs include heketara, lancewood, mahoe, mamaku, nikau, pigeonwood, ponga, rata and rewarewa. The shrub and ground layers, with often dense vegetation, consist of tree ferns, sedges and vines (lianes). In most forest areas, there is a lower tier of epiphytes on tree and tree fern stems.

The Waitakere Reservoir provides habitat for birds such as New Zealand shoveler, paradise shelduck, grey duck and mallard, particularly during the moulting season. Amongst the special features of the Cascades/Kauri/ Waitakere Reservoir site is:

1. Resident long-tailed bats
2. Kaka visiting and possibly attempting to breed.
3. Tomtits widespread throughout the area.
4. A colony of black shags nesting on trees in one arm of the Reservoir
5. On the southern ridge tawari, tawheowheo, toro, wheki, maire tawake and the tree fern, *Cyathea smithii*, are found.
6. Significant kowhai near the Fenceline and Anderson Tracks.

The area is reported to have been little modified by Maori, except for the harvesting of fruits, birds and plants used for medicine and weaving. As with the rest of the Waitakere Ranges, there was extensive modification and logging following the arrival of European settlers. Some farming occurred in cut-over land, particularly in the north. During the construction of the Waitakere Dam (1906-1910) there was considerable clearance of the future reservoir bed and dam site, as well as in the catchment generally.

Further information on the site and its characteristics can be found in Zeiler (2000).

Mainland Islands

The mainland island (habitat) concept has been developed by the Department of Conservation in recent years (Saunders & Norton 2001). The aim is to "protect and restore habitats on the New Zealand mainland through the intensive management of introduced pests. [The word "islands" is used to indicate that the habitats are manageable areas, which are, or can be, isolated from their surroundings by means of actual, or "virtual" fencing, geographical features or intensive management.] The chief issues are:

1. Because of re-invasion, it is not known how sustainable mainland islands will be in the long term.
2. The New Zealand public – as taxpayers are the ultimate funders of much conservation work cannot get to the important conservation islands and see the unique endangered species there. However, there is merit in the public experiencing first-hand a diverse range of native plants and animals in more accessible mainland islands.
3. For those 'mainland islands' without fences, pest control may rely on continual applications of pesticides. This use raises public concerns about side-effects such as the poisoning of livestock, pets or humans, and pesticides entering the food-chain. Also continual use may allow target species to become resistant to pesticides.

Significant Waitakere Flora and Fauna

The flora of the Waitakere Ecological District includes 542 species of higher plants, with 111 species of ferns and fern allies. The fauna includes 71 bird species, 5 lizard species, 3 frog species (2 introduced), 13 native freshwater fish, over 100 species of land snails and over 1000 insect, crustacean and other arthropod (including insect) species. The conservation issues related to the Waitakere Ranges are well canvassed in the Waitakere (and, in part, Tamaki) Protected Natural Area survey reports, (see Denyer et al. 1993).

Weeds and Pests

The weed situation in the Ranges has been surveyed by Fuller & Julian (1995), the Weedfree Waitakere Trust (Bodmin 2002) and the ARC (who have this mapped on their GIS). The Auckland Regional Pest Management Strategy identifies significant weeds including: ginger (*Hedychium gardnerianum, H. flavescens*), wandering jew (*Tradescantia fluminensis*), plectranthus (*Plectranthus ciliatus, P. ecklonii*), jasmine (*Jasminum polyanthum*), African clubmoss (*Selaginella kraussiana*), climbing asparagus (*Asparagus scandens*), Bartlettina (*Bartlettina sordida*), several species of bamboo, pampas (*Cortaderia*) and wattle (*Paraserianthes, Racosperma*). Several weed infestations of limited extent are also a concern.

Possums (*Trichosurus vulpecula*) have caused great destruction in the Waitakere Ranges, changing the floral composition by selectively attacking species such as northern rata, kohekohe and coastal pohutukawa. ARC's 'Operation Forestsave' reduced possum numbers to below a 5% residual trap-catch index and ARC aims to keep the possum population down to this level through a sector-by-sector approach throughout the Ranges. Rodents (rats and mice) are important pests, with effects on plants (by eating fruits, seeds, etc), insects (especially ground dwellers) and vertebrates (preying on birds' eggs and young, and frogs and lizards).

The pesticides used in Operation Forestsave have had a noticeable, albeit temporary, effect on rodent populations. Ongoing control of rodents will form a significant part of the Ark in the Park project.

Public Access

Issues of public access and the impact of visitors to the Ranges have been raised in the preparation of this plan. Concerns include:

1. Physical direct damage (including vandalism) to the environment.
2. Indirect effects of large numbers of visitors – trampling of vegetation, vehicle and parking issues, increased likelihood of accidents (fire, road).
3. Effects on the sense of "wilderness"/"peace and quiet".
4. Cumulative/synergistic effects of the above.

There are a number of people (including coastal communities and the Waitakere Ranges Protection Society) that advocate for tighter constraints on "attractions" to the Waitakere

region. Amongst their concerns is that additional attractions will entice more people into the sensitive parts of the Ranges.

The Ark in the Park project does not propose to restrict visitor access in the project area. Nor does the project propose any development of additional visitor facilities in the project area. Visitor increases in the Waitakere Ranges and across the park network appear to be driven by population growth in the region and local demographic changes (Bellingham 2001). The ARC controls visitor numbers at specific localities in the Waitakere Ranges through management of visitor facilities. Management of visitor facilities is not within the management of the Ark in the Park project.