

Memo

22 March 2017

To: Great Barrier Local Board
cc: Great Barrier Local Board advisory staff
Kathy Cumming – Strategic Broker
From: Eru Nathan, Ecologist (Biodiversity, Central/South)

Subject: Ecological review of the Aotea Great Barrier Island Ecological Vision

Background and scope of review

Aotea Great Barrier Island's Ecological Vision (Ecological Vision) was developed in collaboration with the island community in response to community concerns around the island's environmental future. The development of the vision was fully funded by the Great Barrier Local Board. The Ecological Vision is a holistic document which seeks to promote the ecological, social and economic values of the island through three strategic objectives. While acknowledging the importance of the social and economic objectives to the overall vision, these aspects are not areas of expertise for council's biodiversity group. As such, this review will cover only those aspects directly related to the ecological objective of the Ecological Vision.

Ecological objective

The ecological objective reads:

To enhance our ecological diversity and abundance by enriching our island's ecosystems.

Ecosystems are complex mosaics of habitat that provide critical natural resources used by wildlife and humans. We will focus on restoring the ecological health, functioning and linkages of ecosystems by reducing adverse impacts and enhancing and enriching wildlife resources.

Overall, this objective covers a suitable and compatible set of goals and interventions which should work together to promote the ecological values of Aotea Great Barrier Island. It is considered positive that:

- both diversity and abundance are highlighted as ecological targets,
- health, functioning and linkages are all emphasised as important ecological values to be protected and restored, and
- both reduction of adverse impacts and habitat enhancement and enrichment are indicated as methods to deliver on these targets and values.

Under the ecological objective, four goals are set out and these will be discussed in further detail below.

Goal: Select ecological oases

The Ecological Vision indicates that the community is to identify and prioritise habitats for selection as ecological oases. In general, the idea of community selected ecological oases is likely to be beneficial in terms of promoting and sustaining community interest, engagement and participation, and likely ties in well with social and economic objectives of the Ecological Vision. However, it also presents a risk that the areas or projects selected may not provide optimal ecological outcomes,

and so may not represent the best return on investment from an ecological perspective. As such, it is important that the ecological value of any proposed oasis is carefully considered against available information to ensure that the desired outcomes of the Ecological Vision are able to be achieved at that site.

Biodiversity has recently completed an assessment of ecosystem current state and protection and restoration requirements at the regional scale. This project identified priority areas for protection and restoration across the region, known as Biodiversity Focus Areas. Several Biodiversity Focus Areas are located on Aotea Great Barrier Island; these are

- Windy Hill,
- Kaitoke-Medlands,
- Mt Young-Hirakimata,
- Whangapoua, and;
- Te Paparahi.

These areas have been identified as among the highest priority areas for ecological protection and restoration in the region, due to factors such as their current ecological value and condition and the rarity or threat status of their contained ecosystems. Protection and restoration efforts in these areas is expected to result in the highest level of effectiveness and efficiency for ecological and biodiversity outcomes. As such, it is desirable from an ecological perspective that the Aotea Great Barrier ecological oases are located within these Biodiversity Focus Areas wherever possible so as to maximise these outcomes and return on investment. (However, it is acknowledged that social and economic objectives also form integral parts of the Ecological Vision and may be informed by slightly different considerations). Many of the suggested oases in the Ecological Vision document are already aligned, or potentially aligned, with the Biodiversity Focus Areas.,

Several specific potential oases have been identified under this goal, some of seemingly higher potential ecological value than others, and some are more realistically feasible than others.. However, the list of potential oases contains too little information about what is intended to be able to properly assess their true potential ecological value. As such these will be briefly commented on only at this stage.

Potential oases identified in the Ecological Vision, in order of recommended ecological priority:

Kaitoke stream and pateke habitat – Kaitoke stream and the broader Kaitoke wetland is a very high ecological value site and critically important for the threatened pateke. These values are reflected in the identification of the Kaitoke wetland as a Biodiversity Focus Area, alongside other smaller wetland areas and the dune complex on the coast in this area. Several other rare or threatened bird species are present in the Kaitoke wetland and would benefit from this action as well, including banded rail, spotless crane, fernbird and bittern. Opportunities for protection and enhancement include both pest management and planting of the stream. Given the large size and intact nature of the Kaitoke wetland area, it is considered that the greater benefit to the pateke population and ecosystem health in general would come from increased pest management in the area. The main opportunities for beneficial stream replanting exist at the lower portion of the Kaitoke stream below the wetland area which has been more heavily impacted by human activity.

Dune replanting and New Zealand dotterel – New Zealand dotterel are classified as ‘threatened – nationally vulnerable’ and their ongoing survival is considered conservation dependent, so any action to protect or assist this species is of very high value. Replanting of dunes is specifically highlighted in the Ecological Vision document as being of benefit to New Zealand dotterel, but other important interventions include predator control, roping off of nesting areas and raising public awareness around human and domestic/pet animal impacts. In addition, these actions deliver benefits to other dune-dwelling species, including the variable oystercatcher (classified as ‘at risk – recovering’). Specific locations for a dune planting or New Zealand dotterel focussed oasis have

not been identified in Ecological Vision document, however good opportunities for these interventions exist at Kaitoke Beach and Whangapaoua Beach (which both align with Biodiversity Focus Areas), as well as at Palmers Beach, Awana Bay and Harataonga Bay.

Taiko colony – the Department of Conservation (DOC)-managed area around the Hiramakimata peak is a very high ecological value site, not least because it is home to the main breeding colony of the threatened taiko or black petrel (with Hauturu Little Barrier Island being the only other breeding site for this bird species). Also present at this site are the vulnerable Hochstetters frog and various Great Barrier endemic or otherwise rare plants including *Kunzea sinclairii*, *Epacris sinclairii*, *Olearia allomii*, and *Pittosporum kirkii*. The taiko breeding colony at Hiramakimata is located within the Mt Young-Hiramakimata Biodiversity Focus Area - a critical ecosystem to protect or enhance. Pest management is considered the most valuable intervention for both taiko and the other ecological values of the site.

Penguin habitat and rock pools – little penguin are classified as 'at risk – declining', but this species is very common around the Great Barrier coastline. A specific location of a potential oasis has not been identified in the Ecological Vision document and further scoping may be required to identify the most suitable locations for a little penguin focussed ecological oasis. Suitable interventions at such an oasis would include predator management, habitat planting or installation of nest boxes, all of which should provide a good level of value for the local penguin populations. Raising public awareness around the threat from domestic/pet animals (dogs in particular) and impacts of cars and car strike would also be beneficial.

The island's entrance points – the island's entrance points are attractive as oases from an advocacy point of view (i.e. social and economic factors) as these are obviously highly traversed areas by both locals and visitors. Specific sites or values to protect or enhance at these entrance points have not been identified in the Ecological Vision document making it difficult to assess the ecological value of these sites as oases, although notably the Kaitoke-Medlands Biodiversity Focus Area surrounds the Claris Airport on three sides. No Biodiversity Focus Areas exist at Tryphena or Port Fitzroy. Another consideration is that these access point areas also correspond to the areas of highest biosecurity risk, which would need to be taken into account in their management but may also present an opportunity to increase the likelihood of early detections of any pest plant or animal incursions.

Rakitu Island – this is an ecologically valuable site, featuring a high level of plant and animal diversity. DOC (who manage the island) are intending to undertake a full eradication of the few pest animal species which are present. However, this site may be less suitable as an oasis due to its accessibility; it is a generally difficult site for the public to access as your own boat or charter is required.

Other high ecological value sites not specifically mentioned as potential oases in the Ecological Vision:

Whangapaoua – like Kaitoke-Medlands, this site consists of a largely intact dune-saline-wetland complex. This site has not been mentioned in the Ecological Vision document as a potential oasis but it has been identified as a Biodiversity Focus Area. This largely DOC-managed area features an excellent example of now-rare ecosystem types in a natural complex and supports populations of various rare and threatened bird and other species, including pateke, banded rail, spotless crane, fernbird, bittern, wrybill, New Zealand dotterel, banded dotterel, and variable oystercatcher. For these reasons, this site is worth considering as an ecological oasis.

Te Paparahi – like Hiramakimata, this is another large DOC-managed forest area. This site has not been mentioned in the Ecological Vision document as a potential oasis but it has been identified by as a Biodiversity Focus Area. This site features large intact areas which are excellent examples of

endangered ecosystem types now rare throughout the region, and in some cases the last remnants of these ecosystem types on Aotea Great Barrier Island. However, this site covers a very large area with difficult access and terrain, which may limit its potential as an oasis with a high level of community involvement.

Goal: Suppress predators

The Ecological Vision document details that the terminology of predator suppression has been arrived at deliberately as it is reflective of the range of views of the community, and that this terminology is consistent with those who seek zero pest densities and those who do not. It is considered likely that the common interpretation of the term predator suppression will exclude any possibility of eradication. There is a risk that using this terminology in the Ecological Vision for the island will act to preclude the possibility of pest eradications in the future. Where possible, pest eradications are the most effective and cost-efficient solution to pest management over the long-term.

The Ecological Vision document has also elected to use the specific term predator as opposed to the more general term pest. This terminology excludes and therefore deemphasises the need for the management of non-predator pest species. While predators such as rats and feral cats are often considered the biggest threat to our native bird populations in particular, other animal and plant pests also have significant impacts on native animal and plant populations and overall ecological health and function.

A preference for the use of trapping over toxins for pest management is identified in the Ecological Vision document. Whilst recognising the diversity of opinion on the use of toxins which exists in the community, it is worth emphasising that the level of pest suppression possible for a given level of resource (monetary, labour, etc.) is typically far superior using toxins versus the level possible using trapping. This is especially true as it relates to wide-scale rat control, where control using toxins is considered best practice and control using trapping alone is typically not considered feasible at all. On the other hand, control of feral cats using trapping techniques is considered best practice, including the use of live traps in proximity to areas of human habitation.

It is also noted that 'reducing adverse impacts' is stated in the ecological objective of the Ecological Vision. Predator suppression is detailed as a specific goal under the ecological objective, and weed management is also discussed separately under the goal of habitat enrichment. However, it would be worth highlighting the need for reducing human adverse impacts, especially in any selected oases near to areas of human settlement or farming, as well as near roads and areas such as popular dog walking beaches.

Goal: Enrich selected habitats

The Ecological Vision document lists identification and removal of significant weeds as a method for habitat enrichment. Wilding pines and pampas are specifically suggested as possible target species. Weed management within the selected oases should be a high priority as these (and other species) are potentially ecosystem transforming weeds with very high level of impact if left unattended to. Ecosystem transforming weeds can come to dominate landscapes and will either outcompete or suppress many native species, potentially excluding them from the ecosystem. Wilding pines and pampas are likely to have been selected as these species are highly visible to the Great Barrier Island community, but other significant weed issues exist on the island and these should not be neglected either. For example, the 16 pest plant species profiled in the Great Barrier Local Board produced 'Pests of Aotea Great Barrier – a local guide' are all potentially very damaging to local ecosystems, but are not yet widespread on the island making any management of these species even more valuable, especially if eradication can be achieved.

The Ecological Vision document also highlights propagation and planting of plant species which offer value as food resource for native fauna as a method of habitat enrichment. In general, planting activity should be a lower priority on Great Barrier than in most other areas of New Zealand due to the heavily forested nature of the island; habitat availability and food supply are generally unlikely to be limiting factors for native fauna populations, especially for forest-dwelling species. New planting, where it is undertaken, should be focussed on those ecosystem types which are the most significantly reduced or impacted, such as wetlands and dunes for example. These are typically the areas which are most heavily impacted by human activity rather than pest animals or plants. Similarly, initiatives identified in the Ecological Vision such as garden planting assistance and a potential community nursery would be especially valuable if focussed on those ecosystem types (i.e. oases) which are the most significantly reduced or impacted. This appears to have been considered as the garden planting assistance statement in the Ecological Vision singles out coastal and wet areas as examples.

One specific planting opportunity identified in the Ecological Vision document is planting of puriri along potential bike trails to form a highway of significance. This specific instance of proposed planting is considered to have relatively low value from an ecological perspective as food availability is not typically a limiting factor for fauna on the heavily forested Aotea Great Barrier Island, especially for those species which are likely to benefit from the food values provided by puriri trees.

Goal: Reintroduce species

The reintroduction of species now extinct on Aotea Great Barrier is an ecologically valuable activity and an admirable goal for the ecological oases, as is the spread of other species still present in some areas of the island to other areas where they are no longer found. Consideration must be made of historical ranges for any desired translocation species, as well as the current state of the ecosystems found in the target locations. This is necessary to ensure that the correct species are being transferred to the correct locations, where they are both most likely to thrive and form an appropriate part of the local ecosystem. The level of pest suppression required to give translocated animals the optimal chances of success must be carefully considered as well; these requirements may be high relative to the level of suppression sought by the Great Barrier community.

Next Steps

A proposal to undertake further investigation of sites as potential ecological oases is included in the draft 17/18 environment work programme. This will be discussed in April 2017 as part of the work programme development