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Committee Social and Cultural Wellbeing Committee
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Baring Head - update on research

1. Purpose

To provide the committee with a progress report on the various aspects of research for the Baring Head property, highlighting any issues of note so far.

2. Significance of the decision

The matters for decision in this report **do not** trigger the significance policy of the Council or otherwise trigger section 76(3)(b) of the Local Government Act 2002.

3. Background

In September last year we reported to the previous Committee (refer to Report 10.522) about the tasks associated with opening the Baring Head section of East Harbour Regional Park and the preparation of the management plan. One of these tasks was researching the various values of the area and the opportunities for tourism. The specific areas of research identified were ecological, heritage, cultural and archaeological values, recreation and tourism opportunities.

This research is progressing well and will provide the evidence base to underpin decisions on how Baring Head is managed. The following summary outlines the main findings thus far.

4. Summary of Research

4.1 Ecology

Information previously collected at Baring Head by botanists and fauna specialists has been passed on by the Department of Conservation. This information provides details about species and ecological communities recorded, such as:

- Butterflies, moths and other invertebrates in the coastal area, including Notoreas moth and Myer's black cicada, a southern Wellington endemic species.
- Native bird species, such as the variable oystercatcher, banded dotterel, Caspian tern and blue penguin.
- Lizard species on the dune and beach.
- Significant vegetation, which includes the grey scrub community and rare plants, such as *Muehlenbeckia astonii* and matagouri.
- Fish species recorded in the river including giant kokopu, lamprey and long-fin eel.

The Department of Conservation recently completed a report on the estuaries of the region, in which it was noted that the Wainuiomata River has been identified as a Waterway of National Importance.

Greater Wellington commissioned work to complete the picture of the ecological values of the area. This included a second lizard study, development of a botanical species list and pest plant mapping. The lizard study found that the scree slopes on the river scarp are an ideal habitat for lizards. During December 2010 surveys using trapping and searching methods found nearly six hundred lizards, including spotted skink. Previous botanical surveys are being collated and botanists have volunteered to complete detailed species lists for areas within the park that have not previously been fully studied. This work is underway and should be completed by the end of May. Mapping of pest plant infestations has been completed by a contractor. The survey found that Baring Head has only a small variety of pest plant species, most likely due to its isolation from pest plant sources, and that grazing has kept the pest plant populations present relatively simple and stable in their distribution. An action plan will now be developed from the findings of the survey to establish monitoring and identify priorities for control and a strategy for prevention of new pest plants.

4.1.1 Grazing

An issue which will require further consideration is the role of grazing in the Baring Head area. Baring Head has been maintained as a farm for some time and thus provides a highly visible pastoral landscape. The benefit of this is the visibility of the geological landforms such as the marine terraces. Gorse and lupin spread is inhibited by having grazing stock. However, unmanaged widespread grazing has also allowed cattle to damage the indigenous vegetation, wetland areas and bird nesting sites. Likewise, sheep damage the indigenous vegetation and bird nesting sites.

The place of grazing in the park requires careful consideration. The pastoral landscape is, for some people, an integral part of the area, while others believe that the whole Baring Head block should be retired from grazing. Removing sheep and cattle will prevent damage but it is not yet clear how partial or full retirement from grazing will alter the ecosystems that have formed. For example, the grey scrub communities currently present are rare and allowing natural regeneration to occur will ultimately result in the loss of this ecosystem type in the park.

Over this next period officers will work alongside experts to explore this issue. We will also engage the community on the experience they are seeking and the amenity value of the current landscape. This will help to inform decisions on what areas, if any, grazing should occur; identify where fencing is appropriate; and whether or not restoration planting should be taking place.

Other issues for further consideration are whether it is appropriate for motorised recreation and hunting to be permitted on the block. Both of these activities have been occurring and may have impacts on the identified environmental values of the land.

4.2 Tourism and Recreation

Greater Wellington has engaged Tourism Resource Consultants (TRC) to assess the tourism and recreation potential of Baring Head and the adjacent lighthouse complex. Currently, the decision to demolish the lighthouse keepers' houses is on hold until further investigation is done to look at the feasibility of using the houses for visitor accommodation.

TRC's report considers the lighthouse and associated buildings, potential linkages beyond the park, options for management and an assessment of the feasibility of commercial accommodation. In addition to desk top research, interviews and field visits, a public meeting was held in November 2010 in Petone to gain a community perspective of their ideas and vision for the area. The report is currently in draft and is expected to be completed shortly.

The following summarises the draft recommendations from the report:

- Focus on non-motorised recreation, with loop trails for dual use (i.e. biking and walking) which connect key locations in the park i.e. beach, river, wetland, lighthouse complex, summit and WWII bunkers.
- Create an access point (either a secondary or primary entrance) from the river mouth area building a pedestrian bridge. This would provide enhanced access to the key sites (beach, rock climbing site and the lighthouse).
- Provide picnic areas at key locations (e.g. pump house, lighthouse complex).
- Interpretation at key sites to communicate the stories and themes associated with the site. This could include an interpretative centre at the generator building with facilities for day users. This is particularly important to provide separate facilities if paid accommodation is being provided on site as well. TRC estimates that the area is likely to attract 25-30,000 annually.
- Formalise recreational access from Parangarahu Lakes Area to Baring Head. Hutt City Council has been talking with landowners between Burdan's Gate and Baring Head with the hope of providing recreational

access along the coastline. The existing formed road between these areas traverses private land and requires landowner consent to use.

The report notes that the majority of visitors are likely to be based locally, and to a lesser extent visitors from outside the region. The lighthouse is a particular drawcard and Baring Head provides the opportunity to create an authentic lighthouse accommodation product within close proximity to a large urban centre. Baring Head is comparatively more accessible when compared with other lighthouse accommodation experiences provided in New Zealand. With regard to the lighthouse keepers' houses the draft report suggests:

- Renovating the lighthouse keepers' houses for use as commercial accommodation properties. TRC's research shows that there is a market demand for this type of accommodation. They estimate that the houses provide an opportunity to generate revenue in the order of \$24,000 - \$60,000 annually.

This could either be as a destination in itself, or as part of accommodation for a south coast biking trail should access be successfully negotiated around the coast.

- Using seed capital from key partners (i.e. GWRC, DOC, HCC) for initial upgrade of the houses, but contracting management responsibilities to a trust. There are many successful New Zealand examples of accommodation on public land being managed by the private sector or trusts.
- Retaining (restricted) vehicle access to the lighthouse complex.

The report outlines a number of different development scenarios for the future of the park, concluding that the best possible scenario is to have overnight accommodation for visitors which is easily accessible, and connected to Parangarahu Lakes, East Harbour Regional Park through recreational access along the coast.

Key issues for further consideration arising from the research:

- How to manage vehicle access to the block: The road and bridge are used by a number of parties who require vehicular access. The bridge has a limited life and will require replacement within 5 years. Pedestrian access is recommended by bridge near the river mouth but noting that this is a significant capital cost.
- Ensuring the business model for managing the lighthouse homes is sustainable: The management model for the houses, whether a Trust or another option must have economic sustainability in the longer term. The Friends of Baring Head have indicated a strong intent in investigating whether they could play a lead role in ongoing management of the proposed visitor accommodation.

4.2.1 NIWA interest in developments at Baring Head

Greater Wellington officers have met with the National Institute of Water and Atmospheric Research Ltd (NIWA) over their concerns that any proposed developments do not compromise this monitoring site which is internationally significant to the scientific community. **Attachment 1** provides an overview of the site which has operated since 1973 and is a key part of climate change and atmospheric research. The site provides measurements for amongst other things, our national contribution on greenhouse gas emissions.

Any developments of the site or facilities for public use will need to be designed avoid interference with the measurements taken by NIWA. For example, heating of buildings could be electric or solar powered rather than wood or coal fired, barbeques banned and so on.

4.3 Tangata whenua interests and values report

Greater Wellington contracted a consultant to prepare a report on the historical uses and occupation of the area; identify the tangata whenua interests and values in the Baring Head area; and identify options to recognise and provide for these values within the management plan.

A draft report has been received by Greater Wellington. The following issues were highlighted:

- Baring Head (Orua-Pouanui/Parangarahu) is a significant Maori cultural landscape.
- The most significant site is the ancient Parangarahu Pa (on the north-west boundary, with associated stone wall, wheat field site and pits). Maintaining open pasture with only light stocking will enable these sites to be visible but not damaged.
- Unauthorised vehicles are causing damage to the coastal area and should be restricted at all entry points. Some of the illegal fishing is also connected to the vehicle access issue.
- Discovery of artefacts by the public should be covered in Council's policy.

It is anticipated that the report will be finalised by the end of March 2011.

4.4 Heritage and archaeology

In June 2010 archaeologist Kevin Jones completed a report for GWRC about the surface archaeology of the lighthouse reserve at Baring Head. This report points out that management of this area requires a coordinated approach as a number of parties are involved. It noted that the shelterbelt, headland margin, lighthouse keepers' houses, generator shed, the light, signal platform and the World War II structures and ruins form an integrated whole.

This report had a number of recommendations for further research including interviews, onsite investigations and archives. It also recommended plans are

prepared for the maintenance of vegetation at the site (the shelterbelt) as well as for interpretation and visitor safety.

The New Zealand Historic Places Heritage Trust (NZHPT) in association with Greater Wellington is now gathering further information about the area. This began in December 2010 and will be finished at the end of March. The report will bring together a history of Baring Head from Maori occupation to the present day, a description of the extent of the historic area, and information on the numerous structures that comprise the wider complex (including the lighthouse, houses and military structures along with the modern NIWA structures). It is anticipated to be a substantial document backed up by relevant documentation, images and reference sources.

The factors that mark Baring Head out as special include:

- The lighthouse's history as the earliest electrically operated light which ushered in a new era in lighthouse technology in New Zealand that meant that keepers were not required to maintain a 24 hour watch.
- Baring Head's role during World War II.
- The 1970s installation of monitoring equipment to gather data on climate change to add to the international scientific community knowledge base.
- The remarkably complete collection of associated buildings and the area's associated values.

These elements are reinforced by Baring Head's magnificent location, with sweeping views along the North Island's south coast.

NZHPT officers have indicated that this place may well be worthy of registration, which could see the area added to the NZHPT National Register. However, at this stage the focus is on preparing a comprehensive report which would provide the basis for discussion with the key parties involved at Baring Head including the opportunities and implications of registration. If through this consultation, it is agreed that this complex is a good candidate for registration then it would be put before the Historic Places Trust Board. The process involves peer review, consultation with stakeholders, public notification and final decision making by the Board and typically takes several months.

NZHPT will be available to present their findings to the Committee after the draft report is finalised in late March.

5. Other inspections carried out at Baring Head

5.1 Baring Head Keepers' Lighthouses

In December 2010 Hutt City Council building inspectors assessed the condition of the light house keepers' buildings on behalf of Greater Wellington. They produced a report which assessed the current structural condition of the

buildings and provides guidance on likely renovation cost to bring the buildings up to Building Code Standard.

The key findings are as follows:

- External: The buildings appear to be structurally in a reasonable condition, but require some work to be done to external claddings. It was strongly recommended that the existing roofing be replaced as it contains asbestos.
- Internal: Some minor damages but generally good condition. New fittings and fixtures would be required for the kitchen and bathroom as would new flooring and wall finishes.

To achieve efficient heating, the report recommends installing insulation, and solar or/and gas for heating and cooking.

- Utilities: Sewer systems are in poor condition, new septic tanks would be required. Suggested installation of a storm water system to improve water efficiency. No electrical inspection was done. There is no water source onsite.

The total estimated cost for the recommended building works is in the order of \$150,000 - \$250,000.

5.2 Inspection of World War II Structures

In December 2010 Opus completed an inspection of the three structures that sit near the trig at Baring Head. This was primarily to instruct Greater Wellington on the safety and durability of these buildings. The recommendations outline what can be done structurally to improve their integrity and longevity. In summary:

- The two reinforced concrete storage/communication buildings are in reasonable condition and subject to appropriate repair work can be made suitable for controlled access by members of the general public.
- The separate observation bunker which overlooks the Baring Head Lighthouse has deteriorated significantly. Major works to remove the existing (cantilever) roof and support beams would be required to allow safe access.

These recommendations are caveated by the need for further advice from the Historic Places Trust regarding the appropriate methodology for restoration.

As the opening of the Baring Head occurred in February, these structures were fenced off to ensure public safety until decisions are made on how to restore these structures for public enjoyment.

5.3 Northern boundary vehicle bridge

The bridge on the northern boundary provides vehicle access to the private property on the marine terrace and the organisations with facilities at Baring Head lighthouse reserve. Consultants advised Greater Wellington in December that one of the piles failed when tested and remedial work was undertaken immediately.

This remedial work extends the life of the bridge a further 3-5 years but highlights a potential major expenditure in the future. The financial responsibility falls on all the parties using the right of way including Greater Wellington.

6. Suggested next steps

The research completed to date highlights the significant values of the area but also raises a number of issues that will need to be considered in the context of the management plan. Their contents provide useful background on which to begin a wider discussion with the community. As these reports are finalised, these will be provided to the committee and then posted on the Greater Wellington website.

The process for developing a management plan (set out in Section 41 of the Reserves Act) gives two formal opportunities for the public to input into the plan process: the first prior to formulating a draft and then a further opportunity when the draft is released.

In May, a report to the Committee will seek approval of the first stage of the management plan process. This will eventually form an amendment of the Parks Network Plan. Submissions received will be used to input into development of the draft management plan. In the interim, the reports outlined in Section 4 of this paper will be made available on the website to help the public to engage in the issues. It is also intended to utilise an online moderated forum ('Bang the Table') over the next few months to provide a forum for the public to discuss the findings of the reports and future development and management options.

7. Communication

The agencies involved in the purchase of the land will be sent copies of the research as it is completed.

8. Recommendations

That the Committee:

1. ***Receives the report.***
2. ***Notes the contents of the paper***
3. ***Agrees that the final research reports will be made publicly available.***

4. *Notes that in May 2011 the Committee will receive a further report seeking approval of the first stage of the preparation of a management plan under the Reserves Act 1977.*

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Attachment 1: Information on Atmospheric Measurements by NIWA at Baring Head

Atmospheric measurements by NIWA at Baring Head

Background

The Baring Head Atmospheric Research Station has been operated since 1973 (previously by DSIR, now by NIWA) and is a key part of climate change and atmospheric research funded by the Foundation for Research Science and Technology from the public good science fund. Much of the research done at Baring Head has an international significance. It regularly attracts scientists from other countries, and it meets NZ commitments to the World Meteorological Organization's Global Atmosphere Watch (GAW) programme.

The measurements at Baring Head focus on the composition of clean air in the greater New Zealand region. The associated research programme studies how and why the composition of clean air is changing on the global scale as a result of human activity. Very precise measurements are required because we compare measurements there with measurements taken in the Antarctic and northern hemisphere. The Baring Head research station has produced the longest continuous record in the southern hemisphere of the main greenhouse gas, carbon dioxide (CO₂). Our current programme includes measuring a number of different gases in our atmosphere including green house gases methane and nitrous oxide and related species like carbon monoxide, oxygen, ozone and aerosol particles.

The Role and Use of Research at Baring Head

By carefully establishing the growth rate of greenhouse gases such as carbon dioxide and methane at Baring Head we provide key inputs to research programmes aimed at estimating future climate change. In addition to New Zealand research programmes in this field, we provide our data through the World Meteorological Organization to overseas research programmes. Our focus is to better identify the sources and sinks of greenhouse gases so that we can make better estimates of their levels in the future, and hence reduce uncertainties in climate prediction.

A second major research aim is to study changes in the natural chemistry of the atmosphere which is responsible for removing most pollutants. At present it is not clear whether the ability of the atmosphere to remove pollutants is being overloaded by increasing pollutant emissions. Our work in this area is at the forefront of international research in atmospheric chemistry.

Some of our measurements are made for comparison with other research stations operated by Australia, and the USA in the Southern Hemisphere. The

differences between measurements at different sites are small and difficult to measure, but tell us where greenhouse gases are originating and where they are being removed.

Some of the measurements at Baring Head are unique. We have more detailed information on methane and carbon monoxide than is available anywhere else in the world, and for that reason our data have additional value to researchers globally.

Local Air Quality Issues

In order that our measurements remain representative of large clean air masses in the New Zealand region, it is necessary to prevent contamination at the site from strong local sources of the trace gases being measured.

Although there have been some changes around the site over the last 30 years, they have been generally satisfactory and not compromised our research. Our experience has identified a number of activities which were detectable in atmospheric measurements but usually sufficiently limited that they did not compromise our overall work. These include:

- Vehicles, including our own, particularly in light northerly conditions;
- Use of barbecues by previous lighthouse keepers;
- Salvage operations for the Pacific Charger, a ship that ran aground near Baring Head in 1981, (during construction of the access way at beach level our measurements were significantly contaminated due to emissions by the heavy machinery); and
- Gases emitted from the Pencarrow sewage outfall.