greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

MEMO

TO	Kirsty van Reenen, Senior Resource Advisor
FROM	Roger Uys, Senior Terrestrial Ecologist
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Review of resource consent applications for Western Rivers – effects on river birds and reptiles

Introduction

Greater Wellington Regional Council's Flood Protection Department have submitted resource consent applications for global consents to undertake river management activities on the Hutt, Wainuiomata, Waikanae and Otaki Rivers (Western Rivers). I was asked to provide advice/opinion on the effects of the proposed activities on river birds and reptiles, in particular:

- Has the applicant adequately described the bird and reptile values for each river?
- Whether the resource consent application includes an adequate assessment of effects on river birds and reptiles? If not, what further assessment/information is required to fully understand the effects of what is proposed?
- Are the conditions, under the heading lizards, appropriate to avoid, remedy or mitigate adverse effects on reptiles and its habitat?
- If you consider it necessary, please recommend other conditions or amendments to the conditions to avoid, remedy or mitigate adverse effects on birds and reptiles.
- Is the monitoring that has been proposed by the applicant to assess the decline in bird and reptile populations appropriate?
- Comments on submission points that relate to effects on river birds and reptiles, namely:
    - Department of Conservation (Hutt, Wainuiomata, Waikanae, Ōtaki)
    - Te Ati Awa ki Whakarongotai (Waikanae)
    - Nga Hapu o Ōtaki (Waikanae, Ōtaki)

- Taranaki Whanui ki Te Upoko o Te Ika (Hutt, Wainuiomata)
- Ngati Toa Rangatira (Hutt, Wainuiomata)
- Dr Stephen Lang (Ōtaki)

Bird and reptile values

The evidence presented describes bird populations for the Hutt, Otaki and Waikanae Rivers, but highlights a paucity of information for the Wainuiomata River. The evidence is based on survey reports and may have benefited from reference to sightings posted on the E-Bird and Nature Watch websites, but these are unlikely to have added much detail and so are not worth requesting.

Little information is available about the lizards along these rivers; however I do not see this as a shortcoming. This application is for a 35 year consent, over which time population composition and distribution would be expected to change. It is more important to have up-to-date information to guide the planning and mitigation of individual works. This should be achieved for both birds and lizards by the stipulations in the General Activity Constraints Calendar in the Code of Practice for river management activities.

Effects on river birds and reptiles

Three environmental protections are proposed for identifying effects on birds and lizards, these include:

- Ongoing monitoring of nesting river bird populations on selected rivers.
- Surveys to identify the presence of river bird nests or chicks prior to the commencement of works in the breeding season, with mitigation actions.
- Surveys to identify the presence of lizards where area >100m^2 are to be disturbed, with proposed mitigation actions.

Monitoring river bird populations is a good way of testing the outcome of the proposed nesting river bird protections. If, however, it is found that populations are changing, it will be difficult to ascribe these changes to the actions of the Flood Protection Department.

Manipulation of river bird nesting habitat is one of the main influences that Flood Protection has on nesting success and thereby river bird populations. Causality is hard to establish in the natural environment, so it is important to be able to distinguish the effects of Flood Protection's actions from natural changes to nesting habitat. The Flood Protection Department might therefore consider desktop mapping of the available nesting habitat, so that it can compare the extent of its works to natural changes in the environment. Mapping would be done based on expert advice of what constitutes suitable habitat and could use image classification. The mapping should be done before each nesting river bird surveys so that the map may be ground truthed as part of the nesting river bird surveys.

Another thing to consider is the value of large trees to roosting birds like shags. There are very few of these sites across the region and careful consideration should be given in weighing up the flood risk against the availability of alternative roosting sites when carrying out pre-emptive removal of roosting trees along river banks. Identifying roosting trees would not require expert input as they are easily identified by the large quantity of excrement on their branches and around their base. This could be done each time operational staff are scoping out the extent of works in the field, with roosting trees marked not to be removed.

Bringing experts in to search for and relocate lizards is a good control to mitigate the effects of flood protection works. It does, however, leave space for consideration of the cumulative effects of successive works along a stretch of river bank. Few translocations have 100 percent success rates and moving animals into areas with existing populations can result in the carrying capacity for that area being exceeded, leading to further mortalities.

Conditions for reptiles

To address the cumulative effects on reptile populations (i.e. lizards and geckos), the surveys that have been provided in the General Activity Constraints Calendars should establish the spatial extent of the whole population in the area, not just the area of the proposed footprint of works. If more than 10 percent of a contiguous population is being displaced, consideration should be given to finding alternative sites, rather than saturating the population in the remaining habitat with relocated animals. A suitably qualified expert should be used to do these surveys and to determine whether the quality and population density of the receiving habitat that animals are being relocated to are appropriate. Surveys should expand until the entire contiguous population has been captured or the proportion of the contiguous population being displaced is found to be less than 10 percent. It is important to note that a permit is required from the Department of Conservation to handle indigenous reptiles and such a permit will only be issued to a suitably qualified person. Mitigation might include the replacement of lost habitat on site or in another suitable location as determined by a suitably qualified expert.

It is important that the General Activity Constraints Calendars not be limited to conditions based on our current knowledge, as reptiles have not been well surveyed. Calendars should be changed to reflect the need to survey for reptiles, not just lizards or geckos. All species should be surveyed when contemplating work in listed habitats, not just the known and threatened species.

Additional conditions for birds and reptiles

Based on the above, additional conditions might consider bird roosting trees and the cumulative impacts of works and natural changes to bird and lizard habitat.

Monitoring of birds and reptiles

The monitoring provided for birds is appropriate. The methodology was recently updated to monitoring three years in a row, followed by a three year break. Some of the documentation still refers to a three year monitoring run followed by a five year break. The change was informed by a review of the data collected and best practice on rivers elsewhere in the country.

No monitoring of reptile populations was proposed. Unlike the river birds, none of the reptiles are specific to riverine habitats. Reptile are also far more localised in their movements than river birds. So, it makes sense to limit investigations to specific sites where the area of work will exceed 100m^2 of native habitat. These investigations should however extend beyond the footprint of the works to assess the extent of the population and cover all reptile species.

Comments on submission points - Department of Conservation (Hutt, Wainuiomata, Waikanae, Ōtaki)

The Director General of Conservation expressed a concern about identifying the potential adverse effects of gravel removal on the significant indigenous biodiversity values of river beds. For birds and reptiles, it is unlikely that reptiles will be affected as they generally do not inhabit vegetation free river beds where gravel is extracted. If, however, vegetation is being disturbed, controls have been identified for work extending beyond an area of 100m^2. For birds, any potential adverse effects should be mitigated by the controls on operations during the nesting season. Effects should also be identified through the nesting river bird surveys and by incorporating a measure of suitable habitat for river nesting birds into the monitoring.

The Department of Conservation is concerned that the application fails to protect and restore the wetland, freshwater, estuarine and braided river bird values and fails to avoid any more than minor adverse effects on the significant indigenous biodiversity values contained within rivers and their margins. The provisions to avoid nesting birds and fledglings, should protect individual animals and the inclusion of habitat mapping would help assess the impact on bird habitat. However, no regional or national targets exist for river bird or habitat protection and restoration to plan and measure flood protection works against.

Comments on submission points - Te Āti Awa ki Whakarongotai (Waikanae)

Te Āti Awa submitted that the application "does not avoid, remedy, or mitigate the adverse effects of the Application on the environment" (point 7d).

The identification and avoidance of nest sites is intended to avoid and mitigate impacts on nesting birds. As is the use of specialists to inventory and relocate threatened reptile species.

Te Āti Awa are concerned that their interests as iwi are limited to Cultural Effects in the Assessment of Environmental Effects and that this does not include their interests in birds etc. (point 15).

This is beyond the scope of my role to comment on.

Comments on submission points - Ngā Hapū o Ōtaki (Waikanae, Ōtaki)

Ngā Hapū o Ōtaki submitted that their interests as iwi are limited to Cultural Effects in the Assessment of Environmental Effects and that this does not include their interests in birds etc. (point 24 in each submission).

This is beyond the scope of my role to comment on.

Comments on submission points - Taranaki Whānui ki Te Upoko o Te Ika (Hutt, Wainuiomata)

Taranaki Whānui ki Te Upoko o Te Ika submitted that the application "does not avoid, remedy, or mitigate the adverse effects of the Application on the environment" (point 7d).

The identification and avoidance of nest sites is intended to avoid and mitigate impacts on nesting birds. As is the use of specialists to inventory and relocate threatened reptile species.

Comments on submission points - Ngāti Toa Rangātira (Hutt, Wainuiomata)

Te Rūnanga O Toa Rangātira Incorporated submitted that the application "does not avoid, remedy, or mitigate the adverse effects of the Application on the environment" (point 7d).

The identification and avoidance of nest sites is intended to avoid and mitigate impacts on nesting birds. As is the use of specialists to inventory and relocate threatened reptile species.

Comments on submission points - Dr Stephen Lang (Ōtaki)

Dr Lang asks, "How does GWRC intend to oversee the "duck" shooting that happens yearly at Ōtaki estuary and how does this activity equate with the estuary being a habitat of significance for indigenous birds and is a designated Key Native Ecosystem. Q. How will selective culling be managed especially with nine species designated 'at risk'" (issue #3).

This is beyond the scope of my role to comment on and may be redirected to the Biodiversity Team to comment on.

Dr Roger Uys
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