



STAFF REPORT

TO: Environment & Planning Subcommittee

FROM: Michael Durand - Co-ordinator Natural Resources Consents

REFERENCE: RM070046

SUBJECT: **B R REILLY, J M REILLY, D A EARLE and G R MILNES - REPORT EP07/11/14 - Report prepared for 26 and 27 November hearing**

1. INTRODUCTION

The applicant proposes to establish a tourist venture in the Pupu Valley, Golden Bay, which involves a visitor centre with a large freshwater aquarium, accommodation units and dining facilities. A suite of resource consent applications have been made and these have been assessed in a number of individual staff reports.

This report discusses the proposed discharge to land and water of water from the aquarium. In this report an evaluation of this proposal is made, and the potential adverse environmental effects associated with this activity are discussed. The report also makes a recommendation with regard to the granting of resource consent for the proposed activity.

2. PROPOSED TASMAN RESOURCE MANAGEMENT PLAN (PTRMP) ZONING, AREAS AND RULES AFFECTED

There is no permitted activity rule relating to the discharge to land or water of water previously used in an aquarium. A resource consent is required for this activity pursuant to Section 15 of the Resource Management Act 1991. The status of the activity is discretionary as provided for by Section 70(d) of the Act.

3. SUBMISSIONS

3.2 Summary of submissions commenting on aquarium water discharge matters:

Table 1: Summary of submissions with respect to the discharge of aquarium water

Submitter	Reasons	Comment
Burgess	Suggests there should be "no discharge".	This is not possible to achieve if the aquarium is to provide a freshwater environment (i.e. throughflow of water is required)
Piekarski #1	Aquarium discharge is "not a trickle".	This is accepted. However, the submitter did not suggest or demonstrate that the adverse effect of the proposed discharge (at a rate of up to 10 litres per second) is different or greater than that expected from a "trickle". It is also difficult to define the maximum rate of discharge that could be described as a trickle.

Submitter	Reasons	Comment
Piekarski and NgAng	As in Piekarski #1.	As above.
Piekarski #2	As in Piekarski #1.	As above.
Vaughan	The discharge in to the existing watercourse is excessive.	The existing watercourse is not proposed to remain in its current condition; it is proposed to be modified to cater for this larger flow; the reader is referred to the accompanying report on land disturbance.
Fish and Game	Eggs from aquatic species that are not endemic to the catchment may be released from the aquarium and populations may subsequently become established in the catchment.	This is accepted. Recommended consent conditions aim to avoid the introduction of new species to the catchment.
Wallis	Aquariums breed diseases that may be released into the river.	See later discussion in section 6.2; recommended consent conditions require that an aquarium management plan be submitted for approval by the Council before the exercise of any consent granted.
Forest and Bird	Requests that non-local and potential pest fish are not held in the aquarium, in order to prevent their introduction into the catchment.	This is accepted and addressed through consent conditions.
Gillard	Points out that salmon and trout are not native.	It is proposed that native and common non-native species are held in the aquarium. There should be no adverse effects of non-native species being held in the aquarium, unless they are not currently present in the catchment. Recommended consent conditions prevent non-local fish being held in the aquarium.
Cerny	Suggests aquarium discharge is to occur via a watercourse on their property.	See accompanying report on land disturbance.

Specific commentary on some of the issues raised by submitters is made in the assessment section of this report; these comments can be found in section 6.2 of this report.

4. PRINCIPAL ISSUES

The principal issue associated with proposed development is:

- a) Can the water from the proposed aquarium be discharged to land and to water without causing adverse environmental effects that are more than minor?

5. STATUTORY PROVISIONS

The status of the discharge proposed in the application is discretionary. The Council must consider the application pursuant to Section 104 of the Resource Management Act 1991.

The matters for the Council to consider in Section 104 are:

- Part II matters;
- the actual and potential effects on the environment of allowing the activity (Section 104 (1)(a));
- the relevant objectives and policies in the Tasman Regional Policy Statement, and the Proposed Tasman Resource Management Plan (Section 104 (1) (b));
- any other matter the Council considers relevant and reasonably necessary to determine the application (Section 104 (1)(c)).

5.1 Resource Management Act Part II Matters

In considering an application for resource consent, the Council must ensure that if granted, the proposal is consistent with the purpose and principles set out in Part II of the Act.

Section 5 sets out the **purpose** of the Act which is to promote the sustainable management of natural and physical resources. "Sustainable management" means:

"Managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while -

- *sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- *safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- *avoiding, remedying, or mitigating any adverse effects of activities on the environment*

Sections 6, 7 and 8 set out the **principles** of the Act:

Section 6 of the Act refers to matters of national importance that the Council shall recognise and provide for in achieving the purpose of the Act. The matters relevant to this application are:

- The preservation rivers and their margins, and the protection of them from inappropriate use and development.
- The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

Section 7 of the Act identifies other matters that the Council shall have particular regard to in achieving the purpose of the Act. Relevant matters to this application are:

- 7(d) intrinsic values of ecosystems
- 7(f) maintenance and enhancement of the quality of the environment, and
- 7(g) any finite characteristics of natural and physical resources

If consent is granted, the proposed activity must be deemed to represent the sustainable use and development of a physical resource and any adverse effects of the activity on the environment should be avoided, remedied or mitigated. The critical issue of this consent is whether the proposal represents sustainable use of the rural land resource, whereby servicing and cumulative adverse effects are no more than minor.

These principles underpin all relevant Plans and Policy Statements, which provide more specific guidance for assessing this application.

5.2 Resource Management Act Part VI Matters

Section 105 of the Act identifies matters relevant to certain discharge applications that would contravene section 15 or 15B of the Act. **Section 107** of the Act restricts the granting of discharge permits that contravene Section 15 or 15A of the Act.

5.3 Tasman Regional Policy Statement

The Regional Policy Statement seeks to achieve the sustainable management of land, water and coastal environment resources. Objectives and policies of the Policy Statement clearly articulate the importance of protecting land resources from inappropriate land use and development.

Because the Proposed Tasman Resource Management Plan was developed to be consistent with the Regional Policy Statement, it is considered that an assessment under the Proposed Plan will satisfy an assessment against Policy Statement principles.

5.4 Tasman Resource Management Plan

The most relevant Objectives and Policies to this application are contained in:

- Chapter 33

This chapter articulates Council's key objectives:

Details of the assessment of the proposed activity in terms of these matters are addressed through the assessment of actual and potential effects in paragraphs 6.1–6.3 below, and analysis and discussion on the relevant policies and objectives in paragraph 6.4 of this report.

6. ASSESSMENT

6.1 Background to the Proposed Activity

A description of the proposed activity and associated discharge is provided in the application for resource consent and in a letter providing further information dated 20 June 2007. Details of the proposed aquarium and associated discharge are summarised below (with additional comments in parts):

- The aquarium is proposed “to hold as many of the freshwater fish species found in New Zealand freshwater habitats. That involves both indigenous and exotic species.” The applicant has made no statement on the status of any species within pest management strategies.
- The size of the aquarium and the necessary water discharge rate were not clear at the time of the application being made; this is acknowledged by the applicant. Provisional calculations and experience from elsewhere have suggested that a through-flow of up to 10 litres per second will be sufficient to maintain a high quality freshwater environment within the aquarium. This resource consent application has been assessed by the writer on the basis of a discharge of no more than 10 litres per second, and it is acknowledged that, once the aquarium design has been finalised, the discharge rate may be less than this, but no more. Should consent be granted, it is recommended that the authorised rate of discharge should not exceed 10 litres per second.
- Fish will be fed with food that does not contain hormones, antifungal, antibacterial or any other additives that are potential pollutants that could be carried by the discharged water into the adjacent Waikoropupu River.
- It is suggested by the applicant that “the only contaminants that would arise are “natural” being faeces from the fish and possibly a very minor amount of uneaten fish food.” It is also stated that the fish will not be fed excessively and, by implication, this suggests that relatively little uneaten food will remain in the water and become entrained in the water to be discharged.
- The outlet of the aquarium will be at a high water level and this outlet is to be screened to prevent the escape of fish. Details of this screen were not provided and its ability to filter and remove potential contaminants, especially fish eggs, from the discharge is unclear.
- The discharged aquarium water will reach the Waikoropupu River via a small constructed wetland and an ephemeral stream currently on the property. Plant species introduced to the wetland will be natives only. Some filtering of contaminants is expected in the wetland, but its primary function is as a landscape feature.
- The applicant suggests that final through-flow calculations for the aquarium will ensure that stagnation of the aquarium water is avoided; this in turn will preclude the generation any odour in the aquarium building, in the wetland or in the stream or river.
- The applicant has stated that at a freshwater fish farm in Marlborough (at which generous fish feeding is normal to promote growth), discharged water is consistently of a higher quality than that in the receiving stream. It is also suggested that the quality of water to be discharged, ultimately to the river, from the proposed aquarium is likely to be of a higher quality than that which could occur as a permitted activity from livestock or dairy farming on the subject property.

6.2 Assessment: Discussion of Key Potential Environmental Effects

The key potential adverse environmental effects of the proposed aquarium discharges as identified by the applicant, by the submitters and by Council staff, can broadly be grouped into the following categories: Downstream adverse effects associated with the species to be held in the aquarium; contamination of downstream waterbodies; and the proposed rate of discharge. These are considered in turn below:

Downstream adverse effects associated with the species to be held in the aquarium

The applicant proposes to hold species that are present in waterbodies across New Zealand, be they native or introduced species. However, several submitters raised the issue of species that are not currently in the catchment being introduced by their eggs, larvae (or progeny by whatever means) entering the Waikoropupu River from the aquarium discharge. There was no list provided by the applicant of species intended to be held, but their generic statements can only be interpreted as follows: that all species currently in freshwater environments in New Zealand are potential options.

Under the RMA, a “contaminant” includes “any substance [...] that [...] when discharged into water, changes or is likely to change the physical, chemical or biological condition of water.” This definition makes it clear that any change to the biological nature of the receiving environment—for example by the introduction of new species—is a matter for assessment under this consent application.

Given this, it is not appropriate to grant resource consent for an activity that may introduce any species into a catchment in which it is currently absent. The adverse effects of introduced species in New Zealand (in freshwater environments and elsewhere) are not only notorious, but also difficult to predict and often impossible to reverse. The precautionary principle should be adopted. In this regard, it is my view that species held in the aquarium should be limited to those currently resident in Takaka River and Waikoropupu River catchments. Ideally, the animals to be placed in the aquarium should be sourced from these rivers alone. This view is conservative but will ensure that the introduction of inappropriate and unwanted species to the receiving environment is avoided. Recommended consent conditions reflect this view.

Notwithstanding the above argument, it is worth noting that the Department of Conservation did not raise such concerns about introduced species in their submission.

A further issue relates to the potential of the development of disease in aquarium and subsequent spread of disease to the river. Little is understood about this at present. It is recommended that the applicant provide the Council with a written management plan for the monitoring of the overall health of the aquarium ecosystem; this would need to be to the satisfaction of the Council before any consent is exercised.

Contamination of downstream waterbodies (excluding introductions of new species and diseases)

Notwithstanding the issues discussed in the previous paragraphs, the contamination of the Waikoropupu River by water from the proposed aquarium is likely to be minimal and the adverse environmental effects are considered to be no more than minor. The aquarium environment is intended to mimic that of rivers in Golden Bay, and it is planned that the ecosystem within the aquarium is therefore comparable to that of the adjacent river. In this regard, “contaminants” in the aquarium that may enter the Waikoropupu River include: fish faeces and other fish excretions, small amounts of uneaten fish food, microorganisms, invertebrates, dead and decaying fish or other animals and dead or floating plant matter. The aquarium outlet should be screened to prevent the carry-over of solids or dead fish (down to a certain size).

Whilst these materials are undoubtedly contaminants, it should be recognised that such things will already be present as natural components of the receiving environment and ecosystem. In this regard, it is argued here that (excluding the introduction of unwanted fish or plant species) the discharge should not change the physical, chemical or biological condition of the receiving waters to a degree that is any more than minor. Thus, in my assessment, the adverse environmental effect of contamination caused by the aquarium discharge is expected to be no more than minor.

The proposed rate of discharge

The rate of discharge from the aquarium is expected to be up to 10 litres per second, but may be significantly less than this depending on the final design of the aquarium. My assessment is based on the discharge of 10 litres per second. Submitters have raised the issue that this is not a “trickle”, as suggested by the applicant. This point is accepted, as 10 litres per second is the flow expected from a small stream. However, the applicant proposes to move and modify an existing waterway to accommodate this discharge; conditions recommended for these works (see accompanying staff report on land disturbance activities) should ensure that the watercourse is properly designed to accommodate this flow without any adverse environmental effect that is more than minor.

The proposed discharge of aquarium water will also enter a proposed wetland and as such some of the discharged water will either enter the ground as seepage/soakage or be evaporated from free water surfaces and as such the actual rate of discharge to the Waikoropupu River should be less than that leaving the aquarium itself.

The matter of the proposed watercourse crossing the Cerny property is addressed in the associated staff report on proposed land disturbance activities.

6.3 Permitted Baseline

Under Section 104 (2) of the Resource Management Act the Council may use the “permitted baseline” test to assess the proposal. Under this principle the proposal is compared with what could be done as a permitted activity under the relevant Plan.

There is no relevant permitted activity rule for the discharge of contaminated water from an aquarium to land or water.

6.4 Relevant Objectives and Policies of the PTRMP

The following Policies and Objectives have been considered relevant for this proposal:

Objective

33.1.0

The discharge of contaminants in such a way that avoids, remedies, or mitigates adverse effects while:

- (a) maintaining existing water quality; and
- (b) enhancing water quality where existing quality is degraded for natural and human uses or values.

Policies

33.1.1 To recognise and provide for the uses and values of water through a system of classification that establishes the water quality standards required to protect the water quality needs of those uses and values.

33.1.2 To avoid, remedy, or mitigate the adverse effects of discharges of contaminants so that both individually and cumulatively with the effects of other contaminant discharges, they enable the relevant water quality classification standards to be complied with.

33.1.3 To seek to improve water quality where existing water quality is lower than the requirements of any water classification or water conservation order.

33.1.4 To ensure that water quality is not degraded where the existing water quality is the same or higher than the relevant water classification or any water conservation order.

33.1.5 To ensure that existing water quality is not degraded after reasonable mixing as a result of any discharge of contaminants into water and to take into account the following criteria when determining what constitutes reasonable mixing:

- (a) The depth, width and flow characteristics of the receiving water body, including the nature and extent of mixing which may occur and the assimilative capacity of the water.
- (b) The extent of the mixing zone and the likely adverse effects on aquatic life or ecosystems within the mixing zone.
- (c) The characteristics of the discharge, including the presence of toxic constituents.
- (d) The community (public) uses and values of the water or any mixing zone including those specified in the plan, any water conservation order or water classification for any water body.

33.1.6 To take into account the following factors in determining the significance of actual or likely adverse effects on the receiving water of or from contaminant discharges:

- (a) Any water classification given in any schedule to Chapter 36 or water conservation order.
- (b) Existing water quality of the receiving water.
- (c) The significance or sensitivity of the aquatic life or ecosystem.
- (d) The extent of the water body adversely affected.
- (e) The magnitude, time of year, frequency and duration of the adverse effect(s), including any cumulative effects as a result of the discharge.
- (f) The range and intensity of uses and values of the water body.
- (g) The conflicts between uses and values of the water body.
- (h) The nature of the risks of adverse effect(s).
- (i) Any relevant national or international water quality guidelines or standards, or water conservation order.

- 33.1.7 To control contaminant levels, particularly in relation to karst features and groundwater, and nitrogen in the groundwater of the confined aquifers of the Waimea Plains.
- 33.1.8 To avoid, remedy or mitigate the adverse effects of non-point source contamination arising from land use and discharge activities by a mixture of methods including regulation of discharge activities, and particularly through advocacy of best management practices; and to review the mixture of methods used if environmental monitoring shows that water quality standards are not being maintained.

It is the writer's view that the proposed discharge is broadly consistent with the Policies and Objectives of the Tasman Resource Management Plan.

7. SUMMARY

7.1 Principal Issues

The principal issue is whether the water can be discharged from the proposed aquarium whilst avoiding, remedying or mitigating any adverse environmental effects that are more than minor.

7.2 Overall Conclusion

Overall the writer's assessment is that the actual adverse effects on the environment are minor and the proposal is generally consistent with the objectives and policies, and matters of discretion in the Tasman Resource Management Plan.

8. RECOMMENDATION

The recommendation to grant or decline this application for a discharge permit is dependent upon the Committee's decision whether or not to grant consent for the proposed land use activity.

Having considered the application in detail, it is the writer's view that the adverse environmental effects of the proposed activity will be no more than minor, and that there is no reason why resource consent for the discharge of used water from the proposed aquarium to land and water should not be granted subject to the following recommended conditions.

It should be noted that the discharge of aquarium water to land and water is a consequential activity, and therefore, this recommendation is subject to the granting of other resource consents for the proposed land use activities. Particularly relevant here is the need for the applicant to secure a sustainable water take that is capable of supplying water to the complex, both for domestic (consumptive) use and for the proper functioning of the aquarium.

9. RECOMMENDED CONDITIONS

1. The discharge shall be of aquarium water only and occur via the constructed wetland as shown on the attached Plan A (dated 15 November) and described in resource consent application RM070046 (including further information provided on 20 June 2007). If there inconsistencies between the application and the conditions of this consent, the conditions shall prevail.

2. The rate of discharge shall not exceed 10 litres per second.
3. A complete aquarium design including flow calculations consistent with Condition 2 shall be submitted for approval by Council's Co-ordinator Compliance Monitoring prior to the exercise of this consent.
4. The discharge shall not cause or contribute to erosion of land, including the bed or bank of any stream or river.
5. The discharge shall not cause or contribute to any damage caused by flooding.
6. The discharge shall not cause or contribute to the destruction of any habitat, plant or animal in any water body.
7. The discharge shall not to cause the production of conspicuous oil or grease films, scum or foams, or floatable or suspended materials in the Waikoropupu River at a point measured 5 metres from the point where the discharge from the wetland enters the river.
8. All structures associated with the discharge shall be maintained in a condition such that they are clear of debris, are structurally sound and in full working order.
9. All structures and waterways associated with this discharge shall be entirely on the Consent Holder's land and shall not flow or otherwise enter a property that is not owned by the Consent Holder.
10. Water samples shall be collected from the outlet of the aquarium and also from a point immediately upstream of the point of discharge into the Waikoropupu River (downstream of the wetland but before the discharge enters the river) no less than once every 6 months. These samples shall be tested for:
 - Total nitrogen
 - Total phosphorous
 - Total ammoniacal nitrogen
 - Dissolved reactive phosphorous
 - Total faecal coliforms
 - 5 day biochemical oxygen demand
 - total suspended solids
 - pH
 - Electrical conductivity

All analyses shall be undertaken by an accredited environmental testing laboratory using standard methods apart from pH and electrical conductivity which shall be measured in the field using calibrated meters. The samples shall be transferred to the laboratory by chain of custody and all samples shall be collected using standard methods and in laboratory supplied containers. The analyses shall be forwarded to Council's Co-ordinator Compliance Monitoring within one week of the results of each sample being taken.

11. An Aquarium Management Plan (“AMP”) shall be submitted for approved by Council’s Co-ordinator Compliance Monitoring prior to the exercise of this consent. The AQM document shall include, but not be limited to, a description of site inspections and methods to be used by an appropriately qualified agent engaged by the Consent Holder to assess the health of the aquarium ecosystem (referred to in Condition 12). This assessment shall be for the purposes of measuring the risk of disease transmission and any other potential threats to downstream ecosystems from the aquarium discharge.
12. For the purposes of complying with Conditions 11 and 13, the Consent Holder shall enter into, and maintain at all times, a contract for the ongoing monitoring of the aquarium with an appropriately qualified person or agency.
13. Notwithstanding Condition 11, assessments of the aquarium health and risk to downstream ecosystems shall be conducted by the Consent Holder’s agent (referred to in condition 12) no less than once every six months. Results, plus that person’s or agency’s expert analysis and expert opinion on each assessment shall be forwarded to the Council’s Co-ordinator Compliance Monitoring no more than one month following the completion of the site inspection. In the case that a risk of any kind that is more than minor is identified during this assessment process, the Consent Holder shall comply with the following:
 - (a) the Council’s Co-ordinator Compliance Monitoring shall be notified as soon as possible, and in any case within 48 hours; and
 - (b) the discharge of aquarium water shall cease immediately; and
 - (c) the person or agency referred to in Condition 12 shall be contacted and that person shall make appropriate enquiries; and
 - (d) the discharge shall not recommence until it has been established that, in that person’s expert opinion, there exists no risk of transfer of that disease, illness, infection, infestation or cause or form of malaise to the environment outside of the aquarium.
14. If any member of staff (whether temporary or permanent) working at the complex suspects that, for whatever reason, a disease, illness, infection, infestation or any other cause or form of malaise is present in the aquarium, that person shall advise the Consent Holder who shall comply with the following:
 - (a) the Council’s Co-ordinator Compliance Monitoring shall be notified as soon as possible, and in any case within 48 hours; and
 - (b) the discharge of aquarium water shall cease immediately; and
 - (c) the person or agency referred to in Condition 12 shall be contacted and that person shall make appropriate enquiries; and
 - (d) the discharge shall not recommence until it has been established that, in that person’s expert opinion, there exists no risk of transfer of that disease, illness, infection, infestation or cause or form of malaise to the environment outside of the aquarium.

15. The Council may, in the period 1 November to 1 March each year, review any or all of the conditions of the consent pursuant to Section 128 of the Resource Management Act 1991 for all or any of the following purposes:
- (a) to deal with any adverse effect on the environment which may arise from the exercise of the consent that was not foreseen at the time of granting of the consent, and which is therefore more appropriate to deal with at a later stage; and/or
 - (b) to require the Consent Holder to adopt the best practical option to remove or reduce any adverse effects on the environment resulting from the discharge; and/or
 - (c) to impose contaminant limits and/or receiving environment limits and/or define mixing zones, loading rates and/or discharge volumes and flow rates of this consent if it is appropriate to do so. A decision on whether this condition will be implemented will be dependent on the results of monitoring required to be undertaken in accordance with Condition 10 of this consent; and/or
 - (d) reviewing the frequency of sampling, flow monitoring and/or number of determinands analysed if the results indicate that this is required and/or appropriate.

Duration of consent (RMA Section 123)

13. This consent expires on 1 December 2017.

ADVICE NOTES

1. This resource consent only authorises the activity described above. Any matters or activities not referred to in this consent or covered by the conditions must either: 1) comply with all the criteria of a relevant permitted activity rule in the Proposed Tasman Resource Management Plan (PTRMP); 2) be allowed by the Resource Management Act; or 3) be authorised by a separate resource consent.
2. The Consent Holder shall meet the requirements of Council with regard to all Building and Health Bylaws, Regulations and Acts.
3. All reporting required by Council shall be made in the first instance to the Council's Co-ordinator Compliance Monitoring.
4. Council draws your attention to the provisions of the Historic Places Act 1993 that require you in the event of discovering an archaeological find (eg, shell, midden, hangi or ovens, garden soils, pit, depressions, occupation evidence, burials, taonga) to cease works immediately, and tangata whenua, the Tasman District Council and the New Zealand Historic Places Trust shall be notified within 24 hours. Works may recommence with the written approval of the Council's Environment & Planning Manager, and the New Zealand Historic Places Trust.

Michael Durand
Co-ordinator Natural Resources Consents

Plan A.
15 November 2007

