

Memo

To:	Simon Berry, Berry Simons	Job No:	2245
From:	Graham Ussher (RMA Ecology Ltd)	Date:	19 February 2023
cc:	Junge Xu; Gary Grey; Mark Tollemache		
Subject:	8 Stevensons Crescent, Albany Heights: Fast Track Referral: Ecology assessment		

Dear Mark,

The property at 8 Stevensons Crescent, Albany Heights (hereafter, 'the site') is proposed for a (predominantly) residential and mixed-use development and subdivision, with infrastructure and works.

RMA Ecology Ltd has been engaged by the applicant, Mansion Rear Ltd, to conduct an assessment of the ecological features of the site and to assist with concept planning and design that will appropriately avoid, mitigate or otherwise managed, potential adverse effects on ecological values.

1. Site investigations

Investigations of the site were undertaken on 24 August 2022 and 16 February 2023.

Information was collected from the site to support detailed design at a later date. A summary of the information collected on site is presented here - further detail is available on request, and will be presented as part of any future application to obtain resource consents to develop the site.

Standard methodologies were applied during the site investigations, including:

- On each site visit, the entire site was walked by an experienced ecologist.
- All waterways and flow paths were mapped as being permanent, intermittent, ephemeral or artificial waterway / stream based on the definitions in the Auckland Unitary Plan (AUP). Photographs were taken and a general description of the waterway was undertaken to note characteristics including riparian species and cover, and connectivity to other waterways.
- Vegetation was described on the ground and with the aid of aerial maps to accurately record location and extent. Vegetation communities, exotic and indigenous, were described including canopy, understory, and groundcover tiers. General condition was noted in addition to the presence of environmental weeds.
- Wetlands were assessed based on the definition within the National Policy Statement on Freshwater Management (NPS-FM), including application of the Wetland Delineation Protocols and associated updates to the NPS-FM that became operative on 5 January 2023.
- Wet areas where a wetland had developed in or immediately adjacent to a deliberately constructed water body, or within an area of pasture used for grazing, or within grazed pasture areas where pasture renewal under existing farming activities has recently taken place, were excluded from being assessed under the Delineation Protocols.
- All bird species seen or heard were recorded. Habitat for birds was also noted, and used to infer possible presence in the absence of site records.

- A lizard assessment was based on an assessment of potential habitat, manual search of likely habitats, and a review of existing records from the national Herpetofauna reptile and amphibian database.
- An assessment of bat habitat was undertaken (large trees with splits, occlusions, rot holes). Given the lack of obvious bat habitat on the site following our first site visit, no formal bat survey was undertaken.

2. Site investigations

The site supports one (1) intermittent stream in its southern section (hereafter 'Stream A'; Figure 1). The stream through the site is supplied with water from several small catchments uphill alongside the eastern part of the Dairy Flat Highway, as well as slopes and a small overland flow path catchment on the site.

Stream A has had many years of bed and bank damage caused by stock access, although the margins are less damaged now that stock have been removed for several years. Woody vegetation along the margins is essentially nil and part of the stream has been channelised to run alongside the driveway to the existing dwelling, after which the stream enters a culvert and crosses Stevensons Crescent, to eventually discharge to the upper reaches of Lucas Creek.

Stream A has a narrow bed (less than 0.5 m on average) and lacks root wads, pools of any type, leaf litter packs, undercut banks or other features normally associated with supporting native fish habitat.

It is very likely that the stream dries up completely during normal summer conditions, and is unlikely to support native fish at any time during the year. Fish habitat may exist upstream of the site; if so, Stream A may serve as a connection for fish passage to areas up-catchment of the site.

A second stream (Stream B; Figure 1) is located adjoining the western boundary of the site. No part of that stream is within the site; however, if a 10 m margin to the stream is proposed, part of that margin lies within the site.

As a result of our investigation, I noted that:

- There is no naturally occurring native trees or shrubs on the site and nothing that qualifies as indigenous vegetation.
- There are no areas that have been mapped as Significant Ecological Area (SEA) in the AUP. Most of the site is in managed pasture grassland, garden amenity areas, hard surfaces (driveway, parking, house, sheds) or managed weedy areas (e.g., margins to Stream A).
- Smaller portions of the site support hedgerows and boggy grazed areas that qualify as wetlands (see below).
- Birds recorded from the site are the usual mix of common native and exotic birds that comprise a cosmopolitan/ rural mix. None of the species recorded, or which are likely to use the site, are listed as Threatened or At Risk species in the Department of Conservation's Threat Classification Database.

Lizard habitat is sparse across the site and is limited to the low weedy hedgerows, overgrown amenity gardens, and old sheds around the existing dwelling on the site. No native lizards were found (although our survey was not comprehensive). Based on our 20 + years of experience surveying and salvaging lizards across the Auckland region, we note that:

- It is likely that the invasive exotic rainbow skink is present, the native copper skink may be present in hedgerow and unmanaged areas of the site around the dwelling, and
- It is very unlikely that any other species of native skink or gecko are present. This opinion is also supported by Herpetofauna records in the vicinity of Albany that show that native lizards are much more likely to occur where there is unmanaged scrubland/ rank grassland and copses of native kanuka forest that adjoin larger (e.g Reserve) areas. None of these features exist at this site.

There is no roosting habitat for bats on the site. Examination of records from the national bat database show that of the 20 bat surveys undertaken within 5 km of the site (including one 500 m to the west within good quality forest), none detected bats. Bats are unlikely to be present on the site or to use the site for transiting between other areas. It is likely that bats disappeared from the local area a long time ago.

Several natural inland wetlands exist on the site; all are located along the toe slope on the north-eastern portion of the site (Figure 1). The vegetation communities at these sites range from dry-adapted wet pasture grass and pasture weed communities, through to wet-adapted invasive rush and exotic weed communities. Native plants are absent. The wetlands are grazed as part of the surrounding pasture area.

Seepage points from the adjoining slope appear to sustain hydrological flows to parts of the wetlands where wet-adapted plant species are well established (and which persist over drier summer months). In contrast, most (ca. 80 %) of the wetland areas appear to be primarily sustained by overland flows from adjoining slopes. All wetland areas are very degraded with pugging from stock, grazing from stock, excessive sediment deposition from surrounding grazed slopes, and absence of native plants. The small size of the wetlands and closely grazed nature of them means that they are very unlikely to provide core, key or important habitat for native wildlife. A perimeter drain installed by the previous landowner has likely contributed to draining of the toe slope wetlands.

While the values of these wetland areas are extremely low, each still qualifies as a natural inland wetland in accordance with the definition in the NPS-FM. Pasture or other possible exclusions under the NPS-FM do not apply to these areas.

In summary, the ecology values of the site are:

- Intermittent Stream A, which has low values for naturalness, low riparian margin values, lacks fish habitat and overall constitutes a low ecological value stream;
- Intermittent Stream B, which has part of its margin within the site;
- No native trees or shrubs;
- No indigenous vegetation;
- No SEA;
- Poor quality habitat for lizards; only small parts of the site may support copper skinks;
- No habitat for bats; and
- Several natural inland wetlands, which are very low quality, being small areas, grazed, partly drained through historic drainage and which support only exotic pasture weed or invasive wetland species. These do not support indigenous plant communities and are unlikely to provide core, key or important habitat for native wildlife.

3. Proposed development

The concept plan layout for the site is shown in Figure 2.

The intention is to develop a roading network to service residential and mixed-use activities within the site.

All of the site will be developed apart from the following which will be preserved:

1. Stream A will be preserved and a 10 m wide margin restored (planted up with native trees and shrubs), apart from where the main access road is proposed, which will probably be via culvert;
2. The true right riparian margin to Stream B will be preserved and restored where it is within the site;
3. Wetland areas will be, for the most part, preserved and restored, and a 5 m ecological restoration buffer incorporated into the long-term protection of these areas.

Avoidance of effects on these key ecology features is a fundamental design driver for the development layout. The concept plan layout avoids most effects on Stream A and the wetlands, and provides for

restoration according to best industry practice where ecological features have been set aside for protection.

Where avoidance cannot be achieved – for example, because of the need to facilitate a road crossing or to ensure efficient use of the land for development purposes – mitigation and appropriate offsets will be provided, as is discussed below.



Figure 1. The site showing mapped streams (blue dotted line) and natural inland wetlands (green shaded polygons). The existing extent of 8 Stevenson Crescent is shown as red line.

Master Plan 1:1000@A3



Zoning: Mixed Housing Urban Zone
Site Area: 25112m²

Unit Number: 138
Terrace: 112
Apartment: 26

8 Stevensons Crescent Initial Design Test

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Figure 2. Concept plan showing proposed layout and protection of most areas of ecological value (Stream A and wetlands), including buffers and restoration of buffers for each.

It is proposed that mitigation measures will be applied to the site as listed below. All are standard approaches that are applied by Auckland Council across greenfield development projects and which are typically supported by conditions of resource consent. These include:

- Salvage of native lizards will be undertaken from within potential habitat prior to vegetation clearance, and relocation of any native lizards caught into nearby secure habitat;
- Clearance of shrubs and trees (including exotic species) should occur outside of the breeding season for native passerines (perching birds), or a requirement set that a survey is undertaken by a qualified ecologist to ensure that no active nests of native birds will be impacted. Where native bird nests are detected, clearance works around the nest will be delayed until nestlings have fledged or until the nest has failed.
- If Stream A is crossed using a culvert (as opposed to an arch bridge), the design of the culvert will be required to meet the requirements of Clause 70 of the National Environmental Standards for Freshwater (NES-F) with respect to native fish passage. The small size of the stream, low gradient of the stream, and very narrow diversity of native fish species that may use this stream means that compliance with the permitted activity standards for culvert design are achievable. Where culvert design cannot meet by bankful width/ diameter recommendations, mitigations against increased flows through the culvert can be provided by way of standard flexible baffles installed within the culvert (these provide low-flow areas for native fish to rest between swim bursts in low and moderate stream flows).
- Earthworks across the site will avoid physical works within the wetlands and avoid the deposition of silt or soil within the wetlands. Earthworks may be undertaken within 5 m of each wetland.
- Stormwater management post-development will maintain catchment flows for each wetland through the use of devices such as rain gardens along roads or bioretention devices, and localised discharge to recharge wetland areas such that change to overall catchment area and flow rates are nil or have no ecological consequences.
- Planting up the portion of riparian margin of Stream B within the site will provide buffering benefits to the stream from environmental effects, and preserve opportunities for future restoration of this watercourse should future subdivision and development occur on the adjoining site (within which Stream B is located).

Under the concept plan design, there may be adverse effects on ecology values that cannot be mitigated. These include:

- Loss of stream bed under the main road crossing (if a culvert is used). Depending upon the length of the culvert, there may be a need to offset residual adverse effects that exceed the permitted standards within the AUP; and
- Loss of natural inland wetland on the periphery (upslope) areas of some portion of the mapped wetland areas. The scale of the loss of area will be confirmed at the detailed design stage; however, it is not anticipated to be more than 10 % of the mapped area of wetland.

These residual adverse effects will be addressed by providing biodiversity offsets to at least a no-net-loss level in accordance with Appendix 8 of the AUP and Appendix 6 of the NPS-FM. These criteria/ principles describe the requirements that ecological enhancement must meet to qualify as an offset.

For this site, there is both an ample stream (Stream A) and wetland that is available to be protected and restored that can provide the necessary quantum of offset to achieve no-net-loss (and most probably a substantial net-gain). This outcome is achievable even assuming very precautionary multiplier ratios and approaches as advocated in national guidelines on biodiversity offsetting, and in conservative calculations in all of the primary offset accounting models that are applied to these sorts of situations.

The offset and enhancement programmes that will be applied to the site under the proposed concept plan layout include:

1. Setting aside a 10 m wide riparian margin around Stream A and planting up the margin in site-appropriate native plants and shrubs. Auckland Council technical publication TP148 (riparian zone management) provides guidance on the density and type of plant species that are appropriate. Maintenance for up to 5 years post-planting will ensure full canopy cover and a well-established woody margin to the stream. The health/ condition of the stream will improve markedly over its existing poor quality baseline state.
2. Restoring the wetland areas and a 5 m buffer margin around them will require careful, select control of wetland weeds, and planting of wetland-appropriate reeds, rushes and other wetland plants (again informed by TP148). Plant diversity, native plant cover, buffer protection and provision of habitat for wildlife will all improve considerably from these actions.

The above actions will protect these features and provide habitat and resource for native wildlife more widely.

4. Summary and conclusions

The site at 8 Stevensons Crescent, Albany is proposed for development under the Fast Track legislation pathway.

The site is managed as a rural farm and supports mostly pasture paddocks and amenity gardens around the single dwelling. Features on the site with some ecological values include an intermittent stream and toe slope wetlands – all of which are very degraded and support a low level of ecological value in their current form.

The concept plan layout for the site will involve the loss or modification of a short length of Stream A and loss of parts of the periphery of the wetland areas. Mitigation that will be applied across the site will prevent loss or damage to wildlife that may be using the site (native birds and lizards) and prevent adverse effects to the stream and wetland areas.

A programme of ecological enhancements to the stream and wetland areas is proposed, including margin and buffer protections, and planting of wetland, wetland buffer and stream margins into native shrubland and indigenous wetland communities (respectively). This will protect these features and provide habitat and resource for native wildlife more widely.

Overall, the proposed development will avoid or otherwise manage potential adverse effects, and enhance the areas of stream and wetland on the site. The result will be a greatly enhanced ecological state of the environment that results in no-net-loss or a clear net-gain benefit for ecology of the site and the local area.



Graham Ussher
Principal Ecologist
RMA Ecology Ltd¹

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