rma ecology

Report

To:	**Josh Caddigan, BCD Group Ltd**	**Job No:**	**2653**
From:	**Graham Ussher, RMA Ecology Limited**	**Date:**	**29 September 2026**
cc:			
Subject:	**Pencarrow FTAA: Lizard assessment**		

BCD Group Ltd on behalf of Waikato Thoroughbred Racing is applying for approvals under the Fast-track Approvals Act 2024 to establish and operate a greenfield racing hub (hereafter, 'the Project') at Pencarrow Road, Tamahere, Waikato (hereafter, 'the site').

RMA Ecology Ltd has been engaged to provide an assessment of the ecological values of the site with respect to native lizards, and to provide recommendations regarding the management of potential adverse effects on native lizards that may arise from this project.

1. Declaration and Experience

This report has been prepared by Dr Graham Ussher, who is a qualified and experienced ecologist.

Dr Ussher holds the qualifications of BSc, MSc (1st class honours) and PhD in conservation ecology. He has 34 years' experience as an ecologist in New Zealand, with speciality expertise in herpetology, and effects assessment and management, including offset accounting and modelling.

Dr Ussher has extensive experience in ecological site assessments, significance assessments, impact assessment, and impact management, including extensive experience on the ground designing, constructing, implementing, monitoring and reporting on interventions to restore, enhance, salvage, and protect ecology values at sites across New Zealand. He is considered to be sufficiently qualified to undertake an assessment of this kind. A more detailed description of his experience is attached as **Appendix A**.

Although this document has not been written as a statement of expert evidence, I confirm that at all times I have complied with the Environment Court's Code of Conduct for Expert Witnesses contained in its Practice Note 2023.

I declare that in relation to my role in providing expert ecological assessment and advice for this project I am not, to the best of my knowledge, subject to any real or perceived conflicts of interest.

2. Project description

The Project is centred on a ca. 160 ha block of land at Pencarrow Road, bordered by State Highway 1, Pencarrow, Hooker and Duncan Roads. The site is currently a working dairy farm comprised of pasture with hedgerows, scattered exotic trees, a remnant kahikatea stand with a small area of wetland, and a network of artificial watercourses and associated artificial wetlands (**Figure 1**).

The purpose of the Project is to create a unique, world-class greenfield racing hub designed for horse training, racing and other equine-related activities, brought together in a centralised location.

The Project includes a range of complementary activities on the remaining land. These include equine support services, rural residential housing, a retirement living community, a village centre and a bloodstock sales precinct.

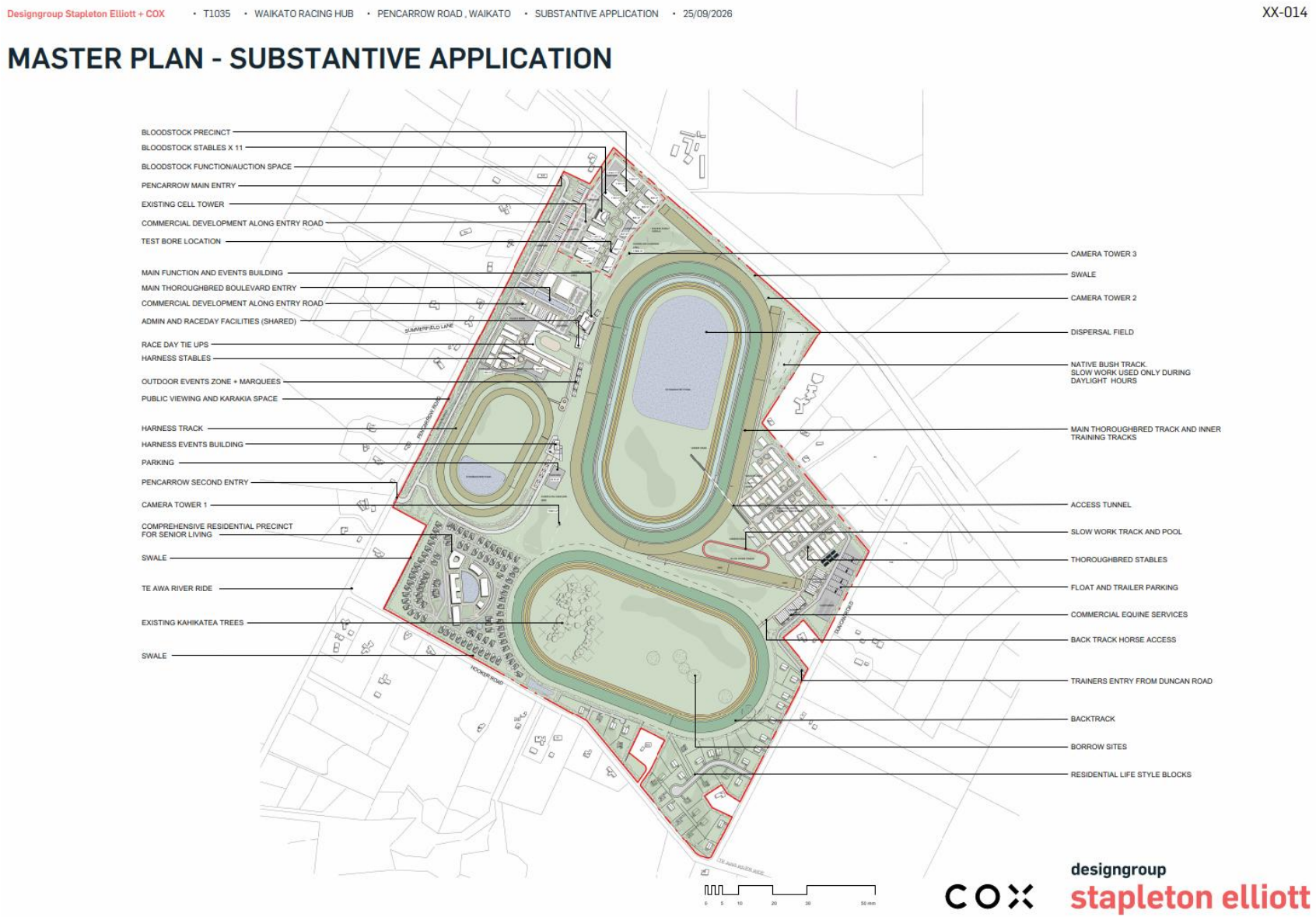


Figure 1. Proposed development of the Pencarrow site. Note the location of the existing kahikatea trees, which will remain as part of the completed development.

3. Native lizards in the local area

Tamahere is a rural area on the outskirts of Hamilton.

The land surrounding the Project site has been managed as individual farms before being subdivided into a mix of small lot farms and lifestyle blocks, together with house gardens, rough pasture paddocks, planted treelands, and cropping and pasture grazed paddocks. There are multiple records of the native copper skink in the vicinity of the site within these rural/ lifestyle areas. There are no records of other native skinks or native geckos within 10 km of the site.

Historically, the site would have supported several species of gecko – including elegant gecko, Pacific gecko, goldstripe gecko, and forest gecko, and skinks – including copper and ornate skinks. The original vegetation that would have supported these species no longer exists on the site or nearby – all original vegetation and habitats would have been removed several hundred years ago as part of conversion to farming.

The Threat Classifications of species that would have once been present on or near the site are listed below:

- Copper skink (*Oligosoma aeneum*; At Risk – Declining) – known locally.
- Ornate skink (*Oligosoma ornatum*; At Risk – Declining) – not known locally, rare in Waikato region.
- Forest gecko (*Mokopirirakau granulatus*; At Risk – Declining) – not known locally, closest location is ca. 25 km to the east within hill country.
- Elegant gecko (*Naultinus elegans*; At Risk – Declining) – not known locally; closest location is ca. 17 km to the south-west within rural shrubland and forest.
- Goldstripe gecko (*Woodworthia chrysosiretica*; At Risk – Declining) – closest location is ca. 15 km to the north-west within a bush reserve in Hamilton City.
- Pacific gecko (*Dactylocnemis pacificus*; Not Threatened) – closest location is ca. 15 km to the north-west within a bush reserve in Hamilton City.

4. Existing habitat quality

The site has been extensively modified over many years, such that all original vegetation – apart from a very small remnant stand of mature kahikatea trees – has been cleared and converted to managed grassland. At least 98 % of the site comprises pasture grassland which is well managed and lacks refuges, or habitat for native skinks or geckos.

It is usual for farmed sites to still retain potential skink habitat as long grass, unmanaged parts of the site or rough grazing. However, for this site, the large scale of the properties has meant that the unit has been farmed intensively such that there are virtually no areas of the site that are not intensively grazed, mown, or managed without lizard habitat present.

Example photos are shown in **Plates 1–8**.

Paddocks are managed as short turf and are not native lizard habitat.

Buildings and road margins lack any structural refuges or habitat.

Watercourse margins are grazed right to the edge, and provide no complex, dry or permanent grassland habitat for native skinks.

Shelterbelts are single lines of well-kept barberry (or similar) that lack a ground cover of grass and lack large woody objects as refuges for skinks.

The kahikatea stand lacks an ungrazed understorey, and for the most part lacks large woody debris. The ground surface floods or retains water over winter, making this unsuitable as skink habitat. The small size of the kahikatea stand, its isolation from any other treelands for many decades, and the lack of animal pest control suggest that the chances of arboreal geckos persisting in these trees are extremely low.






Plates 1–4. Top left & top right: kahikatea stands showing grazed understorey, which has standing water during the year, and which lacks ground refuges or habitat for skinks. Bottom left and right – representative examples of drains on the site showing narrow grass verge, which does not constitute stable habitat for native skinks.






Plates 5–8. Top left & top right: well managed hedgerows on the site lack ground refuges or habitat for skinks. Bottom left and right – representative photos of pasture areas on the site, which comprise approximately 98 % of the current land use on the site, and which do not constitute habitat for native lizards.

5. Likelihood of native lizards on this site

We have extensive experience surveying and salvaging within rural sites around the Waikato for native lizards, using passive and active detection methods. Our experience clearly indicates that there is no chance of native lizards being present within well-managed pasture grassland or narrow strips of rank grassland if those are not connected to more substantial good quality habitat. Rough managed, weedy areas (for example ungrazed grassland and blackberry patches) are better habitat for copper skinks (although none of those exist at this site).

Hedgerows only support copper skinks if they are wide, are unkempt, and have a rank grass margin to them. At this site, hedgerows are narrow, well kept, lack woody debris, and lack a grass margin, and so provide no refuge or habitat for native skinks.

The kahikatea stand comprises older trees and dead trees, in an open canopy/ scattered tree system. There is ample habitat for arboreal geckos with splits, crevices, flaking bark, rotten wood, and cavities. However, the stand is isolated from other areas of treeland on private property, or the Waikato River margin by 800 m to 1,000 m, with the distance between occupied by intensively managed grassland which offers no refuge areas or ability to support a connecting population. Even if geckos were once present in this kahikatea stand, the pressures from feral and domestic cats, and pest animals over many decades make it unlikely that a population of geckos would persist at this site.

Table 1 provides an assessment of the likelihood of native lizards being present within the various environments across the site.

Table 1. The likelihood of native lizards being present within the various environments across the site.

Environment	% coverage of site	Likelihood of native lizards being present
Kahikatea stand	0.5 %	Very low (geckos only)
Grazed pasture areas	98 %	Nil
Hedgerows	0.5 %	Nil
Existing buildings/ margins/ roadways	0.5 %	Nil
Margins of drains/ watercourses	0.5 %	Very low (copper skinks only, only where the margin is wide and well-developed)

The only possible locations on the site where native lizards could be present – and both of these we consider to be very low likelihood – are the kahikatea stand, and the main stream/ drain that traverses the site (but only where margins support a wide swath of rank grass).

The margins of drains/ watercourses that are suitable for copper skinks are a very small portion of the overall margins of drains/ watercourses on the site (approximately 5 % of the total length of margins, which themselves occupy around 0.5 % of the site). The likelihood of these supporting copper skinks is very low, due to the very small areas of potential habitat, the lack of refuges in surrounding areas, the periodic mowing, grazing or flooding of these margins and banks, and the lack of animal pest control across the site (especially of mice and rats as key predators of skinks).

The very low likelihood of lizards being present on this site means that a pre-clearance survey is unnecessary. Rather, it is more appropriate to manage the risk of an adverse effect on native lizards by having an accidental discovery protocol in place for this site, which would respond to the unlikely situation of a native lizard being found during ground clearance works.

6. Managing effects on native lizards

The kahikatea stand will not be removed as part of the project, so the risk of injury or mortality to any resident arboreal geckos (if any) is nil. The restoration works proposed for the kahikatea stand

mean that habitat quality and security from animal pests will be improved as a result of the project, meaning that any resident geckos will be protected.

As the likelihood of native skinks being present on the site is very low, and even then, over very small parts of the site, the risk of injury or harm to native skinks is best managed through an 'accidental discovery' protocol, rather than the Applicant applying for a Wildlife Act Authority.

An accidental discovery protocol for lizards at this site would involve the following.

Lizard Accidental Discovery Response Protocol

This protocol will form a condition of the resource consent, and will be implemented at the time of vegetation clearance across potential lizard habitat at the site.

1. *If any lizards are discovered accidentally during construction works, work will stop immediately in the affected area, and works within 20 m of the discovery will not proceed until this Protocol has been implemented. Do not handle or disturb the species. Maintain a safe distance to avoid causing further stress.*
2. *Notify the Project Ecologist: Contact the Project Ecologist immediately to report the discovery and to confirm the taxonomy (native/exotic). Provide an accurate location and any species information.*
3. *Notify the Department of Conservation.*
4. *Temporary Habitat Relocation: Work with the Project Ecologist and the Department of Conservation to determine if it is possible to temporarily relocate the affected species to a safe area nearby.*
5. *Halt Construction in Affected Area: Construction can continue in areas not affected by the discovery while awaiting guidance from the Project Ecologist and the Department of Conservation regarding the affected area.*
6. *Mitigation and Compliance: Follow all mitigation measures or guidance provided by the Project Ecologist to ensure compliance. This will include salvage and reporting.*
7. *Documentation: Maintain detailed records of all actions taken, including notifications, expert consultations and mitigation efforts. This documentation will be important for compliance and reporting purposes.*

With this protocol in place, the risk of injury or death to native lizards would be reduced to a negligible level, and would ensure that the level of potential adverse effects on native lizards (if there are any present, which we doubt) would be at a de minimis level.

7. Summary and conclusion

RMA Ecology was engaged by BCD Group Ltd, on behalf of Waikato Thoroughbred Racing, to assess native lizard values at the site of a proposed greenfield racing hub at Pencarrow Road, Tamahere.

Copper skink (*Oligosoma aeneum*; At Risk – Declining) is the only native lizard recorded near the site. No other native skinks or geckos are recorded within 10 km. The nearest gecko records are 15–25 km away. The site would once have supported several gecko and skink species, but its original vegetation has long since been cleared.

At least 98 % of the site is intensively managed pasture with no lizard habitat. Hedgerows, buildings, road margins and most drain margins are also assessed as having nil likelihood of lizards. There are only two locations where lizards could possibly be present, and both rate as very low likelihood:

- **The kahikatea stand.** This could support arboreal geckos, but it is small, isolated by 800–1,000 m from other treeland, and has had no pest control.

- **Parts of the main stream/drain margins.** Copper skinks could occur only where the margins carry wide, rank grass. This is about 5 % of the drain margin length.

Because the likelihood is so low, we conclude that a pre-clearance survey and a Wildlife Act authority are not needed.

We recommend a Lizard Accidental Discovery Response Protocol as a consent condition instead.

Under the protocol, work stops within 20 m of any find, the Project Ecologist and the Department of Conservation are notified, and relocation, salvage and record-keeping follow as directed. The kahikatea stand will be retained, so there is no risk to any geckos there.

With the protocol in place, the report assesses residual effects on native lizards as negligible (de minimis).

Yours sincerely,



Dr Graham Ussher

Principal Ecologist

RMA Ecology Ltd

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Appendix A

Credentials and experience of Dr Graham Ussher

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Dr Graham Ussher – Principal Ecologist/ Director



Graham has more than 33 years experience with government agencies and the commercial sector assessing biodiversity and biosecurity issues. He brings a multi-disciplinary approach to ecological monitoring and assessment, strategy development and implementation, and project design and management.

Through his involvement with resource developers, local government and government agencies, he is a recognised leader in New Zealand in the field of ecological effects management – including offsetting and ecological compensation - incorporating ecological risk assessment with detailed project engineering design. Graham regularly presents expert evidence on these matters to local hearings, Boards of Inquiry and the Environment Court.

Qualifications

- PhD (Environmental Management), University of Auckland, NZ.
- MSc (Conservation Ecology) and BSc, UoA, NZ.

Statutory hearing / Court experience

- **Council hearings**: 35
- **Environment Court**: 4 (plus 6 mediations)
- **Fast Track (COVID & FTAA)**
  - **For Applicant** 18
  - **Advising Panel** 5
  - **On Panel** 1

Employment History

- 2016 – Principal Ecologist, RMA Ecology Ltd.
- 2007 – 2016 Principal Ecologist; Tonkin & Taylor Ltd, Auckland.
- 2004 – 2007 Regional Ecologist; Auckland Council.
- 2001 – 2004 Lecturer in Environmental Management; University of Auckland.
- 1995 – 2004 Independent ecological consultant.

Expertise

Core competencies include:

- Ecological survey and effects assessment.
- Stream ecological assessments (incl. SEV).
- Specialist lizard survey and salvage/ relocation.
- Project design ecological risk and cost estimation.
- Mitigation and offset compensation development, including brokering packages with regulators.
- Science advisor for biodiversity offset programmes in industry and government (nationally recognised expert in offset brokering).

Over his 30 years in industry, Graham has focused on work where development is most likely – greenfields areas, lowland shrublands and forests, coastal environments, and environments already modified in terms of wildlife habitat. His past experience in wildlife research, Council parklands management and wildlife programmes with the Department of Conservation required work in wilderness and offshore island locations, providing a robust benchmark against which to assess effects in more modified land proposed for active development.

A common thread running his project experience is a deep involvement with the RMA, particularly in the areas of significance assessments, effects assessments (s88) and more recently, s104 assessments involving ecological offsetting. Over the last 19 years Graham has worked increasingly closer with planners and lawyers so that project-specific designs accurately reflect up-front ecological risk, potential offsetting or compensation needs (and costs), and so that consentable solutions provide ecological benefits as well as achieving desired development outcomes.

Graham has worked for many years with multi-disciplinary teams on projects across New Zealand. From this he has a robust understanding of civil construction processes and engineering design for flood, stormwater, and wastewater management, and a base understanding of issues involved with land development, mining and quarrying sectors, resource management planning, civil engineering, renewables (wind, solar, hydro) and contaminated land management.

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BETTER ECOLOGICAL OUTCOMES

In recent years, Graham has been sought out for his experience in effects management theory, processes and practical application. He has presented on matters of the effects management hierarchy and offsetting to professional bodies including the Planning Institute, Law societies, and to the Environment Court. He has written or co-written national guidance on ecological effects assessment in New Zealand, as well as national guidance on biodiversity offsetting and compensation frameworks as applied under the RMA.

Experience

Examples of relevant projects:

- **Lee River Dam, Nelson, Waimea Water Augmentation Committee/Tasman District Council/ Waimea Water, 2008-ongoing**
  Ecological effects project manager/ ecological specialist for the ecological AEE, including consultation, sub-contractor management, effects assessment, development of mitigation and offset design with key stakeholders (DOC, iwi, public groups), expert at Council hearing and mediation for the Environment Court appeal. Preparation of biodiversity mitigation management plans as required by consent conditions. Ecology technical advisor to TDC on matters post-consent. Undertook cost analysis and costing for environmental components of the dam for Waimea Water (2017). Prepared Vegetation Clearance Plan for consent holders. Senior ecologist advising the consent holder and construction contractor during the 4-year build phase for the dam (2019 onwards).
- **National guidance on biodiversity offsetting; NZ Transport Agency; 2016-2017.** Lead author and researcher for the development of national guidance to the Agency on the application of biodiversity offsetting to roading projects in New Zealand.
- **Local Government guidance on biodiversity offsetting; 2017.** Ecology technical advisor as part of 5-specialist, multi-disciplinary team that prepared national guidance on biodiversity offsetting and ecological compensation for the Regional Bio-managers Group. Co-presenter on 14-city national road show to socialise Guidance amongst regulators and practitioners.
- **Expert advisor to NZ Transport Agency** (2014-ongoing) on biodiversity matters during Auckland Unitary Plan hearings, including SEAs and significance criteria for assessing site values.
- **Auranga Housing development, South Auckland. Karaka and Drury Consultant Ltd. 2015 – ongoing**. Assessment of ecological values and potential effects for a 160 ha, 3,000 lot Special Housing Area/ Plan Change subdivision in rural/ residential land in Papakura, South Auckland. Work includes the mapping of streams & wetlands, vegetation, and coastal values, and development of mitigation and ecological compensation plans where potential effects cannot be avoided. Expert at hearings. Project ecologist dealing with all matters raised by Council through the development administrative process. Project ecologist implementing construction management, wildlife salvage/ relocation, and ecological restoration arising from consents.
- **Milldale Housing development (Auckland). 2018-ongoing.** Lead ecologist for this 200 ha / 2,500-lot subdivision, dealing with values and effects assessment, offsetting requirements, expert for consenting process, and implementation of ecological parts of granted consents (staged development).
- **Auckland housing development projects. 2015 – present.** Lead ecologist for baseline ecological values assessments, assessments of effects, mitigation and compensation programme development, expert representation for clients at Council hearings and development of site ecological management and planting plans (where necessary). Project involvement includes substantial subdivisions such as:

  Auranga A (Drury), Auranga B (Drury), Oraha Rd SHA, Bollard Av SHA (Mt Albert), Oakland Road (Hingaia), McRobbie Road (Kingseat), Stables Retirement Village (Drury), Mangere HNZ/HCL State Housing Redevelopment Project.

- **Hunua Quarry, Winstone Aggregates, 2007 - ongoing** Project manager for mitigation programme development and implementation, expert witness, and project manager for ecological monitoring projects of the $70M Symonds Hill pit development project. Includes substantial annual lead for ecological programmes to salvage wildlife, monitor planting success, report on KPIs and manage consent deliverables on behalf of GBC Winstone for Hunua Quarry.
- **Ecological assessments, AEEs, technical reporting, input into conditions of consent – for at least 250 projects.**
- **Various revegetation and biodiversity management plans as part of consented land development and infrastructure works (at least 150 projects),** including revegetation of shrubland and forest communities, rare species, managing site risks and constraints for plant community persistence, lizard relocation, fish salvage, fish passage and stream diversion design. Sectors include Auckland coastal property rehabilitations, commercial developments, subdivisions, infrastructure and industrial site rehabilitations. Outside Auckland projects include major hydro and irrigation/ water supply dams, national highways, wind farms, port development, quarries and mines, and landfills (new and rehabilitation).

Relevant project involvement (2016 to present)

Large scale projects

- Matakanui Gold mine in Bendigo, Otago - lizard, vegetation, rare plant and birds assessors (RMA Ecology Ltd)
- Ida Valley Solar Farm, Alexandra - lizard and wetland advisor
- Waitaha Hydro project, West Coast - lizard specialist
- Kaimai Wind Farm project, Waikato - overall ecology advisory and effects management expert
- Southland Wind Farm under the COVID-19 Fast Track process - panel expert advisor on ecological effects management
- Oceana Gold Waihi North mine expansion project (including underground mine in southern Coromandel Forest Park), Coromandel - overall ecological effects assessor and management advisor/ technical lead
- Ecological effects advisor to Oceana Gold (NZ) for Macrae's Gold Mine expansion (Deepdell North III)
- Auranga Housing Development – ecological assessment, expert witness, construction contractor
- Milldale Housing Development – ecological assessment, expert witness, construction contractor
- Hunua Quarry Symonds Hill Pit – ecological assessment, expert witness, construction salvage/ monitoring
- Waimea Community Dam - ecological assessment, expert witness, offset design, salvage/ monitoring
- Te Kuha Coal Mine – expert reviewer on behalf of Council; expert for Env Court appeal
- Mt Cass Wind Farm (Christchurch) – project ecologist managing construction monitoring & regulator liaison, lizard and rare plant salvage (extensive), monitoring, reporting, ecological offset modelling, science advisory
- Wongan Farms, Kaitorete Spit. Project ecologist for 1,000 ha farm development for selected irrigation & rare plant/ ecosystem restoration and preservation, effects assessments, monitoring designs, compliance reporting
- Kapiti Coast Airport site re-development – lead ecologist.
- Genesis Energy – Tekapo Power Scheme Re-consenting. Project herpetologist.
- Stevenson Quarries – Clevedon Quarry consenting; expert advisor to Env Court cases regarding AUP zoning
- Wellington region – 200 ha confidential subdivision with considerable ecological issues

Small scale projects

- Lyttleton Port Company – ecological assessment for Gollan's Bay Quarry reactivation & lizard salvage
- Land development projects (effects assessment, management plans, specialist offset, or inputs into consenting)
    - Auckland - approximately 100 projects
    - Wellington - approximately 60 projects
    - Elsewhere North Island – approximately 40 projects
    - Elsewhere South Island - approximately 35 projects

Technical advice only

- Nelson Plan – policy analysis and advice regarding Esplanade Reserve setbacks
- NZTA – lead for preparation of national guidance on biodiversity offsetting
- LGNZ – senior author on national guidance on offsetting under the RMA
- Department of Conservation – 18-month secondment to biodiversity offsetting research programme
- Auckland Council – expert advisor on offsetting for Watercare Services Huia Water Treatment Plan consent
- Wellington Regional Council – technical advice via workshop to across-Council team (legal, policy, planning, ecology, consenting) regarding biodiversity offsetting in practice relative to regional plan provisions.