

MATAKANUI

GOLD LIMITED



Ecological Management Plan Framework

September 2025

Citation: Alliance Ecology Ltd (2025) Bendigo-Ophir Gold Project Ecological Management Plan Framework

DOCUMENT CONTROL

Revision	Authors	Organisation	Date	Approved
V1	M Baber	Alliance Ecology	07/08/2025	
V2	M Baber	Alliance Ecology	02/09/2025	
V3	M Baber	Alliance Ecology	01/10/2025	C Low

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Glossary

Specific terms	
AEE	Assessment of Ecological Effects Report
AEE	Assessment of Environmental Effects Report
AMP	Avifauna Management Plan
ARP	Applied Research Plan for conservation management, rehabilitation and expansion of cushionfields
ARAMP	Ardgour Restoration Area Management Plan
BPPMP	Biosecurity and Plant Pest Management Plan
BOGP	Bendigo-Ophir Gold Project ('the Project')
BOMP	Biodiversity Outcome Monitoring Plan
CIL	Carbon-in-Leach
CIT	Come in Time gold deposit
DDF	Direct disturbance footprint
DOC	Department of Conservation
ELF	Engineered landform
EMPF	Ecological Management Plan Framework
HIMP	Habitat Impact Management Plan
LERMP	Landscape and Ecological Rehabilitation Management Plan
LMP	Lizard Management Plan
MGL	Matakanui Gold Limited
MPMP	Mammalian Pest Management Plan
MRZ	Mine Regeneration Zone
MSMP	Matakanui Sanctuary Management Plan
RAS	Rise and Shine gold deposit
SEQE	Suitably Experienced and Qualified Ecologist(s)
SRE	Srex East gold deposit
SRX	Srex gold deposit
TIMP	Terrestrial Invertebrate Management Plan
TSF	Tailings Storage Facility
General terms	
Biodiversity	The variety of life on Earth at all its levels, from genes to ecosystems, and can encompass the evolutionary, ecological, and cultural processes that sustain life
Ecology	The study of the relationships between living organisms, including humans, and their physical environment.
Habitat clearance	Earthworks and/or vegetation clearance
Site description	

Specific terms	
Ardgour Sanctuary	An area of Ardgour Station, north-northwest of the DDF, in which 38 ha of pest exclusion fencing is proposed
Ardgour Rise	A realignment of part of Thomson Gorge Road, via Ardgour Station (Ardgour Rise), planned to provide public access through to the Manuherikia Valley
Bendigo Sanctuary	An area of Bendigo Station, west of the DDF (and north of Bendigo Historic Reserve), in which 29 ha of pest exclusion fencing is proposed
Matakanui Sanctuary	Collectively the Ardgour and Bendigo Sanctuaries, comprising approximately 67 ha of pest-exclusion fenced areas.

1. INTRODUCTION

1.1. Project overview

Matakanui Gold Limited MGL (“**MGL**”) are proposing to establish the Bendigo-Ophir Gold Project (“**BOGP**”), which comprises a new gold mine, ancillary facilities and environmental mitigation measures on Bendigo and Ardgour Stations in the Dunstan Ranges of Central Otago. The project site is located approximately 20 km north of Cromwell.

The BOGP is located within the footprint of Minerals Exploration Permit 60311, which overlays several pastoral stations that have grazed sheep and cattle in the area for over 100 years. MEP60311 is held by MGL under the Crown Minerals Act 1991. MGL has land access agreements with Bendigo and Ardgour Stations. The BOGP is located adjacent to land administered by the Department of Conservation (“**DOC**”), including the Bendigo Historic Reserve, the Bendigo Conservation Area and the Ardgour Conservation Area. The BOGP planned operations do not directly impact these areas.

The BOGP’s exploration has discovered numerous soil geochemical anomalies and extensive drill evaluation has defined four (4) gold deposits worthy of economic extraction. The most significant is the Rise and Shine (“**RAS**”) discovery which is the most significant gold discovery in New Zealand in the past four decades. The other discoveries at Come in Time (“**CIT**”), Srex (“**SRX**”) and Srex East (“**SRE**”) are smaller in size and tenor.

The defined orebodies are planned to be mined by open pit methods. Underground mining is planned for the deeper parts of the RAS orebody in the later years of development.

The majority of the mining activities, ancillary facilities and associated infrastructure will be located in the Shepherds Valley somewhat hidden from the view of the public. Access, and service and administration offices are planned to be located on the adjoining Ardgour Terrace.

Figure 1 (Appendix A) provides an overview of the footprint associated with the establishment, operation and rehabilitation within the BOGP. The total maximum potential disturbance—referred to as the Direct Disturbance Footprint (“**DDF**”)—including contingency, Ardgour Rise, and predator-proof fencing, is approximately 610 ha.

Ecological work will include rehabilitation on direct disturbed areas, ecological uplift activities and pest exclusion area(s) adjacent to the DDF on nearby areas such as Ardgour and Bendigo Stations (Figure 2 Appendix A).

A full description of the various activities comprising the establishment, operation and rehabilitation within the BOGP is provided in the Assessment of Environmental Effects prepared by Mitchell Daysh Limited. However, by way of summary, the BOGP includes the following components:

- The establishment of the RAS Open Pit and SRX Open Pit, which are planned to form partial pit lakes at closure.
- The establishment of RAS Underground which is planned to be backfilled with cement paste.
- The establishment of the CIT Open Pit, which is the smallest of footprints and is planned to be progressively backfilled with waste rock from the RAS Open Pit and profiled to integrate with the surrounding terrain. Rehabilitation will potentially enable nearby cushionfields to be re-established at the completion of mining activities.
- The establishment of the small SRE Open Pit, which will be backfilled with waste rock before being covered with overburden to form the engineered landform for the adjoining SRX Open Pit (“**SRX ELF**”).
- A conventional hard rock gold processing plant (1.2 million tonnes per annum expandable to 1.8Mtpa) applying modern Carbon-in-Leach (“**CIL**”) technology constructed in the lower reach of Shepherds Valley. The plant will operate in a closed water circuit with the TSF. Residual chemicals in the tailings slurry will be detoxified and/or precipitated with specialist plant.
- The operation of the process plant will be supported by ancillary facilities such as maintenance workshops, raw material and process chemical storage, fuel depot, laboratory and warehousing. Mine offices, carparking and security services will also be established.
- The construction of the plant in the lower reaches of the Shepherds valley will include the realignment of Shepherds Creek.
- The establishment of water storage dams and tankage for use in the process plant, dust suppression and drinking water supply.
- The establishment of a Tailings Storage Facility (“**TSF**”) in the upper reach of Shepherds Valley (including clean water diversion drains), which will utilise waste rock from mining activities within the project site.
- The establishment of permanent engineered landforms in the Shepherds Valley (“**Shepherds ELF**”) and an unnamed creek west of RAS pit (“**WELF**”).
- The establishment of temporary topsoil, vegetation, large rock (for habitat creation) and brown rock stockpiles around the project site.
- The extraction of groundwater from the Bendigo Aquifer for use in mining-related activities as well as supplying BOGP drinking water and replacing small irrigation

water takes from Shepherds Creek. Bore water will be pumped to the processing plant via a pipeline over a distance of approximately 6.5 km.

- The establishment of supporting infrastructure / activities for the project, such as the upgrade of Ardgour Road and parts of Thomson Gorge Road to provide improved access to the BOGP, internal mine access and haul roads, water pipelines and underground utilities, and electricity supply to the project site from Lindis Crossing via a new 66kV overhead powerline that will follow the existing road reserve corridor.
- A realignment of part of Thomson Gorge Road, via Ardgour Station (Ardgour Rise) is planned to maintain public access through to the Manuherikia Valley.
- Main explosives magazines, emulsion mixing facilities and two aggregate pits (located outside the project site on Ardgour Terrace).
- The establishment of non-operational infrastructure associated with the BOGP on the Ardgour Terrace, including security, first aid and administrative offices, geology facilities, high voltage substation and temporary construction workers accommodation; and
- Ecological rehabilitation of all available areas within the DDF
- The establishment of Mine Regeneration Zones (**‘MRZ’**) for ecological enhancement and to facilitate ecological rehabilitation processes within the DDF.
- The establishment of the Ardgour Restoration Area.
- The establishment of the Ardgour and Bendigo Sanctuaries for ecological enhancement activities.

Project activities are expected to have a range of potential effects on ecological values, and the cultural values and interests of mana whenua, Papatipu Rūnanga of Te Rūnanga o Ngāi Tahu.

The potential ecological effects are described in the Assessment of Ecological Effects Report (**“AEcE”**) (Terrestrial) (Alliance Ecology, 2025).

1.2. Document purpose and scope

This Ecological Management Plan Framework (**“EMPF”**) document provides an overview of the procedures and methods to address adverse effects on ecological values associated with the construction and operation of the BOGP, as implemented by the associated Ecological Management Plans.

The management of ecological effects in this document is confined to terrestrial ecology and direct impacts on wetlands. It does not address streams and potential indirect effects on wetlands.

2. TERRESTRIAL AND WETLAND ECOLOGY OVERVIEW

2.1. Characteristics and values

Detailed descriptions of the terrestrial ecological features and values within the DDF and surrounding landscape are provided in the AEcE for the proposal and include:

- A mosaic of seven broad terrestrial vegetation communities, which include:
 - exotic pasture or herbfield
 - mixed depleted herbfield (cushionfield) and grassland
 - mixed tussock shrubland and exotic grassland
 - mixed scrubland
 - native-dominant tussockland
 - native taramea herbfield and shrubland
 - native dominant scrubland.
- Wetland habitats including swamps and marshes, gully fens, and hillside seeps;
- A diverse assemblage of indigenous plant species including at least 58 Threatened or 'At Risk' vascular plant species;
- Indigenous birds, lizards and invertebrates including nationally or regionally Threatened or At Risk species, including:
 - At least 10 bird species, including the nationally Threatened kārearea/eastern falcon, the At Risk pīhoihoi/New Zealand pipit, and braided river bird species that may occasionally use cultivated fields or artificial ponds
 - Two nationally At Risk lizard species: Kowarau gecko and tussock skink
 - 18 notable invertebrate species, including 4 nationally Threatened moth species, and 4 newly identified species.

Although the DDF and surrounding landscape include areas of high ecological value and indigenous biodiversity, the area remains heavily modified by past and current land use practices, along with the ongoing effects of invasive weeds, introduced mammalian predators, and browsers.

2.2. Effects on terrestrial and wetland ecology

Following the implementation of measures to avoid or minimise adverse effects, the BOGP is expected to result in the loss of up to 610 ha of indigenous and exotic vegetation/habitat and associated habitat for flora and fauna. This includes up to:

- 187 ha of mixed tussock shrubland and exotic grassland
- 124 ha of mixed scrubland

- 104 ha of mixed depleted herbfield and grassland (a large component of which includes cushionfields)
- 79 ha of exotic pasture or herbfield
- 25 ha of native-dominant tussockland
- 2 ha of native herbfield and shrubland
- 86 ha of native dominant scrubland
- 3.1 ha of natural inland wetlands including:
 - 2.42 ha of swamp and marsh wetland
 - 0.84 ha of fen wetlands
 - 0.19 ha of seepage wetlands

The actual and potential impacts associated with the construction and operation of the BOGP are described in the AEcE, and in summary include:

- Vegetation and habitat loss through habitat clearance, soil stripping, earthworks and deposition of overburden, waste-rock, or tailings
- Creation of habitat edge effects and altering of the composition and health of adjacent vegetation (i.e. habitat degradation), which may affect habitat suitability for flora and fauna
- Habitat fragmentation and loss of ecological connectivity
- Loss of or harm to species associated with vegetation clearance or earthworks activities.
- Potential for direct mortality of eastern falcon from collision with high fences, windows, and power lines, and for certain bird species (eastern falcon, little shag, and black shag) from electrocution by transmission lines.
- Reduced wetland condition resulting from altered surface and groundwater flows (e.g. dewatering halos around mine pits), vegetation removal, and potential declines in water quality and flow regimes affecting seepages and wetlands.
- Discharge of sediment to aquatic receiving environments that may affect the quality of wetland habitats
- Disturbance associated with construction and operations-related noise, vibrations, lighting and dust.
- Alteration to farming practices that may result in change to vegetation communities.

2.3. Terrestrial and wetland ecology effects management

2.3.1. Effects avoidance and minimisation

A range of measures will be undertaken prior to or during construction and operations to avoid, minimise and remediate adverse effects on vegetation and habitats, including on 'Threatened', 'At Risk' or 'Rare' ecosystems and species. These measures¹ include:

- Implementation of habitat clearance protocols including physical delineation of the disturbance footprint and deployment of erosion and sediment control measures
- Native bird nest surveys
- Salvaging and relocation of terrestrial and wetland, wetland plants, lizards, and invertebrates
- Salvaging and relocation of habitat features, including rock stacks, rock boulders, weathered boulders and coarse wood.

2.3.2. Effects rehabilitation

A range of measures will be undertaken to remediate adverse effects on vegetation and habitats, including on 'Threatened', 'At Risk' or 'Rare' ecosystems and species.

Within the DDF, ecological rehabilitation will occur within the approximately 480 ha of landform that can feasibly be ecologically rehabilitated² including:

- Re-establishment of:
 - Indigenous tussockland (222 ha)
 - Indigenous woody scrubland (230 ha)
 - Cushionfield (19 ha) noting cushionfield re-creation outcomes are uncertain and if proved successful, the areal extent of cushionfield will increase substantially.
 - Taramea herbfield and shrubland (2 ha)
 - Swamp wetland with open water elements (3.5 ha)
 - Marsh wetland (4 ha)
- Establishment of reproductively viable kōwhai clusters.

¹ In addition to general refinement of the DDF through detailed design and construction methodology where possible and as detailed in the AEE and AEcE reports;

² The 480 ha area to be rehabilitated excludes the majority of the two permanent pit lakes (which are deep and steep-sided) and pit walls, and permanent infrastructure (roads and water treatment facilities).

- Deployment of rock piles to provide habitat for lizards, invertebrates and threatened plants (1 per ha), and creation of rubble pits (minimum density 1 per 5 ha) totalling approximately 1.5 ha of rock piles and rubble pits.

Additionally, ecological enhancement of habitats within c. 889 ha of adjacent MRZs will facilitate ecological rehabilitation by providing a continuous native seed/propagule source and source populations of fauna. This ecological enhancement is treated as offsetting/compensation, as most of the benefits do not directly reduce the severity of effect at the point of impact. However, these restoration and enhancement efforts reduce the severity of edge and general disturbance effects from adjacent mining activities, thereby also contributing to ecological rehabilitation.

2.3.3. Residual effects management

Residual effects that cannot be avoided, minimised or remediated will be offset or compensated for to the extent practicable.

Indigenous biodiversity in the landscape is generally declining due to ongoing habitat loss and degradation from stock browsing, burning, topsoil dressing, invasive weeds, and predation by introduced mammalian pests. Without intervention, most native species will continue to decline, with several Threatened or At Risk species at risk of local extirpation. A notable exception is that browsing pressure, coupled with the absence of topsoil dressing for farming (due to mineral exploration), has created favourable conditions for some threatened plant and invertebrate species that thrive in depleted herbfield ecosystem or cushionfield ecosystem types.

Overall, the existing declining state of biodiversity provides a unique opportunity to restore the landscape at scale. This will enhance native biodiversity to a more diverse and indigenous native tussock, herbland, shrubland and forest state that includes re-introductions of species that were historically present but have since been locally extirpated.

The overarching objective and intended biodiversity outcome for addressing residual effects is to achieve, where possible, demonstrable benefits to indigenous terrestrial and wetland biodiversity that outweigh impacts within 35 years of granting of approvals. This will include ecological restoration and habitat enhancement across 2,219 ha of habitat in the landscape surrounding the mine footprint including:

- The 889 ha MRZ adjacent to the DDF via native enrichment planting, livestock management, mammalian pest control and ecological weed control.
- The 1263 ha Ardour Restoration Area (“**ARA**”) via native enrichment planting, livestock management, mammalian pest control, weed control and habitat enhancement. This enhancement will include rock stacks and the creation of rubble pits for lizards, some invertebrate species and threatened plants.

- Approximately 67 ha of pest-free sanctuaries: the 38 ha Ardour Sanctuary and the 29 ha Bendigo Sanctuary. The sanctuaries will include construction of predator-exclusion fences, eradication of mammalian predators, management of browsers, ecological weed control, and habitat enhancement. This enhancement will include native re-vegetation and enrichment planting; relocating rock stacks; creating rubble pits for lizards, some invertebrate species and threatened plants; and also translocating locally extirpated (extinct) Threatened or At Risk species.

Biodiversity outcome monitoring will be undertaken via the Biodiversity Outcome Monitoring Programme (BOMP) to verify that stated outcomes have been achieved or enable adaptive management or contingency measures as required.

3. RESPONSIBILITIES AND COMPETENCIES

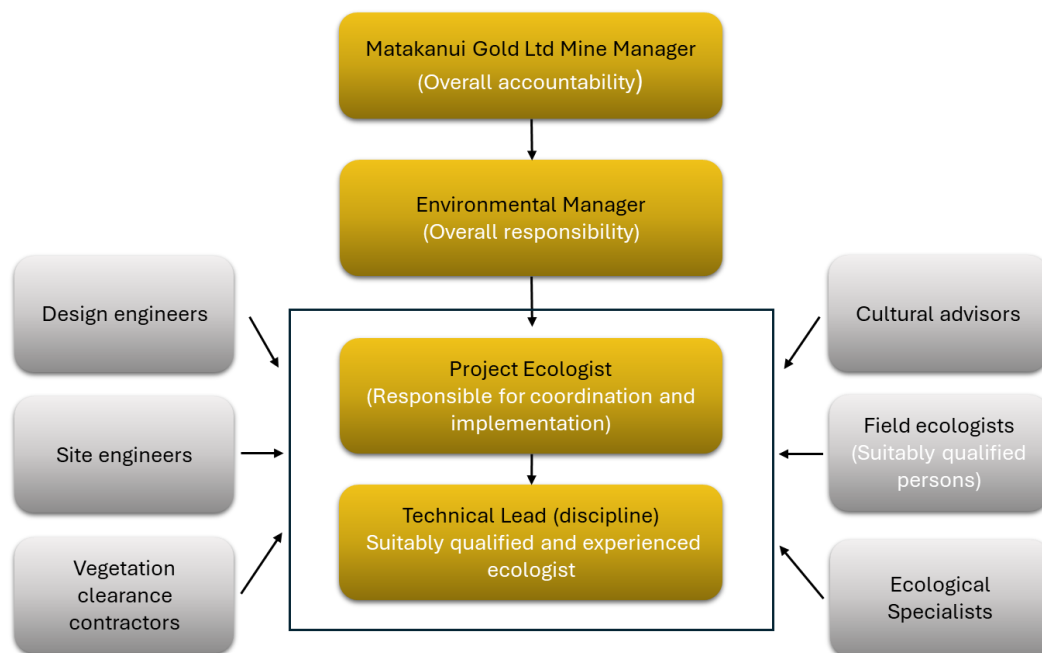
Delivery of, and compliance with, the Ecological Management Plans will be the responsibility of the Environment Manager who will liaise with the Mine Manager, Suitably Experienced and Qualified Ecologist(s)(SEQE), Site Engineers and habitat clearance and earthworks contractors as required.

The responsibilities of the Environment Manager include, but are not limited to:

- Reading and understanding the Ecological Management Plans.
- Facilitating a project start-up meeting with the SEQE, Mine Manager, Site Engineer(s) and habitat clearance and earthworks contractors before habitat clearance and earthworks commence. The objective of this meeting will be to determine habitats scheduled for clearance in each season, enabling forward planning and avoiding delays in the construction schedule.
- Contacting SEQE a minimum of 4 weeks before any of the areas within the DDF are scheduled for clearance.
- Maintaining clear lines of communication with the SEQE, Mine Manager, Site Engineer(s) and vegetation and earthworks contractors regarding changes in the works schedule.
- Briefing new personnel about the contractor's responsibilities under the ecological management plans.
- Inviting mana whenua to participate in and support any vegetation or habitat salvaging and relocation as deemed necessary, to ensure appropriate exercise of kaitiakitanga responsibilities and that cultural concerns are addressed.
- Developing, implementing and monitoring site clearance procedures to ensure all requirements (survey, salvage, stockpiling) have been complied with before work or the next stage of work commences.
- Ensuring personnel induction processes include a module on ecological effects management roles and responsibilities.

All personnel working on site are responsible for alerting the SEQE and the Mine Manager to the discovery of any potentially ‘At Risk’ or ‘Threatened’ flora and fauna not otherwise identified in the ecological management plans.

The Environment Manager holds overall accountability for implementation of and compliance with all ecology management plans. Additional roles and responsibilities are detailed where relevant in the various individual plans.



3.1. Ecology Management Plans

The following suite of ecological management plans has been developed to give effect to proposed conditions relating to ecology:

Habitat Impact Management Plan (HIMP): Describes measures to avoid or minimise adverse effects on wetland and terrestrial vegetation including the salvaging of soils, vegetation or habitat, including rock stacks, rock boulders, weathered boulders and coarse wood. This plan serves as a central reference for all effects management requirements before, during, or after vegetation clearance. It provides links to other management plans for detail, including those for avifauna, lizards, invertebrates and ecological rehabilitation.

Avifauna Management Plan (AMP): Details measures to avoid or minimise effects on indigenous birds, particularly through avoiding nesting sites.

Lizard Management Plan (LMP): Details measures to avoid or minimise effects on indigenous lizards through salvaging and relocation operations.

Terrestrial Invertebrate Management Plan (TIMP): Details measures to avoid or minimise effects on indigenous terrestrial invertebrates.

Landscape and Ecological Rehabilitation Management Plan (LERMP): Details measures to rehabilitate, offset or compensate for adverse effects on terrestrial ecology and landscape values. Methods include the establishment of wetland hydrology, native revegetation or enrichment plantings and the relocation of salvaged vegetation (vegetation transfer) or habitat, including rock stacks, rubble pits, weathered boulders and coarse wood. Measures will also require livestock management, as well as weed management and mammalian pest control.

Ardgour Restoration Area Management Plan (ARAMP): Details habitat restoration measures in the ca. 1263 ha Ardgour Restoration Area, including terrestrial and wetland revegetation, livestock management, weed management, deployment of rock stacks and creation of rubble pits, and mammalian pest control.

Matakanui Sanctuary Management Plan (MSMP), which details the construction of the Ardgour and Bendigo Sanctuaries, including the elimination of mammalian pests, mammalian pest incursion surveillance and response, browser management, weed management, deployment of salvaged rock and coarse wood, and fence maintenance.

Mammalian Pest Management Plan (MPMP), which details the measures for maintaining and enhancing indigenous biodiversity within ecological rehabilitation and offset/compensation sites via the control of introduced mammalian pests.

Biosecurity and Plant Pest Management Plant (BPPMP) detail the measures for managing biosecurity risk and maintaining and enhancing indigenous biodiversity within ecological rehabilitation and offset/compensation sites via the control of weeds.

The Biodiversity Outcome Monitoring Plan (BOMP): Details the biodiversity outcome monitoring and adaptive management/contingency programme to ensure that stated ecological outcomes for the rehabilitation, offset and compensation of terrestrial ecology values are realised.

Applied Research Plan for Cushionfields and Spring Annuals: Details applied research to identify the best ways to improve ecological outcomes for these biodiversity values.

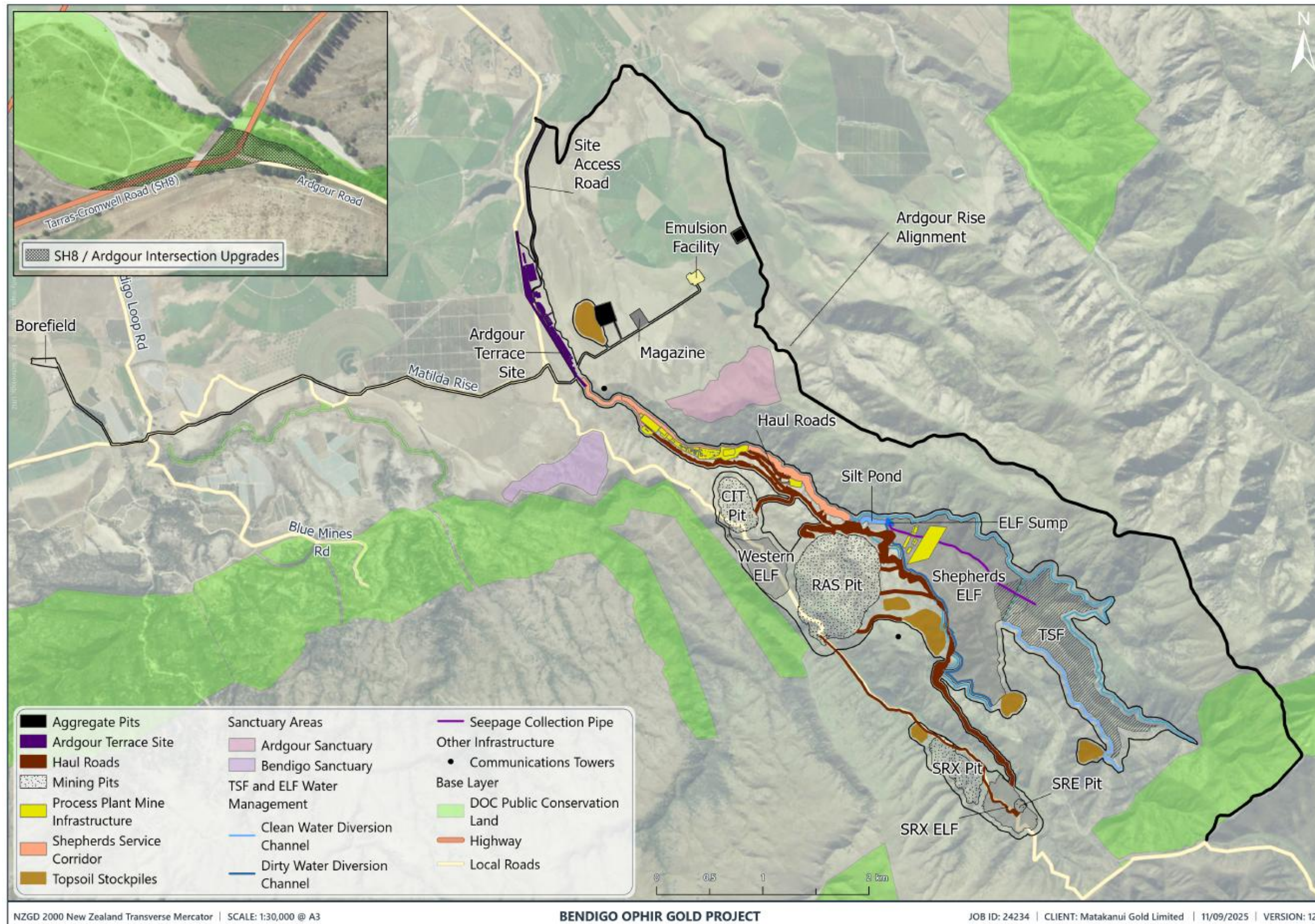
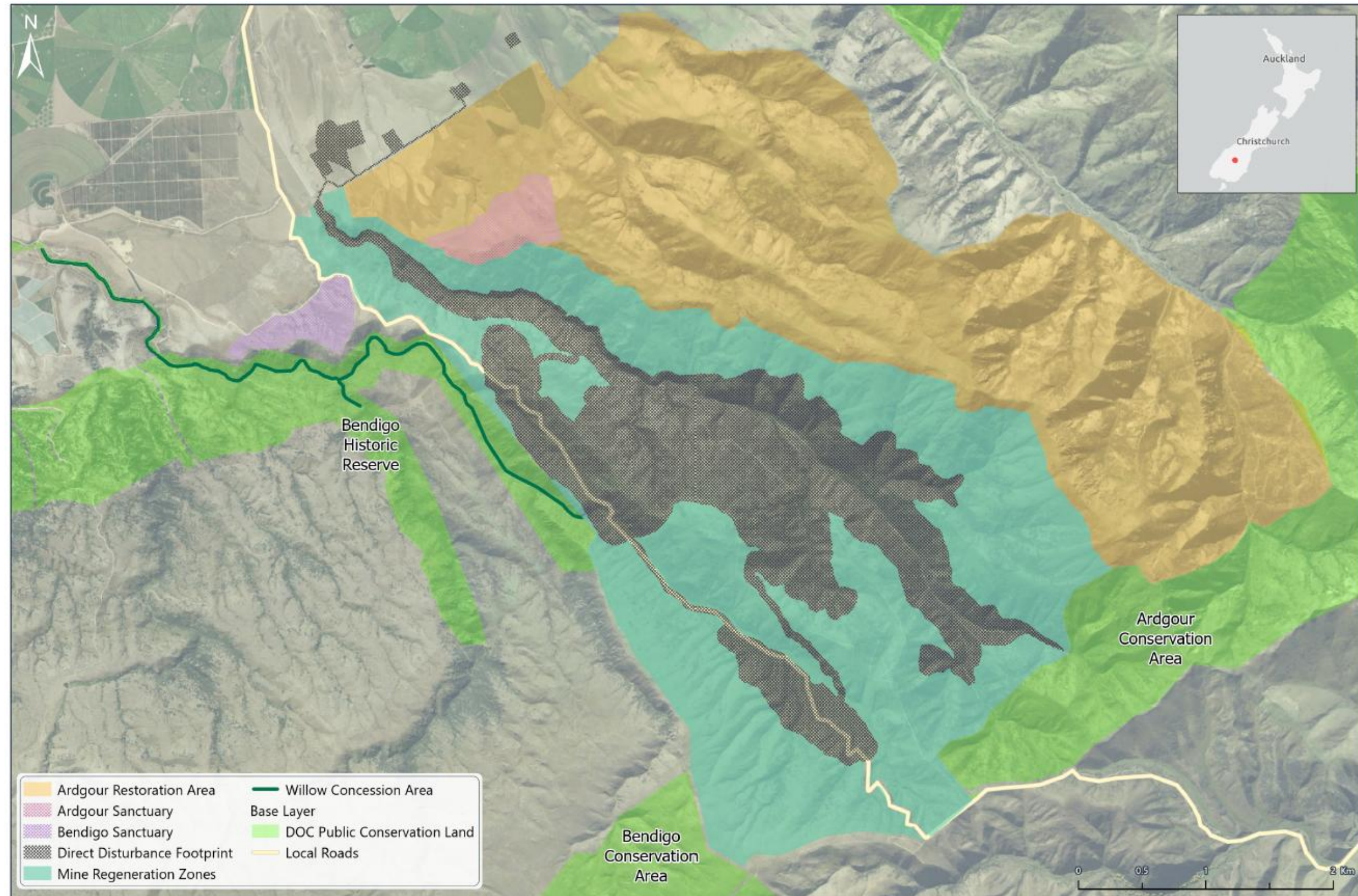


Figure 1: Overview of the Bendigo-Ophir Gold Project



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ECOLOGICAL REHABILITATION AND ENHANCEMENT AREA

JOB ID: 24234 | CLIENT: Matakaniui Gold Limited | 29/09/2025 | VERSION: 6

Figure 2: Bendigo-Ophir Gold Project Ecological Rehabilitation and Enhancement Area