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Environmental Consultants



September 2026

Te Kowhai East- Industrial Development Fish Management Plan

Prepared for:
Te Kowhai East Limited Partnership



water



fauna



flora

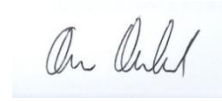


land

Quality Assurance

This report has been prepared and reviewed by the following:

Prepared by: Owen Woodward
Ecologist



Reviewed by: Nick Carter
Director



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ecoLogical solutions

tauranga office
115 the strand, tauranga 3110.
p: 021 806 933

auckland office
building 4/195 main highway,
ellerslie, Auckland, 1051
p: 021 578 726

northland office
30 leigh street, kāeo
po box 180, kāeo 0448
p: 021 403 386

nelson office
58 factory road, brightwater
p: 021 172 2091

www.ecologicalsolutions.co.nz

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1.0 Introduction

1.1 Background

This report prepared by Ecological Solutions Ltd presents the Fish Management Plan (FMP) for the Te Kowhai East Industrial Development (the Project) by Te Kowhai East Limited Partnership. The 'Project Area' is 187.5 ha and is commonly referred to by the primary addresses of 270 Te Kowhai Road and 28 Mathers Road. The Project Area is located in the headwaters of the Mangaheka Stream catchment and a small portion in the Te Otamanui Stream catchment.

This FMP has been prepared as part of the Te Kowhai East Limited Partnership's substantive application for approvals under the Fast-track Approvals Act 2024 (FTAA). The FMP outlines responsibilities, relocation sites, monitoring and reporting. The FMP outlines the methodology for how native fish (excluding black mudfish) will be captured, handled, and relocated from artificial drains, Mangaheka Stream and Te Otamanui Stream within the Project Area prior to and during works and how captured pest fish will be managed.

The methodology for managing black mudfish is addressed separately in the Black Mudfish Habitat Creation Plan (BMHCP) (Ecological Solutions 2026a). The BMHCP governs the creation and establishment of replacement habitat, capture, handling and translocation of black mudfish, and associated monitoring and adaptive management. Where black mudfish are encountered during implementation of this FMP, the requirements of the certified BMHCP apply.

Accordingly, this FMP principally addresses the capture, handling and relocation of other native fish species affected by works within artificial drains, the Mangaheka Stream and Te Otamanui Stream, together with the management of pest fish captured during salvage.

2.0 Site Description

The Project Area covers approximately 187.5 ha of contiguous farmland. The proposed master plan for the site is shown in Figure 1. The Project Area sits at the headwaters of two drainage catchments known to contain black mudfish populations:

- The Mangaheka Stream catchment drains the western and central portions of the site, flowing west to the Waipā River.
- The Te Rapa catchment drains the eastern and southern portions of the site, flowing to the Waikato River system via the Te Rapa drainage network.

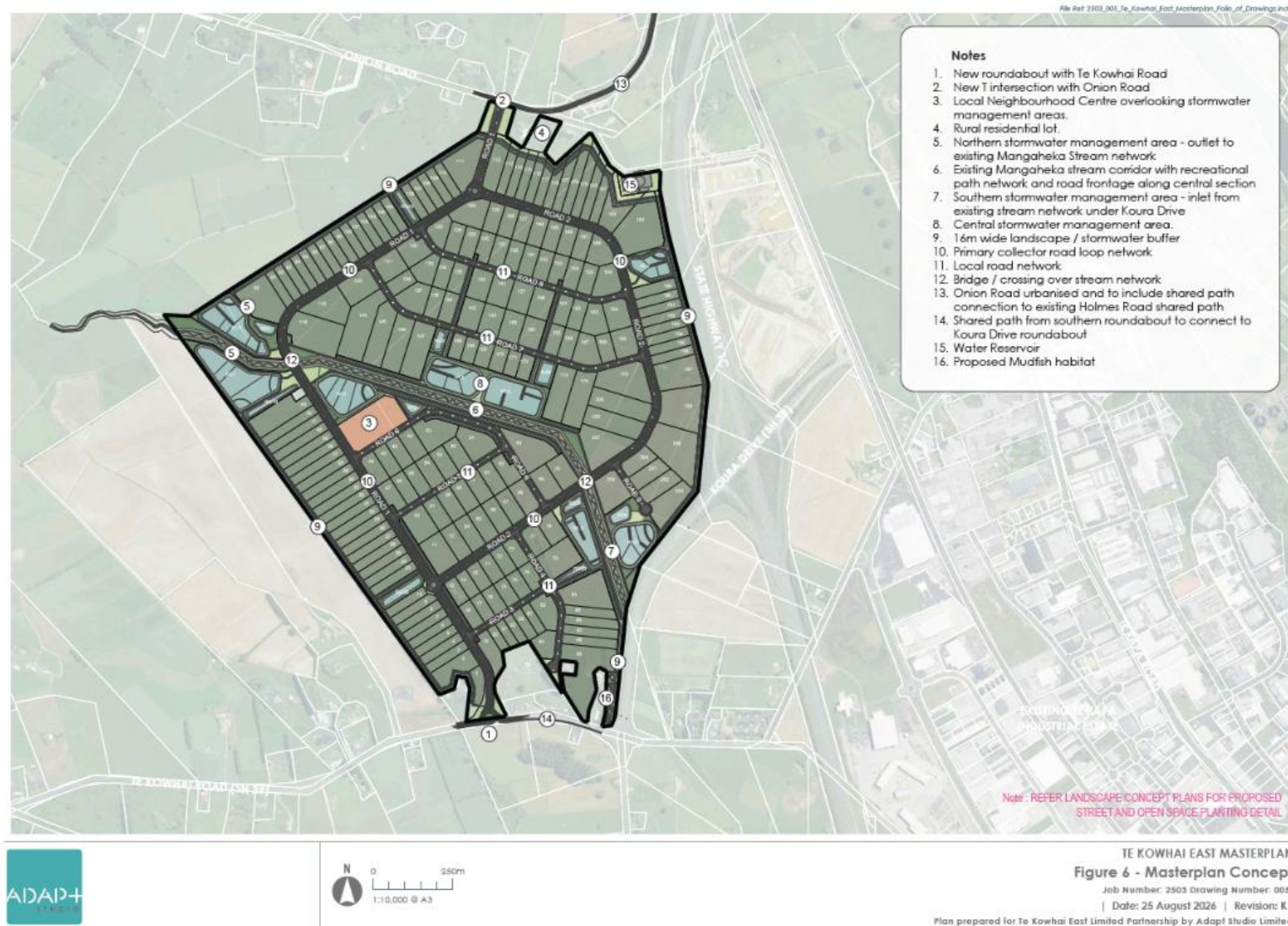


Figure 1: Masterplan Concept (Adapt Studio).

2.1 Purpose and Objectives

The purpose of this FMP is to ensure adverse effects on native fish within the Project Area are minimised prior to and during stream works.

This FMP outlines the timing and methods to achieve:

- Identify affected watercourses capable of supporting fish prior to disturbance;
- Capture and relocate native fish prior to and, during dewatering and excavation;
- Ensure that fish salvage is completed before disturbance of affected watercourses commences;
- Manage unexpected fish discoveries during works;
- Humanely euthanise and lawfully dispose of pest fish captured during fish relocations; and
- Record and report the outcomes of fish salvage undertaken for each relevant stage of works.

2.2 Permits

The capture and relocation of native fish will be carried out under Special Permit Number SP905 and Native Fish Transfer Permit number NFT 441 from Fisheries New Zealand that is currently held by Ecological Solutions. Ecological Solutions have authorisation to operate an electric fishing device in the Auckland Waikato Fish and Game Region. Electric fishing will be carried out by a certified electric fishing operator.

2.3 Related Documentation

This FMP should be read alongside the following related documentation (Table 1).

Table 1: Related Documentation.

Plan code	Plan name	Interface with this FMP
TKE-EclA-001	Ecological Impact Assessment (Ecological Solutions 2026b)	Source for baseline habitat assessment, effects characterisation and application of effects management hierarchy.
TKE-BMHCP-001	Black Mudfish Habitat Creation Plan (Ecological Solutions 2026b)	Governs black mudfish habitat creation; black mudfish capture, handling and translocation; and associated monitoring and adaptive management.
TKE-STMP-001	Stream Works Management Plan (Maven Associates 2026a)	Stream and drain works construction methodology, staging, isolation, dewatering, temporary diversions and sediment control. No relevant stream or drain works commence until fish salvage requirements under this FMP and, where applicable, the BMHCP have been completed, except where works are required for implementation of fish management.
TKE-EWMP-001	Earthworks Management Plan	Bulk earthworks programme that determines drain works timing within each stage.

	(Maven Associates 2026b)	
TKE-MSEP-001	Mangaheka Stream Enhancement Plan (Ecological Solutions 2026c)	The framework for restoration within the catchment which, affecting relocation sites and widening and enhancement of Mangaheka Stream in the Project Area.
TKE-CMP-001	Construction Management Plan (Maven Associates 2026c)	Overall construction management, incident reporting, and pre-commencement notification.

3.0 Responsibilities

The responsibilities of relevant parties involved in the FMP are outlined below:

Table 2: Responsibilities of relevant parties

Relevant party	Responsibility
Freshwater Ecologist (Ecological Solutions) Ecological Solutions Ltd are the ecologists engaged by Te Kowhai East Limited Partnership to take responsibility for the preparation and implementation of the FMP outlined in this document. Ecological Solutions is a specialist freshwater and terrestrial ecology consultancy with over 25 years' experience carrying out native fish relocations.	The Freshwater Ecologist is responsible for preparation of the FMP and ensuring that the relevant resource consent requirements are reflected in the FMP. Fish relocations are to be carried out by experienced freshwater ecologists who are responsible for implementing all aspects of the FMP including holding the required permits, and completing the installation and maintenance of temporary exclusion nets along the drain(s). Fish relocations are to be carried out under the relevant permits including: • A special permit from the Ministry of Primary Industries to capture fish using methods outside of amateur fishing regulations. • An approval to transfer aquatic life under either section 26ZM(2) or 26ZM(3) of the Conservation Act 1987. Section 26ZM(2) is administered by the Ministry of Primary Industries in situations where a species is being translocated to locations where it already occurs while Section 26ZM(3) is administered by the Department of Conservation in situations where a species is being translocated to locations where that species is absent. Ecological Solutions holds Special Permit Number SP905 and Native Fish Transfer Permit number NFT 441 from Fisheries New Zealand. The Freshwater Ecologists are responsible for reporting the outcomes of fish relocations in a timely manner, so they may be reported to WRC via the consent holder by 30 November that same year.
Consent Holder (Te Kowhai East Limited Partnership)	The consent holder is responsible for ensuring the FMP is submitted to WRC for technical certification at least 20 working days prior to the commencement of activities. The consent holder is responsible for engaging with iwi representatives and provide a draft copy of the report to allow for mātauranga input. The consent holder is also responsible for providing a final copy of the report to the various iwi groups. The consent holder is responsible for ensuring the FMP is implemented and that all results are reported to the appropriate entities (e.g., WRC, Waikato Tainui) within 1 month of implementation.
Construction Site Manager	The Construction Site Manager is responsible for earthworks, construction, diversion, dewatering and reclamation/infilling. These responsibilities also include the management of environmental impacts and their own personal health and safety. The Construction Site Manager is responsible for ensuring all contractors report accidental discoveries of fish to the Freshwater Ecologist, so that an appropriate course of action can be taken. The Construction Site Manager shall not authorise disturbance of a watercourse subject to fish salvage until written clearance has been received from the Freshwater Ecologist.

4.0 Fish Fauna and Habitat

4.1 Site Description

The Project Area is located on alluvial plains of the Hamilton Basin and is drained by a network of artificial and straightened modified watercourses of the headwaters of the Mangaheka Stream and a small section of Te Otamanui Stream, which crosses the Project Area near the southern boundary and drains located within the Te Rapa Catchment. These watercourses were historically modified to improve drainage on the flat terrain.

Habitat modification has led to the catchment wide deterioration of freshwater habitat quality, however despite this the Mangaheka Stream catchment provides habitat for longfin (*Anguilla dieffenbachii*; 'At Risk – Declining'), shortfin eel (*Anguilla australis*; 'Not Threatened'), banded kōkopu (*Galaxias fasciatus*; 'At Risk – Naturally Uncommon'), giant kōkopu (*Galaxias argenteus*; 'At Risk – Declining') and black mudfish (*Neochanna diversus*; 'At Risk - Declining').

A watercourse in the headwaters of Te Otamanui Stream crosses the Project Area at the southern boundary and was connected via a small stream feeding from the Mangaheka Stream catchment but is now disconnected (HCC 2019).

Artificial watercourses and modified watercourses (i.e., Mangaheka Stream, Te Otamanui Stream, Watercourse M13) within the Project Area provide highly modified aquatic habitat of generally poor quality for native fish. Despite their degraded state however, these provide a remnant refuge for the black mudfish ('At Risk – Declining'). As a result, these streams and artificial watercourses have moderate–high ecological value.

4.2 Fish Habitat

4.2.1 Mangaheka Stream

The Mangaheka Stream is a highly modified stream with approximately 1,900 m of its length flowing through the Project Area. Historically, the stream has been straightened, realigned, and incised for irrigation and drainage purposes and has limitations in its functional ecological values. The Mangaheka Stream was assessed as having 'moderate' ecological value (Ecological Solutions 2026b).

4.2.2 Te Otamanui Stream

The headwater section of Te Otamanui Stream that flows through the southern portion of the Project Area for approximately 135 m has been heavily modified and has a straight aligned and deepened channel with no effective shading. Te Otamanui Stream was assessed as having 'moderate' ecological value (Ecological Solutions 2026b).

4.2.3 Artificial watercourses

There is approximately 16,192 m of artificial drain within the Project Area. The artificial drains generally provide poor-quality habitat for native fish, but a portion (3,582.5 m) are known to, or have, potential to support black mudfish. Artificial watercourses were assessed as having 'negligible' ecological value if not supporting black mudfish of 'moderate' ecological value if supporting black mudfish.

4.3 Fish Species Present

eDNA sampling detected the presence of the following native fish species in watercourses within the Project Area: shortfin eel (*Anguilla australis*), longfin eel (*Anguilla dieffenbachii*), giant kōkopu (*Galaxias argenteus*) and black mudfish (*Neochanna diversus*).

eDNA sampling detected the presence of the following introduced pest fish species in watercourses within the Project Area: brown bullhead catfish (*Ameiurus nebulosus*), koi carp (*Cyprinus rubrofuscus*), goldfish (*Carassius auratus*) and gambusia (*Gambusia affinis*).

Watercourses in which the above species were recorded are summarised in Table 3.

Table 3: Fish detected from eDNA in watercourses within the Project Area.

Common name	Scientific name	Threat status	Pest	Watercourse							
				Mangaheka	Te Otamanui	M2	M3	M4	M5	M6	
Shortfin eel	<i>Anguilla australis</i>	Not Threatened	-	✓	✓	✓	✓	-	✓	✓	
Longfin eel	<i>Anguilla dieffenbachii</i>	At Risk – Declining	-	-	✓	-	-	-	-	-	
Giant kōkopu	<i>Galaxias argenteus</i>	At Risk – Declining	-	✓	-	-	✓	✓	✓	✓	
Black mudfish	<i>Neochanna diversus</i>	At Risk – Declining	-	-	-	-	-	✓	-	✓	
Catfish	<i>Ameiurus nebulosus</i>	Introduced and naturalised	Yes	✓	✓	-	-	-	-	-	
Koi carp	<i>Cyprinus rubrofuscus</i>	Introduced and naturalised	Yes	✓	✓	-	-	-	-	-	
Goldfish	<i>Carassius auratus</i>	Introduced and naturalised	Yes	✓	✓	-	✓	-	-	-	
Gambusia	<i>Gambusia affinis</i>	Introduced and naturalised	Yes	✓	✓	-	✓	✓	✓	✓	

Note: Listed as pests in the Waikato Regional Pest Management Plan 2014–2024 (Waikato Regional Council 2014)

Banded kōkopu have been recorded within the wider Mangaheka catchment but were not detected in the Project Area during the eDNA survey summarised in Table 3.

4.4 Ecology of Native Fish Present

This section gives a brief overview of the habitat requirements and diet of native freshwater fish known to be present in watercourses within the Project Area.

Longfin eel and shortfin eel

Both species of eel are widely distributed and can be found in high numbers in favourable conditions. They can occupy a range of habitats including streams, wetlands and drains. They are nocturnal feeders and live under cover including sunken logs and boulder piles and undercutting along stream banks. Adult eels migrate to sea in autumn. The diet of both species includes aquatic insects, fish and small birds depending on their stage of life. Longfin eel has a conservation status of 'At Risk – Declining' (Dunn et al. 2025) while shortfin eel is 'Not threatened' (Dunn et al. 2025).

Giant kōkopu

Giant kōkopu favoured habitat is slow flowing, overgrown boggy streams and swampy lagoons and lake margins and depths of > 0.50 m (Bonnet et al, 2002). The diet of giant kōkopu consists of terrestrial animals (e.g., cicadas), kōura and aquatic insects. Giant kōkopu have a conservation status of 'At Risk – Declining' (Dunn et al. 2025).

Banded kōkopu

Habitat preferences include small streams with pools with good cover. Their diet consists of aquatic insects such (e.g., mayflies, caddisflies). Banded kōkopu spawn in autumn along stream margins. The conservation status of banded kōkopu is 'At-Risk – Naturally Uncommon' (Dunn et al. 2025).

Black Mudfish

Black mudfish are a cryptic nocturnal freshwater fish found in wetlands, slow flowing streams and drains. Their diet consists of aquatic and terrestrial insects. Black mudfish have the notable ability to survive periods without open water by burrowing into damp soft ground in order to aestivate, which can continue for extended periods out of water as long as they are kept moist until water returns. Black mudfish can tolerate conditions typical of wetland habitats, including periodic drying, low pH and low dissolved oxygen, however in absence of these constraints are vulnerable to competition and predation from other native and introduced fish species. The conservation status of black mudfish is 'At Risk – Declining' (Dunn et al. 2025).

5.0 Earthworks Staging and Timing

Prior to the commencement of works, Te Kowhai East Limited Partnership will submit the Construction Management Plan (CMP) and Stream Works Management Plan (STMP) to Waikato Regional Council for certification. The CMP and STMP will include specific details on the following:

1. Timing and sequencing of activities.
2. Methodology and plans (where applicable) for activities such as pumping, process of excavation, location and design of temporary stream diversions.
3. Methods to prevent surface water diversion and groundwater drawdown to watercourses and drains located beyond the subject site and Project Area.
4. Methods to prevent sediment discharge and other types of contaminant discharges to watercourses within and outside the works area.
5. Methods to prevent physical disturbance (e.g., from vehicles and works machinery) of watercourses outside the works area.

Activities are likely to occur as follows:

1. A pre-works habitat assessment will be carried out to identify watercourses or habitat(s) with adequate surface water capable of supporting fish.
2. Earthworks will progress in an upstream direction where possible.
3. Earthworks are proposed to commence in 2026/2027 season. The total duration of the Project is expected to extend over five earthworks seasons (refer to EWMP).
4. Temporary diversion channels will be constructed during each stage of earthworks for reconstructing Mangaheka Stream to convey flow around earthworks. Detail of diversion channels will be outlined in the STMP.
5. Sediment and erosion control will be set up concurrently with diversion channels in accordance with the EWMP, after which, earthworks will begin.
6. Staging of earthworks will allow fish relocations to be more easily managed as earthworks will be undertaken in discrete areas and resulting in shorter lengths of

the drain requiring to be fished at any one time. This means impact reaches will be more effectively fished prior to and during earthworks.

7. The timing of fish relocations will depend on the construction schedule and weather/ flow conditions. Fish relocations in sections Mangaheka Stream will require fine weather and base flow conditions. The weather forecast will be monitored close communication will be maintained with the Construction Site Manager.
8. The Construction Site Manager will determine start times for pre-works fishing and is to provide at least 20-days' notice of the intended construction start dates for each stage of works. This will ensure that exclusion nets can be installed and pre-works (Stage 1) fish relocations can be completed before earthworks commence.
9. During the pre-works fishing stage, after a reach has been fished and the required catch rate has been achieved, the Freshwater Ecologist will notify the Construction Site Manager so that flow can be diverted into temporary diversion channels and the fished section isolated (e.g., banded) as soon as practicable to minimise the chance of fish moving into the fished reach.
10. Dewatering (Stage 2) and excavation (Stage 3) fish relocations should be carried out in fished sections soon after water has been diverted into temporary diversion channels to minimise stress on any remaining fish in isolated reaches that lack flow.

6.0 Fish Relocation Methodology

6.1 Introduction

The methodology set out in this FMP shall be implemented for fish salvage undertaken as part of the Project. The Freshwater Ecologist may make reasonable field adjustments to the specific salvage methods where required by site conditions, provided that the objectives and performance outcomes of this FMP are maintained and any applicable permit or consent requirements continue to be met.

The key stages of fish relocations include the below and are described in the following sections:

- Stage 1: Pre-works fish relocations.
- Stage 2: Dewatering fish relocations.
- Stage 3: Excavation fish relocations (if required).

6.2 Stage 1 Pre-works Fish Relocations

Pre-works habitat survey

A pre-works habitat survey shall be undertaken immediately prior to commencing fish relocations to identify watercourses (e.g., artificial drains). The purpose of the assessment is to confirm whether the affected watercourse contains surface water and has potential to support fish, and to determine the appropriate salvage methods.

Any affected watercourse with potential to support fish, as assessed by the Freshwater Ecologist, shall be subject to fish salvage.

An affected watercourse may be excluded from active fish salvage only where the Freshwater Ecologist confirms that it is dry and does not contain wetted or otherwise suitable habitat capable of supporting fish at the time works are proposed.

Exclusion netting and sub-reaches

Within two weeks prior to any works, fine mesh exclusion nets will be installed across watercourses at the upstream and downstream extents of the reach to prevent any fish moving into the section to be worked.

Longer sections of watercourse will generally be divided into shorter sub-reaches (i.e., 100 m) to allow them to be more effectively fished. The decision to divide a section into longer sub-reaches using exclusion nets will be determined by the Freshwater Ecologist based on the size of the watercourse, number of fish captured, or likely number of fish present.

Fish exclusion nets will be left in place until the fished section has been diverted and bunded (preventing fish entry) or until drains have been dewatered and fish removed. Regular maintenance of exclusion nets will be required to ensure they are functioning as intended and especially after high flow events.

Fyke netting

Pre-works netting will be carried out where possible (i.e., adequate depth) using fine mesh fyke nets set at approximately 10 m intervals. Nets will be baited, set overnight and cleared the following morning. Nets will be deployed with an air gap if dissolved oxygen levels are low to ensure fish can gulp air from the surface.

Netting will continue over consecutive nights for a minimum of three nights in watercourses and drains until a maximum average of <1 native fish per trap per night has been achieved. Any fish captured will be handled as per protocols set out in Section 6.6.

Gee minnow trapping

Pre-works trapping will be carried out using un-baited Gee minnow (3 mm wire mesh) traps. Two traps will be set at approximately 10 m intervals along watercourses that contain suitable habitat for native fish. Traps will be set and cleared the following morning to reduce the risk for depleted dissolved oxygen concentrations.

Traps will be set according to best practice for black mudfish monitoring (Ling et al. 2013) with the opening of the entry cones just below the water surface and adequate air space provided to ensure the fish do not drown if dissolved oxygen levels are low.

Trapping will continue over consecutive nights for a minimum of three nights in watercourses until a maximum average of <1 native fish per trap per night has been achieved. Any fish captured will be handled following the protocols set out in Section 6.6.

Electric fishing

On the day that trapping and/or netting in fished sections has reached the target catch rate, the section will be electric fished as a final check that fish have been removed. Electric fishing will involve multiple passes carried out in short sections to maximise fishing effort and to ensure as many fish as possible are captured prior to stream works.

Completion of pre-works trapping and electric fishing

After the Freshwater Ecologist is satisfied that the required pre-works trapping and electric fishing has captured as many fish as possible, the fished reach can be isolated (e.g., bunded) and diverted into temporary diversion channels or stabilised sections, and Stage 2 (dewatering) fish relocations can commence.

6.3 Stage 2: Dewatering Fish Relocations

Experience has shown that some fish (e.g., mostly eels) can remain in streams even after

intensive netting/trapping and electric fishing. Remaining fish will be salvaged during Stage 2 (dewatering) when water is diverted and the reach becomes isolated.

If a pump is used during dewatering, the nozzle must be fitted with a 5 mm mesh screen to prevent fish from being sucked through the pump.

A suitably qualified and experienced Freshwater Ecologist will be on site during dewatering. Any fish observed moving within the channel during the dewatering stage when water levels are lowered will be captured using hand-held nets. An electric fishing machine may be used during the dewatering stage if it is safe to do so.

Any fish observed will be captured using hand-held nets and handled as per protocols set out in Section 6.6.

6.4 Stage 3: Excavation Fish Relocations

After Stage 2 (dewatering), there is still potential for a small number of eels to remain within a fished and dewatered reach if the bed and streambed comprises soft-sediment that can be burrowed into. During Stage 3 (excavation), any material removed from the channel and deposited into designated holding areas will be inspected by the Freshwater Ecologist or contractor under direction from the ecologist. Any fish observed will be captured using hand-held nets and handled as per protocols set out in Section 6.6.

6.5 Unexpected Discoveries

If during the course of works, fish are discovered by the contractor, they shall contact the project Freshwater Ecologist to determine an appropriate course of action. The action taken will depend on the species and number of fish present. Any fish captured will be handled in accordance with Section 6.6.

6.6 Fish Capture and Handling

The following procedures will be followed for the transfer of native fish.

- All native fish captured will be immediately transferred into a clean bucket or fish bin of water from the existing habitat and placed in a well-shaded location. Water may be collected from the release site to ensure it is cool and of good quality.
- Multiple fish bins will be used if there are large numbers of native fish captured to reduce stress.
- Black mudfish and smaller native fish will be kept in separate buckets or fish bins to minimise stress and potential predation by eels as outlined in the BMHCP (Ecological Solutions 2026a).
- Battery powered aquarium pumps will be used to maintain dissolved oxygen in fish bins if required.
- Fish will be checked to ensure that all aquatic plant material is removed prior to transfer into the bucket/fish bin.
- Native fish (excluding black mudfish) will be transported to the designated downstream release points on Mangaheka or Te Otamanui Streams depending on which catchment the fish were caught from. Native fish will be released within two hours of capture or if fish are displaying signs of stress.
- Pest fish will be euthanised humanely by using an appropriate anaesthetic.

- If a large number of eels are captured, they may be transferred to catch bags immediately prior to release to enable safer transport to the release site.

6.7 Fish Release Locations

The Freshwater Ecologist shall select the appropriate release location. The following outlines recommended fish relocation sites (shown on Figure 2):

- Fish release sites will be located within the same catchment that fish were captured from and in locations that are not affected by proposed works.
- After fish capture, consideration will be given to the species, number of fish, life stage, stocking rates, and proximity of the release site to the location they were captured from to minimise stress on fish.
- Black mudfish will be relocated to the wetland habitat created specifically for black mudfish within the Project Area (refer to BMHCP; Ecological Solutions 2026a).
- Fish captured in Mangaheka Stream will be relocated within Mangaheka Stream. Giant kōkopu and banded kōkopu will be released into the downstream section of Mangaheka Stream (i.e., vicinity of Horotiu Road culvert). Eel species will be released upstream of the Project Area (i.e., vicinity of Koura Drive culvert) or downstream (i.e., vicinity of Horotiu Road culvert), dependent on their size and age class, as well as number captured.
- All fish (excluding black mudfish) captured from Te Otamanui Stream will be relocated upstream of the Project Area, or downstream in the vicinity of the Te Kowhai Road culvert. .
- If fish numbers are higher than expected, and overstocking is possible, alternative relocation sites with suitable habitat will be explored within the wider catchment.

7.0 Reporting

Ecological Solutions will report the results of the fish relocation work to the consent holder and Waikato Regional Council within two weeks of completion of fish salvage for the relevant stage of stream or drain works. Results will include the following information:

- Fish species caught.
- Number of each species caught (including mortalities).
- Range in length of each species.
- General health/condition.
- Location of capture.
- Location of release.

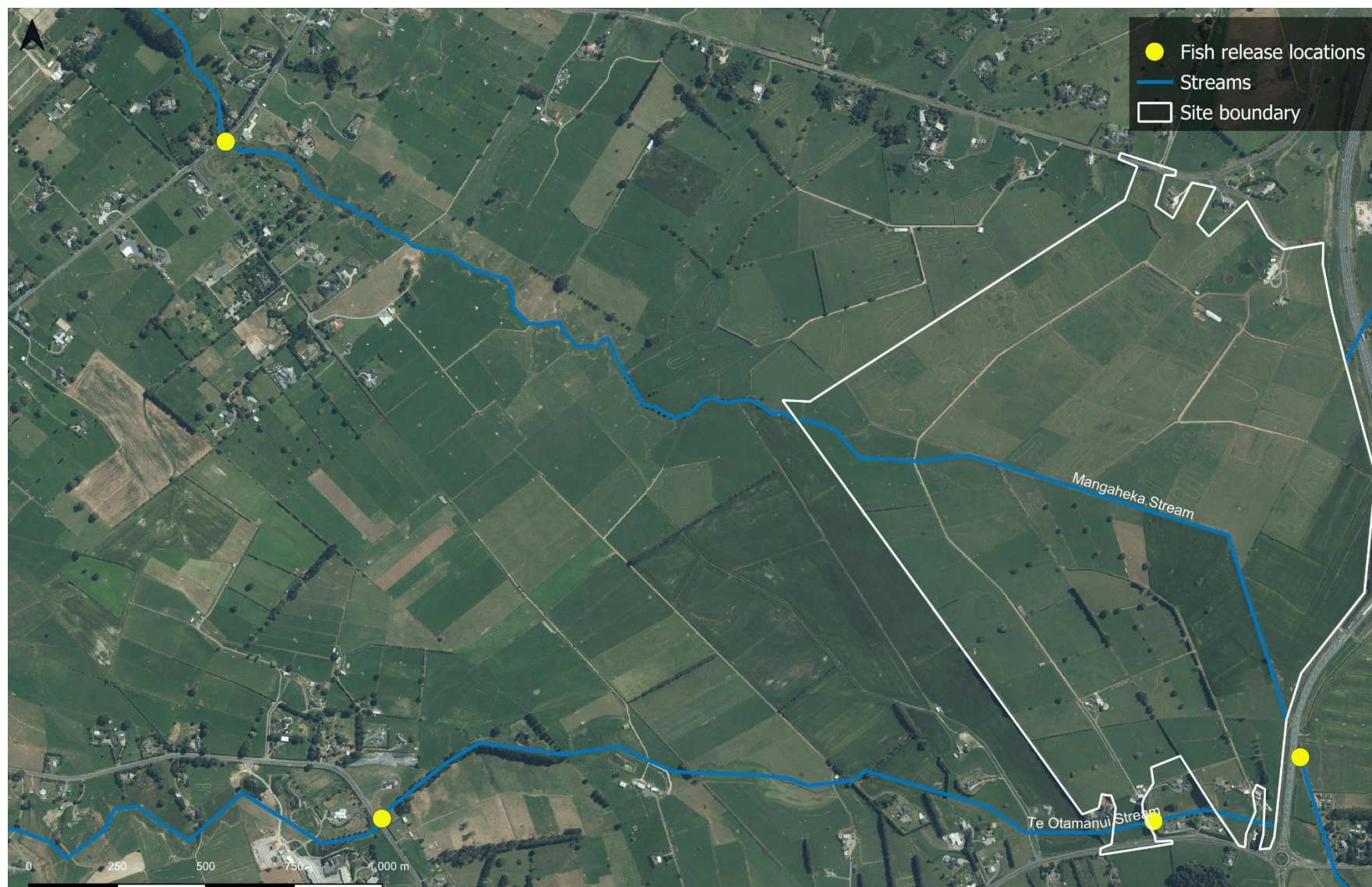


Figure 2: Fish release locations.

8.0 References

- Dunn, N.R., Allibone, R.M., Closs, G.P., Crow, S.K., David, B.O., Goodman, J.M., Griffiths, M., Jack, D.C., Ling, N., Waters, J.M., Rolfe, J.R. 2025. Conservation status of New Zealand freshwater fishes, 2017. New Zealand Threat Classification Series 24. Department of Conservation, Wellington. 11
- Ecological Solutions, 2026a. Black Mudfish Habitat Creation Plan. Report to Te Kowhai East Limited Partnership.
- Ecological Solutions, 2026b. Ecological Impact Assessment. Te Kowhai East - Industrial Development Report to Te Kowhai East Limited Partnership.
- Ecological Solutions, 2026c. Mangaheka Stream Enhancement Plan. Te Kowhai East - Industrial Development Report to Te Kowhai East Limited Partnership.
- Maven Associates. 2026a. Stream Works Management Plan. Te Kowhai East Limited Partnership. Prepared for Fast Track Approvals Act 2024 Consent Application.
- Maven Associates. 2026b. Earthworks Management Plan. Te Kowhai East Limited Partnership. Prepared for Fast Track Approvals Act 2024 Consent Application.
- Maven Associates. 2026c. Construction Management Plan. Te Kowhai East Limited Partnership. Prepared for Fast Track Approvals Act 2024 Consent Application.