

TO: Sabys 101 Limited

Date: 10 February 2026

COPY TO: Ian Thompson (DMR), Kerstin Ghisel (Barker & Assoc) Job No: 68902

FROM: Laura Drummond

CANDYS ROAD FAST TRACK REFERRAL – ECOLOGICAL CONSTRAINTS

Introduction

Bioresearches were engaged by Barker & Associates (B&A), on behalf of their client, Sabys 101 Limited, to undertake a high level ecological constraints assessment to support their Fast Track referral application for an urban development in Halswell.

The site consists of two properties:

- 101 Sabys Road; within the Christchurch District and is formed by two blocks with Candys Road separating the property. The northern Block is zoned Urban – Residential New Neighbourhood, whilst the southern block is zoned Rural (Urban Fringe)
- 6 Wroots Road, located within the Selwyn District and zoned Rural.



Figure 1. Map of the site, showing Christchurch District (yellow polygon) with dashed lined denoting urban zoning and Selwyn District (pink polygon).

This memorandum details the ecological features identified within the site, and the results of a desktop review of ecological features within the wider area.



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Methodology

A desktop review of various online GIS databases was undertaken to determine the extent of ecological protection overlays (e.g. covenants, conservation land, areas of Significant Natural Value/Area, ecosystem types, and to visualise historical land-use using via historic aerial images. The desktop review also included a search for fauna records from various information sources. Specifically, the following databases were reviewed:

- Department of Conservation Bioweb records for herpetofauna and bats;
- iNaturalist records for herpetofauna and avifauna within a 10 km radius from the site;
- New Zealand Bird Atlas eBird database. Bird data is recoded in a 10 km² grid square. CY48 grid square was accessed as this is positioned over the site;
- NIWA's New Zealand Freshwater Fish Database records were accessed for in-site and adjacent stream reaches;
- Canterbury Maps Viewer; and
- Retrolens historic aerial imagery and Canterbury Maps Viewer Historic Aerial Imagery;

A site assessment was undertaken by an experienced ecologist on the 18th December, 2025. During the site assessment, the presence and extent of ecological features such as vegetation types, waterways and rivers, potential springs and seeps, potential wetlands and fauna habitat were noted. No formal fauna surveys were undertaken, however opportunistic observations of species seen or heard were noted.

The waterways were assessed via a desktop review and site assessment. The desktop review noted factors such as changes in land use, vegetation and surface water on current and historical aerial images, and a review of data such as ECan River Network, High Naturalness layers, Water Quality Management Units on Canterbury Maps.

During the site assessment, the waterways and potential wetlands were classified, their presence and extent was noted and reference photographs taken. Stream habitats were marked using a handheld GPS unit. The waterways were classified under the Canterbury Land Water Regional Plan (LWRP), Christchurch District Plan (C-DC) and Selwyn District Plan, as to their ephemeral, perennial or artificial classification.

In additional, these waterways within the Site were mapped in accordance with their waterbody type, as per the C-DP and Selwyn District (Rural Zoning), to determine the appropriate riparian setback, as illustrated in Table 1.

Table 1. Riparian yard setbacks per their waterbody classification relevant to the Project Area

Waterbody Name	Waterbody Classification	Relevant Waterbody Setback Width
Halswell River	Downstream waterway	20 m (Selwyn District)
Nottingham Stream	Upstream waterway	10 m (urban zoned portion), 20 m (rural zoned portion)
Knights Stream	Upstream waterway	20 m
Coakley Drain	Network waterway	5 m
Creamery Drain	Network waterway	5 m

The quality of the aquatic habitat was assessed, noting ecological aspects such as channel modification, hydrological heterogeneity, riparian vegetation extent, substrate type and any fish or macroinvertebrate habitat observed. Riparian and catchment information was also reviewed. Areas of indigenous and exotic

vegetation within the project area were traversed, and their ecological features described using standard non-plot methods. The extent of each habitat type was mapped using a combination of walkover data, observations from vantage points, and observations from current and historic aerial imagery for the least accessible areas.

Historic Ecology

Historically (pre-human), the site would have likely supported podocarp forest¹, which transitioned to herbaceous ferns and grasses following European arrival. The site was further cleared prior to the 1940's, with historic aerial imagery showing the site to be utilised for agricultural uses. The upper flow path of Creamery Drain is visible within aerial images up to 1961, which was subsequently reclaimed or diverted around the 1990s, and now forms the Creamy Wetlands. Vegetation within the site during the 1900's to present day has remained as predominantly pasture grasses, with shelter belts providing the only available woody vegetation. Aside from the removal of some of these shelter belts, largely within the southern portion of the site, vegetation cover has remained consistently sparse to current day.

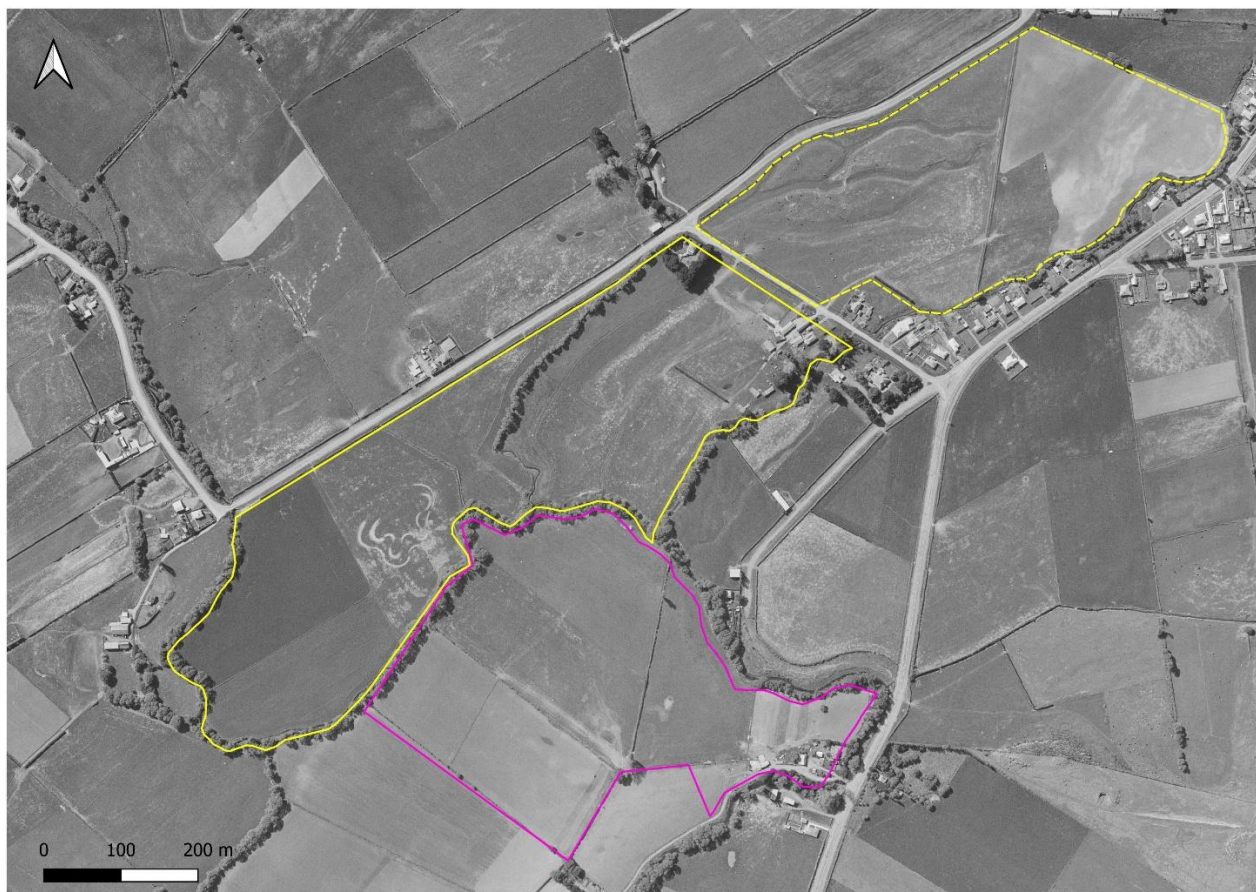


Figure 2. Historic aerial image from 1961. Image sourced from Retrolens

¹ Manaaki Whenua Landcare Research. Our Environment Potential Natural Vegetation

Current Ecology

The current ecological features, streams and various riparian setbacks are illustrated in Figure 3.

Vegetation

The majority of the site consists of exotic pasture grasses which are actively being used for stock (horse) grazing. Pasture grasses included a mix of cocksfoot (*Dactylis glomerata*), browntop (*Agrostis capillaris*), rye (*Lolium perenne*), white clover (*Trifolium repens*), brome (*Bromus catharticus*), with pasture height reaching over 1 m in some places. This dominant vegetation type was consistent throughout the entirety of the site, with variations in pasture height dependant on whether the paddock contained livestock.

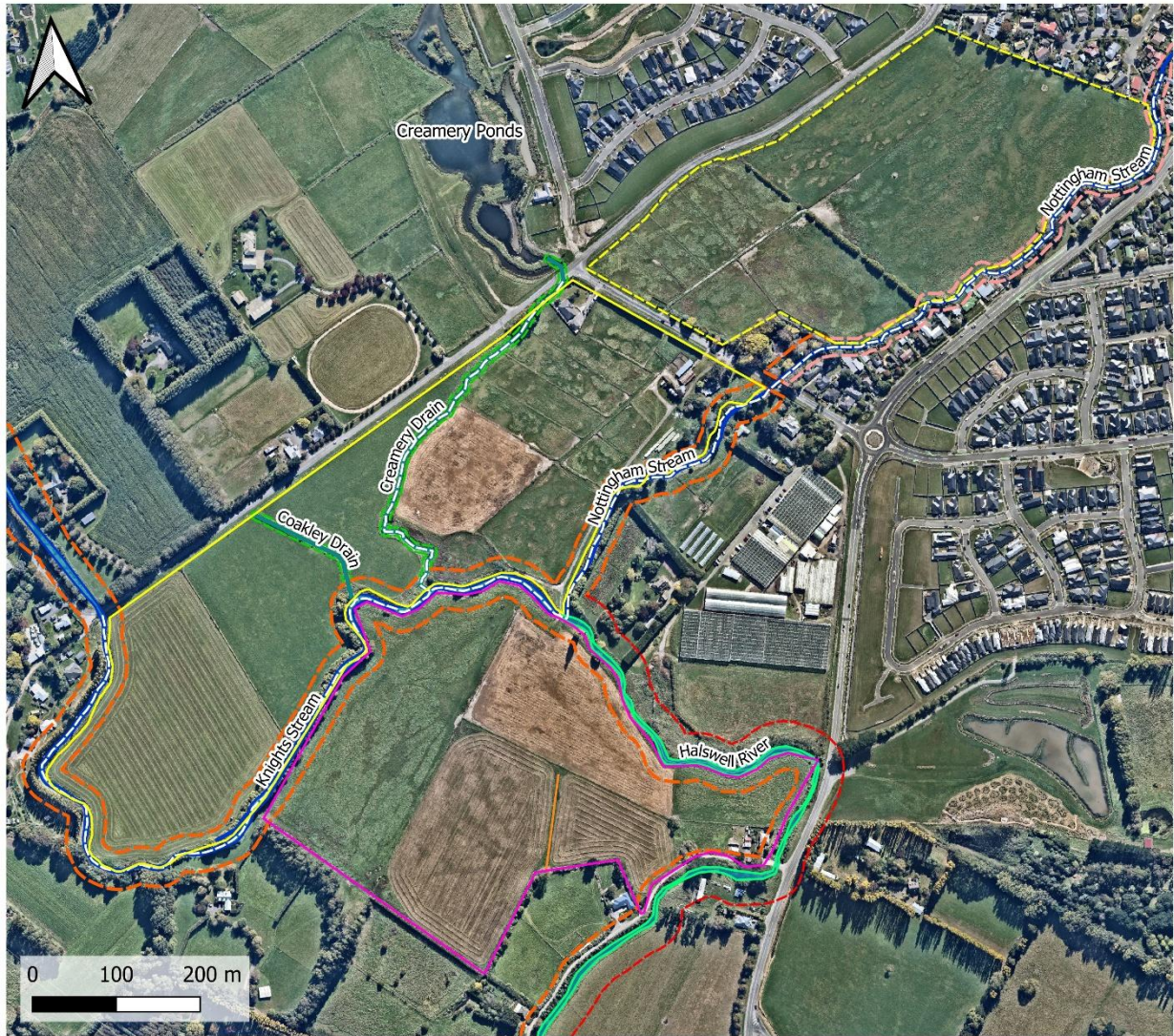


Photo 1 & Photo 2. Variations in rough pasture length throughout the site.



Photo 3 – Photo 4. Variations in rough pasture length throughout the site.

Woody vegetation is primarily restricted to shelter belts and riparian margins, of which the vegetation contained mixed exotic and limited native vegetation. The shelterbelts are predominantly exotic, comprising mostly macrocarpa (*Cupressus macrocarpa*) with some occasional poplar present. Woody vegetation within the riparian margins includes mature macrocarpa, crack willow (*Salix fragilis*), poplar (*Populus* sp.), elder (*Sambucus nigra*), with native vegetation limited to poroporo (*Solanum laciniatum*) and cabbage tree (*Cordyline australis*). The understory within the riparian yards is exotic, with pasture grasses, dock, wild carrot, and ivy (*Hedera helix*) overgrowing much of this vegetation.



NOTES
Aerial Images from Nearmaps (2025).

DISCLAIMER:
This map/plan is not an engineering draft.
This map/plan is illustrative only and all information
should be independently verified on site before
taking any action.

Legend

Site of Ecological Significance

- Downstream waterway
- Upstream waterway
- Network waterway
- Upstream Waterway
- Artificial Watercourse
- 30 m setback
- 20 m setback
- 10 m setback
- 5 m setback

Site boundary

- Christchurch City Council
- Selwyn District Council

White Dashed lined denotes Schedule B
Ecological Sites under the CC-DP

Map Title

Candys Road Fast Track

Identified Ecological Features

Note: Coakley Drain is an artificial watercourse,
however identified as a Network Waterway under
the Christchurch City Council District Plan

Date **Drawn by**

20/01/2026 Initial version by L.D

Figure 3. Existing ecological features identified within the site



Photo 5 & Photo 6. Typical riparian vegetation.



Photo 7. Exotic shelterbelt in the background



Photo 8. Mature macrocarpa with English ivy.

Terrestrial fauna

Avifauna

Opportunistic avifauna surveys were undertaken during the site walkover and recorded paradise shelduck (*Tadorna variegata*), pukeko (*Porphyrio melanotus*), harrier hawk (*Circus approximans*), welcome swallow (*Hirundo neoxena*), and fantail (*Rhipidura fuliginosa*) present within the site. A review of online databases indicates a wider array of native avifauna species to be present within 10 km of the site. Avifauna, with non-native species and those entirely reliant on marine ecosystems removed, are presented as Table 2, including their threat status and an assessment of likely presence within the site.

Table 2. Native avifauna recorded within close proximity to the site, eBird grid square CY48 and within a 10 km radius (iNaturalist)

Scientific name	Common Name	Threat status	Likely presence within the site?
<i>Anas gracilis</i>	Grey teal	Not Threatened	✗
<i>Anthornis melanura</i>	Bellbird	Not Threatened	✓
<i>Anthus novaeseelandiae</i>	Pipit	At Risk – Naturally Uncommon	✓
<i>Ardea alba</i>	White heron	Threatened – Nationally Critical	✗



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<i>Aythya novaeseelandiae</i>	New Zealand Scaup	Not Threatened	✖
<i>Botaurus poeciloptilus</i>	Bittern	Threatened – Nationally Critical	✖
<i>Chalcites lucidus</i>	Shining bronze cuckoo	Not Threatened	✓
<i>Chroicephalus bulleri</i>	Black-billed gull	At Risk - Declining	Intermittently
<i>Chroicocephalus</i>	Red-billed gull	At Risk - Declining	Intermittently
<i>Circus approximans</i>	Harrier hawk	Not Threatened	✓
<i>Cygnus atratus</i>	Black swan	Not Threatened	✖
<i>Egretta novaehollandiae</i>	White faced heron	Not Threatened	Intermittently
<i>Falco novaeseelandiae</i>	New Zealand Falcon	At Risk - Recovering	✖
<i>Greygona igata</i>	Grey warbler	Not Threatened	✓
<i>Haematopus finschi</i>	South Island Pied Oystercatcher	At Risk – Declining	✓
<i>Hemiphaga novaeseelandiae</i>	Kererū	Not Threatened	✖
<i>Himantopus leucocephalus</i>	Pied stilt	Not Threatened	Intermittently
<i>Hirundo neoxena</i>	Welcome swallow	Not Threatened	✓
<i>Larus dominicanus</i>	Black-backed gull	Not Threatened	Intermittently
<i>Microcarbo melanoleucos</i>	Little shag	At Risk - Relict	✖
<i>Petroica macrocephala</i>	Tomtit	Not Threatened	✖
<i>Phalacrocorax carbo</i>	Black shag	At Risk - Relict	✖
<i>Phalacrocorax varius</i>	Pied shag	At Risk - Recovering	✖
<i>Platylaea regia</i>	Royal spoonbill	At Risk – Naturally Uncommon	✖
<i>Porphyrio melanotus</i>	Pukeko	Not Threatened	✓
<i>Rhipidura fuliginosa</i>	Fantail	Not Threatened	✓
<i>Spatula rhynchotis</i>	Australasian shoveler	Not Threatened	✖
<i>Tadorna variegata</i>	Paradise shelduck	Not Threatened	✓
<i>Todiramphs sanctus</i>	King fisher	Not Threatened	✓
<i>Vanellus miles</i>	Spur-winged plover	Not Threatened	✓
<i>Zosterops lateralis</i>	Waxeye	Not Threatened	✓

A variety of indigenous bird species, including those with Threatened – At Risk conservation status may use the site on at least an intermittent basis. Whilst the site is predominantly pastoral, pipit (*Anthus novaeseelandiae*) and oystercatchers (*Haematopus* sp.), have been known to breed on farmland, with gulls and species intermittently using farmland to rest and potentially feed on an opportunistic basis. It is anticipated that appropriate management (such as nest checks) can readily avoid adverse impacts to indigenous avifauna.

Herpetofauna

A skink survey has been previously undertaken within 101 Sabys Road, within the urban zoned portion of the property. Whilst potential habitat was identified along the hedgerows and shelter belts of the property, no lizards were detected in pitfall traps or tracking tunnels. A high number of cats were observed within the site² and their ongoing presence within such a highly modified environment may limit the survival of indigenous skinks, and reduce the lizard habitat potential within the site.

A search of the Department of Conservation Bioweb and iNaturalist records for herpetofauna and bats show southern grass skink (*Oligosoma add. polychroma* Clade 5; At Risk - Declining), and McCanns skink (*Oligosoma maccanni*; Not Threatened) to be recorded in the local landscape. These records include relatively high densities of indigenous skinks, as encountered during a previous salvage/survey at the

² Wildlands(2022).Lizard Habitat Assessment andSurvey – 101 Sabys Road, Halswell.



Creamery Ponds, within 100 m of the site boundary. Whilst the groundcover onsite has been greatly reduced, suitable habitat for these species, which includes an At-Risk species, is expected to be present within the riparian margins, dense grasses, shelter belts and structures of the rural zoned portions of the property. A survey should be undertaken within the rural zone portions of the site to confirm their occurrence and potentially inform management, where appropriate.

Bats

Whilst no bat detections are present within a 10 km radius from the site, this may be attributed to an overall lack of survey effort. Mature trees may provide roost habitat for longtail bats (*Chalinolobus tuberculatus*), with potential foraging over the rivers. Whilst no bats have been detected within the adjacent area, there is an overall lack of survey effort, with the closest survey being 7 km east in the Port Hills, and 17 km south along Lake Ellesmere and over 10 years old. Given the potential habitat present (large, mature trees, waterways and riparian margins) the presence of bats for commuting, foraging, roosting or breeding cannot be entirely excluded and a precautionary survey for bats given their 'Nationally Critical' threat status is recommended to determine appropriate management options if bats are present.

Waterways

Within the site, three natural waterways and two artificial waterways area present. No recent reclamation or removal of waterways has occurred in the previous 80 years, however, there has been some stream modification. The waterways flow into the Halswell River, with the upper reaches of the Halswell River present within the site. This river flows for a further 30 km before entering the marine environment at Lake Ellesmere.

A desktop review of the New Zealand Freshwater Fish Database within the site, and surrounding area, shows a diverse range of species to be present in the local catchment (Table 3).

Table 3. Fish species records from the New Zealand Freshwater Fish Database from within the site and surrounding catchments.

Scientific name	Common Name	Threat Classification	Recorded within the site?
<i>Anguilla australis</i>	Shortfin eel	Not Threatened	✓
<i>Anguilla dieffenbachii</i>	Longfin eel	At Risk - Declining	✓
<i>Echydella manziesii</i>	Kākahi	At Risk - Declining	✗
<i>Galaxias maculatus</i>	Inanga	Threatened – Nationally Vulnerable	✓
<i>Geotira australis</i>	Lamprey	Threatened – Nationally Vulnerable	✗
<i>Gobiomorphus breviceps</i>	Upland bully	At Risk - Declining	✓
<i>Gobiomorphus cotidianus</i>	Common bully	Not Threatened	✓
<i>Gobiomorphus gobiodes</i>	Giant bully	At Risk - Declining	✗
<i>Gobiomorphus hubbsi</i>	Bluegill bully	At Risk - Declining	✗
<i>Oerca fluviatilis</i>	Perch	Introduced and naturalised	✗
<i>Paranephrops zealandicus</i>	Kōura	At Risk - Declining	✗
<i>Salmo trutta</i>	Brown trout	Introduced and naturalised	✓
<i>Scardinius erythrophthalmus</i>	Rudd	Introduced and naturalised	✗

Nottingham Stream

The Nottingham Stream is a spring-fed plains, 'Upstream Waterway' which flows along the eastern boundary of the site, with the upper 640 m of the reach falling within 'Urban' zoning, and the lower 375 m flowing through 'Rural' zoning. The corresponding riparian yard setbacks per zoning rules are illustrated in Figure 3. Nottingham Stream is identified as a Schedule B Ecological Site³ (ES; SES/LP/29) under the C-DP⁴.

Nottingham Stream is a perennial waterway with an average width of 1.5 m, and an average summer water depth of approximately 0.4 m. Nottingham Stream retains some natural characteristics such as meanders and variation in bank width, however the banks are incised, minimising the connectivity to the floodplain. The stream was predominantly soft bottomed, with hard substrates limited, however, the exotic, evergreen riparian yard on the true left bank provided a good proportion of organic matter, with bankside macrophytes and overhanging vegetation present. Observable hydrological heterogeneity was overall low, consisting of runs and pools, and no undercut banks actively observed. It is likely those fish species previously identified as being present within the site (Table 3) would remain present, with inanga likely to inhabit this stream reach due to suitable habitat features.



Photo 9. Soft bottom substrate and woody debris.



Photo 10. Bankside macrophytes and overhanging vegetation.

Knights Stream and Halswell River

The Knights Stream, a spring-fed plains waterway 'Upstream Waterway', enters the site on the western boundary underneath Sabys Road, and flows for 1.14 km before forming the upper reaches of the Halswell River at a confluence with Nottingham Stream, where it transitions to a Downstream Waterway. The corresponding riparian yard setbacks as per the zoning rules are illustrated in Figure 3, noting the Halswell River separates the Christchurch District (true left bank) and Selwyn district (true right bank). Knights Stream is considered a Schedule B ES (SES/LP/29) under the C-DP.

The Knights Stream and upper Halswell River form a wide (>3 m on average) and deep waterway which contains a mix of soft and hard substrates with silts, pebbles and gravels, however no larger structures such as cobbles or boulders were observed. Hydrological heterogeneity was low, with the waterways

³ Ecological Sites identified under Schedule B are for information purposes only and are not subject to rules relating to Sites of Ecological Significance.

⁴ Christchurch City Council District Plan Appendix 9.1.6.1.

consisting of run and pool habitat. Springs have been identified on the banks and bed of the Halswell River in Canterbury Maps. At the time of assessment, the waterways had tannin/green stained water, however clarity visually appeared to be high. Periphyton and macrophytes growing within the reaches included monkey musk (*Erythranthe guttata*), watercress (*Nasturtium officinale*) and oxygen weed (*Lagarosiphon major*). The riparian margin for Knights Stream included woody vegetation, mainly willow, on the true left bank, whilst the true right bank was largely restricted to rank pasture grasses and the occasional tree. Woody vegetation within the riparian margin where the waterway transitioned to the Halswell River is significantly reduced, with the majority of the margin consisting of rank pasture grasses and rare exotic trees, namely poplar.

In addition to those fish species previously recorded within the site (Table 3), it is likely īnanga, lamprey, and brown trout would be present within the stream due to their detections in the upper reaches. Giant bully may be present within the reaches due to their presence in adjacent reaches with similar altitudes, however bluegill bully is unlikely to be present due to the lack of appropriate habitat features (i.e. fast riffles).

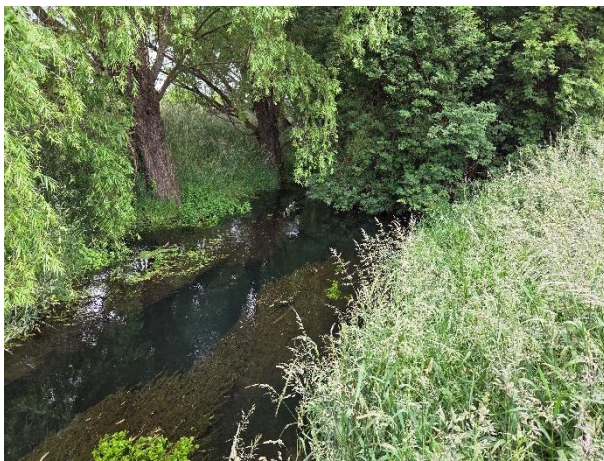


Photo 11. Willow riparian vegetation along Knights Stream



Photo 12. Monkey musk and water cress within Knights Stream



Photo 13. Halswell River was wide and deep.



Photo 14. Occasional woody vegetation within the riparian margin of the Halswell River.

Coakley Drain

Coakley Drain is an artificial watercourse, classified as a 'Network Waterway', on the western portion of the site. The drain originates at Sabys Road and flows in a south-eastern direction for 170 m before

forming a confluence with Knights Stream. Coakley Drain is a straight drain with the bed and banks equal in regards to width, bank height and base gradient. At the time of assessment, Coakley Drain was dry and contained no standing pools or boggy ground, indicating no flows had occurred for some time.



Photo 15. Coakley Drain looking south-east.



**Photo 16. Coakley Drain looking north-west.
Noting rough grass provides good skink habitat**

Creamery Drain

Whilst this waterway is classified as a 'Network Waterway', the stream contains natural stream features, including meanders, and a sinuous flow path which is alignment with historic upslope flow paths visible in Figure 2. Creamery Drain is considered a Schedule B ES (SES/LP/38⁵) under the C-DP, due to its connectivity with the Creamery Ponds.

Creamery Drain was narrower than Knights Stream and Halswell River, however habitat features were similar, with the waterway containing run and pool habitat with overhanging and bankside vegetation. The degree of macrophytes and periphyton within the Creamery Drain was lower than the other waterways, and may be attributes to the shade provided by the banks and upper catchment wetland filtering out a good portion of nutrients. The true left bank contained a narrow bank of woody vegetation, however the true right bank consisted of rank pasture grasses.

In addition to those fish species previously recorded within the site (Table 3), it is likely inanga, lamprey, and brown trout would be present within the stream due to their detections in the upper reaches. Giant bully may be present within the reaches due to their presence in adjacent reaches with similar altitudes, however bluegill bully is unlikely to be present due to the lack of appropriate habitat features (i.e. fast riffles).

⁵ Christchurch City Council District Plan Appendix 9.1.6.1.



Photo 17. Creamery Drain looking upstream



Photo 18. Bankside vegetation within Creamery Drain

Artificial Drain

An artificial drain is present within 6 Wroots Road, with the Selwyn District zoned area, and flows through a linear channel in a north-east to south-west direction, before joining an artificial drain along the southern boundary. The channel was consistent in terms of width (approximately 1 m) and depth, with the alignment within the wider landscape unnatural. Historic aerial images show this artificial drain was a shelter belt, established prior to 1941, and subsequently removed around the 1960's. It is likely the removal of shelterbelt trees, presumably macrocarpa or pine, resulted in the creation of hollows which was subsequently deepened below the water table to provide for drainage. The artificial channel contained water at the time of assessment, however no flows were present or very slow. The drain is soft bottomed with wetted pasture and macrophytes, monkey musk, creeping bent (*Agrostis stolonifera*) and Yorkshire fog (*Holcus lanatus*), covering the bed. These pasture grasses and macrophytes are not considered to form a natural inland wetland as they have established within a purposefully constructed waterbody since its creation.



Photo 19. Mid-section of the drain looking north-east



Photo 20. Mid-section of the drain looking south-west

Constraints Assessment and Anticipated Adverse Effects

Within the site, multiple waterways, including network waterways, upstream waterways and downstream waterways are present within the site, which is subsequently split between rural and urban zoning. Two artificial waterways are present within the southern block of the site. No natural inland wetlands are present within the site.

Assuming no stream/river reclamation is proposed, the anticipated adverse effects on freshwater habitats would be the potential for obstruction of fish passage if culverts to provide access are required, potential for sedimentation during earthworks from the discharge of construction phase stormwater and dewatered water and dewatering effects. These potential adverse effects are not expected to be significant and could be effectively managed with design, minimisation and mitigation measures.

The ecological value of the indigenous vegetation throughout the site is overall low with the majority of the vegetation consisting of exotic plants. However, the riparian margins and rank pasture grasses may provide habitat for indigenous herpetofauna and bats, with the removal and subsequent earthworks potentially disturbing or harming indigenous fauna, if present. The total loss of indigenous fauna habitat is expected to be low, and potential adverse effects to avifauna, lizards and bats could be effectively managed through minimisation and mitigation measures.

Statutory obligations require management of populations of protected species where they or their habitats are threatened by land use changes. It is anticipated that the only indigenous species that are present and may require Wildlife Act Authority will be native lizards. Native reptiles are legally protected under the Wildlife Act 1953 (and subsequent amendments), and vegetation and other features that provide habitat for these species are recognised by the Resource Management Act 1991. Bioresearches currently has a valid Wildlife Act Authority to carry out the survey of lizards, however a salvage and relocation Wildlife Authority will need to be sought if required.



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Legend

- Downstream waterway
- Upstream waterway
- Network waterway
- Upstream Waterway
- Artificial Watercourse
- 30 m setback
- 20 m setback
- 10 m setback
- 5 m setback

Site boundary

- Christchurch City Council
- Selwyn District Council

White Dashed lined denotes Site of
Ecological Significance

Map Title

Candys Road Fast Track

Identified Ecological Features

Note: Coakley Drain is an artificial watercourse,
however identified as a Network Waterway under
the Christchurch City Council District Plan

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20/01/2026	Initial version by L.D