

**BEFORE THE HEARINGS PANEL APPOINTED BY  
CANTERBURY REGIONAL COUNCIL**

**UNDER** the Resource Management Act 1991 (RMA)

**AND**

**IN THE MATTER** of an application by Canterbury Regional Council

for resource consent to discharge agrichemicals to rivers and their connected waterbodies, air and the coastal marine area, and the clearance of vegetation, for the purposes of weed management to provide flood, erosion, drainage and river enhancement works.

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**CLOSING SUBMISSIONS  
FOR THE CANTERBURY REGIONAL COUNCIL (APPLICANT)**

**15 April 2024**

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## Introduction

1. These closing submissions support applications for resource consent by the Canterbury Regional Council ('the Applicant' or 'the Council') associated with its consent applications to discharge agrichemicals to spray vegetation in and adjacent to rivers and drains in the Canterbury region.
2. The Panel heard from the applicant, submitters and the s.42A officers at the hearing on 25-27 March. Following the hearing, the Panel issued Minute 2 on 2 April seeking an updated set of consent conditions and further information on four additional points.
3. Ms Beattie, the s.42A officer, and Ms Irvine, planner for the applicant, have worked constructively to obtain a high level of agreement on consent conditions, which are provided as Attachment 1. Notably, there is agreement on the process for adding new agrichemicals which was a key area of contention prior to the hearing. The only areas of remaining disagreement relate to the inclusion of conditions requiring macroinvertebrate and groundwater investigations.
4. The four additional points in the Panel's Minute 2 are addressed by Ms Irvine in an addendum to her evidence. This is provided as Attachment 2.
5. This right-of-reply provides the following:
  - 5.1. A summary of the information presented at the hearing;
  - 5.2. An overview of the key amendments to the consent conditions included in Attachment 1;
  - 5.3. The Council's position on whether the Panel can issue consents for vegetation clearance under sections 9 and 13 of the Resource Management Act (RMA); and
  - 5.4. A discussion on the relevance of the recent High Court decision regarding the application of s.107 of the RMA.<sup>1</sup>

## A summary of the information presented at the hearing

6. The information presented at the hearing can be summarised as follows:
  - 6.1. The Council has a statutory responsibility to ensure people, property and land are kept safe from floods, and the clearance of vegetation is a critical component of this. The use of agrichemical sprays is an essential method used to clear vegetation, although the Council continues to actively explore alternatives to the use of agrichemicals.
  - 6.2. There are risks associated with agrichemical spraying however these can, to a large extent, be avoided, remedied or mitigated through the use of best practice in the planning and execution of spray operations. The conditions proposed commit

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<sup>1</sup> Environmental Law Initiative v Canterbury Regional Council [2024] NZHC 612 [20 March 2024]

the Council to the continued use of best practices in the planning, operation and monitoring of the discharge of agrichemicals.

- 6.3. The application seeks to use glyphosate and triclopyr, with a robust process proposed to provide for the addition of new agrichemicals that have been approved by the Environmental Protection Authority.
- 6.4. There are areas of significant ecological value within the proposed receiving environment. Knowledge of these values and careful planning and operation is essential to avoid a loss of values in these areas. These values are also being affected by weed encroachment which can be reduced through the use of agrichemicals.
- 6.5. Some of the discussion at the hearing focused on areas that can be sprayed as a permitted activity under the Land and Water Regional Plan (LWRP), for example bat roost trees. The Council is accepting of most consent conditions proposed by the s.42A officers that are best practice for activities that would be permitted.
- 6.6. The Council has engaged with iwi and interested groups to develop the proposed mitigation, and the proposed consent conditions require continued engagement at all stages of spray planning and operation, as well as public notices for helicopter spray operations.
- 6.7. A consent duration of 20 years was justified based on the high costs of applying for replacement applications, the adaptive management approach to consent conditions, the demonstrated commitment to applying best practice, and the value of investment in infrastructure.
- 6.8. Overall, the effects of the discharge of agrichemicals will be minor at most and largely temporary, with the effects being appropriately managed and/or mitigated through the proposed consent conditions.

### **Recommended amendments to consent conditions**

7. An updated set of recommended conditions are provided in Attachment 1, following discussions at and following the hearing between Ms Irvine and Ms Beattie. Agreement has been reached on all consent conditions except for those that require macroinvertebrate and groundwater quality investigations. The key changes from the condition sets discussed that were presented at the hearing relate to:
  - 7.1. An updated definition of Riverine Environments, which is further discussed in Ms Irvine's addendum provided as Attachment 2;
  - 7.2. Strengthened criteria within condition (4) to increase certainty in assessing 'new' agrichemicals as being suitable to be added to Schedule 1;
  - 7.3. The annual spray program conditions (proposed and completed) are merged to a single report;

- 7.4. Inclusion of the Handbook for Spraying as a consent condition;
- 7.5. Removal of the notification requirements (Table 2 in Ms Irvine's substantive evidence) within Schedule 2, as those parties would be notified at least 10 days prior to any spray operations in accordance with condition 13;
- 7.6. Simplification of the condition addressing emergent macrophytes;
- 7.7. An updated bird survey condition, including attachments and exemption criteria;
- 7.8. Minor changes to water quality sampling conditions, including a return to the 12-72 hours post-spray sampling (Condition 32(c));
- 7.9. Inclusion of a new condition requiring dissolved oxygen recording, with the 70% saturation threshold carried over from expired consent CRC041535;
- 7.10. Updates to conditions X1 and X2 requiring investigations of macroinvertebrates and groundwater quality respectfully. For the same reasons outline in Ms Irvine's substantive evidence, these conditions do not form part of her recommended condition set but are drafted if the decision makers are of the opinion these conditions are required;
- 7.11. Added details to Schedule 1;
- 7.12. A reordering of the criteria in Schedule 2 and updates to 'who can approve', mostly referring to a 'suitably qualified scientist' rather than 'ECan science'. In Groundwater related criteria have also been adjusted based on advice from Dr Scott. The justification for the setbacks is included in Ms Irvine addendum provided as Attachment 2;
- 7.13. The addition of Schedule 3 that includes the bird survey procedure and report template, as recommended by Dr Jack.

### **Can consents be issued under s.9 and s.13 of the RMA?**

- 8. Land use consents under s.9 and s.13 of the RMA are required under the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-F) for the clearance of vegetation within wetlands, and within 10 metres of wetlands. At the time of lodgement, the Council did not apply for land use consents and applications under the NES-F have not subsequently been made. This was addressed in the Supplementary Statement of Ms Irvine.
- 9. The Council considers that the Panel cannot issue consents under s.9 and s.13 of the RMA as they have not been sought. The Panel therefore has no delegation to consider such applications. The Council's intent is to rectify this situation through applying for the NES-F applications immediately following any grant of these discharge permits. The current applications seek discharge permits to discharge agrichemicals within wetlands, and within 10 metres of wetlands. The Panel is able to issue consents under s.15 to authorise the discharge of agrichemicals within and adjacent to wetlands under the

relevant regional plans. There are no regulations within Part 3 of the NES-F that preclude such discharge consents being issued.

10. In her summary statement at hearing, Ms Beattie proposed the following additional condition<sup>2</sup>:

*“There must be no discharge of agrichemicals within, or within 10 metres of, a natural inland wetland that results in vegetation clearance unless:*

- a. the discharge and resulting vegetation clearance are for the purposes of the maintenance and operation of specified infrastructure and other infrastructure, or biosecurity; and*
- b. the consent holder can demonstrate the discharge and vegetation clearance can comply with all the permitted conditions in the relevant regulations of the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (or any successor legislation).”*

11. Following discussions between Ms Beattie and Ms Irvine, this condition is no longer recommended in the proposed conditions in Attachment 1. The Council intends to apply for a land use consent under the NES-F should the current applications be granted. Until such time that a consent is issued, any application of agrichemicals that is not permitted by the NES-F would be unlawful. Such a condition is unnecessary and, as drafted, would restrict the Council to applying agrichemicals only in situations where the conditions of the permitted activity regulation can be met. The condition would prevent the Council from applying agrichemicals to such areas where consent is required under the NES-F, even if such a consent was obtained.

## Considering s.107 of the RMA

12. The High Court’s decision in *Environmental Law Initiative v Canterbury Regional Council* relates to the decision of the Canterbury Regional Council to grant a discharge permit to Ashburton Lyndhurst Irrigation Limited (ALIL) to discharge nutrients onto or into land where they may enter water from farming activities. The Environmental Law Initiative (ELI) applied for judicial review on three points, of which the application of s.107 of the RMA is of relevance here. Section 107 of the RMA states:

### **107 Restriction on grant of certain discharge permits**

- (1) *Except as provided in subsection (2), a consent authority shall not grant a discharge permit or a coastal permit to do something that would otherwise contravene section 15 or section 15A allowing—*
- (a) the discharge of a contaminant or water into water; or*
  - (b) a discharge of a contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or*
  - (ba) the dumping in the coastal marine area from any ship, aircraft, or offshore installation of any waste or other matter that is a contaminant,—*

<sup>2</sup> Summary Statement of Ms Rebecca Beattie, 26 March 2024, paragraph 20

*if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:*

- (c) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:*
  - (d) any conspicuous change in the colour or visual clarity:*
  - (e) any emission of objectionable odour:*
  - (f) the rendering of fresh water unsuitable for consumption by farm animals:*
  - (g) any significant adverse effects on aquatic life.*
- (2) A consent authority may grant a discharge permit or a coastal permit to do something that would otherwise contravene section 15 or section 15A that may allow any of the effects described in subsection (1) if it is satisfied—*
- (a) that exceptional circumstances justify the granting of the permit; or*
  - (b) that the discharge is of a temporary nature; or*
  - (c) that the discharge is associated with necessary maintenance work—*  
*and that it is consistent with the purpose of this Act to do so.*
- (3) In addition to any other conditions imposed under this Act, a discharge permit or coastal permit may include conditions requiring the holder of the permit to undertake such works in such stages throughout the term of the permit as will ensure that upon the expiry of the permit the holder can meet the requirements of subsection (1) and of any relevant regional rules.*

13. This High Court decision is still within its appeal period, however the Council is confident that it has applied s.107 in a way that is consistent with the decision. The current application is distinguishable from that of ALIL in a number of ways:

13.1. The residual effects, after application of the mitigations included in the proposed consent conditions and after reasonable mixing, are considered to be no more than minor and will not give rise to any of the effects listed in s.107(1)(a)-(g).

13.2. That said, if the Panel were to consider that the matters listed in s.107(1) would be breached, it still has discretion to grant consent by way of the exemptions provided for in s.107(2). Specifically:

13.2.1. “the discharge is of a temporary nature” (s.107(2)(b)), with each site-specific application of agrichemicals occurring within a day and mostly no more than annually (occasionally small watercourses within the drainage network require a second application in some years); and

13.2.2. “the discharge is associated with necessary maintenance work” (s.107(2)(c)), with the discharge of agrichemicals necessary to maintain flood protection structures, open fairways and drains, which is part of the Council’s statutory functions; and

13.2.3. The discharge of agrichemicals for flood protection and biodiversity enhancement is consistent with the sustainable management purpose of the RMA (s.107(2)). Reducing the occurrence and severity of flooding helps provide

for people and community's social, economic and cultural well-being while the best practice management measures and biodiversity benefits ensure that the life-supporting capacity of air, water soil and ecosystems are safeguarded (s.5).

14. The Council considers that s.107 does not restrict the granting of these discharge permit applications.

## **Conclusion**

15. It is the Council's statutory responsibility to ensure that people, property and land are kept safe from floods. They also undertake river and biodiversity enhancement projects. A critical part of this is the use of agrichemicals to control weed infestations in river and drain channels, berms and stopbanks.
16. The effects of the proposal have been clearly identified and assessed, and these have been addressed through the proposed consent conditions. While there are some adverse effects associated with the use of agrichemicals, these can be substantially reduced through the use of best practice planning and operations, coupled with appropriate monitoring. There is substantial agreement on consent conditions between the officer and applicant teams, and amendments have been made to respond to matters raised at the Hearing.
17. The control of weeds also has positive benefits for indigenous ecosystems and, on balance, the proposed activity is considered to have positive effects on the environment. The Council considers that there are no statutory impediments to granting these consent applications with a 20 year duration.

Bianca Sullivan  
15 April 2024

**Attachment 1: Right of Reply, Agreed proposed conditions.**

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and river enhancement works.

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**Joint Witness Statement of Jolene Irvine and Rebecca Beattie**

**On behalf of Canterbury Regional Council (applicant) and s42A officer respectively**

**15 April 2024**

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1. Following the hearing that commenced on Monday 25<sup>th</sup> and was adjourned on Wednesday 27<sup>th</sup> March for resource consents CRC222040, CRC222041 and CRC222043, the hearing commissioners issued Minute #2 on 2 April 2024. That minute requested an updated set of proposed conditions that clearly show the difference between the Applicant's final proposed condition and those of the s42A reporting officers' final recommended conditions.
2. Ms Jolene Irvine and Ms Rebecca Beattie have progressed discussions on proposed conditions and prepared this joint witness statement. There is full agreement on recommended conditions 1- 42. As outlined below, conditions X1 and X2 are not part of Ms Irvine's recommended conditions, but are included in Ms Beattie's recommended conditions.

**Position statement: Ms Irvine (applicant Planner)**

3. I am in full agreement with Conditions 1 – 42 as documented within this evidence.
4. I do not consider Condition X1 and X2 are justified for the reasons outlined in my substantive evidence, submitted 11 March 2024 and they do not form part of my recommended conditions. If the commissioners are of the opinion that these conditions are required, it is my view that X1 and X2 have been appropriately drafted.

Signed: 

**Jolene Irvine**  
Rivers Planning Advisor  
Environment Canterbury

Dated: 15 April 2024



**Position statement: Ms Beattie (s42A officer)**

5. I am in full agreement with Conditions 1 – 42 in this document.
6. However, I am recommending Conditions X1 and X2 as part of my final s42A officer's conditions, in disagreement with Ms Irvine who is proposing these as optional, additional conditions only if the commissioners are of the opinion they should be part of the final consent conditions.

Signed:   
**Rebecca Beattie**  
Consultant Planner

Dated: 15 April 2024

**Recommended condition set:****DEFINITIONS**

**Agrichemical:** means any substance, or mixture of substances, (including approved adjuvants), whether inorganic or organic, man-made or naturally occurring, modified or in its original state that is used to eradicate, or control flora. It excludes oral nutrition compounds, vertebrate pest controls and fertilisers.

**Community Drinking Water Supply Abstraction Point:** is defined as a publicly or privately owned drinking-water supply that provides no fewer than 25 people with drinking water for not less than 60 days each calendar year or is listed in Schedule 1(a) of the Canterbury Land and Water Regional Plan, or any successor document.

**Riverine Environments within the Coastal Marine Area:** means the typical river environment within the Coastal Marine Area\* that is dominated by terrestrial and freshwater\* plant species. It does not include areas of coastal water\*, hāpua, wahapū (estuaries), coastal beaches or areas dominated by coastal water\* tolerant plant species

*\*as defined in the Resource Management Act 1991*

**Suitably qualified person:** means a person who has the abilities, tertiary qualifications, and at least five years of experience in the field relevant to the task to be completed.

**ACTIVITY**

- (1) The activities authorised under these resource consents are limited to:
  - (a) the discharge of agrichemicals to air,
  - (b) the discharge of agrichemicals to surface water or land where the agrichemical may enter water; and
  - (c) the discharge of agrichemicals to riverine environments within the Coastal Marine Area (CMA);within the Canterbury Region.
- (2) The discharge of agrichemicals shall only be discharged via the following methods:

- (a) Aerial: Spraying from a fixed wing aircraft, helicopter or Unmanned Aerial Vehicle (UAV or 'drone'). The aircraft shall have GPS tracking for flight paths and spray zones.
  - (b) Ground-based: vehicle mounted guns, booms and knapsacks or other handheld means (including stump painting).
- (3) The discharge of agrichemicals shall be:
- (a) in accordance with the requirements set under the Hazardous Substance and New Organism Act 1996 (HSNO), or any successor legislation, including the conditions of its approval, safety data sheets and the product label requirements.
  - (b) Only those agrichemicals listed in Schedule 1, and includes:
    - (i) formulations of glyphosate;
    - (ii) formulations of triclopyr;
    - (iii) adjuvants; and
    - (iv) formulations of other agrichemicals that have been approved through the criteria set out in condition 4.

## **SCHEDULE OF AGRICHEMICALS TO BE USED**

- (4) To add additional herbicide formulations to Schedule 1, the consent holder shall complete the following to demonstrate the added herbicide is fit for purposes for use under these resource consents:
- (a) A review of the Environmental Protection Authority (EPA) conditions of approval and set operational requirements and instructions to ensure that these conditions of approval are met;
  - (b) An assessment of the potential risks to human health and the environment from the use of the proposed herbicide;
  - (c) Measures to reduce these risks and an assessment of the likelihood of those risks being realised;
  - (d) Identification of any national or internationally set water quality limits;
  - (e) This assessment shall be undertaken by a suitably qualified person(s) and include, but is not limited to, a literature review on:
    - (i) The leaching risk of the herbicide to groundwater;
    - (ii) The toxicity of the herbicide on human health in relation to drinking water, consumption of contaminated plants, and contact recreation;
    - (iii) The toxicity of the herbicide to aquatic invertebrates and fish;
    - (iv) The toxicity of the herbicide to terrestrial invertebrates, lizards, birds, bats and other mammals; and
  - (f) The setting of water quality limits for the proposed herbicide to ensure that, after reasonable mixing, the residual concentration does not adversely affect water quality, including quality for human and animal consumption, and aquatic ecology. For the avoidance of doubt, this limit shall be based on established limits, identified through clause (c) and in the absence of established limits, the default shall be 'no detectable limit'. This limit shall be recorded in Schedule 1 and will be used for water quality monitoring in accordance with Condition (35);

- (g) Prepare a report summarising the findings of clause (a)-(f) of this condition and submit the report to an independent, suitably qualified ecotoxicologist with at least five years experience in ecotoxicology for their review;
- (h) The reviewed report shall then be provided to Canterbury Regional Council (CRC), Attn: Compliance Manager, papatipu rūnanga, Te Whatu Ora Health New Zealand – Waitaha Canterbury and the territorial authorities within whose districts the discharges will occur. These parties shall be invited to, within 30 working days of being provided that report, respond in writing to the consent holder:
  - (i) That they do not object to the new herbicide being added to Schedule 1; or
  - (ii) Of any concerns they have, or further information or assessment they require, prior to the new herbicide being added to Schedule 1;
- (i) The herbicide can only be added to Schedule 1 if all those provided the report under clause (h) above have:
  - (i) confirmed they do not object to the new herbicide being added to Schedule 1 or if no response is received, the consent holder has made two follow up attempts, over a total three-month period, to receive a response from each party and no response was forthcoming; or
  - (ii) all concerns or further information or assessment required under (h)(ii) have been addressed by the consent holder and the party subsequently confirms they do not object to the new herbicide being added to Schedule 1;
- (j) If (i)(ii) cannot be satisfied within three months of the report being circulated, the consent holder may choose to organise a decision-making panel which will include one representative from the consent holder, one representative from the group raising concerns and chaired by a mutually agreed independent representative accredited as a RMA decision maker to determine whether the new herbicide can be added to Schedule 1 (or not); and
- (k) Any amendments to Schedule 1 shall be completed within 20 working days of clause (h) or (i) being satisfied and the updated Schedule 1 shall be provided to CRC, Attn: Compliance Manager, papatipu rūnanga, Te Whatu Ora Health New Zealand – Waitaha Canterbury and the territorial authorities within whose districts the discharges will occur, within one week of those changes being made.

**Advice Note:** <https://environment.govt.nz> lists certified RMA decision makers who have completed the 'Making Good Decisions Programme' are accredited to sit of RMA hearing panels.

## ANNUAL REPORTING

### AGRICHEMICAL STRATEGIC MANAGEMENT PLAN

- (5) An 'Agrichemical Strategic Management Plan' (ASMP) shall be prepared by the consent holder within the first twelve (12) months of this consent being issued, and reviewed at least annually thereafter, and provided to, CRC: Attn, Compliance Manager. This ASMP shall be available to any party on request. It shall include at a minimum:
  - (a) The purpose and scope of the ASMP and these consents;
  - (b) A review of current agrichemicals in use to determine if there have been changes to the hazard classification, controls or approvals required for that substance to be used in New Zealand for the required purpose;
  - (c) A review of current practices regarding agrichemical uses and alternative agrichemical formulations that could be used;

- (d) An assessment of alternatives to agrichemical spraying to achieve the purposes of these consents, and identification of sites where these alternatives can be employed;
- (e) Methods and actions for the progressive expansion of areas where alternatives to agrichemicals is employed;
- (f) Monitoring and reporting on progress made for extending areas where alternatives to agrichemicals were used, and the effectiveness of the actions listed in the ASMP for reducing agrichemical use under these consents;
- (g) A summary of habitat restoration and/or riparian planting projects that are supported by the agrichemical spraying, or are for river enhancement.
- (h) A record of engagement undertaken for the development of this ASMP. At a minimum the following **'parties'** shall be consulted with and allowed a three-month period to engage:
  - (i) Te Rūnanga o Ngāi Tahu;
  - (ii) Papatipu Rūnanga within whose rohe spraying is proposed;
  - (iii) The Department of Conservation area conservancies within which the discharge will occur;
  - (iv) The Councils of Fish and Game New Zealand within whose regions the discharge will occur;
  - (v) The Canterbury Branches of the Royal Forest and Bird Protection Society of New Zealand (Forest and Bird);
  - (vi) Apiculture New Zealand – Canterbury Hub;
  - (vii) Te Whatu Ora Health New Zealand – Waitaha Canterbury; and
  - (viii) The territorial authorities within whose districts the discharges will occur; and
- (i) A record of any reviews and amendments made to the ASMP.

## ANNUAL SPRAY PROGRAMME

- (6) The consent holder shall prepare an "Annual Spray Programme Report" (The Annual Programme) at least once per year. The Annual Programme shall include:
  - (a) for the upcoming annual period 1 September to the following 30 August, the proposed:
    - (i) agrichemical discharge areas;
    - (ii) dates of agrichemicals discharges; and
    - (iii) Method(s) and chemicals to be used.
  - (b) for the previous annual period 1 June to 31 May :
    - (i) The completed areas of agrichemical operations under this consent;
    - (ii) the agrichemicals used for each operation;
    - (iii) the volumes of agrichemicals used;
    - (iv) Spray methods used;
    - (v) The dates of operations;
    - (vi) The results, and analysis of the results, of any water quality and dissolved oxygen monitoring that has taken place; and

- (vii) A summary of all environmental, agrichemical spill, or non-target damage incidents that may have occurred, and the actions taken to address these incidents; and
  - (viii) A summary of any complaints received in the register required by Condition (41), and the actions taken to address these.
- (7) 'The Annual Programme' prepared under Condition (6) shall, by 20 June each year, be made publicly available on the consent holders' external website and be provided to:
  - (a) CRC: Attn, Compliance Manager;
  - (b) The '**parties**' listed in condition 5(g);
  - (c) Any other party the consent holder has arranged to consult with on these consents or the Annual Programme; and
  - (d) With each party invited to:
    - (i) Provide feedback in writing within 30 working days; or
    - (ii) Confirm they want to meet with the consent holder for the purposes set out in Condition (8).
- (8) If a party contacted under Condition (7) confirms they want to meet the consent holder, a meeting shall be held during August that year, or earlier, with the agenda to discuss:
  - (a) The circulated Annual Programme for that year;
  - (b) A review of the ASMP and any amendments that need to be made to it;
  - (c) A review of the Register and any amendments that need to be made to it;
  - (d) Examples and extent of where alternatives to agrichemicals were used, and the outcome of that work.
- (9) If feedback is received in accordance with condition 7(d), or if a meeting is held in accordance with condition (8), within 20 working days of the conclusion the meeting (if held), the consent holder shall provide a complete report to CRC: Attn, Compliance Manager, that records:
  - (a) the matters discussed, dispute resolutions (if any), actions points, and any amendments required to be made to any document required by these conditions of consent; and
  - (b) any written feedback received in accordance with condition 7(d).
- (10) If the discharge of agrichemicals are required outside of the areas identified in the prepared Annual Programme, prior to the commencement of any agrichemical discharges in that area, the consent holder will notify those **parties** listed in Condition (7) that have overlapping rohe or territory within the catchment that the change relates to.

## REGISTER OF SENSITIVE, RESTRICTED AND NOTIFIABLE SITES

- (11) The consent holder shall establish and maintain a register of sensitive, restricted and notifiable sites (the Register) to identify the locations of the features that meet the criteria listed in Schedule 2. The Register:

- (a) May be in the form of a written report or GIS records; and
- (b) Shall be reviewed at least once per year and updated where relevant.

## HANDBOOK

(12) A 'Handbook for Spraying' shall be prepared by the consent holder, and provided to CRC, Attn: Compliance Manager within the first three months of this consent being issued, and provided again within 20 working days if any updates are made. The Handbook for Spraying shall:

- (a) Be a living document and be amended as required to better manage the effects of the activities authorised under these consents and improve planning and management of the activities; and
- (b) be prepared in accordance with NZS 8409:2021, the ASMP and any other conditions of these consents and include, but is not limited to:
  - (i) The methods of discharge and agrichemicals approved under these consents;
  - (ii) The required pre-spraying planning and notifications requirements;
  - (iii) Details of methods and measures to reduce agrichemical spray drift and leaching, including those listed in Condition (25);
  - (iv) Details of methods and measures to avoid or manage adverse effects of agrichemical spraying on sensitive areas;
  - (v) Details of methods and measures for protecting bees and other pollinators;
  - (vi) Required qualifications for any persons undertaking agrichemical discharges;
  - (vii) The agrichemical mixing, diluting and cleaning requirements listed in Conditions (39) and (40);
  - (viii) Information on Threatened and At Risk indigenous flora and fauna and their habitats that are widespread or locally common within the proposed spray areas, and how to identify, account for and avoid these fauna and flora during all spray operations;
  - (ix) Information for identifying indigenous bird nesting habitats and breeding behaviours, and how to account for and avoid these fauna;
  - (x) All of the restricted activities and excluded locations listed in Schedule 2 of this consent;
  - (xi) Information on how to collect water samples as required by Conditions (31) to (34);
  - (xii) Details of daily spray recording requirements as required by Condition (38);
  - (xiii) The Hazardous Substance Spill and Response Plan, as required by Condition (17); and
  - (xiv) Response procedures to any complaints received-

**Advice Note 1:** 'Threatened' or 'At Risk' are as defined in the New Zealand Threat Classification System (NZTCS), or any successor document.

**Advice Note 2:** Any amendments to the Spraying Handbook should be consistent with any changes to industry or national guidelines or regulations for discharges of herbicides, or as

*recommended during any review of the handbook or the management and operation of these activities authorised by these consents.*

## **OPERATIONS**

### **PRIOR NOTIFICATION**

- (13) At least 10 days prior to any agrichemical discharge operations, the consent holder shall notify:
- (a) Canterbury Hub of Apiculture New Zealand;
  - (b) Any known bee keepers who may be operating hives in or adjacent to the proposed spray area;
  - (c) Fish and Game Council for the areas where spraying may occur;
  - (d) Papatipu Rūnanga within whose rohe spraying may occur;
  - (e) Owners and occupiers of any known organic farms adjacent to the proposed spray area; and
  - (f) Any other party that the consent holder has arranged to be notified.
- (14) Prior to any helicopter or fixed wing spray operation, the consent holder shall place public notifications on their external website and in local newspaper(s).

### **SPRAY PLANNING**

- (15) The consent holder shall prepare an Operations Management Plan (OMP), that plans the delivery of each individual spray operation. The OMP shall:
- (a) Be prepared in accordance with the conditions of this consent and the following document(s), or any successor documents:
    - (i) NZS 8409:2021;
    - (ii) The ASMP, as required by Condition (5); and
    - (iii) The 'Handbook for Spraying', as required by Condition (12).
  - (b) Identify and record:
    - (i) The proposed area for spraying and the name of any waterbody affected, including a map and GPS location;
    - (ii) The proposed method(s) of spraying and agrichemicals to be used;
    - (iii) Dates and durations of the proposed discharge;
    - (iv) Proposed methods to reduce agrichemical spray drift;
    - (v) The agency conducting the operation, including contact details of the person supervising the discharge;
    - (vi) Identification on the map created under clause (b)(i) of this condition, any sites from the Register that intersect or are within the setback described in Schedule 2 of the proposed discharge area;

- (vii) Details of methods and measures to avoid or manage the effects of agrichemicals spraying on the sites identified in clause (b)(vi) of this condition (sites in Register);
  - (viii) A list of parties notified about the proposed agrichemical spray operation the OMP relates to, as required by Condition (13), Condition (14), and Condition (20) and Schedule 2 if required;
  - (ix) Assessment of alternatives to agrichemicals considered for this proposed discharge area; and
  - (x) If the individual spray operation is to be subject to water quality sampling, as required by Conditions (30) and (31), the sample location(s) shall be Identified on the map created under clause (b)(i) of this condition.
- (c) be archived electronically for at least three years, and provided to CRC: Attn, Compliance Manager on request.
- (16) A Hazardous Substance Spill and Response Plan (HSSRP) shall be prepared by the consent holder which details measures and methods for avoiding spills of hazardous substances (including agrichemicals) to water or to land where it may enter water, and a response plan in the event that this unwanted discharge occurs. The HSSRP shall:
- (a) be prepared in accordance with the “Emergency Planning – Spills” section of NZS 8409:2021 (or any successor document) and include the following steps:
    - (i) Implement all practicable measures to reduce the contaminant in the receiving environment. Such measures may include cessation of activities that may have caused the discharge or removal of the contaminant source(s);
    - (ii) Notify the owners or operators of any public, community or private drinking water supplies within 2 km of the spill;
    - (iii) Notify the CRC, Attn: Compliance Manager and the respective Papatipu Rūnanga whose rohe the spill is located; and
    - (iv) Implement all practicable measures to prevent a reoccurrence of the spill event.
  - (b) be provided to CRC, Attn: Compliance Manager within the first three months of this consent being issued, and again within 20 working days of any future updated versions.

## **SPRAY DELIVERY**

### **Operators**

- (17) The consent holder shall ensure all individuals involved in the handling and the discharging of agrichemicals authorised by these consents:
- (a) meet the qualification requirements set by the EPA and WorkSafe New Zealand;
  - (b) are provided with, hold a copy onsite during operations and adhere to:
    - (i) the conditions of these consents;
    - (ii) the Handbook for Spraying;
    - (iii) the OMP; and
    - (iv) the Hazardous Substance Spill Avoidance and Response Plan; and



- (c) are trained by a suitability qualified person(s) in water quality sampling techniques if that individual may be tasked with taking water quality samples under these consents;
- (d) are trained by a suitably qualified and experienced person(s) in the identification of:
  - (i) wetland areas;
  - (ii) At Risk and Threatened indigenous species, as identified in Handbook for Spraying; and
  - (iii) braided river indigenous bird nesting habitat and breeding behaviours; and
- (e) cease spraying if the values listed in clause (c) are encountered and the OMP has not addressed that value. Spraying may only resume once the encountered value has been addressed within the OMP subject to the criteria outlined in Condition (15).

**Advice Note:** 'Threatened' or 'At Risk' are as defined in the New Zealand Threat Classification System (NZTCS), or any successor document.

### Signage

- (18) Prior to the discharge of agrichemicals, and for at least 24 hours afterwards, the consent holder shall erect and maintain signs at places where people normally obtain access (pedestrian and vehicular) to the spray area. These signs shall comply with the signage requirements of New Zealand Standard 'Management of Agrichemicals' 8409:2021 (NZS 8409:2021), or any successor document, and shall state at a minimum:
- (a) that spraying is in progress;
  - (b) the proposed duration of the spraying, including starting and finishing dates and times;
  - (c) the method(s) of spraying;
  - (d) the active herbicide and adjuvant being used; and
  - (e) Contact name and number for the person managing the operation.
- (19) Where there are publicly accessible edible plants or fruit that may be foraged by people, signs shall remain onsite for two weeks.

### Setbacks

- (20) There shall be no discharge of agrichemicals within the listed setbacks for sensitive, restricted and notifiable sites, as recorded in 'The Register' prepared under Condition (11), unless the required approval, as listed in Schedule 2, has been obtained and provided to CRC: Attn, Compliance Manager, prior to spraying.
- (21) Triclopyr and any other agrichemical approved for use under this consent with the Globally Harmonised System 7 Classification (or any successor classification system) of "hazardous to the aquatic environment acute Category 1" or "hazardous to the aquatic environment chronic Category 1" shall not be discharged directly to water or discharged aerially within 8 metres of ponded or flowing surface water.

(22) Vehicles and machinery discharging agrichemicals shall not:

- (a) enter river channels containing flowing water within 250 metres; or
  - (b) travel on land within 25 metres upstream;
- of any community or papakāinga surface water supply abstraction point.

### **Timing**

(23) Agrichemicals shall not be discharged on Sundays, public holidays, or weekends which immediately precede or follow public holidays, including regional holidays.

### **Drift and leaching**

(24) The discharge of agrichemicals shall be carried out using methods and equipment that minimizes spray leaching and drift beyond the target area as set out in 'The Handbook for Spraying' and shall include:

- (a) Prohibiting spraying when rain is publicly forecast to occur before the manufacturers labelled drying times;
- (b) Prohibiting spraying when adverse wind conditions (as described in the Handbook for Spraying) that are likely to exacerbate spray drift are forecast to occur within a spraying location or time; and
- (c) Ceasing spraying if adverse wind conditions (as described in the Handbook for Spraying) that cause spray drift beyond the target area arise during any spray operation.

### **Emergent macrophytes**

(25) There shall be no direct discharge of agrichemicals to surface water, unless:

- (a) The agrichemical is approved for use as an aquatic herbicide;
- (b) The discharge is explicitly to target emergent aquatic vegetation (macrophytes); and
- (c) The consent holder has assessed the suitability of the site for other practicable options to control the macrophytes; and

If a direct discharge of agrichemicals to surface water is to occur under clause (a) of this condition, and macrophyte cover is less than 90% of the water way to be sprayed, the agrichemical spraying must only occur from one side of the waterway at a time and targeted to the plants only, to minimise agrichemical discharge to open water.

### **Backflow prevention**

(26) The operator discharging agrichemicals shall ensure that:

- (a) The filling of tanks to dilute concentrated agrichemicals is carried out in a manner that prevents back-flow of any agrichemical to the water source; and
- (b) The filling procedures and back-flow prevention devices and methods shall comply with the Australian Standard/New Zealand Standard 2845.1:2022 'Water supply – Backflow prevention devices, Part 1: Materials, design and performance requirements', or any successor document.

**Bees and other pollinators**

- (27) Discharge shall only occur during the time of day, or during weather conditions, where there is a reduced number of exotic bees and other pollinators foraging on flowers, unless evidence has been published that the mixture to be applied is not toxic to bees and other pollinators.

**Long-tailed Bats**

- (28) Between 1 January and the following 31 March inclusive, and within any documented long-tailed bat habitats, the discharge of agrichemicals shall commence after sunrise and cease before 2pm.

**Birds**

- (29) The consent holder shall ensure that prior to any agrichemical discharges occurring within braided rivers and wetlands in the period 1 September to 1 February, unless exempt under clause (b) of this condition, a suitably-qualified bird surveyor surveys the proposed area to locate any nests, colonies and/or chicks of 'Threatened' and/or 'At Risk' bird species present within the proposed discharge areas.

- (a) The survey and reporting requirements are:
- (i) Surveys shall be conducted according to the standard methodology detailed in Schedule 3, Part A and a report shall be prepared by completing the Pre-works Survey Report template in Schedule 3, Part B, both of which are attached to, and form, part of this consent;
  - (ii) Surveys are conducted no earlier than 10 working days prior to any discharge of agrichemicals;
  - (iii) A copy of the Pre-works Survey Report, prepared in accordance with clause (a) of this condition, is submitted to CRC: Attn, Compliance Manager no less than 5 working days prior to any agrichemical discharges occurring; and
  - (iv) A distance of at least 100 metres is maintained between all machinery, personnel, and agrichemical spraying and the breeding birds identified in the Pre-works Survey Report unless the Pre-works Survey Report recommends that a lesser setback, along with any other recommended measures, is acceptable. Where a lesser setback is recommended the setback distance shall not be less than 25 metres.
- (b) The consent holder may seek an exemption from undertaking a bird survey if a suitably-qualified bird surveyor confirms the likelihood of nesting birds is very low and they receive confirmation in writing from CRC: Compliance Manager that one of the following criteria is met:
- (i) A bank-to-bank flood has occurred at the spray area within 10 days preceding the agrichemical discharge; or
  - (ii) The riverbed is completely dry at least 500m upstream and downstream of the spray area and has been for at least four weeks; or
  - (iii) The riverbed at the spray area is heavily infested with woody weeds (50% woody weed vegetation cover); or
  - (iv) The wetland is not a known breeding site for 'Threatened' and 'At Risk' birds.

**Advice Note 1:** A “suitably-qualified bird surveyor (person)” is defined within Schedule 3 as someone who has a minimum of 160 hours field experience locating and monitoring shorebird nests.

**Advice Note 2:** “‘Threatened’ or ‘At Risk’” are as defined in the New Zealand Threat Classification System (NZTCS).

**Advice Note 3:** Irrespective of the requirements under these consents, anyone undertaking or supervising the works is still required to comply with the Wildlife Act 1953 and not disturb, harm, kill etc any river nesting birds (or other protected wildlife).

## ENVIRONMENTAL SAMPLING

### Water Quality

- (30) Each year, samples of receiving waters shall be taken from at least nine (9) locations, unless clause (b) of this condition applies, where there has been agrichemical discharge under these consents:
- (a) The samples shall be from:
    - (i) at least three sites adjacent to, or overlapping with, any sensitive, restricted and notifiable sites identified within Schedule 2;
    - (ii) at least three sites within the drainage network waterways; and
    - (iii) at least three sites within rivers.
  - (b) No sample is required from a site listed in (a)(i)-(a)(iii) of this condition if no spraying has occurred in that environment in that spray season.
- (31) Samples for each of the nine (9) ‘sample events’ required under Condition (30) shall be taken as follows:
- (a) One sample shall be taken from the spray reach immediately prior to spraying occurring, or immediately upstream of the spray reach at the same time as Sample 2 is taken (Sample 1);
  - (b) One sample shall be taken within the applicable mixing zone defined in Schedule 5 of the Canterbury Land and Water Regional Plan (or any successor document), or a minimum of 25 metres, downstream of the spray reach, immediately after spraying has completed (Sample 2); and
  - (c) One sample shall be taken from the same location as Sample 2 between 12 and 72 hours after the spraying is completed (Sample 3).
- (32) Sample 2 shall be sent to an accredited laboratory within two days of the sample being taken and analysed for the agrichemicals discharged in that area.
- (33) If the Sample 2 test results exceed the limits set in Condition (34), the consent holder shall:
- (a) Within five days, analyse Sample 1 and Sample 3, for those same agrichemicals analysed for Sample 2 and within two days of receiving those results send them to CRC: Attn, Compliance Manager;
  - (b) Within one day of receiving Sample 2 test results provide notice of the exceedance to the owners of any known:

- (i) Community drinking water supply whose mapped protection zone (as defined in the LWRP or any successor document) overlaps with the discharge area;
  - (ii) surface water intake that is within 250m of the discharge area; and
  - (iii) active groundwater bore owner within 250m downstream, whose bores are screened at a depth less than 20 metres below ground.
- (c) Within two days, return to the spray area and take one sample from the same location as Sample 2 (Sample 4). Sample 4 is to be analysed for those same agrichemicals as analysed for Sample 2 only if the Sample 3 test results identifies an exceedance of the limits set in Condition (34);
- (d) Within one month complete an investigation and produce a report on the potential cause of the exceedance and set out any learnings or change in practices required to minimize the risk of future exceedance, which shall include, but is not limited to:
- (i) reviewing the weather conditions, flow conditions, agrichemical concentrations, mixing rates, application rates and volumes used;
  - (ii) Condition of weed growth at the time of spraying;
  - (iii) Any observed effects on flora and/or fauna;
  - (iv) Operator handling; and
  - (v) Any spills or other relevant contributing factors including the results of Sample 1 (pre discharge testing).
- (e) The report shall be submitted to the CRC, Attn: Compliance Manager and any parties contacted as per clause (b) within 5 working days of completion of clause (d); and
- (f) Contact those parties listed under clause (b) on return of Sample 3, and if applicable Sample 4, and provide them the report created under clause (d).

### **Water Quality - Limits**

(34) The water quality concentration limits for agrichemicals tested in the water samples are:

- (a) 0.1 g/m<sup>3</sup> for glyphosate;
- (b) 0.01 g/m<sup>3</sup> for glyphosate if 'RoundUp'® formulations are used;
- (c) 0.01 g/m<sup>3</sup> for triclopyr;
- (d) The limit set for any other approved agrichemical as identified in Schedule 1.

### **Dissolved Oxygen**

(35) The consent holder shall identify three stretches of single thread waterways (drainage network) each year that have 90%+ weed coverage prior to spraying, that are to be monitored for dissolved oxygen changes. Monitoring shall be completed by, or under the supervision of, a suitably qualified person and use continual dissolved oxygen loggers to be placed upstream and in the lower third of the spray reach at least two days prior, and for at least three weeks after spraying occurs.

(36) If the dissolved oxygen recorded under Condition (35) identifies:

- (a) A drop in dissolved oxygen below 70% saturation, the consent holder shall establish an investigation within six months of those results that has the objective

- of identifying practical spray planning and operations that minimises the extent of dissolved oxygen depletion and implement those findings; or
- (b) If over the first five-year period of the consent being issued, no dissolved oxygen records below 70% saturation, then no further dissolved oxygen monitoring is required.

### **Daily Spray Records**

- (37) The consent holder shall ensure that the personnel carrying out the agrichemical discharges authorised by these consents keeps a daily record of:
- (a) all agrichemicals applied during each spraying operation;
  - (b) A location map of the areas of spray application and spray mixing locations and supporting GPS logs (if aerial or UAV methods used) or track logs (for ground based methods);
  - (c) The types, rates and amounts of agrichemicals used;
  - (d) Methods and equipment used;
  - (e) Start and finish times and dates;
  - (f) Target plant species;
  - (g) Operators names;
  - (h) Weather conditions (including details of wind speed readings taken at least at the start of the spray operation, and four-hourly thereafter until the completion of spraying that day);
  - (i) The location of the water sources used for diluting agrichemical solutions and for cleaning spray equipment;
  - (j) A section confirming the ecological and cultural significant sites and sensitive sites (in list or map form) as identified in the OMP for the spray operation that have been avoided during the spray operation. This section shall also include any additional ecological or cultural significant sites or other sensitive sites encountered (and avoided) that were not identified in the OMP;
  - (k) Records of any water samples taken (if required in the OMP for the spray operation).

### **MIXING AND CLEANING**

- (38) The consent holder shall ensure that all empty chemical containers are disposed of at an authorized disposal site.
- (39) Any mixing or diluting of an agrichemical or rinsing or cleaning of containers or equipment, and the discharge of water used for rinsing or cleaning, shall not take place within:
- (a) 10 metres of any ponded or flowing surface water, bore, known subsurface drainage infrastructure or stormwater system; or
  - (b) The Christchurch Groundwater Protection Zone as shown on the Canterbury Land and Water Regional Plan Planning Maps or successor document, or a Community Drinking-water Protection Zone as set out in Schedule 1 of the Land and Water Regional Plan, or any such zone determined in a successor document, unless:

- (i) The mixing or dilution takes place within a sealed, bunded system that will contain a volume of at least 110 percent of the largest spray tank to be filled; and
- (ii) The mixing or dilution is for a hand-held application technique or method authorised under Condition (2)(b).

**Advice note:** For the purposes of this consent only, stormwater system includes sumps, manholes, outfalls, soakage pits, or any system which may discharge to surface water.

## COMPLAINTS

(40) The consent holder shall keep a register of any formal complaints received that specifically relate to any direct actual or perceived impact on the complainant due to the discharge of agrichemicals under this consent and provide that register to the CRC, Attn: Compliance Manager on request. This complaints register shall include:

- (a) the date and time the complaint was received;
- (b) the nature of the complaint;
- (c) the name, telephone number, and address of the complainant (if provided);
- (d) a link to the OMP and Daily Spray Log relevant to the complaint; and
- (e) any remedial actions taken to address the complaint and prevent further incidents.

**Advice note:** The intention of the complaints register is to record direct impacts on people's health, assets or wildlife and does not set an expectation that all spray related commentary is recorded. Such incidents warranting a record include (but are not limited to) non-target plant damage, damage to private enhancement or aesthetic plantings, and observed wildlife deaths.

## ADMINISTRATION

(41) The Canterbury Regional Council may annually on the last working day of May or November, pursuant to Sections 128, 129, 130, 131 and 132 of the RMA, serve notice of its intention to review the conditions of this consent for the purposes of:

- (a) Dealing with adverse effect on the environment which may arise from the exercise of these consents, and which is not appropriate to deal with at a later stage; or
- (b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment; or
- (c) Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by these consents; or
- (d) To modify the conditions of this consent to ensure that it is consistent with the operative provisions of a regional plan.

(42) If this consent is not exercised before 30 June 2029, it shall lapse in accordance with Section 125 of the Resource Management Act 1991.

## **Additional Environmental Monitoring Conditions**

### **Environmental Monitoring – Macroinvertebrates**

- (X1) Within the first year of this consent being issued, the consent holder shall establish an investigation, to be conducted over a period up to five years that:
- (a) Is designed by a suitably qualified person(s) and has an objective of improving the knowledge of agrichemical use effects on freshwater benthic macroinvertebrates, water quality and sediment before and after agrichemical discharges;
  - (b) has a focus on the impacts on springs and seeps in braided rivers, wetlands and/or gravel-bottom small single thread waterways;
  - (c) involves a minimum total effort of 15 total days per year (to plan, field and laboratory work, and reporting); and
  - (d) Records the findings and if any ongoing monitoring is recommended in a report, that is to be provided to CRC, Attn: Compliance Manager within six months of the completion of the investigation.

### **Environmental Monitoring – Groundwater Quality**

- (X2) Within the first year of this consent being issued, the consent holder shall establish an investigation, to be conducted over a period up to five years that:
- (a) Is designed by a suitably qualified person and has the objective of improving the knowledge of the risk of agrichemical leaching to groundwater, and assess likelihood of this consent being the source of such contamination;
  - (b) Establishes criteria for the selection of bores with a high risk of contamination;
  - (c) samples groundwater quality, in bores identified as having high risk of contamination from the discharge of agrichemical under this consent, to detect the presence, or absence, of the discharged agrichemical;
  - (d) involves a total effort applied of 20 total days per year (to plan, field and laboratory work, and reporting) and up to six water quality analyses each year; and
  - (e) Records the findings and if any ongoing monitoring is recommended in a report, that is to be provided to CRC: Attn, Compliance Manager within six months of the completion of field work.



**Schedule 1 – Schedule of Agrichemicals to be used**

In accordance with Condition 3, Schedule 1 includes:

1. Formulations of glyphosate
2. Formulations of triclopyr
3. Adjuvants
4. *Holding spot for any addition agrichemicals added in accordance with condition 4, and listed below.*

**Added agrichemical (1)**

Agrichemical: \_\_\_\_\_

Date added: \_\_\_\_\_

Water quality limit to be applied to condition 32: \_\_\_\_\_

Reference to assessment undertaken in accordance with Condition 4: \_\_\_\_\_

**Added agrichemical (2)**

Agrichemical: \_\_\_\_\_

Date added: \_\_\_\_\_

Water quality limit to be applied to condition 32: \_\_\_\_\_

Reference to assessment undertaken in accordance with Condition 4: \_\_\_\_\_

**Added agrichemical (3)**

Agrichemical: \_\_\_\_\_

Date added: \_\_\_\_\_

Water quality limit to be applied to condition 32: \_\_\_\_\_

Reference to assessment undertaken in accordance with Condition 4: \_\_\_\_\_

## Schedule 2 – Criteria for Register of Sensitive, Restricted and Notifiable Sites

In accordance with condition (11), the consent holder is required to create and maintain a register of sensitive, restricted and notifiable sites under this consent. That register may be in written report form, or digitally mapped. The identified restricted sites shall, at a minimum, include known 'Sites' for the criteria and features listed under Table 1.

**Table 1: Sensitive sites with setback restrictions; no discharge can occur within the setbacks until prior approval is obtained and provided to CRC compliance.**

	Feature / Criteria	Setback	Who can approve
1	Education facilities (incl Schools and Preschools)	Aerial: 250m Ground: 50m	Site manager/principal.
2	Surface water intake* for drinking water, or community or papakāinga supply	Aerial: 250m Ground: 50m	Owner of intake/Supply manager
3	Surface water intake* (other than above)	25m	Owner of intake
4	Groundwater intake*, for community or papakāinga supply	Aerial: 250m Ground: 50m	Supply manager
5	Groundwater intake*, less than 20m deep, for drinking water supply (other than above)	50m	Owner of intake
6	Groundwater intake*, (other than the above)	5m	nil
7	Residential dwelling	50m	Occupier
8	Established campsites	Aerial: 50m Ground: nil	Site manager
9	Beehive	50m	Owner
10	Designated mahinga kai gathering site	Aerial: 16m Ground: 5m	Papatipu rūnanga
11	Nesting Threatened and At Risk birds	100m	Suitably qualified scientist (see condition 30)**
12	Natural Inland Wetlands (for spraying other than maintenance and operation of specified infrastructure).	Aerial: 26m Ground: 10m	Suitably qualified scientist (aquatic and terrestrial ecologists)**
13	Critical habitat mapped in LWRP		
14	Known habitat of indigenous fauna listed as threatened or at risk.		
15	Inanga Spawning habitat between 1 January and the following 1 June (only).		
16	Known trees with roosting bats	Aerial: 8m Ground: Avoid direct discharge on those plants	Owner
17	Private flood protection vegetation		Suitably qualified terrestrial ecologist**
18	Indigenous vegetation		Owner
19	Aesthetic and commercial vegetation	As agreed	As agreed
20	other sites requested through annual hui or as notified by public.		As agreed

*\*only active intakes need to be considered. To be considered an active intake there shall be intake infrastructure on-site or listed as active within the CRC database.*

*\*\*For the purposes of this schedule, a suitably qualified person is someone who holds a relevant qualification and has at least five years of experience relating to the relevant criteria. It may commonly be the relevant CRC science expert.*

## Schedule 3 – Bird Survey methodology and template

### Part A: Standard Survey Methodology

The field survey will generate two outputs: A Pre-works Survey Report (see attached below) and an online eBird checklist.

The field survey methodology and reporting include the following elements:

- (A) When ready to begin the survey, the surveyor starts an eBird checklist on the app.
- (B) The surveyor walks slowly and systematically through any habitats within the proposed works area, and an additional 100 m buffer zone surrounding the proposed works area, surveying for nests, nesting colonies or chicks of any bird species listed as 'Nationally Threatened' or 'At Risk' under the New Zealand Threat Classification System (Robertson et al, 2021). The surveyor should aim to grid search suitable habitat on a 50 x 50 m grid, or zig-zag pattern, to ensure any incubating bird present are likely to be flushed from their nests and therefore detected.
- (C) If adults are flushed from nests or are showing other signs of breeding activity (e.g. defensive or alarmed behaviour, broken wing displays etc), then the surveyor should back away until the bird resumes normal behaviour, then observe the bird as it returns to its nest, or to check for the presence of chicks.
- (D) For any nesting or breeding birds detected, the location of any nests or chicks found should be recorded to an accuracy of 5-10 m using a handheld GPS device, and any nests marked with a small stone cairn labelled with the words "[species] nest". Any recommended exclusion zones for operators should be marked. Note, nests should **not** be permanently marked with dazzle or road cones or other conspicuous markers, as these have the potential to attract predators or casual inspection by curious people. Record GPS references as NZGD2000 New Zealand Transverse Mercator projection.
- (E) The surveyor should clearly delimit the area of habitat surveyed, either by marking the area clearly on an aerial photo, or by delimiting the area using a handheld GPS, by recording either a sequence of waypoints or a track describing the boundary of the survey area (or utilise the eBird generated track log). The surveyor should record the start and finish times of their survey, so that the total amount of time spent surveying the proposed site and surrounding buffer can be calculated.
- (F) During the survey, the surveyor should compile a complete eBird checklist of all the bird species seen or heard during the course of the survey, together with counts or estimates of the total number of individuals of each species seen or heard. This complete eBird checklist, together with location, date, time and search effort data, should be submitted as either a stationary or travelling count (whichever is most appropriate) to the New Zealand eBird database (<https://ebird.org/newzealand/home>).
- (G) Within the 'Comments' field of the eBird Checklist enter the consent reference number "CRCXXXXX" (the consent holder has this number) and the name of the habitat. E.g., Waimakariri River, CRC123456
- (H) Once submitted, the checklist should be shared with the Environment Canterbury, NZ eBird account. Using the eBird app in the field will automatically submit the requirements above.

- (I) Share survey counts from your existing eBird account with eBird account user Environment Canterbury, NZ. Do this by entering this username and where prompted the email address: [ecanbirddata@ecan.govt.nz](mailto:ecanbirddata@ecan.govt.nz). Do not directly email survey counts to this email address. Send the pre-works survey report to CRC Monitoring and Compliance.
- (J) Once the survey has been completed, the surveyor should prepare the pre-works survey report using the template supplied (attached below). This pre-works survey report should focus on documenting the name and qualifications of the surveyor, the location of the site surveyed, the number and locations of any nests, nesting colonies or chicks found, and a summary of any mitigation measures recommended. Note, the report should not contain any presence/absence or count data for adult birds. Instead, this is submitted to the New Zealand eBird data according to the instructions above. Each pre-works survey report should be a maximum of 3 pages in length.
- (K) Submit the pre-works survey report (the Word document) to CRC: Attn, Compliance Manager.

**Part B: Pre-works Survey Report**

<b>Pre-works Bird Survey</b>	<b>River name:</b>	<b>Date:</b>	
<b>A report for:</b> <i>Name, Company, resource consent code</i>			
<b>Time survey start &amp; end:</b>			
<b>1 Surveyor's Qualifications and Experience<sup>1</sup>:</b>  The survey was undertaken by: <i>Name, relevant qualifications</i>  Brief description of relevant experience, including: <i>-a summary of previous experience locating and monitoring shorebird / avifauna nests</i>			
<b>2 Search Effort</b> A survey was carried out in the proposed works site (including buffer zones) using the standard survey methodology provided by Environment Canterbury  The area surveyed was within the grid references:  <i>E.g. (Use NZTM Format) E1557634.151 N5189884.308</i> <i>The survey area length was 650m and was 17ha in area.</i>  <i>[Attach map of surveyed habitat in relation to consented area.]</i>			
<b>3 Results</b>			
<b>Bird species</b> Any 'Nationally Threatened' or 'At Risk'	<b>Nest, chick(s) or colony</b>	<b>(NZTM) E</b>	<b>(NZTM) N</b>
<i>E.g. Crested grebe</i>	<i>Nest (3 eggs)</i>	<i>E1557844</i>	<i>N5190014</i>
Please enter a locality map clearly delimiting the survey area and showing locations of nests or chicks or colonies, recommended exclusion zones and alternative accessways.  A complete checklist of all of the bird species identified during this survey, including species counts, location, date and search effort data has been submitted to the New Zealand eBird database and shared with the Environment Canterbury, NZ eBird account <sup>2</sup> . <i>[Enter eBird checklist number here]</i> .			

<sup>1</sup> a "suitably-qualified surveyor" is defined as someone who has a minimum of 160 hours field experience locating and monitoring shorebird nests.

<sup>2</sup> Please share survey counts from your eBird account with eBird account user Environment Canterbury, NZ. Do this by entering this username and where prompted the email address: [ecanbirddata@ecan.govt.nz](mailto:ecanbirddata@ecan.govt.nz). Do not directly email reports to this email address.

#### 4 Discussion and Recommendations

*Specify any exclusion zones from nests, chicks or colonies.* Exclusion distances may differentiate between “continuous” disturbance (disturbance that occurs continuously over a period of hours or more) and “episodic” disturbance (disturbance that occurs for a matter of minutes, e.g. trucks driving past a nest situated near an accessway). The recommended exclusion zone for activities resulting in “continuous” disturbance is 100m for nests and broods of chicks; whereas for activities resulting in “episodic” disturbance, or where nests or chicks are not in line of sight to the source of disturbance (e.g. an island of screening vegetation is situated between the nest or chicks and the source of disturbance), the distance may be reduced to a minimum of 25m where provided for by the bird survey report recommendations.

*E.g. A banded dotterel nest and an adult with a chick were detected within the proposed extraction area. I recommend that a 75m exclusion zone be maintained around the nest and where the chick was sighted. This exclusion zone was marked for the operators. The location of the banded dotterel chick prevents operating along the regular access track. Therefore, access will now be gained from another track, 250m east of the regular access track. The situation was discussed with the staff on site.*

*E.g. Recommendation: Works [can/should not] proceed in the proposed extraction area outside the two exclusion zones. Avoidance / Mitigation measures:*

#### Attachments:

*[Including map of surveyed habitat in relation to consented area]*

**Banded dotterel (*Charadrius bicinctus*)**

**National conservation status:** Threatened, nationally vulnerable (Robertson et al. 2017)

Medium sized dotterel 20cm, 60g. Breeding adult has white underparts with a thin black band on lower neck and broad chestnut band on chest. Male has bolder darker bands and a dark band above white forehead (Heather & Robertson, 2015)



Image courtesy of Neil Fitzgerald/NZ Birds Online

**Black-fronted dotterel (*Elsayornis melanops*)**

**National conservation status:** At risk, naturally uncommon (Robertson et al. 2017)

Small dotterel 17cm, 33g. Bill red, with a black tip. Black forehead, vertical patch onto crown, eyeline and v-shaped breast band. Upperparts are mottled brown. Hand have black wingtips. Sexes alike (Heather & Robertson, 2015)



Image courtesy of John Woods/NZ Birds Online

**Wrybill (*Anarhynchus frontalis*)**

**National conservation status:** Threatened, nationally vulnerable (Robertson et al. 2017)

20cm, 50g. Pale grey wader, with bill curved to the right. Underparts white with black band across upper chest. Sexes alike (Heather & Robertson, 2015)



Image courtesy of Samantha Ray

**Black-fronted tern (*Chlidonias albostratus*)**

**National conservation status:** Threatened, nationally endangered (Robertson et al. 2017)

29cm, 90g. Body, wings and tail bluish grey. Black cap down to bill on breeding adult. Thin white streak across cheeks. Bill and legs bright orange (Heather & Robertson, 2015)



Photo courtesy of Craig McKenzie/NZ Birds Online

**Caspian tern (*Hydroprogne caspia*)**

**National conservation status:** Threatened, nationally vulnerable (Robertson et al. 2017)

Large silver grey tern, 51cm, 700g. Red bill with black and yellow tip. Adult has black cap when breeding. Underparts white with black tipped underwing. Short tail with a slight fork (Heather & Robertson, 2015)



Image courtesy of Les Feasey/NZ Birds Online



**White-winged black tern (*Chlidonias leucopterus*)**

**National conservation status:** Non-resident native, migrant (Robertson et al. 2017)

Small tern 23cm, 65g. Breeding plumage is black head, neck, back and underparts, white rump. Upper wing pale grey and darker at tips. (Heather & Robertson, 2015).



Image Courtesy of Will Parsons/NZ Birds Online

**Black stilt (*Himantopus novaezelandiae*)**

**National conservation status:** Threatened, nationally critical (Robertson et al. 2017)

40cm, 220g. Pure adults are entirely black. Long pinkish-red legs, and long fine black bill. Red eye. Juvenile has white on head, breast and chest. (Heather & Robertson, 2015)

**Pied stilt (*Himantopus himantopus*)**

**National conservation status:** Not threatened (Robertson et al. 2017)

40cm, 220g. Long pinkish-red legs. Long fine black bill. Face throat and underparts white. Black crown, nape, hindneck, collar on lower neck and wings. (Heather & Robertson, 2015).

Image courtesy of Dick Veitch/NZ Birds Online

**South Island pied oystercatcher (*Haematopus finschi*)**

**National conservation status:** At risk, declining (Robertson et al. 2017)

46cm, 550g. Black and white, sharp border between black upperparts and white underparts. White tab upwards in front of folded wing. Long red bill and short red legs (Heather & Robertson, 2015)

Image Courtesy of Thomas Musson/NZ Birds Online

**Black-billed gull (*Larus bulleri*)**

**National conservation status:** Threatened, nationally critical (Robertson et al. 2017)

37cm, 250-300g. Pale gull. Long thin black bill and pale wingtips. Legs and feet black or reddish black. (Heather & Robertson, 2015).

Image courtesy of Gordon Watson/NZ Birds Online



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Robertson, H.A.; Baird, K.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Miskelly, C.M.; McArthur, N.; O'Donnell, C.J.F.; Sagar, P.M.; Scofield, R.P. and Taylor, G.A. 2017. *Conservation status of New Zealand birds, 2016*. New Zealand Threat Classification Series 19, Department of Conservation, Wellington

Image courtesy of Oscar Thomas/NZ Birds Online



**BEFORE THE HEARINGS PANEL APPOINTED BY  
CANTERBURY REGIONAL COUNCIL**

**UNDER** the Resource Management Act 1991 (RMA); and

**IN THE MATTER** of an application by Canterbury Regional Council  
for resource consent to discharge agrichemicals to rivers and their  
connected waterbodies, air and the coastal marine area, and the  
clearance of vegetation, for the purposes of weed management to  
provide flood, erosion, drainage and river enhancement works.

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**Supplementary evidence of Jolene Margaret Irvine  
on behalf of Canterbury Regional Council (applicant)  
15 April 2024**

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**Introduction**

1. My substantive evidence for the abovementioned application was submitted on 11 March 2024, and supplementary evidence lodged 31 March 2024. Following the hearing, the hearing commissioners issued Minute #2 on 2 April 2024, that requested further information or assessment on several matters. These are included in this supplementary evidence under the headings:
  - a. Updated proposed conditions;
  - b. Justification of setback distances;
  - c. Riverine environments definitions;
  - d. Canterbury Air Regional Plan – when is an air discharge consent required?;  
and
  - e. Assessment against Policy 23 of the NZ Coastal Policy Statement
2. This does not impact my position that CRC222040, CRC222041 and CRC222043 can be granted.

**Updated proposed conditions**

3. Updated recommended conditions have been provided in Attachment 1 of the Right of Reply that reflect discussions that occurred at hearing and following the hearing between myself and Ms Beattie.
4. Ms Beattie and I are in full agreement with conditions 1 – 42, including the schedules. I do not recommend the inclusion of conditions X1 and X2, but Ms Beattie does.

**Justification of setback distances**

5. The condition set provided in my substantive evidence, and updated in Attachment 1 of this supplementary evidence, includes Schedule 2 which lists setbacks between the activity and listed sensitive, restricted, and notifiable sites.
6. The purpose of this section is to provide commentary on how or why I selected each of those setback distances. In some instances, it was a carry-over of setbacks from expired consents CRC951580 and CRC041535, which now form part of normal operating procedures and where additional information has not suggested that a

more restrictive setback is required. Where this is the reason for certain setbacks, I have referred to the relevant consent number in the table below.

	<b>Feature / Criteria</b>	<b>Setback</b>	<b>Reasoning</b>
1	Education facilities (incl Schools and Preschools)	Aerial: 250m Ground: 50m	CRC951580: Aerial: 250m Ground: 50m setback proposed in s.92 response 2 and no further forthcoming information or assessment indicates that this is not an appropriate setback.
2	Surface water intake* for drinking water, or community or papakāinga supply	Aerial: 250m Ground: 50m	CRC981580: Aerial 250m and ground 25m CRC041535: 250m upstream (u/s) of private or domestic supplies and 1,000m u/s of community water supplies. 1,000m is now the permitted activity setback for surface water community supplies under the LWRP. These surface water supply sites are uncommon, and do not occur within the small waterways within a drainage network (where increased risk of direct discharge to surface water). Additional mitigations have justified the shift to 250m. I extended the ground setback from 25m to 50m to be consistent with the setback recommended for groundwater takes.
3	Surface water intake* (other than above)	25m	CRC041535: 25m u/s of surface water takes for uses other than domestic or community supply.
4	Groundwater intake*, for community or papakāinga supply	Aerial: 250m Ground: 50m	CRC981580: 250m specifically to shallow wells and Waimakariri Public Supply Wells. Recommendation of Dr Marta Scott: Ground 50m
5	Groundwater intake*, less than 20m deep, for drinking water supply (other than above)	50m	Recommendation of Dr Marta Scott: 50m
6	Groundwater intake*, (other than the above)	5m	Recommendation of Dr Marta Scott: 5m
7	Residential dwelling	50m	Setback proposed in s.92 response 2 and no further forthcoming information or assessment to indicate this is not an appropriate setback.
8	Established campsites	Aerial: 50m Ground: nil	50m setback proposed in s.92 response 2 and no further forthcoming information or assessment to indicate this is not an appropriate setback. Nil for ground will allow for weed management within campsites. Note the requirements for signage. It is also most likely that discharges within campsites would be a permitted activity.
9	Beehive	50m	CRC041535: 50m beehives Consistent with engagement with Apiculture NZ.
10	Designated mahinga kai gathering site	Aerial: 16m Ground: 5m	Dr Brian Richardson modelled spray drift with varying parameters and recommended a setback of 20m from the center of the helicopter. The helicopters have 8m long

			booms, so I have subtracted half the boom width as being the outer point of discharge from the helicopter. Ground based of 5m was chosen as a nominal distance.
11	Nesting Threatened and At Risk birds	100m	This is a commonly used setback for activities involving disturbance of riverbeds during bird nesting season.
12	Natural Inland Wetlands (for spraying other than maintenance and operation of specified infrastructure).	Aerial: 26m Ground: 10m	As above (under feature 10), I have started with the 16m setback from Dr Richardson's evidence, and added on 10m, as the NES-F rules on wetlands apply to within wetlands, and within 10m of wetlands.
13	Critical habitat mapped in LWRP		Ten (10) metres was used for ground based as that is the setback in the NES-F. Within 10m specific risk assessment is required by suitably qualified personal.
14	Known habitat of indigenous fauna listed as threatened or at risk.		I have grouped these features as there is commonly overlap with protected fauna and flora and wetland areas.
15	Inanga Spawning habitat between 1 January and the following 1 June (only).		Note that spraying around bat roosting trees would generally be a permitted activity.
16	Known trees with roosting bats		
17	Private flood protection vegetation	Aerial: 8m Ground: Avoid direct discharge on those plants	As above (under feature 10), I referred to Dr Richardson's modelled spray drift with varying parameters. His modelling identified a 12m setback was appropriate for all instances, except where droplet size wasn't 'ultra coarse and greater'. Again, that is 12m from the center of the helicopter, so 8m from the end of the boom.
18	Indigenous vegetation		To find a balance between risk and the requirement for weed control, I considered this slightly less conservative restriction appropriate for these features.
19	Aesthetic and commercial vegetation		
20	Other sites requested through annual hui or as notified by public.	As agreed	

### Riverine Environments definition

1. The updated recommended condition set included as Attachment 1 includes the following updated definition of Riverine Environments within the Coastal Marine Area.

***Riverine Environments within the Coastal Marine Area:*** means the typical river environment within the Coastal Marine Area\* that is dominated by terrestrial and freshwater\* plant species. It does not include areas of coastal water\*, hāpua, wahapū (estuaries), coastal beaches or areas dominated by coastal water\* tolerant plant species.

*\*as defined in the Resource Management Act 1991*

2. The definition refocuses the separation of where spraying may occur to only those areas dominated by freshwater environments. The Resource Management Act 1991 (RMA) definition of coastal water includes seawater that has a substantial freshwater

component and seawater in estuaries. Areas of coastal water are excluded from these consents.

3. To further illustrate why a coastal permit is required, and that this can be up to 1km upstream from the open ocean, I have included 'Appendix A – Map Series' to this evidence, that estimates the up-river extent of the CMA for seven braided rivers within Canterbury. In undertaking this exercise, I first measured the width of the river at its lower extent and then measured up-river either 5x that width, or 1km, whichever is the lesser (in accordance with the definition of the CMA in the RMA).
4. Agrichemical discharge and vegetation clearance is only required within the flowing rivers where there is a need to manage fluvial flooding and erosion risks. It is not proposed that these consents will authorise discharges to hāpua, wahapū (estuaries), coastal beaches or areas dominated by coastal water tolerant plant species.

### **Canterbury Air Regional Plan – when is an air discharge consent required?**

5. I have reviewed the 2016 [s42A report](#) and the [Recommended decision on submissions – Appendix A](#) for the Canterbury Air Regional Plan (CARP). Section 14-8 (PDF page 144) of the s42A report discusses proposed rules 7.72, 7.73 and 7.74 (operative version 7.77, 7.78 and 7.79). The s42A report states:

*Rules 7.72, 7.73, and 7.74 provide for the discharge of contaminants into air from the application of agrichemicals or fertilisers. The rules represent a step away from management of the application of these substances by the CRC, through the provisions of the pCARP. Generally application of agrichemicals and fertilisers are a discharge to land or water, with some fugitive discharge into air that is more likely to be significant when aerial or vehicular application methods are used. Therefore, these activities are likely to be managed under the LWRP. Further provisions requiring specific certification under legislation to which the CRC is not a regulatory authority (HSNO) has been removed.*

6. The s42A report went on to assess the submissions on [proposed] rules 7.72, 7.73 and 7.74 by the Ashburton, Waimakariri and Selwyn District Councils that sought inclusion of a new rule that provided for the application of agrichemicals using hand-held appliances by property owners. The s42A officers' assessment of that submission was:

*This was provided for by the NRRP. However, these rules were not carried over to the pCARP as they were considered to apply to discharges to land or water, rather than discharges into air, and also to go beyond the powers, functions and duties of a Regional Council pursuant to section 30 of the RMA. Some of the District Council's concerns appear to relate to a perception that application of agrichemicals in accordance with NZS8409:2009 requires separate certification, that may be onerous for small-scale applications. This is not the case, the standard provides users with direction for compliance with the HSNO Regulations, and the need for certification or not.*

7. The hearing commissioners' decisions, in 'Recommended decision on submissions - appendix A' (page 173), responded to the same submission request and adopted the recommendations and reasons set out in the s42A report.
8. In my substantive evidence (11 March 2024), I stated it was my opinion that ground-based applications did not require consideration under the CARP, where aerial discharges do. On review of the above s42A and decision report on the CARP, I now advise that vehicle-based discharges may indeed also require consideration under the CARP (and require consent) but I maintain that handheld discharges do not. The

impacts of that discharge to air are on land and water, and have been considered throughout the processing of these consent applications.

### **Assessment against Policy 23 of the NZ Coastal Policy Statement.**

9. An assessment against Policy 23 of the NZCPS was provided under paragraphs 564-568 of the AEE (page 117-118) and paragraphs 450-453 of the s42A report (page 70). An extended assessment is provided here.
10. This assessment is focusing on the aspects of the proposal that occur within the Coastal Marine Area (CMA) which is the lower extent of some braided rivers, but only within the riverine environments.
11. Policy 23 of the NZCPS has five parts; with Clauses 2, 3, 4, and 5 relating to discharges of human sewage, stormwater and from ports and other marine facilities which are not relevant to this proposal. Clause 1 relates to discharges to water, and states:

*In managing discharges to water in the coastal environment, have particular regard to:*

- (a) *the sensitivity of the receiving environment;*
- (b) *the nature of the contaminants to be discharged, the particular concentration of contaminants needed to achieve the required water quality in the receiving environment, and the risks if that concentration of contaminants is exceeded; and*
- (c) *the capacity of the receiving environment to assimilate the contaminants; and:*
- (d) *avoid significant adverse effects on ecosystems and habitats after reasonable mixing;*
- (e) *use the smallest mixing zone necessary to achieve the required water quality in the receiving environment; and*
- (f) *minimise adverse effects on the life-supporting capacity of water within a mixing zone.*

12. Regarding the sensitivity of the receiving environment (a), the environment has been described within the evidence of Ms Melissa Shearer, Dr Jean-Marie Jack and Dr Duncan Gray. Braided rivers are sensitive environments. They are inhabited by Threatened and At Risk New Zealand native flora and fauna, are of significance to Ngāi Tahu, globally rare and iconic to Canterbury. These braided rivers are also sensitive and vulnerable to weed infestations. Mr David Aires explained the consequences of weed infestation on flood and erosion protection whilst Dr Jack and Dr Duncan outlined that weed infestations can impact the habitat of native flora and fauna.
13. The nature of the discharge (agrichemicals), the risks of environmental limits being exceeded and the capacity of the environment to assimilate those contaminants (required by (b) and (c)) was primarily considered in the evidence of Dr Richardson and Dr Gray. Dr Richardson provided modelling that informed the proposed setback distances of aerial discharges to water to avoid the resultant water quality exceeding the Environmental Exposure Limits (EEL) or Maximum Acceptable Values (MAV).
14. Dr Gray's evidence, paragraph 59, outlined that the Australia and New Zealand Environment and Conservation Council (ANZECC) 2021 water quality guidelines included default trigger values for glyphosate in freshwater. The 99%, 95%, 90%, and 80% species protection levels are 0.18mg/L, 0.32mg/L, 0.46mg/L and 0.76mg/L respectfully. I note that the Canterbury Land and Water Regional Plan (LWRP) Schedule 5 sets the 99%, 95% and 90% species protection levels for glyphosate at 0.37mg/L, 1.20mg/L and 2.0mg/L respectively. The proposed resulting water quality

limit for glyphosate in water, after reasonably mixing is 0.1mg/L, which is lower than all these values.

15. Dr Gray did not identify an aquatic life trigger value for triclopyr and raised concerns specifically with the toxicity of ester-based formulation of triclopyr on aquatic life. Dr Richardson referred to the EEL of triclopyr 0.059mg/L, which is the single EEL set by the Environmental Protection Authority for triclopyr for 'Garlon™ 360' formulations (approval number HSR007690) which is an 'amine' based formulation of triclopyr.
16. Additional mitigations, including increased setbacks to water, are proposed to minimise the potential risk of triclopyr, particularly ester formulations, entering water.
17. I consider that these proposed setbacks minimise the risk that the environmental limits of agrichemicals will be exceeded through the proposed use of agrichemicals.
18. The significance of adverse effects on ecosystems and habitats, the life-supporting capacity of water, and the setting of mixing zones (as required by (d), (e) and (f)) were addressed in the evidence of Dr Gray and Ms Laura Drummond, and further discussed by those experts at the hearing.
19. Ms Beattie considered that any uncertainty as to the effects on surface water quality and aquatic ecology can be addressed through robust effects management measures imposed through consent conditions. This will ensure that surface water environments are sufficiently protected, and adverse effects are acceptable (paragraph 331 of the s.42A report). Ms Beattie and I have agreed to the recommended conditions provided in Attachment 1, except for whether conditions X1 and X2 are justified and required. I note those additional two conditions relate to information gathering and not effects mitigation per se.
20. The updated recommended conditions have linked the calculation of an appropriate mixing zone to the criteria listed in the LWRP. Given the activity occurs within the riverine environment, including within the CMA, I consider this appropriate.
21. In acknowledging the potential adverse environmental effects from no weed control, and the agreed recommended condition set, I consider that the actual and potential adverse effects have been mitigated as far as practicable and will ensure that agrichemical use will not result in significant adverse effects.
22. Overall, I consider that the proposal is consistent with Policy 23 of the NZCPS as it has considered the likelihood of the resultant agrichemicals entering into the riverine environment of the CMA, the actual and potential effects of those agrichemicals on the CMA, and mitigations to ensure that the proposal will not result in significant adverse effects.

Signed: 

Dated: 15 April 2024

**Jolene Irvine**

Rivers Planning Advisor



## Appendix A – Map series: Approximate Coastal Marine Area boundaries.

### Purpose:

The purpose of this Map Series is to provide a crude illustration on what may be consider in the up-river extent of the Coastal Marine Area (CMA) for a number of braided rivers within Canterbury. I have first measured the width of the river at its lower extent and then measured up-river either 5x that width, or 1km, whichever is the lesser (application of the definition of the CMA in the RMA).

### Key:

Dashed blue = indicative CMA on Canterbury Maps (no legal bearing).

Orange line = my measurement of river width, 'at mouth'.

Red line = either 5x the river width or 1km, whichever is the lesser. This may indicate the extent of the Coastal Marine Area, in accordance with the RMA definition.

Blue area = only on some images as examples of weed infested islands within the imagery shown that may be an example where weed control is needed within the 'riverine environment' of the Coastal Marine Area.













