

**Before the Canterbury Regional Council  
Hearing Commissioners**

In the Matter of            the Environment Canterbury (Temporary  
Commissioners and Improved Water Management)  
Act 2010 and the Resource Management Act 1991

And

In the Matter of            Submissions and further submissions on proposed  
plan change 4 (omnibus) to the partly operative  
Canterbury Land and Water Regional Plan

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**STATEMENT OF REBUTTAL EVIDENCE OF DR BELINDA ISOBEL  
MARGETTS FOR THE CHRISTCHURCH CITY COUNCIL**

**19 February 2016**

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## **INTRODUCTION**

### **Qualifications and Role**

1. My full name is Belinda Isobel Margetts. I have been requested by the Christchurch City Council (CCC) to give evidence in relation to inanga (*Galaxias maculatus*) spawning sites. My qualifications and experience are set out in my evidence in chief dated 29 January 2016.
2. I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise except where I state that I am relying on the evidence of another person.

### **Scope of Evidence**

3. My rebuttal evidence is provided in response to the statement by Ellesmere Sustainable Agriculture Incorporated (ESAI; C16C/11459), dated 29 January 2016.
4. I also request that an additional inanga spawning site be added to the list submitted in my evidence, and subsequently Schedule 17 (Salmon and Inanga Spawning Sites) of the Land and Water Regional Plan (LWRP).

### **Ellesmere Sustainable Agriculture Incorporated**

5. ESAI consider that there should be no known inanga sites or habitat until consultation with landowners is undertaken. They do not specifically state whether this should only refer to sites within their locality or the Canterbury region as a whole.
6. I do not agree with ESAI. This will mean in the interim no protection will be afforded to inanga sites and habitat, with potentially some time needed for consultation to be carried out. For known inanga sites at least, there is strong evidence of spawning activity, and therefore these sites should be protected as soon as possible.

7. ESAI also sought that artificial waterways be removed from the spawning habitat sites, as they consider these waterways only flow in response to rainfall and therefore do not provide spawning habitat. However, in my experience artificial waterways can have intermittent or permanent flow and can provide good habitat for native fish species. Therefore, there is the potential these waterways could provide spawning habitat. It is also hard sometimes to determine an artificial waterway from a modified natural or natural waterway. As such, I do not agree with the ESAI submission.

#### **Additional Spawning Site**

8. I have recently become aware of a survey that observed inanga eggs within an area of the Heathcote River not covered by the CCC spawning site maps<sup>1</sup>. I request that this site be added to the list of sites I submitted in Table 1 of my original evidence. I have updated this table below, with the changes underlined and italicised. As per my evidence, I request that this site be added to Schedule 17 of the LRWP.

*B Margetts*

**Dr Belinda Isobel Margetts  
Waterways Ecologist  
Christchurch City Council**

**19 February 2016**

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<sup>1</sup> Orchard, S. & Hickford, M. (2016). Spatial effects of the Canterbury earthquakes on inanga spawning habitat and implications for waterways management. Report prepared by Waterways Centre for Freshwater Management and Marine Ecology Research Group, University of Canterbury, for IPENZ Rivers Group. Christchurch, New Zealand.

**Table 1** CCC known inanga spawning sites

Reach ID	Catchment	Waterway Name	Spawning Site Location	Upstream Easting	Upstream Northing	Downstream Easting	Downstream Northing
1	Styx River	Styx River Tributary	The upstream limit is 2.45 km downstream of where the un-named vehicle track intersects with Seddon Street	2484304	5757152	2484420	5757157
2	Styx River	Styx River	Immediately upstream of the tide gates	2485015	5756430	2485006	5756644
3	Avon	Avon River	Avondale	2484351	5744647	2485041	5745015
4	Avon	Corsers Stream	Immediately downstream of New Brighton Road	2485465	5745128	2485462	5745072
5	Avon	Avon River	Orrick Crescent	2485657	5745101	2485699	5745106
6	Avon	Lake Kate Sheppard	Immediately upstream of New Brighton Road	2485868	5745327	2485953	5745157
7	Heathcote	Heathcote River	Aynsley Reserve	2482776	5738333	2482816	5738348
8	Heathcote	Heathcote River	Aynsley Reserve	2482877	5738374	2482900	5738384
9	Heathcote	Heathcote River	Opawa	2483104	5739162	2483249	5739346
10	Heathcote	Heathcote River	Woolston Park	2483862	5739917	2483871	5739928

Reach ID	Catchment	Waterway Name	Spawning Site Location	Upstream Easting	Upstream Northing	Downstream Easting	Downstream Northing
<u>35</u>	<u>Heathcote</u>	<u>Heathcote River</u>	Catherine Street footbridge	<u>2484405</u> <sup>2</sup>	<u>5739477</u>	<u>2484049</u> <sup>3</sup>	<u>5739335</u>
11	Heathcote	Steamwharf Stream	Immediately upstream of Dyers Pass Road	2485052	5739405	2485128	5739394
12	Allandale	Bamford Road Stream	10 m upstream of Governors Bay Teddington Road Bridge	2481716	5729544	2481718	5729552
13	Charteris Bay	Te Wharau Stream	110 m downstream of Marine Drive Bridge	2485941	5728191	2485910	5728214
14	Port Levy	Wharf Road Stream	145 m upstream of Wharf Road	2494741	5727252	2494750	5727246
15	Port Levy	Te Kawa Stream	At and upstream of, Fernlea Point Road	2495084	5727090	2495141	5727196
16	Pigeon Bay	Pigeon Bay Stream	170 m upstream of Wharf Road Bridge	2501581	5724145	2501552	5724200
17	Okains Bay	Opara Stream	At and upstream of the intersection of Schoolhouse Road Bridge	2512884	5721608	2512945	5721681
18	Le Bons Bay	Le Bons Stream	Downstream end adjacent to Le Bons Bay and Dalglis Road Intersection (spawning reach includes a side stream)	2516382	5716778	2516538	5716811
19	Goughs Bay	Goughs Bay Stream	650 m upstream of the beach	2517255	5711151	2517382	5711132
20	Flea Bay	Flea Bay Stream	(Western Stream) 40 m downstream of Flea Bay Road Bridge	2510400	5704397	2510411	5704384

<sup>2</sup> Site H8 in Orchard & Hickford (2016)

<sup>3</sup> Site H1 in Orchard & Hickford (2016)

Reach ID	Catchment	Waterway Name	Spawning Site Location	Upstream Easting	Upstream Northing	Downstream Easting	Downstream Northing
21	Takamatua	Takamatua Stream	90 m upstream of the termination of Takamatua Beach Road	2507506	5713993	2507480	5713990
22	Robinsons Bay	Robinsons Bay Stream	10 m upstream of Christchurch Akaroa Road	2507030	5715934	2507013	5715924
23	Duvauchelle Bay	Pipers Stream	Downstream of Christchurch Akaroa Road	2505373	5717108	2505355	5717098
24	Duvauchelle Bay	Pawsons Stream	2 m upstream of Christchurch Akaroa Road	2504473	5717406	2504477	5717402
25	Barrys Bay	Barrys Bay Stream	20 m upstream of Christchurch Akaroa Road	2502800	5716231	2502792	5716185
26	French Farm Bay	French Farm Bay Stream #2	25 m upstream of Wainui Main Road Bridge (70 m north of French Farm Bay #1)	2502560	5714260	2502605	5714221
27	French Farm Bay	French Farm Bay Stream #1	Upstream of Wainui Main Road Bridge (adjacent to Bantry Lodge Road)	2502560	5714166	2502560	5714156
28	Long Bay	Long Bay Stream	20 m upstream of the beach	2498573	5703400	2498558	5703396
29	Peraki Bay	Peraki Creek	100 m upstream of the beach	2495711	5705329	2495713	5705303
30	Tumbledown Bay	Tumbledown Bay Stream	Downstream of Te Oka Bay Road, 45 m upstream of the beach	2491493	5706058	2491494	5706045
31	Magnet Bay	Magnet Bay Stream	Just below footbridge and 200 m upstream of the beach	2489306	5707116	2489311	5707101

Reach ID	Catchment	Waterway Name	Spawning Site Location	Upstream Easting	Upstream Northing	Downstream Easting	Downstream Northing
32	Hikuraki Bay	Hikuraki Bay Stream	45 m upstream of the beach	2489371	5707850	2489372	5707835
33	Head of the Bay	Waiake Stream	120 m upstream of Charteris Bay Road	2483590	5726601	2483565	5726617
34	Lake Ellesmere	Kaituna River	1.2 km upstream of Christchurch Akaroa Road	2482625	5715757	2482575	5715770