

# Whitebait Watch Assessment Kit

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Mountains to Sea Wānanga

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# Ngā mihinui ki a koutou!

## Overview

- Context for citizen science
- Whitebait Watch overview
- iNaturalist project
- Data fields and access
- Feedback invited!
  - data fields / database / viewing records
  - guidance materials to support
- Q & A

# Why monitor īnanga?



- Declining species ...  
and biggest contributor to whitebait catch
- Very specific locations used for spawning
- Easy to damage/degrade these sites  
... could be easy to protect?
- High turnover (~yearly life cycle) means each  
season's whitebait rely on last season's eggs

OF INTEREST TO

Scientists / planners / policy makers / community!



# Īnanga methods development

2020

CITIZEN & COMMUNITY SCIENCE

- Whitebait Watch database & assessment kit

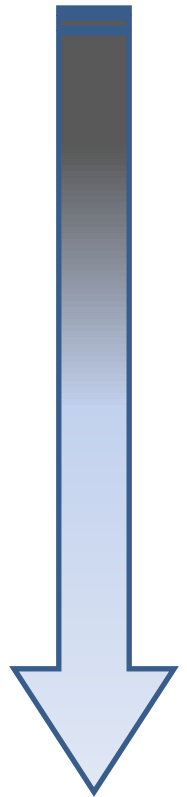
2021

TECHNICAL GUIDANCE UPDATE

- Review of spawning survey protocols
- DOC guidance for standardised survey methods
  - methods / data fields for detailed studies
  - incorporate historical records

FUTURE!

- Re-establish a national database in collaboration with potential users!



# Īnanga spawning: current state of knowledge

- 565 spawning sites in National Īnanga Spawning Database (NISD)
- NISD inactive since 2004
  - but surveys have happened since

We need

- lots more observations!
- pull together what we have
- consistency going forward ...

**Community & citizen science can help!**



# Whitebait Watch - database & guidance for community & citizen science

## Covers:

- Where to look
- What measurements to take
- How and where to store data
- How to access and view records

Supports and consolidates community-based monitoring efforts



# Draws on previous guidance



**Te Tiaki inanga**  
Care for inanga

Whakamahia he mōkihi tākakai kia mōhiotia ki whea te inanga whakawhānau ai

Kua roa nei te inanga hei kai huarangi i Aotearoa. E ai te Maori, he uri nō Tangaroa.

Contents lists available at ScienceDirect

**Ecological Indicators**

journal homepage: [www.elsevier.com/locate/ecolind](http://www.elsevier.com/locate/ecolind)

ELSEVIER

Original Articles

Use of artificial habitats to detect spawning sites for the con  
*Galaxias maculatus*, a  
spawning fish

D.S.E. Orchard<sup>a,b,c</sup>, M.J.H.

<sup>a</sup>Waterways Centre for Freshwater Management  
<sup>b</sup>Marine Ecology Research Group, University

## How to Locate and Protect Whitebait Spawning Grounds

NEW ZEALAND JOURNAL OF MARINE AND FRESHWATER RESEARCH, 2017  
<https://doi.org/10.1080/00288330.2017.1392990>

RESEARCH ARTICLE

**Census survey approach to quantifying inanga spawning habitat for conservation and management**

Shane Orchard <sup>a</sup> and Michael J. Hickford <sup>b</sup>

<sup>a</sup>Waterways Centre for Freshwater Management, University of Canterbury and Lincoln University, Christchurch, New Zealand; <sup>b</sup>Marine Ecology Research Group, University of Canterbury, Christchurch, New Zealand

Taylor & Francis  
Taylor & Francis Group

Check for updates

**whitebait Connection**  
Xstream about freshwater life

National Inanga Spawning Education Programme

Department of Conservation  
Te Papa Atatu

TE WĀNANGA O RAU

RESEARCH ARTICLE

Earthquake-induced habitat migration in a riparian fish has implications for conservation management

Shane Orchard<sup>1,2</sup> | Michael J.H. Hickford<sup>2</sup> | David R. Schiel<sup>2</sup>

**Inanga/Whitebait**  
What • Where • Why • How

# What are we talking about here?





# Whitebait Watch project

[www.inaturalist.org/projects/whitebait-watch](http://www.inaturalist.org/projects/whitebait-watch)

« Projects



Whitebait Watch

[Terms & Rules](#) | [Edit Project](#)

[Add Observations to This Project](#)

## Stats

### Totals

**850**  
Observations »

**5**  
Species »

**223**  
People »

### Most Observations

**shane\_orchard**  
340 observations

**wild\_wind**  
36 observations

**belstudholme**  
18 observations

**jacqui\_nz**  
18 observations

**andymckay**  
16 observations

### Most Species

**wild\_wind**  
4 species

**charlesfryett**  
4 species

**parkecology**  
4 species

**john\_barkla**  
3 species

**silversea\_starsong**  
3 species

### Most Observed Species

**Inanga**  
475 observations

**Banded Kokopu**  
276 observations

**Giant Kokopu**  
44 observations

**Koaro**  
38 observations

**Shortjaw Kokopu**  
17 observations



## » Members

10 members



[View All Members »](#)

## » Your Membership

340 observations

## » Add from Your Observations

[Download template for use in the bulk uploader](#)

## » Export Observations

[Atom / CSV](#)

## » Project List

# Data entry screen

## Whitebait Watch project

### Add An Observation to Whitebait Watch

What did you see?

Was it captive / cultivated? ?

When did you see it?  
  
(GMT+12:00) Auckland v  
e.g. 2019-10-29 13:15:21

Notes

Tags Comma-separated, please

Where were you?  
Name of the place you made the observation

Lat:  Lon:  Edit  
Acc (m):  Src:

Map Satellite ☰ ⌂  
  
Google Map Data 500 km Terms of Use

Change geoprivacy open v ?

Add: [Batch](#) · [From list](#) · [Import](#) · [From photos](#)

Add media  
[Add Photos](#) [Add sounds](#)

Search  
[Find Photos](#) [Select All](#) [None](#)

[« Prev](#) [Next »](#)

Select One or More Photos  
[Choose Files](#) No file chosen  
 Sync obs. w/ photo metadata? clear

We also support [Flickr](#), [Google Photos](#), and [Facebook](#) for image hosting.

[Link your Flickr account](#)  
[Link your Google account](#)  
[Link your Facebook account](#)

Fill out project observation fields

Organisation / group

Contact us to add your group to this list. Remember to also enter your group name as a Tag

project-specific fields

# Whitebait Watch project

Fill out project observation fields

Organisation / group

*Contact us to add your group to this list. Remember to also enter your group name as a Tag*

---

Catchment

*Name of the river, stream, or estuary that best describes this waterway*

---

Sub-catchment

*Details of sub-catchment or general locality*

---

River Bank side

*left or right bank, as you look down stream*

---

Length of reach surveyed (m)

*Length surveyed on this side of the waterway only*

---

Spawning sites - habitat type

*Choose best description for this site*

---

Spawning sites - length of site

*Record length of this site in metres*

---

Spawning sites - spawning area (m2)

*The area occupied by eggs in m2. This = the length of the spawning site (along the riverbank, or along the straw bale) x the average width of the egg band. eg. a 10 m site with average egg band width of 0.30 m has an area of 3.0 m2*

---

Spawning sites - egg number

*Estimate the number of eggs at this site. This = area of the spawning site x the average density of eggs*

---

Fish surveys - sampling method

*Record the sampling method for this observation. Use the Comments field to record additional details (e.g. number of traps used with the reach) - especially if using a non-standard method.*

---

Spawning fish observed?

*If unsure select no, if 'yes' describe further in comments*

optional  
data  
fields

# Whitebait Watch data fields

## General info

- Organisation / group
- Catchment + subcatchment
- Description of survey reach
- River bank side (left/right)
- Length of reach surveyed
- Threats

## Spawning site data

- Length of site
- Spawning area
- Egg number
- Habitat type





# Whitebait Watch data fields

## Fish observations

- Sampling method
- Number of fish
- Spawning fish observed (Y/N)



# Whitebait watch data fields

## Viewing your records

- Use search function in iNaturalist using Projects, Species, Places, or Tags

search using the Filters

Observations



Species

Location

Go

Filters <sup>2</sup>

The World

850  
OBSERVATIONS

5  
SPECIES





94  
IDENTIFIERS

223  
OBSERVERS

Map

Grid

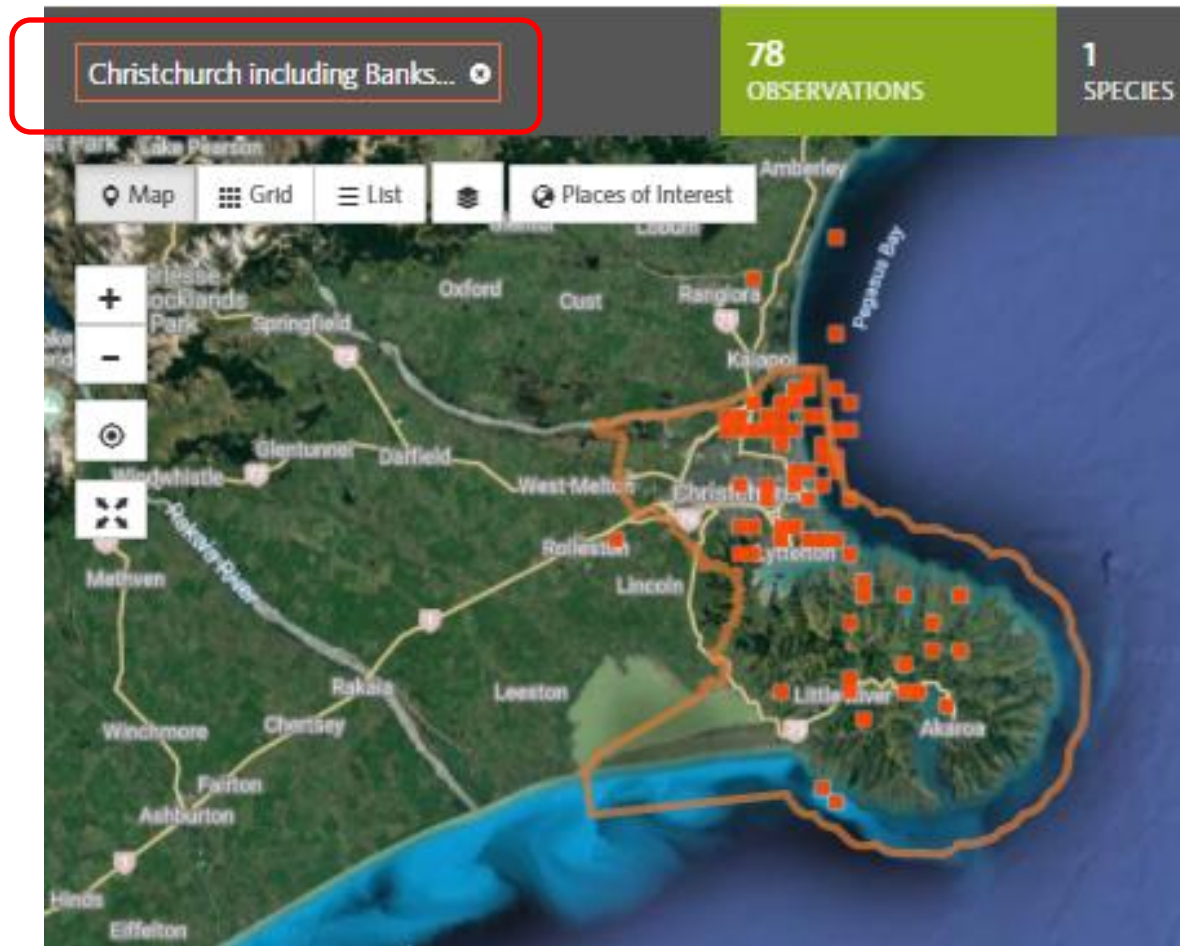
List

Media	Name	User	Observed	Place	Added
	<b>Inanga</b> ( <i>Galaxias maculatus</i> ) Casual	 shane_orchard	Feb 5, 2020	Canterbury, NZ	Apr 17, 2021 12:02 PM NZDT
	<b>Inanga</b> ( <i>Galaxias maculatus</i> ) Casual	 shane_orchard	Feb 5, 2020	Canterbury, NZ	Apr 17, 2021 12:02 PM NZDT
	<b>Inanga</b> ( <i>Galaxias maculatus</i> ) Casual	 shane_orchard	Mar 15, 2020	Canterbury, NZ	Apr 17, 2021 12:02 PM NZDT
	<b>Inanga</b> ( <i>Galaxias maculatus</i> ) Casual	 shane_orchard	Mar 15, 2020	Canterbury, NZ	Apr 17, 2021 12:02 PM NZDT

# Whitebait Watch data fields

## Viewing your records

- Example search on 'Christchurch' as a 'Place'



## Q & A !

- What do you think of the data fields?
- Have we missed anything?
- Too much info to enter?
- What extra guidance would you need?





# Thanks!

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