

# Catfish Incursion Response

## Monitoring Update and Communications

Shane Grayling – Biosecurity Team Leader

27 September 2018



# Lake Rotoiti catfish incursion

## Initial discovery – 16/03/2016

- First discovery of live catfish in Lake Rotoiti.
- Two catfish seen within 30 minutes.
- Incursion response planning began immediately.



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# Lake Rotoiti

## Previous reports (to our knowledge)

Numerous over a number of years:

- **1993:** Single catfish presented to DOC.
- **2004:** Electrofishing survey by UoW in response to circular excavations noted by NIWA divers.
- **2009:** Large dead catfish found washed ashore in Okawa Bay.
- **2015:** Owners of Lake Rotoiti hot pools report live catfish.
- **2016:** Live capture by weed harvester in Te Weta Bay.



# Brown bullhead catfish

## So what's the issue?

- Introduced in 1877 to the Auckland region.
- Opportunistic predatory scavengers, eat diverse range of food.
- Typically nocturnal bottom feeders.
- Prefer slow flowing, weedy, shallow habitat.
- Identified as one of the most significant threats to koura in New Zealand.
- Throughout the Waikato River system including Lake Taupō.





# Brown bullhead catfish

## So what's the issue?

- Can cope with huge range of temperatures, water quality, and are capable of surviving extended periods out of water.
- Typically grow to average of 230 – 305mm in length, rarely exceed 450mm.
- Mature at 2-3 years (approx. 200mm length).
- Thought to be serial spawners (few hundred to > 6000 eggs).
- Most catfish 1-5 years old though some have reached 8 years of age.



# How do we catch them?



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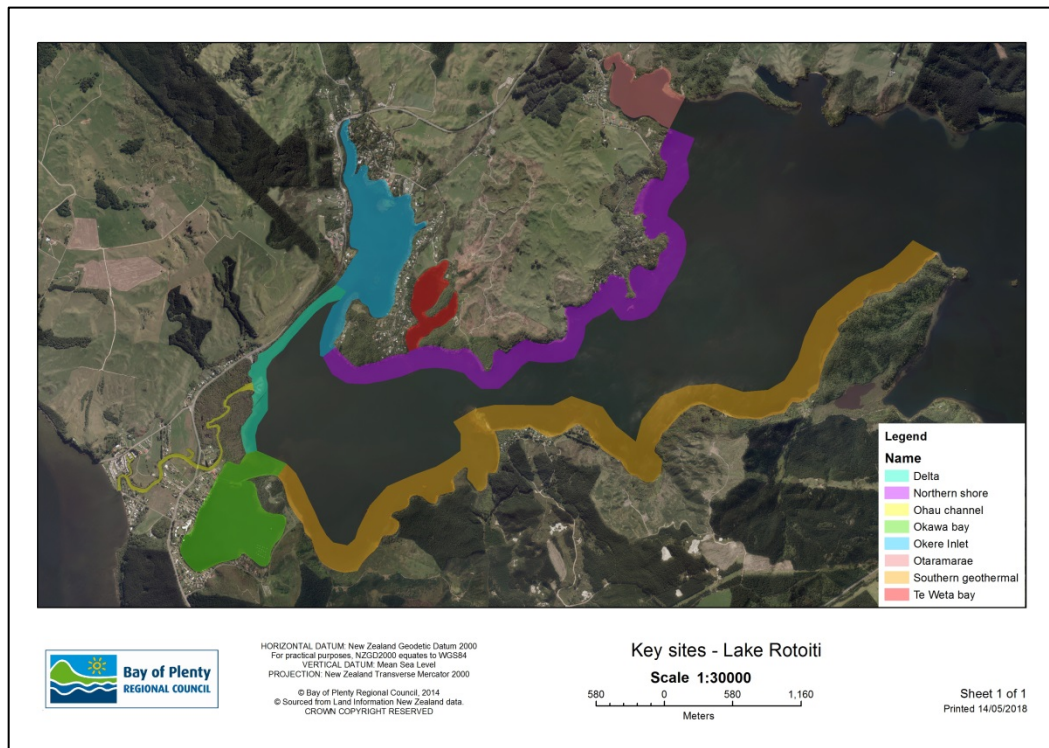
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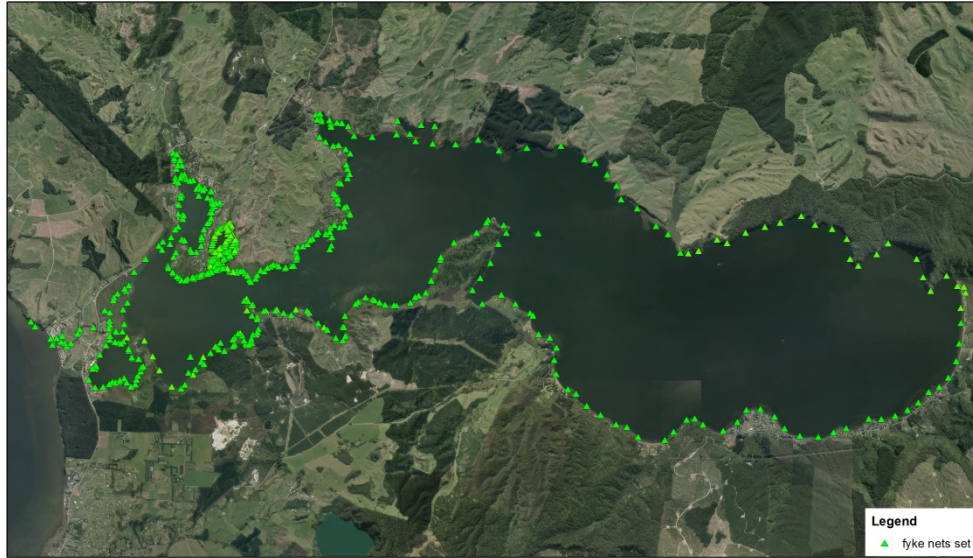


# Get your bearings





# How bad is it? March to June 2016



HORIZONTAL DATUM: New Zealand Geodetic Datum 2000  
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VERTICAL DATUM: Mean Sea Level  
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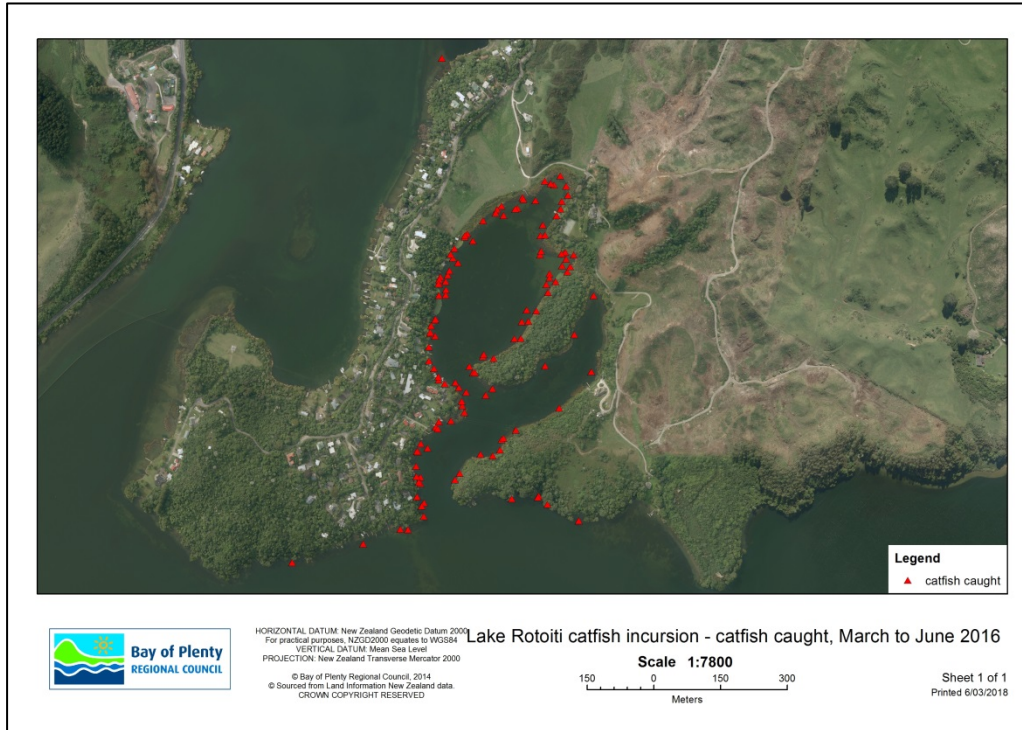
Lake Rotoiti catfish surveillance effort - March to June 2016

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Meters

Sheet 1 of 1  
Printed 8/03/2017



# How bad is it? March to June 2016



# Catch results – early 2016

Site	Nets set	Catfish caught	Percentage of total catch	Catch per unit effort
Te Weta Bay	290	381	97.44%	1.31
Northern shore	482	9	2.30%	0.02
Okere Inlet		1	0.26%	
OTHER		0	0.00%	
<b>TOTAL</b>	<b>772</b>	<b>391</b>	<b>100.00%</b>	<b>0.50</b>

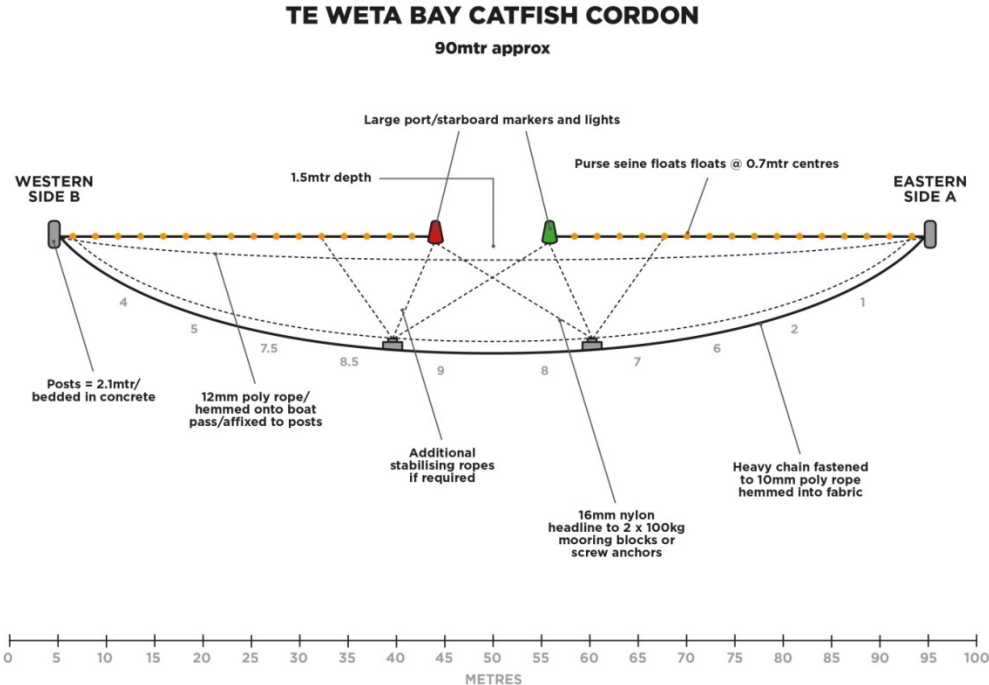
Lake	Nets set	Catfish caught
Lake Rotoehu	92	0
Lake Tarawera	253	0





# Operational work 2016/17

## Te Weta bay cordon – what does it look like?



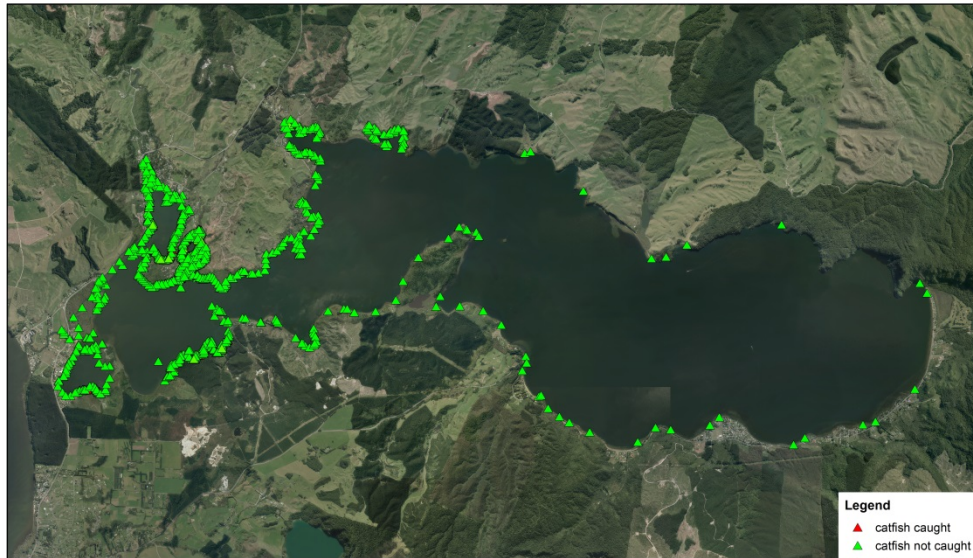
# Operational work 2016/17

## Te Weta bay cordon – a beautiful thing

- Variation to consent required.
- Installed April 2017.



# Control effort - 2016/17



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Lake Rotoiti catfish surveillance effort - 2016/17

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Meters

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Printed 28/06/2017



# Catch results – 2016/17



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Lake Rotoiti catfish caught - 2016/17

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Meters

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# Catch results - 2016/17

Site	Nets set	Catfish caught	Percentage of total catch	Catch per unit effort
Te Weta Bay	914	3,227	98.62%	3.53
Okawa Bay	146	6	0.18%	0.04
Okere Inlet	390	19	0.58%	0.05
Otaramarae	114	2	0.06%	0.02
Northern Shore	292	4	0.12%	0.01
Southern Geothermal	234	14	0.43%	0.06
OTHER	220	0	0.00%	0.00
<b>TOTAL</b>	<b>2,310</b>	<b>3,272</b>	<b>100.00%</b>	<b>1.42</b>

Lake	Nets set	Catfish caught
Lake Okareka	102	0
Lake Rotoma	68	0



# Some lessons

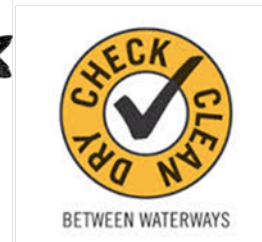
Site	Fine mesh net	Coarse mesh net
Te Weta Bay	91.41%	8.59%
Okawa Bay	83.33%	16.67%
Okere Inlet	87.50%	12.50%
Otaramarae	100.00%	0.00%
Northern Shore	75.00%	25.00%
Southern Geothermal	50.00%	50.00%
OTHER	0.00%	0.00%
<b>TOTAL</b>	<b>91.21%</b>	<b>8.79%</b>





# Some lessons

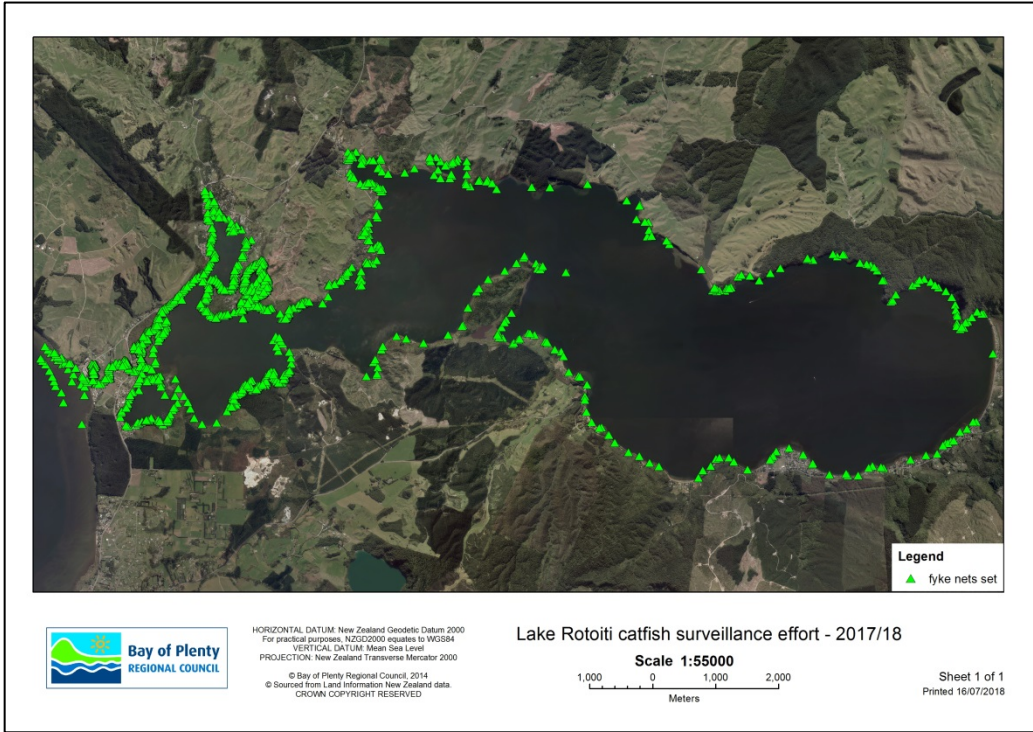
Length	Number of catfish	% of catch
351-400mm	8	0.24%
301-350mm	50	1.53%
251-300mm	14	0.43%
201-250mm	56	1.71%
151-200mm	198	6.05%
101-150mm	200	6.11%
51-100mm	1,351	41.29%
0-50mm	1,395	42.63%
<b>TOTAL</b>	<b>3,272</b>	<b>100.00%</b>



# Some lessons

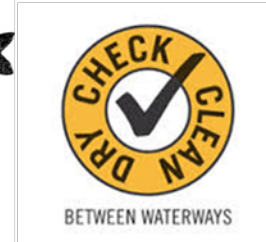
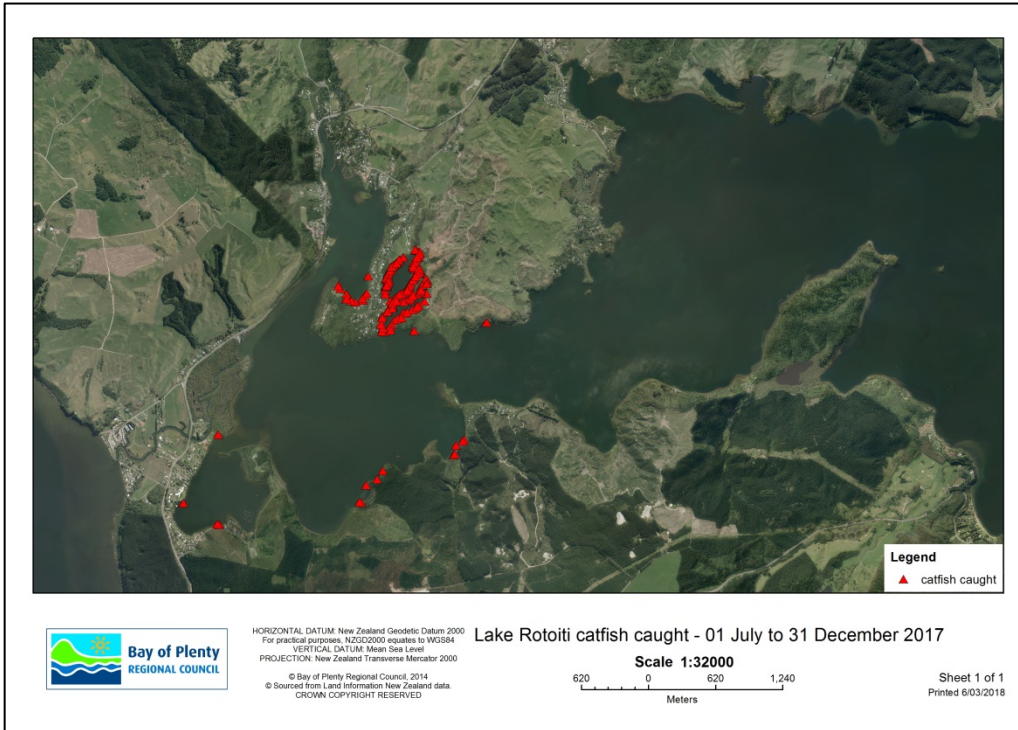


# Control effort - 2017/18





# Catch results – late 2017



# Catch results – 2017/18



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Lake Rotoiti catfish caught - 1 July 2017 to 30 June 2018

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Meters

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# Catch results - 2017/18

Site	Nets set	Catfish caught	Percentage of total catch	Catch per unit effort
Te Weta Bay	633	26,054	76.38%	41.16
Okawa Bay	178	425	1.25%	2.39
Okere Inlet	251	4,331	12.70%	17.25
Otaramarae	63	13	0.04%	0.21
Northern Shore	285	1,154	3.38%	4.05
Southern Geothermal	237	436	1.28%	1.84
Delta	266	150	0.44%	0.56
Ohau Channel	836	1,540	4.51%	1.84
OTHER	218	9	0.03%	0.04
<b>TOTAL</b>	<b>2,967</b>	<b>34,112</b>	<b>100.00%</b>	<b>11.50</b>

Lake	Nets set	Catfish caught
Lake Rotoehu	200	0
Lake Okataina	120	0
Lake Rotorua	127	0





# Research and Innovation



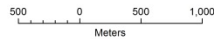
# Research and Innovation



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Catfish acoustic trial - receiver placement

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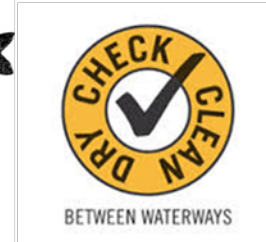


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# Research and Innovation



# Community catfish coordinator



William Anaru ([william@tearawa.iwi.nz](mailto:william@tearawa.iwi.nz))



# Communications



## Media Release

### *If you like trout, think about catfish*

27th September 2018

All it would take to cause irreversible damage to our lakes and tributaries is one person transporting a catfish or its eggs to a new body of water and starting another population.

That's why with the fly fishing season kicking off on October 1st, the Bay of Plenty Regional Council is asking anglers and lake users to be extra vigilant this season and help stop the spread of catfish.

Lake Rototiti holds the only known population of catfish in the Bay of Plenty after they were discovered in 2016 by the Bay of Plenty Regional Council while weed harvesting. Since the find the Regional Council and Te Arawa Lakes Trust have been working hard to keep their numbers down and stop them spreading to other waterways.

Biosecurity Team Leader Shane Grayling explains that catfish pose a real threat to lake ecosystems if allowed to spread.

"Catfish are a nasty invasive pest that not only predate on native fish, trout and trout eggs but they are also a serious threat to one of our taonga species, koura. They also lower water quality by churning up mud while feeding" says Grayling.

Anyone visiting Rotorua Lakes is reminded to always check their boat, trailer and gear for weeds before leaving a waterway as catfish or their eggs will often hide amongst the weed fragments. Catfish will also hide in trailers which is why people are urged to not leave them in the water unless loading or unloading their boats.



# Communications





# Communications

## AUKATIA TE HORA O TE KA POTI

### STOP THE SPREAD OF CATFISH

Catfish are an unwanted pest threatening to ruin the renowned Rotorua Lakes and tributaries. They prey on trout, native fish and they also lower water quality by churning up mud.

Catfish have already made it into Lake Rototiti and if they spread to other lakes, it could be devastating.

## HAI ĀTA TIRO ATU

### WHAT TO LOOK FOR



#### CATFISH EGGS

**How to identify:**  
Small mucus covered clusters of round eggs.

**Size:**  
2mm - 3mm in diameter.

**Colour:**  
Pale in colour and coated in mucus.



#### JUVENILE CATFISH

**How to identify:**  
Barbels (whiskers) around the mouth with three spines on dorsal and pectoral fins.

**Size:**  
20mm - 100mm in length

**Colour:**  
Juveniles are usually a single colour, brown/black.



#### MATURE CATFISH

**How to identify:**  
Barbels (whiskers) around the mouth, large hard spines on pectoral and dorsal fins, smooth skin with round fins and no scales.

**Size:**  
100mm - 400mm in length

**Colour:**  
Dark brown/green blending to green/yellow sides with a white belly.



## I MUA I TŌ WEHENGĀ BEFORE YOU LEAVE

**1**  
Remove all weeds from your boat, trailer and gear.

**2**  
Empty any ballast or lake water you may be carrying.

**3**  
Don't leave your trailer in the water, catfish love hiding in them.



KEEP OUR LAKES GREAT  
[STOPTHESPREAD.CO.NZ](http://STOPTHESPREAD.CO.NZ)

KO TE WAONGA PAI RAWA O TE HORAPATANGA KO KOE.  
OUR BEST DEFENCE AGAINST THE SPREAD IS YOU.

# A massive THANK YOU!

We could not do this alone...



TE ARAWA LAKES TRUST



NEW ZEALAND



Department of  
Conservation  
*Te Papa Atawhai*



**NIWA**

Taihoro Nukurangi



THE UNIVERSITY OF  
**WAIKATO**  
*Te Whare Wānanga o Waikato*

Thank you

Questions?

