

Version No: 05 Issue Date: 27-07-2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 1 of 15
	Hydrology Operations Manual	

State of Environment – Coastal Lake Helicopter Run 1



Organise helicopter and check the weather the day before

Field Site Location Guide

Coastal Lake Monitoring SoE

1. Lake Westmere (public notifications made)
2. Lake Kohata
3. Lake Waipu
4. Lake Koitiata
5. Lake Heaton (Power line hazard)
6. Lake William
7. Lake Herbert
8. Lake Alice
9. Omanuka Lagoon
10. Pukepuke Lagoon
11. Lake Koputara

Ohakea air space

(Monthly Sampling)

*Subject to weather and helicopter availability.

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 2 of 15
horizons regional council 	Hydrology Operations Manual	

SITE INFORMATION

[Contact details can be found here.](#)

Map showing Lakes to be sampled: (Red shading is Ohakea air space)



EQUIPMENT REQUIRED

Bottles in the helicopter	Twenty two 2 litre bottles plus four spare
Sampler NUMBERS	Eleven from Sampler (11), Eleven or Twenty two from CADDIS (11 or 22)
METERS/EQUIP	• SmarTroll or AquaTroll • Helicopter Sampling device and two 2 litre bottles per lake • Spare 2 litre bottles in case you lose some. (recommend 4) • This run guide in the helicopter • Warm clothes

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 3 of 15
horizons regional council 	Hydrology Operations Manual	

	Manually deployed PFD (No automatic Inflation life vests)
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		Latitude	Longitude
Lake Westmere	Site 1	-39.896211°	175.000657°
	Site 2	-39.894978°	174.999147°
	Site 3	-39.893456°	174.998593°

1

- Approximately 4.1 nm North of Wanganui airport (342 degrees true)
- Shallow Lake < 5 meters deep
- Monthly sampling by helicopter



Next Lake:

Lake Kohata, approximately 5.8 nautical miles heading South East (142 degrees true)

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 4 of 15
horizons regional council	Hydrology Operations Manual	horizons regional council

		Latitude	Longitude
Lake Kohata	Site 1	-39.972276°	175.079127°
	Site 2	-39.972012°	175.080627°
	Site 3	-39.971083°	175.081013°

2

- Approximately 2.5 nm ESE of Wanganui airport
- Shallow Lake < 5 meters' deep
- Monthly sampling by helicopter



Next Lake:

Lake Waipu, approximately **5.5 nautical miles** heading **South East**
(140 degrees true)

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 5 of 15
	Hydrology Operations Manual	

		Latitude	Longitude
Lake Waipu	Site 1	-40.043009°	175.156932°
	Site 2	-40.044016°	175.156233°
	Site 3	-40.044746°	175.155958°

3

- Approximately 0.9 nm West of Ratana
- Shallow Lake < 5 meters deep
- Monthly sampling by helicopter



Next Lake:

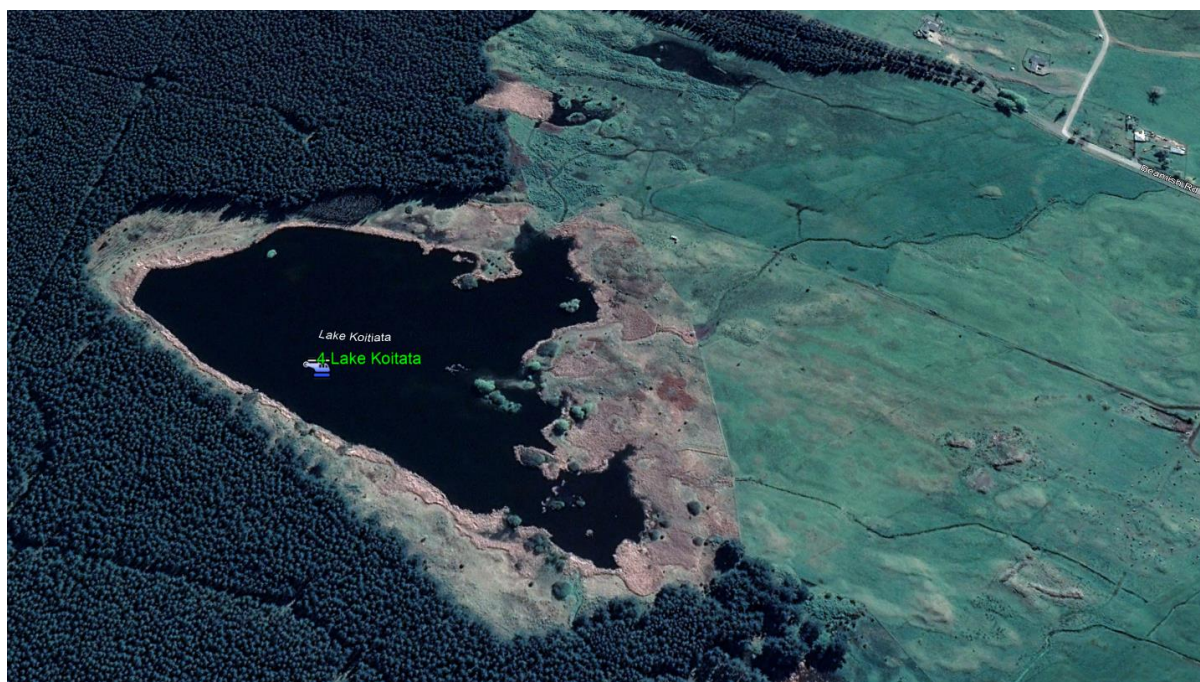
Lake Koitata, approximately **4.8 nautical miles** heading **South South East**
(157 degrees true)

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 6 of 15
horizons regional council 	Hydrology Operations Manual	

		<i>Latitude</i>	<i>Longitude</i>
Lake Koitata	Site 1	-40.117945°	175.196714°
	Site 2	-40.118620°	175.195929°
	Site 3	-40.117968°	175.193705°

4

- Approximately 2.2 nm NW of Santoft
- Shallow Lake < 5 meters deep
- Monthly sampling by helicopter



Next Lake:

Lake Heaton, approximately **4.3 nautical miles** heading **East North East**

(82 degrees true)

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 7 of 15
horizons regional council 	Hydrology Operations Manual	

		Latitude	Longitude
Lake Heaton	Site 1	-40.108037°	175.287341°
	Site 2	-40.106738°	175.288818°
	Site 3	-40.107846°	175.290572°

5

- **Caution, overhead power cable spans lake**
- Approximately 6.0 nm North West of Bulls
- Shallow Lake < 5 meters deep
- Monthly sampling by helicopter



Next Lake:

Lake William, approximately **1.3 nautical miles** heading **South East**

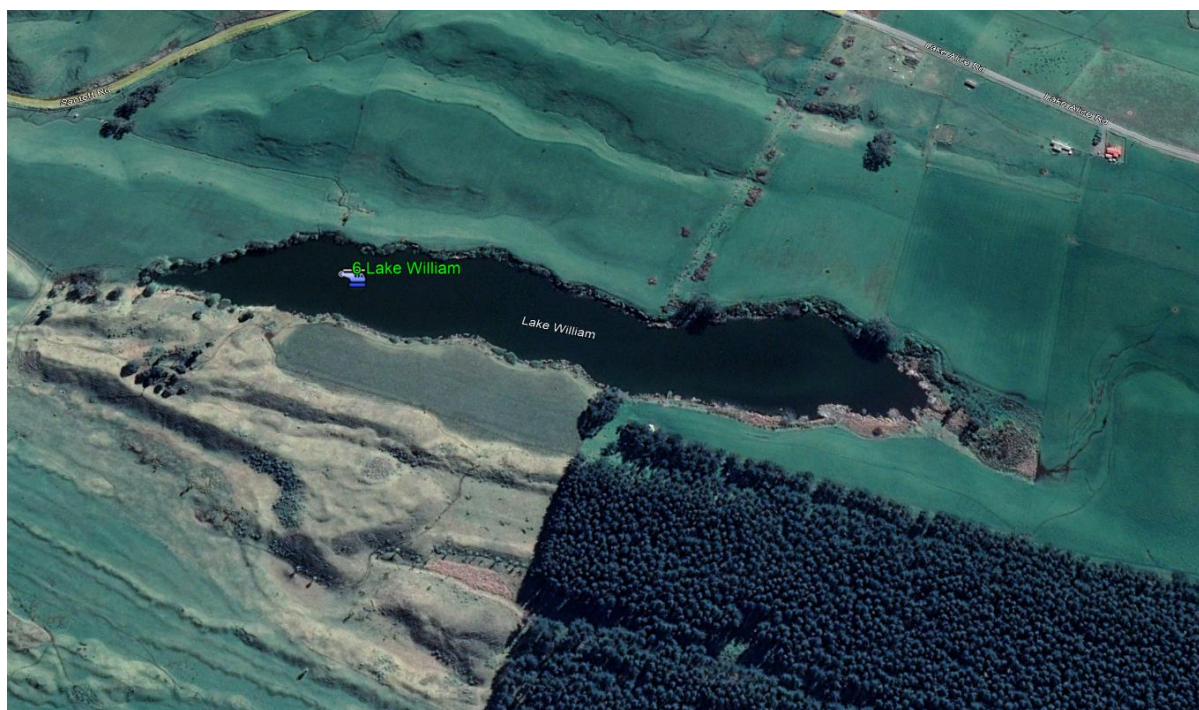
(133 degrees true)

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 8 of 15
horizons regional council 	Hydrology Operations Manual	

Lake William		Latitude	Longitude
	Site 1	-40.123310°	175.313462°
	Site 2	-40.122894°	175.311067°
	Site 3	-40.122528°	175.308906°

6

- Approximately 4.5 nm North West of Bulls
- Shallow Lake < 5 meters deep
- Monthly sampling by helicopter



Next Lake:

Lake Herbert, approximately **1.0 nautical miles** heading **South West**

(215 degrees true)

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 9 of 15
horizons regional council 	Hydrology Operations Manual	

		<i>Latitude</i>	<i>Longitude</i>
Lake Herbert	Site 1	-40.135405°	175.297038°
	Site 2	-40.135512°	175.297439°
	Site 3	-40.135673°	175.297841°

7

- Approximately 4.6 nm NW of Bulls
- Shallow Lake < 5 meters deep
- Monthly sampling by helicopter



Next Lake:

Lake Alice, approximately **1.5 nautical miles** heading **East**

(90 degrees true.)

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 10 of 15
horizons regional council 	Hydrology Operations Manual	

		Latitude	Longitude
Lake Alice S23:086167	Site 1	-40.135270°	175.333155°
	Site 2	-40.134183°	175.331707°
	Site 3	-40.132899°	175.330984°

8

- Approximately 3.4 nm NW of Bulls
- Shallow Lake < 5 meters deep
- Monthly sampling by helicopter



Next Lake:

Omanuka Lagoon, approximately **12 nautical miles** heading **South**

(180 degrees true)

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 11 of 15
	Hydrology Operations Manual	

		Latitude	Longitude
Omanuka Lagoon S24 075 950	Site 1	-40.329369°	175.327600°
	Site 2	-40.328552°	175.326269°
	Site 3	-40.327694°	175.324572°

9

- Approximately 4.9 nm NE of Himatangi Beach
- Shallow Lake < 5 meters deep
- Monthly sampling by helicopter



Next Lake:

Pukepuke Lagoon, approximately **2.7 nautical miles** heading **West south West**
(255 degrees true)

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 12 of 15
horizons regional council 	Hydrology Operations Manual	

		Latitude	Longitude
Pukepuke Lagoon	Site 1	-40.342353°	175.266291°
	Site 2	-40.341512°	175.265738°
	Site 3	-40.340917°	175.264767°

10

- Approximately 7 km NE of Himatangi Beach
- Shallow Lake < 5 meters deep
- Monthly sampling by helicopter



Next Lake:

Lake Koputara, approximately **3.6 nautical miles** heading **South**
(183 degrees true)

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 13 of 15
horizons regional council 	Hydrology Operations Manual	

		<i>Latitude</i>	<i>Longitude</i>
Lake Koputara S24 020 871	Site 1	-40.400205°	175.263447°
	Site 2	-40.399302°	175.262917°
	Site 3	-40.398470°	175.262388°

11

- Approximately 2.1 nm SE of Himatangi Beach
- Shallow Lake < 5 meters deep
- Permissions in place
- Monthly sampling by helicopter



End of run / return to base:

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 14 of 15
	Hydrology Operations Manual	

SPECIAL INSTRUCTIONS

-All crew, Horizons employees sampling from a helicopter, shall have read and signed the working in aircraft HMP and undertaken HUET, (Helicopter Underwater Evacuation Training)

SAMPLING DETAILS

In the air take photos of the lake as you arrive for colour etc. Also take photos of the iPad screen with the water quality parameters recorded showing. (Please ensure location services have been turned on, as this helps determine which lake was sampled).

Back on the ground, record on the lake sampling field sheet:

- **DO, TEMPERATURE, BAROMETER & pH & COND** – Use hand held meters.
- **OBSERVATIONS** – Weed & Algae growth density & depth from surface. Plus anything else of interest.
- **GRAB SAMPLES**

- **For each lake:**

In the helicopter, collect 2 x 1 litre bottles from each sampling site as per the run guide.

Samples will then be split back in the office, as follows:

- 2 one litre bottles from each site will be sent to ELS as is
- 3 Digi tubes
- Yellow top micro
- Metals bottle
- Anions bottle
- 500 ml sediment bottle
- ½ fill a glass bottle for toxins (freeze this)
- One preserved bottle and one unpreserved bottle for NIWA (Algal samples)

Refer to next page:

Version No: 05 Issue Date: 27/07/2022 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 53 Page: 15 of 15
horizons regional council 	Hydrology Operations Manual	

In the office, ALL lakes, sub sample from the bulk:

	One unpreserved bottle is sent to NIWA on the day of sampling, and is tested for Algae.. CADDIS ID 20XXHRCPHYXXX
	One preserved bottle is sent to NIWA on the day of sampling, and is tested for Algae. -Add 3 – 4 drops of iodine (if not pre prepared) CADDIS ID 20XXHRCPHYXXX
	½ fill a glass bottle from the bulk sample and store in freezer on its side. Science will send this to Cawthron when we have enough samples of the same toxin CADDIS ID 20XXHRCWQUXXXX