

Te Waikai Otaota: Te Mahere Nui

Spray plan 2 for Te Arawa Lakes Aquatic Weed Management 2024

Koheri ra! Kohera e!
Tutapa mai nuku, tutapa mai whiti
Kia rongo te pō, kia rongo te ao
Kia pā tata mai tō hau manawa
Ki tōku aronga manawa
Hai puta ki te whai ao, ki te ao mārāma
Tihē Mauri Ora!
Toitū te wai,
toitū te whenua,
toitū Te Arawa

Ngā Tono Whakarite | *Resource consents*

- **68367-AP** (Bay of Plenty Regional Council, Land Information New Zealand)
- **RM16-0520-AP** (Bay of Plenty Regional Council)

Te Waikai Otaota | *Te Arawa Lakes Treatment Areas*

Te Tukunga Waikai Otaota Aquatic weed control operations will be taking place intermittently between the 20th of May 2024 and the 30th of June 2024 in Lake Rotoiti, Lake Rotoehu, Lake Rotomā, Lake Tarawera and Lake Ōkātaina using the herbicide Diquat Dibromide.

Anō Pea Te Tukunga Waikai Otaota: Follow up treatment may be applied following this period depending on the results of the initial treatment.

Ka Rāhui Tēnei Takiwā o Te Moana: A rāhui on the area of control prohibiting swimming, taking food, and collecting drinking water will be in place for 24 hours following control operations.

Ka Whakatūria Ngā Pou Whakamōhio: Signage will be erected during this time to ensure all lake users are aware of this rāhui.

Table 1. Treatment areas and proposed dates of control for each lake.

Lake	Treatment area (ha)	Treatment area as a percentage of lake area (%)	Application method	Proposed date range
Lake Rotoiti	99.76	2.93	Boat	20 May – 30 June
Lake Rotoehu	1.47	0.18	Boat	20 May – 30 June
Lake Rotomā	2.31	0.21	Boat	20 May – 30 June
Lake Tarawera	8.81	0.21	Boat	20 May – 30 June
Lake Ōkātaina	11.31	1.05	Boat	20 May – 30 June

Te Takiwā | *Timing of operations*

The specific timing of operations within each season is dependent on wind, water and weather conditions. Preferred date ranges for each season will be included in each spray plan and provided to the public via methods outlined in the Communications Plan (Appendix 1).

In some cases, follow up control works may be required. Following herbicide application, a 14-day stand-down period will be implemented before further control works can proceed.

Control operations will not occur on any weekend, public holiday or during school holidays to ensure the programme does not impede the use and enjoyment of our lakes.

Ngā Herenga | *Consent conditions*

Ngā Tikiwai | *Water takes:*

Consented water takes will be notified via methods outlined in the Communications Plan (Appendix 1) prior to control works. All landowners adjacent to control sites and within a 200-metre buffer zone around each site will be notified prior to control works to ensure those with permitted water takes can take appropriate action.

Ngā Wharau a Ngā Manu Taketake | *Areas of native nesting bird roosting or breeding:*

During pre-spray monitoring a thorough investigation of each site is conducted and any notable areas of bird life recorded. These reports and any others from the community are taken into consideration alongside recommendations from the Department of Conservation to ensure roosting and breeding sites are undisturbed.

Ngā Wāhi Tapu | *Sites of significance to tangata whenua:*

Several sites are considered for control operations each year due to their significance to tangata whenua, such as wāhi tapu, mahinga kai and papakāinga. These sites can be added to or omitted from the programme upon request from hapū.

Ngā Karere | *Notification:*

All practical steps will be taken to ensure that the community, including the Rotorua Lakes Council, the Medical Officer of Health, iwi with mana whenua, landowners and occupiers adjoining or adjacent to areas to be sprayed, and the public are aware of control operations and subsequent rāhui and provided with contact information to discuss any queries or concerns.

Ngā Herenga Otaota | *Current weed conditions:*

Pre-spray monitoring survey is undertaken in the weeks prior to spraying to determine if weed and water conditions are suitable for diquat application. Weed species present in each lake are listed in table 2.

Table 2. Priority lakes for aquatic weed control and the weed species they contain.

Lake	Lake size (Hectares)	Weeds present
Rotomā	1100	<i>Lagarosiphon major</i> , <i>Elodea Canadensis</i>
Ōkāreka	340	<i>Lagarosiphon major</i> , <i>Elodea canadensis</i>
Ōkātina	1080	<i>Lagarosiphon major</i> , <i>Elodea canadensis</i>
Rotorua	7980	<i>Ceratophyllum demersum</i> , <i>Egeria densa</i> , <i>Lagarosiphon major</i> , <i>Elodea canadensis</i>
Tarawera	4130	<i>Ceratophyllum demersum</i> , <i>Egeria densa</i> , <i>Lagarosiphon major</i> , <i>Elodea canadensis</i>
Rotoiti	3400	<i>Ceratophyllum demersum</i> , <i>Egeria densa</i> , <i>Lagarosiphon major</i> , <i>Elodea canadensis</i>
Rotoehu	800	<i>Ceratophyllum demersum</i> , <i>Elodea canadensis</i> , <i>Lagarosiphon major</i>
Rerewhakaaitu	530	<i>Lagarosiphon major</i> , <i>Elodea canadensis</i> , <i>Egeria densa</i>

Based on the limited impact of the previous two control efforts and the significant scale of the weed issue on Lake Rotorua, aquatic weed control will not be undertaken on Lake Rotorua during this upcoming spray round. It is estimated that there are over 300 hectares of lake weed in Lake Rotorua, and lake weed wash up's following storm events such as those at the Rotorua Lakefront will continue to occur even if weed control is undertaken.

Pre-spray divers described good results from the previous rounds of aquatic weed control at Lake Rerewhakaaitu and Lake Ōkāreka, noting reduced weed extent and density. Due to these good results, these lakes have been omitted from the spraying programme for this round.

In Okawa and Te Weta Bay in accordance with consent condition 6.4, spraying will be conducted in 3 separate applications to ensure that no more than 25% of these bays are sprayed during any single application. Between each application, a stand-down period of 14 days will be observed before further spraying of herbicide in each bay.

Ngā Pou Ārahi | Cultural Monitoring Plan:

Alongside these control works, a cultural monitoring plan will be implemented to evaluate the impact of operations on taonga species. The purpose of the Cultural Monitoring Plan is to ensure that the values of Te Arawa associated with the lakes are identified and monitored alongside the activity of aquatic weed management.

Ngā tino wāhi | Priority control areas:

Table 3. Total proposed treatment area for each lake and the percentage of the littoral zone this occupies.

Lake name	Treatment area (ha)	Littoral zone (ha)	Treatment area as a percentage of littoral zone (%)
Lake Rotoiti	99.76	800	12.47
Lake Rotoehu	1.47	413	0.36
Lake Rotomā	2.31	342	0.68
Lake Tarawera	8.81	543	1.62
Lake Ōkataina	11.31	304	3.72

Ngā tino wāhi | *Priority control sites*

Rotomā



Site name	Treatment Area (Hectares)	Application Method	Preferred Date Range
Whangaroa Inlet	2.31	Boat	20 May - 30 June

Tarawera



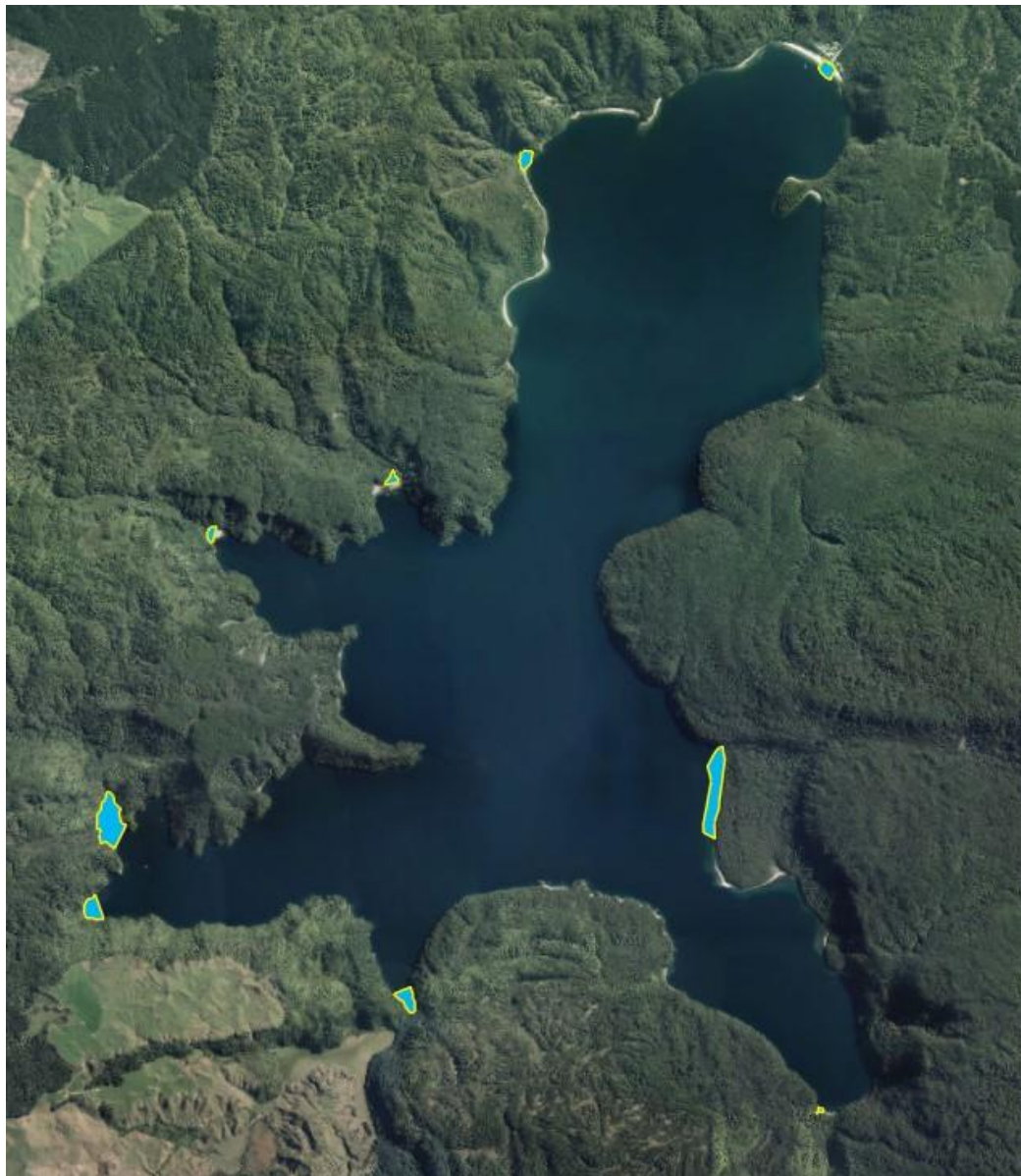
Site name	Treatment Area (Hectares)	Application Method	Preferred Date Range
Boatshed Bay	0.29	Boat	20 May – 30 June
Kōtukutuku Bay/The Landing	0.22	Boat	20 May – 30 June
Otumutu Lagoon	6.65	Boat	20 May – 30 June
Te Rātā Bay	1.12	Boat	20 May – 30 June
Wairua Hotpool	0.53	Boat	20 May – 30 June

Rotoiti



Site name	Treatment Area (Hectares)	Application Method	Preferred Date Range for spray
Gisborne Point/Punawhakareia Bay	20.2	Boat	20 May – 30 June
Te Ruatō Bay	3.43	Boat	20 May – 30 June
Hauparu Bay	0.47	Boat	20 May – 30 June
Ōkawa Bay	26.5	Boat	20 May – 30 June
Ōkahutoroa Bay/Cherry Bay	2	Boat	20 May – 30 June
Te Weta Bay	10.7	Boat	20 May – 30 June
Te Ti Bay	1.1	Boat	20 May – 30 June
Ōtaramarae Boat Ramp	8.64	Boat	20 May – 30 June
Ōkere Inlet	15.5	Boat	20 May – 30 June
Kakaho Bay	2	Boat	20 May – 30 June
Tapuaekura Bay	1.13	Boat	20 May – 30 June
Te Waiiti Stream	0.76	Boat	20 May – 30 June
Teal Bay	1.91	Boat	20 May – 30 June
Wairau Bay	0.89	Boat	20 May – 30 June
Te Akau peninsula	3.8	Boat	20 May – 30 June
Hinehopu	0.51	Boat	20 May – 30 June
Manupirua Bay	0.22	Boat	20 May – 30 June

Ōkataina



Site name	Treatment Area (Hectares)	Application Method	Preferred Date Range for spray
Log Pool Stream	0.63	Boat	20 May – 30 June
Ōtangimoana Bay	0.1	Boat	20 May – 30 June
Dogger Bank	3.72	Boat	20 May – 30 June
Kaikakahi Bay	0.34	Boat	20 May – 30 June
Tauranganui Bay	0.66	Boat	20 May – 30 June
Motuwhetero	1.1	Boat	20 May – 30 June
Previous weed cordon	3.42	Boat	20 May – 30 June
Haumingi Bay	1	Boat	20 May – 30 June
Paremata Bay	0.34	Boat	20 May – 30 June

Rotoehu



Site name	Treatment Area (Hectares)	Application Method	Preferred Date Range for spray
Ōtautū Bay	1.47	Boat	20 May – 30 June

Te Āpiti 1 | Appendix 1:

Whakapāpā | Communications Plan

Kua tuhia tēnei mahere whakapāpā e ai tā te Tono Rauemi 68367-AP i whakaaetia e Te Moana a Toi, mō te whakarehunga otaota ki te waikai e kī nei ko Diquat Dibromide, ki ngā rotomoana o Te Arawa.

This communications plan is written in accordance with Resource Consent 68367-AP granted by Bay of Plenty Regional Council for the purpose of controlling aquatic weeds with Diquat Dibromide across Te Arawa Lakes.

Aratakinga Whakapāpā | Communication objectives

- Engage with stakeholders and audiences to notify them of aquatic weed control works and use this as an opportunity to empower lake users with information about invasive lakeweeds and aquatic weed management.
- Provide a clear pathway for lake users to enquire about operations. Follow up on enquiries and supply sufficient information to ease any concerns.
- Ensure relevant audiences are informed of aquatic spraying operations including location and timing of proposed spraying and withholding period or rāhui for taking of water, swimming, and taking of fish for consumption.
- Comply with resource consent conditions.

Te Ara Tukutuku | Delivery partners and target audiences

- Target audiences are broken down into four categories:
 - **Mana whenua:** iwi and hapū who hold mana whenua status over spraying areas and/or have wāhi tapu or māhinga kai within spraying areas.
 - **Adjacent landowners:** public and private landowners adjacent to spraying areas.
 - **Business owners:** parties with economic or resource interests in spraying areas, including tourism operators and consent holders.
 - **Community groups:** community associations, schools, recreational lake users and any other parties which have an interest in the spraying area including visitors to the area.
- **Ngā Hoa Tāpui | Delivery partners**
 - Bay of Plenty Regional Council (BOPRC)
 - Toitū Te Whenua Land Information New Zealand (LINZ)
 - Te Arawa Lakes Trust (TALT)
 - Rotorua Lakes Council (RLC)
 - Department of Conservation (DOC)
 - Fish and Game (F&G)
 - National Institute of Water and Atmospheric Research (NIWA)
 - AquaAg Ltd.
 - Medical Officer of Health (enquiries@toiteora.govt.nz). To be informed of proposed spray works and of any poisoning events and/or environmental contamination.

Kupu Matua | Key messages

- Aquatic weed spraying will be occurring in _ area on _ date.
- A 24-hour rāhui or stand down period applies for swimming, taking of water and taking of fish for consumption.

- Invasive lakeweeds are a particular problem in Te Arawa rohe due to their ability to form large dense weed beds that have a negative impact on the lake ecosystem including our native species.
- Spraying invasive lakeweeds with the herbicide Diquat is a safe and effective way of suppressing these invasive lakeweeds based on current research and when used correctly it has no adverse effects on native species or humans.
- Consent has been granted by BOPRC to discharge the herbicide diquat into waterbodies for the purposes of controlling aquatic weeds.
- Any questions or comments concerning these matters can be directed to Te Arawa Lakes Trust via aquaticweed@tearawa.iwi.nz

Te Aronga | Approach

Engagement will occur at three levels:

1. **Notify target audiences** via **letter and/or email** detailing the location and timing of proposed spraying dates and rāhui information about taking of water, swimming, and taking of fish for consumption, and contact details for TALT. All target audiences identified above will be notified at this level.
2. Distribute written and video **media release** about upcoming aquatic weed spraying, the nature of diquat and invasive lakeweeds through local and regional newspapers, radio, stakeholder websites and social media.
3. **Signage** will be erected at each lake detailing the location and timing of control operations, their duration, information about rāhui for taking of water, swimming, and taking of fish for consumption, and contact details for TALT. See Appendix 2 for signage locations. Signage will be removed following this rāhui.
4. **Optional hui** will be offered to hapū affiliated with spraying sites. If accepted, TALT staff to give presentation about current aquatic weed management and accept feedback in person. Feedback from these hui will be recorded and incorporated into future operations. If a hui is deemed unnecessary by the hapū, information will be provided for hapū representatives to distribute.

Te Tūhononga Kōrero | Channels of engagement

Channel	Details of engagement	Timing (approximate)
Written and video media release	Written and video media release distributed via social media and TALT website.	1 week prior to control operations
Email/letter/phone call	Distributed to all target audiences.	1 week prior to control operations and throughout control operations
Websites	Copy of Spray Plan provided on stakeholder websites.	1 week prior to control operations
Newspaper	Notices in Rotorua Daily Post.	1 week prior to control operations
Radio	Announcements made on local radio station Te Arawa FM before and during control operations.	1 week prior to control operations
Social media	Posts made on TALT social media pages. Content will be developed by TALT and once posted a link will be distributed to stakeholders to share.	3 days prior to control operations and ongoing daily updates throughout control operations

Signage	Signage erected at each spray site.	1 day prior to control operations
Hui	Offered as an option to mana whenua.	Ongoing

Whakapā Mai | Contact details

Any queries should be directed to Te Arawa Lakes Trust via email aquaticweed@tearawa.iwi.nz. Further updates in relation to the work and treatment progress can be found on www.tearawa.iwi.nz and www.linz.govt.nz.

Tuku Kōrero Mai | Feedback form

Te Arawa Rotomoana | Te Arawa Lakes Trust Weed Spray Feedback Form

Please fill this form out and return to 1194 Haupapa Street, Rotorua, or email it to aquaticweed@tearawa.iwi.nz if you have any feedback regarding aquatic weed management operations.

This form will be assessed by Te Arawa Lakes Trust Health and Safety Officer.

Contact details

Name:	
Contact Number:	
Email address:	
Postal address: (optional)	
Signature: Date:	

Location of interest:

Method of application:	Yes/No
Boat	
Helicopter	
Manual (knapsack)	

Feedback:

Te Āpiti 2 | Appendix 2: Te tohu | Signage

Rotoiti



Signage locations:

- Delta boat ramp
- Otaramarae boat ramp
- Gisborne point boat ramp
- Punawhakareia boat ramp
- Hinehopu boat ramp

Tarawera



Signage locations:

- Otumutu lagoon boat ramp
- Stoney point boat ramp
- Boatshed bay boat ramp
- The landing boat ramp
- Hot water beach

Rotoehu



Signage locations:

- Kennedy Bay
- Ōtautū Bay

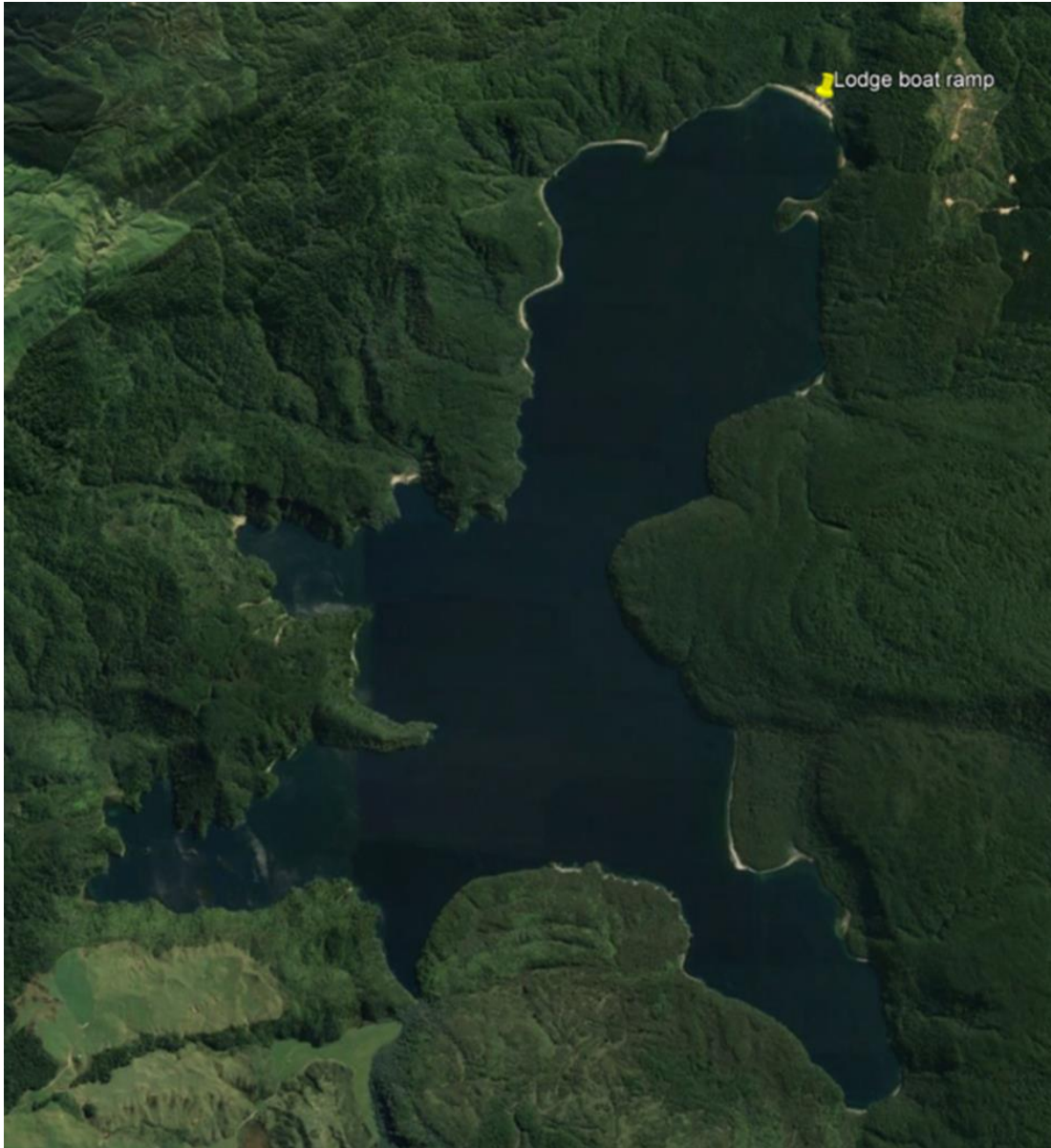
Rotomā



Signage locations:

- Merge boat ramp
- Matahi spit boat ramp

Ōkātaina



Signage locations:

- Lodge boat ramp