

Te Waikai Otaota: Te Mahere Nui

Spray plan 2 for Te Arawa Lakes Aquatic Weed Management 2023

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 mārama
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 1st of November and the 10th of December 2023 in Lake Rotorua, Lake Rotoiti, Lake Tarawera and Lake Ōkāreka 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 |
|----------|---------------------|---|--------------------|--------------------------|
| Ōkāreka | 24.8 | 7.29 | Boat | 1 November – 10 December |
| Rotorua | 69.8 | 0.87 | Boat | 1 November – 10 December |
| Rotoiti | 11.31 | 0.33 | Boat | 1 November – 10 December |
| Tarawera | 2.94 | 0.07 | Boat | 1 November – 10 December |

Te timing | *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 between 20 December and 10 January 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> |
| Ōkātaina | 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> |

Due to high water levels the following lakes have been omitted from control operations for this period:

- Lake Rotomā
- Lake Ōkātaina
- Lake Rotoehu

Pre-spray divers noted heavy fouling of weeds, sedimentation and algal blooms in Lake Rotoiti which impact the efficacy of control methods used. The following sites were omitted from control operations for this period due to poor weed conditions:

- Te Ruato Bay
- Hauparu Bay
- Okawa Bay
- Te Weta Bay
- Okere Inlet

Pre-spray divers noted reduced weed extent and density at Lake Rerewhakaaitu and Lake Ōkāreka.

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 (%) |
|------------------|----------------------------|---------------------------|--|
| Ōkāreka | 24.8 | 102 | 24.31 |
| Tarawera | 2.94 | 543 | 0.54 |
| Rotoiti | 11.31 | 800 | 1.41 |
| Rotorua | 69.8 | 2213 | 3.15 |

Ngā tino wāhi | *Priority control sites*

Ōkāreka



| Site name | Treatment Area (Hectares) | Application Method | Preferred Date Range |
|------------------|---------------------------|--------------------|--------------------------|
| Southern Outlet | 0.44 | Boat | 1 November – 10 December |
| Bird Walkway Bay | 0.91 | Boat | 1 November – 10 December |
| Lake Margin | 23.45 | Boat | 1 November – 10 December |

Tarawera



| Site name | Treatment Area (Hectares) | Application Method | Preferred Date Range |
|----------------------------|---------------------------|--------------------|--------------------------|
| Boatshed Bay | 0.50 | Boat | 1 November – 10 December |
| Kōtukutuku Bay/The Landing | 0.20 | Boat | 1 November – 10 December |
| Stoney Point | 0.20 | Boat | 1 November – 10 December |
| Otumutu Lagoon | 0.20 | Boat | 1 November – 10 December |
| Te Rātā Bay | 1.31 | Boat | 1 November – 10 December |
| Wairua Hotpool | 0.53 | Boat | 1 November – 10 December |

Rotoiti



| Site name | Treatment Area (Hectares) | Application Method | Preferred Date Range for spray |
|----------------------------------|---------------------------|--------------------|--------------------------------|
| Gisborne Point/Punawhakareia Bay | 5.18 | Boat | 1 November – 10 December |
| Okahutoroa Bay/Cherry Bay | 0.72 | Boat | 1 November – 10 December |
| Te Ti Bay | 1.1 | Boat | 1 November – 10 December |
| Otaramarae Boat Ramp | 2.28 | Boat | 1 November – 10 December |
| Tapuaekura Bay | 0.29 | Boat | 1 November – 10 December |
| Tokerau Bay | 0.63 | Boat | 1 November – 10 December |
| Wairau Bay | 0.89 | Boat | 1 November – 10 December |
| Manupirua Bay | 0.22 | Boat | 1 November – 10 December |

Rotorua



| Site name | Treatment Area (Hectares) | Application Method | Preferred Date Range for spray |
|--------------|---------------------------|--------------------|--------------------------------|
| Kawaha Point | 41.3 | Boat | 1 November – 10 December |
| Lakefront | 28.5 | Boat | 1 November – 10 December |

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. | 2 days 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

Ōkāreka



Signage locations:

- DOC campsite
- DOC carpark
- TWPT
- Boyes Beach carpark
- Boyes Beach
- Little Boyes Beach
- Acacia Bay boat ramp
- Lake Ōkāreka walkway

Rotoiti



Signage locations:

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

Rotorua



Signage locations:

- Hannah's Bay boat ramp
- Lakefront boat ramp
- Whittaker rd
- Bennetts rd
- Karenga St reserve
- Hei matau paddlers
- Haumoana St reserve
- Manahi Ave reserve
- Waiowhiro Stream
- Waikuta rd
- Ngongotahā boat ramp
- Hamurana boat ramp 1
- Hamurana boat ramp 2

Tarawera



Signage locations:

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