

Report to the Rural Services and Wairarapa Committee
from Dave Bayly, Biosecurity Officer (Plants)

Hornwort - Lake Wairarapa Wetlands – Management Options

1. Purpose

To update the Committee on options for control of Hornwort in the Lake Wairarapa wetland area and to identify future management options for approval.

2. Background

Under the Council's Pest Plant Management Strategy, Hornwort is classified as a Total Control Pest Plant. This classification was applied as Hornwort was thought to be limited to the outlet from Barton's Lagoon situated at the northern end of Lake Wairarapa. It was also thought at the time that control was achievable.

Since the initial discovery, several surveys have been undertaken and a further eleven infestations located. These infestations are mainly in waterbodies flowing into the Lake, embayments, lagoons and in drains and streams on private property along the eastern lakeshore. Surveys by foot in limited areas along the western lakeshore have failed to find any infestations.

Many of the new infestations are thought to have been created by the drift of vegetative material. However, spread has also occurred through the use of drainage machinery and fyke nets used by eel fishermen. Several of these new sites are now capable of readily dispersing significant amounts of vegetative matter.

3. Historical Control Efforts

The first attempts to control Hornwort were undertaken by the Council staff who hand weeded an area of the outlet from Barton's lagoon in 1997. The YMCA Conservation Corps also hand weeded 200 metres of stream to the west of the yacht club at the Lake Reserve in 1998. This work proved fruitless

as reinvasion was noted within three months. This form of control on that scale was abandoned.

In March 1999, the Department of Conservation trialed the use of polythene in the drainage system off Barton's Lagoon. This method attempts to eliminate light to the plant. In order for this type of control to be successful it requires regular moving of the sheeting to ensure that all infested areas receive coverage.

Although using polythene or similar material is an accepted method, on this occasion it was unsuccessful as the polythene remained in the same position. New growth quickly appeared on top of the sheeting.

A digger has also been used to clear streams at the Lake Reserve. This work has been undertaken by a local farmer on an annual basis for several years, to prevent flooding of his property during the winter months.

4. Current Infestations

The worst affected areas at present are the drainage system from Barton's Lagoon at the Lake Reserve, Oporua Spillway and Mangatete Backwater.

4.1 Barton's Lagoon

Prior to cleaning by the drain digger at the Lake Reserve, exceptionally heavy infestations of Hornwort provided complete coverage of virtually all of the waterways in this area. The cleaning work was undertaken in late February and the Hornwort has already begun to dominate again.

4.2 Oporua Spillway

At the Oporua Spillway below the Kahutara road bridge, surface reaching mats of Hornwort dominate both banks for approximately 1km. In places the infestations extend out into the channel for 10 metres or more. This area is also of concern as the intake channel for Boggy Pond is fed from this section of the spillway. The main intake channel is also totally dominated by Hornwort.

4.3 Mangatete Backwater

The lower end of the Mangatete backwater and stream to the Lake contain moderate to heavy infestations of Hornwort. The backwater is utilised by several farmers who draw water for irrigation.

For other affected areas refer to appendix 1.

5. Control Options

5.1 Weed matting

Council staff, in conjunction with the YMCA Conservation Corps, are to undertake a trial in the stream at the western side of the Lake Reserve, using weed matting. This trial will begin in March 2000. Two 50 metre lengths will be laid, with the first being elevated above water level and attached to the banks to block out the light. The second will be laid in the water to smother the infestations. After a period of six weeks, both trials will be assessed to determine which option will be continued.

The YMCA Conservation Corps have agreed to undertake the ongoing work of shifting the matting. During the winter months the matting will be removed and re-laid in spring.

Such localised infestations can be treated in this manner but this method is not acceptable for areas such as the Oporua Spillway, Mangatete Backwater and the outlet from Barton's Lagoon, as these have deep water and are subject to flooding.

5.2 Chemical Control

Diquat is the only chemical that is currently approved for control of submerged species. However this option has limitations as Diquat is readily deactivated in turbid or muddy waters. Virtually all infestations of Hornwort in the wetlands and surrounding areas are found in turbid or muddy waters.

As Diquat is only a desiccant, there would be a need to repeat the control process several times in a season. Annual control may be required.

5.3 Zoning

This would require areas of ecological importance to be identified and prioritised. Annual inspections would be necessary to determine whether Hornwort infestations were present. Any infestations would be removed using the most appropriate methods available.

Where the infestation is such that it is not practical to physically control, then alternatives such as suppression with weed matting would need to be explored. This work would need to be undertaken several times a year and would possibly require the services of a specialised contractor.

The areas to be determined as zones would require consultation between all affected parties. Other infested areas outside of the zones

would only require monitoring, unless minor infestations are found which could be readily controlled.

5.4 Suction Dredging

This option has already been investigated by the Department of Conservation. Indications are that suction dredging, in most cases, will only remove plant material above the streambed. There would also be difficulty with access to many of the sites.

6. Long Term Control Options

6.1 Chemical Control

The National Institute for Water and Atmospheric Research (NIWA) are currently trialing the Herbicide *Endothall* on various aquatic species, including Hornwort. To date, trial results are encouraging. This herbicide is currently used for the control of aquatic species in America but it may be several years before it is registered for use in New Zealand.

6.2 Ban On Activities

(a) Mechanical Clearance

This use of excavators to clear Hornwort is only serving to compound the problem. With each clearance operation, more material is removed from the beds and banks of the streams. This is in effect creating a more desirable habitat for Hornwort, as there is less flow in the streams.

While it is appreciated that flooding of property may occur if excavation is stopped, alternatives should be sought.

Prohibiting the use of diggers at the Reserve will help prevent the creation of better habitat for Hornwort. An education programme for contractors and farmers around the Lake who utilise diggers for drain clearance, will also help prevent the spread.

(b) Eel Fishing

It is believed that the initial problem began with eel fishermen from other areas having licences to fish the Wairarapa and bringing infected fyke nets into the region. These nets have not only been used in the Lake, but in backwaters, streams and rivers around the region.

Once Hornwort is established then local people who utilise the area for fishing and other recreational activities, may be unwittingly spreading it. The continued use of nets in infected areas will inevitably see the problem dispersed to other locations around the region.

Policing the movements of fishermen, to ensure they are not transporting the problem to other locations, would be difficult. A ban on eeling in affected areas would help to prevent the further spread of Hornwort. A ban on eeling may also prevent other unwanted aquatic species from being introduced to the area.

6.3 Habitat Manipulation

Some areas, particularly the Lake Reserve, lend themselves to habitat manipulation. Riparian plantings could help reduce the size and density of infestations by reducing light. In conjunction with tree planting, some areas could be sectioned off, drained and then sprayed on an annual basis, or weed matting applied.

Although these options will not achieve total control it will be effective in reducing the amount of plant matter being produced for reinfestation of other areas.

6.4 Working Group

It would be appropriate that representatives of all affected landowners form a working group so that a strategic plan can be agreed and implemented. As the regulatory agency, Council should take the lead role in managing this working group.

7. Ownership Of Waterbodies

While there is clear title to the surrounding land it has been difficult to trace ownership of the waterbodies themselves.

In order to determine who has title to a waterbody, a search of the deed title will be required. This will involve tracing land and deed titles back to when the crown disposed of the land to the original owners.

- Currently, it appears that the South Wairarapa District Council is responsible for administering the Lake Reserve at Featherston. This includes the majority of infestations around Barton's Lagoon.
- The small stream to the west of the Lake Reserve is shown as being part of the main lake body, which is administered by the Department of Conservation.
- The Mangatete backwater is on private land with several owners surrounding it. Title to this waterbody is unclear.
- The Oporua Spillway is currently administered by the Wellington Regional Council.

In some situations it is clear as to who are the guardians of certain waterbodies, but for the purposes of serving a Notice Of Direction there must be clear legal title.

8. Serving Notices Of Direction

- (a) Under the Strategy, Rule 4.13.3.1 requires all occupiers in the Wellington Region to destroy all plants of Hornwort wherever the plants occur in waterbodies on their land.
- (b) Failure to comply with the requirements of the Strategy can result in the Council serving a Notice Of Direction on an occupier under Section 122 of the Biosecurity Act 1993.
- (c) Failure to comply with a Notice Of Direction can result in Council carrying out work under Section 128 of the Biosecurity Act 1993 (Power to act on default) to achieve the purpose of that Direction.
- (d) Under Section 129 of the Act a management agency may recover costs incurred under Section 128 by way of a lien against the land concerned.

8.1 Implications of undertaking taking Legal Action

There are several issues that need to be addressed before consideration is given to taking legal action.

(a) Clear Title

Considerable time and expense will be required in order to determine who has title to certain waterbodies.

(b) Control Options

As the currently recommended techniques are inadequate for any permanent control, the Regional Council may have difficulty enforcing compliance. Serving of a Notice Of Direction by the Council under these circumstances may not be viewed with credibility.

(c) Issuing of Legal Direction

The issuing of Legal Directions would not be confined to the Department of Conservation but would also include the Regional Council, South Wairarapa District Council and various individuals.

9. Amending the RPMS

Mr Paul Champion of NIWA recommended in his May 1999 report that-

“Hornwort be removed from the Total Control Pest Plants list under the Wellington Regional Council Pest Plants Strategy, as eradication of this plant from the region is no longer possible.”

Mr Champion suggests to “retain Hornwort as a pest plant of regional significance to allow DoC to continue control efforts (on private property if necessary), provided there is no imperative for others to control Hornwort”.

Although his views are acceptable in the respect that eradication may no longer be achievable, staff consider that an amendment to the current Strategy is not appropriate.

The current definition of a Total Control Pest Plant allows the Council to continue to seek solutions –

“Pest Plants where infestation levels are such that eradication is considered possible and/or pest plants that pose an extreme threat to the regional environment if their spread is not controlled”.

The development of a working group will enable a closer look at possible control options. It is also imperative that we have authority to act quickly if infestations are located in other parts of the region.

The Strategy review process will consider the advantages of zoning of Hornwort. This option may enable clear areas to be given priority.

10. Summary

As Lake Wairarapa is recognised as a wetland of international importance there is an obligation for all affected parties to consider options for Hornwort management. It would be appropriate, as an initial step, to form a working group to develop a strategic plan that can be implemented to manage the Hornwort problem. As the regulatory agency, Council should take the lead role in forming and managing this working group.

The goal of the working group should be to protect those areas of ecological importance until such times as a long term solution to the problem can be found. Control methods and costs should be considered on a case by case basis.

The serving of Notices Of Direction by the Regional Council could possibly be subject to challenge, due to the lack of effective control measures that are currently available. The serving of Notices Of Direction is likely to make it difficult for the Regional Council to gain co-operation from individual occupiers, in particular, as there is no economic benefit to be gained by them. Most will consider the Hornwort problem to be of minor significance to their farming operations.

11. Communications

Communication with adjacent and affected landowners has occurred periodically over the last two years. A number of large public information signs have been erected at strategic points around entry points to the wetlands. An information pamphlet on Hornwort was produced for distribution in 1999. All known eel fishermen were contacted late last year with information on the effects of transporting Hornwort fragments around the Region.

All affected and interested parties will be contacted if the Committee approves the formation of a working group to consider future management strategies.

12. Recommendation

- (1) *That the serving of Legal Notices under Section 122 of the Biosecurity Act 1993 be deferred.*
- (2). *That the Council write to the Minister of Conservation expressing concern at the unabated spread of the aquatic pest plant, Hornwort, throughout the Lake Wairarapa wetlands, and requesting the Minister urgently resource the Department of Conservation to ensure that control measures can be effectively implemented.*
- (3) *That the Committee endorses the establishment of a working group to develop a strategy for addressing the future management of Hornwort in the Lake Wairarapa area.*
- (4) *That the working group prepare a draft strategy for Committee approval by the August 2000 meeting.*

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