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CONCLUSIONS

1. Hydrilla is a serious problem of national magnitude. Each day that passes poses a continued threat of it escaping into other waterways.

2. To do nothing or to defer action on this problem is unacceptable and irresponsible.

3. The problem is not a simple one and has a complex background. There are many interest groups, environmental issues and political imperatives. However, with goodwill and co-operation among the parties most concerned a situation acceptable to all should be attainable.

4. Eradication or containment of hydrilla now would potentially save the nation huge future costs. Eradication would be cheapest in the long term and offers the prospects for restoration of natural aquatic values of the lakes.

5. Eradication is possible at this stage, but the available methods that would be certain to work would destroy all life in the lakes. More benign methods look less certain to succeed at present, but are still possible: only after intensive effort and monitoring had commenced would it become obvious.

6. High level containment to radically reduce the risk of hydrilla escaping into other waterways, without drastically altering the lake ecosystems, is feasible with existing management tools. It would require a commitment long-term, or until eradication techniques had been developed to be clearly effective.

7. Should such a containment programme be enacted, most negatively affected would be the existing black swan population and trout-fishing activities on the lakes. Boating and eel fishing stand to gain, and a new recreational fishery - for grass carp - would be created.

8. Should grass carp be used, strict measures will be necessary to ensure the potential risks of them to waterways elsewhere are minimised.

RECOMMENDATIONS

1. Despite the current uncertainty of eradication using existing tools, a programme should be commenced now with the objective of eradication of hydrilla from each lake in which it occurs. This programme should contain the provision to be amended or modified to attain a high level of containment of hydrilla in the lakes for a period while additional tools are developed, if the current tools are not going to achieve eradication at all sites.

2. If eradication is attempted, the methods used should be a combination of densely stocked grass carp (to knock down the hydrilla beds and keep them down), weed matting and selective herbicides (to kill hydrilla where grass carp can't get it). An all-out effort should be made. Strict safeguards to confine the carp to the hydrilla lakes should be built into the operation.

3. For containment, the same combination of tools should be used (grass carp, weed matting and selective herbicides). It need not be quite so intensively applied, but targetted to the most likely sites for hydrilla transfer.

4. Current containment management - restrictions on boat use, restrictions on eel fishing using nets or hinaki, conditions on research and management practices and education - should be continued, and in fact stepped up and formalised. Kakahi gathering should also be restricted at this stage, to prevent the risk of accidental transfer of hydrilla tubers and turions.

5. Restoration or provision of alternatives to compensate for losses in traditional harvesting and recreational opportunities should be part of the eradication or containment programmes. For example, enhancement of lakeshore vegetation by planting of flaxes, shrubs, rushes and trees would encourage waterfowl, other birdlife and some traditional plant harvests.

6. Ecological compensation for the loss of the macrophyte beds of the lakes should be built into eradication or containment management. The most obvious is to enhance lakeshore stability and help control sediment and nutrient runoff from the land by planting a riparian zone of vegetation such as flaxes, rushes and shrubs. This would have direct or indirect benefits for wildlife (birds, eels, trout, invertebrates) and have other benefits too.

7. Should eradication be successful, active restoration management should be an integral component. By this is meant restoration of native aquatic vegetation communities, bird habitat, wildlife and recreational opportunities.

8. Research effort at this stage should be stimulated to find a selective herbicide effective on hydrilla in New Zealand conditions.

9. Hydrilla should be reclassified (as a Class A noxious weed) to reflect the severity of threat it poses and to ensure Crown funding for its control.

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DOC 4/18 PTS 015 RES 6/2/9/1 RES 6/4/8

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APPENDIX I: **TABULATION OF OPTIONS AND THEIR POTENTIAL COSTS, BENEFITS, RESOURCES REQUIRED AND PRACTICALITY**

Rankings of the potential costs, benefits and resources required are made on the assumption that the measures work; rankings of practicality are assessments of whether in fact they would work or are sensible.

0	=	zero
*	=	minor
**	=	moderate
***	=	major
?	=	unknown

THE OPTIONS

DO NOTHING/DEFER ACTION
Overall/in principle

ERADICATION	
Overall/in principle	
Water level draw-down	
Herbicides	- selective
	- non-selective
Mechanical harvesting	
Weed mats/blankets	
Biological	- grass carp
	- other
Dyes	

CONTAINMENT	
Overall/in principle	
Water level draw-down (periodic)	
Herbicides	- selective
	- non-selective
Mechanical harvesting	
Weed mats/blankets	
Biological	- grass carp
	- other
Competitive exclusion (other water plants)	
Restriction of boat use	
Restriction of net fishing and shellfish gathering	
Conditions on research and management practices	
Education (signs, notices, etc.)	

POTENTIAL COSTS/DISADVANTAGES

EXTENT			TIME FRAME		IN HYDRILLA LAKES									
Local	Regional	National	Short term	Long term	Traditional Harvests	Native Vegetation	Native Fauna	Exotic Vegetation	Exotic Fauna	Water Quality	Lakeshore Stability	Recreation	Restoration	Aesthetics
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POTENTIAL BENEFITS/ADVANTAGES

EXTENT			TIME FRAME		IN HYDRILLA LAKES									
Local	Regional	National	Short term	Long term	Traditional Harvests	Native Vegetation	Native Fauna	Exotic Vegetation	Exotic Fauna	Water Quality	Lakeshore Stability	Recreation	Restoration	Aesthetics
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RESOURCES REQUIRED AND PRACTICALITY

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PRACTICALITY	
SHORT TERM	LONG TERM
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