

MEL05516

21 June 2005

Meridian Energy
PO Box 14 100
CHRISTCHURCH

Attention Dave Herrick

Dear Dave

WAIIAU ARM AND LAKE MANAPOURI SURVEY FOR *DIDYMOSPHENIA GEMINATA*: ONGOING MONITORING 1 JUNE 2005

On 1 June 2005, Fred Inder and Evan Brunton on Te Anau carried out the first of the ongoing surveys following our detailed survey of the Waiau Arm and Lake Manapouri on 6-7 April 2005.

Methods were as described in Appendix 1 of the original survey report (*Didymosphenia geminata* in the Waiau Arm and Lake Manapouri: a survey to investigate current distribution, and recommendations for ongoing monitoring. NIWA Client Report CHC2005-037). Sixteen samples were collected and multiple subsamples from each were examined microscopically. Results are shown below (Map and Table 1).

Note that sample 10 (shown as a blue circle in Zone 2) which gave a positive result, was in exactly the same location as sample 48 in the initial survey, which was also positive. All four samples taken within Zone 1 were positive. Over time, the occurrence of Didymo in samples from Zone 1 may show a relationship to flows leading up to the survey. This can be analysed following further sampling.

We recommend sampling approximately monthly. Therefore the next survey should take place around 1 July. In view of the discussions at the meeting on 15 June of the *D. geminata* Technical Advisory Group, the next monitoring will comprise more concentrated sampling in the western part of Zone 2 and Zone 3, in addition to the sites sampled on 1 June. We will coordinate with Colin Sinclair/Fred Inder to organise this.

Yours sincerely

Cathy Kilroy
River Ecosystems Group, Christchurch

Table 1. List of samples collected on 1 June 2005, with microscope observations

Sample no	E	N	Type of sample	Location	didy_score	Notes on taxa present
1	2090025	5502692	rock	lake	0	Cymbella, Gomphoneis minutum, Fragilaria, Oedogonium, Synedra, Aulacoseira; lots of sand
2	2089374	5502225	rock	lake	0	small Gomphnema/Cymbella, Tabellaria, big Cymbella, Spirogyra, bulbochaete, Oscillatoria; silt
3	2088983	5501974	rock	lake	0	Epithemia sorex, Zygnema, Tabellaria, Oedogonium, G. minuta, Mougeotia, Melosira, Chaetophora; silt
4	2088836	5501718	rock	lake	0	Fine silt. Dichothrix, desmids (Netrium, Gonatozygon), Coleodesmium, Spirogyra, Tabellaria, Frustulia, Pinnularia
5	2090313	5501872	branch	lake	0	big Cymbella, Oscillatoria/Coleodesmium, Oedogonium, Pinnularia, G. acuminatum, Surirella, Frustulia, small diatoms
6	2090519	5500802	branch	south	0	big Cymbella, G. acuminatum, Synedra acus, Navicula, Nitzschia, Melosira, Eunotia
7	2091394	5500260	branch	north	0	Lyngbya, Synedra, big Cymbella, Gyrosigma, small diatoms
8	2092455	5499956	branch	north	0	big Cymbella, G. acuminatum, small/large Pinnularia, Synedra, Dichothrix, Frustulia
9	2093690	5499991	log/weed	north	0	Synedra, G. acuminatum, Pinnularia, Eunotia, Navicula, Surirella
10	2093791	5499380	branch	north	3	Synedra, G. acuminatum, Pinnularia, Oscillatoria, coleodesmium, Achnanthes inflata. Didymosphenia (1 cell, live, no stalk, in one subsample of 4)
D1	2093704	5499193	drift	centre	0	Cocconies, Gomphonema
D2	2092754	5499850	drift	centre	0	Aulacoseira
11	2094948	5497962	branch/weed	north	4	Melosira, Synedra, Pinnularia. Didymosphenia (live cells, no stalks, in all subsamples)
12	2095080	5497573	rock/branch	south	5	Synedra. Didymosphenia (occ-comm in all subsamples. Live cells, mostly detached; a few on stalks)
13	2095489	5497434	branch/rock	north	4	Synedra, Gomphonema acuminatum, Pinnularia, Didymosphenia (rare to occasional in all subsamples, cells only, no stalks. Many dead cells)
14	2095853	5496981	branch/rock	weir	8	Didymosphenia dominant (mostly detached live cells, some attached to stalks)

