

MEL05516

29 July 2005

Meridian Energy  
PO Box 14 100  
CHRISTCHURCH

Attention Dave Herrick

Dear Dave

**WAIUA ARM AND LAKE MANAPOURI SURVEY FOR *DIDYMOSPHENIA*  
*GEMINATA*: ONGOING MONITORING 25 JULY 2005**

The third survey in the ongoing surveillance of Didymo in the Waiua Arm and Lake Manapouri was carried out on 25 July 2005 by Fred Inder and Evan Brunton.

Methods were as used on the previous surveys. On this occasion, extra samples were collected from Frasers Beach, from the lakeshore along from the southern side of the Arm, and from around the western end of Zone 2. Thirty benthic samples and two drift samples were collected. Results are shown below (Table 1 and Map).

Again there was a single positive sample in Zone 2 in exactly the same location as positive samples in the previous three surveys. Didymo was rare in this sample and no healthy (live)-looking cells were found. All four samples from Zone 1 were positive. *Didymosphenia* was again not found in any subsamples examined from Zone 3 samples.

Yours sincerely

Cathy Kilroy  
River Ecosystems Group, Christchurch

**Table 1. List of samples collected on 25 July 2005, including main algae taxa found in each sample (in approx. order of abundance). Samples were taken from depths of 0.5 to 1.0 m.**

Sample number	E	N	Sample type	Zone	Score	Notes on taxa present
1	2090038	5502972	rocks, sand	3	0	Cymbella, many dead diatoms (Epithemia, Pinnularia, etc.)
1a	2089828	5502694	weed off bottom, rocks	3	0	Cymbella, Gomphoneis, Oscillatoria, Melosira, Synedra, Eunotia, Spirogira, Stigeoclonium, Navicula, Tabellaria
2	2089392	5502242	rocks, weed	3	0	Cymbella, Coleodesmium, Tabellaria, Epithemia, Navicula, Gomphoneis, Tabellaria, Fragilaria, Aulacoseira
2a	2089208	5502088	weed, rocks	3	0	Tabellaria, Aulacoseira, Epithemia, Cymbella, Gomphonema, Navicula
3	2089020	5502012	sand, rocks	3	0	Cymbella, Achnanthydium, Tabellaria, Stauroneis, Mougeotia, Gomphonema, Navicula, Zygnema.
4	2088889	5501837	rocks	3	0	Diatoma tenuis, Tabellaria, Cymbella, Gomphonema, Epithemia, Zygnema, Synedra
5	2088916	5501789	rocks, slimy weed	3	0	Charophytes; Cymbella, Tabellaria, Gomphoneis, Gomphonema, Phormidium/Oscillatoria, Fragilaria
6	2088826	5501729	slimy rocks	3	0	Cymbella, Phormidium, Nitzschia, Navicula, Neidium, tabellaria, Synedra
6a	2088789	5501675	branch, weed	3	0	Pinnularia, Cymbella aspera, Cymbella, Epithemia, Melosira, Aulacoseira (many dead diatoms)
6b	2088685	5501626	branch, sediment	3	0	Tabellaria, Fragilaria, Cymbella, Navicula, Aulacoseira, Meloseira
7	2088933	5501653	weed, rocks	3	0	Cymbella, Fragilaria, Diploneis, Gomphonema, Tabellaria, Nitzschia, Zygnema, Phormidium/Oscillatoria, Oedogonium
8	2089595	5501645	weed, branch	3	0	Synedra, Fragilaria, Cymbella, Navicula, Tabellaria, Melosira, G. truncatum, Oedogonium, Pinnularia, Eunotia
9	2089762	5501389	branches, weed	3	0	Phormidium, Navicula, Eunotia, Nitzschia, Pinnularia, Cymbella, Gyrosigma
10	2090179	5501205	sand, weed, sticks	3	0	Melosira, Pinnularia, Frustulia, Navicula, Phormidium/Oscillatoria, Oedogonium
11	2090100	5501161	sand, bark, sediment	3	0	Frustulia, Melosira, Symbella, Synedra, Nitzschia, Phormidium / Oscillatoria, Eunotia
12	2090423	5500921	weed, rocks	3	0	Nitzschia, Navicula, G. truncatum (on stalks), many small diatoms
13	2090321	5500862	stick, weed, sediment	3	0	Cymbella, Navicula, Diploneis, Gomphonema, Melosira, Surirella, Pinnularia, Nitzschia, Stigeoclonium, Fragilaria
14	2090632	5500690	sticks & weed	2	0	Synedra, Eunotia, Navicula, Phormidium, cymbella, Tabellaria, A. inflata, big variety of diatoms
14a	2090853	5500560	branches, weed & sediment	2	0	Cymbella, Sellaphora, Tabellaria, Surirella, Phormidium/Oscillatoria
15	2090524	5500643	sticks & weed	2	0	Synedra, Nitzschia, Cymbella, Navicula, Frustulia, many small diatoms
16	2090876	5500547	branches, weed sediment	2	0	Cymbella, Oscillatoria, Nitzschia, Synedra
16a	2090888	5500534	branches & weed	2	0	Many dead diatoms; Frustulia, Pinnularia, Aulacoseira, Surirella
17	2091676	5500216	sticks & weed	2	0	Synedra, Frustulia, Diploneis, G. acuminatum
18	2092539	5499949	rocks, weed, branches	2	0	G. acuminatum, Tabellaria, Diatoma tenuis, Cymbella; many small diatoms

Table 1 continued

Sample number	E	N	Sample type	Zone	Score	Notes on taxa present
19	2093775	5499956	branches, weed, sand	2	0	G. acuminatum, Melosira, Fragilaria, Pinnularia, Cocconeis
20	2093769	5499355	branches, weed, sediment	2	1	G. acuminatum, many small diatoms, Nitzschia, <b>Didymosphenia</b> (1 dead-looking cell)
D1	2093722	5499282	drift	2	0	leaf fragments with small diatoms attached
D2	2092880	5499355	drift	2	0	Tabellaria, Cocconeis, Chaetophora, Gomphonema, Eunotia (entangled with debris fragments)
21	2094515	5498287	sticks, weed, sediment	1	1	Pinnularia, Fragilaria, <b>Didymosphenia</b> (rare dead cells only, no stalks)
22	2095126	5497554	sticks, weed, sediment	1	4	Many small diatoms, <b>Didymosphenia</b> (common, but most dead/unhealthy; occasional live cells, most solitary)
23	2095487	5497414	branches, rocks, weed, sediment	1	5	Pinnularia, G. acuminatum, small diatoms. <b>Didymosphenia</b> (live Dg occasional/common, some attached to stalk fragments, many solitary)
24	2095852	5496955	weed, sediment, rocks	1	7	Nitzschia, many dead diatoms, <b>Didymosphenia</b> (live cells abundant, no intact colonies, mostly solitary cells, some with stalk fragments)

Results of analyses of samples collected on 25 July 2005. Yellow circles, no *D. geminata* found; green, dead *D. geminata* only; blue – pink – purple – black, live cells (with chloroplasts) rare – occasional – common – abundant – dominant.

