

Supplementary material

Methods

Fatty acid analysis - Homogenised sediment (200mg) and composite tissue of *M. liliana* (50mg) were added to pre-weighed glass vials containing a small magnetic stirrer bar. Tricosanoic acid (C23:0) was added as an internal standard in a solution of methanol:toluene (4:1 v/v). The standard (2mL) was added to each sample vial before slowly adding Acetyl chloride (200 μ L, over 1 min). Teflon caps were tightened and Teflon tape wrapped around each tube. The weight of each sample tube was determined and if there were any signs of evaporation after incubations, samples were re-run from freeze-dried sediment/*M. liliana*. Samples were incubated on a magnetic stirrer at 100°C for 1 hr (methanolysis). After tubes were cooled for 10 min in cold water, 5 mL of 6% K₂CO₃ was added to stop the reaction and neutralise the solution. Samples were capped, vortexed for 1 min and centrifuged at 1500 RPM for 5 min to aid separation. The upper toluene phase was transferred to small 1.5 μ L insert vials and 1 μ L aliquots of the suspensions were injected into a gas chromatograph (GC 7890 Agilent system) coupled with a mass spectrometry detector (MSD 5975c) to separate and quantify FAMES. System configuration followed Zarate and colleagues (2016). Raw FA data was data-mined using AMDIS and the R-package "MassOmics" as described by Han and colleagues (2017), to deconvolute and identify compounds. Fatty acid methyl esters (FAME) peaks were identified by comparing their retention times with those of an authentic FA standard mix (supelco 37 component FAME mix). The mass spectra of FAMES that were not contained in the standard mix were compared to the National Institute of Standards and Technology mass spectra library (NIST MS search 2.0) and the Lipid library of Christie (2012) giving a total of 51 possible FAMES.

Results

Supplementary Table 1: Summary information of sites selected.

Site Code	Harbour Name	GPS	
MK	Manukau	37° 07' 57.43" S	174° 41' 35.65" E
MH2	Mahurangi	36° 26' 57.19" S	174° 43' 50.16" E
WR3	Whangarei	35° 49' 31.5" S	174° 25' 26.04" E
MH3	Mahurangi	36° 29' 1.72" S	174° 42' 47.41" E
WG	Whangateau	36° 19' 1.60" S	174° 46' 11.03" E
MH1	Mahurangi	36° 29' 39.55" S	174° 44' 15.14" E
WR1	Whangarei	35° 45' 54.43" S	174° 21' 24.98" E
WR2	Whangarei	35° 46' 47.53" S	174° 26' 3.66" E