

ANNEX 12 – LAKES – Benthic invertebrates – CPET and LAMM

Contents

A1 Description of Method (i) CPET (ii) LAMM

A2 Key documents and references

A1 Description of Method

(i) CPET

The methods used to determine invertebrate class status in lakes has not changed between the 1st and 2nd RBMP. Therefore no comparisons have been undertaken. Note that some very minor errors and amendments are made to the CPET species scores. For reference, all of the up to date scores are provided in Table 1. Further information on the method can be found in the Key Documents section.

Chironomid Taxon	Nutrient sensitivity score
Ablabesmyia longistyla	-0.23
Ablabesmyia monilis	-0.34
Ablabesmyia phatta	0.66
Acamptocladius	-0.82
Acricotopus lucens	1.09
Apsectrotanypus trifascipennis	-1.35
Arctopelopia	-0.71
Brillia bifida	-0.21
Bryophaenocladius	-0.11
Chaetocladius	-0.62
Chironomus (lobo) dissidens	0.86
Chironomus anthracinus	0.06
Chironomus holomelas	-0.79
Chironomus other	0.65
Chironomus piger	0.93
Chironomus plumosus group	1.03
Cladopelma	0.22
Cladotanytarsus atridorsum	0.46
Cladotanytarsus lepidocalcar	0.86
Cladotanytarsus new pupal sp.	0.20
Cladotanytarsus other	0.06
Cladotanytarsus vanderwulpi	-0.84
Clinotanypus nervosus	0.33
Conchapelopia melanops	-0.93

Conchapelopia other	-1.14
Corynoneura arctica group	-0.48
Corynoneura fittkaui	-0.55
Corynoneura scutellata group	0.12
Corynoneurella paludosa	-0.09
Cricotopus (Cricotopus) other	-0.17
Cricotopus (I) brevipalpis	-0.64
Cricotopus (I) sylvestris (Fab)	0.97
Cricotopus (Isocladius) group	-0.11
Cricotopus (Isocladius) Pe	0.56
Cricotopus bicinctus	-0.29
Cricotopus intersectus group	0.97
Cryptochironomus obreptans group	0.46
Cryptochironomus redekei group	0.65
Cryptotendipes	0.19
Demeijerea rufipes	0.85
Demicryptochironomus	-0.29
Diamesa	-0.30
Dicrotendipes nervosus	0.58
Dicrotendipes notatus	0.90
Dicrotendipes other	0.15
Dicrotendipes tritomus	-0.55
Einfeldia pagana	0.49
Endochironomus	0.81
Eukiefferiella claripennis	-0.49
Eukiefferiella coerulescens	-0.83
Eukiefferiella other	-0.70
Georthocladius luteicornis	-0.90
Glyptotendipes (cau)	0.47
Glyptotendipes (sensu stricto)	0.76
Guttipelopia guttipennis	1.01
Harnischia	0.34
Heleniella ornatcollis	-0.33
Heterotanytarsus apicalis	-0.72
Heterotrissocladius	-0.70
Kiefferulus tendipediformis	0.82
Labrundinia longipalpis	0.43
Larsia	-0.44
Lauterborniella agrayloides	-0.71
Limnophyes	-0.17
Macropelopia aducta	-0.80
Macropelopia nebulosa	-0.72
Metriocnemus	0.17
Microchironomus tener	1.08
Micropsectra atrofasciata	-0.13
Micropsectra fusca	-0.33
Micropsectra junci	-0.07
Micropsectra other	0.06
Microtendipes	0.17
Microtendipes britteni	-1.58
Nanocladius balticus	-0.59
Nanocladius other	0.30
Neozavrelia longappendiculata	-0.96
Neozavrelia other	-0.47
Nilotanypus dubius	-1.39

<i>Nilothauma brayi</i>	-0.65
<i>Orthocladius</i> (<i>Eudactylocladius</i>)	-0.17
<i>Orthocladius</i> (<i>Euorthocladius</i>)	0.31
<i>Orthocladius</i> (<i>sensu stricto</i>) other	0.03
<i>Orthocladius consobrinus</i>	0.10
<i>Orthocladius frigidus</i>	-0.81
<i>Orthocladius holsatus</i>	0.57
<i>Orthocladius rubicundus</i>	-0.25
<i>Pagastiella orophila</i>	-0.66
<i>Parachironomus arcuatus</i>	0.57
<i>Parachironomus biannulatus</i>	0.96
<i>Parachironomus</i> other	0.37
<i>Parachironomus tenuicaudatus</i>	0.35
<i>Paracladius conversus</i>	1.18
<i>Paracladopelma camptolabis</i> group	-0.60
<i>Paracladopelma nigritulum</i>	-1.08
<i>Parakiefferiella coronata</i>	-1.10
<i>Parakiefferiella fennica</i>	-1.42
<i>Parakiefferiella</i> other	-0.56
<i>Parakiefferiella</i> Pe 1	-0.37
<i>Paramerina</i>	-0.68
<i>Parametricnemus</i>	0.40
<i>Paraphaenocladius</i>	-0.51
<i>Parapsectra nana</i>	-0.45
<i>Paratanytarsus laccophilus</i>	-0.16
<i>Paratanytarsus</i> other	-0.07
<i>Paratanytarsus tenellulus</i>	1.01
<i>Paratendipes</i>	0.02
<i>Paratrichocladius</i> other	-0.88
<i>Paratrichocladius rufiventris</i>	-0.34
<i>Phaenopsectra</i>	-0.41
<i>Polypedilum arundineti</i>	-0.59
<i>Polypedilum nubeculosum</i> group	0.39
<i>Polypedilum nubens</i>	-0.35
<i>Polypedilum</i> other	-0.06
<i>Polypedilum pullum</i> group	-0.25
<i>Polypedilum sordens</i> group	0.66
<i>Potthastia gaedii</i> group	-0.78
<i>Potthastia longimana</i> group	-0.36
<i>Procladius</i> (<i>holotanypus</i>)	0.29
<i>Procladius</i> (<i>Psilotanypus</i>)	0.71
<i>Procladius crassinervis</i>	-0.04
<i>Prodiamesa olivacea</i>	0.45
<i>Protanypus morio</i>	-0.50
<i>Psectrocladius</i> (<i>sensu stricto</i>) Ot	0.03
<i>Psectrocladius barbatipes</i>	-0.82
<i>Psectrocladius barbimanus</i>	1.20
<i>Psectrocladius calcaratus</i>	-0.80
<i>Psectrocladius obivius</i>	0.13
<i>Psectrocladius octomaculatus</i>	-1.29
<i>Psectrocladius platypus</i>	-0.68
<i>Psectrotanypus varius</i>	1.17
<i>Pseudochironomus prasinatus</i>	-0.33
<i>Pseudorthocladius</i>	-0.63
<i>Pseudosmittia</i>	-0.75

Rheocricotopus (Psilocricotopus)	-1.14
Rheocricotopus (sensu stricto)	0.42
Rheotanytarsus	-0.21
Sergentia	-0.67
Smittia	0.07
Stempellina almi	0.18
Stempellina bausei	-0.75
Stempellinella	-0.53
Stenochironomus	-0.12
Stictochironomus	-0.68
Synendotendipes	0.42
Synorthocladus semivirens	-0.56
Tanytus other	0.97
Tanytus punctipennis	1.35
Tanytarsus anderseni	0.31
Tanytarsus brundini	-0.58
Tanytarsus buchonius	-0.32
Tanytarsus chinyensis	-0.57
Tanytarsus ejuncidus group	0.39
Tanytarsus mendax	0.90
Tanytarsus pallidicornis	0.21
Tanytarsus part 1	-0.16
Tanytarsus part 2	0.03
Tanytarsus part 3	-0.77
Tanytarsus sylvaticus	0.88
Thienemanniella	-0.25
Thienemannimyia	-0.88
Tribelos intextus	0.16
Trissopelopia longimana	-1.17
Tvetenia other	-0.37
Virgatanytarsus	-0.67
Xenochironomus xenolabis	-0.48
Zalutschia humphresiae	-0.66
Zavreliomyia	-1.39

(ii) LAMM

The methods used to determine invertebrate acidification class status in lakes has not changed between the 1st and 2nd RBMP. Therefore no comparisons have been undertaken. Further information on the method can be found in the Key Documents section.

A2 Key documents and references

[CPET method statement](#)

detailed description of method used for 1st RBMP

[LAMM method statement](#)

detailed description of method used for 1st RBMP

McFarland, B., Carse, F. & Sandin, L. (2009) *Littoral Macro-Invertebrates as indicators of Acidification in the UK* Aquatic Conserv: Mar. Freshw. Ecosyst. DOI: 10.1002/aqc.1064

Ruse L. (2002). Chironomid pupal exuviae as indicators of lake status. *Archiv fur Hydrobiologie* 153: 367-390.

Wilson R. S. and Ruse L. P. (2005). A guide to the identification of genera of chironomid pupal exuviae occurring in Britain and Ireland. *Freshwater Biological Association Special Publication no. 13*.

Environment Agency (2009). Lake nutrient impact classified by the chironomid pupal exuviae technique. *Science Report SC080006*.