

Chapter 10: Annexes

Annex A: A listing of submerged and floating macrophyte taxa included in the 1989 TWINSpan analysis (Palmer *et al.* 1992) and the 2004 re-analysis of the JNCC lake dataset described in this report, with the number of records used. Any subsequent analysis of this dataset should try to incorporate these taxa. Most of the differences between the records used in 1989 and 2004 have arisen from uncertainty over the form (submerged/floating/emergent) of the plants recorded, taxonomic amalgamations, and the inclusion of canals in the first dataset.

Code	Scientific Name	1989	2004	Notes
Ag	<i>Alisma gramineum</i>	1	1	One record (EN0303 - Westwood Great Pool) added by MP to reanalysis.
Af	<i>Azolla filiculoides</i>	2	1	
Api	<i>Apium inundatum</i>	88	186	
Cah/a	<i>Callitriche hamulata</i>	162	585	Records merged with <i>C. hamulata</i> sens.lat (Cah).
Cao	<i>Callitriche obtusangula</i>	15	14	
Cas/a	<i>Callitriche stagnalis</i>	206	664	Records merged with <i>C. stagnalis</i> sens.lat (Cas).
Ctrunc	<i>Callitriche truncata</i>	4	1	One record (EN0073 - Clumber Park Lake) added by MP to re-analysis.
Caa	<i>Catabrosa aquatica</i>	1	0	Included by Palmer (1992) but not in 2004 re-analysis.
Ced	<i>Ceratophyllum demersum</i>	28	44	
Cersub	<i>Ceratophyllum submersum</i>	3	9	
Chara	<i>Chara</i> spp.	279	726	Cha (in database); Chara (in spreadsheet) <i>Chara</i> only taxon included by Palmer (1992). In the re-analysis the following <i>Chara</i> records were merged and the highest DAFOR rating was used - Cha, Chaas, Chaas/s, Chaas/l, Chaco, Chacu, Chagl, Chagls, Chahi, Chape, Charu, Chavi, Chavi/a, Chavu, Chavu/h, Chavu/l, Chavu/p, Chavu/v, Chavusst,
Cher	<i>Callitriche hermaphroditica</i>	87	168	
Cpla	<i>Callitriche platycarpa</i>	23	23	
Crh	<i>Crassula helmsii</i>	2	2	
Drepan	<i>Drepanocladus</i> spp. and <i>Drepanocladus fluitans</i>	8	0	Palmer (1992) used <i>Drepanocladus</i> spp. (n = 6) and <i>D. fluitans</i> (n =2).
Ec	<i>Elodea canadensis</i>	183	316	
Ef	<i>Eleogiton fluitans</i>	90	523	= <i>Scirpus fluitans</i>
Ela	<i>Elatine hexandra</i>	25	75	
Elaca	<i>Eleocharis acicularis</i>	21	34	Records for Elaca (aquatic) and Elac used.
Elh	<i>Elatine hydropiper</i>	8	15	
En	<i>Elodea nuttallii</i>	58	52	
Ent	<i>Enteromorpha</i> spp.	42	60	Amalgamated records for <i>Enteromorpha</i> spp. (Ent) and <i>E. intestinalis</i> (Entint)
Ese	<i>Eriocaulon aquaticum</i>	3	48	
Fon	<i>Fontinalis antipyretica</i>	262	803	
Fsq	<i>Fontinalis squamosa</i>	1	0	
Fuc	Fucoid algae	10	11	
Gld	<i>Glyceria declinata</i>	11	0	
Glfl	<i>Glyceria fluitans</i>	289	1052	
Gln	<i>Glyceria notata</i>	8	5	
Grd	<i>Groenlandia densa</i>	3	4	
Hipa	<i>Hippuris vulgaris</i>	176	153	Records for Hipa (aquatic) and Hip used.
Hotpal	<i>Hottonia palustris</i>	5	13	
Hmr	<i>Hydrocharis morsus-ranae</i>	6	12	

Code	Scientific Name	1989	2004	Notes
Ise	<i>Isoetes echinospora</i>	5	50	
Isl	<i>Isoetes lacustris</i>	215	832	
Jba	<i>Juncus bulbosus</i>	537	2140	Records for Jb and Jba (aquatic) used
Lam	<i>Lagarosipon major</i>	0	3	
Lg	<i>Lemna gibba</i>	5	12	
Lita	<i>Littorella uniflora</i>	565	1838	Records for <i>Littorella uniflora</i> (Lit) and aquatic form (Lita) merged
Lm	<i>Lemna minor</i>	148	409	
Lmi	<i>Lemna minuta</i>	1	1	
Lob	<i>Lobelia dortmanna</i>	313	1383	
Lt	<i>Lemna trisulca</i>	53	102	
Lun	<i>Luronium natans</i>	6	8	
Mal	<i>Myriophyllum alterniflorum</i>	453	1552	
Msp	<i>Myriophyllum spicatum</i>	183	216	
Myrver	<i>Myriophyllum verticillatum</i>	1	3	
Na	<i>Nymphaea alba</i>	237	872	
Nf	<i>Najas flexilis</i>	11	22	
Nm	<i>Najas marina</i>	1	0	
Nit or Nitella	<i>Nitella</i> spp.	175	686	<i>Nitella</i> only taxon used by Palmer (1992). Merged records for Nit, Nitco, Nitflagg, Nitgr, Nitmu, Nitop, Nittr for re-analysis.
Nul	<i>Nuphar lutea</i>	131	214	
Nup	<i>Nuphar pumila</i>	28	58	
Nus	<i>Nuphar lutea</i> x <i>pumila</i>	4	14	<i>N. intermedia</i> in Palmer (1992).
Nyp	<i>Nymphoides peltata</i>	5	11	
Oa	<i>Oenanthe aquatica</i>	13	12	
Oenflu	<i>Oenanthe fluviatilis</i>	2	0	
Pal	<i>Potamogeton alpinus</i>	65	169	
Pama	<i>Persicaria amphibia</i>	216	306	= <i>Polygonum amphibium</i> ; records for <i>P amphibia</i> (Pam) and aquatic form (Pama) merged for reanalysis.
Pbe	<i>Potamogeton berchtoldii</i>	190	416	
Pcol	<i>Potamogeton coloratus</i>	0	9	
Pcom	<i>Potamogeton compressus</i>	4	1	
Pcr	<i>Potamogeton crispus</i>	104	194	
Pep	<i>Potamogeton epihydrus</i>	0	1	
Pfil	<i>Potamogeton filiformis</i>	112	169	
Pfr	<i>Potamogeton friesii</i>	30	28	
Pgr	<i>Potamogeton gramineus</i>	163	278	
Pgr/pxn	<i>Potamogeton gramineus</i> x <i>nitens</i>	0	3	
Pil	<i>Pilularia globulifera</i>	12	25	Merged records for Pil and Pila (aquatic) for re-analysis.
Plu	<i>Potamogeton lucens</i>	41	34	
Pn	<i>Potamogeton natans</i>	471	1647	
Pob	<i>Potamogeton obtusifolius</i>	85	181	
Ppec	<i>Potamogeton pectinatus</i>	199	220	
Pper	<i>Potamogeton perfoliatus</i>	242	450	
Ppol	<i>Potamogeton polygonifolius</i>	330	1633	
Ppra	<i>Potamogeton praelongus</i>	32	88	
Ppu	<i>Potamogeton pusillus</i>	142	187	
Pr	<i>Potamogeton rutilus</i>	4	8	
Pt	<i>Potamogeton trichoides</i>	17	11	

Code	Scientific Name	1989	2004	Notes
Pxg	<i>Potamogeton natans</i> x <i>polygonifolius</i>	0	1	
Pxgr	<i>Potamogeton alpinus</i> x <i>praelongus</i>	0	1	
Pxn	<i>Potamogeton gramineus</i> x <i>perfoliatus</i>	19	127	
Pxsp	<i>Potamogeton gramineus</i> x <i>natans</i>	0	4	
Pxz	<i>Potamogeton gramineus</i> x <i>lucens</i>	5	27	Included by Palmer (1992) as <i>P. x zizii</i>
No code	<i>Potamogeton</i> x <i>lintonii</i>	1	0	Included by Palmer (1992); = <i>P. crispus</i> x <i>P. friesii</i> . Taxon not included in JNCC database.
Ra	<i>Ranunculus aquatilis</i> sens. str.	31	66	<i>Ranunculus aquatilis</i> included by Palmer (1992)
Rb	<i>Ranunculus baudotii</i>	82	97	
Rc	<i>Ranunculus circinatus</i>	42	47	
Rf	<i>Ranunculus fluitans</i>	1	0	
Rh	<i>Ranunculus hederaceus</i>	22	74	
Ricflu	<i>Riccia fluitans</i>	5	9	
Ro	<i>Ranunculus omiophyllus</i>	14	18	
Rp	<i>Ranunculus peltatus</i>	28	75	
Rpse	<i>Ranunculus penicillatus</i> subspecies <i>pseudofluitans</i>	1	1	
Rtr	<i>Ranunculus trichophyllus</i>	32	55	
Ricnat	<i>Ricciocarpos natans</i>	2	0	
Ru	<i>Ruppia</i> spp.	21	0	Palmer (1992) included <i>Ruppia</i> sp.
Ruc	<i>Ruppia cirrhosa</i>	0	4	
Rum	<i>Ruppia maritima</i>	0	29	
Spa	<i>Sparganium angustifolium</i>	260	1140	
Spema	<i>Sparganium emersum</i>	60	155	Spem and Spema (aquatic) records amalgamated for reanalysis.
Sphag	<i>Sphagnum</i>	80	1004	<i>Sphagnum</i> sp. (submerged) included by Palmer (1992) merged with small number of records for other <i>Sphagnum</i> taxa
Spn	<i>Sparganium natans</i>	71	239	= <i>Sparganium minimum</i>
Spo	<i>Spirodela polyrhiza</i>	3	5	= <i>Lemna polyrhiza</i>
Stralo	<i>Stratiotes aloides</i>	5	0	
Sub	<i>Subularia aquatica</i>	85	353	
Um	<i>Utricularia minor</i>	59	364	
Uti	<i>Utricularia intermedia</i> sens. lat.	83	256	<i>Utricularia intermedia</i> agg. included by Palmer (1992)
Uva	<i>Utricularia vulgaris</i> sens. lat.	89	187	<i>Utricularia vulgaris</i> agg. included by Palmer (1992)
No code	<i>Vallisneria spiralis</i>	1	0	Not in JNCC database
Woa	<i>Wolffia arrhiza</i>	0	1	
Zan	<i>Zannichellia palustris</i>	86	145	