SHORTER CONTRIBUTION

A REVIEW OF STONEWORTS IN THE SOMERSET LEVELS AND MOORS

Stoneworts, or charophytes as they are sometimes known, comprise a group of green algae which grow submerged in fresh or sometimes brackish water. They have a complex structure and some species can grow up to 1m in length. They have a superficial resemblance to some aquatic vascular plants; indeed, one of their earliest English names was 'Stinking Water Horsetail', implying a link to the pteridophyte genus *Equisetum* (horsetails). As a result they have frequently been recorded by vascular plant botanists and are the only non-vascular plants included within the remit of the Botanical Society of the British Isles. This has meant that their distribution and ecology is much better known than any other algal group.

There are only 33 species of stonewort in Britain, but nearly half of these are extremely rare or threatened. Stoneworts are very sensitive to nutrient levels in the water and soon succumb if levels of nitrates or phosphates are raised. This is very often the case in lowland Britain, either due to agricultural run-off or to sewage inputs (which often have high phosphate levels even after treatment).

Stewart (2004) identified a number of key areas for stoneworts in the UK. The Somerset Levels and Moors were assessed to be of European importance because of the diversity of species they contain, including two Red List species (*Tolypella intricata* and *T. prolifera*) and three others that are Nationally Scarce (*Chara aculeolata*, *Nitella mucronata* and *Tolypella glomerata*). A further species, *Tolypella salina*, has only recently been noted as present in Britain from an old herbarium specimen from the Portbury area and is likely to be extinct. *Nitellopsis obtusa*, another Red List species, was discovered in 2011 in Cheddar Reservoir on the edge of the Levels.

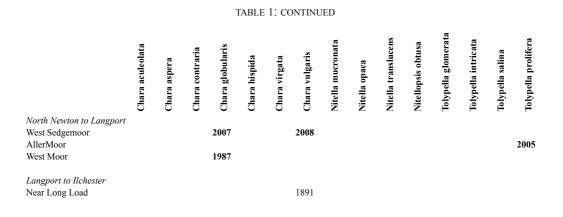
In recent years, information on stonewort distribution in the Somerset Levels and Moors has been extremely patchy. A few moors have been quite well studied, particularly where there are known populations of the Red-listed species (eg Southlake Moor), but many others are completely lacking in recent records. In some cases this is no doubt due to local extinctions, but in many areas the apparent absences are almost certainly due to lack of recording. Various ditch surveys for Natural England, for example, have indicated scattered records for '*Chara* sp.' without identifying to species. Table 1 provides a summary of our current state of knowledge, and gives an indication of where further surveys may be needed.

The sites have been grouped together in areas working from north to south. Moors not included in the list have no records, or only records for '*Chara* sp.'. The dates given are those of the most recent record for that species; further detail for many of the records in North Somerset (VC6) can be found in Lansdown *et al.* (2006). Recent records (since 1985) are shown in bold. Some of the older records were poorly localized and in many cases it has not been possible to pinpoint the exact sites.

I would be pleased to receive any records of stoneworts in the Somerset Levels and Moors, and to determine material or visit sites to look at plants *in situ*.

TABLE 1: THE MOST RECENT RECORDS OF STONEWORT SPECIES IN DIFFERENT PARTS OF THE SOMERSET LEVELS AND MOORS

	Chara aculeolata	Chara aspera	Chara contraria	Chara globularis	Chara hispida	Chara virgata	Chara vulgaris	Nitella mucronata	Nitella opaca	Nitella translucens	Nitellopsis obtusa	Tolypella glomerata	Folypella intricata	Tolypella salina	Tolypella prolifera
<i>Gordano</i> Near Portbury Clapton Moor Walton Moor Weston Moor	2002 2002	0	1922	1902 2002 2004	1887 1903 2002 2004	2001 2002 2004	1907 2003 2002 2004	Z	2 1989	Z	Z	1922	E 1989	1922	L
Clevedon to Yatton Near Clevedon Tickenham Moor Nailsea Moor Kenn Moor Near Yatton	1880			1883 1912	1887 1902 1904 1887	1921	1896 1912 2005 2007 1912								
Yatton to Mendip Gap Kingston Seymour West Hewish N of Banwell Weston airport							1981 1990 1990 1990								
Bleadon to Stert Point Brean Berrow Dunes Burnham Pawlett Hams Fenning Island				2010 2007			1882 2010 1912 2007 1979								
Brent Knoll to Cheddar Cheddar Reservoir		2011	2011	2011			.,,,	2011			2011				
Highbridge to Glastonbur Mark Moor Tealham Moor Tadham Moor Chilton Moor Edington Heath Catoatt Grounds	V			1992		2007	1915 2007 2003 2007 1915						2003		
Catcott Grounds Catcott Heath Westhay Level Ashcott/Shapwick Heaths Street Heath Butt Moor				1995 1902		200719372003	1937200719122006	1989		1922					2006
Bridgwater to Compton Dundon Horsey Level Moorlinch Moor King's Sedge Moor Street/Compton Dundon Moors Somerton Moor			1986	2009 2007	2007 2007	1891		2007				1899	1907		
Southlake Moor				2002			2008								2003



References

- Lansdown, R.V., Stewart, N.F., Kitchen, C., and Kitchen, M.A.R., 2006. 'The status and conservation of stoneworts (Characeae) in West Gloucestershire (v.c. 34) and North Somerset (v.v. 6)', *Watsonia*, 26, 145-69.
- Stewart, N.F., 2004. Important Stonewort Areas. An assessment of the best areas for stoneworts in the United Kingdom (summary), Plantlife International, Salisbury.

N.F. STEWART