
Rapid expansion of a stand of common club-rush at the Balmaha Marshes, Loch Lomond

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The first published mention of flowering plants of the water's edge at Balmaha (VC.86) in the south-east corner of Loch Lomond followed an excursion by the Natural History Society of Glasgow on 8 July 1893 (Anon, 1897). More than a century later, the district has lost none of its appeal to field botanists, in particular the Balmaha Marshes (NS 425903) – a loch-side wet meadow which is in the process of being fragmented into a patchwork of shallow lagoons and small islands resulting from wave erosion during winter storms.



Fig. 1. Two decades of expansion by a stand of common club-rush at the Balmaha Marshes, Loch Lomond (Photographs: John Mitchell). (**top**) 24 July 1987 (**bottom**) 23 July 2007.

Over the years the Balmaha Marshes have produced an impressive list of nationally rare and locally uncommon species, including small water-pepper *Persicaria minus*, Loch Lomond dock *Rumex aquaticus*, eight-stamened waterwort *Elatine hydropiper*, awlwort *Subularia aquatica*, tufted

loosestrife *Lysimachia thysiflora*, narrow-fruited water-starwort *Callitriche palustris*, lesser water-plantain *Baldellia ranunculoides*, thread rush *Juncus filiformis* and needle spike-rush *Eleocharis acicularis*. Today the rich diversity of this wetland community is under threat, not only from being overtaken by non-indigenous plant invaders (Mitchell, 2008), but also from a rapid colonisation by the native common club-rush *Schoenoplectus lacustris*, in the last 20 years the species covering more than half of the marshes' open water (Fig. 1a & b).

At least two factors would appear to be involved in the club-rush's recent vigorous performance. In the past cattle played a role in keeping the spread of the club-rush in check, both by grazing the young growth and trampling the plant's exposed rhizomes when the loch level dropped during the summer months. Since 1972 however, when Loch Lomond was impounded as a major water supply for Central Scotland, the raised loch level has limited cattle access to the site. Perhaps of more importance is the club-rush's response to the steady increase in nutrient enrichment known to be occurring in Loch Lomond's southern waters, the problem of chemical imbalance caused by sewage discharge and agricultural fertilisers finding their way into the waterways of the surrounding catchment area (Scottish Environment Protection Agency, 2008).

REFERENCES

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