

# *Buxbaumia viridis* - the Hunt

Clare Rickerby & Julie Smith report on a search for *Buxbaumia viridis* in areas north and west of its known population as part of a project funded by Scottish National Heritage



△Fig. 1. *Buxbaumia viridis*, Glen Strathfarrar.  
C. Rickerby

In February 2016 myself and Julie Smith with the occasional eyes of Gordon Rothero and Dave Genney took up the challenge to look for *Buxbaumia viridis* in areas to the west of its current known range. In advance of the survey Stuart Taylor reintroduced us to the species and its range of habitats at Abernethy. Strategic plans were then made in order to target habitat where *B. viridis* had potential to occur; mature semi-natural birch and Scots pine woodland and old growth Norway spruce and Scots pine plantation. This potential habitat was located and highlighted across Glen Affric, Glen Cannich, Glen Urquart, Glen Strathfarrar, Strathconnon, Glen Moriston and Strathglass – these are glens that are all to the west or north west of Loch Ness. Three weeks of surveying lay ahead, with no idea of whether or not this delightful little moss would be found.

Day one in Glen Urquart was met with a very wet, cold windy morning but moving into the afternoon undeterred, Julie, peering upon a promising area of fallen logs, clocked two *Buxbaumia* capsules on a large fallen Norway spruce tree in an old Norway spruce plantation. The log was very soft and sheltered by nearby

Norway spruce trees but in a clearing, the associate species were *Dicranum scoparium* and *Cladonia* sp. To find it on the first day was a real boost as deep down we knew that there was a very real possibility that we wouldn't find any during the whole survey. What we didn't know at this time was that this was just the start of us significantly extending the known range of *Buxbaumia viridis*.

Day 4 and Glen Moriston was our target, after a bad start not being able to access the planned woodland we just pulled into a layby where there were a couple of lovely old granny pines by the river Moriston and really nice looking old Scots pine forest on the other side. We thought it was worth a look and within a couple of minutes Julie called out that she had found *B. viridis* again! This time on a soft rotting Scots pine log on the ground, the immediate associate was *Riccardia palmata*, but other species on the log close to the capsule were *Dicranum scoparium*, *Hypnum cupressiforme*, *Rhytidiadelphus triquetrus*, *Thuidium tamariscinum*, *Lophozia ventricosa* and *Scapania gracilis*. Despite the unexpected find we continued with plan B to some stands of old



△Fig. 2. Stuart Taylor showing Julie and Clare *B. viridis* growing on an ants nest, Abernethy. D. Genney

Norway Spruce in a forestry plantation on the south side of the river. Here on a smaller rotting branch with *Frullania tamarisci* and *Dicranum scoparium* we found two green capsules and a couple of old setae. The area that we searched could only be described as ‘moss heaven’ with luxurious carpets of large pleurocarps, *Sphagnum* and *Polytrichum commune*.

Day 5 we headed into Glen Cannich but it wasn't until the very end of the day with the light starting to fade that Gordon found a colony of

seven green capsules on a large rotting birch log amongst birch saplings; *Dicranum scoparium* and *Cladonia* sp. were the associates. Another log was found by Julie with two more capsules in the vicinity.

Day 8 was the end of week 2 and our second visit to Glen Affric; we thought that surely *B. viridis* must be here somewhere! There was a little sprinkling of snow that morning but it soon melted and we hunted high and low on birch and Scots pine logs all day with no luck. Back at

▽Fig. 3. Markers showing *B. viridis* on rotting Norway spruce, Glen Moriston. C. Rickerby





△Fig. 4 (above). Markers showing *B. viridis* scattered on rotting birch, Glen Strathfarrar. C. Rickerby.

△Fig. 5 (below). Clare and Julie excited to find *B. viridis* on decaying Scots pine, Glen Moriston. J. Smith

the car park, however, on a very mossy rotting birch trunk just below where we had parked the car was *B. viridis*. One capsule was growing with *Lophozia ventricosa*, *Lophocolea bidentata* and *Dicranum scoparium*. It was becoming a bit of a theme that we only found *B. viridis* when the car was still visible... so far all of the sites had been within about 50 m of the car. So far Julie had found three and Gordon one, I was starting to wonder when it would be my turn to find some!

Day 9 & 10 were spent in the beautiful Glen Strathfarrar where we found *B. viridis* at 6 sites and finally it was my turn to find it! All of the sites were on birch, either rotting fallen trunks or decaying root plates. *Dicranum scoparium* was the most common associate and *Scapania gracilis*, *Cladonia* sp. and *Riccardia palmata* were also common. Four of the sites had 1 or 2 capsules but two of the sites had 10 capsules, so Strathfarrar was deemed a real hot spot for *B. viridis*.

Day 11 we headed north to Strathconon. We felt uninspired on our drive up the glen as there was a lot of forestry plantation that looked too young to be suitable habitat. After drawing a blank in said forestry in the morning we crossed the river into an area of deer fenced rejuvenating birch and hazel; it was dense with new growth and very steep resulting in very difficult walking! Here I found the biggest colony of the survey with 16 capsules (what a treat!) growing on a narrow rotting branch which may have been either birch or hazel. The majority of the capsules were growing out of the wood with no associates, *Isoetecium myosuroides* and *Riccardia palmata* were associated with a few of them.

Day 12 the final survey day we chose to visit Eskdale in Strathglass. Most of the wood felt too open and not quite right for *B. viridis*, we dropped down closer to the river where things started to feel more hopeful. On a split decaying



△Fig. 6 (left). Clare with biggest colony found during the survey, Strathconon. J. Smith. △Fig. 7 (right). *B. viridis* capsules on decaying birch or hazel, Strathconon. C. Rickerby.

alder trunk we found one capsule associated with *Cladonia* sp.

To everyone's surprise the survey was a resounding success, 14 new sites were found in 7 new hectads with success on three quarters of the field days. *B. viridis* was most commonly found on decaying birch of some form (10 sites), but also on Norway spruce (2 sites), Scots pine (1) and alder (1). Surprisingly, the sites where the species was found were often quite open but there was always an additional humidity adding factor, such as being close to a river; on a steep slope (north facing); at the foot of a slope or crag or being surrounded by younger trees, in two cases this was birch saplings and in one case younger Norway and Sitka spruce. Another observation worth noting was the presence of bracken. It was noted to be frequent at nine of the *B. viridis* sites. Perhaps in the summer the bracken provides additional shelter preventing the habitat from drying out too much but does not overshadow the *B. viridis* sporophytes in the autumn and winter months as it has died back.

Mature woodland on north, north west or north east facing slopes was always the most hopeful. Logs were usually a good size and often well rotted and seemingly suitable for *B. viridis* in these woodlands. It was felt that with the majority of plantation woodland, most logs were not large enough and were often dominated by a thick mat of *Riccardia palmata* and *Nowellia curvifolia* which does not seem to be optimal for *B. viridis*. Some of the plantation woodland also seemed to be too disturbed and it was felt that *B. viridis* seemed to prefer sites where large logs had been left alone. Both of the sites in plantation woodland were in trees that had been planted in the 1930s and they seemed relatively undisturbed. While there are records of *B. viridis* in younger stands of Norway Spruce plantation woodland at Abernethy, we felt that plantation younger than from the 1930s in the areas we were looking in was not optimal.

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