

Rana temporaria (European common frog), British altitudinal range extension.

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The most widespread British amphibian *Rana temporaria*, is found in every mainland county in Britain (NBN, 2014). Beebee & Griffiths (2000) describe it as “breeding in mountain bogs and tarns up to 1,000 metres above sea level,” though it can be found up to 3,000 m above sea level in the Pyrenees (Arnold, 2002).

On 22nd July 2014 numbers of *R. temporaria* tadpoles and one adult were found in the shallows of Lochan Buidhe (British national grid NH983010) at an altitude of 1,120 m above sea level. The site is near the summit of Ben Macdui, Britain's second tallest mountain and the highest peak of the Cairngorms.



Figure 1. Lochan Buidhe, and its surrounding habitat, from the north.

The lochan itself (fig. 1) is shallow (less than 1 m deep throughout) with very gently sloping sides and is oligotrophic. Aquatic vegetation is made up mainly of algae and bryophytes (principally the liverwort *Nardia compressa* with a little *Sphagnum papillosum/ palustre*) and with some emergent sedge *Carex rariflora*. There were no aquatic macrophytes, presumably due to the effects of freezing and ice scouring in such a shallow high-altitude water body (Light, 1975), and the margins are *Anthelia julacea-Sphagnum denticulatum* spring (NVC class M31, EUNIS class D2.2C). The surrounding vegetation is *Nardus stricta-Carex bigelowii* grass-heath (NVC class U7, EUNIS class E4.32) and *Juncus trifidus-Racomitrium*

lanuginosum rush-heath (NVC class U9, EUNIS class E4.21) with rocks. These habitats are associated with harsh climates with strong winds and poor soils (Averis et al., 2004). Indeed snow was still lying c. 200 m from the site. It is probably similar to those areas occupied by *R. temporaria* in the Arctic Circle, where these habitats are more widely found (Ratcliffe & Thompson, 1988).

A review of the NBN (2014) found records of *R. temporaria* from elsewhere on the Cairngorm Massif and also from the lower part of Ben Nevis, Britain's highest mountain, but all were below 1,100 m with only 2 records above 1,000 m. There are 32 peaks in Britain higher than Lochan Buidhe (Scottish Mountaineering Club, 2014), however a review of maps and aerial photographs did not show any water bodies at greater altitudes, with the exception of some small pools (altitude 1,190 m) close to the summits of Ben Macdui and Cairngorm. When surveyed (visual search and dip net) no amphibians were found in these pools, although given the dispersal ability of *R. temporaria* and its tendency to frequent ponds one year and desert them in another, it remains possible that they are sometimes used as breeding sites.

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