



# UK Biodiversity Action Plan Priority Habitat Descriptions

## Mesotrophic Lakes

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## Mesotrophic Lakes

The definition of this habitat remains unchanged from the pre-existing Habitat Action Plan (<http://www.ukbap.org.uk/UKPlans.aspx?ID=22>) a summary of which appears below.

### Physical and chemical status

Mesotrophic lakes (i.e. those in the middle of the trophic range) are relatively infrequent in the UK and largely confined to the margins of upland areas in the north and west. They are characterised by having a narrow range of nutrients, the main indicative ones being inorganic nitrogen (N) and total phosphorus (P). Typically, mesotrophic lakes have nutrient levels of 0.3-0.65 mgNl<sup>-1</sup> and 0.01-0.03 mgPl<sup>-1</sup>. Whilst such levels simplify the complex interaction between plant nutrients and the hydrological and physical characteristics of individual lakes (for instance, virtually all available nutrients are 'locked up' in algae during the growing season), they serve to show the sensitivity of the trophic state to artificially increased levels of nitrogen and phosphorus. Thus, this is an increasingly rare type of lake.

Several of the largest and most important lakes in the UK, including Lough Neagh and Lower Lough Erne were once mesotrophic but are now classified as eutrophic and not included in this action plan. Two existing large mesotrophic lakes, Lough Melvin and Upper Lough MacNea straddle the international border with the Republic of Ireland.

### Biological status

Mesotrophic lakes potentially have the highest macrophyte diversity of any lake type. Furthermore, relative to other lake types, they contain a higher proportion of nationally scarce and rare aquatic plants. Macroinvertebrates are well represented, with particularly important groups being dragonflies, water beetles, stoneflies and mayflies.

Rare fish, of which only three species are found in UK lakes, are well represented in mesotrophic lakes. The vendace, *Coregonus albula* is only found in two sites in Britain, one of which is Bassenthwaite Water in Cumbria. Another whitefish, *Coregonus lavaretus*, known as the schelly (or gwyniad, or powan), is found in a mesotrophic tarn in Cumbria. The schelly is also found in oligotrophic lakes in Cumbria, Wales and Scotland and there is uncertainty as to whether it is abnormally stressed in a mesotrophic environment. In general, fish communities in mesotrophic lakes are a mix of coarse and salmonid species, but today there are few truly natural assemblages due to introduced species.