Case Study: An Invertebrate Survey of an Acid Mire – Lampert Mosses SSSI

Introduction

Invertebrates can act as excellent indicators of environmental quality. With complex and specialised life cycles, many invertebrates require consistency of habitat to enable their long-term survival at a given location. Several insects are also relatively immobile and find it difficult to recolonise an area after local extinctions. This makes invertebrates very sensitive to environmental change and as a consequence excellent indicators of habitat quality and important as indicators of continuity of habitat types.

The Study

In 2015 EMEC Ecology was commissioned by Natural England to conduct an intensive whole summer survey on the invertebrate survey of the notified invertebrate assemblage of Northumberland's Lampert Mosses Site of Special Scientific Interest (SSSI)

Survey Details

The primary objective of the study was to identify the assemblage of invertebrates intricately associated with sphagnum bog habitats typically found in upland areas of northern England. Several invertebrates are stenotopic (can only survive in a very restricted habitat or ecological conditions) for sphagnum bog. The presence or absence of these stenotopic invertebrates can give the surveyor a clear picture of the quality of the bog habitat being surveyed. The number of key species found can also be used to categorise the quality of the habitat. For the purposes of this study into either favourable habitat to support a number of species associated with sphagnum bog or a habitat that is in unfavourable condition to support species requiring this habitat.

This survey was conducted from early June to mid-September and consisted of four, two day visits timed to coincide with the emergence dates of the majority of invertebrates targeted and to allow for effective service and maintenance.

Initial exploratory work at Lampert Mosses identified several sample locations where large areas of sphagnum were still to be found. Of these locations four were selected for survey due to both their topography and accessibility. At each of the four sites pitfall traps were sited in accordance with protocols developed and standardised by Natural England. As well as pitfall trapping the following collection techniques were also employed at each sample location:

- Suction sampling.
- Pond netting (where standing water was present).
- Sweep netting.
- Ground searching by hand.

At each site all Coleoptera, Diptera, Hemiptera and Araneae were retained for future identification or identified on-site wherever possible.

The ground beetle *Carabus nitens*. A beetle very strongly associated with sphagnum bog type habitats and a key indicator of good quality acid mire. Found on several occasions at Lampert mosses SSSI during the summer of 2015.

Survey results confirmed that Lampert Mosses SSSI is a nationally important site for acid mire invertebrates and that the presence of several species associated with sphagnum bog warrants its maintained status as an SSSI due to its invertebrate fauna. Recommendations based on the survey findings were also given to maintain and enhance the Lampert Mosses SSSI as a habitat for acid mire invertebrates.

Salda morio, a distinctive shore bug known to be strongly linked with acid mire habitats in the northwest of England and Wales. Found in good numbers at Lampert Mosses SSSI.

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