

Carabus hortensis L. (Coleoptera, Carabidae) in northern Norway

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Hatteland, B.A. & Hauge, E. 2007. *Carabus hortensis* L. (Coleoptera, Carabidae) in northern Norway. *Norw. J. Entomol.* 54, 105-109.

During a comprehensive study involving 616 pitfall traps in Nordland, northern Norway, 184 specimens of the carabid beetle *Carabus hortensis* L. were collected. *C. hortensis* is recorded new to the northern part of Nordland and seems to be a species expanding its range in Scandinavia. The present study discusses the spreading of this specific species as well as dispersal of other *Carabus* species.

Key words: *Carabus hortensis*, distributional pattern, Nordland, northern Norway

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INTRODUCTION

Many species are probably presently spreading at a much higher rate than they would normally do under natural conditions (Arim et al. 2005). Human activity is affecting the natural world in a whole range of ways of which pollution, habitat destruction and global warming have been given a lot of attention. However, the dispersal of species by trade and other activities also have a major impact on ecosystems. Invasive species, like the Iberian slug (Dolmen & Winge 1997), have been given some attention but species which do not become pests do in many cases displace other species (McNeely et al. 2001, Arim et al. 2005).

Carabus hortensis L. is a widespread and common carabid species in Europe distributed from Norway and Central Europe to the Southern Urals in Russia (Turin et al. 2003). In Norway, the species has been recorded north to the southern part of the county of Nordland, about 64° N, (Lindroth 1985, Lindroth

1986, Vik 1991). It is mainly a eurytopic forest or woodland dwelling species, but is also found in open country. In Norway, *C. hortensis* is locally very abundant in deciduous and mixed forest up to tree-line (Lindroth 1985, Oró 2006, Hanssen & Andersen unpublished data). Furthermore, Arndt (cited in Turin et al. 2003) recorded the same local dominance in moderately dry, coniferous forests in Poland and eastern Germany.

Sampling was conducted continuously from late May to late July 2003 in a total of 77 sites. Each site had eight pitfall traps in a line separated by 2 m. Each trap consisted of a plastic cup, 7 cm in diameter and 9.5 cm deep, buried to the rim. The traps were covered by a sheet metal roof 2 cm above the rim of the trap and half filled with a 4 % formaldehyde solution with a small amount of liquid detergent.

The localities are given according to the revised Strand system (Økland 1981) and the survey grid