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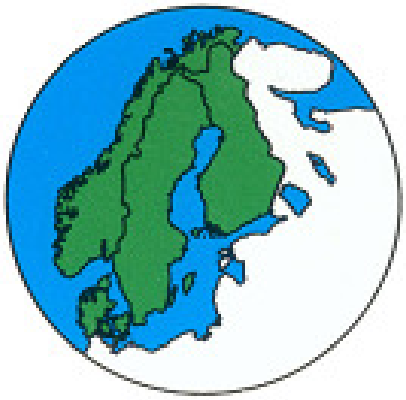

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Even Bergseng, Grethe Delbeck,

Hans Fredrik Hoen (eds.)

Ås

Conflicts between drinking water protection and income from Christmas tree production

Tove Enggrob Boon and Henrik Meilby

Abstract

Provision of pure drinking water is a main priority throughout Europe. At an overall level, The EU Water Framework Directive provides rules and guidelines for achieving a *good environmental status* in the water environment, including also drinking water resources. In Denmark, areas with valuable drinking water resources (groundwater) have been designated, so as to direct land use in these areas towards activities that enhance water protection. Forestry is considered a land use suitable for groundwater protection, and one of the aims of public afforestation is to protect ground water.

Forests cover 11 % (486,000 ha) of the land area in Denmark. The Forest Act allows production of Christmas trees and greenery on up to 10 % of areas designated as forest reserves (90 % of all forest areas).

Additionally, Christmas tree production takes place on farm fields. A total of 40,000 ha (8 % of the forest area) was forested with either Abies nordmanniana (ANR, Christmas trees) or Abies nobilis (ANO, greenery). However, the production of Christmas trees and greenery involves use of pesticides and fertilizers. This creates a potential conflict between the financial interests of the landowner and the common concern for groundwater protection.

The aim of this study is to investigate to what extent there is a geographical overlap between areas used for Christmas tree or greenery production and areas designated for groundwater protection, and how these areas are allocated to different types of owners (public, private). Implications for policy and practice are discussed. The analysis is based on data from a national forest inventory.

Key words: pesticides, ground water protection, greenery, Abies nordmanniana, Abies nobilis