

Cost-benefit analysis of restoration of hydrological processes at Store Blåkilde and Villestrup å

Jesper Sølvér Schou, Rasmus Ballebye Jensen, Thomas Lundhede and Søren Bøye Olsen. Department of Food and Resource Economics, University of Copenhagen

Abstract

In this study we present an ex ante social cost-benefit analysis of the effects following restoration of hydrological processes and introduction of low input all year grazing in a 140 hectare area surrounding Store Blåkilde and Villestrup å in the municipality of Mariagerfjord. The CBA applies the Total Economic Value approach covering all costs and benefits (marketed and non-marketed) resulting from the project. Three scenarios are considered: Business-as-usual (BAU) and two alternative scenarios, one resulting in restoration of hydrological processes and low input all year grazing and the other additionally restoration of natural hydrology in a 3km stretch of the upper part of Villestrup å.

Costs of the scenarios are determined using a description of the restoration processes, primary data and on-site observations, and benefits are assessed using benefit transfer from relevant Danish valuation studies. Benefits primarily derive from reduced GHG-emissions and non-use values from improved biological functions. When assessing the biodiversity benefits we apply the conservative unit values. Even though we find both alternative scenarios result in benefits clearly exceeding the costs. Results suggest a socioeconomic benefit from the scenarios of 9.3 and 10.7 mill. DKK and the benefit-cost ratio are 8 respectively 4. Results are robust to changes in the various assumptions, and generally show the same properties as previous cost-benefit-studies in Denmark.