

<b>Project title</b>	Greenhouse Gas Budget for the Skjern Catchment
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<b>Co-advisors</b>	Senior Researcher Anton Thomsen, Department of Agroecology and Environment, Aarhus University, <a href="mailto:Anton.Thomsen@agrsci.dk">Anton.Thomsen@agrsci.dk</a>
<b>Employment</b>	Department of Geography and Geology, University of Copenhagen
<b>Enrollment</b>	PhD school of Science, University of Copenhagen
<p><b>Project description</b></p> <p>Over the last decade natural Greenhouse gas (GHG) budgets have been studied within the framework of the CarboEurope- and a number of associated projects including NECC for the Nordic countries and CarboNorth for the Russian taiga-tundra. Due to its importance in the global GHG-budget and the availability of measurement techniques, most studies have focused on the CO<sub>2</sub> whereas CH<sub>4</sub> and N<sub>2</sub>O have been more or less neglected even though they contribute with approximately one third to the greenhouse forcing. Over the last few years the measurement technique (laser technology/eddy covariance) for CH<sub>4</sub> and N<sub>2</sub>O has become much better suited for field studies, and it was found that locally the CH<sub>4</sub>-emission from wetlands and N<sub>2</sub>O emission from agricultural areas may contribute significantly to the GHG-budget on an ecosystem level.</p> <p>As an integrated part of the research center HOBE – a hydrological observatory <a href="http://www.hobecenter.dk/">http://www.hobecenter.dk/</a>, continuous measurements of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O fluxes between the vegetation and the atmosphere have been initiated in the Skjern Å basin of Western Jutland. The basin contains natural and managed ecosystems including meadow, forest and agricultural land. For each of these ecosystems measuring masts will be operated for a 5 years period. A GHG- and a hydrological programme in parallel offers unique opportunities for studying the controlling factors for the GHG emission. At the same time it adds extra values to the hydrological data collection as it facilitates global change calculations.</p> <p>The successful candidate will be a part of a research group consisting of 6-7 members including professors, young scientists and doctoral students. The PhD-activities will consist of designing, conducting, and reporting a research programme as well as maintaining the data collection. The PhD study will focus specifically on the consequences of land-use changes and climate on the GHG budget and upscaling of the GHG budget from ecosystem to basin-wide averages.</p>	