Geophysical Research Abstracts,
Vol. 10, EGU2008-A-08594, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-08594
EGU General Assembly 2008

Potential impacts of agricultural land use changes on the Eiderstedt peninsula (Schleswig-Holstein, Germany) on important bird habitats and species abundance

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Agricultural land on the Eiderstedt peninsula in Schleswig-Holstein (Germany) is traditionally dominated by extensively used grassland. These grassland areas are home to many (endangered) bird species, making Eiderstedt one of the prime bird habitats at the West coast of Schleswig-Holstein. Recently, plans have been developed to convert large shares of grassland to arable farm land, on which the crops necessary for an intensified dairy production and for biofuel production can be grown. Such a considerable change in the appearance and use of the agricultural land has a variety of ecological and economic impacts.

To assess these impacts, three possible scenarios of agricultural land use change on Eiderstedt in the next couple of decades are developed. Using a GIS, these scenarios are applied and the consequences of such conversions for breeding bird populations of four key species are determined. The results indicate that an increase of arable farm land to approximately two thirds of the whole agricultural area drastically reduces suitable bird habitat, thus considerably diminishing the number of breeding pairs supported by the environment. The ornithological impact is greatest if conversion takes place throughout Eiderstedt extending from already existing areas of arable farm land. But even though the reduction in suitable breeding habitat is less pronounced in the other scenarios, every one of them induces a severe pressure on populations of mead-

owbirds that rely on habitat on Eiderstedt for successful reproduction.

Present work involves the improvement of the quality of the scenarios by validating them based on a census of current agricultural land use and the latest data on the abundance of meadowbirds domestic to the peninsula. Furthermore, the usefulness of the already declared bird sanctuaries on Eiderstedt is assessed for the agricultural land conversion scenarios to identify the optimal areas to be protected as ornithological breeding habitats.