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People in German Biosphere Reserves

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Abstract

As model regions for sustainable development Biosphere Reserves explicitly include human activities. We analysed the Biosphere Reserves in Germany as home for people based on official statistical data on a community level, including temporal developments. The population development impacts further human activities, like land-use activities, infrastructure use and provision, as well as actual utilization of ecosystem services delivered by Biosphere Reserves. We present different types of temporal population development with reference to spatial variations.

Keywords

types of population development, rural landscapes, Biosphere Reserves, spatio-temporal variation, socio-economic areas

Introduction

As model regions for sustainable development Biosphere Reserves explicitly include human activities (MAB-NK 2007, MAB 2016: Lima Action Plan 2016-2025). For a range of human activities, including Biosphere Reserves, the knowledge about the human population development and its components – migration and natural population development and the balances, gains and losses, is increasingly recognized as being of significant importance for assessing the regional chances and challenges for development. Especially, the population development impacts human activities, like land-use activities, infrastructure supply and demand, as well as actual utilization of ecosystem services delivered by the existent habitats and ecosystems. The model character of Biosphere Reserves for sustainable human activities includes the question, which types of socio-economic areas are represented by the Biosphere Reserves. In Germany, the Biosphere Reserves cover a wide range of socio-economic areas, from rural and peri-urban and urban areas. We aim to analyze different types of the population development, its components and balances represented by the German Biosphere Reserves.

Methods

Case study regions

Germany today has 17 Biosphere Reserves which cover an area of 1.994.273 ha, their sizes range from the small 'Hamburgisches Wattenmeer' with 11.700 ha to the 'Schleswig-Holsteinisches Wattenmeer und Halligen' with 443.100 ha (BfN 2017) and they are located in 12 of the 16 federal states of Germany.

Analysis

We analyzed the Biosphere Reserves in Germany as home for people based on official statistical data on a community level, including temporal developments. First, we selected the communities, which are full or partly located in the Biosphere Reserves with geoprocessing between the protected areas and the administrative units. Second, we attributed the administrative units with statistical data about migration and natural population development. Third, we identified for each administrative unit the type of population development. And finally, we compared the types of population development in the Biosphere Reserves in their spatio-temporal variations, basic components and representativeness.

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