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Landscape Science and Landscape Ecology: Considering Responses to Global Challenges

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Book of Abstracts



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5. Land use and land management - LULM

5.5. Landscape structure and land use of mountain countries

Agricultural land use in the Southeastern Highlands of Australia: specifics and environmental problems

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The Southeastern Highlands (Victorian Highlands) is the one of the main geographical and agricultural regions in Australia. This area is used for sheep and cattle grazing, cereals cultivation, and fruit-growing. The aim of the research is to describe the present-day territorial combination of agricultural land use in the Southeastern Highlands and to reveal environmental problems caused by arable, plantation, and grazing activities. To achieve this aim, it was necessary to solve the following tasks: (1) to study the landscape features of this region and to determine its sustainability to agricultural pressure, (2) to study specifics of present-day agricultural land use, (3) to find out environmental problems, emerging in this region during agricultural development. Basing on analyze of modern geospatial data on land cover, agricultural land use locations, and statistical data on environmental problems related to agricultural activity, author reveals the following patterns in this region: 1) Agricultural land use is strongly integrated in the natural landscapes. (2) Types of agricultural land use deal with relief forms, type of vegetation and soils, climatic features, and water supply: from south to north and from west to east arable lands and replaced by plantations and are shifted by pastures. (3) Plantation areas are expanded to the east due to availability of irrigation resources. (4) Intensity of crop cultivation is higher on fertilized lowland western areas, on higher-rainfall flat sites, on hilly territories lying along the southern foothills, and on areas adjacent to urbanized lands. (5) Pastures are getting less productive from south to north and from west to east; the main reason is the features of the natural vegetation types and lack of precipitation. Agricultural development triggers environmental problems occurring on cultivated and intensively fertilized lands. Nevertheless, these problems have a local impact on the environment. Distribution of erosion, land cover fragmentation, deflation, salinity, and acidification are restrained by ecologically balanced farm management practice, which allows stabilizing land degradation at the level of 7-12% per year.

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