

The basin approach and mapping to the anthropogenic impact assessment on the east of the russian plain

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Abstract

© Research India Publications. The given paper considers the methodological aspects of the Atlas mapping for the purposes of Sustainable Development in the regions of Russia. Requirements for the Atlas's structure and content were outlined. The approaches to mapping of "an ecological dominant" of Sustainable Development conceptually substantiated following the pattern of a large region of Russia. The Atlas proposed to be developed, can be considered by its spatial scope as the regional one and by the content as the fundamental complex science-reference mapping guide which characterizes the environment situation in the east of Tatarstan, the conditions and factors that determine it, the tendencies to the change of the ecological state in the territory and in the centers, the measures to reach an ecological equilibrium. Several maps were built as example of regional mapping to estimate impact of oil and gas industry on the environment and to develop solutions for natural resources optimization on the study territory. The complexity of natural systems and the need to integrate large number of factors required the use of modern methods of geoinformatics, information technology, mathematical and cartographic modeling. "Map of cumulative anthropogenic impact" allows through the selected parameters to identify the impacts caused by agricultural activity and "Integral environmental assessment map" – oil and gas industry impact on the environment. A technique for quantifying of different sectors of the economy contribution to human impact on the certain components of the landscape realized by the example of forest vegetation.

Keywords

Anthropogenic impact, Atlas, Basin approach, Environmental assessment, Geographic information systems, Integrated assessment, Mapping, Spatial analysis, Sustainable development