

# Scales and Contexts of the Amur River

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## **Abstract**

Some methodological problems arise when making summary of the vast array of studies, publications, statistical and other data on the Amur River and its basin. All that hampers use of existing knowledge, contributes to the uncertainty of conclusions and often leads to false findings. The source of the problems is an underestimation of the scale structure of our knowledge related to the river. The report presents some scale framework for analysis of the river's objects and processes.

The geographical and ecosystem hierarchies of the Amur River's scales are considered. Geographically the river with its basin is presented as a component of the Amur-Okhotsk sub-global system with sub-divisions that pertain to China, Mongolia and Russia and numerous local natural units of moderate size. The river's ecosystems scales include the levels of reobiom, freshwater ecoregions, river sections, river patches (ecosystems), communities of aquatic organisms and their populations. The state of current knowledge on the Amur ecosystem was also examined. It's been concluded that the ecosystem concept and the contemporary theoretical basis of river ecology does not fully correspond to the organization of aquatic organisms in such a large river as the Amur.

Contexts, understood as issues of actual problems, cognition, development, etc., are closely related to scales. Potentially possible set of contexts that are relevant to the Amur, comprises their large groups of "Nature" and "People and Society". Actual issues of the Amur, often integrated in the context of sustainable development, are induced by interaction of heterogeneous processes operating at different scales.

**Keywords:** Amur River, Amur-Okhotsk system, context, hierarchy, river ecosystem, scale