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STUDY ON ECOSYSTEM SERVICES:PROGRESS, LIMITATION AND BASIC PARADIGM

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The concept of ecosystem services was first used in 1960s in abroad and the terminology of "ecosystem services" appeared in 1981. Three classifications of ecosystem services included function classification, structure classification and description classification, in which function classification has been used widely. The relationship between ecosystem services and biodiversity was examined to understand the mechanism of formation and variation in ecosystem services. At present, many case studies have been conducted to obtain the economic values of ecosystem services at local, river basin, regional and national levels with three kinds of methods: economic method, emergy method and benefit transfer. In China, the concept of ecosystem services was introduced in 1990s and, since then, there have been many studies about ecosystem services which involves the introduction of abroad studies, forming and accumulating process of ecosystem services and case studies. Because of limitations on the studies of ecosystem services, including the reliability of the evaluation results, confusion of ecological capital and ecosystem services, uncertainty of the quantity of ecosystem services, uncertainty of the monetary values of ecosystem services, and complexity of ecosystem functions and services. A new paradigm of ecosystem services should be set to strictly distinguish the ecosystem services from ecological capital, to evaluate the ecosystem services on the basis of ecological monitoring and ecological models, and to divide the region into different units in evaluation of regional ecosystem services. The researches on ecosystem services should pay more attention in the complex relationships between ecosystem services, structure and processes, the response and feedback of ecosystem services to human activities, the impacts of changes in ecosystem services on human well-being, the impacts of policies and institutions on ecosystem services, and the monetary values of ecosystem services from different kinds of ecosystems.

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