Abstract

Conservation of species in agroecosystems has attracted attention. Irrigation channels can improve habitats and offer conditions for freshwater species conservation. Two questions from biodiversity conservation point of view are: 1) Can the irrigated channels maintain a rich diversity of macrophytes, macroinvertebrates and amphibians over the cultivation cycle? 2) Do richness, abundance and composition of aquatic species change over the rice cultivation cycle? For this, a set of four rice field channels was randomly selected in Southern Brazilian wetlands. In each channel, six sample collection events were carried out over the rice cultivation cycle (June 2005 to June 2006). A total of 160 taxa were identified in irrigated channels, including 59 macrophyte species, 91 taxa of macroinvertebrate and 10 amphibian species. The richness and abundance of macrophytes, macroinvertebrates and amphibians did not change significantly over the rice cultivation cycle. However, the species composition of these groups in the irrigation channels varied between uncultivated and cultivated periods. Our results showed that the species diversity found in the irrigation channels, together with the permanence of water enables these man-made aquatic networks to function as important systems that can contribute to the conservation of biodiversity in regions where the wetlands were converted into rice fields. The conservation of the species in agriculture, such as rice field channels, may be an important alternative for biodiversity conservation in Southern Brazil, where more than 90% of wetland systems have already been lost and the remaining ones are still at high risk due to the expansion of rice production.

Keywords

Conservation, plant, macroinvertebrate, anuran, agroecosystem, cultivation cycle.