

Biodiversity Conservation in Mizoro-Ga-Ike Located in the Ancient City of Kyoto

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Wetlands of peat bog type spread widely from tropical to frigid zones on the planet. Many of them are a hot spot of biodiversity in the basin ecosystem because of the rich humus matter in the peat making unique habitat conditions for plants and animals. Since the wetlands are apt to receive increased nutrient load due to basin development, eutrophication has been a major issue not only in the respect of biodiversity conservation but also from applied aspects for enjoying ecosystem services of the wetlands. Although the wetland is often highlighted as a natural water purification system, a single function of the wetland should not be emphasized as its ecosystem service. We had better learn more on relations of ecological functions to biodiversity since the ecosystem service depend on biological processes and the conservation of those processes will be required for sustainable use of natural resources. This paper presents a biodiversity conservation strategy for wetlands based on the case study in Misoro-ga-ike, a pond with a peat moss island, located in Kyoto City, central Japan. The pond bears a total of 46 red species of aquatic animals in spite of continuous human impacts on the pond through 1200 years history of Kyoto City. Although the biological community of the pond was designated as a national treasure in 1927 and thereafter the pond has been conserved with its catchment, the vegetation area in the pond has increased through natural process of eutrophication. Ecological investigations on the benthic invertebrate communities revealed that most of the rare species in the pond require oligotrophic and acid water quality relevant to Sphagnum moss on the peat island. In order to maintain the oligotrophic and acid water quality in the pond, removal of the pond product in the open water and the littoral area would be beneficial to inhabitants of the peat island. The 1200-year-history of utilization of the forest product by the citizens in the catchment might be another factor for the mechanism of biodiversity conservation. We can learn a sustainable usage of natural resources from the scheme of human impacts enhancing the biodiversity in Mizoro-ga-ike in the ancient city of Kyoto.