

MBDPS: A Migratory Birds Distribution Prediction System

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Species distribution modeling is an important ecological research task that has received a great deal of interest. There are several single model systems and applications available for species distribution analysis. This paper introduces Migratory Birds Distribution Prediction System (MBDPS), an extensible online analysis system for spatial distribution of migratory birds. The system uses GPS data of wild birds and remote sensing data as biological data and environmental data respectively. And it adopt an effective distributed structure based on Hadoop to store and access the huge amounts of remote sensing data. The MBDPS supports integration and expansion of species distribution models which are implemented by different platforms, and it supports online computation and visualization. Our experiment reveals that the MBDPS can support the spatial distribution prediction of wild birds.

Keywords: Species distribution modelling, e-Science, GPS data, Remote sensing data, Migratory birds