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## **The economic value of White Stork nesting colonies in Polish ‘stork villages’**

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White Stork *Ciconia ciconia* plays a particularly important role in Polish culture and traditions. About 23% of the world population of White Stork breeds in Poland, with long-range historical data available on the Stork's biology and ecology. As such a ‘flagship’ species, it has been very well studied, including recently from the perspective of ecosystem services.

As an umbrella species for other animals and plants, Storks can be associated with supporting services. As a predator, they perform regulatory services in an ecosystem, including regulating ‘pest’ populations. From the perspective of humans, the most important benefits provided by Storks fall into the category of cultural services. For at least 500 years White Storks have lived close to human settlements, becoming an important part of Polish folklore, traditions, literature and everyday life.

In this paper we attempt to estimate the economic value of cultural services (tourism, recreation) provided by White Storks in Polish ‘stork villages’. A stork village is a common name for a village with a White Stork breeding colony, often inhabited by more storks than people. Kłopot and Zywkowo, two of the best known stork villages in Poland, receive annually 1000–5000 tourists each, almost half of whom come from abroad (mostly Germany). In different years these two villages have about 15–35 White Stork nests each. The villages offer Stork-watching towers, gift shops and exhibitions (with a unique White Stork Museum in Kłopot).

To estimate the economic value of White Storks in a stork village, we used the travel cost method, and combined it with the choice experiment method, in order to derive more precise estimates of value of travel time. About 700 respondents took part in our survey during the 2011 breeding/tourist season (April–August). This is, to our knowledge, the first study aiming to provide an estimate of the recreational value of a stork village. The results are discussed in the broader context of the value of cultural ecosystem services and of using these services as a foundation for the sustainable development of local communities. Therefore, in addition to valuation, we also make suggestions on how to exploit the economic potential of ‘stork villages’ by making them a keystone for regional development.