



АВТОМАТИЗИРОВАННЫЕ СИСТЕМЫ НАУЧНЫХ ИССЛЕДОВАНИЙ

T. Legović

A NEW MODEL FOR PREDICTING COLLISION OF BIRDS WITH BLADES OF A WIND TURBINE

(OIKON Ltd. Institute for Applied Ecology, Libertas International University,
R. Bošković Institute, Zagreb, Croatia)

It is well known that rotating blades of a wind turbine represent a risk to collision of birds. For potential areas of wind farm siting, computer models predicting collision of birds with rotors are used regularly. However, monitoring results after wind farms have been built have shown that these assessments were unreliable to the extent that wind farms have been located at wrong places with regard to collision risk.

Up to now, about 20 models have been formulated to calculate the number of bird collisions per year for a particular wind farm. The most often used is the Band model developed for the Scottish Natural Heritage. Since the model was built for use on potential locations of wind farms at the sea, the validation does not exist.

An attempt to use the model for a potential location of a wind farm in Croatia has revealed:

- a) some calculations in the model are erroneous;
- b) the basic hypothesis used in the model does not conform to reality;
- c) the model overestimates the number of collisions by two orders of magnitude.

Hence, a new model has been formulated in which corrections to previous models have been made, additional relevant factors have been taken into account, verification has been completed and validation has been made using monitoring results after several wind farms have been built. The model will be used for finding the best locations of future wind farms with regard to minimization of collision risk to resident predatory birds such as eagles, hawks, buzzards, falcons and kestrels.