

THE LEVEL OF ENVIRONMENTAL DAMAGE FROM TIMBER HARVESTING DEPENDING ON SKIDDING METHODS

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Abstract: *The need to create the methodology of assessing the level of ecological damage caused by timber harvesting seems to be unquestionable. Analysis of relevant research done both in Poland and abroad shows that it is considerably difficult to assess harvesting damage to forest in an objective and complex way.*

Most research includes only some fragmentary problems of the damaging role of the timber harvesting process on the forest environment. A large number of variable factors affecting this environment as well as a large number of those of its elements which can be damaged effectively hinder the creation of one uniform method of damage assessment that would be simple to use, based on objective data and, at the same time, including the influence of various elements on the level of damage.

The aim of the present research was to determine multicriterial synthetic indexes of the lack of harvesting damage to the forest environment WW_{bu} for harvesting technologies which are basic in Polish conditions and include various methods and technological means of skidding. The present research was performed in three regions of southern Poland, representing a lowland, an upland and a mountain area.

The WW_{bu} multicriterial index of environmental damage amounted to 0.9548 for horse skidding, 0.9377 for farm tractor skidding and 0.9215 for skidding by means of the LKT skidder. When two skidding methods were combined (e.g. the horse + the LKT), the WW_{bu} index ranged from 0.9378 to 0.9624.