**ABSTRACT**

MODELING DETERMINATION OF PROTECTED FOREST (HL) WITH PAIRWISE COMPARISONS WEIGHTING METHOD  
(Case Study: Forest Protected Areas of Belitung Island)

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Modeling protected forest (HL) by scoring method based on the Decree of Agriculture Minister No.837/Kpts/Um/11/1980 not necessarily correspond to the implementation on the ground because of the general criteria used in accordance with the criteria. Therefore, it is necessary to model protected forests by another method. This study aims for modeling the determination of protected forest in Belitung Island with pairwise comparison weighting method. Modeling is initiated by selecting proper input criteria of protected forest based on the principal functions of protected forest. Input criteria of modeling are slope, elevation, non-forest, water bodies and soil sensitivity layers further they are reclassed twice, first to suitability scale 1-9 and second to byte scale ranges 0-255. Reclassed maps are then overlaid and weighted. Weighting is done by 15 (fifteen) consistent scenarios that the value of CR < 0.1 for all scenarios. The results of weighting were analyzed with multi-criteria evaluation (MCE) to display 15 (fifteen) modeling maps. The next step is validation modeling results map to obtain the value of kappa index agreement (KIA) ​​and the overall accuracy. The highest value of KIA and overall accuracy found in model 4 where the values ​​are 0.8967 and 98.59 % respectively. These results indicate that modeling the determination of protected forest can be done by pairwise comparison weighting method.

**Keywords:** Modeling, pairwise comparison, protected forest, Belitung Island