Modeling of tree growth after forest fire in mount ciremai national park, Indonesia

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Abstrak

Forest fire is a massive threat towards tropical forest causing various negative impacts to nature and human being.Â Forest fire often leads to alteration of forest structure and its functions.Â This study of tree growth after forest fire was conducted using a model simulation.Â The model was performed at the individual level of plant community and built to analyze the potential of tree growth and its scenario for post-fire recovery.Â Five important tree species from montane forest of Mount Ciremai were chosen to build the model based on four main parameters i.e. plant growth rate, diameter at breast height (DBH), tree-to-grass competition and tree-to-tree competition.Â The scenario of post-fire recovery was performed by replanting similar species with 5 cm DBH seedling.Â Prediction from our model showed that most of the chosen species would recover to its pre-fire condition after 37 - 50 years.Â Considering the limitation of competition after re-planting, it was suggested to minimize tree to tree competition and applied silvicultural treatments to maximize tree growth and tree community recovery.