ABSTRACT

The selective logging has been taking place for decades in South Papua, yet less information concerning its effect on ecological change and population dynamic of certain species. *Pometia* is target species in logging activity. Hence, this research was intended to investigate impact of logging on ecological alteration of logged forest and population dynamic of *Pometia* after selective logging. The study was conducted in logging concession of PT Tunas Timber Lestari, South Papua. Data were collected in primary forest, one-year logged-over forest, five-year logged-over forest, ten-year logged-over forest and fifteen-year logged-over forest, while to analyze population dynamic data were taken in permanent sampling plot. The results revealed that tree species and stem density decreased during post-selective logging. The soil organic matter (SOM) tended to decline in logged forest, suggesting that logged forest is still recuperating. Population of *Pometia* increased dramatically as contributed more by small individuals. However, population growth rate of remnant stands outcompeted the population growth rate of *Pometia* over the time. Conclusively, the role of large individuals of *Pometia* is necessary as putative parent trees to allow its natural regeneration.

Keywords: tropical logged forest, South Papua, population dynamic, Canonical Correspondence Analysis, integral projection model

INTISARI

Penebangan selektif telah berlangsung selama puluhan tahun di Papua Selatan, namun sedikit informasi mengenai pengaruhnya terhadap perubahan ekologis dan dinamika populasi spesies tertentu. Pometia adalah spesies sasaran dalam aktivitas pembalakan. Oleh karena itu, penelitian ini bertujuan untuk mengetahui dampak penebangan terhadap perubahan ekologis hutan bekas tebangan dan dinamika populasi Pometia setelah kegiatan penebangan. Penelitian dilakukan di konsesi PT Tunas Timber Lestari, Papua Selatan. Data dikumpulkan di hutan primer, hutan bekas tebangan satu tahun, hutan bekas tebangan lima tahun, hutan bekas tebangan sepuluh tahun dan hutan bekas tebangan lima belas tahun, sedangkan untuk menganalisis data dinamis populasi diambil pada petak ukur permanen. Hasilnya menunjukkan bahwa jenis pohon dan kepadatan batang menurun setelah penebangan. Bahan organik tanah (SOM) cenderung menurun di hutan bekas tebangan, menunjukkan bahwa hutan bekas tebangan masih dalam proses suksesi. Populasi Pometia meningkat secara dramatis karena lebih banyak dikontribusikan oleh individu kecil. Namun, tingkat pertumbuhan populasi tegakan tinggal melebihi tingkat pertumbuhan Pometia selama ini. Secara meyakinkan, peran individu besar Pometia diperlukan sebagai pohon induk untuk memungkinkan regenerasi alami.

Kata kunci: hutan bekas tebangan tropis, Papua Selatan, dinamika populasi, Canonical Correspondence Analysis, integral projection model