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#### **The effect of selective logging on genetic diversity of two Amazonian species with contrasting ecological and reproductive characteristics**

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An important component of the Dendrogene project was the study of genetic structure, gene flow and reproductive biology of Amazonian timber species, before and after logging. Genetic data together with growth, regeneration and ecological data of the species are integrated in a simulation model analysis (Eco-gene), with different scenarios and intensities of logging, in order to evaluate outputs for supporting policies and management practices to seek sustainable forest management and genetic resources conservation. This presentation focus on two Amazonian timber species [*Dipteryx odorata* (Leguminosae) tetraploid, and *Jacaranda copaia* (Bignoniaceae), diploid]. Genetic diversity and gene flow were characterized using hypervariable microsatellite markers before and after logging. Long-term genetic and demographic impacts (300 hundred years) were evaluated through simulations using the Eco-gene model. Overall, there were no short or long term impacts on this population of *J. copaia*, where current Brazilian forest management regulations are sustainable for both timber extraction and genetic diversity of the species. In contrast, *D. odorata* showed both short and long-term genetic and demographic impacts from selective logging. The removal of trees caused a 10% allele loss. Asynchrony of flowering could also limit the reproduction of *D. odorata* if the logged forest is fragmented with no connectivity between remnant forest patches. In the long term *D. odorata* will not cope with current Brazilian forest management practice. Increasing the minimum cutting diameter from 50 cm to 100 cm of dbh over a 30-year logging cycle, seems to be a recommended scenario for *D. odorata*. This work supports the idea that ecological and genetic information at species, ecological guild or reproductive group levels are essential in helping to derive sustainable management scenarios for tropical forests. Financial Support: Embrapa Amazônia Oriental/ABC/DFID e FINEP/MCT/CNPq, Clarendon Program (University of Oxford), Beca Program-IEB/Fundação Moore e Program Alþan.