

**PhD Dissertation**  
**Department of Environmental Science and Policy**  
**George Mason University**

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Title: Sustainability and Conservation of the Ecologically, Culturally, and Economically Important Palm Tree *Mauritia flexuosa* in the Peruvian Amazon

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**ABSTRACT**

*Mauritia flexuosa* is a non-timber forest product (NTFP) with sustainable management concerns and a complex socio-ecological system. It is a long lived, dioecious species and the fruit are harvested for human consumption in the northern Peruvian Amazon. Most *M. flexuosa* fruit are harvested by felling female trees, though alternative, more sustainable, harvest methods have been developed. Reports on sexual maturity of the palm differ, but range between 10 to 12 years in the wild and 7 to 8 years in agroforestry settings. After reaching maturity, the palm may continue to be productive for many decades, so the current harvest intervals and methods are likely both ecologically and economically unsustainable. This dissertation research analyzes the market with respect to conservation activities, assesses the change in distribution over time related to community harvest methods, and evaluates conservation work aimed at changing the traditional harvest method.

Most market power and financial gains are controlled by intermediary sellers. Harvester groups are disparate and mostly harvest by cutting methods, though several communities have participated in climbing workshops led by development groups. Supervised classification using Landsat TM data reveals more research is needed to differentiate *M. flexuosa* stands from other land cover classes. However, while the ability to accurately identify and quantify distribution changes remains an important research need, this should not deter promotion of sustainable harvest practices. Many development and conservation organizations teach

climbing workshops, but not all communities or individuals who participate in the workshops switch from cutting to climbing. This research indicates that strong property rights, an influential person driving change, and individually owned equipment may be critical to the success of climbing workshops. Although each chapter provides analysis for a distinct aspect of the complete SES associated with *M. flexuosa* harvest for consumption in Iquitos, Peru, successful management of the species depends on consideration of the system as a whole and how each part interacts, influences, and is influenced by other aspect.