Comparing the Difference in Plant Species Diversity, Plant Growth Forms, and Soil Characteristics Between Native and Non-Native Forests,Year II

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The amount of native forests left on Moloka‘i is only 15% (Sarhangi, 2017). On a field trip, we observed that non-native forest seemed to have a lack of variety in plants. However, the native forest had numerous ferns, mosses, and native trees. If the non-native forests have a low plant diversity and richness than there would be fewer habitats for native plants and animals. It would also affect water storage (Giambelluca et al., 2008; Kagawa et al., 2009). We collected plant species data at each foot along two to four 100-foot transects at four sites: fenced `ohi`a lehua, Metrosideros polymorpha; unfenced `ohi`a lehua; swamp mahogany, Eucalyptus robusta; and Monterey cypress, Cupressa macrocarpa. We also collected soil samples and recorded bird calls in each plot. The native plots had much greater plant species richness and a higher plant species diversity index (DI) than one of the non-native plots. The DI for the Eucalyptus forest was similar to the native plots. We found that native ?olapa (Cheirodendron trigynum) was common in the understory of the cypress plot, including seedlings. Nitrogen, pH, Phosphorus, and potash (Potassium) all differed between the plots. We couldn?t tell the difference between the number or type of bird calls between the plots. Based on our results, it appears that non-native forests on Moloka‘i provide less habitat for native plants and animals than native forests. Differences between native and non-native forest could also be affecting water storage. Our results also underscore the critical importance of fencing intact native forest.

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