1077-92-1606   **Matthew J Labrum*** (`mlabrum@math.wsu.edu`), PO Box 643113, Neill 103, Washington State University, Pullman, WA 99164-3113. *Biodiversity dynamics under intransitive competition and habitat destruction.* Preliminary report.

As world population increases, anthropogenic habitat destruction becomes more prevalent and poses an increasing threat to biodiversity. To identify species at risk of extinction, it is important to understand the interplay between species interactions and habitat destruction. While recent modeling efforts have made great strides towards understanding the principal factors causing the extinction of species in response to habitat destruction, a common simplifying assumption made in these models is a hierarchical ranking of competitive abilities among the species occupying a focal habitat. Empirical studies, however, have suggested that this assumption is not always valid. I investigate the ecological consequences of incorporating intransitive competition in a habitat-destruction model. As previous studies have shown that spatial scales affect the outcomes of intransitive competition, both spatial and non-spatial models are analyzed. Model outcomes are contrasted with those resulting for a perfect hierarchical ranking of competitive abilities among species. Of particular interest is the extent to which intransitivity in competitive interactions affects biodiversity dynamics and extinction risks, and how the frequency and spatial extent of habitat destruction alter these results. (Received September 20, 2011)