

OR092*Isotopic analysis of Solenopsis geminata diets in invaded Indonesian savanna.***Rebecca Sandidge**

The Tropical Fire Ant (TFA), *Solenopsis geminata*, is considered an invasive pest throughout much of the global tropics, however very few studies have been conducted on TFA biology. Like most invasive ants, the TFA is omnivorous and attains large colony sizes. Among the fire ants, TFAs display a unique major worker caste with physical adaptations for seed consumption. In order to better understand the process of TFA invasion we examined colonies utilize food resources across habitat boundaries. Sites were located on small, isolated islands dominated by native tropical savanna in southeastern Indonesia. Behavioral assays and stable isotope analysis were used to describe TFA dietary differences between villages and disturbed savannas, two commonly invaded habitats. Environmental data and foraging observations were used along with analysis of C13, N15, and S34 isotopic ratios to clarify major food resources and trophic position of the TFA. The trophic position of the TFA is described relative to co-occurring species ranging from herbivores (Acrididae) to predators (Lycosidae). Results show that adaptations for seed consumption may play an important role in the distribution and invasion biology of the TFA. We show that the TFA does not rely on grass seed availability; colonies are able to shift from animal-based village food waste resources to C4 plant-based resources during range expansion. An isotopic signal from nutrients present in village waste declines with distance from development boundaries without a corresponding decline in TFA abundance in disturbed savanna. However, land use practices influencing the abundance of favored grass species and availability of these grasses may limit the spread of the TFA beyond disturbed grasslands into native savanna.