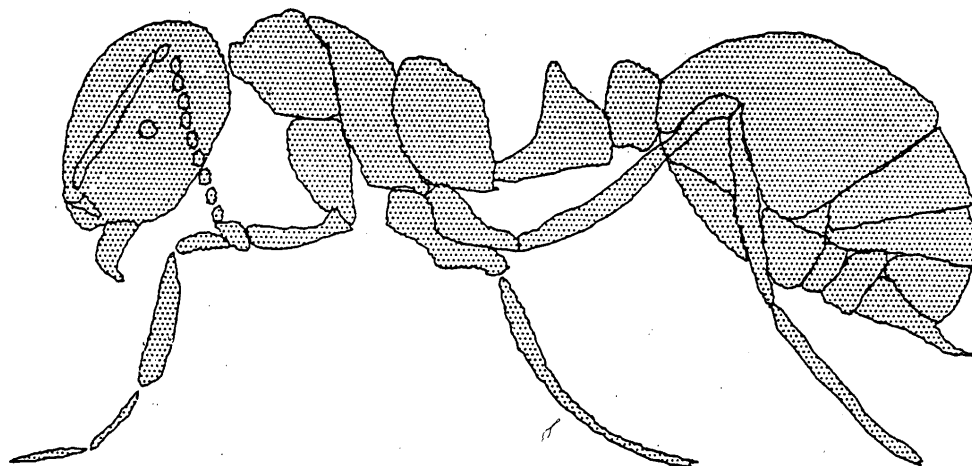


# 1997 IMPORTED FIRE ANT RESEARCH CONFERENCE

HOLIDAY INN WEST  
GAINESVILLE, FL  
APRIL 14 - 16, 1997



HOSTED BY  
USDA, ARS, CMAVE  
IMPORTED FIRE ANT & HOUSEHOLD INSECTS RESEARCH UNIT  
GAINESVILLE, FL

## EFFECTS OF FIRE ANT INVASION ON OTHER ANTS.

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Ants were sampled periodically from March 1972 to September 1992 on roadside stations using hamburger and honey baits. During 68 sampling periods over 21 years, 13,600 bait samples and 990,079 specimens were collected and identified, representing 55 species in 22 genera in 5 subfamilies. More than one ant species was collected on approximately 33% of the baits; 16% of the baits were blank. Red Imported Fire Ants (Solenopsis invicta), S. geminata and Pheidole dentata were the 3 major species collected on the transect over the years in total occurrences (58.33%) and specimens (82.5%).

The RIFA population has gradually increased until in September 1992 it dominated the ant fauna: 43.3% of the sample occurrences (maximum 55.8% in March 1990 & April 1992), 63.1% of the sample specimens (maximum 74.3% in April 1992), and 50 sites (maximum 59 sites in April 1991). The increase occurred in spite of high populations of S. geminata and P. dentata, two species which are predaceous on newly-mated RIFA queens. RIFA is an r-strategist or weed species with great reinfestation abilities, enabling it to invade, establish, and rebuild populations quickly. Once established, it persists and dominates its habitat, becoming a keystone species and influencing community structure.

Both S. geminata and P. dentata showed significant negative correlations ( $P < 0.01$ ) when compared to RIFA in percent occurrences, in specimens, and in number of sites occupied. S. geminata is able to overcome moderate disturbance, and persist and flourish in the presence of the RIFA invasion. S. geminata populations can return to pre-disturbance levels if they are not displaced by competitors. Despite having an alarm-recruitment defense system specific to Solenopsis species ants, P. dentata has decreased wherever it has been studied following RIFA invasion. This decrease is at least partially attributable to the superior recruitment and displacement abilities of RIFA over P. dentata.

An additional 13 species occurred often enough to allow calculation of significant correlations against occurrences. These species can be divided into native ants and introduced ants. Each group had species which were either negatively or positively correlated with the ranked percent occurrences of RIFA.