

# IUSSI 2006 Congress

The International Union for the Study of Social Insects  
2006 Congress, Washington, D.C., USA  
July 30th through August 5th, 2006



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The International Union for the Study of Social Insects (IUSSI) holds an international congress every four years. In 2006, the North American Section will host the meeting in Washington, D.C., USA from Sunday **July 30th** through Friday **August 4th**.

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**Washington, D.C.**  
Summer, 2006



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## **Predictors of the spread of Argentine ants (*Linepithema humile*) across scales and regions**

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Predicting potential range limits of introduced species has become a focal task in ecology and conservation. Studies attempting to forecast future range limits of invasive species use environmental niche, climate-envelope models or related procedures. Few attempts have been made to quantify the generality of predictive models for species invasions across space or scale. The Argentine ant system presents unique opportunities for much needed model scrutiny. It is well known that the abiotic environment is of preeminent importance for invasion success of Argentine ants in southern California. Due to scaling issues, important additional factors exist that may only be poorly addressed by simple climatic models of species range limits. For example, urban run-off, and precipitation in the upper elevations of watersheds have the potential to influence the abundance and spread of Argentine ants in nearby habitats. Here we thus establish a more general model using 15 predictor variables of climate, habitat, and human impact. Preliminary results indicate that elevation, distance to nearest highway and urban area are important predictors at the landscape-level. Based on this information, we then assess the generality of these predictors across two different regions in southern California, with 348 sampling points in one and planned 400 in the other. Using this information we build logistic regression models separately for each area and the entire region and compare the strength of predictors. Finally, we compare these models with those from previous work on Argentine ant range limits at the global level. Studies like ours will help to significantly advance models of potential range limits of introduced species by improving their generality and explicit scrutiny of regional and scale effects.

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