



Oral 8.5 in *Seed Dispersal on Islands*: Einstein Auditorium, 15.06.2010, 17:45-18:00

Pigeons as frugivores on insular environments: the case of two sympatric species in the Canary Islands

MANUEL NOGALES¹, PATRICIA MARRERO¹

¹ Island Ecology and Evolution Research Group, IPNA-CSIC

The frugivory is the predominant trophic strategy adopted by many insular species of pigeons, playing an important role on the structure and composition of plant communities. In a recent review carried out by our research group, we suggested that more detailed and systematic studies on diet should be performed to understand the ecological and evolutionary effects of pigeons on their ecosystems. Probably this lack of information is due to the methodological complexity of these trophic studies. Therefore, we decided to develop some complementary techniques which were applied on the two endemic pigeons of the Canary Islands (*Columba bollii* and *C. junoniae*). Due to the fact that in the Canaries inhabits two species of endangered pigeons, it was convenient to study the diet by the development of non-invasive methods, based in droppings. Therefore, first table, it was necessary to develop protocols of extraction and amplification of DNA in order to identify both pigeons from a genetic point of view. Once identified the droppings, we proceeded to the microhistological study of the diet and trophic ecology of both endemic pigeons. As general patterns, we have confirmed that both species have a vegetarian diet and that they share a high number of diet components. However, the quantitative component is clearly different.

Oral 8.6 in *Seed-Dispersal on Islands*: Einstein Auditorium, 15.06.2010, 18:00-18:15

Novel dispersal relationships on remote oceanic islands affect native communities and species invasions in French Polynesia

ERICA SPOTSWOOD¹, JAMES BARTOLOME¹, JEAN-YVES MEYER²

¹ Environmental Science Policy and Management, University of California at Berkeley

² Délégation à la Recherche, Government of French Polynesia

The arrival of introduced organisms on remote oceanic islands can disrupt mutualisms between frugivores and plants. These changes can trigger cascading consequences for native communities and can facilitate the spread of invasive plants. In the tropical high islands of French Polynesia, three frugivores disperse the seeds of many plants, both native and exotic. We investigated the network of relationships between frugivores and fruit bearing plants on the islands of Tahiti and Moorea. Bird diet was determined through analysis of fecal samples. Seed viability was assessed with germination tests with seeds extracted from intact fruits and fecal samples. Our results show a high level of integration between native and exotic organisms. Birds consumed the fruits of 21 species, 13 of which are introduced and naturalized. Exotic seeds remain viable after digestion, while the seeds of two native plants show enhanced germination after digestion by native frugivores highlighting the important role of dispersal. Native frugivores consume many exotic species which provide a highly abundant and continuously available resource. These indirect impacts of species invasions are likely to be detrimental to the regeneration of native forests.