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Assessing the Impacts of Frugivorous Birds on Dispersal and Recruitment of Invasive Phytolacca Americana in an Urban Landscape

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Abstract : Although seed dispersal is considered to be a key process determining the spatial structure and spread of invasive plant populations, few studies have explicitly addressed the link between dispersal vector behaviour, and seedling recruitment to gain insight into the process of exotic species invasion within a urban landscape. The present study tests the effects of native bird species on the dispersal and recruitment of invasive Phytolacca Americana in an urban garden. We found the invasive population of American pokeweed attracted both generalist species and specialist species to forage and disperse its seeds, with generalists Pycnonotus sinensis and Urocissa erythrorhyncha being by far the most important dispersers. Seedling numbers of P. Americana was strongly affected by perching behavior of bird dispersers. Moreover, two main disperser species, P. sinensis and U. erythrorhyncha govern a high quality dispersal service for P. Americana. Our results highlight the ability of invasive P. americana to recruit seed dispersal agents in urban habitats. However, if the newly recruited species could use the seedling safe site for perching shelter, the invasive plants will get a high regenerate rate in the invasive new habitats thus enhancing their invasive ability.

Keywords : frugivorous birds, phytolacca americana, seed dispersal, urban landscape
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