

Influences of Island Characteristics on Plant Community Structure of Farasan Archipelago, Saudi Arabia: Island Biogeography and Nested Pattern

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Abstract : The present study was carried out in 20 islands of Farasan Archipelago in Saudi Arabia to describe the biogeography patterns of plants. A total of 191 species belonging to 129 genera and 53 families were identified. Following island biogeography theory, total plant species richness and their ecological groups were positively influenced by island size, number of habitats, elevation and were not affected by isolation. The high level of nestedness, the strong effect of area on total plant species richness and ecological groups, and the similarity of vegetation composition on the islands has several implications for conservation. In conclusion the large and richest islands in Farasan Archipelago such as Farasan Alkbir would conserve higher diversity than several smaller islands. This island also includes rare habitats like coral rocks and rare species. The invasion of the unique habitats such as wadi channels and water catchments in this island by the exotic tree *Prosopis juliflora* should be managed to conserve the native biodiversity. The protection of such critical habitats is very important on the other large island (e.g. Zufaf), due to their limited distribution in the country.

Keywords : island biogeography, conservation, farasan archipelago, saudi arabia, plant diversity

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