



## A study on alien flora of Gadag District, Karnataka, India

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### Abstract

In this study we present an account of alien species in the Gadag District in India with additional information on habit, origin, longevity, habitat and uses. During this study, a total of 141 alien species belonging to 112 genera in 40 families were identified and listed from various localities in the District. Among the total number of the alien species 54% are native to Tropical America. Analysis of the habit shows that herbs having included 86 alien species, followed by 25 shrubs, 16 trees and 14 climbers. Among 40 families, Fabaceae is the most dominantly invasive family with 21 species. There is an urgent need to list regional data on (invasive) alien species diversity in order to study the impact on native vegetation and explore the worldwide pattern of species invasion.

### Introduction

Organisms migrating to new localities and their descendants have been referred to as alien, adventive, exotic, introduced and non-indigenous (Sharma *et al.* 2005). Biological invasions by alien species are globally recognized as a significant component of human induced environmental changes, often resulting in a significant loss in the economic value of crops, forests, fisheries, grazing capacity of domesticated animals (Mack *et al.* 2000, Lambdon *et al.* 2008), in serious environmental threats to local ecosystems, biodiversity and to society including human health (Wu *et al.* 2010a). Invasive alien species are annually causing billions of dollars damage across a wide range of sectors including agriculture, forestry, fishery, ecosystem services, and overall environment (Goyal 2005). Invasive exotic plants are implicated in the decline of threatened and endangered species, because they alter ecosystem processes, change vegetation structures and displace native species, often because they reach high densities and biomass (Denslow 2007).

Biological invasions are represented by alien species introduced accidentally or purposefully outside their native geographical distribution ranges, for example, within 200 years of introduction to India, the invasive weed *Parthenium hysterophorus* L. invaded 14.25 million hectares of farm land. Similarly, *Prosopis juliflora* (Sw.) DC. invaded 1.8% of the total land area of India (Love *et al.* 2009). *Parthenium hysterophorus* has been reported to be a health hazard, particularly to farm labourers. Frequent contact with this plant causes allergy, dermatitis, eczema, asthma, and gangrene (Bahar 2000), and also constant sneezing, cough, and fever (Dasgupta 2010). Another invasive species, *Lantana camara* L. increases the incidence of sleeping sickness in both wild and domesticated animals, as well in as human beings (Meck *et al.* 2000).

Most of the introduced taxa multiply in a limited period of time and destroy the native flora. Any change in floristic composition is bound to alter the primary productivity of the ecosystem in time and space. Therefore, investigation of the spread of alien or exotic species has become an imperative issue in the Indian subcontinent and globally.