AUSTROEUPATORIUM INULIFOLIUM INVASION IN KNUCKLES CONSERVATION AREA

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Invasive plants

Invasive species pose a growing problem around the world, both ecologically and economically. Invasions can influence the native flora negatively. Invasive plants also know to possess many physiological and morphological traits that help them to invade successfully in introduced habitats. Some of these traits include their superior competitive ability over native flora, their high reproductive ability and their potential to colonize on disturbed areas. Invasive plants can spread into new habitats already occupied by native flora and displace them. Therefore, intentional and/or unintentional transport of plants to new regions has become a serious threat the biodiversity and ecosystem functions. Human activities have accelerated long-distance transport of organisms, frequency of colonization, and establishment and invasion of non-native populations. Most of the impacts of invasive plants are considered as negative but there are reports of positive impacts especially on degraded habitats.

Austroeupatorium inulifolium

Taxonomic name: *Austroeupatorium inulifolium* (Kunth) R. M. King & H. Rob
Synonyms: *Austroeupatorium inulaefolium* (H.B.K.) R. M. King & H. Rob.
Eupatorium inulifolium Kunth
Habit: Herb/shrub
Habitats: Agricultural fields, fallow fields, waste lands and roadsides etc.

Habit and the habitat of *Austroeupatorium inulifolium*

General impacts:

Austroeupatorium inulifolium is listed as an "agricultural and environmental weed" in the Global Compendium of Weeds, (2008). It is a serious weed in the Philippines where it forms very dense thickets in rubber, tea and rosella plantations, upland rice plantations and in clearings of secondary forests (Waterhouse and Mitchell, 1998). In Sri Lanka, this plant has been identified as an invasive alien plant recently. For the last few years, *A. inulifoium* has spread into the Knuckles Conservation Area (KCA) and has invaded many ecosystems such as grasslands, plantations and roadsides.

Invasion of *Austroeupatorium* in Knuckles conservation area

KCA is a unique ecosystem in Sri Lanka, and consists of varying land use patterns providing a refuge for many endemic and threatened floral and faunal species. *Austroeupatorium inulifolium* has been rapidly invaded in and around KCA during the past few years. Out of many land use types in KCA, *Cymbopogon* dominated grasslands are the most vulnerable for this invasion. *Austroeupatorium* can also be seen in other land use types such as roadsides, *Pinus* undergrowth and forest-grassland edges. It is important to improve the basic ecological understanding of these invasions in order to

reverse or mitigate their often devastating effects. Understanding the invasion process and basic attributes correlated with invasibility can enhance the strategic planning processes for early detection, management and mitigation of these invasive species effectively.

Research findings

A preliminary studies conducted by Haluwana and Madawala in 2013 have shown that *Austroeupatorium* invasion has a facilitative effect on the tree seedling establishments on highly degraded grasslands in the Knuckles Conservation Area (KCA), and suggested that this positive effect possibly due to enhanced edaphic and micro-climatic parameters. Further experiments on *A. inulifolium* have shown that this plant is physiologically and morphologically more plastic than other co-habitating plants, which is considered as an important trait possess by invasive species to perform well under harsh conditions. This ability of *Austroeupatorium* may be the driving force behind high invasion rates into *Cymbopogon* dominated grasslands in the KCA (Piyasinghe *et al*., 2010). Studies also revealed high quality and litter inputs, and decomposition rates of *Austroeupatorium* litter that may leads to changes in the soil nutrient pools and their cycling processes over time (Piyasinghe *et al*., 2013).

References:

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