Sri Lankan Biodiversity Review. Volume 1: 73-78, 2001.

POTENTIAL INVASIVE PLANTS IN SRI LANKA

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ABSTRACT

Invasions by alien plants can cause detrimental effects to the native biodiversity. The introductions of invasive plants may be deliberate or inadvertent. Many plants that have become invasive in Sri Lanka have been introduced by the Royal Botanic Gardens for ornamental, botanical or other scientific purposes. There are many plants that are potentially invasive and that could endanger native biodiversity. Based on personal observations, these plants include *Millingtonia hortensis, Potamogeton nodosus, Hydrilla verticillata, Utricularia aurea, Pennisetum clandestinum, P. thunbergii, Arundo donax, Xanthium indicum, Psidium cattleyanum,* and *Eupatorium inulifolium*

INTRODUCTION

Biological Diversity is defined customarily in terms of genes, species and ecosystems. Invasive species can reduce genetic diversity by eliminating genetically distinct populations. Hybridization or interbreeding of introduced species with native ones could also affect genetic diversity. Species diversity is affected by invasive species that compete with native species and displace them. Invasive species can also affect ecosystems by obstructing processes such as nutrient cycling, pollination, regeneration of soils, and energy flow. As invasive species could reduce genetic, species and ecosystem diversity they are considered to be an important threat to biological diversity loss after habitat destruction.

Invasive species are sometimes introduced intentionally into new habitats. These include species that are used in agriculture, forestry, horticulture, and fisheries. Alien invasive plant species could

also enter the environment from botanic gardens (Table 1) or similar places involved in cultivation of non-native plants. Royal Botanic Gardens, Peradeniya have played a major role in many plant introductions. In fact, one of the major purposes of establishing botanic gardens was to introduce plants that are of economic, ornamental, or scientific significance. Some of the plants introduced have become serious weeds. One of the best examples is *Eichhornia crassipes* (Water Hyacinth, Japan Jabara).

Table 1. Some plants introduced by the Royal Botanic Gardens that are or in the process of being alleged as invasive in Sri Lanka.

Species	Year Introduced	Family	Origin
Antigonon leptopus	1870	Polygonaceae	Tropical America
Aristea ecklonii	1889	Iridaceae	Cape of Good Hope
Cestrum aurantiacum	1889	Solanaceae	Guatemala
Clidemia hirta	1894	Melastomataceae	Tropical America
Clusea rosea	1866	Clusiaceae	West Indies
Eichhornia crassipes	1905	Pontederiaceae	Hong Kong
Eupatorium riparium	1905	Compositae	Mexico
Lantana aculeata	1826	Verbenaceae	Tropical America
Miconia calvescens	1888	Melastomataceae	Mexico
Myroxylon toluiferum	1870	Leguminosae	Venezuela
Prosopis julifera	1880	Leguminosae	Tropical America
Taraxacum officinale	1882	Compositae	Europe
Tithonia diversifolia	1851	Compositae	Mexico
Ulex europaeus	1888	Leguminosae	Europe
Dillenia suffruticosa	1882	Dilleniaceae	Borneo

With the rapid development of trade and tourism invasive species inadvertent introduction of invasive species into new habitats throughout the world is rapidly increasing. This paper attempts to draw attention to some invasive plants that could threaten the biodiversity of Sri Lanka, if adequate measures are not taken to control the spread of these into the wild.

Some notable plant species showing invasive tendencies

The following descriptions of plant species showing invasive behaviour is based on personal observations made by the author (with the exception of *Potamogeton nodosus* and *Hydrilla verticillata*) during field visits made during the last two decades. However, this claim is not based on a scientific measurement on the degree of invasiveness. Such measurements on the degree of invasiveness need to scientifically established.

Millingtonia hortensis - Bignoniaceae

Aggressive growth of *Milingtonia hortensis* (Indian cork tree) due to root suckers was observed in the Department of Agriculture Farm at Bata Ata and roadside wastelands near Embilipitiya (1999). This species is cultivated in Asian countries as an ornamental tree on account of its fragrant white flowers.

Potamogeton nodosus - Potamogetonaceae and *Hydrilla verticillata* - Hydrocharitaceae

Disturbance of inland waterways due to growth of *Potamogeton nodosus* and *Hydrilla verticillata* has been observed recently (2001) in the southern province (Dr. B. Marambe, Personal communication).

Utricularia aurea - Lentibulariaceae

Utricularia aurea is an attractive yellow flowered carnivorous plant commonly found under submerged condition in the

dry zone tanks of Sri Lanka. This plant can become a serious invasive plant in aquatic ecosystems in the wet zone as it appears to multiply rapidly when grown in mid country wet zone.

Pennisetum clandestinum and P. thunbergii - Poaceae

African grasses, *Pennisetum clandestinum,* ('kikuyu grass') and *P. thunbergii* are presently dominant grasses in the grasslands at Horton Plains National Park. *Pennisetum clandestinum* was introduced into Ambewela Cattle Farm probably during the 1950s as a pasture grass. Clearance of Horton Plains grassland for potato cultivation in the 1960s led to rapid invasion of these grasses. Grasslands dominated by these exotic pasture grasses are now the main grazing areas of the sambhurs. This may however lead to an imbalance in the natural ecological system.

Arundo donax - Poaceae

Arundo donax is found abundantly along roadside wastelands in Welimada, Keppitipola area. As the mature culms of this tall Mediterranean grass locally known as 'epala' are being used extensively by vegetable cultivators as support for crops such as pole beans, it is considered a useful plant. However, this has replaced the natural vegetation besides water streams and can be considered a potential invasive plant in the region.

Xanthium indicum - Asteraceae

This plant was reported to be very rare about 100 years ago (Trimen, 1895). Now it is abundant along water bodies of the dry and intermediate areas of Sri Lanka especially in the Mahaweli region.

Psidium cattleyanum - Myrtaceae

Psidium cattleyanum commonly known as cheena pera in Sinhala is found growing in the disturbed montane forests of Peak

Wilderness area. This small tree could easily invade the gaps within upper montane forests owing to its edible fruits.

Eupatorium inulifolium - Asteraceae

Eupatorium inulifolium grows abundantly in the sub montane areas of Bandarawela and Ramboda. It is now found in the Horton Plains and similar areas in the upper montane region. This white flowered shrub is usually found in disturbed sites such as degraded tea lands and roadsides.

Cuscuta chinensis - Convolvulaceae

Holoparasitic creeper *Cuscuta chinensis* (dodder, aga mula nethi wel) was found to be very rare about a century ago (Trimen, 1895). During the last decade it has become very common and is found to be parasitizing a broad range of host distributed in the mid country and low country.

Bambusa bambos - Poaceae

This southeastern bamboo known as katu una is fast spreading in the semi evergreen forests in the hilly areas of Randenigala National Park

Pittosporum ferrugineum - Pittosporaceae

This small tree known as kaputu was introduced into Sri Lanka by the Royal Botanic Garden as an ornamental plant. It is now naturalized in and around Kandy.

The preceding descriptions do not cover all potential invasive plants present in the island. The plants mentioned in this paper are some of the conspicuous species that need to be recognized as invasive plants.

It is worth noting that even the native plants could become invasive. One example is *Strobilanthes* species in the undergrowth of

upper montane forests. Almost all the fast spreading species of *Strobilanthes* are endemic to Sri Lanka.

LITERATURE CITED

Trimen, H. 1895. Handbook to the Flora of Ceylon. Volume III. Dulau & Co. London.