



Section D

Invasive alien fish species: Status, concerns and management in Sri Lanka

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The movement of species, ranging in size from microscopic organisms such as viruses or bacteria, from plants to large animals has always been a part of life on our planet. Humans, however, have been responsible for extensive artificial movement of large numbers of species for some time, due to their economic and social activities. Some of these introduced species have created serious management issues with regard to conservation and the sustainable use of biodiversity, with significant undesirable impacts on the goods and services provided by ecosystems. Today, the movement of live animals and plants around the world, facilitated by increased global trade and the accessibility of online marketing tools, poses a risk of spreading species around the globe more widely and more rapidly.

Now, let's look at what 'invasive species' means. We know that 'alien' means 'belonging to another place, something strange or something new'. When alien species invade a new habitat, there might be many changes, most often, they can disrupt the existing balance of the ecosystem. In some cases, the new species causes radical and irreversible changes to the environment it has invaded. When this occurs, the species is defined as 'invasive'. Invasive alien species (IAS) include exotic or non-native micro- and macro-species introduced, accidentally or deliberately, to a place that is not part of their natural habitat or distributional range, and have adverse ecological and economic impacts.

The World Conservation Union rates AIS as the second worst threat to biodiversity after habitat loss. In addition, invasive alien species have been a burden to economic development due to both the financial implications of present invasions to agriculture and ecosystem services, as well as the high cost of eradication efforts.

Impacts of invasive species are severe in biogeographical islands as they modify the colonization to extinction equilibrium. Sri Lanka being an island with a rich biodiversity the threat of invasive species should be given considerable attention. Environmental variability, biotic interactions and abiotic disturbances influence the ability of alien species to colonize a new environment. As freshwater ecosystems are particularly subjected to disturbances and are constantly exposed to degradation throughout the world they are more susceptible to invasion by introduced species. The decline of inland water biodiversity has reached alarming rates, making inland water species among the most threatened of all taxa.

Sri Lanka constitutes about 153,000 ha of freshwater bodies, which include 70,000 ha of large irrigation reservoirs, 39,000 ha of minor irrigation tanks, 4,000 ha of flood lakes, 8,000 ha of upland reservoirs and 22,000 ha of Mahaweli reservoirs. There is a possibility that the availability of these aquatic habitats, which are interconnected by irrigational channels, would greatly enhance the distribution of aquatic alien invasive organisms throughout the country. Large and sudden changes of flow (floods and droughts) which