

Editorial

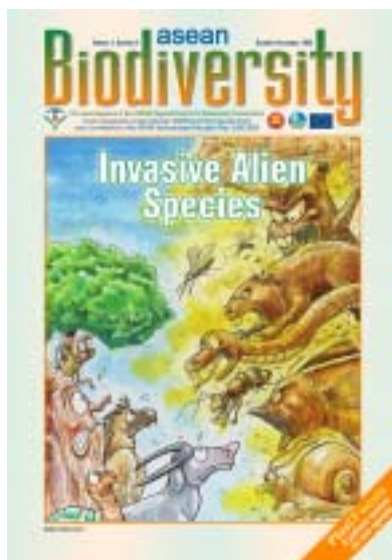
Invasive Alien Species and their Impacts on Biodiversity

■ By Gregorio I. Texon

One of the major threats to biodiversity in the ASEAN region as well as globally is the introduction of exotic species into the region. For the past 40 years, the rate of and risks associated with biotic invaders have increased enormously because of human population growth, rapid movement of people, and alteration of the environment.

Alien species are those that occur outside their natural range or have established themselves accidentally or introduced deliberately. Invasive alien species (IAS) are those that threaten the existence of native plants and animals or other aspects of biodiversity, and occur in all groups of plants and animals. The Species Survival Commission of IUCN reports that as competitors, predators, pathogens and parasites, alien species have invaded almost every type of native ecosystem, and caused hundreds of extinctions. Accordingly, their impacts are immense, insidious and usually irreversible. The article on page 16 (Global Strategy on Invasive Alien Species) of this magazine points out that the establishment of non-native species that have wreaked havoc on local ecosystems is one of the significant impacts of the globalisation of trade.

Political boundaries are indeed porous to the intentional and unintentional movement of species from various ecosystems in all parts of the world. And in both ecological and economic terms, the scope and cost of biological alien invasions are enormous. Introduced pests and pathogens reduce crop and stock yields, and weeds degrade marine and freshwater ecosystems. In South-



Cover illustration by Rene Aranda

east Asia alone, according to John R. MacKinnon's article (see page 9 of this magazine), IAS are causing billions of dollars worth of damages.

Among the worst IAS in the ASEAN region are the: water hyacinth (*Eichhornia crassipes*), pantropical weeds (*Imperata cylindrical*), Thai catfish (*Clarias batrachus*), Chinese super-tree (*Paulownia tomentosa*), bullfrogs (*Rana catesbeiana*), golden apple snail (*Pomacea canaliculata*), ship-spread rats (*Rattus rattus*), and American cockroach (*Periplaneta americana*). Add to these species those listed in the national reports of each ASEAN member-country featured in this issue of *ASEAN Biodiversity* (see pages 20 - 39); the articles discuss the status of IAS as well as nationally implemented strategies to manage and control these.

However, we still have a long way to go before we could even match the enormous problem and risks with a well-balanced solution. Concerted efforts are needed at the national, regional and international levels.

Government planners and regulators must ensure that IAS issues are addressed and efforts of various institutions are well supported and enhanced.

Being intrinsically global in nature, IAS require international attention and solutions. Future work should thus include:

- Development of a regional programme for taxonomists to build core competencies and expertise in identifying specific taxonomic groups and alien species
- Assessment of the extent of invasions by alien species and their economic implications.
- Update and/or amendment of the existing sanitary and phytosanitary measures or other associated legislations, regulations and procedures to make them more effective in dealing with exotic species
- Improved education and dissemination of information that could help reverse or at least halt the problems should be shared sufficiently to all sections of the international community.
- Development and/or establishment of national databases on websites that should include a list of recognised invasive species, and case studies of levels of damage and of control measures employed.
- Introduction of national programmes including tax incentives that promote the use of native germplasm for horticulture, urban greening, parks, golf courses, roadside trees and forestry. ■