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## ***Conservation News Service.***

**Editor: Dharman Wickremaretna**

**A plague on plastic shopping bags Various environmental systems are in force around us. Plastic (shopping) bags which can have an effect on these environmental systems have appeared on the scene. These plastic bags which are not biodegradable affect the environmental balance in various ways. Today this situation underlies, over and over again, the need for sustainable development.**

Horton Plains, Sinharaja, Yala Sanctuary, Uda Walawe National Park and Attidiya Bird Sanctuary are a few places of Sri Lanka's national heritage. Plastic (shopping) bags have become a plague that indirectly affects every one of these national environmental resources. Visitors to these places bring various items wrapped in plastic (shopping) bags and leave them behind after use without any concern for the environment. The damage caused to the environment because of plastic bags is amply demonstrated by the fact that certain people are said to have observed the presence of undergraded plastic (shopping) bags in the bellies of some dead wild animals. Furthermore, it is on record that rare turtles have died in the sea after consuming plastic (shopping) bags having assumed them to be jelly fish.

This is indeed another sad aspect. From 1979, the destruction of forests has received the attention of the Community Educational Centre, Malabe. Later its attention was directed to the damage of polythene and plastics. Women's societies of eight districts which participate in the work of this Centre emphasized this problem in their monthly meetings as well as in their training sessions for women leaders.

In 1992, some 376 members of 20 societies in the six districts of Matale, Moneragala, Colombo, Gampaha, Anuradhapura and Galle were subjected to a survey. As much as 368, ie. 98% of them were found to be using plastic (shopping) bags over and over again. Out of them 24% used a plastic only once and 12% used more than twice. Those who used plastic (shopping) bags for other purposes amounted to only 4%. The remaining 96% threw them into garbage dumps or left them on the wayside after use or even burnt them. Before adopting the use of plastic (shopping) bags, they used bags made of cloth, leather, paper or other synthetic materials.

In connection with this programme, ideas and suggestions started to pour in through women's societies. Minimal use of plastic (shopping) bags, using them for an optimum

period and burning them after use in one place instead of throwing them all over, were some of the main suggestions. However, it was the primary objective of the Community Environmental Centre to find a suitable alternative for use. Accordingly during the Sinhala and Tamil New Year, in 1992, a bag made of reeds was introduced. A women's society located at Waturuwela in Galle distributed hundreds of bags made of reeds, produced with the help of rural women, with the message "an alternative to polythene and plastics which destroy the fertility of the earth". These bags were distributed among 80 women's societies in eight districts.

While certain women's societies started to use cloth bags as an alternative, certain other societies began to produce bags using discarded old clothes. In this manner an educational message spreads among the communities across the length and breadth of the country through rural women's societies. Similarly, the introduction of bags made of reeds with various environmental themes takes place every year at the time of the Sinhala and Tamil New Year. In addition, at the request of teachers of nursery schools, 100 cloth bags with an environmental message printed on them were sold to the teachers by the Centre for use by the nursery students in 1996. Some parents of nursery students also produced new cloth bags for their children. At the moment, women of all districts are involved in a practical educational programme against plastic (shopping) bags.

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## Young ones join hands to protect animals

**I**t is certainly a pleasant experience to spend an hour among chirping birds and a lot of animals although it is only an artificial environment lacking the authentic atmosphere of a jungle replete with trees and such like. This realization comes to everybody who visits the Dehiwala Zoo in the suburb of Colombo.

The Zoo which is a haven for both local and alien animals has become an educational centre today. Lyn de Alwis, who was an advisor to Zoo authorities in 1996 laid the foundation for this educational centre on November 17, 1972. The centre was called the Young Zoologists' Association (YZA).

The YZA is a non-governmental organization (NGO) operating within a state sector organization. From its inception, the primary objective of the YZA has been to create an awareness particularly among **school** children about wild animals. In addition thousands of visitors to the Zoo receive various forms of assistance from young officials of the YZA. They perform an invaluable service as voluntary guides. Hence visitors have been able to observe animals on the basis of accurate data provided by them.

In association with the Zoo authorities the YZA has, in the recent past, built an arboreum mainly for the benefit of children. This children's arbour located under the shade of trees is equally beneficial to adults as an educational facility. Animal pets like giant pythons, lion cubs and other species such as deer, who enjoy freedom within this

harbour under the supervision of these zoologists, have won the hearts of children. The members of the YZA have dedicated themselves to looking after these animals.

Activities carried out by these young zoologists have become a source of help to the Zoo administrators. They feel that particularly the problem of a large workforce has been eased for them by these voluntary youth. Without merely confining their activities to the Zoo, the YZA has enlisted the support of **school** societies on a large scale. Naturally their contribution particularly to environmental protection, in co-operation with other organizations, is considerable. This contribution becomes greater in value because activists of several environmental organizations have received their grounding at the YZA. It wouldn't be incorrect to look on the YZA as the "**Chipco School**" in **Sri Lanka**, one which has produced several environmentalists.

The YZA with its headquarters at the Zoo performs a great service from the point of view of the environment and particularly in the protection of animals. It also carries out special awareness activities through various national programmes planned for the protection of biodiversity. Under this activity the YZA issues a quarterly newsletter titled "Message" as well an annual journal called "Thithmuwa."

The Secretary of the Research Projects Committee of the YZA describing the aims of the organisation said: "At present the YZA has over 500 members. Our primary target is to enlighten the public correctly about animals as well as on the importance of environmental protection. Our environment is as important as the animals to be found within it. The key message of our association is that everybody should join hands to protect the environment. In future we hope to produce posters in order to educate the public, especially on animals as well as on poisonous snakes which face extinction. These posters will be distributed among schools, NGOs and as well as state sector organizations.

The YZA has brought out a research publication based on the Bolgoda Lake south of Colombo in the vicinity of Moratuwa. They have conducted lectures in a large number of schools in the island under its programme aimed at educating **school** children. While creating an awareness about the environment among **school** children, steps have been taken to enhance their organizational capacity. They have demonstrated that as youth they can do a great deal more indeed in the future too, if only organizations like the YZA are extended greater patronage and given a free hand to enlarge the scope of their work.

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### **Baffled botanists battle a blunder**

"The fact that the spread of *Salvinia* began from Kolonnawa is perhaps known only to the scientists who released this plant into the Kolonnawa canal in 1939"

The genesis of the *Salvinia* plant can be traced to Brazil. At a time when *Salvinia* was alien to Sri Lanka, the Department of Botany of the University of Ceylon in 1939 got

down some *Salvinia* plants for an examination from the Royal Botanical Gardens in (UK). From time to time *Salvinia* plants were brought to Sri Lanka from Kew Gardens or Calcutta since the process of getting them down was both expensive and troublesome. Some plants thus brought to Sri Lanka were released into a canal at Kolonnawa in the hope they would grow there to be collected when needed.

*Salvinia* brought here for study purposes appears to have slipped from everybody's attention after a short period of time. According to a legend, *Salvinia* is supposed to have been introduced into the major water bodies in and around Colombo in order to make them look like grasslands so that during the Second World War, Japanese parachutists would land on *salvinia* and get drowned. The fact that the spread of *Salvinia* began from Kolonnawa is perhaps known only to the scientists who released this plant into the Kolonnawa canal in 1939.

The *Salvinia* plant spread fast to the water bodies and fertile paddy fields throughout Sri Lanka becoming a great enemy of agriculture. Several steps taken by the relevant authorities towards its eradication had insignificant success. Although *Salvinia* plants were removed on a mass scale from water bodies and paddy fields, the menace would spread again after a short period of time.

Reading the gravity of the problem, the Natural Resources Energy and Science Authority (NARESA) of Sri Lanka took the initiative to find a solution. Scientists from the University of Sri Jayawardenapura were of the view that biological control can be successfully adopted against *Salvinia* and accordingly a project was launched by NARESA to combat *Salvinia* using a weevil. NARESA's main role here was to enlist the expertise available in universities, research institutes and various government departments. In addition, NARESA obtained the necessary funds from the Australian Centre for International Agricultural Research (ACIAR) and expertise from the Commonwealth Scientific and Industrial Research Organization (CSIRO). The primary course of action undertaken in this project was the testing, both in the laboratory and in the field, of the effectiveness of *Cyrtobagous salviniae* a weevil which had been used successfully for biological control of *Salvinia* in Australia as well as in Papua New Guinea.

Says Prof. Priyani Soysa, the Director-General of NARESA, "We found out that Australia had discovered a weevil capable of destroying *Salvinia*. We decided to bring down this weevil to Sri Lanka in order to control the *Salvinia* menace. Towards the end of 1980, the Department of Zoology of the University of Kelaniya was entrusted with the responsibility of forging ahead with the proposed project in collaboration with NARESA. Presently the officials involved in this assignment have been successful in controlling the menace by about 85%."

While NARESA and CSIRO provided the necessary guidance and ACIAR the financial support, the University of Kelaniya and the Department of Agriculture got involved in the experimental activities. It was a tiny weevil of Brazilian origin known as *Cyrtobagous salviniae* that was made use of for this gigantic task. The first step in the process of experimentation was to ascertain whether this tiny weevil was likely to pose a threat to other agricultural crops. Three well known Biologists in Sri Lanka, namely Dr. G.

Sivanathan, Mr. G. A. Gunatilleke and Dr. Ivor Fernando were involved in the initial experiments relating to this weevil.

Said Dr. Ivor Fernando of the Department of Zoology of the University of Kelaniya "When we commenced the campaign against *Salvinia*, this water weed had already assumed dangerous proportions. However we wanted to make sure that this weevil will not attack any other plant. Detailed experiments were conducted with this weevil by the quarantine division of the Department of Agriculture at Gannoruwa. These experiments proved that the *Citrobagus* beetle survives solely on *Salvinia* and will not attack any other plant of economic importance. Accordingly we decided to release this weevil into the water bodies infested with *Salvinia*".

Speaking further Dr. Fernando said: "NARESA appointed an Action Committee in this connection which consisted of members from NARESA, the University of Kelaniya, Jayawardenapura and the Departments of Agriculture, and Irrigation. Target locations numbering 132 water bodies which had been completely effected by *Salvinia* throughout Sri Lanka were selected for the purpose of introducing the weevil. A part of the first consignment of weevil received from Australia was handed over to the Central Agricultural Research Institute at Gannoruwa. Propagation of this weevil was not a difficult task. First of all, this weevil was released into selected water bodies even if they were completely covered by this plant. We were convinced that this weevil was the best remedy."

Most of the water bodies examined before and after the biological control programme showed that they are clear of *Salvinia*. The campaign launched by NARESA covered areas in and around Colombo as well as in Anuradhapura, Polonnaruwa, Kurunegala, Puttalam, Puliyankulama, Girandurukotte, Maduru Oya, Ampara and Angunakolapelessa.

While the weevil feeds and survives entirely on *Salvinia*, its breeding cycle is also dependent on the plant. The larvae of this weevil feed inside the plant while the adult feeds on growing buds. Due to the combined action of both adults and larvae, growth of the plant is arrested at first and then the plant dies and turns brown. After a while the dead plants sink to the bottom of the water body. When the *Salvinia* plant dies in this manner, most of the weevils will perish in the absence of their usual food plants.

However some will survive on a few plants and persist to carry on the goodwork. Director of Plant protection, Dr. Lakshman Amerasinghe said "Our main objective is to breed this weevil in a proper manner because there are several other locations where the threat of *Salvinia* still exists. We are in the process of releasing the weevil in places like Mahiyanganaya, Bible and Matale. In short we are prepared to release the weevil into any water body where the *Salvinia* menace exists, if and when we are informed".

Replying to our question as to whether the Plant Protection Unit would respond in the event of several requests for assistance coming in at the same time, Dr. Amerasinghe said: "We have faced such situations before. What we do is to despatch a consignment of

weevils by post. The fact that the weevil can survive for a few days without food and water is a special advantage in moving the weevil to various locations. We hope to continue this campaign more systematically in association with state and community organizations and to completely control the Salvinia menace in Sri Lanka in the near future".

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