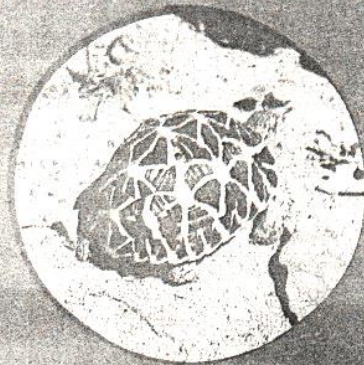


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*Proposed Action Plan: Conservation,
Restoration and Management of the
Testudines and their habitats in
Sri Lanka*



Anslem de Silva

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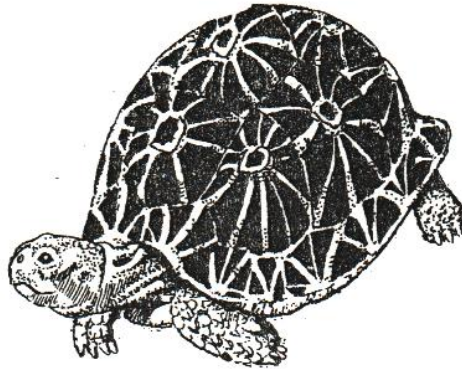
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Three confusing names: Turtles, tortoises and terrapins

*All tortoises are turtles
but not all turtles are tortoises
All terrapins are turtles
but not all turtles are terrapins
Some turtles are just turtles*

Source: Das & Whitaker, 1993

List of Contents

	Page
Foreword	04
Preface	05
Acknowledgements	05
Introduction	06
Objectives	06
Checklist of Testudines of Sri Lanka	07
Threat categories	08
Conservation priorities	08
Threats and stressess	09
Turtle research projects	11
Marine turtle hatcheries	12
Pet trade	12
Recommended actions for conservation and management	13
Expert resources available	15
References	16
Further recomended reading	18
Appendices	
I Turtle carapace and plastron	20
II Key to the turtles of Sri Lanka	21
III Some marine turtle nesting localities	22
IV Distribution of land turtles	23
V Distribution of <i>Geochelone elegans</i>	24
VI Coastal habitats of Sri Lanka	25
VII Some Marine turtle hatcheries of Sri Lanka	26
VIII Specialist chelonian organizations	27

(The views expressed in this book are those of the author and are not necessarily endorsed by the Dept of Wildlife Conservation)

Foreword

Despite its small size, the island nation of Sri Lanka harbours rich biodiversity of global significance. The Department of Wildlife Conservation (DWLC) is the key player in the field of nature conservation commanding some 13% of the country's land area in 70 protected areas in varied habitats ranging from montane to coastal ecosystems.

Department of Wildlife Conservation has been seized of the significance of testudines as an important segment of reptilian fauna and of the diverse habitats they inhabit. Not only are their habitats safe guarded in the protected area network but many species have been afforded protection outside the PAs too.

In 1970, *Dermochelys coriacea* (Leatherback Turtle) was the first species of turtles to be protected, subsequently, in 1972 the other 4 marine turtles (*Caretta caretta*, *Chelonia mydas*, *Eretmochelys imbricata* and *Lepidochelys olivacea*) too were given legal protection. The law prohibits killing, harming, capturing and collecting turtle eggs.

As shown in this Action plan, there are many threats faced by the turtles, terrapins and tortoise of Sri Lanka. Legal protection and field conservation measures need the all important support of people by making them aware of the scientific and cultural aspects of conservation. This booklet will hopefully provide wildlife managers, planners and conservationists some suggestions in conservation, restoration, management and conducting public awareness programmes on the testudines of Sri Lanka.

Lalith Hettiarachchi

Director, Dept of Wildlife Conservation and
National Project Director
Global Environmental Facility Project, Colombo
May 1996.

Preface

A preliminary Action Plan for the conservation and management of amphibians and reptiles of Sri Lanka was presented at the First IUCN/SSC, Indian Subcontinent Reptile and Amphibian Specialists Group (now renamed the South Asian Reptile and Amphibian Specialist Group) meeting held in Orissa, India, in February 1992. This included a brief account of the order Testudines of Sri Lanka. A preliminary draft of the present Action Plan for the conservation and management of testudines of Sri Lanka, was submitted by the author during the first "Action Plan for Turtle Conservation" meeting held in Colombo on 16 June 1994. It was chaired by the Director, Dept of Wildlife Conservation, Sri Lanka, and after that many revisions were made.

It is hoped that this Action Plan will be a "live" one and that its recommendations and suggestions will be implemented, instead of becoming yet another document which will gather dust on a library shelf.

Anslem de Silva

University of Peradeniya, May 1996.

Acknowledgements

I wish to thank the Director, Department of Wild Life Conservation & Global Environmental Facility Programme, for funding this publication to be issued for the participants of the International Conference on the Biology and Conservation of South Asian Amphibians and Reptiles, held in Peradeniya and Kandy in August 1996; to Malik Fernando, Indraneil Das, Peter Richardson and D G A Perera for their helpful comments and suggestions; and Bernard Devaux for inviting the author to present the preliminary report of this paper at the International Congress of Chelonian Conservation, Gonfearon, France in 1995. Turtle Conservation Project (Heather Kalb) for providing a colour photo of *Eretmochelys imbricata* (Hawksbill turtle).

1. Introduction

The order Testudines is an important component of the herpetofauna of Sri Lanka, as its three main groups, namely the marine, freshwater and land turtles are found in the Island. Freshwater and land turtles are also called pond turtles or terrapins and tortoises respectively. They add to the biodiversity of the herpetofauna of Sri Lanka. Their vital ecological functions help to maintain the health and balance of nature, and preserve their prominent place in the heritage of the world. Our knowledge of the ecology, distribution and status of testudines is poor; but the alarming, uncontrolled rate of collection of eggs for sale and consumption, the killing of turtles (for meat, aphrodisiacs, medicines and souvenirs), the rapid depletion of natural habitats and nesting grounds, their collection of these animals for the pet trade are some of the well known threats and strains faced by the wild turtle populations of Sri Lanka. The slow growth rate of these animals reduces their ability to cope with such decimation of their numbers.

2. Objectives of the action plan

2.1. To take immediate steps to carry out a status survey and simultaneously protect and restore existing populations of testudines and their habitats and feeding grounds (sea-grass beds, coral reefs, open tracts in forests with grass and weeds) in Sri Lanka by implementing existing laws.

2.2. To take immediate steps to monitor, evaluate and improve existing programs, such as on going turtle research projects, Marine turtle hatcheries etc.

2.3. To conduct awareness programs, with a view of enhancing conservation and research in areas where turtles are threatened.

2.4. To conduct status surveys and appropriate research projects on the turtles of Sri Lanka in important habitats.

2.5. To identify threats faced by turtles and conduct surveys to evaluate their extent and significance with the aim of eliminating them or minimizing their effects.

2.6. To monitor the importation of foreign turtles in to Sri Lanka by pet traders (eg, Red-eared terrapins). There is evidence that this species (*Pseudemys scripta*, renamed *Chrysemys scripta* by Pritchard, in 1979) some have escaped, and are now found in the wild around Colombo.

2.7. To identify possible alternative sources of income generation for local people currently exploiting Sri Lankan testudines and lobby the appropriate government authorities to implement projects for alternative employment.

2.8. To devise and implement sustainable and participatory turtle conservation strategies in all important habitats.

2.9. To declare some major nesting beaches as sanctuaries.

3. Checklist of Testudines of Sri Lanka

Order : Testudines

Family Bataguridae (Asian pond turtles)

Melanochelys trijuga parkeri Deraniyagala, 1931 (English = Parker's Rock Turtle ; Sinhalese = *Parkerge Gal Ibba*.)

Melanochelys trijuga trijuga Schweigger, 1814 (English = Rock Turtle ; Sinhalese = *Gal Ibba*)

Family Cheloniidae (Sea turtles)

Caretta caretta (Linnaeus, 1758) (English = Loggerhead Sea Turtle; Sinhalese = *Olugedi Kesbeva*)

Chelonia mydas (Linnaeus, 1758) (English = Green Sea Turtle; Sinhalese = *Gal Kesbava*)

Eretmochelys imbricata (Linnaeus, 1766)(English =Hawksbill Sea Turtle; Sinhalese = *Pothu Kesbava*)

Lepidochelys olivacea (Eschscholtz, 1829) (Olive-Ridley Sea Turtle; Sinhalese = *Batu Kesbava*)

Family Dermochelyidae (Leatherback sea turtles)

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Dermochelys coriacea (Linnaeus, 1766) (English = Leathery Turtle; Sinhalese = *Dhara Kesbeva*)

Family Testudinidae (Land tortoises)

Geochelone elegans (Schoepff, 1795) (English = Star Tortoise; Sinhalese = *Meyavara Ibba*; *Tharaka Ibba*)

Family Trionychidae (Soft-shelled turtles)

Lissemys punctata punctata (Lacepede, 1788) (English = Flapshell Turtle; Sinhalese = *Kiri Ibba*)

Doubtful taxon: The Flatback Turtle (*Natator depressa*) is considered a occasional visitor to our coastal waters. (Deraniyagala 1971, Hewavisenthi 1990; Wickramasinghe, 1981). A key to identify the testudines are given in Appendix II.

4. Threat categories

4.1. The Red Data Book (World Conservation Monitoring Center, 1990), lists *Chelonia mydas*, *Eretmochelys imbricata*, *Lepidochelys olivacea*, *Dermochelys coriacea* as endangered and *Caretta caretta* as vulnerable taxa.

4.2. CITES: All marine turtles and *Lissemys punctata* are listed in Appendix I and *Geochelone elegans* in Appendix II

4.3. In Sri Lanka all marine turtles and *Geochelone elegans* are protected under the amendment of Fauna and Flora Protection Act of June 1972. Under this ordinance, it is an offence, for any person to possess, capture, kill or injure these animals or to collect or destroy their eggs. However the 7th amendment to the Act (No.49 of 1993) gave protection to all reptiles.

5. Conservation Priorities

It is inappropriate to attempt proposing rigid conservation priorities as we lack reliable data about our turtles. The following provisional priority ranking for conservation activities is proposed, based on our preliminary observations:

First Priority : All taxa of marine turtles and *Melanochelys trijuga parkeri* (Deraniyagala, 1931). The latter is said to have restricted distribution.

Second Priority :

Melanochelys trijuga trijuga and *Lissemys punctata punctata* (Lacepede, 1788)

Third Priority :-

Geochelone elegans (Schoepff, 1795).

6. Threats and Stresses

The threats faced by the turtles of Sri Lanka can be divided into two groups - natural threats and threats caused by human actions.

6.1. Natural threats

Natural threats occur throughout the life cycle of the turtle. For convenience, three phases of the life cycle have been distinguished: the eggs, the hatchlings and the adults.

6.1.1. Eggs

6.1.1.1. Turtle eggs are widely eaten by humans, *Varanus salvator*, *Varanus bengalensis*, *Crocodylus porosus*, *C. palustris*, Otters (*Lutra species*), wild pigs and dogs.

6.1.1.2. Marine turtle nests made on beaches that experience high rates of erosion and nests made late in the season are prone to being washed away or water-logged by rough wave action. Excessive heat which may desiccate eggs, may also have adverse effects on sexual behavior and gender determination.

6.1.1.3. Marine turtle eggs are prone to fungal and bacterial infections which will kill whole clutches once established in the nest. Clutches laid in areas of dense vegetation can also be killed by root penetration.

6.1.2. Hatchlings

6.1.2.1. Predation by fish, crabs, varanids, crocodiles, birds, wild boar, dogs and jackal.

6.1.2.2. Diseases - turtles are highly prone to parasitic infestations (internal and external). Shell necrosis and upper respiratory tract infections have been frequently observed.

6.1.3. Adults

6.1.3.1. Diseases - adult turtles are highly prone to parasitic infestation (internal and external), shell necrosis and respiratory tract infection.

6.1.3.2. Predation by sharks and large carnivorous cetaceans, crocodiles, wild boar etc.

6.1.3.3. Loss of nesting beaches due to erosion is a major problem faced by marine turtles visiting Sri Lanka.

6.1.3.4. Severe aquatic leech infestation in *Lissemys punctata* in the dry zone was observed. Tugores (1987) records death of hatchling turtles due to marine leech attack.

6.2. Threats caused by human interference

6.2.1. An important threat faced by all taxa of testudines (except *Geochelone elegans*, although there is recent evidence that humans feed on the flesh of this tortoise too) is killing them for meat and medicinal and aphrodisiac use, especially the flesh and eggs.

6.2.2. The major threat faced by all marine turtle taxa is the collection of their eggs for household consumption and for sale, to markets and turtle hatcheries. Surveys suggest that almost 100% of the nests on the south-west coast of Sri Lanka, from Colombo to Hambantota are robbed of their eggs (Richardson, 1995b).

6.2.3. Pet trade. There is evidence that terrapins and tortoises (*Geochelone elegans*, *Melanochelys trijuga* and *Lissemys punctata*) are widely captured to be reared as pets and for export (both legally and illegally).

6.2.4. Artificial lighting in or near nesting beaches may disorient marine turtle hatchlings preventing their escape in to the ocean and also disturb nesting females.

6.2.5. Loss of marine turtle feeding grounds (sea-grass beds and coral reefs) as a result of pollution, coral mining and development in tourist industry.

6.2.6. Loss of habitat and nesting grounds of marine turtles and land tortoise due to vast agricultural projects and rapid urbanization is occurring at an alarming rate.

6.2.7. Local harvesting and import of *Eretmochelys imbricata* scales and *Geochelone elegans* carapaces for the illegal "tortoise shell" industry.

6.2.8. A study in one locality showed that approximately 55 % of the *Geochelone elegans* population had their carapace damaged by humans giving rise to minor or grievous injuries (de Silva, 1996). Such injuries may be caused intentionally or unintentionally.

6.2.9. Depletion of prey species population of all sea turtle taxa, such as fish, crustacea, mollusks, echinoderms, jelly fish (*Schizophor-medusae*) and cephalopods as a result of pollution, coral reef destruction and over fishing. When adult, *Chelonia mydas* is herbivorous but is carnivorous at the juvenile stage of the life cycle.

6.2.10. Increase of toxic substances in natural food due to extensive use of agrochemicals, fertilizers and other environmental pollutants.

6.2.11. Coastal, offshore, deep sea and inland fishing have increased during the past few decades. Although there is inadequate data, preliminary inquiries and data from other sources (Jinadasa, 1984; Hewavisanthi, 1990) have revealed that marine and fresh water turtles are trapped both accidentally and intentionally in fishing nets and illegally harvested. Also sea and fresh water turtles are captured incidental to other fishing activities.

6.2.12. During chena cultivation some star tortoises (*Geochelone elegans*) get burnt. A study in the dry zone revealed that of 105 *Geochelone elegans* studied four were burnt (de Silva, 1996).

7. Turtle research projects

The following are the main ongoing turtle research projects in Sri Lanka:

7.1. Ongoing status survey of turtles conducted by Amphibia and Reptile Research Organization of Sri Lanka, in collaboration with the Faculty of Veterinary Science, University of Peradeniya.

7.2. Turtle Conservation Project, conducted by 'Care for the Wild'.

7.3. Marine turtle hatcheries conducted by Wildlife and Nature Protection Society, Sri Lanka.

7.4. Marine turtle research projects conducted by the Dept. of Zoology, Open University, Nawala, Rajagiriya.

7.5. Ongoing development of sustainable and participatory "in situ" nest protection and scientific monitoring strategies at Rekawa, and other important sea turtle rookeries.

7.6. Ongoing monitoring project of the extent of the "tortoise shell" industry in Sri Lanka by the Turtle Conservation Project.

7.7. Ongoing evaluation projects of the marine turtle hatcheries of Sri Lanka conducted by the NARA (National Aquatic Resources Agency) and Turtle Conservation Project.

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7.8. Ongoing turtle conservation educational programmes at hotels, coastal community centers and schools conducted by NGO's.

8. Marine Turtle hatcheries

There are nearly twenty five marine turtle hatcheries in Sri Lanka (Appendix VII). These need immediate assessment, hence the following should be carried out.

8.1. Prepare guidelines and instructions/information packages for turtle hatcheries.

8.2. Prepare a list of all turtle hatcheries

8.3. Evaluate the hatcheries using advice from local and foreign experts.

8.4. Establish a government license scheme for the current hatcheries whereby government guidelines must be followed. Hatcheries that refuse or are unable to follow the guidelines should be closed down. Hatcheries that agree to follow the guidelines should be actively promoted by the Department of Wildlife Conservation and the Ceylon Tourist Board.

8.5. Establish posts for officers within the Department of Wildlife Conservation and NARA whose duties would be to coordinate all government and NGO involved in sea turtle, tortoise and terrapin related activities.

8.6. Design a pre structured questionnaire and issue to all marine turtle hatcheries so that they could maintain detailed accounts of eggs, hatchlings, species etc.

8.7. Research workers should have easy access to carry out their research at these hatcheries.

9. Pet Trade

9.1. There are many who keep *Geochelone elegans* and other turtles, local as well as imported, as pets. Prepare a list of persons who keep land tortoises as pets.

9.2. The traders who sell local as well as imported turtles should be monitored and listed. Importation of foreign species should be banned with immediate effect. (Refer 2.6)

10. Some Recommended actions for conservation, restoration and management

10.1. Conduct studies on all species of turtles to identify and investigate:

10.1.1. Current status, ecology, and population size of testudines of Sri Lanka.

10.1.2. Conduct a comprehensive survey of all marine turtle rookeries of the entire coast line of Sri Lanka.

10.1.3. Status of natural habitats and natural feeding grounds.

10.1.4. Threats unique to Sri Lanka

10.1.5. Evaluation and value of all ongoing research, conservation projects and marine turtle hatcheries are urgently required.

10.2. Increase and implementation of protective legislation, participatory action and conservation awareness programs at all known important nesting and feeding habitats of all taxa. Increase Police and Dept of Wildlife Conservation Officers patrolling/monitoring.

10.3. Educational and training programs on turtles and environmental law for the respective officers, concerned volunteers etc.

10.4. Protection, restoration and propergation of sea grass beds, reefs and known sandy nesting beaches.

10.5. Initiate collaborative research and conservation work on turtles with recognized local and foreign institutions and NGO's.

10.6. Initiate in situ conservation programs for all taxa and ex situ conservation programs where necessary and if scientifically proven to be of value.

10.7. Discourage or ban the building of hotels, shops and houses in or near favored turtle nesting sites. Also discourage camp fires, singing, dancing, playing music or shining torches in these nesting sites.

10.8. Monitor and evaluate ongoing captive breeding programs in commercial farms. There is a possibility of introducing parasites and or bacteria to wild populations in the course of release.

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Study deformities caused by nutritional deficiencies. Release of captive turtles should be coordinated with accepted scientific and conservation authorities. Turtles for release should be permanently marked for identification and comprehensive records maintained. Releasing of animals should be well timed to coincide with the behavioral needs of the animals.

10.9. Publicize cases of poisoning and deaths due to consumption of marine turtle flesh (Ariyananda & Fernando, 1987) and the possible ill effects of eating an excess of high cholesterol loaded marine turtle eggs. Also publicize the habits of their feeding on excreta.

10.10. Ascertain the importance of turtles to ecology and commerce (i.e. potential eco-tourism value).

10.11. Carry out a census of families dependent on the "tortoise shell" industry and establish training programs for alternative employment, if found to be necessary.

10.12. Identify and monitor the markets for marine turtle flesh and their eggs and establish conservation awareness programs where such markets exist.

10.13. Modern fishing methods have made turtles more vulnerable (Jinadasa, 1984) hence conduct awareness programs for the fishermen and on the steps that should be taken to minimize turtles getting trapped and drowned in nets.

10.14. Determine the frequency of sea and fresh water turtle captures: species, sex and numbers per year, selling prices, income etc.

10.15. Organize international, national and regional symposia and workshops etc on turtles and conduct educational programs at schools and community centers where exploitation is widespread and threat to the local testudines populations is very high.

10.16. Organize beach clean-up programs with the assistance of school children, local volunteers and NGO's. Many turtles have died by ingestion of plastic bags.

10.17. Initiate specific conservation projects.

10.18. Declare major nesting beaches (eg. Induruwa, Kosgoda, Rekawa, Bundaia) as protected areas.

10.19. Inform cultivators (chena) in the dry Zone, Sri Lanka, before setting fire to

the dry vegetation to check it for possible star tortoises hiding under fallen leaves.

10.20. To erect a fence around the vegetable (beans etc.) and ground nut cultivations as *Geochelone elegans* feed on tender leaves of these voraciously.

11. Expert resources available

11.1. Government departments: Department of Wildlife Conservation, Gregorie's Road, Colombo 07; National Aquatic Research Agency, (NARA), Colombo, 13; Coast Conservation Department, Colombo 10; National Museums Department, Colombo 07; Zoological Gardens, Dehiwala.

11.2. In addition there are many local herpetological societies which provide technical advice and information on turtles. They are:

- a. Wildlife and Nature Protection Society of Sri Lanka (WNPS) Chitiya Road, Colombo 01
- b. Amphibia and Reptile Research Organization of Sri Lanka (ARROS), 15/1 Dolosbage Road, Gampola
- c. Turtle Conservation Project (TCP), 14'A, de Saram Road, Mount Lavenia.
- d. Young Zoologists Association, Zoological Gardens, Dehiwala.

11.3. Personnel

11.3.1. Research workers on testudines from Sri Lanka:
Suhashini Hewavisenthi and Sarath Kotagama, Open University, Rajagiriya, Sri Lanka; Vijitha Kuruvita, R P J Rajapaksa, Anslam de Silva, University of Peradeniya, Sri Lanka. Peter Richardson and Susan Ranger, TCP, Mt' Lavenia.

11.3.2. Experts from abroad:

Peter C H. Pritchd, Florida Audubon Society, Caselberry, Florida 32707, USA; Edward O Mole, Eastern Illinois university, Charleston, Illinois, USA; Ian R. Swingland, University of Kent, UK; Indrncil Das, Center for Herpetology, Madras Crocodile Bank, India; Gerald Kuchling, Dept of Zoology, University of Western Australia, WA 6009, Australia

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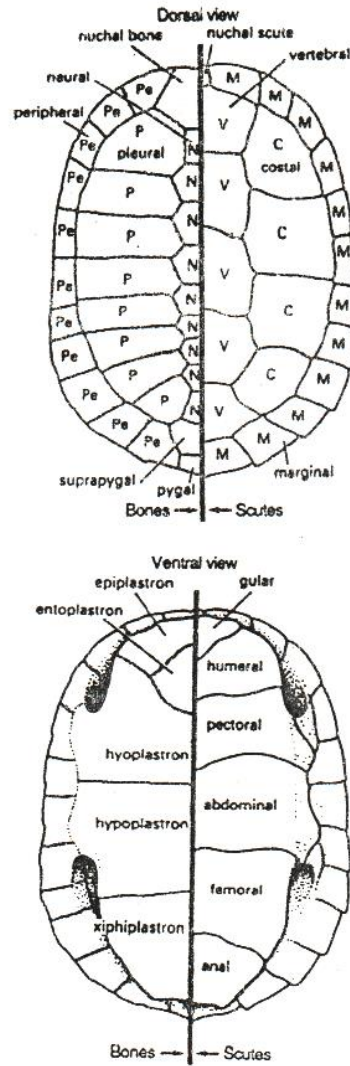
Some Journal and newsletters on testudines

Chelonian conservation and biology, published by the Chelonian Research Foundation.

Testudo Journal of the British Chelonian Group

Tortoises and Turtles, IUCN

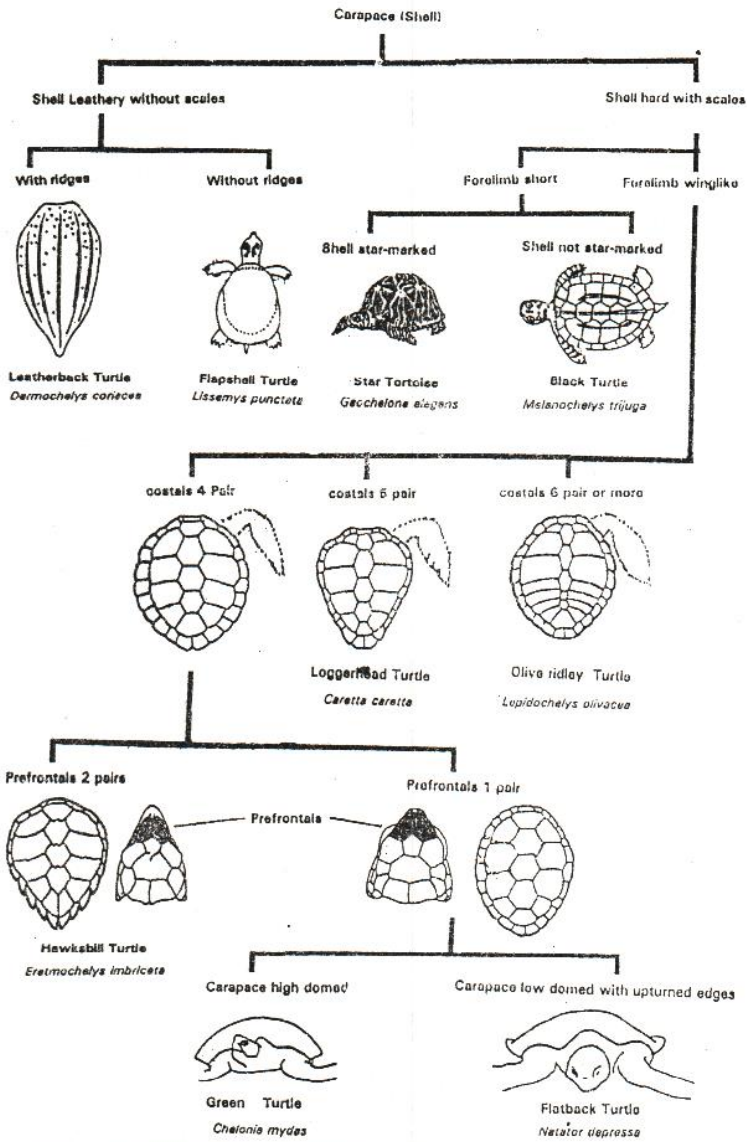
Appendix I
Bones and scutes of turtle carapace and plastron



Source: Zhao & Adler, 1993.

Appendix II

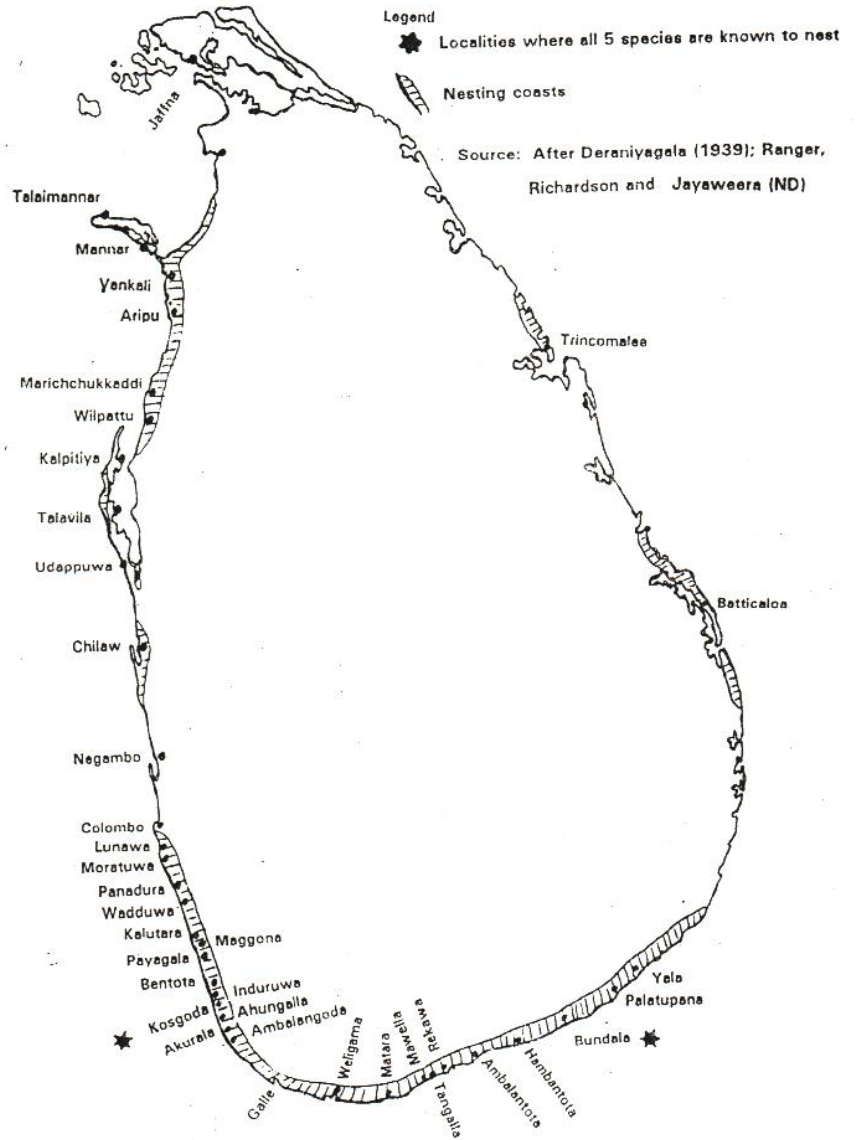
Key to the Turtles of Sri Lanka



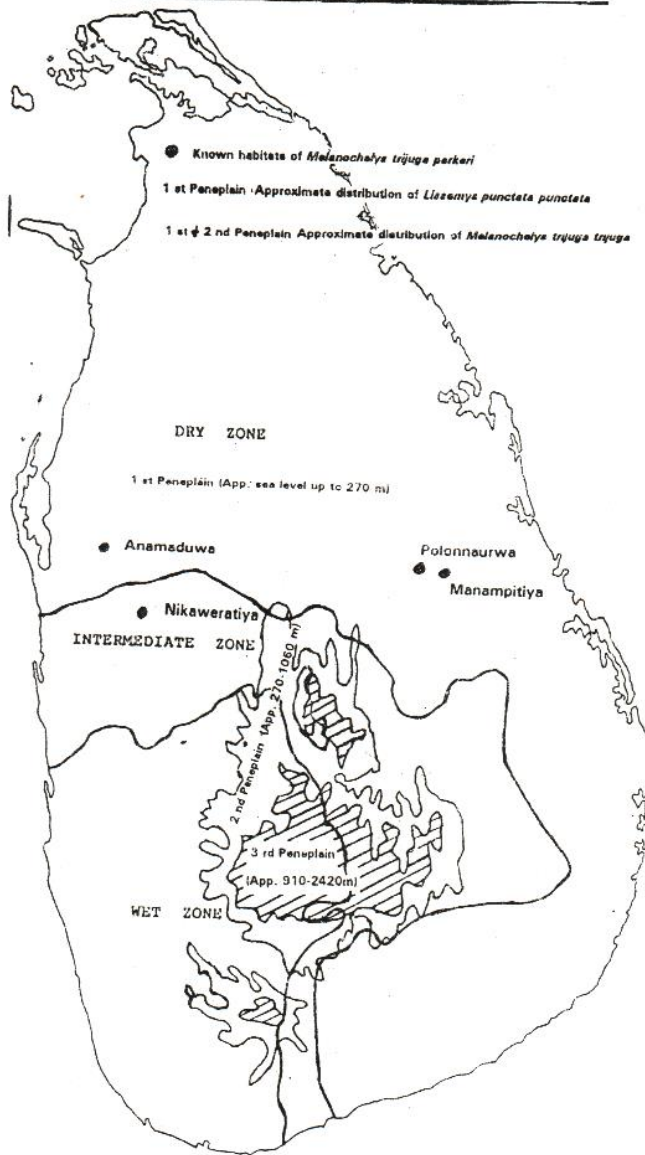
Source: Modified from, Indo-Pacific marine turtles, Greenpeace, 1991

Appendix III

Some Marine Turtle Nesting Localities in Sri Lanka



Appendix IV Distribution of Land turtles



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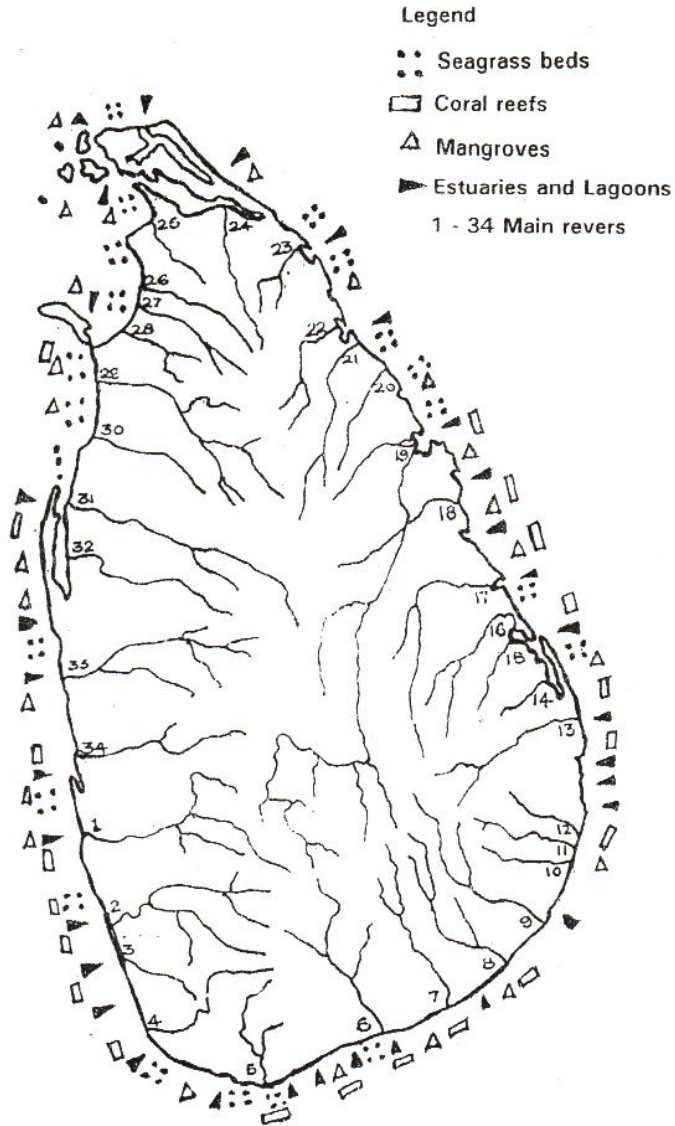
Appendix V
 Distribution of *Geochelone elegans*

Source: de Silva, 1996



Appendix VI Coastal Habitats of Sri Lanka

(Modified from National Atlas of Sri Lanka)



roup.

ornia

Appendix VII Some Marine Turtle Hatcheries of Sri Lanka

(The source is given within parenthesis, it is possible that some of the hatcheries listed may not be functioning at present)

1. Bundala Hatchery (March for Conservation - Report on the Bundalahatchery, Newsletter No.1 April 1983).
2. Palatupana, Wildlife and Nature Protection Society Hatchery (Wickramasinghe, 1981).
3. Bentota Beach Hotel Hatchery (Wickramasinghe, 1981)
4. Tangalla Bay Hotel Hatchery (Wickramasinghe, 1983)
5. Kosgoda Hatchery (Wickramasinghe, 1982)
6. Koggala Beach Hotel, Koggala.(Richardson, 1995)
7. The Strand Hotel, Yaddhimulla, Unawatuna.(Weerasinghe & Walker, 1995)
8. Sea Turtle Hatchery and Research Centre, Dodanduwa. (Richardson, 1995)
9. Triton Hotel, Ahungalla.(Richardson, 1995)
10. Sunset Restaurant, Ahungalla beach (north of the Triton) Hotel.(Richardson, 1995)
11. Hibiscus Restaurant, Ahungalla beach. (north of the Triton) Hotel.(Richardson, 1995)
12. Unnamed Hatchery, (south of the Victor Hasselblad Hatchery) Kosgoda. (Ref. Wickramasinghe, 1982)
13. Victor Hasselblad Hatchery, Kosgoda.(Ref. Wickramasinghe, 1982)
14. Sea Turtle Sanctuary, Farm and Hatchery, Galle Road Mahalapana, Kosgoda.(Ref. Wickramasinghe, 1981)

15. Sea Turtle Protection Association, Galle Road, Bentota South. (Ref. Wickramasinge, 1981)
16. Sea Turtle Hatchery and Research Centre. Galle Road, Induruwa. (Richardson, 1995)
17. Robinson Club, Galle Road, Bentota. (Ref. Wickramasinghe, 1982)
18. Neptune Hotel, Galle Road, Beruwala. (Ref. Wickramasinghe, 1982)
19. Mount Lavinia Hotel, Mount Lavinia, Colombo. (Richardson, 1995)
20. St. Thomas's College Hatchery, Mount Lavinia, Colombo. (Richardson, 1995)
21. Aquatic Resort, Pamballa, Chilaw. (Fernando, 1993)
22. Bundala beach Hotel, March for Conservation report on Bundala. (Ref. Wickramasinghe, 1983)
23. Wellawatta (Siri Wickramasinghe's Private Hatchery) (Wickramasinghe 1982)
24. Moratuwa Turtle Farm (Richardson, 1995)
25. Bayroon Hotel, Beruwala. (Wickramasinghe, 1982)

Appendix VIII

Specialist chelonian organization

Marine Turtle Specialist group and tortoise and Freshwater Turtle Specialist Group, IUCN/SSC, Gland Switzerland.

IUCN/SSC South Asian Reptile and Amphibian Specialist Group, Centre for Herpetology, Mamallapuram - 603 104, South India.

California Turtle and Tortoise Club, P.O. Box 8952, Fountain Valley, California 92708 USA

Testudines Action Plan

Desert Tortoise Council, P.O. Box 1738, Palm Desert, CA 92261, USA

Endangered Turtle Protection Foundation, P.O.Box 417, Greenville, DE 18807, USA

Gopher Tortoise Council, 611 N.W. 79th Drive, Gainesville, Florida, FL 32607, USA

Interessengemeinschaft Schildkroten Schutz, Kelterbacherstr. 24, D-5138 Heinsberg-Grebben, West Germany

Lubbock Turtle and Tortoise Society, 5/08 64th Street, Lubbock, Texas, TX 79424, USA

National Turtle and Tortoise Society Inc., P.O. Box 98068-9806, USA

New York Turtle and Tortoise Society, 163 Amsterdam Avenue, Suite 365 New York, NY 10023, USA

San Diego Turtle and Tortoise Society, 17963 Lyons Valley Road, Jamul, California, CA 92035-9607, USA

S.O.P.T.O.M., Village des Tortues, B.P. 24, 3590 Gonfaron, France

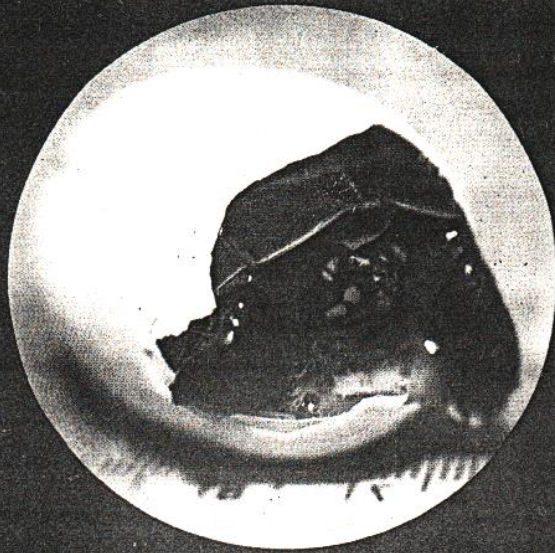
The Tortoise Trust, BM Tortoise, London, WC1N 3XX, England

Tortoise Survival Project, c/o The Tortoise Trust, BM Tortoise, London WC1N 3XX, England

Turtle Organisation of San Luis Obispo, P.O.Box3208, Shell Beach, CA 93449, USA

Turtle and Tortoise Club of Santa Barbara, P.O.Box 70745, Santa Barbara, CA 93160, USA

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