

Let's Conserve the Critically Endangered Mangrove Species *Ceriops decandra* (Rhizophoraceae) in Sri Lanka.

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Sri Lanka is an island which is possess typical tropical climate such as high temperature, rain fall as well as high percentage of humidity throughout the year. It was identified as a biodiversity hotspot along with the Western Ghats mountain range of the Indian sub-continent. As a hotspot it should possess a high number of species and endemism in 10,000 sqkm as well as the threats to biodiversity should also be high. Sri Lanka shows high degree of genetic, species as well as ecosystem diversity in Asia.

Mangrove ecosystems are valuable both economically and ecologically, contributing a significant range of ecosystem goods and services. Mangroves play a major role in carbon sequestration, providing protection to coastal zones against the force of storms and energetic waves such as tsunami and they have the ability to absorb many pollutants and purify water as a natural filter. That is to say, they have a strong potential to contribute to climate change mitigation.

Figure 1- The mangrove ecosystem



Mangrove is a unique and vulnerable ecosystem which is confined to the inter - tidal zone of the country. It possesses several adaptations to survive in hard conditions in inter tidal zones such as viviparous fruits, salt glands, aerial root systems and thick cuticles in leaves. It shows patchy distribution around the country in lagoons, estuaries, salt marshes and sheltered bays. It provides essential life-support services to humans as well as to many faunal groups. They are associated with tropical coastal environments and are comprised of woody halophytes that are well adapted to intertidal conditions. There are 65 - 70 true mangrove species identified globally while 21 true mangrove species were identified from Sri Lanka (National Red List, 2012). The global coverage of mangroves are 15.2 million ha among 123 tropical and some sub-tropical countries while 15000 ha of area are represented in Sri Lanka. Though the area of distribution is less than 0.1% the species composition in Sri Lanka is around 1/3 of the total. So the species diversity of the mangroves of Sri Lanka is comparatively very high.

There are two true mangrove species that are listed as Critically Endangered in Sri Lanka namely *Lumnitzera littoria* and *Ceriops decandra*. (National Red List, 2012).



Figure 2 -*Lumnitzera littoria*. At Madugana Estuary

Lumnitzera littoria (Figure 2) is confined to the Maduganga estuary which belongs to the Balapitiya Divisional Secretariat in Galle District. Since the Maduganga estuary is gazetted as a sanctuary under the Flora and Fauna Protection Ordinance and it has been declared as the third Ramsar wetland in Sri Lanka under the Ramsar Convention. Therefore, this ecosystem as well as *Lumnitzera littoria* is protected under the purview of the Department of Wildlife Conservation.

In this short communication I want to draw your attention on *Ceriops decandra* (Figure 3) which is listed as Critically Endangered. Few researchers such as Abeywickrema, (1960) De Silva K.H.G.M, Balasubramaniam, S., (1984–85), Amarasinghe, M.D.,(1996), Pinto, L. (1986) mentioned *C. decandra* as a true mangrove species in Sri Lanka without mentioning available locations nor have they included photographs in their publications for proper identification. Prof. L.P. Jayathissa rediscovered this rare mangrove species from Trincomalee and published its conservation status as Critically Endangered in the National Red List in 2012. It is considered as a rare species globally According to the World Atlas of Mangroves, it has been recorded in 10 countries out of the 112 countries where mangroves exist. However, they have not mentioned Sri Lanka as a country of occurrence. Discovery of this species by Prof. L.P. Jayatissa was the first recent record. Thereafter, it was published with detailed photographs by M.G. Manoj Prasanna (the author of this article) and Prof. K.B. Ranawana in the Guide to Mangroves of Sri Lanka which was published by the Biodiversity Secretariat, Ministry of Environment in 2014. It was the first recent publication with detailed photographs. In 2015, the first substantiated record of *Ceriops decandra* (Rhizophoraceae) in Sri Lanka by depositing a voucher specimen in national herbarium was done by Mr. Sarath Ekanayake and his team.





Figure 3 - Ceriops (Rhizophoraceae) Plant, fruits and flowers

Ceriops decandra is a small tree or shrub grows maximum up to 5 m. Bark of this tree has been used to extract tannin and dye, traditionally used for the staining of fishing nets and sails. Leaves are oval to obovate and 4–10 cm long with rounded to emarginated apex and it has 8–10 lateral veins. Distinctive features of this species are found in the hypocotyl. Hypocotyl of *C. decandra* is erect and it is shorter than the hypocotyl of *C. tagal*. Further, the cotyledonary collar of *C. decandra* is dark red

in mature fruits while that in *C. tagal* is yellowish. Presently *Ceriops decandra* is recorded from Pulmuddai, Thambalagamuwa, Poduvikkadu and Upparu (Figure 4) in Trincomalee District in Sri Lanka. Three locations in Pulmuddai was recorded by Mr. Sarath Ekanayake and other three locations was recorded by the author of this article. All



these populations are comparatively small and under severe threat of human pressure caused by habitat disturbance, as well as their unawareness of this species. Therefore, I would like to propose that it is the right time to take immediate, appropriate and effective protection mechanisms to protect this threatened species as well as to protect the mangrove ecosystems in Sri Lanka.

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