



Forestry Department

Food and Agriculture Organization of the United Nations

**GLOBAL FOREST RESOURCES
ASSESSMENT 2005
THEMATIC STUDY ON MANGROVES**

CHRISTMAS ISLAND

COUNTRY PROFILE

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The purpose of this paper is to provide early information on on-going activities and programmes, to facilitate dialogue, and to stimulate discussion.

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INTRODUCTION

Mangroves are found along sheltered coastlines in the tropics and sub-tropics where they fulfil important functions in terms of providing wood and non-wood forest products, coastal protection, conservation of biological diversity and provision of habitat, spawning grounds and nutrients for a variety of fish and shellfish. High population pressure in coastal areas has led to the conversion of many mangrove areas to other uses and numerous case studies describe mangrove losses over time. However, information on status and trends at the global level is scarce. The first attempt at estimating the total mangrove area in the world was undertaken as part of the FAO/UNEP Tropical Forest Resources Assessment in 1980, where the world total was estimated as 15.6 million hectares. More recent estimates range from 12 to 20 million ha. For many of these studies, countries with small areas of mangroves were excluded due to lack of information and because their combined area of mangroves would not significantly affect the world total.

A recent initiative by FAO aimed at facilitating access to comprehensive information on the current and past extent of mangroves in 121 countries and areas (FAO. 2003). This built on the earlier FAO/UNEP assessment and on the recent FAO Global Forest Resources Assessment 2000 (FRA 2000). An extensive literature search yielded additional information. More than 2800 national and sub-national datasets were collected, with the earliest estimates dating back to 1918. One of the results was an updated list of the most reliable, recent estimate for each country, mostly based on inventories or analysis of remote sensing imagery. Regression analyses based on earlier data provided estimates for 1990 and 1980 and an extrapolated estimate for 2000 for each country.

The preliminary results of this initiative showed that mangrove deforestation continues, albeit on a slightly lower rate in the 1990s than in the 1980s. The relatively large mangrove deforestation rates in Asia, the Caribbean and Latin America in the 1980s reflect large-scale conversion of mangroves for aquaculture and tourism infrastructure. Most countries have now banned the conversion of mangroves for aquaculture purposes and require environmental impact assessments prior to large-scale conversion of mangroves areas for other uses.

In order to provide the most accurate and comprehensive evaluation of current mangrove status, FAO is presently updating the above cited preliminary results, which have been sent out to all countries and areas in which they exist (124) for information and validation. Additional literature search, active collaboration with national and international mangrove experts and the use of remote sensing imagery interpretation have further supported the preparation of the final report, which will be published in 2005.

Readers are strongly encouraged to provide feedback and additional information to help update and improve this database for the benefit of all those who may have an interest in mangroves.

Christmas Island

Vegetation description

Christmas Island consists of a cap of limestone in the Indian Ocean. Mangroves do not occur on the coasts, but a stand of unusually tall trees of *Bruguiera gymnorrhiza* and *Bruguiera sexangula* (locally called tumu merah and tumu barau) is found about 50 m above sea level at Hosnie's Spring, which was designated Ramsar site in 1990. On the east coast two more species are found, *Heritiera littoralis* (dungun), above Greta Beach and towards Dolly Beach, and *Cynometra ramiflora* (puki anjing), which can reach 20 m in height, and occurs in a single stand south of Ross Hill summit, at 220-300 m altitude; another example of coastal mangrove species living far from the sea.

Uses and threats

Besides the minor threat represented by the tourism activities, no other major threats are currently present on the island. Part of the territory was declared National Park in 1980 and thanks to following extensions, around the 63 percent of the territory is now protected within the park. Hosnie's Spring was incorporated in the Park in 1989 and it was declared a wetland of international importance in 1990, the smallest in the world. This wetland had little human impact and it is in relatively undisturbed condition, probably also due to the isolation of the site.

Department of the Environment and Heritage, Australian Government. 2004. *Christmas Island National Park*. <http://www.deh.gov.au/parks/christmas/index.html>

The Ramsar Convention on Wetlands 2003. *The Annotated Ramsar List of Wetlands of International Importance – Australia*. http://www.ramsar.org/profile/profiles_australia.htm#nsw

Ramsar Bureau. *A Directory of Wetlands of International Importance*. http://www.wetlands.org/RDB/Ramsar_Dir/Australia/au040D02.htm

National level mangrove estimates

No quantitative information is currently available for this territory. The stand found at Hosnie's Spring is however very small in extent, comprising between 300 and 600 *Bruguiera* *sp* trees

Mangrove species checklist

Following Tomlinson 1987 classification, mangroves may be divided into three groups according to their features: major elements (strict or true mangroves), minor elements and mangrove associates. Tomlinson list of true mangrove species have been here modified by adding some species commonly found as exclusive mangrove species (Saenger et al. 1983)

In the context of this assessment, only true mangrove species found in the present country will be reported:

Bruguiera gymnorrhiza

Bruguiera sexangula

Cynometra ramiflora

Heritiera littoralis

Summary status of mangrove area extent over time

	Most reliable, recent mangrove area estimate		Mangrove area estimate 1980	Mangrove area estimate 1990	Mangrove area estimate 2000	Mangrove area estimate 2005
	ha	year	ha	ha	ha	ha
Christmas Island	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

References

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- FAO.** 2003. *Status and trends in mangrove area extent worldwide*. By Wilkie, M.L. and Fortuna, S. Forest Resources Assessment Working Paper No. 63. Forest Resources Division. FAO, Rome. (*Unpublished*) <http://www.fao.org/documents/>
- Saenger, P., Hegerl, E.J. & Davie, J.D.S.** 1983. *Global status of mangrove ecosystems*. Commission on ecology papers No. 3. Gland, Switzerland, IUCN.
- Tomlinson, P.B.** 1986. *The botany of mangroves*. Cambridge Tropical Biology Series, Cambridge, 419 pp.

