



Forestry Department

Food and Agriculture Organization of the United Nations

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

SOLOMON ISLANDS

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.

Solomon Islands

Vegetation description

Mangroves are found on most of the Solomon Islands, occurring in sheltered coastal bays and along river mouths in two structural types: one is a low, stunted, 2.5 m tall forest dominated by *Rhizophora apiculata* while the other reach heights up to 25 m and it is composed of *Bruguiera parviflora*, *B. sexangula*, *Rhizophora apiculata* and *R. stylosa*. Other mangrove species include *Ceriops tagal* and *Lumnitzera littorea*, which sometimes forms pure stands. These differences in structure and composition are highly related to habitat features and to past disturbance. During the 1970s mangroves were the most extensive wetland type occurring in this country; significant extents were found on coastal areas on Isabel, New Georgia and Malaita islands

Uses and threats

Freshwater wetlands and mangroves are of economic importance to the largely subsistence economy of Solomon Islanders. The leaf of *Nypa* palm are used as important building material, and it is also extensively used in traditional weaving, while other species supply important building materials and food resources ranging from fruits to a large variety of shells, crustaceans and fish. Mangroves have not been exploited on an industrial scale; however they are traditionally used for fishing and collecting crabs, the timber is extensively used for firewood and construction of houses and boats. As in other parts of the world, these forests are being removed for coastal development. Mangroves are protected from commercial logging and export under the Forest Resources and Timber Utilisation Act, and however their degradation is still ongoing. Despite the deforestation still occurring due to over exploitation and conversion to other uses, some efforts are also made to regenerate the forest.

Hansell, J.R.F. & Wall, J.R.D. 1976. *Land Resource of the Solomon Islands. Volume 1. Introduction and recommendations.* Land Resource study 18.

Scott, D.A. ed. 1993. *A Directory of Wetlands in Oceania.* IWRB, Slimbridge, U.K. and AWB, Kuala Lumpur, Malaysia.

Spalding, M.D., Blasco, F. & Field, C.D., eds. 1997 *World Mangrove Atlas.* The International Society for Mangrove Ecosystems, Okinawa, Japan. 178 pp.

WWF South Pacific Programme. 2003. *WWF Solomon Islands Country Programme. Marine ecosystems of the Solomon Islands.* (Bismarck-Solomon seas ecoregion). <http://www.wwfpacific.org.fj/marineresourcessolo.htm>

National level mangrove estimates

In order to provide the whole range of the information currently available on mangrove area extent for this country, all the national level mangrove area estimates collected so far have been reported in the following table.

Differences in methodologies, classifications, mapping scales etc. may have led to discrepancies in estimations. Only the figures considered as the most accurate and reliable (marked in the Trend column in this table) have been used for the analysis of the area changes over time; the remaining have been reported, but not used for the trend analysis.

Year	Area (ha)	Source	Trend	Methodology/Comments
1975	64 200	Hansell, J.R.F., Wall, J.R.D. 1976. <i>Land Resources of the Solomon Islands, Volume 1: Introduction and Recommendations</i> . Land Resources Div., Ministry of Overseas Development. Surbiton, Surrey (UK). 148 pp.	X	Remote sensing
<u>1993</u>	<u>50 572</u>	ACIL Australia Pty Ltd, International Forest Environment Research and Management Pty Ltd, ERSIS Australia Pty Ltd. 1995. <i>Solomon Islands National Forest Resources Inventory, Forests of the Solomon Islands</i> Australian International Development Assistance Bureau and Ministry of Natural Resources	X	Remote sensing. Area listed as forest type: Saline swamp (usually mangroves). Figure reported for each province. The figure excludes Rob Roy and Vaghena islands, small islands unlikely to significantly affect the total figure.
1995	52 500	Solomon Islands National Forestry Inventory. 1995.		Cited in: WWF South Pacific Programme. 2003. <i>WWF Solomon Islands Country Programme. Marine ecosystems of the Solomon Islands.</i> (Bismarck-Solomon seas ecoregion). http://www.wwfpacific.org.fj/marineresourcessolo.htm

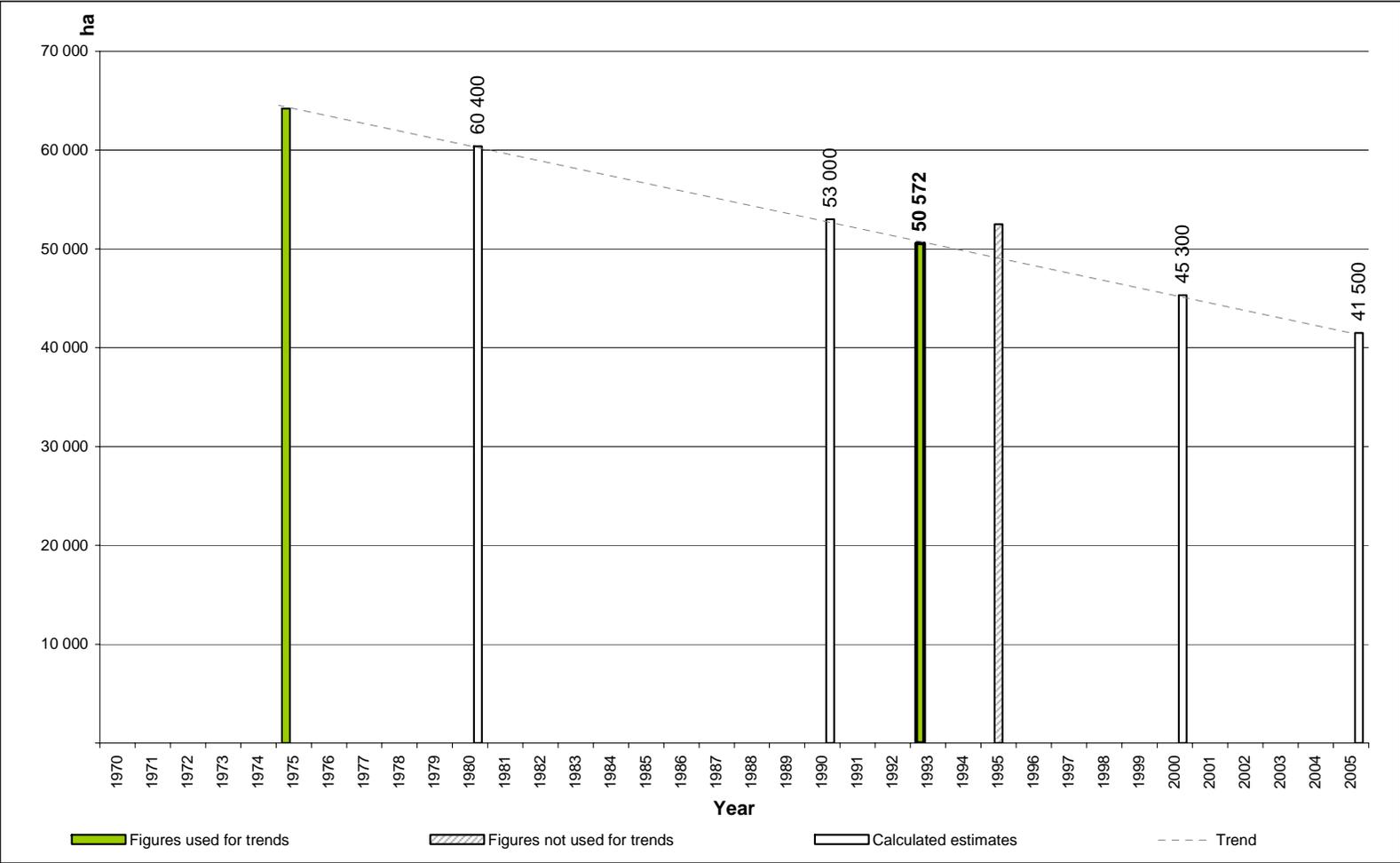
Mangrove species checklist

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:

Aegiceras corniculatum
Avicennia alba
Avicennia marina
Bruguiera gymnorrhiza
Bruguiera parviflora
Bruguiera sexangula
Ceriops tagal
Excoecaria agallocha
Heritiera littoralis
Lumnitzera littorea
Nypa fruticans
Osbornia octodonta
Rhizophora apiculata
Rhizophora mucronata
Rhizophora stylosa
Rhizophora x lamarckii
Scyphiphora hydrophyllacea
Sonneratia alba
Sonneratia caseolaris
Sonneratia x gulngai
Xylocarpus granatum
Xylocarpus mekongensis

Trends in mangrove area extent over time



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
Solomon Islands	50 572	1993	60 400	53 000	45 300	41 500

References

- FAO.** 1995. *Forest Resources assessment 1990: Global synthesis*. FAO Forestry Paper No. 124. Rome, 46pp.
- FAO.** 2005. *Global Forest Resources Assessment 2005: main report*. FAO Forestry Paper. Rome. *In press*
- 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.

Explanatory notes

Figures used for trends

The estimates used for the trend analysis have been marked with an “X” in the “Trend” column of the national level mangrove estimates table; they have been coloured in green - with no patterns - in the chart.

Most recent reliable figures

The figure chosen as the most recent reliable is underlined in the national level mangrove estimates table; it has been bolded in the chart.

Formulas used for the trend analysis

Linear:

$y = mx + b$ where m is the slope and b is the intercept.

