



Your Secretary taking an enforced break (excuse the pun) from work!!

# World Seagrass Association Inc.

WORLD  SEAGRASS ASSOCIATION

March 2005

Newsletter Issue 2

## Key dates to Remember:

ISBW 7 September  
2006 in Zanzibar

## See Our Web Page

<http://www.worldseagrass.org/>

## 2004-2005 Committee

**President:** Fred Short  
**Vice President:** Miguel Fortes  
**Treasurer:** Len McKenzie  
**Secretary:** Rob Coles  
**Members**  
Diana Walker,  
Hitoshi Iizumi,  
Evamaria Koch,  
John Kuo  
Silvia Ibarra Obando  
Gerard Pergent  
Maria Cristina Buia  
Jacqui Uku  
Gloria Peralta

## A note from the Secretary!!!

I have had a slower start to the year than anticipated. If you still require a receipt or were expecting communication from me it might be best to e-mail me and just ensure you are on my list of things to do. I would normally have been in contact with all members by now and I apologise for not having done so. Lying on your back with a leg in the air is not conducive to internet connections!!

I miss timed a jump on roller blades at a skate board park and now sport a titanium rod between my knee and ankle. I am likely to be on crutches until May. And yes, my children have already stated the obvious – “stay on the flat bits next time Dad”!! They have been very helpful wheeling me around but we live well out of town and I am dependent on the family to get to work. They have seized the opportunity to see more of me!!

## A welcome to our new Committee, President and Treasurer

At the Annual general meeting held in Townsville as part of Seagrass 2004 a new committee president and treasurer were elected.

Our new president is Professor Fred Short from the Jackson Estuarine Laboratory, University of New Hampshire, who has been our Vice President for the past two years and needs little introduction. Miguel has “retired” to be Vice President. A big thanks to Miguel for his work as inaugural President of the association.

Len McKenzie joins us as treasurer. As the company is registered in Queensland, Australia it has been difficult for our past treasurer, Maria Cristina Buia, based in Italy.

Len is part of the Cooperative Research Centre for the Great Barrier Reef World Heritage Area and The Queensland Department of Primary Industries and is based in Cairns Australia. He is widely regarded for his experience with community/citizen seagrass monitoring groups.

Our thanks to Maria Cristina for her support in the start-up of the Association.

Jacqui and Gloria have joined our committee and we look forward to working together with them for the year. A big thanks as well to the other committee members for their ongoing support.



**Fred Short -  
President of WSA Inc.**



**Len Mckenzie -  
Treasurer of WSA Inc.**

## Our Association

The World Seagrass Association is a not for profit company incorporated in Queensland Australia and dedicated to raising the profile of global seagrass issues.

The Association was initiated from discussions that were held at International Seagrass Biology workshops in The Philippines (1998) and in Corsica (2000). Those discussions, which were led by Professor Miguel Fortes and Professor Fred Short, emphasised our need, in this first decade of the new millennium, to approach seagrass issues from a global perspective. We were guided by the 1992 Rio Declaration on Environment and Development, Principle 7 that says in part: "States shall cooperate in a spirit of global partnership to conserve, protect, and restore the health and integrity of the earth's ecosystems."

The Association has initiated a global seagrass monitoring program and is planning to coordinate the production of a meaningful "Seagrass Global Report Card" based on standard methodologies. It has supported the production of a Seagrass Methods book and an Atlas of World Seagrass. It supports, and its members help organise, a biennial International Seagrass Biology Workshop.

Our aim has been to bring seagrass issues onto the radar screen in a world political sense and to give seagrasses a profile similar to that of coral reefs.

We encourage you to join the Association and enjoy interacting with those seagrass people who have a global vision.

## Sponsorship

The administrative cost of running the association as an incorporated company (company registration audit fees, web hosting etc.) are paid for by the Queensland Government Department of Primary Industries and Fisheries. This very much-appreciated grant means that any membership fees that you pay are available for the association to spend on seagrass projects, scholarships, conferences etc.

The grant reflects the confidence the Queensland Government has in the association's ability to deliver or support seagrass projects that will lead to more profitable and (by definition) sustainable fisheries.



A credit facility is also provided free of charge by the CRC Reef Research Centre in Townsville who also support the association with staff time and administrative advice.



### **CONTACT US:**

**Secretary**

**Rob Coles**

[rob.coles@dpi.qld.gov.au](mailto:rob.coles@dpi.qld.gov.au)

## You Would Like to Join??

It's easy! Fill in the form on the web page <http://www.worldseagrass.org/> and fax it to the Secretary on the fax number supplied. Be patient, it sometime takes a while to process. Credit cards are best. You can send a cheque or other payment instrument but processing costs will mean we do not get much.

Membership is 20 US dollars for non students and 10 US dollars for students.

If you are coming to ISBW 7 in Zanzibar we will be happy to take your cash in US or Australian Dollars!!

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## Activities of the Association

### Seagrass Methods:

The Association supported the production of a book of seagrass research methods applicable around the world. The book, edited by the Associations' Vice President and Secretary, "Global Seagrass Research Methods" was published by Elsevier in 2001. See our web page: <http://www.worldseagrass.org/> for order details.

### Global Report Card:

In 2001 Association members met in Florida to plan a World Atlas of Seagrasses. The final product was edited and produced by Ed Green and our Vice President Fred Short in 2003. See our web page: <http://www.worldseagrass.org/> for order details.

### SeagrassNet: a global seagrass monitoring program

The Association supports a scientific seagrass monitoring program now operating at 35 sites in 15 countries. Data is collected quarterly on fixed transects. See <http://www.SeagrassNet.org>.

### Community – based Seagrass Watch monitoring program:

The Association supports community involvement in seagrass monitoring activities as a means of developing a seagrass constituency.

See the web page <http://www.seagrasswatch.org>

### Seagrass Forum: a web-based discussion group

The Association supports the Seagrass Forum, where questions are posed and discussions held via the internet concerning seagrass science and policy. Thanks to Mike Van Keulen for maintenance of this forum and for his recent upgrade to a new server. [www.Seagrass\\_forum@central.murdoch.edu.au](mailto:www.Seagrass_forum@central.murdoch.edu.au)

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**Secretary**

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[rob.coles@dpi.qld.gov.au](mailto:rob.coles@dpi.qld.gov.au)

## President's Message

Hello to all World Seagrass Association members and a special welcome to new members. We appreciate your interest in seagrasses and the WSA's efforts to increase awareness and protection of seagrasses worldwide.

Our thoughts go out to our colleagues in the tsunami-affected areas of the Indian Ocean. The human toll is tragic, and we know that some marine laboratories were devastated by the tsunami. Of course, there was also great environmental impact from the tsunami and subsequent sedimentation and floating debris. Early reports of seagrass impacts are now coming in from Phuket, Thailand and Tamil Nadu, India, with some indication that seagrasses fared better than corals in the aftermath of this natural tragedy.

The Seagrass 2004 event in Townsville, Australia was an excellent gathering. Much appreciation to Michelle Waycott and her crew. The International Seagrass Biology Workshop-6 on Magnetic Island off of Townsville was likewise a useful and enjoyable event. Good to see old faces and new ones participating in seagrass science; the discussions, as always, were helpful scientifically and served to create a sense of community among the widely-scattered seagrass scientists who attended.

Now we look forward to ISBW-7 in Zanzibar, Tanzania which will be held in September of 2006. The planning committee is already working hard to put together a good week for our first African meeting. Further information on the seventh ISBW can be found in this newsletter.

Many thanks to Rob Coles, Queensland, Australia, our active Secretary of WSA for his generous contributions of time, energy, and vigilance to keep the organization running and legal. Rob drafted, and the WSA recently mailed, an excellent letter to the Presidents of Japan and the United States concerning the possible destruction of seagrass and important dugong feeding area in Okinawa, Japan for expansion of a US military base.

There is an increasing awareness of seagrasses globally. The Seagrass Forum continues to have increased participation from around the world. Thanks to Mike van Keulen for keeping the Forum up-to-date and running. I frequently receive emails from researchers in Asia and elsewhere, looking for seagrass information and monitoring methods. Miguel Fortes is planning an international workshop in November 2005 in Phuket, Thailand titled Post-Tsunami Coastal Ecosystems and Biodiversity Assessment of The Indian Ocean. The next Estuarine Research Federation (ERF) meeting will be held in Virginia (USA) in October of 2005 (<http://erf.org>) and will have some interesting seagrass sessions. SeagrassNet and Seagrass-Watch, both global seagrass monitoring efforts, are continuing to expand in the Western Pacific, Caribbean Sea and across the Americas. Efforts are still underway to expand these global monitoring activities into new regions of the world.

New books you will want to look for:

**A Guide to Tropical Seagrasses of the Indo-West Pacific, 2004, by Michelle Waycott and colleagues, James Cook University, Townsville. Available at [www.jcu.edu.au/tropbiol/seagrass/](http://www.jcu.edu.au/tropbiol/seagrass/)**

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[rob.coles@dpi.qld.gov.au](mailto:rob.coles@dpi.qld.gov.au)

**Seagrasses: Biology, Ecology and Their Conservation**, edited by Tony Larkum, Robert Orth and Carlos Duarte, in press.

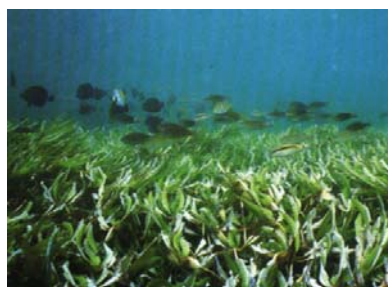
**Aquatic Ecosystems: Trends and Global Prospects**, edited by Nicolas Poulinin, Cambridge University Press., in press. A seagrass chapter by Duarte, Borum, Walker, and Short.

Also, coming out soon, a special issue of the journal Estuarine and Coastal Shelf Science on the seagrass landscape.

Best wishes for a good field season and excellent year,

Fred

## **7th International Seagrass Biology Workshop**



***ISBW-7***

**First Announcement**

**Zanzibar, Tanzania – September, 2006**

### **Organizing committee**

Dr. Matern Mtolera, Institute of Marine Sciences, University of Dar es Salaam

Dr. Alfonse Dubi, Institute of Marine Sciences, University of Dar es Salaam

Dr. Thomas Lyimo, Department of Botany, University of Dar es Salaam

Prof. Sven Beer, Department of Plant Sciences, Tel Aviv University

Prof. Mats Bjork, Department of Botany, Stockholm University

Ms. Jacqueline Uku, Kenya Marine Fisheries Research Institute

Dr. Salomao Bendeira, Universidade Eduardo Mondlane

### **CONTACT US:**

**Secretary**

**Rob Coles**

[rob.coles@dpi.qld.gov.au](mailto:rob.coles@dpi.qld.gov.au)

## Workshop contact address

The Director,

Institute of Marine Sciences, University of Dar es Salaam,

P. O. Box 668, Zanzibar, Tanzania.

Tel: No: 255 (024) 2230741/ 2232128; Fax No: 255 (024) 2233050

E-mail: [dubi@ims.udsm.ac.tz](mailto:dubi@ims.udsm.ac.tz); [mtolera@ims.udsm.ac.tz](mailto:mtolera@ims.udsm.ac.tz)

### 7<sup>th</sup> International Seagrass Biology Workshop, Zanzibar, Tanzania – September, 2006

*Please return the following information to the workshop contact:*

I wish to receive forthcoming announcements

*Name (underline surname).....*

*Occupation/Title.....*

*Organisation/Company.....*

*Address.....*

*Postal code/City..... Country.....*

*Tel..... Fax ..... E-mail.....*

*Please indicate area of focus.....*

.....

### 7<sup>th</sup> International Seagrass Biology Workshop

#### Scope and objective:

Seagrasses are submersed monocotyledons that have adapted to marine life (probably 70-140 million years ago). They are the only higher plants that live, and complete their full life history, entirely submerged in the sea. Seagrasses are found worldwide in tropical, sub-tropic and temperate coastal areas. Seagrasses have little direct commercial value; rather, their importance is in ecological aspects such as (1) providing food to fish, turtles and dugongs, and sheltering sessile invertebrates and epiphytic micro- and macro-algae, (2) improving the marine productivity by “pumping” nutrients trapped in the sea bed and sheltering nitrogen-fixing organisms capable of fertilising the water column with limiting nutrients, (3) stabilising shorelines and providing a nursery ground for fish, including species of commercial and recreational value. However, the provision of these vital services is threatened by seagrass degradation attributed to, among others, unsustainable use of coastal resources, pressures from the growing coastal population, land based pollution, inadequacy of information and research inputs into resource management and constraints in technical development of alternative livelihoods, and resource harvesting technologies. Acquisition of appropriate scientific and technological know-how is therefore crucial to arrest the situation.

ISBW workshops bring together researchers, scientist and managers from around the world in a congenial and friendly atmosphere to discuss a wide range of seagrass science

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**Secretary**

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[rob.coles@dpi.qld.gov.au](mailto:rob.coles@dpi.qld.gov.au)

topics with the view to sustainably manage this vital resource.

The symposium is hosted by the Institute of Marine Sciences of the University of Dar es Salaam, located along the Mizingani road in Stone Town (on the West Coast of Zanzibar). Participants will have a unique opportunity to visit tropical Indian Ocean seagrass environments in Zanzibar, Tanzania. Zanzibar Islands (Unguja and Pemba; total area 2,400 km<sup>2</sup>) is home to about 1 million people, whose livelihood depend mainly on fishing, family scale farming (including seaweed farming), and an upcoming tourist industry. After a long history of being a major trading post between the Far East and the West (mainly of spices, but also of slaves), Zanzibar gained its independence through a revolution in January 1964, and three months later was united with Tanganyika to form the country Tanzania, which it is part of today. Being an island that has kept its own character and life style, Zanzibar offers a genuine and friendly atmosphere for a meeting such as the ISBW. The meeting is planned for September 2006 (the exact dates will be set soon). The venue for the meeting shall be Zanzibar Beach Resort, 3 kilometers from the Zanzibar Airport. The venue shall be 6 kilometers from the stone town and the closest seagrass site is a walking distance away.

Both scientists and graduate students from the region should be encouraged to attend the meeting. Also, while oral presentations from experienced professionals will be preferred, students are encouraged to give poster presentations on their specific research topics. The meeting will be 5 days long. In order to encourage interactions, the field trip to special seagrass sites will be on the 2nd day of the meeting. The meeting will be followed by an optional 2-day on hands training course for students of the region.

While the various scientific themes for the meeting will be decided upon based on the abstracts and presentation titles submitted, potential themes could include: Ecology, Adaptations to Various Environments, Cellular Biology, Monitoring and Mapping, Impact Assessments and Management. The topics and presenters of plenary talks will also be decided upon based on the titles submitted by the participants. There will be no parallel sessions, and ample time will be given for discussions.

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## **Asian Tsunami Disaster – a seagrass perspective**

Summarised by Len McKenzie

The earthquake and tsunami of 26 December 2004, and the events that followed, will be remembered as among the worst human tragedies in history. The loss and devastation caused by this disaster brought incalculable suffering to millions of people around the Indian Ocean.

Approximately 300,000 lives have been lost, but the total will probably never be fully known. Apart from the human cost, the tsunami was an unprecedented natural disaster with enormous consequences for the region's environment.

Many Seagrass-Watch volunteers have asked if the tsunami had any effects on the seagrasses of the region affected. The following assessments are from collaborative researchers in the region and summarized from the report produced by the UNEP Asian Tsunami Task Force in close partnership with national environmental authorities in the affected countries. The impact of the tsunami varied enormously across and within affected countries. Our thoughts are with all those affected.

### **THAILAND**

In Thailand, the tsunami hit the Andaman Coast (954 kilometres in length) between 9.40 and 10.30 a.m. local time. The first waves passed almost unnoticed four to ten kilometres offshore. The second series of waves, however, up to 10 metres high, impacted severely on the six coastal provinces along the Andaman Sea, namely: Ranong, Phang Nga,



Chatcharee Supanwanid

Phuket, Krabi, Trang and Satun. The level of devastation in the six provinces varies significantly. The most affected province is Phang Nga, in particular Khao Lak district. Phuket and Krabi provinces were also severely impacted. In Ranong, Trang and Satun provinces, offshore islands sustained severe damage, but lesser impacts were recorded on the mainland.

Seagrass researcher Chatcharee Supanwanid (Kasetsart University, Bangkok) reported that the marine research station and Sea Turtle Conservation & Wildlife Sanctuary Project in Ranong province was destroyed. Sadly, 9 staff died and many people were injured. The village behind the station was destroyed and more than 70 people died. In addition, two dugongs and three dolphins were carried inland by the waves. One of the dugongs and both dolphins died.

Chatcharee also reported that in Trang Province (Haad Chao Mai National Park), the location of the first Seagrass-Watch rapid assessment workshop (in 1998), the fishing village at Koh Muk and Talibong Island where training workshop was conducted, was destroyed. Luckily the Trang Marine Research Station was OK. Before the tsunami hit, everyone from the station went to higher ground.

The seagrass meadows along the Andaman coast of Thailand cover an area of 7,937 hectares. To estimate the impacts of the tsunami disaster on the seagrass meadows, a rapid assessment was undertaken by the Department of Marine and Coastal Resources of MONRE covering approximately 70 per cent of the total seagrass area. Based on the results, 3.5 per cent of the inspected areas are impacted, through siltation and sand sedimentation, while 1.5 per cent of the inspected areas suffered total habitat loss. The most impacted sea grass meadows are those of Yao Yai Island, Phang Nga Province, which registered an estimated total habitat loss of 10 per cent.

The seagrass meadows of Talibong Island, Trang Province, which are the largest seagrass areas in Thailand's Andaman coast providing foraging grounds to a large dugong population, did not suffer any loss, although 10 per cent of the area is impacted by siltation or superficial erosion. It is estimated that it will take three months for seagrass to recover from siltation. However, it is not yet known how long it will take to recover from sand sedimentation. The assessments also revealed that seagrass meadows covering the inter-tidal zone appear to have prevented soil erosion of beaches during the tsunami event, such as at Kuraburi, Phang Nga Province.

#### INDONESIA

Within minutes of the earthquake, the first tsunami waves struck the Indonesian Island of Simeule, located approximately 40 kilometres from the epicentre. Waves between 15 and 30 metres high then proceeded to the western and northern coasts of Sumatra, causing massive damage to thousands of kilometres of coastline in Aceh and North Sumatra Provinces and the western islands. A rebound effect then occurred, with waves pounding parts of the east coast of Sumatra.

In Aceh region, North Sumatra Provinces and the western islands of Indonesia an estimated 30 per cent of the nearly 100,000 hectares of coral reefs were damaged.

Besides coral reefs, highly productive seagrass meadows, totalling approximately 600 ha, are found off the coast of Nias and off Pulau Weh and Banyak Islands. Functionally, they also serve to trap coastal sediments, provide coastal protection from high waters and support endangered Green Sea Turtle and dugong populations in the area. The National Development Planning Agency (BAPPENAS) initial damage assessment estimated 20 per cent loss of seagrass meadows, approximately 600 hectares, for a net loss of \$2.3 million (\$2,684/ha estimated value). For coral reefs the estimated valuation of 30 per cent damage to 97,250 hectares is a net loss of \$332.4 million (\$1,599/ha). Wetlands International has also conducted preliminary assessments of the impact on seagrass in a number of Islands. Early results suggest extensive damage to seagrass meadows in Pulo Aceh, with less severe but significant impact in the Simeulue and Weh Islands.

The most serious threat to the coastal environment from the tsunami currently stems from the massive amounts of natural and man-made materials that were dragged into the ocean by the receding waters. This waste ranges from vehicles and fuel tankers to silt and debris, including whole trees. In the case of Calang and Teunom on the West coast of Sumatra, almost all above-ground infrastructure was sucked into the ocean by the tsunami. Aerial photos of the zone show surprisingly little remaining debris. The main



Dugong feeding trails –  
Trang province



risk is that this debris is causing secondary damage to the coastal environment by being continually pounded into delicate ecosystems by normal wave action. The extent of the problem is currently unknown.

#### SRI LANKA

The first tsunami wave began to impact the eastern coast of Sri Lanka about 100 minutes after the earthquake, at approximately 8:40 a.m. The wave surge was recorded at between 5 and 6.5 metres in most of the eastern and northeastern coast, and parts of the southern coast, doing most damage up to 3 metres above mean sea level. A secondary wave struck approximately 20 minutes later.

Seagrass meadows constitute the most extensive coastal ecosystem in Sri Lanka. They occur along the open coast as well as within estuaries and lagoons (UNEP-WCMC, 2003). Very large meadows exist around the north-western and southwestern coasts, and smaller seagrass meadows are found on the leeward side of coral reefs elsewhere.

In Sri Lanka, the impact of the tsunami on coral reefs and coastal ecosystems was highly varied, ranging from almost unaffected to extremely damaged. Damage to seagrass meadows however, was minor and where present mostly due to shifting rubble. Hardly any uprooting was observed. Severe beach erosion was observed both in the east and southwest areas, but impact was patchy.

#### THE MALDIVES

The Indian Ocean tsunami reached the Maldives at 9:20 a.m. local time, approximately three hours after tremors were felt. Tidal waves ranging between 1 and 5 metres high were reported in all parts of the country. The force of the waves caused widespread infrastructure devastation in the atolls, 80 per cent of which are less than one metre above sea level. On a per capita basis, the Maldives is one of the countries worst affected by the tsunami.

The Maldives are home to a vast system of world famous coral reefs that attracts tourists from around the world. The country's lagoons and reefs combined make up approximately 21,300 square kilometres. The tsunami however, generally had little direct effect on the country's coral reefs. The most serious concern was that sand and sediment was found to have coated and in some cases smothered sections of coral, particularly at lower depths. It is estimated that in the Maldives more than "100 million square metres of beach on 130 islands was eroded by the tsunami's force.

#### SEYCHELLES

The tsunami that hit the Seychelles travelled about 5,000 kilometres from the earthquake zone in less than seven hours. At 1 p.m. waves ranging from 2.5 to 4 metres in height hit the east coast of Praslin and Mahé islands. Another wave occurred at 5 p.m., followed by two smaller waves at 10 p.m. and at 5 a.m. on 27 December. The second wave had more or less the same effect as the first because, although smaller, it occurred at high tide.

The Seychelles has a coral reef area of 1,690 square kilometres with eight seagrass species. Damage to seagrass meadows was low, with only one definite case of damage recorded at Baie Ternaie Marine Park, Mahé Island. In this case, a seagrass meadow adjacent to a drainage channel in the reef was smothered by sediment, probably mobilized from the extensive shallows and reef flat area, and backwash from land. The Seychelles's small but important stands of mangroves amounting to around 30 square kilometres were also impacted mainly as a result of smothering of their 'breathing roots' by sand and silt.

The effect on coastal ecosystems of other countries hit by the tsunami was similarly low. A string of recommendations have been made including building the skills, knowledge and equipment base of the affected governments and local authorities. There are many lessons to be learnt including that barriers such as coastal mangrove forests and coral reefs save lives by deflecting the tsunami and that governments should protect such natural bulwarks. The report also recommends that more detailed studies, including long term monitoring, of the countries concerned and the main impacts sites, are needed.

For further information, see UNEP Tsunami Response: [www.unep.org/tsunami/](http://www.unep.org/tsunami/)

## In our next newsletter:

- Seagrass 2004 - a summary of the conference highlights
- The Associations response to the planned airport on seagrass meadows in Okinawa
- Surveying Northern Australia
- The Seagrass Watch program



Green Island Field Trip  
Seagrass 2004



Seagrass 2004 –  
Magnetic Island

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**Rob Coles**

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