

CORAL REEF NEWS
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NOAA Coral Reef News is a monthly e-newsletter established to provide current information on the activities of the National Oceanic and Atmospheric Administration's (NOAA) Coral Reef Conservation Program (CRCP) and other relevant NOAA programs. The CRCP supports effective management and sound science to preserve, sustain and restore valuable coral reef ecosystems. Back issues are available at <http://www.coralreef.noaa.gov>.

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OF SPECIAL NOTE

Reporters Contact CRCP to Understand Impacts of Tsunami on Coral Reefs. Among the thousands of media requests fielded by NOAA's Office of Public Affairs, the CRCP was contacted to help reporters at *Science*, the *Associated Press*, *ABC News.com* and others understand the impacts of the recent South Asian tsunami on coral reefs and near-shore marine life. CRCP spokespersons particularly emphasized the invaluable protection that coral reefs provide against tsunami storm surge. Since the tsunami decimated island and coastal communities throughout South Asia, the international media and South Asian officials have increasingly reported dramatic reduction in deaths and destruction in some locations due to the wave-absorbing properties of healthy coral reef ecosystems. For a sample of the CRCP's media response, read the *Associated Press* article "Tsunami May Have Damaged Coral Reefs," listed in the "Coral Reefs In the News" section of this newsletter.

ANNOUNCEMENTS

NOAA's Southeast Fisheries Science Center Helps Confirm Discovery of Deepest Photosynthetic Coral Reef in U.S. NOAA's Southeast Fisheries Science Center, with funding from the CRCP, recently collaborated with other Florida-based marine researchers to confirm the discovery of the deepest photosynthetic coral reef ever found in the United States. The reef is located on Pulley Ridge, about 50 miles west of the Dry Tortugas, and spans an area of approximately 3 miles by 20 miles at a depth of about 250 feet. Scientists from the University of South Florida tentatively identified the area as a coral reef in 1999, but it took until December 2004 to confirm it as a living photosynthetic reef. To learn more about this discovery, read the *Associated Press* article, "U.S. confirms

deepest U.S. reef found by Florida researchers," listed in the "Coral Reefs In the News" section of this newsletter.

International Coral Reef Initiative Creates Special Web Page For Information on Tsunami's Effect on Coral Reefs; United Nations Atlas of the Oceans to be Expanded.

A special Web page regarding the impact of the recent South Asian tsunami on coral reefs has been created on the International Coral Reef Initiative (ICRI) Forum at <http://www.icriforum.org/router.cfm?show=secretariat/tsunami.html>. The page contains links to websites, field reports, photos, press releases, and other relevant on-line information. One link from the ICRI Forum points to the home page of the United Nations Atlas of the Oceans, which now has a dedicated area for exchanging and accessing information on the tsunami. On this page one can find descriptions of tsunamis' impact on ecosystems, details on tsunami warning systems, maps and profiles of the areas affected by the recent tsunami, reports on recent action taken by the United Nations and other organizations in helping with rehabilitation projects, and numerous other links. The Atlas will soon be expanded to incorporate any new information on the tsunami. To help ICRI update its page, additional information should be sent to administrator@icriforum.org.

UPDATES

National Marine Sanctuary Program Contributes to Designation of Coral Essential Fish Habitats in the Southeast U.S. At a January 12th meeting of the Gulf of Mexico Fisheries Management Council (Council) in Baton Rouge, LA, the Flower Garden Banks National Marine Sanctuary (FGBNMS) built upon recommendations from the NOAA Fisheries Galveston Laboratory to provide input regarding Habitat Areas of Particular Concern (HAPC) and Coral Essential

Fish Habitat (EFH) designations in the northwestern Gulf of Mexico. As a result, the Council designated the following as Coral EFH areas (with boundaries recommended by the FGBNMS): West FGB, East FGB, and Stetson and McGrail Banks in the northwestern Gulf of Mexico. Previous input to the Council by the Florida Keys National Marine Sanctuary (FKNMS) led to the designation of a portion of the Pulley's Ridge HAPC area as Coral EFH. In addition to the designations, the Council passed motions to (1) adopt fishing restrictions in the Coral EFH areas that would prohibit anchoring, trawling, bottom longlines, and buoy and trap/pot gear, and to (2) create an education program for recreational and commercial fisherman on the protection of coral reefs. For a list of motions made at the Council meeting in Baton Rouge, visit <http://www.gulfcouncil.org/motions/motions2005-01.htm>.

National Centers for Coastal Ocean Science Model Applied to Restoration Plans and Court Cases on Coral Reef Damages. In collaboration with National Marine Sanctuary and National Park Service staff, National Centers for Coastal Ocean Science scientists recently calibrated a coral injury recovery model in the Florida Keys National Marine Sanctuary (FKNMS). The scientists located historical boat groundings on coral reefs that occurred within the FKNMS to assess the natural recovery process. The model will be used to develop recovery estimates for use in damage assessments, restoration plans, and federal court cases regarding injuries to coral reefs that NOAA protects and restores on behalf of the public.

New Software Helps Increase Efficiency of Coral Reef Restoration Efforts. The National Centers for Coastal Ocean Science-sponsored National Coral Reef Institute has developed software that integrates an existing method for determining economic and environmental

values of natural resources with an intuitive graphical interface in which the user can modify input parameters and quickly evaluate multiple restoration strategies. The Habitat Equivalency Analysis (HEA) method is used to determine the amount of restoration necessary to compensate for the interim loss of habitat and other services following natural resource injuries. The new Visual HEA software is available free-of-charge for non-commercial use to governmental and academic researchers. The software was recently presented at the U.S. Coral Reef Task Force meeting in Miami, Florida and the first National Conference on Ecosystem Restoration in Orlando, Florida. For more information, visit http://www.nova.edu/ocean/visual_he/index.html.

NOAA Fisheries Galveston Laboratory Presents Modeling Effort to Investigate Marine Reserve Effectiveness. As part of a modeling project investigating the effects of coral reef marine reserves on various trophic (species) groups, NOAA Fisheries Galveston (TX) Laboratory is developing Ecopath models for the U.S. Caribbean. In December 2004, these modeling efforts were presented to a joint meeting of the Caribbean Fisheries Management Council's (CFMC) Habitat Advisory Panel and the Scientific and Statistical Committee. The presentation focused on the basics of the Ecopath model and its potential for managing fisheries in an ecosystem context. Discussions resulted in recommendations for defining model boundaries and synchronizing data needs among local resource agencies, modelers, and/or stock assessment scientists. Further information will be provided to CFMC as the models are completed this year. Learn more about the NOAA Fisheries Galveston Laboratory at <http://galveston.ssp.nmfs.gov/index.html>.

NOAA CRCP Scientists Measure Coral Reef Health in Real-Time. On January 20, 2005, a research team, including scientists at NOAA's Atlantic Oceanographic and Meteorological Laboratory (AOML), installed the first near real-time (hourly) direct measure of coral health (fluorescent yield) with the installation of four Pulse Amplitude Modulated fluorometer heads at North Norman's Patch Reef near Lee Stocking Island, Bahamas. These new instruments, as part of AOML's Coral Reef Early Warning System (CREWS), should allow scientists to tell when environmental conditions exist that are conducive to bleaching of coral reefs weeks prior to the actual occurrence of such events. The research will require more long-term data and corresponding field observations to establish its validity and accuracy, but preliminary results are promising. After careful evaluation of the results from the first station, researchers plan on deploying similar instrument packages in 2005 at existing CREWS stations at Heron Island (Great Barrier Reef, Australia) and La Parguera, Puerto Rico. For more information, visit http://www.coral.noaa.gov/crw/real_data.shtml.

Pacific Islands Fisheries Science Center Releases Bathymetric Data For Coral Reef Habitats in the U.S. Pacific Islands. With support from the NOAA CRCP, the Coral Reef Ecosystem Division of the Pacific Islands Fisheries Science Center has released gridded bathymetric data and metadata for coral reef habitats in the U.S. Pacific Islands. The data are now available at www.pifsc.noaa.gov/cred/hmapping and through the NOAA Coral Reef Information System. Study areas for this mapping and characterization effort included Midway Atoll in the Northwestern Hawaiian Islands; Saipan Island, Tinian Island, Rota Island, Marpi Bank, and Tatsumi Reef in Commonwealth of the Northern Mariana Islands; Guam; and Tutuila Island, Ofu Island, Olosega Island, and Ta'u Island in the Territory of American Samoa.

Surveys were conducted between August 2003 and April 2004 by the R/V Acoustic Habitat Investigator, a 25-foot survey launch equipped with a Reson 8101ER multibeam echosounder. Please note that these data are not to be used for navigation.

NOAA Participates in Collaborative International Cruise to Explore Coral Reefs in Fiji. Scientists representing government agencies, museums, academia and private organizations conducted a 10-day cruise ending in December 2004 on the liveboard vessel Nai'a to examine coral reefs in Vatu-I-Ra Passage, off the coast of Rakiraki, Fiji. These reefs are currently being considered for designation as a coral reef world heritage site. Participants from NOAA Fisheries, U.S. Geological Survey, Western Australian Museum, Australian Institute of Marine Science, Bishop Museum, University of Hawai'i, Natural History Museum of Los Angeles County, California Academy of Science, and Reef Environmental Education Foundation (REEF), and other naturalists discovered a new species of coral, several new damselfish, and many new deep coral reef fishes. NOAA and REEF participants documented over 200 species of reef fishes and evaluated the potential of conducting volunteer reef fish identification surveys in Fiji. The Fiji Ministers of Tourism and Education, as well as representatives from local television, radio, and print media outlets visited the cruise to discuss reef conservation efforts and issues.

Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve Hosts Meeting to Finalize Contribution to NOAA Coral Research Plan. The Northwestern Hawaiian Islands (NWHI) Coral Reef Ecosystem Reserve organized and hosted a January 5, 2005 meeting to finalize a draft of the NWHI regional chapter for NOAA's Coral Reef Ecosystem Research Plan. The writing team consisted of jurisdictional partners and agencies

with research responsibilities in the NWHI, including scientists from the Reserve, the State of Hawai'i, the U.S. Fish and Wildlife Service, the NOAA Fisheries Pacific Islands Fisheries Science Center and the University of Hawai'i. The half-day meeting successfully resulted in the identification of shared management objectives and research priorities for the NWHI. For more information on the Reserve, visit <http://www.hawaiiireef.noaa.gov/>.

Coral Reef Information System Increases Number of Available Data Sets by 34% During First Quarter of FY 2005. NOAA's Coral Reef Information System (CoRIS) now provides access to 9,801 products and metadata for 801 coral data sets, a 34% increase over the 597 data sets available at the end of the 2004 fiscal year. This significant increase is largely due to improved communications with CRCP scientists, achieved by the CoRIS team's work to establish rapport with principal investigators by offering technical assistance. In addition, many projects that were funded in fiscal years 2002 and 2003 are now yielding data sets, products, and publications for inclusion in CoRIS. Visit CoRIS at <http://www.coris.noaa.gov/>.

Coral Reef Information System Implementing Higher Standards of Quality Control. NOAA's Coral Reef Information System (CoRIS) is improving the integrity of information content by engineering a variety of URL checkers. This data management tool is run weekly to verify the validity of URLs found within CoRIS and make updates where needed. The implementation of URL checkers is another step CoRIS has taken to promote quality-assured coral reef information. Visit CoRIS at <http://www.coris.noaa.gov/>.

CORAL REEFS IN THE NEWS

“U.S. confirms deepest U.S. reef found by Florida researchers” – January 2, 2005 (*Associated Press in Bradenton Herald*). “ST. PETERSBURG, Fla. - Florida-based marine researchers have discovered the deepest coral reef ever found in the United States.” <http://www.bradenton.com/mld/bradenton/10549773.htm>

“Coral reef damage continues” – January 3, 2005 (*Honolulu Advertiser*). “When it comes to restoring coral reefs, one researcher uses a medical analogy: He says we spend too much time putting on bandages and not enough time figuring out how not to get wounded in the first place.” <http://64.233.161.104/search?q=cache:Cc5xyweepuEJ:the.honoluluadvertiser.com/article/2005/Jan/03/ln/ln32pjan.html>

“Coral trade threatens marine life” -- January 12, 2005 (*Viet Nam News*). “Increased demand and over fishing could mean the end of Viet Nam's coral reef, an element of sea life necessary for a healthy and balanced ecology.” <http://vietnamnews.vnagency.com.vn/showarticle.php?num=02ENV120105>

“Coral reefs under threat: COA” – January 13, 2005 (*Taipei Times, Taiwan*). “About three-fourths of the nation's coral reefs regularly checked by researchers are deteriorating, the Council of Agriculture said yesterday, and the establishment of protected marine areas should be the first step to effectively mitigate this problem.” <http://www.taipeitimes.com/News/taiwan/archives/2005/01/15/2003219471>

“New hope for coral reefs amid warming oceans” – January 15, 2005 (*The New York Times in The News & Observer*). “KEY LARGO, Fla. - For some time, scientists have predicted that the world's coral reefs will be among the first ecosystems to suffer devastating damage from global warming.”
http://www.newsobserver.com/news/health_sci ence/story/1952822p-8317063c.html

“Oil spill from Malaysian barge ruins coral reef” – January 17, 2005 (*Philippine Daily Inquirer*). “PUERTO PRINCESA CITY, Palawan, Philippines -- An oil spill from a Malaysian barge has amaged around seven hectares of coral reefs in Busuanga town, Palawan.”
http://news.inq7.net/breaking/index.php?index=2&story_id=24604

“Ships dumping garbage on Barrier Reef” – January 17, 2005 (*Queensland Sunday Mail, Australia*). “International ships are illegally polluting the Great Barrier Reef by dumping garbage and oily bilge water into the sensitive area, prompting a crackdown by federal authorities.”
http://www.thesundaymail.news.com.au/comm on/story_page/0,5936,11975434%255E421,00.html

“Gas pipeline firm proposes tunnel to spare reef” – January 20, 2005 (*Palm Beach Post, FL*). “Pipeline operator El Paso Corp. has proposed bringing natural gas into South Florida by way of a 3-mile tunnel instead of using a drilling method that some feared would disturb a large coral reef and other environmentally sensitive areas.”
http://www.palmbeachpost.com/business/content/business/epaper/2005/01/20/a1d_seafarer_01_20.html

“South Broward's beachfront to be widened along 7-mile stretch” – January 25, 2005 (*South Florida Sun-Sentinel*). After years of

delay to address concerns about protecting coral reefs and sea life, Broward County is set to shortly begin work on widening seven miles of eroded beaches between Port Everglades and Aventura. http://www.sun-sentinel.com/news/local/broward/sfl-cbeach25jan25_0,5400655.story?coll=sfla-news-broward

“Glowing corals may be lifesavers” – January 31, 2005 (*National Geographic Society, in Bangkok Post*). “Proteins that give coral reefs a mysterious glow are illuminating medical and environmental research.”
http://www.bangkokpost.com/en/Outlook/31Jan2005_out02.php

TSUNAMI ARTICLES:

The following articles represent a sample of recent media coverage on the South Asia tsunami and its relationship to coral reefs.

“Coral reefs protect Guam from tsunamis” – December 27, 2004 (*Agana Pacific Daily News, Guam*). “Guam's coral reefs, and even the Marianas Trench, help protect the island from the flooding and destruction caused by tsunamis.”
<http://www.guampdn.com/news/stories/20041228/localnews/1793631.html>

“Global Warming, Pollution Add to Coastal Threats” – December 27, 2004 (*Reuters*). “OSLO - A creeping rise in sea levels tied to global warming, pollution and damage to coral reefs may make coastlines even more vulnerable to disasters like tsunamis or storms in future, experts said Monday.”
<http://olympics.reuters.com/newsArticle.jhtml?type=scienceNews&storyID=7185892>

“Tsunami may have killed Andaman Sea coral reefs” – December 28, 2004 (*Reuters*). “BANGKOK – The tsunami which killed hundreds of people in southern Thailand may also have killed the coral reefs which attract

large numbers of foreign tourists, a Thai marine scientist was quoted on Tuesday as saying.”

<http://www.alertnet.org/thenews/newsdesk/BK130733.htm>

“Priceless marine life devastated” – December 30, 2004 (Reuters in *The Australian*).

“Precious coral reefs and mangrove areas will have been crushed by the huge waves that have devastated southern Asia - an environmental and economic setback that could take years to reverse.”

http://www.theaustralian.news.com.au/common/story_page/0,5744,11808841%255E2703,00.html

“Officials: Warnings, geographical features leave U.S. bases at minimal tsunami risk” – December 30, 2004 (*Stars and Stripes*).

“U.S. Navy facilities in Japan and Guam are unlikely to experience tsunami disasters like those dealt countries in Southeast Asia on Sunday, officials said...U.S. Naval Base Guam is protected similarly with coral reefs and the Marianas Trench, both helping to deflect a tsunami’s powerful punch.”

<http://www.estripes.com/article.asp?section=104&article=25369&archive=true>

“Environmental Issues Emerging from Wreckage of Asian Tsunami: UNEP earmarks US \$1 million for environmental needs assessments” – December 30, 2004 (United Nations Environment Programme press release).

“As the Asian earthquake and tsunami death toll is now feared to be approaching 100,000 people, emergency humanitarian assistance remains the top priority, but urgent environmental concerns that threaten human health must be addressed, the United Nations Environment Programme (UNEP) said today.”

<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=414&ArticleID=4692&l=en>

“UN to assess damage to coral reefs, forests” – December 31, 2004 (*The Boston Globe*).

“The United Nations yesterday set aside \$1 million to assess environmental damage caused by this week's devastating tsunami, as reports of destroyed coral reefs and uprooted mangrove forests began trickling in.”

http://www.boston.com/news/world/asia/articles/2004/12/31/un_to_assess_damage_to_coral_reefs_forests/

“Tsunami Could Crush Coral Reefs” – December 31, 2004 (*Los Angeles Times* in the *Denver Post*).

“When giant tsunami waves smashed onto shores around the Indian Ocean on Sunday, they first killed tens of thousands of people. Then a massive backwash returned to sea carrying a deadly cargo that could destroy the region's vital coral reefs.”

<http://www.denverpost.com/framework/0,1413,36~11676~2627276,00.html>

“On Asia's Coasts, Progress Destroys Natural Defenses” – December 31, 2004 (*The Wall Street Journal on Interservice for Sustainability*).

“HONG KONG -- The ring of coral in crystal waters around the Surin Island chain off Thailand's west coast forms a sturdy defense against the sea. So when the tsunami struck on Sunday it punched a few holes in the reef, but the structure mostly held firm.”

http://www.virtueel.com/upd/ins_headlines.rxm?cust=2&id=764

“For 'very lucky' Maldives, it's time to worry” – January 3, 2005 (*The New York Times* on *International Herald Tribune Online*).

The highest natural point in the Maldives is no more than one and a half meters above sea level, so low that water from the tsunami rushed over nearly every inch of this nation of 1,190 tiny islands. Here on Kolhufushi, there was no dry ground to run to... It seems a paradox that the nation that would seem most vulnerable to a tsunami suffered far fewer deaths than some coastal areas of Sri Lanka, just to the northeast in the

Indian Ocean, or the part of Indonesia hit by the waves. Apparently, it is because the huge coral reefs that encircle the islands absorbed the impact somewhat.

<http://www.iht.com/articles/2005/01/03/news/maldives.html>

“Tsunami Leaves Behind Human Devastation and Environmental Damage that May Take Decades to Recover: Scientists Begin to Assess Damaged Marine and Coastal Resources That Will Impact Local Economy and Livelihoods for Years to Come” – January 5, 2005 (*The Nature Conservancy* press release).

“As aid arrives to countries hit by the tsunami to provide much-needed food, shelter and medicine for the survivors, scientists are beginning to focus on the longer-term environmental damage that will affect the livelihoods of fishermen and coastal communities for years to come.”

<http://nature.org/pressroom/press/press1726.html>

“Tsunami May Have Dealt Blow to Marine Life: Underwater Devastation Could Affect Fishing for Years to Come” – January 5, 2005 (*ABC News*). “The devastation from the South Asian tsunami has been horribly apparent on land, but what about under water?... ‘I think there is going to be significant impact,’ said Tom Hourigan, a coral reef expert with the National Marine Fisheries Service headquarters in Silver Spring, Md. ‘Even hurricanes can have an impact on marine life, and the scale of this is much greater.’”

<http://abcnews.go.com/Technology/story?id=383497&page=1>

“Tsunami May Have Damaged Coral Reefs” – January 6, 2005 (*Associated Press on ABC News* and approx. 40 other outlets).

“WASHINGTON - The tsunami that took a heavy toll in human life also battered Indian Ocean coral reefs that already were in distress from pollution and global warming, possibly

causing damage that will require decades to recover, experts say... Tom Hourigan, a coral reef expert for the National Marine Fisheries Service, said that coral formations throughout the Indian Ocean were severely damaged by El Nino warming in 1997 and 1998 and were just beginning to recover when they were slammed by the tsunami last month....”

<http://abcnews.go.com/Politics/wireStory?id=390517>

“Fears for Andaman Island Reefs, Thailand's Survive” – January 7, 2005 (*Reuters*). “PHUKET, Thailand/PORT BLAIR, India (Reuters) - Breathtaking coral reefs around India's Andaman and Nicobar islands may have suffered severe tsunami damage, but fears for those off Thailand have proven overblown, experts said on Friday.”

<http://www.reuters.com/newsArticle.jhtml?type=scienceNews&storyID=7262161>

“Tsunami calamity highlights key protective role of coral, mangroves” – January 6, 2005 (*Agence France-Presse, Paris in TerraDaily*).

“Long-term environmental lessons must be drawn from Asia's tsunami disaster, especially the consequences of ripping out mangroves and destroying coral reefs that help protect coasts from sea and storms, experts say.”

<http://www.terradaily.com/2005/050106013100.xy0unu8h.html>

“Potential Ecological Impacts of Indian Ocean Tsunami On Nearshore Marine Ecosystems” – January 6, 2005 (*NOAA Magazine*).

“In addition to causing tremendous loss to human life and property, the tsunami that devastated coastal communities along the Indian Ocean on Dec. 26, 2004, may have also caused extensive environmental damage throughout the nearshore marine ecosystems in this region.”

<http://www.noaanews.noaa.gov/stories2005/s2362.htm>

“U.N.: Mangroves could have reduced tsunami damage” – January 7, 2005 (*The Malaysia Star*). “GENEVA (AP): Damage from the Indian Ocean tsunami could have been reduced if more coastal areas had maintained their protective shields of mangrove swamps and coral reefs, a key U.N. official said Friday.”

<http://thestar.com.my/news/story.asp?file=/2005/1/7/latest/20587UNMang&sec=latest>

“Aussie Experts in Reef Mission” – January 9, 2005 (*Melbourne Herald Sun, Australia*).

“Australian experts have been called on to rescue coral reefs and fisheries damaged in the Indian Ocean tsunami.”

http://www.heraldsun.news.com.au/common/story_page/0,5478,11893713%255E1702,00.htm

“Divers begin Thailand's big coral clean-up” – January 9, 2005 (*Reuters UK*).

“KOH PHI PHI, Thailand (Reuters) - Boatloads of volunteer divers descended into the azure waters of the Andaman Sea to clear away the tsunami debris littering Thailand's famed coral reefs.”

<http://www.reuters.co.uk/newsArticle.jhtml?type=topNews&storyID=650997>

“Review of tsunami reef damage to take months” – January 12, 2005 (*Reuters*).

“PORT LOUIS - Scientists will not know for months how much damage the Indian Ocean tsunami caused to coral reefs, a crucial barrier against heavy seas and valuable tourist attraction, a reef conservation group said on Wednesday.”

<http://www.alertnet.org/thenews/newsdesk/L1268345.htm>

“Indonesia to Replant Mangroves in Tsunami Defense” – January 18, 2005 (*Reuters in Environmental News Network*).

“JAKARTA — Indonesia will replant huge swathes of mangrove forest along its vulnerable

coastline to help provide a buffer against possible future tsunamis, the forestry minister said.” <http://www.enn.com/today.html?id=6953>

“Silt Threatens Tsunami-Hit Coral Life” – January 19, 2005 (*Associated Press in The Macon Telegraph, GA and approx. 30 other outlets*). “PORT BLAIR, India - The tsunami split coral reefs in India's remote Andaman and Nicobar islands chain, burying them under sand deposits and threatening the entire marine habitat in the area, researchers said Wednesday.”

<http://www.macon.com/mld/macon/news/world/10681902.htm>

“Tsunami damage to environment put at US\$675 million in Indonesia” – January 20, 2005 (*The Jakarta Post, Indonesia on TerraDaily.com*).

“The United Nations Environment Programme on Friday estimated damage from Asia's tsunami disaster to Indonesia's environment would amount to US\$675 million.”

<http://www.terradaily.com/2005/050121104319.sfwwa14i.html>

“Coastal ‘bio-shield’ to protect against tsunami” – January 21, 2005 (*Times of India*). “NEW DELHI: A ‘bio-shield’ formed by planting a vegetation belt along coastlines would protect India against future coastal storms, cyclones and tsunamis, scientists here said.”

<http://timesofindia.indiatimes.com/articleshow/997237.cms>

“Sri Lanka reefs ‘survive tsunami’” – January 23, 2005 (*BBC News*). “Coral reefs around the coast of Sri Lanka may have suffered much less damage from the Indian Ocean tsunami than was initially feared, early surveys have suggested.”

http://news.bbc.co.uk/2/hi/south_asia/4184277.stm

UPCOMING EVENTS

If you have events you would like listed in future newsletters please contact coralreef@noaa.gov.

February 2005

15 – 17: **MPA Federal Advisory Committee Meeting**. Arlington, VA.

http://mpa.gov/fac/fac_meetings.html

17 – 21: **American Association for the Advancement of Science Annual Meeting**. Washington, DC. http://www.aaas.org/meetings/Annual_Meeting/

20 – 25: **American Society of Limnology and Oceanography (ASLO) 2005 Aquatic Sciences Meeting**. Salt Lake City, UT. <http://www.aslo.org/meetings/slc2005/>

March 2005

2 – 3: **13th U.S. Coral Reef Task Force Meeting**. Washington, DC.

<http://www.coralreef.gov/meetings/announcements.html>

2: **NOAA's Annual Stakeholder Forum**. Washington, DC.

<http://www.spo.noaa.gov/dcforum2005.htm>

31 – April 3: **National Science Teachers Association - Annual Conference and Exhibit**. Dallas, TX. http://www.nsta.org/conventiondetail&Meeting_Code=2005DAL

April 2005

2 – 3: **Second International Coral Reefs Conference of Paris (CIRCoP)**. Paris, France.

http://www.circop.com/US_default.html

10 – 14: **Eighth International Conference on Artificial Reefs (and Related) Artificial Habitats**. Biloxi, MS. <http://www.cfi.lsu.edu/carah/>

18 – 22: **Dive In To Earth Day (The Coral Reef Alliance)**. Regional events internationally. <http://www.coralreefalliance.org/divein/>

25 – 28: **ICRI General Meeting (Final meeting of the current secretariat)**. The Seychelles. http://www.icriforum.org/secretariat/ICRI_GM_April05.html

May 2005

17 – 19: **MPA Federal Advisory Committee Meeting**. New England.

http://mpa.gov/fac/fac_meetings.html

June 2005

8 – 9: **Capitol Hill Oceans Week 2005**. Washington, DC. www.nmsfocean.org/

13 – 17: **32nd Scientific Meeting of the Association of Marine Laboratories of the Caribbean (AMLC)**. Abstracts due April 1, 2005. Curacao, Netherlands Antilles. http://www.amlc-carib.org/en/future_meetings/2005_scientific_meeting_curacao/about_the_meeting/

19 – 24: **American Society of Limnology and Oceanography (ASLO) Summer Meeting**. Abstracts due Feb. 1, 2005. Santiago de Compostela, Spain. <http://aslo.org/santiago2005/>

July 2005

11 – 16: **National Marine Educators Association Annual Conference.** Maui, Hawai'i.

<http://www.hawaii.edu/mcc/oceania/NMEA05.html>

17 – 21: **Coastal Zone 2005.** New Orleans, LA. <http://www.csc.noaa.gov/cz/>

August 2005

13 – 19: **8th International Phycological Congress.** Durban, South Africa.

<http://www.ipc8.org.za/>

September 2005

19 – 23: **Marine Technology Society and IEEE Oceanic Engineering Society Oceans**

Conference 2005. Abstracts due Feb. 15, 2005. Washington, DC. <http://www.oceans2005.org/>

October 2005

23 – 27: **The First International Congress on Marine Protected Areas.** Geelong, Australia.

www.impaccongress.org

November 2005

28 – Dec. 2: **Third International Symposium on Deep-Sea Corals.** Miami, Florida.

<http://www.conference.ifas.ufl.edu/coral>

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