Profile

Damaris Torres-Pulliza is a physical geographer specialized in scientific and technical applications of remote sensing and GIS in multi-scale ecosystem base management.

Born in San Juan, Puerto Rico, Damaris developed an early attachment to the marine environment during her childhood. With a clear passion for the natural environment and concern for issues affecting it, she aimed her college courses to coastal dynamics and urban planning, implementing then the use of GIS as a practical tool to understand the landscape spatial matrix. As a graduate student she further engaged with coral reef habitats, hydrology, oceanography, coastal geomorphology and tectonics connectivity subjects. Under a NASA fellowship at UPRM, she adopted GPS geodesy, LiDAR and optical remote sensing as pioneering techniques and technologies for coastal-marine and tectonics research in the Caribbean. Later, at the USGS, Center for Coastal & Watershed Studies, she focused on applications of remote sensing technologies for coral reef characterization, coastal management and marine conservation collaborating with the community, non-governmental and academic streams. Nowadays, as a research scientist at the Institute for Marine Remote Sensing (IMaRS/USF), she interacts and collaborates with an outstanding group of scientists in the topic of Earth Observation Systems in marine sciences. At IMaRS she assisted Dr. Serge Andréfouët and Dr. Frank Müller-Karger on the Millennium Coral Reef Mapping Project, an unprecedented effort to characterize and map coral reef geomorphology worldwide using high-resolution satellite imagery. Moreover, she develops projects and methods to generate relevant multi-scale marine ecosystem datasets used for marine conservation studies or the design of Marine Protected Areas (MPA). Damaris, founder of Synoptika Solutions, currently works as a consultant coupling geo-technologies and international field experience to support practices that preserve the natural resources we rely on.

If you don't find her at work she has probably gone after one of her personal interests: diving, hiking, photographing, swimming, beach volleyball, or just a beach walk.

Education:

M.Sc. Geology: University of Puerto Rico, Mayagüez, PR

B.Sc. Geography: University of Puerto Rico, Río Piedras, PR

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Work Experience:

President: Synoptika Solutions, USA-CR-BRA, 2006-*

Research Assistant: Institute for Marine Remote Sensing, USF, 2003-*

Research Assistant: Center for Coastal & Watershed Studies, USGS. 1999-2002

Teaching Assistant: Department of Geology, UPRM, 1997-1999

GIS Specialist: Institute for Hemispheric Studies, UPR, 1995-1996

Planning Analyst II: Hon. Planning Board of Puerto Rico, PR, 1994-1995

Research Interests:

The scientific utility of remote sensing tools and techniques to support practical ecosystem base management, design and function of effective MPA, and policymaking strategies

Field methods and GIS to assess and model multi-scale connectivity between coastal development and tropical ecosystems (coral reefs, seagrass and mangrove) susceptibility

Best practices for community awareness, education and capacity building

Research Involvement:

PI: Seagrass Habitat Mapping: approach to support the development of a resilient network of MPAs in the Lesser Sunda Ecoregion of “The Coral Triangle”, (TNC, 2009)

PI: Seagrass and Mangrove Habitat Mapping: Derawan Marine Protected Areas of “The Coral Triangle” (TNC, 2008)

PI: MCRMP: Reef Geomorphology Mapping of Malaysia, Philippines, Myanmar, Brunei, Taiwan, Vietnam, Cambodia and Thailand (WorldFish|ReefBase, 2007)

PI: Bahamas and Meso-American Reefs and Seagrass Mapping Project. (TNC, 2006).

PI: Reef Geomorphology and Seagrass Mapping for Identification of Spawning Aggregation Sites in the Caribbean. (TNC, 2005).

PI: Reef Geomorphology for Eastern Ecoregions of "The Coral Triangle". (TNC, 2005)

RA: Millennium Coral Reef Mapping Project. (IMaRS, 2003-2005).

RA: NASA Experimental Airborne Advanced Research Lidar, test for marine ecosystems (USGS, 2001-2002)

PT: National Coal Resource Assessment, Gulf Coastal Plains (USGS, 1999)

PT: Assessing the Quality of the World’s Coal (USGS, 1999)

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Publications and Presentations:

Torres-Pulliza D (2009) Landsat derived ecoregional seagrass mapping: decision support products for the development of a resilient network of MPAs in the Lesser Sunda Ecoregion, Tech. Rep. TNC-CTC-Bali, 36pp.

Wabnitz C, S Andréfouët, D Torres-Pulliza, FE Müller-Karger & P Kramer (2008) Regional-scale seagrass habitat mapping in the Wider Caribbean region using Landsat sensors: Applications to conservation and ecology. Remote Sens. of Env. 112 (8):3455-3467.

Andréfouët S, C Kranenburg, D Torres-Pulliza, F Müller-Karger (2008) The status of the Millennium Coral Reef Mapping Project worldwide. Proceedings of the 11th International Coral Reef Symposium, International Society for Reef Studies, Fort Lauderdale, Florida.

Andréfouët S, C Kranenburg, C Chauvin, D Torres-Pulliza, F Müller-Karger (2008) The status of coral reefs in the Pacific Ocean: assessment from the Millennium Coral Reef Mapping Project. Le Méridien Nouméa, New Caledonia.

Müller-Karger F, S Andréfouët, C Kranenburg, D Torres-Pulliza (2008) The status of the Millennium Coral Reef Mapping Project. NASA Carbon Cycle & Ecosystems Joint Science Workshop, University of Maryland Inn and Conference Center, Maryland.

Andréfouët S, C Kranenburg, C Chauvin, D Torres-Pulliza, L Vigliola, M Noordeloos, F Muller-Karger (2007) The status of the Millennium Coral Reef Mapping for Pacific Ocean islands. GeoHabs 2007, Nouméa, New Caledonia.

Andréfouët S, C Chauvin, S Spraggins, D Torres-Pulliza, C Kranenburg (2005) Atlas des récifs coralliens de Polynésie française, IRD, Nouméa, Février 2005, 38 pages + 86 planches.

Andréfouët S, FE Müller-Karger, JA Robinson, CJ Kranenburg, D Torres-Pulliza, SA Spraggins, B Murch (2005) Global assessment of modern coral reef extent and diversity for regional science and management applications: A view from space. Pages 1732-1745 in Y Suzuki, T Nakamori, M Hidaka, H Kayanne, BE Casareto K Nadaoka, H Yamano, M Tsuchiya, and K Yamazato (eds.) Proceedings of the 10th International Coral Reef Symposium, Japanese Coral Reef Society, Okinawa.

Torres-Pulliza D, S Andréfouët, F Gilbes, F Muller-Karger (2005) Comparison of tropical patch reef habitat maps using airborne hyperspectral and satellite multispectral data. Proceedings of the 10th International Coral Reef Symposium, Japanese Coral Reef Society, Okinawa.

Robinson JA, S Andréfouët, L Burke, G Feldmand, J Gebelein, EP Green, C Kranenburg, F Müller-Karger, N Kuring, M Noodeloos, S Rohmann, A Spraggings, RP Stumpf, D Torres-Pulliza (2005) Partnership for Global Coral Reef Mapping and Data Distribution. Proceedings of the 10th International Coral Reef Symposium, Japanese Coral Reef Society, Okinawa.

Torres-Pulliza D (2004) A Multi-Sensor Comparison for Coral Reef Habitat Mapping: A case study using a tropical patch reef environment in Biscayne National Park, Florida. Master Thesis, pp 73.

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Andréfouët S, D Torres-Pulliza (2004) Atlas des récifs coralliens de Nouvelle-Calédonie. IRD, Nouméa, 54 pages + 23 planches.

Palandro D, C Hu, D Torres-Pulliza, S Andréfouët, FE Müller-Karger (2003) Changes in Land Use and Nearby Coral Reef Ecosystems as Detected by Landsat and In-Situ Data: A Possible Link. Submitted to the International Journal of Remote Sensing.

Andréfouët S, P Kramer, D Torres-Pulliza, KE Joyce, EJ Hochberg, R. Garza-Pérez, PJ Mumby, B Riegl, H Yamano, WH White, M Zubia, JC Brock, SR Phinn, FE Müller-Karger (2003) Multi-sites Evaluation of IKONOS data for Classification of Tropical Coral Reef Environments. Remote Sensing of Environment, 88, pp. 128-143.

Torres-Pulliza D, J Brock, S Andréfouët (2001) Assessment of Hyperspectral AISA Imagery for Benthic Habitat Mapping: Anniversary Reef, FL. Proceedings of 7th International Remote Sensing for Marine and Coastal Environments Conference, Miami, Florida.

Torres-Pulliza D, A Mercado, M Harris, J Brock (2001) NASA Topographic Lidar Survey of the Puerto Rican Coast. Proceedings of American Society for Photogrammetry and Remote Sensing Conference, Saint Petersburg, Florida.

Torres-Pulliza D, C Lea, J Brock, M Duffy (2001) Classification of Barrier Island Land-Cover Using Aerial Photograph and Airborne Lidar Remote Sensing. Proceedings of 5th International Airborne Remote Sensing Conference, San Francisco, California.

Torres-Pulliza D, P Jansma, G Mattioli (2000). Assessing the interplay of tectonics, sedimentology, and lithology in coastline development in Puerto Rico using GIS. *IEEE Proc. Int. Geosci. Rem. Sens. Symp.*, Honolulu, 295-297.

Languages:

Spanish, English and Portuguese

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