

Marko Totic

Born: 19/03/81, Toronto, Canada
marko.totic7@gmail.com

EDUCATION

Doctor of Science

2015 - 2018

Erasmus Mundus Joint Doctorate Program
in Marine and Coastal Management (MACOMA)
University of Cadiz (Spain) & University of Algarve (Portugal)

- Researched pollution impacts in Cartagena Bay, Colombia
- Articulated studies of coastal hydrodynamic modelling with the assessment of public policy on coastal water quality standards and effluent limitations

Master of Science

2005 - 2007

Dept. of Bioresource Engineering
McGill University, Montréal, Canada

- Researched the effects of runoff on coral reef water quality in Barbados
- Conducted field studies of hydrology, sedimentation, and coastal ecosystems
- Mapped and modeled watershed with GIS

Bachelor of Science

2000-2004

Major: Environment; Minor: Physics
McGill University, Montréal, Canada

Languages: English, Spanish, French, Italian, Portuguese and Serbian.

PROFESSIONALEXPERIENCE

Project Manager – IDRC-funded project “BASIC Cartagena”

Jul. 2014 – present

EAFIT University, Colombia

- Coordinating inter-institutional partnerships and collaboration in 6-year applied research project on *Basin Sea Interactions with Communities (BASIC Cartagena)*.
- Developing, monitoring and evaluating multidisciplinary research activities, including watershed and coastal hydrology, fish ecotoxicology, socio-economics and public health.
- Leading research component focused on coastal hydrodynamic dispersion modelling, impacts of pollution and assessment of water quality standards in the coastal zone.
- Coordinating technical and financial reports as well as public outreach and networking.

Integrated Water Resource Management Consultant

Dec. 2012 – Jun. 2014

Playascol Corporation E.U., Colombia

- Worked as project manager of consultancies with various private and government clients
- Designed water monitoring programs and developed watershed management plans
- Conducted statistical and spatio-temporal analyses of water quality datasets
- Identified funding, partners and prepared proposals for coastal zone consulting projects

Head of Monitoring and Impact Assessment

Sept. 2010 – Oct. 2012

National Marine and Coastal Research Institute (INVEMAR), Colombia

- Led research department for water quality and impacts of pollution
- Coordinated national marine and coastal water quality monitoring program in network of academic, research and governmental entities
- Conducted research projects to establish marine water quality standards and maximum discharge limits in the development of national legislation

AMEP Program Assistant

Sept. 2009 – Aug. 2010

UNEP-CEP, Jamaica

- Assisted implementation of the Assessment and Management of Environmental Pollution (AMEP) Programme in support of the Cartagena Convention
- Technical support on outputs relating to coastal management and marine pollution
- Multi-lingual communications with project partners across the Caribbean

Marko Totic

Born: 19/03/81, Toronto, Canada
marko.totic7@gmail.com

Integrated Coastal Area Management Assistant

Sept. 2008–Aug. 2009

IOCARIBE-UNESCO, Colombia

- Assisted facilitation of regional-scale oceanographic projects in the Caribbean
- Initiated networks and maintained correspondence with other Caribbean organizations
- Identified funding opportunities for project development

Field and Research Assistant

June - Aug. 2008

Cape Eleuthera Institute, Bahamas

- Assisted marine aquaculture and shark migration research projects
- Researched and implemented various methods for mapping marine environments

Ecological Field and Research Assistant

2003 – 2004

Biology Department, McGill University & Algonquin Park, Ontario

- Conducted lab work focused on fish biology and lake ecology
- Implemented various fishing techniques and sampling methods in the field

FUNDING MOBILIZATION

IDRC Large-Scale Project Grant

2018 – 2021

International Development Research Centre (IDRC), Canada: 553.200 \$CAD

- Coordinated development of project proposal involving 8 institutions (academic, governmental, NGO) on behalf of EAFIT University (Medellin, Colombia).
- Secured funding for 3-year phase-2 research project “*BASIC Cartagena Resilient*” through preparation of final project proposal, development of detailed budget and coordination with donors.

Doctoral Research Scholarship

2015 – 2018

Erasmus Mundus (European Union): 129.900 €

- Joint Doctorate Program in Marine and Coastal Management (MACOMA) at the University of Cadiz (Spain) and the University of Algarve (Portugal)
- 3 year of research on marine pollution impacts, hydrodynamic modelling, pollution sources and water quality standards.

IDRC Large-Scale Project Grant

2014 – 2017

International Development Research Centre (IDRC), Canada: 669.000 \$CAD

- Coordinated development of project proposal involving 5 institutions (academic, governmental, NGO) on behalf of EAFIT University (Medellin, Colombia).
- Secured funding for 3-year research project “*BASIC Cartagena*” through preparation of final project proposal, development of detailed budget and coordination with donors.

PUBLICATIONS

Totic M, Martins F, Lonin S, Izquierdo A, Restrepo JD (2019) A practical method for setting coastal water quality targets: Harmonization of land-based discharge limits with marine ecosystem thresholds. *Marine Policy* 108 (103641).

Totic M, Martins F, Lonin S, Izquierdo A, Restrepo JD (2019) Estuarine light attenuation modelling towards improved management of coastal fisheries. In: International Conference on Computational Science, Springer, Cham, pp. 301-314, DOI: 10.1007/978-3-030-22747-0_24

Totic M, Martins F, Lonin S, Izquierdo A, Restrepo JD (2019) Hydrodynamic modelling of a polluted tropical bay: Assessment of anthropogenic impacts on freshwater runoff and estuarine water renewal. *Journal of Environmental Management* 236: 695-714.

Marko Tusic

Born: 19/03/81, Toronto, Canada
marko.tusic7@gmail.com

Tusic M, Restrepo JD, Lonin S, Izquierdo A, Martins F (2019) Water and sediment quality in Cartagena Bay, Colombia: Seasonal variability and potential impacts of pollution. *Estuarine Coastal and Shelf Science* 216: 187-203. ISSN 0272-7714.

Tusic M, Restrepo JD, Izquierdo A, Lonin S, Martins F, Escobar R (2018) An integrated approach for the assessment of land-based pollution loads in the coastal zone demonstrated in Cartagena Bay, Colombia. *Estuarine Coastal and Shelf Science* 211: 217-226.

Newton A, Brito A... **Tusic M** (13 of 36), et al. (2018) Assessing, quantifying and valuing the ecosystem services of coastal lagoons. *Journal for Nature Conservation* 44: 50-65.

Restrepo, JD, Escobar R, **Tusic M** (2018) Fluvial fluxes from the Magdalena River into Cartagena Bay, Caribbean Colombia: Trends, future scenarios and connections with upstream human impacts. *Geomorphology* 302: 92-105.

Tusic M (2017) Cartagena Bay: A final destination for pollution in Colombia. In: Restrepo, JD (ed) Arrastrando la Montaña hacia el Mar. Editorial Agenda del Mar Comunicaciones, Medellín, Colombia, pp. 56-65.

Botero C, Pereira C, **Tusic M**, Manjarrez G (2015) Design of an index for monitoring the environmental quality of tourist beaches from a holistic approach. *Ocean & Coastal Management* 108: 65-73.

Botero C, **Tusic M**, Calderón H, Niño D (2014) Ordenamiento del golfo de Cupica (Pacífico colombiano) como ejemplo de gestión costera integrada a escala local. *Bol. Cient. CIOH*; 32:105-122.

Tusic M, Narváez-Flórez S, Parra-Lozano JP (2013) Selection of Parameters in the Design of Beach Water Quality Monitoring Programs. *Intropica* 8(1): 43-51.

Tusic M, Fanning AL, Toro C (2009) An Assessment of International Organizations Funding Projects Related to Integrated Coastal Area Management in Latin America and the Caribbean. In: Universidad de Oriente (ed) Proceedings of the 4th International Conference on Integrated Management of Coastal Zones. Santiago de Cuba, Cuba.

Tusic M, Bonnell RB, Dutilleul P, Oxenford HA (2009) Runoff water quality, landuse and environmental impacts on the Bellairs fringing reef, Barbados. In: Yang X (ed) Remote sensing and geospatial technologies for coastal ecosystem assessment and management. Springer-Verlag GMBH, Berlin, Germany, pp. 521-553.

Tusic M, Bonnell RB, Dutilleul P (2007) Environmental impacts of runoff on the Bellairs fringing reef, Barbados. In: Cantabria University and IH Cantabria (eds) Proceedings of the 8th International Symposium on GIS and Computer Mapping for Coastal Zone Management. Santander, Spain, Vol. 2, pp. 214-232.

CONFERENCE PRESENTATIONS

Tusic M, Restrepo JD, Martins F, Lonin S, Izquierdo A (2020) Sediment Pollution Impacts in The Coastal Zone of Cartagena Bay, Colombia: Monitoring, Modelling and Management. AGU Ocean Sciences Meeting, San Diego, USA, Feb. 16-21.

Tusic M, Martins F, Lonin S, Izquierdo A, Restrepo JD (2019) A modelling approach to setting water quality policy targets for land-based discharges in the coastal zone. Congress on Latin-American Physics of Estuaries and Coastal Oceans Congress, Florianopolis, Brazil, Nov. 18-22.

Marko Totic

Born: 19/03/81, Toronto, Canada
marko.totic7@gmail.com

Totic M, Restrepo JD, Lonin S, Martins F, Izquierdo A (2019) Assessment of pollution impacts, sources, mitigation plans and policy targets in the waters and sediments of Cartagena Bay, Colombia. SETAC Latin America 13th Biennial Meeting, Cartagena, Colombia, Sept. 16-18.

Luna-Acosta A, Herrera-Tavera H, **Totic M**, Caballero S (2019) “To eat or not to eat?” Community-based monitoring of trace metal contamination in commercial fish species: a case study in Cartagena, Colombia. SETAC Latin America 13th Biennial Meeting, Cartagena, Colombia, Sept. 16-18.

Totic M, Martins F, Lonin S, Izquierdo A, Restrepo JD (2019) Estuarine Light Attenuation Modelling Towards Improved Management of Coastal Fisheries. International Conference on Computational Science (ICCS), Faro, Portugal, June 12-13.

Totic M (2019) Development of an early warning system for the protection of coastal water quality in Cartagena Bay. IV International Congress on the Environmental Quality of Touristic Beaches. Keynote Presentation. Barranquilla, Colombia. March 26-28

Totic M, Restrepo JD, Escobar R, Izquierdo A, Lonin S, Martins F (2016) Integrated assessment of anthropogenic pollution loads discharged into the coastal zone of Cartagena Bay, Colombia. 56th International Symposium of the Estuarine and Coastal Science Association (ECSA 56), Bremen, Germany, September 4-7.

Totic M, Martins F, Lonin S, Izquierdo A (2016) Characterization of water renewal in Cartagena bay, Colombia: A hydrodynamic modelling approach. 11th International Conference on Environmental Management of Enclosed Coastal Seas (EMECS'11), St. Petersburg, Russia, August 22-27.

Totic M, Restrepo JD, Lonin S, Izquierdo A, Martins F (2016) Water and sediment quality in Cartagena Bay, Colombia: Seasonal variability and potential impacts of pollution. 7th European Coastal Lagoons Symposium, Murcia, Spain, March 1-4.

Totic M, Escobar R, Caballero S, Restrepo JD (2015) Analysis of seawater quality and fish diversity on two artisanal fishing areas in the coastal zone of Cartagena, Colombia. XVI Latin American Congress of Marine Science (COLACMAR), Santa Marta, Colombia. Oct. 19-22.

Totic M, Guerrero Jiménez T, Abdul-Azis P, Narváez-Flórez S, Parra-Lozano JPP (2013) “Water Quality Monitoring in Touristic Beaches: Design, Analysis and Future Research.” II International Congress on the Environmental Quality of Touristic Beaches, Plenary Session. Cartagena, Colombia. April 17-19.

Totic M and R Navas-Camacho (2012) “Long-term Monitoring of Temperature in Coral Reef Waters of the Colombian Caribbean.” Joint ICTP-TWAS Workshop on Climate Change in Mediterranean and Caribbean Seas: Research Experiences and New Scientific Challenges. Guayaquil, Ecuador. May 7-12.

Totic M, Vivas-Aguas LJ, Carvajalino-Fernández MA (2011) “Impacts of Land-Based Sources of Pollution on the Marine and Coastal Waters of Colombia.” ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, February 13-18.

Totic M (2010) “Watershed Modeling in the Caribbean: Application of GIS in the Assessment and Management of Land-Based Sources of Marine Pollution.” 5th Caribbean Environmental Forum and Exhibition (CEF5), Montego Bay, Jamaica, June 21-25.

Marko Totic

Born: 19/03/81, Toronto, Canada
marko.totic7@gmail.com

Totic M, Fanning AL, Toro C (2009) "An Assessment of International Organizations FundingProjects Related to ICAM in Latin America and the Caribbean." 4th International Conference on Integrated Management of Coastal Zones. Santiago de Cuba, Cuba, 13-15 May.

Totic M, Bonnell RB, Dutilleul P (2007) "Environmental Impacts of Runoff on the Bellairs Fringing Reef, Barbados." 8th International Symposium on GIS and Computer Mapping for Coastal Zone Management. Santander, Spain, October 8-10

Totic M and Bonnell RB (2007) "The Effects of Surface Runoff on Reef Water Quality in Barbados." Annual Conference for the Association of American Geographers. San Francisco, USA, April 17-21.

HONOURS AND AWARDS

- Cum Laude - awarded by Cádiz University for PhD Thesis
- 1st Honourable Mention for the project BASIC-Cartagena in the category of Environment and Sustainable Development from the Colombian National "Alejandro Escobar" Awards
- Award for Best Student Presentation – awarded at the 8th International Symposium on GIS and Computer Mapping for Coastal Zone Management
- Dean's Honour List – awarded by McGill University for MSc Thesis

GIS KNOWLEDGE: ArcGIS, ArcView, Idrisi, AutoCAD, GPS post-processing software