

# Laura Johanna May-Collado

Department of Biology

University of Vermont

Email: [lmaycollado@gmail.com](mailto:lmaycollado@gmail.com) or [lmaycoll@uvm.edu](mailto:lmaycoll@uvm.edu)

Homepage: <http://www.lauramay-collado.com/>

109 Carrigan Drive, Department of Biology, University of Vermont, Burlington VT 05405

Office: 217 MLS; Phone: (802) 9998558

PhD: 2007. Total pubs: 38. IWC Reports: 16, H-index (G-Scholar): 17; i10Index: 28; Research Gate: 27.08; Grants: ~\$178,000. Media: **BBC Earth, NPR Science Friday, STRI News.**

**Google Scholar:** <https://scholar.google.com/citations?user=HUUPac4AAAAJ&hl=en>

**Research Gate:** [https://www.researchgate.net/profile/Laura\\_May-Collado](https://www.researchgate.net/profile/Laura_May-Collado)

**Research Interests:** Marine Soundscape Ecology, Animal Acoustic Communication, Evolution & Phylogenetics, Behavioral Ecology & Marine Conservation Biology.

## Positions Held (most recent)

- Life Science Scholar Program Director. College of Art and Sciences. University of Vermont. Present.
- Lecturer, Department of Biology. University of Vermont. 2014-present.
- Lecturer, Department of Biology, University of Puerto Rico. 2009-2012.
- Coordinator of Zoology Labs. Department of Biology, University of Puerto Rico. 2012-2011.
- Coordinator of Field Tropical Biology, Organization for Tropical Studies, Costa Rica. 2008.
- Field Teaching Assistant. Field Biology Institute Monteverde, Costa Rica. 1997-2000.
- Field Teaching Assistant of Field Tropical Ecology, Organization for Tropical Studies, Costa Rica. 1997, 2001.

## Affiliations

- Co-Founder of Panacetacea. 501(c)3 nonprofit organization
- Research Associate at Centro de Investigaciones del Mar y Limnología (CIMAR), Universidad de Costa Rica
- Affiliated Professor at Universidad Maritima Internacional de Panama.

## Postdoctoral Positions

- **Postdoctoral Investigator. University of Vermont.** 2013-2014. Trained in molecular techniques to study the biogeography of whip less spiders of the Caribbean. Under: Dr. Ingi Agnarsson.
- **Postdoctoral Research Associate. University of Puerto Rico.** 2009-2010. Trained in soundscape analyzing to study and improve animal monitoring efforts using passive acoustic technology. Under: Dr. Mitch Aide.

## Education

- **Ph.D., Biology. Florida International University. 2003-2007.** *“Phylogenetic and ecological significance in the evolution of Cetacean tonal sounds”*. Under: Dr. Douglas Wartzok. <http://digitalcommons.fiu.edu/dissertations/AAI3301615/>.

- **M.Sc., Biology. University of Costa Rica.** San Jose, Costa Rica. 1998-2001. “*Ecology and Behavior of spotted dolphins in the northern Pacific coast of Costa Rica*”. Adviser. Dr. Alvaro Morales.
- **B. Sc., Biology. University of Costa Rica.** San Jose, Costa Rica. 1992-1996.
- **Visitor Scholar, Biology.** Portland State University 1997-1998.

### **Honors, Nominations, and Fellowships**

- Honor graduation. M.Sc. University of Costa Rica. 2000.
- WWF-Russel E. Train Scholarship. 2005-2007.
- Dissertation Year Fellowship. Florida International University. 2007.

### **Academic and other Services (selected)**

- **Member of the Committee of Scientific Advisors for the Society for Marine Mammalogy.** 2011-present.
- **Member of the International Whaling Commission (IWC) Scientific Committee.** 2012-present.
- **Scientific Advisor to Ministry of the Environment in Panama (MI AMBIENTE).** 2016-present.
- **Committee Advisor** for graduate students from the following universities: Universidad Maritima Internacional de Panama, University of New York, Universidad de Costa Rica, Universidad Nacional de Costa Rica, Universidad Jose Tadeo Lozano, Colombia, Universidad de los Andes, Colombia, Universidad Nacional del Litoral, Argentina, University of Rostock, Germany, George Mason University, University of Puerto Rico, University of Anchorage, McGill University.
- **Reviewer-Manuscripts:** Naturwissenschaften, BMC Evolutionary Biology, Proceedings of the Royal Society B, Molecular Phylogenetics and Evolution, Systematic Biology, Marine Mammal Science, Journal of the Marine Biological Association of the United Kingdom, Revista de Biologia Tropical, Revista Cientifica UDO Agricola, Zoologica Scripta, Marine Environmental Research, Revista Ciencias Marinas, Latin American Journal of Aquatic Mammals, Marine Biodiversity Records, Pacific Science, Aquatic Mammals, Axios, Acta Ethologica, Pacific Science, Frontiers Marine Science, Frontiers Ecology and Evolution, Scientific Reports, Bioacoustics, Aquatic conservation Marine and Freshwater Ecosystems, Behaviour, Journal of the Acoustical Society of America, PLOS ONE.
- **Grant Panels:** New York Sea Grant, NSF Division of Environmental Biology, Schmidt Ocean Institute, Puerto Rico Sea Grant, Grants-in-aid for the Society for Marine Mammalogy.
- **Northeast Regional Environmental Acoustic Network Education Subcommittee.**

### **Grants, Awards, and contracts (selected)**

- United Nations Development Programme & MI AMBIENTE, Panama. September-December 2017. “*Monitoring the health of marine communities in two marine protected areas: Archipelago of Perlas and Coiba National Park, Panama using autonomous underwater recorders.*” \$28,900.
- Conservation International, Costa Rica. June 2016 to March 2017. “*Evaluation of the impact of boat traffic on marine mammals and marine communities of the Cano Island Biological Reserve, Costa Rica using autonomous underwater recorders.*”. \$40,000.
- Cetacean International Society. 2015. \$700.
- Waitt Foundation-ROC. \$10,000.
- WWF-Russel E. Train Scholarship. 2005-2007. \$27,100
- Private donations of Underwater Acoustic Unit for Research. 2011. \$6000.
- Florida International University, Dissertation Year Fellowship. 2007. \$20,000.
- Whale and Dolphin Conservation Society. 2007. \$2,015.
- American Society of Mammalogists, Latin American Student Field Research Award. 2006. \$1,500.
- McArthur Foundation-Nature Conservancy Research Grant. 1998. \$5,000.

- Society of Marine Mammalogy, Emily Shane Award. 1998. \$7,200.

### Field Experience (selected)

- PI. Acoustic monitoring of marine communities Belize, Costa Rica, and Panama. 2011-present.
- PI. Population and behavioral surveys of bottlenose dolphins in Panama. 2004-present.
- PI. Cetacean's abundance and acoustic monitoring Caribbean of Costa Rica. 2003-2007.
- PI. River dolphin expedition to the Yasuni National Park, Ecuador. 2005.
- PI. Cetacean's abundance surveys in Northern Pacific of Costa Rica. 1998-2001.

### Teaching Experience

- **Course-based undergraduate research experience (CURE) Soundscapes and Behavior Research (BIOL 195-A).** The core of this course is to apply the process of science through the development of research on marine soundscape ecology and marine mammal behavior. The goal is that students become leaders of their research projects while maintaining a collaborative atmosphere that promotes communication and collaboration.
- **Animal Communication (BIOL 296).** University of Vermont. Spring 2018. This course provides an overview of the different modes used by animals to communicate, with an emphasis on acoustic communication and field methods.
- **Introduction to Marine Sciences (BIOL 196).** University of Vermont. Spring 2018. This course focuses on providing students with baseline information on oceanography, ocean chemistry, and marine biodiversity. We will also hot topics on climate change, fishing, and ocean exploration.
- **Biology of Marine Mammals (BIOL 295).** University of Vermont. Summer 2018. This course provides an overview of the biology of marine mammals with emphasis on the use standard methods to determine population size, site fidelity, home range, and behavior during lab hours.
- **Mammalogy (Biol-217).** Department of Biology. University of Vermont. Fall 2017. This course focuses on the evolutionary and ecological aspects that have made mammals such a morphological and functionally diverse group of vertebrates. The lab provides students an opportunity to use field data and online tools for students to develop their independent research projects.
- **Special Topics: Marine Soundscape (BIOL 195).** Department of Biology. University of Vermont. Fall 2017. This course provides undergraduate students the opportunity to learn about soundscape ecology and develop their own research.
- **Independent Research Seminar. Department of Biology (BIO 295).** University of Vermont. Spring Fall 2015- 206. This course provides undergraduate students to be part of ongoing research develop my myself and graduate students, providing the opportunity work in a team and publish their first manuscript.
- **Exploring Biology-Organismal Biology (BCOR12)** Department of Biology, University of Vermont. Spring 2015-present. This is an introductory to basic process in organismal biology. Students evaluations consistently positive and above departmental mean.
- **Exploring Biology-Organismal Biology (BCOR11).** Department of Biology, University of Vermont. Fall 2015. This is an introductory to basic process on biology, with focus on molecular biology, cell division and communication. Students evaluations consistently positive and above departmental mean.
- **Marine Mammal Biology Field Course (BIOL 295TR2).** Summer 2015. This is field course aimed to learn scientific inquiry and basic methods to study marine mammals. Students evaluations consistently positive and above departmental mean.
- **Evolution (BIOL 271).** Department of Biology, University of Vermont. Fall 2014. This an upper level undergraduate course aimed to learn and discuss evolutionary process. Students evaluations consistently positive and above departmental mean.

- **Zoology.** Department of Biology, University of Puerto Rico. 2010-2012. This course used a phylogenetic background to study the evolution of animals, their adaptations, behavior and ecology. The lab combined comparative anatomy, field, and experimental components.
- **Animal Communication Seminar.** Department of Biology, University of Puerto Rico. 2012. This course was developed for graduate student to discussed different aspect of animal communication from signal emission, to processing, and adaptations to an ever-changing world.
- **General Biology II.** Department of Biology, University of Puerto Rico. 2009-2010. Introduction to organismal biology, ecology, and behavior.
- **Field Tropical Biology.** Organization for Tropical Studies, Costa Rica. 2008. This course introduced undergraduate students to the tropics, we visited dry forest, cloud forest, and rainforest, and develop research projects with the guidance of guess scientists.
- **Tropical Biology – An Ecological Approach (English).** Organization for Tropical Studies, Costa Rica. 2001. This course introduced graduate students to the tropics, we visited dry forest, cloud forest, and rainforest, and develop research projects with the guidance of guess scientists.
- **Mammalogy,** Department of Biology, University of Costa Rica. 1995
- **Ornithology,** Department of Biology, University of Costa Rica. 1996.
- **Botany.** Biology, Department of Biology, University of Costa Rica. 1994.

**Publications (\* high impact publications,  $\Phi$ =publication with undergraduate students,  $\Psi$ =graduate students)**

1.  $\Psi$ Gabriel Melo-Santos, Angélica Lúcia Figueiredo Rodrigues, Rodrigo Hipólito Tardin, Israel de Sá Maciel, Miriam Marmontel, Maria Luisa Da Silva, Laura Johanna May-Collado. 2018. The newly described Araguaian river dolphins, *Inia araguaiaensis* (Cetartiodactyla, Iniidae), produce a diverse repertoire of acoustic signals. **In Review at Peer J.** <https://peerj.com/preprints/26962/>
2.  $\Phi$ Chereskin, E., Beck, L., Gamboa-Poveda, M., Palacios-Alfaro, J. D., Monge-Arias, R., Chase, A. R., Coven, B. M., Guzman, A., McManus, N., O'Halloran, R. A., Neuhauss, A. P., Rosen, S. G., and L.J. May-Collado. Singing activity of Northern and Southern Hemispheres humpback whales wintering off the coast of Costa Rica. Submitted to **Revista de Biología Tropical**
3.  $\Psi$ Barragan-Barrera, D. C., May-Collado, L. J., Tezanos-Pinto, G., Islas-Villanueva, V., Correa-Cardenas, C. A., and S. Caballero. 2017. High genetic structure and low mitochondrial diversity in bottlenose dolphins of the Archipelago of Bocas del Toro, Panama: a population at risk? **PLoS ONE** 12(12): e0189370.
4.  $\Psi$ May-Collado, L. J., Marisol Amador-Caballero, José Julio Casas, Mónica P. Gamboa-Poveda, Frank Garita-Alpizar, Tim Gerrodette, Rocío González-Barrientos, Gabriela Hernández-Mora, Daniel M. Palacios, José D. Palacios-Alfaro, Betzi Pérez, Kristin Rasmussen, Lissette Trejos-Lasso, Javier Rodríguez-Fonseca. 2017. **Ecology and Conservation of Cetaceans of Costa Rica and Panama. In Advances in Marine Vertebrate Research in Latin America.** Editors M. Rossi-Santos and C. Finkl eds. Springer Press.
5.  $\Psi$ Sitar, A., May-Collado, L. J., Wright, A. J., Peters-Burton, E., Rockwood, L., and E.C.M. Parsons. 2017. Tourists' perspectives on dolphin watching in Bocas del Toro. **Tourism in Marine Environments.** 12:79-94.
6.  $\Psi$ Sitar, A., May-Collado, L. J., Wright, A. J., Peters-Burton, E., Rockwood, L., and E.C.M. Parsons. 2016. Boat operators in Bocas del Toro, Panama display low levels of compliance with national whale-watching regulations. **Marine Policy.** 68: 221-228.
7. Jie Liu; May-Collado, L.J; Stano Pekár P. H. D, and I. Agnarsson. 2016. A revised and dated phylogeny of cobweb spiders (Araneae, Araneoidea, Theridiidae): a predatory Cretaceous lineage diversifying in the era of the ants. **Molecular Phylogenetics and Evolution.** 94:658-675.

8. May-Collado, L.J., Carlos Zambrana, and I. Agnarsson. 2016. **Global spatial analysis of phylogenetic conservation priorities for aquatic mammals. In Biodiversity Conservation and Phylogenetic Systematics.** Editors R. Pellens & P. Grandcolas. Springer Press.
9. Esposito, L.; Bloom, T.; Caicedo-Quiroga, L.; Alicea-Serrano, A. M.; Sánchez-Ruíz, J. A.; May-Collado, L. J.; Binford, G. J.; and I. Agnarsson. 2015. Islands within islands: diversification of tailless whip spiders (*Amblypygi*, *Phrynus*) in Caribbean caves. **Molecular Phylogenetics and Evolution.** 93: 107-117.
10. Dines, J., Mesnick, S., Ralis, K., May-Collado, L.J., Agnarsson, I., and D. Matthew. 2015. A tradeoff between precopulatory and postcopulatory trait investment in male cetaceans. **Evolution.** 69: 1560-1572.
11. May-Collado, L.J., C. W. Kilpatrick and I. Agnarsson. 2015. Mammals from ‘down under’: a multi-gene species-level phylogeny of marsupial mammals (Mammalia:Methateria). **PeerJ** 3:e805.
12. Ruch, J., Riehl, T., May-Collado, L. J., and I. Agnarsson. 2014. Multiple origins of subsociality in crab spiders (Thomisidae). **Molecular Phylogenetics and Evolution.** 82:330–340
13. ΨMay-Collado, L.J. and S. Quinones-Lebron. 2014. Dolphin changes in whistle structure with watercraft activity depends on their behavioral state. **Journal of the Acoustic Society of America, Express Letters** 135, EL193-198.
14. May-Collado, L.J. 2013. Guyana dolphins (*Sotalia guianensis*) from Costa Rica emit whistles that vary with surface behaviours. **Journal of the Acoustic Society of America, Express Letters**, 134: EL359-EL365.
15. May-Collado, L.J. and J. Forcada. 2012. Small-scale estimation of relative abundance for the coastal spotted dolphins (*Stenella attenuata*) in Costa Rica: the effect of habitat and seasonality. **Revista de Biología Tropical** Vol. 60 (Suppl. 2) 133-14.
16. May-Collado, L.J. and I. Agnarsson. 2011. Phylogenetic analysis of conservation priorities for aquatic mammals and their terrestrial relatives, with a comparison of methods. **PLoS One.**6 (7): e22562.
17. \*Agnarsson, I., Zambrana-Torrel, C. M., Flores-Saldana, N. P., and L. J. May-Collado. 2011. A time-calibrated species-level phylogeny of bats (Chiroptera, Mammalia). **PLoS Currents: Tree of Life.**
18. Kuntner, M., May-Collado, L. J. and I. Agnarsson. 2011. Phylogeny and conservation priorities of afrotherian mammals (Afrotheria, Mammalia). **Zoologica Scripta.** 40:1-15.
19. Quiñones-Lebrón S. G. and L. J. May-Collado. 2011. Factores determining whistle emission rate in bottlenose dolphins of Bocas del Toro, Panama. **Journal of the Acoustic Society of America** 129, 2671.
20. May-Collado, L. J. 2011. Whistle variation is associated with surface behavior in the Guyana dolphin (*Sotalia guianensis*). **Journal of the Acoustic Society of America.** 129, 2671.
21. ΨMartínez-Fernández, D., Montero-Cordero, A. and L. J. May-Collado. 2011. Cetáceos de las aguas costeras del Pacífico norte y sur de Costa Rica. **Revista de Biología Tropical.** 59 (1): 283-290.
22. \*Agnarsson, I., Kuntner, M., and L. J. May-Collado. 2010. Dogs, cats, and kin: a near species-complete phylogeny of Carnivora. **Molecular Phylogenetics and Evolution.** 54: 726-745.
23. May-Collado, L.J. 2010a. Sounds produced by tucuxi dolphins (*Sotalia fluviatilis*) from the Napo and Aguarico Rivers of Ecuador. **Latin American Journal of Aquatic Mammals.** 8:131-136.
24. May-Collado, L. J. 2010b. Changes in whistle structure of two dolphin species during interspecific associations. **Ethology.** 116:1065-1074.
25. May-Collado, L. J., Aide, M., Alvarez, A., and C. Corrada-Bravo. 2010. A comparison of acoustic soundscapes within and among three tropical habitats: Can soundscape heterogeneity be used as an index of  $\alpha$  and  $\beta$  diversity? **Journal of the Acoustic Society of America.** 128, 2412

26. May-Collado, L.J. and D. Wartzok. 2009. A characterization of Guyana dolphin (*Sotalia guianensis*) whistles from Costa Rica: The importance of broadband recording systems. **Journal of the Acoustic Society of America**. 125 (2): 1202-1213.
27. May-Collado, L. J. Chapter 42: **Marine Mammals. 2009. In Marine Biodiversity of Costa Rica, Central America**. Edited by Wehrmann, I. and J. Cortes. Springer Verlag Academic Press.
28. \*Agnarsson, I. and L. J. May-Collado. 2008. The phylogeny of Cetartiodactyla: the importance of dense taxon sampling, missing data, and the remarkable promise of Cytochrome b to provide reliable species-level phylogenies. **Molecular Evolution and Phylogenetics**. 48:964-985.
29. \*May-Collado, L. J. and D. Wartzok. 2008. A comparison of bottlenose dolphin whistle in the Western Atlantic Ocean: insights on factors promoting whistle variation. **Journal of Mammalogy**. 89:205-216.
30. \*May-Collado, L. J., Agnarsson, I., and D. Wartzok. 2007a. Phylogenetic review of tonal sound production in whales in relation to sociality. **BMC Evolutionary Biology**. 7:136
31. \*May-Collado, L. J., Agnarsson, I., and D. Wartzok. 2007b. Reexamining the relationship between body size and tonal signals frequency in whales: a phylogenetic comparative approach. *Marine Mammal Science*. **Marine Mammal Science**. 23 (3): 524–552.
32. May-Collado, L. J. and D. Wartzok. 2007. *Inia geoffrensis* high frequency whistles. **Journal of the Acoustic Society of America**. 121 (2): 1203-1212.
33. Agnarsson, I., Coddington, J.A., and L.J. May-Collado. 2007. Elongated pedicillate setae- a putative sensory system and synapomorphy of spiders. *Journal of Arachnology*. 35: 411-426.
34. Agnarsson, I., Barrantes, G. and L. J. May-Collado. 2007. Notes on the biology of *Anelosimus pacificus* Levi, 1963 (Theridiidae, Araneae)-evidence for an evolutionary reversal to a less social state. In press. **Journal of Natural History**. 40:2681-2687
35. \*May-Collado, L. J. and I. Agnarsson. 2006. Cytochrome b and Bayesian inference of whale phylogeny. **Molecular Phylogenetics and Evolution**. 38: 344–354.
36. May-Collado, L. J. and Morales Ramírez, A. 2005. Presencia y Patrones de comportamiento del delfín manchado costero, *Stenella attenuata graffmani* (Cetacea: Delphinidae) en el Golfo de Papagayo, Costa Rica. **Revista de Biología Tropical**. 53: 265-276.
37. May-Collado, L. J.; Gerrodete, T.; Calambokidis, J.; Rassumen K. and I. Sereg. 2005. Distribution of Cetaceans sightings in the EEZ of Costa Rica. **Revista de Biología Tropical**. 53: 249-263.
38. Rodríguez-Hernández, B. Chinchilla, F. A. and May-Collado, L. J. 2002. Lista de especies, endemismo, y conservación de los mamíferos de Costa Rica. **Revista Mexicana de Mastozoología**. 6: 19-41.

### Press Coverage

- Boat traffic threatens the survival of Panama’s Bocas del Toro dolphins. EurekaAlert! AAAS, December 22, 2017.
- Boat traffic threatens the survival of Panama’s Bocas del Toro dolphins. PHYS ORG. December 22, 2017 <https://phys.org/news/2017-12-boat-traffic-threatens-survival-panama.html>
- Why one dolphin has turned pink? 2017. <http://www.bbc.com/earth/story/20160426-why-one-species-of-dolphin-has-turned-pink>
- Radio Show Amelia Rueda “Con grabadoras especiales, Proyecto estudia como el ruido de barcos afecta a ballenas y delfines en Isla del Cano”. <https://www.ameliarueda.com/nota/proyecto-ondas-salud-cetaceos-cantos-en-isla-del-cano>
- Women in Science, interview by Conservation International. February 2017. <http://cicostarica.org/es/una-mujer-de-ciencia-laura-j-may-collado/>

- Project ONDAS, interview by Conservation International. September 2016. Podcast: <https://soundcloud.com/conservacion-intl-cr/proyectoondas-mixdown>
- Trabajando con mamíferos marinos. 2015. Parte I: vacíos de conocimiento. Blog series for Conservation International Costa Rica. <http://cicostarica.org/es/category/delfines-y-cetaceos/>
- Trabajando con mamíferos marinos. 2015. Parte II: Áreas protegidas marinas y completando espacios vacíos. Blog series for Conservation International Costa Rica. <http://cicostarica.org/es/category/delfines-y-cetaceos/>
- Capturing the Science of Biodiversity. Science Friday NPR. July 19, 2013.
- <http://www.npr.org/2013/07/19/203606166/capturing-the-sounds-of-biodiversity>.
- Interspecific communication in dolphins: BBC September 30, 2010
- [http://news.bbc.co.uk/earth/hi/earth\\_news/newsid\\_9045000/9045389.stm](http://news.bbc.co.uk/earth/hi/earth_news/newsid_9045000/9045389.stm)
- Carnívoros: BBC November 30, 2009
- [http://news.bbc.co.uk/earth/hi/earth\\_news/newsid\\_8383000/8383070.stm](http://news.bbc.co.uk/earth/hi/earth_news/newsid_8383000/8383070.stm)
- EFN Grantees Accomplishments: EFNews August 2010.
- Dolphin communicative signal geographical variation: STRI NEWS October 17, 2008.
- <http://www.nacion.com/dominical/2000/junio/04/dominical3.html>
- Talento Destacado Ticotal
- <http://ticotal.cr/talento-destacado/talentos-destacados-antiores/laura-j-may-collado-phd.html>
- <http://thebocabreeze.com/travel/our-dolphins-are-unique/>
- <http://www.inaturalist.org/projects/dolphins-of-bocas-del-toro-panama>
- <http://waittfoundation.org/rocsplight/panacetacea-archipelago-of-bocas-del-toro/>
- <http://www.panama-guide.com/article.php/20120909201715927>
- <https://www.bgeneral.com/Revista/articulos/2011/2011-06/Delfines.asp>
- [http://www.stri.si.edu/english/about\\_stri/headline\\_news/news/article.php?id=1795](http://www.stri.si.edu/english/about_stri/headline_news/news/article.php?id=1795)
- <http://likepty.com/sustain/delfines-en-las-escuelas/>

### **Manuscripts in preparation (\* undergraduate \*\*graduate students leading the manuscript)**

1. May-Collado, L. J., N. Pradhan, I. Agnarsson. Free to evolved: signal frequency and body size decouple in aquatic mammals and relatives.
2. Beanland\* M., Daszkiewicz, H., DeRoy, C., DeVito, B., Kuppermann, J., Snyder, C., Weiss, S. and LJ May-Collado. Home range of resident female and male bottlenose dolphins of Bocas del Toro, Panama.
3. Chereski\*, E., May-Collado, LJ, Palacios, JD, Gamboa-Poveda, M., Gonzalez S., Guzman A., Calambokidis, J., K. Rasmussen. Humpback whale acoustic activity: a song comparison from northern and southern hemispheres whales that breed in Costa Rica.
4. May-Collado, Palacios, D., Barragán-Barrera, D., Quinones-Lebron, S., Gamboa-Poveda M., Kassamali-Fox, A., Perez, B., Taubitz, E., Sitar, A., Agnarsson, I. and Daszkiewicz H. On the ecology and conservation status of the bottlenose dolphins of Bocas del Toro from 2004 to 2016.
5. Melos-Santos, G. et al. May-Collado. A population comparison of whistle repertoire in the dolphin genus *Sotalia* across most of its distribution. To be submitted to Nature Communications
6. Melos-Santos, G. et al. May-Collado. A first detailed description of the vocal behavior of a newly discovered river dolphins. Journal TBD.

### **Scientific Reports to the International Whaling Commission**

1. Barragán-Barrera DC, May-Collado LJ, Islas-Villanueva, V., Caballero S. Isolated in the Caribbean: low genetic diversity of a bottlenose dolphin in Bocas del Toro, Panama. International Whaling Commission 2015; [SC/66a/SM/13](https://www.ihw.org/SC/66a/SM/13)



2. May-Collado, L. J., Trejos, L., Perez B., Gamboa-Poveda, M., Casas J.J., Jacome G., and A. Gonzalez. Panacetacea efforts for a participatory conservation planning of the dolphin watching industry in Bocas del Toro, Panama. International Whaling Commission 2015. [SC/66a/WW1](#)
3. May-Collado, L. J. and D. Wartzok. The effect of dolphin watching boat noise levels on the whistle acoustic structure of dolphins in Bocas del Toro, Panama. International Whaling Commission 2015. [SC/66a/WW5](#).
4. May-Collado, L. J. The acoustic behavior of Bocas del Toro dolphins varies with watercraft activity International Whaling Commission 2015. [SC/66a/WW6](#).
5. Trejos Lasso, L. and May-Collado, L. J. Bottlenose dolphins *Tursiops truncatus* strandings in Bocas del Toro caused by boat strikes and fishing entanglement. International Whaling Commission 2015. [SC/66a/WW7](#).
6. May-Collado, L. J., Quiñones-Lebrón, S. G., Barragán-Barrera, D. C., Jose D. Palacios, Monica Gamboa-Poveda, and A. Kassamali-Fox. The Bocas del Toro dolphin watching industry relies on a small community of bottlenose dolphins: implications for management. International Whaling Commission 2015. [SC/66a/WW10](#).
7. Kassamali-Fox. A., Christiansen, F., Quinones-Lebron, S., Rusk, A., May-Collado, LJ, and B. Kaplin. Using Markov chains to model the impacts of the dolphin watching industry on the dolphin community of Dolphin Bay, Bocas del Toro, Panama. International Whaling Commission 2015. [SC/66a/WW11](#).
8. Sitar, A., May-Collado, LJ, Wright, AJ, Peter-Burton, E, Rockwood, L, and ECM Parsons. The effect of whale watching vessels on the behaviour of common bottlenose dolphins (*Tursiops truncatus*) in Bocas del Toro, Panama. International Whaling Commission 2015. [SC/66a/WW12](#).
9. Sitar, A., May-Collado, LJ, Wright, AJ, Peter-Burton, E, Rockwood, L, and ECM Parsons. Low levels of compliance with national whale watching regulations in dolphin watching boat operators in Bocas del toro, Panama. International Whaling Commission 2015. [SC/66a/WW14](#).
10. Sitar, A., May-Collado, LJ, Wright, AJ, Peter-Burton, E, Rockwood, L, and ECM Parsons. Tourists perspectives on dolphin watching in Bocas del Toro, Panama support sustainable and educational tourism. International Whaling Commission 2015. [SC/66a/WW15](#).
11. Sitar, A., May-Collado, LJ, Wright, AJ, Peter-Burton, E, Rockwood, L, and ECM Parsons. Opinions and perspectives of the dolphin watching boat operators in Bocas del Toro, Panama. International Whaling Commission 2015. [SC/66a/WW16](#).
12. May-Collado, L. J., Quiñones-Lebrón, S. G., Barragán-Barrera, D. C., Jose D. Palacios, Monica Gamboa-Poveda. 2014. The dolphin watching industry of Bocas del Toro continues impacting the resident bottlenose dolphin population. [International Whaling Commission, Slovenia. SC/65b/WW06](#).
13. Sitar, A., May-Collado, L. J., Parsons E. C. M. 2014. High-levels of non-compliance with whale-watching regulations in Bocas del Toro, Panama and effects of non-compliance on bottlenose dolphin behavior. [International Whaling Commission, Slovenia. SC/65b/WW09](#).
14. May-Collado, L. J.1,2, Barragán-Barrera, D. C.3, Quiñones-Lebrón, S. G.1, & W. Aquino-Reynoso1. 2012. Dolphin watching boats impact on habitat use and communication of bottlenose dolphins in Bocas delToro, Panama during 2004, 2006-2010. [International Whaling Commission. SC/64/WW2](#).
15. Barragán-Barrera DC, May-Collado LJ, Quiñones-Lebrón SG, Caballero S. Population at risk: low genetic diversity in bottlenose dolphins of Bocas del Toro, Panama. International Whaling Commission 2013; [SC/65a/SM15: 1–11](#).
16. Gamboa-Poveda M. and L. J. May-Collado. 2006 Insights on the occurrence, residency, and behavior of two coastal dolphins from Gandoca-Manzanillo, Costa Rica: *Sotalia guianensis* and *Tursiops truncatus* (Family Delphinidae). [International Whaling Commission. SC/58/SM4](#).



### Invited Seminars and Talks

- **Invited Speaker for the Animal Communication Symposium**, Nebraska, July 18-22, 2017. On the evolution of acoustic communication of aquatic mammals and their terrestrial relatives.
- **Invited Speaker for TEDx Pura Vida**. Me escuchas? “Can you hear me?”. 2016. <https://www.youtube.com/watch?v=zmfDMx4te6w>
- **Seminar at University of Costa Rica**. Using remote underwater recorders to study cetacean’s habitat use.
- **Tupper Seminar Series**, Smithsonian Tropical Research Institute. Evolution of Acoustic Communication in whales. 2015.
- **Seminar at University of Vermont**. Evolution of Acoustic Communication in Whales and their Terrestrial Relatives. 2013.
- **Seminar at Syracuse University**. Evolution of Acoustic Communication in Whales and their Terrestrial Relatives. 2012.
- **Symposium on complex communication and complex society**. Joint Meeting of the Animal Behavior Society and the International Ethological Conference, Indiana, USA. July 25-30. 2011.
- **Seminar at University of Akron**. Phylogenetic and Ecological Significance of toothed whale communication acoustic signals. 2007.
- **Seminar at University of British Columbia**. Phylogenetic and Ecological Significance of toothed whale communication acoustic signals. 2006.

### Workshops Initiatives

- *RIEMMCCA: Network of Aquatic Mammal Specialists of Central America and the Caribbean*. 21<sup>st</sup> Biennial Conference on the Biology of Marine Mammals, San Francisco, December 2015.
- *Unmanned Aerial Systems: Powerful and Cost-Effective Tools for Marine Science and Conservation*. 21<sup>st</sup>. Biennial Conference on the Biology of Marine Mammals, San Francisco, December 2015
- *Drones and their potential use in marine mammal studies*. SOLAMAC, Cartagena, Dec. 1-5, 2014. Oral Presentation part of the Whale-Watching Symposium.
- *Phylogenetic tools*. 18th Biennial Conference on the Biology of Marine Mammals, Quebec. 2008. Oral Presentation.

### Conference & Meeting presentations

1. Barragan-Barrera, Polo-Silva Carlos, Bustamante Paco, May-Collado Laura, Caballero Susana, Luna-Acosta Andrea. 2018. Biomagnificación de mercurio en la cadena alimenticia de los delfines nariz de botella en Bocas del Toro, Panamá. Comité Organizador del XII Congreso de la Sociedad Latinoamericana de especialistas en Mamíferos Acuáticos, Nov 9-8, Lima, Peru.
2. Perez Ortega P., Hendry, A., and L. J. May-Collado. 2018. Contribution of tour boats to the soundscape and the potential effects on bottlenose dolphins in Bocas del Toro. Poster Presentation, Smithsonian Tropical Research Institute, Panama.
3. Melos-Santos, G. et al. May-Collado. 2017. Is there geographical variation in whistles of the genus *Sotalia*? A distribution-wide approach. 22<sup>nd</sup>. Biennial Conference on the Biology of Marine Mammals, Halifax, Nova Scotia October 23-27.
4. Barragan-Barrera, et al. May-Collado and Caballero. 2017. Insights into the foraging ecology of an isolated bottlenose Dolphin population in the Archipelago of Bocas del Toro (Panama). 22<sup>nd</sup>. Biennial Conference on the Biology of Marine Mammals, Halifax, Nova Scotia October 23-27.
5. Melo-Santos et al., May-Collado (adviser). 4th International Symposium on Acoustic Communication by Animals, Nebraska, July 18-22, 2017.

6. May-Collado, L.J., Palacios, J.D., Gamboa-Poveda, M., Quesada Alpízar, M., and Ana Guzmán. 2017. Using remote acoustic technology to document fluctuations in marine communities, boat traffic, and habitat use by two cetaceans in the Biological Reserve of Caño Island in Costa Rica. International Marine Protected Areas Congress, Chile September 2017.
7. May-Collado, L.J., Daniels, T., Agnarsson, I. and S. Parks. 2015. On the evolution of acoustic communication of cetaceans and their terrestrial relatives. Oral Presentation. 21st. Biennial Conference on the Biology of Marine Mammals, San Francisco, December 2015.
8. Ayshah Kassamali-Fox, Fredrik Christiansen, Shakira Quinones-Lebron, Laura May-Collado, Beth A. Kaplin. 2015. Evaluating the effects of dolphin watching boats on the behavior of bottlenose dolphins in Bocas del Toro, Panama: using Markov chains to model the impacts of tourism on a genetically distinct population. Oral Presentation. 21st. Biennial Conference on the Biology of Marine Mammals, San Francisco, December 2015.
9. Perez, B., Gamboa-Poveda, and May-Collado, L.J. 2015. How do intense-dolphin-watching activities affect the foraging behavior of bottlenose dolphin in Dolphin Bay, Panama? Poster Presentation. 21st. Biennial Conference on the Biology of Marine Mammals, San Francisco, December 2015.
10. Gamboa-Poveda, M., Veve, G., Barragan-Barrera D., Kassamali-Fox, A., and L. J., May-Collado. 2015. Residency and association patterns of two neighboring populations of bottlenose dolphins in the Caribbean coast of Costa Rica and Panama. Poster Presentation. 21st. Biennial Conference on the Biology of Marine Mammals, San Francisco, December 2015.
11. Barragan-Barrera, D., May-Collado, L.J., Islas-Villanueva, V., and S. Caballero. 2015. Isolated in the Caribbean: high population structure of the bottlenose dolphin population of Bocas del Toro, Panama. Poster Presentation. 21st. Biennial Conference on the Biology of Marine Mammals, San Francisco, December 2015.
12. May-Collado LJ and D. Wartzok. 2015. The effect of changing ambient noise levels on the whistle acoustic structure of dolphins in Bocas del Toro, Panama. Watkins Memorial Meeting at Bedford, MA.
13. May-Collado, L. J., Quiñones-Lebrón, S. G., Barragán-Barrera, D. C. Jose D. Palacios, Monica Gamboa-Poveda. La observación comercial de delfines afecta el uso de hábitat de los delfines nariz de botella de Bocas del Toro: pasado, presente, y un futuro preocupante. SOLAMAC, Cartagena, Dec. 1-5, 2014. Oral Presentation part of the Whale-Watching Symposium.
14. May-Collado LJ and SG Quiñones-Lebrón. 2013. Estado del conocimiento de los delfines de Bocas del Toro y su interaccion con la observacion comercial de avistamientos de delfines en Panama. Grupo Argentina/International Whale Commission. Diciembre, Cartagena, Colombia.
15. Barragán-Barrera DC, May-Collado L.J., Caballero S. Population at risk: low genetic diversity in bottlenose dolphins of Bocas del Toro, Panama. 20th Biennial Conference on the Biology of Marine Mammals, New Zealand. Poster Presentation.
16. Barragan-Barrera, D., Quiñones-Lebrón, S., Palacios-Alfaro, P., Caballero-Gaitan, S., and L. J. May-Collado. 2012. Efecto a largo plazo del turismo de observacion de delfines nariz de botella (*Tursiops truncatus*) en Bocas del Toro, Panama. SOLAMAC. September 2012. Argentina, Patagonia.
17. Mesnick, S. L., May-Collado, L J, Agnarsson, I., Ralls, K., Chan, C., and A. Allen. 2012. Sexual selection sperm competition and the evolution of cetacean mating systems. 49th Annual Meeting of the Animal Behavior Society - June 10-14, 2012 (Joint HBES). New Mexico.
18. May-Collado, L. J., Aide, M., Alvarez, A., and C. Corrada-Bravo. 2010. A comparison of acoustic soundscapes within and among three tropical habitats: Can soundscape heterogeneity be used as an index of  $\alpha$  and  $\beta$  diversity? Acoustical Society of America, Cancun, Mexico. November 18th, Oral Presentation.
19. May-Collado, L. J. and I. Agnarsson. 2009. Phylogenetic analyses of conservation priorities for cetaceans and pinnipeds. 18th Biennial Conference on the Biology of Marine Mammals, Quebec. Oral Presentation.

20. Gamboa-Poveda, M. P., Ramirez, O., and L.J. May-Collado. 2009. Population size, distribution, and habitat use of two sympatric dolphin species the Guyana dolphin (*Sotalia guianensis*) and the Bottlenose dolphin (*Tursiops truncatus*) from the Southern Caribbean of Costa Rica. 18th Biennial Conference on the Biology of Marine Mammals, Quebec. Poster.
21. Barragan-Barrera, D. C., Palacios Alfaro, J. D., Taubitz, E., and L. J. May-Collado. 2009. A spatial analysis of habitat use by bottlenose dolphins from Bocas del Toro, Panama. 18th Biennial Conference on the Biology of Marine Mammals, Quebec. Poster.
22. Garcia, C., Avila, I. C., Palacios, D., Gerrodette, T., Suarez, M. Soler, G., Trujillo, F., Bessudo, S., Rasmussen, K., May-Collado, L. J., and C. Parson. 2008. Presencia, distribución y amenazas de *Stenella attenuata* y *Tursiops truncatus* en el Pacífico de Panamá y Colombia. Mamíferos Acuáticos de Sur America, Uruguay. Poster.
23. Paulo A.C. Flores, Mariel Bazzalo, Susana Caballero, Marcos C.O. Santos, Marcos R. Rossi-Santos, Fernando Trujillo, Jaime Bolaños-Jimenez, Marta J. Cremer, Laura J. May-Collado, Flávio J. L. Silva, Maria Gabriela Montiel, Alexandre F. Azevedo, Ana C. O. Meirelles, Leonardo Flach, Hector Barrios, Paulo C. Simões-Lopes, Haydée A. Cunha and Koen Van Waerebeek. 2008. Proposed English common name of *Sotalia guianensis* dolphin. Mamíferos Acuáticos de Sur America, Uruguay. Poster.

### **Mentoring and Advising**

1. Doctoral Candidate Betzi Perez, McGill University, Montreal, Co-advising with Dr. Andrew Hendry. 2015-present.
2. Doctoral Student Eric Ramos, University of New York, Co-advising with Dr. Diane Reiss. 2012-present.
3. M.Sc. Adriana Arce. Universidad de Costa Rica. Costa Rica. Co-advised with Dr. Juan Jose Alvarado.
4. Kahlia Gonzalez, Natalia Swack, Jessa Houghton, Caroline Dunbar, Isabel Mize, Amanda Jones, Kate Ziegler, Danielle McAree, Shelby Rosten, Rebecca Daw, Hannah Hutchens, Erin Powell, Jade McMillan, Cooper Peterson, Riley O'Halloran, University of Vermont.

### **Former students**

5. Ph.D. Dalia Barragan-Barrera, Universidad de Los Andes, Colombia, Co-advising with Dr. Susana Caballero. 2012-2018.
6. B.Sc. Honor's Thesis. Emma Cherenski. University of Vermont. 2016-2018.
7. Ph.D. Gabriel Melo Alves dos Santos, Universidade Federal do Para, Brazil, Co-advising with Dr. Maria Luisa Da Silva. 2015-2018.
8. M.Sc. Ayshah Kassamali-Fox. Antioch University New England, USA. Co-advised with Dr. Beth A. Kaplin. 2014-2017.
9. Ph.D. Ashley Sitar, Ph.D. Department of Environmental Sciences and Policies, George Mason University. Co-advised with Dr. Chris Parsons. 2013-2015.
10. M. Sc. Shakira Quiñónez, University of Puerto Rico. Co-advised with Dr. Mitch Aide. 2008-2012.
11. M. Sc. Jose Arístides Ponce Santamaria, Universidad Maritima Internacional de Panama. Co-advised with M.Sc. Jose Julio Casas. 2012-2014.
12. M. Sc. Monica Gamboa Poveda, Universidad Nacional de Costa Rica. Adviser. 2004-2007.
13. M. Sc. Jose Damián Martinez, Universidad Nacional de Costa Rica. Adviser. 2004-2007.
14. M. Sc. Andrea Montero Cordero, Universidad de Costa Rica. Co-adviser with Dr. Jorge Lobo. 2004-2007.
15. Lic. Jose D. Palacios Alfaro, Universidad Nacional de Costa Rica. Adviser. 2004-2007.
16. Lic. Raúl Sobrero, Lic. Facultad de Humanidades y Ciencias. Universidad Nacional del Litoral, Argentina. Adviser 1999-2001.

17. B. Sc. Evelyn Taubitz. University of Rostock, Germany. Adviser. 2004-2007.
18. B.Sc. Joel Sánchez, Universidad Marítima Internacional de Panamá, Co-advised with Prof. Jose Julio Casas. 2015.
19. B.Sc. Roberto Santamaria, Universidad Marítima Internacional de Panamá, Co-advised with Prof. Jose Julio Casas. 2015.
20. B.Sc. Whitney Kwiers, Universidad Marítima Internacional de Panamá, Co-advised with Prof. Jose Julio Casas. 2015.

### **Where about of my former students**

- Raul Sobrero is professor at Universidad National del Litoral in Argentina where he leads a lab using phylogeny to study the relationships and behavior of caviomorph rodents.
- Andrea Montero Cordero is the Conservation Manager of Marine Protected Areas at FAICO-Amigos de la Isla del Coco.
- Monica Gamboa Poveda is the Marine Conservation Officer at Costa Rica por Siempre, is an association created to protect marine and terrestrial ecosystems in Costa Rica.
- Jose David Palacios Alfaro. Co-Founder of KETO a non-profit organization dedicated to the study and protection of marine communities in Costa Rica.
- Shakira Quiñónez and Ayshah Kassamali-Fox are working on their Ph.D. in Slovenia and New England, respectively.
- Gabriel Melo Alves dos Santos, is starting a postdoc in St Andrews University under the supervision of Dr. Vincent Janik studying the contact calls of river dolphins.
- Emma Cherenski, is working at the New England Aquarium.

### **Public Documents**

- May-Collado, L.J. et al. 2015. The Archipelago of Bocas del Toro: Urgent need for marine conservation planning and development of sustainable eco-tourism practices. Report to Waitt Foundation. [http://www.lauramay-collado.com/uploads/6/6/8/1/6681148/report\\_waitt-maycollado2015.pdf](http://www.lauramay-collado.com/uploads/6/6/8/1/6681148/report_waitt-maycollado2015.pdf)
- May-Collado, L.J. et al. 2014. Decimo Aniversario del proyecto de investigacion sobre la biologia y estado de conservacion de los delfines de Bocas del Toro, Panama. Reporte Tecnico. [http://www.panacetacea.org/uploads/6/6/8/1/6681148/reportproyectodelfines\\_2014.pdf](http://www.panacetacea.org/uploads/6/6/8/1/6681148/reportproyectodelfines_2014.pdf)
- May-Collado, L.J. et al. 2013. Observa, Admira, Proteje: Estado de conservacion de los delfines de Bocas del Toro, Panama del 2004-2012. Reporte Tecnico. <http://www.panacetacea.org/uploads/6/6/8/1/6681148/reportedolphinsbocasfinal2013.pdf>
- May-Collado. 2006. Capitulo X: Mamiferos Marinos. Informe Tecnico Ambientes Marino Costeros de Costa Rica. Comision Interdisciplinaria Marino costera de la zona Economica Exclusiva de Costa Rica. Nielse Munoz, V. y M. A. Quesada Alpizar (eds). [http://www.lauramay-collado.com/uploads/6/6/8/1/6681148/informe\\_tecnico-ambientes\\_marinos.pdf](http://www.lauramay-collado.com/uploads/6/6/8/1/6681148/informe_tecnico-ambientes_marinos.pdf)
- Gamboa-Poveda M. and L. J. May-Collado 2015. Guia para un turismo marino sostenible en Bocas del Toro. [http://www.panacetacea.org/uploads/6/6/8/1/6681148/guia\\_para\\_un\\_turismo\\_marino\\_sostenible\\_en\\_bocas\\_del\\_toro-final2.pdf](http://www.panacetacea.org/uploads/6/6/8/1/6681148/guia_para_un_turismo_marino_sostenible_en_bocas_del_toro-final2.pdf)
- Rasmussen, K., May-Collado, L.J., and J.J. Casas. Panacetacea Newsletter October 2013. [http://www.panacetacea.org/uploads/6/6/8/1/6681148/panacetaceanewsletterfinal2\\_kr\\_10\\_october.pdf](http://www.panacetacea.org/uploads/6/6/8/1/6681148/panacetaceanewsletterfinal2_kr_10_october.pdf)
- May-Collado, L.J. Panacetacea Newsletter July 2013. <http://www.panacetacea.org/documents-for-the-public.html>

- May-Collado, L. J. and S. Quinones-Lebron. 2012. Brochure para informar a los turistas sobre las buenas practicas de observacion comercial de delfines.  
<http://www.panacetacea.org/uploads/6/6/8/1/6681148/brochurerecomendacionesp1.pdf>
- May-Collado, L. J. and S. Quinones-Lebron. 2012. Guidelines for sustainable dolphin watching practices in Bocas del Toro.  
<http://www.panacetacea.org/uploads/6/6/8/1/6681148/brochurerecomendacionesp1-eng.pdf>
- May-Collado, L. J. Bottlenose dolphins brochure.  
<http://www.panacetacea.org/uploads/6/6/8/1/6681148/delfines.pdf>
- May-Collado, L. J. and S. Quinones-Lebron. 2012. Guidelines for sustainable dolphin watching practices in Panama.  
<http://www.panacetacea.org/uploads/6/6/8/1/6681148/brochurerecomendacioneswhalesp1-eng.pdf>

### **Memberships**

Society for Marine Mammalogy  
Acoustical Society of America