

Eva María Salas-De la Fuente, PhD

Adjunct instructor, Cabrillo College

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INTERESTS

Coral Reef Ecology, Biodiversity and Conservation, Ichthyology, Population genomics, Citizen Science

EDUCATION

2016 PhD, University of California Santa Cruz & California Academy of Sciences

2008 Master of Science, Biology, University of Costa Rica
Graduation with honors

2003 Bachelor of Science, Biology, University of Costa Rica

PROFESSIONAL SERVICE

2017-now Adjunct instructor, Cabrillo College. Ulithi youth program leader (Blueecology independent contractor)

2011-2016 University of California Santa Cruz, PhD Candidate and Teaching assistant.

2010-2011 University of Texas at Austin. Teaching assistant of Oceanography and Biology of Fishes.

2008-2010 Fundación MarViva, Biologist. Department of Science & Communities
<http://www.marviva.net/index.php/en/>

2008-now Associate scientist, Fundación KETO. We adapted the Reef Check protocol for the Eastern Pacific indicator species and trained people of Drake Bay, a coastal community in Costa Rica
<http://www.fundacionketo.org/conozcanos.php>

2008 Scientific evaluator for marine fish, IUCN Red List Workshop: Global Species Assessment of Tropical Eastern Pacific fishes, part II. CIMAR, University of Costa Rica (UCR)

2006-2007 Genetics work (for my MSc.) at Dan Heath's lab, Great Lakes Institute of Environmental Research (GLIER), University of Windsor, Windsor ON, Canada.

2001-2005 Research Assistant, Jorge Cortés Lab. Centro de Investigación en Ciencias del Mar y Limnología (CIMAR), Universidad de Costa Rica (UCR)

1999- 2000 Research Assistant in Alvaro Morales lab, CIMAR, UCR, Bahía Culebra zooplankton ecology project.

EXPEDITIONS & FIELD WORK

2014 Cocos Island (Eastern Pacific), CIMAR/Conservation International Expedition. Reef fish and pelagic top predator surveys. Reef fish collection for population genomics.

2014	Saudi Arabia, R/V Thwual cruise. Scientific collection of reef fish
2013	Saudi Arabia, scientific collection of reef fish
2012	Keppel Islands, Australia, scientific collection of reef fish
2007,2008	Belize and Mexico, scientific collection of reef fish
2008	Caño Island, Costa Rica- Eastern Pacific. Reef fish surveys
2007	Cocos Island CIMAR/MarViva expedition. Reef fish surveys.
2006	Costa Rica and Panama's Caribbean, scientific collection of reef fish
2005	Internship "Bermuda Reef Ecosystem Assessment and Mapping" (BREAM), Bermuda Zoological Station. AGRRRA fish and coral surveys
2000-2005	Bahía Culebra, monitoring coral reefs with CIMAR. Parque Marino Ballena (Eastern Pacific) & Islas Catalinas, fish surveys Costa Rica's Caribbean coast (Cahuita, Gandoca, Manzanillo): CARICOMP reef, mangrove and seagrass monitoring with CIMAR
2000	Bahía Culebra plankton surveys with CIMAR

PEER-REVIEW PUBLICATIONS (google scholar profile: 374 citations, h-index: 10, i-10 index: 10)

1. Robitzch, V., Lozano-Cortés, D., Kandler, N.M., **Salas, E.**, Berumen, M. 2015. Productivity and sea surface temperature are correlated with the pelagic larval duration of damselfishes in the Red Sea. *Marine Pollution Bulletin*. Available online Dec 1, 2015.
2. Di Battista, J., Roberts, M., Bouwmeester, J., Bowen, B., Coker, D., Lozano-Cortés, D., Choat, H., Gaither, M., Hobbs, J.P., Khalili, M., Kochzius, M., Myers, R., Paulay, G., Robitzch, V., Saenz-Agudelo, P., **Salas, E.**, Sinclair-Taylor, T., Toonen, R., Westneat, M., Williams, S., Berumen, M. 2015. A review of contemporary patterns of endemism for shallow water reef fauna in the Red Sea. *Journal of Biogeography*. Online Early View. DOI: 10.1111/jbi.12649
3. **Salas, E.**, Montero, A., Sánchez, C. y Martínez, D. 2015. Estructura de las comunidades de peces de arrecife asociadas a la Isla del Caño, Costa Rica. *Revista de Biología Tropical*. 63: 97-116
4. Alvarado, JJ., J. Cortés, M.F. Esquivel and **E. Salas**. 2012. Costa Rica's Marine Protected Areas: status and perspectives. *Revista de Biología Tropical*. 60: 129-142
5. **Salas, E.**, Molina, H., R. P. Walter & D.D. Heath. 2010. Local and Regional Connectivity in a Caribbean Reef Fish. *Marine Biology*. 157:437-445
6. Cortés, J., Fonseca, A., Nivia, J., Nielsen-Muñoz, V, Samper, J. **Salas, E.**, Martínez, S., Zamora-Trejos, P. 2010. Monitoring Coral Reefs, Seagrasses and Mangroves in Costa Rica (CARICOMP). *Revista de Biología Tropical (International Journal of Tropical Biology and Conservation)*. Suppl 3. 1-22
7. **Salas, E.** & JJ Alvarado. 2008. Lista de peces costeros del Parque Nacional Marino Ballena, Costa Rica, con anotaciones sobre su ecología. *Brenesia*. 69: 43-58

8. Paddack MJ, Reynolds JD, Aguilar C, Appeldoorn RS, Beets J, Burkett WE, Chittaro PM, Clarke K, Esteves R, Fonseca AC, Forrester GE, Friedlander AM, García-Sais J, González-Sansón G, Jordan LKB, McClellan D, Miller MW, Molloy P, Mumby PJ, Nagelkerken I, Nemeth M, Navas-Camacho R, Pitt J, Polunin NVC, Reyes-Nivia MC, Robertson DR, Rodríguez Ramírez A, **Salas E**, Smith SR, Spieler RE, Steele MA, Williams ID, Wormald C, Watkinson AR, and Côté IM. 2009. Recent region-wide declines in Caribbean reef fish abundance. *Current Biology*. 19: 590-595.

9. Fonseca, A.C., **E. Salas** & J. Cortés. 2006. Monitoreo del arrecife coralino Meager Shoal, Parque Nacional Cahuita, Costa Rica (sitio CARICOMP). *Revista de Biología Tropical (International Journal of Tropical Biology and Conservation)*. 54: 755-763.

10. Espinoza, M. & **Salas, E.** 2005. Estructura de las comunidades de peces de arrecife en las Islas Catalinas y playa Ocotol, Pacífico Norte de Costa Rica. *Revista de Biología Tropical (International Journal of Tropical Biology and Conservation)*. 53 (3-4). 523-536.

11. Alvarado, J. J., Cortés, J., & **Salas, E.** 2004. Population Densities of *Diadema antillarum* Phillippi at Cahuita National Park (1977-2003), Costa Rica. *Caribbean Journal of Science*. 40: 257-259.

OTHER PUBLICATIONS:

12. **Salas, E.** Ross, E. y Arias, A. 2012. Diagnóstico de las Áreas Marinas Protegidas y Áreas Marinas para la Pesca Responsable en el Pacífico Costarricense. (Diagnosis of Costa Rican Marine Protected Areas in the Pacific Coast) Fundación MarViva, San José, Costa Rica. 174pp. http://www.marviva.net/index.php/es/nuestro-trabajo/publicaciones/cat_view/3-publicaciones/11-ordenamiento-espacial-marino

13. Sánchez Godínez, C., **E. Salas-De la Fuente**, A. Montero-Cordero, D. Martínez – Fernández & D. Palacios Alfaro. 2011. Adaptación del protocolo de monitoreo Reef Check para el Pacífico Oriental Tropical. Fundación Keto. San José, Costa Rica. 25 p. <http://www.scribd.com/doc/61663468/Adaptacion-protocolo-ReefCheck-para-el-Pacifico-Oriental-Tropical-Keto-Costa-Rica>

14. Cortés, J. & **Salas, E.** 2009. Seagrasses. In: J. Cortés and I.S. Wehrtmann (Eds.). *Marine Biodiversity of Costa Rica, Central America*. Ed. Springer.

15. Rodríguez-Ramírez, A., Bastidas, C., Cortés, C., Guzmán, H., Leao, Z., Garzón-Ferreira, J., Kikuchi, R, Padovani-Ferreira, B., Alvarado, J.J., Jiménez, C., Fonseca, A., **Salas, E.**, Nivia, J., Fernández, C., Rodríguez, S., Debrot, D., Cróquer, A., Gil, D., Isabel, D., Navas-Camacho, R., Reyes-Nivia, C., Acosta, A., Alvarado, E., Pizarro, V., SanJuan, A., Herrón, P., Zapata, F., Zea, Z., López-Victoria, M., Sánchez, A. 2008. Status of Coral Reefs and Associated Ecosystems in Southern Tropical America: Brazil, Colombia, Costa Rica, Panamá and Venezuela. In: Wilkinson, C (Ed.). 2008. *Status of the Coral Reefs of the World*, Reef and Rainforest Research Centre, Townsville, Australia, 296 p. http://www.reefbase.org/resource_center/publication/statusreport.aspx?refid=27173

16. **Salas, E.** 2008. Impactos potenciales del proyecto de maricultura oceánica de AQUAPARGOS, S.A., en las poblaciones silvestres de peces y tortugas en Palo Seco-Isla Damas, Pacífico Central. Environmental Impact study.

17. **Salas, E.**, & Sanchez, C. 2008. Associated fish and rocky-coral reefs. In: Assessment of Punta Burica coastal habitats, Fundación Keto. Report for The Nature Conservancy.

18. Cordero, A., **Salas, E.** Martínez, D & Sanchez, C. 2008. Estructura de las comunidades de peces en la Reserva Biológica Isla del Caño y San Josecito, y efecto potencial de las

mismas en la ocurrencia de delfines. Fundacion Keto. Report for Friends of Osa Foundation.

19. **Salas, E.** & Gamboa, S. 2004. El comercio de peces ornamentales marinos: El caso de Cuajiniquil, Guanacaste. Mares Foundation. Report for AVINA Foundation.

WORK IN PROGRESS

Anderson, A., **Salas, E.**, Rocha, L.A., Floeter, S.R. The recent colonization of Southern Brazil by the Azores Chromis (Pomacentridae, *Chromis limbata*). *Submitted to Journal of Fish Biology*.

Salas, E., Bernardi, G., Gaither, M., Berumen, M., Rocha, L.A. RadSeq reveals population structure at different time scales for a coral reef fish. *To be submitted to Proceedings Open Science*.

Salas, E., Saenz-Agudelo, P., Bernardi, G., Berumen, M., Rocha, L.A. Connectivity of *Dascyllus trimaculatus* in the Arabian Peninsula and Red Sea. *In preparation*

Salas, E., Bernal, M., Bernardi, G., Berumen, M., Rocha, L.A. Genomics and subtle color reveal cryptic hybridization in a coral reef fish. *In preparation*

Harrison, H. B., Berumen M.L., Saenz-Agudelo P., **Salas E.**, Williamson D., Jones G.P. Widespread hybridisation and bi-directional introgression in sympatric species of coral reef fish. *Submitted to Molecular Ecology*

JOURNAL REVIEWER FOR:

PLoS ONE, Marine Ecology, Conservation genetics, Ecology and Evolution, Revista de Biología Tropical, Revista de Ciencias Marinas y Costeras (REVMAR)-Universidad Nacional

PRESENTATIONS

2016. 13th International Coral Reef Symposium (ICRS), Hawaii, USA. Oral presentation

2015 Evolution conference, Sao Paulo, Brazil. Oral presentation.

2014 Evolution conference, Raleigh, NC, USA. Poster presentation

2013 American Society of Ichthyologists and Herpetologists (ASIH), New Mexico. Poster presentation

2012 Evolution conference, Ottawa, Canada. Poster presentation

2008 11th International Coral Reef Symposium (ICRS), Ft. Lauderdale, Florida, USA. Oral presentation

2007 33rd Conference of the Association of the Marine Laboratories of the Caribbean (AMLC), St. Thomas, USVI. Oral presentation

2007 Canadian Conference for Fish and Fisheries Research), Montréal, Quebec, Canada (CCFFR). Oral presentation

WORKSHOPS

- 2014 Red Sea Biogeography Workshop. King Abdullah University of Science and Technology (KAUST)
- 2008 Connectivity and protected area management on the Mesoamerican Reef – Lessons to date. Coral Reef Targeted Research Program (CRTR). Ft. Lauderdale, Florida, USA.
- 2008 Coral Reef CSI (Crime Scene Investigation) workshop. ICRAN, ICRI, NOAA initiative. Punta Cana, Dominican Republic.
- 2007 Future Leaders Forum. GEF/World Bank Coral Reef Targeted Research Program. The University of Queensland, Brisbane, Australia.
- 2006 “Connectivity of Mesoamerican Reefs” GEF/World Bank Coral Reef Targeted Research, Connectivity Program. Rosentiel School for Marine and Atmospheric Sciences, University of Miami, USA.

TEACHING

I have participated as a lecturer at Cabrillo College and University of California Santa Cruz (UCSC). I have been a teaching assistant at University of California UCSC, the University of Texas at Austin (UT), UT's Marine Science Institute (UTMSI), and University of Costa Rica (UCR). I was originally a PhD student at UT and later transferred to UCSC.

2017 Adjunct Instructor at Cabrillo College, spring semester: Ecology 11C, Ecology, Evolution and Plant Biology (9B), and Independent Research (80S)- barcoding of Micronesian fishes.

2016 Instructor at Cabrillo College for 9B fall semester (Ecology, Evolution and Plant Biology), Marine Ecology at UCSC (summer) Teaching Assistant BIOE122 Invertebrate Zoology (Winter 2016), Marine Botany (Spring 2016) at UCSC.

2015 Teaching Assistant at UCSC. BIOE122 Invertebrate Zoology (Winter 2015) and Ichthyology BIO127 (Fall 2015)

2014 Teaching Assistant. BIOE108 Marine Ecology, UCSC (Summer 2014)

2012 Teaching Assistant. BIOE 20B Development and Physiology, UCSC (Spring 2012)

2012 Teaching Assistant, Evolution BIOE 109, UCSC (Winter 2012)

2011 Teaching Assistant, Biology of Fishes, UTMSI, Port Aransas (Summer 2011)

2011 Teaching Assistant, Oceanography lab, UT Austin (Spring 2011)

2010 Teaching Assistant, Oceanography lab, UT Austin (Fall 2010)

2005 Invited assistant, UC Education Abroad Program (EAP)- Tropical Biology led by Frank Joyce in Costa Rica (marine field trips). Spring and Fall semesters. Field assistant for student projects and coral reef lectures

2004 Invited assistant, UC Education Abroad Program (EAP)- Tropical Biology in Costa Rica (marine chapter). Fall semester. Field assistant for student projects and coral reef lectures

2004 Invited assistant, Manzanillo field trip, help with fish identification. For Universidad de Costa Rica (UCR) Zoology II class, and for Universidad Latina Zoology class.

2003 Invited assistant, Manzanillo field trip, help with fish identification. For UCR Zoology II class, and for Universidad Latina Zoology class.

2001 Teaching Assistant, Botany I, UCR

MENTORING

I was in the thesis committee of MSc. student Ulises Arrieta Abellán from Universidad Nacional de Costa Rica. He graduated in 2014. His thesis name is "Estructura de la comunidad de peces de la zona arrecifal de Puerto Viejo-Punta Mona, Limón, Costa Rica"

I mentored 6 students from Cabrillo College in two population genomics projects about corals from Micronesia and fish from the Eastern Pacific.

PUBLIC ENGAGEMENT

2017 In the summer I will lead the Ulithi youth program to Micronesia

2016 Wrote in Conservation International blog (Costa Rica chapter) about Costa Rican marine ecosystems and participated in an interview with UNIVISION about latin American scientists working in the USA and a showcase by Conservation International Costa Rica about women in science

Article at CI blog: <http://cicostarica.org/es/nuestra-costa-rica-submarina-es-simplemente-increible/>

Univision article: <http://www.univision.com/noticias/planeta/la-hispana-que-le-hace-prueba-de-paternidad-a-peces-pequenos>

CI showcase in facebook:

<https://www.facebook.com/ConservacionIntlCR/photos/a.719947471348857.1073741828.719695114707426/1154050437938556/?type=3&theater>

2015 Tour guide of Santa Cruz tidepools, tailored for California Academy of Sciences Platinum donors

2014 Participated in a short video of Conservation International Costa Rica, to show our work in Cocos Island to the general public. Video available at: <https://vimeo.com/117284174>

2008 I taught REEF- Field Reef Fish Identification techniques at the classroom and in the field to client divers at Mundo de Aventura Oceánica dive shop, Costa Rica. I also assisted REEF in generating a custom species list for the tropical Eastern Pacific, along with scientist Ana Fonseca. While volunteering with this dive shop, I also developed the curriculum for one-day clases for divers about corals and coral reefs.

2008 As an associate scientist of Fundacion Keto, I spearheaded an initiative of monitoring coral reefs with local communities of Costa Rican South Pacific using the Reef Check initiative. I designed the Project and wrote proposals to get the project moving. We invited a trainer from Reef Check Dominican Republic to train the foundation in the methods. We also developed a list of important species to assess in Reef Check Tropical Eastern Pacific, with aid of local scientists and managers in a round of workshops. I asisted in the initial phases of community training. I also gave talks to the community about local fishes.

2002 Social Work in Ostional, Costa Rica: Natural history classes for kids.

2000-2005 While participating in the Caribbean reef, seagrass and mangrove monitoring (CARICOMP), we always included park rangers and community members in our field work at Cahuita National Park and Gandoca-Manzanillo, to exchange knowledge and involve the community in the monitoring efforts

2000 I was vice-president of Asociacion Mundo Arrecife, a small and local NGO in Costa Rica, that doesn't exist anymore. We trained divers in the north pacific of Costa Rica in fish identification. We also participated in Costa Rican festivals in the Museo de Niños and talked with children about corals and coral reefs. We produced a short video of our work, too.

GRANTS AND FELLOWSHIPS

- 2014 Myers trust award \$1,500 for research expenses
- 2012,2014 UCSC summer travel and research award, \$1,000 in 2012, and \$2,000 in 2014 and 2015, \$5000 in 2016 to attend conferences, field trips related to my research
- 2011-2014 California Academy of Sciences, Lakeside Foundation Scholarship for PhD tuition and living expenses 2011-2014.
- 2009 FOO Friends of Osa Foundation Evergreen, \$1,000 USD Awarded for Coral reef monitoring at Caño Island with community volunteers (Education and outreach), for work with Keto Foundation
- 2009 RAMSAR Wetlands for the future fund (FHF), \$13,030 USD Awarded for Coral reef monitoring at Caño Island with community volunteers (Education and outreach), for work with Keto Foundation
- 2008 PADI Project AWARE grant. US \$2,000 for Coral reef monitoring at Caño Island with community volunteers (Education and outreach), for work with Keto Foundation
- 2007 Friends of Osa Foundation Evergreen Fellowship US \$5,000 for field work for the project "Assessment of reef fish community structure in Caño Island and Bahía Paraiso" to Andrea Montero Cordero, myself and Damián Martínez, Fundacion Keto.
- 2005-2007 United Nations University student fellowship, US \$ 30,000 to cover food, lodging & research for my Master thesis studies.
- 2007 AMLC (Association of Marine Laboratories of the Caribbean) & the University of Puerto Rico, \$400 to attend the AMLC conference
- 2004 CONICIT (Consejo Nacional de Ciencia y Tecnología) –Costa Rica, US \$ 900 to cover partial cost of the course and travel for Belize
- 2004 University of Costa Rica Master degree funding, US \$ 550 to cover partial cost of the course, food and lodging for Belize coral reef fish field course
- 2003 OTS (Organization of Tropical Studies) and STRI (Smithsonian Tropical Research Institute) fellowship, to cover total cost of the course: STRI/OTS Tropical Marine Ecology, held in Bocas del Toro, Panamá

DIVING CERTIFICATIONS & FIRST AID

- 2012 AAUS Scientific diver, depth rating 100ft/NAUI Master diver
- 2010 PADI Divemaster
- 2010 PADI Rescue Diver

2010	PADI Nitrox certification
2010	PADI Underwater photography instructor
2003-2014	PADI First Aid/CPR/Oxygen provider
2003-2014	DAN Oxygen Provider
2002	PADI Advanced Open Water Diver
2000	PADI Open Water Diver

Currently I have logged >500 dives, mostly in tropical waters (Costa Rica, Panama, Belize, Honduras, Mexico, Bermuda, Australia, Virgin Islands, Saudi Arabia, Micronesia), and in cold waters in California. Last dives were in Monterey, 2016.

OTHERS

Reef Check Tropical Pacific instructor
 Beginner dinghy sailor, boating experience with Zodiac small boats

REFERENCES

1. Nicole Crane, Cabrillo College Instructor. nicrane@cabrillo.edu. Nicole can speak about my enthusiasm and development as a teacher and the work I have been participating with her with One People One Reef
1. Luiz Rocha, PhD. PhD thesis supervisor. California Academy of Sciences. L.Rocha@calacademy.org. Luiz can speak about my PhD research and experience with genomics
2. Giacomo Bernardi PhD. PhD thesis co-supervisor. University of California, Santa Cruz bernardi@ucsc.edu Giacomo can speak about my PhD research and experience with genomics and next generation sequencing with fish and corals
3. Helena Molina-Ureña, PhD. Master thesis supervisor. Professor, University of Costa Rica. E-mail: hmolina@rsmas.miami.edu
4. Daniel Heath, PhD. Master thesis reader, he supervised me while I was in Canada. Professor GLIER, University of Windsor, ON Email: dheath@uwindsor.ca
5. Peter F. Sale, PhD. Connectivity working group Chair, Coral Reef Targeted Research and Capacity Building Program (CRTR), United Nations University and University of Windsor, ON. I consider Peter Sale as a career mentor, I met him in Belize in 2005 and he opened many doors for advancing my career as a reef fish ecologist. sale@uwindsor.ca
6. Jorge Cortés-Núñez, PhD. Professor. University of Costa Rica. I was one of his undergraduate research assistants; he has also been a lifetime career mentor. JORGE.CORTES@ucr.ac.cr
7. Marco Quesada, PhD. Director, Conservation International (CI) in Costa Rica chapter. He has seen me working since I started as an undergraduate assistant at CIMAR, University of Costa Rica, and while I worked at the marine NGOs Keto and MarViva. We were also together in the joint expedition between CIMAR and CI at Cocos Island in 2014. mquesada@conservation.org
8. Frank Joyce, Director and Instructor of EAP Costa Rica, Tropical Biology class. I was an invited assistant in his classes (the marine portion of them), he can speak of my interest in teaching outdoors and inspiring students about the ocean. fjoyce@racsa.co.cr, frankjoycejr@gmail.com