

Eva María Salas De la Fuente, PhD

Researcher, FishBio.
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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

2018 Researcher at [FishBio](#).

2017-summer Leader, [Ulithi Youth Action Project](#), with Blueecology and One People One Reef.

2016-now Adjunct instructor, [Cabrillo College](#)

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

2008 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

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

2017 Yap Outer Islands expedition (Micronesia) with One People One Reef team. Coral reef benthic surveys.

2016 Ulithi atoll expedition (Micronesia) with One People One Reef team. Coral reef benthic surveys.

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. AGRRA 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: 520 citations, h-index: 10, i-10 index: 10)

1. Quimbayo, J. P., Dias, M. S., Kulbicki, M., Mendes, T. C., Lamb, R. W., Johnson, A. F., Aburto-Oropeza, O., Alvarado J.J., Bocos, A., Ferreira, C., Garcia, E., Luiz, O., Mascarenas-Osorio, I., Pinheiro, H.T., Rodriguez-Zaragoza, F., **Salas, E.**, Zapata, F., Floeter, S. 2018. *Determinants of Reef Fish Assemblages in Tropical Oceanic Islands*. *Ecography*

2. Anderson, A., **Salas, E.**, Rocha, L.A., Floeter, S.R. 2017. *The recent colonization of Southern Brazil by the Azores Chromis (Pomacentridae, Chromis limbata)*. Journal of Fish Biology.
3. Harrison, H. B., Berumen, M. L., Saenz-Agudelo, P., **Salas, E.**, Williamson, D. H., & Jones, G. P. 2017. *Widespread hybridization and bidirectional introgression in sympatric species of coral reef fish*. Molecular ecology, 26(20), 5692-5704
- 4.. 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.
5. 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
6. **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
7. 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
8. **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
9. 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
10. **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
11. Paddock 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.
12. 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.
13. Espinoza, M. & **Salas, E.** 2005. *Estructura de las comunidades de peces de arrecife en las Islas Catalinas y playa Ocotal, Pacífico Norte de Costa Rica*. Revista de Biología Tropical (International Journal of Tropical Biology and Conservation). 53 (3-4). 523-536.

14. 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:

8. **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.

7. 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.

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

5. 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.

4. **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.

3. **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.

2. 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*. Fundación Keto. Report for Friends of Osa Foundation.

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

PUBLICATIONS IN PROGRESS

Salas, E., Bernardi, G., Gaither, M., Berumen, M., Rocha, L.A. *RadSeq reveals population structure at different time scales for a coral reef fish*. 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

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, U S A .
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, Q u e b e c ,
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, N O A A
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 T a r g e t e d
Research, Connectivity Program. Rosentiel School for Marine and Atmospheric
Sciences, University of Miami, USA.

TEACHING

Instructor, Cabrillo College:

- General Biology (11A).
 - SP 2018
- Ecology (11C).
 - SP 2017
- Plant Biology, Ecology and Evolution (9B).
 - FA2016, SP2017, FA2017, SP2018
- Barcoding of Micronesian fish Research class (80S)
 - SP2017, FA2017, SP2018

Leader, Blueecology field experience

- Ulithi Youth Action Program with [Blueecology](#) and [One People One Reef](#)
 - Summer 2018.

Instructor, University of California Santa Cruz

- Marine Ecology (BIOE108).
 - Summer 2016

Teaching assistant:

- Marine Ecology (BIOE108) UCSC
- Invertebrate Zoology (BIOE122) UCSC, 2 quarters
- Marine Botany (BIOE120L) UCSC
- Evolution (BIOE109) UCSC
- Development and Physiology (BIOE20B) UCSC
- Biology of Fishes (MNS354C) UT Austin
- Oceanography lab (MNS307) UT Austin, 2 semesters
- Botany I (BO237) University of Costa Rica

Others

- Invited assistant, UC Education Abroad Program (EAP), “Tropical Biology” (3 times)
- Invited assistant, reef fish identification, Universidad de Costa Rica
- REEF fish identification classes for recreational divers and tour guides

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 OUTREACH

2016 Wrote Blog at Conservation International about [Costa Rican marine ecosystems](#)

2016 Interviewed at [UNIVISION about my research](#) and experience as a latin American scientist working in the USA

2016 Appeared at Conservation International Costa Rica [facebook page](#), highlighting Costa Rican women in science

2014 Participated in a short video of Conservation International Costa Rica, [about our work in Cocos Island](#)

2008 Worked with scuba dive instructors to teach divers about reef fish identification and coral reefs. Divers also did citizen science, participating in REEF roving diver surveys. Assisted REEF organization to generate a custom species list of fish for the Tropical Eastern Pacific

2008 With Fundacion Keto, we developed a list of important [species to assess in Reef Check Tropical Eastern Pacific reef surveys](#), with aid of local scientists and managers. We did a citizen science project with Drake Bay communities to monitor coral reefs using this protocol.

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 that existed in Costa Rica. 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

- 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
 Begginer dinghy sailor, boating experience with Zodiac small boats
 Appointed at the LiMPETS Science Advisory Committee 2018-2022

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 fish 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, as well as my experience working with One People One Reef
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. 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