

DEGREES

PhD in Environmental Science and Management (September 2017 – Current)

Bren School of Environmental Science & Management – University of California, Santa Barbara

Advisors: Dr. Steven Gaines & Dr. Christopher Costello

Master of Environmental Science and Management. 2017

Coastal Marine Resources Management Specialization

Bren School of Environmental Science & Management – University of California, Santa Barbara

Thesis: A general approach and tool to evaluate the effectiveness of no-take marine reserves

Advisor: Dr. Christopher Costello

Bachelor of Science in Oceanography, *Honors*. 2015

Facultad de Ciencias Marinas – Universidad Autónoma de Baja California (UABC)

Thesis: Latitudinal differences in size-structure of fish populations along the Pacific coast of Baja California

Advisor: M.Sc. Arturo Ramírez-Valdez

PEER-REVIEWED PUBLICATIONS

- In prep. Ramírez-Valdez, A., Montaña-Moctezuma G. Villaseñor-Derbez J.C., Torres-Moye G. (*in prep.*). The forgotten forests: Fish communities in the southern limit of the giant kelp forest in the Northwestern Pacific. Target: *Journal of Biogeography*
- In prep. **Villaseñor-Derbez, J.C.**, Aceves-Bueno E., Suarez-Castillo, A., Fulton, S., Torre, J. Enabling conditions for effective community based marine reserves in small scale fisheries. Target: *Frontiers in Marine Science*.
- In prep. **Villaseñor-Derbez, J.C.** Fitzgerald S. (*in prep.*). Invasive lionfish present region-wide variation of allometric growth in the Western Atlantic. Target: *Peer-J*.
- 2018 Paeke, J., Bogdanoff, A.K., Layman, C.A., Castillo, B., Chapman, J., Dahl, K., Patterson, W., Eddy, C., Ellis, R., Faletti, M., Higgs, N., Johnston, M., Muñoz, R., Sandel, V., **Villaseñor-Derbez, J.C.**, Morris Jr., J.A. (2018). Feeding ecology of invasive lionfish (*Pterois volitans* and *Pterois miles*) in the temperate and tropical western Atlantic. *Biological Invasions*. <https://doi.org/10.1007/s10530-018-1720-5>
- 2018 **Villaseñor-Derbez, J.C.** Faro, C., Wright, M., Martínez, J., Fitzgerald, S., Fulton, S., Mancha-Cisneros, M.M., McDonald, G., Micheli, F., Suárez, A., Torre, J., Costello, C. (2018). A user-friendly tool to evaluate the effectiveness of no-take marine reserves. *PLoS ONE*. <https://doi.org/10.1371/journal.pone.0191821>
- 2016 Hernández-Velasco, A.J., Fernández-Rivera Melo, F.J., Melo-Merino, S.M., **Villaseñor-Derbez, J.C.** (2016). Occurrence of *Holacanthus clarionensis* (Pomacanthidae), *Stegastes leucorus*, and *S. acapulcoensis* (Pomacentridae) at Isla Magdalena B.C.S., Mexico. *Marine Biodiversity Records*, 9(1). <http://dx.doi.org/10.1186/s41200-016-0062-1>

- 2015 Ramírez-Valdez, A., Dominguez-Guerrero, I., Palacios-Salgado, D.S., Cota-Nieto J.J., Hinojosa-Arango G., Correa-Sandoval, F., Reyes-Bonilla, H., **Villaseñor-Derbez, J.C.**, Hernandez, A., Aburto-Oropeza, O. (2015). The nearshore fishes of the Cedros archipelago and their biogeographic affinities, northeastern Pacific. *CalCOFI Reports*, 56
- 2015 Dreyfus M., Mejía-Trejo A., **Villaseñor-Derbez J.C.** (2015). Analysis of null sets (no catch) made by the Mexican tuna seine fleet (2000-2013). *Ciencias Marinas*, 41(2):85-92.
<http://dx.doi.org/10.7773/cm.v41i2.2471>
- 2014 **Villaseñor-Derbez J.C.** & Herrera-Pérez R. (2014). Brief description of prey selectivity and ontogenetic changes in the diet of the invasive lionfish *Pterois volitans* (Actinopterygii, Scorpaenidae) in the Mexican Caribbean. *Pan-American Journal of Aquatic Sciences*, 8(2):131-135

FUNDING

- 2017 *CONACyT International Student's Doctoral Fellowship (2017 – 2021)* (\$146,619 USD)
- 2017 *UC Mexus-CONACyT Doctoral Fellowship (2017 – 2022)*
- 2017 *Latin American Fisheries Fellowship (2017 – 2018)*. Doctoral Fellowship (\$14,352 USD)
- 2017 PADI Foundation Research Grant. Natural history of the giant sea bass (*Stereolepis gigas*) in Mexican waters. With A. Ramírez-Valdez and P. Sgarlatta. (\$ 6,600 USD)
- 2015 *CONACyT International Student's Masters Fellowship*. (\$ 64,946 USD)
- 2015 *Latin American Fisheries Fellowship*. Masters Fellowship (\$ 42,000 USD)
- 2014 *Facultad de Ciencias Marinas, Universidad Autónoma de Baja California*. To attend and present at the XIV National Ichthyology Meeting and III Latin-American Ichthyology Symposium, Morelia, Michoacán, Mexico (\$1,000 USD)
- 2014 *Facultad de Ciencias Marinas, Universidad Autónoma de Baja California*. To attend to the XVIII National Oceanography Conference, La Paz, Baja California Sur, Mexico (1,000 USD)
- 2013 *Scholarship by Comunidad y Biodiversidad*. To attend the Marine Conservation Biology Course, by Comunidad y Biodiversidad, Isla Magdalena, Baja California Sur, Mexico
- 2013 *Fellowship by Asociación Nacional de Oceanólogos (ASOCEAN)*. To perform a research internship at SQUALUS (NGO), Cali, Colombia (\$ 2,000 USD)
- 2012 *Fellowship by Facultad de Ciencias Marinas, Universidad Autónoma de Baja California*. To attend to the XIII National Ichthyology Meeting, Chiapas, Mexico (\$ 1,000 USD)
- 2011 *Scholarship from The School for Field Studies*. To attend the Coastal Ecology Course, by the School for Field Studies, Puerto San Carlos, Baja California Sur, Mexico

SCIENCE COMMUNICATION

- 2018 Hernández-Velasco A., Beas-Luna, R., **Villaseñor-Derbez, J.C.**, Domínguez-Guerrero I., Precoma de la Mora, M., Gómez, A. (2018). Los Bosques Sumergidos de México. *Biodiversitas* 137: 2 - 6
- 2017 Ramírez-Valdez A., Sgarlatta M.P., **Villaseñor-Derbez J.C.**, Rowell T.J., Erisman B., Hernández A. (2017). Buscando al gigante de los bosques de kelp en las aguas de Baja California: el mero gigante. *Mediterranews*. [DOI 10.13140/RG.2.2.17855.82082](https://doi.org/10.13140/RG.2.2.17855.82082)
- 2016 Dreyfus, M., Robles, H., **Villaseñor-Derbez, J.C.** (2016). Distribución espacial de tallas del atún aleta amarilla (*Thunnus albacares*) capturado por la flota atunera mexicana durante el 2001 y 2014. *El Vigía*, 20(43), 5:8.
- 2015 **Villaseñor-Derbez J.C.**, Hernández-Velasco, A., Erauskin, M., Fulton, S., Cota-Nieto, J.J., Torre-Cosío, J., Herzka-Llona, S., Aburto-Oropeza, A. (2015). Effects of short-term marine reserves on grouper and bass populations. *DataMares. InteractiveResource*. <http://dx.doi.org/10.13022/M33K52>
- 2015 Hernández-Velasco, A., **Villaseñor-Derbez, J.C.**, Suárez Castillo, A., Torre Cosío, A., Espinoza, A. (2015). Isla Natividad en la Reserva del Vizcaíno. *Espacio Profundo*, 136: 34-40.
- 2015 Robles H., Dreyfus M., **Villaseñor-Derbez J.C.** (2015). Descargas de la flota atunera mexicana en el Pacífico Oriental en 2014 y su comparación con el período 1992-2013. *El Vigía*, 19(42), 3:5.
- 2014 Ramírez Valdez A., Montaña Moctezuma G., Torres Moya G., **Villaseñor Derbez J.C.**, Aburto-Oropeza O. (2014). Counting fish in the Kelp forests of Baja California. *DataMares. InteractiveResource*. <http://dx.doi.org/10.13022/M3BC7X>

ACADEMIC AWARDS

- 2014 Pedro Mercado Sánchez National Oceanography Award. For the best undergraduate research project presented at the XVIII National Oceanography Conference, La Paz, Baja California Sur, Mexico
- 2014 *2nd Place for the best undergraduate presentation.* 2nd State Meeting of Young Researchers, Tijuana, Baja California
- 2014 Distinguished Student of the Oceanography program
- 2013 *1st Place for the best undergraduate presentation.* 1st State Meeting of Young Researchers, Tijuana, Baja California, Mexico
- 2013 *1st Place for the best undergraduate presentation.* XXI Student Conference at the Facultad de Ciencias Marinas, Ensenada, Baja California, Mexico
- 2012 *2nd Place for the best undergraduate presentation.* XX Student Conference at the Facultad de Ciencias Marinas, Universidad Autónoma de Baja California, Ensenada, Baja California
- 2012 Distinguished Student of the Oceanography program

WORK EXPERIENCE

Independent Consultant – Comunidad y Biodiversidad (COBI) (06/17 – 06/18)

- Developed a web-based application to calculate operational costs of implementing community-based marine reserves.
- Prepared a course and materials to teach marine reserve evaluation methods to environmental managers and NGO members.
- Performed a national-level evaluation of marine reserves in Mexico with case studies from the Gulf of California, Pacific and Caribbean.

Field Assistant & Data Manager – Comunidad y Biodiversidad (COBI), La Paz, Mexico (03/15 - 07/15)

- Coordinated fieldwork to evaluate recovery of voluntarily-established marine reserves along the Baja California Peninsula
- Maintained a database with fish, invertebrate, and algae abundances derived from the underwater ecological surveys performed in the marine reserves
- Enabled communication among fishing community leaders, NGOs, and universities
- Wrote a protocol on how to operate oceanographic instruments used by fishers and staff. Produced 3 brochures, 1 interactive visualization and a peer-reviewed article on occurrences of tropical fish in temperate regions

Independent Consultant – Mexican Tuna Purse Seine Fleet Research Trust (02/2015 – 06/2015)

- Managed a database with information on tuna biometrics and landings from by the Mexican tuna fleet between 1992 and 2014.
- Maintained accurate records for reference by decision makers using the data to regulate fishing quotas and inform policy and management decisions.

Research Intern – Kelp Forest Ecology Research Group, Ensenada, Mexico (12/2011 – 12/2014)

- Performed SCUBA dives for *in situ* fish community sampling (richness, abundance, and estimating lengths) and video-transects for in-lab processing.
- Conducted algae sampling to determine habitat complexity and heterogeneity.
- Supervised dive safety
- Created a MATLAB-based software to capture information from the ecological surveys
- Maintained a database with the group's ecological data of fish species, used in different analyses
- Communicated the group's results to audiences of 20-50 people at local, national, and international scientific conferences

Monitor Diver - Facultad de Ciencias Marinas, Universidad Autónoma de Baja California (08/14)

*Feeding ecology of *Phoca vitulina richardsi* off the coasts of Baja California and Baja California Sur*

Performed SCUBA dives in seal feeding grounds to identify fish species that could be potential prey.

Research Intern - Fundación para el Estudio y Conservación de Condrictios, SQUALUS (06/13 - 08/13)

- Performed studies on sexual maturity, reproduction, and trophic ecology of six elasmobranch species.

On-board scientific observer – CICESE (9/13)

Biological Monitoring Program for Guadalupe Island: White shark observation

- Scientific observer on recreational vessels for white shark observation.
- Taking information on efforts of the activity, social perspective, and etology.

Intern - Facultad de Ciencias Marinas, Universidad Autónoma de Baja California (08/11 – 07/12)

Marine pollution by trace metals off the coasts of Baja California, Mexico

- Field work on collecting water samples for Trace metals, Chlorophylls, Dissolved Organic Carbon, Salinity and Oxygen.
- Lab work analyzing water samples with spectrophotometers, oxygen titration (Winkler's Method) and preparing equipment for future sampling campaigns.

Intern - Centro de Investigación Científica y Educación Superior de Ensenada (CICESE) (3/12)

IMECOCAL #53 (1203) Oceanographic Cruise, FU1203-287 Oceanographic Campaign.

- In charge of performing CTD/LADCP casts and keeping track of navigation logbook.
- Spent 28 days at sea

CONFERENCE PRESENTATIONS

- 2017 **J.C. Villaseñor-Derbez**, C. Faro, M. Wright, J. Martínez, C. Costello. A general approach and tool to evaluate the effectiveness of no take marine reserves. *28th International Congress for Conservation Biology*. July, 2017, Cartagena, Colombia.
- 2014 **J.C. Villaseñor-Derbez**, A. Ramírez-Valdez, G. Montaña-Moctezuma, G. Torres-Moye. Because size matters: Differences in size structure of exploited and unexploited fish populations along the coasts of Baja California, Mexico. *XIV National Ichthyology Meeting and III Latin-American Ichthyology Symposium*. November, 2014, Morelia, Michoacán.
- 2014 Ramírez-Valdez A., Montaña-Moctezuma G., Torres-Moye G., Aburto-Oropeza O., **Villaseñor-Derbez JC**. Biogeographic relationships of fish communities associated to Kelp Forests off the coasts of Baja California, Mexico. *XIV National Ichthyology Meeting and III Latin-American Ichthyology Symposium*. November, 2014, Morelia, Michoacán.
- 2014 **J.C. Villaseñor-Derbez**, A. Ramírez-Valdez, G. Montaña-Moctezuma, G. Torres-Moye. Effects of recreational fisheries over sizes and biomasses of fish associated to Kelp Forests. *2nd State Meeting of Young Researchers*. October, 2014, Tijuana, Baja California. **(Awarded)**.
- 2014 **J.C. Villaseñor-Derbez**, A. Ramírez-Valdez, G. Montaña-Moctezuma, G. Torres-Moye. Latitudinal distribution of sizes of fish associated to Kelp Forests off the coasts of Baja California, Mexico. *XVIII National Oceanography Conference*. June, 2014, La Paz, Baja California Sur. **(Awarded)**.
- 2014 **J.C. Villaseñor-Derbez**, A. Ramírez-Valdez, G. Montaña-Moctezuma, G. Torres-Moye. Latitudinal distribution of sizes of fish associated to Kelp Forests off the coasts of Baja California, Mexico. *XXII Student Conference at the Marine Sciences School and 1st National Student Conference on Marine and Environmental Sciences*. May, 2014, Ensenada, Baja California, Mexico.
- 2014 **J.C. Villaseñor-Derbez**. Description of feeding habits and ontogenetic changes in the invasive lion fish *Pterois volitans* (Linnaeus, 1758) diet off the coasts of Playa del Carmen, Quintana Roo. *1st Student Conference of Biological Sciences*. March, 2014, Ensenada, Baja California, Mexico.
- 2013 **J.C. Villaseñor-Derbez**, G. Montaña-Moctezuma, G. Torres-Moye y A. Ramírez-Valdez. Community relationships of fish associated to Kelp Forests off the coasts of Baja California, Mexico. *1st State Meeting of Young Researchers*. November, 2013, Tijuana, Baja California, Mexico. **(Awarded)**

- 2013 **J.C. Villaseñor-Derbez**, G. Montaña-Moctezuma, G. Torres-Moye y A. Ramírez-Valdez. Community relationships of fish associated to Kelp Forests off the coasts of Baja California, Mexico. *XXI Student Conference at the Marine Sciences School*. May, 2013, Ensenada, Baja California, Mexico. (**Awarded**)
- 2012 **J.C. Villaseñor-Derbez**. Contribution to knowledge of diet and biometrics of the invasive lion fish [*Pterois volitans* (Linnaeus 1758)] off the coasts of Playa del Carmen, Quintana Roo, Mexico. *XIII National Ichthyology Meeting and 1st Latin-American Ichthyology Symposium*. October, 2012, San Cristobal de las Casas, Chiapas, Mexico. DOI: 10.13140/2.1.3483.4889
- 2012 **J.C. Villaseñor-Derbez**. Contribution to knowledge of diet and biometrics of the invasive lion fish [*Pterois volitans* (Linnaeus 1758)] off the coasts of Playa del Carmen, Quintana Roo, Mexico. *XX Student Conference at the Marine Sciences School*. May, 2012, Ensenada, Baja California, Mexico. (**Awarded**)

WORKSHOPS AND COURSES TAUGHT

Introduction to R Markdown (October 2017)

- Audience of ~35 people
- Part of the Eco-data-science workshops series
- Hour-long workshop on the basics of R Markdown to promote transparent research and generate reproducible reports

Evaluation of Marine Reserves in Mexico (July 2017)

- Participation of 12 members from Mexican NGOs and government agencies
- Taught causal inference methods used to evaluate conservation interventions
- Introduced participants to the use of the Marine Reserve Evaluation Application (MAREA)

REEFCheck California monitoring techniques (July 2015)

- Co-taught with Megan Wehrenberg (REEFCheck California) and Arturo Hernández (COBI)
- Instructed members from two fishing communities on scientific diving techniques and species identification in the Kelp Forests of Baja California
- Evaluated performance of divers on the field

MENTORING

External Advisor for Masters Group Theses

- 2018 Project: Procrastination thermometer: economic quantification of delaying management in the Midriff Islands, Mexico
Students: Edaysi Bucio, Seleni Cruz, Vienna Saccomanno, Juliette Verstaen, Valeria Tamayo
- 2018 Project: Guiding insurance instruments to leverage natural infrastructure for climate change resilience
Students: Mario Colon, Daniel Elkin, Lauren Kaapcke, Madison Meltzer, Casey Moorhead

ATTENDED COURSES

BigData (January 2018)

Rstudio::conf(2018L), San Diego, CA

BigData analysis and workflow in R and RStudio, by Edgar Ruiz

Advanced Shiny (January 2017)

Rstudio::conf(2017L), Orlando, FL

Advanced techniques for the development of Shiny Apps with R and R Studio, by developer Joe Cheng

Marine Spatial Planning. (March 2016)

Ecosystem-Based Management Tools Training Event by NatureServe, San Juan, Puerto Rico

Introduction to SeaSketch, a software for collaborative marine spatial planning, by Grace Goldberg

Scientific Monitoring of Fishes Associated to Kelp Forests of *Macrocystis pyrifera* (October 2013)

Instituto de Investigaciones Oceanológicas (IIO), Facultad de Ciencias Marinas (FCM), Universidad Autónoma de Baja California (UABC), Ensenada, Baja California, Mexico

Training on methodology for scientific diving, north oriental Pacific fish species identification, abundance, and length estimations, macroalgae and heterogeneity of substrata. Lecturer: M. Sc. Arturo Ramírez

Marine Conservation Biology Course (Scholarship) (March 2013)

Comunidad y Biodiversidad, Isla Magdalena, Baja California Sur, Mexico.

Natural resource management, social research, society-nature interactions. Lecturers: Andrea Sáenz

Arroyo, Larry Crowder, Elena Finkbeiner

Coastal Ecology Course (Scholarship) (June 2011)

School for Field Studies (SFS) and Center for Coastal Studies

Puerto San Carlos, Baja California Sur, Mexico

Natural resource management, social research, society-nature interactions. Field work on marine ecology projects answering to local issues with different species (e.g. scallop, octopus, sea-lions, sea turtles, mangroves). Director: Dr. Gustavo Hinojosa

SKILLS

Languages

- **Spanish** (Native)
- **English** (Fully fluent; TOEFL iBT: 102)
- **French** (Semi-fluent; DELF A2)

Computing and Software

- **R and RStudio:**
 - 1000+ hours
 - Package development
 - ShinyApp framework
 - R Markdown
 - Machine learning
 - Spatial analyses
- **Git / GitHub:** <https://github.com/jcvdav/>
- **Microsoft Office:** Word, Excel, PowerPoint, Publisher, Outlook
- **MATLAB:** 1000+ hours
- **Tableau:** Creation of dashboards for interactive visualizations

SCUBA

- **PADI** (1500 + Dives):
 - OpenWater Diver
 - Advanced OpenWater Diver
 - Rescue Diver
 - Dive Master
- **TDI:**
 - Sidemount Diver
- **Scientific Diving** (100 + Dives)
 - UABC Scientific Diver
 - Underwater ecological transects and quadrats
 - Identification of fish and invertebrates from the temperate Mexican Pacific and Caribbean