

## DEGREES

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Ph.D. Environmental Science and Management. University of California, Santa Barbara (Est June 2022)

2017 Master of Environmental Science and Management. University of California, Santa Barbara

2015 B. Sc. Oceanography, *Honors*. Universidad Autónoma de Baja California

## ACADEMIC APPOINTMENTS

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2020 - current Graduate Student Researcher. Environmental Markets Solutions Lab. UCSB.

2019 - 2020 Graduate Student Researcher. National Center for Ecological Analysis and Synthesis. UCSB.

2015 - 2016 Data analyst. Mexican Tuna Purse Seine Fleet Research Trust

2011 - 2015 Research Assistant. Kelp Forest Ecology Research Group, Ensenada, Mexico

2013 - 2013 Research Intern. Fundación para el Estudio y Conservación de Condrictios, SQUALUS

2013 - 2013 On-board scientific observer. Fisheries Ecology Lab. CICESE

2012 - 2012 Oceanographic Cruise Research Intern. Oceanography Department. CICESE

## PEER-REVIEWED PUBLICATIONS

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In prep **Villaseñor-Derbez, J.C.** Private economic value of community-based marine reserves

**Villaseñor-Derbez, J.C.** 20 years of community-based marine conservation in Mexico: what do the numbers tell us?

**Villaseñor-Derbez, J.C.**, Costello, C., Bradley D., Mayorga, J.S. Plantinga, A. A global market for marine conservation

In review Millage K., **Villaseñor-Derbez, J.C.**, Bradley D., Burgess M., Lenihan H., Costello C. (*in review*). Self-Financed Marine Protected Areas.

Halpern B., Tuholske C., Blasco G., **Villaseñor-Derbez J.C.**, Frazier M., Caylor K.K. (*conditionally accepted*). Mapping global inputs and impacts from human sewage in coastal ecosystem. PLoS One

- 2021 Ramirez-Valdez, A; Rowell, T J; Dale, K ; Craig, M; Allen, L; **Villaseñor-Derbez, J.C.**; Cisneros-Montemayor, A; Hernández-Velasco, A; Torre, J; Hofmeister, J; Erisman, B. (2021) Asymmetry across international borders: Research, fishery and management trends and economic value of the giant sea bass (*Stereolepis gigas*). *Fish & Fisheries*. <https://doi.org/10.1111/faf.12594>
- 2020 Wilson, M. W., Lawson, J. M., Rivera-Hechem, M. I., **Villaseñor-Derbez, J. C.**, & Gaines, S. D. (2020). Status and trends of moored fish aggregating device (MFAD) fisheries in the Caribbean and Bermuda. *Marine Policy*, 121, 104148.
- Lynham J., Nikolaev A., Rainor, J., Vilela T., **Villaseñor-Derbez J.C.** (2020). Economic Impact of Two of the Largest Protected Areas on Earth. *Nature Communications*. <https://doi.org/10.1038/s41467-020-14588-3>
- Villaseñor-Derbez J.C.**, Lynham J., Costello C. (2020). Environmental Market Design for Large-Scale Marine Conservation. *Nature Sustainability*. <https://doi.org/10.1038/s41893-019-0459-z>
- 2019 **Villaseñor-Derbez, J.C.**, Aceves-Bueno E., Fulton, S., Suarez-Castillo, A., Hernández-Velasco, A., Torre, J., Micheli, F. (2019). An interdisciplinary evaluation of community-based TURF-reserves. *PLoS ONE*. <https://doi.org/10.1371/journal.pone.0221660>
- O'Hara, C. **Villaseñor-Derbez, J.C.** Ralph, G., Halpern, B. (2019). Mapping status and conservation of global at-risk marine biodiversity. *Conservation Letters*. <https://doi.org/10.1111/conl.12651>
- Villaseñor-Derbez, J.C.** Fitzgerald S. (2019). Spatial variation in allometric growth of invasive lionfish has management implications. *PeerJ*. <https://doi.org/10.7717/peerj.6667>
- 2018 Peake, 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>
- 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 leucurus*, and *S. acapulcoensis* (Pomacentridae) at Isla Magdalena B.C.S., Mexico. *Marine Biodiversity Records*. <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*
- 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*. <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

## TEACHING AND MENTORING

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### Teaching Assistant

- 2020 ESM 206 – Introduction to Environmental Data Science & Statistics (100+ students)
- ESM 201 – Ecology of Managed Ecosystems with Professor David Tilman (86 students)
- 2019 ESM 201 – Ecology of Managed Ecosystems with Professor David Tilman (82 students)

### Guest Lectures

- 2020 EEMB 168 – Conservation Ecology – Marine Conservation in Practice (100+ students)
- ESM 206 – Data Analysis and Statistics – “Package-less” coding: Coding in base R (100+ students)
- 2018 ESM 244 – Adv. Data Analysis and Statistics – The development cycle of web-based apps (~70 students)

### Data Science Workshops ([link](#))

- 2021 GNU make and Makefiles for continuous development (and reproducibility) – EcoDataScience Workshop
- 2019 GitHub for Collaboration – EcoDataScience Workshop
- Advanced RMarkdown – LAFF workshop
- 2017 Introduction to R Markdown – EcoDataScience Workshop

### Technical Workshops

- 2019 Evaluation and budgeting of Marine Reserves in Mexico
- 2018 Evaluation of Marine Reserves in Mexico
- 2017 A general approach and tool to evaluate the effectiveness of no-take marine reserves (June, 2017)
- Evaluation of Marine Reserves in Mexico
- 2015 REEFCheck California monitoring techniques (July 2015)

### Masters Group Theses Mentored

- 2020 Project: Marine Extractive Reserve performance in Brazil  
Students: Peyton Moore, Ruben Sanchez-Ramirez, Dylan Glave, Elliott Matthews
- 2019 Project: Assessing Brazil’s Marine Aquaculture Potential  
Students: Caio Della Colleta Vianna, Eva Marrero, Kirby Bartlett, Anna Calle, Sandra Fogg
- 2018 Project: Economic quantification of delaying management in the Midriff Islands, Mexico  
Students: Edaysi Bucio, Seleni Cruz, Vienna Saccomanno, Juliette Verstaen, Valeria Tamayo
- Project: Insurance instruments to leverage natural infrastructure for climate change resilience  
Students: Mario Colon, Daniel Elkin, Lauren Kaapcke, Madison Meltzer, Casey Moorhead

### UCSB Summer Research Mentorship Program for High School students

2018 Project: Small-scale variation in the diet of invasive lionfish  
Student: Alex Reulbach - Currently Marine Bio student at UNC Chapel Hill, John F Bruno Lab

Project: Ontogenetic habitat shifts in invasive lionfish  
Student: Alisha Naidu

Project: Optimal marine reserve design to maximize economic and conservation benefits  
Student: Joseph Sausville

### GRANTS, SCHOLARSHIPS & FELLOWSHIPS

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- 2021 Schmidt Family Foundation Research Grant: *Incentives for Equitable and Cost-effective Marine Conservation*  
  
Institute on Global Conflict and Cooperation Dissertation Fellowship: *Designing Conservation Markets for International Cooperation*
- 2020 H. William Kuni Bren Research Award: *Economic and Ecological responses to global economic shutdowns in coral reef communities*
- 2019 Mohamed bin Zayed Species Conservation Fund: *Unveiling the Ecology of Giant Sea Bass (Stereolepis gigas): Generating knowledge to inform management of a critically endangered fish species*. With Arturo Ramírez-Valdez and Kyla Blincow
- 2018 H. William Kuni Bren Research Award: *The proliferation of Fish Aggregating Devices (FADs) in the Caribbean Sea*. With Molly Wilson, Julia Lawson, and Ignacia Rivera
- 2017 PADI Foundation Research Grant. *Natural history of the giant sea bass (Stereolepis gigas) in Mexican waters*. With A. Ramírez-Valdez and P. Sgarlatta.  
  
*CONACyT International Student's Doctoral Fellowship*  
  
*UC Mexus-CONACyT Doctoral Fellowship*  
  
*Latin American Fisheries Fellowship* Doctoral Fellowship
- 2015 *CONACyT International Student's Masters Fellowship*.  
  
*Latin American Fisheries Fellowship*. Masters Fellowship.

### INVITED TALKS AND CONFERENCE PRESENTATIONS (\*Indicates awarded)

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- 2019 **Villaseñor-Derbez J.C.**, Rivera-Hechem M.I., Wilson, M. W., Lawson, J. M. & Gaines, S. D. Status and trends of moored fish aggregating device (MFAD) fisheries in the Caribbean and Bermuda. *72th GCFI*
- \*Villaseñor-Derbez J.C.**, Lynham J., Costello C. Change in behavior and effort redistribution after implementation of Large Scale Marine Protected Areas. *Future Oceans2*

- 2018 **Villaseñor-Derbez, J.C.**, Aceves-Bueno E., Fulton, S., Suarez-Castillo, A., Hernández-Velasco, A., Torre, J., Micheli, F. Effectiveness of community-based marine reserves in small-scale fisheries. *3<sup>rd</sup> World Small-Scale Fisheries Conference*
- 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. *28<sup>th</sup> International Congress for Conservation Biology*.
- 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*.
- Ramírez-Valdez A., Montaña-Moctezuma G., Torres-Moye G., Aburto-Oropeza O., **Villaseñor-Derbez J.C.** 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*.
- 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. *2<sup>nd</sup> State Meeting of Young Researchers*.
- \*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*.
- \*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 1<sup>st</sup> National Student Conference on Marine and Environmental Sciences*.
- J.C. Villaseñor-Derbez**. Description of feeding habits and ontogenetic changes in the invasive lionfish *Pterois volitans* (Linnaeus, 1758) diet off the coasts of Playa del Carmen, Quintana Roo. *1<sup>st</sup> Student Conference of Biological Sciences*.
- 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. *1<sup>st</sup> State Meeting of Young Researchers*
- 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*
- 2012 **J.C. Villaseñor-Derbez**. Contribution to knowledge of diet and biometrics of the invasive lionfish [*Pterois volitans* (Linnaeus 1758)] off the coasts of Playa del Carmen, Quintana Roo, Mexico. *XIII National Ichthyology Meeting and 1<sup>st</sup> Latin-American Ichthyology Symposium*
- \*J.C. Villaseñor-Derbez**. Contribution to knowledge of diet and biometrics of the invasive lionfish [*Pterois volitans* (Linnaeus 1758)] off the coasts of Playa del Carmen, Quintana Roo, Mexico. *XX Student Conference at the Marine Sciences School*

## WORKING GROUPS

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- 2019 Palau's National Marine Sanctuary: Managing Ocean Change and Supporting Food Security. NCEAS
- 2017 Marine Spatial Planning in Baja California: Connecting MPA networks in a transboundary context. COBI
- 2017 Defining Ecological indicators for the evaluation of marine protected areas. COBI / TNC
- 2016 Defining Socioeconomic indicators for the evaluation of marine protected areas. COBI / TNC

## ACADEMIC SERVICE

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### Referee Activity

Ecological Modelling, Frontiers in Marine Science, Gulf and Caribbean Research, Bulletin of Marine Science, Nature Sustainability

### Committies

- 2020 MEDS Faculty Search. Bren School of Environmental Science & Management, UCSB
- 2019 Dean's Advisory Council. Bren School of Environmental Science & Management, UCSB
- 2018 PhD Symposium organization committee. Bren School of Environmental Science & Management, UCSB
- 2014 Student Conference Organizer. Facultad de Ciencias Marinas. UABC
- 2013 Student Council. Facultad de Ciencias Marinas. UABC

## SCIENCE COMMUNICATION

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- 2020 **Villasenor-Derbez, J.C.** El Pez León invasor en el Caribe Mexicano. (2020). Biodiversitas 149: 2- 6
- 2018 Hernández-Velasco A., Beas-Luna, R., **Villasenor-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., **Villasenor-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. Mediterraneanews. [DOI 10.13140/RG.2.2.17855.82082](https://doi.org/10.13140/RG.2.2.17855.82082)
- 2016 Dreyfus, M., Robles, H., **Villasenor-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 **Villasenor-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. Interactive Resource*. <http://dx.doi.org/10.13022/M33K52>  
  
Hernández-Velasco, A., **Villasenor-Derbez, J.C.**, Suárez Castillo, A., Torre Cosío, A., Espinoza, A. (2015). Isla Natividad en la Reserva del Vizcaíno. *Espacio Profundo*, 136: 34-40.

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 Moye G., **Villaseñor Derbez J.C.**, Aburto-Oropeza O. (2014). Counting fish in the Kelp forests of Baja California. *DataMares. Interactive Resource*.  
<http://dx.doi.org/10.13022/M3BC7X>

## NON-ACADEMIC APPOINTMENTS

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- 2021      Independent Consultant
- Bioeconomic estimation and simulation of costs and benefits of select community-based marine reserves
  - Review of 20 year of community-based marine conservation in Mexico
  - Evaluation of fisheries subsidies in small-scale fisheries
- 2018      Independent Consultant
- Web-app development to calculate operational costs of implementing community-based marine reserves.
- 2018      Independent Consultant
- Prepared materials and taught three courses on marine reserve evaluation methods to environmental managers and NGO members.
- 2017      Independent Consultant
- Performed a national evaluation of marine reserves in Mexico with case studies from the Gulf of California, Pacific and Caribbean.
- 2015      Field Assistant & Data Manager. Comunidad y Biodiversidad (COBI)
- Coordinated fieldwork to evaluate voluntarily-established marine reserves along Baja California
  - Produced 3 brochures, 1 interactive visualization and a peer-reviewed article on occurrences of tropical fish in temperate regions

## DATA SCIENCE SKILLS

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**R and RStudio:** Numerical simulation, Spatial analyses (vector, raster), Machine learning (tidymodels), BigData (sparklyr, data.table), Package development, ShinyApp framework, R Markdown, Unit Testing, Continuous Development and Integration

**Git & GitHub:** <https://github.com/jcvday/>

**Google Cloud:** BigQuery (Standard SQL), ComputeEngine, Google Suite Utilities

### Software development:

- startR – and R-package for internal workflow management: [emlab-ucsb.github.io/startR/](https://github.com/emlab-ucsb/startR/)
- CostApp – A web-based app to estimate costs of marine-reserve implementation:  
[innovacionazul.shinyapps.io/AppCosteo/](https://innovacionazul.shinyapps.io/AppCosteo/)
- The Marine Reserve Evaluation App (MAREA) – A web-based app to evaluate conservation interventions:  
[innovacionazul.shinyapps.io/MAREA](https://innovacionazul.shinyapps.io/MAREA)

### DataScience leadership:

- EcoDataScience: Organize workshops and maintain website; Group of 250+ members: [eco-data-science.github.io](https://eco-data-science.github.io)

- ERRE – A blog about “Rstats”, in Spanish: [erre-esp.org](http://erre-esp.org)

## **OTHER SKILLS**

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### **Languages**

- **Spanish** (Native)
- **English** (Fluent; TOEFL iBT: 102; graduate school completed in English)
- **French** (Basic; DELF A2 certification)

### **SCUBA certifications**

- PADI Open Water Diver – 2007
- PADI Advanced Open Water Diver – 2007
- PADI Rescue Diver – 2008
- FCM-UABC Scientific Diver - 2011
- TDI Side mount Diver – 2016

## **AFFILIATIONS TO ORGANIZATIONS**

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Society for Conservation Biology, Asociación de Oceanólogos de México, North American Association of Fisheries Economists.