Marc James Simon Hensel

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EDUCATION

2020	**University of Massachusetts Boston**	Ph.D. Biology
2013	**University of Florida**	M.S. Zoology
2010	**University of Florida**	B.S. Zoology, Wildlife Ecology & Conservation

APPOINTMENTS

2024 – present	*Early Career Fellow*, Gulf Research Program, **National Academy of Sciences**
2024 – present	Affiliated Faculty: UF School for Natural Resources and the Environment, UF Center for Coastal Solutions
2024 – present	*Research Assistant Professor*, Joint Appointment: Nature Coast Biological Station; Dept of Soil, Water, and Ecosystem Sciences, **University of Florida**.
2020 - 2023	*Post-doctoral Research Associate*, **College of William & Mary, Virginia Institute of Marine Science**
2020	*Post-doctoral Researcher*, **Duke University**

PUBLICATIONS

Published or Accepted

Morton, J., **Hensel, M.J.S**, et al. 2024. Mesopredator release moderates trophic control of plant biomass in a Georgia salt marsh. *Ecology.*

Silliman, B.R.S., **Hensel, M.J.S**, et al., 2024. Harnessing ecological theory to enhance ecosystem restoration. *Current Biology*.

Smith, C.S., Zhang, Y.S., **Hensel, M.J.S**, Pennings, S.C., and B.R. Silliman. 2024. Long-term data reveal that consumer density mediates climatic stress in salt marshes. *Ecology Letters.*

Petillon, J., McKinley, E., Alexander, M., Adams, J.B., Angelini, C., Balke, T., Griffin, J.G., Bouma, T., Hacker, S., He, Q., **Hensel, M.J.S.,** et al. 2023. Top ten priorities for global saltmarsh restoration, conservation, and ecosystem service research. *Science of the Total Environment*. 165544.

Hensel, M.J.S., Patrick, C.J., Orth, R.J., Wilcox, D.J., Dennison, W.C., Gurbisz, C. Hannam, M., Landry, B., Moore, K, Murphy, R., Testa, J., and J.S. Lefcheck. 2023. Rise of *Ruppia* in Chesapeake Bay: climate-change driven turnover of foundation species creates new threats and management opportunities. *Proceedings of the National Academy of Sciences.*

Patrick, C.J., Kominoski, J.S., McDowell, W.H., Branoff, B., Lagoamsino, D., Leon, M., Hensel, E., **Hensel, M.J.S.,** Strickland, B.A., et al., 2022. A general pattern of trade-offs between ecosystem resistance and resilience to tropical cyclones . *Science Advances.* 8(9)

Hensel, M.J.S., Silliman, B.R., Hensel, E. and J.E.K. Byrnes. 2022. Feral hogs control brackish marsh plant communities over time *Ecology.* 103(2)

Hensel, M.J.S., Silliman, B.R., van de Koppel, J., Hensel, E., Sharp, S.J., Crotty, S.M., and J.E.K. Byrnes. 2021. A large invasive consumer reduces coastal ecosystem resilience by disabling positive species interactions. *Nature Communications.* 12.

Bates, A.E., **et al.,** 2021. Global COVID-19 lockdown higlights humans as both threats and custodians of the environment. *Biological Conservation.* 263. 109-75

Angelini, C., van Montfrans, S.G., **Hensel, M.J.S.**, He, Q., and B.R. Silliman. 2018. The importance of an underestimated grazer under climate change: how crab density, consumer competition and physical stress affect salt marsh resiliance. *Oecologia.* 187 (1), 205-217

Elahi, R., O'Connor, M.I., Byrnes, J.E.K., Dunic, J., Eriksson, B., **Hensel, M.J.S.**, and P. Kearns. 2015. Recent trends in local-scale marine biodiversity reflect community structre and human impacts. *Current Biology.* 25 (14) 1938-1943

Lefcheck, J.S., Byrnes, J.E.K., Isbell, F., Gamfeldt, L., Griffin, J.N., Eisenhauer, N., **Hensel, M.J.S.**, Hector, A., Cardinale, B. J., and J.E. Duffy. 2015. Biodiversity enhances ecosystem multifunctionality across trophic levels and habitats. *Nature Communications*. 6.

Soomdat, N.N*., Griffin, J.N., McCoy, M.W., **Hensel, M.J.S**, Buhler, S*., Chejanovski, Z.*, and B.R. Silliman. 2014. Independent and combined effects of multiple predators across ontogeny of a keystone grazer. *Oikos.* 123 (9), 1081-1090

Hensel, M.J.S., and B.R. Silliman. 2013. Consumer diversity across kingdoms supports multiple functions in a coastal ecosystem. *Proceedings of the National Academy of Sciences.* 110(51):20621–20626.

*indicates undergraduate researcher

Submitted, in review, or revision

Silliman, B.R.S., **Hensel, M.J.S**, et al., 2025. *in revision*. Ecosystem Cultivation. Invited special essay in *Current Biology*.

Silliman, B.R.S., **Hensel, M.J.S**, et al., 2025. *in review*. Ecosystem Technology. Invited special essay in *Current Biology*.

GRANTS AND AWARDS

2024. *pending* NOAA RESTORE Science Program $3,950,213 (co-lead PI with Dr. Maitane Olabarrieta, Dept of Environmental Engineering, UF)

2024. National Academy of Sciences, Gulf Scholars Program Early Career Fellowship $76,000

2024. UF Gulf Scholars Program Course Development Grant $4,000

2021. EPA Chesapeake Bay Trust Climate Change Goal Implementation Team $75,000

2018. Sanolfi Graduate Research Fellowship $10,000

2017. UMass Boston International Studies Seed Funding Grant $2,000

2016. Sanolfi Graduate Research Fellowship $10,000

2016. Nantucket Biodiversity Initiative Grant $1,000

2015. Nantucket Biodiversity Initiative Grant $2,000

2014. Massachusetts Sea Grant Research Grant (co-PI w J.Byrnes, UMass Boston) $125,000

2013. UMass Goranson Research Grant $500

2012. Graduate Research Fellowship, NOAA/NERR $60,000

2009. University of Florida University Scholars Program $2,500

TEACHING AND MENTORSHIP

Teaching

2025 *scheduled*. Professor, Paradigms of Ecology and Conservation (UF, TBA graduate students).
This hybrid online and in-person SNRE course will outline both the genesis of foundational ecological principles and advancements in modern ecology. Students will interact with course material through a conservation lens as we synthesize the holy trinity of approaches (field observations, controlled experiments, and mathematical exploration) to understand important ecological paradigm shifts over time.

2025. Professor, Gulf of Mexico Field Ecology (UF, ~20 undergraduate students).
As part of the first set of offered courses for the UF Gulf Scholars Program, this field course and lecture hybrid course will offer undergraduate students a chance to explore the coastal

ecosystems of the Gulf of Mexico. Students will conduct independent projects in the final half of the semester.

2017. Teaching Assistant, Biological Statistics (UMass Boston, 15 students).
Created and graded assignments in R, built structure for remote learning that was eventually utilized during the pandemic

2016. Teaching Assistant, Structural Equation Modeling (Swansea University, Wales, 15 students)
Assisted Dr Byrnes in a visiting Structural Equation Modeling class and workshop in Swansea with students from the UK, France, and Germany

2015. Course Organizer, Teaching Assistant, Marine Biology and Ecology (UMass Boston, 24 students)
Built a semester-long field course from scratch, created field-based labs including field data collection and analyses, biogeochemical data collection and analyses, advised undergraduate independent projects including final project presentations

2013. Teaching Assistant, Introduction to Biology (UMass Boston, 55 students)
Taught introductory biology principles to the most diverse student body in Boston

2013. Visiting Faculty, Tropical Marine Ecology Field Course in San Salvador (UVA, 28 students)
Invited by Drs Fred Diehl and Dave Smith from UVA as faculty for 2 week field course, led field excursions, taught lectures in rocky shore ecology and salt marsh ecology

2013. Course Organizer, Head Teaching Assistant, Tropical Marine Ecology Field Course in San Salvador and Seahorse Key (UF, 21 students)
Organized full logistics to get 21 undergraduates from Gainesville to The Bahamas, developed lesson plans including both lecture and field trips into Caribbean ecosystems, assembled guest faculty from UVA, UF, and Cal State Chico to teach lectures, taught lectures in rocky shore ecology, salt marsh ecology, and coral reef herbivory

2012. Teaching Assistant, Tropical Marine Ecology Field Course in San Salvador and Seahorse Key (UF, 24 students)
Aided head teaching assistant in planning logistics, led field trips, taught lectures in rocky shore ecology and salt marsh ecology

2011. Teaching Assistant, Tropical Marine Ecology Field Course in San Salvador, Bahamas and Seahorse Key (UF, 19 students)
Aided head teaching assistant in planning logistics, led field trips

2012. Teaching Assistant, General Ecology (UF, 55 students)
Taught two sections of this advanced undergraduate course, led field trips, advised students on independent research projects

2011. Teaching Assistant, Introduction to Biology (UF, 60 students)

Taught two sections of biology lab to undergraduates

2010. Teaching Assistant, Introduction to Biology (UF, 90 students)
Taught three sections of biology lab to undergraduates

Students Mentored (Degree conferred; institution)

Danielle Keller (PhD; University of North Carolina)

Alvin Beyerlein (MS; University of Florida)

Eric Monaco (MD; University of South Florida)

Matt Souza (MS; University of the Virgin Islands)

Alex Walus (MS; Michigan State University)

Barbara Arya (RN; UMass Boston).

Lauren Alvaro (MS; Virginia Institute of Marine Science)

Aly Hall (current PhD candidate; Virginia Institute of Marine Science)

Alvio Barbaretta (current PhD student; Florida Gulf Coast University)

Kay Schlachter (current PhD student; UF)

Alex Walus (current PhD student; UF)

Miranda Mays (current undergraduate; UF)

PRESENTATIONS

Invited Presentations:

2024. **Hensel, M.J.S.** Causes and Consequences of Climate-Induced Species Shifts for Seagrass Management. University of Florida School for Natural Resources and the Environment Research Symposium. Gainesville, FL.

2024. **Hensel, M.J.S.**, An uncertain future for seagrasses, our underwater coastal gardens. Florida Federation of Garden Clubs, Inc. 100th Anniversary Conference, Invited Seminar, Jacksonville, Florida.

2024. **Hensel, M.J.S.**, Global change, novel environments, and the uncertain future of coastal ecosystems. School for Natural Resources and the Environment & Soil, Water, and Ecosystem Sciences Co-Hosted Invited Seminar, University of Florida.

2023. **Hensel, M.J.S.**, Global change, novel environments, and the uncertain future of coastal ecosystems. Biology and Marine Biology Department Invited Seminar, University of North Carolina Wilmington.

2022. **Hensel, M.J.S.,** Patrick, C.J., Wilcox, D., and J.L. Lefcheck. Envisioning the future of Chesapeake Bay SAV under climate change. Invited Research Talk, Chesapeake Bay Foundation, Annapolis, Maryland.

2021. **Hensel, M.J.S**, and M. Roy. The role of species expansions and predator-prey dynamics in Nantucket salt marshes. Nantucket Island-wide Research Talk, UMass Boston Field Station.

2020. **Hensel, M.J.S.** The role of invasive megaconsumers in controlling structure, function, and resilience of coastal marshes. Institutional Seminar, Virginia Institute of Marine Science.

2016. **Hensel, M.J.S.** Cross-ecosystem predators drive community structure and ecosystem functioning of coastal Atlantic marshes. Biology Department Seminar, UMass Boston. Boston, MA.

2015. **Hensel, M.J.S.,** and J.E.K. Byrnes. Cross-ecosystem predators drive marsh community structure and ecosystem multifunctionality. Nantucket Biodiversity Initiative Research Symposium.

2013. **Hensel, M.J.S.** Consequences of coral reef consumer loss on reef ecosystem structure and function. Guest lecture, UMass Boston Marine Ecology class.

Contributed Presentations:

2024. Mays, M.M.** and **M.J.S. Hensel**. Change in Vegetation in the Cedar Keys over Time. University of Florida School for Natural Resources and the Environment Symposium. Gainesville,FL. (Honorable Mention: Best Poster)

2024. Patrick, C.J., **Hensel, M.J.S.,** Wilcox, D., and J.L. Lefcheck. Climate change, shifting seagrass, and the future of Chesapeake Bay underwater grasses. Benthic Ecology Meeting, Savannah, GA.

2023. Patrick, C.J., Peterson, B., Martin, C.W., Fodrie, J., **Hensel, M.J.S.,** Lusk, B., Collins, B and R. J. Orth. Seagrass after hours: night-time surveys through time across a latitudinal gradient reveal distinct communities. Coastal and Estuarine Research Foundation, Portland, OR.

2023. Landry, B., **Hensel, M.J.S.,** Lefcheck, J.S., Golden, B.L, Wilcox, D., and C.J. Patrick**.** Leaning into the Anthropocene: Managing SAV in the nation's largest estuary. Coastal and Estuarine Research Foundation, Portland, OR.

2023. **Hensel, M.J.S.,** Wilcox, D., Lefcheck, J.L., and C.J. Patrick. Climate change and active habitat management will shape the future of Chesapeake Bay underwater ecosystems. Benthic Ecology Meeting, Miami, FL.

2023. Alvaro, L.*, **Hensel, M.J.S.,** and C.J. Patrick. Seagrass species shifts change invertebrate and fish community structure. Benthic Ecology Meeting, Miami, FL.

2022. **Hensel, M.J.S.,** Wilcox, D., Lefcheck, J.L., and C.J. Patrick. Envisioning the future for Chesapeake Bay seagrasses under climate change. International Seagrass Biology Workshop and World Seagrass Meeting, Annapolis MD.

2022. Alvaro, L.*, **Hensel, M.J.S.,** and C.J. Patrick. Climate-mediated shifts in foundation species affects community structure. International Seagrass Biology Workshop and World Seagrass Meeting, Annapolis MD.

2022. Patrick, C.J., **Hensel, M.J.S.,** Lusk, B., Collins, B., and R.J. Orth. Eelgrass after hours: Night-time surveys reveal a hidden component of a well-studied seagrass meadow. Benthic Ecology Meeting, Portsmouth, NH.

2021. **Hensel, M.J.S.,** Lefcheck, J.S., Orth, R.J., and C.J. Patrick**.** Multi-decadal climate change-driven turnover of dominant foundation seagrass species creates new threats and opportunities for coastal habitat management in the Chesapeake Bay. Coastal and Estuarine Research Foundation.

2018**. Hensel, M.J.S.,** Silliman, B.R.S., Hensel, E., Sharp, S., Crotty, S., and J.E.K. Byrnes. An invasive megaconsumer weakens salt marsh resilience and recovery by reversing salt marsh positive interactions. Ecological Society of America Meeting, New Orleans, LA.

2017. **Hensel, M.J.S.**, and J.E.K. Byrnes. Cross-ecosystem consumers control New England salt marsh community structure and ecosystem multifunctionality. Benthic Ecology Meeting, Myrtle Beach, SC

2016. **Hensel, M.J.S.**, Buhler, S., Silliman, B.R.S, and J.E.K. Byrnes. An invasive megaconsumer slows salt marsh recovery and decreases resilience. Benthic Ecology Meeting, Portland ME

2014. **Hensel, M.J. S.**, Angelini, C., Nifong, J.C., van Montfrans, S.G. and Silliman, B.R. Oceanographic gradients drive adult invertebrate densities in a marine estuary. Benthic Ecology Meeting, Jacksonville FL.

2013. **Hensel, M.J. S**., and Silliman, B.R. Cross-kingdom consumer diversity enhances multifunctionality of a coastal ecosystem. Benthic Ecology Meetings, Savannah GA.

2013. **Hensel, M.J. S.**, Angelini, C., Nifong, J.C., van Montfrans, S.G. and Silliman, B.R. Oceanographic gradients drive adult invertebrate densities in a marine estuary. University of Florida Marine Biology Symposium.

2012. **Hensel, M.J. S.,** and B.R. Silliman. Multiple consumers and multiple functions: investigating the consumer-microbe connection. Benthic Ecology Meetings, Norfolk VA.

*indicates graduate student researcher
** indicates undergraduate student researcher

SERVICE AND SYNERGISTIC ACTIVITIES

Grant reviewer for:

National Science Foundation (NSF), Panelist for NOAA Effects of Sea Level Rise

Manuscript reviewer for:

Global Change Biology, Ecology, Ecology Letters, Ecology and Evolution, Estuaries and Coasts, Journal of Ecology, Oecologia, Oikos, MEPS, Frontiers in Marine Science.

Outreach

2024-present. Organizing Committee Member, Northeast Florida Marine Science Symposium. Organize, set schedule, recruit speakers, and facilitate the marine science symposium. This 2 day meeting heavily features student research and provides an opportunity for early career ecologists to present their research in a local setting.

2024-present. Faculty Mentor, Nature Coast Biological Station Internship Program. Mentor for UF undergraduate researchers each summer.

2020-present. Member of Chesapeake Bay Program SAV Workgroup. Annual presentations and discussions with other researchers and managers in the Chesapeake Bay. Communicate research directly to habitat managers and conservation scientists in the Bay.

2014-2016. Participant in Nantucket Biodiversity Initiative. Taught Nantucket Conservation Foundation staff new salt marsh food web monitoring techniques to build a master species list for the island's marshes. Took 30 different NBI participants on an annual marsh walk to learn species and discuss Nantucket marsh ecology and conservation.

2009-2013. Participant in NSF Schoolyard project. Worked with over 50 elementary, middle, and high school science teachers in an annual, week-long workshop exposing them to field biology and helping them to develop ideas for their classroom. Developed curricula and ideas for hands on labs for teachers.

REFERENCES

Brian R. Silliman, Masters and Post-doc Advisor
Rachel Carson Associate Professor of Marine Conservation Biology
Duke University
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