Kristy A. Lewis

Curriculum vitae 2023 September

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PROFESSIONAL PREPARATION

Ph.D. Department of Oceanography and Coastal Sciences, 2014

Louisiana State University, Baton Rouge, LA

M.A. Environmental Studies-Conservation Biology and Management, 2008

Prescott College, Prescott, AZ

B.S. Biology, 2000

Shorter University, Rome, GA

PROFESSIONAL APPOINTMENTS

2023 – Present	Assistant Professor (tenure track) Graduate School of Oceanography University of Rhode Island, Narragansett, RI
2018 – 2023	Assistant Professor (tenure track) Director, National Academies of Sciences UCF Gulf Scholars Program National Center for Integrated Coastal Research Department of Biology University of Central Florida, Orlando, FL
2022 -2023	Faculty Cluster Initiative Faculty Fellow Office of Research University of Central Florida, Orlando, FL
2016 – 2021	Affiliate Professor Department of Environmental Science and Policy George Mason University, Fairfax, VA
2017 – 2018	Assistant Professor (tenure track) Department of Biology St. Mary's College of Maryland, St. Mary's City, MD
2016 – 2017	Visiting Assistant Professor Department of Biology St. Mary's College of Maryland, St. Mary's City, MD

2014 - 2016 Postdoctoral Research Fellow
Department of Environmental Science and Policy
George Mason University, Fairfax, VA
PI: Kim de Mutsert

PUBLICATIONS

(*Indicates graduate students, otherwise authors listed in order of effort)

Peer Reviewed Referred Publications

In Production *	Shaffer, M., Mariott, S., Lewis, K.A., Buszowski, J., De Mutsert, K Action
S	cience in Practice: co-production of a decision support tool visualizing effects of
n	utrient and hypoxia reduction goals on fisheries species. Marine and Coastal
F	isheries.
<u>2023</u> *:	Devillier, V., Hall, E.R., Anderson, D.A., Lewis, K.A. Exposure of Blue Crab

- *Devillier, V., Hall, E.R., Anderson, D.A., **Lewis, K.A.** Exposure of Blue Crab (*Callinectes sapidus*) to Clay Treatment of *Karenia brevis* as a Bloom Control Strategy. *Harmful Algae. Volume 128, 102492*
- *Allen, K., Garwood, J., Hu, K., Meselhe, E., **Lewis, K.A.** Synergistic impacts of climate change and human induced stressors on a northern Gulf of Mexico estuarine food web. *Frontiers of Marine Science*. 10:1213949.
- *Allen, K., Idhe, T., Knoche, S., Townsend, H., **Lewis. K.A.**. Simulated climate change impacts on striped bass, blue crab and Eastern oyster in oyster sanctuary habitats of Chesapeake Bay. *Estuarine, Coastal, and Shelf Science*. Volume 292, 108465
- Manuel, L., Meselhe, E., Kleiss, B., **Lewis, K.A.**, Madill, H., Allison, M, Giordano, S.. A roadmap to the co-production of a decision support tool for coastal ecosystems. *Environmental Science and Policy 144: 31-42*.
- Garwood, J., *Allen, K., Lamb, **Lewis, K.A.**, Harper, J., Edmiston, L. Using long-term ecological monitoring to evaluate how climate and human induced disturbances impact nekton communities in a Northern Gulf of Mexico estuary. *Hydrobiologia*, https://doi.org/10.1007/s10750-023-05206-6.
- Lewis, K.A., Christian, R. C., Martin, C.W., *Allen, K., McDonald, A.M., *Roberts, V., *Shaffer, M., Valentine, J.F.. Complexities of disturbance response in a marine food web. *Limnology & Oceanography:* Special Issue: Nonlinear dynamics, resilience, and regime shifts in aquatic communities and ecosystems. 67 S352 S364.

- Harris, L.A., Grayson, T., Neckles, H.A., Emrich, C.T., **Lewis, K.A.,** Grimes, K.W., Williamson, S., Garza, C., Whitcraft, C.R., Pollack, J., Talley, D.M., Fertig, B., Palinkas, C.M., Park, S., Vaudrey, J.M.P., Fitzgerald, A.M., Quispe, J.. A Socio-Ecological Imperative for Broadening Participation in Coastal and Estuarine Research and Management. *Estuaries and Coasts:* **45**, 38 48.
- Steenbeek, J., Buszowski, J., Chagaris, D., Christensen, V., Coll, M., Fulton, E.A., Katsanevakis, S, **Lewis, K.A.**, Mazaris, A.D., Macias, D., De Mutsert, K., Oldford, G., Pennino, M.G., Piroddi, C., Romagnoni, G., Serpetti, N., Shin, Y., Spence, M.A., Stelzenmüller, V.. Making spatial-temporal marine ecosystem modelling better a perspective. *Environmental Modelling and Software:* 145(105209).
- 2021 Lewis, K.A., Rose, K., De Mutsert, K., Sable, S., Ainsworth, C., Brady, D., Townsend, H.. Multiple ecosystem model integration for use in an environmental impact study. *Front. Mar. Sci.* 8: 625790
- De Mutsert K., **Lewis K.A.**, White E.D. and Buszowski J.. End-to-End Modeling Reveals Species-Specific Effects of Large-Scale Coastal Restoration on Living Resources Facing Climate Change. *Front. Mar. Sci.* 8:624532.
- Malisch, J.L., Harris, B.N., Sherrer, S.M., Lewis, K.A., Shepherd, S. L., McCarthy, P.C., Spott, J.L., Karam, E.P., Moustaid-Moussa, N., Calarco, J. M., Ramalingam, L., Talley, A.E., Canas-Carrel, J.E., Ardon-Dryer, K., Weiser, D.A., Bernal, X.E., Deitloff, J.. Letter to the Editor: Reply to Arora et al.: Concerns and considerations about using the CV as an equity tool. *PNAS*: 117 (39).
- Malisch, J.L., Harris, B.N., Sherrer, S.M., **Lewis, K.A.,** Shepherd, S. L., McCarthy, P.C., Spott, J.L., Karam, E.P., Moustaid-Moussa, N., Calarco, J. M., Ramalingam, L., Talley, A.E., Canas-Carrel, J.E., Ardon-Dryer, K., Weiser, D.A., Bernal, X.E., Deitloff, J.. Gender Equity in Academia Post-COVID-19: Challenges and Opportunities. *PNAS*: 117 (27) 15378-15381.
- Martin, C.W., **Lewis, K.A.**, McDonald, A.M., Spearman, T.K., Christian, R.C., Valentine, J.F.. Disturbance-Driven Changes to Northern Gulf of Mexico Nekton Communities Following the Deepwater Horizon Oil Spill. *Marine Pollution Bulletin*: 155: 111098.
- *Hakimelahi, M., Savari, A., Doustshenas, B., Ghodrati Shojaei M., **Lewis, K.A.**. Food and feeding habits of Indian Mackerel (*Rastrelliger kanagurta*) in the Southern Part of the Qeshm Island, Persian Gulf. *Iranian Journal of Fisheries Science* 19(2) 563 573. Doi: 10.22092/IJFS.2018.120058.
- *Reynolds, E., Cowan Jr., J.H., **Lewis. K.A.**. New method for estimating relative abundance and species composition around oil and gas platforms in the northern Gulf of Mexico, USA. *Fisheries Research:* 201: 44-55.

- 2017 De Mutsert, K., **Lewis, K.A.**, Milroy, S., Buszowski, J., Steenbeek, J. Using ecosystem modeling to evaluate tradeoffs in coastal management: Effects of large-scale river diversions on fish and fisheries. *Ecolog. Modelling.* 360: 14 26.
- Lewis, K.A., De Mutsert, K., Cowan, J.H., Steenbeek, J., and Buszowski, J.. Employing ecosystem models and Geographic Information Systems (GIS) to investigate the response of changing marsh edge on the historical biomass of estuarine nekton in Barataria Bay, Louisiana, USA. *Ecolog. Modelling*. Ecopath 30 Years Special Issue: 331: 129-141
- De Mutsert, K., Steenbeek, J., **Lewis, K.A.**, Cowan Jr., J.H., Christensen, V.. Exploring effects of hypoxia on fish and fisheries in the northern Gulf of Mexico using a dynamic spatially-explicit ecosystem model. *Ecological Modelling*. *Ecopath 30 Years Special Issue: 331: 142-150*
- 2010 Stevenson, D. E., **Lewis, K. A**. Observer-reported skate bycatch in the commercial groundfish fisheries of Alaska. *Fish Bull*. 108(2):208 217.

INVTIED PEER REVIEWED BOOK CHAPTERS

- In Production Lewis, K.A., Christian, R. C., Martin, C.W., McDonald, A.M., Valentine, J.F.. Ecosystem response to anthropogenic disturbances in the coastal zone. Treatise on Estuarine and Coastal Science-Second Edition. Elsevier. Submission date: 25 July 2023.
- 2023 Lewis, K.A., De Marco, K, McClenachan, G., Salerno, J.. Thompson, K.. Perspectives from coastal ecosystems through the lens of climate change. Oxford University Press.
- De Mutsert, K, Ainsworth, C., Buszowski, J., Chagaris, D., Christensen, V., Coll, M., Heymans, J.J., Libralato, S., **Lewis, K.A.**, Oldford, G., Romagnoni, G., Serpetti, N., Spence, M., Steenbeek, J.. Advances in spatial-temporal coastal ecosystem modeling using Ecopath with Ecosim and Ecospace. Treatise on Estuarine and Coastal Science-Second Edition. Elsevier.
- Von Storch, Hans., Fennel. K., Jensen, J., **Lewis, K.A.**, Ratter, B., Schlurmann, T., Wahl, T., Wenyang, Z.. Climate and Coast. Overview and Introduction. Oxford University Press. https://doi.org/10.1093/acrefore/9780190228620.013.816

PEER REVIEWED TECHNICAL REPORTS

- De Mutsert, K, **Lewis, K.A.**, Sable, S, Watkins, K, Liu, , Jung, H., Carruthers, T, Kiskaddon, E. Description of the Breton Sound and Lower Pontchartrain Basin Food Web Structure and Energetics from the EwE and CASM Ecosystem Models. Report developed for the Coastal Protection and Restoration Authority. Baton Rouge, Louisiana.
- ZO20 Knoche, Scott, Thomas F. Ihde, Giselle Samonte, Howard M. Townsend, Douglas Lipton, Kristy A. Lewis, and Scott Steinback. Estimating Ecological Benefits and Socio-Economic Impacts from Oyster Reef Restoration in the Choptank River Complex, Chesapeake Bay. NOAA Tech. Memo. NMFS-OHC-6, 68 p.
- Rose, K., Ainsworth, C., Brady, D., De Mutsert, K., **Lewis, K.A.,** Sable, S.. Description of the Barataria Bay Food Web Structure and Energetics from the EwE and CASM Ecosystem Models: For consideration in the Environmental Impact Statement (EIS). Louisiana Coastal Protection and Restoration Authority.
- De Mutsert, K., **Lewis, K.A**., Buszowski, J., Steenbeek, J. & Milroy, S. 2017 Coastal Master Plan: Ecosystem Outcomes, Community Model Description (4.5). Final Report. (99 p.) Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.
- De Mutsert, K., **Lewis, K.A.**, Buszowski, J., Steenbeek, J. & Milroy, S.. Louisiana Coastal Area Delta Management Ecosystem Modeling: Delta Management Fish and Shellfish Ecosystem Model. Final Report. (73 p.) Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.
- De Mutsert, K., **Lewis, K.A.,** Steenbeek, J., Buszowski, J., Milroy, S., Cowan Jr., J.H.. Louisiana Coastal Area Delta Management Ecosystem Modeling: Delta Management Fish and Shellfish Ecosystem Model. Prepared for: Louisiana Coastal Protection and Restoration Authority. (101 p.)
- De Mutsert, K., **Lewis. K.A.**, Steenbeek, J., Buszowski, J., Milroy, S., Cowan Jr., J.H... 2017 Coastal Master Plan: Ecosystem Outcomes, Community Modeling Justification. (4.5). Version 1. Baton Rouge, Louisiana: Coastal Protection and Restoration Authority. (52 p.)
- De Mutsert, K., **Lewis. K.A.**, Steenbeek, J., Buszowski, J., Milroy, S.. 2017 Coastal Master Plan: Ecosystem Outcomes, Community Model Description (4.5). Version 1. Baton Rouge, Louisiana: Coastal Protection and Restoration Authority. (117p.)

OTHER PUBLICATIONS

- Macy, M, Mayo, T., Wang, L, Walters, L., Reckdenwald, A., Leon, L., Hashim, A., Lewis, K. A., Huang, HJ., Vosoughi, A., Chumbimuni-Torres, K. "Is your mentor really your mentor?" Fall 2019 STEM Women Faculty Mentoring & Networking Community. UCF Faculty Focus: V. 19 No. 1 March 2020.
- Alvarez S., Almagro-Moreno S., Baggio J., Emrich C.T., **Lewis K.A.**, Wahl T., Worthy G.. Challenge of the Century: Rapid and drastic adaptation is required to maintain our quality of life. QC Research, May/June Edition, Florida League of Cities.
- Lewis, K.A., De Mutsert, K., Steenbeek, J., Buszowski, J., Cowan, Jr., J.H..
 Using Ecopath with Ecosim and Ecospace to model the response of estuarine nekton to multiple habitat scenarios in Barataria Bay, Louisiana, USA. Page 192 *in* Fisheries Centre Research Reports 22(3). University of British Columbia, Canada.
- 2014 **Lewis, K.A.**. Addressing the Land-Loss Fish Production Paradox. Dissertation in Oceanography and Coastal Sciences (Baton Rouge, Louisiana State University), (138 p.)

GRANTS/FELLOWSHIPS

Total Funding to Date: \$10,174,065

Total Funding Attributed to Lewis: \$1,913,459 *Indicates co-authorship with graduate student

Active Anderson, D. Lewis. K.A. (co-PI), Hall, E.R., Lovko, V., Pierce, R., Heil, C.A., Place, A.R., Judd, M., Double Indemnity for Karenia: modifying clay for improved cell and toxin removal. Mote Marine Lab: Florida Red Tide

Mitigation and Technology Development Grants-Year 5. \$325,000. Aug 2023

– July 2024.

*Shaffer, M., Lewis, K.A.. Letting the Past Inform the Future: Using Advanced Stable Isotope Analysis to Reconstruct Deep Time Coastal Food Webs. **NOAA Florida Sea Grant College Program** - 2023 Gradute Student Coastal and Ocean Fellowship. \$25,000. 01 Feb 2023 – 31 Jan 2024.

Active Park, S., Grimes, K.W., Hamdan, L., **Lewis, K.A.** (**co-PI**), Whitcraft, C.. Collaborative Research: IMPLEMENTATION: C-COAST: Changing the Culture of our Occupations to Achieve Systemic Transformation. **NSF-Leading Culture Change Through Professional Societies of Biology** (**BIO-LEAPS**). \$2,000,000.

01 Jan 2023 – 31 Dec 2026.

- Active Lewis, K.A. (PI), Sandoval, J., Berry, A., Rodreguez Kight E., Taub, M.. The National Academies of Sciences Gulf Research Program-Gulf Scholars Program. \$450,000. 01 Aug 2022 30 Sept 2027.
- Active Lewis, K.A. (PI), Hall, E.R., Almagro-Moreno, S., Anderson, D., Ubeda, A. A promising Florida Red Tide control strategy: combining stakeholder input and benthic surveys to evaluate impacts of clay flocculation. NOAA Florida Sea Grant. \$280,307. 01 Aug 2022 30 July 2024.
- Active Anderson, D. **Lewis. K.A.** (**co-PI**), Hall, E.R., Lovko, V., Pierce, R., Culter, J., Hubbard, K., Flewelling, L., Buck, K., Alvarez, S.. PCMHAB20: Application of Clay Flocculation for Removal of Karenia brevis Cells and Toxins in Southwest Florida Coastal Waters. **NOAA PCMHAB 2020**: NOAA-NOS-NCCOS-2020-2006219. \$2,397,085. 01 Sept 2021 31 Aug 2025.
- Active Emrich, C. (PI), Alvarez, S., Baggio, J., Cutter, S., Freidland, C., Gall, M., Klima, K., Lewis, K.A. (co-PI), Miro, M., O'Dell, W., Polsky, C., Preston, B., Sheldon, T., Stephens, S., Van Zandt, S.. The New First Line of Defense: Building Community Resilience through Residential Risk Disclosure. National Academies of Sciences Gulf Research Program: Thriving Communities Grants 5. 01 Aug 2019 31 Oct 2023. \$3,403,554.

Funded/Completed

- 2021 2023 Meselhe, E., Giordano, S., Lewis, J., Fischer, A., Hunter, A., Allison, M., Kleiss, B., Cambazoglu, K., Wiggert, J., Lewis, K.A., White, J., Tian, H., Steyer, G., Martin, S., Madill, H., Flowers, T., Whitbeck, J., Ford, M., Burke, P.. From Planning to Adaptive Management: Natural Resources Decision Making in Response to the Allocation of Riverine Inflows in the Northern Gulf of Mexico. NOAA Competition: NOAA-NOS-NCCOS-2021-2006590. \$124,926. 09/01/2021 08/31/2023.
- 2121 2023 Anderson, D. **Lewis. K.A.** (**co-PI**), Hall, E.R., Lovko, V., Pierce, R., Culter, J.. Fate and Effects of Karenia brevis Cells, Toxins, and Nutrients Following Clay Application for Bloom Control. Mote Marine Lab: **Florida Red Tide Mitigation and Technology Development Grants**-Year 3. \$249,863. 01 Aug. 2021 30 June 2023.
- 2020 2023 Polito, M., Moyo, S., Lewis, K.A. (co-PI), Synder, B.F., Bui, L.M., Otts, S.S.. Panacea or pandora's box: coastal restoration and recreational fishing livelihoods in the salt marsh ecosystems of coastal Louisiana. National Academies of Sciences Gulf Research Program: Healthy Ecosystems Grant 4: Adavncing Understanding of Coastal Ecosystem Fucntion and Dynamics in the Coupled Natural-Human System of the U.S. Gulf Coast. Award #: NAS 200011664. 01 Aug 2020 28 Feb 2023.

- *Allen, K., **Lewis. K.A.** Effects of changing salinity regimes on the Apalachicola Bay food web. **NOAA Margaret A. Davidson Graduate Fellowship**. \$116,000. 01 Aug 2020 31 Dec 2022. UCF Credit Split: 100%. Award #: NA20NOS4200126.
- 2016 2022 De Mutsert, K. (PI)., **Lewis, K.A.** (co-PI), Campbell, M. (co-PI), Brandt, S. (co-PI), Laurent, A., Buszowski, J., & Steenbeek, J.. User-driven predictive tools to assess effects of reduced nutrients and hypoxia on living resources in the Gulf of Mexico. **NOAA-NOS-NCCOS-2016-2004640**. 01 Sept 2016 31 August 2022, \$851,838.
- 2020 2022 Barber, S.B., Donoghue, J., Jacques, P., Kibler, K., **Lewis, K.A.** (co-PI). Modeling Lagoon Ecosystem Health over Deep Time: Developing new methods through convergent research in tropical Mexico. **UCF Seed Funding Program**. \$46,905. 05 Jan 2020 30 June 2022.
- *Allen, K., Lewis, K.A.. Effects of short-term and long-term drought events on apalachicola bay forage fish and the associated food web. Pew Charitable Trusts and Florida Fish and Wildlife Conservation Commission Fish Research Program Fellowship-2021. \$14,950. All funds dispersed directly to the student.
- Anderson, D. **Lewis. K.A.** (**co-PI**), Hall, E.R., Lovko, V., Pierce, R., Culter, J.. Fate and Effects of Karenia brevis Cells, Toxins, and Nutrients Following Clay Application for Bloom Control. Mote Marine Lab: **Florida Red Tide Mitigation and Technology Development Grants**. \$249,978. To Lewis: \$52,895. 01 Aug 2020 31 July 2021.
- *Shaffer, M., **Lewis. K.A.**. Evaluating spatial-temporal trends of indian river lagoon essential fish habitat, forage fish and their predators. **Pew Charitable Trusts and Florida Fish and Wildlife Conservation Commission**: Forage Fish Fellowship. June 2019 May 2020. \$15,000 (directly awarded to student, not routed through UCF).
- Cheong, S. (PI), Crowder, L. (co-PI), **Lewis, K.A. (co-PI)**, Model, J.. **National Academy of Sciences Gulf Research Program**. Scientific Synthesis Connecting Environmental, Social, and/or Health Data. Community cohesion and recovery after the Deepwater Horizon oil spill. 1 year. \$590,000. To Lewis: \$38,500.
- 2015-2017 De Mutsert, K. (PI), **Lewis, K.A.** (**co-PI**), Steenbeek, J., and Buszowski, B. 2017 Louisiana Coastal Master Plan: Fish and Shellfish Model Development and Application. **The Water Institute of the Gulf.** \$131,759 (2.25 years)

- De Mutsert, Kim (PI), **Lewis, K.A.** (**co-PI**), and 4 others. Delta Management Ecosystem Modeling. **The Water Institute of the Gulf.** \$194,613.10. Award # CPRA-2014-T32-SB01. (1.25 years).
- De Mutsert, Kim (PI), **Lewis, K.A.** (**co-PI**), and 4 others. Simulating Coastal Restoration Impacts on Fish and Shellfish Communities in Louisiana. **The Water Institute of the Gulf**. \$258,182 (1-2.5 years).

INVITED TALKS

- Lewis, K.A., Christian, Allen, K., R. C., Martin, C.W., McDonald, A.M., Roberts, V., Shaffer, M., Valentine, J.F.. Complexities of disturbance response in a marine food web. University of Florida Fisheries and Aquatic Science Seminar. 18 February.
- Lewis, K.A., De Mutsert, K.. Louisiana State University. Department of Applied Ecological Modeling: Integrated approaches for use in restoration, management & Assessment. 14 February. LSU College of the Coast & Environment as Guest Seminar Series. 19 April.
- 2020 **Lewis, K.A.,** De Mutsert, K.. Tulane University. Department of Ecology and Evolutionary Biology Seminar Series. Applied Ecological Modeling: Integrated approaches for use in restoration, management & assessment. 14 February.
- 2019 **Lewis, K.A..** Coastal Estuarine Research Federation 25th Biennial Conference. CERF 2019 Inclusion Lunch: What's in your gumbo? Ingredients for Putting diversity, equity and inclusion into practice. **Keynote Speaker**. 05 November.
- 2019 **Lewis, K.A.** Entomological Society of Central Florida. University of Central Florida. "Coastal Challenges of the 21st Century." 02 April.
- 2019 **Lewis, K.A.** The New College of Florida. "Ecological modeling for applied use in ecosystem restoration and management. 29 March.
- 2018 **Lewis, K.A.** The Florida Water and Climate Alliance. "Florida Red Tide: a disturbance of unknown duration." Orlando, FL. 20 December.
- Lewis, K.A., De Mutsert, K.. UMCES Chesapeake Biological Laboratory Distinguished Scholar Seminar Series. "Life on the Edge: Revisiting the importance of marsh interface on fisheries productivity." Solomon's Island, MD. 27 September.
- 2016 **Lewis, K.A.,** De Mutsert, K.. Smithsonian Environmental Research Center Seminar Series. "Using ecosystem modeling to evaluate tradeoffs: effects of using river diversions on fish and fisheries" Edgewater, MD. 27 October.

- 2016 **Lewis, K.A.,** De Mutsert, K.. Chesapeake Bay Modeling Symposium. "A spatial fish and shellfish model used in delta management decisions." Williamsburg, VA, 01 02 June.
- 2015 **Lewis, K.A.,** Cowan, J.H. Environmental Science and Policy Lecture Series. "Tipping points in coastal fisheries." George Mason University, Fairfax, VA, 04 December.
- 2014 **Lewis, K.A.,** Cowan, J.H. Environmental Science and Policy Lecture Series. "Addressing the land-loss fish production paradox--Applied Fisheries Ecology." George Mason University, Fairfax, VA. 23 October
- 2010 **Lewis, K.A.** Science Seminar Featured Speaker. "Wanderings of a Shorter University Biologist." Shorter University, Rome, GA, April.
- 2010 **Lewis, K.A.** Integrated Ecosystem Assessment Workshop. "Data synthesis, historical distribution changes, and ecosystem model development." NOAA, New Orleans, LA. June.

CONFERENCE ACTIVITY/PARTICIPATION

(*Indicates graduate students mentored, **undergraduate students I mentored, otherwise authors listed in order of effort.)

Panels Organized

Lewis, K.A., Schmitt, J. PANEL: Working across discipline and difference to address complex coastal issues. 14 Nov. The goal is to demystify transdisciplinary marine research, emphasize the importance of diverse perspectives, which includes community and Tribal involvement from problem identification to solutioning.

Refereed Papers Presented

National/International Professional Meetings

- 2022 **Lewis, K.A.,** Anderson, D., Hall, E., Lovko, V., Pierce, R., Culter, J., *Roberts, V.. Using clay flocculation as a *Karenia brevis* control in Florida waters. 11th US Symposium on Harmful Algae. Albany, NY. 23 28 October.
- *Roberts, V., Hall, E., Anderson, D., Lovko, V., Pierce, R., Culter, J., **Lewis, K.A.**. Lethal and Sublethal Responses to Clay Treatment of *Karenia brevis* in *Mercenaria campechiensis*, *Lytechinus variegatus*, and *Callinectes sapidus*. 11th US Symposium on Harmful Algae. Albany, NY. 23 28 October.

- *Shaffer, M.N, MacDonald, T.C., Thompson, K.A., **Lewis, K.A.**. Seagrass Impacts on Predator and Forage Fish Dynamics and Distribution in the Indian River Lagoon, FL. Joint Aquatic Sciences Meeting. Virtual, FL, May 16.
- Lewis, K.A., Christian, Allen, K., R. C., Martin, C.W., McDonald, A.M., Roberts, V., Shaffer, M., Valentine, J.F.. Complexities of disturbance response in a marine food web. Coastal Estuarine Research Federation 2021 Biennial Conference. 1-4, 8-11 Nov.
- *Roberts, V., Hall, E., **Lewis, K.A.**. Clay treatment of red tide and impacts on blue crab. Coastal Estuarine Research Federation 2021 Biennial Conference. 1-4, 8-11 Nov.
- *Shaffer, M.N, MacDonald, T.C., Thompson, K.A., **Lewis, K.A.**. Spatio-temporal Effects of Seagrass Loss on Predator and Forage Fish Dynamics and Distribution. 26th Biennial Conference Coastal Estuarine Research Federation. Virtual Conference, FL, November 02.
- *Shaffer, M.N, MacDonald, T.C., Thompson, K.A., **Lewis, K.A.**. Seagrass Impacts on Predator and Forage Fish Dynamics and Distribution. American Fisheries Society 150th Annual Meeting. Virtual Conference, FL, September 17.
- *Roberts, V., Hall, E., **Lewis, K.A.**. Emerging HAB control technology: Clay treatment of red tide and impacts on blue crab. Poster and Speed Talk. 27 May.
- 2019 **Lewis, K.A.**, Sable, S., De Mutsert, K., Ainsworth, C., Rose, K., Brady, D.. Ecopath35. "Multiple ecosystem model integration for use in an environmental impact study." St. Petersburg, FL, 4-11 December.
- **Lewis, K.A.**, Sable, S., De Mutsert, K., Ainsworth, C., Rose, K., Brady, D. 24th Biennial Conference Coastal Estuarine Research Federation. "Multiple ecosystem model integration for use in an environmental impact study." Mobile, AL, 3-7 November.
- De Mutsert, K., **Lewis, K.A.**, White, E., Buszowski, J.. 24th Biennial Conference Coastal Estuarine Research Federation. "Food web modeling in support of the 2017 Louisiana Coastal Master Plan." Providence, RI, 5 9 November.
- 2017 **Lewis, K.A.,** Cowan, J.H. American Fisheries Society, 147th Meeting. "Revisiting the importance of marsh interface—fisheries on the edge." Tampa, FL, August 20 24 August.
- Lewis, K.A., De Mutsert, K. Steenbeek, J., Peele, H., Cowan, J.H., Buszowski, J.. The International Society for Ecological Modelling Global Conference 2016. "Informing an estuarine food web model with spatially-explicit and time-dynamic GIS data." Baltimore, MD, 8 -12 May.

- 2015 **Lewis, K.A.,** De Mutsert, K. Steenbeek, J., Peele, H., Cowan, J.H., Buszowski, J.. 23rd Biennial Conference Coastal Estuarine Research Federation. "Addressing the land-loss fish production paradox." Portland, OR, November 8-12.
- De Mutsert, K., **Lewis, K.A.,** White, E., Buszowski, J.. Ecopath 30 Years: Modelling dynamic ecosystems: beyond boundaries with EwE. "Using Ecopath with Ecosim and Ecospace to model the response of estuarine nekton to multiple habitat restoration scenarios in Barataria Bay, Louisiana, USA." Barcelona, Spain, November 4-14.
- 2011 **Lewis, K.A.,** Cowan, J.H. American Fisheries Society, 141st Meeting. "Historical analysis of species abundance distributions of nekton with emphasis on economically important fish species. " Seattle, WA, September 4-8.

Regional/Local Meetings

- *Allen, K, **Lewis, K.A..** Freshwater reduction and sea level rise impacts on estuarine forage fish in Apalachicola Bay, FL. The Gulf of Mexico Conference. Baton Rouge, LA, 25-28 April.
- *Allen, K., Lewis, K.A. Effects of sea level rise and riverine input on valuable estuarine species. Marine Science Graduate Student Symposium. Virtual symposium, 16-18 April.
- *Shaffer, M.N, MacDonald, T.C., Thompson, K.A., **Lewis, K.A.**. Seagrass Impacts on Predator and Forage Fish Dynamics and Distribution. American Fisheries Society 150th Annual Meeting. Virtual Conference, FL, September 17.
- *Shaffer, M.N, MacDonald, T.C., Thompson, K.A., **Lewis, K.A.**. Evaluating Spatial-Temporal Trends of Indian River Lagoon Seagrass Habitat, Forage Fish, and their Predators. 4th Annual Forage Fish Data Workshop. Virtual Conference, FL, April 27.
- 2016 **Lewis, K.A.,** Cowan, J.H. Atlantic Estuarine Research Society. "Tipping Points in Coastal Fisheries." Catonsville, MD, 17 19 November.
- Lewis, K.A., De Mutsert, K. Steenbeek, J., Peele, H., Cowan, J.H., Buszowski, J.. American Fisheries Society Tidewater Chapter Annual Meeting. "Employing ecosystem models and Geographic Information Systems (GIS) to investigate the response of changing marsh edge on the historical biomass of estuarine nekton in Barataria Bay, Louisiana, USA." Edgewater, MD, 7 -9 April.

Posters

National/International Professional Meetings

- *Morgan, E., Polito, M., Moyo, S., **Lewis, K.A**. Improving confidence in food web models for natural resource management using stable isotope analysis. Gulf of Mexico Conference, 26-28 April.
- *Allen, K., Garwood, J.A., **Lewis, K.A.** Effects of changing salinity regimes on a northern Gulf of Mexico estuarine food web. National Estuarine Research Reserve System Annual Meeting. Virtual conference, 15-18 November.
- *Allen, K., **Lewis, K.A.** Freshwater reduction and sea level rise impacts on estuarine forage fish in Apalachicola Bay. American Fisheries Society 151st Annual Meeting. Virtual conference, 6-10 November.
- *Allen, K., **Lewis, K.A.,** Garwood, J.A. Effects of changing salinity regimes on a northern Gulf of Mexico estuarine food web. 26th Biennial Conference Coastal and Estuarine Research Federation. Virtual conference, 1-4 and 8-11 November.
- *Shaffer, M., MacDonald, T., Thompson, K. Lewis, K.A. American Fisheries Society 150th Annual Meeting. "Seagrass Impacts on Predator and Forage Fish Dynamics and Distribution." Virtual Conference, FL, September 17.
- *Allen, K., Idhe, T., Knoche, S., Townsend, H., **Lewis, K.A.**. North Florida Marine Science Symposium. "Implications of climate-change induced variations in water temperature and salinity for focal species of an oyster reef food web." St. Augustine, FL, 23-24 January.
- *Allen, K.. Idhe, T., Knoche, S., Townsend, H., **Lewis, K.A.**. Ecopath35: Making Ecosystem-Based Management Operational. "Implications of climate-change induced variations in water temperature and salinity for focal species of an oyster reef food web." St. Petersburg, FL, 4-11 December
- *Shaffer, M., Macdonald, T., Thompson, K., **Lewis, K.A.**. 25th Biennial Conference Coastal and Estuarine Research Federation. "How does the decline of seagrass within the Indian River Lagoon, FL USA affect the abundance and distribution of recreationally important predators?" poster presentation, Mobile, AL, 3 7 November.
- 2015 **Lewis, K.A.,** Cowan, J.H. Student Conference on Conservation Science-New York. "Exploring the land-loss fish production paradox in coastal Louisiana." October 7-9.

Lewis, K.A., De Mutsert, K. Steenbeek, J., Peele, H., Cowan, J.H., Buszowski, J.. Ecological Society of America Annual Meeting. "Employing statistical models and Geographic Information Systems (GIS) to investigate the effect of changing marsh edge on the biomass of estuarine nekton in Barataria Bay, Louisiana, USA." August 9-14.

Regional/Local Meetings

- **Oestmann, Z., **Henderson, S. *Shaffer, M., Lewis, K.A.. Evaluating Seasonal Sport Fish Diet in the Indian River Lagoon, FL. UCF Research Week Student Scholar Symposium. Orlando, FL. 28 March. WINNER of the People's Choice Award for Best Poster.
- **Oestmann, Z., *Shaffer, M., Lewis, K.A.. Evaluating Sport Fish Diet and Competition in the Indian River Lagoon, FL. UCF Research Week Student Scholar Symposium. Orlando, FL. 28 March 01 April. *WINNER of the People's Choice Award for Best Poster.
- *Shaffer, M.N, MacDonald, T.C., Thompson, K.A., **Lewis, K.A.**. Seagrass Impacts on Predator and Forage Fish Dynamics in the Indian River Lagoon, FL. Indian River Lagoon Symposium. Ft. Pierce, FL, April 21.
- *Shaffer, M., Macdonald, T., Thompson, K., **Lewis, K.A.** Indian River Lagoon Symposium. "Evaluating spatial-temporal trends of Indian River Lagoon essential fish habitat, forage fish, and recreationally important predators." 4th Annual Forage Fish Fellowship Workshop. 27 April.
- *Shaffer, M., Macdonald, T., Thompson, K., **Lewis, K.A.** Indian River Lagoon Symposium. "Evaluating spatial-temporal trends of Indian River Lagoon essential fish habitat, forage fish, and recreationally important predators." poster presentation, Fort Pierce, FL, 13 February.
- *Shaffer, M., Macdonald, T., Thompson, K., **Lewis, K.A..** North Florida Marine Science Symposium. "Evaluating spatial-temporal trends of Indian River Lagoon essential fish habitat, forage fish, and recreationally important predators." poster presentation, St. Augustine, FL, 23 24 January. **1**st **Place Poster Award**
- *Roberts, V., **Lewis, K.A..** UF/IFAS Florida Sea Grant Florida HAB State of the Science Symposium. "Experimental treatment of harmful algal blooms with clay flocculation: Impacts on nekton." St. Petersburg, FL, 20-21 August

Conferences and Sessions Organized

- 2023 Coastal Estuarine Research Federation 2023 Biennial Conference.
- 2021 Coastal Estuarine Research Federation 2021 Biennial Conference. Organismal Biology and Ecology. 1-4, 8-11 Nov. 2022. **Session Chair**.

- 2019 EwE35: Ecopath 35 Years-Making Ecosystem-Based Management Operational. FWRI-St. Petersburg, FL. 02 11 Dec. **Co-Convener.**
- 2017 Atlantic Estuarine Research Society. "Continuing Science in the Face of Change." St. Mary's College of Maryland. 16 March 18 March. **Convener**.

AWARDS AND RECOGNITION

- 2023 UCF Research Incentive Award. In recognition of the outstanding impact of scholarly work. \$5000 increase in base salary and \$5000 onetime bonus.
- 2022 UCF College of Science-Research Activity Recognition for submitting eight grants.
- 2021 UCF Faculty Excellence Women's History Month Awardee. Recognizing dedication to the advancement of all women in academia.

GRADUATE COMMITTEES

Graduate Students (4)

2019 – Present	Primary advisor . Michelle Shaffer, PhD. Department of Biology.
	National Center for Integrated Coastal Research. University of Central

Florida.

-AWARDED 2023: NOAA Florida Sea Grant Graduate Student Coastal and Ocean Fellowship (\$25,000)

-AWARDED 2019: Forage Fish Fellowship Application. Florida Fish and Wildlife Conservation Commission in partnership with the Pew Charitable Trusts. \$15,000

-AWARDED 2019: First place Poster, North Florida Marine Science Symposium

-AWARDED 2019: Graduate Student Travel Award, CERF 2019 \$250

2019 – Present. **Primary Advisor**. Victoria Roberts, PhD. Department of Biology.

National Center for Integrated Coastal Research. University of Central

Florida.

-AWARDED 2020: Mote Marine Lab College Internship. \$500 **-AWARDED 2022:** US HAB Symposium Travel Award. \$900

-AWARDED 2022: UCF Department of Biology Travel Award. \$400

2022 – Present. **Primary Advisor**. Katherine Thompson, PhD. Graduate School of

Oceanography, University of Rhode Island.

-AWARDED 2022: Department of Biology Graduate Teaching Assistantship

2022 – Present. John Kristoffer Andres, PhD. Department of Biology. National Center for

Integrated Coastal Research. University of Central Florida.

-AWARDED 2022: College of Sciences Dean's Fellowship \$5000.

Primary Advisor (Graduated)

2019 – 2022 **Primary advisor**. Kira Allen, MS. Department of Biology. National

Center for Integrated Coastal Research. University of Central Florida.

Graduated Dec. 2022.

-AWARDED 2020: NOAA Margaret A. Davis Graduate Fellowship.

\$116,000

-AWARDED 2021: Forage Fish Fellowship Application. Florida Fish and Wildlife Conservation Commission in partnership with the Pew Charitable

Trusts. \$15,000

2021—2023 **Primary Advisor**. Emma Morgan, MS. Department of Biology. National

Center for Integrated Coastal Research. University of Central Florida.

Graduated May 2023.

Graduate Student Committees

2023 – Present Committee member. Andrea Swinehart, MS. University of North Florida.

Graduate Student Committees Graduated

2019 - 2021	Committee member. Alicia Formanack, MS. Department of Biology.
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University of Central Florida

2019 – 2021 **Committee member.** Rebecca Fillyam, MS. Department of Biology.

University of Central Florida

2019 – 2021 **Committee member**. Casey Craig, MS. Department of Biology.

University of Central Florida

2021 - 2022 **Committee member.** Jessica Copertina, MS. Department of Biology.

University of Central Florida

Undergraduate Students (6)

2020 – 2023 **Supervisor.** Sydney Henderson. Trophic Ecology and Diet Study.

AWARDED 2023: People's Choice Award Student Scholar

Symposium for her poster: Evaluating Seasonal Sport Fish Diet in the

Indian River Lagoon, FL

2020 – 2023	Supervisor. Zachary Oestmann. Trophic Ecology and Diet Study. AWARDED 2022: People's Choice Award Student Scholar Symposium for his poster: Evaluating Sport Fish Diet and Competition in the Indian River Lagoon, FL AWARDED 2023: People's Choice Award Student Scholar Symposium for his poster: Evaluating Seasonal Sport Fish Diet in the Indian River Lagoon, FL	
2020 – 2022.	Supervisor . Miguel Silva. Environmental Vulnerability Index in the Gulf of Mexico Coastal Zone	
2021 – 2022	Supervisor . Sabrina Lopez. Harmful Algal Bloom Ecology. EXCEL Undergraduate Research Experience.	
2020 - 2021	Supervisor. Neha Mungala. Trophic Ecology and Diet Study.	
2020 – 2021	Supervisor . Allison Pecenka. Environmental Vulnerability Index in the Gulf of Mexico Coastal Zone	
Research Technicians (2)		
2020 – 2022	Supervisor . Nancy Pham Ho. Environmental Vulnerability Index in the Gulf of Mexico Coastal Zone	
2021 – 2022	Supervisor. Samantha Alexander. Harmful Algal Bloom Ecology.	

TEACHING EXPERIENCE

University of Central Florida

GIS for Biologists and Ecologists (Fall 2022; Split level)

GIS for Biologists and Ecologists (Fall 2021; Split level)

GIS for Biologists and Ecologists (Fall 2020; Split level)

Introduction to Environmental Science (Spring 2020)

GIS for Biologists and Ecologists (Fall 2019; Undergraduate Course)

GIS for Biologists and Ecologists (Fall 2018; Graduate Course)

St. Mary's College of Maryland: Department of Biology (Undergraduate Courses)

Ecology of Coastal Systems (Fall 2017, Fall 2016)

Principles of Biology Lab (Fall 2017, Fall 2016)

Contemporary Bioscience – Fish, Humans, and Change (Spring 2017)

Ecology and Evolution (Spring 2018)

Ecology and Evolution Lab (Spring 2018, Spring 2017)

George Mason University: Department of Environmental Science and Policy (Graduate Courses)

Ecosystem Modeling: Ecopath with Ecosim and Ecospace (Spring 2016) Controversy in Fisheries Science Seminar (Co-taught, Summer 2015) Estuarine and Coastal Ecology Lab (Co-taught, Summer 2015)

SERVICE TO PROFESSION

2023	NSF Panel Reviewer. May.
2022 - 2023	CERF 2023-Chair, Inclusive Culture Committee.
2022	NSF Panel Reviewer. March.
2021	CERF 2021-Scientific Program Committee-DEI Sub-Committee Co-Chair
2021-Present	Scientific Advisory Committee Member. Suwannee River Modeling, University of Florida. National Academies of Science GRP.
2020-Present	Coastal Estuarine Research Federation Broadening Participation Council
2020	NOAA Sea Grant Resource Economics Panel Reviewer. May.
2020	NSF Panel Reviewer. May.
2020	NSF Panel Reviewer. April.
	Training Coordinator Ecopath Research and Development Consortium,
	Barcelona, Spain.
2016-Present	Journal Reviewer
	Estuaries and Coasts
	Ecological Modelling
	Marine Ecology Progress Series
	Ices Journal of Marine Science
	Oxford University Press
	PLosOne
	Ecology and Society
	Marine and Coastal Fisheries
	Bulletin of Marine Science
	Ecological Modelling
	Estuaries and Coasts
2018	Reviewer, IUCN Report: Impacts on ocean deoxygenation on fishing.
2017	Attendee Experience Committee: CERF Ambassador Program, Coastal Estuarine
2015	Research Federation (CERF). November 5 – 9, Providence, RI
2017	Local Host and Sponsor: Atlantic Estuarine Research Society (AERS), March 16 – 18. St. Mary's College of Maryland
2016	Panelist: Chesapeake Modeling Symposium, June 1-2
	"The Challenge of Transparency in Management Modeling: What is transparency,
	why do we need it and how do we get there?
2014	Independent Science Reviewer
	Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived
	Economies of the Gulf Coast States Act (RESTORE Act)
	Gulf Coast Ecosystem Restoration Council.
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SERVICE TO DEPARTMENT

2023	URI GSO JEDI Committee
2022	Faculty Search Committee for Integrated Biologist. Spring.
2020-Present	Chair, Ad Hoc Committee on Inclusive Culture-Department of Biology (UCF)
2019	Undergraduate Committee (New Course Development Committee (UCF)
2019	Development of Sustainable Coastal Systems PhD Program (UCF)

SERVICE TO INSTITUION

2022	Associate Vice President of Research Search Committee. Invited to participate by
	the Elizabeth Klonoff, VP of Research.
2022	UCF Celebrates the Arts. National Center for Integrated Coastal Research.
	Provided materials and created an informational video for outreach. Volunteered
	time at the UCF Coastal table to interact with the community. 09 April.
2021-Present	Diversity, Equity and Inclusion Action Team-UCF College of Science
2020	UCF Coastal Board Meeting Presentation
2019-2020	Co-Faculty Sponsor of the Pride Student Association, UCF
2019-Present	Undergraduate GIS Certificate Committee, UCF
2020-Present	Advisor to Student Club: Eco Educators
2019	UCF Coastal Outreach: NOAA Marine Sanctuaries and Fury Water Sports
2019	2019 Seed Funding Reviewer, UCF
2018	UCF Coastal Launch Event, August

Prior to UCF (2010 -2018)

2017	Sustainability Counsel Faculty Fellow. St. Mary's College of Maryland.
2017	Tobacco Free Generation Campus Initiative Task Force. St. Mary's College of
	Maryland
2015	Provost's Multidisciplinary Research Seed Grant Review Panel. George Mason
	University, Fairfax, VA. Environmental Public Health Panel

MEDIA COVERAGE

MIEDIA CO	VERAGE
<u>2023</u>	UCF Today. UCF Researchers Help Lead New, \$2 Million NSF Project to Make
	Coastal Sciences More Inclusive.
<u>2023</u>	UCF Today. UCF Forms Multidisciplinary Team to Create Undergraduate
	Program to Address Gulf Coast Challenges.
<u>2023</u>	WESH 2 News. UCF researchers studying ways to combat red tide blooms.
<u>2023</u>	UCF Today. "UCF uses 6-foot 'Test Tubes' to study red tide.
<u>2023</u>	EFE Agency, Spanish Language News. "Potential red tide treatment successfully
	tested in Florida"
<u>2023</u>	FOX35 News. Could fighting red tide really be this simple?
<u>2023</u>	WESH 2 News. "UCF Researchers studying ways to combat red tide blooms."
2023	AccuWeather. Red tide concerns resurface along Florida's southwest coast.

<u>2022</u>	Amazon Prime-The College Tour-a streaming program. UCF-Florida Based
	Studies.
<u>2021</u>	MySunCoast.com and ABC7-Sarasota. Mote testing new method to kill red tide
	algae across the Suncoast.
<u>2021</u>	Fox13-Tampa Bay: Breakthrough discovery: Mote researchers may have found
	method to kill red tide with clay
<u>2021</u>	Mote Marine Lab Press Release. Rapid test of red tide mitigation strategy
	deployed in Sarasota.
<u>2021</u>	WESH Channel 2, NBC. How to tell the difference? Saharan Dust allergies can
	mimic COVID-19 symptoms.
<u>2020</u>	WFTV Channel 9, ABC. Red tide & Saharan dust: How are they linked?
<u>2020</u>	UCF Today: UCF Scientists Study Method to Combat Florida Red Tide
<u>2020</u>	UCF COS: UCF Scientists Study Method to Combat Florida Red Tide
<u>2020</u>	UCF Today: 17 Academics from Across the Nation Warn that COVID-19
	Pandemic Worsens Equity Gap between Men, Women in Academia
<u>2018</u>	News 96.5 WDBO. Current Red Tide Interview and Discussion.
<u>2018</u>	Manatee County Board of Commissioners Meeting. Red Tide RFP presentation.
<u>2018</u>	Bradenton Herald. "Red Tide will be a problem again someday. Manatee County
	wants a "playbook" for next time."
<u>2018</u>	WMFE 90.7 NPR. "Red Tide believed to be behind thousands of dead fish in
	Cocoa Beach."

COMMUNITY SERVICE AND OUTREACH

2023	Florida Marine Science Educators Association Conference-Invited Research Talk.
	"Fate and Effects of Red Tide (Karenia brevis) During Clay Flocculation and the
	Non-Target Organism Impacts"
2022	UCF Coastal: Coastal Vision 2022. Outreach event to Florida community, which
	included two panels on resilient coastal communities and eco-tourism. Dr. Lewis
	provided the final summary talk, unifying the lessons learned from the event.
2022	UCF Celebrates the Arts. National Center for Integrated Coastal Research.
	Outreach table at event showcasing current coastal research
2021	Florida Women's Doctors Club Presentation. "Florida's Natural Treasures."

EXTRACURRICULAR UNIVERSITY SERVICE

2020	Pride Faculty and Staff Scholarship Review Committee (UCF)
2016	Poster Judge. Mason Water Forum, March 18. George Mason University, Fairfax,
	VA
2015	Founder. Women in Science Lunch Series (WISLS). George Mason University,
	Fairfax, VA
2015	Poster Judge. Undergraduate Research Symposium. George Mason University,
	Fairfax, VA

RELATED WORK

2012-2013	Stock Assessment Biologist. Louisiana Department of Wildlife and Fisheries Fisheries Management: Research and Assessment Division. Baton Rouge, LA
2008-2009	Marine Biologist. NOAA Fisheries. Alaska Fisheries Science Center. Fisheries Monitoring and Analysis Division. Seattle, WA
2000-2003	North Pacific Groundfish Observer, Field Marine Biologist. Northwest Observers, Inc. (NOAA Fisheries). Alaska, Various Locations and Ports

CURRENT PROFESSIONAL MEMBERSHIPS

American Association of University Women | Community Surface Dynamics Modeling System (CSDMS) | International Society for Ecological Modelling | American Fisheries Society | Coastal and Estuarine Research Federation Gulf Estuarine Research Society | Ecopath Research and Development Consortium | American Institute of Fishery Research Biologists