DAMIAN C. BRADY, PH.D.
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Assistant Director for Research at Maine Sea Grant
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EDUCATION

University of Delaware, Graduate College of Marine Studies, Lewes, DE (2008)
Ph.D. in Marine Biology-Biochemistry
Graduate Advisor: Timothy E. Targett, Ph.D.

Roger Williams University, Bristol, RI (May 2000)
Bachelor of Science with honors (Magna cum laude) - Marine Biology
Minor - Chemistry

Sea Education Association (SEA), Woods Hole, MA (Fall 1998)

RESEARCH AND LEADERSHIP

Assistant Research Professor, School of Marine Sciences, University of Maine (2010-present)

Assistant Director for Research at Maine Sea Grant (October 2014 – present)

Acting Interim Director of the University of Maine's Ira C. Darling Marine Center (Summer 2014)

Co-Leader of Research Theme 1: Environmental Carrying Capacities for Coastal Seas in NSF's EPSCoR Sustainable Ecological Aquaculture Network (September 2014 – present)

Assistant Director of NSF-funded: "Water Sustainability and Climate Category 3 Collaborative: Impacts of Climate Change on the Phenology of Linked Agriculture-Water Systems" project

Environmental Monitoring Task Manager for the University of Maine led DeepCwind Consortium and Maine Aqua Ventus Offshore Wind Energy Initiatives (2011-present)

Post-doctoral Researcher, Department of Civil and Environmental Engineering, University of Delaware (2007-2010)

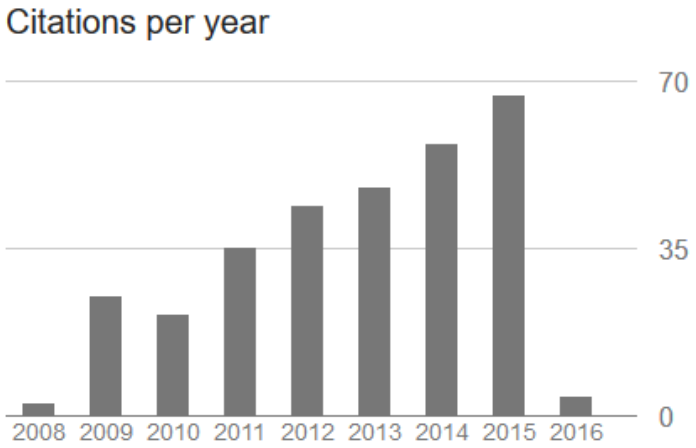
Research Assistant, University of Delaware, Lewes, DE (2001-2008)

PH.D. Dissertation: Behavior of juvenile estuary-dependent fish in relation to the spatial and temporal dynamics of diel-cycling hypoxia in an estuarine tributary

Undergraduate Senior Honors Program, Roger Williams University, Bristol, RI (2000)
Honors Thesis title: The effect of temperature and salinity on the optimum growth rate of *Tautoga onitis*

PUBLICATIONS

As of 1/1/2016: h-index = 9



Lasley-Rasher, R., **Brady, D.C.**, Smith, B. and P. Jumars (2015). It takes guts to locate mobile crustacean prey. *Marine Ecology Progress Series*. 538: 1-12

Testa, J.M., **Brady, D.C.**, Cornwell, J.C., Owens, M.S., Sanford, L.P., Newell, R.I.E., Newell, C.R., Richardson, J. & Suttles, S.E. (2015) Modeling the impact of floating oyster aquaculture on sediment-water nutrient and oxygen fluxes. *Aquaculture Environment Interactions,* 7: 205-222

Zhang, Q., **Brady, D.C.**, Boynton, W.R., & Ball, W.P. (2015) Long-term trends of nutrients and sediment from the non-tidal Chesapeake watershed: An assessment of progress by river and season. *Journal of the American Water Resources Association,* 51 (6): 1534-1555

Grieve C, **Brady D.C.,** and Polet H (2015) Best practices for managing, measuring and mitigating the benthic impacts of fishing - Part 2. Marine Stewardship Council Science Series 3: 81 – 120.

Grieve, C., **Brady, D.C.,** and Polet, H. (2014) Best practices for managing, measuring, and mitigating the benthic impact of fishing - Part 1. Marine Stewardship Council Science Series 2: 18-88

Miller, M.H., Targett, T.E., & **Brady, D.C.** (*accepted pending revisions*) Movement patterns of summer flounder (*Paralichthys dentatus*) in relation to diel-cycling hypoxia in an estuarine tributary. *Marine Ecology Progress Series*

Aikman, F., **Brady, D.C.,** Brush, M.J., Burke, P. Cerco, C.F., Fitzpatrick, J.J., He, R., Jacobs, G.A., Kemp, W.M., & Wiggert, J.D. (2014) Modeling approaches for scenario forecasts of Gulf of Mexico hypoxia. *Edited by* D.M. Kidwell, A.J. Lewitus, & E. Turner. White Paper from the Hypoxic Zone Modeling Technical Review Meeting, 17-19 April 2013 at the Mississippi State University Science and Technology Center at NASA's Stennis Space Center in Mississippi, 46 pp.

Testa, J.M., Li, Y., Lee, Y., Li, M., **Brady, D.C.,** Di Toro, D.M., & Kemp, W.M. (2014) Quantifying the effects of nutrient loading on dissolved O_2 cycling and hypoxia in Chesapeake Bay using a coupled hydrodynamic-biogeochemical model. *Journal of Marine Systems,* 139: 139-158

Grieve, C., **Brady, D.C.**, & Polet, H. (2014) Best practices for managing, measuring, and mitigating the benthic impacts of fishing – Part 1. *Marine Stewardship Council Science Series* 2: 18-88. (Cited by the Institute for European Environmental Policy: Allocating fishing opportunities using environmental criteria and being proposed as the guide for determining impact as a criterion for allocating quota)

Brady, D.C. & Targett, T.E. (2013) Movement of juvenile weakfish (*Cynoscion regalis*) and spot (*Leiostomus xanthurus*) in relation to diel-cycling hypoxia in an estuarine tributary: Assessment using acoustic telemetry. *Marine Ecology Progress Series,* 491: 199-219

Brady, D.C., Testa, JM., Di Toro, D.M., Boynton, W.R., & Kemp, W.M. (2013) Sediment Flux Modeling: Application and validation for coastal systems. *Estuarine, Coastal, and Shelf Science* 117: 107-124

Testa, J.M., **Brady, D.C.**, Di Toro, D.M., Boynton, W.R., Cornwell, J.C., & Kemp, W.M. (2013) Sediment Flux Modeling: Simulating nitrogen, phosphorus, and silica cycles. *Estuarine, Coastal and Shelf Science*, 131: 245-263

McMahan, M.D., **Brady, D.C.**, Cowan, D.F., Grabowski, J.H., & Sherwood, G.D. (2013) Using acoustic telemetry to observe the effects of a groundfish predator (Atlantic cod, *Gadus morhua*) on movement of the American lobster (*Homarus americanus*). *Canadian Journal of Fisheries and Aquatic Sciences,* 70: 1625-1634

Zhang, Q., **Brady, D.C.**, & Ball, W.P. (2013) Long-term seasonal trends of nitrogen, phosphorus, and suspended sediment load from the non-tidal Susquehanna River Basin to Chesapeake Bay. *Science of the Total Environment*, 452-453: 208-221

Grieve, C., **Brady, D.C.**, & Polet, H. (2011) Best Practices for Managing, Measuring, and Mitigating the Benthic Impacts of Fishing: *Final Report to the Marine Stewardship Council*

Brady, D.C. & Targett, T.E. (2010) Characterizing the escape response of air-saturation and hypoxia-acclimated juvenile summer flounder (*Paralichthys dentatus*) to diel-cycling hypoxia. *Journal of Fish Biology,* **77**(1): 137-152.

Breitburg, D.L., Craig, J.K., Fulford, R.S., Rose, K.A., Boynton, W.R., **Brady, D.C.**, Ciotti, B.J., Diaz, R.J., Friedland, K.D., Hagy, J.D. III, Hart, D.R., Hines, A.H., Houde, E.D., Kolesar, S.E., Nixon, S.W., Rice, J.A., Secor, D.H., & Targett, T.E. (2009) Nutrient enrichment and fisheries exploitation: interactive effects on estuarine living resources and their management. *Hydrobiologia,* 629(1): 31-47.

Tyler, R.M., **Brady, D.C.**, & Targett, T.E. (2009) Temporal and spatial dynamics of diel-cycling dissolved oxygen in estuarine tributaries. *Estuaries and Coasts.* 32(1): 123-145.

Brady, D.C., Tuzzolino, D.M., & Targett, T.E. (2009) Behavioral responses of juvenile weakfish, *Cynoscion regalis*, to diel-cycling hypoxia: swimming speed, angular

correlation, expected displacement and effects of hypoxia acclimation. *Canadian Journal of Fisheries and Aquatic Sciences.* 66(3): 415-424.

Fennel, K., **Brady, D.C.**, Di Toro, D.M., Fulweiler, R., Gardner, W.S., Giblin, A., McCarthy, M.J., Rao, A., Seitzinger, S., Thouvenot-Korppoo, & Tobias, C. (2009) Modeling denitrification in aquatic sediments. *Biogeochemistry.* **93**(1-2): 159-178.

CBEO Project Team: Ball, W.P., **Brady, D.C.**, Brooks, M.T., Burns, R, Cuker, B.E., Di Toro, D.M., Gross, T.F., Kemp, W.M., Murray, L., Murphy, R.R., Perlman, E., Piasecki, M., Testa, J.M., & Zaslavsky, I. (2008) Prototype system for multi-disciplinary shared cyberinfrastructure: Chesapeake Bay Environmental Observatory (CBEO). *Journal of Hydrologic Engineering, ASCE*. **13**(10): 960-970.

FUNDING HISTORY in ECOLOGICAL MODELING (co-investigator or co-author)

Brady, D.C., Xue, H., Chai, F., Zou, Q., Segee, B., & Cousins, S. MRI Track1: Acquisition of High Performance Computing to Model Coastal Responses to a Changing Environment. NSF Major Research Instrumentation -09/01/2015-08/31/2017 $266,309

Brady, D.C., Boss, E., Thomas, A, Morse, D., and Newell, C. Aquaculture Site Prospecting: Developing Remote Sensing Capabilities for the Aquaculture Community of Maine - National Strategic Initiative for National Sea Grant - 09/01/2015-08/31/2017 $227,208

Brady, D.C. Characterizing the Penobscot River estuarine transition zone to determine environmental challenges for Atlantic salmon, their prey, and other sea-run species. NOAA Cooperative Institute of the North Atlantic Region – 01/01/2015-12/31/2015 $66,893.

Brady, D.C. Development of a coupled hydrodynamic-biological decision support model for sea lice management. Northeast Regional Aquaculture Center - $200,000. Decision pending.

Unfunded: Projecting Climate-related Shifts in American Lobster Habitat and Connectivity: integrated Modeling to Inform Sustainable Management. Wahle, R.A. (Lead PI), Brady, D.C., Chen, Y., Incze, L., Xue, H. (UMaine), Shank, B, and Stock, C. (NOAA). Funding Agency NOAA Climate Program Office, funded at $1,066,000

Unfunded: Developing Modeling and Observational Systems in Northern New England to Examine the Potential Impact of Ocean and Coastal Acidification on the American Lobster. Brady, D.C. (Lead PI), Wahle, R.A., Mayer, L.M., Xue, H., Smith, S.M. (UMaine), Salisbury, J. (UNH), Fields, D. (Bigelow), and Arnold, S. (Island Institute). Funding Agency: NOAA CSCOR, funded at $1,496,000

The Development of On-Land, Closed Containment Integrated Multitrophic Sustainable Aquaculture by means of Ecological Diversity. Pryor, T. (Acadia Harvesting), Barrett, A. (Acadia Harvesting), Brady, D.C. (UMaine). Funding Agency: NSF Small Business Innovation Research Phase II. Project Period: 10/1/2014-9/31/2016 funded at $750,000

Water Sustainability and Climate Category 3 Collaborative: Impacts of Climate Change on the Phenology of Linked Agriculture-Water Systems. Ball, W.P. (Director), Harmon,

C. (JHU – Associate Director), Brady, D.C. (UMaine – Assistant Director), Testa, J.M., Kemp, W.M., Wainger, L. (UMCES), and Ortiz-Bobra, A. (Cornell). Funding Agency: NSF. Project Period: 09/01/2014 – 08/31/2017 funded at $2,500,000

Maine EPSCoR: The Nexus of Coastal Marine Social-Environmental Systems. *Part of the Writing Team.* Funding Agency NSF EPSCoR. Project Period: 11/1/2014-10/31/2019 funded at $20,000,000

Application of a Shallow-water Model for Use in Supporting Chesapeake Bay Management Decision-making. Investigators: Testa, J.M., Li, M. (UMCES), & Brady, D.C. (University of Maine). Funding Agency: Environmental Protection Agency. Project Period: 03/2014-02/2016 funded at $73,333

The role of wild and farmed fish in modulating infectious pressure of the sea louse (*Lepeophtherius salmonis* Kroyer 1837). Investigators: Bricknell, I. & Brady, D.C. (University of Maine). Funding Agency: NOAA National Sea Grant. Project Period 2013-2015 funded at $697,826.

TMDL Model and Data Evaluation for Delaware's Inland Bays. Investigator: Brady, D.C. (University of Maine). Funding Agency: Delaware Center for the Inland Bays. Project Period: 2012-2013 funded at $15,000.

Validating and improving a mechanistic sediment flux modeling framework to simulate a climate and nutrient management driven transition from eutrophication to oligotrophication. Investigators: **Brady, D.C.** (University of Maine)**,** Di Toro, D.M. (University of Delaware (UD)), Nixon, S. (University of Rhode Island), & Fulweiler, R. (Boston University). Funding Agency: Rhode Island Sea Grant. Project Period: 2011-2012 funded at $10,000.

Feasibility Study for Operational Regional Coastal Ecosystem Management Models. Investigators: Fitzpatrick, J. (HDR|HydroQual), Di Toro, D.M. (UD), Scavia, D. (University of Michigan), De Pinto, J. (LimnoTech, Inc.), Kemp, W.M. (University of Maryland Center for Environmental Sciences), & **Brady, D.C.** (University of Maine). Funding Agency: NOAA Center for Sponsored Coastal Ocean Research. Project Period: 2011-2014 funded at $500,000.

Can TMDL Models Reproduce the Nutrient Loading-Hypoxia Relationship? Investigators: Di Toro, D.M. (UD), **Brady, D.C.** (University of Maine), & Ball, W.P. (Johns Hopkins University). Funding Agency: Water Environment Research Federation (WERF). Project Period: 2010-2014 funded at $175,000.

NASA EPSCoR Research Project: Building and Enhancing a Competitive and Sustainable Remote Sensing Infrastructure for Critical Zone Studies and Cutting Edge Research. Investigators: Mullan, M, Yan, X-H, Sparks, D., Di Toro, D.M., Klemas, V., Jo, Y-H., & **Brady, D.C.** (UD). Funding Agency: NASA EPSCoR. Project Period: 2008 – 2011 funded at $749,769 and matched at $750,124.

Collaborative research: Process Based Statistical Interpolation Methods for Improved Analysis of WATERS Test-bed Observations and Water Quality Models. Investigators: Ball, W.P., Curriero, F. (JHU), Di Toro, D.M., & **Brady, D.C.** (UD). Funding Agency: National Science Foundation – Environmental Engineering. Project Period 2009 – 2012 funded at $252,193

CHRP07: Modeling Hypoxia and ecological responses to Climate and Nutrients. Investigators: Kemp, W.M., Li, M., North, E., Boynton, W., Secor, D., (University of Maryland Center for Environmental Studies), Di Toro, D.M., **Brady, D.C.** (UD), & Fennel, K. (Dalhousie University). Funding Agency: NOAA's Coastal Hypoxia Research Program. Project Period 2007 – 2012 funded at $2,321,845

A Prototype System for Multi-Disciplinary Shared Cyberinfrastructure – Chesapeake Bay Environmental Observatory (CBEO). Investigators: Gross, T. (Chesapeake Research Consortium), Ball, W.P. (JHU), Di Toro, D.M. (UD), Kemp, W.M. (UMCES), Piasecki, M. (Drexel University), & Burns, R. (JHU). Funding Agency: National Science Foundation - Cyberinfrastructure. Project Period: 2007-2010 funded at $2,149,906

Integrated Water Quality Monitoring, Habitat Mapping, and Fish Tracking with an Automated Underwater Vehicle. Investigators: Trembanis, A., Di Toro, D.M. & Targett, T.E. (UD). Funding Agency: Delaware EPSCoR Seed Grant Program. Project Period 2006 funded at $48,000.

Linking Water Quality Models with Individual-based Models to Investigate Impacts of Diel-cycling Hypoxia on Nursery Habitat Quality for Estuarine Dependent Fishes. Investigators: Targett, T.E., Di Toro, D.M. (UD), & Diaz, R.J. (College of William and Mary). Funding agency: NOAA Coastal Hypoxia Research Program. Project Period: 2005-2008

Impact of Hypoxia on Quality and Quantity of Estuarine Nursery Habitat: Patterns of in situ Growth and Swimming Avoidance Activity & Costs in Estuarine-Dependent Fishes. Investigator: Targett. T.E. (UD) Funding Agency: Delaware Sea Grant Program, NOAA, Grant No. NA03OAR4170011 (project R/F 23). Project Period: Feb. 1, 2003 – Jan. 31, 2005

FUNDING HISTORY – OTHER

FSML Planning for the Future of the Darling Marine Center. Investigators: Perry, M.J., **Brady, D.C.**, Chai, F., Lindsay, S., & Steneck, R. (University of Maine). Funding Agency: National Science Foundation. Project Period: 9/1/2013-9/1/2015 funded at $24,993

Maine Aqua Ventus I: Floating Offshore Wind Energy. Investigators: Dagher, H. (Advanced Composites Center) & **Brady, D.C.** (University of Maine). Funding Agency: Department of Energy's Offshore Wind Advanced Technology Demonstration Projects. Project Period: 2013-2014 funded at $4,000,000.

Developing wildlife monitoring capabilities for weather buoys in the Gulf of Maine. Investigators: **Brady, D.C.** (University of Maine) & Adams, E. (BioDiversity Research Institute). Funding Agency: Maine Sea Grant. Project Period: 2013-2014 funded at $5,400.

CONTRIBUTED AND INVITED RESEARCH PRESENTATIONS

***LEADERSHIP in the ECOLOGICAL MODELING COMMUNITY*:**

Co-chair of the Coastal and Estuarine Research Federation (CERF) Session: SCI-163 Timing is Everything: Phenology in Coastal Marine Ecosystems with Kemp, W.M., & Testa, J.M. (2015)

Leader of the NOAA North Atlantic Regional Team on the 2015 Theme - "Linking freshwater and ocean dynamics towards integrative ecosystem modeling: opportunities and challenges" with Dr. Adrian Jordaan - August 27-28th Norrie Point Environmental Center, NY

Co-chair of the Coastal and Estuarine Research Federation (CERF) Session: SCI-039 Synthesis Research in Estuarine and Coastal Science: Focus on Process and Application with Kemp, W.M., Testa, J.M., & Boynton, W.P. (2013)

Conference Organizing and Scientific Committee Member for Sea Lice 2014 in Portland, ME. And Chair of the Sea Lice Modeling Session: The 10th International Sea Lice Conference will be the first hosted in the U.S. from August 31st to September 5th

Chair of the Aquaculture Modeling Session at the Northeast Aquaculture Conference and Exposition on January 14th-16th 2015 in Portland, ME

MEDIA EXPERIENCE: January 23rd, 2015: Guest on WERU's Coastal Conversations: Ocean Acidification

Brady, D.C., Byron, C., Anderson, P. & Costa-Pierce. The Sustainable Ecological Aquaculture Network (SEANET). Coastal and Estuarine Research Federation meeting in Portland, OR - November 2015

Brady, D.C. Environmental Effects of Offshore Wind Development. Maine State Science Fair: February 20th, 2015

Brady, D.C. Northeast Aquaculture Convention and Exposition, Portland, ME January 16th, 2015. Contributed Paper: Modeling of Bivalve Aquaculture Spatial Impacts on Sediments (BASIS)

Brady D.C. 1st Annual Maine Aquaculture Research and Development Forum at the Northeast Aquaculture Convention and Exposition, Portland, ME January 14th, 2015: Invited Feature: The role of estuarine science in informing the location and dynamics of growing areas

Brady, D.C. Damariscotta River Association, Damariscotta, ME January 8th, 2015: Invited Feature: Damariscotta River Estuary: Where have we been and where are we going?

Brady, D.C. Maine Department of Environmental Protection, Augusta, ME December 17th, 2014: Invited Feature: How Models Influence Environmental Policy Decision-Making: Lessons Learned from Models of Nutrient Loading and Hypoxia

Brady, D.C. The George J. Mitchell Center for Sustainability Solutions Invited Presenter, Orono, ME September 15th 2014: Invited Feature - How Models Influence Environmental Policy Decision-Making: Lessons Learned from Models of Nutrient Loading and Hypoxia

Ball, W.P., Zhang, Q., **Brady, D.C.**, Boynton, W. American Geophysical Union Fall Meeting December 15th-19th 2014, San Francisco, CA: Contributed Paper: Long-Term Loads of Nutrients and Sediment from Non-Tidal Regions of the Chesapeake Bay Watershed

Lasley-Rasher, R., Stevens, J., Lipsky, C., **Brady, D.C.**, Jumars, P. American Fisheries Society, August 17th-21st 2014: Contributed Poster: Exploring the importance of top-down and bottom-up drivers of mysid shrimp distribution in the Penobscot Estuary, Maine

Frederick, C., Pietrak, M., Barker, S., **Brady, D.C.,** & Bricknell, I. Sea Lice 2014 August 31st-September 5th, 2014: Contributed Paper: Where are all the sea lice? A First glance at sentinel fish in Cobscook Bay

Brady, D.C. The State of Maine's legislatively Convened Ocean Acidification Panel, August 1st, 2014: Invited Paper: The Potential Role of Water Quality Modeling in Coastal Acidification Management

Brady, D.C. Chesapeake Bay Program Modeling Workgroup April 1st, 2014: Invited Presentation: TMDL Models and Hypoxic Volume: A Long-term Modeling Approach

Brady, D.C. Center for the Inland Bays Science and Technical Advisory Committee, Lewes, DE March 28, 2014: Invited Paper: Water quality Modeling in Delaware's Inland Bays: Where Have We Been and Where Should We Go?

Brady, D.C. Climate Solutions Expo and Summit, March 15th, 2014: Invited Presentation: Climate Implications of Floating Offshore Wind Energy in Maine

Bayer, S.R., Wahle, R.A., **Brady, D.C.**, Brooks, D.A. & Jumars, P.A. Association for the Sciences of Limnology and Oceanography: Ocean Sciences, Honolulu, HI, February 23-28 Contributed Poster: Scale of fertilization success in an exploited broadcast spawner: From an individual to an estuary

Oppenheim, N.G., Wahle, R.A., & **Brady, D.C.** Association for the Sciences of Limnology and Oceanography: Ocean Sciences, Honolulu, HI, February 23-28 Contributed Poster: Can we forecast the future of the American lobster fishery from a larval settlement index?

Brady, D.C., Testa, J.M., Sanford, L.P., Cornwell, J.C., Newell, R.I.E., Newell, C., & Richardson, J. Coastal and Estuarine Research Federation Meeting, San Diego, CA, November 3-7 2013 Invited Paper: Sediment flux modeling of Bivalve Aquaculture Spatial Impacts on Sediments (BASIS)

Brady, D.C. Maine Maritime Academy, Castine, ME, October 21 2013 Invited Seminar: Floating Offshore Wind Energy Development: Monitoring and Permitting Next Generation Technology

Brady, D.C. Island Institute Energy Conference, Belfast Bay, ME, October 18 2013 Invited Presentation: Floating Offshore Wind Energy Development in Maine: Updates from DeepCwind and Maine Aqua Ventus

Zhang, Q., Brady, D.C., & Ball, W.P., Community Surface Dynamics Modeling System Annual Meeting, Boulder, CO, March 23-25, 2013 Contributed Paper: Long-term Seasonal Trends of Nitrogen, Phosphorus, and Suspended Sediment Load from the Non-tidal Susquehanna River Basin to Chesapeake Bay

Brady, D.C., Fitzpatrick, J., Scavia, D., DePinto, J., Kemp, W.M., & Di Toro, D.M. Association for the Sciences of Limnology and Oceanography: Aquatic Sciences,

New Orleans, February 17-22, 2013. Invited Paper: Feasibility study for operational regional coastal ecosystem management models

Brady, D.C., Di Toro, D.M., Targett, T.E. & Kemp, W.M. Association for the Sciences of Limnology and Oceanography: Aquatic Sciences, New Orleans, February 17-22, 2013. Contributed Paper: Coupling the spatial and temporal dynamics of hypoxia with juvenile estuary dependent fish behavior

Brady, D.C. U.S.-Canadian Lobsterman Town Meeting, Portland, ME March 2012. Environmental Effects of Offshore Wind Development: The DeepCwind Case Study

Brady, D.C., Testa, J., Di Toro, D.M., Boynton, W.R. & Kemp, W.M. Coastal and Estuarine Research Federation Meeting, Daytona, FL, November 2011. Contributed Paper: Estimating organic matter deposition and decay with a long-term sediment flux database and mechanistic model

Ball, W.P., Bosch, J.A., Brady, D.C., Di Toro, D.M., Kemp, W.M., Murphy, R.R., & Testa, J.M. Association of Environmental Engineering and Science Professors, Tampa Bay, FL, July 2011. Contributed Paper: Hypoxia in Chesapeake Bay: Mining decades of data for new insights

Brady, D.C., Testa, J., Di Toro, D.M., & Kemp, W.M. Chesapeake Bay Modeling Symposium, Annapolis, MD, May 2010. Invited Paper: Sediment-Water Oxygen and Nutrient Exchanges in Chesapeake Bay: Insights from Model-Data Comparisons

CBEO Project Team: Ball, W.P., Burns, R, Cuker, B.E., Di Toro, D.M., Kemp, W.M., Murray, L., Piasecki, M., Zaslavsky, I., Aguayo, M., Bosch, J., Brady, D.C., Murphy, R.R., Perlman, E., Rodriguez, M., Testa, J.M., & Whitenack, T. American Geophysical Union, San Francisco, CA, December 2009 Contributed Paper: The Design and Application of a Chesapeake Bay Environmental Observatory

Brady, D.C. & Targett, T.E. Coastal and Estuarine Research Federation, Portland, OR, November 2009. Contributed Paper: Movement of juvenile weakfish (*Cynoscion regalis*) and spot (*Leiostomus xanthurus*) in relation to diel-cycling hypoxia in an estuarine tributary: Assessment using acoustic telemetry

Brady, D.C., Di Toro, D.M., Kirby, J.T., Xu, L., & Targett, T.E. Estuarine Research Federation Conference, Providence, RI, November 2007. Contributed Paper: Water quality modeling of diel-cycling hypoxia in Delaware's Coastal Bays

Brady, D.C., Tuzzolino, D.M., & Targett, T.E. 31st Annual Larval Fish Conference, St. John's, Newfoundland, Canada, July 2007. Contributed Paper: Laboratory and field evaluation of juvenile weakfish (*Cynoscion regalis*) behavioral responses to diel-cycling hypoxia in estuarine tributaries.

Targett, T.E., Brady, D.C., & Stierhoff, K.L. Ecological Impacts on Living Resources Workshop, Stennis Space Center, Bay St. Louis, MS. March 2007. Contributed paper: Diel-cycling hypoxia in shallow estuarine waters: Impacts on fish growth and movements.

Brady, D.C. & Di Toro, D.M. Denitrification Modeling Across Terrestrial, Freshwater, and Marine Systems. The Institute of Ecosystems Studies, Millbrook, NY. November 2006. Invited Presentation: Sediment Flux Modeling: Special Emphasis on Denitrification

Brady, D.C., Tuzzolino, D.M., & Targett, T.E. Tidal Finfish Advisory Council, Delaware Department of Natural Resources & Environmental Control. Dover, DE. November 2006. Invited Presentation. Examining the resource value of benthic habitats affected by low dissolved oxygen to weakfish and summer flounder

Brady, D.C., Tyler, R.M., & Targett, T.E. 7th Annual Shallow Water Science and Management Conference, Atlantic City, NJ. September 2006. Contributed Paper: Spatial and Temporal Variability in Diel-Cycling Hypoxia: Causes and Consequences

Brady, D.C. Delaware's Center for the Inland Bays Science and Technical Advisory Committee, Lewes, DE. January 2006. Invited Presentation: A How to Guide for Estuary-Dependent Fish Avoiding Hypoxia in Delaware's Inland Bays

Brady, D.C., Tuzzolino, D.M., & Targett, T.E. Estuarine Research Federation Conference. Norfolk, VA. October 2005. Contributed Paper. Hypoxia-induced searching strategies of juvenile weakfish: How do interacting kineses facilitate hypoxia avoidance and survival?

Brady, D.C. American Fisheries Society 135th Annual Meeting. Anchorage, AK. September 2005. Contributed Paper: Integrating fish behavior and water quality models: Hypoxia-induced searching strategies of juvenile weakfish

Brady, D.C. Mid-Atlantic Chapter-American Fisheries Society Annual Meeting, Rider University, NJ. 2005. Invited Presentation. Searching for oxygen: Deriving a mechanistic understanding of weakfish behavior during hypoxia

Brady, D.C. & Targett, T.E. Flatfish Biology Conference. Westbrook, CT. December 2004. Contributed Paper: Behavioral responses of summer flounder and weakfish to declining dissolved oxygen: interspecific and intraspecific comparisons

Brady, D.C. University of Delaware College of Marine Studies Graduate Student Symposium. Lewes, DE. November 2004. Invited Presentation: Behavioral responses of fishes to declining dissolved oxygen: avoidance and acclimation

Brady, D.C., & Targett, T.E. VI International Congress on the Biology of Fish. Manaus, Brazil. August 2004: Contributed Paper. Behavioral responses of juvenile estuarine-dependant fishes to declining dissolved oxygen: avoidance, recovery, and acclimation

Brady, D.C. & Targett, T.E. Tidal Finfish Advisory Council, Delaware Department of Natural Resources & Environmental Control. Dover, DE. June 2004: Invited Presentation. Moving targets: linking water quality to juvenile weakfish and summer flounder

Brady, D.C. & Stierhoff, K.L. UD College of Marine Studies Ocean Current Lecture Series. Lewes, DE. 2002: Invited Presentation. The stresses on fish and graduate students in and around Delaware Bay

FELLOWSHIPS AND DISTINCTIONS

Frances Severance Award for Best Thesis or Dissertation in the College of Marine and Earth Studies Marine Biosciences Program, University of Delaware, Lewes, DE, 2008

Center for the Inland Bays Award for demonstrating research excellence that advances the resource management and educational missions of the center, Center for the Inland Bays, Rehoboth, DE, 2008

Best Student Oral Presentation at the Mid-Atlantic Chapter of the American Fisheries Society, Rider University, Lawrenceville, NJ. 2005.

Best Student Oral Presentation in the "Fish Locomotion" Symposium.VI International Congress on the Biology of Fish, Manaus, Brazil. August 2004.

Marian R. Okie Fellowship for academic and research excellence and demonstrated leadership abilities. University of Delaware Graduate College of Marine Studies. 2004 – 2005

Marine Biology/Biochemistry Program Fellow. University of Delaware Graduate College of Marine Studies. 2001-2002.

TEACHING & EDUCATION EXPERIENCE

Master's and Ph.D. Student Committees: Skylar Bayer, Jennifer McHenry, Kevin Du Clos, Kevin Staples, and Catherine Fredericks (UMaine's School of Marine Sciences), Danielle Martin and Brett Gerrard (UMaine's School of Earth and Climate Sciences), and Kisei Tanaka (UMaine's Climate Change Institute), Sarah Fischer (University of Delaware's College of Earth, Ocean, and the Environment)

Post-doc Advisor to Rachel Lasley-Rasher, Ph.D. (NSF Biological Oceanography Fellowship) and Kelly Cole, Ph.D. (NSF New England Sustainability Consortium)

Capstone Project Advisor for UMaine Student, Marina Van der Eb: "Behavioral model of Atlantic salmon in relation to sea lice infectious pressure" and Brianna Smith "Nutrient, Light, and Productivity Dynamics in the Damariscotta River Estuary"

May/June 2011-present: MATLAB for Marine Scientists (2 CR) at the Darling Marine Center at the University of Maine

Fall 2012 and 2013: Developer of and Lecturer in SMS 500: Marine Biology, the University of Maine's 1st Graduate Level Marine Biology course and a requirement for graduate students

2011-2013: Guest lecturer in the Semester by the Sea Program at the Darling Marine Center at the University of Maine in Human Impacts on the Ocean: "Eutrophication in the Coastal Ocean" & "Environmental Impacts of Offshore Wind", Benthic Ecology: "Movement Ecology", and Estuarine Oceanography: "The role of models in estuarine management"

2010-2012: Adjunct Professor at Husson University, Bangor, ME teaching the laboratory sections of General Biology II and Principles of Chemistry I & II

2005-2009: Guest Lecturer at the University of Delaware in Advanced Water Quality Modeling, Eutrophication and Sediment Flux Modeling & Fish Topics

2005: Guest Lecturer at Delaware State University in Marine Biology: "The Functional Role of Estuaries: Can We Break Them?"

2000: Wildlife Educator, Wildlife Conservation Society, Bronx Zoo. Taught wildlife science to K-12th grade.

2000: Education Consultant, Metis Associates, New York, New York, Data analysis particularly concerning program development and evaluation in K-12th grade education

Summer 1996 & 1997: Marine Mammal Demonstration Narrator and Assistant Trainer, Wildlife Conservation Society New York Aquarium for Wildlife Conservation. Narrated marine mammal demonstrations (three shows daily for 1400 people) and assisted in care, training and behavioral observations for California sea lions, Atlantic bottle-nosed dolphins, and beluga whales.

UNIVERSITY SERVICE, CONSULTING, & VOLUNTEER OUTREACH

Environmental Monitoring and Permitting Task Manager for the DeepCwind Consortium and Maine Aqua Ventus I (2012-present)

- Received Finding of No Significant Impact (FONSI) for Monhegan Island Floating Offshore Wind Test Site (2012) – First permitted project of its kind in the US
- Received Finding of No Significant Impact (FONSI) for the Castine, ME Floating Offshore Wind Test Site (2013) – First floating offshore wind turbine connected to the grid in the US
- Only DOE Offshore Wind Technology funded project to have no environmental monitoring and permitting spending holds

Proposal and Natural Resource Management Review:

- Member of the Environmental Effects Panel for the Gulf of Mexico Research Initiative RFP-I (2011), RFP-II (2012), and RFP-I (2015) to investigate the impacts of the Deepwater Horizon Oil Spill
- Technical Advisory Committee for Maine Sea Grant's Healthy Beaches Program (2015-present)
- Reviewer for New Jersey, Puerto Rico, and Oregon Sea Grant Full Proposals: July 2013. Reviewer for Maryland Sea Grant 2015
- Advisor to the Maine Coastal Mapping Initiative and the Maine Coastal Atlas Project, both run by the State of Maine's Coastal Program: 2013-present
- Member of NOAA's Northern Gulf of Mexico Hypoxia Modeling Technical Review Team: April 17-18, 2013, Stennis Space Center, MS
- Member of the Comprehensive Management Plan team for Delaware's Inland Bays and editor of the State of the Bay report for Delaware's Inland Bays (2011-present)
- Panel Reviewer for Connecticut and New York Sea Grant: Long Island Sound Study Pre-proposals and Full Proposals: 2012
- Panel Reviewer for Virginia Sea Grant Pre-proposals 2011
- Member of the Peer Advisory Panel for the National Oceanic and Atmospheric Association (NOAA) Coastal Hypoxia Research Program. February 2010.

Reviewed Manuscripts or Book Chapters for Estuarine and Coastal Shelf Science (named a top reviewer in 2015), Estuaries and Coasts, Marine Ecology Progress Series,

Climatic Change, Conservation Physiology, Journal of Marine Systems, Fisheries Oceanography, Journal of the American Water Resources Association, Fishery Bulletin, Journal of Environmental Management, African Journal of Biotechnology, Journal of Experimental Marine Biology and Ecology, Fisheries Research, and Garland Scientific, Hydrobiologia, Journal of Fish Disease

Senior Modeling Consultant for Chesapeake Biogeochemical Associates: Philadelphia Water District Project 09/01/2015-08/31/2017

Serve on the University of Maine's Ira C. Darling Marine Center Safety Committee (2012-present)

Marine Biology Educator for the University of Maine's College of Natural Sciences, Forestry, and Agriculture Freshman Orientation (Fall 2011-present) and the Darling Marine Center Dive-In Program for High School Seniors (Summer 2011-present)

Consultant for the Marine Stewardship Council regarding the environmental effects of fishing gear on habitat (September 2011)

Scientific Advisor for the Hurricane Island Foundation Center for Science and Leadership Field Research Station (2011-present)

Served on the University of Delaware's College of Earth, Ocean, and Environment Search Committee for an Academic Coordinator

Student Representative for the University of Delaware's Graduate College of Marine Studies Academic Council, 2005-2007.

University of Delaware College of Marine Studies Lunch Lecture Series for Research Experience for Undergraduate (REU) interns, "Applying to Graduate School in the Marine Sciences" (Summers 2003-2006).

Marine Biology Educator, Partnership for the Delaware Estuary, Wilmington, DE (2004)

Marine Biology Educator, Mariner Middle School, Milford, DE (2002-2003)

Marine Biology Educator, H.B. DuPont Middle School, Hockessin, DE (2002-2003 & 2006)

Marine Biology Educator, Governor's School for Excellence, Lewes, DE (2001-2004)
Judge, Sussex County Science Fair (2002)

University of Delaware College of Marine Studies Ocean Currents Lecture Series Lecturer (2002).

GRADUATE COURSES

Marine Biology (A-); Marine Biochemistry (A); Coastal Field Biology (A); Statistics in the Marine Sciences (A); Ecology and Evolution of Coral Reefs (A); Genetics of Marine Organisms (A); Marine Inorganic Chemistry (A); Writing Papers in the Marine Sciences (A-); Ichthyology: Systematics, Physiology, & Ecology (A); Introductory PERL for Biologists (A); Advanced Water Quality Modeling (A-); Physiology of Marine Organisms (A); ; Topics in Fish Biology (7 semesters, A's); Benthic Boundary Layer Seminar (A); Marine Biology-Biochemistry Seminar (2 semesters, A), Eutrophication and Sediment Flux Modeling (A-), Principles of Water Quality Criteria (audited)

GPA: 3.93

UNDERGRADUATE COURSES in the SCIENCES

Biology I & II; Principles of Chemistry I & II; Calculus I & II; Expository Writing; Critical Writing for Science Majors; Marine Zoology; Organic Chemistry I & II; Probability and Statistics; Physics I & II; Introduction to Speech Communication; Scientific Communication; Principles of Oceanography; Practical Oceanographic Research; Nautical Science; Marine Technology; Maritime Studies; Ichthyology; Animal Behavior; Environmental Analysis II; Botany; Evolution; Freshwater/Estuarine Ecology; Herpetology; Marine Phycology; Biochemistry; Ornithology; Instrumental Methods of Analysis; Advanced Chemistry Lab

GPA: 3.71

PROFESSIONAL AFFILIATIONS

American Fisheries Society

Mid-Atlantic Chapter Member (2002-2008)

Mid-Atlantic Chapter Student Representative 2004

Estuaries and Early Life History Sections Member

The Coastal & Estuarine Research Federation

New England Estuarine Research Society

Association for the Sciences of Limnology and Oceanography

SKILLS AND CERTIFICATION

Programming: ArcGIS Editor, FORTRAN, MATLAB®, SQL Server, and VBA

Statistical Packages: SAS, SPSS, Systat, and DTREG

Ecosystem Modeling Experience: ECOPATH: Completed 30 Hours Instructional Time in "Ecosystem Modeling using EcoPath with EcoSim", March 12-15, 2012

Water Quality Modeling: Row Column AESOP (RCA), Sediment Flux Modeling (SFM), Chesapeake Bay Eutrophication Model (CE-Qual-ICM)

Hydrodynamic Modeling: Estuarine Coastal Ocean Model with Sediment module (ECOMSED), Regional Ocean Modeling System (ROMS), Larval Transport Lagrangian Model (LTRANS – completed 2 day training at Horn Point Laboratory with Dr. Elizabeth North)

Watershed Modeling: Hydrologic Simulation Program – FORTRAN (HSPF)

NAUI Open Water Dive (1999)

USCG Small Boat Operators Certification (2001)

REFERENCES

Dr. Dominic M. Di Toro, Professor, University of Delaware-Department of Civil & Environmental Engineering

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Dr. Timothy E. Targett, Professor, University of Delaware
Email: ttargett@udel.edu Phone: (302) 645-4396
Dr. W.M. Kemp, Professor, University of Maryland Center for Environmental Science
Email: kemp@umces.edu Phone: (410) 221-8490