

Curriculum Vita:

Roger Mann, Professor of Marine Science,

Virginia Institute of Marine Sciences

William & Mary

Gloucester Point, VA 23062

PERSONAL INFORMATION

Name:	Roger Mann	Revision Date: February 9, 2023
Office Address:	Virginia Institute of Marine Science, Gloucester Point, VA 23062	
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Home Phone:	(804) 725-4617	
Position:	Professor of Marine Science	

EDUCATION

Academic degrees, institutions and dates.

Ph.D. 1976. Marine Science. Bangor University, Wales

B.S. 1972. Biological Science. University of East Anglia, Norwich, U.K.

ACADEMIC POSITIONS

Teaching and research positions, including dates

2003-2012, Director for Research and Advisory Services, Virginia Institute of Marine Sciences

1987-present, Professor, William & Mary

1985-1987, Associate Professor, William & Mary

1981-1984, Associate Scientist, Woods Hole Oceanographic Institution (WHOI)

1977-1981, Assistant Scientist, WHOI

1975-1977, Post-Doctoral Fellow, WHOI

2016-present, Associate Graduate Faculty, Gulf Coast Research Laboratory, University of Southern Mississippi

2022-present, Associate Graduate Faculty, University of Maine

HONORS, PRIZES AND AWARDS

Professional prizes, awards, honors, editorial positions on scholarly journals, services on review boards outside the College, and offices in professional societies

Professional prizes, awards, and honors:

Chesapeake Bay Commission Tribute to Excellence, 1994, for "...official recognition of significant contributions to the management and protection of the Chesapeake Bay."

School of Marine Science Outstanding Teacher Award, 2001

School of Marine Science Outstanding Faculty Award in Advisory Service, 2022

Kirby Lang Visiting Professor in Marine Science, University College of North Wales, Bangor, Marine Science Laboratories, Menai Bridge, Wales, 2003

Honored Life Member, National Shellfisheries Association, 2008

Plumeri Award for Faculty Excellence, William & Mary 2012.

Editorial positions on scholarly journals

Editor of the Journal of Shellfish Research from 1982 -1986.

Editorial boards: 2000-2018 Aquaculture (Elsevier), Journal of Shellfish Research (current)

Offices in professional societies:

National Shellfisheries Association (in chronological order):

Publications Committee member (1980-present), Publications Committee (2021 – present), Chair, Journal Editor (J. Shellfish Research) (1982-86), Editorial Board (1982-present), Vice President (1986-87), Program Chairman (1987 AGM), President Elect (1987-88), President (1988-89), AGM. Site and Program Organizer 1989-90, Constitutional Revision Committee 1990-91, Chair, Honorary Membership Committee 1991-92 and 1995-96.

ACADEMIC CONTRIBUTIONS

6a. Courses taught (all as sole instructor)

Spring 1990. MS-698-02 Physiological Methods. 3 credits.
 Fall 1991. MS-698-03 Readings in Larval Ecology. 3 credits
 Spring 1992 MS-698-02 Physiological Methods. 3 credits.
 Spring 1993 MS-698-02 Physiological Methods. 3 credits.
 Spring 1994 MS 617 Malacology. 3 credits.
 Spring 1996 MS 668 Malacology. 3 credits.
 Spring 1997 MS 668 Malacology. 3 credits.
 Spring 1997 MS 571 Culture and Physiology of Aquatic Organisms. 3 credits
 Spring 1998 MS 698 Larval Ecology. 3 credits
 Spring 1999 MS 668 Malacology. 3 credits.
 Spring 2000 MS 658 Larval Ecology. 3 credits
 Spring 2000 MS 698 Biology of Northern Maritime Climate Coastlines. 2 credits
 Fall 2000 MS 698 Dispersal of propagules. 3 credits
 Spring 2001 MS 668 Malacology. 3 credits.
 Fall 2001 MS 698-03 Invasive species: biology, policy and management, 1 or 2 credits.
 Spring 2002 MS 658 Larval Ecology. 3 credits
 Spring 2003 MS 668 Malacology. 3 credits.
 Spring 2003. 8 lecture invited course given at Bangor University, Wales, in March 2003.
 Spring 2004 MS 658 Larval Ecology. 3 credits
 Spring 2005 MS 668 Malacology. 3 credits
 Spring 2006 MS 658 Larval Ecology. 3 credits
 Spring 2007 MS 668 Malacology. 3 credits
 Spring 2008 MS 658 Larval Ecology. 3 credits
 Spring 2009 MS 668 Malacology. 3 credits
 Spring 2010 MS 658 Larval Ecology. 3 credits
 Spring 2011 MS 668 Malacology. 3 credits
 Spring 2012 MS 698 Invasion Biology. 3 credits – taught with Filipe Ribeiro
 Spring 2012 MS 658 Larval Ecology. 3 credits
 Fall 2013 MS 668 Malacology. 3 credits
 Fall 2014 MS 658 Larval Ecology. 3 credits

Fall 2015	MS 668	Malacology. 3 credits
Fall 2016	MS 658	Larval Ecology. 3 credits
Fall 2017	MS 668	Malacology. 3 credits
Fall 2018	MS 658	Larval Ecology. 3 credits
Fall 2019	MS 668	Malacology. 3 credits
Spring 2020	MS 658	Larval Ecology. 3 credits
Fall 2020	MS 658	Larval Ecology. 3 credits
Fall 2021	MS 668	Malacology. 3 credits
Fall 2022	MS 658	Larval Ecology. 3 credits

I contributed to MS-500 level Introductory core courses and/or their laboratories (1986 – 1990, 2000-2003), MS-601 The Development of Public Policy (1992), MS-628 Biological Oceanographic Processes, MS-528 Marine Fisheries Science (all years offered), and PBP-390-01 Environment and Health in the Developing World. (Fall 1991, Spring and Fall of 1992, Spring and Fall of 1993.)

6b. Students mentored (SMS/VIMS)

1. Major Advisor

Graduated students

- Alexandria Marquardt. PhD in progress. Dynamics of oyster populations.**
- Kaitlyn Clark. PhD candidate in progress, co-mentor with David Rudders. Density dependent growth in the scallop *Placopecten magellanicus*.**
- Alexis Hollander. MS 2022. A retrospective on growth of the Atlantic surfclam *Spisula solidissima* in a changing ocean.
- David Rudders Ph.D. 2010. (I mentored David during the final year of his work including the writing based on years of work after his major professor William DuPaul retired in 2009). Incorporating industry based dredge surveys into the assessment of the sea scallop , *Placopecten magellanicus*
- Stefanie Gera. 2010 M.S. Egg Capsule Hatching Success in *Rapana venosa* and *Urosalpinx cinerea* in Relation to Temperature and Salinity.
- Emily Chandler, M.S. 2007. Genetically monomorphic invasive populations of the rapa whelk, *Rapana venosa*.
- Adriana Picariello 2006. M.S. The effects of climate change on the population biology of the surf clam, *Spisula solidissima*, in the Middle Atlantic Bight.
- Elizabeth Darrow (co-chair with Mark Luckenbach.). 2004 M.S. Ecological energetics of the hard clam.
- Doolittle, Daniel. (co-chair with Mark Patterson). 2003. M.S. Development of a method for the identification and quantification of biological targets detected by sidescan sonar
- Catherine Ware, 2002. M.S. Temporal and spatial variation in reproductive output of the veined rapa whelk (*Rapana venosa*) in the Chesapeake Bay.
- Arminda Gensler. (co-chair with John Graves). 2001, M.S. Genetic Investigations of Interspecific and Intraspecific Relationships within the Genus *Rapana*.
- Erica Westcott, 2001 M.S. Seasonal reproductive activity of the invading gastropod *Rapana venosa* in the Chesapeake Bay
- Rebecca Green, 2001. M.S. Morphological variation of three populations of the Veined Rapa Whelk, *Rapana venosa*, an invasive predatory gastropod species.
- Juliana M. Harding. 2000. Ph.D. Ecological interactions between benthic oyster reef fishes and oysters.
- Ian Bartol. 1999. (co chair with Mark Patterson) Ph.D. Swimming Physiology of the Brief Squid, *Lolliguncula brevis*.

16. Melissa Southworth, 1998. M. A. Oyster Reef Broodstock Enhancement in the Great Wicomico River, Virginia
17. Sandra Brooke, 1996, M.A. A comparison of natural and laboratory diets for the culture of marine invertebrate larvae: American Oyster, Queen Conch, and Milk Conch.
18. Elizabeth Keane - Shea, M.A. 1995 (co-chair with Mike Vecchione, Systematics Laboratory, National Museum, Smithsonian.) The early life histories of three families of cephalopods, and an examination of the concept of a paralarvae.
19. Ian Bartol, 1995, M.A. *Crassostrea virginica* on constructed intertidal oyster reefs: Effects of tidal height and substrate level on settlement, growth and mortality.
20. Patrick K. Baker, 1994, Ph.D. Quantification of settlement and recruitment processes in bivalve molluscs.
21. Shirley M. Baker, 1994, Ph.D. Oyster (*Crassostrea virginica*) metamorphosis - Effects of low oxygen.
22. Robert A. Blaylock, 1992. Ph.D. Distribution, abundance and behavior of the Cownose Ray, *Rhinoptera bonasus*, in Lower Chesapeake Bay.
23. L. L. Castell, 1991, M.A. Assessment of larval physiological condition using fluorescent, lipid specific stains.
24. G. Curtis Roegner, 1990, M.A. Recruitment and growth of juvenile *Crassostrea virginica* (Gmelin) in relation to tidal zonation.
25. Kevin McCarthy, 1990, M.A. The influence of swimming behavior of larval *Crassostrea virginica* (Gmelin).
26. Carrollyn Cox, 1988, M.A. Seasonal changes in the fecundity of oysters *Crassostrea virginica* (Gmelin) from four oyster reefs in the James River, Virginia.
27. Bernardita Campos, 1988, M.A. Swimming response of larvae of three mactrid bivalves to different salinity gradients.
28. David Eggleston, 1988, M.A. Predator-prey dynamics between the blue crab, *Callinectes sapidus* Rathbun, and juvenile oysters, *Crassostrea virginica* (Gmelin).
29. Ellen Pafford, 1988, M.A. Distribution and taxonomy of endolithic algae occurring in the shells of *Crassostrea virginica* in the lower James River, Virginia.

2. Student Committee Service

W&M School of Marine Science

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| 1. Kristen Prosser, Ph.D candidate | 18. Noel Yochum, M.S. 2006 |
| 2. Ann Schatz, Ph.D candidate | 19. Lawrence Carpenter, Ph.D. 2006 |
| 3. Anthony Hines, Ph.D candidate | 20. John Walter, Ph.D. 2005 |
| 4. Sarah K. Pease, Ph.D 2021 | 21. Vincent Encomio, Ph.D. 2004 |
| 5. Vaskar Nepal KC, Ph.D 2020 | 22. Andrew Walker, M.S. 2004 |
| 6. Ann J. Ropp, M.S. 2020 | 23. Kristen Delano, M.S. 2003 |
| 7. Kate Ritter, M.S. 2019 | 24. Jo Gascoigne, Ph.D. 2003 |
| 8. Lauren Huey, M.S. 2018 | 25. Qian Zhang, M.S. 2003 |
| 9. Joseph Matt, M.S. 2018 | 26. Erin Seney, M.S. 2003 |
| 10. Robert Isdell, Ph.D 2018 | 27. Alex Jestel, M.S. 2003 |
| 11. Brendan Turley, M.S. 2015 | 28. Janet Nestlerode, Ph.D 2003 |
| 12. Brian Callam, M.S. 2013 | 29. Laurie Sorabella, M.S. 2002 |
| 13. Stefanie Reiner, M.S. 2011 | 30. David Lange, M.S. 2002 |
| 14. David Rudders, Ph.D. 2010 | 31. Mingfang Zhou, M.S. 2001 |
| 15. Heather Harwell, Ph.D. 2010 | 32. Helen Woods, M.S.2001 |
| 16. Brian Barnes, M.S. 2008 | 33. Jacques Oliver, M.A. 1999 |
| 17. Mike Congrove, M.S. 2008 | 34. David Carlini, Ph.D 1998 |

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| 35. James Gelsleichter, Ph.D 1998 | 45. Paul Rudershausen, M.A. 1994 |
| 36. Heather Yarnell, M.A. 1998 | 46. Ryan Carnegie, M.A. 1994. |
| 37. Lance Garrison, Ph.D 1997 | 47. Kyeong Park, Ph.D 1993 |
| 38. Christine Scanlon, M.A. 1997 | 48. Gwynne Day Brown, M.A. 1992 |
| 39. Zhaoqing Yang, Ph.D 1996 | 49. Cheol Mo, Ph.D 1992 |
| 40. Larry Boles, M.A. 1996 | 50. Rochelle Seitz, M.A. 1991 |
| 41. Deborah Harsh, M.A. 1995 | 51. John Field, M.A. 1991 |
| 42. Sureyya Ozkizilcik, Ph.D 1995 | 52. Linda Frizzell, M.A. 1985 |
| 43. Carrie O' Farrell, M.A. 1995 | 53. Eric Zobrist, M.A. 1989 |
| 44. Sandra Blake, M.A. 1994 | 54. Roberto Llanso, Ph.D. 1990 |

William & Mary Biology

Taylor Heyl, M.S. 2005. Reproductive ecology of cold seep associated organisms.

Susan Bacon. Honors thesis. 1999-2000. Rate of oogenesis in the hydrothermal vent polychaete *Paralvinella palmiformis*.

Jessica Morgan. Honors thesis 1997. Occurrence of post larval byssal drifting bivalves in the York River, VA.

Outside of W&M I have served or serve as committee member on the following student committees:

Bryn Jones. M.S. 2000. University of North Wales at Bangor, Marine Sciences

Dario Savini. M.S. 2001. University of North Wales at Bangor, Marine Sciences

Sara Pace. MS 2017. University of Southern Mississippi, Gulf Coast Research Laboratory, Ocean Springs MS.

Jeremy Timbs. MS 2018. University of Southern Mississippi, Gulf Coast Research Laboratory, Ocean Springs MS.

Kathleen Hemeon. PhD 2022. University of Southern Mississippi, Gulf Coast Research Laboratory, Ocean Springs MS.

Alyssa LeCalire. MS 2022. University of Southern Mississippi, Gulf Coast Research Laboratory, Ocean Springs MS.

Jillian Sowers. MS 2022. University of Southern Mississippi, Gulf Coast Research Laboratory, Ocean Springs MS.

Stephanie Stromp. MS 2023. University of Southern Mississippi, Gulf Coast Research Laboratory, Ocean Springs MS.

Phoebe Jekielek. PhD in progress. University of Maine.

Outside of W&M I have served as external examiner on the following student committees:

Peter A. Thompson, Department of Oceanography, University of British Columbia. Ph.D 1991.

Margaret M. Deksheniaks, Ph.D 1996, Center for Coastal Physical Oceanography, Department of Oceanography, Old Dominion University, Norfolk, VA 23529-0276

F. Krassoi. Ph.D 1998. University of Technology, Sydney, Australia.

Warwick James Noble. Ph.D. 2014. Flinders University, Adelaide, Australia.

I have not included service on student committees prior to 1985 because of incomplete records.

Post doctoral fellow mentoring:

Muki Shpigel 1992-1993 (from IOLR, Eilat, Israel)

Peter Kingsley Smith 2002-2003 (from Bangor University, Wales)

Other mentoring:

1999-2000 Stephanie Haywood, Mathews High School

2000-2002 Rhonda Howlett, Mathews High School (now a graduate of Mary Washington University)
 2018-2019 Emma McKee, Chesapeake Bay Governors School
 2018-2019 Khalil Russell, REU William & Mary Biology
 2021-2022 Jasmine Whelan, REU William & Mary Biology
 2021-2022 Shijun Zeng, VET, William & Mary Chemistry
 2022-2023 Brody Phillips, REU William & Mary Biology
 2022-2023 Garrett Bellin, REU William & Mary Biology
 2022-2023 Olivia Cohn, VET, William & Mary Biology

FELLOWSHIPS AND GRANTS. (active in bold)

10/1/2022 – 9/30/2023. The Virginia Seed Oyster Fishery: A Management Decision Tool. Roger Mann and Andrew Scheld co-PIs. Total \$78,775. Virginia Marine resources Commission.

6/1/2022-5/30/2024. Collaborative Research: Reconstructing bottom water temperatures from bivalves on the continental shelf: Holocene history as a window to the future in the Mid-Atlantic. Roger Mann (VIMS), Eric Powell (U. Southern Mississippi), Eileen Hofmann and John Klinck (Old Dominion Univ), Carolyn Ummenhofer (WHOI). \$396,469. VIMS portion \$103,848. National Science Foundation

5/1/2022-4/30/2023. Research Experience for a Undergraduate (REU) in the SCeMFis projects. – 3 students at \$8,000 each. Total \$24,000. National Science Foundation. Stipend, technical and travel support to REUparticipants.

9/1/2020-8/31/2023. Pew Foundation/LenFest Ocean Program. Support of a post doctoral investigator – climate change and fisheries. \$210,418. Proposal generated by a 6 person team invited by Lenfest. Post doc situated at U. Wisconsin.

1/1/2021-7/1/2023. INTERN DCL NSF 18-102: Fisheries and climate change. NSF. \$54,927. Stipend, technical and travel support to graduate student Alexis Hollander

11/1/2019-6/30/2023 (extended due to COVID). Research Experience for a Veteran (VET) in the SCeMFis project entitled “Ocean quahogs (*Arctica islandica*) age structure.” - \$10,000. National Science Foundation. Stipend, technical and travel support to veteran participant.

4/1/2019 – 3/31/24. Industry/University Cooperative Research Center: Science Center for Marine Fisheries (SCeMFis). Eric N. Powell (University of Southern Mississippi) and Roger Mann (VIMS) VIMS portion - \$500,000 from National Science Foundation plus \$2,000,000 industry matching. Technical and travel support only from NSF portion. Variable salary from industry portion.

3/1/2020-2/28/2023 (12 month no cost extension granted). Age based assessment in the sea scallop *Placopecten magellanicus*. Roger Mann and David Rudders, co-PI's. \$ 692,772. NOAA scallop RSA program

3/1/2018-2/28/2022. Age based assessment in the sea scallop *Placopecten magellanicus*: a pilot study. Roger Mann and David Rudders, co-PI's. \$ 692,772. NOAA scallop RSA program

2/1/2021-6/30/2022. Research Experience for a Undergraduate (REU) in the SCeMFis projects. - \$8,000. National Science Foundation. Stipend, technical and travel support to REUparticipant.

1/1/2020-2/28/2022. Revisiting *Rapana venosa* in Hampton Roads as TBT abates. Mid-Atlantic Regional Panel on Aquatic Invasive Species. \$10,000 (NOAA-MAPAIS).

6/1/2020-12/31/2020. Oyster settlement monitoring in the vicinity of the Surry Nuclear Power Plant \$8,905. Dominion Energy.

3/1/2018-2/28/2021 (12 month no cost extension). The Effect of Density on the Growth, Yield and Reproduction of the Sea Scallop, *Placopecten magellanicus*. David Rudders and Roger Mann, co-PI's. \$320,279. NOAA scallop RSA program

1/1/2018-9/30/2021 (no cost extension granted). Expanding Virginia's oyster industry while minimizing user conflict. Roger Mann, Marcia Berman, Melissa Southworth. PI. \$261,288. DEQ - VA Coastal Zone Management Program.

10/1/2018-12/31/2018. Surevy of clam resources in the HRBT expansion footprint. Roger Mann and Melissa Southworth co-PI's. VA Department of Transportation.

11/1/2017-10/30/2018. Research Experience for an Undergraduate (REU) in the SCeMFiS project entitled "Ocean quahogs (*Arctica islandica*) age structure." - \$8,000. National Science Foundation. Stipend, technical and travel support to student participant.

9/1/2016-8/31/2019. Age structure and recruitment in the ocean quahog *Arctica islandica*. Roger Mann PI. \$275,473 NOAA-SK.

3/1/2016-2/28/2019. Age structure and growth rate in the sea scallop *Placopecten magellanicus*. Roger Mann and David Rudders, co-PI's. \$608,626. NOAA scallop RSA program.

4/1/2013 – 3/31/2019 (includes one year no cost extension). Industry/University Cooperative Research Center: Science Center for Marine Fisheries (SCeMFiS). Eric N. Powell (University of Southern Mississippi) and Roger Mann (VIMS) VIMS portion - \$300,000 from National Science Foundation plus \$1,500,000 industry matching. Technical and travel support only from NSF portion. Variable salary from industry portion.

3/1/2017-2/28/2018 in no cost extension. Shell/habitat dynamics in oyster restoration and fishery management. Roger Mann PI. \$59,999. Chesapeake Bay Trust

7/1/2014-6/30/2015. Participation of a high school teacher in the SCeMFiS project entitled "Ocean quahogs (*Arctica islandica*) recruitment and life history dynamics." - \$10,000. National Science Foundation. Salary, technical and travel support to teacher participant only.

10/1/2014-12/31/2014. Stock assessment of Virginia Oysters. Virginia Marine Resources Commission. Field personnel support only – reimbursable to \$10,000.

7/1/2012-12/30/2014. Plumeri Award for Faculty Excellence. College of William and Mary. \$10,000.

7/1/2013-9/30/2014. Shell budgets in the Virginia Chesapeake Bay: Quantitative estimates to support long term restoration and resource stabilization. Virginia Oyster Heritage Foundation. Roger Mann (VIMS) and James Wesson (VMRC) \$30,000 (student and technical support).

10/1/2009-9/30/2012 (no cost extension through 9/30/2014). Collaborative Research: Climate Change and Responses in a Coupled Marine System. NSF. \$613,707. Lead PI McCay (Rutgers) VIMS award \$99,999. Mann 1.0 mo/yr

7/1/2011-6/30/2013 (no cost extension through 6/30/2014). A bay-wide approach to oyster stock assessment, estimates of vital rates and disease status. NOAA-NCBO. \$ 336,193. Mann (lead PI) 1.0 mo/yr., with Ryan Carnegie (VIMS), James Wesson (VMRC), Mike Naylor and C. Dungan (MD DNR), Kennedy Paynter Jr. (UMD) and Howard Townsend (NOAA).

2/1/2012 – 1/31/2013. Planning Grant: Industry/University Cooperative Research Center for Mid-Atlantic Center for Fisheries Science (MaCFiS). Eric N. Powell (Rutgers) and Roger Mann (VIMS) \$30,000. National Science Foundation. Technical and travel support only.

1/1/2012-12/31/2013. Climate Change and the Fisheries Food Web in the Chesapeake Bay and coastal Atlantic Ocean. Robert Latour, Mary Fabrizio and Roger Mann. (VEE post doctoral support)

5/23/2011-12/21/2012. Shell substrate conditions and predator exclusion in oyster restoration. Virginia Oyster Heritage Foundation. Roger Mann (VIMS) and James Wesson (VMRC) \$25,000 (technical support).

7/1/2011-6/30/2014. Oyster planting protocols to deter losses to cownose ray predation. NOAA-NCBO. \$156,297. Mann (Lead PI) 1.0 mo/yr with James Wesson (VMRC), A.J. Erskine (Cowart Seafood), Tommy Leggett and Bill Goldsborough (CBF).

11/1/2010-3/31/2014 Shell budgets as a tool in oyster restoration and fishery management – application in Louisiana Primary State Seed Grounds. \$150,000. National Fish & Wildlife Foundation. Mann (lead PI) 0.5 mo/yr.

7/1/2010-6/30/2011. Collaborative research: summer flounder collections for regional examination of sex ratio and size. Contract from Rutgers University. \$25,672 (for technical support).

7/1/2010 – 6/30/2012. Virginia oyster management and restoration. NOAA-NCBO. \$214,000. Mann 1.5 mo/yr.

2/1/2009-1/31/2011. Climate Change Impacts in Virginia: Natural resource data records as tools to assess continuing trends. NOAA \$120,000. Roger Mann, Marcia Berman and Carl Hershner. Mann 0.5 mo/yr.

9/1/2009-8/31/2011. Virginia Oyster Restoration. NOAA-NCBO. \$241,165. Mann 1.0/yr as match.

7/1/08-6/30/09. *Rapana venosa*: bounty program in support of collection. VMRC. \$40,000. Mann commitment as match.

9/1/07 – 8/31/09. The influence of disease on oyster generation time and implications for fecundity and habitat maintenance. Eileen Hofmann (ODU), John Klinck (ODU), Eric Powell (Rutgers), Roger Mann (VIMS) and Dennis Hedgecock (UC Davis). NOAA. \$250,000. Mann commitment as match, funding for tech support only (approx \$75K/yr).

9/1/07 –9/30/2010. Impacts of oyster aquaculture on shallow water ecosystems in a Chesapeake Bay setting: developing guidelines of the industry, regulators and public education process. Roger Mann, Melissa Southworth and Juliana M. Harding. NOAA-NCBO. \$94,626. Mann commitment as match.

3/1/2008 – 2/28/2009. Climate Change Impacts in Virginia: Status of Natural Resource Data Records as Tools to Assess Continuing Trends. Roger Mann, Marcia Berman and Carl Hershner. Virginia Environmental Endowment, \$40,000. Mann commitment as match.

7/1/07-6/30/08. *Rapana venosa*: bounty program in support of collection. VMRC. \$40,000. Mann commitment as match.

7/1/07 – 6/30/08. Native oyster restoration in the Virginia portion of the Chesapeake Bay. Roger Mann, Standish Allen Jr., Mark Luckenbach, Eugene Burreson, Kimberley Reece, and Juliana M. Harding. NOAA \$955,000. Roger Mann. commitment 1.0 man. mo./yr.

9/1/06 – 8/31/07. Quantification and description of fertilization process in sessile invertebrates. Investigators Mark Luckenbach (VIMS), Elizabeth North (UMD), Larry Sanford (UMD) and Roger Mann (VIMS). NOAA \$100,000. Roger Mann. commitment 1.0 man. mo./yr.

7/1/06 – 6/30/07. Native oyster restoration in the Virginia portion of the Chesapeake Bay. Roger Mann, Standish Allen Jr., Mark Luckenbach, Eugene Burreson, Kimberley Reece, and Juliana M. Harding. NOAA \$1,900,000. Roger Mann. commitment 2.0 man. mo./yr.

7/1/06-6/30/07. *Rapana venosa*: bounty program in support of collection. VMRC. \$40,000.

10/1/2005 – 9/30/07 Evaluation of triploid *Crassostrea virginica* in on-bottom culture. Melissa Southworth, Roger Mann, Alan J. Erskine and Thomas Leggett Jr. NOAA. \$25,000 Mann commitment as matching support.

10/1/2005 – 9/30/06. Global climate change impacts in the Middle Atlantic Bight: Is this the cause of large scale mortality in the surf clam *Spisula solidissima*? Roger Mann, James Weinberg (NOAA), Eric Powell (Rutgers). VIMS-CMER \$33,000. Students support only.

7/1/05-6/30/06. *Rapana venosa*: bounty program in support of collection. VMRC. \$40,000.

10/1/2004 – 9/30/05. Global climate change impacts in the Middle Atlantic Bight: Is this the cause of large scale mortality in the surf clam *Spisula solidissima*? Roger Mann, James Weinberg (NOAA), Eric Powell (Rutgers). VIMS-CMER \$33,000. Students support only.

10/1/2004-12/31/2005. Estimates of oyster growth and mortality rates in Virginia. NOAA Chesapeake Bay Stock Assessment Committee (CBSAC). \$,65,000 Roger Mann. commitment 1 man. mo.

7/1/04 – 12/30/04. Dye studies of potential oyster larval dispersal in the Chesapeake Bay. Roger Mann, Ken Moore and Jian Shen. EPA, NOAA & VMRC. \$55,000. Roger Mann as match salary only.

7/1/04 – 6/30/05. Native oyster restoration in the Virginia portion of the Chesapeake Bay. Roger Mann, Standish Allen Jr., Mark Luckenbach, Eugene Burreson, Kimberley Reece, Juliana M. Harding and Laurie Sorabella-Carroll. NOAA \$1,900,000. Roger Mann. commitment 1.5 man. mo./yr

2/23/2004 – 12/31/05 Population models for the oysters *Crassostrea virginica* and *Crassostrea ariakensis*. MD Dept. Natural Resources and Potomac River Fisheries Commission. \$50,000. Roger Mann commitment as matching effort, direct funds for technical support time, travel and supplies

1/1/2004-12/31/2005. Chesapeake Bay oyster restoration. US Army Corps of Engineers, Norfolk District. \$180,000. Roger Mann, Standish Allen Jr. Eugene Burreson, Mark Luckenbach. commitment 0.5 man. mo/yr

1/1/2004-12/31/2004. Aquatic nuisance species: collaborative work with commercial fishermen. National Fish and Wildlife Foundation. \$20,000. Roger Mann (no direct cost, participation as match).

10/1/2003 - 12/31/2004. Age structure and production estimates for VA hard clam populations NOAA Chesapeake Bay Stock Assessment Committee (CBSAC). \$50,000 Roger Mann. commitment 1 man. mo.

1/1/2003-4/1/2004. Age determination in the ocean quahog. \$20,000 Rutgers University. R. Mann (VIMS) at no cost (technician time only).

6/1/2002 – 5/30/2003. Shipboard demonstration of the AquaHabistat ballast water treatment technology. Virginia CIT (as a pass through from NOAA). \$235,000 Wilson Browning Jr. (Browning Transport, Norfolk VA), Roger Mann (VIMS) commitment 1.0 man mo.

10/1/2002 - 12/31/2003. Oyster population assessment: size based growth estimation. NOAA Chesapeake Bay Stock Assessment Committee (CBSAC). \$25,000, Roger Mann (VIMS) – effected as a subcontract through MD DNR. commitment 0.5 man. mo/yr

7/1/2002 - 6/30/2003. Oyster population estimation in support of the ten year goal for oyster restoration in the Chesapeake Bay Fishery. EPA Chesapeake Bay Program. \$50,000 Roger Mann (VIMS), Gary Smith (MD DNR), and Kennedy Paynter (UMD). commitment 0.5 man. mo/yr

10/1/2001 – 9/31/2004. Aquatic Nuisance Species Research and Outreach: Ecological and commercial impact, and control of the non-indigenous marine gastropod *Rapana venosa*. NOAA. \$204,667. Roger Mann and Juliana Harding. Mann commitment 2.0 man mo. per year

3/1/2001-2/28/2003. Oyster larvae and recruitment: the paradox of turbidity, salinity and larval feeding conditions. VA Sea Grant. \$108,126. Roger Mann (VIMS) and Roger Newell (UMD). Mann commitment 1.0 man mo. per year

10/1/2001 - 9/31/2002. Oyster population estimation in support of the ten year goal for oyster restoration in the Chesapeake Bay Fishery. NOAA Chesapeake Bay Stock Assessment Committee (CBSAC). \$50,000 Stephen Jordan (MD DNR), Roger Mann (VIMS) and Kennedy Paynter (UMD). commitment 1 man. mo/yr

10/1/2001 - 12/31/2002. Fishery independent standing stock surveys of hard clam populations in the Chesapeake Bay and a comparison with continuing estimates from fishery dependent data. NOAA Chesapeake Bay Stock Assessment Committee (CBSAC). \$69,041 Roger Mann. commitment 1 man. mo.

10/1/2001-12/30/2002. Development of Image processing Algorithms for Identification and Quantification of Biological Targets Detected by Side Scan Sonar: Application to Fisheries Stock Assessment from Robotic Platforms. NOAA. \$89,675. Mark Patterson, Zia-ur Rahman, and Roger Mann. Mann commitment 0.8 man mo. per year

7/1/2001 - 6/30/2002. Oyster population estimation in support of the ten year goal for oyster restoration in the Chesapeake Bay Fishery. EPA Chesapeake Bay Program. \$50,000 Roger Mann (VIMS), Stephen Jordan (MD DNR), and Kennedy Paynter (UMD). commitment 0.5 man. mo/yr

9/1/2000 - 9/31/2001. Oyster population estimation in support of the ten year goal for oyster restoration in the Chesapeake Bay Fishery. NOAA Chesapeake Bay Stock Assessment Committee (CBSAC). \$74,506 Stephen Jordan (MD DNR), Roger Mann (VIMS) and Kennedy Paynter (UMD). commitment 1 man. mo/yr

9/1/2000 - 9/31/2001. Fishery independent standing stock surveys of hard clam populations in the Chesapeake Bay and a comparison with continuing estimates from fishery dependent data. NOAA Chesapeake Bay Stock Assessment Committee (CBSAC). \$70,165 Roger Mann. commitment 1 man. no.

8/1/1999-7/30/2001. Restoring an oyster reef for mitigation of estuarine water quality. NOAA: The Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET). Raymond Grizzle (UNH), Mark Luckenbach and Roger Mann (VIMS). VIMS subcontract from UNH: \$10,000. Mann commitment 0.5 man mo.

10/1/99-9/30/2001. Aquatic Nuisance Species Research and Outreach: Current distribution, potential range expansion, ecological and commercial impact, and control of the non indigenous marine gastropod *Rapana venosa*. NOAA. \$180,000. Roger Mann, John Graves and Juliana Harding. Mann commitment 3.0 man mo. per year

9/1/1999-8/30/2000. The Virginia Oyster Heritage Program: Initial Population Assessment in the Rappahannock River, Virginia NOAA Coastal Zone Program. \$20,000. James Wesson (Virginia Marine Resources Commission) and Roger Mann

1/6/99-5/31/2000. VORTEX workshops: Development of a public education program in support of Virginia oyster reef and tidal habitat restoration. Chesapeake Bay Restoration Fund. \$10,779. Juliana Harding, Vicki Clark and Roger Mann.

1/1/99-12/31/99. VORTEX workshops: Development of a public education program in support of oyster reef restoration within the Chesapeake Bay. Virginia Environmental Endowment . \$4500 Juliana Harding, Vicki Clark and Roger Mann.

9/1/98-8/30/99. Management of oyster broodstock sanctuaries in the Great Wicomico and Piankatank Rivers, Virginia: optimal use of cultch to maximize settlement. NOAA Coastal Zone Program. \$35,000

6/1/98-5/31/99. Development of a public education tool in support of Virginia oyster reef and tidal habitat restoration. Chesapeake Bay Restoration Fund. \$22,508. Roger Mann, Vicki Clark and Juli Harding.

5/1/98-4/30/99. Ecological function of constructed oyster reefs along an environmental gradient in Chesapeake Bay. EPA Bay Program \$79,589. Mark Luckenbach and Roger Mann.

1/1/98-12/31/2000. A field test of source sink dynamics in marine systems: Linking recruitment, dispersal and post settlement processes in space and time. NSF Biological Oceanography. \$388,471. Anson Hines (Smithsonian), Rom Lipcius, Rochelle Seitz, Roger Mann, and Mark Luckenbach

4/1/97 - 12/31/97 Evaluation of Oyster Sanctuary Broodstock Enhancement in the Great Wicomico River, Virginia. NOAA/DEQ/CRM \$ 13,000 Roger Mann

5/1/97-4/30/98 Trophic studies on constructed "restored" oyster reefs. EPA Bay Program. \$55,000 Roger Mann

9/1/96 - 8/31/97. Fishery independent oyster stock assessment in Virginia. NOAA-CBSAC. \$12,000. Roger Mann (VIMS) and James Wesson (VMRC)

5/1/96-4/30/97. Trophic studies on constructed “restored” oyster reefs. EPA Bay Program. \$50,000 Roger Mann

10/1/95-9/30/96. Evaluation of oyster settlement and survival on large scale intertidal oyster reefs in Virginia. VADEQ. \$22,000. Roger Mann (VIMS) and James Wesson (VMRC)

7/1/95-6/30/97. Giant Clams in the Red Sea: A Unique Ecological Resource or a Sustainable Economic Resource. State Department through NOAA Sea Grant. \$50,000. Roger Mann (PI), William K. Fitt (U Georgia, Co-PI), Raouf W. S. Kilada (Suez Canal University, Egypt. Co-PI), Muki Shpigel (Israel Oceanographic & Limnological Research (I.O.L.R), Elat, Israel. Co-PI)

9/1/95- 8/31/96. Fishery independent standing stock surveys of oyster populations in the Virginia sub estuaries of Chesapeake Bay. NOAA-CBSAC. \$85,364. Roger Mann (VIMS) and James Wesson (VMRC)

10/1/94 - 9/30/95. Intertidal oyster reefs as a tool for estuarine rehabilitation. NOAA-VADEQ. \$40,800. Roger Mann, James Wesson (VMRC) and Frank Perkins.

9/1/94 - 8/31/95. Fishery independent oyster stock assessment in Virginia. NOAA-CBSAC. \$60,000. Roger Mann (VIMS) and James Wesson (VMRC)

2/1/94 - 1/31/96. Balancing the budget: progress towards a stock recruit relationship for the James River oyster resource. \$141,678. NOAA Sea Grant. Roger Mann and John M. Hamrick.

2/1/94 - 1/31/95. Intertidal oyster reefs: instrumentation. NOAA. \$14,000. Roger Mann

10/1/93 - 9/30/94. Intertidal oyster reefs as a tool for estuarine rehabilitation. NOAA-VCRMP (now VADEQ). \$40,800. Roger Mann, James Wesson (VMRC) and Frank Perkins.

9/1/93 - 8/31/94. Fishery independent oyster stock assessment in Virginia. NOAA-CBSAC. \$70,044. Roger Mann (VIMS) and James Wesson (VMRC)

1/1/93 - 12/31/95 (including no cost extension). A stock recruit model of the James River Oyster Fishery. NOAA-NMFS. \$229,310. Roger Mann, Eugene Burreson and David A. Evans

9/1/92 - 12/31/92. Application of Remotely Operated Vehicle Technology in Education: Studies of Shallow Water Physical Processes. NOAA-NURP. ROV support only. Roger Mann, L. Donelson Wright, John Boon, Evon P. Ruzicki, and John Brubaker

10/1/91 - 9/30/95. A physiological approach to understanding the parasite *Perkinsus marinus* of the oyster *Crassostrea virginica*. NOAA. \$108,251. Bruce Barber and Roger Mann.

7/1/91 - 6/30/95. Intensive culture of oysters: models. N.C.R.I. Mark Luckenbach and Roger Mann.

7/1/90 - 12/31/92. Intensive culture of triploid oysters. C.I.T. \$156,536. Roger Mann and Michael Castagna.

1/1/91 - 12/31/93. Rejuvenation of the Virginia Oyster Industry. NOAA Sea Grant. \$192,622 . Eugene M. Burreson, Roger Mann, John Graves and Bruce Barber.

9/1/90 - 12/31/90. Digitization of Baylor Grounds. VA DEQ & NOAA. \$7,000. Roger Mann and Carl Hershner.

1/1/90 - 1/5/90. Literature reviews for CRC/USFWS. \$10,000. Roger Mann.

5/1/89 - 4/30/89. Rejuvenation of the Virginia Oyster Industry. NOAA Sea Grant. \$125,000. Roger Mann and Eugene M. Burreson.

1990-91 Survey services. VA DOT and City of Norfolk. \$8,500 Roger Mann.

1/1/89- 12/31/89 Chesapeake Bay to Norfolk Canyon Transect Study. NOAA-NURP. ROV support only. R. Mann (PI), L.D. Wright, G.C. Grant, L. Schaffner, M. Luckenbach, and J. Brubaker

10/1/88-9/30/90 Calorespirometry, instrumentation, facility and workshop (located at U. Maine). NSF facilities. \$144,000 Malcolm Shick (U.Me, PI), Roger Newell(Assoc PI), Roger Mann (Assoc PI), Gary King (U.Me ,Assoc PI), Donal Manahan (USC), Ken T. Paynter (CBI), Eric Powell (Texas A&M)

10/1/88-12/31/90 Effect of Low D.O. on Ability to Metamorphose and Post Metamorphic Energy Balance in Oysters. NOAA Sea Grant. \$68,036 Roger Mann and Roger I.E. Newell (U.Md.)

10/1/88-9/30/89 Estimation of Standing Crop of Oysters in the James River Using Commercial Fishing Records. NOAA-CBSAC \$22,000 Roger Mann.

1/88-12/88 Uptake and Depuration of Saxitoxins by Bivalve Molluscs. F.D.A. \$42,079 Roger Mann.

1985-1986 4 Surveys Requested by Va. Dept. Highways and Transportation. Va. DOT. \$12,000 Roger Mann.

6/87-6/88 Recruitment to the Benthos of Bivalve Molluscs in the Middle Atlantic Bight. NOAA-NURP. Submersible support only. Roger Mann

6/85-12/87 Influence of Low D.O. on Behavior and Physiology of *Crassostrea virginica*. NOAA Sea Grant. \$84,000 Roger Mann (VIMS), Roger Newell and Victor Kennedy (U.Md)

6/85-6/86 Evaluation of Newport News Port Island. PPAV \$250,000 Robert J. Byrne and others

7/1/84-6/30/85 Lipids and metamorphosis in marine bivalve larvae. NOAA Sea Grant NA84AA-D-00033 \$36,800 Roger Mann and Scott M. Gallager

5/1/84-6/30/84 Preparation of invited paper on "Sampling of bivalve larvae" for inclusion in volume on Stock Assessment and Management of Invertebrate Fisheries. NOAA Sea Grant NA83AA-D-00049 \$3,183

10/15/83-9/30/85 Lipids and Marine Invertebrate Larvae. NSF OCE-8309558 \$27,775 Roger Mann

10/1/83-9/30/85 Metamorphosis in Marine Wood Boring Molluscs. ONR N00014-82-C-0019 \$277,778 Roger Mann and John Waterbury (WHOI).

7/1/83-6/30/84 Lipids and metamorphosis in marine bivalve larvae. NOAA Sea Grant NA83AA-D-00049 \$40,000 Roger Mann and Scott M. Gallager

10/1/82-9/30/84 Tissue Culture in Molluscs (Study leave). Mellon Foundation. \$27,000 Roger Mann

9/1/82-6/30/83 Lipid stain advisory and hatchery operation meeting. NOAA Sea Grant NA80AA-D-00077 \$3,575 Arthur Gaines, Scott M. Gallager and Roger Mann.

7/1/82-6/30/83 Application of lipid specific staining in the culture of bivalve molluscs. NOAA Sea Grant NA80AA-D-00077 \$22,100. Roger Mann and Scott M. Gallager

10/1/81-9/30/83 Bioenergetics of Wood Boring Molluscs. ONR N00014-82-C-0019 \$109,278 Roger Mann.

7/1/81-6/30/82 Use of lipid specific staining techniques for assaying condition in cultured bivalve larvae and field zooplankton. NOAA Sea Grant NA80AA-D-00077. \$11,000 Roger Mann and Scott M. Gallager

12/8/80-9/30/81 The effects of temperature, pH and organic content on the survival of human enteric viruses in marine waters and sediments. Brookhaven National Laboratories 536003-S \$10,000. Roger Mann, James Vaughan and Edward M. Landry.

11/15/80-11/14/81 Biology of ships ballast water: The role of ballast water in the transoceanic dispersal of marine organisms. NSF DAR-8008450 \$75,004. James T. Carlton and Roger Mann.

7/1/80-6/30/82 Biology of the Ocean Quahog, *Arctica islandica*. NOAA Sea Grant NA80AA-D-00077. \$87,200 Roger Mann

7/1/80-6/30/81 Microencapsulated foods for rearing larval marine fishes. NOAA Sea Grant NA80AA-D-00077. \$7,500. Roger Mann and Glenn Sasaki.

1/21/80-9/30/80 The effects of temperature, pH and organic content on the survival of human enteric viruses in marine waters and sediments. Brookhaven National Laboratories 506020S \$10,000. Roger Mann, James Vaughan and Edward M. Landry.

1/1/80-12/31/80 Construction of a controlled environment laboratory suitable for the maintenance and culture of marine species found in cold (<10C) water. Ocean Industries Program of WHOI. \$5,268. Roger Mann

1/1/80-9/30/80 Biology of ships ballast water: Experimental studies with the R/V Knorr from Bermuda to Woods Hole and development of ballast tank sampling methodology. NOAA Sea Grant NA79AA-D-00102 \$2,900. James T. Carlton and Roger Mann.

1/1/80-9/30/81 Bioenergetics of Marine Wood Boring Molluscs. ONR N00014-79-C-0071 \$89,806 Roger Mann.

7/1/79-6/30/80 Biology of the Ocean Quahog, *Arctica islandica*. NOAA Sea Grant NA79AA-D-00102. \$50,000 Roger Mann

5/1/79-9/30/79 The effects of temperature, pH and organic content on the survival of human enteric viruses in marine waters and sediments. Brookhaven National Laboratories 482190-S \$12,750. Roger Mann, James Vaughan and Edward M. Landry.

1/1/79-12/31/79 The energy budget of marine wood-boring molluscs. ONR N00014-79-C0071 \$36,487. Roger Mann.

7/1/78-6/30/79 Microencapsulated foods for rearing larval marine fishes. NOAA Sea Grant 04-8-M01-149. \$4,200. Roger Mann and Glenn Sasaki.

7/1/78-6/30/79 A combined biological and economic analysis of the feasibility of large scale, waste recycling marine bivalve aquaculture systems. NOAA Sea Grant 04-8-M01-149. Roger Mann and P. G. Allen (U. Mass, Amherst).

7/1/78-6/30/79 Biology of the Ocean Quahog, *Arctica islandica*. NOAA Sea Grant 04-8-M01-149. \$70,600 Roger Mann

3/7/78-12/31/78 Introduction of Exotic Species for Marine Mariculture: An International Workshop. Pew Foundation and NOAA Sea Grant. \$70,600 Roger Mann

7/1/77-6/30/78 Bivalve mollusc culture in a waste recycling aquaculture system. NOAA Sea Grant 04-7-158-44104. \$73,000 John Ryther and Roger Mann

5/1/76-4/30/78 Uptake and release of contaminants by organisms grown in a waste recycling aquaculture system. Sarah Scaiffe Mellon Foundation. \$97,100. John Ryther and Roger Mann.

10/75-9/77 Jessie Smith Noyes Fellow in Marine Science, Woods Hole Oceanographic Institution

RESEARCH

Referee publications

LeClaire A.M, E. N. Powell, R. Mann, K. M. Hemeon, S. M. Pace, V. Saba, H. du Pontavice, J. R. Sower. (in review). Temporal and Spatial Comparisons of Ocean Quahog (*Arctica islandica*) growth on the Mid Atlantic Continental Shelf: From the Neoglacial through the Twentieth Century.

Stromp S.L., E. N. Powell, R. Mann. (in review). Bivalves on the move. Evaluation of the degree of co-occurrence of Atlantic surfclams (*Spisula solidissima*) and ocean quahogs (*Arctica islandica*) in the expanding Northwestern Atlantic boreal/temperate ecotone: implications for their fisheries. J. Shellfish Research

Stromp S.L., A. M. Scheld, J. M. Klinck, D. M. Munroe, E. N. Powell, R. Mann, S. Borsetti, E. E. Hofmann (in press). Interactive effects of climate change-induced range shifts and wind energy development on future economic conditions of the Atlantic surfclam fishery. Marine and Coastal Fisheries.

LeClaire A.M , E. N. Powell, R Mann (in review). Taphonomic indicators of dead ocean quahog (*Arctica islandica*) shell age in the death assemblage of the Mid-Atlantic Bight continental shelf.

Sower J. R., E. N. Powell, K. M. Hemeon, R. Mann, S. M. Pace (in review). Ocean quahog (*Arctica islandica*) growth rate analyses of four populations from the Mid-Atlantic Bight and Georges Bank. Continental Shelf Research

Sower J. R., E. N. Powell, R. Mann, K. M. Hemeon, S. M. Pace, T. E. Redmond. (in press) Examination of spatial heterogeneity in population age frequency and recruitment in the ocean quahog (*Arctica islandica* Linnaeus 1767). Marine Biology.

Hemeon K.H., E. N. Powell, J. M. Klinck, R. Mann, S. M. Pace. (in press). Regional growth rates and growth synchronicity between two populations of *Arctica islandica* in the western Mid-Atlantic (US). Marine Biology.

Bi R., R. Mann, K. E. Mills, V. Saba, J. Wiedenmann, O. P. Jensen (in press). Empirical estimates of

- inter-assessment uncertainty for marine fish and invertebrate stocks. *Fish and Fisheries*.
- Hemeon K.M., E. N. Powell, S. M. Pace, T. E. Redmond, R. Mann. (2023) Population dynamics of *Arctica islandica* off Long Island (USA): an analysis of sex-based demographics and regional comparisons. *Marine Biology*. <https://doi.org/10.1007/s00227-023-04176-6>
- LeClaire A.M., E. N. Powell, R. Mann, K. M. Hemeon, S. M. Pace, J. R. Sower, T. E. Redmond. (2022) Historical biogeographic range shifts and the influence of climate change during the Holocene on ocean quahogs (*Arctica islandica*) in the Mid-Atlantic Bight. *The Holocene* 10.1177/0959683622110127, 13 pp.
- Sower J. R., E. Robillard, E.N. Powell, K. M Hemeon, R. Mann (2022). Defining Patterns in Ocean Quahog (*Arctica islandica*) Sexual Dimorphism along the Mid Atlantic Bight. *J. Shellfish Research* 41(3):335-348. <https://doi.org/10.2983/035.041.0304>
- Hemeon K.H., E. N. Powell, S. M. Pace, T. E. Redmond, R. Mann. (2022). Population dynamics of *Arctica islandica* at Georges Bank (USA): an analysis of sex-based demographics. *J. Marine Biological Association UK*. 101(7): 1003-1018. <https://www.doi.org/10.1017/S0025315422000030>.
- Mann R., M. Southworth, J. Wesson, J. Thomas, M. Tarnowski, M. Homer (2021). Oyster shell production and loss in the Chesapeake Bay. *Journal of Shellfish Research* 40(3): 451-469. doi. 10.2983/035.040.0300
- Hemeon K.M., E. N. Powell, E. Robillard, S.M. Pace, T.E. Redmond, R. Mann (2021). Attainability of accurate age frequencies for ocean quahogs (*Arctica islandica*) using large datasets: protocol, reader precision, and error assessment. *Journal of Shellfish Research* 40(2): 255-267. <https://doi.org/10.2983/035.040.0206>
- Mann R. (2021) An ecosystem is not a monument, and other challenges to fishing in the 21st century. *Journal of Shellfish Research*.40(2):1-6 <https://doi.org/10.2983/035.040.0100>
- Powell E.N., R. Mann, M. C. Long, J. R. Timbs, K. M. Kuykendall. (2020) The conundrum of biont-free substrates on a high-energy continental shelf: Burial and scour on Nantucket Shoals, Great South Channel. *Estuarine Coastal Shelf Science*. <https://doi.org/10.1016/j.ecss.2020.107089>
- Mann R., E.N. Powell, D.M. Munroe. (2020). The Case of the “Missing” Arctic Bivalves and the Walrus, the Biggest [Ignored] Clam Fishery on the Planet. *Journal of Shellfish Research*. 39(3):1-9. <https://doi.org/10.2983/035.039.0301>
- Cronin K.E., S.E. Walker, R. Mann; A.S. Chute, M.C. Long; S.S. Bowser (2020). Growth and longevity of the Antarctic scallop *Adamussium colbecki*, an ecosystem engineer, under annual and multi-annual sea ice. *Antarctic Science*. 32 (6) 466-475. <https://doi.org/10.1017/S0954102020000322>
- Powell E.N., J. M. Trumble, R. Mann, M. C. Long, S. M. Pace, J. R. Timbs, K. M. Kuykendall. (2020): Growth and Longevity in Surfclams East of Nantucket: Range Expansion in Response to the Post-2000 Warming of the North Atlantic. *Continental Shelf Research*. 195. <https://doi.org/10.1016/j.csr.2020.104059>
- Lockwood R., R. Mann (2019). A conservation paleobiological perspective on Chesapeake Bay oysters. *Phil. Transactions of the Royal Society*. doi: 10.1098/rstb.2019.0209
- Powell E.N., R. Mann, K.M. Kuykendall, M.C. Long, J. R. Timbs J.R. (2019). The intermingling of benthic macroinvertebrate communities during a period of shifting range: The “East of Nantucket” Atlantic Surfclam Survey and the existence of transient multiple stable states. *Mar Ecol*. 2019:e12546. <https://doi.org/10.1111/maec.12546>
- Timbs J.R., E. N. Powell, R. Mann (2019). Changes in the spatial distribution and anatomy of a range shift for Atlantic surfclams, *Spisula solidissima*, in the Mid-Atlantic Bight and on Georges Bank. *MEPS* 620:77-97
- Timbs J.R., E. N. Powell, R. Mann (2019). Assessment of the Relationship of Stock and Recruitment in the Atlantic surfclam, *Spisula solidissima*, in the Northwestern Atlantic Ocean. *Journal of Shellfish Research*, 37(5) : 965-978

- Hennen, D.R., R. Mann, D.M. Munroe, E.N. Powell. (2018). Applied management strategy evaluation: determining biological reference points for Atlantic surfclam (*Spisula solidissima*) in warming seas. *Fisheries Research* 207: 126-139.
- Pace S.M., E. N. Powell, R. Mann (2018). Two-hundred year record of increasing growth rates for ocean quahogs (*Arctica islandica*) from the northwestern Atlantic Ocean. *Journal of Experimental Marine Biology and Ecology*. 503:8-22
- Hofmann E.E., E.N. Powell, J. M. Klinck, D. M. Munroe, R Mann, D. B. Haidvogel, D. A. Narváez, X. Zhang, K. M. Kuykendall. (2018). Factors Affecting Distribution of the Atlantic Surfclam (*Spisula solidissima*), A Continental Shelf Biomass Dominant, During a Period of Climate Change. *J. Shellfish Research*. 37, 821-831.
- Pace S.M., E. N. Powell, R. Mann, M. C. Long (2017). Comparison of age–frequency distributions for ocean quahogs *Arctica islandica* on the western Atlantic US continental shelf. *Mar Ecol. Prog. Ser.* 585: 81–98, 2017. <https://doi.org/10.3354/meps12384>
- Powell E. N., R. Mann, K. M. Kuykendall, M. C. Long. (2017). Can we estimate molluscan abundance and biomass on the continental shelf? *Estuarine Coastal Shelf Science*. 198:231-224. doi: 10.1016/j.ecss.2017.09.012
- Southworth, M., M.C. Long and R. Mann (2017). Oyster (*Crassostrea virginica* GMELIN 1791) mortality at prolonged exposures to high temperature and low salinity. *J. Shellfish Research*. 36(2):335-340.
- Cai W-J, W-J Huang, G. Luther, D. Pierrot, M. Li, J. Testa, M. Xue, A. Joesoef, R. Mann, J. Brodeur, B. Chen, G. Waldbusser, J. Cornwell, M. Kemp (2017). Redox reactions and weak buffer capacity lead to acidification in the Chesapeake Bay. *Nature Communications*. DOI: 10.1038/s41467-017-00417-7
- Pace S.M., E. N. Powell, R. Mann, M. C. Long, J. M. Klinck. (2017) . Development of an age frequency distribution for ocean quahogs (*Arctica islandica*) on Georges Bank. *J. Shellfish Res.* 36, No. 1, 41–53, 2017.
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- Harding, J. M., M. A. Unger, E. A. Jestel, and R. Mann. (2016). Sex and site-specific trends in veined rapa whelk (*Rapana venosa*) tributyltin bioaccumulation: considerations for biomonitoring. *J. Mar. Biol. Ass. UK*. 2016 doi:10.1017/S0025315416000849
- Torben C. R., L. A. Reeder-Myers, D. Breitburg, R. Lockwood, C. A. Hofman, G. Henkes, L. Kellogg, D. L. Lowery, M. Luckenbach, R. Mann, M. B. Ogburn, M. J. Southworth, J. Wah, J. Wesson, A. H. Hines. (2016). Millennial-Scale Sustainability of the Chesapeake Bay Native American Oyster Fishery. *Proc. National Academy Science*. www.pnas.org/cgi/doi/10.1073/pnas.1600019113
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- Goldman, J. C. and R. Mann. 1980. Temperature influenced variations in phytoplankton species and their chemical composition in outdoor mass cultures. *J. Exp. Mar. Biol. Ecol.* 46 (1): 29-40.
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- Mann, R. 1979. The effect of temperature on growth, physiology and gametogenesis in the Manila clam *Tapes philippinarum* (Adams and Reeve, 1850). *J. Exp. Mar. Biol. Ecol.* 38: 121-133.
- Mann, R. 1979. Some biochemical and physiological aspects of growth and gametogenesis in *Crassostrea gigas* (Thunberg) and *Ostrea edulis* L. grown at sustained elevated temperatures. *J. Mar. Biol. Ass. U.K.* 59: 95-110.
- Mann, R. 1978. A Comparison of Morphometric, Biochemical and Physiological Indexes of Condition in Marine Bivalve Molluscs. p. 484-497. In: *Energy and Environmental Stress in Aquatic Systems.* J. H. Thorp and J. W. Gibbons (eds.) D.O.E. Symposium Series (Conf. - 771114) 854 p.
- Mann, R. 1978. Growth of *Mytilus edulis* L. in a waste-recycling aquaculture system. *Aquaculture* 13: 351-354.
- Mann, R. and S. J. Glomb. 1978. The effect of temperature on growth and ammonia excretion of the Manila clam *Tapes japonica*. *Estuarine and Coastal Marine Science* 6: 335-337.
- Mann, R. and J. H. Ryther. 1977. Growth of six species of bivalve molluscs in a waste-recycling aquaculture system. *Aquaculture* 11:231-245.
- Mann, R. 1977. An assessment of the use of pigment content as a feeding index in oysters. *Aquaculture* 10: 373-376.
- Walne, P. R. and R. Mann. 1975. Growth and biochemical composition in *Ostrea edulis* and *Crassostrea gigas*. *Proc. Ninth Europ. Mar. Biol. Symp.* pp. 587-607. In: H. Barnes (ed.) *Aberdeen Univ. Press.*

8b) books written: none

8c) edited volumes

Conference proceeding volumes with peer review of all contributions.

- Luckenbach, M, R. Mann and J. E. Wesson. (eds) 1999. Oyster Reef Habitat Restoration: A Synopsis of Approaches. 366p. Virginia Institute of Marine Science, Gloucester Point, VA 23062.
- Rosenfield, A. and R. Mann. 1992. Dispersal of Living Organisms Into Aquatic Systems. Maryland Sea Grant College Press. UM-SG-TS-92-01. 436pp.
- R. W. Menzel (deceased). 1991. Estuarine and Marine Bivalve Mollusk Culture. CRC Press. Boca Raton, FL 500 pp. J. P. McVey (NOAA Sea Grant) and R. Mann completed the editorial work at invitation of CRC Press after Dr. Menzel's death during the compilation stage of the volume.
- Morse, D. E., K. K. Chew and R. Mann 1984. Recent Innovations in the Cultivation of Pacific Molluscs. Elsevier. NY. 404 pp.
- Mann, R. 1979. Exotic Species in Aquaculture. 363 pp. The M.I.T. Press, Cambridge, MA.

Non referee conference proceedings

- Mann, R. 1992. Mechanisms to optimize beneficial use of non endemic species in mariculture. Proceedings of Workshop on Mariculture and the Environment, Eilat, Israel. June 7-14, 1992. Sponsors: National Oceanic and Atmospheric Administration (U.S.A.) & Israel Oceanographic and Limnological Research Institute.
- Mann, R. 1992. Introduction of marine species and ecosystem integrity. in: "Introduction and Transfers of Marine Species: Achieving a Balance Between Economic Development and Resource Protection." M. R. DeVoe (Ed.). South Carolina Sea Grant Consortium Symposium Proceedings, October 30 - November 2, 1992.
- Mann, R. 1992. A consideration of the introduction of *Crassostrea gigas* into the Chesapeake Bay. in: "Introduction and Transfers of Marine Species: Achieving a Balance Between Economic Development and Resource Protection." M. R. DeVoe (Ed.). South Carolina Sea Grant Consortium Symposium Proceedings, October 30 - November 2, 1992.
- Mann, R., B. Meehan, J. S. Rainer, V. S. Kennedy, R. I. E. Newell and W. F. Van Heukelem. 1987. Influence of low oxygen tensions on larvae and post settlement stages of the oyster *Crassostrea virginica*. pp. 139-143 in G. B. Mackiernan (ed.), Dissolved Oxygen in the Chesapeake Bay. MD Sea Grant Publication UM-SG-TS-87-03.
- Mann, R., R. A. Lutz, and M. Castagna. 1981. The Reproductive Biology of *A. islandica*. International Council for the Exploration of the Sea. ICES: C.M./K:26 12 pp.
- Gallager, S. M. and R. Mann. 1981. Larval bivalve condition index based on lipid content visualized with lipid specific stains. International Council for the Exploration of the Sea. ICES:C.M./F:20 10 pp.
- Mann, R. 1979. Bioenergetics of marine bivalve molluscs: Considerations for the design and operation of large-scale grow-out systems. International Council for the Exploration of the Sea. C.M.1979/F:25.

8e) invited scholarly papers and talks (list is incomplete pre 1982).

2022. Managing Fisheries in a World of Moving Resource Footprints and Competing Societal Needs. U. Massachusetts School of Marine Science and Technology. Dartmouth MA
2017. Fisheries sustainability in a world of moving baselines. IFFO - The Marine Ingredients Organization. (www.iffonet.net) Annual Conference, Washington DC October 25, 2017
2017. Fisheries management and moving baselines. ASMFC plenary speaker AGM, Norfolk VA Oct 16, 2017

- 2016 Biological Invasions as data sources to understand dynamics of estuarine communities over geological time frames: the example of *Rapana venosa* in the Chesapeake Bay. University of Southern Mississippi, Gulf Coast Research Lab. December 1, 2016.
- 2014 He who has the largest dredge makes the most money: a overview of offshore clam fishing on the US East Coast. November 2, 2014. Marine Science Laboratories, Menai Bridge, Bangor University, Wales.
- 2013 Climate change in the US Middle Atlantic States. May 15, 2013. Institute for Marine Environmental Research (IMARES), Yerseke, the Netherlands.
- 2012 Oyster restoration in the Chesapeake Bay: it's as much about the shell as it is the shellfish. Chew Lecture, School of Fisheries, University of Washington, Seattle. March 29, 2012.
- 2011 (a) 15 years of oyster stock assessment approaches in the Virginia portion of the Chesapeake Bay. (b) On the biology of reef forming (and other) species and what we should measure in addition to the typical density, length and weight data. International Workshop on Shellfish Stock Assessments: State of the Art and New Techniques. November 3 – 4, 2011 – Institute for Marine Environmental Research (IMARES), Yerseke, the Netherlands.
- 2009 Building population models of *Rapana venosa* in the southern Chesapeake Bay and application to the Black Sea. European Union and Black Sea Commission workshop on *Rapana venosa* in the Black Sea, Istanbul, Turkey, November 2009.
- 2009 Climate Change impacts in Hampton Roads, setting the stage. A Forum on Climate Change Sponsored by the Pew Charitable Foundations, Norfolk, VA. October 9, 2009
- 2009 Managed Natural Resources and Climate Change: The Challenge Ahead. America's New Energy: A Mount Vernon Forum on Climate Change and Energy. Sponsored by the Pew Charitable Foundations. March 20, 2009.
- 2009 Virginia as a Natural Laboratory to Study Climate Change Impacts. Annual Science Fair, Chesapeake Bay Governors School, Virginia Commonwealth University, Richmond. March 13, 2009.
- 2008 Climate Change Impacts on Natural Resources in Virginia. Mid Atlantic Marine Educators Association. October 25, 2008. Virginia Beach VA.
- 2008 An Ounce of Prevention: Early Detection, Rapid Response and Understanding Risks of Invasions. Nature Conservancy Annual Meeting. May 30, 2008.
- 2008 Invited plenary presentation on the 100th Anniversary of the National Shellfisheries Association. Looking forward after 100 years of shellfish debates: responsibilities and context. April 8, 2008.
- 2007 Climate Change Impacts on Natural Resources (and a few other things) in Virginia. April 1, 2007. Old Dominion University
- 2007 Climate Change Impacts on Natural Resources in Virginia. September 11, 2007. NASA Laboratory seminar series. NASA Langley.
- 2007 Climate Change Impacts on Natural Resources in Virginia. September 11, 2007. NASA Sigma Series public lectures. Air & Space Museum, Hampton VA.
- 2007 Climate Change Impacts on Natural Resources and Water in Virginia. September 18, 2007. Virginia Waterworks association, Hampton, VA.
- 2007 Opportunities for Climate Change Research at the "Local" Scale - Impacts on Natural Resources in Virginia. 5th Anniversary Colloquium, National Institute of Aerospace, Hampton VA.
- 2007 Why here, why now? Virginia as a test site for the application of new sensor technology. Invited speaker: Hampton Roads Technology Meeting on Biosensors.
- 2007 Climate Change Impacts in Virginia: from Natural Resources to the National Economy. Virginia Seafood Council Annual Meeting, November 29, 2007. Richmond.
2006. Invited presentation. Emerging invasive threats from a global perspective. SEAFWA meeting, Norfolk VA 11/6/2006.
- 2005 Invited presentations (3). 8th International Symposium on Shellfish Restoration. Brest, France.
2004. Keynote Address and Plenary Speaker. 7th International Symposium on Shellfish Restoration. Charleston, SC.

2004. Plenary speaker. Strangford Lough Restoration Conference, Royal Ulster Museum and Queens University, Belfast, Ireland. March 30-31, 2004. Restoration of keystone species of benthic filter feeders in temperate estuaries and embayments: application of lessons from oyster restoration in the Chesapeake Bay to mussel restoration in Strangford Lough, Ireland.
2004. Two seminars given at Dept. Zoology and Animal Ecology, Cork University, Ireland, February 2004.
1. Non-native species in ecosystem management: intentional versus accidental introductions.
 2. Current status and potential establishment range for the predatory gastropod *Rapana venosa* on the U.S. East coast
2003. Two seminar given as Kirby Laing Visting Professor in Marine Science, Bangor University, Marine Science Laboratories, March 2003.
1. Non-native species in ecosystem management: intentional versus accidental introductions.
 2. Current status and potential establishment range for the predatory gastropod *Rapana venosa* on the U.S. East coast.
2002. Environmental change in the coastal environment: challenges for the selection and propagation of filter feeding species in aquaculture, stock enhancement and environmental rehabilitation. Presented in symposium format at 31st United States – Japan Cooperative Program in Natural Resources (UJNR) Aquaculture Panel Meeting, Yokohama, Japan, Oct 2002.
2002. ICES Special Advisory Report Prepared at the 24th meeting of the ICES Working Group on Introductions and Transfers of Marine Organisms (WGITMO), Goteborg, Sweden, March 20-21, 2002. Status of Invasions by the Marine Gastropod *Rapana venosa*.
2002. United States – Japan Cooperative Program in Natural Resources (UJNR) Aquaculture Panel 31st Meeting, Yokohama, Japan, Oct 2002. Environmental change in the coastal environment: challenges for the selection and propagation of filter feeding species in aquaculture, stock enhancement and environmental rehabilitation.
1999. Marine Science Laboratories, Menai Bridge, University of Wales. Oyster restoration and the ecology of the Chesapeake Bay.
1996. Christopher Newport University. Tercentennial Lecture: Biology at the Interface: The Question of The Introduction of Non-Native Species to the Chesapeake Bay.
1994. Old Dominion University. The decline and fall of the Chesapeake oyster resource
1993. University of Valparaiso and Instituto de Oceanologia, Vina del Mar, Chile. Identification, physiology and sampling of bivalve larvae in the field.
1993. University Austral de Chile, Puerto Montt, Chile. Bivalve larvae in shallow seas and estuaries: where do they go?
1992. Old Dominion University. Assessment of physiological condition of bivalve larvae from the field: are they starving?
1991. University of Delaware. Larval ecology of bivalve molluscs: progress towards a quantitative understanding.
1990. Mid Atlantic Regional Oyster Workshop, Annapolis, Md. Overview of proposed multi-institutional collaborative program for the middle Atlantic states.
1990. Rutgers University Shellfish Research Laboratory, Port Norris, NJ. *Crassostrea gigas*, another oyster for the Middle Atlantic?
1990. North Carolina State University, Agricultural Extension Services. Current oyster culture technology.
1990. North Carolina State University, Department of Zoology. Bivalve mollusc larvae: passive drifters or active depth regulators?
1990. Virginia Center for Innovative Technology. Use of triploid oysters and off bottom oyster culture to rejuvenate the Virginia oyster industry.
1987. NOAA-NMFS, Milford, CT. Recruitment of bivalve larvae to the benthos.
1986. National Institute of Oceanography, Goa, India. Marine wood borers. (Full reference in 8a)
1986. University of Madras, Madras, India. Shipworm symbiosis.

- 1986 Naval Research Laboratories and University of Bombay, Bombay, India.
 a) The Chesapeake Bay: fisheries and the impact of pollution.
 b) Shipworm symbiosis.
- 1986 Marathwada University, Aurangabad, India.
 a) Shipworm symbiosis.
 b) Culture of bivalve molluscs.
- 1985 University of Connecticut, Avery Point, CT. Larval dispersal on the New England Shelf.
- 1985 Shipworm symbiosis. William and Mary Dept. of Biology
- 1985 University of Maryland, Chesapeake Biological Station, Solomons, MD. History of Aquaculture.
1984. Bigelow Laboratory for Ocean Sciences, Boothbay Harbor, ME. Larval behavior and physical processes controlling recruitment in the "cold pool" in the Middle Atlantic Bight.
- 1984 Pacific Biological Station, Nanaimo, B.C., Canada. Sampling of bivalve larvae. (reference in 8a)
- 1984 University of Maryland, Horn Point Environmental Laboratories, Cambridge, MD. Reproduction of bivalves on the New England Shelf.
- 1984 University of Delaware, Lewes, DE. Shipworm symbiosis.
- 1984 VIMS. Reproduction of the Ocean Quahog, *Arctica islandica*, on the Southern New England Shelf.
- 1983 Institute for Marine Environmental Research, Plymouth, U.K. Shipworm symbiosis.
- 1983 Fifth Symposium on Aquaculture in Latin America, Valdivia, Chile. (Full reference in section 8a)
- 1982 Marine Science Research Center, State University of New York, Stony Brook. Biotechnology and Aquaculture.
- 1982 University of California, Santa Barbara, California. Clams, clams everywhere, but where do the larvae go to?
- 1981 2nd International Symposium on Invertebrate Reproduction, Newcastle, U.K. Control of reproduction in marine bivalves.
- 1979 University of Washington, Seattle, WA. Larval dispersal on the New England Shelf.
- 1978 Duke University Marine Lab. Aquaculture.

8j) unrefereed publications not listed above

- Newell, R.I.E, and R. Mann, 2012. Shellfish Aquaculture: Ecosystem Effects, Benthic–Pelagic Coupling and Potential for Nutrient Trading. A Report Prepared for the Secretary of Natural Resources, Commonwealth of Virginia. June 21, 2012
- Baker, P. K. and R. Mann. 1990. Habitat requirements for the soft shell clam, *Mya arenaria*, in Chesapeake Bay. Special Scientific Report, Virginia Institute of Marine Science, Gloucester Point, Virginia.
- Roegner, G. C. and R. Mann. 1990. Habitat requirements for the hard clam, *Mercenaria mercenaria*, in Chesapeake Bay. Special Scientific Report, Virginia Institute of Marine Science, Gloucester Point, Virginia.
- Mann, R., B. J. Barber, J. P. Whitcomb, and K. S. Walker. 1989. Field studies of comparative settlement of oyster larvae on oyster shell, expanded shale and tire chips. V.M.R.C.
- Morales-Alamo R., and R. Mann. 1990. Recruitment and growth of oysters on shell cultch planted at monthly intervals (May-August, 1986) in the lower Potomac River, Maryland. (SRAMSOE)
- Mann, R. 1985. Molluscan mariculture history and prospects. Shellfisheries Newsletter of New Zealand 25: 8-9.
- Mann, R. 1979. Exotic Species in Aquaculture. Oceanus. Spring Edition pp. 29-35.

8m) published software:

- Harding, J.M., Mann, R. and Clark, V.P. 1999. Oyster Reef Communities in the Chesapeake Bay. Version 1.0 [CD ROM] Virginia Institute of Marine Science Educational Series No. 45/ Virginia Sea Grant Publication No. 99-06. Virginia Institute of Marine Science, Gloucester Point, VA. 23062.

8o) Other scholarly activity, including papers presented at professional meetings and publication of abstracts

2022

NATIONAL SHELLFISHERIES ASSOCIATION. San Diego CA. March 2022

- Melissa Southworth, Alexandria Marquardt, Nathan Otto, Mike Unger, Roger Mann. 2022. Revisiting *Rapana venosa* in Hampton Roads, Chesapeake Bay as TBT abates.
- Alexandria Marquardt, Melissa Southworth, Roger Mann, 2022. Estimating post-settlement growth and survival in Eastern Oysters *Crassostrea virginica* in the Chesapeake Bay.
- Alexandria Marquardt, Roger Mann. 2022. Distribution and Demographics of Fossil Oysters on the Atlantic Continental Shelf.
- Kaitlyn R. Clark, Sally Roman, Roger Mann, David B. Rudders. 2022. The Effect of Density on Reproductive Activity in Atlantic Sea Scallops *Placopecten magellanicus*.

2022

BENTHIC ECOLOGY MEETINGS. Durham NH, March 2022

- Jillian R. Sower, Eric N. Powell, Roger L. Mann, Kathleen M. Hemeon, Sara Pace. 2022. Examining spatial heterogeneity trends in ocean quahog growth and recruitment

2021

NATIONAL SHELLFISHERIES ASSOCIATION. Virtual via Zoom. March 2021

- Roger Mann 2021 (Plenary). Managing fisheries in the mid-Atlantic and New England in the coming decades – moving resource footprints, competing societal needs, and facilitating the discussion.
- Alyssa LeClaire, Eric Powell, Roger Mann. 2021. Historical range shifts and the influence of global warming on ocean quahogs (*Arctica islandica*)
- Alexis Hollander, Roger Mann. 2021. Temporal and spatial growth in the surfclam *Spisula solidissima*
- Kathleen M. Hemeon, Eric Robillard, Eric N. Powell, Roger L. Mann, Theresa Redmond, Sara Pace, Jillian Sower. 2021. Determining reader precision and bias when aging *Arctica islandica*, the oldest-living bivalve on Earth.
- Eric N. Powell, Roger Mann. 2021. The confusion of complexity versus dynamics: Habitat management and surfclams off Nantucket. 2021.
- Eric N. Powell, Roger Mann, Daphne M. Munroe, Eileen Hofmann, John Klinck. 2021. The potential to model future range shifts of commercial species and their fisheries: A possible new approach
- Jillian R. Sower, Eric N. Powell, Roger L. Mann, Kathleen M. Hemeon, Sara Pace. 2021. Examining spatial heterogeneity trends in ocean quahog growth and recruitment.
- Roger Mann, Melissa Southworth, Rowan Lockwood. 2021. Oyster reef accretion rates estimated from fossil shell collections
- Alexandria Marquardt, Melissa Southworth, Roger Mann. 2021. Post. settlement survival in Eastern Oysters (*Crassostrea virginica*) to inform management and restoration in the Chesapeake Bay.
- Melissa Southworth, James Wesson, Marcia Berman, Tamia Rudnicki, Roger Mann. 2021. On the co-existence of submerged aquatic vegetation and cage based aquaculture in Virginia.
- Kaitlyn R. Clark, Sally Roman, Roger Mann, David B. Rudders. 2021. The effect of density on reproductive effort in the Atlantic Sea Scallop *Placopecten magellanicus*
- Theresa Redmond, Jessica Bergeron, Sally Roman, David Rudders and Roger Mann. 2021. Morphometric Change with growth in the Scallop *Placopecten magellanicus*

2020

Disappeared in a cloud of COVID

2019

5TH SCLEROCHRONOLOGY CONFERENCE, Split, Croatia June 2019

- Roger Mann, Eric Powell, John Klinck, Sara Pace, Matthew Long, Theresa Redmond, Khalil Russell. 2019. A 250 year chronology of *Arctica islandica* in the Mid-Atlantic region of the US continental shelf.

5TH INTERNATIONAL PECTINID WORKSHOP, Santiago de Compostela Spain April 2019

- David Rudders, Theresa Redmond, M. Chase Long, Sara G. Thomas, Sally A. Roman, Roger Mann. 2019. Age and Growth rate measurement in scallops from the mid-Atlantic: a comparison of shell signatures, hinge resilia and isotope based methods.

NATIONAL SHELLFISHERIES ASSOCIATION. New Orleans, LA March 2019

- M. Chase Long, Roger Mann. 2019. Collections of Young Ocean Quahogs: Lessons learned from from the Newest Recruits of the World's Longest-Living Metazoan.
- Roger Mann, Melissa Southworth, James E. Wesson. 2019. On the stock recruit relationship in oysters populations of the Virginia Chesapeake Bay.
- Roger Mann, Melissa Southworth, James E. Wesson. 2019. Growth, mortality and shell turnover rates in oysters populations of the Virginia Chesapeake Bay.
- Melissa Southworth, James E. Wesson, Marcia Berman, Tamia Rudnicki and Roger Mann. 2019. Building tools to minimize user conflict while promoting both aquaculture and traditional fisheries.
- Theresa Redmond, M. Chase Long, Sara Thomas, Sally Roman, David Rudders, Roger Mann. 2019. Age and Growth rate measurement in scallops from the mid Atlantic: a comparison of shell signatures, hinge resilia and isotope based methods.
- Khalil Russell, M. Chase Long, Theresa Redmond, Sara Pace, Roger Mann, Eric Powell 2019. Can we discern major meteorological and environmental events in the growth record of the long lived clam *Arctica islandica*?
- Kathleen M. Hemeon, Eric N. Powell, Roger Mann, M. Chase Long. 2019. Ocean Quahog Population Age-Frequency Estimates Through Region Specific Age-Length Key probabilities and Model Simualtion.

THE PAST IS A FOREIGN COUNTRY: HOW MUCH CAN THE FOSSIL RECORD ACTUALLY INFORM CONSERVATION? Oxford University, UK. January 2019.

A workshop including fields of deep-time paleontology, Quaternary science, historical ecology, and conservation biology to provide expert-based interdisciplinary assessment of the potential opportunities for using different long-term biodiversity archives to inform conservation and environmental management, and critical evaluation of the potential limitations of using past data to understand the present and predict the future.

Presentation title: A conservation paleobiological perspective on Chesapeake Bay oysters.
R.Lockwood and R. Mann

2018

AMERICAN FISHERIES SOCIETY, Atlantic City NJ, August 19-23, 2018

- Long M.C., Mann R., Rudders D., Roman S., Chute A, Cronin K., Walker S. 2018. Growth rate measurement in scallops: revisiting Merrill after 50 years on the library shelf.

NATIONAL SHELLFISHERIES ASSOCIATION. Seattle WA. March 2018

- Mann R., Powell E.N., Munroe D.M. 2018. The Case of the “Missing” Arctic Bivalves and the Walrus, the Biggest [Ignored] Clam Fishery on the Planet.
- Southworth M., Mann R., Wesson J.E., Tarnowski M., Homer M., Reay, W. Thomas J. 2018. Spatial variation in oyster shape in the Chesapeake Bay: implications for shell carbonate budgets
- Mann R, Southworth M, Wesson J.E., Tarnowski M, Thomas J. 2018. Oysters shell budgets in the Chesapeake Bay: a summary from long term survey data.
- Long M.C., Mann R., Rudders D., Roman S., Chute A, Cronin K., Walker S. 2018. Growth rate measurement in scallops: revisiting Merrill after 50 years on the library shelf.
- Kuykendall K.M., Powell E.N., Mann R., Long M.C., Timbs J. 2018. The “East of Nantucket” survey: Surfclams on the march offshore – Mussels beware.
- Kuykendall K.M., Powell E.N., Mann R., Reay K. 2017. SCeMFis 2017: A year in review.
- Timbs J., Mann R., Powell E.N. 2018. Assessment of the distribution shift and range expansion of the Atlantic surfclam *Spisula solidissima*, using a spatial distribution function model.
- Powell E.N., Pace S., Mann R., Klinck J.M. 2018. The warming of the Northwest Atlantic as recorded by the Ocean Quahog, *Arctica islandica*, with a note on climate cycles.

OCEAN SCIENCES MEETING, Portland OR, February 2018

- Klinck J.M, Powell E.N., Mann R., Hofmann E.E., Pace S.M., Long M.C. 2018. Growth rate variations of ocean quahog clams in the northwest Atlantic as a record of bottom water temperature variations.

2017

GEOLOGICAL SOCIETY OF AMERICA, Seattle WA, October 2017

- Cronin K; Walker S.E; Mann R; Chute A. S.; Long M.C.; Bowser S.S. 2017. Relatively fast growth and moderate longevity for the Antarctic Scallop, *Adamussium colbecki*, living in the coldest waters on Earth.

BENTHIC ECOLOGY MEETINGS. Myrtle Beach SC, April 2017

- Timbs J, Mann R, Powell E.N. 2017. Spatial Distribution of Atlantic surfclams (*Spisula solidissima*) in the Middle Atlantic Bight and Georges Bank.
- Pace, S. M. ;Powell, E. N.; Mann, R.; Klinck, J.M. 2017. Effects of increasing bottom water temperature on growth rates of ocean quahogs throughout the Mid-Atlantic

NATIONAL SHELLFISHERIES ASSOCIATION. Knoxville TN. March 2017

- Long M.C., Mann R., E. N. Powell. 2017 Sexual dimorphism in *Arctica islandica*.
- Mann R., Long M.C., Pace S., Powell E.N. 2017. Sub annual signatures in the valves of juveniles *Arctica islandica*.
- Southworth M. , Mann R., Long M.C. 2017. Tolerance of *Crassostrea virginica* to combinations of low salinity and high temperature.
- Powell E. N., Pace S., Mann R., Klinck J.M. Invasion Dynamics of *Arctica islandica*, Ocean Quahog, in the Western Atlantic Ocean.
- Pace S., Powell E.N., Mann R, Klinck J.M. 2017. Evidence of multidecadal recruitment in the ocean quahog, *Arctica islandica*, in the Western Atlantic Ocean.
- Timbs J, Mann R, Powell E.N. 2017. Spatial Distribution of Atlantic surfclams (*Spisula solidissima*) in the Middle Atlantic Bight and Georges Bank.

2016

ICES ANNUAL SCIENCE SYMPOSIUM, Riga, Latvia. September 19-23, 2016

- Pace, S. E. N. Powell and R. Mann. 2016. Age structure of the Ocean Quahog *Arctica islandica* from the northwest Atlantic Ocean.

-

NATIONAL SHELLFISHERIES ASSOCIATION, Las Vegas NV, February 2014

- Southworth M. and R. Mann. 2016. Which kids from which parents? The relationship of spawning periodicity to YOY survival in VA oyster populations.

2015

AMERICAN FISHERIES SOCIETY, Portland OR, August 16-20, 2015

- Powell, E.N., Klinck, J.M., Hofmann, E.E., Moreno, P., Kuykendall, K.M., Munroe, D.M., Mann, R. 2015. Captains' Response to a Declining Stock as Anticipated in the Surfclam (*Spisula solidissima*) Fishery.

NATIONAL SHELLFISHERIES ASSOCIATION, Monterey CA, March 2014

- Southworth M, J. Thomas and R. Mann. 2015
- Towards the paperless oyster survey; consideration of digital data entry in the field.

2014

AMERICAN FISHERIES SOCIETY, Quebec City. August 17-21, 2014

- Moreno, P., E. N. Powell, J. M. Klinck, D.M. Munroe and R. Mann. 2014. Spatially-explicit Fisheries Economics Simulator: a predictive tool of climate-induced effects on harvesting performance.

NATIONAL SHELLFISHERIES ASSOCIATION, Jacksonville FL, March 2014

- Soniat, T. M., N. Cooper, E.N. Powell, J.M. Klinck, and R. Mann. 2014. Application of a shell budget model to evaluate success or failure of oyster reef restoration.
- Southworth, M and R. Mann. 2014. Moving baselines in oyster reproductive periodicity in the Virginia Chesapeake Bay.
- Mann R., D. M. Munroe, K Kuykendall and E. N. Powell. 2014. A simple method for correction of breakages losses in clam surveys.
- Bergeron, J., D. Rudders and R. Mann. 2014. Latitudinal and bathymetric variation in ontogenetic morphology in the sea scallop *Placopecten magellanicus*.
- Kuykendall, K., P. Moreno, E. N. Powell, T. Soniat, S. Theodosiou, R. Mann, and D. M. Munroe. 2014. The exposed surface area to volume ratio: Is shell more cost-efficient than limestone in promoting oyster recruitment?

2013

3RD INTERNATIONAL SCLEROCHRONOLOGY CONFERENCE, May 18-20, Caernarfon, Wales

- Mann R, Munroe D. M., Powell E.N., Hofmann E.E., Klinck J. M. 2013. Sclerochronology and bioenergetics models: a combination to elucidate changes in growth environments at small temporal and spatial scales.

AMERICAN FISHERIES SOCIETY, 2013

- Powell E.N., Klinck J. M., Moreno P., Munroe D. M., Hofmann E. E., Mann, R. 2013. Evaluation of a Spatially-explicit Fisheries Economics Simulator (SEFES) for the Mid-Atlantic surfclam fishery

- Moreno P., Powell E.N., Klinck J. M., Munroe D. M., Hofmann Eileen. E., Mann, R. 2013. Climate-induced changes in the performance of the Mid-Atlantic surfclam fishery: linking biological and human processes

MANAGING OUR NATIONS FISHERIES: ADVANCING SUSTAINABILITY. May 7-9. Washington DC.

- D. Munroe, B. McCay, E.N. Powell, J. M. Klinck, E. E. Hofmann, R. Mann, D. Haidvogel, S. Brandt, C. Creed, P. Zhang, and C. V. Mejía. Assessing the Impacts of Climate Change in a Coupled Socio-Ecological System: The Case of Atlantic Surfclams

AERS MEETING, Williamsburg VA. April 12-13, 2013.

- Mann, R., E. N Powell, and G. Waldbusser. Biogenic carbonate and community structure in estuaries.

28TH LOWELL WAKEFIELD FISHERIES SYMPOSIUM . Anchorage, Alaska. March 26–29, 2013.

- Mann R., D. M. Munroe, E. N. Powell, E. E. Hofmann and J. M. Klinck: Long-lived bivalve molluscs as barometers of climate change in shallow Arctic marine systems

BENTHIC ECOLOGY MEETINGS, Savannah, GA. March 20-24, 2013

- Munroe D. M., Narváez D, Curchitser E, Klinck J. M., Hofmann E. E., Mann R., Powell E. N. 2013. Longterm Dynamics in Atlantic surfclams: The Role of Bottom Water Temperature.
- Narváez D. Munroe D. M., Mann R., Powell E. N., Klinck J. M., Hofmann E. E. 2013. Modeling Dynamics in Continental Shelf Benthos: An Individual-Based Population Model for Atlantic Surfclams
- Moreno P., Powell E. N., Klinck J. M., Hofmann E. E., Munroe D. M., Mann R. 2013. Climate-induced changes in the performance of the Mid-Atlantic surfclam fishery: linking biological and human processes

NATIONAL SHELLFISHERIES ASSOCIATION, Nashville, March 2013

- Southworth M, R. Mann, P. McGrath and M. Congrove (2013). Fecundity of oysters *Crassostrea virginica* estimated from spawning of field collected individuals.

INTEGRATED MARINE BIOGEOCHEMISTRY AND ECOSYSTEM RESEARCH (IMBER). Goa, India January 2013.

- Hofmann E. E. , J. M. Klinck, B. McCay, C. Creed, S. Brandt, C. M. V. Mejia, E. N. Powell, D. Munroe, D. B. Haidvogel and R. Mann (2013). A Coupled Model of Economics, Human Behavior, and Bivalve Biology: Application to the Surfclam Fishery.

2012

NATIONAL SHELLFISHERIES ASSOCIATION, Seattle, March 2012

- Southworth, M., J. A. Wesson and R. Mann. (2012). Rotational harvest in the Rappahannock River: a review of progress to date.
- Mann, R., B. Walles, K. Troost and T. Ysebaert (2012). So what should a natural mortality curve look like for oysters?

BENTHIC ECOLOGY MEETING, Norfolk, March 2012

- Walles, B., R. Mann, T. Ysebaert and K. Troost K. 2012. Reef Dynamics of *Crassostrea gigas* in the Oosterschelde estuary (The Netherlands).

2011

INTERNATIONAL WORKSHOP ON SHELLFISH STOCK ASSESSMENTS: STATE OF THE ART AND NEW TECHNIQUES, NOVEMBER 3 – 4, 2011 - YERSEKE, THE NETHERLANDS

- Mann, R. (2011) 15 years of oyster assessment approaches in the Virginia portion of the Chesapeake Bay.
- Mann, R. (2011) On the biology of reef forming species and what we should measure in addition to the typical density, length and weight data.

WORLD CONFERENCE ON BIOLOGICAL INVASIONS AND ECOSYSTEM FUNCTIONING.
BARCELONA SPAIN. AUGUST 22-25, 2011

- Ribeiro, F., R. Schlosser, A. Deary and R. Mann (2011). Multivariate approaches to predict invasion success: a novel conceptual framework.

NATIONAL SHELLFISHERIES ASSOCIATION

- Southworth, M., R. Mann and J. M. Harding (2011). Biodeposition rates in shallow water, intensive oyster farms.
- Mann, R., J. M. Harding, M. Southworth and J. Wesson (2011). Managing shell budgets through rotational harvest in seed production areas.
- Mann, R. (2011) The Chesapeake Bay Executive Order, oyster restoration goals and dollars – did anyone think about the costs?
- Harding, J.M., E. N. Powell, R. Mann and M. Southworth. (2011) Sex ratio and age in *Crassostrea virginica*.

2009

NATIONAL SHELLFISHERIES ASSOCIATION

- Southworth, M., R. Mann, E. Reilly and J. M. Harding (2009). Intensive oyster culture in very shallow estuaries: biodeposition versus flushing rates as long-term management considerations.
- Mann, R., J. M. Harding and M. Southworth (2009). Oyster restoration in the mid Atlantic – beating a dead horse?

2008

"MANAGING ALIEN SPECIES FOR SUSTAINABLE DEVELOPMENT OF AQUACULTURE AND FISHERIES" (MALIAF). FLORENCE, ITALY. NOVEMBER 4-7, 2008.

- Mann, R. (2008). Choosing a non-native species for aquaculture and fishery enhancement: How niche matching limits choice and ability to develop sound risk assessments.

NATIONAL SHELLFISHERIES ASSOCIATION

- Southworth, M., R. Mann, J. M. Harding and J. Wesson (2008). Oyster recruitment to constructed sanctuary reefs in the Chesapeake Bay – one reason why constructed reefs have limited utility.
- Mann, R and M. Luckenbach (2008). So how fast do oyster sperm swim?
- Mann, R, M. Southworth, J. M. Harding and J. Wesson (2008). Estimating mortality rates in oyster populations.

2007

NATIONAL SHELLFISHERIES ASSOCIATION

- Southworth, M., R. Mann, and J. M. Harding (2007). Propagule contribution by selected oyster strains used in field broodstock enhancement

DELAWARE BAY SYMPOSIUM. JANUARY 2007.

- Mann, R. (2007). Native Oyster Restoration in the Chesapeake Bay: Lessons for the Delaware Estuary

BIOINVASIONS 2007 MIT. May 2007.

- Mann, R and J. M. Harding (2007) Modeling invasions by invertebrate species with pelagic larvae in estuarine and coastal systems: an argument for short generational dispersal distance.

ESTUARINE RESEARCH FOUNDATION 2007

- Harding, J.M., A. Picariello, R. Mann and E.N. Powell. (2007). Growth rates of the Atlantic Surf Clam, *Spisula solidissima*, in relation to bottom water temperatures in the Mid-Atlantic Bight.
- Mann, R, M. Southworth, J.M. Harding and J. Wesson. (.2007). Shell budgets for the James River, Virginia oyster resource.

INTERNATIONAL CONFERENCE ON SHELLFISH RESTORATION, Wissingen, Netherlands, 11/2007

- Mann, R., M. Southworth, J.M. Harding and J. Wesson. (2007). Shell budgets for the James River, Virginia oyster resource.

CHESAPEAKE BAY OYSTER MANAGEMENT PROGRAM, Waldorf, MD 12/3/2007

- Mann, R., M. Southworth, J.M. Harding and J. Wesson. (.2007). Quantitative aspects of oyster biology relevant to management of the Chesapeake Bay resource.

2006

NATIONAL SHELLFISHERIES ASSOCIATION 2006, Monterey CA

- Harding, J. M. and R. Mann. (2006). Age and growth of *Crassostrea ariakensis* and *Crassostrea gigas* from Laizhou Bay, China.

LARVAL BIOLOGY CONFERENCE, Coos Bay, OR. August 2006.

- Mann, R., J. M. Harding, M. Southworth and J. Shen (2006). How far do planktotrophic larvae disperse in shallow estuarine systems?

2005

INTERNATIONAL CONFERENCE ON SHELLFISH RESTORATION, Brest, France

- Mann R., M. Southworth and J. M. Harding. Stock-recruit relationships in shallow water estuaries: examples and implication for shellfish restoration strategies.
- Mann R., J. Shen, M. Southworth, A..J. Erskine, S. Snyder, and K. Hudson. Circulation in restoration sites: implications for retention or dispersal of shellfish larvae in restoration programs.
- Mann R., S. K. Allen Jr., E. M. Burreson, M. Luckenbach, K. Reece, J. M. Harding, M. Southworth, R. Carnegie, and J. Carlsson. The Great Wicomico River oyster restoration program: a multi disciplinary approach to restoring a complete estuarine shellfish population.

ESTUARINE RESEARCH FOUNDATION 2005, Norfolk VA

- Mann, R., J. M. Harding and M. Southworth. Tracking progression of a marine invasion: seven years of observations of the marine gastropod *Rapana venosa* in the Chesapeake Bay, Virginia, USA.

NATIONAL SHELLFISHERIES ASSOCIATION 2005, Philadelphia, PA

- Mann, R., J. M. Harding and E. N. Powell. Recruitment patterns of the Ocean Quahog, *Arctica islandica*, in the Mid Atlantic Bight as illustrated by sized and age structure.
- Erskine, A. J., S. Snyder, M. Southworth, K. Hudson, J. Shen, and R. Mann. So how far do oyster larvae disperse? A dye study simulation.
- Mann R. So how far do oyster larvae disperse? Theoretical and time frame considerations

2004

INTERNATIONAL CONFERENCE ON SHELLFISH RESTORATION 2004, Charleston SC

- Mann, R. (Invited plenary talk) Oyster restoration through environmental rehabilitation: ten years and over 100 reefs later what have we learned?

NATIONAL SHELLFISHERIES ASSOCIATION 2004, Honolulu, Hawaii.

- Mann, R., M. Southworth, J.M. Harding and J. E. Wesson. A comparison of dredge and patent tongs for estimation of oyster populations. J. Shellfish Res.
- Elizabeth S. Darrow, E. S., M. W. Luckenbach, and R. Mann. Physiological Ecology of the Cultured Hard Clam, *Mercenaria mercenaria*
- Southworth M. and R. Mann. A comparison of recruitment on mid-water oyster spat collectors and subsequent bottom recruitment in three sub estuaries of the Chesapeake Bay, Virginia

2003

OYSTER DISEASE SYMPOSIUM. February 17-18, 2003. Annapolis MD (NOAA & MD Sea Grant)

- Mann, R. Current Status of Oyster Populations and Restoration Prospects.

CHESAPEAKE BAY STOCK ASSESSMENT COMMITTEE, ANNUAL STOCK ASSESSMENT WORKSHOP. Patuxent Wildlife Center, February 19, 2003

- Mann, R. Oyster Population Estimation in Support of the Ten-Year Goal for Oyster Restoration in the Chesapeake Bay
- Mann, R. Fishery Independent Stock Assessment of Hard Clam Populations in the Chesapeake Bay and Limitations of Fishery Dependent Data.

BIOINVASIONS 2003, San Diego, March 2003

- Mann, R. and J. M. Harding. Biological invasions as tools to understand basic paradigms in larval ecology.

NATIONAL SHELLFISHERIES ASSOCIATION, New Orleans, April 2003

- Southworth, M. and R. Mann. Decadal scale changes in seasonal patterns of oyster recruitment in the Virginia sub estuaries of the Chesapeake Bay.
- Mann, R. and P. Kingsley-Smith. Finding the wheat in the chaff: the paradox of turbidity, salinity and larval feeding conditions.

CHESAPEAKE BAY SCIENTIFIC AND TECHNICAL ADVISORY COMMITTEE (STAC) OYSTER WORKSHOP, December 2003, Annapolis, MD.

- Mann, R. Square pegs in rectangular holes: What have we learned from previous oyster introductions, and what questions should we be asking about future introductions?

2002

CHESAPEAKE BAY STOCK ASSESSMENT COMMITTEE, ANNUAL STOCK ASSESSMENT WORKSHOP. Patuxent Wildlife Center, February 6, 2002

- Mann, R. Oyster Population Estimation in Support of the Ten-Year Goal for Oyster Restoration in the Chesapeake Bay Fishery: Estimation of Virginia Stocks.
- Mann, R. Fishery Independent Standing Stock Surveys of Hard Clam Populations in the Chesapeake Bay and a Comparison with Continuing Estimates from Fishery Dependent Data.

AQUATIC NUISANCE SPECIES SYMPOSIUM, Arlington, FEBRUARY 2002

- Mann, R. and J. M. Harding. Estimation of dispersal and establishment range for the predatory marine gastropod *Rapana venosa* on the U.S. East Coast.
- Harding, J. M. and R. Mann. Early life history tactics of veined Rapa Whelks (*Rapana venosa*) in Chesapeake Bay: blueprint for a successful bioinvasion by stealth.
- Ware, C., J. M. Harding and R. Mann, Identification of spatial breeding limitations in effecting invasions: local variation in egg capsule morphology and larval viability in the invading predatory marine gastropod *Rapana venosa*.

NATIONAL SHELLFISHERIES ASSOCIATION. April 2002

- Southworth, M., J. M. Harding and R. Mann. 2002, in press. Population structure of the hard clam, *Mercenaria mercenaria*, in Hampton Roads, Virginia. J. Shellfish Research.

AFS MEETING, Baltimore, MD, August 2002

- Mann, R. and J. M. Harding. 2002. Current status and potential establishment range for the predatory marine gastropod *Rapana venosa* on the U.S. East Coast.
- Walter, J. F., R. Lipcius, R. Mann, and J. M. Harding. 2002. Predation of *Rapana venosa* on the hard clam, *Mercenaria mercenaria*, in the Chesapeake Bay.

INTERNATIONAL CONFERENCE ON SHELLFISH RESTORATION. November 2002

- R. Mann and P. Kingsley-Smith Oyster larvae and recruitment: the paradox of turbidity, salinity and larval feeding conditions. J. Shellfish Research.

- Mann, R. and J. M. Harding. Encroachment into shellfish restoration efforts: invasion patterns of the gastropod *Rapana venosa* in the Chesapeake Bay.

AFS SYMPOSIUM ON IMPACTS OF FISHING GEAR ON THE BENTHOS. DECEMBER 2002

- Doolittle, D. A, M. R. Patterson, Z. Rahman, and R. Mann. Development of a method for the identification and quantification of biological targets detected by sidescan sonar with application to fisheries stock assessment from autonomous underwater vehicles.

2001

BIOINVASIONS 2001, New Orleans, April 9-11, 2001

- Mann, R. and J. M. Harding. Salinity tolerance of larval *Rapana venosa*: implications for dispersal and establishment range on the U.S. East Coast.
- Harding, J. M. and R. Mann. Growth Rates of Larvae and Juvenile Veined Rapa Whelks, *Rapana venosa*, from Chesapeake Bay, U.S.A. from Hatch Through Age 1.
- Westcott, E, R. Mann and J. M. Harding. Reproductive Biology of Chesapeake Bay U.S.A. Veined Rapa Whelks, *Rapana venosa*.
- Ware, C, J. M. Harding, and R. Mann. Temporal and Spatial Variation in Egg Cases of *Rapana venosa* from the Chesapeake Bay.
- Green, R, R. Mann, and J. M. Harding. Morphological Variation Between Three Populations of the Veined Rapa Whelk, *Rapana venosa*, a Recent Gastropod Invader of the Chesapeake Bay, Virginia, U.S.A.
- Gensler, A, R. Mann, and J. E. Graves. The Genetics of Invasion: A Study of the Asian Veined Rapa Whelk, *Rapana venosa*.
- Savini, D, J. M. Harding and R. Mann. Experimental Evaluation of *Rapana venosa* Feeding Rates Preying on the Bivalve *Mercenaria mercenaria* in the Lower Chesapeake Bay, U.S.A.

2000

INTERNATIONAL CONFERENCE ON SHELLFISH RESTORATION. NOVEMBER 2000

- Mann, R. Up close and personal: a suggested quantitative approach to broodstock enhancement on shellfish restoration sites
- Harding, J. M. and R. Mann. Essential or just opportunistic fish habitat? Utilization of restored complex shellfish habitat by fish species.
- Mann, R. and Juliana M. Harding. Coming soon to a restoration site near you: the invading, predatory Oriental gastropod *Rapana venosa*.

RESTORATION OF OYSTERS IN TOMALES BAY, CA Sea Grant, September 2000

- Mann, R. Restoration of oyster communities in Chesapeake Bay with implications for Tomales Bay.

4TH INTERNATIONAL LARVAL BIOLOGY CONFERENCE, June 24- 28, 2000, Santa Cruz, CA.

- Harding, J.M. and Mann, R. 2000. Larval ecology of the veined rapa whelk, *Rapana venosa*, from Chesapeake Bay, U.S.A.
- Mann, R. and Harding, J.M. 2000. Variability in larval development of veined rapa whelk, *Rapana venosa*, from Chesapeake Bay, U.S.A.: Implications for ecological success in local habitats.

AQUACULTURE ASSOCIATION OF CANADA, Moncton, NS. May 2000

- Mann, R. 2000. Restoring the oyster reef communities of the Chesapeake Bay: It's not just the fishery anymore.

NATIONAL SHELLFISHERIES ASSOCIATION. March 2000

- Mann, R and J. M. Harding. 2000. Veined Rapa Whelks (*Rapana venosa*) in the Chesapeake Bay: Current status and preliminary reports on larval growth and development.

- Southworth, M, J.H. Harding and R. Mann. 2000. Abundance of small predatory gastropods (*Urosalpinx cinera*, *Eupleura caudata*, *Rapana venosa*) in relation to Lower Chesapeake Bay oyster (*Crassostrea virginica*) populations.
- Luckenbach, M., O'Beirn, F., Harding, J.M., Mann, R. and Nestlerode, J. 2000. Temporal patterns of fish and decapod utilization of oyster reefs: comparisons across an estuarine gradient.

REGIONAL OYSTER RESTORATION WORKSHOP, January 2000, Waldorf, MD.

- Mann, R. and J. E. Wesson. 2000. Oyster stock assessment in Virginia.

1999

USFWS AQUATIC NUISANCE SPECIES WORKSHOP, Arlington December 1999

- Mann, R. 1999. The current status of the Rapa Whelk in the Chesapeake Bay

INTERNATIONAL CONFERENCE ON SHELLFISH RESTORATION. Galway, Ireland. September 1999

- Luckenbach, M. W., Harding, J., Mann, R., Nestlerode, J., O'Beirn, F. X., 1999. Oyster Reef Restoration in Virginia, USA: Rehabilitating habitats and restoring ecological functions

MINI-MARINE SCIENCE SCHOOL, VIMS/MARINERS MUSEUM, September 29, 1999

- Mann, R. Non-native Species: The Rapa Whelk in Virginia waters.

MARINE SCIENCE SCHOOL, RICHMOND, VA.

- Mann, R. Non-native Species: The Rapa Whelk in Virginia waters.

SOCIETY OF WETLAND SCIENTISTS, Norfolk, VA June 1999

- Mann, R. 1999. Restoring oyster reef communities in the Chesapeake Bay: Ecological versus economic needs.

ICES WORKING GROUP ON INTRODUCTIONS AND TRANSFERS OF MARINE ORGANISMS, Conwy, North Wales, April 12-16, 1999.

- Mann, R. 1999. The current status of the Rapa Whelk in the Chesapeake Bay

BIOINVASIONS CONFERENCE, MIT, January 1999

- Mann, R and J. M. Harding. *Rapana venosa* in the Chesapeake Bay: Current status and prospects for range extension based on salinity tolerance of early life history stages.
- Harding, J. M. and R. Mann. Habitat and prey preferences of Veined Rapa Whelks (*Rapana venosa*) in the Chesapeake Bay: Direct and indirect trophic consequences.

NATIONAL SHELLFISHERIES ASSOCIATION. 1999

- Mann, R and J. M. Harding. 1999 *Rapana venosa* in the Chesapeake Bay: Current status and prospects for range extension based on salinity tolerance of early life history stages.
- Southworth, M and R. Mann. 1999 Oyster Reef Broodstock Enhancement in the Great Wicomico River, Virginia.

1996

NATIONAL SHELLFISHERIES ASSOCIATION. 1996

- Mann, R. and J. M. Hamrick. 1996. Metapopulation dynamics of oysters in a subestuary of the Chesapeake Bay: The role of Physical Transport. *J. Shellfish Res.* 15(2): 492
- Mann, R. 1996. Metapopulation dynamics of oysters in a subestuary of the Chesapeake Bay: Estimating early life history mortality rates. *J. Shellfish Res.* 15(2): 492
- Brooke, S. and R. Mann. 1996. Use of mesocosms for "in situ" culture of marine invertebrate larvae. *J. Shellfish Res.* 15(2): 492

1995

LARVAL BIOLOGY MEETINGS

- Mann, R. and J. M. Hamrick. Towards an understanding of metapopulation dynamics in an estuarine invertebrate.

1994

NATIONAL SHELLFISHERIES ASSOCIATION. 1994

- Mann, R. Identification and acquisition of broodstock for the aquaculture of molluscan shellfish. *J. Shellfish. Res.* 13(1): 280
- Mann, R., E. M. Burreson and Standish Allen Jr. Growth of triploid *Crassostrea gigas* under natural conditions in the lower Chesapeake Bay. *J. Shellfish. Res.* 13(1): 279
- Burreson, E. M., R. Mann, and Standish Allen Jr. Field exposure of triploid *Crassostrea gigas* to *Haplosporidium nelsoni* (MSX) and *Perkinsus marinus* (Dermo) in the lower Chesapeake Bay. *J. Shellfish. Res.* 13(1): 293

1993

ESTUARINE RESEARCH FEDERATION. 1993

- Mann, R., and R. Morales-Alamo. Balancing the budget for the oyster population in the James River, Virginia.

NATIONAL SHELLFISHERIES ASSOCIATION. 1993.

- Mann, R. 1993. Population models to evaluate the impact of diseases and management options for the James River oyster fishery. *J. Shellfish Res.* 12(1): 129
- Barber, B. J. and R. Mann. 1993. Comparative physiology of *Crassostrea virginica* and *Crassostrea gigas*: growth, mortality and infection by *Perkinsus marinus*. *J. Shellfish Res.* 12(1): 125

AMERICAN SOCIETY ZOOLOGISTS AGM 1993.

- Baker, S.M. and R. Mann. 1993. Metabolic rates of metamorphosing oysters (*Crassostrea virginica*) determined by calorimetry.

BENTHIC ECOLOGY MEETING, 1993

- Baker, S.M. and R. Mann. 1993. Effects of hypoxia on metamorphic success, survival and growth of oyster (*Crassostrea virginica*) larvae and spat.

1992

AMERICAN SOCIETY ZOOLOGISTS AGM 1992.

- Baker, S.M. and R. Mann. 1992. How do respiration rates change during metamorphosis of the oyster *Crassostrea virginica*?

BENTHIC ECOLOGY MEETING, 1992

- Baker, S.M. and R. Mann. 1992. Effects of hypoxia and anoxia on metamorphosis of the oyster *Crassostrea virginica*?

1991

ESTUARINE RESEARCH FEDERATION. 1991

- Baker, P. K. and R. Mann. 1991. Effect of light on metamorphosis in the oyster, *Crassostrea virginica*.

AMERICAN SOCIETY ZOOLOGISTS AGM. 1991.

- Baker, S. M. and R. Mann. 1991. Heat production during metamorphosis by the oyster, *Crassostrea virginica*.

1990

NATIONAL SHELLFISHERIES ASSOCIATION. 1990

- Mann, R. 1990. Larval ecology of the scallop, *Placopecten magellanicus*, in the Middle Atlantic Bight: the functional spawning season. *J. Shellfish Res.* 8(2): 434.

- Mann, R. 1990. Recruitment of scallops in the Mid Atlantic Bight: is vertical relief important? J. Shellfish Res. 8(2): 457.
- Mann, R. 1990. Larval ecology of *Arctica islandica* on the inner continental shelf of the United States. J. Shellfish Res. 8(2): 464.
- Mann, R. 1990. Another oyster for the Chesapeake Bay? A discussion of habitat considerations when selecting species for introduction. J. Shellfish Res. 8(2): 466.
- Mann, R., J. S. Rainer, and S. Hall. 1990. Body burden and tissue allocation of saxitoxin in two clam species. J. Shellfish Res. 8(2): 486.
- Rainer J.S. and R. Mann. 1990 Estimation of oyster standing stock using SCUBA. J. Shellfish Res. 8(2): 487.

1989

NATIONAL SHELLFISHERIES ASSOCIATION. 1989

- Widdows, J., R. Mann, and R. I. E. Newell. 1989. Calorespirometry, a method for examining response of oyster larvae to hypoxia and anoxia. J Shellfish Res. 7(3): 551.

ESTUARINE RESEARCH FEDERATION. 1989

- Mann, R., J. Widdows, and R. I. E. Newell. 1989. Impact of seasonal hypoxia on early life history of oysters.
- McCarthy, K. J. and R. Mann. 1989. Swimming behavior and dispersal of larval *Crassostrea virginica*
- Rainer, J. S. and R. Mann. 1989. Estimation of oyster standing stock using SCUBA.

1988

NATIONAL SHELLFISHERIES ASSOCIATION. 1988.

- Campos, B. and R. Mann. 1988. Discocilia and paddle cilia in the larvae of *Mulinia lateralis* and *Spisula solidissima*. J. Shellfish Res. 7(1): 189.
- Campos, B. and R. Mann. 1988. Swimming behavior of Mactrid larvae in response to salinity gradients. J. Shellfish Res. 7(1): 189.

1987

NATIONAL SHELLFISHERIES ASSOCIATION 1987.

- Mann, R. and J. S. Rainer. 1988. The response of swimming and metamorphosing oyster larvae to low dissolved oxygen. J. Shellfish Res. 7(1): 168.
- Morales-Alamo, R. and R. Mann. 1988. Use of gonad area/body area ratio in histological sections of *Crassostrea virginica* to monitor reproductive development: relevancy, difficulties and solutions. J. Shellfish Res. 7(1): 170.

AMERICAN SOCIETY ZOOLOGISTS AGM. 1987.

- Mann, R. and J. S. Rainer. 1987. The response of swimming and metamorphosing oyster larvae to low dissolved oxygen.

1986

NATIONAL SHELLFISHERIES ASSOCIATION AGM. 1986.

- Mann, R., R. J. Byrne, and B. Campos. 1988. Dispersal of bivalve larvae at a frontal system in the James River, Virginia. J. Shellfish Research 7(1): 124.
- Rheinhardt, R. D. and R. Mann. 1988. Development of epibenthic fouling communities on natural oyster bed in the James River, Virginia. J. Shellfish Research 7(1): 130.

1985

NATIONAL SHELLFISHERIES ASSOCIATION. 1985.

- Mann, R. 1985. On the design of sampling protocols for bivalve larvae in the field. J. Shellfish Research.
- Kunkle, J. S., S. M. Gallagher and R. Mann. Feeding and respiration rates of *Mercenaria mercenaria* (L) during settlement and metamorphosis. J. Shellfish Research.

1984

AGU-ASLO AGM. 1984.

- Mann, R. 1984. Lipids and metamorphosis in marine mollusc larvae. EOS.

1982

NATIONAL SHELLFISHERIES ASSOCIATION AGM. 1982.

- Castagna, M., J. G. Goodsell, R. A. Lutz, and R. Mann. 1982. The Egg Capsule of *Arctica islandica* (Linne). J. Shellfish Res. 2(1): 91.
- Gallagher, S. M. and R. Mann. 1982. Can Phytoplankton Carbon/Nitrogen Ratios be of Nutritional Significance to Bivalves? J. Shellfish Res. 2(1): 96.
- Mann, R. 1982. Shipworm nutrition: a review of recent work with an unusual bivalve. J. Shellfish Res. 2(1): 102.
- Lutz, R. A., J. G. Goodsell, R. Mann, and M. Castagna. 1982. The Early Life History of the Ocean Quahog *Arctica islandica* (Linne). J. Shellfish Res. 2(1): 101.

ANNUAL MARINE BIOLOGICAL MEETING, MARINE BIOLOGICAL LABORATORY, Woods Hole, MA. 1982.

- Anmuth, C. D., S. M. Gallagher, R. Mann, and R. S. Alberte. 1982. Glutamate dehydrogenase activity in wood and mud burrowing bivalve molluscs. Biol. Bull. 163: 355.
- Prusch, R. D., S. M. Gallagher, and R. Mann. 1982. Uptake and utilization of L-alanine by 10 species of bivalve molluscs. Biol. Bull. 163:360.

1981

NATIONAL SHELLFISHERIES ASSOCIATION AGM. 1981.

- Carlton, J. T. and R. Mann. 1981. Maintenance, manageability and utilization of introduced species: pathways and case histories. J. Shellfish Res. 1(1): 109.
- Mann, R. 1981. Reproduction in *Arctica islandica* and its relationship to the oceanography of the Middle Atlantic Bight. J. Shellfish Res. 1(1): 119.

ANNUAL MARINE BIOLOGICAL MEETING, MARINE BIOLOGICAL LABORATORY, WOODS HOLE, MA. 1981.

- Gallagher, S. M., R. B. Barlow, Jr., and R. Mann. 1981. Non-invasive, long-term recording of shipworm boring activity. Biol. Bull. 161: 312.
- Prusch, R. D., S. M. Gallagher, and R. Mann. 1981. Net flux of dissolved amino acids into adult tissues and larvae of the shipworm *Lyrodus pedicellatus*. Biol. Bull. 161: 315.
- Wright, A. E., C. M. Cavanaugh, S. M. Gallagher, R. Mann, and R. D. Turner. 1981. Preliminary observations of bacteria and shipworms. Biol. Bull. 161: 332.

SECOND INTERNATIONAL CONFERENCE ON AQUACULTURE NUTRITION. 1981.

- Gallagher, S. M. and R. Mann. 1981. Lipid Specific Staining: A Visual Technique for Monitoring Condition of Bivalve Larvae. Univ. of Delaware Press.

ICES MEETING 1981, Woods Hole, MA.

- Gallagher, S. M. and R. Mann. 1981. Larval bivalve condition index based on lipid content visualized with lipid specific stains. ICES:C.M./F:20 10 pp.
- Mann, R., R. A. Lutz, and M. Castagna. 1981. The Reproductive Biology of *A. islandica*. ICES: C.M./K:26 12 pp.

PROFESSIONAL SERVICE

9a) College wide committee service

Member, International Studies Committee, 1999-2000

Member, Academic Affairs sub committee of the International Studies Committee, 1999-2000

9b) SMS/VIMS Governance.

My service on academic governance committees was curtailed during my service as Director for Research and Advisory Services from January 2003 through December 2012. I retained options for limited service in academic governance and included these as time permits.

Member, Organization Review Team, VIMS 2022

Chair, Search committee, Faculty – Aquaculture Coordinator, VIMS 2019-20

Member, Search committee, Faculty – sea grasses, VIMS 2018-19

Member, Admissions Committee, 2014-present.

Member, Strategic Planning Committee, 2014.

Chair, Search committee, Resource Economist, SMS/VIMS 2012-2013 and 2013-2014

Member, Search committee, Marine Education Specialist, VIMS 2012

Member, School of Marine Science Safety Committee, 1991- 2012

Academic program examination moderator, 2000-present

Chair, Budget review committee, 2009

Member, Chancellor Professor selection committee, 2009

Member, Review Committee, Dean and Director, SMS/VIMS 2006-2007

Member, Search Committee, Director for Development, SMS/VIMS 2005-2006

Member, Search committee, Dean and Director SMS/VIMS 2003

Member, Vessels Advisory Committee, Fisheries departmental member, 1999 - 2002

Chair, Faculty Status and Tenure Review Committee, 1991-1992 and 1997 - 2002.

Alternate member, Academic Council, 1996 - 2000

Member, Search Committee, Shellfish Geneticist(s), 1997-1998.

Member, Search Committee, Fisheries Stock Assessment Scientist, 1997.

Chair, Search Committee, Director for Research and Advisory Services, 1996

Chair, Fisheries Department, 1992-1995.

Member, Search Committee, Fishery Biologist, 1993

Member, Search Committee, Plankton Biologist, 1993

Member, School of Marine Science Criteria Committee, 1992.

Member, School of Marine Science Publications and Graphic Services Review Committee, 1992

Chair, Search Committee, Hatchery Manager, 1992

Member, Faculty Status and Tenure Review Committee, 1990-1991.

Chair, Search Committee, Fisheries Population Geneticist, 1990

Member, FAC subcommittee on ethics, 1989.

Chair, FAC subcommittee on procedures for Sabbatical Assignment, 1989.

Member, Academic Advisory Committee, 1989.

Chair, Search Committee, Hatchery Biologist, 1989

Chair, Fisheries Subfaculty, 1988-1990.

Committee on Continuing Education, 1987-1988.

Member, Search Committee, Facilities Manager, 1987

Member, Search Committee, Hatchery Manager, 1987

Outstanding Academic Service Award Committee, 1987.

Member, School of Marine Science Admissions Committee, 1986-1989.

9c) Editorial Board Services, review panels, program reviews, national or international research programs.

Editorial positions on scholarly journals

Editor of the Journal of Shellfish Research from 1982 -1986.

Editorial board, Aquaculture (Elsevier), 2000-2018.

Editorial board, Journal of Shellfish Research, (National Shellfisheries Association). 1987-present

External reviewer for NSF (Biological Oceanography, Polar Programs), NOAA (Sea Grant, Bay Program, both National and Regional Invasive Species Programs, Oyster Disease Program, and NURP), EPA (HAB), USDA Small Business Administration, and the following peer review journals (for which I am not an Editorial Board member): American Fisheries Society Bulletin, Archive Fishery Marine Research, Biological Bulletin, Biological Invasions, Bulletin of Marine Science, Estuaries, Comparative Biochemistry and Physiology, Diseases of Aquatic Organisms, Ecological Applications, Ecological Restoration, Estuarine Cast and Shelf Science, Fisheries Bulletin, Fisheries Research, Hydrobiologia, Indian Journal of Marine Science, International Journal of Chemistry and Ecology, Journal of Applied Aquaculture, Journal of Environmental Management, Journal of Experimental Marine Biology and Ecology, Journal of Sea Research, Journal of Marine Research, Journal of the Marine Biological Association of the United Kingdom, Limnology and Oceanography, Marine Biology, Marine Ecology Progress Series, New Zealand Journal of Freshwater and Marine Research, Polar Biology, PLOS One, Quarterly Review of Biology, Regional Studies in Marine Science, National Geographic Society and the National Fish and Wildlife Foundation.

International reviewer for the U.K. Natural Environment Research Council, the Canadian Department of Fisheries and Oceans, the US-Israel Binational Agricultural Research and Development Program (BARD), the Science and Technology Center in Ukraine through the U.S. Department of State and the U.S. Civilian Research and Development Foundation (CRDF).

Review panels and program reviews for Federal and other state (not VA) agencies.

- Virginia delegate, Mid Atlantic Marine Fisheries Council. 2016-2019.
- Member, Aquatic Nuisance Species Task Force ballast water research committee - ANSTF is a federal lead committee enjoining state participation under the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (16 USC 4701 to 4741 as amended). 2011 – 2013.
- Invited expert, Stock Assessment Working Group, New Jersey oyster stock assessment and management plan, Rutgers University, 2001, 2006-2008 and 2010-2012.
- Federal Interstate Shellfish Transport Advisory Committee: 2006 - 2018
- Mid Atlantic States Invasive Species Council. 2004-2016
- Chesapeake Bay Program ad hoc panel on non-native species: Virginia representative 2003 – present
- Invertebrate Stock Assessment Working Group, Mid Atlantic Fishery Management Council. 1997-2016
- Ballast Water task Group, Exotic Species Workgroup, Chesapeake Bay Program 1996-2016
- NOAA Invasive Species Great Lakes Program review panel 2008
- NOAA-EPA ECOHAB review panel 2008
- Washington Sea Grant, Geoduck research initiative, plenary speaker and review panel 2007 - 2008
- Expert Review Panel: Non-native Oyster EIS Research, Maryland. 2005-2008
- Invited expert review panel for Canada Dept. Fisheries and Oceans, Aquaculture and environment interactions. Moncton, NB, Canada. Feb 28-March 3, 2006.
- South Carolina Sea Grant program review team 2005.
- Visiting Committee, Hollings Marine Laboratory Oceans and Humans Health Program, 2004

- Congressional Testimony, U.S. House of Representatives, Committee on Resources, Subcommittee on Fisheries, Wildlife and Oceans. April 2003. Subject: ballast water and invasive species regulations.
- Congressional Testimony, U.S. House of Representatives, Committee on Resources, Subcommittee on Fisheries, Wildlife and Oceans. November 2002. Subject: ballast water regulations.
- Invited Expert, Commission on Environmental Cooperation, International Workshop on Cooperative Actions Between Mexico, Canada and the U.S. to Reduce the Impacts of Invasive Species and Aquaculture. Montreal, Canada. March 28-30, 2001
- National Review committee: NOAA program on oyster diseases. 2001- 2002
- National Review Panel, EPA STAR Program for graduate scholarships in oceanography. 2/2001
- Co-chair (with Bill Hershberger, USDA), Aquaculture review panel, Binational Agricultural Research and Development Fund (BARD) - U.S. Israel Joint Program. 2000-2001
- Invited workshop member, NOAA workshop on development of National Oyster Restoration Plan, Charleston, January 2000.
- Co-chair (with Rex Dunham, Auburn University), Aquaculture review panel, Binational Agricultural Research and Development Fund (BARD) - U.S. Israel Joint Program. 1999-2000
- EPA Chesapeake Bay Aquatic Reef Habitat Workgroup 1997- 2000.
- Congressional Testimony, U.S. House of Representatives, Committee on Resources, Subcommittee on Fisheries, Wildlife and Oceans. July 11, 1996. Subject: non indigenous species research.
- NSF working group on options for culture of organisms from deep ocean vent communities. Stanford Sierra Fallen Leaf Camp - May 1994.
- U.S. Army Corps of Engineers, Review Team, Galveston Bay modeling program 1994 - 1995
- U.S.D.A. Agricultural Biotechnology Research Advisory Committee: Working Group on Aquatic Biotechnology and Environmental Safety. 1992-1995. I was the **only** member of this committee from the marine science community. The product of this committee was written into federal legislation.
- Maryland Power Plant Siting Program: Biological Impacts: Review Team 1993
- NSF GLOBEC (Global Ecology and Climate Change) working group: Application of biotechnological methods to assess zooplankton physiological condition. RSMAS, Miami, 11/1990.
- NOAA National Undersea Research Program review team for Caribbean Program 1990.
- National Academy of Science: Working group on fisheries 1989.
- NOAA NURP Planning and Development Panel for Mid-Atlantic Activities 1988.
- U.S. Dept. Agriculture: SBIR. National review panel 1988.
- Maryland Power Plant Siting Program: Biological Impacts: Review Team 1988.
- NOAA National Undersea Research Program review team for Caribbean Program 1988.
- Congressional testimony team (oyster disease initiative), January, 1988.
- NOAA Sea Grant site review team: NJ Marine Science Consortium 1987.
- NOAA NURP review team for Gulf of Maine and Mid Atlantic Programs 1987.
- NOAA Sea Grant site review teams: U. Maryland 1986.
- NOAA Sea Grant site review teams: U. Washington 1981.

ADVISORY SERVICE ACTIVITY

Much of the following describes my focused fields of effort prior to 2003 under my faculty appointment. These continue. My role as Director for Research and Advisory Services (2003-2012) required a much broader participation in Advisory Activity than is described here; the diversity and number of my interactions as DRAS exceeded that typical of my actions as a faculty member with focused program responsibilities.

Advisory service relative to VIMS mandates.

10a) Service to agencies of the Commonwealth of Virginia

I am a long standing advisor to the VMRC Shellfish Management Advisory Committee (VIMS serves as an advisor rather than a committee member). I have also served as an advisor to the Potomac River Fisheries Commission, although this activity has been reduced to almost zero in the recent years. I speak directly with the PRFC Secretary when he needs my input. In 1991 served as a member of Secretary Haskell's "Blue Ribbon" panel on restoration of the Virginia oyster industry. I served on the 2007-2008 iteration of that Panel appointed by Secretary Bryant. I represented Virginia in a 1994-1995 Chesapeake Bay Commission working group on Ballast Water Impacts in the Chesapeake Bay. For my contributions I was awarded the Chesapeake Bay Commission Tribute to Excellence, 1994, for "...official recognition of significant contributions to the management and protection of the Chesapeake Bay." The final report of the first iteration of this working group was presented to the Commission at its January 1995 meeting. This working group is advisory to the Exotic Species Workgroup of the Chesapeake Bay Program, the legislatures, regulators and the public. It was active in 2001, meeting about every 8 weeks to develop regional policy on ballast water issues and interface with national level bodies. This resulted in State level regulations on ballast water discharge.

In 2001 I was appointed to serve on the Virginia Invasive Species Workgroup by the Commissioner of the Department of Agriculture and Consumer Services. This work group was succeeded by a new group formed by the Secretary of Natural Resources who, in May 2012 formed the Virginia Invasive Species Council of which I am a member. This active workgroup met every two months during 2005 to develop the Virginia Invasive Species Management Plan as required by an Act of the General Assembly. This was delivered to the General Assembly in January 2006. The Council was reinstated by then Secretary of Natural Resources Bryant (Kaine administration), and the McDonnell administration in 2010, and the McAuliffe administration, meeting 2-3 times per year. It met under the Northam administration, but my participation has been all through e-mail when needed (not often). It has not, to the best of my knowledge, been continued under the current administration.

10b) Service to the legislature and the Congress.

Member of the Virginia Governors Advisory Board on Aquaculture (appointed under Gov. McDonnell) from 2010-through 2017. I requested that my appointment not be renewed when I was appointed to the MAFMC in 2016 (see 10d below).

Member of the Virginia Governors Commission on Climate Change in 2008 (Gov. Kaine).

As a faculty member I briefed the Secretary of Natural Resources twice in 1999 on the status of *Rapana venosa* in Virginia waters, and again in 2002 on oyster restoration issues.

During my appointment as Director for Research and Advisory Services (2003-2012) briefings on a wide array of subjects were a regular part of my work load at both the state and federal level. The focus on non-native oyster introductions (2006-2009) and native oyster restoration (continuing) required interactions with the legislature and/or the executive branch. I do not keep record of all issues, but they have also included water quality standards and ballast water, especially at the federal level where the federal Senate Bill number 363, 109th Congress in 2005 addressing this action was essentially based on my testimony and editing by staffers in the appropriate committees. Unfortunately the Congress acquiesced to lesser international standards for ballast discharge, mostly because of lethargy in addressing the subject.

10d) Regional, national or international management commissions or programs.

This is partly covered in 9c and 10c above. Membership in the following constitutes appropriate activity for this category.

- Virginia delegate, Mid-Atlantic Fisheries Management Council. 2016-2019.
- Invited Expert. European Union and Black Sea Commission workshop on *Rapana venosa* in the Black Sea, Istanbul, Turkey, November 2009.
- Invited Expert. ICES - Working Group on Introductions and Transfers of Marine Organisms (WGITMO) 2002 - present. I have reduced this to a “mail in” effort because I do not have funds to attend the meetings that are almost always held in European venues.
- Invertebrate Subcommittee and Stock Assessment Working Group (Surf Clam and Ocean Quahog), Mid Atlantic Fishery Management Council. 1997-2016 (membership resigned with appointment to MAFMC)
- Mid Atlantic States Invasive Species Council. 2004-present
- Chesapeake Bay Program ad hoc panel on non-native species: Virginia representative 2003 – present.
- Expert Review Panel: Non-native Oyster EIS Research, Maryland. 2005 - 2008
- Visiting Committee, Hollings Marine Laboratory Oceans and Humans Health Program, 2004
- Invited expert review panel for Canada Dept. Fisheries and Oceans, Aquaculture and environment interactions. Moncton, NB, Canada. Feb 28-March 3, 2006.
- Invited U.S. Representative. 31st United States – Japan Cooperative Program in Natural Resources (UJNR) Aquaculture Panel Meeting, Yokohama, Japan, Oct 2002.
- Co-chair, Aquaculture review panel, Binational Agricultural Research and Development Fund (BARD) - U.S. Israel Joint Program. 1999-2001
- EPA Chesapeake Bay Aquatic Reef Habitat Workgroup 1997 – 2000
- Ballast Water task Group, Exotic Species Workgroup, Chesapeake Bay Program 1996-2000