

## Curriculum Vitae

Bradley G. Stevens

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### BIOGRAPHICAL SUMMARY

Bradley G. Stevens, PhD, is a Professor of Environmental Science in the Department of Natural Sciences at the University of Maryland Eastern Shore, and Distinguished Research Scientist with the NOAA Living Marine Resources Cooperative Science Center. He is also a Graduate Faculty member of the University of Maryland Marine, Estuarine, and Environmental Sciences (MEES) Graduate Program. He received his PhD from the University of Washington. He previously worked for the National Marine Fisheries Service in Kodiak, Alaska, where he was Task Leader for Bering Sea Crab Stock Assessment, managed the Seawater Laboratory at the Kodiak Fisheries Research Center, and was Acting Director of the NMFS Kodiak Laboratory in 2006. In 2006 he left Alaska (and NOAA) to join the University of Massachusetts as an Associate Professor, and in 2009 moved to the University of Maryland Eastern Shore as full Professor. He has authored or co-authored over 65 peer-reviewed publications and conference proceedings, and is the Editor and principal author of "King Crabs of the World", CRC Press, 2014. Since 2007, he has advised 14 graduate students in Massachusetts and Maryland. Dr. Stevens' research program focuses on ecology and reproductive biology of invertebrates (primarily crabs), and impacts of fishing on fish and invertebrate populations and their habitats. Recent research activities have focused on ecology of mid-Atlantic offshore benthic habitats. Since 2009, he has brought in >\$1,000,000 in grants as P.I., and has co-authored grants totaling >\$30,000,000. His teaching specialties include statistical computing with R, and sampling theory for population assessments. In 2015, he initiated the AAUS Diving program at UMES, and currently serves on the University System of Maryland Diving Control Board.

### EDUCATION

- PhD. Fisheries Science, 1982. School of Fisheries, University of Washington, Seattle, WA. Dissertation title: "Distribution, Abundance, and food habits of the Dungeness Crab, *Cancer magister*, in Grays Harbor, Washington". Minor in statistics, sampling theory, and stock assessment.
- M.S. Marine Biology, 1977. The College of Charleston, Charleston SC. MS. Thesis: "A study of seasonal changes in component indices and lipid content of the digestive gland, ovary, and foot of *Busycon carica*." Specialties in reproductive physiology of invertebrates.
- B.S. Biology, 1973. University of Cincinnati, Cincinnati, OH. Minor in physiology.

### RESEARCH INTERESTS

Fisheries Ecology: Life history, reproductive biology, larval ecology, growth, and feeding behavior,

especially for crustaceans and molluscs. Cultivation and stock enhancement of crustaceans. Reproductive biology of crabs, especially Tanner crabs (*Chionoecetes bairdi*), king crabs (*Paralithodes* sp), red deep-sea crabs (*Chaceon quinquegens*), and Jonah crabs (*Cancer borealis*). Other species studied include the channeled whelk (*Busycotypus canaliculatus*) and queen conch (*Lobatus gigas*).

Stock Assessment and Habitat Research: Development of direct (video) methods to estimate abundance of marine populations, and understanding their relationship to habitats, with an emphasis on black sea bass (*Centropristis striata*).

In-situ and deep-sea research: Use of submersibles, ROV's, and sonar to study populations and behavioral ecology. Use of underwater video technology to assess abundance and distribution of marine fish and invertebrates. I have made over 60 submersible dives, and led two cruises with the submersible *Alvin* to study ecology of Gulf of Alaska Seamounts. I have designed and built seven video camera sleds for undersea research, as well as other devices for application of underwater video. I specialize in applications of sampling theory to estimate animal abundance. I have been a lifelong SCUBA diver (>600 dives) and initiated an AAUS Diving program at UMES. In 2003, I discovered the wreck of the Russian Barque *Kad'yak* (1860), and participated in an archaeological survey of the site in 2004; it is the only shipwreck from the Russian Colonial Period ever found, and the oldest known shipwreck site in Alaska.

Fishing Impacts: Estimating bycatch and mortality caused by handling and discarding of undersize or non-target species, with emphasis on crabs and fish. Estimating the impacts of derelict fishing gear on crabs and fish, and their habitats. Behavior of fish and crabs towards traps, and alternative designs of fishing gear to reduce bycatch and negative habitat interactions.

## **POSITIONS HELD**

2009- Present: **Professor of Marine Science & Distinguished Research Scientist**, Living Marine Resources Cooperative Science Center, Department of Natural Sciences, University of Maryland Eastern Shore, Princess Anne, MD 21853.

- Serve as advisor and supervisor for multiple graduate students (MS and PhD)
- Teach graduate classes in Statistics, Survey Sampling, and Fisheries Management
- Conduct research on deep sea red crabs (*Chaceon* sp), Alaskan king crabs, whelks (*Busycyon*, *Strombus*, etc), black sea bass, gorgonian corals, and their fisheries and habitats, and impacts of fishing (bycatch and habitat impacts).
- Write, manage, and supervise grant-funded research.
- As the Distinguished Research Scientist (DRS) for the LMRCS, I provide guidance and set policy for research programs conducted by faculty and students within the LMRCS, a consortium of seven University partners, supporting 15-20 faculty researchers and >50 graduate students. Each year I plan, organize, and conduct an annual Science Meeting for all LMRCS Partners and funded researchers. I write and distribute an annual Request for Proposals for small research projects that are reviewed by a Technical Advisory Board (TAB) and funded by the LMRCS program; each year we fund about 10 grants for an average of about \$45,000 each. My other duties as the DRS include keeping abreast of NOAA research priorities and communicating these to partner scientists, reviewing TAB grant reports, and conducting monthly conferences of the LMRCS Research Committee.
- Member, MEES Ecological Systems Foundation Application Review Committee. I read, review, and evaluate applications to the MEES program from ~ 50 prospective graduate students annually, and make admission recommendations to the MEES Director.

2006-2009: **Associate Professor, University of Massachusetts, Dartmouth** School for Marine Science and Technology, Dept. of Fisheries Oceanography.

- Served as advisor and supervisor for 3 graduate students (2 MS, 1 PhD)
- Taught graduate classes in Statistics, Survey Sampling, and Fisheries Management
- Conducted research on crab, lobster, scallop, and whelk fisheries
- Managed and supervised a seawater research laboratory

2006: **Acting Director, Kodiak Fisheries Research Center**, Kodiak, AK

- NOAA National Marine Fisheries Service
- Paygrade GS-14 (ZP-4)
- Supervised a staff of 12 scientists and support personnel
- Conducted research and stock assessment on Bering Sea crab fisheries
- Managed a budget of \$1.5-2.0 M
- Managed and supervised a seawater research laboratory

1984-2006: **Research Fishery Biologist** NMFS/NOAA, Kodiak, AK (GS-13/ZP-4)

- Conducted research and stock assessment on Bering Sea crab fisheries
- Wrote and managed grants for research
- Conducted research on biology, ecology, behavior, and development of crab species
- Managed and supervised research in a seawater laboratory
- Participated in NOAA Diving Program (as Divemaster)

2000-2009: **Affiliate Professor**, University of Alaska, Fairbanks.

1996: **Visiting Scientist**, Tokyo Science University Nemuro Marine Laboratory, Hokkaido, Japan.

1984- 2006: **Adjunct Faculty**, Kodiak College, Univ. of Alaska.

1983: **Research Assistant Professor**, Old Dominion University, Norfolk, VA

1978-1980: **Fishery Biologist II**, Washington Dept. of Fisheries, Westport, WA

## **PROFESSIONAL AFFILIATIONS**

American Fisheries Society (member since 1982)

President, American Fisheries Society Tidewater Chapter, 2019-2020.

AFS Alaska State Chapter Secretary-Treasurer, 1987-1989.

The Crustacean Society (member since 1981).

Associate Editor, Journal of Crustacean Biology (2010-2014). I conducted initial review of manuscripts submitted for publication, determine whether they fit the focus of the journal, select reviewers and send manuscripts out for review; collate and summarize reviews, and make recommendations for publication to the editor.

National Shellfisheries Association (member since 1978).

Editorial Board Member, Journal of Shellfish Research (2007-2009). Conducted reviews of manuscripts for the journal.

## **PUBLICATIONS**

#### PEER-REVIEWED JOURNAL ARTICLES

- Lawrence, A., **B. G. Stevens**, and J. S. Chung. In press. Morphometric and physiological maturity of male Jonah crab, *Cancer borealis*, in southern New England. *J. Crustacean Biology*.
- Schweitzer, C. C., and **B. G. Stevens**. in press. Increasing seascape connectivity via artificial reefs enhances fish population footprint. *Marine and Coastal Fisheries*.
- Schweitzer, C. C., A. Z. Horodysky, A. L. Price, and **B. G. Stevens**. 2020. Impairment indicators for predicting delayed mortality in black sea bass (*Centropristis striata*) discards within the commercial trap fishery. *Conservation Physiology* Volume 8, Issue 1, 2020, coaa068, <https://doi.org/10.1093/conphys/coaa068>. Published 9/08/2020.
- Olsen, N. A., and **B. G. Stevens**. 2020. Size at Maturity, Shell Conditions, and Morphometric Relationships of Male and Female Jonah Crabs *Cancer borealis* in the Mid-Atlantic Bight. *North American Journal of Fisheries Management* DOI: 10.1002/nafm.10509
- Stevens, Bradley G.** 2020. The ups and downs of traps: environmental impacts, entanglement, mitigation, and the future of trap fishing for crustaceans and fish, *ICES Journal of Marine Science*. fsaa135, <https://doi.org/10.1093/icesjms/fsaa135>
- Stevens, B. G.** 2020. Wikipedia entry for *Chaceon quinquegens*. Last accessed 02/18/2020. [https://en.wikipedia.org/wiki/Chaceon\\_quinquegens](https://en.wikipedia.org/wiki/Chaceon_quinquegens).
- Cullen, D.W. and **Stevens, B.G.** 2020. A brief examination of underwater video and hook-and-line gears for sampling black sea bass (*Centropristis striata*) simultaneously at 2 Mid-Atlantic sites off the Maryland coast. *J. Northw. Atl. Fish. Sci.*, 51: 1–13. doi:10.2960/J.v51.m725
- Martínez Rivera, S., and **B. G. Stevens**. 2020. Embryonic development and fecundity of red deep-sea crab, *Chaceon quinquegens* (Smith, 1879), in the Mid-Atlantic Bight, determined by image analysis. *Journal of Crustacean Biology* 40(3):230-236. <https://doi.org/10.1093/jcbiol/ruaa017>. Published 04/01/2020.
- Martínez-Rivera, S., W. C. Long, and **B. G. Stevens**. 2020. Physiological and behavioral sexual maturity of female red deep-sea crabs *Chaceon quinquegens* (Smith, 1879) (Decapoda: Brachyura: Geryonidae) in the Mid-Atlantic Bight. *Journal of Crustacean Biology*. DOI: 10.1093/jcbiol/ruaa007.
- Cruz-Marrero, W., C. A. Harms-Tuohy, R. Appeldoorn, and **B. G. Stevens**. 2020. Comparison of video camera sled with diver surveys for queen conch *Lobatus gigas* (Linnaeus, 1758) density estimates in the west coast of Puerto Rico. *Bulletin of Marine Science* <https://doi.org/10.5343/bms.2019.0087>
- Wenker, R. P., and **B. G. Stevens**. 2020. Sea whip coral *Leptogorgia virgulata* in the Mid-Atlantic Bight: Colony complexity, age, and growth. *PeerJ* 8:e8372.
- Schweitzer, C. C., and **B. G. Stevens**. 2019. The relationship between fish abundance and benthic community structure on artificial reefs in the Mid-Atlantic Bight, and the importance of sea whip corals *Leptogorgia virgulata*. *PeerJ* 7:e7277.
- Cruz-Marrero, W., D. W. Cullen, N. R. Gay, and **B. G. Stevens**. 2019. Characterizing the benthic community in Maryland's offshore wind energy areas using a towed camera sled: Developing a

- method to reduce the effort of image analysis and community description. PLoS ONE 14(5):e0215966.
- Schweitzer, C. C., R. N. Lipcius, and **B. G. Stevens**. 2018. Impacts of a multi-trap line on benthic habitat containing emergent epifauna within the Mid-Atlantic Bight. ICES Journal of Marine Science:fsy109-fsy109.
- Cullen, D. W., and **B. G. Stevens**. 2017. Application of systematic adaptive cluster sampling for the assessment of black sea bass *Centropristis striata* abundance. Fisheries Science. DOI: 10.1007/s12562-017-1116-y
- Cullen, D. W., and **B. G. Stevens**. 2017. Use of an underwater video system to record observations of black sea bass in waters off the coast of Maryland. Fishery Bulletin 115:408-418. DOI: 10.7755/FB.115.3.10
- Cullen, D. and **B. G. Stevens**. 2017. Video Examination of Black Sea Bass Trap Catches in Relation to Soak Time in the Mid-Atlantic Bight. N. Amer. J. Fish. Manag. 37: 9-15. DOI: 10.1080/02755947.2016.1235630.
- Stevens, B. G.**, and B-J. Peemoeller. 2016. Sex differences in growth of channeled whelks from Buzzards Bay, Massachusetts, during one or two years at liberty. Marine and Coastal Fisheries 8: 462–475. DOI: 10.1080/19425120.2016.1194918
- Stevens, B. G.**, and V. Guida. 2016. Depth and temperature distribution, morphometrics, and sex ratios of red deepsea crab (*Chaceon quinquegens*) at 4 sampling sites in the Mid-Atlantic Bight. Fishery Bulletin 114: 343:359.
- Miller, A.S, S. X. Cadrin, and **B. G. Stevens**. 2013. Effects of shell disease on egg quality of the American lobster. Journal of Crustacean Biology, 33(4): 461-469.
- Peemoeller, B-J., and **B. G. Stevens**. 2013. Age, Size, and Sexual Maturity of Channeled Whelk (*Busycotypus canaliculatus*) in Buzzards, Bay, MA. Fishery Bulletin, 111: 265-278.
- Stevens, B. G.** 2012. Feeding rate of juvenile red king crabs, *Paralithodes camtschaticus*, in the laboratory: Effects of temperature, size, molting, and feeding frequency. Polar Biology 35:1791-1799. DOI 10.1007/s00300-012-1221-4.
- Stevens, B. G.** 2012. Growth of juvenile red king crabs, *Paralithodes camtschaticus*, through sequential molts in the laboratory. Journal of Crustacean Biology 32(2):215-222. DOI: 10.1163/193724011X615460
- Bethoney, D., **B. G. Stevens**, K. Stokesbury, and M. Altabet. 2011. The impact of bait on the susceptibility of American lobsters (*Homarus americanus*) to epizootic shell disease investigated using nitrogen isotope ratios. Diseases of Aquatic Organisms 95:1-8.
- Romero, M. C., F. Tapella, C. L. Buck, and **B. G. Stevens**. 2010. Effects of reproductive stage and temperature on rates of oxygen consumption in *Paralithodes platypus* (Crustacea: Decapoda: Anomura) J. Crust. Biol. 30(3):393-400.
- Stevens, B. G.** 2009. Effects of epizootic shell disease on American lobsters, *Homarus americanus* determined using a quantitative disease index. Diseases of Aquatic Organisms 88:25-34.
- Stevens, B. G.** 2009. Hardening of red king crab shells after molting. Journal of Crustacean Biology 29:157-160.

- Tapella, F., M. C. Romero, **B. G. Stevens**, and L. Buck. 2009. Substrate preferences and redistribution of blue king crab *Paralithodes platypus* glaucothoe and first crab on natural substrates in the laboratory. *Journal of Experimental Marine Biology and Ecology* 372:31-35.
- Stevens, B. G.**, K. M. Swiney, and C. L. Buck. 2008. Thermal effects on embryonic development and hatching for blue king crab *Paralithodes platypus* (Brandt, 1850) held in the laboratory, and a method for predicting dates of hatching. *Journal of Shellfish Research* 27:1255-1263.
- Stevens, B. G.**, S. Persselin, and J. Matweyou. 2008. Survival of blue king crab larvae, *Paralithodes platypus*, in cultivation: Effects of diet, temperature, and density. *Aquaculture Research* 39: 390-397.
- Stevens, B. G.** and K. M. Swiney. 2007. Growth of female red king crabs *Paralithodes camtschaticus* during pubertal, primiparous, and multiparous molts. *Alaska Fisheries Research Bulletin* 12(2): 263-270.
- Stevens, B. G.**, and K. Swiney. 2007. Hatch timing, incubation period, and reproductive cycle for captive primiparous and multiparous red king crab *Paralithodes camtschaticus* (Tilesius, 1815). *Journal of Crustacean Biology* 27(1): 37-48.
- Stevens, B. G.** 2006. Timing and duration of larval hatching for blue king crab *Paralithodes platypus* Brandt, 1850 held in the laboratory. *Journal of Crustacean Biology* 26(4): 495-502.
- Stevens, B. G.** 2006. Embryonic development and morphometry in the blue king crab, *Paralithodes platypus*, studied by image and cluster analysis. *Journal of Shellfish Research* 25(2):569-576.
- Payne, S. A., J. A. Haaga, and **B. G. Stevens**. 2006. Observations on the reproductive biology of the hairy crab *Hapalogaster mertensii*, on Kodiak Island, Alaska. *Journal of Shellfish Research*. 25:761.
- Stevens, B. G.**, and K. M. Swiney. 2005. Post-settlement effects of habitat type and predator size on cannibalism of glaucothoe and juveniles of red king crab *Paralithodes camtschaticus*. *J. Exp. Mar. Biol. Ecol.* 321(1):1-11.
- Hoff, G. R., and **B. Stevens**. 2005. Faunal assemblage structure on the Patton Seamount (Gulf of Alaska, USA). *Alaska Fish. Res. Bull.* 11:27-36.
- Stevens, B. G.**, J. E. Munk, and P. E. Cummiskey. 2004. Utilization of log piling structures as artificial habitats for red king crabs, *Paralithodes camtschaticus*. *J. Shellfish Res.* 23(1):221-226.
- Stevens, B. G.** 2003. Timing of aggregation and larval release by Tanner crabs, *Chionoecetes bairdi*, in relation to tidal current patterns. *Fisheries Research*. 65:201-216.
- Stevens, B. G.** 2003. Settlement, substrate preference, and survival of red king crab *Paralithodes camtschaticus* (Tilesius, 1815) glaucothoe on natural substrates in the laboratory. *J. Exp. Mar. Biol. Ecol.* 283:63-78.
- Loher, T., D. A. Armstrong, and **B. G. Stevens**. 2001. Growth of juvenile red king crab (*Paralithodes camtschaticus*) in Bristol Bay (Alaska) elucidated from field sampling and analysis of trawl-survey data. *Fish. Bull.* 99:572-587.
- Stevens, B. G.**, and P. J. Anderson. 2000. An association between the anemone, *Cribrinopsis fernaldi*, and shrimps of the families Hippolytidae and Pandalidae. *J. Northw. Atl. Fish. Sci.* 27:77-82.
- Stevens, B. G.**, I. Vining, S. Byersdorfer, and W. E. Donaldson. 2000. Ghost fishing of Tanner crabs

(*Chionoecetes bairdi*) at Kodiak Alaska: Pot density and catch per trap as determined by sonar, submersible, and pot recovery. Fish Bull. 98:389-399.

**Stevens, B. G.**, J. Haaga, and W. E. Donaldson. 2000. Mound formation by Tanner crabs (*Chionoecetes bairdi*): Tidal phasing of larval launch pads? Crustacean Issues 12:445-456.

**Stevens, B. G.**, and J. Kittaka. 1998. Postlarval settling behavior, substrate preference, and time to metamorphosis for the red king crab (*Paralithodes camtschaticus*). Mar. Ecol. Prog. Ser. 167:197-206.

Tracey, G. A., E. Saade, **B. Stevens**, P. Selvitelli, and J. Scott. 1998. Laser line scan survey of crab habitats in Alaskan waters. Journal of Shellfish Research 17:1483-1486.

Himelbloom, B. H., and **B. G. Stevens**. 1994. Microbial analysis of a fish waste dump site in Alaska. Bioresource Technology. 47:229-233.

**Stevens, B. G.**, J. A. Haaga, and W. E. Donaldson. 1994. Aggregative mating of Tanner crabs *Chionoecetes bairdi*. Can. J. Fish. Aquat. Sci. 51:1273-1280.

**Stevens, B. G.**, W.E. Donaldson, J. A. Haaga, and J. E. Munk. 1993. Morphometry and maturity of paired Tanner crabs, *Chionoecetes bairdi*, from shallow- and deepwater environments. Can. J. Fisheries and Aquat. Sciences 50:1504-1516.

**Stevens, B. G.**, W.E. Donaldson, and J. A. Haaga. 1992. First report of podding behavior in the Pacific lyre crab, *Hyas lyratus*. J. Crustacean Biology 12(2):193-195.

**Stevens, B. G.** 1990a. Survival of king and Tanner crabs captured by commercial sole trawls. Fishery Bulletin 88:731-744.

**Stevens, B. G.** 1990b. Temperature-dependent growth of juvenile red king crab *Paralithodes camtschatica*, and it's effects on size-at-age and subsequent recruitment in the eastern Bering Sea. Can. J. Fish. Aquat. Sci. 47(7):1307-1317.

Armetta, T., and **B. Stevens**. 1987. Aspects of the biology of the Hair crab, *Erimacrus isenbeckii*, in the eastern Bering Sea. Fish. Bull. 85(3):523-545.

**Stevens, B.**, and D. Armstrong. 1984a. Diel activity of an estuarine population of Dungeness crabs, *Cancer magister*, in relation to feeding and environmental factors. J. Crust. Biol. 4(3): 390-403.

**Stevens, B.**, and D. Armstrong. 1984b. Distribution, abundance, and population size of Dungeness crab, *Cancer magister*, in Grays Harbor, Washington. Fish. Bull 82(3): 469-483.

**Stevens, B.** 1982. Distribution, abundance, and feeding habits of Dungeness crab, *Cancer magister*, in Grays Harbor, Washington. PhD. Dissertation, Univ. of Washington. 213 pp.

**Stevens, B.**, D. Armstrong, and R. Cusimano. 1982. Feeding habits of the Dungeness crab, *Cancer magister*, in Grays Harbor, Washington, as indicated by the Index of Relative Importance. Mar. Biol. 72(2): 135-146.

**Stevens, B.**, and D. Armstrong. 1981. Mass mortality of female Dungeness crab, *Cancer magister*, on the southern Washington coast. Fish. Bull. 79(2): 349-352.

#### BOOKS AND PROCEEDINGS EDITED

**Stevens, B. G.** 2018. *The Ship, the Saint, and the Sailor: The Long Search for the Legendary Kad'yak*. Ingram Press, San Diego, CA.

**Stevens, B. G.**, ed. 2014. *King Crabs of the World: Biology and Fisheries Management*. CRC Press (Taylor and Francis), Boca Raton, FL. 608 pp.

**B. G. Stevens**, Editor. 2006. *Alaskan Crab Stock Enhancement and Rehabilitation*. Proceedings of a workshop held at Kodiak College, Kodiak, AK, March, 2006. University of Alaska Sea Grant. Rep. No. AK-SG-06-04. 89 pp.

#### BOOK CHAPTERS PUBLISHED

**Stevens, B. G.**, and T. J. Miller. in press. *Crab Fisheries*. G. A. Lovrich, and M. Thiel, editors. *The Natural History of the Crustacea*, Vol. 9, Chapter 5. Oxford University Press.

**Stevens, B. G.** 2014. *Biology and ecology of juvenile king crabs*. pp 261-284. In B. G. Stevens (ed.) *King Crabs of the World: Biology and Fisheries Management*. CRC Press (Taylor and Francis), Boca Raton, FL. [Chapter 9]

**Stevens, B. G.** 2014. *Development and biology of king crab larvae*. pp 233-260. In B. G. Stevens (ed.) *King Crabs of the World: Biology and Fisheries Management*. CRC Press (Taylor and Francis), Boca Raton, FL. [Chapter 8]

**Stevens, B. G.** 2014. *Embryo development and hatching of king crabs*. pp 211-232. In B. G. Stevens (ed.) *King Crabs of the World: Biology and Fisheries Management*. CRC Press (Taylor and Francis), Boca Raton, FL. [Chapter 7]

**Stevens, B. G.** 2014. *Future of king crabs*. pp 583-594. In B. G. Stevens (ed.) *King Crabs of the World: Biology and Fisheries Management*. CRC Press (Taylor and Francis), Boca Raton, FL. [Chapter 19]

**Stevens, B. G.** 2014. *Impacts of fishing on king crabs: Bycatch, injuries, and mortality*. pp 363-402. In B. G. Stevens (ed.) *King Crabs of the World: Biology and Fisheries Management*. CRC Press (Taylor and Francis), Boca Raton, FL. [Chapter 12]

**Stevens, B. G.**, A. Dunham, J. Kittaka, N. Kovatcheva, S. Persselin, and G. v. d. Meeren. 2014. *Aquaculture and stock enhancement of king crabs*. pp 403-448. In B. G. Stevens (ed.) *King Crabs of the World: Biology and Fisheries Management*. CRC Press (Taylor and Francis), Boca Raton, FL. [Chapter 13]

**Stevens, B. G.**, and S. C. Jewett. 2014. *Growth, molting, and feeding of king crabs*. pp 315-362. In B. G. Stevens (ed.) *King Crabs of the World: Biology and Fisheries Management*. CRC Press (Taylor and Francis), Boca Raton, FL. [Chapter 11]

**Stevens, B. G.**, and G. A. Lovrich. 2014. *King Crabs of the World: Species and Distributions*. pp 1-30. In B. G. Stevens (ed.) *King Crabs of the World: Biology and Fisheries Management*. CRC Press (Taylor and Francis), Boca Raton, FL. [Chapter 1]

#### THESES SUPERVISED

Cruz-Marrero, Wilmelie. 2020. *Utilizing a camera sled for assessment of benthic resources: Estimating community diversity in Maryland, and population status of queen conch in Puerto Rico*. PhD Dissertation. University of Maryland Eastern Shore, Princess Anne, MD. 63 Pages.



- Wenker, R. 2019. Sea-Whip Coral (*Leptogorgia virgulata*) in the Mid-Atlantic Bight: Colony Complexity, Age, and Growth. MS Thesis. University of Maryland Eastern Shore, Princess Anne, MD. 63 Pages.
- Schweitzer, C. S. 2019. The Effects of Commercial Trap Fishing on Benthic Structural Habitat and Fish Abundance in the Mid-Atlantic: Case Study of Black Sea Bass *Centropristis striata*. PhD Dissertation. University of Maryland Eastern Shore, Princess Anne, MD. 210 Pages.
- Price, A. L. 2019. Comparing Localized Feeding Ecology of Black Sea Bass (*Centropristis striata*) at Natural and Artificial Reefs Using Gut Content and Stable Isotope Analyses. MS Thesis. University of Maryland Eastern Shore, Princess Anne, MD. 67 Pages.
- Martinez-Rivera, S. 2018. Reproductive Biology of the Female Red Deep-Sea Crab, *Chaceon quinquegens* (Smith, 1879), in the Mid-Atlantic Bight. PhD Dissertation. University of Maryland Eastern Shore, Princess Anne, MD. 163 Pages.
- Olsen, N. A. 2018. Reproductive Biology and Size at Sexual Maturity of Jonah Crabs (*Cancer borealis*) in the mid-Atlantic Bight. MS Thesis. University of Maryland Eastern Shore. 51 Pages.
- Wilson, J. L. 2017. Age determination of Red Deep-Sea Crabs (*Chaceon quinquegens*) by growth ring analysis. MS Thesis. University of Maryland Eastern Shore. 70 Pages.
- Cullen, D. W. 2016. The use of Remote Underwater Video to Assess the Abundance and Behavior of Black Sea Bass (*Centropristis striata* L.) in the Mid-Atlantic Bight. PhD Dissertation. University of Maryland Eastern Shore. 163 Pages.
- Hall, V. A. 2014. Impact of the Second Seasonal Spawn on Reproduction, Recruitment, Population, and Life History of the Northern Bay Scallop, *Argopecten irradians irradians* (Lamarck, 1819). PhD Dissertation. University of Massachusetts, Dartmouth, New Bedford, MA. 186 Pages.
- Tewes, E. E. 2013. Assessment of Marine Renewable Energy Installation Siting: Distribution of Sediment Types and Epibenthic Communities. MS Thesis. University of Maryland Eastern Shore. 82 Pages.
- Peemoeller, B.-J. 2012. Age, Size, and Sexual Maturity of Channeled Whelk (*Busycotypus canaliculatus*) in Buzzards Bay, MA MS Thesis. University of Maryland Eastern Shore. 36 Pages.
- McGeachy, C. T. 2012. Evaluation of Black Sea Bass (*Centropristis striata*) behavioral interactions in and around traps using in situ video. MS Thesis. University of Maryland Eastern Shore, Princess Anne, MD. 54 Pages.
- Bethoney, N. D. 2010. Association between Diet and Epizootic Shell Disease in the American Lobster (*Homarus americanus*) around Western Martha's Vineyard using  $\delta^{15}\text{N}$  Signatures. M.S. Thesis. University of Massachusetts, Dartmouth, New Bedford, MA. 53 Pages.
- Long, A. 2010. Potential Effects of Lobster Shell Disease on Egg Quality in Buzzards Bay: A Biomass and Biochemical Approach. MS Thesis. University of Massachusetts, Dartmouth, New Bedford, MA. 47 Pages.

#### CONFERENCE PROCEEDINGS

- Stevens, B. G.** 2018. Finding (and saving) the Kad'yak: How the Oldest Known Alaskan Shipwreck Became the First Alaskan Underwater Archeological Survey (but almost didn't). Extended Abstract. Proceedings of the American Academy of Underwater Sciences, October 11-13, 2018. Tahoe City, NV.
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#### PROFESSIONAL PRESENTATIONS (Last 5 years)

- Stevens, B. G.** A Picture is Worth 1000 Datums. American Fisheries Society 149<sup>th</sup> Annual Meeting, Reno, NV, October 3, 2019.
- Stevens, B. G.** Hab in the MAB: Characterizing Black Sea Bass Habitat in the Mid-Atlantic Bight. Report to the Atlantic States Marine Fisheries Commission, August 6, 2019.
- Stevens, B. G.** Hab in the MAB: Characterizing Black Sea Bass Habitat in the Mid-Atlantic Bight. Report to the Mid-Atlantic Fisheries Management Council, August 14, 2019.
- Stevens, B. G.**, and T. J. Miller. Status and Trends of World Crab Fisheries. Presentation to Norwegian Institute of Fisheries and Aquaculture Research, June, 2019.
- Stevens, B. G.** Experimental Design for Biologists. Presentation for NSF-Research Experience for Undergraduates, UMES, June 10, 2019.
- Stevens, B. G.** The Coastal Connection. Black sea bass and coastal habitats, and fishing impacts in Maryland's waters. Presentation to Chinese Economic Delegation, College Park, MD, September, 2018. .
- Stevens, B. G.** Finding (and saving) the Kad'yak: How the Oldest Known Alaskan Shipwreck Became the First Alaskan Underwater Archeological Survey (but almost didn't). American Academy of Underwater Sciences, October 11-13, 2018. Tahoe City, NV.
- Stevens, B. G.** The Ship, the Saint, and the Sailor: Finding the Wreck of the Russian ship Kad'yak. Invited Seminar, National Science Foundation. November 28, 2018.
- Stevens, B. G.** The Ship, the Saint, and the Sailor: Finding the Wreck of the Russian ship Kad'yak. Dept. of Natural Sciences Departmental Seminar, October 18, 2018.
- Stevens, B. G., and T. J. Miller.** Status and Trends of World Crab Fisheries. American Fisheries Society 148<sup>th</sup> Annual Meeting, Atlantic City, NJ, August 22, 2018.
- Stevens, B. G.** Supporting NOAA with Research Education at the Living Marine Resources Cooperative Science Center. American Fisheries Society 148<sup>th</sup> Annual Meeting, Atlantic City, NJ, August 20, 2018.
- Stevens, B. G., J. Wilson, N. A. Olsen, and S. Martinez.** Direct Aging of Red Deep-Sea and Jonah Crabs, and Implications for Lifetime Reproduction. American Fisheries Society 148<sup>th</sup> Annual Meeting, Atlantic City, NJ, August 21, 2018.
- B.G. Stevens.** Direct aging of crustaceans with application to red deep-sea crabs and Jonah crabs. NOAA Educational Partnership Program Education and Science Symposium, Howard University, Washington, DC. March, 2018.
- B.G. Stevens.** Direct aging of crustaceans with application to red deep-sea crabs and Jonah crabs. Invited seminar presentation, Old Dominion University. February, 2018.
- B.G. Stevens.** Direct aging of crustaceans with application to red deep-sea crabs and Jonah crabs. American Fisheries Society Tidewater Chapter 32<sup>nd</sup> Annual Meeting. Beaufort, NC. January, 2018.

- B.G. Stevens.** Black Sea Bass Research at UMES. Invited Speaker, Mid Atlantic Fisheries Management Council, Kitty Hawk, NC, January 14-15, 2017.
- B.G. Stevens.** Management of Alaskan King Crab Fisheries. Invited Speaker, King crab research and management symposium, Punta Arenas, Chile, December 11-17, 2016.
- B.G. Stevens, M. Blakeslee, and S. McEntyre.** The Benthic Resource Assessment Device, #7: A low-cost digital camera sled for benthic resource surveys. Gulf and Caribbean Fishery Institute 69<sup>th</sup> Annual Meeting, Grand Cayman, 4-11 November, 2017.
- B.G. Stevens.** To keep or not to keep: Utilizing Bycatch in the Alaskan King Crab Fisheries. American Fisheries Society Annual Meeting, Portland OR, 20 August, 2015.
- B. G. Stevens and B-J. Peemoeller.** Differential growth rates in male and female channeled whelks. National Shellfisheries Association 107th Annual Meeting, Monterey, CA, 26 March 2015.
- B. G. Stevens.** Using underwater video to assess epibenthic communities and habitats in the Maryland wind-energy area. Maryland Energy Administration, 30 Jan 2015.
- B. G. Stevens.** Using underwater video to assess abundance and behavior of black sea bass and sea-floor habitats in the Maryland coastal zone. Maryland Dept. of Natural Resources monthly seminar series, Nov. 2014.
- B. G. Stevens and B-J. Peemoeller.** Age, growth, and sexual maturity of channeled whelks, in Buzzards Bay, Massachusetts. Invited workshop on “*Coherent Approach to Busycon/Busycotypus Fishery Management along the U.S. Atlantic Seaboard*”. 16<sup>th</sup> International Conference on Shellfish Restoration, Charleston, SC, Dec 12-15, 2014.
- B. G. Stevens.** Deep Sea Red Crabs *Chaceon quinquegens* in the Mid-Atlantic Bight: Depth Distribution and Reproduction. National Shellfisheries Association 106 Annual Meeting, Jacksonville, FL, 29 March 2014.
- B. G. Stevens.** “Remote underwater video systems for assessment of black sea bass abundance, behavior, and habitats.” Invited presentation for New Jersey Sea Grant Underwater Imaging workshop, Red Bank, NJ, 1/14/14.
- B. G. Stevens.** “Exploring the Deep Sea, One crab at a time”. UMES Natural Sciences Seminar Series. 11/21/13.
- B. G. Stevens.** “Aggregation, Mating, and hatching behavior of Tanner crabs, *Chionoecetes bairdi*, in Kodiak, Alaska”. LMRCS monthly seminar, UMES, 9/13/2013.
- E. Tewes and B. G. Stevens.** Assessment of Marine Renewable Energy Installation Siting: Effects on Epibenthic Communities (Poster). LMRCS Marine Fisheries Workshop, UMES Paul Sarbanes Coastal Ecology Laboratory, 15 May, 2013.
- D. Cullen and B. G. Stevens.** Comparing Baited and Unbaited Video to Assess Black Sea Bass (*Centropristis striata* L.) Abundance (Poster). LMRCS Marine Fisheries Workshop, UMES Paul Sarbanes Coastal Ecology Laboratory, 15 May, 2013.
- B. G. Stevens.** “Using underwater video for assessing abundance and behavior of black sea bass and seafloor habitats”. One NOAA Science Seminars: NOAA HQ, Silver Spring MD, 09/26/2012.
- B. G. Stevens.** “Sex and the single Conch: Size at Maturity of New England Channeled Whelks”. Academy of Natural Sciences, Drexel University, Philadelphia PA. 9/20/12.

#### **Student Presentations (Last 3 years)**

- Farmer, M. A., and B. G. Stevens. The Spatial and Temporal Distribution of juvenile *Crassostrea virginica* and Fouling Organisms in the Maryland Coastal Bays. Maryland Coastal Bays Science and Technical Advisory Committee Meeting, June 30, 2020. Online presentation.
- Farmer, M. A., and B. G. Stevens. The Spatial and Temporal Distribution of juvenile *Crassostrea virginica* and Fouling Organisms in the Maryland Coastal Bays. American Fisheries Society Virtual Spring

- Meeting, April 27, 2020. Online presentation.
- Farmer, M. A., J. S. Pitula, E. W. North, and B. G. Stevens. Spatial and Temporal Distribution of *Crassostrea virginica* Spat Settlement in the Maryland Coastal Bays. University of Maryland Eastern Shore Graduate Studies Regional Research Symposium 2019, Princess Anne, MD, April 16, 2019. (10 minute oral presentation)
- Farmer, M. A. and B. G. Stevens. Where are the Baby Oysters? University of Maryland Eastern Shore Graduate Studies Regional Research Symposium 2019, Princess Anne, MD, April 16, 2019. (3 minute thesis)
- Wenker, R.P. and **B.G. Stevens**. Sea whip coral (*Leptogorgia virgulata*) in the Mid-Atlantic Bight: Age, colony complexity, and distribution. ASLO 2019 Aquatic Sciences Meeting, San Juan, Puerto Rico, February 27, 2019. (Oral)
- Wenker, R.P., and **B.G. Stevens**. 2019. Sea whip coral (*Leptogorgia virgulata*) in the Mid-Atlantic Bight: Age, colony complexity, and growth. 33<sup>rd</sup> Annual Meeting of the AFS Tidewater Chapter, Salisbury, MD, February 8, 2019. (Oral)
- Cruz-Marrero, W., and **B. G. Stevens**. Assessing deep water queen conch population in Puerto Rico. SACNAS Annual meeting, November 2019\* (applying for a student award).
- Cruz-Marrero, W., and N. López-Figueroa. How to apply for graduate school? University of Puerto Rico Meeting, Humacao, Puerto Rico, January 9, 2019.
- Cruz-Marrero, W., C. Tuohy, R. Appeldoorn, and **B. G. Stevens**. Comparación de censos de buceo y cámara en trineo: ¿será una mejora para datos independientes de pesquerías para el caracol rosado en Puerto Rico? Gulf and Caribbean Fisheries Institute Annual Meeting, San Andres, Colombia, November 8, 2018.
- Schweitzer, C. C., and **B. G. Stevens**. "The effectiveness of increasing connectivity between two patch reefs for increasing site fish abundance in the Mid-Atlantic". Presented at Ecological Society of America, New Orleans, LA August 2018.
- Cruz-Marrero, W., C. Tuohy, R. Appeldoorn, and **B. G. Stevens**. Comparing Divers and Camera Sled Surveys: An Improvement for Fisheries Independent Data for Queen Conch in Puerto Rico? American Fisheries Society 148<sup>th</sup> Annual Meeting, Atlantic City, NJ, August 21, 2018.
- Wenker, R.P., and B.G. Stevens. Cold-water corals in the Mid-Atlantic Bight: Age, colony complexity, and growth. 148<sup>th</sup> Annual Meeting of the American Fisheries Society. August 20, 2018, Atlantic City, NJ. (Poster)
- Olsen, N. A., and **B. G. Stevens**. Reproductive Biology and Size at Sexual Maturity of Jonah Crabs (*Cancer borealis*) in the Mid-Atlantic Bight. American Fisheries Society 148<sup>th</sup> Annual Meeting, Atlantic City, NJ, August 21, 2018.
- Almodovar-Acevedo, L., and **B. G. Stevens**. Effect of Temperature on Respiration Rates of Black Sea Bass and Applications in Modeling. American Fisheries Society 148<sup>th</sup> Annual Meeting, Atlantic City, NJ, August 21, 2018.
- Cullen, D., and **B. G. Stevens**. Application of Systematic Adaptive Cluster Sampling for the Assessment of Black Sea Bass *Centropristis striata* Abundance. American Fisheries Society 148<sup>th</sup> Annual Meeting, Atlantic City, NJ, August 21, 2018.
- Martinez-Rivera, S., and **B. G. Stevens**. Reproductive Biology of the Female Red Deep-Sea Crab, *Chaceon quinquegens*, in the Mid-Atlantic Bight (Poster). American Fisheries Society 148<sup>th</sup> Annual Meeting, Atlantic City, NJ, August 21, 2018.
- Wenker, R., and **B. G. Stevens**. Cold-Water Corals in the Mid-Atlantic Bight: Age, Colony Complexity, and Growth (Poster). American Fisheries Society 148<sup>th</sup> Annual Meeting, Atlantic City, NJ, August 21, 2018.

- Almodovar-Acevedo, L., and **B. G. Stevens** Investigating Juvenile Habitat of Black Sea Bass (*Centropristis striata*) in the Chesapeake Bay. School of Agriculture and Natural Sciences Weekly Seminar Series, April 26, 2018, University of Maryland Eastern Shore.
- Schweitzer, C.C., Horodysky, A.Z., and **B. G. Stevens**. Evaluating the effectiveness of reflex action mortality predictor (RAMP) in black sea bass, *Centropristis striata*, bycatch within the commercial trap fishery. NOAA EPP. Washington, D.C. March 2018
- Schweitzer, C.C., Horodysky, A.Z., and **B. G. Stevens**. Evaluating the effectiveness of reflex action mortality predictor (RAMP) in black sea bass, *Centropristis striata*, bycatch within the commercial trap fishery. American Fisheries Society: Tidewater Chapter. Beaufort, NC. January 2018.
- Schweitzer, C.C., Lipcius R.N., and **B. G. Stevens**. The Use of Sea Whips (*Leptogorgia* spp.) as an Indicator Species (IS) for Habitat Quality Assessment within the Mid-Atlantic Bight (MAB). American Fisheries Society. Tampa, FL. August 2017
- Olsen, N.A., and **B.G. Stevens**. Reproductive biology of Jonah crabs, *Cancer borealis*, in the Mid-Atlantic Bight. American Fisheries Society Tidewater Chapter 31st Annual Meeting. Virginia Beach, VA. March, 2017.
- Olsen, N.A., and **B.G. Stevens**. Reproductive biology of Jonah crabs, *Cancer borealis*, in the Mid-Atlantic Bight. American Fisheries Society 147th Annual Meeting. Tampa, FL. August 2017.
- Price, A.L., Schweitzer C., and **B.G. Stevens**. Comparing Localized Feeding Ecology of Black Sea Bass (*Centropristis striata*) at Selected Reefs Using Gut Content and Stable Isotope Analyses. National Oceanic and Atmospheric Administration Educational Partnership Program (NOAA EPP) Healthy Oceans Session. Washington, DC. March, 2018.
- Price, A.L., Schweitzer C., and **B.G. Stevens**. Comparing Localized Feeding Ecology of Black Sea Bass (*Centropristis striata*) at Natural and Artificial Reefs Using Gut Content and Stable Isotope Analyses. American Fisheries Society Tidewater Chapter 32<sup>nd</sup> Annual Meeting. Beaufort, NC. January, 2018.
- Martínez-Rivera, S., and **B.G. Stevens**. (2017, April). Reproductive biology of female red deep-sea crabs (*Chaceon quinquegens*) in the Mid-Atlantic Bight. American Fisheries Society: DelMarVa's Aquatic Resources & Ecosystems Research Symposium, Berlin, MD.
- Martínez-Rivera, S., and **B.G. Stevens**. (2016, October). Reproductive biology of female red deep-sea crabs (*Chaceon quinquegens*) in the Mid-Atlantic Bight. Marine Estuarine Environmental Sciences Graduate Colloquium, College Park, MD.
- C. Schweitzer and **B.G. Stevens**.: Effects of fishing traps on black sea bass' essential fish habitat. MD Coastal Bays Program, Science and Technical Advisory Committee Meeting, January 18, 2017, Horn Point Laboratory, Cambridge, MD.
- C. Schweitzer and **B.G. Stevens**. Seasonal variability in black sea bass bycatch mortality within the commercial trap fishery. Living Marine Resources Cooperative Science Center Annual Science Meeting, 25 April 2017, Southeast Fisheries Science Center, Miami, FL.
- R. Wenker, and **B. G. Stevens**. Cold-water corals in the Mid-Atlantic Bight: Age, density, condition, and fishing impacts. AFS Tidewater Chapter Symposium on Delmarva's Aquatic Resources & Ecosystems. 28 April, 2017, Assateague, MD.
- N. A. Olsen, and **B. G. Stevens**. Reproductive biology and size at maturity for Jonah crabs, *Cancer borealis*, in the Mid-Atlantic Bight. NOAA EPP/MSI 8th Biannual Education and Science Forum. Sept 28-31. New York, NY. (poster)
- Olsen, N.A.\* and **B.G. Stevens**. 2017. Reproductive biology of Jonah crabs, *Cancer borealis*, in the Mid-Atlantic Bight. American Fisheries Society Tidewater Chapter 31st Annual Meeting. March 9-11. Virginia Beach, VA. (poster)

- L. Almodóvar-Acevedo, and **B. G. Stevens**. Respiration Rates of black sea bass in an interrupted flow-through apparatus. AFS Tidewater Chapter Symposium on Delmarva's Aquatic Resources & Ecosystems. 28 April, 2017, Assateague, MD.
- Martínez-Rivera, S., and **B. G. Stevens**. Reproductive biology of the female red deep-sea crab (*Chaceon quinque-dens*) in the Mid-Atlantic Bight. MEES Colloquium, College Park, MD, October 2016.
- S. Martinez-Romero, and **B. G. Stevens**. Reproductive biology of the red deep-sea crab (*Chaceon quinque-dens*) in the Mid-Atlantic Bight. National Shellfisheries Association 108th Annual Meeting, Las Vegas, NV, March 2016.
- J. Wilson and **B. G. Stevens**. Age determination of red deep-sea crab (*Chaceon quinque-dens*) by growth ring analysis. National Shellfisheries Association 108th Annual Meeting, Las Vegas, NV, March 2016.
- C. Schweitzer and **B.G. Stevens**. Trap Fishing Impacts on Benthic Live-Bottom Habitat within the Black Sea Bass Fishery in the Mid-Atlantic Bight. ASLO Meeting, New Orleans, LA, January 2016.

### Technical Reports

- Stevens, B. G., C. S. Schweitzer, and A. L. Price. 2019.** Hab in the MAB: Characterizing Black Sea Bass Habitat in the Mid-Atlantic Bight. Project Completion Report for the Atlantic Coast Fish Habitat Partnership, the Atlantic States Marine Fisheries Commission, and the Mid-Atlantic Fisheries Management Council. 60 pp.
- Stevens, B. G.,** J. E. Munk, and P. E. Cummiskey. 2002. A study on the utility of log piling structures as artificial habitats for red king crabs and other fauna. AFSC Processed Report. No. 2002-03. National Marine Fisheries Service. Kodiak Fisheries Research Center, 301 Research Ct., Kodiak, AK 99615. 44 p.
- Vining, I., S. Byersdorfer, W. Donaldson, **B. Stevens**, and G. Edwards. 1995. Lost crab and cod pot recovery and ghost fishing in Chiniak Bay and other areas in the waters around Kodiak Island, Alaska. Regional Information Report. No. 4K97-42. Alaska Dept. of Fish and Game. 211 Mission Rd., Kodiak, Alaska 99615. 93 pp.
- Stevens, B. G.,** J. A. Haaga, and W. E. Donaldson. 1993. Underwater observations on behavior of king crabs escaping from crab pots. Processed Report 93-06, NMFS/NOAA, Northwest and Alaska Fisheries Center, 7600 Sand Point Way NE, Seattle, WA, 98115.
- Stevens, B. G.,** and J. A. Haaga. 1992. Impacts of fish processing waste dumping in Chiniak Bay, Kodiak Island, Alaska. Final Report for NOAA Undersea Research Program. No. NMFS, NOAA, Alaska Fisheries Science Center. Kodiak, AK. 50 pp.
- Stevens, B. G.,** J. A. Haaga, R. A. MacIntosh, R. S. Otto, and L. Rugolo. 2001. Report to Industry on the 2001 Eastern Bering Sea Crab Survey. AFSC Processed Reports. No. 2001-07. Alaska Fishery Science Center, National Marine Fisheries Service. Kodiak Fishery Research Center, 301 Research Ct. Kodiak, AK 99615 USA. 62 p.
- Stevens, B. G.,** J. Haaga, and R. A. MacIntosh, and R. S. Otto. 2000. Report to Industry on the 1998 eastern Bering Sea Crab Survey. Processed Report 2000-01, NMFS/NOAA, Alaska Fisheries Science Center, 7600 Sand Point Way, Seattle, WA 98115. 59 pp.
- . 1998. Report to Industry ..... Processed Report 98-07, NMFS/NOAA, AFSC. 52 pp.
- Stevens, B. G.,** J. Haaga, and R. A. MacIntosh. 1997. Report to Industry .... Processed Report 98-02, NMFS/NOAA, Alaska Fisheries Science Center. 52 pp.
- . 1995. Report to Industry... Processed Report 94-07, NMFS/NOAA, AFSC.
- . 1993. Report to Industry... Processed Report 93-14, NMFS/NOAA, AFSC.
- . 1992. Report to Industry ..... Processed Report 92-12, NMFS/NOAA, AFSC.
- Stevens, B. G.,** and R. A. MacIntosh. 1991. Report to Industry .... Processed Report 91-17, NMFS/NOAA,

Alaska Fisheries Center (AFSC).

----- 1990. Report to Industry....Processed Report 90-09, NMFS/NOAA, NWAFC. 50 pp.

----- 1989. Report to Industry....Processed Report 89-18, NMFS/NOAA, NWAFC. 47 pp.

----- 1988. Report to Industry ... Processed Report 88-23, NMFS/NOAA, NWAFC.

----- 1987. Report to Industry ... Processed Report 87-18, NMFS/NOAA, NWAFC.

----- 1986. Report to Industry ... Processed Report 86-17, NMFS/NOAA, NWAFC.

----- 1985. Report to Industry ... Processed Report 85-20, NMFS/NOAA, NWAFC.

**Stevens, B. G.**, and R. A. MacIntosh. 1985. Analysis of crab data from the 1985 NMFS survey of the Northeast Bering Sea and Norton Sound. Processed Report 86-16, NMFS/NOAA, Northwest and Alaska Fisheries Center, 7600 Sand Point Way NE, Seattle, WA, 98115.

Armstrong, D., **B. Stevens**, and J. Hoeman, 1982. Distribution and abundance of Dungeness crab, Cancer magister and Crangon shrimp, and dredging-related mortality of invertebrates and fish in Grays Harbor, Washington. Final Report to U.S. Army Corps of Engineers and Washington Department of Fisheries, Seattle, WA. 349 pp.

**Stevens, B.** 1981. Dredging-related mortality of Dungeness crab, Cancer magister, associated with four dredges operating in Grays Harbor, Washington. Final Report to U.S. Army Corps of Engineers and Washington Department of Fisheries, Seattle, WA. 148 pp.

#### **GRANTS and CONTRACTS FUNDED (as Principal Investigator)**

**2018** Assessing the Feasibility of Oyster Restoration at Assateague Island National Seashore. National Park Service, \$32,242. This project was initially funded by the NPS, with an additional supplement from Maryland Sea Grant. The primary goal is to determine the distribution and timing of spat settlement for oysters in the Maryland coastal bays. A secondary goal is to determine if spat settlement is dense enough to establish oyster populations on artificial substrata if they were established.

**2018** Assessing the Feasibility of Oyster Restoration at Assateague Island National Seashore. MD SeaGrant Program Development Funds, \$10,000.

**2016** Cold-water corals in the Mid-Atlantic Bight: Diversity, age, condition, and fishing impacts. NOAA Bycatch Reduction Program. Total funding: \$139,725

The goals of this study are to better identify regions of EFH in the Delmarva MAB, determine differences in condition across a gradient of fishing effort, conduct surveys by SCUBA to assess species composition, density, and condition of structure forming invertebrates. Compare diversity and sea whip condition between fished and unfished sites, and determine the age and impacts of fishing on sea whips (*Leptogorgia* ?? spp) between fished and unfished sites of known age (artificial reefs).

**2016** Title: Hab in the MAB: Characterizing black sea bass habitat in the Mid-Atlantic Bight. Source: Atlantic Coastal Fish Habitat Partnership (ACFHP). Total Funding: \$216,394

The objective of this study is to improve our understanding of the relationship between BSB abundance and habitat characteristics in the Mid-Atlantic region. The relationship between black sea bass and habitat utilization will be investigated near Ocean City, MD by documenting habitat characteristics, fish abundance, and fish diets. Physical and biological characteristics of natural and artificial habitats will be documented by scuba and photography, and fish abundance and size will be estimated by video and controlled angling. Fish diet and trophic levels will be analyzed via stable isotope analysis. Experimental structures will be placed near



existing habitat and monitored for up to 3 years to determine how they affect recruitment.

- 2015 Title: Bycatch and discard mortality in the commercial black sea bass trap fishery.  
Source: LMRCSC. Total Funding: \$57,421.

Black sea bass (BSB) support commercial and recreational fisheries on the US east coast worth about \$16M annually combined. Small BSB are discarded and assumed to live, but there is virtually no published information regarding bycatch, discard, or post-release mortality rates within the commercial black sea bass trap fishery. We plan to document and record bycatch of BSB in the commercial trap fishery, evaluate behavioral (RAMP: Reflex Action Mortality Predictors) and physiological (stress responses, HSP70) predictors of mortality, and estimate post release mortality by holding fish in sea cages. Results of this research will provide more accurate estimates of discard rates and post-release mortality for BSB which can be used to improve stock assessment models, and should produce recommendations for alternative fishing practices to reduce post-release mortality, which could improve the sustainability of the BSB fishery.

- 2015 Title: Comparison of video camera sled with diver surveys for Puerto Rico queen conch (*Lobatus gigas*). Source: NOAA S-K. Total Funding: \$358,305.

Queen conch *Lobatus (Strombus) gigas* is one the most important fisheries species in the Caribbean with annual landings worth > US\$30 million. Queen conch are overfished in most parts of the Caribbean. Management of queen conch requires estimates of abundance and standing stock. Abundance surveys in Puerto Rico are conducted by scuba divers at intervals of 3 years, but have not been completed in recent years due to unavailability of trained divers for conducting surveys. Diver surveys are also limited to shallow water (<25 m), which may not encompass the entire depth range of queen conch stocks. Camera sleds can operate deeper than divers, and stay underwater for longer periods of time, which should increase their efficiency and utility relative to diver surveys. In addition, they provide a permanent record of observations that can be reviewed multiple times by different observers for comparison. We propose to 1) compare diver surveys of queen conch to camera sled surveys in previously surveyed areas to determine if the camera sled provides improved or more cost-effective results, and 2) determine the efficacy of marine protected areas (MPA) for queen conch conservation by comparing conch abundance between MPAs and nearby fished areas.

- 2015 Title: Reproductive biology of Deep-sea red crabs, Year 3.  
Source: LMRCSC. Total Funding: \$ 55,546

Deep sea red crabs support a small but valuable federally-managed fishery along the US Atlantic coast, but lack of information about their biology, abundance, growth, age, or reproduction prohibits adequate management. Our goals are to determine size at maturity, seasonality of reproduction, fecundity, age structure, and larval biology. Preliminary data collected aboard NOAA Research Vessels during 2011-2013 indicates that female red crabs have a biennial reproductive cycle. In 2013, students began verifying this information verified by histological analysis of gonad tissues, and in 2014 we began sampling aboard commercial fishing vessels. We plan to determine age of crabs using the eyestalks and gastric mill, and collect tissue samples for other researchers. This information is critical for management and conservation of red crab populations.

- 2014 Title: Reproductive biology of Deep-sea red crabs, Year 2. LMRCSC \$ 59,074
- 2013 Title: Reproductive biology of Deep-sea red crabs, *Chaceon quinquegens*. LMRCSC \$ 47,984
- 2014 Title: Augmenting black sea bass stock assessment, Year 3. LMRCSC \$53,075.
- 2013 Title: Augmenting black sea bass stock assessment, Year 2. LMRCSC \$36,500

- 2013 Title: Determination of the impacts of trap fishing on Mid-Atlantic benthic habitats, with emphasis on structure-forming invertebrates. With Rom Lipcius, Virginia Institute of Marine Science. Source: NOAA Bycatch Reduction Program. Total Funding: \$93,235.

The NOAA/NMFS is required to determine the identity, extent, and condition of essential fish habitat (EFH) for managed species. Black sea bass (BSB) *Centropristis striata* is a federally managed species that supports important commercial and recreational fisheries in the Mid Atlantic Bight, but data on its EFH is extremely limited. BSB traps are set almost exclusively in areas of hard bottom with live covering of anemones, corals, and other emergent epifauna. Setting and retrieval of traps, as well as movement of traps caused by storms, may damage the underlying epifauna which act as EFH for the fish and lobster species being targeted. The goals of the study will be to determine if fish/lobster traps set in open ocean waters cause damage to underlying epifauna while being set, retrieved or dragged. This project will involve graduate and undergraduate students from underrepresented minorities. This proposal addresses multiple NOAA and NMFS Strategic Plan Objectives.

- 2013 Title: Assessment of Epibenthic Communities in Maryland Year 2. MD-DNR. \$100,000.
- 2012 In-situ assessment of black sea bass, *Centropristis striata*, Year 3. LMRCSC. \$ 49,952.
- 2012 Augmenting black sea bass stock assessment in fixed and fluid habitats. LMRCSC \$37,436.
- 2012 In-situ assessment of black sea bass, *Centropristis striata*, Year 2. LMRCSC \$ 49,952.
- 2011 Assessment of Epibenthic Communities in Maryland Year 1. MD-DNR. \$65,000 (FY 11-12).
- 2011 In-situ assessment of black sea bass, *Centropristis striata*, Year 1. LMRCSC \$25,000.
- 2009 Conservation of New England Whelks, *Busycotypus canaliculatus*. NOAA S-K, \$220,380
- 2008 Alaska King Crab Research, consulting contract (University of Alaska Fairbanks, \$14,017)
- 2008 Determining Metabolic rates of lobster larvae (UMass Dartmouth, \$9,913)
- 2008 UMass Public Service Proposal for Shellfish Assessment (UMass Dartmouth, \$9,981)
- 2006 New Initiatives Grant for Bay Scallop Research (WHOI Sea Grant, \$2075)
- 2005 Environmental effects on juvenile blue king crabs (NPRB, \$172,000)
- 2003 Cultivation techniques for blue king crab (North Pacific Research Board, \$85,400).
- 2002 Ecology of Gulf of Alaska Seamounts (NOAA Ocean Exploration, WHOI, amount undisclosed)
- 2002 Effects of environment on timing of hatching of Tanner crabs, Year 2 (NURP, \$97,000)
- 2001 Effects of environment on timing of hatching of Tanner crabs, Year 1 (NURP, \$85,000)
- 1999 Ecology of Deep-sea Crabs on Gulf of Alaska Seamounts (NURP, DSV Alvin, amount undisclosed)

- 1995 Reproductive biology of Tanner crab (NURP, \$90,000)
- 1995 ROV observations of crab mating behavior (\$75,000).
- 1995 Ghost fishing by lost crab pots (NMFS, \$90,000).
- 1994 Sidescan Sonar detection derelict pots (US Army Corps of Engineers, \$46,619).
- 1994 Reproductive ecology of female Tanner crabs (NURP, \$96,000).
- 1993 Observations of crab escapement from crab pots by ROV (NMFS, \$22,626).
- 1992 Aspects of a mating aggregation of Tanner crabs (NURP, \$80,000).
- 1991 Characteristics of mating Tanner crabs captured in situ (NURP, \$130,000).
- 1991 Effects of a fish waste dumpsite on benthic habitat and associated water quality (NURP, \$60,000).

**Synergistic Activities** (Selected)

Symposia and Workshops

Symposium Coordinator “Techno-Fish: Application of emerging technologies for solving persistent problems in marine fisheries”. American Fisheries Society 149<sup>th</sup> Annual Meeting, Reno, NV, October 3, 2019. Sponsored by the Living Marine Resources Cooperative Science Center.

Project Leader for LMRCSC Grant Writing Workshop, March 2018, March 2019.

Symposium Coordinator “Meeting NOAA’s Needs”, American Fisheries Society Annual Meeting, Atlantic City, NJ, August 20, 2018.

Symposium Host: Crustacean Fisheries and Management, National Shellfisheries Association 2016 Meeting, Las Vegas, NV.

Symposium Host: Crustacean Aquaculture, National Shellfisheries Association 2009 Meeting, San Diego, CA.

Convened and edited The Alaska Crab Stock Enhancement Workshop, Kodiak, AK, March 2006

Research Cruises

Co-Chief Scientist, NOAA R/V Gordon Gunter, July 2013 (w/ Rich Langton).

Co-Chief Scientist, NOAA R/V Delaware II, January 2012 (w/ Vince Guida).

Co-Chief Scientist, NOAA R/V Delaware II, January 2011 (w/ Vince Guida).

Chief Scientist for Gulf of Alaska Seamount Exploration (GOASEX) project, funded by NOAA Office of Ocean Exploration, using DSV Alvin, July 2002.

Co-Chief Scientist for Gulf of Alaska Seamount Exploration (GOASEX) project, funded by NOAA Office of Ocean Exploration, using DSV Alvin, July 1999.

**LIST OF OTHER COLLABORATORS WITHIN PAST 10 YEARS**

Dr. Vince Guida, NMFS/NOAA, J.J. Howard Marine Laboratory, Sandy Hook, NJ

Dr. Rom Lipcius, Virginia Institute of Marine Science, Gloucester Point, VA

Dr. Andrij Horodysky, Hampton University, Hampton, VA

Dr. J. Sook Chung, University of Maryland Center for Environmental Science, Baltimore, MD

Dr. Howard Townsend, NMFS/NOAA, Oxford Cooperative Laboratory, Oxford, MD

Dr. Loren Buck, University of Alaska, Anchorage AK

Dr. Steve Cadrin, University of Massachusetts Dartmouth, New Bedford, MA

Dr. Valerie Hall, University of Massachusetts Dartmouth, New Bedford, MA

Bhae-Jin Peemoeller, University of Maryland Eastern Shore, Princess Anne, MD  
Dr. Tom Shirley, Harte Research Institute, Texas A&M Corpus Christi, TX  
Dr. Federico Tapella, Centro Austral de Investigaciones Científicas (CADIC), Ushuaia, Argentina

## **PROFFESIONAL TRAINING**

SCUBA: I am a certified SCUBA diver with over 500 dives. Certifications include: PADI Open Water (1975) and PADI Nitrox-EO 32 (2003). I attended the NOAA dive school in Seattle in 1987 and 1994 and acquired the following certifications: NOAA Divemaster (1994); NAUI Advanced Open Water (1993); NOAA Nitrox 1 (1989); NOAA Basic, Working, and Dry-suit Diver (1987). First Aid training (2018); CPR/AED training (2018), and Emergency O<sub>2</sub> Administration (2018). In 2015 I started an AAUS Diving program at the University of Maryland Eastern Shore.

Technical Courses: Microsoft Visual Basic, Weeklong seminar, March 1998, Los Angeles, CA. Recirculating Aquaculture Systems Design, Harbor Branch Oceanographic Institute, 2001. NOAA EEO Training, April 2004, and IT Security Training, February 2005. SAS Programming I, and specialized SAS training for NMFS, February 2005.

Other training and experience: I completed a four-month Rotational Assignment with the NOAA Undersea Research Program, at NOAA HQ in Silver Spring, MD, 2003. Completed US OPM Leadership Development Seminar (two weeks), November 2004, Denver, CO.

## **SPECIALIZED EXPERIENCE:**

In addition to experience and training listed above, I have:

- Over 20 years experience managing a large database system of > 1 million records.
- Experience with statistical and graphic analysis using R, SAS, SYSTAT, and SPSS. A working knowledge of Fortran and Visual Basic programming languages.
- Over 600 hours experience operating small boats (16-32 ft) for research; Over 600 days experience conducting research aboard large research or commercial fishing vessels;
- Approximately 60 dives in manned research submersibles, including 50+ in the Delta, 5 in Alvin, and 3 in Pisces. My deepest dive was >3700 m on Patton Seamount in the Gulf of Alaska.
- Experience in the design, construction, and use of ROVs and camera sleds for marine research.
- Experience in underwater photography and videography. Experience analyzing and editing video with non-linear digital editing software (Adobe Premier).

## **CLASSES TAUGHT at University of Maryland Eastern Shore**

MEES 641: Survey Sampling (2007–2017)

MEES 688: Biostatistics with R (2014–2020)

MEES 608: Current topics in Fisheries Seminar (2010-2020); Annual topics have included: Fisheries Management; Fisheries Policy Development; Caribbean Fisheries; Fisheries Sustainability; Crustacean Biology and Fisheries.

MEES 799: Masters Thesis Research (Annually 2007-2014)

MEES 899: Doctoral Dissertation Research (Annually 2007-2014)

MAR 542: Marine Invertebrate Fisheries (at UMass): 2007

## **GRADUATE STUDENT ADVISING**

CHAIR OF GRADUATE THESIS COMMITTEE for:

Madeline Farmer (MS, Expected Spring 2021)

Laura Almodovar-Acevedo (PhD, expected Fall 2020)

Wilmelie Cruz-Marrero (PhD, Spring 2020) Dissertation title: UTILIZING A CAMERA SLED FOR ASSESSMENT OF BENTHIC RESOURCES: ESTIMATING COMMUNITY DIVERSITY IN MARYLAND, AND POPULATION STATUS OF QUEEN CONCH IN PUERTO RICO.

Rebecca Wenker (MS, Spring 2019) Sea Whip Coral (*Leptogorgia virgulata*) in the Mid-Atlantic Bight: Colony Complexity, Age, and Growth.

Andre' Price (MS, Spring 2019) Comparing Localized Feeding Ecology of Black Sea Bass (*Centropristis striata*) at Natural and Artificial Reefs Using Gut Content and Stable Isotope Analyses

Cara Schweitzer (Phd, Spring 2019) The effects of Commercial Trap Fishing on Benthic Structural Habitat and Fish Abundance in the Mid-Atlantic: Case study of Black Sea Bass *Centropristis striata*

Stephanie Martinez-Rivera (Phd, Fall 2018) Reproductive biology of the female red deep-sea crab, *Chaceon quinquegens* (Smith, 1878) in the Mid-Atlantic Bight

Noelle Olsen (MS, Spring 2018) Reproductive Biology and Size at Sexual Maturity of Jonah Crabs (*Cancer borealis*) in the mid-Atlantic Bight

Justin Wilson (MS, Fall 2017) Age determination of Red Deep-Sea Crabs (*Chaceon quinquegens*) by growth ring analysis.

Dan Cullen (PhD, Spring 2016) The use of Remote Underwater Video to Assess the Abundance and Behavior of Black Sea Bass (*Centropristis striata* L.) in the Mid-Atlantic Bight

Emily Tewes (MS, Spring 2013) Assessment of Marine Renewable Energy Installation Siting: Distribution of Sediment Types and Epibenthic Communities

Bhae-Jin Peemoeller (MS, Fall 2012) Age, Size, and Sexual Maturity of Channeled Whelk (*Busycotypus canaliculatus*) in Buzzards Bay, MA

Courtney McGeachy (MS, Spring 2012) Evaluation of Black Sea Bass (*Centropristis striata*) behavioral interactions in and around traps using in situ video

Valerie Hall (PhD, Spring 2014) Impact of the Second Seasonal Spawn on Reproduction, Recruitment, Population, and Life History of the Northern Bay Scallop, *Argopecten irradians irradians* (Lamarck, 1819)

Alicia Long (MS, January 2010). Potential Effects of Lobster Shell Disease on Egg Quality in Buzzards Bay: A Biomass and Biochemical Approach

N. David Bethoney (MS, May 2010). Association between Diet and Epizootic Shell Disease in the American Lobster (*Homarus americanus*) around Western Matrtha's Vineyard using  $\delta^{15}\text{N}$  Signatures

## **DISSERTATION OPPONENT AT THE UNIVERSITY OF THE ARCTIC (TROMSO, NORWAY)**

I have been invited on multiple occasions to be the first or second opponent for the Dissertation defense of PhD students in the Department of Arctic and Marine Biology, Faculty of Biosciences, Fisheries and

Economics, at the University of the Arctic (UiT) in Tromsø, Norway.

**2020** Bernadine Everett (1<sup>st</sup> Opponent): “The challenges of understanding the biogeography of commercially important crustacean species of the Southwestern Indian Ocean— Separating what we know from what we think we know”. Dissertation submitted for the degree of Philosophiae Doctor, Norwegian College of Fisheries Sciences, May 2020.

**2019** Snorre Bakke (1<sup>st</sup> Opponent): “Life history and distribution of the edible crab (*Cancer pagurus*) in Norway: Effect of temperature and other environmental parameters at high latitudes”. Dissertation submitted for the degree of Philosophiae Doctor, Department of Arctic and Marine Biology, Faculty of Biosciences, Fisheries and Economics, May 2019.

**2017** Helena Kling Michelsen (2<sup>nd</sup> Opponent): “Seasonal and spatial dynamics of meroplankton in a sub-arctic fjord, With additional focus on larvae of the invasive red king crab”. Dissertation submitted for the degree of Philosophiae Doctor, Department of Arctic and marine Biology, Faculty of Biosciences, Fisheries and Economics, December 2017.

**2014:** (1<sup>st</sup> Opponent): “Migration, growth, and mortality of red king crab in northern Norway”. Dissertation submitted for the degree of Philosophiae Doctor, Department of Arctic and marine Biology, Faculty of Biosciences, Fisheries and Economics, September, 2014.

**THESIS COMMITTEE MEMBER for:**

Shadaesha Green (PhD, UMCES, Spring 2021); Amanda Lawrence (MS, UMCES, Fall 2020); Ginni LaRosa, UMCES-CBL (MS Fall 2018); Nivette Perez-Perez, Delaware State University (MS, Spring 2017); Eric Evans, UMES (PhD, Spring 2017), Javier Alvarez, UMCES (PhD, 2015); Ejiro Mayor, UMES (PhD, 2015); Andrea Stoneman, Delaware State University (MS, 2014); Willawan Thongda, UMCES-IMET (MS, 2012); Celeste LeRoux, University of Alaska Fairbanks (MS, 2010); Talia Bigelow, UMass Dartmouth (MS, 2012); Paula Rodgers, Univ. of MD Center for Environmental Science (PhD, 2009); Brent Courchene, UMass Dartmouth (MS, 2008); Sonia ElMejatti, University of Alaska Fairbanks (MS, 2006)

**Web Sites Created and Managed**

Brad Stevens [Academic Web Page : Crabman](#)

Brad Stevens [Research Gate](#) Profile

[Stevens Lab Group Facebook Page](#) What my students and I are working on

[King Crabs of the World \(CRC Press\)](#) The encyclopedia of king crab esoterica

[The Ship, The Saint, and the Sailor](#) How I found and preserved a 19<sup>th</sup> century Russian shipwreck

Wikipedia entry for red deep-sea crab [Chaceon quinquegens](#)

Blue king crab research: <http://www.afsc.noaa.gov/kodiak/shellfish/bkcupdate.htm>

Alaskan Seamounts: [http://www.afsc.noaa.gov/kodiak/shellfish/submersibles/alvin\\_2002.htm](http://www.afsc.noaa.gov/kodiak/shellfish/submersibles/alvin_2002.htm)

Video Camera Sleds: <http://www.afsc.noaa.gov/kodiak/shellfish/submersibles/sled.htm>