



Workshop Background Materials: Chesapeake Bay Studies

Cownose Rays in the Chesapeake Bay: What do we know?

Thursday, October 22nd, 2015
National Aquarium, Baltimore, MD

Age, Growth and Reproduction

- Fisher, R.A. 2010. Revised 2012. Life history, trophic ecology, & prey handling by cownose ray, *Rhinoptera bonasus*, from Chesapeake Bay. Final Report to NOAA Chesapeake Bay Office for (NA07NMF4570324) Grant No. 713031. [Link](#)
- Fisher, R.A., G.C. Call and J.R. McDowell. 2014. Reproductive variations in cownose rays (*Rhinoptera bonasus*) from Chesapeake Bay. *Environmental Biology of Fishes* 97(9): 1031-1038. DOI: [10.1007/s10641-014-0297-9](https://doi.org/10.1007/s10641-014-0297-9)
- Fisher, R.A., G.C. Call and R.D. Grubbs. 2013. Age, Growth, and Reproductive Biology of Cownose Rays in Chesapeake Bay. *Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science* 5: 224-235. DOI: [10.1080/19425120.2013.812587](https://doi.org/10.1080/19425120.2013.812587)
- Smith, J.W. and J.V. Merriner. 1986. Observations on the Reproductive Biology of the Cownose Ray, *Rhinoptera bonasus*, in Chesapeake Bay. *Fishery Bulletin* 84(4). [Link](#)

Diet Studies

- Bade, L.M., C.N. Balakrishnan, E.M. Pilgrim, S.B. McRae and J.L. Luczkovich. 2014. A genetic technique to identify the diet of cownose rays, *Rhinoptera bonasus*: analysis of shellfish prey items from North Carolina and Virginia. *Environmental Biology of Fishes* 97(9): 999-1012. DOI: [10.1007/s10641-014-0290-3](https://doi.org/10.1007/s10641-014-0290-3)
- Fisher, R.A. 2010. Revised 2012. Life history, trophic ecology, & prey handling by cownose ray, *Rhinoptera bonasus*, from Chesapeake Bay. Final Report to NOAA Chesapeake Bay Office for (NA07NMF4570324) Grant No. 713031. [Link](#)
- Fisher, R.A., G.C. Call and R.D. Grubbs. 2011. Cownose Ray (*Rhinoptera bonasus*) Predation Relative to Bivalve Ontogeny. *Journal of Shellfish Research* 30(1): 187-196. DOI: [http://dx.Doi.org/10.2983/035.030.0126](http://dx.doi.org/10.2983/035.030.0126)
- Kolmann, M.A., D.R. Huber, P.J. Motta and R.D. Grubbs. 2015. Feeding biomechanics of the cownose ray, *Rhinoptera bonasus*, over ontogeny. *Journal of Anatomy* 227(3): 341-351. DOI: [10.1111/joa.12342](https://doi.org/10.1111/joa.12342)
- Smith, J.W. and J.V. Merriner. 1985. Food habits and feeding behavior of the cownose ray, *Rhinoptera bonasus*, in lower Chesapeake Bay. *Estuaries* 8(3): 305-310. DOI: [10.2307/1351491](https://doi.org/10.2307/1351491)

Population Dynamics

- Blaylock, R. A. 1989. A massive school of cownose rays, *Rhinoptera bonasus* (Rhinopteridae), in lower Chesapeake Bay. *Copeia* 1989:744–748. DOI: [10.2307/1445506](https://doi.org/10.2307/1445506)
- Blaylock, R.A. 1993. Distribution and abundance of the cownose ray, *Rhinoptera bonasus*, in lower Chesapeake Bay. *Estuaries* 16(2): 255-263. DOI: [10.2307/2F1352498](https://doi.org/10.2307/2F1352498)
- Carney, S.I., D.M. McVeigh, J.B. Moss, M.D. Ferrier, and J.F. Morrissey. In review. Preliminary investigation of mitochondrial genetic variation in the cownose ray *Rhinoptera bonasus* from the Chesapeake Bay and Gulf of Mexico. Submitted to the *Journal of Fish Biology*.
- Fisher, R.A and J.R. McDowell. 2014. Discrimination of Cownose Ray, *Rhinoptera bonasus*, Stocks Based on Microsatellite DNA Markers. Final Report to NOAA Chesapeake Bay Office for (NA11NMF4570215) [Link](#)
- Grusha, D. S. 2005. Investigation into the life history of the Cownose Ray, *Rhinoptera bonasus*, (Mitchill 1815). Master's thesis. Virginia Institute of Marine Science, College of William and Mary, Gloucester Point. [Link](#)
- Omori, K.L. 2015. Developing Methodologies for Studying Elasmobranchs and Other Data-Poor Species. Master's thesis. Virginia Institute of Marine Science, College of William and Mary, Gloucester Point. [Link](#)
- Patrick, Chris. 2015. "Tracking the Bay's cownose rays". Blog post. Smithsonian Environmental Research Center. [Link](#)
- Smith, J.W. and J.V. Merriner. 1987. Age and growth, movements and distribution of the cownose ray, *Rhinoptera bonasus*, in Chesapeake Bay. *Estuaries* 10(2): 153-164. DOI: [10.2307/1352180](https://doi.org/10.2307/1352180)

Habitat Interaction

- Orth, R. J. 1975. Destruction of eelgrass, *Zostera marina*, by the cownose ray, *Rhinoptera bonasus*, in the Chesapeake Bay. *Chesapeake Science*, 16(3), 205-208. DOI: [10.2307/1350896](https://doi.org/10.2307/1350896)

Workshop and Marketing in Virginia

- Fisher, R. (ed). 2009. Regional Workshop on Cownose Ray Issues Identifying Research and Extension Needs, Yorktown, VA, June 1-2, 2006. Virginia Sea Grant-09-06. VIMS Marine Resource Report 2009-06. [Link](#)
- Fisher, R.A. 2012. Product Development for Cownose Ray. Final Report Submitted to the Virginia Marine Resources Commission. VIMS Marine Resource Report No. 2012-5. VSG-12-08. [Link](#)

Shellfish Predation Deterrents

- Fisher, R.A. and E.M. Stroud. 2006. An Evaluation of the Behavioral Responses of *Rhinoptera bonasus* to Permanent Magnets and Electropositive Alloys. VIMS Marine Resource Report No. 2006-12 VSG-06-14. [Link](#)
- Mann, R, R.A. Fisher, M. Southworth, J. Wesson, A.J. Erskine and T. Leggett. 2014. Oyster planting protocols to deter losses to cownose ray predation. Final Report to NOAA Chesapeake Bay Office for (NA11NMF4570227). [Link](#)