David B. Parrish

Environmental Data Center Manager

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My research focuses on the assessment of water quality conditions and associated ecological implications in shallow water, estuarine and coastal environments. As part of this scope, I am interested in the analysis of water quality monitoring datasets, working closely with our state, federal, and local partners, and developing web application platforms that serve as an interface between science and the community.

Education

Central Washington University — **Ellensburg, WA**
MS Resource Management — 2003 - 2005

James Madison University — **Harrisonburg, VA**
BS Integrated Science and Technology — 2000 - 2003

Professional

Environmental Data Center Manager — **Gloucester Point, VA**
VIMS, William & Mary — 2020 - Present

Scientist II — **Gloucester Point, VA**
VIMS, William & Mary — 2012 - 2020

Scientist I — **Gloucester Point, VA**
VIMS, William & Mary — 2007 - 2012

Floodplain Program Planner — **Richmond, VA**
VA DCR — 2006 - 2007

Technical

Coding Languages	Software	Other
R – Python – SQL – ASP.NET – C# – JavaScript	Visual Studio – RStudio – ArcGIS	Git – Markdown – Leaflet – Vue

Projects

Lab

Environmental Data Center — **VIMS, William & Mary**
The Environmental Data Center manages and analyzes environmental data products in support of the Chesapeake National Estuarine Research Reserve, Va and the Virginia Institue of Marine Science.

Web Applications

Virginia Estuarine and Coastal Observing System (VECOS) — ***http://vecos.vims.edu***
VECOS distributes results of water quality and meteorological monitoring efforts conducted in the Chesapeake Bay and its tributaries in Virginia.
> 170 million samples

Chesapeake Monitoring Cooperative Data Explorer — ***http://cmc.vims.edu***
The Data Explorer shares information collected by a network of water quality community monitors working with the Chesapeake Monitoring Cooperative
> 370,000 samples

Research

PI or Co-PI

2021 - 2027	Data Entry Tools and Online Database for Monitoring Data for the Integration of Volunteer and other Nontraditional Monitoring Data into the Chesapeake Bay Program Network. EPA Chesapeake Bay Program via the Alliance for the Chesapeake Bay. D. Parrish, Lead VIMS PI.	$548,000
2015 - 2021	Data Entry Tools and Online Database for Monitoring Data for the Integration of Volunteer and other Nontraditional Monitoring Data into the Chesapeake Bay Program Network. EPA Chesapeake Bay Program via the Alliance for the Chesapeake Bay. D. Parrish, Lead VIMS PI.	$170,000
2022 - 2023	CMC Data Explorer Virginia Expansion. Virginia Department of Environmental Quality. D. Parrish, Lead VIMS PI.	$87,738

Participant

2020 -	Virginia Water Quality Initiative
2020 -	Lynnhaven SAV Restoration Pilot
2007 -	Water Quality Monitoring for Southern Chesapeake Bay Water Quality Standards Assessment
2007 -	Cheseake Bay National Estuarine Research Reserve Operations

Publications

Peer-Reviewed

Plaisted, H. K., Shields, E. C., Novak, A. B., Peck, C. P., Schenck, F., Carr, J., Duffy, P. A., Evans, N. T., Fox, S. E., Heck, S. M., Hudson, R., Mattera, T., Moore, K. A., Neikirk, B., Parrish, D. B., Peterson, B. J., Short, F. T., & Tinoco, A. I. (2022). Influence of rising water temperature on the temperate seagrass species eelgrass (zostera marina) in the northeast USA. *Frontiers in Marine Science*, *9*. https://doi.org/10.3389/fmars.2022.920699

Shields, E. C., Parrish, D., & Moore, K. (2019). Short-term temperature stress results in seagrass community shift in a temperate estuary. *Estuaries and Coasts*, *42*(3), 755–764. https://doi.org/10.1007/s12237-019-00517-1

Shields, E. C., Moore, K. A., & Parrish, D. B. (2018). Adaptations by zostera marina dominated seagrass meadows in response to water quality and climate forcing. *Diversity*, *10*(4), 125. https://doi.org/10.3390/d10040125

Moore, K. A., Shields, E. C., & Parrish, D. B. (2014). Impacts of varying estuarine temperature and light conditions on zostera marina (eelgrass) and its interactions with ruppia maritima (widgeongrass). *Estuaries and Coasts*, *37*(1), 20–30. https://doi.org/10.1007/s12237-013-9667-3

Moore, K. A., Shields, E. C., Parrish, D. B., & Orth, R. J. (2012). Eelgrass survival in two contrasting systems: Role of turbidity and summer water temperatures. *Marine Ecology Progress Series*, *448*, 247–258. https://doi.org/10.3354/meps09578

Orth, R. J., Moore, K. A., Marion, S. R., Wilcox, D. J., & Parrish, D. B. (2012). Seed addition facilitates eelgrass recovery in a coastal bay system. *Marine Ecology Progress Series*, *448*, 177–195. https://doi.org/10.3354/meps09522

Shields, E. C., Moore, K. A., & Parrish, D. B. (2012). Influences of salinity and light availability on abundance and distribution of tidal freshwater and oligohaline submersed aquatic vegetation. *Estuaries and Coasts*, *35*(2), 515–526. https://doi.org/10.1007/s12237-011-9460-0

Other

Reay, W., Baber, J., Brooks, H., Demeo, A., Friedrichs, C., Gonzales, C., Kuriawa, J., Hooper, T., Lerberg, S., Miles, E., et al. (2022). *Chesapeake bay national estuarine research reserve in virginia management plan: 2022-2027*. https://doi.org/10.25773/5k5f-jf24

Orth, R., Moore, K., Luckenbach, M., Bonniwell, S., Curry Jr, A., Fate, S., Lusk, B., Marion, S., Neikirk, B., Parrish, D., et al. (2012). Task 10 eelgrass and bay scallop restoration in the seaside bays of virginia.(april 1, 2011, to nov. 30, 2012). *Gloucester Point, VA: Virginia Institute of Marine Science*.

Parrish, D. B. (2005). *An ecological characterization of salmon habitat restoration efforts on abandoned gravel pits along the yakima river system, washington* [Master's thesis, Central Washington University]. https://searchlib.cwu.edu/permalink/f/15utse1/CP71188302100001451

Presentations

First-Author

Parrish, D. B. (2022). Chesapeake Monitoring Cooperative's Chesapeake Data Explorer: A Platform to Centralize, Manage, and Communicate Community Science Monitoring. *2022 Chesapeake Community Research Symposium*.

Parrish, D. B. (2021). Using the Cold Stun Alert System to identify when water temperature conditions at sites in Virginia and South Carolina are too cold for trout. *2021 Estuary Research: Engaging the 5 Senses*.

Parrish, D. B. (2020). Demonstration of Virginia Estuarine and Coastal Observing System and Chesapeake Data Explorer. *Digital Data and Tools Primer Workshop*.

Parrish, D. B., Friedrichs, C., Reay, W. G., & Shields, E. C. (2019). An investigation of an historic low salinity event in the York River Estuary, Chesapeake Bay. *2019 CERF Biennial Conference*.

Parrish, D. B., Neikirk, B. B., & Moore, K. A. (2017). Assessing the use of high frequency spatial water quality datasets to target future monitoring efforts. *24th Biennial CERF Conference*.

Parrish, D. B., Moore, K. A., & Neikirk, B. B. (2015). Assessing trends in estuarine water quality using high frequency spatial and temporal sampling. *23rd Biennial CERF Conference*.

Co-Authored

Friedrichs, C., Fall, K., Massey, G., Moore, K., Neikirk, B., Parrish, D., Reay, W., & Shields, E. (n.d.). *Controls on multiple measures of water clarity in the york river estuary*.

Fall, K., Friedrichs, C., Massey, G., Moore, K., Neikirk, B., Parrish, D., Reay, W., & Shields, E. (2021). Controls on multiple measures of water clarity. *Teachers on the Estuary (TOTE) Outreach Speaker Series*.

Friedrichs, C., Lerberg, S., Moore, K., Parrish, D., Reay, W., & Shields, E. (2021). Estuarine sentinel sites: Measurements for managing under climate change. *After Hours Lecture Series*.

Fall, K., Friedrichs, C., Massey, G., Moore, K., Neikirk, B., Parrish, D., Reay, W., & Shields, E. (2020). Controls on multiple measures of water clarity. *National Estuarine Research Reserve System Annual Meeting*.

Friedrichs, C., Fall, K., Massey, G., Moore, K., Neikirk, B., Parrish, D., Reay, W., & Shields, E. (2020). Controls on light attenuation and secchi depth as a function of water column suspended particle properties and other water column constituents: Insights form the york river estuary, virginia, USA. *Chesapeake Community Research Symposium*.

Jasinski, D., Parrish, D. B., & Chudoba, L. (2019). Lessons learned in the development of a multi-organizational citizen's monitoring database. *2019 CERF Biennial Conference*.

Moore, K. A., Neikirk, B. B., Shields, E. C., & Parrish, D. B. (2017). Chesapeake bay SAV water quality habitat requirements: How robust and useful have these metrics been? *24th Biennial CERF Conference*.

Neikirk, B. B., Parrish, D. B., & Moore, K. A. (2017). Assessment of estuarine water quality condition: The intersection of science, management and citizen involvement. *24th Biennial CERF Conference*.

Plaisted, H. K., Shields, E. C., Carr, J., Evans, N. T., Fox, S. E., Heck, S. M., Hudson, R., Moore, K. A., Neckles, H. A., NeikirK, B., et al. (2017). Seagrass responses to environmental variables from maryland to new hampshire show impacts of ocean warming. *24th Biennial CERF Conference*.

Shields, E. C., Moore, K. A., & Parrish, D. B. (2017). Assessing changes in seagrass species dominance after die-off events. *24th Biennial CERF Conference*.

Moore, K. A., Shields, E. C., Parrish, D. B., & French, E. (2015). Seagrass vegetation monitoring: Assessing seagrass recovery and shifts in species dominance after seagrass diebacks. *23rd Biennial CERF Conference*.

Moore, K. A., Parrish, D. B., & Neikirk, B. (2013). The use of high frequency water quality monitoring results to improve the management and modeling of shallow water habitats. *22nd Biennial CERF Conference*.

Shields, E. C., Moore, K. A., Parrish, D. B., & Orth, R. (2011). Eelgrass survival within two contrasting systems in the mid-atlantic: The critical role of summer temperature. *21st Biennial CERF Conference*.

Wilcox, D., Orth, R., Moore, K. A., Whiting, J., Kenne, A., Owens, A., Nagey, L., & Parrish, D. B. (2011). Monitoring submersed aquatic vegetation: Techniques and applications in management in chesapeake bay, USA. *21st Biennial CERF Conference*.

Memberships, Workgroups, & Teams

2011 - Coastal and Estuarine Research Federation
2015 - Chesapeake Monitoring Cooperative
2020 - Chesapeake Bay Program Criteria Assessment Protocol Team
2020 - Chesapeake Bay Program Integrated Trends Analysis Team
2022 - Chesapeake Bay Program Cluster Analysis Workgroup