Carrie J. Byron, Ph.D., Professor, School of Marine and Environmental Programs at University of New England (UNE).

My research is grounded in marine ecology and integrates an interdisciplinary approach. Research disciplines include sea farming, harvesting and coastal management. Previous projects have been based in a variety of habitats, including freshwater, estuarine and marine habitats such as temperate lakes, Atlantic rocky shorelines, temperate barrier-beach lagoons, tropical coral reefs and Pacific glacial fjords. I enjoy working on projects that examine biotic and abiotic dynamics and interactions as they apply to conservation and/or social development issues. My research focus on blue mussels (*Mytilus edulis*) is motivated by the growing aquaculture industry examining questions regarding carrying capacity, species interactions with farm sites, and ecosystem services provided by farmed mussels. I seek to understand energy transfer of this primary consumer within the coastal food web. Looking forward, I see need to better understand climate impacts on mussel reproduction and life cycle timing to improve predictability larval settlement for aquaculture and stabilization of wild beds.

Mussel-specific publications:

1. Jones, C.*, Byron, C.J., St.Gelais, A., Smolowitz, R., Costa-Pierce, B., Shippey, E.**, Condon, M.**, Parker, K.**, Jane, A.** 2021. A histopathological health and condition assessment of farmed blue mussels (*Mytilus edulis)* in a changing Gulf of Maine. Journal of Shellfish Research. 40(1):77-92.
2. Maurin, C.E.*, Byron, C.J., Wilson, K.A. 2019. Food webs and species biodiversity on bivalve (*Mytilus edulis*) aquaculture farms compared to analogous non-farm structures. Marine Environmental Research. 147:49-61.
3. Outeiro, L.*, Byron, C.J., R. Angelini. 2018. Ecosystem maturity as a proxy of mussel aquaculture carrying capacity in Ria de Arousa (NW Spain): a food web modelling perspective. Aquaculture. 498(1):270-284.

Publications related to mussels:

4. Byron. 2022. Review of eider duck interaction with mussel farms. Report prepared for World Wildlife Fund (WWF). September 30, 2022. 45pp.
5. Both, A.*, Byron, C., Brady, Costa-Pierce, B.A., D., Mayer, L., Parrish, C.C. 2022. Solubilization of nutritional lipids from three coastal and estuarine primary producers using sodium taurocholate as a model surfactant to mimic typical consumer gut-fluids. Journal of Experimental Marine Biology and Ecology. 548:151686.
6. Filgueira, R., Byron, C.J., Comeau, L.A., Costa-Pierce, B., Cranford, P.J., Ferreira, J.G., Guyondet, T., Jansen, H.M., Landry, T., McKindsey, C.W., Petersen, J.K., Reid, G.K., Robinson, S.M.C., Smaal, A., Sonier, R., Strohmeier, T. (abc order). 2015. An integrated ecosystem approach for assessing the potential role of cultivated bivalve shells as part of the carbon trading system. Marine Ecology Progress Series. 518:281-287.