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IMPACT OF WATER CHEMISTRY ON INVERTEBRATE COMMUNITIES IN AGRICULTURAL WETLANDS IN THE ANNAPOLIS VALLEY, NOVA SCOTIA

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The importance of wetlands has been often overlooked in favour of land conversion for industrialization and modern agriculture. According to Ducks Unlimited (DU), over 90 percent of the wetlands in the Annapolis Valley have been lost to development. In order to mitigate these losses DU has constructed wetlands in the agricultural landscape of the Annapolis Valley. In addition, most farms have both wetlands and ponds that are used for irrigation but which can still serve as an important habitat for a variety of species. In 2008, the Nova Scotia Eastern Habitat Joint Venture (NS-EHJV) developed a plan to assess wetland habitat quality for duck broods of various species. To evaluate the assumptions of the NS-EHJV for increasing duck production in the agricultural landscape, surveys of duck broods and invertebrates were carried out in the Annapolis Valley in 2009, 2010, and 2011. During 2012, evaluation of chemical and physical variables was added to the assessment. The chemical limnology component included analysis of phosphorus, pH measurements, and chlorophyll *a* determination. In-situ measurements of water temperature and specific conductivity were also taken. This study compares DU constructed wetlands and farm ponds/wetlands with respect to chemical and biological properties of wetlands in the Annapolis Valley. Farm ponds/wetlands had consistently higher invertebrate species richness and diversity. Results indicate eutrophication of most wetlands by the end of the sampling period; however, invertebrate species richness and diversity appear unaffected by eutrophic conditions. Greater numbers of ducklings were found on wetlands with higher invertebrate species richness and diversity, suggesting that greater invertebrate species richness may indicate more suitable habitat for duck broods.

Lauren Banks graduated from Cobequid Educational Centre in Truro, Nova Scotia in 2008. Lauren is currently completing her Honours thesis in her fifth year of a Biology and Environmental Science degree at Acadia. Acadia has provided Lauren with amazing opportunities, including scholarships and various teaching and research assistantships. During her time in Wolfville she has been involved with Deep Roots Music Festival, Acadia Community Farm, and Axe Radio. Next, she is headed to Trent University in Ontario to pursue a Master's Degree in freshwater ecology...Can't get enough of those waders!