Estimating Plant Nutrient Loading to the Chesapeake Bay. (A01-allison143038-Oral)

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Abstract:

Watershed management has emerged as a science because many water quality and ecosystem problems are best solved at the watershed level rather than at the field level. The Estuary Eutrophication Framework (EEF) watershed model was developed to simulate phosphorus, nitrogen, and sediment loads to estuaries from land-based and atmospheric sources and to predict the impact of these pollutants on dissolved oxygen levels. The EEF model has been used in introductory soils at Wesley College to predict the impact of agricultural and urban land use practices on pollutant loading to the Chesapeake Bay. Students explored such questions as: 1. How is nutrient loading to the Chesapeake Bay altered when forest and agricultural lands are converted to urban land?, 2. What are the total N and P loads delivered to the estuary?, 3. What is the atmospheric contribution to nutrient loading?, and 4. Which basin had the largest nitrogen input per unit land area? When students completed the laboratory exercises, they had a better understanding of watershed processes and the impact on the Chesapeake Bay. Environmental and landscape analysis exercises using the EEF model will be discussed.

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