MS Thesis Defense

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Title: Assessment of the Relationship between Standards of Learning Biology and Earth Science Courses and Environmental Literacy among High School Students near Haymarket, Virginia, USA

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ABSTRACT

Environmental problems are increasingly affecting the economic, health and welfare of our society. Because of this, our collective ability to knowledgably deal with issues of the environment is essential. For example, the Commonwealth of Virginia amended its constitution to include protections for "its atmosphere, lands, and waters from pollution, impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth." (Virginia Const. art. XI, **§ 1)** Creating youth who are literate about the environment and assessing this environmental literacy (EL), is vital to our realization of this responsibility.

This thesis analyzes the acquisition of three components of environmental literacy – environmental knowledge, dispositions and action strategies (Roth, 1992) that result from biology and/or earth science courses taught in a suburban Northern Virginia high school.

Students at this school who had taken biology and earth science courses based on the Virginia Standards of Learning (SOL) were surveyed for environmental knowledge, dispositions and knowledge of action strategies using appropriate sections of the Secondary School Environmental Literacy Assessment Instrument (Marcinkowski and Rehrig, 1995). Comparison of means was conducted to determine what, if any influence these courses have on these components of EL.

Significantly higher environmental sensitivity, a factor in environmental dispositions, was found in students who had taken only biology when compared to students who took biology and earth science. Similarly, higher ecological knowledge was measured in students who had taken biology only as compared to those who had taken both courses. When course level was taken into account, students who took general level biology and general level earth science had lower environmental sensitivity than five of the other seven combinations of courses and lower total scores on environmental dispositions than two of the combinations. Recommendations will be made based on these results which include the argument for a more organized direct treatment of EL within a single course and research to investigate EL within courses that more directly address components of EL.