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To: [ED, State Board of Ed](#)
Subject: [External] Proposed PA Science Standards
Date: Tuesday, June 8, 2021 3:36:19 PM

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Director Molchanow,

I am writing to express my dissatisfaction with the current proposed changes to the PA Science Standards.

The proposed standards have essentially removed **Environment, Ecology and Agriculture** from the secondary level. It appears there was a rush to complete the new standards by some arbitrarily chosen date and to "streamline" (eliminate) for merely the sake of "simplifying."

The amount of relevant content removed is staggering. Without specific standards, teachers will not be held accountable for covering relevant topics on the environment, ecology and agriculture. How are students to make informed decisions as adults when they are not presented with content on the workings and needs of the environment?

Areas of concern that need to be addressed and which are NOT covered in the proposed standards include:

Watersheds and Wetlands – PA has lost over 1/2 of its wetlands, but no standard addresses it. Nothing is mentioned on Species Dependence on Wetlands, Cycles, Role of Watersheds, Characteristics and Functions of Wetlands, Impacts of Watersheds and Wetlands on Human Communities.

Renewable and Nonrenewable Resources – At a time when the nation and corporations are using/developing more on renewal and non-consumptive energy resources, nothing is mentioned.

Environmental Health – Biological Diversity, Effects on Human Health

Agriculture and Society – Society Needs, Agriculture Science, Agriculture Systems, Technology

Integrated Pest Management – Reports from National Audubon and the Xerces Society have documented the reduction and loss of species and/or numbers on bird and insect species. Pollinators are at an all time low. Management Practices, Reductions in Chemical Controls

Ecosystems and their Interactions – Change Over Time, How Nature and the Human Worlds are Interconnected on a Daily Basis.

Threatened, Endangered, and Extinct Species – Management Strategies, Why Reduction Has Occurred

Humans and the Environment – Society Needs, Sustainability, Supply and Demand

Environmental Laws and Regulations – Environmental Laws and their Impacts, Citizen Involvement

Additionally, the proposed standards do not address the North American Association for Environmental Education Guidelines for Excellence in the following areas:

Human Systems – Individuals Groups and Societies, Culture, Political Systems, Economic Systems

Decision-Making and Action Skills – Forming and Evaluating Personal Views, Evaluating Need for Action, Planning and Taking Action, Evaluating Results of Action

Personal and Civic Responsibility – Recognizing Rights and Responsibilities, Accepting Personal Responsibility

Having retired after 36 years with the PA Bureau of State Parks (18 years as an environmental educator and another 18 as a park manager at three different state parks) I am acutely aware of the need for educating students at all levels on environmental issues, natural cycles and the role we need to play in preserving the natural world for future generations. The proposed standards need to reflect these. Additional work needs to be done to include the topics mentioned above. Pennsylvania has long been noted for its lead in environmental education. It needs to continue that role.

Thank you for your consideration on this matter. I look forward to seeing changes made to the proposed standards.

Nick Kerlin
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