

July 1, 2021

PA State Board of Education
Sent by Email to:
ra-stateboardofed@pa.gov

Dear Board Members:

The Conservation and Natural Resources Advisory Council appreciates the opportunity to comment on the proposed science standard changes. CNRAC is a legislatively mandated Pennsylvania Department of Conservation and Natural Resources (DCNR) advisory board. We are charged with reviewing conservation and natural resource policies, laws and programs of the Commonwealth and making appropriate suggestions and recommendations to the Department, the Governor and the General Assembly.

CNRAC supports the letter submitted by Secretary Dunn of DCNR dated July 1, 2021 regarding the proposed science standards.

CNRAC is concerned that the changes to the science standards will have an impact on the citizens of Pennsylvania through students not being college and career ready to assume positions with agencies such as DCNR and DEP, as well as the myriad of other professions which depend on a strong environmental science and ecology background. These professions are an important part of Pennsylvania's economy and workforce. We are concerned the change in science standards will not provide future professionals with the ability to make sound, well-educated decisions surrounding the Commonwealth's valuable natural resources as well as prepare all Pennsylvania students to become educated leaders and stewards of Pennsylvania's environment.

CNRAC supports separate standards for science and technology and for environment and ecology, along with the inclusion of climate change and local Pennsylvania environmental issues. Pennsylvania students need an understanding of Pennsylvania's ecosystems, including animals and wildlife, water and air, forests and fauna. Including all these topics will provide opportunities to participate in meaningful educational experiences and allow students to discover potential passions for pursuing environmental and ecological careers or volunteer opportunities. CNRAC believes the separate standards will provide a well-rounded education for Pennsylvania students. Specifically, CNRAC would like to see connections in the proposed standards to the following 2002 standards:

1. Watersheds and Wetlands – Cycles, Role of Watersheds, Physical Factors, Characteristics and Functions of Wetlands, Impacts of Watersheds and Wetlands
2. Renewable and Nonrenewable Resources – Uses, Influential Factors
3. Environmental Health – Biological Diversity
4. Agriculture and Society – Society Needs, Agriculture Science, Agriculture Systems, Technology
5. Integrated Pest Management – Effects Benefits and Impacts, Health Risks, Management Practices
6. Ecosystems and their Interactions – Change Over Time
7. Threatened, Endangered, and Extinct Species – Management Strategies
8. Humans and the Environment – Society Needs, Sustainability, Supply and Demand
9. Environmental Laws and Regulations – Environmental Laws and their Impacts

We also feel it is important to include Pennsylvania's Environmental Rights Amendment in the standards. The very existence of this Amendment, along with its historical implications and applicability even today, strongly suggests the need for perhaps the Amendment itself to be included as a standard, apart from education on Environmental Laws and Regulations.

In addition, studies have shown that environmental education improves academic performance, increase civic engagement, and instills a belief that individuals can make a difference. These are qualities we hope all are instilled in all Pennsylvanians. Therefore, CNRAC would also like to see the proposed standards address the following NAAEE Guidelines:

1. Human Systems – Individuals Groups and Societies, Culture, Political Systems, Economic Systems
2. Decision-Making and Action Skills – Forming and Evaluating Personal Views, Evaluating Need for Action, Planning and Taking Action, Evaluating Results of Action
3. Personal and Civic Responsibility – Recognizing Rights and Responsibilities, Recognizing Efficacy and Developing Agency, Accepting Personal Responsibility

Thank you for consideration of our comments.

Sincerely,



Gerilyn Umstead-Singer, CNRAC Chair

cc: Cindy Adams Dunn, Secretary, DCNR