



From: [Patricia Bixler](#)
To: [ED, State Board of Ed](#)
Subject: [External] Standards
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Dear Ms Molchanow,

Thank you for considering revising the Pennsylvania Science, Technology, and Environment and Ecology standards. I have concerns about the proposed Integrated Standards for Science, Environment and Ecology at all levels.

The new proposed standards do not clearly include Environment, Ecology and Agriculture as performance expectations. After a review of the proposed standards, I have found that the following areas are present but not stated in a manner that allows educators to see a clear path to develop curriculum and lesson plans that efficiently teach valuable material for the future adults of our nation.

Watersheds and Wetlands

Renewable and Nonrenewable Resources

Environmental Health

Agriculture and Society

Integrated Pest Management

Ecosystems and their Interactions

Threatened, Endangered, and Extinct Species

Humans and the Environment

Environmental Laws and Regulations

Human Systems

Decision-Making and Action Skills

Personal and Civic Responsibility

These topics are critical to ensure that students, many of whom do not start their education in Pennsylvania, are informed citizens and are prepared for the challenges and opportunities of the 21st century. For example, in the light of the recent building collapse in Florida, it is more evident than ever that individuals need a good, sound, rounded education about the environment and how it influences our own personal habitats. That was a tragedy that might have been avoided had everyday citizens learned enough about the value of wetlands, the importance of barrier islands, and what could happen in the future if wetlands were filled in and then built upon in later years. This goes for not only salt but freshwater ecosystems as well. On a smaller scale, land subsidence is a chronic problem we all deal with in PA, they are called potholes. Most are the result of roadways built upon land that historically had been wetlands in the past.

As a certified Biology and Environmental Education instructor for 22 years now, I have always maintained that Biology instruction is vital for every high school student, and Ecology and Environmental Science are critical to the understanding of how those biological principles are applied in real life. Please ensure all of these Life Science standards are not lost to complicated jargon that no one really wants to sit and spend time analyzing their meaning. Time is limited for everyone, the goal is to create clear standards quickly and efficiently so all can get back to the real job of teaching the next generation.

Respectfully,

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M. Ed. with a concentration in Biology instruction

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