

## Jeff H. Statement to the Wyoming Board of Education – November 5, 2013

I have chosen to focus my comments on actual examples of the Next Generation Science Standards themselves that to me seem to be anti-Wyoming and therefore I would assume would be of concern to all Wyomingites and in particular to the Science Standards Review Committee which was tasked with looking over NGSS and giving their recommendation to the State Board of Education. I only had a few hours to study the standards so I ended up only looking briefly at 3 of the 39 topics in NGSS. I recognize that such a narrow scope can be looked at in two different ways: 1) these are extreme examples picked out of a large quantity of good standards, or 2) if such issues were found in just 3 of the 39 topics, might there be more problems with NGSS than we realized? I'll leave that to you to decide. (NGSS standards as directly copied and pasted from their website are in black, my comments are in red.)

### **ESS3C – HUMAN IMPACTS ON EARTH'S SYSTEMS**

Performance Expectation: MS – Human Impacts (Grades 6-8)

**MS-** Construct an argument supported by evidence for how increases in human population **ESS3-4.** and per-capital consumption of natural resources impact Earth's systems.

**My Comments:** The obvious follow up question is if increases in human population are negatively impacting Earth's systems, how can increases in human population be mitigated? Now, admittedly this may be a stretch, but it seems that the only logical solution to the viewpoint that overpopulation of the earth is causing negative effects on earth's natural resources would be for population control. Is population control a Wyoming value? (I know, it's a stretch, but in my mind, this type of standard leads young impressionable minds to some logical conclusions of viewing the population of the earth as a negative thing. I think we need to be careful.)

Performance Expectation: HS – Human Sustainability (*Grade 9-12*)

**HS-** Evaluate or refine a technological solution that reduces impacts of human activities on **ESS3-4.** natural systems.

**HS-** Create a computational simulation to illustrate the relationships among management of **ESS3-3.** natural resources, the sustainability of human populations, and biodiversity.

**HS-** Use a computational representation to illustrate the relationships among Earth systems **ESS3-6.** and how those relationships are being modified due to human activity.

**My Comments:** In the 5 performance expectations mentioned in this topic (two weren't copied and pasted here), none discuss or address the positive aspect of human uses of natural resources. If Wyoming's economy revolves around fossil fuels, do we really want to teach our children to look negatively at the use of such resources especially when such resources have been the cause to celebrate some of the best advances in human history? Additionally, I wonder if the business/industry (i.e. from coal and oil) members of the review committee agree with this negative viewpoint. **And, maybe even further to the point, what representation from business/industry/agriculture is required by statute to be on the review committee and did**

**we have any citizens representing business/industry/agriculture on the review committee? According to WDE sources, of the 33 members on the review committee, 32 were education personnel from 40% of the school districts in the state and 1 was a community member. I think our education community is well represented (and I understand that those 32 educators are also parents) but I'm concerned with the lack of non-educator parental, community, and business/industry/agriculture representation on the review committee.**

Disciplinary Core Idea: ESS3.C: HUMAN IMPACTS ON EARTH SYSTEMS

*How do humans change the planet?*

Recorded history . . . indicates that human activities in agriculture, industry, and everyday life have had major impacts on the land, rivers, ocean, and air. Humans affect the quality, availability, and distribution of Earth's water through the modification of streams, lakes, and groundwater. Large areas of land, including such delicate ecosystems as wetlands, forests, and grasslands, are being transformed by human agriculture, mining, and the expansion of settlements and roads. Human activities now cause land erosion and soil movement annually that exceed all natural processes. Air and water pollution caused by human activities affect the condition of the atmosphere and of rivers and lakes, with damaging effects on other species and on human health. The activities of humans have significantly altered the biosphere, changing or destroying natural habitats and causing the extinction of many living species. These changes also affect the viability of agriculture or fisheries to support human populations.

The activities and advanced technologies that have built and maintained human civilizations clearly have large consequences for the sustainability of these civilizations and the ecosystems with which they interact.

**My Comments:** What is being taught is that human action (agriculture, mining, etc) leads to negative consequences for the earth. But isn't agriculture and mining what we do here in Wyoming? Are there any responsible Wyomingites out there who are involved with ag or mining that make a living responsibly, efficiently and without destroying the earth? Why doesn't NGSS ever mention that perspective? Once again, do Wyoming business/industry/agriculture communities agree with the viewpoint of NGSS?

**My Comments:** Of course, NGSS offers solutions to the human issue.

Some negative effects of human activities are reversible with informed and responsible management. Regulations . . . international treaties . . . [and] the development of alternative energy sources can reduce the environmental impacts otherwise caused by the use of fossil fuels.

**My Comments:** The NGSS advocate that the use of fossil fuels has negative environmental impacts and that the solution is government regulations, international treaties, and a reduction in use of fossil fuels through alternative energy sources. Does this sound like a pro-Wyoming viewpoint? Does Wyoming see regulations, international treaties and alternative energy sources as the best way to help Wyoming use its abundance of natural resources to their full potential? Does Wyoming see government as the reason for progress in natural resource development or

does Wyoming see a free market, entrepreneurship and good old fashioned blood, sweat, and tears as the source of past successes? Is Wyoming embarrassed by their natural resource industry or are they proud of what they've responsibly and productively accomplished? What do we want to teach our children?

### **ESS3A: NATURAL RESOURCES**

Disciplinary Core Idea: ESS3A: Natural Resources

*How do humans depend on Earth's resources?*

Humans depend on Earth's land, ocean, atmosphere, and biosphere for many different resources, including air, water, soil, minerals, metals, energy, plants, and animals. Some of these resources are renewable over human lifetimes, and some are nonrenewable (mineral resources and fossil fuels)

**My Comments:** I guess if I look at this from a Wyoming perspective, I would say that although it is true that nonrenewable resources that are plentiful in our state are, by definition, limited the gross amount of nonrenewable resources and fossil fuels that are currently available is never mentioned. The focus is placed on the fact that they are nonrenewable and therefore an inferior resource. Nor does it mention how much these nonrenewable resources and fossil fuels currently contribute to or would contribute to our natural resource needs now and in the future.

Materials important to modern technological societies are not uniformly distributed across the planet e.g., oil in the Middle East . . .

**My Comments:** Are nonrenewable resources good or are they bad? Apparently they are good and important to modern technological societies. What a great opportunity to point out that Wyoming is one of those places blessed with the materials important to modern technological societies such as natural gas, coal, oil, and other natural resources.

As the global human population increases and people's demands for better living conditions increase, resources considered readily available in the past, such as land for agriculture or drinkable water, are becoming scarcer and more valued.

**My Comments:** Land and water may be becoming more scarce and more valued but the real question is, is there sufficient land and water for the people of the earth? If there is not enough land available would 48% of Wyoming being owned by the Federal government have anything do with lack of land availability?

All forms of resource extraction and land use have associated economic, social, environmental, and geopolitical costs and risks, as well as benefits. New technologies and regulations can change the balance of these factors

**My Comments:** Are there any current technologies and non-government regulation solutions that have worked in the past in Wyoming or that are currently working?

Much energy production today comes from nonrenewable sources, such as coal and oil. However, advances in related science and technology are reducing the cost of energy from renewable resources, such as sunlight, and some regulations are favoring their use. As a result, future energy supplies are likely to come from a much wider range of sources.

**My Comments:** This casts a bad light on non-renewable resources and suggests once again that government action - this time in the form of subsidies to make renewable resources economically viable – will allow us to be less dependent on coal and oil – two major industries in Wyoming. Once again, does Wyoming business/agriculture/industry share the viewpoint that NGSS does toward nonrenewable resources such as coal and oil?

### **ESS3D: GLOBAL CLIMATE CHANGE**

Performance Expectation: MS-ESS3 Earth and Human Activity (Grades 6-8)

- Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century. [Clarification Statement: Examples of factors include human activities (such as fossil fuel combustion . . . and agricultural activity) . . .
- MS-ESS3-5.** . Emphasis is on the major role that human activities play in causing the rise in global temperatures.]

**My Comments:** Therefore, NGSS advocates that the consumption of Wyoming’s natural resources and its agricultural activity is tied directly to the negative outcome of global warming – a theory that is not scientifically proven – to the detriment of Wyoming.

Disciplinary Core Idea: ESS3.D: Global Climate Change

Human activities, such as the release of greenhouse gases from burning fossil fuels, are major factors in the current rise in Earth’s mean surface temperature (global warming).

**My Comments:** Does science support this claim? Hundreds of scientists have publicly defended and scientifically proven that man-made global warming is unfactual. To publicize and teach our children global warming as if it were fact is questionable, and in the state of Wyoming doing so is deplorable because Wyoming citizens and Wyoming industry (ag, mining, etc) suffers from such promulgation of disinformation.

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Wyoming