

***Northeast Campus Sustainability
Consortium Conference***

Keynote Address: Climate Change in Institutions of Higher Learning

J. Gustave Speth, Dean

Yale School of Forestry & Environmental Studies

I am most honored to have this opportunity. Thank you. Congratulations to Julie Newman and Lisa Fernandez and others who have worked hard to pull this together. And congratulations to each of you. What you are doing on campuses around the country could not be more important. I'll elaborate on that shortly!

But first I want to say that I think this will be a watershed event. Here's why: things are happening! There is more opportunity now for environmental progress than ever before – at least outside of Washington, D.C. I predict that you'll be able to get more done at your colleges and universities over the next few years than you could have imagined a year ago.

One reason is that the grave reality of our environmental challenges is sinking in. On climate change, our biggest threat, I believe we have passed through an important threshold. The science is screaming at us; it can no longer be ignored. A critical mass of leaders in all sectors has finally heard it and now knows this important fact: it's time for something different. We've had boomlets in climate awareness before – the issue was on the cover of *Time* twenty years ago! But this time it's here to stay. We have real action for the first time – the RGGI initiative here in the Northeast, California's program to reduce its GHG emissions by 25 percent by 2020, and action on campuses across the land. (And) I am so very proud of President Rick Levin and Yale and Julie Newman for their commitment to reduce Yale's GHG emissions by 43 percent by 2020.

People are beginning to face up to our environmental challenges.

That said, it is difficult to imagine how badly our past neglect has let things spin out of control. Let me summarize for you just what we're up against – this is the backdrop to your work.

First, environmental losses are already great. Half the world's tropical and temperate forests are gone. Half the wetlands and a third of the mangroves are gone. Ninety percent of the large predator fish are gone, and 75 percent of marine fisheries are now over-fished or fished to capacity. Twenty percent of the corals are gone, and another 20 percent severely threatened. Species are disappearing at rates 100 to 1000 times normal. Most agricultural land in dryer regions suffers from serious deterioration.

Persistent toxic chemicals can now be found by the dozens in essentially each and every one of us.

Consider also that human activities are now large relative to natural systems. We severely depleted the Earth's stratospheric ozone layer without knowing it. We have pushed atmospheric carbon dioxide up by one-third and started the dangerous process of warming the planet and disrupting climate. Everywhere Earth's ice fields are melting. We are fixing nitrogen at a rate equal to nature's; one result is the development of at least 150 dead zones in the oceans due to over-fertilization. We already consume or destroy each year about 40 percent of nature's photosynthetic output, leaving too little for other species. Freshwater withdrawals doubled globally between 1960 and 2000 and are now approaching a quarter of all river flow. The following rivers no longer reach the oceans in the dry season: Colorado, Yellow, Ganges and the Nile, among others. We live in a full world, dramatically unlike the world of 1900, or even that of 1950.

Consider also that all we have to do to destroy the planet's climate and its biota is to keep doing exactly what we are doing today, even with no growth in the human population or the world economy. But human activities *are* growing – dramatically. It took all of history to build the \$7 trillion world economy of 1950, and today we add that amount of economic activity every 5 to 10 years. The world economy is poised to double and then double again by mid-century. This economic growth cannot resemble the growth of the past. It requires new designs and new technologies. Everything must be different – construction, manufacturing, energy production, transportation, forestry and agriculture, all very different.

Finally, consider that political, technological and social changes take time. We are now in the most important race in human history – the race to change our politics, our technology and our personal consumption choices much faster than the world economy grows. Only unprecedented action taken with a profound sense of urgency can forestall an appalling deterioration of our natural assets. This is the challenge of environmental management. It may be the biggest challenge ever.

To prepare for this race, we must build a new academic field, this inter-disciplinary field called “environment studies.” It must champion the rigorous scientific study of the interactions between human societies and the natural world of the biosphere. Knowledge generated in this new field becomes the basis for environmental management. We need new leaders closely familiar with this knowledge and we also need the knowledge of environment to infuse the traditional professions – business, law, science and engineering, medicine, and so on – and to motivate a revolution in personal choice as each of us carries out daily life as student, consumer, family member, investor, joiner, manager, worshipper, teacher, and voter.

So the role of our colleges and universities must be three-fold:

- First, we must strengthen the curriculum, and our educational programs generally, in environmental studies and allied fields, so that every graduate has that core of essential knowledge and understanding needed to be good stewards of our natural heritage. All of our graduates should know what they need to know to care for our little planet. We will know when we are getting

there, for example, when all economics majors appreciate that the economy is a rather ill-mannered sub-system nested in a grander but finite system we call the biosphere.

- Second, we must strengthen the environmental performance – the sustainability – of all university operations and functions – energy, transport, water, emissions and discharges, hazardous materials. You know the agenda better than I because at last we have a new generation of environmental management professionals at our colleges and universities – you! You attend to these priorities because you know good citizenship requires it. But your work – and engaging students in it – is a vital part of the education that colleges and universities offer. What students see us doing teaches just as surely as our lectures (maybe more so!) And, even more, what students participate in with you establishes lifelong patterns of stewardship and leadership – learning by doing is lasting!
- And third, we must engage the world outside the walls of the academy in a far more profound dialogue on environmental and sustainability. Today public discourse in our country on these issues can only be said to be anemic, impoverished, elementary. It is the job of our institutions of higher education to work to change that situation – to teach beyond our walls.

Have I thanked Tony Cortese yet? I do. I thank him for seeing all this first and for teaching us all about it. And congratulations to Tony, to AASHE, and to ecoAmerica for your University Presidents Climate Commitment campaign.

Speaking of campaigns, let's also hear it for that Yale drop-out Billy Parish and his merry band of student organizers at Campus Climate Challenge. Here's what Billy reported to me the other day:

“The Campus Climate Challenge has about 340 student groups registered with the campaign and working on these issues. We also have 45 full-time dedicated field staff supporting student groups. The movement is bigger than ever, we finally have a real field presence, we're building strong state networks, doing a lot of training and leadership development, more policies are passed every week. We're working closely with some higher educational associations and in many cases are working closely with campus administrators, faculty and staff to make these changes. Virtually every youth organization we approach for partnership is interested, so the opportunities for expanding the movement and redefining outside of a narrower environmental frame are big.”

And our colleges and universities are responding:

- At least 250 campuses have sustainability coordinators or directors or offices of sustainability; and twice that many have institution-wide sustainability or environmental committees.
- Almost a dozen are purchasing 100 percent clean energy.
- At least 60 institutions are purchasing clean electricity.

- 91 have solar panels on campuses and 33 have wind turbines.
- At least 40 institutions have adopted green building policies.

So what are some reasonable climate goals for U.S. colleges and universities? I would urge this consortium and others to get behind a two-step process:

1. First, at a minimum all colleges and universities should do at least what Yale has done—commit to reducing emissions to 10 percent below 1990 by 2020. That starts everybody down the right path.
2. Then for the second step we should all commit to going climate neutral—to zero net emissions. With California already having a goal of 80 percent below 1990 by 2050, zero emissions from colleges and universities represents the kind of leadership we should be giving.

An in-between step of great importance is university sponsorship of an increasing number of climate neutral events, buildings, and operations. I'm particularly proud that our new home for our school—the Kroon Building—will be climate neutral. The building itself will require less than a third of the normal energy use, and our remaining energy needs are mostly for electricity, which we plan to find from renewable resources like wind.

And speaking of leadership, hats off to my friend David Hales and the College of the Atlantic for their commitment to going climate neutral. And thanks to Dan Worth at the National Association of Environmental Law Societies for their work to put this goal on the map.

We must think big and be bold, because what we do, the leadership we give, can make a huge difference. And as the Stern report, just released in the UK earlier this week makes plain, the stakes could not be higher.

I want to close by putting our actions in a broader context. In my book, *Red Sky at Morning*, I developed the concept of green jazz—all the bottom up, improvisational, unscripted actions that people and institutions can take—without waiting on Washington.

The biggest threat to our environment is global climate disruption, and the greatest problem in that context is America's energy use and the policies that undergird it. So in terms of bottom-up, citizen-driven actions—green jazz—there is no riper target than the U.S. energy scene. And, indeed, the energy-climate problem provides the best example available of how decentralized initiatives and local action are beginning to address a global-scale problem. We can imagine goals being set for renewable energy use and for reductions in greenhouse gas emissions by businesses and universities, by communities and states, then by groups of states and national associations and organizations of many types, including educational institutions, all supported by worried insurers and institutional investors, and prodded on by students and other stakeholders, to the point that local actions are indeed going to scale and changing the world. This is not a distant vision: it is a process that has already begun in our country. It is a great privilege for all of us to be part of this effort, and it is wonderful to see you playing this beautiful jazz.