of opposing interests have been spreading misinformation about the global climate change that is under way, in an ef- fort to deny that our wasteful use of fossil fuel is responsible. Time is running out. We must change direction and replace our infrastructure to be energy efficient and powered by renewable energy sources. We now have less than a generation to do this, because we have delayed so long. We need ideas, innovation, and ways of working creatively and more humbly with the earth, not against it, as we make the transition away from fossil fuels. We need clarity and hope to find our way through the web of confusion and doubt that those who stand to profit in the short run will continue to weave. How can we recognize the landmarks on our way to a sustainable society?

Using fossil fuels to ship most of our food thousands of miles is not sustainable. Growing more of our food locally is not only sustainable but also benefits Vermont farms. It’s even easier for us now, as the warming of the earth has ex- tended our growing season by one month in the past 30 years. For the last few years, I have been able to grow mega- nic sweet potatoes in Pittsford!

We need to develop new, renewable energy sources and new business models that are sustainable and earth-friendly. Humanity’s pathways on a communities must be a step in the right direction. As our society functions more efficiently and we use less fossil fuel, we save money and reduce the growth of the CO2 burden in the earth’s atmos- phere. This is a huge but exciting transformation of our society, and it will require sustained community effort. The rewards for our children and grandchildren and our planet are immense. We cannot continue to ignore what our ineffi- cient fossil-fuel society is doing to the web of life on this earth is beyond words.

Vermont experience

“Climate Change & Community”

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Abstract

A new Sunday Environment section was started in January 2008 at the Vermont newspapers, the Rutland Herald and Barre-Montpelier Times Argus. It arose from discussions from the Herald editor, a com- munity activist, and this author, a climate scientist. We se- lected the sections for Alan Betts, Mike Robinson, and known and ac- quainted columnists from the local community. We actively solicit articles from a variety of Vermont perspectives – readers, state officials, students, businesses, teachers and many people who simply appreciate the beautiful environ- ment of Vermont, known as the Green Mountain state. Our focus is on broad sweep of environmental issues - including climate change - that affect the state either directly or indirectly, and our aim is to suggest new strategies for individuals, communities and society. We edit material for accu- racy and strive to encourage a broad debate. The framework is holistic: attempting to explain both the underlying scientific processes and technology that is happening to the earth, as far as it is known; how we, the people, through our industrial society, are now deeply involved with the future of the earth and its ecosystems.

My own columns go through the seasons, dealing with weather, climate, climate change, energy and policy issues as they are topical. They blend science with a systems perspective and encourage the reader to explore alternative and hopeful paths for themselves, their families and society.

Rutland Herald & Montpelier Times/Argus

2008 Topics [Alan Betts]

1. Welcome to the Planet (20 January, 2008)
2. Looking back at 2007, and looking ahead (10 February, 2008)
3. The integrity of science: the IPCC process (1 March, 2008)
4. The challenge we all face (23 March, 2008)
5. Spring, carbon dioxide and the rebirth of life (13 April, 2008)
6. The Spring climate transition (11 May, 2008)
7. The mid-summer solar moon (8 June, 2008)
8. The interdependence of water and life (6 July, 2008)
9. Facing the truth about our policies (31 August, 2008)
10. From the European Weather Centre (3 November, 2008)
11. Caring for our forests (5 October, 2008)
12. Sustainable Systems (9 November, 2008)
13. Our common Planet (14 December, 2008)

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1. Welcome to the Planet (20 January, 2008)

This is an exciting moment for Vermont: the beginning of the “Weekly Planet” column and the new environ- mental section of this Sunday newspaper (the Rutland Herald and Barre-Montpelier Times-Argus). The journey before us will be a great adventure. We have reached a critical time for the earth. This past year, the Antarctica ice shelves are now as big as the state of Vermont. The entire Arctic ice cap has melted, although it may take many centuries. Sea-level will rise by as much as 5 feet to flood our coastal cities and plains. Whole ecosystems will be de- stroyed as the earth continues to warm, and hundreds of millions of people will be become refugees, driven from their homes by environmental disasters, floods, drought and starvation.

It is difficult for us to grasp the scale and magnitude of the issue that we face. For many years a wealth

Flooded hayfields

Vermont in Fall

12. Sustainable Systems (9 November, 2008)

Sitting outside the last few weeks on glorious sunny days, watching the leaves fall, I have been reflecting on the natu- ral cycles of life. This October mirrored in many ways the spring transition that I talked about back in May. Nature de- ploy the first frost as long as possible. When the forests are green, they are transporting water, keeping the air moist and providing vapor to form clouds. Clouds and water vapor, a greenhouse gas, blanket the earth. This reduces night-time cooling, so temperatures before sunrise can stay in the 40s (4°C). Dew may form, but there is no frost.

In September as the nights get longer and the sun drops lower in the sky, the earth cools, until one night cold air blows down from the north, and the temperature falls until frost forms. Our summer vegetables die, and our forests recognize frost as a signal to prepare for winter. The leaves turn, and transpiration falls dramatically. The air gets dryer, cloud cover diminishes and so frosts become more frequent. Nature goes through a cycle of growth and decay. The forests grow slowly and respond to the supply of nutrients, wa- ter and sunlight. All parts of the system - soil, roots, trees, leaves and air - are exchanging and communicating with each other. There is a balance, with a complex network of regulatory controls providing stability.

Sure, I harvest some trees for fuel and compost some leaves to feed my garden in the spring. But if I am wise, I do so in moderation.

Contrast this with our human economic and financial system. Against all evidence, we believe that we have unlimited material and financial resources. We think that we can grow our economies, our wealth and our debt without limit, with less and less regulation and control - and without proper information flows and feedbacks to keep the system sta- ble. In 2008, the whole financial system has failed to the point that virtually all financial instruments have failed. Millions of dollars of complex financial in- stitutions (think ‘virtual money’) have sucked all the real wealth out of business.

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We don’t know how to make one part of the financial system from the whole. We have not built in a way to ‘compost’ this toxic debt and separate it from the basic banking system that we all need for commerce. We got drunk with greed, and failed to notice that we had coupled the real world, which has real limits, with our virtual world of limit- less leveraged debt. With so much money and ideology at stake, no one wants to discuss the reality of the mess and admit the truth, especially in an election season. And it is silly to expect economists and financiers to sort it out. It was their false assumptions and dishonesty that created it in the first place. Ecologists understand sustainable systems much better - we should listen to them!

A sustainable society is not just a slogan, we know better and could do better. So let us spend this winter in all our communities, planning a better future, where the rules are designed to work for us, the earth and the whole of creation. Here are some paths to start. Here is just one, with a rich thirty-year history.

The Institute for Local Self-Reliance has proposed we develop a set of new rules that restore human-scale politics and economics and rebuild our communities. These rules are an extension of the ‘localism’ movement which has been dis- cussed on these pages. They embrace three principles:

- Communities accept responsibility for the welfare of their members and for the next generation.
- Households and communities possess or own sufficient productive capacity to generate real wealth.
- Communities use the tools of ‘real’ money (think ‘virtual money’) to maintain real wealth.