

# **What to do with 150 Gigatons? How Grassland Restoration Can Sequester Legacy Atmospheric Carbon While Mitigating Floods and Building Healthy Economies**

Wednesday March 18, 2009, 12 noon - 1:00 pm  
SEI, 11 Curtis Ave, Somerville  
<http://www.sei-us.org/events.html>  
Jim Laurie and Seth Itzkan

## **Overview**

The presentation explores the role of grasslands restoration as a key component for climate change mitigation. There is a growing body of research that suggests that grasslands are undervalued as a carbon sink, and that their potential for safe, quick, and long lasting sequestration may be as high as 10 GT/year. This far exceeds other options and may be achievable in a manner that is non-polluting and economically viable. The strategy calls for a reevaluation of how we think about soil health and the role of animal impact. Grasslands and grazing mammals co-evolved about 50 million years ago when atmospheric CO<sub>2</sub> was close to 800 ppm. Today, grasslands are the world's largest terrestrial ecosystem and a prodigious carbon store. When Lewis and Clark explored the Great Plains, they were walking on a veritable ocean of sequestered carbon that was held in dark, moist, soils up to three meters deep and stretching for thousands of square miles. The grassland ecosystem that held this carbon was made possible through the collective impact of billions of prairie dogs and tens of millions buffalo and other grazing mammals - a fact that has been largely forgotten. Unfortunately, the Great Plains, and other native grasslands, have been gravely depleted - diminishing their carbon caring capacity and accelerating desertification. The good news is that through coordinated animal impact, soils can be readily restored to their original health, and in a manner that is low tech and cost effective. The global adoption of this approach offers promise for helping us to bring atmospheric CO<sub>2</sub> down to safe levels (below 350 ppm) in a time span sufficient to avoid catastrophic consequences. The presentation will advocate for greater research into this strategy.

## **Presenters**

**Jim Laurie** is a biologist focused on biodiversity and ecosystem restoration as the key to creating a better future. Recently, he has been researching grassland restoration and its importance as the essential process to reverse global warming. Mr. Laurie has 30 years experience working for industry, nonprofits, futures think tanks, and educational and environmental interests. For 20 years Jim worked in the Houston petrochemical industry as the Laboratory Training Supervisor and Environmental Biologist with Bayer Corp. While at Bayer, Jim implemented industrial wastewater experiments using purely biological processes. Working closely with ecosystem visionary, Dr. John Todd, Jim managed the startup of the "Vermont Living Machine" project in South Burlington, Vermont. This EPA funded project demonstrated ecosystems can effectively treat municipal wastewater without toxic materials. In 2005, he worked with business and environmental groups in California to create a restoration plan for the Eel River Valley. The goal is the restoration of salmon runs and redwood groves in an area that has been largely deforested. More recently, Jim worked with Pogo Organics in Sunshine, Maryland, on the cultivation of mycelial networks for ecosystem restoration and mushroom culture. He also spent a summer volunteering with the International Wolf Center in Ely, MN learning and teaching about wolves and bears. Mr. Laurie has spoken to numerous groups on the role of soils in climate change mediation, and has been featured on EcoShock ([www.ecoshock.org](http://www.ecoshock.org)), a weekly internet radio show. With his colleague, Seth Itzkan, he started the Google group Soil-Age. Mr. Laurie served as a 1LT in the U.S.

Army as a Medical Operations Officer. He has a BA in biology from Rice University and an MS from University of Houston in Studies of the Future.

**Seth Itzkan** is President of Planet-TECH Associates, a consultancy focusing on trends and innovations for sustainable economic development. Seth has twenty years experience consulting with private non-profit, municipal, state, and federal agencies on strategies for success in changing times. His clients include The Boston Foundation, The U.S. Census Bureau, The Massachusetts Technology Collaborative, and the City of Haverhill, Massachusetts. For the past four years he has been consulting with The Boston Foundation in the design, research, and implementation of a prominent feature of their Indicators Project, titled The Hub of Innovations. The objective of this work is to highlight innovations germane to municipal quality-of-life improvements. Seth is profoundly interested in climate change mitigation and is investigating new approaches to the problem, particularly the role of soils and grassland restoration. With his colleague Jim Laurie, Seth has co-authored a paper on the topic titled, New Considerations for Climate Change. They have created a Google group, Soil-Age, to further explore the issue. Seth is a graduate of the Tufts College of Engineering and the University of Houston Masters of Science Program in Studies of the Future.