

Testimony of Ivan J. Fernandez, University of Maine School of Forest Resources and Climate Change Institute, before the Committee on Agriculture, Conservation and Forestry of the 130th Maine Legislature, In support of LD 437, “An Act To Establish the Maine Healthy Soils Program”

Senator Dill, Representative O’Neil, and distinguished members of the Committee on Agriculture, Conservation and Forestry: my name is Ivan Fernandez. I have been Professor of Soil Science at the University of Maine for four decades, have taught over 6,000 students the course “Soil Science”, am a Fellow in the Soil Science Society of America, have served on the Maine Board of Licensure for Geologists and Soil Scientists for the better part of three decades, and have done research on the soils of Maine’s farms and forests for all my career. In 1998 I stood with then Governor King as he signed into law *Chesuncook* as the Maine State Soil. Most recently I have had the privilege of serving on the Maine Climate Council, am co-Chair of the Council’s Scientific and Technical Subcommittee and am a member of the Council’s Natural and Working Lands Work Group. The Council work has highlighted the critical importance of soil health in Maine’s response to the climate crisis. My testimony here represents by own opinion on this important topic.

Maine soils are geologically young and fragile, having had at most 12,500 years to form since the glaciers left Maine. Many have been formed much more recently. Our soils are relatively thin and form slowly in our cold climate. We think of Maine as our forests and crops and lawns and buildings, but those come and go, and the soil that supports them persists into the future. Maine soils store more carbon belowground than any of our crops or forests do aboveground. Maine soils have processed and, when healthy, purified almost all the water we prize in our wells, streams, lakes and rivers. We literally rely on our soil resources for life.

There is no clearer illustration of the importance of Maine soil than on our farms throughout Maine. It is with a concern for the degradation of these intensively managed soil resources that the concept of “soil health” emerged internationally,

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because soils are more than small pieces of rock, but are an intimate complex of mineral particles of varying sizes, pore spaces, soil solutions, roots, microbes, earthworms and the critical component we call “organic matter”. What we often forgot in the 20th century, but are recognizing in the 21st century, is that soil not only provides mechanical support for plants, but soil is a living system teeming so much so that it ‘breathes’ much like we do. Soil scientists commonly measure soil respiration reflecting that reality. It is on farms and other intensively managed settings where neglect of the soil leads to real costs to farmers and society. However, we know a lot about how to build soil health and land managers only need the technical guidance and resources to support those practices. It is in these intensively managed settings that we have the most to gain in food security and prosperity for Maine agriculture, and in so doing, reduce greenhouse gases in the atmosphere and build resilience to the climate challenges of intensified heat, rains and droughts now unfolding each year.

I strongly urge you to support LD 437, “An Act To Establish the Maine Healthy Soils Program”. LD 437 serves as an important opportunity to enhance the resilience of Maine’s small and large farms alike. The Maine Healthy Soils Program should provide a portal of information on technical guidance and grants for managers to enhance soil health. The Program should do so collaboratively with the University of Maine and other entities, most notably with the University’s Cooperative Extension who already serves Maine farmers and growers across the state and is a trusted source of information on soil health and the climate challenge. The Program should emphasize the benefits of soil health practices and promote voluntary engagement

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by land managers. The Soil Health Program should clearly demonstrate that it is not a pathway to regulation but to solutions.

While trees and crops and lawns come and go, healthy soils will persist through the generations, even in a changing climate. This is an unprecedented moment in time to invest in our soils and the people who manage them because all of us, and those generations to follow, are depending on them.

Thank you.