

REFLECTIONS

Why Doesn't Science Get Used? The Upcoming Focus on Citizen Science

by Linda Silka

At *Maine Policy Review*, we focus on publishing research that makes a difference for Maine, particularly looking for research that has the greatest potential to affect policy. To meet this mission, the next issue of *Maine Policy Review* will examine citizen science and how it helps to solve problems in Maine. So, my column for this issue is intended to start you thinking about how you might bring your expertise and skills to Maine's growing leadership in citizen science work.

What is citizen science and why should the people of Maine care about it? In citizen science, scientists are not working in isolation to decide what to study or how it should be studied; instead, they are working hand-in-hand with citizens. Scientists and fishermen work together to assess whether fish populations are declining. Homeowners and scientists join forces to investigate arsenic levels in wells. Scientists and farmers study changes in soil conditions that may affect productivity. Scientists and beekeepers study bee colony collapse, which is affecting the pollination of some of Maine's most important crops. Scientists and Native American basket makers come together to study the emerald ash borer and how this pest could affect the trees of greatest importance to basket makers. Citizen science is where scientists and citizens and policymakers come together to use scientific approaches to study problems of common concern.

Having an impact on policy is important, but policy impacts do not happen simply because scientists have studied an issue. Citizen science can be crucial to developing policy that is

grounded in shared understanding. Consider vernal pools. The seemingly odd term *vernal pools* refers to seasonal pools of water: they exist for a short time in the spring and then dry up until the following year. They are tucked away in many places in Maine, sometimes on private land or land we might want to develop. Why should we worry about small pools that exist only seasonally? It turns out that these ephemeral pools and the lands around them play an unexpectedly outsized role in Maine's web of plants and animals. Vernal pools are where the young of certain amphibian species are born and from which they make their way across nearby land to where they will live as adults. Eliminating vernal pools will have broad and unexpected impacts on Maine's environment. Scientists working alone can study this as an abstract issue, but the question then is, Who cares? In contrast, when citizen become involved it can lead to policies that take into account real life, real conditions, real issues, and real promise. Citizen science has brought together scientists, citizens, and policymakers to figure out what kinds of land-use policies might maintain vernal pools while not discouraging development. Citizen science moves away from the scientists finishing their research and then pronouncing what should be done; citizen science instead can lead to a shared understanding of what can be done.

As a field, citizen science is taking off, leading to an outpouring of books. As a starter, I encourage you to look at *The Rightful Place of Science: Citizen Science* by Darlene Cavalier and Eric B.

Kennedy. This short edited book (part of a series on new developments in science published out by Arizona State) is accessible, interesting, and timely. Among its many informative chapters is a chapter on policy, which talks about how we need to go back to some of our roots if science is going to make a difference. What does returning to our old roots mean? Well, if we look back in time, it turns out that most science was actually done by citizens and not by those who had gone to school to earn the official title of "scientist." Moreover, Maine was a leader in scientific work advanced by citizens. Acadia National Park, for example, holds extensive scientific collections, largely the result of citizen naturalists collecting and recording data about the flora and fauna in the region.

So citizen science has a long history to build, but at the same time, there is much that is new that makes citizen science even more viable today. In this year's second issue of *MPR*, we will see that the availability of apps, cell phones, and computers are making it easier for all of us to systematically collect data that will answer the questions we have and make our lives—individually and collectively—better. We hope, after reading the next issue, you will become a part of this work. 🐸



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