

UC Agriculture & Natural Resources

California Agriculture

Title

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Permalink

<https://escholarship.org/uc/item/0tk0v8j8>

Journal

California Agriculture, 75(1)

ISSN

0008-0845

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Publication Date

2021

DOI

10.3733/ca.2021a0008

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Community and citizen science: Inviting the public into UC ANR research

by Glenda Humiston

Online: <https://doi.org/10.3733/ca.2021a0008>

Community and citizen science (CCS) is an exciting approach to enhance research activities while also expanding community engagement. It advances the work of professional scientists, engages and educates amateur scientists and benefits society by reducing scientific illiteracy — all while creating greater awareness of the crucial work that the University of California and other research institutions perform.



Glenda Humiston, Vice President, UC ANR

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This issue of *California Agriculture* reports on a variety of research projects that might never have happened without the involvement of community and citizen scientists. For example, in a project described by Grosholz et al. (page 40, this issue), community scientists working in a Marin County lagoon have helped control populations of the European green crab, an invasive species whose effects on native shellfish are devastating. The community scientists, working on the project for nearly a decade now, have collected data from a large network of crab traps and in some cases have allowed researchers access to private

property. Their monitoring work has enabled scientists to develop crab management strategies that have reduced the crabs' population by 70% to 80%. According to researchers, maintaining European green crab populations at this level will, over time, allow for restoration of the lagoon habitat and allow native species to return to abundance. Perhaps most impressively, this ongoing project is now managed almost entirely by community volunteers.

The relationship between professional scientists and community scientists, however, is a two-way street. Because CCS projects allow ordinary people to get their hands dirty in scientific research and begin to understand how science really works, volunteers gain a deeper understanding of the world around them and the specific conditions that exist in their

own communities. Often, projects lead to concrete improvements in communities, with longstanding local problems resolved or remediated thanks to knowledge gained from CCS projects — just as in the example above.

But CCS can confer benefits across the whole of society. In the United States, scientific illiteracy is an ever-growing problem with frightening consequences. Take climate change, where public skepticism toward scientific realities can hinder policy responses and individual action to confront perhaps the most pressing problem that humanity will face over the coming decades. Vaccines, which stand among science's greatest achievements, often encounter public resistance — an especially disturbing response during a global pandemic.

Overcoming scientific illiteracy is a wide-ranging challenge that will require an array of responses, but CCS can be an important piece of the solution. For example, children participating in CCS projects can gain respect for the rigorous work that science professionals practice every day. But CCS's potential for overcoming scientific illiteracy isn't limited to kids — adults can also participate in CCS to learn about the world, do science and become better-informed, more-involved community members.

For UC Agriculture and Natural Resources, CCS is a natural fit. UC ANR's mission is to connect the University of California — and the science practiced throughout the UC system — with the people of the state. With UC Cooperative Extension academics and staff working in every California county, UC ANR is well-positioned to broaden the scope and impact of CCS across the state, conferring benefits on scientists, amateur researchers and broader communities. Established and trusted programs, including UC Master Gardener Program, UC California Naturalist and 4-H, provide ideal vehicles for CCS. By helping community members develop research skills and experience, CCS fosters an appreciation for the scientific process, building scientific literacy and public support for research. Come join us in a CCS project in your community! [CA](#)