

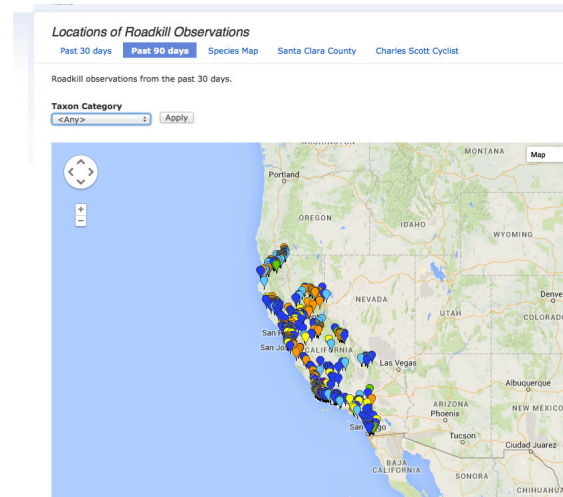


Crowdsourcing, Citizen Science and News Organizations

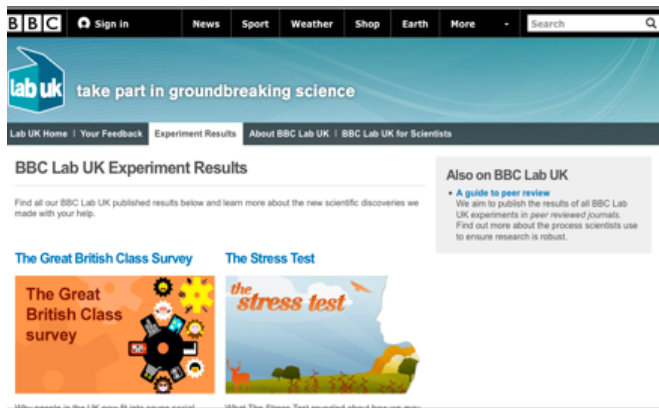
Most of the digital tools we use today -- the Internet, web browsers, search engines, computer animation, geo-tagging, visual recognition software, even Google -- were originally developed by scientists to perform research tasks.

So it's useful to look at what scientists are doing today for clues to new tools on the horizon, and consider how journalists might use them to encourage audience engagement and involvement in information gathering.

Citizen science and crowdsourcing are rich areas to explore. In recent years, as cellphones and information sharing have become ubiquitous, and as open source or inexpensive software can now handle huge amounts of data, the US and other countries have seen an explosion of citizen science and crowdsourcing efforts.



Volunteers have sent in more than 20,000 reports to the California Roadkill Observation System



What is crowdsourcing? What is citizen science?

Definitions vary, but in general, crowdsourcing enlists the public's help to do work of various kinds or to address societal problems and challenges.

In citizen science, the public participates in collecting, reporting or analyzing information for scientific research, and to answer research questions. Professional scientists are usually -- but not always -- involved in the effort.

Many scientists have found that enlisting the public can help them answer questions too large or expensive for a single research team to handle. Some citizen science projects involve hundreds of thousands of people classifying millions of pieces of data.

The numbers will become larger as a growing number of U.S. federal agencies launch major citizen science and crowdsourcing initiatives. They are now gearing up for those efforts.

Many citizen science projects use mobile apps for activities like identifying plants and trees, reporting weather, counting wild animals, and detecting earthquakes. Citizen scientists can now use palm-sized sensors to measure noise, light, air, and water pollution.

Data is often collected to address community concerns. Public contributions to road kill surveys in several states using geo-tagged cellphone photos helped transportation authorities identify highway danger spots. The Smithsonian's eMammal project documented the impact of hunting and hiking on animal populations in national parks in six states and along the Appalachian Trail.

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News organizations experiment with citizen science

News organizations have begun to experiment with citizen science and crowdsourcing.

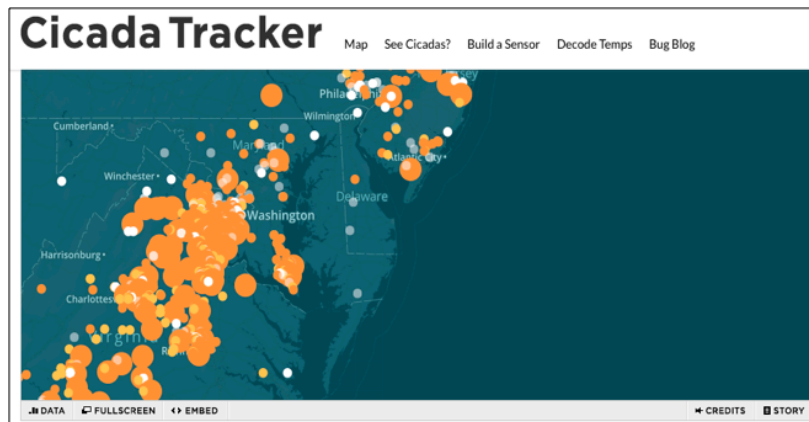
--The British Broadcasting Corporation (BBC) created its own citizen science website, BBC Lab UK (<http://www.bbc.co.uk/labuk/>) in 2009. Since then, hundreds of thousands of people have participated in online experiments on subjects like stress, risk taking, money management, and social class. The experiments are designed in collaboration with scientists and BBC television programming.

-- WNYC, New York's public radio station, launched an online Cicada Tracker project in 2013. Eight hundred listeners measured soil temperatures to predict when 17-year cicadas would emerge and filled out sighting forms that were sent to University of Connecticut scientists for analysis. WNYC mapped participants' contributions. <http://project.wnyc.org/cicadas/#buildyourown>

Are the data reliable?

The issue of data quality frequently comes up. Many projects provide online training tools. Scientists have also developed algorithms and other digital tools to spot anomalies and errors in data volunteers have collected. News organizations often partner with scientists who help write the protocols and review the data.

The Smithsonian's eMammal project uses an Expert Review Tool app to review data produced by citizen scientists. When dealing with local wildlife, citizen scientists have identified 95% of wildlife photos correctly, a success rate close to professional scientists. Many other organizations have similarly high reliability rates. Some use crowdsourcing as their "expert" to review data.



Compiled by Science and the Media

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