Citizen Science and Data Curation: Who Needs What?

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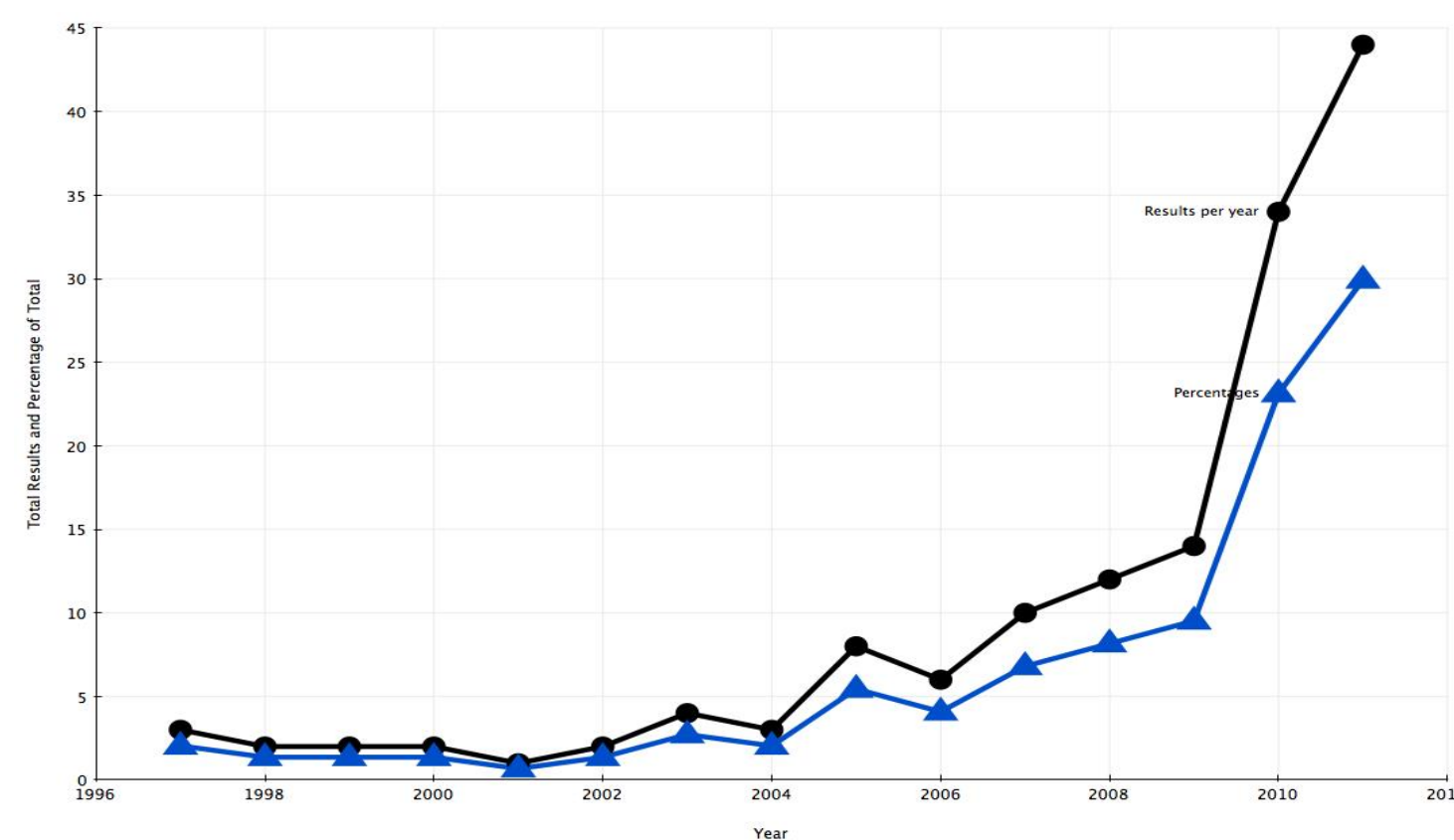
Background

"Citizen science [is the participation] of the general public in scientific research" (Couvet et al., 2008) Two trends, the growth of data and the availability of the internet, have enabled professional scientists to recruit amateur scientists to collect and analyze data. Recruiting citizens to do science may improve science communication and understanding.

Biological sciences have been rapid adopters of citizen science, especially areas of study that require field observations from large geographic and temporal scales. Two examples are the National Phenology Network (usanpn.org) and eBird (ebird.org). Both projects gather and host citizen science data from across the country.
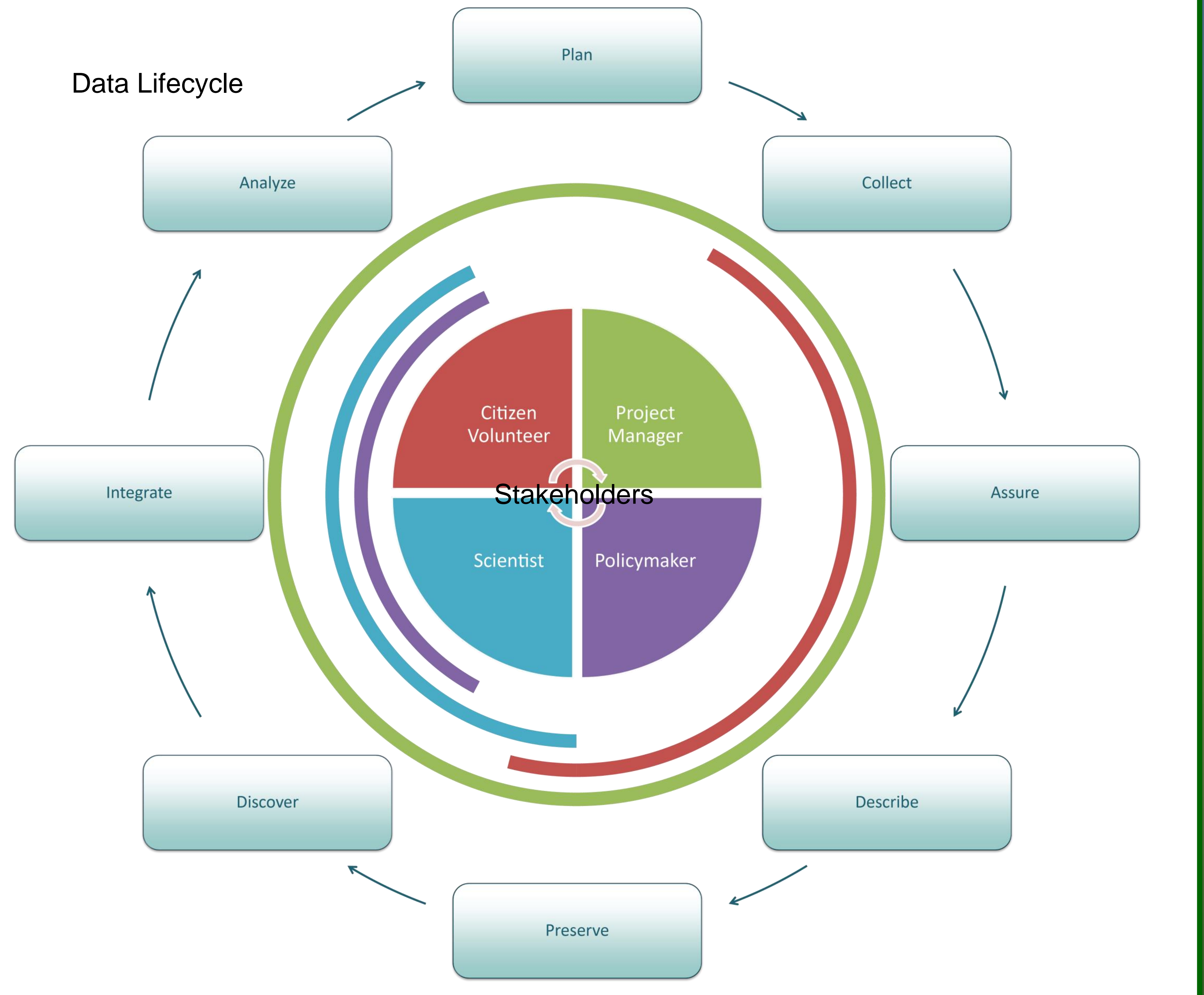
Growth of Citizen Science

A search of Web of Science for the phrase "citizen science" in December 2011 returned the following results which show the growth of citizen science over the past decade.

Data Lifecycle

The data lifecycle diagram is taken from the DataONE project. DataONE is an ongoing NSF-funded project to create a network for the sharing of environmental data. The lifecycle was created during the first phases of the project. Additional work on personas has been used to inform some of the stakeholders listed at the center of the graphic.

Research Questions

Citizen science is a challenging test case for digital curation efforts because projects span multiple stakeholders and involve a variety of communication channels. My dissertation work will examine some of the following issues:

1. Who are the stakeholders for citizen science?
2. What are their concerns about digital/data curation?
3. Are they aware of data curation problems and issues?
4. How do they learn about data/digital curation problems and issues?
5. How can information scientists help meet the needs of citizen scientists?
6. What are the implications for science communication?

Data Lifecycle

Plan · Collect · Assure · Describe · Preserve · Discover · Integrate · Analyze

Stakeholders: Citizen Volunteer · Project Manager · Scientist · Policymaker

Data Lifecycle and Stakeholders in Citizen Science

The data lifecycle from the DataONE project is overlaid on a list of potential stakeholders for citizen science projects. The stakeholder list is an initial attempt to enumerate the groups involved in citizen science projects and to indicate some of their data management concerns. The four circles, some partial, between the inner list of stakeholders and the outer ring of the data lifecycle are color coded to match the background of the interior stakeholder diagram. The circles indicate portions of the data lifecycle that are highly relevant to particular stakeholders.

Acknowledgements