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Easier citizen science is better

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Non-scientists are now participating in research in ways that were previously impossible, thanks to more web-based projects to collect and analyse data. Here we suggest a way to encourage broader participation while increasing the quality of data.

Participation may be passive, as when someone donates their computer's 'downtime' to projects such as SETI@home, or active, as when someone uses eBird to log birds they have spotted. Unfortunately, the prevailing data-collection and storage practices for active projects inhibit participation by non-experts.

Many projects rely on positive identification, whether explicitly (as for eBird) or by soliciting photographs and descriptions that others can use to classify the observation (as for the UK website iSpot). Because non-experts often lack the knowledge to identify species, they may opt not to participate or may provide inaccurate data by accidentally misidentifying something. The result is a trade-off between participation and data quality.

This trade-off can be avoided simply by changing the way information is collected and stored. Participants should be given the option to report a sighting in terms of observed attributes, eliminating the need to force a (possibly incorrect) classification. For example, allowing someone to report a bird as oil-covered may be more valuable than asking them to guess what the species is. For such data to be used effectively, they need to be stored in a way that supports attributes rather than fixed, predetermined classes.

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