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Citizen Science, Revisited

Six years have passed since I first wrote about the growing roles of citizen science in the wildlife field (*Fair Chase*, Fall 2007), and during that time, the pace has accelerated. Quite simply, citizen science is the engagement of volunteers to collect data needed by scientists. While today's rate of growth is unprecedented, citizen science projects have been amassing important data sets for over a century.

One of the earliest examples was launched in 1900 by Frank Chapman, a B&C Professional Member and officer of the Audubon Club. What he proposed was a replacement for the traditional Christmas Side Hunt, in which people chose sides and went afield to compete in shooting the most birds and mammals. Chapman's idea was that instead of shooting, teams would compete to count the most species of birds in a designated area. Voilà – the Audubon Christmas Bird Count was born! Today it is the longest-running citizen science survey in the world, providing vitally important data on bird population trends.

What accounts for the increased use of citizen science in the wildlife field? Technology is one factor, creating possibilities that did not exist in decades past. Today nearly everybody owns one or more computers and various mobile gadgets, all linked in vast networks via the Internet. This enables more people than ever before to feed in data that has been collected according to strict protocols, or to make their computers available for the distributed crunching of huge data sets. A great example is Mark Boyce's moose app (*Fair Chase*, Winter 2012), which enables any willing Alberta hunter with a smartphone to contribute to the important work of monitoring moose populations.

Limited budgets and staff is another factor spurring growth. Most agencies are strapped for funding, and the conventional methods of monitoring wildlife by helicopter and fixed-wing flights are becoming cost-prohibitive. Jami Belt's article on mountain goat monitoring in this issue identifies tight budgets as one reason Glacier National Park has turned to citizen science, as well as the need to minimize aircraft activity in backcountry settings.

Commencing a citizen science project involves a great deal more than enlisting volunteers and turning them loose to collect data. For starters, it is essential for the volunteer component of any citizen science project to be embedded in a research framework designed and overseen by scientists. Volunteers must be well-trained in data collection procedures, which must be kept simple and repeatable. Volunteer skill levels and data quality should be assessed on a continuing basis. And, because data quality has a positive relationship to experience, volunteer retention is very important. Volunteers tend to stay with a project when the work is interesting, meaningful, and enjoyable, and when they feel like valued members of the research team. Motivation and positive feedback are very important; these people are volunteers, after all.

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Citizen science provides a direct way for members of society to contribute their time and effort to wildlife research and conservation. And for projects involving fieldwork, it provides meaningful engagement in the natural world. This got me thinking, could the growth of citizen science be a beneficial trend for the future of wildlife funding?

From the earliest days of the conservation movement, hunters have done the heavy lifting in funding wildlife management. They support it through license fees and surcharges on purchases of sporting gear and ammunition. They join conservation organizations such as the Rocky Mountain Elk Foundation, Ducks Unlimited, and many others to step up to organize and participate in fundraising events that support the important work of these organizations. Hunters pull out their checkbooks and roll up their sleeves to support habitat restoration projects of all kinds. My life-partner and No. 1 hunting buddy insists that "hunting is not an expense, it is an investment," and I suspect that many hunters share that philosophy when purchasing hunting tags and stamps they may not actually use. Where does this commitment come from? I'm certain that much of it stems from their personal engagement with wildlife, including priceless memories of days spent afield.

A holy grail in wildlife conservation is figuring out how to expand the funding base by including other users besides hunters. While ideas have been floated, such as surcharges on binoculars, field guides, and other gear, none have materialized. Many non-hunters regard the $40 or so that they spend every year for membership in a favorite wildlife organization as their contribution to conservation. The magazine received as a member benefit may be the closest view that many have of wild places and creatures.

Citizen science opens a new avenue of engagement for some wildlife enthusiasts, on a level more akin to what hunters have long enjoyed. At the least, it is a significant way for greater numbers of people to invest their time and sweat equity in support of science-based conservation. Won't it be grand if their engagement also motivates them to pull out their checkbooks and propose new ways to grow the funding base for wildlife? ■

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