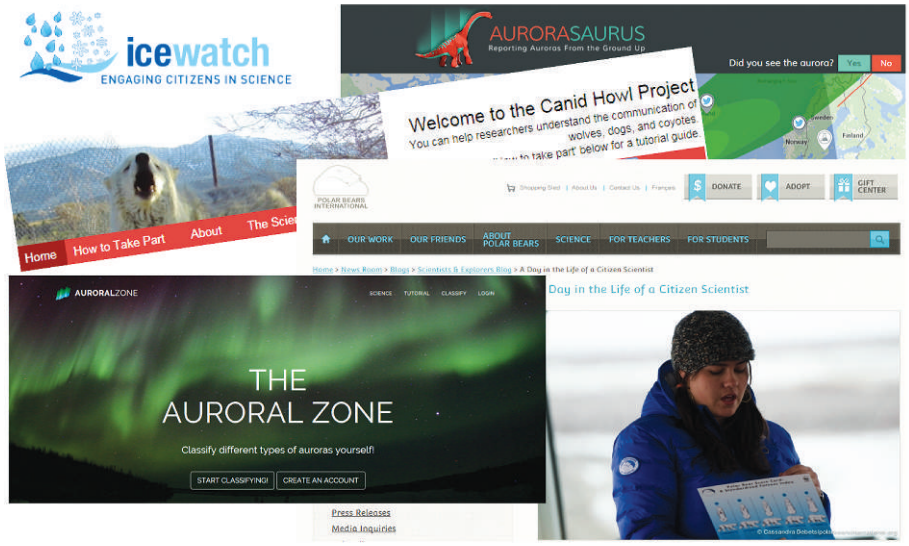
Citizen science comes to the Arctic



Scientific research in the Arctic has traditionally been conducted by university academics or government agencies, who have sometimes been guilty of working in isolation from the northern communities whose environment they are studying. Although there are plenty who do engage Inuit assistance for their projects, for others their involvement might be as brief as buying fuel and supplies at the local store and then heading off on their skidoos. But now a phenomenon known as 'citizen science' means that many research projects are not only actively encouraging public participation, they are completely dependent on it for their success.

In fact, Canada's Arctic is an ideal location for such public-participation projects. Logistically it is a challenging and expensive place to work, so partnering with people who live there year-round makes a lot of sense. Above all, the Inuit have a huge amount of knowledge to contribute that external researchers simply don't possess.

What makes a citizen science project?

'Citizen science' only entered the dictionaries in 2014, and is in many ways the product of the Internet and smart phones. Those two technologies have made such projects possible by allowing access to a much wider audience as well as making them easier to participate.

There are two basic kinds of projects — observation and analysis. Observation projects depend on people living in the area to report what they see, such as types and numbers of birds or marine wildlife. This can be entered in a project website or with a smart phone app to snap and upload photos.

Analysis projects ask people to help with analyzing or classifying the results, and don't actually require you to be in a specific location to take part. For example, the Arctic Institute of North America, in collaboration with the

Scientific research in the Yukon.
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Canadian Space Agency, is running a project called The Auroral Zone (auroralzone.org) which asks members of the public to help classify photos of the aurora into different types. Anyone can participate, but obviously being familiar with the aurora and their various forms is a big advantage.

Of course conventional research projects often also seek input from Arctic communities, either by doing surveys, asking questions, or even engaging them to take measurements throughout the year. Academics can often only do fieldwork in the summer when they are not teaching!

What projects are out there?

Most of the projects in the Arctic are about wildlife observations, climate change, or the aurora. For example, Canid Howl (howlcoder.appspot.com) allows you to both report and help classify wolf and coyote howls. Polar Bears International (polarbearsinternational.org) is mainly an educational site but also invites people who live near polar bears to log their numbers and general health (by characterizing body weight into five categories ranging from skinny to very fat).

Other projects are global but include the Arctic, such as the long-running Ebird project (ebird.org) which has hundreds of participants logging bird sightings from Baffin Island to the Mackenzie Delta. They also organize the annual Global Big Day bird census, which last year had 14,000 observers in 135 countries. Another project is Happy Whale (happywhale.org) which aims to track whales by asking the public to submit photographs, and then seeks to follow individual whales.

If you're interested in the climate, you might like to check out Icewatch Canada (naturewatch.ca/icewatch), which aims to track changes in the climate by asking participants to report the freeze and thaw dates of lakes and rivers across Canada.

Citizen science projects allow northern communities to take an active and key role in studies of topics important to them, such as climate change, and bird and animal populations. For scientists they also provide broader and more continuous data than individual scientists would be able to gather themselves, as well as knowledge only known to those living there. These projects provide opportunities for young people in the North to gain exposure to scientific projects and contacts in universities that they might otherwise not have access to and potentially lead to careers in science. A&B

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