

Zoos and universities must work together to safeguard wildlife and improve conservation, say researchers

June 26 2023, by Albrecht Schulte-Hostedde, David Lesbarrères, Gabriela Mastromonaco and Trevor Pitcher



Credit: Pixabay/CC0 Public Domain

The word "zoo" is complicated and can have different meanings to

different people. For some, a zoo is an organization committed to [animal well-being and wildlife conservation](#) that offers its visitors a fun and educational experience. To others, it is a place where people pay to see [exotic animals in poor conditions](#).

Zoos—a shortening of zoological gardens—can refer to both zoos and aquariums. Zoos accredited by bodies such as [the Association of Zoos and Aquariums \(AZA\)](#) and [the European Association of Zoos and Aquaria](#) make [important contributions](#) to conservation and the recovery of endangered species.

With more than 700 million visitors receiving conservation education globally and more than US\$350 million spent on wildlife conservation, [zoos are the third largest contributors to conservation initiatives after The Nature Conservancy and World Wildlife Fund](#).

Nonetheless, many zoos have the capacity to do more for conservation science and practice. We see this potential in the groundbreaking work of zoos with global reach including [Chester Zoo](#), [Zoos Victoria](#) and the [San Diego Zoo Wildlife Alliance](#).

The modern zoo

Zoos continue to renegotiate their social contract with the public as societal values change. Today, the modern zoo must focus not only on the well-being of its animals, but also emphasize its impact on conservation.

In Canada, the Calgary Zoo has established the [Wilder Institute](#) with a vision to become "Canada's leader in [wildlife conservation](#)." The [Toronto Zoo](#) has a mission of "Connecting people, animals and conservation science to fight extinction."

These, and other [examples, highlight the continued shift toward investing in conservation science](#) by zoos in Canada, with an increased focus on [collaborative research](#).

How do zoos produce research in conservation science?

While many zoos have dedicated staff for [conservation projects](#), [collaboration with universities](#) can help zoos increase their contribution to conservation science.

Historically, in Canada and other countries, most published research from zoos is related to [veterinary sciences](#), [not conservation](#). Academic institutions can provide scientific and technical expertise in conservation science, as well as access to envelopes of funding that are not available to zoos alone.

University researchers have rigorous science communication requirements that include not only publication in [peer-reviewed journals](#), but conference presentations, lectures and more. When zoos collaborate with universities, they have greater access to funding for conservation research and produce accessible research for conservation practitioners, researchers and the public alike.

At universities, graduate students as well as post-doctoral researchers perform the majority of research, supervised by a professor in a mentor-mentee relationship. Collaborating with graduate students and their mentors can help zoos address any ongoing conservation challenges.

ReNewZoo as a model

In 2016, our team of ten academics and zoo practitioners received

funding from the [Natural Sciences and Engineering Research Council of Canada \(NSERC\)](#) to launch [ReNewZoo](#), a [training program](#) for graduate students in zoo conservation science.

We involved six universities and five zoos from across Canada, providing training and internships for Master's and Ph.D. students as well as post-doctoral researchers. The goal of the program was to integrate graduate students and their research into Canadian and international zoos, bridging the gap with universities.

As part of this program, graduate students conducted their thesis projects in collaboration with zoos and had zoo staff on their advisory committees.

We integrated our annual symposium with the annual meeting of [Canada's Accredited Zoos and Aquariums](#) where students presented their work to potential future employers and listened to experts speak about issues in zoo [conservation science](#) and the business of zoos. Our students then interned with zoos for a first-hand look at the daily operations of a zoo.

Finally, we had an [online course](#) where academics and practitioners met with our students to discuss the important issues facing zoo conservation. The students learned about the science of zoo conservation, as well as the history and ethics of zoos and their role in conservation.

A success story

But did it work? ReNewZoo supported 26 early career researchers working with zoos including the Toronto Zoo, Calgary Zoo, Vancouver Aquarium, the Insectarium de Montréal and the Assiniboine Park Zoo in Winnipeg.

And these student researchers have already made many discoveries that can inform conservation practice.

In one such project involving the breeding and reintroduction of the endangered redbreasted dace—a small, colorful stream fish—within Ontario's Great Lakes region, Andy Turko, a ReNewZoo postdoctoral fellow, found that the [thermal \(temperature\) tolerance of the fish's source populations](#) is critical to the success of the reintroduction process.

Another ReNewZoo student, Damien Mullin, in collaboration with the Toronto Zoo, proved that headstarting—a breeding-centric conservation strategy where hatchlings are kept in captivity for a period of time before reintroduction—[improves survival in the endangered wood turtle](#).

He, however, also found that keeping juvenile wood turtles in captivity for longer than a year did not improve survival much more. Zoos can now use this information to optimize their conservation strategies.

While Turko and Mullin made discoveries that can boost the success rate of reintroduced endangered species, ReNewZoo student Léa Fieschi-Méric found a way to successfully move endangered amphibians.

The skin of amphibians houses a community of bacteria that helps resist pathogens. Moving these species to support their recovery in the wild through the process of [conservation translocation](#) can disrupt these communities of bacteria.

By successfully moving yellow-spotted salamander larvae from one lake to another in an experiment, Fieschi-Méric found that translocation [does not disrupt the community of bacteria living on the skin](#).

The resulting peer-reviewed publications from these and other students are now available for academics and, most importantly, conservation

practitioners to use and learn from.

Bringing zoos and universities together

Bringing zoos and universities together takes time, energy and money. But the benefits for conservation are far-reaching. We suggest a three-pronged approach to bridge these two types of institutions.

The foundation of any relationship is trust. Fostering connections between the people working at zoos and universities by conducting joint events, with invited speakers from each institution is a good way to start building the [level of trust that will lead to productive collaborations](#).

Graduate students are the bridge between zoos and universities. Funding graduate students and their stipends to work with zoos serves two purposes. First, the graduate students perform the actual research. Second, they serve as a source for new staff at the zoo, particularly related to roles in conservation.

Finally, formalizing the connections between zoos and universities with collaborative agreements, joint research appointments and even shared facilities will promote the sustainability of these relationships.

Collectively, these measures will enhance the [conservation](#) impact of zoos and universities and improve the chances that endangered species will survive.

This article is republished from [The Conversation](#) under a Creative Commons license. Read the [original article](#).

Provided by The Conversation

Citation: Zoos and universities must work together to safeguard wildlife and improve conservation, say researchers (2023, June 26) retrieved 28 April 2024 from <https://phys.org/news/2023-06-zoos-universities-safeguard-wildlife.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.