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International group of experts makes recommendations on conservation actions for Canadian snakes

GUELPH, Ontario - A diverse group of specialists evaluated potential *ex situ* conservation roles for all Canadian snakes in a science-based, inclusive, and participatory decision-making process. The recommendations presented in the new report on **Integrated Collection Assessment and Planning for Canadian Snakes** provide a basis for *ex situ* actions to be developed that best contribute to conserving Canadian snake species in the wild.

Highlights:

- Conservation needs and opportunities for Canadian snakes were evaluated through a One Plan Approach using establishing international guidelines. For the first time in Canada, species experts and practitioners from the *in situ* (in the wild) and *ex situ* (in human care) communities came together in an Integrated Collection and Assessment Planning (ICAP) virtual workshop facilitated by the Canadian Species Initiative and the IUCN SSC Conservation Planning Specialist Group in March 2021.
- The resulting report on **Integrated Collection Assessment and Planning for Canadian Snakes** identifies priority recommendations for *ex situ* conservation roles that will have direct benefit to snake populations in the wild and will foster integrated *in situ* and *ex situ* conservation efforts.
- Recommendations include population management activities for select threatened species as well as conservation-based education, research and training. Recommended actions were tailored to the conservation needs of each species to ensure they will have a net positive impact and will complement *in situ* conservation efforts.
- Results presented in the report will enable Canada's Accredited Zoos and Aquariums' Conservation Committee and associated partner facilities to better inform regional collection planning to support species conservation and prevent extinction in the wild along with *in situ* collaborators.

"Congratulations to the organizers and participants of this workshop. ... it was an amazing event, and you should all be proud of the great detail of knowledge you have about Canadian snakes. It should be a great conservation tool for this species we all like so much."

- Dr. J. Jesús Sigala Rodríguez, Co-Chair of the IUCN Viper Specialist Group

In March 2021, species experts and practitioners from the *in situ* (in the wild) and *ex situ* (in human care) communities came together to evaluate the conservation needs and opportunities for Canadian snakes through a One Plan Approach, which considers all potential conservation tools and partners in the race to save our endangered species. The workshop was the first of its kind in Canada, and for snake species globally. The diverse group of over 60 participants included representatives from governments and First

Nations communities, zoos and other *ex situ* facilities, academics, and other species experts from across Canada, the United States, and Mexico. The resulting report on **Integrated Collection Assessment and Planning for Canadian Snakes**, which was *released today*, makes recommendations for the most effective conservation actions by the *ex situ* community, which includes zoos and aquariums, wildlife centers, botanical gardens, and gene banks, to achieve wild population recovery goals.

Canada recently committed to reversing biodiversity loss by 2030 at the United Nations Summit on Biodiversity in 2020. Immediate innovative, integrated, and coordinated recovery actions are required to meet Canada's targets for biodiversity. It is, therefore, critical that all available management techniques are considered and applied strategically to prevent further loss of species. The One Plan Approach, developed by the Conservation Planning Specialist Group (CPSG) of the IUCN's Species Survival Commission (SSC), involves development of integrated species conservation plans that consider all potential conservation tools and partners, including both *in situ* (in the wild) and *ex situ* (in human care) conservation efforts where appropriate. Involving a diverse range of participants in the planning process helps to ensure that the full complement of knowledge, skills, and strengths are brought together to identify the most effective and achievable conservation actions. A recent study by Lees et al. (2021) demonstrated that these science-based, participatory, and inclusive species conservation planning processes increase the conservation impact of the resulting plans. The One Plan Approach is the global standard for species conservation, ratified by a resolution at the 2020 IUCN World Conservation Congress to link *in situ* and *ex situ* efforts to save threatened species.

Canadian snakes are faced by many combined threats such as habitat loss and degradation, road mortality, intentional persecution, disease, and climate change. Under this increasing pressure, more than 60% of Canada's snake species are now considered at some level of risk according to the Committee on the Status of Endangered Wildlife in Canada. While many *in situ* conservation efforts are underway to address these threats to wild populations in their natural habitats, conservation planning in Canada has generally not considered the full complement of potential conservation roles that might be contributed by the *ex situ* community, including zoos and aquariums, wildlife centers, botanical gardens, and gene banks, to effectively achieve wild population recovery goals.

The report on **Integrated Collection Assessment and Planning for Canadian Snakes** is the result of a three-day workshop facilitated by the [Conservation Planning Specialist Group](#) (CPSG) and the [Canadian Species Initiative](#) (CSI). A diverse group of over 60 experts from across North America came together to discuss the *ex situ* conservation options for all Canadian snakes. Using the decision process of the IUCN SSC Guidelines for the Use of *Ex Situ* Management for Species Conservation (IUCN/SSC 2014), participants evaluated if and when *ex situ* management is an appropriate conservation tool for each of the 39 taxa of Canadian snakes. CPSG has previously facilitated similar *ex situ* conservation assessments for a range of species, including wild species of dogs and cats, turtles and tortoises, birds, and butterflies

and bumble bees, but this is the first time that a workshop of this nature and scale has been held for either snakes or for species in Canada. This workshop was the first in a series of *ex situ* assessment workshops planned by CSI that will cover additional taxonomic groups over the next several years.

In a rapid species-by-species approach, workshop participants evaluated potential *ex situ* conservation roles, including long-term breeding programs, programs to provide animals to recover or re-establish wild populations, and conservation-based research, training, and education programs. The process ensured that potential *ex situ* actions were evaluated against each species' conservation needs along with the feasibility of such efforts. This enabled workshop participants to identify ways that zoos and

other *ex situ* facilities can support the conservation of Canadian snakes through actions that are both achievable and have high conservation value. At-risk species with established *ex situ* populations had the most recommendations, such as establishing breeding and release programs, while conservation-based research, training and education were recommended across all species, including non-threatened species that can serve as models for other more threatened snakes.

The recommended actions detailed in the report broaden existing *ex situ* roles and published recommendations, identify regional priorities for Canadian snakes, and complement *in situ* conservation efforts enabling the development of more detailed integrated conservation plans. This process also increased knowledge and understanding amongst all participants of the full spectrum of possible *ex situ* roles and how they can contribute to conservation.

*The Integrated Collection Assessment and Planning workshop for Canadian snakes was a collaboration of the Conservation Planning Specialist Group (CPSG) of the International Union on the Conservation of Nature (IUCN) Species Survival Commission (SSC) and the Canadian Species Initiative (CSI), a partnership between Wildlife Preservation Canada and African Lion Safari, which serves as the Regional Resource Center for CPSG in Canada. The report on **Integrated Collection Assessment and Planning for Canadian Snakes** is now available here <http://cpsg.org/content/integrated-collection-assessment-and-planning-canadian-snakes>.*

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References:

Lees, C.M., A. Rutschmann, A.W. Santure, and J.R. Beggs. 2021. Science-based, stakeholder-inclusive and participatory conservation planning helps reverse the decline of threatened species. *Biological Conservation* 260 (2021) 109194. <https://doi.org/10.1016/j.biocon.2021.109194>.

IUCN/SSC (2014). Guidelines on the Use of Ex Situ Management for Species Conservation. Version 2.0. Gland, Switzerland: IUCN Species Survival Commission. http://www.cpsg.org/sites/cbsg.org/files/documents/IUCN_SSC_ex_situ_guidelines_FINAL.pdf

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