

## The Snakes of Ontario: Natural History, Distribution and Status

By Jeffrey C. Rowell. 2013. Art Bookbindery, Suite 5-1377 Border Street, Winnipeg, MB, Canada, R3H 0N1. 411 pages, 55.00 CAD, Cloth.

Herpetology, the study of Amphibians and Reptiles (aka “herps”), has a somewhat dubious and decidedly brief history in Canada, undoubtedly because the country harbours fewer than 100 species of herps, with most of them shivering in shrinking relic enclaves hugging the US border. Canada has nevertheless had some illustrious herpetologists, but they have not produced much in the way of substantial books on their discipline. Most Canadian herp books have been slim, paperback field guides with pen and ink illustrations, coarse maps, and repetition of the same basic, even banal, descriptions of morphology and habitat. A recent exception was the entertaining “Snakebit” by Leslie Anthony, but that was more about ‘weird herpetologists’, an amusingly redundant term, than the beasts themselves. The weighty Canadian tomes devoted to other vertebrate taxa, like Peterson’s *Mammals of Eastern Canada*, and Banfield’s *Mammals of Canada*, or Taverner’s *Birds of Canada*, and Tozer’s *Birds of Algonquin Park* or Scott and Crossman’s magnificent *Freshwater Fishes of Canada* are not matched by herpetology. Even insects and flies have Stephen Marshall’s massive volumes to boast of. There are also numerous substantial, scholarly Canadian books on single species that are more substantial than any herp book. It is almost as though our depauperate herp biodiversity has convinced the herpetologists that there is no point to writing a grand synthesis. Of course, our herps also lack the charisma of polar bears or peregrines, the gourmet properties of ducks and salmon, and the sporting attractions of all the above. Trophy snapping turtles or ratsnakes decorate few game rooms, and herps have little impact on the GDP or global food supply. Snakes, frogs and their kin don’t need or deserve more than skinny paperbacks. Or, if one wishes to be cruel, one can imply that most herp enthusiasts aren’t terribly strong on reading and scholarly pursuits as much populating their dank basements with scaly, slimy pets to go with their tattoos and bad taste in apparel.

However, with this monumental work by Jeff Rowell, Canadian herpetology has made a huge leap forward. It is like going from the ‘Twitterverse’ to Margaret Atwood. *The Snakes of Ontario* is a massive 400-page effort, longer and heavier than most previous Canadian herpetology books combined. I feel utterly justified in saying that it is a book no serious Canadian herpetologist should be without. Remarkably, it only covers the 18 species and subspecies of snakes found in Ontario, much fewer than in a single county in Georgia as an American colleague once chortled to me, although twice as many as in any other province and more than the rest of Canada combined. Perhaps more interesting is that its author is not a herpetologist. His academic background, like that of Darwin, was geology,

and when he decided he didn’t want to excavate the northwest Territories for mining corporations, he turned to an even less herpetological discipline, computer science. Nevertheless, he tells us in the preface that he has always liked snakes, although he does not appear to be one of those collectors who frequent reptile “shows”, drooling over exotic mutants to house in his bedroom. In other words, he doesn’t appear to be one of those ‘weird herpetologists’ bent on collecting, trading, and breeding for show and tell sessions in trade-fairs at the local Legion or in the rear of motorcycle repair shops.

I have always felt that herpetologists often trail behind the other taxonomic specialists. Take conservation as a case in point. In the good old days, a vertebrate scientist would collect specimens of the taxa of interest, mammal skins, bird eggs, pickled fish, but by the time I started my academic career these practices were eschewed by ornithologists, and most mammalogists; small mammal trapping was still a joyful pursuit at the meetings. Ichthyologists still netted and hooked endless specimens, but they were focussed too on calculating MSY and creel counts, having become cognizant of the perils of overfishing. Herpetologists seemed immune to the idea that their quarry could be over-harvested or that they should exist free of formalin. Even today, ‘herpers’ rush out at lunch breaks at the SSAR meetings to grab some snakes and salamanders. This practice is slowly being abandoned, but the notion that their beloved subjects were disappearing came late to herpetology which still attracts the Indiana Jones crowd and those daredevils with southern or Aussie accents who populate the Outdoor Learning Network. Now, however, the paperback field guides lament declining frogs, and the beleaguered turtles (“7 of 8 Ontario species are at risk”). Rowell’s book will vault snakes into this sphere of concern as he makes it clear that Ontario’s snakes are at least as at risk as its frogs and turtles. Nevertheless, one gets the impression from Facebook babble that most herp people still think their subject consists of flipping logs and collecting anecdotes.

Rowell begins with a review of current ideas on taxonomy depicting cladograms (evolutionary relationships), starting at the broader level of all tetrapods, then going to narrower charts showing the more detailed phylogenies at the family and tribe levels of various Ontario snakes. Overall, he presents a clear summary of taxonomic issues, including the, in my opinion, vexing habit of herpetologists to fret over every ‘scientific’ and common name. I especially like the disagreements over the ‘scientific’ name of the Eastern Fox Snake. Whereas the common name has stayed consistent for more than a whole decade, the Latin binomial has changed faster than a chameleon’s colour, the genus

transforming from *Elaphe* to *Pantherophis*, to *Pituophis*, to *Mintonius* and back to *Pantherophis*, my favourite, in that same decade. This would be funny, but somehow many herpetologists take special joy in carefully following these changes as though they were keys to a special jargon that opens the sacred door to Alfred Romer's Cabinet of Wonders. Rowell follows this painful subject with a clear and concise summary of the evolutionary and biogeographical history of Ontario serpents. My favourite section in this part of the book is the well-illustrated discussion of the relationship between environment and distribution. I still remember being exposed to the concept of the effect of temperatures on distributional limits of Canadian reptiles in Bleakney's classic 1958 paper. Somehow, this brilliant insight has kept disappearing from the literature, but Rowell gives it a good boost here. This entire section makes thought provoking reading.

Rowell next presents a superb chapter tracking the history of snake study in Ontario, illustrated with portraits of the key players. We learn that one of the earliest Ontario herpetologists, the irascible Dr. Garnier, "dared to swear like a cattle driver and never went to church". This noble tradition remains a sacrosanct precept of the discipline to the present day. Even though much of Canadian herpetology tried to keep anecdotes at the forefront of the discipline, by mid 20th century, more serious research began to dominate with the redoubtable Sherman Bleakney, his talented protégée Francis Cook and the dedicated Craig Campbell, all still alive and sufficiently idiosyncratic to be affectionately deemed 'weird herpetologists'. Early work was associated largely with museums, but by the 1970's academic research on herps expanded to the universities and the literature widened to include numerous reports, peer reviewed papers and even a couple of multi-authored books on conservation. With Rowell's book, we begin a new era.

Next is a section on threats and conservation status. Here we get a somewhat truncated discussion of major threats, and a revealing chart of current COSEWIC/COSSARO status assessments showing that snakes in beloved Ontario are in dire straits. Indeed, one could look at the chart and conclude that snakes are doing worse than turtles. Fourteen of 20 are assessed as at risk, only 2 are not at risk (Northern Watersnake and Dekay's Brownsnake) and 4 others have not been assessed. These latter half dozen could easily be at risk, but we don't have the data to make defensible assessments. From my somewhat biased view, this section could have been more emphatic and provocative. This section ends, appropriately with some amusing old myths about snakes. This section could be endless. Just in the past year, I have been assured by a friend that she saw a "black snake" over 10 feet long (near Barrie) and a hotel manager who insisted that fox snakes could kill children. The chapter ends with a brief section on First Nations' views which seem no less bizarre than those of the rest of us.

The bulk of the book consists of accounts of each species. Each account is lavishly illustrated with colour photos, mostly by the author, of the beasts themselves. Where appropriate, there are photos of different colour phases and patterns (e.g., Eastern Hog-nosed Snake), drawings of unusual features, such as the oral apparatus of some species, and histograms of the distributions of intra-annual records by dates from the Ontario Herpetological Atlas. Each species also has coloured maps of historical and current distribution, photos of habitat and sometimes maps of relevant habitat features. Each species' account has 9 main sections following a pattern of similar to COSEWIC reports. Sections are; Physical Description, (with photos and some drawings), Nomenclature (herp people will like this), Taxonomy (more thrills), Status and Distribution (including Historical and Current Distribution, often broken down by region), Habitat, (including some photos and charts), Behaviour and Patterns of Activity, Diets and Feeding, Reproduction and Growth, and Predators. Chapter lengths range from 10 pages (Smooth Greensnake and Northern Ribbonsnake) to 32 pages (Massasauga), reflecting nicely which species have been looked at more and which have been neglected. I think it interesting that the most studied species are those that have been assessed Threatened or Endangered by COSEWIC. Those species that remain not assessed, not at risk, or Special Concern clearly have relatively limited data available, particularly on abundance, trends in abundance and impact of threats. Again, it is probably lack of data, not level of risk, that puts snakes in these more "positive" categories.

One of my more brilliant colleagues after perusing a copy of this book commented that it did not target an audience. I begged to differ. It targets everyone who has an interest in snakes, especially those whose interest goes beyond eating or displaying them. The Snakes of Ontario demonstrates, despite the paucity of species and herpetologists, that there is a rich, provincial history, luxuriously attested to by Rowell's bibliography of more than 2000 references. The cornucopia of references forms the source for his wide ranging text and plethora of coloured maps and figures. For the novice, there is a useful 5-page glossary including some cool herp terms such as opistoglyphus, key concepts like vicariance, and the inconvenient truth that there are at least 3 definitions of species. For the snake expert, there is a wealth of information that can form the basis of ideas and hypotheses for research.

This book is not, of course, one that you take into the field to identify snakes, but let's face it, there are fewer than 20 to identify so how hard can it be? You can take a pocket guide in the field, but I don't believe there are any current field guides that come even close to providing comparable pictures and information to assist in tricky identification.

So some careful reading beforehand and a good camera to take photos to compare with the book when you are at leisure after returning from the field can

confirm your identification. This book is a must for any serious herpetologist, but it should also appeal to a wide range of naturalists and biologists. I hate to call it a coffee-table book, but it would not be out of place there just as it should grace the serious biologist's desk or library shelf. I think the book is like a combination of James Harding's *Amphibians and Reptiles of the Great Lakes Region* and Harry Greene's 'Snakes: the Evolution of Mystery'. Snakes need lots of positive publicity. Anyone who reads Rowell's book will find snakes immensely more interesting than they will reading the treacly summaries found on those endlessly repetitive government sponsored conservation websites, because Rowell, like Greene, places his subjects in a broad context so that one sees them as a part of regional landscape and history. We often read that loss of this or that species or group of species will lead to ecological disaster, or similar Armageddon. I much prefer the

perspective that the potential loss of our snakes will not lead to ecological collapse, but will rob us of an fascinating element of our provincial natural history. I can't think of any recent book on our native fauna that promotes this perspective so well. Herpers and normal citizens all have their trove of stories that reflect the natural variety of our surroundings and society. When you read this book, you want to integrate its content with your own snake experiences, experiences that we all have. *The Snakes of Ontario* melds the herpetological, biological, and historical into a compelling picture of our relationship with other creatures that goes well beyond a single target audience of reptile lovers to the whole changing fabric of our culture. The target audience should be everyone.

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