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THE CANADIAN HERPETOLOGIST/ L'HERPÉTOLOGISTE CANADIEN

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Cover Photograph of Spring Peeper from Ontario by Joe Crowley



**CANADIAN HERPETOLOGICAL SOCIETY /
SOCIÉTÉ D'HERPÉTOLOGIE DU CANADA
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- Abstracts of student theses (4th year, M.Sc., Ph.D.) that have not already been listed in a previous issue of TCH
- Feature articles on topics such as ecology, genetics, taxonomy, conservation issues, field techniques, recovery programs, etc.
- Field notes outlining the results of recent herpetological work
- News, announcements, job postings, collaboration opportunities or any other information that may be of interest to Canadian amphibian and reptile researchers and conservation practitioners
- Photographs and art
- Book reviews

Please e-mail your submissions as MS Word documents with photos attached separately as JPEGs to the Editors (jlitzgus@laurentian.ca or Joe.Crowley@ontario.ca).

EDITORIAL NOTES

Joe Crowley

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This past fall, many of us attended the 3rd annual CHS meeting at the Toronto Zoo, which was probably one of the largest herpetological gatherings in Canada, with the obvious exception of international venues such as the World Congress of Herpetology in 2012. It was encouraging to see so many researchers, conservation practitioners, students, naturalists and others with a keen interest in herpetology all gathered in one place to share information and learn from each other. The conference featured an impressive four-day agenda packed with workshops, over 80 platform and poster presentations, engaging keynote talks, a wine and cheese social, a banquet and awards ceremony, a silent auction and book raffle, and a field trip. The first article in this issue of TCH provides some more detail about the conference and a summary of some of the main highlights.

The annual CHS conference plays an important role in fostering reptile and amphibian conservation and research in Canada. Although CHS is only 3 years old, national herpetological societies have been active in Canada for over half of a century. In his article on the history of CARCS, Wayne Weller provides an intriguing account of the origins of herpetological societies in Canada and describes many the early efforts that would set the stage for present day herpetological conservation, education and research in Canada. Mike

INSTRUCTIONS FOR AUTHORS

All submissions should be relevant to Canadian herpetofauna or other topics related to Canadian herpetology. Submissions by Canadian herpetologists about research or programs they have been involved with outside of Canada are also considered for publication. Please submit:

- Citations of recent (within the last 2 years) publications relevant to Canadian herpetology that have not already been listed in TCH. If the publication was "in press" in the previous issue, we will re-list it in the upcoming issue with the full citation information

Oldham also provides thoughtful perspectives on herpetology in Canada over the past few decades as he summarizes his career in herpetology in the second feature article of this issue. Wayne's discussion about the use of printed flyers and bulletins as the primary source of communications in the 1960s and Mike's description of the data submission and entry process in the early days of the OHS in the 1980s really demonstrates just how much the field of herpetology has changed over the past few decades.

This issue of TCH also features a note on applied conservation from Dave Seburn, the new chair of our Conservation Committee, as well a neat natural history note on overwintering Spotted Salamanders from Peter Mills, author of the popular new book on Ontario amphibian larval identification. The thesis abstracts and recent publications sections are always a great source of information on recent herpetological research in Canada, and don't forget to check the News and Announcements section for important CHS updates and some volunteer opportunities.

MEETINGS

TCH will post announcements about upcoming herpetological meetings and provide reports of recently-held meetings.

Canadian Herpetological Society 2016 Conference and Annual General Meeting

Amelia Argue*, Amanda Bennett, Sue Carstairs, Joe Crowley, Andrew Lentini, and Julia Phillips

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The 2016 CHS conference and AGM was held at the Toronto Zoo, Ontario from September 16 to 19. With more than 160 registrants, over 60 platform presentations (including 15 five-minute "lightning talks") and 29 posters, this was our biggest conference ever!

The conference started off with two concurrent workshops on the Friday afternoon: one on field techniques and one on "conservation across Canada". Andrew Lentini and Sue Carstairs led the Field Techniques session, and tag-teamed the day's events. The content covered a wide range of relevant skills and topics for those working in the field. An overview of injuries from motor vehicle collisions and the medical and rehabilitative care of injured turtles was presented,

and cadavers were used to illustrate these concepts. The cadavers also provided participants the opportunity to practice venipuncture and PIT tag insertion on a variety of species. A number of live animals were used to demonstrate handling techniques, including venomous snake handling. Attendees were then able to try nonvenomous snake and turtle handling for themselves. Radio transmitter attachment was also demonstrated, and participants had a chance to practice radio-telemetry techniques through the beautiful Toronto Zoo property.

Tanya Pulfer led the "conservation across Canada" session in the atrium at the Toronto Zoo. The purpose of this session was to collectively discuss actions to further our knowledge and resources for the conservation of Canada's reptiles and amphibians. Ontario Nature presented an overview of herpetofauna atlases in Canada, including a preview of their new Ontario Amphibian and Reptile Atlas mobile site. Barriers to implementing successful atlas projects were identified, and standardization, communication, funding, and education were identified as areas where actions to overcome barriers would be most effective. Long-term monitoring projects were then discussed, and it was decided that the development and coordination of long-term monitoring programs in Canada would be pursued through CHS's Research Committee (stay tuned!). Last, the workshop participants heard an overview of emerging infectious diseases in Canada, and discussed the potential role of CHS in the mitigation of threats of disease. It was recommended that disinfection protocols be incorporated into atlas and monitoring programs, with disinfection recommended any time surveyors move between locations by vehicle and more intensive measures taken at locations with known disease outbreaks. Additionally, participants were reminded that evidence of mortality events or diseased animals should be reported to the Canadian Wildlife Health Cooperative (http://www.cwhc-rcsf.ca/report_submit.php).

After a busy day of workshops, Friday night's wine and cheese reception was held at the Delta Toronto East, where conference guests had an opportunity to catch up and mingle over drinks and light hors d'oeuvres.

Saturday's events kicked off with an excellent plenary presentation by Dr. Ariadne Angulo, Co-Chair of the IUCN SSC Amphibian Specialist Group. Participants learned about some of the critical work the IUCN SSC group and the Amphibian Survival Alliance are doing to support amphibian conservation and research across the globe. Saturday's platform presentations covered a variety of topics including emerging infectious diseases, applied conservation, and reptile and amphibian research in Canada and beyond.

The CHS AGM was held on Saturday afternoon and was attended by about 40 members and 20 non-members. Scott Gillingwater welcomed everyone to the meeting, provided an overview of the role of CHS and the importance of membership, and summarized some of CHS's recent activities. Scott also thanked Steve Marks, Steve Mockford, Tom Herman and Patrick Gregory for their recent contributions to the Board of Directors as they stepped down to make way for new board members. An election was held and, after some discussion about having student representation on the Board of Directors, Patrick Moldowan was nominated from the floor and added to the pool of excellent board nominees. Members cast their votes for four new board members and we welcomed Amanda Bennett, Christina Davy, Jean-François Desroches and Patrick Moldowan to the Board. At the end of this year, Joe Crowley moves from vice-president to president and Scott Gillingwater will become our past president. So, we also held an election for the vice-president position, and we were happy to have Jackie Litzgus elected into this role. Scott Gillingwater also announced that the board had been working on the development of a new award, the E.B.S. Logier Communications Award, which the membership then proceeded to ratify. Jose provided his treasurer's report, and he also reiterated Scott's comment about the importance of memberships in supporting CHS. We also heard updates from the CHS committees, including an announcement about two new IMPARA sites: The Ojibway Prairie Complex and Beausoleil Island. During the Conservation Committee and Research Committee updates, it was announced that the current chairs of those committees were stepping down and that David Seburn and Amanda Bennett (respectively) would be taking on these roles. Finally, the locations of the next two CHS conferences were discussed. Joe Crowley indicated that Pamela Rutherford had offered to host the 2017 conference in Brandon, MB or Regina, SK and that the Meetings and Workshop Committee had also been in discussions with Karl Larson about hosting the 2018 conference in Kamloops, BC. The membership was supportive of pursuing these options, and it looks like we'll be heading west for the next couple of years!

After the AGM, the Zoo hosted a well-attended poster session followed by the banquet dinner. The banquet travelogue speaker was Patrick Moldowan, who took a captivated audience on a photographic tour of the history, species and ecosystems of the island of Mauritius, and shared stories of his work there through the New Noah program with rare and endemic wildlife. Although Patrick's talk was a hard act to follow, the awards ceremony maintained the atmosphere of excitement and awe as several very deserving

individuals were presented with awards for truly outstanding contributions to the field of herpetology. See "2016 Award Winners" in the News and Announcements section of this edition for details about this year's award recipients. The evening finished up with the entertaining (and challenging) herp quiz led by the one-and-only Steve Marks.



Top: Patrick Moldowan delivering a captivating travelogue; Bottom: Leslie Anthony (left) and Scott Gillingwater (right) presenting the Blue Racer Award to Jacqueline Litzgus (Photos by Joe Crowley).

On Sunday morning Dr. Jackie Litzgus gave an inspiring plenary address that described how she turned her childhood interests and passion into a career in applied herpetological research (helped along by a serendipitous phone call that was actually meant for her older sibling!). The day continued with concurrent sessions filled with interesting and informative platform presentations on a range of topics including reptile and amphibian habitat, physiology, threats, conservation, research and citizen science. Participants had an opportunity over lunch to explore the Toronto Zoo and see some of the amazing animals (such as the endangered Chinese Giant Salamander!) that reside there. Sunday wrapped up with a very successful Silent Auction and Book Raffle, which generated over \$2,000 for CHS! A special thank you to everyone who participated and donated items!



Attendees of the 2016 Canadian Herpetological Society Conference

On Monday, September 19th CHS field trip participants enjoyed a fun and adventurous day exploring Canada's newest national park, the Rouge National Urban Park (RNUP) and the Toronto Zoo, and learning about a variety of amphibian and reptile conservation projects. In the morning, led by a group of ecologists and researchers from RNUP, Toronto Zoo, Toronto and Region Conservation Authority and the University of Waterloo, attendees had the chance to explore a series of restoration sites in RNUP. The morning's activities included hiking in restored wetland areas to radio-track head-started Blanding's turtles, flipping cover boards in recovering meadow habitat to find elusive Milksnakes, and visiting a Carolinian forest conservation site in search of salamanders. Participants were treated to a visit from Toronto Zoo's live outreach turtles during lunch before travelling on to visit newly restored salamander wetlands in the Toronto Zoo's oldest 'back property' forests. In the afternoon, experts from the Toronto Zoo toured the group through a series of amazing reptile and amphibian conservation projects taking place in the Americas Pavilion, after which attendees happily wandered off to explore the Zoo's variety of facilities and exhibits for the rest of the day. Major highlights for the day included special field finds of juvenile Blanding's Turtles, a big Milksnake, Eastern Red-backed Salamanders and encounters with some of the rarest amphibians and reptiles on the planet on site at Toronto Zoo!

A final thank you to the Toronto Zoo, local organizing committee, CHS board, sponsors and participants! And thanks to all the presenters who took the time to share their work and experiences over the weekend! It was a successful conference, full of wonderful and inspiring people. Keep up the great work and we hope to see you next year in Manitoba!



CHS field trip participants searching for herpetofauna in the Rouge National Urban Park (Photo by Joe Crowley)



Jeff Row discussing his Milksnake research with CHS field trip participants while they admire the Milksnake that was found during their surveys (Photo by Joe Crowley)

FEATURE ARTICLES

A Detailed Account of the Formation and Activities of Canada's First Herpetological Organization: The Canadian Amphibian and Reptile Conservation Society (CARCS)

Wayne F. Weller

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The formation of a Canadian organization concerned with the plight of amphibians and reptiles in captivity and in wild populations across Canada began in the fall of 1960. Alex Findlay and his wife Peggy invited several people interested in herpetology to their home on November 2, 1960 to discuss forming an organization. Those who gathered believed that an organization was needed to speak to the plight of amphibians and reptiles, and to promote a more positive attitude towards these species especially snakes since the public attitude was generally negative. With the impending retirement of E.B.S. (*Shelly*) Logier (Curator of Herpetology, Royal Ontario Museum, Toronto), who had long been a spokesman for reptile conservation in Canada through his publications, there was concern among those gathered at the Findlay home that efforts to conserve amphibians and reptiles would lag after Logier's retirement unless an organization was formed to carry on the crusade. There was also concern with the appalling conditions in which amphibians and reptiles were kept in pet stores and private collections. Eleven people attended this first meeting. Some of our readers will recognize the names of many who were present: Keith Davies and his wife Myrna; Dr. David Fowle (Federation of Ontario Naturalists, now Ontario Nature), Barbara Froom (Ontario Department of Lands and Forests, now Ontario Ministry of Natural Resources and Forestry); Shelly Logier (Royal Ontario Museum) and his wife Beryl; Bruce McBride (Science teacher); Herb Southam; Ken Zurosky (Ontario Department of Lands and Forests); and of course, Alex Findlay and his wife Peggy. Four others were invited, but unfortunately were unable to attend: George Toner (Writer); Ken May (Riverdale Zoo); Bob Vineham; and, Peter Buerschaper (Royal Ontario Museum).

It was announced at this meeting that Shelly Logier had accepted the position of President of this as yet unnamed organization. Dr. Fowle provided information and assistance on how to form and structure an organization, and discussions on this issue took up most of the evening. Due to the fact that several important invitees could not attend, it was decided to hold a second meeting on November 23, 1960 at which time

administrative positions would be put to a vote. A committee was tasked with drafting a constitution to present to the members for voting at the November 23, 1960 meeting.

The second meeting convened in the evening of November 23, 1960 at the home of Alex and Peggy Findlay. Sixteen people attended this meeting. Eight (8) of those who attended the first meeting (Keith and Myrna Davies; Alex and Peggy Findlay; Barbara Froom; Shelly and Beryl Logier; and Ken Zurosky) were joined by 8 others: Glen Burke (Toronto school teacher); Francis Cook (National Museums of Canada, now Canadian Museum of Nature); Bruce Harding (Artist); Allan Helmsley (Ontario Department of Lands and Forests); John Livingston (Audubon Society of Canada); Ken May; George Toner; and, Bob Vineham.

At this meeting, the name of the organization was chosen – Canadian Amphibian and Reptile Conservation Society (CARCS). This, however, was not the original name proposed for the organization. Francis Cook advised me that “the name first proposed for what became CARCS was the Canadian Reptile and Amphibian Conservation Society – CRACS, but it was felt that if the society was to be taken seriously by the public and the press, CRACS was too vulnerable to ridicule”.

The important item of creating a constitution was discussed at this second meeting. Shelly Logier presented his committee's draft constitution, and after slight revisions, it was adopted as being the Society's operating principles. CARCS selected Allan Helmsley as its Conservation Director, and Bob Lindsay (Riverdale Zoo) as its Membership Director. Attendees at this meeting voted in favour of appointing other Liaison Officers as soon as possible to represent CARCS in discussions with a number of professional, conservation/nature, and academic organizations.

Several journals, magazines, and media outlets promoted CARCS and its goals. Among them was *The Canadian Field-Naturalist* in its first issue of 1961. Over the months to come, affiliations with well established and respected conservation organizations were made, monthly meetings open to the public were arranged, a motto and logo were selected, stationery was designed and printed, and membership to CARCS was made available to the general public who had an interest in amphibians and reptiles. A means to communicate with the general public through pamphlets and with members through the *Bulletin* was established, and various activities were organized. The following sections provide details of the various facets of CARCS.

CARCS Constitution

The CARCS Constitution was modelled after that of the Metropolitan New York Herpetological Society (May 14, 1960) and the Philadelphia Herpetological Society (September 29, 1960). It was ratified at CARCS’s second meeting on November 23, 1960, and consisted of the following 10 sections, called Articles:

1. the name of the Society, and the creation of the Toronto Branch with the opportunity to create other Branches across Canada;
2. a statement of the primary and secondary purposes of the Society;
3. the composition of the membership, and the potential creation of a “young” (under 16 years of age) members group with affiliation to the adult group;
4. the annual membership due established at \$4.00 per year;
5. the potential to enlist the cooperation of government agencies and conservation organizations in an effort to fulfill CARCS’ purposes, and seek affiliation with other groups to promote compatible interests;
6. the calendar year to be the Society’s annual operating term;
7. the listing of the Society officer positions, and the election of people to those positions;
8. the scheduling of meetings and recording of minutes of meetings;
9. a means to amend the Constitution; and,
10. the Toronto Branch, and any other formed in the future, would be required to abide by the Constitution of CARCS.

CARCS Executives

Elections for President, Secretary-Treasurer, and Editor were held at the initial meeting on November 3, 1960. E.B.S. (*Shelly*) Logier was elected President, A.R. (*Alex*) Findlay, Secretary-Treasurer, and Barbara Froom, Editor. At the following 2 meetings in 1960 (November 23 and December 7), the following people were voted/appointed into various executive positions:

- Bob Lindsay - Executive Vice President (Membership Director);
- Glen Burke – Interior Vice President (Program Director);
- Al Helmsley – Exterior Vice President (Conservation Director);
- Ken Zurosky – Assistant Conservation Director;
- Bruce Harding – Chairman of the Art Committee
- Ken May – Liaison Officer with Riverdale Zoo;
- George Toner – Liaison Officer with Federation of Ontario Naturalists (now Ontario Nature);

- Keith & Myrna Davies – Liaison Officers with Toronto Humane Society; and,
- Dr. Allan Scollard - Liaison Officer with the Veterinary profession.

The roles and responsibilities of these positions were discussed at an Executive meeting convened on December 13, 1960. There are no records, however, to indicate how long a term these positions were to be occupied, nor to indicate which of the positions listed above, other than President, Secretary-Treasurer, and Editor, still existed after the first 3 years of CARCS. Over the 30 years that CARCS existed, five (5) people held the position of President, nine (9) people Secretary-Treasurer, and three (3) people Editor (Table 1). The Editor position was vacant during July 1989 – December 1990, but responsibilities were assumed by the President. Shelly Logier was bestowed the position of Honorary President in January 1973 and maintained that honour until his death in March 1979. Craig Campbell was appointed Vice-President in January 1973, and continued in that position indefinitely. At various times throughout the existence of CARCS, the position of Treasurer was merged with that of President.

Table 1. List of CARCS Presidents, Secretary-Treasurers, and Editors (Nov 1960 – Apr 1991).

President	
Shelly Logier	Nov 1960 - Dec 1961
Bob Lindsay	Jan 1962 - Dec 1966
Bruce M. McBride	Jan 1967 - Dec 1972
Wayne F. Weller	Jan 1973 - Aug 1975 and Jul 1978 - Apr 1991
Craig A. Campbell	Sep 1975 - Jun 1978
Secretary-Treasurer	
Bob Eakin	1960
Alex Findlay	1961; Nov 1964 - Aug 1966
Jim Lovisek	Sep 1966 - Feb 1968
Wayne F. Weller	Mar 1968 - Dec 1972 and Jul 1977 - Apr 1979
Joe Cebek	Jan 1973 - Apr 1973
Vic Palermo	May 1973 - Aug 1975
George R. Francis	Sep 1975 - Jun 1977
Wilhelm Betz	May 1979 - Feb 1983
Penny Johnson	Mar 1983 - Nov 1987
Editor	
Barbara Froom	Nov 1960 - Oct 1987
Kelly Leavesley	Nov 1987 - Jun 1989
Jason Wakelin	Jan 1991 – Apr 1991

Affiliations

It was strongly believed right from the start that if CARCS was to have a strong voice and successfully promote its cause, it should become affiliated with other conservation organizations. On January 28, 1961,

CARCS became a federated club of the Federation of Ontario Naturalists (FON). Over time, CARCS became affiliated with the Canadian Wildlife Federation, the Audubon Society of Canada, and the Conservation Council of Ontario. There is, however, no record as to how CARCS interacted with these Groups, other than the FON which assisted in the early years with printing the Bulletins.

Motto

The title of the very first publication of CARCS became its motto – “LET THEM LIVE”. This 1-page publication stated that “the primary aim of this Society is to encourage the conservation of amphibians and reptiles by efforts to change the public attitude”. The publication went on to say that “they ...” (i.e. the general public) “... need not have a special liking for these lowly creatures, but they should spare their lives and when possible, their habitat”. The motto was promoted at every opportunity.

Logo

Bruce Harding, Chairman of the Art Committee, designed the CARCS logo which was a stylized frog and snake (Figure 1). It is not known why the logo was printed in green ink, but it may have been because of the widely held notion among the general public at that time that all frogs were green. The CARCS logo appeared on all publications of the Society including Bulletins, stationery, envelopes, lapel buttons (Figure 1), pamphlets, and membership and business cards.



Figure 1. CARCS logo (left) and CARCS lapel button (right)

Membership

Membership was open to anyone 16 years of age and older who had an interest in amphibians and reptiles. It was planned that a Junior Branch of CARCS would be established, but it is unknown if a Junior Branch was ever formed. The membership fee in 1960 was \$4.00 per year. At some point in time after 1960 the fee was reduced to \$2.00 per year, but in 1978 it was raised to \$3.00, and remained at that level from that time on.

Membership grew steadily from twenty-one paid members at the December 7, 1960 meeting to 101 members in March of 1979. In 1979, 80% of the membership resided in southern Ontario; 11% resided in Canada but outside of Ontario, and 9% resided in the U.S.A. and Europe. The names of CARCS members as early 1972 and 1979 appeared in the CARCS Bulletin of March-April 1972 (Vol. 10, No.2) and March-April 1979 (Vol. 16, No. 4), respectively. The number of members began to diminish throughout the 1980s, but there is no record of specific numbers. Members were a mix of professionals in various fields related to herpetology, field naturalists, and pet keepers. T.W. (Tom) Thompson, Parks Commissioner for Metropolitan Toronto, was bestowed CARCS' first honorary member for donating the facilities of the Don Valley Golf Club for meetings. At some point in the history of the Society, Shelly Logier and Craig Campbell were bestowed honorary memberships in recognition of their outstanding contributions to Canadian herpetology.

Norris Denman (St. Lambert, Québec) arranged for and personally funded the production of 1000 membership cards (English on one side, French on the other) which were issued to members. He also arranged and funded the production of 5000 business cards which were issued to members prior to 1964. Members were encouraged to give them out to people who had a common interest in promoting the protection of amphibians and reptiles.

CARCS Meetings

There were at least 14 meetings held between the inaugural meeting on November 2, 1960 and April 4, 1962. The first two meetings (November 2 and November 23) were held at the home of Alex and Peggy Findlay. Shelly Logier arranged to hold the next 6 meetings at the Royal Ontario Museum (ROM). Many Executive positions were filled at the third CARCS meeting (the first at the ROM). The 21 people who attended were treated to a display of live snakes (*Boa constrictor* and *Thamnophis sirtalis*). At the fourth meeting on January 4, 1961 a film on the snakes of Canada was shown. The fifth meeting was held on February 1, 1961, and highlights included a presentation by Colonel George Reade (Public Relations Director of the Toronto Humane Society) on the history of the Humane Society and a presentation/display by Bruce McBride of some the amphibians and reptiles in his personal collection. The sixth CARCS meeting was held on March 1, 1961 and included a presentation by Shelly Logier on salamanders which focused on what was known at that time of the taxonomic status of the Blue-spotted/Jefferson Salamander complex; a

presentation by Bob Lindsay on the Blue-tailed Skink; and, a slide show by Glenn Burke on his trip to William Haasts' Miami Serpentarium. At the seventh meeting, held on April 12, 1961, Bruce McBride spoke on the proper preserving techniques used for snakes, turtles, and amphibians to maintain body integrity and colour. The eighth and final meeting at the ROM was held on May 3, 1961. Bob Lindsay gave a presentation on his observations of Musk Turtles which he found to be quite common in Horseshoe Lake near Arden in Frontenac County, Ontario. Alex Findlay gave a presentation on the Black Ratsnake (now Gray Ratsnake, *Pantherophis spiloides*) in Ontario, and brought along a live 6 foot specimen.



Eastern Musk Turtle (photo by Scott Gillingwater)

The venue for ninth CARCS meeting on November 1, 1961 changed from the ROM to the Don Valley Golf Club, and the next 5 meetings were held at the golf club (December 6, 1961; January 3, 1962; February 7, 1962; March 7, 1962; and, April 4, 1962). There is no information to indicate who attended the November 1, 1961 meeting, nor the focus of this meeting. Nature films which focused on snakes were shown at the tenth meeting, December 6, 1961. At the eleventh meeting on January 3, 1962 Bob Lindsay gave a presentation on the Mink Frog, and Keith and Myrna Davies presented a slide show of their recent trip to the reptile department at the Dudley Zoo in England. Allan Life gave a presentation on lizards at the twelfth meeting on February 7, 1962, and Peter Strickland presented a slide show of his live collection of crocodylians he had at his home in Oakville, Ontario. At the thirteenth meeting on March 7, 1962, Elmer Taylor gave a presentation on the reptile display at the Calgary Aquarium, and 2 nature films ("Sands of Central Asia" and "Australia's Coral Wonderland") were shown. At the fourteenth, and last meeting that I have records for, Dr. Gordon Edmond (Associate Curator, Vertebrate Palaeontology, ROM)

gave an illustrated presentation on the origin of amphibians. It would appear that no meetings were held after April 4, 1962.

Pamphlets

Two pamphlets were produce for public distribution. The first, written by Shelly Logier in 1961, was titled "LET THEM LIVE". Fifteen thousand were printed, courtesy of the Canadian National Sportsmen's Show (CNSS) and distributed to museums (particularly the Calgary Aquarium through Elmer Taylor), various aquaria across Canada, Ontario provincial parks, and interested people who came to the Society's exhibit at the FON booth at the 1961 Canadian National Sportsmen's Show in Toronto. The second pamphlet was printed in January 1962 and was titled "THE CARE of TURTLES!". Several hundred of these, along with first pamphlet, were distributed at the 1962 CNSS. This one was directed towards those who bought hatchling turtles from pet stores. Both pamphlets were freely distributed at every public display thereafter. Copies of these pamphlets are available through CHS.

CARCS Bulletin

The Bulletin was the primary means of keeping in touch with the membership. From 1960-63, CARCS published 17 issues. Many of them were undated and unnumbered. Over the period of 1964-88, 5-7 issues were published annually (in most years, 5 issues); however, only 3 issues were published in 1975 and 1989. No Bulletins were published in 1990, and in 1991, its last year of operation, CARCS published only two Bulletins, the last in March/April 1991 (Vol. 27, No. 1). In total, 149 issues of the CARCS Bulletin were published over its 30-year existence. Subject matter was quite varied ranging from distribution, taxonomy, ecological status, habitat, care of native and non-native species in captivity, conservation, snake bite, and current news topics. In the early years, the CARCS Bulletin was printed by the Federation of Ontario Naturalists. Later, the printing was done by a commercial printing company thanks to an annual financial donation by the Canadian National Sportsmen's Show (CNSS). After the CNSS donations ceased, the cost of printing came from membership fees and the Bulletin continued to be printed by various commercial printing companies.

What turned out to become one of the primary purposes of the CARCS Bulletin was to report the results of members' activities. Over the years, articles appeared in the Bulletin on non-Ontario field work conducted in the Prairie Provinces (Cook 1968), Québec (Gaudette 1983), and New Brunswick (McAlpine 1984).

The results of a sample of the field work conducted in the following areas of Ontario appeared in the CARCS Bulletin: northern Ontario (Weller 1987), central Ontario (Cebek 1971; Parent 1986; Weller and Gregory 1965), southern Ontario (Campbell 1967; Oldham 1981, 1989; Palermo 1969; Scallen 1983; Spurr and Smith 1980), and multiple Ontario areas (Campbell 1969, 1971). Over the years, CARCS published 2 supplements to the Bulletin. Bulletin Supplement #1 ("Harmless or Poisonous?") was written by Bruce McBride and published in February 1965. Bulletin Supplement #2 ("Captive Reptiles Present Problems"), written by Barbara Froom, was published in May 1966 and again in March 1970.

What is believed to be a complete set of Bulletins has been deposited in the Library of the ROM, and a complete set was scanned into PDF format, and given to the herpetology group at the ROM.

Activities

The first external activity for CARCS members noted in the material I have is a one-day trip to the Buffalo Zoological Gardens (Buffalo, New York) on Saturday, March 31, 1962. The personal tour through the reptile house was hosted by Clayton Freiheit, Curator of the Buffalo Zoo, and assisted by Bill Leumer, Head Reptile Keeper.

The primary external activity of CARCS was exhibiting at the annual Canadian National Sportsmen's Show (CNSS) held at the Canadian National Exhibition grounds in Toronto each March. The first opportunity to promote CARCS came in March 1961 when the Federation of Ontario Naturalists offered space at their exhibit. An Eastern Foxsnake display was provided by Len May and Bob Vineham, and over the 8 days of the show 4 teams of volunteers answered questions and provided information on the Society, and on amphibians and reptiles in general through the "LET THEM LIVE" pamphlet. In March 1962, CARCS again was provided space at the FON booth, and distributed both of its pamphlets. In addition, Alex and Peggy Findlay hosted a 20-minute live snake show on several evenings in the nearby sports demonstration area. This arrangement with the FON continued for a few years, but in the late 1960s CARCS had its own large portable display that was built and erected in the exhibit gallery. Display animals were borrowed from the private collections of various members, and several members volunteered their time to man the booth each year. In appreciation, volunteers were given a CARCS lapel button to wear and promote the Society.

CARCS participated in the CNSS for 25 consecutive years, the last year being 1986. A number

of factors arose which did not permit continuing beyond 1986. Among them was the cancellation of the waiver of the exhibitors' fee that CARCS enjoyed, the mounting cost of having an electrical contractor hook up electricity to the booth, the request of the CNSS to hold liability insurance because we were exhibiting rattlesnakes, and my accepting employment with Ontario Hydro (now Ontario Power Generation) which did not allow me to take a leave of absence to organize the exhibit and attend the show.

In 1970, CARCS approached the ROM with the suggestion of displaying live amphibians and reptiles at the Museum. The Public Relations and Publicity Department accepted our proposal, and several press releases and public service announcements were made to promote the CARCS exhibit. In total, 11 CARCS members loaned 37 species of Canadian amphibians and reptiles for the exhibit. The animals were displayed in as natural a setting as we could provide. Several other CARCS members helped man the exhibit and answer questions. The exhibit was considered by CARCS members and ROM staff to be very successful, and 21 new members joined the Society. All the time and effort that was devoted to publicizing the exhibit seemed to pay off. Nearly 9,000 people visited the Museum over those 2 days, and ROM staff attributed the CARCS display with bringing in 2,000-2,500 visitors.

CARCS was involved with sponsoring field work. In the early 1970s, a modest sum of money was given to members to help defer travelling expenses to obtain life history and distribution information in various regions of Canada. In 1972, money was allocated to survey in the eastern Townships of Québec (Wayne Weller) and Manitoulin Island (Joe Cebek). Craig Campbell was granted money in 1973 to survey for stream salamanders in the eastern Townships of Québec, conduct a general survey of Point Pelee National Park, study Butler's Gartersnakes (*Thamnophis butleri*) in the Sarnia/London area, and study hybridization between Northern Leopard Frogs (*Lithobates pipiens*) and Pickerel Frogs (*Lithobates palustris*) in the Parry Sound/Waterloo areas. Wayne Weller was granted money in 1973 to survey for late spring breeding amphibians in Georgian Bay areas and northern Bruce Peninsula, and investigate Blanding's Turtles (*Emydoidea blandingii*) at Long Point, Ontario, and Dusky Salamanders (*Desmognathus*) in Pennsylvania. A. Lohse was granted money to survey for amphibians and reptiles in the La Ronge area of northern Saskatchewan, and D. Michalewicz to study the reproductive ecology of Eastern Foxsnakes (*Pantherophis vulpinus*) in captivity. Money was also given to the Ontario Herpetofaunal Summary (OHS) program in the late 1980s to assist with data entry.



Stream Salamanders: Two-lined Salamander (top) and Northern Dusky Salamander (bottom) (Photos by Joe Crowley)

Retirement of CARCS

Membership after the mid 1980s began to diminish as other organizations with a more focused interest in herpetology emerged – namely those interested in care in captivity and captive breeding (e.g. Ontario Herpetological Society; Etobicoke Reptile Club) and those more interested in the biology and conservation of amphibians and reptiles in Canada. The most prominent of these latter groups was the Canadian Association of Herpetologists (CAH). Formed in 1986 at the annual meeting of the American Society of Ichthyologists and Herpetologists in Victoria, British Columbia, this organization consisted largely of professionals, academics and their graduate students, and serious amateurs who were interested in forming an organization with a more scientific approach to the study of herpetology.

In the late 1980s and early 1990s, there was serious interest by members of CAH to respond to the worldwide concern for declining amphibian populations. A subset of the CAH membership devoted to addressing this issue formed a group that became known as Declining Amphibian Populations in Canada (DAPCAN), and met for the first time in Burlington,

Ontario in the fall of 1991. In 1996, the DAPCAN group expanded its conservation interests to include reptiles. To reflect this expansion of interest and concern, the group was renamed the Canadian Amphibian and Reptile Conservation Network (CARCNET). I became quite involved in the DAPCAN and CARCNET efforts, and found that what time I could devote to CARCS became severely limited. With limited time and reduced assistance, I quietly retired CARCS after the publication of its March/April 1991 (Vol. 27, No. 1) Bulletin.

Accomplishments

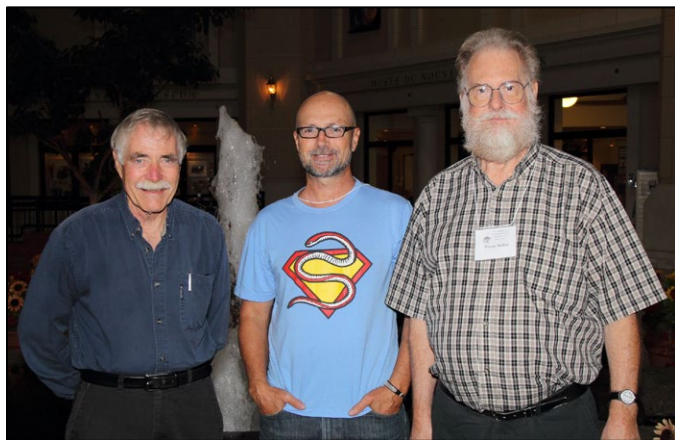
In response to an increased concern in the early 1960s for the conservation of amphibians and reptiles by herpetologists in the U.S.A., CARCS received a letter asking for a list of endangered species in Canada. Barbara Froom asked Francis Cook to compile a list and respond to this request. His response and follow up amendments, which appeared in the February and April 1964 issues of CARCS' Bulletin, were the first efforts to deal with this issue in Canada (Cook 1964a, 1964b).

The extensive field investigations of Craig Campbell at Point Pelee in the late 1960s and early 1970s led to the Blue Racer and Lake Erie Watersnake being listed among the 4 species protected under the first version (in 1972) of Ontario's Endangered Species Act. Without the results of Craig's field work, this would not have been accomplished. The results of the field activities of Craig Campbell and other CARCS members were useful to Barbara Froom for her books on the snakes (Froom 1972), turtles (Froom 1976), and amphibians of Canada (Froom 1982).

In May 1976, the Canadian Nature Federation and the World Wildlife Fund (Canada) co-sponsored a symposium in Ottawa, Ontario to address Canada's threatened species and their habitats. Proceedings of that symposium were published (Mosquin and Suchal 1977). All of the herpetological papers were written by CARCS members: 1) review of the Canadian herpetological scene (Cook 1977); 2) snakes (Gregory 1977); 3) prairie lizards (Scott 1977); 4) frogs and toads (Campbell 1977a); 5) turtles (Campbell 1977b); and, 6) summary observations (Francis 1977). This symposium was the precursor to the formation of the Committee on the Status of Endangered Wildlife in Canada ([COSEWIC] Cook and Muir 1984). CARCS members were invited to write the early versions of COSEWIC status reports for Jefferson Salamander (*Ambystoma jeffersonianum*) (Weller 1985; Rye and Weller 2000) and Massasauga (*Sistrurus catenatus*) (Weller 1986; Weller and Parsons 1991). Several CARCS members continued their studies to examine threats to Canadian

amphibians and reptiles, and published their research on amphibians in Green (1997), and on reptiles in Seburn and Bishop (2007).

CARCS reached out and changed attitudes towards amphibians and reptiles of thousands of people over the years through public exhibits and the distribution of pamphlets, and of dozens of people through membership. Some who joined CARCS in their early years went on to join or form organizations more focused on the herpetocultural aspects of the discipline (e.g. Etobicoke Reptile Club), whereas others went on to have professional or semi-professional careers in herpetology with government agencies, universities, and private environmental consulting firms. Several CARCS members have become closely involved with other herpetological organizations (e.g. CAH, DAPCAN, CARCNET, CHS), and have contributed substantially to our knowledge of amphibians and reptiles in Canada. I shall not list all the people in this group that I am aware of for fear of offending those who I would have left out; however, I do want to acknowledge CARCS members Dr. James P. Bogart (Professor Emeritus, University of Guelph), Dr. Francis R. Cook (Curator Emeritus, Canadian Museum of Nature), and Dr. Patrick T. Gregory (Professor, University of Victoria), all of whom have not only made substantial contributions to herpetology, but also have had bestowed upon them the Blue Racer Award (JPB – 2012; FRC – 2001; PTG – 2006) “in recognition of long-standing contributions to the research and conservation of amphibians and reptiles in Canada”.



Jim Bogart (left), Lesley Anthony (middle) and Wayne Weller (right) (Photo by Joe Crowley)

Acknowledgements

I wish to thank Craig Campbell for providing comments on an earlier version of this work, and Francis Cook for providing his recollections of the early years and his comments on this paper. I am extremely grateful to Barbara Froom for giving me the material she

had, and talking with me about the early years of CARCS. The final version of this article benefitted from the comments of Joe Crowley and Jackie Litzgus.

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Ramblings and Recollections from a Career in Herpetology

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On 8 September 2016 I received an email from Scott Gillingwater informing me that I was to be the recipient of the Canadian Herpetological Society's (CHS) "Michael Rankin Distinguished Canadian Herpetologist Award" for 2016, to be presented at the annual conference at the Toronto Zoo on 17 September 2016. I was totally surprised, humbled, and honoured to

have been selected, especially when I looked over the list of previous recipients. After receiving this news I began reflecting on my herpetological career, early events that influenced me, the many great people I've met along the way, and the herpetological adventures I've had. I thought these recollections might be of interest to some so I decided to write a few of the many memories down.



Michael Oldham receiving the CHS Michael Rankin Award from CHS president, Scott Gillingwater (Photo by Joe Crowley)

I was born in 1956 in a suburb of London, in herpetologically depauperate England. The first eight years of my life were spent in England where I enjoyed nature and the out-of-doors. I recall seeing frogs, toads, and newts in England, though I don't think I ever saw any of the rather few British reptile species in the wild.

Our family moved to Thousand Oaks in southern California when I was eight years old and it was here that my herpetological interest really blossomed. The area around Thousand Oaks consisted of dry, rocky, rolling hills of sagebrush and there were several nearby canyons with streams flowing through them. A couple of friends with similar interests and I spent many days exploring the area looking mainly for reptiles. At the time I was actively involved with keeping a variety of snakes and lizards as pets and my father helped me to construct terraria in which to keep them.

The Thousand Oaks area had a rich herpetofauna and within walking distance of my house I can recall finding Coast Range Newt (*Taricha torosa torosa*), California Slender Salamander (*Batrachoseps attenuatus*), California Toad (*Bufo boreas halophilus*), California Treefrog (*Hyla californiae*), Pacific Treefrog (*Hyla regilla*), California Red-legged Frog (*Rana aurora draytoni*), Bullfrog (*Rana catesbeiana*; introduced), Southwestern Pond Turtle (*Clemmys marmorata pallida*), Great Basin Fence Lizard

(*Sceloporus occidentalis biseriatus*), California Side-blotched Lizard (*Uta stansburiana hesperis*), California Horned Lizard (*Phrynosoma coronatum frontale*), Western Skink (*Eumeces skiltonianus skiltonianus*), California Whiptail (*Cnemidophorus tigris mundus*), California Alligator Lizard (*Gerrhonotus multicarinatus multicarinatus*), Silvery Legless Lizard (*Anniella pulchra pulchra*), Pacific Ringneck Snake (*Diadophis punctatus amabilis*), Western Yellow-bellied Racer (*Coluber constrictor mormon*), California Striped Racer (*Masticophis lateralis lateralis*), Coast Patch-nosed Snake (*Salvadora hexalepis virgulata*), Pacific Gopher Snake (*Pituophis melanoleucus catenifer*), California Kingsnake (*Lampropeltis getulus californiae*), Two-striped Garter Snake (*Thamnophis couchi hammondi*), California Black-headed Snake (*Tantilla planiceps eiseni*), and Southern Pacific Rattlesnake (*Crotalus viridis helleri*). The names used in the preceding list are those used by Robert Stebbins in "A Field Guide to Western Reptiles and Amphibians"; many have subsequently changed. Stebbins' field guide was my bible during my years in southern California. It was published in 1966 and a copy was given to me at Christmas 1967 by my parents.



Western Yellow-bellied Racer (Photo by Joe Crowley)

My parents were wonderfully tolerant of my reptile-keeping hobby. My father is a chemist and mathematician and my mother had her hands full raising five children, of which I am the eldest. Our family enjoyed travelling and camping and I have great memories of the many interesting and beautiful parks we visited and camped in; these trips provided opportunities to encounter different herp species in new places. On one trip north to San Francisco we encountered a large Bullsnake (Gopher Snake) crossing the road. My father stopped the car so I could rush out and catch it. Of course I wanted to take it home, but we had nothing with us big enough to put such a large snake in. My parents ended up emptying a suitcase in which "Big Billy" (as we named him) was housed for

the remainder of the trip. We spent several nights in a motel with “Big Billy” in a suitcase in the motel room closet. We were hopeful that the cleaning lady who tidied the room and made the beds was not the nosey type. On another occasion back in Thousand Oaks while I was at school, my mother came home from shopping and opened the front door to find that one of my captive snakes had escaped and was coiled up on the door mat. Ever resourceful, she found a cardboard box which she put over the snake. When I got home from school I returned the snake to its cage in my room. Soon after that my reptile cages were moved to a shaded and fenced area outside the house.

A strong early influence on my herpetological career was my uncle, Robert S. Oldham. At the time we were in southern California Uncle Rob was at the University of Texas in Austin doing post-doctoral studies in herpetology (Jim Bogart was also studying there at the time). Uncle Rob has a Canadian connection too. He received his Ph. D. in Zoology in 1962 at the University of Western Ontario where he studied spring movements in Green Frogs and American Toads in the London, Ontario, area and in Algonquin Park (Oldham 1962, 1966, 1967, 1969). In Texas, Uncle Rob studied mating call structure and taxonomy in the Leopard Frog (*Rana* [now *Lithobates*] *pipiens*) complex which led to a paper in Science (Littlejohn and Oldham 1968) and ultimately to the description of a new species, the Plains Leopard Frog (*Rana* [*Lithobates*] *blairi*), named for his supervisor, W. Frank Blair (Mecham *et al.* 1973).

After Austin, Texas, Uncle Rob moved to the University of Ibaden in Nigeria where he taught zoology, and I saw little of him in the years to come. I did spend a memorable few months with my uncle, his wife Elaine, and their five children in 1975 when my younger brother, Paul, and I visited him in Ibaden. I was 18 at the time and in high school. After a month in Nigeria, Paul and I accompanied Rob and Elaine and their children on a three-month adventure driving in two Land Rovers from Ibaden to England. The herpetological specimens we collected during that trip now reside at the British Museum in London, England. Uncle Rob spent the remainder of his career at De Montfort University, Leicester, England, studying amphibian biology and teaching zoology. Uncle Rob still studies local amphibians in the ponds and wetlands near his home at The Rectory, Coleorton, in Leicestershire, where my wife, Mireille, and I visited him and Auntie Elaine in March 2016.

After five years in Thousand Oaks, California, our family moved to Peterborough, Ontario in September 1970, where my father taught chemistry at Trent University. I remember Dad telling us that when he was

applying to various universities for academic positions, he was offered two, one at the University of Malaya in Kuala Lumpur, and the other at Trent University. I occasionally wonder how my life would have turned out had we moved to Malaysia! When we moved to Peterborough, I started grade 9 at Adam Scott Collegiate and Vocational Institute. I knew little about Canada and much less about its herpetofauna back then but assumed that there would be few if any herps in the area. I was pleasantly surprised when we went for a family drive north of Peterborough to the Buckhorn area on a warm sunny day, 20 September 1970. That day we encountered three snake species, Eastern Gartersnake (2 live and 15 DOR [dead-on-road]), Northern Watersnake (2 DOR), and Eastern Milksnake (1 DOR). These are my earliest Ontario herp observations and are recorded in the Ontario Herpetofaunal Summary (OHS) database. During my high school years in Peterborough I explored the county finding a variety of interesting herps (32 species).



Northern Watersnake (top), Milksnake (middle) and Eastern Gartersnake (bottom) (Photos by Joe Crowley)

A major source of encouragement during my high school years was Dr. Francis R. Cook, Curator of Herpetology at the National Museum of Natural Sciences in Ottawa. I first wrote to Francis in September 1972 and he wrote back asking to hear about my herpetological observations from the Peterborough area. From then on we corresponded frequently and Francis wrote me many detailed and helpful letters and provided me with formalin and jars so that I could collect road kills and other specimens for the Museum. In June 1974 the American Society of Ichthyologists and Herpetologists (ASIH) met in Ottawa and I was excited to attend my first scientific conference and meet Francis for the first time.

Like many, I was not too sure what I wanted to do after high school, but since biology was my favourite subject in high school I enrolled in the "Fish and Wildlife Biology" program at the University of Guelph. Probably the greatest factors influencing my decision to go to Guelph were the facts that it had an undergraduate course in herpetology and a meeting with Dr. James (Jim) P. Bogart. I still had a collection of live reptiles during my high school years and was unsure what I was going to do with them when I moved into a university residence. Jim said I could keep them in one of the zoology annex buildings where he and graduate student, Dave Servage, kept various herps that were being used for research and for the herpetology course. Jim also offered me a part-time job caring for the herps in the zoology annex, so several times a week I would spend an hour or two cleaning aquaria and cages and feeding the interesting collection of native and exotic amphibians and reptiles.

My university years at Guelph were great and it was there that my interests broadened considerably. In my last couple of years of high school I had started to get interested in birdwatching, initially through a chance meeting with Peterborough birder, Doug McRae, who was about my age. I took courses in botany, entomology, ornithology, ichthyology, mammalogy, and of course, herpetology, and enjoyed them all, though struggled through other courses such as chemistry, physics, genetics, and biostatistics.... My favourite teacher was Dr. Ron Brooks and my favourite course his "Animal Evolution". I felt honoured later in life to work with Ron as a member of COSEWIC (Committee on the Status of Endangered Wildlife in Canada) and COSSARO (Committee on the Status of Species at Risk in Ontario).

Several summer jobs in high school and university helped convince me that field studies in natural history and biology were my biggest passion. I worked at two different children's summer camps as a camp counsellor (nature instructor) for three summers: in 1974 at Camp

Ponacka near Bancroft north of Peterborough; and 1977 and 1979 at Camp Hurontario in southern Georgian Bay. Camp Hurontario in particular was a herpetologist's paradise with a wide variety of species, including most of those found in the province. At Camp Hurontario in 1977 I initiated a mark-release-recapture project on a local Spotted Turtle population with the other biology instructor, Gerry Bird. We continued the project intermittently from 1977 to 1986 and I was delighted when Jackie Litzgus began to study the population in 1992 for her M. Sc. studies (with Ron Brooks) and she and her students continued to study it for many more years. During the summer of 1978 I worked as a park naturalist at Arrowhead Provincial Park near Huntsville, Ontario, another influential summer job and my first employment with the Ontario Ministry of Natural Resources (OMNR). In the summer of 1980 I was employed by the Metropolitan Toronto Region Conservation Authority as a Crew Leader working on a study of Environmentally Sensitive Areas in Metro Toronto.

I graduated from the University of Guelph in 1980 with an Honours B. Sc. and considered postgraduate studies but decided instead to seek employment in the field of biology. My first job after graduating was a contract with the Essex Region Conservation Authority (ERCA) to conduct a survey of Environmentally Significant Areas (ESAs) of the Essex Region. This was a great job since it was mainly out-of-doors surveying local natural areas and allowed me to continue to develop my growing interest in birds, botany, and other aspects of natural history, plus I was working in the most southern county in Canada, an area rich in herps and many rare species. I was close to Pelee Island, one of my favourite places in the province, as well as other interesting natural areas such as Point Pelee National Park and Ojibway Prairie.

Herpetological adventures in the early 1980s in Essex County including visiting Pelee Island in 1982 with Craig Campbell of Waterloo. Craig was a wealth of knowledge concerning Ontario herpetology and natural history; he wrote many of the first status reports on various reptile species at risk in the province in the 1970s (e.g. Spotted Turtle, Eastern Spiny Softshell, Butler's Gartersnake, Queensnake, Blue Racer, Lake Erie Watersnake, Black Ratsnake) and was an early mentor. We resurveyed all the sites on Pelee Island where Craig had heard Blanchard's Cricket Frogs in the 1970s (about 20), and we heard and saw them at only a single site on the island. There are few reliable reports since then and the species is now considered extirpated from Canada. Craig and I collaborated on the first COSEWIC status report on Blanchard's Cricket Frog in

Canada (Oldham and Campbell 1990). In the early 1980s I was also visited by Mike Rankin and Fred Schueler on a collecting trip from the National Museum. I took them to several natural areas in the Essex region and we found an Eastern Foxsnake in Windsor which was later painted by Aleta Karstad for the book on Canadian amphibians and reptiles which Francis Cook is working on. On 30 June 1988 I was delighted to be able to show Francis (and Mike Rankin) his first wild Softshell Turtle in Canada when we saw one basking on the Fanshawe Dam spillway in London.



Michael Oldham with his first wild Blue Racer, Pelee Island, 28 April 1980.

My initial one-year contract with ERCA was extended and I ended up working there from 1981 to 1982, but eventually the ESA report was completed and I found myself unemployed. I prepared a few reports on contract with OMNR, including the first COSEWIC status report on Spotted Turtle (Oldham 1982), but was unable to find a full-time job. I decided to go back to school and in 1983 enrolled in an M. Sc. program at York University under the supervision of herpetologist Dr. Lawrence (Larry) E. Licht. My Masters project involved looking at the breeding behaviour of the confusing *Ambystoma* salamanders on Pelee Island (*A. laterale*, *A. texanum*, and polyploids) and relating this behaviour to genetic data in collaboration with Jim

Bogart. I spent a spring (1984) field season on Pelee Island, but later in 1984 ERCA received approval from their board to create their first full-time biologist position and that fall I somewhat reluctantly left York University to accept the biologist position at ERCA.



Michael Oldham, May 1984, with an Eastern Foxsnake during an interpretive program for the Essex Region Conservation Authority.

I worked as ERCA Biologist from 1984 to 1987, and during that period the Ontario Herpetofaunal Summary (OHS), Ontario's (and North America's) first volunteer-based amphibian and reptile atlas project, was started. Don Sutherland (now a colleague at NHIC) and I first came up with the idea as the province's first five-year Breeding Bird Atlas project was winding down. We were both involved in the bird atlas as were many Ontario naturalists and thought we would try and harness this energy and enthusiasm and encourage bird atlasers and others to gather data on herps. In early 1984 we sent out letters to about a hundred Ontario naturalists asking them to keep track of their herp observations for the year and send us their observations after the field season.

The response exceeded our expectations and 2,460 records were submitted by 169 contributors in 1984. This grew to 4,524 records from over 300 contributors in 1985 and 6,136 records from 586 contributors in 1986. The OHS never had any paid staff and a tremendous amount of time and effort was contributed by a small group of volunteers to keep the project going from the mid-1980s to the mid-1990s. Key volunteers included Gary Allen, Peter Carson, Mary Gartshore, James Kamstra, Ross MacCulloch, Martyn Obbard, Don Sutherland, and Wayne Weller. Wayne Weller, in particular, was a major force in keeping the OHS going. He encouraged us to move into the computer age at a

time when personal computers were in their infancy. Initially records were submitted either by typed or hand written letters (pre-email days) or on printed 4 X 6" data cards which we supplied to observers. Maps in our first annual report were prepared using Letraset dots (younger readers may have to Google this!) and species accounts were prepared on an electric typewriter (another obsolete device!). With Wayne's help we began entering sightings into a computer database, initially dBase III then FoxPro, and we moved into the computer mapping age (with assistance from Phil Taylor, then at the University of Waterloo). The OHS project also received bits and pieces of funding which allowed us to print data cards for recording and submitting observations as well as producing newsletters and reports. Key funders included the World Wildlife Fund (thanks to Stephen Price), OMNR (under CWIP, the Community Wildlife Involvement Project), ERCA, and Carolinian Canada. Annual reports were produced summarizing and mapping records received in 1984, 1985, and 1986; these were favourably reviewed by Francis Cook in *Canadian Field-Naturalist* (Cook 1991).

The OHS project was a great motivator for getting into the field and exploring new areas. There were always 10 X 10 km atlas squares that lacked observations of even the most common species and many weekends were spent "square bashing" trying to fill in these gaps. A personal goal of mine was to find and photograph in the wild all extant Ontario herp species and with two summers in Georgian Bay in the late 1970s and time spent on Pelee Island in the early 1980s I had almost achieved that goal before the OHS started. The last species I needed was Wood Turtle and one weekend in spring 1986 I drove from Essex to eastern Algonquin Park in search of the species. I came as close as finding a badly crushed road-kill on a logging road (now in the National Museum), but this didn't count. Two years later I was finally able to add this species to my life list. Another big miss was in 1989 when James Kamstra, Ken Towle, and I planned a weekend square bashing trip in Niagara Region. We had a productive Saturday but towards the end of the day I was feeling somewhat under-the-weather and decided to head home. The next day James and Ken rediscovered Northern Dusky Salamander in the province in the Niagara Gorge (Kamstra 1991). I was able to see this species in the province a couple of weeks later on a subsequent trip with James and Wayne Weller.

The OHS project was initially based at ERCA, but followed my career moves to OMNR offices in London (where I was Assistant Regional Ecologist from 1987-1989 and supervised and mentored by Paul Prevett), Aylmer (where I was District Ecologist from 1989-1993

under the supervision of Brad Graham, another great boss), and finally to the Natural Heritage Information Centre (NHIC), in Peterborough (1993-present). The NHIC is Ontario's conservation data centre (CDC) and even before a CDC existed in Ontario I was keen to work there. I had heard about CDCs and their mandate to gather, enhance, and disseminate species occurrence and other data to inform conservation decisions from attending herpetology and conservation biology meetings and conferences in the U.S., and it was always my hope that CDCs would eventually come to Canada (they now exist in all Canadian provinces and territories). I applied for the position of Botanist when the NHIC first came into existence in 1993, since by then I had a growing interest in botany, however I still wanted to continue my work with the OHS and other herp conservation projects. When I was initially hired at NHIC my position title was "Botanist-Herpetologist", thanks to the first NHIC co-ordinator, Ian Kirkham.



Michael Oldham, summer 1989, a trip leader at the Federation of Ontario Naturalists (now Ontario Nature) summer camp on the Bruce Peninsula, having just waded thigh deep into a swamp to show participants a Northern Watersnake.

As well as the OHS, I was involved in other herp conservation efforts including several species at risk recovery teams. I co-chaired the Eastern Spiny Softshell Recovery Team with Martyn Obbard and was also a

member of the Blanchard's Cricket Frog, Fowler's Toad, and Dusky Salamander Recovery Teams. One of the most rewarding aspects of my career in conservation was involvement with COSEWIC and COSSARO. I served as a member of the COSEWIC Amphibians and Reptiles Species Specialist Committee (SSC) for six years and as a member of the Plants SSC for more than twenty years. For more than a decade I attended the COSEWIC Species Assessment Meetings twice a year, initially to assist Ontario's COSEWIC member, Irene Bowman, then as Ontario co-member with Alan Dextrase, her successor, and later as sole Ontario member for several years. For fifteen years I was a member of the provincial COSSARO committee. Serving on these committees with other dedicated conservation biologists and deciding on the national and provincial status of various plant and animal species was a most educational and rewarding experience.

Another enjoyable aspect of the various positions I've held has been the opportunity to interact with and mentor many summer students, interns, high school co-op students, university undergraduates and graduate students, and volunteers. Many have gone on to their own careers in biology and conservation, including a few to careers in herpetology such as Raymond Saumure, Tanya Pulfer, and Joe Crowley. If I have provided significant assistance or motivation to others in their conservation projects or careers then my own career has been worthwhile.

From my early herpetological experiences roaming the hills in southern California to the present, perhaps my greatest passion is exploring new (or familiar) areas in search of interesting species. The various jobs I've had have always included a fieldwork component and I've taken advantage of opportunities to get to remote parts of the province and contribute to a better understanding of the distribution and status of Ontario's flora and fauna. Ever since the OHS started in 1984, I've recorded virtually every herp I've seen or heard in Ontario and have submitted over 16,000 personal herp records to the OHS and more recently to the Ontario Reptile and Amphibian Atlas (ORAA) covering all extant Ontario species and over a large part of the province (Figure 4).

I was especially proud to have been honoured at the same CHS meeting where others who have inspired and motivated me also received awards. Jackie Litzgus received the CHS "Blue Racer Award" and I am so pleased that my marking of Spotted Turtles in Georgian Bay in the late 1970s and early 1980s laid the groundwork for her own research on the same population. Bob Johnson has always been an inspiration during my career and it was great to see him honoured,

appropriately at a CHS meeting at the Toronto Zoo. Jeffrey Rowell certainly deserved the new CHS "Shelley Logier Award" for his amazingly thorough and encyclopedic book on the "Snakes of Ontario" and I was very pleased to have been able to assist Jeff with some aspects of the book.

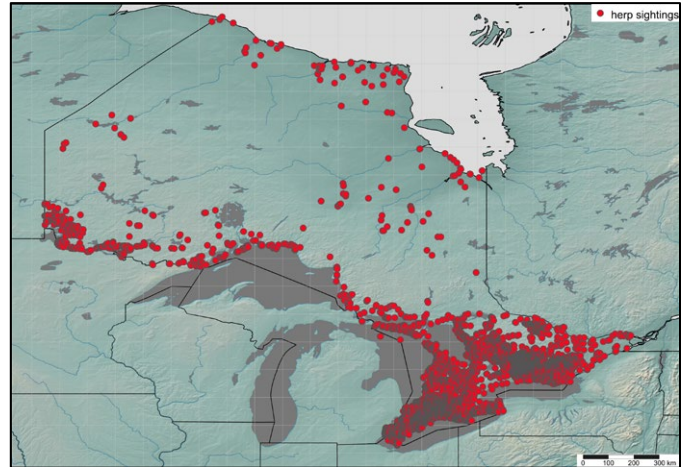


Figure 4. Locations in Ontario with one or more herp records submitted by Michael Oldham to the OHS or ORAA.

Finally, I'd like to thank my parents for putting up with snakes in their house and the other things that went with raising a budding herpetologist. My wife, Mireille, and our children, Veronique and Robert, have tolerated my long absences for fieldwork and evening and weekend hours spent at the computer or working on specimens in the basement.

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Blue Racer (Photo by Michael Oldham)

FIELD NOTES

An Instance of the Spotted Salamander (*Ambystoma maculatum*) Overwintering in the Larval Form in South-central Ontario

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The Spotted Salamander (*Ambystoma maculatum*) is a spring breeder. Following thaw these animals migrate to aquatic breeding sites, mate nocturnally over a brief period, deposit their eggs, and then return to their terrestrial woodland haunts. Eggs hatch within a matter of weeks, and the gilled larvae feed and grow in these aquatic sites until metamorphosis later that season. A more thorough review of this species' breeding biology is outlined in Petranka (2010).

On December 6th, 2015 I found five larval Spotted Salamanders in a small spring in central Parry Sound District. The pool (Figure 1) is approximately 2x2 m and is beside a low-traffic rural road in spruce and fir forest. The maximum depth is approximately 50 cm, although the substrate is extremely soft and constitutes an additional measure of depth. The pool has never been observed to freeze over 17 years of casual observation, and contains cool water in the summer. This suggests that the pool is fed by stable, low-temperature groundwater. The spring is anecdotally said to have been dug by humans earlier in the century for cattle to drink from when this parcel of land was farmed.



Figure 1. Spring containing overwintering *A. maculatum* larvae.

The larvae were in the late-stages of development (Mills 2016). They lacked balancers and had all limbs fully formed with toe differentiation (Figure 2). Interestingly, at least some of these larvae were still

present in the pool on May 26th, 2016. These larvae could not have been from a breeding event a month earlier (the typical breeding time for *A. maculatum* at this site). No breeding adults oviposited in this pool in spring 2016 and the larvae were too large and well-developed to have been only ~4 weeks old. Small numbers of adult Green Frogs (*Lithobates clamitans*) regularly overwinter in this pool, and an adult American Bullfrog (*Lithobates catesbeianus*) has been observed to also use this as a hibernation site.



Figure 2. Two of the larvae that spent the winter of 2015-2016 in this pool, photographed on May 26th, 2016.

It is unusual to see *A. maculatum* still in a larval form during the winter, but this phenomenon has been documented by others. Whitford and Vinegar (1966) documented overwintering larvae in Rhode Island, as did Ireland (1973) in Arkansas. Stangel (1988) noted this phenomenon in Massachusetts, Phillips (1992) in Missouri, and Bleakney (1952) in Nova Scotia. It appears that low water temperatures [and/or low access to food] is what slows larval development and can illicit certain individuals to remain in the larval stage while they overwinter. I suggest this is likely the mechanism in the cool, small, and barren pool discussed here. If these larvae were laid as eggs at a typical time for this site (late April), overwintered, and were still in the larval form in late May of 2016 it suggests the pre-metamorphic interval for these individuals was at least 13 months.

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Of Curbs and Hatchling Turtles: a Lesson in Working with the System

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It is often said that you can't fight city hall. Whether that is true or not, sometimes you can motivate the powers that be.

For some time now it has been known that many hatchling Snapping Turtles (listed as Special Concern under both the Species at Risk Act and the Ontario Endangered Species Act, 2007) are killed on a road to a water filtration plant in the city of Ottawa. Female Snapping Turtles emerge from the small lake at the site every June to find nesting locations. Although the females may head in any direction, many of them head north from the lake and lay their eggs in the gardens and open areas around the filtration plant. Every fall the eggs hatch and the hatchlings disperse. Hatchlings may only have to trek a few metres to find water when nests are laid close to the lake, but other hatchlings must cross the road to make it to the lake. Being hit by a car, even on a low traffic road, is always a risk, but a larger problem was the road's curb. Hatchlings could easily get onto the road by tumbling down from the curb on the north side of the road but those hatchlings that safely made it across the road faced a big problem: how to get up the curb and off the road on the opposite side. The standard, suburban curb is only about 10 cm tall, but from the viewpoint of a 3 cm long hatchling, it is an

insurmountable cliff. Hatchlings could follow the curb, hoping to find a gap, but this might be 10 m or more away. As a result, many hatchlings died on the road under the hot sun.

The Conservation Committee of the Ottawa Field-Naturalists' Club worked with the city on this issue and a solution has now been put into place. The city removed the existing vertical curbs along the south side of the road and installed sloped curbs (Figure 1). The gradual slope to these curbs means that hatchling Snapping Turtles will be able to cross the road, climb up the curb, and continue their trek to Mud Lake. How did we achieve this success? Simple: we wrote a letter to the mayor. The letter was polite, but very detailed in explaining the issue and the fact that it involved a federally listed species at risk. As a result, city staff were willing to work with us. Possible solutions were discussed at one meeting on site, and then a few months later, new curbs were installed (Figure 1).

The Ottawa Field-Naturalists' Club has a long history in the city and is not considered a fringe group. Our letter seems to have caused the mayor to tell his staff to solve this problem. The message seems very clear: a polite but assertive letter from a well-respected local group to the person at the top can make things happen. Too often we feel that problems are insurmountable. In our case, focusing on the right person, the mayor, who could make decisions, meant that staff were authorized to solve a problem. If we had started with the city environmental staff they would likely have told us there was nothing they could do. When dealing with your next conservation issue, don't be afraid to go to the top. Also, consider that a letter from a recognized group may carry more weight than a letter from an individual. If a local group is not available to assist with submitting a letter, the CHS conservation committee is willing to help with relevant issues.



Figure 1. Sloped curb installed at a site in Ottawa. Toy turtle (8 cm carapace length) for scale.

THESIS ABSTRACTS IN CANADIAN HERPETOLOGY

TCH publishes abstracts of recently completed Honours, M.Sc., and Ph.D. theses from Canadian universities and professors. Students or their supervisors are invited to send abstracts to the Editor.

Gasbarrini, D.M.L. M.Sc. 2016. Laurentian University (Co-supervisors: D. Lesbarrères and J.D. Litzgus)

Investigation into the causes of a mass mortality of a long-lived species in a Provincial Park and an evaluation of recovery strategies

Mass mortality events (MMEs) are rapidly occurring and localized events, and have been reported to remove up to 90% of individuals in a population. MMEs can be especially damaging to population persistence for long-lived species, such as chelonians. While MMEs have been regarded as rare events, they are predicted to occur with increased frequency as environmental stochasticity associated with climate change increases. Unfortunately, a limited understanding of the causes and consequences of MMEs remains. In the current thesis, I investigated the potential causes of an acute MME of at-risk Blanding's turtles (*Emydoidea blandingii*) at Misery Bay Provincial Park on Manitoulin Island, Ontario in which approximately 50% of the population succumbed to mortality, and used population viability analyses (PVAs) to examine strategies to recover the population. Because the park includes relatively pristine habitat in which most of the regular anthropogenic threats to turtles are absent, the hypotheses I tested to explain the mortality considered natural threats, including disease, failed overwintering, and predation in the winter and active seasons. I determined that the most likely cause of death was a large-scale predation event, which received support from several lines of evidence, including the presence of predators within the park, a failed predation attempt on a live Blanding's turtle, and the meticulous destruction of a turtle decoy stationed where carcasses were found. The recovery strategies examined included nest protection, introduction of juveniles, introduction of adults, and a nest protection plus introduction of juvenile combination strategy. PVAs determined that the most effective recovery strategy for this population would be a combination of nest protection and the annual introduction of 25 two-year-old females for a period of 50 years. The information gained through my study has led to the recommendation of appropriate

conservation strategies for this population, and will aid in the management of future MMEs elsewhere.

Heney, P.S. B.Sc. 2016. Trent University (Supervisor Dennis L. Murray).

Fluctuating asymmetry in Spotted Salamander (*Ambystoma maculatum*) spot patterns in response to predation risk

Stress has been correlated with increased fluctuating asymmetry (FA) in a number of taxa, but tests in amphibians have been largely correlational and their results equivocal. We tested the hypothesis that predator-induced stress altered the FA of spotted salamanders (*Ambystoma maculatum*) by exposing larvae to perceived predator risk in the lab and testing for differences in bilateral symmetry in the post-metamorphic head and dorsal spot pattern. We found that individuals exposed to predation risk in the larval stage had greater levels of FA in the head spot pattern, but not in the dorsal spot pattern, post-metamorphosis. This outcome persisted for several months post-metamorphosis, although we noted that an individual's spotting pattern itself varied through the 6 months following metamorphosis. This study is among the first to reveal expression of FA in amphibians exposed to perceived predation risk, and future research should investigate how other stressors (both natural and anthropogenic) may affect FA in amphibians, and whether the location and duration of the FA response varies according to stressor type and conditions of exposure.

Hughes, G.N. M.Sc. 2016. Laurentian University (Supervisor: J.D. Litzgus)

Navigating the thermal landscape: Thermo-spatial ecology of Wood Turtles (*Glyptemys insculpta*) in the north

Thermal ecology studies of ectotherms, like turtles, have typically focused on a species' thermal preferences and tolerances, or on thermoregulation site selections; only recently have landscape-scale thermal ecology studies been performed. I examined the spatial and nesting ecology of wood turtles in Sudbury District of Ontario, Canada, in a thermal context. I also measured the thermal impacts of natural resource extraction on wood turtle habitat. Wood turtles (*Glyptemys insculpta*) cover a wide variety of terrestrial and aquatic habitats during their annual cycle, making them ideal for thermo-spatial studies. I tracked movements and thermal use of

15 radio-tagged adult turtles during the active season, comparing their selections to temperature monitoring stations spread in an array across the study area, to determine if the turtles are navigating a thermal landscape. Temperature had minimal influence on home range-scale movements, but possibly influenced movements at a smaller spatial scale. I compared the thermal landscape (using thermal imagery), soil moisture, and grain size distribution of 3 nesting beaches to determine the strongest predictor of nest-searching behaviour. Temperature range appeared to be an important cue, but females were apparently using a suite of cues to select their nest sites. I mapped the thermal landscapes of six sites: two relatively undisturbed wood turtle habitat sites, two recently-harvested forestry sites, and two active gravel pits, to find the effects of resource harvesting on wood turtle habitat. The undisturbed sites were cooler and less variable than the disturbed sites, and provided higher-quality thermal habitat. My results support the findings of previous studies: that temperature is a stronger driver of turtle behaviour at the micro-habitat scale than the home range scale, and that soil temperature co-varies with soil structural variables at the micro-habitat scale. The data from the habitat mapping provide useful information for conservation efforts when mitigating or rehabilitating wood turtle habitat.



Wood Turtle (Photo by Scott Gillingwater)

Kelly, D.O. M.Sc. (Cognitive and Behavioural Ecology). 2016. Memorial University of Newfoundland (Supervisor: I.G. Warkentin)

Potential impact of invasive anuran species in western Newfoundland

Successful establishment and dispersal of invasive anurans (frogs and toads) may be influenced by competitive exclusion and/or niche differentiation with competing species. I investigated the dispersal of

anurans in western Newfoundland using anuran calling surveys and pond-edge transects. The Mink Frog, *Lithobates septentrionalis*, had dispersed ~50.0 km northeast from the original (2001) discovery location and ~34.0 km southwest; displaying spatial separation from Green Frogs, *Lithobates clamitans*, at landscape and local scales. I also assessed the impact of varying tadpole densities on removal of epilithic periphyton by providing epilithon covered substrates for American Toad, *Anaxyrus americanus*, tadpoles raised in laboratory or field enclosures. Higher tadpole densities resulted in smaller tadpoles that removed more organic material from substrates. As the anuran populations expand their range in insular Newfoundland there may be effects on ecological resources for vertebrate and invertebrate competitors.

McCurdy-Adams, H.L. M.Sc. 2016. Laurentian University (Supervisor: J.D. Litzgus)

Anthropogenic effects on chronic stress and nest predation patterns in freshwater turtles

Human altered landscapes contribute to direct and indirect threats on wildlife populations. Chronically high stress, an indirect threat, has been associated with decreased fitness. I examined chronic stress in Midland Painted Turtles (*Chrysemys picta marginata*), Snapping Turtles (*Chelydra serpentina*), and Blanding's Turtles (*Emydoidea blandingii*) in areas with varying densities of anthropogenic structures in Muskoka, Ontario. Enzyme immunoassays were run, in partnership with Dr. Gabriela Mastromonaco (Toronto Zoo), on turtle claws to obtain concentrations of corticosterone (CORT). Most Snapping Turtles had above-minimum CORT, and male Midland Painted Turtles and Blanding's Turtles had relatively high CORT levels. Anthropogenic density did not seem to affect CORT levels, but more research needs to be done to understand the complex relationships. I also determined the rate and pattern of nest depredation, a direct threat, throughout egg incubation in areas of varying anthropogenic densities. Nest depredation occurred throughout egg incubation and relative nest mesopredator abundance did not differ among sites with varying anthropogenic densities. Contrary to some nest caging protocols, my findings suggest that nest cages should be kept on nests until the turtles hatch and priority should be given to caging nests in low road density areas to help increase population recruitment. Understanding indirect and direct threats to turtles can help inform mitigation strategies to improve their fitness.

RECENT PUBLICATIONS IN CANADIAN HERPETOLOGY

TCH lists recent publications by Canadian herpetologists working in Canada and abroad. Please send to the Editor a list of your recent papers, and send citation information for new papers as they come hot off the presses.

- Brown M.G.C. and D.V. Beresford. 2016. Unusually high trap catches of a snake egg parasitoid, *Necrophorus pustulatus* (Coleoptera: Silphidae) in the Frontenac Axis population of Gray Ratsnake *Pantherophis spiloides*. *Canadian Wildlife Biology & Management* 5(2): 25-31.
- Colley, M., S. Lougheed, K. Otterbein, and J.D. Litzgus. 2016. *Nerodia sipedon sipedon* (Northern Watersnake). Reproduction / Arboreal mating. *Herpetological Review* 47(1): 149-150.
- Hughes, G.H., L. Monck-Whipp, and J.D. Litzgus. 2016. *Glyptemys insculpta* (Wood Turtle). Potential anting behavior. *Herpetological Review* 47(3): 445-446.
- Hughes, K.D., S.R. de Solla, D.V.C. Weseloh, and P.A. Martin. 2016. Long-term trends in contaminants in aquatic wildlife in the Hamilton Harbour area of concern. *Aquatic Ecosystem Health and Management* 19: 171-180.
- Laverty, J.F., B. Korol, and J.D. Litzgus. 2016. Measuring the effects of water-based recreation on the spatial ecology of Eastern Musk Turtles (*Sternotherus odoratus*) in a Provincial Park in Ontario, Canada. *Copeia* 104(2): 440-447 (doi: 10.1643/CE-15-284).
- Letcher, R.J., Z. Lu, S.R. de Solla, C. Sandau, and K.J. Fernie. 2015. Chlorinated and brominated contaminants and metabolites and thyroid hormone in the plasma of snapping turtles (*Chelydra serpentina*) from sites in the Laurentian Great Lakes. *Environmental Research* 143: 266-278.
- Marchand, K.A., C.M. Somers, and R.G. Poulin. 2015. Sightings of non-native red-eared sliders in Wascana Marsh, Regina, Saskatchewan. *Blue Jay* 73:186-187.
- Marchand, K.A., A. Stulberg, C.M. Somers and R.G. Poulin. 2015. *Chrysemys picta bellii* (Western Painted Turtle). Record Carapace Length. *Herpetological Review* 46(4): 617.
- Mathieu-Denoncourt, J., C.J. Martyniuk, J.R. Loughery, V. Yargeau, S.R. de Solla, and V.C. Langlois. 2016. Lethal and sublethal effects of phthalate diesters in *Silurana tropicalis* larvae. *Environmental Toxicology and Chemistry* 35(10): 2511-2522. doi: 10.1002/etc.3413
- Mathieu-Denoncourt, J., S.R. de Solla, and V.S. Langlois. 2015. Chronic exposures to monomethyl phthalate in Western clawed frogs. *General and Comparative Endocrinology* 219: 53-63.
- Moldowan, P.D., R.J. Brooks, and J.D. Litzgus. 2016. Quantification of cranial and tomiodont dimorphism in Testudines using the Midland Painted Turtle (*Chrysemys picta marginata*). *Zoomorphology* 135: 499-510. doi: 10.1007/s00435-016-0320-0
- Mui, A.B., C.B. Edge, J.E. Paterson, B. Caverhill, B. Johnson, J.D. Litzgus, and Y. He. 2016. Nesting sites in agricultural landscapes are a potential sink for turtle populations. *Canadian Journal of Zoology* 94: 61-67 (doi: 10.1139/cjz-2015-0154).
- Riley, J.L., J.H. Baxter-Gilbert, C. Guglielmo, and J.D. Litzgus. 2016. A novel approach for measuring body condition of snakes using quantitative magnetic resonance. *Journal of Herpetology* (in press doi: 10.1670/15-113).
- Sasaki, K., D. Lesbarrères, C. Tremblay Beaulieu, G. Watson and J.D. Litzgus. 2016. Effects of a mining-altered environment on individual fitness of amphibians and reptiles. *Ecosphere* 7(6): e01360 (doi: 10.1002/ecs2.1360).
- Wang D, S.R. de Solla, M. Lebeuf, T. Bisbicos, G.C. Barrett, and M Alae. In press. Determination of linear and cyclic volatile methylsiloxanes in blood of turtles, cormorants, and seals from Canada. *Science of the Total Environment* 574: 1254-1260. doi: 10.1016/j.scitotenv.2016.07.133



Texanum-dependant Unisexual Salamander from Pelee Island
(Photo by Patrick Heney)

NEWS AND ANNOUNCEMENTS

2016 CHS Award Recipients

Joe Crowley

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This year we had the pleasure of presenting awards to several very deserving individuals who have made truly outstanding contributions to the field of herpetology in Canada. Dr. Jacqueline Litzgus was presented with the Blue Racer Award in recognition of significant contributions to reptile and amphibian research and conservation in Canada. Dr. Litzgus, a professor at Laurentian University, has been a leader in Canadian herpetology for many years and has established Laurentian University as an entirely new and respected centre of regional and Canadian herpetology. Mike Oldham was presented with the Michael Rankin Distinguished Canadian Herpetologist Award for significant and long-term contributions to Canadian herpetology. Mike has played a major role in the field of Canadian herpetology for several decades, from shaping our knowledge of species distributions to assessing the national and provincial conservation status of species.

The first E.B.S. Logier Communications Award was presented to Jeffrey C. Rowell for his groundbreaking publication "The Snakes of Ontario: Natural History, Distribution, and Status". This outstanding contribution to scholarly knowledge of Ontario snakes covers the biology, history, biogeography, threats and a synthesis of the known history of snakes in Ontario and is, by far, the most complete book on the snakes of Ontario ever written.

The Silver Salamander Award is presented to an individual or an organization in recognition of a specific contribution to the conservation of amphibians and reptiles in Canada. We had many outstanding individuals and programs to choose from, and three Silver Salamander Award winners were selected this year. Bob Johnson received a Silver Salamander Award for the creation of the Adopt-a-Pond Programme, which has become one of the longest-running and most influential reptile and amphibian conservation initiatives in Canada. Sue Carstairs accepted a Silver Salamander Award on behalf of the Ontario Turtle Conservation Centre for their long-term contributions to turtle conservation in Ontario. Dr. Anthony (Tony) Braithwaite has been volunteering his time and veterinary expertise to implant radio-transmitters in snakes since the mid 1990s, and he also received a Silver Salamander Award in recognition of his long-

term and extensive volunteer contributions to snake research in Ontario.



Andrew Lentini (left) and Scott Gillingwater (right) presenting Bob Johnson with a Silver Salamander Award (Photo by Joe Crowley)

Each year, awards are given out for the best student platform presentation and best student poster presentation at our annual CHS conference. The 2016 conference was our largest on record, and thus an equally large selection of excellent presentations and posters were available to choose from. Our 2016 winners are, Kelsey Marchand (University of Regina) for her presentation titled: "Urban habitat selection and resource use of Western Painted Turtles near the northern limit of the species range" and Shannon Ritchie (University of Toronto Scarborough / the Toronto Zoo) for her poster titled: "Overwintering ecology of head-started Blanding's Turtles (*Emydoidea blandingii*) in a restored wetland". Congratulations to the winners and thank you to everyone who contributed presentations and posters at the 2016 conference.

A common theme among the accomplishments of this year's award winners was role that these individuals played in providing mentorship, guidance and inspiration to many other researchers and conservation professionals. These individuals have had a profound effect on Canadian herpetology not only through their work, but also in supporting and helping to shape the next generation of Canadian herpetologists. Congratulations to all of this year's award winners, and thank you for your ongoing dedication and contributions to the field of herpetology in Canada.



2017 CHS Conference Location

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At the recent AGM, two potential locations for next year’s meeting were announced: Brandon, MB and Regina, SK. Through ongoing discussions with Pamela Rutherford, who has offered to host next year’s meeting, we have decided to hold the meeting at Brandon University in Brandon, MB. The date has not been confirmed yet, but it will likely be the third weekend in September. More information about next year’s conference will be provided in the spring edition of TCH. We will also post updates on our [conference webpage](#) and on the CHS facebook page as details unfold.



Red-sided Gartersnake (top) and Plains Spadefoot (bottom)
(Photos by Nick Cairns)



Call for Possible Snake Fungal Disease Sightings

Monique Aarts and John Urquhart
Blazing Star Environmental
Oshawa, ON
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Have you observed snakes with crusty scales, white opaque cloudiness of the eyes (not associated with shedding), abnormal shedding, skin ulcers and/or facial swelling? If so, you may have been looking at a snake infected with Snake Fungal Disease (SFD), a new emerging threat to snakes. SFD has been confirmed in 16 states and now one province in Canada - Ontario. In Ontario, SFD infection has been confirmed in 3 locations including Rondeau Provincial Park, Point Pelee National Park and the Grand River. The fungus responsible for SFD, *Ophidiomyces ophidiicola*, has been confirmed to be present on snakes in 9 locations (Figure 1), although the presence of the fungus on snakes does not indicate that they are suffering from the disease.

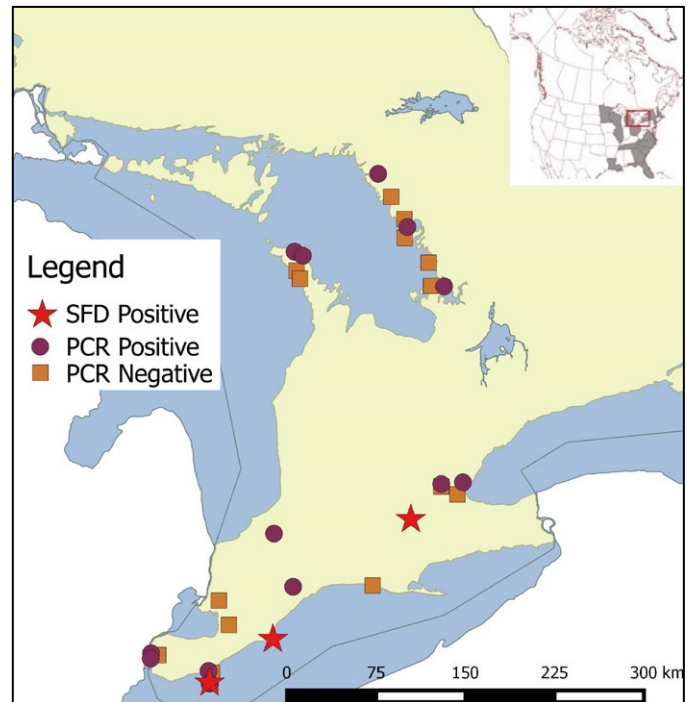


Figure 1. Locations of confirmed cases of SFD (red stars), confirmed presence of fungus on snake (purple circles) and negative test for fungus on snake (orange squares) (data from CWHC, 2016).

Blazing Star Environmental (BSE) is conducting a two-year study to determine the extent and prevalence of SFD in Ontario. BSE has funding, permits and training to swab all species of symptomatic snakes across Ontario. Trained staff will be traveling to high priority

locations to determine if the fungus is present in the area by swabbing snakes. All samples collected are analyzed by the Canadian Wildlife Health Cooperative. BSE is especially interested in any observations of symptomatic snakes in locations where the fungus has not yet been confirmed (see Figure 1). If you have witnessed a snake with symptoms consistent with SFD, please report your sightings to John Urquhart: john@blazingstar.ca; 289-927-2964.

Do you work or live in areas where Eastern Foxsnake or Massasauga populations occur in Ontario? If so, there is an opportunity for you to assist with Blazing Star Environmental's (BSE) snake detection probability study in 2017. We are investigating the number of surveys that are required to reliably assess absence, the effect of surveyor experience on detection probability and the seasonal and weather conditions that optimize detection probability. This information will help to inform provincial standards and guidance for snake survey work in Ontario.

This partnership opportunity will include receiving training and site setup support from BSE. You would be responsible for surveying the same 1-hectare site of suitable habitat for the target species up to five times throughout the active season. Each survey takes approximately 60-90 minutes and can easily be combined with an existing survey. All experience levels are welcome! For more details, please contact John Urquhart (john@blazingstar.ca; 289-927-2964).



Figure 2. Two Queensnakes found with symptoms consistent with SFD in Essex County (Photos by Monique Aarts).



Eastern Foxsnake (top) and juvenile Massasauga (bottom) (Photos by Joe Crowley)



Opportunity to Survey for Eastern Foxsnakes and/or Massasaugas

Monique Aarts and John Urquhart
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