

# Donald Evan McAllister, 1934-2001: The Growth of Ichthyological Research at the National Museum of Canada/Canadian Museum of Nature

FRANCIS R. COOK, BRIAN W. COAD, CLAUDE B. RENAUD, CHARLES G. GRUCHY, and NOEL R. ALFONSO

Canadian Museum of Nature, P.O. Box 3443, Station D, Ottawa, Ontario K1P 6P4

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Don McAllister was curator of fishes, researcher, and biodiversity specialist from 1958 to 2001 for the National Museum of Canada ("rebranded" as the Canadian Museum of Nature in 1990). His contributions were recognized by The Ottawa Field-Naturalists' Club which made him an Honorary Member in 1986 (Brunton et al. 1987). Don was born 23 August 1934 in Victoria, British Columbia. He married fellow University of British Columbia student Nancy Ann Mahoney in the 1950s and together they raised five children: Fern, Wendy, Sylvia, Jean, and Bruce. Nancy died in 1983. Don remarried, in 1992, to Lise Janssen who had been a volunteer in the herpetological section of the museum 1985-1991. He died in hospital in Toronto, Ontario, 17 June 2001, while waiting for a transplant to replace his liver, damaged from effects of hepatitis C contracted from blood transfusions received during colon surgery 20 years before. It is sadly ironic that Don would succumb to the effects of tainted blood as he had been a monthly blood donor over many years.

Don arrived at the National Museum of Canada 1 August 1958 having established himself as a researcher in the making. He had obtained his Master's thesis on sculpins at the University of British Columbia under the supervision of legendary ichthyologist Casimir C. Lindsey. He followed this with a year as a National Science and Engineering Research visiting student at the Museum of Zoology, University of Michigan. At both institutions he obtained a basic grounding in curating fish collections.

Although the museum had specialists in other vertebrate groups (birds, mammals, and amphibians and reptiles) for over 50 years, there had never been an ichthyologist on the permanent staff of Canada's federal natural history museum (variously named the Museum of the Geological Survey of Canada 1843, of the Geological and Natural History Survey of Canada 1877, the Victoria Memorial Museum 1910, the National Museum of Canada 1927, the National Museum of Canada, Natural History Branch 1957, the National Museums of Canada, National Museum of Natural Sciences 1967). The Survey, from its inception, had accumulated collections, first in geology, and soon

after in natural history, both for display and research (Collins 1927; Russell 1961; Zaslow 1975; Cranmer-Byng 1996).

Fishes had been regarded on the federal scene as largely the responsibility of a fisheries department (variously included in the Department of Naval Service, Marine and Fisheries, Dominion Department of Fisheries, Department of Fisheries and Oceans). However, many of the early Survey staff (e.g., geologists R. Bell, G. M. Dawson, A. P. Low, palaeontologist-zoologist and museum curator, J. F. Whiteaves, and botanist-naturalist John Macoun, assisted by James M. Macoun, W. Spreadborough and C. H. Young), did include fishes in their sampling. John Macoun published a list of western fishes (Macoun 1882) but surviving museum specimens begin with a collection made 16 August 1883 by John Macoun from Anticosti Island. Whiteaves (1886) included fishes in a list of Canadian Atlantic marine vertebrates and invertebrates. Bean and Weed (1920) published on specimens obtained by Young and Spreadborough on Vancouver Island in 1909.

At least from 1885 the Department of Naval Service maintained its own museum in Ottawa, the Canadian Fisheries Museum. It was overseen by Associate Zoologist, Naturalist, and Curator Andrew Halkett (Lloyd 1939). Halkett produced the *Checklist of the Fishes of the Dominion of Canada and Newfoundland* (1913) and retired after 52 years of government service at the age of 75 in 1929. The Fisheries Museum, however, was closed when its building was to be demolished, and in March 1918, its specimens of mammals, birds (including eggs), reptiles and amphibians, crustaceans, and coelenterates were transferred to the Victoria Memorial Museum along with 42 collections of fish which were re-catalogued there.

Early fish collections, that later formed part of the slender initial base for Don's studies nearly a half century later, were made in the Canadian Arctic by Danish biologist Frits Johansen (Porsild and Bousfield 1959). Johansen was a member of a joint Geological Survey and Department of Naval Service sponsored Canadian Arctic Expedition as entomologist, marine biologist and botanist. He was on the staff of the Geological





FIGURE 1. Don at his desk in the “Beamish Building” (1501 Carling Avenue) displaying a fine mesh net for use by Phillipine fishermen to capture coral reef fish for the aquarium trade. Use of these nets was promoted to replace cyanide and thus dramatically reduce mortality of both fish and associated marine life. *Ottawa Citizen* 27 November 1986, reproduced by permission.

Survey during 1916 to 1918 and his Arctic collections were deposited in the Victoria Memorial Museum. Johansen partially completed a manuscript on the fishes collected and observed, intended for Volume 6, Part A, of *Report of the Canadian Arctic Expedition 1913-18*, but it never appeared. A draft was apparently completed in 1926 or 1927 but not submitted to the museum until 1934 (an incomplete copy is in the museum archives). Eventually, it was used by an American ichthyologist (Walters 1953). However, Johansen’s botanical contribution (which was the first comprehensive description of the vegetation of the western North American Arctic) was published in one of two botanical volumes based on his collections. He also contributed three faunistic reports as part of the seven volumes of invertebrate papers by various authorities based on his specimens.

Successive herpetologists (C. L. Patch 1913 to 1950; J. S. Bleakney 1952 to 1958) at the National Museum were nominally in charge of curating the fish collections but produced only one ichthyological paper (Bleakney 1954). Only about 500 specimens were cat-

alogued, all in the period 1914 to 1926, and 4000 additional uncatalogued specimens were added, half between 1926 and 1951, and half after during Bleakney’s tenure.

Both federal and provincial fisheries research were primarily focused on managing commercial and sport species, leaving unfulfilled the need for a systematic ichthyologist at the federal level who could cover both marine and freshwater non-commercial species. This role had gone by default largely to the Royal Ontario Museum in Toronto (associated with the University of Toronto), and the British Columbia Provincial Museum (later renamed the Royal British Columbia Museum) in Victoria and the University of British Columbia with later contributions from the Nova Scotia Museum, New Brunswick Museum, University of Manitoba, and University of Alberta, all maintaining research collections. The University of Toronto ichthyologist, Professor J. R. Dymond, was also director of the Royal Ontario Museum of Zoology (Dymond 1940, 1964) but the first formal Curator of Fishes position at a Canadian museum was not created until 1948 when W. B. Scott



was appointed. E. J. Crossman was added as Assistant Curator in 1955 (Dymond 1964). Later this pair produced the definitive volume on Canadian freshwater fish (Scott and Crossman 1973).

Soon after arrival in Ottawa, Don launched into research on the marine fish of Arctic Canada, the missing piece in comprehensive coverage of Canadian fishes, as books on the Pacific, the Atlantic, and the freshwater species had appeared or were planned, sponsored by Fisheries and Oceans. In 1960, Don produced a preliminary checklist followed by keys, and a series of research papers on individual groups or species soon followed. In 1975, he completed a more comprehensive list of scientific, English, French, and Inuktituk names of Arctic fishes in collaboration with V. Legendre and J. G. Hunter, revised in 1987; in 1984, a distributional atlas of Arctic records in the National Museum with Hunter, Shirley Leach, and Michèle Steigerwald; and in 1986, a bibliography of marine fishes of Arctic Canada 1771-1985 with Steigerwald. He compiled extensive files and a database on which his successors continued to build. Peripheral interests repeatedly distracted Don from finishing it himself. In the fall of 1960, he took educational leave to complete residency requirements for a Ph.D. at the University of British Columbia. His thesis *Evolution of branchiostegal rays in teleostome fishes*, supervised by J. C. Briggs and R. H. Rosenblatt, was accepted in 1964 and published by the museum as Bulletin 221 in 1968. (Nancy's Ph.D. thesis, on grebe behaviour, done simultaneously at the University of British Columbia, was accepted before Don's). He also published on such varied topics as the evolution of the black peritoneum in fishes (1960), a revision of the smelt family (1963), numerical taxonomy of smelts (1966), and the significance of ventral bioluminescence in fish (1967). His enthusiasm for Pleistocene fossil fish led to papers on Green Creek remains from the Champlain Sea in the Ottawa District, on fossils from the Yukon, and on more recent remains from various archaeological sites in Canada. A star acquisition obtained by museum purchase was a specimen of the "living fossil" from off Madagascar in 1969, the Coelacanth, *Latimeria chalumnae*. In 1971, he published a detailed review of the species and the information contributed by the new specimen. Also in 1971, with E. J. Crossman of the Royal Ontario Museum, Don wrote *A guide to the freshwater sport fishes of Canada*. In 1974, Don's extensive local collecting led to *The Fishes of Canada's National Capital Region/Poissons de la région de la Capitale du Canada* co-authored with Brian Coad. In 1980, Don was a co-editor and co-author of the *Atlas of North American Freshwater Fishes* published by the North Carolina State Museum. In 1986 he again collaborated with Crossman, this time on the zoogeography of freshwater fishes of the Hudson Bay drainage, Ungava Bay and the Arctic Archipelago, as a chapter in *Zoogeography of North American Freshwater Fishes*.



FIGURE 2. Don and Pat Bleeks in the fish laboratory at the Beamish Building, Ottawa, examining the newly arrived Coelacanth, August 1969

Don was an innovator in museum procedures, publishing a chapter on methods of collecting and preserving fishes in 1965, and using x-rays for taxonomic studies in numerous papers. He was a pioneer and advocate for the computerization of museum collections and devised a detailed field data input sheet for standardizing information recorded with specimens. *The complete minicomputer cataloguing and research system for a museum* was co-authored with R. Murphy and J. Morrison in 1978. Don also compiled a comprehensive list of terms and definitions (since expanded by BWC and available at [www.briancoad.com](http://www.briancoad.com)). Another project was a file and reprint library of ichthyological papers from around the world with particular emphasis on Canada and especially on the Arctic. Don organized the 1974 Annual Meeting of the American Society of Ichthyologists and Herpetologists in Ottawa, only the third time the society had met in Canada and the first to be bilingual. Don was an active member of the Fish and Marine Mammals Subcommittee of COSEWIC (Committee on the Status of Endangered Wildlife in Canada) and wrote the first endangered fish list for Canada (1970). A complete bibliography, compiled by BWC follows this tribute.

As curator and researcher of the ichthyology section, Don attracted, trained and had a lasting influence on a multitude of excellent staff, several of whom went on to fill other important roles at the museum and elsewhere. Assistant Curators started with CGG (first



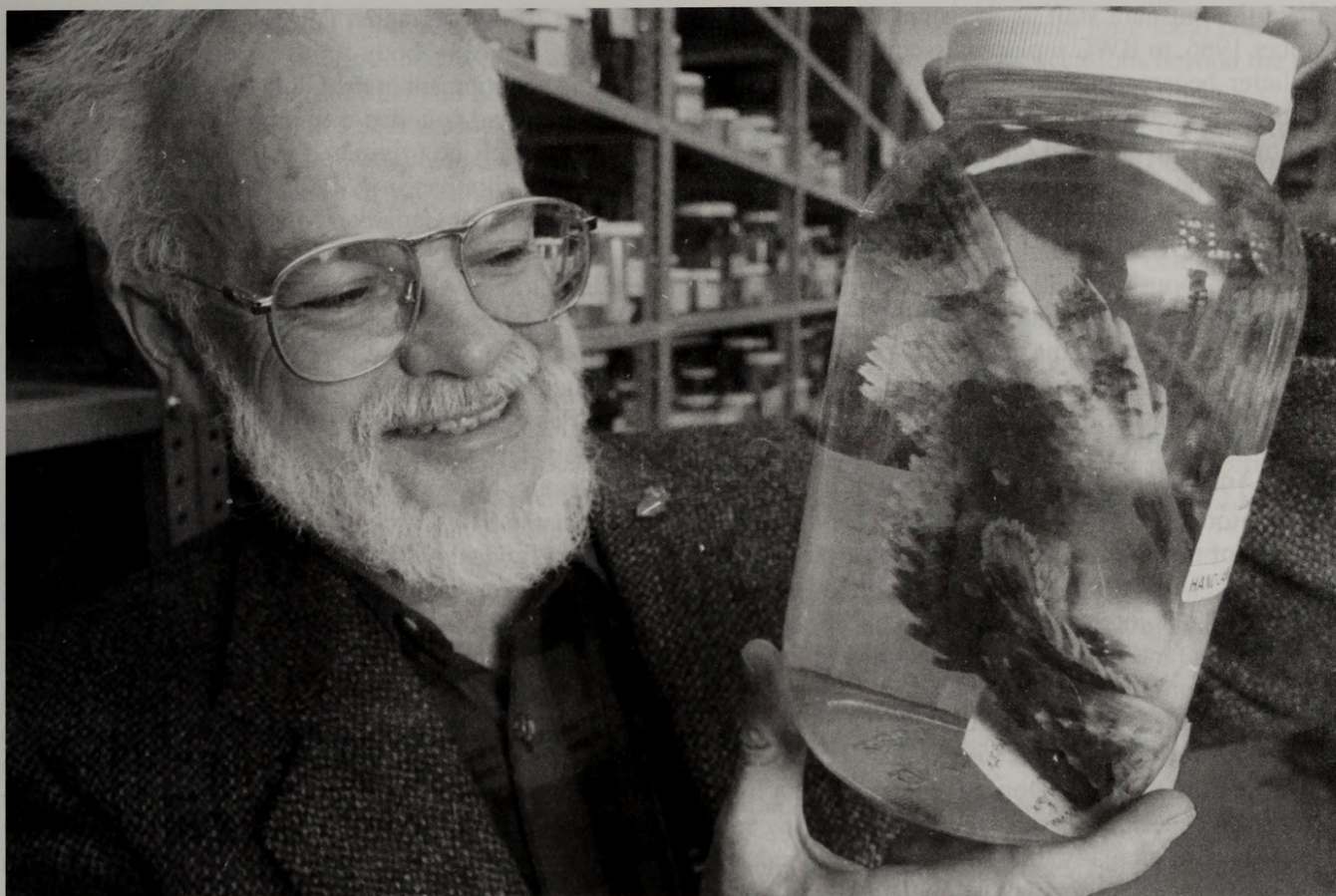


FIGURE 3. Don and a specimen of the Spotted Scorpionfish, *Scorpaena plumieri*, (family scorpaenidae) CMNF: (Canadian Museum of Nature, Fish) 1976-0173 Florida, Munroe County, 24°33'30"N, 81°43'30"W). A portion of the Canadian Museum fish collection is in the background. *Ottawa Citizen* 5 May 1991, reproduced with permission.

hired on a cataloguing contract 1 April 1969 and made permanent 25 May 1970). In January 1977 he left ichthyology to become acting chief, then chief, of the Invertebrate Zoology Division. He later moved up to Assistant Director of the Museum in 1981, Acting Director in 1982, and back to Assistant Director in 1983. (Subsequently, he became Director General of the Canadian Conservation Institute). BWC obtained his Ph.D. at the University of Ottawa in 1976, taught at the University of Shiraz, Iran, undertook comprehensive studies of the Iranian ichthyofauna, and returned to Canada in 1979. He was a Research Associate with the Museum 1979 to 1981 while he catalogued his large Iranian collection and was appointed Associate Curator of Fishes 18 March 1981, and Curator in 1986.

The first fish technician (Curatorial Assistant) at the National Museum, Stan Gorham, was shared with herpetology in 1964 to 1965. Stan had been a general zoology technician at the museum from 1953 to 1964; and subsequently was solely herpetology technician in 1965 before going on to the New Brunswick Museum that year to become curator of zoology). His replacement from 1966 to 1968, Bill Van Vliet, left the museum for graduate work and drowned during field research while diving in Lac Heney in the Gatineau region of Quebec. From 1968 to 1970, Tom Willock

was Curatorial Assistant. He later became Director of the Medicine Hat Museum in Alberta. Jadwiga Anis-kowicz (now Frank) was hired on contract in 1970 and was curatorial assistant 1973 to 1993. Michèle Bélanger (now Steigerwald) was hired on contract in 1978 and Sylvie Laframboise in 1982. Both later attained permanent status and have remained with the museum in the new Collections Division created in the 1991 re-organization. Numerous contractees, summer students, and workers from government employment projects have also passed through the ichthyology section, numbering over one hundred people.

Post-doctoral students in ichthyology were Alex Peden 1970 (who became a curator at the British Columbia Provincial Museum), Rick Winterbottom 1972-1973 (who went to South Africa and returned for 1977-1978, before taking a research position at the Royal Ontario Museum) and Labbish Chao 1976 (who went on to research in Brazil). Research Associates were Vadim D. Vladykov, Professor and later Emeritus Professor of Biology, University of Ottawa, from 1973 to 1986, and Garry M. Bernacsek in 1983. Douglas Copeman was Visiting Scientist on sabbatical from the Memorial University of Newfoundland 1976-1977. Don was thesis co-supervisor (with Professor Sami Qadri) for CBR at the University of Ottawa. Claude



joined the museum staff as Assistant Curator, 24 November 1986, to BWC replaced associate curator when the latter became curator. François Chapleau was a postdoctoral fellow in 1987 and was appointed to the staff of the University of Ottawa in 1988.

During the 28 years Don was Curator of Fishes, the collection ballooned from 4638 specimens (virtually all from Canada and majority of them uncatalogued) to about 410 000 catalogued specimens from Canada alone, as well as an ever-increasing collections worldwide. This was the result of staff expeditions, contracts, donations, purchases, and exchanges with other institutions. Subsequent to his handing on the curator post to BWC, the collection continued to grow, and by 1991 when a separate collection division was formed, totalled 581 949 specimens world-wide, with 450 276 of these Canadian. Recent totals are 676 597 specimens with 504 910 Canadian. Included in the totals are 42 holotypes, 4 neotypes, 2288 paratypes, 41 syntypes, and 67 topotypes (Sylvie Laframboise, personal communication 18 January 2011).

The database for this collection, first computerized under Don's direction, plus his extensive file of literature, was the basis for Don's preparation of a list of families and species of fish of the world covering some 20 000 taxa. Eventually the project was superseded by the *Catalog of Fishes* originated by Bill Eschmeyer in California which had vastly greater resources (supplied by the United States National Science Foundation), whereas Don had worked from a limited Canadian museum budget and some meagre additional contributed funds.

While serving in his broad and varied role as a museum curator and researcher, Don also held adjunct professorships at both University of Ottawa, beginning in 1969 (where he taught courses in ichthyology), and Carleton University (also in Ottawa) beginning in 1980. He participated on graduate student committees at both. Van Vliet, CGG, BWC, and CBR did graduate work at Ottawa University, Willock at Carleton. Among the various organizations in which he participated, perhaps one of the most important in Canada was the Fish and Marine Mammals Subcommittee of COSEWIC (Committee on the Status of Endangered Wildlife in Canada) which, on the basis of detailed status reports, made designations of species at risk in Canada.

After a position shift to senior researcher in 1986, Don increasingly applied his experience and social conscience to broader concerns for the planet through writing, editing, and international committees; leading eventually to his moving into the museum's newly created biodiversity group in the 1990s. He was increasingly active through efforts in lobbying, and through serving on such committees as the IUCN SSC Coral Reef Specialist Group as co-chair. He was twice a member of the Canadian delegation on the negotiations for the Convention on Biological Diversity and was a

member of the Canadian delegation to scientific and technical advisory body for the Biodiversity Convention and a participant in the Global Biodiversity Forum. Earlier, he had founded and edited the quarterly *Sea Wind*. In 1991, he originated and edited the quarterly *Canadian Biodiversity* (later *Global Biodiversity*) published by the Canadian Museum of Nature, which totalled 8 volumes but discontinued in 1999. It was replaced the next year by *Biodiversity: A Journal of Life on Earth* with the Tropical Conservancy as publisher, and Don as Editor. He volunteered to take early retirement from the museum in 1993, in a characteristic selfless gesture meant to free a position to enable younger staff to be retained in a period of museum downsizing, but continued his close ties as Research Emeritus and Research Associate. He mortgaged his home to fund his effort to promote sustainability in collection of aquarium fish by Phillipine fishermen.

Don left an indelible mark on the museum in many other ways, helping to popularize sports shirts to replace the traditional white ones and ties, pioneering Christmas staff plays which freely lampooned staff and policies, and promoting collegial staff coffee breaks. He also became a leading advocate for bilingualism and computerization at the museum by his example. His work habits included a free-range filing system where multiple piles of correspondence, manuscripts, books, and specimens from his simultaneous projects spread to cover every available surface in his office, but from which he rarely failed to find any item requested. This made it a featured stop on visitors' tours of the museum temporary research facilities at Carling Avenue from 1967 to 1991. Ultimately, it was included as a fire hazard among over 90 Labour Canada code violation citations. These helped speed a move to a new collection and research facility, this one on a site across the Ottawa River in Aylmer [now Gatineau], Quebec.

Of the two journals Don founded, *Sea Wind* and its publisher, initially Ocean Voice then as The International Marine Alliance, which Don also was a founder, have ceased. They focused attention to marine conservation, including promoting replacement of the non-sustainable fishing practices using cyanide for collecting tropical aquarium species with use of nets to reduce collection mortalities and environmental damage. The broader *Biodiversity* has survived under a succession of editors including distinguished biologists Ted Mosquin and Geoff Scudder.

The Don E. McAllister Memorial Scholarship has been created at the University of Ottawa, sponsored through the winding up of *Sea Wind* accounts and donations, to provide financial assistance to graduate students working on the taxonomy/systematics of fishes, or on biodiversity/conservation issues. Application must be made to the Director of Financial Aid and Awards Service ([www.uOttawa.ca/loansandawards](http://www.uOttawa.ca/loansandawards)). Applicants must (1) be registered as a full time graduate student in the Faculty of Science, Department of



Biology at the University of Ottawa, (2) be an Ontario resident, as per OSAP (Ontario Student Assistance Program) rules, (3) demonstrate financial need, as determined by the Financial Aid and Awards Service of the University of Ottawa, (4) be studying in the area of taxonomy/systematics of fishes or on biodiversity/conservation issues.

The McAllister legacy and its influence at the Canadian Museum of Nature is evident through continuing staff that he first recruited, BWC and CBR as research scientists and NA as research assistant in the Research Services Division, and Sylvie Laframboise (fish) and Michèle Steigerwald (amphibians and reptiles) assistant collection managers in the Collections Services Division. A primary McAllister research initiative will finally be realized this year by completion of the manuscript for *Arctic Marine Fishes of Canada*, dedicated to him and edited by Brian W. Coad and James D. Reist, with contributions by Noel Alfonso, Fikret Berkes, Peter Rask Møller and Claude B. Renaud. With the financial assistance of Fisheries and Oceans Canada, this completes the missing piece of the comprehensive references to Canada's fish fauna so vitally important as benchmarks for planning future research priorities. Its completion is timely in this era of increasing concern about global warming and Canadian Arctic sovereignty.

## Acknowledgments

The text of this tribute has drawn extensively on previous tributes to Don mostly by, or based on information contributed in part, by the present authors. Sylvie Laframboise supplied the totals for the fish collection at various periods.

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FRC, as Curator of Amphibians and Reptiles (herpetology), spent most of 30 years (1960-1991) in an adjoining office, or in one separated from Don only by the assistant curator's office (in the Victoria Memorial Museum Building from 1960 to 1967 and later at the "Beamish" warehouse building on 1501 Carling Avenue), until Don moved to Biodiversity offices. As well as daily contact throughout most of their muse-

um careers, there were frequent joint local collecting expeditions, and often social occasions beyond the museum duties. All of us are indebted to him for unfailing comradeship and encouragement of our individual views and projects throughout, and often as well for his statistical and computer knowledge and numerous other bits of advice, taken or not. NA originally requested FRC to write a tribute to celebrate Don's contributions for *Sea Wind* while he was alive. BWC and CBR contributed detail on the ichthyology collection growth, staff and publications and discussions of Don's contribution from their particular perspectives and extensively contributed to this and previous accounts cited. CGG and NA added recollections of their long association and joint projects with Don.

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