

species of bears which inhabit the North American continent. Effectiveness of a repellent is a function of many factors, including the experience of the bear, prevailing weather conditions, and surrounding habitat. People who use these deterrents can never be sure of the results until after the bear has reacted to (or completely ignored) the deterrent. Chemical sprays may prove effective; however, researchers are faced with the problem of developing an effective delivery system. I can not imagine a chemical spray working well against a Polar Bear on a windy day along the Arctic coast or a Grizzly Bear on a mountain slope for example, particularly if the person wants to deter the bear at some reasonable distance (e.g., 10-30 m). The spray may serve as a last resort during the onset of an attack.

The work conducted by the various members of the "Safety In Bear Country" program, which was coordinated by the Government of the Northwest Territories, shows promising results. For example, the NWT program researchers have developed and tested a prototype of a nonlethal 12-gauge plastic bullet. Once perfected, these bullets could potentially arm the general public with an effective method of deterring bears at reasonable distance, thus maximizing safety and minimizing the number of bears killed as nuisance animals. Given that this work was initiated in the Churchill area in 1981, and is documented in a number of management reports, I found it disappointing that it was not mentioned in the book.

In addition to deterrent techniques, effective management of man-bear encounters is, in part, contingent upon the development and application of effective detection systems. Researchers with the "Safety In Bear Country" program have identified a number of practical techniques, ranging from a trip-wire system for small tent camps to an infrared detection system for large industrial operations. Detection systems were completely ignored in the book. For a fairly comprehensive account of

available detection and deterrent techniques, the reader is referred to Bromley (1985) and Gray and Sutherland (1988).

I was also disappointed in this book because the author virtually ignored the work of Dr. Steven Herrero of the University of Calgary. Dr. Herrero has spent many years studying bear behavior, bear habitat, and man-bear conflicts; he has published extensively on locating and designing hiking trails in bear country, for example. In addition, Dr. Herrero's book *Bear Attacks: Their Causes and Avoidance* is excellent (see *Canadian Field-Naturalist* 101(2): 312-313), and well worth reading.

Book 3, "In Pursuit Of Bears", contains 9 chapters which focus, in large part, on the author's personal experiences with bears from the time he was a young boy growing up in British Columbia. In addition, the author includes more accounts of maulings. The inserts in the last book depict the life of the Grizzly Bear. The epilogue is a short section entitled "Bear Hunting: The Rites And Rights".

Despite its shortcomings, I enjoyed the book, and recommend it to readers interested in man-bear conflicts.

Literature Cited

- Bromley, M.** 1985. Safety in bear country: a reference manual. NWT Department Of Renewable Resources, Yellowknife, Northwest Territories.
- Gray, P. A., and M. Sutherland.** 1988. Bear detection techniques: a review. In Proceedings of the symposium on bear-people conflicts, April, 1987. Edited by M. Bromley. Government of the Northwest Territories, Yellowknife.
- Herrero, S.** 1985. Bear attacks: their causes and avoidance. Winchester Press (Canadian distributor Hurtig, Edmonton). 287 pp.

PAUL A. GRAY

Wildlife Branch, Ontario Ministry of Natural Resources, Whitney Block, Queen's Park, Toronto, Ontario, M7A 1W3

Safety in Bear Country: A Reference Manual

By M. Bromley. 1985. Northwest Territories Department of Renewable Resources, Yellowknife. 116 pp., illus.

The potential danger of human-bear interactions has become of increasing interest to researchers, back country travellers, rural residents, northern industrial camps, and others. *Safety in Bear Country* is a manual developed by the Northwest Territories to provide guidelines for dealing with, understanding, and preventing such occurrences.

All three North American bear species are dealt with in a common manner, although it appears that the emphasis, in decreasing order of importance, is on Polar, Grizzly, and Black bears. Given the Northwest Territories origin, the manual is understandably geared towards large expeditions, particularly exploration camps. Nonetheless it provides much useful information for the individual travelling in bear country.

Chapters are succinct but detailed. As an example, thorough descriptions of the general

biology of all three bear species, including distribution, annual cycles, size, et cetera, encompass only eight pages; a four-page discussion on behaviour covers social behaviour, dominance hierarchies, and reactions to human encounters. It has been necessary to generalize to cover the most common but not the entire range of behaviour. This may be the biggest fault of the book. There is little room for detailed cause and effect discussions, speculation, discussion of the literature, et cetera. There are few references to specific case histories and the corresponding analysis such as one would find in Herrero's *Bear Attacks: Their Causes and Avoidance*. A few examples of human-bear interactions are appended, but they add little to the manual due to their brevity and lack of analysis.

An excellent chapter on avoiding bear problems provides advice on how to react to several realistic scenarios (e.g. bear unaware of you and feeding, bear aware of you and close, et cetera). Because of the book's brevity, the responses may approach a cookbook style, and cannot anticipate all possible bear reactions. The book's approach of generalizing the responses of all bear species also may not adequately account for interspecific differences.

Several chapters relate to bear avoidance/deterrent procedures including camp layout, bear detection methods, bear deterrent procedures, and firearms. These would be of great value to large industrial camps in Polar Bear range, and include some high-technology solutions (e.g. trip wires,

infra-red detection, microwave motion detection systems). They are not very relevant to individuals and small groups.

The manual is well organized in easy-to-reference sections, including index tabs and a three-ring binder format. The binder is presumably to provide for ease in updating the manual, although there is no apparent procedure for doing this. The binder also makes the manual considerably thicker than it would otherwise be if bound at 116 pages. There are ample black-and-white photographs and diagrams distributed throughout the text. The photographs cover most aspects discussed in the text, but their standard small size and variable quality make some subjects difficult to discern. These criticisms may be somewhat unfair, given the obvious intent to provide a valuable and comprehensive manual at low cost.

Safety in Bear Country meets its apparent objective well. It is an excellent reference manual, and should be in the libraries of those working and travelling extensively in bear country. Those who travel in the bush less often would be wise to consult the manual, but they would find much of it inappropriate. This manual should complement other recent books on bear behaviour and attacks. Where the latter describe and analyse, this book will aid in preventing or mitigating human-bear encounters.

TED (E. R.) ARMSTRONG

615 Rosewood Crescent, Thunder Bay, Ontario P7E 2R5

Large Mammals, Volume 2

By Robert E. Wrigley. 1985. Canadian Album Series, Nature Stories for Children. Hyperion Press, Winnipeg, Manitoba. 40 pp., illus. \$4.95.

Large Mammals, Volume 2 is comprised of 19 short stories with accompanying line drawings and brief descriptions of classification, morphology, distribution, food, and reproduction. A detailed description of colour is provided for use in colouring sketches.

Each story weaves facts of the animal's life history into a tale depicting an incident or period in its life. The wolverine's habits and habitats, for example, are illustrated in a story beginning with a pack of wolves killing a caribou. The wolverine finds the cached remains on which it feeds for several days. When the wolves return the wolverine stands them off and, though wounded, is victorious in keeping the prize.

The stories are quite effective in portraying the animal's place in the ecosystem. The composition sparks the imagination, although the vocabulary is

often much too difficult for young readers and listeners to comprehend. There is some ascribing of human traits to the animals, but not in a Disneylike manner. Atlantic White-sided Dolphins reunited with a family member are jubilant. They "remembered each other over the long period of separation". This technique does not make the stories read as fantasy, rather it makes the characteristics more clearly understood by children.

The descriptions of distribution, food habits, et cetera, for each animal are brief and useful for those wanting more scientific information. Noticeably lacking are scientific names.

The drawings are well placed opposite each story. They are "adaptations of original watercolour paintings by Canadian wildlife artist, Dwayne Harty". The colouring is sometimes complex for younger children. Others such as a Polar bear on ice floes or a fisher in forest understory give little variety for children to colour. Older children may not be interested in colouring any more, although



Armstrong, Ted. 1989. "Safety in Bear Country: A Reference Manual, by M. Bromley [Review]." *The Canadian field-naturalist* 103(2), 306–307.
<https://doi.org/10.5962/p.356145>.

View This Item Online: <https://www.biodiversitylibrary.org/item/106991>

DOI: <https://doi.org/10.5962/p.356145>

Permalink: <https://www.biodiversitylibrary.org/partpdf/356145>

Holding Institution

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

Sponsored by

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Ottawa Field-Naturalists' Club

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.