

Response from the author:

Although the writer appreciates the constructive input in the above review, there would appear to be some points that might need clarification. The intended title of this book was *Utilization of the Permafrost Environment*, but this was later altered since it was thought that the subject matter was sufficiently well described both on the dust cover and in the table of contents. The book was written specifically for the *Croom Helm Natural Environment — Problems and Management Series*, and therefore the title was restricted to the format being used in that series. Permafrost studies are sufficiently diverse that undoubtedly they now warrant the status of an independent science rather than being a subject to be annexed by one of the conventional fields of sciences, social sciences or engineering.

The review takes exception to the statement that permafrost “. . . is the result of a negative heat balance at the surface of the earth. . . .” Actually, this is implied in the definition of permafrost (ground that remains below 0°C for more than two years), but if one considers the implications of the quotation, he will find that additional duration and persistence of the negative heat balance after the formation of permafrost is neither stated nor necessarily implied. The problem of disequilibrium conditions is discussed on pages 26-27, 31-33, and 56-57. Stability of permafrost is dealt with on pages 68-72, together with a brief summary of the possible effects of climatic changes such as the postulated warming due to changes in atmospheric carbon dioxide.

It should be noted that the book first appeared in December 1985 in the United Kingdom, so the manuscript in camera-ready form had to be delivered in early 1985 at a time when the Zama Lake-Norman Wells pipeline construction was hardly complete, let alone tested and described in accessible sources. Examples were deliberately chosen from English language literature that is reasonably accessible, since few of our students read Danish, Polish, Russian or Chinese. All the material is available in the library of the Arctic Institute of North America, and there are enough translations of key Russian and Chinese works that the most important foreign work is included.

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YUKON WILDLIFE: A SOCIAL HISTORY. By ROBERT G. McCANDLESS. Edmonton: The University of Alberta Press, 1985. 200 p. Map, photos, index, bib., appendix: transcripts of oral histories by John Joe, Frank Goulter, and Johnny Taku Jack. Softbound. Cdn\$14.95. Distributed in U.S. by University of Nebraska Press, Lincoln, Nebraska. US\$14.95.

Yukon Territory is an enclave of half a million square kilometres of mostly wilderness, where wildlife has been an essential part of the economy — traditionally as a livelihood for the inhabitants, and after 1900 as a source of revenue for the territorial government. By tracing changing attitudes toward wildlife as reflected in law and custom, McCandless has in effect outlined the Yukon's recent history. His central theme touches upon nearly every important aspect of life in that corner of Canada: the native trapping industry and the fur trade, the Gold Rush and subsequent mining enterprises, subsistence and market hunting for wild meat, fur farming, the evolution of territorial government, big game outfitting, shipping by steamboat and rail, the World War II intrusion of roads, aerodromes, telecommunications and the media and, finally, the post-war influx of permanent settlers from “outside” cultures.

This book is very welcome. Until recently, Canadians and Americans alike have avoided serious analysis of the *processes* that have transformed culture and economics in the northern and northwestern parts of the continent. These processes have been encouraged, when not actually imposed, by remote politicians, bureaucrats and urban

interest groups whose attitudes were formed under conditions quite different from those of the “frontier.” The main trend of such pressures, particularly since the 1940s, has been to bring law and custom into line with practices instituted elsewhere, ignoring the abundant wildlife, the thin and scattered population using it, and the generally stagnant economies of such isolated regions.

McCandless's treatment of the Yukon's unique situation is thoughtful and discerning. His study is based on an analysis of documents in the territorial and other archives and is supplemented by oral histories obtained from articulate Yukon old-timers (there should be much more of the like collected). It is informed by professional knowledge acquired during work for the territorial Wildlife Branch and the federal Environmental Protection Service. He hopes that the “example provided by the Yukon can help illuminate problems of wildlife management which may be encountered in other jurisdictions.” He is calling for a deeper sensitivity to regional conditions.

After a preliminary chapter on game law history (of which more later), McCandless first reviews game law affecting the Yukon, attending to the jurisdictional bases of its sometimes conflicting authority. The core of the book separately considers big game hunting and the fur industry, although he acknowledges that, of course, these two “themes” are inextricably related, especially as hunting and trapping involve the native population.

Game laws pertinent to the Yukon begin with The Unorganized Territories' Game Preservation Act of 1894 (more concerned with Canadian sovereignty than with preservation of wild animals) and the Yukon Act of 1900, Canada's response to the invasion of 30 000 gold seekers by establishing a quasi-provincial government with a two-member council and legislative powers over wildlife resources. Changes in the game regulations from 1900 to 1950 provide a “weather vane” of attitudes essentially cultural in origin. These attitudes ranged from taboos on shooting female big game to “cycles of wolf-hating,” from exemption of Indians from certain regulations to barring of Indians as independent contractors or “outfitters” in the big game hunting industry.

Because of the “cultural equilibrium” between Indians and non-Indians prior to the 1940s, the few thousand adults living in the Yukon were generally unaffected by game regulations. “Virtually the entire population . . . were wildlife users,” McCandless says; self-government and an isolated situation allowed them to resist irrelevant pressures. Because of their self-reliance, coupled with rather stable fur prices, Yukoners did not feel the Great Depression of the 1930s as severely as did other Canadians. Complicating factors in this period, however, included the necessity of cooperating with Ottawa to preserve the territory's feeble status as a political entity; meddling by myopic but influential trophy hunters who viewed the Indians as “wasters of game”; the determination of a government licensing agent in Whitehorse to reserve the the guiding business for white residents; and Alaska's requests for coordination of controls along the border.

The invasion in 1942 of thousands of soldiers and civilians for construction of the Alaska Highway, Northwest Staging Route aerodromes and related military projects disrupted forever the Yukoners' simple but fairly comfortable isolation. The intrusion resulted in the shift of the centre of decision making from Dawson City to Whitehorse and exposed the inhabitants to the full force of “metropolitan views” of game conservation and to Alberta-born theories of game management. A catalyst for change, McCandless shows, was the Yukon Fish and Game Association, “townspeople, most of them strangers to the Territory.” The medium for change was the indecisive territorial government, which, unlike British Columbia and Alaska, granted resident hunting licenses to military personnel.

One imported notion was trapline registration, incompatible with the life, culture, economics and conservation practices of Yukon Indian trappers. Another such borrowing was the wolf-poisoning program, originally a palliative for Alberta ranchers. Abolition of market hunting infringed on the livelihood of Yukoners. Meanwhile, outfitters acquired monopolies of hunting areas, buying and selling them as real estate although they had no legal tenure.

The post-war years, in McCandless's view, intensified "a process of separation, both social and economic, between the Indian and non-Indian cultures." In addition, these years saw a substantial decline in fur prices. "The net effect was total disruption for the Yukon Indian communities." The Family Allowance Act of 1944 was paid to the mothers and required enrolling children in schools, which tended to draw families to nearby settlements. It was the men, the trappers, who lost the most; trapping was no longer a family project. As one trapper said, "The government became my wife's old man. She don't need me any more."

It followed that from the late 1940s "the Yukon's decades-old wildlife policies transformed themselves."

The wildlife became detached from the landscape, from any site-specific understanding of varieties and abundance, only to become a free-floating, Territory-wide system providing trophies and other cult objects for export out of the Yukon. Its use as sustenance and a livelihood became less important.

McCandless offers two remedies for the present situation: abolition of non-resident hunting by simple amendment of the Game Ordinance, and reinstatement of market hunting under license "to make big game of direct and indirect benefit to Yukon residents." Needless to say, he holds out little hope that his unconventional advice will be accepted.

Yukon Wildlife focuses our attention on the small number of politicians and administrators who during the first half of the 20th century made wildlife policies for the Yukon Territory that were increasingly detrimental to the Indian people, who lacked the political power to defend their interests. The account implies that, in the long run, such policies are destructive: exasperated, impoverished or demoralized natives not only become a drain on social welfare funds but also, instead of being recruited into effective and relevant conservation practices in harmony with their culture, are now tempted to indulge in extremes to express their "rights." The recent slaughter of geese in the Yukon-Kuskokwim Delta, Alaska, is an example that Yukoners should heed. It will be interesting to watch the development of wildlife policies as the native land claims in the Yukon near settlement.

McCandless deserves our gratitude for his forthright presentation of what is bound to be an unpopular position. He is also to be commended for attempting to place events in the Yukon in the perspective of an "historically relentless process global in scale." His first chapter, "Old Laws — New Attitudes," shows that recent game laws in the Yukon, one of the last real wildernesses in the world, are an end point of a "certain pattern" of aggrandizement of hunting privileges by licensed elites, to the exclusion of ordinary inhabitants enjoying the usufruct of the land. This pattern dates at least to 1217, when King John's barons forced him to sign the Forest Charter, relieving abuses of the Norman kings as monopolizers of the forests and wild animals. Its progress paralleled the centralization of legal systems during the rise of nation states, accelerating as England was deforested and the land enclosed for sheep pasture and making speedy headway in North America after extermination of the bison.

"Only the longest view," McCandless explains, "will help us understand why Europeans, and English colonial administrators in particular, had some very definite and rigid ideas about game management at the time of the Gold Rush." The historical background is necessary also "to understand the core problem seen in the history of the Yukon Territory's game laws, game as trophies or game as meat."

Although the animals can provide staples, their value in relation to the land they occupy soon becomes less than that land's ultimate value as a location for agriculture, or forestry, or mineral and fuel production. As the lands still available for wild animals diminish, so must the material well-being of persons who obtained their living from wildlife.

Since the book is, for the most part, written in plain, non-technical language, it should appeal not only to wildlife management people everywhere but also to all Yukoners, whatever their situation. Teachers, students, hunters, trappers, lawyers, sociologists, land claims negotiators and business people involved in tourism will benefit from the insights McCandless's study presents. We especially recommend it to Canadian and American government functionaries, however distant

from the Yukon, who have a hand in shaping and executing policies affecting residents of the northwest.

We have one or two criticisms of the book. The photo credits listed on the last two pages should instead accompany the photographs. The excellent pictures used at the beginning of each chapter should be full page size. The photo on the back cover is much clearer than is its reproduction in the text.

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HANDBUCH DER VÖGEL DER SOWJETUNION — BAND 1.

Edited by V.D. IL'ICEV and V.E. FLINT, U.S.S.R. Academy of Sciences. Translated from Russian into German by BURKHARD STEPHAN. Wittenberg Lutherstadt: A. Ziemsen Verlag, 1985. 350 p. Colour plates, illus., maps, tables, refs. Hardbound. M78.00.

This handsome first volume of ten, entitled *Handbook of the Birds of the Soviet Union*, is an updated German translation of the Russian version that appeared in 1982. Production of these volumes began in response to a request by an advisory committee of the U.S.S.R. Academy of Sciences responsible for the study, protection and management of birds. Special emphasis was to be placed on hitherto little-studied, remote regions, rare and endangered species and species of particular economic and scientific value. The last time a similar extensive work had appeared in the Soviet Union was nearly 30 years ago, when G.P. Dement'ev and N.A. Gladkov compiled *The Birds of the Soviet Union*.

The handbook contains a summary of avian studies in the Soviet Union beginning with the first scientific expeditions in 1768-74 led by P.S. Pallas and others. The second part of the book treats the biology of three orders of birds: Gaviiformes (loons), Podicipediformes (grebes) and Procellariiformes (albatrosses, fulmars, shearwaters and petrels).

In an attempt to focus attention on little-studied, remote regions, Chapter 1 (158 p.) deals with summaries of the avian studies in each of 74 biogeographic regions. The names of investigators, the area visited, the time period involved and the species encountered receive prominent mention. Conclusions are treated superficially in comparison. In Chapter 2 (15 p.) the authors evaluate the completeness of avian studies in each biogeographic region. Under consideration are species inventories, area coverage, data on abundance and ecology and availability of the results in published form. A map summarizing this evaluation illustrates that vast sections of the northern and eastern parts of the Soviet Union are in need of further study. Chapter 3 (16 p.) represents a compilation of the most important ornithological publications. This list is in addition to 460 references cited in the Literature Cited section.

In Chapters 4 (32 p.), 5 (48 p.) and 6 (50 p.) the orders of birds are introduced, beginning with a summary of anatomical, ecological, taxonomic and paleontological information for the particular group. This introduction is followed by a detailed description of each species providing information on plumages, body measurements, distribution, habitat, abundance, breeding, food habits and economic importance. Maps portray distribution worldwide and in greater detail within the Soviet Union. Throughout these chapters, identifying characteristics and behaviour are liberally illustrated using black and white sketches. In addition, colour plates illustrate males and females of each species and also eggs and young.

This valuable volume provides considerable insight into the rich avifauna of a vast region of Eurasia. The arrangement is pleasing, using illustrations and colour. The historical portion of the book may be of little utility to most readers, but the species descriptions are detailed