

as far north as Edmonton" (p. 27). In fact Merlins have been a permanent resident of Edmonton for over twenty years, and in December 1986, 40 Merlins were counted on the Christmas Bird Count, more than in any other count in North America in the history of these counts! It is stated that the Peregrine Falcon is a non-breeder "from the Gulf of St. Lawrence to the Gulf of Mexico" (p. 27). While this was true twenty years ago, there are four pairs in Canada (unpubl. data) and 56 pairs confirmed on territory in eastern U.S. (Cade and Dague, 1987). Although many of these references and those that follow appeared in 1987, the same year that the book was published, the information is available elsewhere in other publications.

The statement that the "Cougar territory has contracted along with herds of White-tailed Deer" (p. 49) does not agree with published accounts of the expansion of White-tailed Deer over most of North America since 1908 (Hesselton and Hesselton, 1982). Wolf families (packs) rarely mingle in winter, contrary to what is stated (Parasido and Nowak, 1982). Herds of adult elk or wapiti are segregated by sex in winter, spring and summer (Peek, 1982), which hardly warrants the conclusion that they are "a clearly male dominated society" (p. 56). In the bison account the numbers are wrong. There are over 2000 Wood Bison in the Mackenzie Bison Sanctuary, not 500 as stated. The Wood Bison has little chance for survival in Wood Buffalo National Park, since over 6000 Plain's Bison were transferred there in 1925 to 1928 (Reynolds, 1987). The Plain's Bison left Wainwright before World War Two, not after 1960 (p. 60). I could go on but there is little need.

This book has a lofty and admirable objective, which makes it difficult to criticize; but authors, editors and publishers have a responsibility to ensure texts are grammatically correct and factually accurate. They have failed in this book. Consequently, I cannot recommend this book to any audience.

REFERENCES

- ALLEN, R.P. 1952. The Whooping Crane. Research Report No. 3. National Audubon Society. 1-246.
- CADE, T.J., and DAGUE, P.R. 1987. New York: Cornell University Laboratory of Ornithology. The Peregrine Fund Newsletter No. 15. 16 p.
- CADMAN, M.D., EAGLES, P.F.J., and HELLEINER, F.M. 1987. Atlas of the Breeding Birds of Ontario. Federation of Ontario Naturalists and Long Point Bird Observatory. Waterloo: University of Waterloo Press. 617 p.
- FILION, F.L., JAMES, S.W., DUCHARNE, J.L., PEPPER, P., REID, R., BOXALL, P., and TEILL, D. 1983. The Importance of Wildlife to Canadians. Ottawa: Canadian Wildlife Service, Environment Canada. 40 p.
- HELSELTON, W.T., and HELSELTON, R.M. 1982. White-tailed Deer. In: Chapman, J.A., and Feldhamer, G.A., eds. Wild Mammals of North America. Baltimore: The John Hopkins University Press. 878-901.
- KUYT, E. 1987. Whooping Crane. In: Holroyd, G.L., et al. Endangered Species in the Prairie Provinces. Edmonton: Provincial Museum of Alberta. Natural History Occasional Paper No. 9. 229-232.
- PARASIDO, J.L., and NOWAK, R.M. 1982. Wolves. In: Chapman, J.A., and Feldhamer, G.A., eds. Wild Mammals of North America. Baltimore: The John Hopkins University Press. 460-474.
- PEEK, J.M. 1982. Elk. In: Chapman, J.A., and Feldhamer, G.A., eds. Wild Mammals of North America. Baltimore: The John Hopkins University Press. 851-861.
- REYNOLDS, H. 1987. The Canadian Wildlife Service Program to Restore Wood Bison. In: Holroyd, G.L., et al. Endangered Species in the Prairie Provinces. Edmonton: Provincial Museum of Alberta. Natural History Occasional Paper No. 9. 323-328.
- SHANDRUK, L. 1987. A Review of the Habitat Requirements and Management Priorities for the Canadian Breeding Population of Trumpeter Swans. In: Holroyd, G.L., et al. Endangered Species in the Prairie Provinces. Edmonton: Provincial Museum of Alberta. Natural History Occasional Paper No. 9. 179-188.

Geoffrey L. Holroyd
Canadian Wildlife Service
2nd Floor, 4999 - 98 Avenue
Edmonton, Alberta, Canada
T6B 2X3

A REVIEW OF ARCTIC GRAYLING STUDIES IN ALASKA, 1952-1982. By ROBERT H. ARMSTRONG. Together with INDEXED BIBLIOGRAPHY OF THE HOLARCTIC GENUS *THYMALLUS* (GRAYLING) TO 1985. By ROBERT H. ARMSTRONG, HAAKON HOP and JULIA H. TRIPLEHORN. Biological Papers of the University of Alaska, No. 23. Fairbanks: University of Alaska, 1986. 110 p., 3 figs., 6 tables. Softbound. No price indicated.

This monograph consists of a review of studies of Arctic grayling in Alaska (1952-1982) and a seemingly exhaustive bibliography (to 1985) of the Holarctic genus *Thymallus* (grayling). The primary intent of the monograph is to assemble and review the large number of published papers and relatively inaccessible research reports on grayling, therefore providing the first bibliographical update on the genus in approximately 20 years.

Armstrong's review and synthesis of data available on Arctic grayling in Alaska primarily is directed towards fisheries management and includes sections on sport harvest, stocking, life history, migrations, age and growth, feeding ecology, and population estimation. A strength of this contribution is the inclusion in the synthesis of numerous documents, like Federal Aid annual reports, that are not easily obtained elsewhere. This review concludes with a clear statement that identifies major gaps in knowledge of Arctic grayling biology and speculates on how this information void may severely hamper future management attempts. Our major criticism of the review stems from the exclusive use and discussion of literature pertinent to the management of grayling. Clearly, the synthesis would have benefited by an attempt to draw parallels and distinctions among Arctic grayling and other salmonid species.

The major component of this monograph is a 92-page worldwide bibliographic listing of 1314 references on the grayling genus *Thymallus*. Researchers will find this index most helpful, as the introduction clearly describes how to use the various indexed sections of the bibliography. Even the abstracting services and key words used for the computer searches are provided, so that researchers could conceivably conduct a similar search of the post-1985 articles not included in the monograph. Although the bibliography is compiled alphabetically by author, key word indices that categorize articles by taxonomy, geography and subject matter are given. These indices greatly facilitate the ease and speed with which the bibliography can be searched for specific information; however, many of the larger categories would have benefited by the use of sub-headings. Each bibliographic listing includes basic reference information (e.g., title, author, date, etc.), as well as an indication of whether an English translation or summary of the article is available.

The review is aimed at researchers specifically interested in the management of Arctic grayling, while the bibliography is designed as a general reference aid for anyone working on the genus *Thymallus*. Although the audience for this review and bibliography is limited, researchers requiring information on grayling will likely find the monograph an invaluable, and inexpensive, method for accessing this widespread reference material.

Joseph M. Culp and Chris E. Beers
Division of Ecology
Department of Biological Sciences
University of Calgary
Calgary, Alberta, Canada
T2N 1N4