

Book Reviews

ZOOLOGY

Birds of Azerbaijan

By Michael Patrikeev. 2004. Pensoft Publishers, Geo Milev Street 13a, 1111 Sofia, Bulgaria. 500 pages, U.S. \$177.50 Cloth.

Several years ago I took a small map and shaded the countries for which you could purchase a good bird guide. There were two key gaps. One zone ran from eastern Turkey to Afghanistan (and the other was Brazil). The best books you could get for this former region (the Caucasus) was the *Birds of Russia* by Flint Boehme, Kostin and Kuznetsor or *Birds of the Soviet Union* by Dementiev and Gladkov (both nearly 50 years old). This new book covers the 372 species that have been recorded in the Republic of Azerbaijan and fills in some of that area with poor coverage.

Azerbaijan lies on the western shore of the Caspian Sea, to the north of Iran and east of Turkey. A southern section of Armenia clips off a small enclave called Noxçivan. It has a varied topography with the consequent diversity of bird species. This book covers this troubled region. There were wars in the 1800s with imperial Russia, civil war between 1917-1920, attacks by the Turks from the 1950s onwards, and still the area has an ongoing dispute with neighbouring Armenia. The struggles, along with changing economic and political status has led to some discontinuity in the study of birds. Separation from the USSR in 1991 lost the services of the Russian science community and this lack of continuous research shows in the data cited. Much of the information used by the author is from before the mid-1990s. There are some later references, but these are much fewer. Separation from the former USSR also caused economic difficulties from which the country has yet to emerge.

Birds of Azerbaijan is a distributional atlas, not a field guide. The author has compiled data from a large variety of sources, much from the "Russian" era. For example the data on Mallard is primarily prior to 1996. [We have seen with our work on the *Breeding Bird Atlas of Ontario* what an amazing difference a gap of ten years in the data can make]. The author has added his own extensive observations taken between 1970

and 1991. The story is quite gloomy. For example, many thousands of Red-breasted Geese were seen in the 1950s, but the species is considered virtually extinct now. Even the Eurasian Coot has dropped from millions to tens of thousands. The reasons for these changes include severe air, soil, and water pollution. Soil pollution results from oil spills, DDT and defoliants used in the production of cotton, making the Caspian Sea one of the most ecologically degraded areas in the world. Less gloomy, but equally distressing is the lack of current information on some species, for example Red Kite.

It is against this background that the author has done a sterling job of pulling the known information on this country's birds into a logical, readable text. Each species account has status, distribution, population size, migratory movements, breeding information, diet and mortality. The English names are used throughout, while Azaeri names are added for many species. A respectably-sized distribution map has codes for summer, winter, nesting, etc. for most species. The author gives an annotated bird list and describes important bird areas, places for colonial birds, waterfowl wintering areas, and the influence of cold winters and oil pollution. There are 78 photographs, of which one third show habitat, one third are bird photos and the rest are of eggs and nests. The habitat photographs show the nine basic types of landscapes from alpine meadows in mountains to semi-desert and wetland. But he does not illustrate the rust and mauve mountains of the Caucasus located in the troubled Naxçivan Autonomous District nor of any arid badlands. There is not full coverage of the 50 Important Bird Areas identified by the author.

Given the way the Azaeri economy has languished as regional trade has suffered and the underdeveloped oil production has yet to fulfill its promise, this book may be a very important milestone in a continuing tragic ornithological history.

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Birds of New Brunswick: An Annotated List

By David S. Christie, Brian E. Dalzell, Marcel David, Robert Doiron, Donald G. Gibson, Mike H. Lushington, Peter A. Pearce, Stuart I. Tingley, and James G. Wilson. 2004. New Brunswick Museum Monographic Series (Natural Science) Number 10, 277 Douglas Avenue, Saint John,

New Brunswick, E2K 1E5. 2004. 83 pages. [Also available in French.]

This publication appeared in the same series as the two previous summaries (hereafter "lists") of bird status

in New Brunswick (Squires 1952, 1976), and seems to serve essentially the same purpose, to update the provincial bird list and the status of each species. This review considers the new publication's success in achieving its purpose, whether viewed only as an update of the earlier lists, or as state-of-the-art representation of each bird species' status in New Brunswick.

The subtitle "An annotated list" implies that this publication was planned as a less ambitious publication than its predecessors, but that may be a quibble. The earlier books were also annotated lists, though including more descriptive "front material" and fairly extensive bibliographies. The new species accounts generally are shorter than those in the earlier lists, omitting most place-names and dates – except for species known from very few records. Presumably that reflected more complete perspective on status than was available earlier, as might be expected; given 30 years' additional data, and their consideration by a panel of authors drawn from most parts of the province, it may have been redundant to document *in detail* the distribution of each species, many of which occur regularly in all or most of the 15 counties.

Considered only as an updated provincial list, with status assessed from existing, largely unstandardized data, I judge that this publication will serve most of its immediate objectives adequately. Birders will be able to find out whether a scarce species has been reported previously in New Brunswick and, if so, where and how many times. They also can obtain an idea, in very general terms, of how common a regular species is, across the province and in the seasons when it is to be expected.

Scientists seeking potential study areas may be dissatisfied with the scarcity of specific locations and of distributional limits within the province. Few "hot-spots" are identified except for very scarce species. Admittedly, scientists "from away" probably also had difficulty extracting such information from the earlier lists, owing to far greater gaps in knowledge then.

The introduction makes it clear that the present list, longer by 61 species than its 1976 predecessor, grew by addition largely of vagrants (= "lost birds"). Some new species had expanded their ranges, but very few of those – Mourning Dove the most obvious example – breed widely in New Brunswick as yet. Only two species were stated to have declined drastically, though other declines were noted in species accounts; my recent experience (quite limited geographically) suggested that some other declines may be as significant as those highlighted in the Introduction.

Perhaps a more important question emerging from review of this publication is whether its format was suitable for presenting status of all species **representatively**, even if we acknowledge that complete information will never be available? Status involves frequency of encounter and density, as well as distribution. Most observational effort by birders is notoriously uneven, focusing on "hot-spots" and easily accessi-

ble areas – and on misplaced species. Is it reasonable to accept that data from such efforts provide the best picture available on bird status?

The status of many *breeding* birds in New Brunswick was presented, probably more representatively (up to that time), in the maps and population estimates of the Maritimes Atlas (Erskine 1992). From the start of that (breeding) Atlas project, it was recognized that the major increases in perspective would emerge for species that were neither everywhere nor with very restricted breeding ranges – and that was found to be so. Although "abundance indices" were assessed for most species, and extrapolated to total breeding populations for many of them, no attempt has been made – as yet – to map relative densities of breeding species within New Brunswick from Atlas data. That would be essential for representative assessment of status, and it may soon become possible using "point-count" data to be collected in the second-generation bird atlas in the Maritimes (now in planning) [that in Ontario is nearing completion]. Breeding species make up most of the provincial list of *regularly occurring birds*, and Atlas data should be preferred over even up-to-date annotated lists by most scientists and many birders.

The Atlas mapping approach reduced unsampled areas greatly – though not completely. It could be used effectively only during breeding and wintering seasons, when birds are fairly sedentary. As yet, no bird atlas coverage is available in the Maritimes for winter or migration seasons – except for seabirds (which may not provide a model useful for other species). Many (uncompiled) data exist for other regular species in other seasons; although most were collected unsystematically and with no attempt at comprehensive coverage, it would be possible to produce maps for occurrence and frequency of wintering and migrating birds – in this and nearby provinces – that would improve greatly on the rather subjective status assessments available in check-list form. Until that is done, annotated lists may be the only readily available summaries of bird status in non-breeding seasons, including most occurrences of "displaced birds".

The new list of New Brunswick birds is a neat, compact publication, with a sturdy "ring" binding and attractive cover pictures. The front cover features an Evening Grosbeak, a colourful and conspicuous species that often dominated the New Brunswick bird scene in the 1970s – but that, in the past decade, has almost disappeared from southeast New Brunswick.

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Fishes of the Great Lakes Region Revised Edition

By Carl L. Hubbs and Karl F. Lagler. Revised by Gerald R. Smith. 2004. The University of Michigan Press, Ann Arbor, Michigan USA. xvii + 276 pages, plates 1-32. \$24.95.

This book first appeared in 1941 in a different form and has had several subsequent editions. It is renowned for standardizing the methods for counting scales and fin rays and for measuring a fish specimen. This latest edition adds thirteen newly introduced species, plus hybrids between White Bass and Striped Bass, and geographical distribution maps for each species. It is much more user friendly than the 1964 edition. As was intended originally, this book is aimed at students and the ease with which this book can be used makes this point clear.

The Great Lakes region covers 287 770 square miles, while the Great Lakes themselves occupy 94 700 square miles of this area. Michigan is wholly encompassed by the region, as are small portions of other states bordering the lakes, but Ontario is the largest land area within the Great Lakes region so the book has a Canadian relevance. Within this region there are 28 families, 70 genera, 161 species and 215 forms of native fish. The term "form" is undefined, and seems to be used interchangeably with the term "kind". Presumably subspecies is meant. There are 210 species in total. Thirteen species and hybrids have been recently introduced by the construction of canals, by stocking, and through the dumping of ballast water from international freighters. Warning is given about the more destructive invaders' effects on the fish fauna and the loss of species that will result when the full effect is seen. The introductory sections of this book go into significant detail about the waters of the Great Lakes region, zoogeography, and the effects of postglacial redispersal.

The information in this book is generally well laid out. There is a section on the collection of fishes, on the preservation of fishes, and on how to identify these preserved fishes. All this information is very convenient for an amateur naturalist, including the description of the extent to which field notes should be made. These sections are brief, however, and are intended as basic information only.

There is a key to families and keys to identify species within families. The key to families is very easy to use, outlining the basic and most prominent features, allowing for quick and easy use, even by beginners. Not all the keys are together but the page references are clear. The species keys are also fairly easy to use, and the added line drawings can be helpful when identifying vague features but additional key features are in a second section after each key. There are 62 cyprinid species (carps and minnows) which makes it easy to go astray. Perhaps an initial key to genera would reduce the chance of error. Some exotics (Goldfish, Carp) are included in the key but others are not (Bighead, Black, Grass and Silver carp). A section on these "alien species" appears at the end of

the key to Cyprinidae and might better be placed at the beginning, as would a section on hybridization in Cyprinidae.

Before each key there is a description of the family which is limited to physical features, geographical distribution, a brief biological outline, and occasionally the importance of the family to the fisheries. Species introduction dates and effects are included where applicable. After each key there is a list of all the species supplemented by a brief description, including physical features, geographical distribution, and what the species feeds on. The arrangement of species is not alphabetical by common name or by scientific name and does not follow the appearance of the species in the key, necessitating some searching in larger families. In addition to the descriptions there is a black-and-white photograph of the whole fish on the facing page as well as small line drawing of heads, spines, gill arches, mouths or other key features. The photos here, however, are not of the highest quality. In some cases, almost all detail is missing. The line drawings are small and often have no indication of the key structures so necessitating constant flipping between the key and the description section. The description has a tiny (22 × 16 mm) geographical distribution map. The maps are provided as a quick reference only since exact locations can scarcely be found. Larger maps are provided on the inside of each cover, in significantly more detail, allowing for some cross-referencing. Ontario and Quebec records of the Chestnut Lamprey are not apparent, the Carp and Freshwater Drum are not recorded from the area around Ottawa where they are common, and the White Bass is mapped for Ottawa where it does not occur. Evidently, the maps must be taken as a general guide to distribution and cannot always be used locally, where most students and naturalists work.

At the end of the book there is an appendix of line drawings of the larval stages of some of the fish of the Great Lakes region. This book is geared towards the identification of adult fish and any inquiries as to the identification of larvae are directed to consult other works. The index includes species names, common names and some key words. No glossary is provided though its presence would be ideal. While a section on anatomy is given at the beginning, it is not useful as a quick reference, nor is it complete (for example, adipose and falcate are not explained in the book, nor are markings well described). The book ends with a series of 32 colour plates with several species per plate, which are generally useful to flip through to locate a species that you are already somewhat familiar with, although many of the colours are inaccurate making identification by a beginner difficult.

The page numbering system is a little confusing, sometimes at the bottom of the page, sometimes at the top, sometimes missing and easily confused with

the numbering system for species. There are also some errors of omission and commission. It is noted that scales are not used for ageing mudminnows but does not explain why. The number of lamprey species is given as about two dozen (the same as in the 1964 edition) but this number has increased to about 34 since then. Some scientific names are given as a trinomial; e.g., *Semotilus atromaculatus atromaculatus*, but no other subspecies are mentioned which makes this extensive name unnecessary.

The list of families provided includes native fish only, so to get a comprehensive count of all the different genera and species in the Great Lakes region you would have to look through the entire book. Also, upon comparing the present list to the list provided in the 1964 edition, the latter includes all fish, not just native species. It is therefore not possible, without great effort, to find out how many new native fish have been discovered in the past forty years. There have also been many name changes that have occurred since the last edition was published. *Entosphenus lamotteni* has now become *Lampetra appendix*, *Lepisosteus productus* has become *Lepisosteus oculatus*, and *Pomolobus pseudoharengus* has become *Alosa pseudoharengus*, to name a few.

Some of the criticisms of this book mentioned here could be addressed by an on-line version. This book must be small and therefore concise for use in the field and laboratory. An on-line version could have larger maps (updated as new information or corrections are noted), colour photographs of live fish which would be of use to field workers, keys segmented by lake or country (most work is done locally, a worker in eastern Ontario would not find the same suite of species as a worker in Illinois), larger illustrations of key characters, key characters embedded in the key for easier reference, new species could be added as discovered, and keys to larval fish developed.

This book is a great tool for use in the lab or field by beginners and professionals alike. With some use it will lay open flat, preventing the loss of place while your hands are busy working on the fish. The positive reputation of this book as *the* book for Great Lakes region fishes is long standing and will only increase with time.

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Seabirds and Atlantic Canada's Ship-Source Oil Pollution

By F. Wiese. 2002. World Wildlife Fund, 245 Eglinton Avenue East, Suite 410, Toronto, Ontario M4P 3J1 Canada. 82 pages.

The public seems to have a love-hate relationship with oil. Oil allows for high salaries and contributes to civilisation, but it also can create severe pollution. As this report shows well, chronic offshore oil ranks among the most severe pollution problems in the world.

"Many people consider Canada to be one of the leading nations in environmental conservation in the world". However, the still conservative estimate of 300 000 dead Canadian seabirds due to chronic oil pollution and presented in this report is shocking; to say the least. Besides a seabird population issue this also a major animal care issue: over 300 000 animal individuals are suffering and are dying a gruesome death. As this informative report emphasizes, for each oiled seabird found in Newfoundland one can assume that at least 10 more have died.

Together with several individuals devoted to the issue of marine and oil pollution, author Dr. F. Wiese studied seabirds and their oil-related mortality for many years. His report on chronic offshore oil pollution is structured in two parts: The Problem (11 chapters) and The Solution (8 chapters); four appendices, a list of abbreviations and some references are also given. Half of the report deals with OSIRs (Oil Spill Intelligence Reports 1997-2000), presented in Appendix 4. OSIRs are only accessible for few signed-up members, and it is great that this report provides the wider public with an opportunity to access this information.

Besides reporting baseline numbers of seabird mortalities and oil pollution incidents, other highlights of this document are presented to a wide audience dealing with ocean modelling, detectabilities of oiled birds on a beach, drift block experiments and emphasizing how important such methods are to address the chronic offshore oil pollution efficiently and in accurate terms.

"Most of those in the marine industry carry out their operations in a safe and environmentally responsible manner." This statement is somewhat in contrast to the fact that oiled birds keep washing up on shorelines worldwide which suggests that national legislation and international conventions and guidelines are not being followed or that they are inefficient. "The illegal discharge of oil from ships into the world's oceans is a global problem that affects the entire marine ecosystem". This calls for a global oiled bird survey; e.g., citizen- and volunteer-based marine and beach surveys.

From this nice report it becomes quickly obvious that the history and track-record of chronic oil pollution, a by-product of the current civilisation, is not an environmental success story. Instead, the current progress for trying to keep the (marine) environment clean presents more of an international embarrassment. It is still difficult to understand why the "burden of proof" for chronic oil pollution is not on the industry side. After reading this report and its seabird facts one cannot deny that oil pollution equals environmental massmurder.

It is correct that the Canadian legislation extends the enforcement of shipping, environmental, and

wildlife law to the 200-mile exclusive economic zone. However, some federal legal decisions have restricted these laws to the 12-nautical-mile territorial zone. Offshore pollution monitoring flights are made by Transport Canada and by the Canadian Coastguard; the Department of National Defence and Department of Fisheries and Oceans are encouraged as well. Although the Canadian Shipping Act, the Migratory Bird Convention Act, the Canadian Environmental Protection Act and the Fisheries Act deal with oil pollution issues, suspected ships have rarely been turned back to a Canadian port for further investigations. Only the Migratory Bird Convention Act protects migratory seabirds from oil-related offences; but so far, only five vessels were charged. Knowing that approximately 2500 offshore oil spills are reported per year in Atlantic Canada, one gets quickly an idea of the issue. Obviously, pollution pays ... and as the report convincingly shows, the polluter gets almost awarded due to the competitive business advantage when not punished. Atlantic Canada is simply the cheapest place to dump bilge oil on the Great Circle route between North Atlantic and Europe. No doubt, the enforcement needs to be stronger in Canada, higher fines are required, and on board disposal facilities, increased monitoring, increased awareness and other measures are necessary. Even the European Union uses RADARSAT (SAR), a satellite image product from Canada, in order to trace and to monitor offshore oil pollution.

As Wiese's WWF report presents, Canada does not really have a national standard for an EDA (Environmental Damage Assessment). It is surprising that the exact number on "how many seabirds are really oiled" is hard to get and not available with high accuracy; accurate numbers seem not to play a role in the legal decision and discussion even! Perhaps court fines should consider a price per oiled seabird, and thus could change the current dilemma?!

This document reports that approximately 40 million pelagic seabirds reside during the year on the Grand Banks off Newfoundland. However, some of the presented numbers are puzzling and might cause

confusion for the informed Naturalist. It was reported earlier that over 200 000 Thick-billed murres are killed annually during the Murre hunt off Newfoundland. Now, chronic oil pollution is even added, but breeding Thick-billed Murres in the Canadian Arctic – the seabird species believed to be affected the most by chronic oil pollution – does not show a significantly declining population trend at all. Are Canadian seabirds sensitive indicators of the marine environment? Or are birds from other areas in the world and being present in Canadian waters, such as Greenland's Thick-billed Murres and Manx Shearwaters from England (both populations are known to be declining), better indicators? More research is required. Some other confusion might arise from the presented population numbers of wintering Eastern Harlequin Ducks, and that no direct relationship is known to exist between the amount of oil spilled and the numbers of seabirds killed. For my taste, some key references such as J. Burger's 1997 book on "Oil Spills" would have been a great addition. Of interest might also be the seabird oil pollution work in British Columbia by A. Burger, the Festucca Oil Spill Trust Fund and the Provincial Government's work. Globally speaking, it might be interesting for the reader to learn how Norway, a country with major offshore oil resources and with a very long coastline and huge seabird resources, deals with chronic oil pollution! Perhaps it would also be informative to have a list of all known oil vessel accidents in Canadian waters.

However, this informative report provides many important details and baseline information on the slightly overlooked but very relevant chronic oil pollution topic in the offshore waters of Eastern Canada. It focuses on seabirds; but many other species and the entire ecosystem suffer from oil pollution, too. "Chronic oil pollution is an international problem whose solution requires national and international effort".

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Spiders of Australia: An Introduction to their Classification, Biology and Distribution

By T. J. Hawkeswood, 2003. Pensoft Publishers, Geo Milev Street 13a, 1111 Sofia, Bulgaria. 264 pages. EURO 19.95 paper, 34.95 cloth

The past few decades have seen the production of a considerable number of landmark volumes on the natural history of regional spider faunas. Volumes by Dippenaar-Schoeman and Jocqué (1997), Song *et al.* (1999), Ubick *et al.* (2005) among others have set a high standard for concise, useful, in-depth coverage of regional faunas. With this in mind, I readily agreed to review *Spiders of Australia: an Introduction to their Classification, Biology and Distribution*.

I tried, I really did try, to find good things to say about this book. Certainly the dust cover of this volume, with its border of 24 colour images of various Australian spiders surrounding an anthropomorphic photograph of the front end of an immature male deinopid spider (looking as charmingly pugilistic as only an immature male can), promises an interesting and engaging piece of work. Unfortunately, as they say, you can't judge a book by its cover.

The content of *Spiders of Australia* falls far short of fulfilling the promise of either the cover or title. Interesting observations on the natural history of a variety

of relatively common and fairly well known spiders from Oz are marred by errors of fact and/or presentation on nearly every page. One is left with the impression that the well-meaning author has little professional knowledge of spiders and that the text never received professional content or copy editing.

This volume commences with a brief preface followed by several short introductory chapters covering spider morphology, natural history, classification and other general topics. Anyone with more than basic knowledge of spiders will find much to criticize or question within these pages. For instance, we are presented with the following dubious “facts.”

- Spiders are important in controlling mosquito populations. In reality, fish, birds and various other organisms are vastly more important for mosquito control than are spiders.
- There are about 20 000 and 1800 spider species in the world and Australia respectively. The actual figures are closer to 40 000 (Platnick 2006) and 3300 (R. J. Raven, Queensland Museum, personal communications).
- Male and female spider genitalia fit together like a “lock and key mechanism.” Wrong! Spider genitalia are one of the best known examples of rapid evolution likely resulting from sexual selection by female choice (Eberhard 1985).
- Palps of male spiders are “hollowed out” to hold sperm. An insult to male spiders everywhere! Mature male spiders are unique in (and defined by) their possession of palps bizarrely modified into complex sperm storage and transfer organs.
- A considerable number of Australian spiders pose “a serious threat to humans in Australia.” Wrong! Among Australian spiders, only widows (*Latrodectus hasselti*) and a couple of funnel-web spiders (*Atrax* and *Hadronyche* spp.) pose any threat and true bites from these spiders are exceedingly rare (Isbister 2004, Isbister and Gray 2002). Australians are better off spending their paranoia time worrying about being hit by lightning.

Things don’t get much better in the subsequent chapter (“Species described in this book”) which forms the bulk of the text. Approximately 125 pages discuss 141 species in 29 families (or about 4 and a little more than 30% of the currently recognized species and families represented in Oz). Each family section lists the number of Australian and world species in the family and describes the general appearance, life history, and behaviour of one or more exemplar species. Unfortunately, the families are organized in a confusing quasi-phylogenetic manner, the species statistics are often erroneous, the descriptive information is largely useless for identification purposes, other information is often misleading or erroneous, and the vast majority of the unique and truly wonderful Oz spider fauna is ignored.

For instance, consider the author’s treatment of the family Pholcidae. Australian genera and species are listed as 9 and “about 12” and the cosmopolitan *Pholcus phalangioides* is the token exemplar. The author references the most recent taxonomic work summarizing the Oz pholcid fauna (Huber 2001) but missed the fact that this work records 14 genera and nearly 80 species (and still counting). Well, okay, I sometimes have trouble with math, too. But in such a book I expect to be introduced to truly Australian pholcids instead of to an already well-known species found throughout the world. The section is further marred with factual and typographical errors. Similar problems surface in the treatment of other families. As well, erroneous medical “information” is regularly trundled forward – e.g. under Lamponidae, almost entirely an Australian family, discussion of the life and times of *Queenvic piccadilly* would be vastly preferable to reiteration of the discredited medical mythology surrounding *Lampona cylindrata*.

A short glossary of slightly less than 100 entries follows the “Species described ...” chapter. Explanations are generally clear but one wonders why such terms as anus, bark, and solitary warrant entries but mygalomorph does not. Nearly 30 pages of references conclude the text. There is an annotated section on general texts on Australian spiders and fairly complete and up-to-date scientific references are presented for each family. In spite of considerable repetition [e.g. Rainbow (1911) appears no less than 29 times] the references are easily the most useful part of the entire book.

The book finishes with a set of 139 photographic plates and 27 paintings of the main species discussed in the text, arranged 3 to a page. Some of the photographs are quite nice illustrations (e.g., plate 5 *Deinopis subrufa*, the cover boy mentioned earlier, and plate 16 *Lycosa bicolor*, also featured on the cover as one of the border images). The paintings are without exception unexceptional – two-dimensional, flatly coloured, and crudely rendered.

In summary, if you are looking for an interesting decorative wall piece, frame the cover and recycle the rest (maybe keep the references section). If seriously curious about general spider biology and classification, spend your money on Levi and Levi (1968) or Foelix (1996). For specific information on the spiders of Oz, buy Murphy and Murphy’s (2000) treatise on southeast Asian spiders – it does a much better job of introducing the fauna than does *Spiders of Australia*

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Annotated Bibliography of Quaternary Vertebrates of Northern North America With Radiocarbon Dates

Edited by C. R. Harington. 2005. University of Toronto Press, 10 St. Mary Street Suite 700, Toronto, Ontario M5T 1R5 Canada. 539 pages. \$150.00 CDN.

Bibliographies have proven an essential tool in any historical based research, yet are often underrated. In paleontology, specifically vertebrate paleontology, many have relied upon *Bibliography of Fossil Vertebrates Exclusive of North America 1509-1927* (Romer et al., 1962), and *Bibliography of Fossil Vertebrates (BFV)* (produced by the Society of Vertebrate Paleontology), and their earlier versions. The BFV, however, is no longer updated. Taxon-oriented bibliographies are also produced, like Crossman and Casselman's (1987) annotated bibliography of *Esox lucius*; and theme oriented bibliographies like Tokaryk et al. (1992) annotated bibliography of the Cretaceous-Tertiary extinction event. Without continued maintenance, these, however, are quickly dated.

Harington's *Annotated Bibliography of Quaternary Vertebrates of Northern North America – with Radiocarbon Dates* is a recent contribution to the stacks of paleontological resources. This volume contains 1347 citations (in 328 pages) from 1748 to 2000, containing descriptions or notices of fauna from 2 million to 5000 years ago. The region is inclusive of Alaska, Greenland, and Canada.

The annotation is of sufficient depth when warranted and the reader will note the brevity given to many of the pre-20th century articles as these themselves lack sufficient depth. The indexing, always a vital tool in

White as a Ghost: Winter Ticks and Moose

By Bill Samuel. 2004. Federation of Alberta Naturalists, 11759 – Groat Road, Edmonton, Alberta, T5M 3K6 Canada. 100 pages. \$ 24.95.

Parasites are a fascinating study. They are able to adapt and evolve in order to survive in or on their hosts, but usually will not kill their hosts. Books about parasites are not often found in a public library, but *White as a Ghost* would be a good addition. It has a large format, 28 cm × 23 cm, with excellent photographs illus-

trating the text, but is not a coffee table book. It is intended to give trappers, Fish and Wildlife officers, hunters, farmers and biologists the knowledge they need to understand and recognize the life cycle of the tick which causes Ghost Moose: *Dermacentor albipictus*. Wilderness campers, more than the general public, are most likely to come across Ghost Moose.

Dr. Samuel is a parasitologist who studies parasites of deer, Elk and Moose and in particular the tick which causes Ghost Moose. The tick is widespread bibliographic construction, is subdivided into five sections: scientific names; common names; localities and stratigraphic terms; personal names and institutions; and of a general index. This latter section, always constrained by the subjective nature of its composer, can be relied upon for consistency simply for the fact of Harington's long time standing in Quaternary paleontological research, which is beyond reproach.

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Dr. Samuel is a parasitologist who studies parasites of deer, Elk and Moose and in particular the tick which causes Ghost Moose. The tick is widespread

and is found throughout the North American ranges of deer, Elk and Moose except the far north. Deer and Elk seem able to co-exist with this parasite, and they remove most of the ticks by efficient grooming before they can do much harm. But Moose are less capable of combating an infestation. The eggs of *D. albipictus* are laid on vegetation in the spring, and from September to November the hatched larvae climb up the vegetation and attach themselves to a passing animal. After November the larvae left on the ground die. Once attached to Moose, larvae feed on Moose blood before becoming nymphs; the nymphs are dormant until February, then moult and become adult ticks. All three stages depend on blood to survive, but it is in March and April that their feeding causes the Moose to become so weakened by loss of blood that some can die. The tick bites can also introduce other pathogens into the host so that there may be multiple causes for death. After May, the female ticks drop off the host, lay their eggs in sheltered places and the cycle starts again. The irritation of the bites make the Moose groom incessantly, mostly with its tongue, which breaks off the ends of the coat hair leaving only the short undercoat exposed. This is grey-white and gives the Moose the typical "ghost" appearance. Licking can also break the skin, allowing easier access for the ticks. A serious infestation will create large open areas of bleeding skin and consequent debilitation.

Moose populations in Canada are stable, but when a local population increases, the young in particular start the winter under-nourished and more susceptible to disease. Then there can be a serious die-off in

March and April due to tick infestation. There were major die-offs of up to 50% of the population in some areas in 1991 (Minnesota), 1999 (six provinces, British Columbia the worst), and 2002 (eastern provinces and the prairies). Some dead Moose have carried more than 500 000 ticks. Effective prevention is difficult but Dr. Samuel suggests that a possible solution would be to cull Moose where there is a population build up, thus reducing the demand on the available food sources. Experiments have shown that Moose can detect and avoid tick-infested vegetation but if food is scarce, they will eat it.

There are chapters on the life cycle of the tick, how they are adapted to attack Moose, their invasive characteristics and behavioural strategies used by Moose to evade the ticks. The book is attractively illustrated and for light relief, there are good puns on the word "tick": e.g., characteris-ticks, and a poem or two. Knowing more about the life cycle of the tick and its serious effects on Moose populations should be of value to anyone travelling or working in the areas where moose are found.

The Federation of Alberta Naturalists has published several natural history books, and their Atlas of Breeding Birds of Alberta is a best seller. They commissioned Dr. Samuel to write Ghost Moose which is an interesting and serious book about a wildlife disease. It makes absorbing reading and describes an aspect of wildlife we seldom hear about.

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Lewis and Clark on the Great Plains: A Natural History

By Paul A. Johnsgard. Bison Books, University of Nebraska Press, 1111 Lincoln Mall, Lincoln, Nebraska 68588-0630 USA. 143 pages, \$18.28.

One of the most profound expeditions in American history and culture was of the Lewis and Clark adventures, 1803-1806. Led by Meriwether Lewis (1774-1809) and William Clark (1770-1838), the expedition was one of the first systematic surveys of the natural resources and natural history of the American west. And as such, the published record since the early 19th century pertaining to these treks is voluminous. From narratives and journals (e.g., Moulton 1983-2002), their place in history, and their experiences with natural history (Cutright 1969), all raise Lewis and Clark to American cultural icons.

Johnsgard's *Lewis and Clark on the Great Plains* adds to this list but should not be considered a significant contribution to the histrionics of the expedition and what it meant. The author's contribution is more in line with a combination field guide / history lesson of the wildlife encountered by Lewis and Clark's group. Following a brief introduction, the book is chaptered by contemporary States with regional maps outlining expeditionary routes. This template is essential in un-

derstanding the chronology as the expedition at times retraced their steps in a single season, if not over the course of the expedition's history.

The bulk of the content is a listing of the flora and fauna (complimented with scientific and common names). In user friendly manner Johnsgard provides a concise synopsis of the taxa followed by shorter notations as to the encounters with the expeditionary force. The Western Hognose Snake (*Heterodon nasicus*) for example, was likely found and described on July 23, 1805 near Townsend, Montana, prior to the formal erection of the species in 1852 (Baird and Girard 1852). Based on his description, "Lewis should be credited" Johnsgard contends, "with the discovery of the species" (page 97).

Visual support for the descriptions come from the authors own line drawings, 39 in all. Simple in vision yet detailed, collectively with the body of text, make this little volume an added historical perspective to viewing nature as it once was, 200 years ago.

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Baird, S. F., and C. F. Girard. 1852. Reptiles. Pages 336-353 in Exploration and Survey of the Valley of the Great Salt Lake of Utah, including a reconnaissance of a new rout through the Rocky

Mountains. Edited by H. Stansbury. Lippencott, Grambo, and Company, Philadelphia. 487 pages.
Moulton, G. E. Editor. 1983-2001. *The Journals of Lewis and Clark Expedition*. 13 volumes. University of Nebraska Press, Lincoln.

Waterfowl of Eastern North America

By Chris G. Earley. 2005. Firefly Books: Buffalo, New York; and 3680 Victoria Park Avenue, Toronto, Ontario M2H 3K1 Canada. 158 pages. \$19.95 Paper.

This attractive bird identification book is clearly aimed at the beginner birder. It is the fourth in a series of similar books by the same author and publisher. Earley properly cautions new birders about hasty and uncertain judgments in the often perplexing task of bird identification.

A cursory review of this handsomely printed, full-color book, measuring 5½" (14.0 cm) by 8½" (21.6 cm) by ½" (1.3 cm), makes a favorable first impression. In particular, the photographs of individual birds, usually in nuptial plumage, on the water and flying, and when used in comparison with look-alike birds, are excellent. Two pages are usually devoted to each species, including photographs, a small range map, and brief text mostly descriptive of non-breeding season plumages. Two to four sentences tell a bit about each species and a sentence or two under "Nature Notes" provides additional eclectic, often trivial information.

Unfortunately, my initial favorable impressions soon changed. First, the title is a misnomer. A substantial number of the species included are not waterfowl as defined by the AOU checklist, which the author references. Rather, the author re-defines waterfowl to include other "ducklike birds", such as some species of loons, grebes, pelicans, cormorants, rails, and gallinules. Attention to these species comprises about a quarter of the pages accorded the true waterfowl.

North America and Eastern North America are not defined. By AOU definition the mainland of North America extends south through Panama, including associated islands. Consequently, some native North American species are missing. On the other hand, several exotic or species of rare or irregular occurrence are addressed (e.g., Mute Swan, Barnacle Goose, Garganey, Tufted Duck, and Smew). Oddly, four full pages are devoted to each of three species rarely (unlikely ever to be) seen by many birders (the King and Common eiders and the Long-tailed Duck); but the commonest North American duck, the Mallard, receives only two pages.

Other problems arise. The range maps are too small, especially for coastal species when the pale yellow representing winter range is cast against the light gray background. The map depicting the wintering range of the Blue-winged Teal (page 47) as including northeastern Argentina, Paraguay, Uruguay and extreme southern Brazil is incorrect. Upon close examination,

Cutright, P. R. 1969 [1989]. *Lewis and Clark: Pioneering Naturalists*. [Reprint]. University of Nebraska Press, Lincoln.

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the unnatural, vertically-flying shoveler (page 9) is certainly a cropped view of the horizontally-flying bird depicted on page 14 with the photo reversed and rotated 90 degrees. The photograph of a flying male Common Merganser (page 147) is mis-labeled as a Hooded Merganser.

The two-page chart titled "Seasonal Status of Waterfowl" (pages 16-17) is based solely on observations at Point Pelee National Park [Ontario]. While perhaps useful in showing relative species abundance and temporal distribution in the Great Lakes region, it has questionable relevance elsewhere.

"What can I do to help waterfowl?" (pages 130-131). is largely about nesting boxes. Only a half-dozen or so waterfowl utilize such structures. Nothing is said about North American waterfowl being protected by international treaties, federal laws, and laws and regulations of the various states and provinces.

The list of references (pages 154-155) is peculiar. Some entries are outdated (e.g., Studer, 1881) or are primarily of works of art (e.g., Brasher 1962, Lansdowne 1980). While the definitive AOU *The Birds of North America* monographs (Poole and Gill, eds.) are noted, their scientific excellence, content, and format are undescribed and their general unavailability, except in larger libraries, is unmentioned.

A number of important waterfowl references are overlooked (e.g., Delacour's four-volume *The Waterfowl of the World*; Palmer's *Handbook of North American Birds*, Volumes 2 and 3, Waterfowl; Volume 1 (Ostrich to Ducks) of the magnificent *Handbook of the Birds of the World*, edited by del Hoyo, Elliott, and Sargatal; and even the early but enduring John C. Phillips' four-volume opus, *A Natural History of the Ducks*. Despite the attention given wood ducks and nesting boxes, Frank Bellrose's splendid monograph (*Ecology and Management of the Wood Duck*) is likewise missing. All of these basic references could easily have been accommodated in the large blank space on page 155.

Much of what the novice birder learns in this book will have to be forgotten should his early interest in birding lead him forward. Perhaps the concerns and errors noted above, and others unexpressed, will be corrected in a reprinting. In the meantime one would be wiser to spend a few more dollars for one of several time-tested, authoritative field guides listed among the author's references.

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Wolves: Behavior, Ecology, and Conservation

Edited by D. Mech and L. Boitani. 2003. University of Chicago Press, 5801 Ellis Avenue, Chicago, Illinois, 60637 USA. xvii + 448 pages, U.S. \$49

In 1961, wolf biologist Douglas Pimlott wrote: "The wolf poses one of the most important conservation questions of our time. Will the species still exist when the twentieth century passes into history?"

Pimlott, if he were alive today, would be amazed and heartened by *Wolves: Behavior, Ecology, and Conservation* by L. D. Mech and L. Boitani because not only does it describe evidence of a "turn around" for the species that occurred in recent decades, but provides an encyclopaedia of scientific information about the wolf that has come from a remarkable amount of research over the past 40 years.

This book replaces one by David Mech written in 1970. However, this "update" is a much expanded, 22-authored, 448 page tome that provides one of the most extensive descriptions of the ecology of any mammal species in the world. The Table of Contents provides evidence of the book's depth, with chapters on: wolf social ecology; behaviour; communication; wolf-prey relations; wolf physiology; genetics; evolution and taxonomy; interactions with non-prey; restoration of the red wolf; wolves and humans; wolf conservation and recovery.

This is a book that you should read in selected chapters, rather than from cover to cover. There is too much detail to absorb, and although mostly written clearly, the style is fully referenced science. The book is well indexed, and brings together research conclusions on any conceivable topic related to wolves, very useful either for the interested person or the biologist.

The intent of the book, according to the editors, is to counter the "myth and legend, folklore and fairy tale" that has, and continues, to surround the species, by presenting a scientific view of the animal. The underlying assumption is that this scientific understanding will result in support for wise management of the expanded wolf populations that now exist in many places in the world. A more poetic reason for the book is given by physiologist Terry Kreeger: "Physiologically, we know a great deal about the wolf, although we still have much to learn. But why should we continue to study the wolf? Some people curse the animal; others deify it. As scientists study it, we may be able to blunt these extremes and place the wolf in proper perspective. Wolves tend to roughen the edges of a world being smoothed by human hands. For many of us, that is

good reason to learn what we can about them, inside and out, and certainly good reason to work for their conservation."

Some chapters are difficult, particularly those addressing wolf taxonomy and genetics, because the data from research are themselves confusing, contradictory or only tentative. Both fields have been fraught with "re-interpretations," sometimes by the same researchers, and consensus on what constitutes adequate evidence is unclear. For example, in the genetics chapter is a statement that parent-offspring relationships can be determined by examining nuclear DNA at as little as 10 microsatellite loci, whereas work done in association with our Algonquin wolf studies showed that as many as 15 loci were needed to avoid mistakes. These chapters leave their respective topics in chaos; hopefully, analytical methods soon will improve.

All other chapters are more readable and, because of the wealth of data, lead to more intriguing descriptions of the lives of wolves. Portrayed here are images of the wolf as a highly adaptable and intelligent species, one with a set of biological limits and norms, but with the flexibility to exercise a great deal of individual choice, the key to its success.

Human-wolf relationships are chronicled through the ages, right up to modern attitudes and their consequence for the future of the species. In a final chapter, Mech and Boitani reflect on the need to shift our perspectives on how to manage wolves from one of past "trench warfare" between people with different attitudes, to some new, more moderate paradigm that accepts the wolf with human imposed limits on population size, particularly in human-altered environments where it has been shown capable of surviving. Missing, however, is recognition of the importance of maintaining at least some areas as a crucible of natural selective forces surrounding the species – the very forces out of which the species evolved – rather than being content with the imposition of human modified environments and human control. There is still more to achieve before we congratulate ourselves in saving the real "wild" wolf in real intact wilderness.

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BOTANY

Rendezvous with the Wild: The Boreal Forest

Edited by James Raffan, 2004. The Boston Mills Press, 132 Main Street, Erin, Ontario N0B 1T0 Canada. 192 pages, \$49.95 Cloth.

Named after the Greek god of the northwind, Boreas, the boreal forests of the world carpet the northern circumpolar reaches. St retching across Canada from New-

foundland to the Yukon, the boreal forest reaches into Alaska, through the vastness of Russia and into the Nordic countries of Scandinavia. Forests of coniferous black spruce, white spruce, balsam fir, jack pine, and tamarack, interspersed with deciduous white birch, aspens, willows and alders dominate the boreal scene.

Canada's boreal forests are of national, and indeed, global significance. Approximately 40% of the globe's boreal forests lie within Canada's boundaries. Fifty-eight percent of Canada's landmass is boreal forest that includes over 90% of the country's remaining large, intact forest landscapes or 25% of the globe's intact forests. Ecological values include prime habitat for many species of wildlife (including 75 percent of the continent's waterfowl), vast areas of lakes, rivers and wetlands and globally significant storage of carbon.

Canadian forests, especially the boreal forest, have long played a key role in the national economy. In 2003 alone, forest products contributed almost \$30 billion to Canada's \$46 billion trade balance. Canada is the world's second largest producer of wood pulp and the world's largest producer of newsprint. Direct forest industry employment totaled 376 300 workers for 2003. Much of this economic activity is directly related to the boreal forest that acts as the economic foundation for many communities across the country.

Given the economic and ecological significance of Canada's boreal forest, it is small wonder that people are becoming increasingly concerned about the long-term sustainability of this continental biome. *Rendezvous with the Wild* is the latest in a series of books, articles and media features on the future of the boreal forest. It tells the story of the Boreal Rendezvous, a series of canoe trips taken in the summer of 2003 on ten Canadian boreal rivers from the Wind River in the Yukon to the Moisie in Quebec.

The canoe trips were a vision of the Canadian Parks and Wilderness Society (CPAWS) in collaboration with the David Suzuki Foundation, the Canadian Boreal Initiative, and Mountain Equipment Co-op. They sought ways that would help shift our relationship with the boreal forest from one of accelerating large-scale, industrial fragmentation and transformation, to one that focused more on boreal forest conservation and viable, sustainable development.

Edited by the well-known Canadian author and avid canoeist James Raffan, *Rendezvous with the Wild* is an enticing collage of photography, art, journal entries, essays, poems, musings and prayers from many of the canoe trip participants. The variety of entries is marked by the diversity of contributors. Over 70 peo-

ple including Native elders, conservationists, television celebrities, scientists, photographers, poets, academics, canoe builders, and musicians contributed their voice and creativity to this marvelous tribute to the mystery and attraction of the boreal forest.

As Raffan notes in his opening essay, this is not a book about the boreal forest, but rather a book in response to the boreal forest. The canoe trips and canoeing act as constant themes weaving their way through the rich and varied fare. The photography is splendid and the book's layout a delight to the senses. The reader is carried along the current of the river with boreal vistas provided by the many witnesses offered by the book. Of particular strength throughout the book is the vision and witness of the First Nations to their boreal forest home.

The French philosopher Blais Pascal once remarked that the human heart has reasons of which the mind knows little. In boreal forest conservation issues, the environmental community often takes refuge in the technical, scientific dimensions of any particular boreal forest issue. This is essential and necessary. However, sole attention to the technical dimension fails to tap the depths of energy that can be attributed to the multidimensional human experience of the boreal forest. This human "emotional" experience is often dismissed as simply a "subjective," private experience that cannot be accepted on par with so-called "objective" scientific knowledge of any particular issue. *Rendezvous with the Wild* dispels such dualistic thinking and attempt to legitimize the direct human experience of the boreal forest as a powerful force that may energize action on behalf of forest conservation.

Rendezvous with the Wild begins and ends with a prayer by William Commanda, an Algonquin elder from Maniwaki and honorary elder of the CPAWS Boreal Program. The book is thus bounded by the spiritual, by due attention to the human experience of the boreal forest. You will have to look elsewhere for material on the boreal forest, on its ecology, on the impact of industrial activity, or the development of boreal forest policy. *Rendezvous with the Wild* attends to other data, to the inner data of human consciousness vis-à-vis the boreal forest. I have no doubt that if such data is not seriously considered, then conservation and sustainable development of Canada's boreal forests will remain a dream – forever.

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ENVIRONMENT

The Earth's Blanket: Traditional Teachings for Sustainable Living

By Nancy J. Turner. 2005. University of Washington Press, P.O. Box 50096, Seattle, Washington 98145-5096 USA. 298 pages, U.S. \$29.95.

Nancy Turner's book, *The Earth's Blanket* is a thorough treatise on indigenous peoples' relationships with the environment, and has as its goal to demon-

strate and better understand alternative ways of viewing the world. Underlying the theme is the concern that the rich environmental knowledge that sustains the earth's ecosystems is being lost at a time of great environmental devastation. It is well researched, well supported with references and source notes, and cites numerous examples to substantiate all claims.

The central thesis revolves around the concept of the earth's blanket, which is a metaphor used by the Nlaka'pmx of the southern interior of BC, to describe the plants that cover the earth; if removed will cause the earth to be "angry" and to "weep". Turner weaves the theme of the reciprocal relationship that humans have with their environments throughout the eight chapters. The reader moves through discussions of wealth and value in a changing world, a kincentric approach to nature, honouring nature through ceremony and ritual, to land stewardship, all richly illustrated with stories of First peoples and historical accounts (from the 1800s onwards from the journals of Simon Fraser) of Indian agents, anthropologists and early European travelers.

An ethnobotanist for over 30 years and as a non-indigenous academic, Turner skillfully combines the perspectives of indigenous peoples: chiefs, friends, Elders, ethnobotanists, in several communities in British Columbia, with some examples from indigenous communities in other parts of the world (i.e. Sierra Terrahumara, in Mexico). Turner has fluency with First Nations peoples and issues in British Columbia and through developing trust and friendship, has become close to special and profound relationships with earths' offerings. Turner provides several traditional stories, ceremonies and rituals that are "situated", connected to the history and geography of the region and thus connects people to place. Stories also demonstrate how knowledge and understanding of the environment is relational – that the plants, animals and other features are imbued with human qualities, so that humans are not viewed as separate and outside ecosystems.

Several important issues emerge throughout the book that tie together the loss of cultures and environmental destruction: the importance of language is mentioned several times, in that language is a reservoir of traditional knowledge, culture and connections to the landscape. Loss of language severs that connection. The consequences of environmental destruction are poignantly described using several species, with salmon a recurring example throughout the book. Salmon is a strong marker of cultural identity for British Columbia First Nations and is a thread throughout the book that weaves together origin stories with scientific understandings of salmon ecology. Turner provides details on how to prepare salmon and chronicles the demise of salmon stock and the effect this has on communities that depend on the catch. One Sec-

wepemc story about salmon migration helps children learn that salmon are to be respected and admired. Other key species that are indicators of ecological decline are the Bitterroot (*Lewisia rediviva*) used by the Nlaka'pmx peoples, numerous edible berries and abalone.

In Chapter 7, "Everything is One", Turner ties together the several different themes that focus on human's interdependence with the environment. The interconnections that are so vital are expressed in the story of the Xaxl'ep people who live at Fountain, a small settlement near the Fraser River, where "Everything in their territory is connected to them and if part of it is lost the Xaxl'ep lose part of themselves." This makes the point that when habitat and resources are taken away, people lose the knowledge associated with that place and that resource.

Towards the end of the book, Turner introduces scientific concepts such resilience, complex systems, adaptive management and ecosystem based management to bring together the multi-faceted human-ecosystem relationship and how we can live sustainably. There are stories of hope and ideas for a sustainable future. For example, the Stó:lô people of the Fraser valley are revitalizing their language and cultural heritage after the drainage of the Sumas Lake in the 1920s and the subsequent loss of traditional resources, and means of transportation for the Stó:lô people. The Tmix[®] research project of the Nlaka'pmx people encourages developers to integrate traditional knowledge with land management to foster a sustainable land ethic. Turner suggests three criteria for positive change and eight concepts for ecocultural restoration and urges us to continue to be optimistic despite the level of environmental destruction that we are witnessing globally.

If there are any shortcomings to this book, they are few. At times, it is difficult to delineate the chapters as several of them overlap and appear repetitive. While Turner is meticulous in providing both scientific and indigenous/local language names for all species mentioned, the scientific name is sometimes provided more than once, when once would have been sufficient. Also, Turner does not address changes in attitudes towards the environment by First Nations – there are often difficult trade offs to be made when economic benefits seem to outweigh traditional teachings of respect and environmental conservation. Attitude change occurs within communities as values shift – addressing what is to be done about the loss of sense of responsibility for stewardship is a difficult issue. In all, however, the book provides important lessons on First Nations stewardship and promises of positive change if we all just listen.

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Greenpeace: How a Group of Journalists, Ecologists and Visionaries Changed the World

By R. Weyler. 2004. Raincoast Books, 9050 Shaughnessy Street, Vancouver, British Columbia, V6P 6E5 Canada. 574 pages. \$25.95.

Rex Weyler has released an honest, informative, and politically motivating history of the first nine years of the Greenpeace movement, charting its course from its inception in a Vancouver living room in 1970 to its official internationalization in an Amsterdam pub in 1979. While others have written histories of this now widely-studied movement, Weyler's is of a different sort: he is an insider to the group, having been a Greenpeace activist since 1974, and knows its key players better than most. He relates individual motivations and personalities, and shares both the bitter disputes between factions of the movement and the eco-political victories celebrated over pints of beer. Weyler divides his study into three sections: War and Peace, All Sentient Beings, and Political Ecology. Throughout, he relates the growth of the movement and its increasing lens of awareness in a style that is clear and captivating, teaching readers about the commitments of the movement and winning new environmental activists as he details the group's adventures.

Weyler begins by locating the global climate of 1970, as seen from the west coast of Canada. War in Vietnam continued to rage, and American draft dodgers were fleeing to Canada by the thousand. The public outcry against war built throughout the 1960s, and the ever-quickening pace of the international arms race daily increased the number of anti-war activists. Meanwhile, the world's superpowers invested billions to stay in military advance of competing nations. Nuclear bombs were dropped at a rate of one per week, often with total disregard to populations neighbouring test sites. These nuclear blasts were contaminating entire cities with fallout, and the toxic Strontium-90, a by-product of the nuclear tests, was spread globally through the atmosphere. Most frightening, perhaps, were the questions surrounding the bombs that continued to be tested with ever-increasing rapidity. In the race to produce the biggest and strongest atomic bomb, each superpower allowed their testing to proceed in advance of scientific answers as to the effects of the bomb. Physicists cast bets among themselves about whether the next bomb would ignite the atmosphere. Civilians were intentionally uninformed of their proximity to the tests, to allow governments to test the effects of radiation on humanity.

Into this scene of rising and potentially deadly conflict, Weyler introduces his Vancouverite "cast of characters," including political journalist Bob Hunter, pacifist ex-soldier Ben Metcalfe, and Quaker social activists Dorothy and Irving Stowe. This team realized that nuclear testing and the threat of nuclear warfare promised to kill our planet. They combined their strengths to develop a movement committed to gain-

ing the general public's support for pacifism, with emphasis on ending atmospheric nuclear testing. The team shared an awareness of the power of the media, and while they understood the science-based arguments against the danger of nuclear testing, they realized that the public would be won not by numbers, but by images.

Hunter called these images "mindbombs": they were "simple images, delivered by the media, that would 'explode in people's minds' and create a new understanding of the world" (73). The team realized that whoever has the best picture wins, and set out to use this knowledge to their advantage. As ecological and disarmament goals merged, the group found their identity advocating not only peace, but an environmentally-aware peace, a *green* peace, and thus found their name.

The newly formed Greenpeace realized that protest groups had been largely ignored in the past because they weren't demanding to be seen. Greenpeace decided to sail a boat into the middle of the next scheduled nuclear explosion, a United States test scheduled to take place in October of 1971 on Amchitka Island, a "registered National Wildlife Refuge" (55). By placing themselves in the middle of the event, and ensuring that dramatic photographs and news stories were released to the media, Greenpeace guaranteed that their campaign could not be overlooked. Though this initial campaign, the sailing of the *Greenpeace I* and *II*, did not prevent the bomb from being detonated (creating "the largest human-made earth tremor in history," (131) a 7.2 magnitude earthquake), the mission was nevertheless a success. They had informed politicians and the general public of the dangers of the bomb, and had made their case for the futility of the arms race. As protests erupted around the world, atmospheric nuclear testing became an embarrassment to the United States government, and experiments soon moved underground. Other countries followed suit, after similar pressure and embarrassing attention from Greenpeace groups.

The strategy proved successful: Greenpeace had lodged itself between the aggressor and the resource they aimed to protect, and people took notice. The movement grew, and attracted new activists. With the anti-nuclear success, the group shifted its attention to environmental injustices. Biocracy, the right of each living thing to be respected, became the credo of the group, as reflected in the "Greenpeace ecology manifesto," titled the "Declaration of Interdependence" (393). Individual Greenpeace members maintain individual ecological vision, and while this varies from member to member, most seem to be deep ecologists, maintaining that the survival of each living thing is dependent on the ecosphere at large; no species, including humans, takes priority over another. Greenpeace as a whole adamantly proclaims its "fundamen-

tal values” as “peace, tolerance, bearing witness, ecology, innovative direct action, [and] non-violence” (489).

One of the new attendees at Greenpeace meetings, Dr. Peter Spock, a psychologist who had come to realize the enormous intelligence and complex brain waves of whales, advocated that their protection from whaling fleets should be the focus of the next Greenpeace campaign.

Fleets of whaling ships, including factory boats that would process the whales while still at sea, had hunted the world’s whales to dangerously low levels, pushing some species to extinction. The Greenpeace team decided to emulate their successful anti-nuclear tactics, and again place themselves between the aggressor and the victim: they will pilot zodiacs between the whaling ships and the whales. This proved an enormously dangerous task, as the whaling ships were equipped with canon-fired harpoons, and the whalers were often not persuaded by the activists’ presence to hold their fire. Nevertheless, the Greenpeace team time and again positioned themselves between the guns and the whales, all the while snapping pictures to send to worldwide media, communicating the gory horror of the whale hunt. As with the anti-nuclear warfare campaign, Weyler relates devastating statistics about the depletion of the whale population, simultaneously explaining the need for change and campaigning further to his readers.

Both the anti-nuclear and the anti-whaling campaigns had found success, but the split-focus had divided the group. Names, places, and projects proliferate in the latter section of the book, speaking to the new nature and diversity of Greenpeace. However, funds were limited, and members disagreed about priorities. Further dividing the group was a new interest in an anti-sealing campaign. Sealers off the coast of Newfoundland and Labrador slaughtered hundreds of thousands of white coat seal pups each season, a hunt that Greenpeace claimed was rapidly and dangerously depleting the seal numbers. Greenpeace activist Paul Watson advocated spraying the pups with a harmless green dye, which would make them worthless to the fashion industry to which their pelts are usually sold. The team set out for Newfoundland, with this intent. They were not well received by Newfoundlanders, who viewed them as outsiders, without right to decide on Newfoundlanders’ means of income.

Realizing the support of Newfoundland was vital, Hunter agreed to abandon the green dye idea, in favour of direct confrontation with the sealing companies. The focus, Hunter maintained, was not the sealers themselves, but the foreign factory ships that employed the sealers for very little, and sold the seal pelts at a great profit. This focus seemed to appease the Newfoundland sealers, who guardedly welcomed the Greenpeace activists. While Weyler makes mention of the realization that this is an economic as well as an environmental problem, and briefly alludes to a

campaign to replace a portion of the wages of sealers who would agree to give up their work, this vital aspect of the problem is not pursued. The anti-sealing campaign continued, but did not present an economic alternative for sealers.

The group became increasingly divided as Watson, frustrated over the slow pace of success in Newfoundland, advocated for a more aggressive approach in confronting environmental abuse. Greenpeace, however, remained staunchly committed to non-violence, and Watson left to form his own campaign, the Sea Shepherd Society. A faction of Greenpeace remained committed to the seal campaign, and there seemed now to be three separate Greenpeaces, each competing for funds, each demanding that their own campaign was most important. A suggestion arose from the group: “If we’re ecologists, then let’s rise above our particular issues to see the bigger pattern” (231). Despite their vision of an ecologically-just society, it became clear that, amidst all of their funding problems and internal bickering, they were not promoting balance, nor were they celebrating diversity. As their debt mounted, they gave in to pressure from Greenpeace groups that had formed worldwide to give up Vancouver control, and merge with newer collectives to become Greenpeace International. Though the Greenpeace campaign lives on, its focus is no longer Canadian, and Weyler’s retelling ends here.

The continued international presence suggests that this truly is “the movement the world needs” (135). Projects continue to proliferate: as www.Greenpeace.ca clearly evidences, “the ecological crisis seems to be expanding on an exponential trajectory” (352). It will be of great benefit to those motivated to participate in today’s Greenpeace campaigns to know something of the roots of the movement.

Weyler makes only brief mention of a common criticism leveled at Greenpeace; the rising feminist movement called the Greenpeace Foundation sexist, and perhaps rightfully so. Feminists accused the largely-male collective of militaristic language and macho and aggressive tactics. Hunter suggested at the time that a forceful and aggressive strategy was necessary to ensure that their environmental concerns were heard. Weyler himself doesn’t take the claims to task: instead, he allows the history of the movement to speak for itself. Throughout this history, he highlights the contributions of women to the campaign, and follows the story of Susi Newborn’s efforts to launch the first Greenpeace UK boat, the *Rainbow Warrior*, on a hugely successful mission. The concerns of ecofeminists, however, seem to stand, even as Hunter’s motto “A flower is your brother” (150) changed to the more inclusive “A flower is your brother *and* your sister” (489). Other criticisms, such as the now common concern that the boats Greenpeace uses for its eco-interventions are themselves far from eco-friendly, remain unaddressed. But perhaps such silence is justified: Weyler doesn’t set out for himself the task of justifying Green-

peace. Instead, he recounts the passions that formed the movement and kept it motivated, and the inner conflicts that forced its evolution.

The history certainly has its shortcomings. A tiresome *Lord of the Rings* analogy runs throughout the 574 pages of text, and the foreshadowing of future Greenpeace trouble is almost constant. Most distracting is Weyler's tendency to tediously set a scene, detailing the room, the lighting, and even the contents of paintings hanging on the walls. But his goal is as much to convey the emotion as the historical record of these first nine years, and the details help to transport the reader to the time and place remembered. (Weyler's elaborate scene-setting becomes slightly more understandable once we learn that he is the group photographer.)

The Last Great Sea: A Voyage Through the Human and Natural History of the North Pacific Ocean

By T. Glavin. 2000. David Suzuki Foundation and Greystone Books Douglas & McIntyre Publishing Group, Vancouver/Toronto, Canada. 244 pages, \$34.95 hardcover.

This book belongs in every conservationist's bookshelf, to say the least. As D. Suzuki describes very convincingly in the foreword, the environment of today's North Pacific is characterized by its loss of (fish) species and its wipe-out of protein assemblages. The collapse of Sockeye Salmon is only one of many sad examples, many more exist: Steller's Sea Cow, Spectacled Cormorant, Dawson's Caribou (Queen Charlotte Islands), and even plant species like Tobacco (Queen Charlotte Islands). Other species like Walruses, Sea Otters and Fur Seals barely survived until now.

The first chapter starts slow but allows a very solid overview about historical and archaeological facts. Already after Chapter 2, nobody can deny anymore the environmental disaster and mis-management of the North Pacific and coastal British Columbia. Nevertheless, the author convinces the reader that the North Pacific still is THE largest fish producer in the world. "As in aboriginal fisheries, mythology played a part in industrial fisheries management, especially the myth of a superabundant ocean and the all-powerful capability of science and technology to fix the messes made by hydroelectric dams, lousy forestry practices and overfishing". The governmentally encouraged Merganser Control and Bear Shooting Programs designed for the sake of Salmon Protection prove this citation very well. Galvin strongly eliminates all illusions on how to heal the problem of overfishing. For instance, he shows that S. Livingstone's widely followed idea of Fish Hatcheries does not produce more salmon, but instead takes away funds and harms natural salmon stocks since they simply replace the last remaining and struggling stocks with poorly adjusted new ones. Strong also are Gavin's arguments against Salmon Farming; e.g., it contributes to the closure of

Ultimately, Weyler's passion and enthusiasm for the ideals of the Greenpeace movement are shared with the reader in a style that is politically, scientifically and historically informed, making his book the perfect starting point for anyone who is looking for either a history of Greenpeace, or the inspiration to become politically and environmentally active. This history, I think, will make Greenpeace's proud, as it functions as a mindbomb: reading about Greenpeace's commitments, their successes and failures, awakens an awareness of the potentials of eco-activism within each reader. You can put the book down, but you can't stop thinking about it...

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marine fisheries for wild salmon, and it requires 3 kg of fish to produce 1 kg of salmon.

Fisheries and the ecology of all major North Pacific fish species get well-covered in this book. Since the abundance of salmon shaped western North America, this topic receives major attention in the text. All Pacific salmon species are discussed: Chum, Sockeye, Pink, Coho, Steelhead, Masu and Amago. Of major interest is in this regard the scientific discussion around the taxonomy of salmon; e.g., Steelhead (classified until 1980s as Trout). The author brilliantly points out the implications of the religious-based and somewhat outdated taxonomical system by Carl von Linné, and how this affects the species management by national governments (provincial and federal) on an international level even (Canada vs. USA).

The backwardness and failure of fishery laws are shown by outlining that the first salmon-fishing regulations for the Fraser River was a simple word-for-word replication of fishing regulations on English Rivers. At that time, Canada's external affairs jurisdiction was still controlled by the British, which affects the Canada-U.S. salmon treaty concluded 1930s and renewed in 1985. In addition, Galvin shows that Canadian and U.S. fishery scientists significantly differed in their stock assessment results for the same species in the same waters even; consequently, so did the management and political agendas. This is the classical picture of "mixed-stock" fisheries, which also threatens small salmon runs.

The author reports the incidental death of 50 000 marine mammals and 500 000 seabirds due to driftnet fishery activities in the North Pacific; marine (plastic) pollution comes with it. Despite the well shown failure of a European and Western approach dealing with the North Pacific fisheries, domestic Japanese and Native fisheries seemed to work well and be sustainable. Galvin shows the magnitude of "pre-contact" fish-

ery for salmon by natives, which was even comparable with levels of commercial fisheries from this century. Some readers might find that the book slightly follows stereotypical views of the noble native.

A very strong point in this book is how the North Pacific and its fauna is linked with the "hinterland": Old-growth rainforest, landscape and Bald Eagles. This needs to be considered in the light that resident Killer Whales in British Columbia are among the most contaminated cetaceans of the world.

A very complete picture of the North Pacific is portrayed by fully considering the Russian influence and history. The book outlines well that Russian settlers did much better than the western type of colonization (a point that might be put in doubt for the Kodiak Islands at least). The Russian-American Company was much more relevant in the history of North Pacific settlements and explorations than the Hudson Bay Company (HBC). But nevertheless, as with the HBC, the Russian quest for the North Pacific had the same motivation: central European pelt resources were already overhunted!

Regarding the marine ecology of the North Pacific, the importance of the Aleutian low, Pacific currents, and El Niño are fully described. This ecosystem is driven by "regime changes", which calls for a dynamic management. The author outlines this very well by presenting the ground-breaking work from Russian Scientist T. Baranov, but also from Bill Ricker "Ricker curve" and others at the Pacific Biological Station, e.g., G. McFarlane and D. Beamish. A quote from the book says it all: Understanding catch statistics is like "reading a single faded and crumbling onionskin page from an early draft of Wagner's Tannhaeuser, in a dimly lit room". Another quote of the book and taken from the U.N. Code of Conduct for Responsible Fisheries states, in part, that "the absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures". Well said.

Galvin makes a strong case that ethnocentric approaches for understanding and managing the North Pacific have failed, e.g. the Chinese might have been in North America much earlier than the Europeans. The book elaborates on the major question "who came

first" since it had such a major economical and political implication for European powers. A major conclusion from this book is that there never was such a thing like an Old World (Eurasian) and New World (Americas).

The chapters on anthropology and human history of the North Pacific and how the Russians, Asians and Natives settled and explored the North Pacific are on the same level than high-caliber books as *Guns, Germs and Steel* by J. Diamond. Just to name some highlights, Galvin mentions how natives grew Arrowhead and potatoes, he cites the work of the Russian Anthropologist S. Fedorova, and he documents that Hawaiians, Japanese, Chinese and Russians presented a major group of settlers. In addition, the book reports a lot of British Columbian and Vancouver history and puts Canada in the context of the overall Pacific.

Despite the fact that whaling, sealing and eating dolphins is as old as the human history of the North Pacific, whale watching (starting as early as 1907) has already produced more profit than commercial whaling ever did for western North America. Greenpeace started in Vancouver, it "was born in the blood of whales". Nevertheless, the author shows that already in the 19th century the pelagic seal hunt provoked the first great international controversy about the overharvesting of the world's marine mammals. It resulted in the international milestone contract ("fur seal treaty") of 1911 between Russia, Japan, Canada and USA.

Topics mentioned in the seven chapters of this book are so manifold and detailed that only some can be mentioned in this review: Bute Wax, Russian scientist K. V. Belkemishev, occurrence of pilchards in British Columbia, oolichan grease, geoduck, Pollock fisheries, Korean squid fisheries, canneries, Earth Rotational Velocity Index, J. Cook, G. Vancouver, V. Bering and J. J. Walbaum. Although the author emphasizes the problems with old-fashioned type of science for the North Pacific, the book is actually based on scientific publications. The index and the annotated scientific references will be highly appreciated by the scholar. This text book (no pictures but five maps) has no shortcomings.

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Quantitative Conservation Biology: Theory and Practice of Population Viability Analysis

Morris, W. F., and D. F. Doak. 2002. Sinauer Associates Inc., Sunderland Massachusetts USA. ISBN 0-87893-546-0 paperback (41.95 US\$)

This is a great book, which should affect how we research and manage wildlife and its controlling factors. The topic of a Population Viability Analysis (PVA) is not really new, but there are only few books that describe the topic well for the general public and managers. "PVA is the use of quantitative methods to predict the likely future status of a population or collection of populations of conservation concern".

"The promise that PVA holds as a tool for guiding conservation decision-making has been recognized by governmental science advisory boards, by professional organizations such as the Ecological Society of America and by nongovernmental conservation organizations such as The Nature Conservancy." This statement also holds for the Habitat Conservation Plans and for the Recovery Plans of the U.S. Endangered Species Act. However, "Instead of seeing PVA as a valuable tool to aid their decision making, most field-oriented conservation biologists retain the misinterpretation

that PVA models can only be constructed and understood by an elite priesthood of mathematical population ecologists”.

Fortunately, this book is supposed to make PVAs easier to understand. It is based on the advanced matrix-based population modeling concept and uses count-based and demographic PVAs. The authors present actually a very good introduction to demographical population studies and even to the relatively new AIC concept. It explains its concepts with examples from a great variety of different animal and plant populations world-wide. The authors do a great effort to explain important concepts such as Vital Rates, Lambda, Bonanzas and Catastrophes, Density Dependence, Ricker Curve, Beverton-Holt Model, Log-Population Growth Rate, Accounting for Errors, Environmental Stochasticity, Sensitivity Analysis and many others. As a key take-home message from this book I see the authors' focus on confidence intervals, rather than the pure population means. Such an approach embraces the uncertainty among population estimates in a much more transparent fashion than usually done. Many conservationists world-wide have encountered the sad but so often true statement made by the authors: “While data uncertainties are frequently used as a reason to rely solely on expert opinion – or on simple political expediency – when deciding difficult issues, we believe that use of more formal analyses can frequently benefit conservation practice. In the absence of such scientific analysis of conservation situations, personalities, politics, and dollars will drive what actions are and are not taken, often with little or no regard to their real conservation value”.

The reader will also learn in this excellent PVA-book about the great importance of the extinction-time cumulative distribution function, plotted against years into the future. As the authors show, there are five measures to express extinction risk: the probability of extinction by a given time, the probability of extinction ever

occurring, and the mean, median and model times to extinction. Of these, only the first three are the most useful, but the last two are still the ones most often used.

This book has contributing software in MATLAB and SAS code (also available on the website www.sinauer.com/PVA/), which the practitioner will benefit from. Fourteen pages of literature references and a well-organized index will be very helpful to the reader as well.

Despite the “how to” focus of the book, I find the text is not that easy to understand, and it refers the reader too often all over the book. So from my experience, I suspect that most managers will not really read it, nor fully understand all relevant (statistical) details; the mathematical codes alone take up an Appendix. The book on how to link PVAs with Geographic Information Systems (GIS) still awaits to be written.

In either case, I admire in this book that it promotes an overall quantitative approach to wildlife conservation, and specifically I love the last chapters; e.g., Management with Uncertainty, Multiple Site PVAs, Viability-Analysis for Spatially Structured Populations and When and When Not to Perform a PVA (a great argumentation help when doing PVAs). There just is no escape from numbers and reliability in this important conservation field.

This important book makes it clear that well-designed demographical studies and PVAs are nowadays among the basics for any wildlife population to be studied and managed. It provides crucial tools for a quantitative wildlife monitoring and conservation in the new millennium. Now it's once more up to the managers to read, to understand, and fully implement all relevant lessons learnt from this baseline publication.

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Their Fathers' Work: Casting Nets with the World's Fishermen

By W. McCloskey. 2000. International Marine/McGraw-Hill, P.O. Box 182604, Columbus, Ohio 43272 USA. 370 pages, \$20.95 Paper.

This book provides the reader with a superb and highly praised overview of global fisheries, focusing on Alaskan waters. In addition, it also covers first-hand experiences for offshore and coastal fisheries with vessels from Japan, Chile, Indonesia, Newfoundland (Grand Banks), Maine (Georges Bank), Iceland and Norway. The book is very pleasant to read since it combines fiction with facts. It is a heroic and romantic description of a likely soon-to-be-gone life of hard work. Nevertheless, reading how other people work very hard and under life-threatening conditions might present some sort of decadence; but so be it.

In case the reader would not be familiar with how to cheat in the business of international fisheries and quotas (led by Spain, Taiwan, Japan and many East European nations) this book will definitely help. It outlines in detail how fishing quotas are easily doubled, if not ignored by many vessel captains and fishermen worldwide. The explicit use of Dynamite Fishing, Liner Nets (an additional net with an illegally smaller mesh-size put inside the regular net), the “Pareja” Method (one huge net pulled by two boats) and many other tricks are shown and suggested; e.g., the same vessel being registered with two different names (thus, multiplying the quota by two), stowing an additional catch somewhere under deck, trading the catch offshore (therefore enabled to start again with a “new” quota),

and mis-reporting catches. When fisheries officers appear for control and gear inspection, nets simply get cut off (which makes it even worse for fish, seabirds and sea mammals that drown in the “ghost nets” later). Overall, I find that the author, an American, might have a tendency to blame the Spaniards and Russians too much here. Instead, a mention and description of the role that the Vladivostok-based Russian fisheries plays, acting worldwide, could have made the book even better.

The thorough understatement of environmental damage done by coastal and offshore fishery must be of concern to any informed naturalist. The author neglects to address the destructive fishery method from draggers (“seafloor dredging”), which is, for instance, estimated to damage an area larger than that lost through deforestation in the tropics. There is no mentioning of fisheries gear polluting beaches worldwide, or “ghost nets” which float around in the world’s oceans for years (eventually, they will sink, but only the fish know whether they will ever rot). Sensitive by-catch topics such as the endangered Short-tailed Albatross (*Phoebastria albatrus*) caught by freezer-longliners fishing off Alaska are not mentioned, and certainly there is no reporting of the numerous sea turtles, sharks, dolphins, porpoises, seabirds, moon fishes and many other species suffering and dying for the sake of high quality fish. In times of environmentalism, that might be seen as a short coming of this book. Although the occurrence of a “black catch” is somewhat mentioned, one has to read that shrimp fisheries has apparently almost no by-catch. The reader has to keep his/her breath when McCloskey mentions “overpopulations” of Sockeye and seals; 50 000 seals are described as an “overpopulation” rather than victims in a potential by-catch problem. No wonder, the author identifies clearly from the “fishermen’s side”, blames Greenpeace, and does not place fisheries in the overall context of the environment; instead, he mostly focuses on economical and descriptive aspects of fisheries. In this regard, the author’s presentation of Chile’s fishery development lacks sensitivity to the well-proven and negative effects of over-commercialization. On the other side, his won-

derful and detailed presentation of the effects from the Exxon Valdez Oilspill for Alaska and its island communities compensate for the previous short-comings. A remarkable link is shown why the prizes of the Japanese Salmon market are driven by cycles of the Japanese Salmon runs, and thus dictate the Alaskan Salmon fisheries. McCloskey gets closer to the heart of the fisheries problem when outlining that improved efficiency and introduction of very light, and therefore allowing for longer, plastic nets has contributed to the current overfishing crisis.

In the numerous and fascinating book chapters the author also emphasizes and describes that there exists such a thing as severe overfishing: Snow Crab in Alaska; Cod, Flounder and Squid in Newfoundland; and Halibut off West America. He blames governmental mismanagement and elaborates nicely throughout the text that there is also conflict of interest among fishermen on these topics; e.g., unions, and small scale fisheries vs. industrialized trawlers. In the context of governmental mismanagement, New Zealand’s Orange Roughy, a prime example of overfishing and disastrous fisheries management, could have been mentioned, too. The book would have gotten even better when topics such as Native Fishery Rights, North Sea Fisheries and Krill Fisheries in the Antarctic would have been included. The map of the Grand Banks lacks the French Fisheries zone around St. Pierre and Miquelon; but the reader will appreciate that this book has a very detailed index, which allows that it can serve as a valid source of references, too.

The book ends with a well-written and conclusive section on global fisheries and policy. The author quotes from one of his many interviews with experts: “Gathering fishery statistics is an art in probability”. That statement makes it clear that, currently, there can be no sustainable world fisheries. Due to the many topics covered, I thoroughly enjoyed reading this book and got literally “hooked”.

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MISCELLANEOUS

How the Earthquake Bird Got its Name and Other Tails of an Unbalanced Nature

H. H. Shugart. 2004. Yale University Press, New Haven, USA. 227 pages.

What do the following five birds, four mammals and one marsupial have in common: Ivory-billed Woodpeckers, penguins, packrats, Bachman’s Warblers, Leadbeater’s Possums, Red-billed Queleas, Beavers, Giant Moas, Gray Wolves, and European Rabbits? Several are extinct, a few are very numerous, some are common, and others are rare. They all have been chosen by Shugart who, with charm and panache, intro-

duces the reader to a wide range of ecological concepts under the rubric of animal parables.

Shugart, the W. W. Corcoran Professor and Director, Global Environmental Change Program at the University of Virginia, presents nine ecological concepts: forest gap dynamics, niche theory, paleoecology, ecological disturbance, migration, keystone species, island biogeography, domestication, and invasive species. These ecological principles are not presented in a “pristine” form, but are embedded within the context of human transformation of the earth’s landscapes and

how these transformations relate to animal extinctions and explosions.

Shugart introduces each concept with an animal story that sets the stage for an intelligent and entertaining journey through a mélange of natural and human history. Did you know that the word “penguin” comes from two Welsh words? *Pen* is the Welsh word for head and *gwyn* is Welsh for white. Penguins do not have white heads, but were actually named for the great, guano-whitened headlands on an island near Newfoundland (Funk Island). The birds of interest, however, were not penguins as we know them from the Antarctic region, but actually auks, of which the now extinct Great Auk was the one most familiar to the sailors of the day. The Great Auks were named penguins long before European mariners misnamed the similar looking but unrelated penguins of the southern and Antarctic waters. Being from Newfoundland, I found this little tidbit delightful. This is typical of the manner in which Shugart expertly weaves natural and human history into an attractive and colourful mosaic.

The packrat and its middens introduce the reader to the world of paleoecology, of the archival nature of tree rings, ice cores, and pollen deposits that reveals a dynamic and ever-changing earth. The African grassland Red-billed Quail, apparently the most common bird on earth, initiates the reader to a marvelous treatment of bird migration that is sobered by an account of the extinction of the once numerous Passenger Pigeon. Shugart’s account of the Wolf (*Canus lupus*) introduces us to the domesticated wolf or dog (*Canus domesticus*) and the history of animal domestication by our ancestors. To see how humans have radically

altered natural landscapes without metal or modern devices, one has only to turn to the domesticated grazers.

If you are looking for support of notions such as “the balance of nature” or “unspoiled, pristine wilderness” you will be disappointed. Shugart explicitly eschews such notions. His objective is to “provide an alternative view, to give insights into the dynamically changing nature of ecosystems and the implications of this dynamism for our stewardship of the planet” (page 2). According to Shugart, the only constant in nature is change. For him, planetary management or stewardship is the human vocation; a vocation that is defined, not by hubris, but rather by an acknowledgement of the long and continuing history of human alteration of planetary ecosystems, and the need for intentional and responsible human action. It is within this paradigm that we must understand the myriad of conservation and ethical challenges that face us.

This work will pique the interest of all naturalists. Shugart’s writing is far from being pedantic or stogy. He writes with passion, charm and clarity about a subject that has no doubt become a vocation. A wealth of original ecological research is synthesized in a delightfully accessible manner that relates to our proverbial interest in the wax and wane of animal species. Why are some species abundant and others rare? Why does one species respond positively to human influence, while other species meet extirpation or extinction? The detailed and helpful notes serve well the interested reader who wishes to pursue further research.

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NEW TITLES †Available * Assigned

Zoology

Amphibians and Reptiles of the Bay Islands, and Cayos Cochinos, Honduras. By J. McCranie, L. Wilson and G. Köhler. 2005 Bibliomania! P.O. Box 58355, Salt Lake City, Utah 84158. 224 pages. U.S. \$29.95 Cloth.

Amphibians and Reptiles: Status and Conservation in Florida. 2005. By W. Menhaka and K. Babbitt. P.O. Box 9542, Melbourne, Florida USA. 32902-9542. 334 pages. U.S. \$66.50.

Bird Coloration – Volume 1. By G. Hill and McGraw. 2005. Harvard University Press, 100 Maple Ridge Drive, Cumberland Rhode Island 02864-1769. 544 pages. U.S. \$95.

* **Birds of New Brunswick: An Annotated list. (Oiseaux du Nouveau-Brunswick: une liste commentée.)** By David Christie et al. 2005. New Brunswick Museum, Monograph No. 10, 277 Douglas Avenue, Saint John, New Brunswick E2K 1E5. 84 pages. not illustrated, no price available.

Birds of Ontario: Habitat Requirements, Limiting Factors and Status (Nonpasserines, Waterfowl through Cranes). By A. Sandilands. 2005. UBC Press, 2029 West Mall, Vancouver, British Columbia V6T 1Z2. 366 pages. \$95.

Birds of Two Worlds – The Ecology and Evolution of Migration. Edited by Russell Greenberg and Peter P. Marra. The Johns Hopkins University Press, 2715 North Charles Street, Baltimore, Maryland 21218-4363. £15.50 Cloth.

* **Blue Grouse – their Biology and Natural History.** By F. Zwickel and J. Bendall. 2005. NRC Research Press, M-55, National Research Council, Ottawa, Ontario K1A 0R6. 284 pages. \$69.95 Paper.

Crows. By Candace Savage. 2005. Greystone Books, Suite 500, 720 Bathurst Street, Toronto Ontario M5S 2R4. 120 pages. \$27 Cloth.

Dragonflies of Sussex. By T. A. Belden et al. 2004. NHBS Ltd., 2-3 Wills Road, Totnes, Devon, Great Britain TQ9 5XN. £7.95 Paper.

Duikers of Africa: Masters of the African Forest Floor – A Study of Duikers – People – Hunting and Bushmeat. By Vivian J Wilson. 2005. NHBS Ltd., 2-3 Wills Road, Totnes, Devon, Great Britain TQ9 5XN £125 Cloth.

Florida Butterfly Caterpillars and Their Host Plants. By M. Minno, J. Butler and D. Hall. 2005. University Press of Florida, 15 NW 15th Street, Gainesville, Florida 32611. 352 pages. US\$34.95.

* **The Natural History of Bermuda.** By M. Thomas. 2005. The Bermuda Zoological Society P.O. Box FL 145 Flatts, Florida BX Bermuda. NPA.

Biology of Gila Monsters and Beaded Lizards. By Daniel D. Beck. 2005. NHBS Ltd., 2-3 Wills Road, Totnes, Devon, Great Britain TQ9 5XN. £26.50 Cloth.

Parenting for Primates. By H. Smith. 2005. Harvard University Press, 100 Maple Ridge Drive, Cumberland, Rhode Island 02864-1769. 394 pages. US\$29.95.

Secret Weapons – Defenses of Insects, Spiders, Scorpions and Other Many-legged Creatures. By T. Eisner, M. Eisner and M. Singer. 2005. Harvard University Press, 100 Maple Ridge Drive, Cumberland, Rhode Island 02864-1769. 365 pages. U.S.\$29.95.

The Smaller Majority (Frogs, insects and others). By P. Naskrecki. 2005. Harvard University Press, 100 Maple Ridge Drive, Cumberland, Rhode Island 02864-1769. 364 pages. U.S.\$35.

† **Wheatears of the Palearctic – Ecology, Behaviour and Evolution of the Genus *Oenanthe*.** By E. Panov. 2005. Pensoft Publishers, Geo Milev Street 13a, 1111 Sofia, Bulgaria. In English, pages. U.S.\$58.80. Cloth.

† **Land Snails of British Columbia.** By R. Forsythe. 2005. Royal BC Museum, 675 Belleville Street, Victoria, British Columbia V8W 9W2. 192 pages. \$25.95.

* **Monitoring Bird Populations Using Mist Nets.** By C. Ralph and E. Dunn (eds). 2005. Cooper Ornithological Society. 211 pages. U.S.\$23 Paper

Nests, Eggs, and Nestlings of North American Birds (Second Edition). By P. Baicich and C. Harrison. 2005. Princeton University Press, 41 William Street, Princeton, New Jersey, 08540-5237 USA. 416 pages. U.S.\$29.95

Out of the Blue – a Journey through the World's Oceans. By P. Horsman. 2005. The MIT Press, Five Cambridge Center, 4th Floor, Cambridge, Massachusetts 02142-1493 USA. 160 pages. U.S.\$22.95 Cloth.

Walker's Carnivores of the World. By Ronald M. Nowak. 2005. The Johns Hopkins University Press, 2715 North Charles Street, Baltimore, Maryland 21218-4363. £15.50 Paper.

Botany

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