Book Reviews

Book Review Editor's Note: We are continuing to use the current currency codes. Thus Canadian dollars are CAD, U.S. dollars are USD, Euros are EUR, China Yuan Remimbi are CNY, Australian dollars are AUD and so on.

Zoology

Being a Bird in North America, North of Mexico, Volume 1: Waterfowl to Shorebirds

By Robert Alvo. 2015. Robert Alvo, Ottawa, ON, Canada, http://babina.ca/. 255 pages, 41.99 CAD, Cloth.

As a birder and young ecologist, it goes without saying that I have a lot of books based around conservation, birding, and field guides. With my bookshelves full, when thinking about adding a new book to my collection, there has to be something unique about it. Most bird-related books that I own typically fall under one of three categories: birding field guides, natural history, or autobiography. *Being a Bird in North America* is not a field guide; however, its blend of humour, natural history, and conservation science makes this book both informative and original.

Each species' account contained a global map of its range, along with the species' Nature Serve status. Accounts include traditional photos that you might find in a field guide or online account, plus a unique cartoon for the species. These cartoons were drawn by 15 cartoonists and resemble something unique about the species' biology, behaviour, or conservation.

I found myself quickly looking up species I was familiar with to see if I could guess what the cartoon would depict. I was pleasantly surprised to correctly guess what the illustration would be for a number of species; for others, the meaning could easily be found within the subtext of the species' account.

Species accounts are easy to read and include very little jargon. This makes it a book that can be enjoyed not only by experienced birders, but also inexperienced birders or children who have an interest in natural history. No two species accounts are alike, with topics ranging from behaviour, such as feeding or breeding, population threats, conservation management, and personal accounts or experiences with the species. While this can sometimes feel a bit unsystematic, it also brings a certain charm to it and it is nice to have such a variety of topics.

Many conservation programs and projects are mentioned in these accounts, bringing to light the vast amount of research and conservation effort being put in place for different species. Science communication is a growing field within the scientific community, especially within the environmental sector. Providing a stronger understanding of what research is being conducted, what conservation techniques are being implemented and their relevance to other species helps to build further support for conservation efforts. By placing these efforts into an easy, enjoyable, and educational read, *Being a Bird in North America* helps to communicate these facts to an audience greater than what may be normally targeted.

This book acts as a great supplement to a field guide, when you want to learn more about the natural history of a species, or as a stand-alone book. Throwing in some humour and popular culture references made the reading more delightful, pairing perfectly with the thoughtful and witty cartoons. *Being a Bird in North America* is a great addition to one's coffee table or bedside table. I can't wait to see what the next edition has in store!

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age to include the central portion of the continent; it was a companion to the 1966 guide to western species, filling a geographic gap in coverage between the two earlier guides.

Roger Conant wrote the first two editions and his wife, Isabelle Hunt Conant, illustrated them with photographs she took of living specimens posed in similar positions for ease and accuracy of comparison and coloured by hand from the same living specimens. A third edition in 1991 added Joseph T. Collins to update the text and artist Tom R. Johnson to illustrate the added species. Featured was Collins's attempt to unilaterally accomplish what he regarded as a modernization of the scientific nomenclature, but this did not meet with universal support from herpetologists (see Cook 1991). An expansion of this edition in 1998 did not include any text revision (see Cook 2001).

The Conants and Collins have since died but finally a new group led by Dr. Robert Powell, a professor of biology at Avila University in Kansas City, Missouri, has taken up the daunting challenge of updating the text. A decision to build on past editions assures that the fourth is still a great field guide, with its scrapbook of previous illustrations interspaced with the new photographs. Its nomenclature follows the 2012 committee-generated list published by The Society for the Study of Amphibians and Reptiles which is now used by all major herpetological societies for North America.

The number of species included in the new edition of the field guide has increased since 1991 from 379 to 501, adding those uncovered since the earlier editions, particularly through widespread molecular analysis, and the continued or new establishment of 60 intentionally or accidentally introduced exotic species.

The maps have been updated by Travis W. Taggert with consultation of an impressive list of United States herpetologists but very few Canadians. Throughout, Taggert's novel innovation is his careful attempt to more accurately depict in these maps the distributions, particularly of aquatic and semi-aquatic species, as following a dendroidal pattern within watersheds, and by attention to the fragmented edges of most ranges. A few Canadian ranges appear exaggerated in northern regions due to the map projection chosen. On others, records are difficult to detect because of the small map size and because those judged to be disjuncts are indicated by a miniscule "x". Inclusion of provincial atlas reports may have included occasional unverified localities.

In contrast to the early editions, sections on capture and keeping amphibians and reptiles in captivity have been reduced or eliminated, as well as the treatment of poisonous snakebites, as these topics are now treated in greater depth and modern relevance in other publications. Throughout, the emphasis in a changing world is on conservation of populations and habitats and knowledge of provincial, state, and federal regulations.

References

Cook, F. R. 1991. [Book Review] Field Guide to Amphibians and Reptiles of Eastern and Central North America. Third Edition. Canadian Field-Naturalist 105: 608–610.

Cook, F. R. 2001. [Book Review] Field Guide to Reptiles and Amphibians of Eastern and Central North America. Expanded third edition. The Canadian Field-Naturalist 115: 194.

Cook, F. R. 2012. [Book review] Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding. Seventh Edition. Brian I. Crother, Committee Chair. 2012 Society for the Study of Amphibians and Reptiles. Herpetological Circular 39. 92 + 5 pages. Canadian Field-Naturalist 126: 340–341.

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Reptile Ecology and Conservation: A Handbook of Techniques

Edited by C. Kenneth Dodd, Jr. 2016. Oxford University Press, Great Clarendon Street, Oxford, UK, OX2 6DP. 490 pages, 79.95 CAD, Paper, 58.99 CAD, E-book.

Methods in reptile ecology and conservation have evolved greatly over the past few decades. Satellites can now track the movement of sea turtles and water samples can be used to detect the species present in a wetland using environmental DNA. *Reptile Ecology and Conservation* brings together 30 papers written by 57 experts on a variety of new and standard techniques. While most of the authors are from the USA, there are authors from South America, Europe, Africa, and Asia, giving the book a global perspective.

The book is divided into six parts. Part one, Introduction, consists of three chapters covering reptile diversity and life history, setting research objectives, and data collection. Part two, The Individual, consists of six chapters on marking and measuring individuals, digital identification, preserving specimens, reproduction, diet, and movement patterns. Part three, Sampling Reptiles, is composed of seven chapters on locating or capturing different groups of reptiles. Two preliminary chapters summarize basic methods for surface-dwelling reptiles and arboreal or fossorial reptiles, while the other chapters focus on different reptile groups: sea snakes, freshwater turtles, terrestrial turtles, sea turtles, and crocodilians. Part four, Reptiles in the Community, consists of six chapters on plot and transect censuses, rapid assessments of species diversity, measuring microhabitats, water quality and toxicology, species richness and diversity, and landscape ecology. Part five,

Experimental Applications, Physiological Ecology, and Genetics, is composed of three chapters on experimental design, thermal ecology, and the role of genetics. Part six, Trends Analysis and Conservation Options, consists of four chapters on occupancy models, estimating abundance, biological sampling for disease monitoring, and conservation management.

Entire books have been written on many of these topics, so these chapters only provide a basic introduction and high-level review of the concepts and issues. As such, the chapters can lack detail. For example, the section on cover board surveys does not even discuss the effect of different types of cover objects on the species detected. Although chapters had to be kept short to limit the physical size of the book, inserting additional references would not have significantly increased the length of the book.

The chapter on data collection took a novel approach. Rather than just present his own perspective, the author surveyed 28 experienced herpetologists to get a broad range of opinions and experiences. Although the trusty field book is the most commonly used method for data collection, a compelling argument is made that tablet computers have many advantages over field books, particularly when coupled with back-up cloud storage to prevent data loss and the ability to consult years of data in the field.

Reptile Ecology and Conservation is similar to another recent book, *Reptile Biodiversity: Standard Methods for Inventory and Monitoring* (edited by McDiarmid *et al.* 2012, University of California Press). For example, Richard Vogt wrote the section on sampling freshwater turtles for both books. Which book is better will depend upon a reader's particular interest. Dodd's book has chapters on toxicology and biological sampling for disease, which are not covered in the McDiarmid book. Examine both books carefully before deciding which one to purchase. *Reptile Ecology and Conservation* is an excellent book both for established researchers looking for new ideas and graduate students just beginning their research careers.

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The Beaver: Its Life and Impact. Second Edition

By Dietland Müller-Schwarze. 2011. Cornell University Press, Sage House, 512 East State Street, Ithaca, New York, NY, USA, 14850. 228 pages, 39.95 USD, Cloth.

Beavers are the second largest rodents in the world. Two extant species comprise the beaver genus *Castor*. The Eurasian Beaver (*Castor fiber*) was once widespread in Eurasia until uncontrolled hunting (for its fur and castoreum) nearly wiped out the species (concerted reintroduction programs throughout much of its former range have re-established many populations). The North American Beaver (*Castor canadensis*) is one of North America's most iconic mammals, having played a significant role in the human colonization of the continent.

Author Dietland Müller-Schwarze correctly refers to the beaver by its many descriptors – ecosystem/wetlands engineer, keystone species, and invasive species. Perhaps no other Holarctic mammal (with the exception of man) can influence its environment as profoundly as beavers. Admired for their determination and ingenuity, beavers are also sometimes shunned by those that find their natural behaviour in altering landscapes to be destructive and a nuisance. Given their ecological and economic importance, mammologists know much about the life history of beavers. Yet, despite knowing much about their biology, few compiled works exist. This up-to-date and inclusive book, in its second edition, is an attempt by Müller-Schwarze to fill that void.

The book is effectively organized into five parts, each one covering a different aspect of beaver life history and human interactions: I. The Organism; II. Behavior; III. Populations; IV. Ecology; and V. Beaver and People: Conservation, Use, and Management. Each part is comprised of several chapters which present comprehensive information on a specific aspect of beaver biology, ranging from specific topics that include morphology (form and function), physiology (e.g., diving and thermoregulation) and behaviour (e.g., communication) to broader subject matters that encompass population biology, ecology (e.g., diseases; predators), and wildlife management.

Much of the information presented is data rich; many past, classical scientific studies on beavers (e.g., intra- and interspecific interactions; summer versus winter metabolic rates) are cited in the text. Though the prose is largely scientific, the writing style is clear and concise which facilitates quick understanding for those relatively familiar with biological terms and jargon. Colour and black-and-white photographs interspersed throughout the text illustrate the various aspects of beaver life history, highlighting anatomical features (skull, castor sacs), beaver infrastructure (dams, lodges, trails, and canals), and the species' importance and impact on human culture (e.g., fur trade).

Altogether, Müller-Schwarze has done a commendable job, compiling almost all the pertinent studies on beavers into an easily accessible resource. This is a

book which should find a place on the library shelf of every bibliophile who has an interest in wildlife and landscape management. Readers who are particularly interested in learning more about the biology and historical significance of one of the world's most charismatic rodents will be pleased with this excellent contribution.

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OTHER

Field Notes on Science and Nature

Edited by Michael R. Canfield. 2011. Harvard University Press, Kittredge Hall, 79 Garden Street, Cambridge, MA, USA, 02138. 297 pages, 27.95 USD, Paper.

Recently, one of my colleagues dropped by and asked me to look up some information from field research we'd done about twenty years ago. Should be straightforward, I thought. I dug out my field notebook and attempted to interpret my notes. That's when I realized that my note-taking wasn't as good as it should have been. Clearly, the notes made sense to me at the time, but decades later not so much. Yet field notes, just like specimen records, should be a permanent record of work done. And if I can't figure out what my own field notes mean, then how can they be useful to anyone else following up on the same project or field area after I am gone? How do you take field notes that remain comprehensible years later?

So I opened this book with great anticipation, interested to see how other field scientists take records. Some have clearly had the same difficulty: "Few things are more frustrating than not being able to understand your own notes from several seasons ago". Well, yes, I would agree! "Write so that the picture is clear for an external audience, and it will be clearer to you as well." So advise John Perrine and James Patton in their account of resurveying wildlife in areas of California originally studied by teams coordinated by Joseph Grinnell, director of the Museum of Vertebrate Zoology, in the early twentieth century. The notes taken at that time were so good that the modern teams were able to go back to the same sites to resample. Now that is good field recording!

Biologist Michael Canfield has gathered articles about field note taking by thirteen eminent scientists from different fields of bioscience, geoscience, and ecology. Besides Perrine and Patton, the contributors include George Schaller, Bernd Heinrich, Kenn Kaufman, Roger Kitching, Anna Behrensmeyer, Karen Kramer, Jonathan Kingdon, Jenny Keller, James Reveal, Piotr Naskrecki, and Erick Greene. There are many different styles of note-taking represented here, from narratives with sketches, to detailed drawings and sketch maps, to predefined forms to be filled in, to an entirely digital database. All these accomplish the same task: that of keeping an accurate (and understandable) record of what was seen, collected, or experienced in the field. It is interesting to see that there isn't a standard way to keep notes; each field scientist has developed their own style, which is customized according to their research focus and field methods.

The book is fascinating to read and beautifully produced. Chapters are copiously illustrated. All include sample pages from notebooks or records, showing exactly how different observers approach recording field information. Often, notetaking techniques have evolved over the course of a lifetime or a career. Both Bernd Heinrich and Anna Behrensmeyer show examples of notes taken early in their career as comparisons with more recent notebooks. Behrensmeyer points out that an early field site drawing lacks a scale, something that would have been helpful when returning to the study later. Heinrich describes how he started taking field notes – records of plants and animals that he encountered while he was out running – when he was a child and young teenager. The lesson is clear. Note taking is a skill that develops over a lifetime, and the earlier it is started, the better.

Why keep a field notebook? A good question, to which Erick Greene and other contributors give cogent answers. Perrine and Patton describe field notes as "letters to the future". Many contributors maintain that a field notebook is not just for projects. Greene makes an eloquent case that a field notebook should be like an everyday journal – a place for recording observations and thoughts about the natural world. George Schaller shares that he keeps two notebooks: one to record his scientific observations, the second as a personal journal, "a daily record of impressions, ideas, concerns, and complaints".

Anthropologist Karen Kramer indicates that her personal field journal helped her "to maintain normalcy under circumstances that at the time seemed far removed from my cultural frame of reference". Greene emphasizes the value of notebooks as "an incredibly fertile incubator for your ideas and observations", noting that "one of the hardest parts of science is coming up with new questions". He describes an exercise in which he asked university students in an ecology class "to pick one 'thing' and observe it carefully over the entire semester". Many students were extremely resistant to doing this, although some became enthusiastic converts to field observation and note taking. I thought it was rather sad that students in university had not al-

ready been exposed to the discipline of note taking and field observation. There is clearly still a place for natural history clubs in developing these skills, as Roger Kitching acknowledges in his account of his childhood years in Hull, Yorkshire.

Sketching and drawing often supplement notetaking. In other cases, sketches are the main form of recording, as Jonathan Kingdon shows with sample pages of his observations on Caracal cat and guenon monkey behaviour. Kingdon is an immensely talented and justly famous wildlife artist, as well as a respected scientist. His pages are both beautiful and informative. Scientific illustrator Jenny Keller provides some hints on making accurate field sketches and recording colour. She works primarily on marine lifeforms. Colour records are especially important for these because specimens' colours can change dramatically and quickly when they are out of water or dead.

Besides a notebook, a camera is an essential piece of field equipment. Perrine and Patton show examples of "then and now" photographs, with images of Emerald Lake taken in 1924 and retaken in 2006. The comparison of vegetation composition and density is instructive to document landscape change. Their examples show why images are such an important part of field records. Beginning in the mid-1960s, Polaroid photography was a useful adjunct to field record keeping. Images could be annotated right in the field and taped into the notebook. Behrensmeyer shows several examples of this. Nowadays, digital photography is the norm, and images can be added to electronic records and annotated, as Naskrecki shows. His digital records also include sound recordings and sonograms of the katydids he studies, examples of the expanding data types that can now be captured and processed directly in the field. Digital imagery allows an instant assessment of record quality. This is a far cry from earlier times when there was much anxious waiting to get photographs or slides developed after returning from the field, hoping that they would turn out well and provide good visual documentation.

An especially important aspect of fieldwork is knowing exactly where you are when you collect a specimen or record an observation. The field notes show different ways of documenting location. In 1961, botanist James Reveal recorded the location of a specimen of *Polygala* by using a legal land description, the familiar section-township-range system. In October 1975, he recorded another collecting location with reference to distance along a major highway from a specific junction. Today, most contributors mention using a Global Positioning System (GPS) unit to record location and elevation information. Both descriptive and instrumental locational data are valuable because they capture different aspects of location. GPS coordinates give a precise point on the landscape, whereas descriptive accounts usually tell you how to get there.

In his introduction, Canfield situates modern field notetaking in the tradition of great naturalists of the past, including Gilbert White, Henry David Thoreau, and Charles Darwin. Their field notes formed the basis for classic natural history works – *The Natural History of Selborne*, *Walden*, and *The Voyage of the Beagle*. The published accounts may be polished for literary effect but the field notes provide the straightforward record of what happened. Several contributors to this volume have also drawn on field notes for popular works. Notable among these are Schaller's *Stones of Silence*, Heinrich's *Winter World*, as well as many books by preface-writer Edward Wilson. Indeed, all contributors are accomplished writers as well as scientists, and their words are worth reading, re-reading, and savouring. With this well-chosen and thoughtful suite of essays, Canfield has achieved his objective "to encourage more rigorous and long-lasting documentation of our natural world".

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Time and A Place: An Environmental History of Prince Edward Island

Edited by Edward MacDonald, Joshua MacFayden, and Irene Novaczek. 2016. McGill-Queen's University Press, 1010 Sherbrooke West, Suite 1720, Montreal, QC, Canada, H3A 2R7 / Douglas Library Building, 93 University Avenue, Kingston, ON, Canada K7L 5C4, and Island Studies Press, Room 204, Main Building at UPEI, 550 University Avenue, Charlottetown, PEI, Canada, C1A 4P3. 442 pages, 34.95 CAD, Paper.

Time and A Place enjoys the dual distinction of being the first environmental history of Prince Edward Island (PEI) and, indeed, "Canada's first provincial environmental history" (p. 10). PEI is unique in several ways among Canada's provinces and territories, in addition to being the only island. It is Canada's smallest province, at once its "most densely populated" (p. 7), lowest in absolute population numbers, and most rural, with about 53% of its people living in the country; its geology differs from that of the rest of Canada, built as it is on sandstone-covered ancient silt; and its human past dates from its emergence as a land mass 5000 years ago. Thus, its environment has been shaped and reshaped by human actions for millennia. As the editors explain in their helpful introduction, environmental history is about environments, not nature, for these millennia of human activity have left "little that resembles wilderness or untouched nature on Prince Edward Island" (p. 7). Are field naturalists able to play a role in

understanding this place, and receive benefits from the attempt?

Environmental history is a relatively new field in the broader discipline of Canadian history. Doing environmental history requires drawing contexts from several disciplines, such as bioregionalism, natural history, ecology, and nissology, the study of islands. This book flowed from the *Time and A Place* conference that did just that, drawing some "60 local, national, and international participants" to UPEI's L. M. Montgomery Institute on June 13–18, 2010 [http://www.lmmontgomery.ca/content/2010-time-and-place-conference-june-13-18]. The papers gathered here are more than conference proceedings, however, having been expanded for this book, a recent addition to the McGill-Queen's Rural, Wildland, and Resource Studies Series.

Time and A Place is an ambitious work: it attempts to cover all aspects of the environmental history of PEI, from its geological formation to the several phases of use and occupation by Aboriginal peoples, already present in the Maritime region for 13 millennia, to the impacts flowing from the relatively late settlement by European peoples after 1720. The book opens with an introduction providing theoretical context and overviews of the 11 main chapters, organized in three sections. It concludes with a thoughtful epilogue that brings out the themes of the book. An appendix lists two centuries of provincial legislation, primarily regulations relating to forestry, hunting, fishing, and agriculture from 1770–1970, a pre-conservation period characterized by protection of resources for continuing use. An extensive bibliography and notes on contributors round out the book. The black-and-white illustrations are not a strong point, unfortunately, the small maps in particular being generally difficult to decipher.

A theoretical framework for approaching the study of islands is provided in the two papers comprising the first section. The generally accepted view is that islands are simply chunks of land surrounded by water. Not so simple, asserts Gillis, as he introduces the concept of the ecotone, or boundary zone, that introduces us to islands as "terraqueous" areas (p. 35). The geographer Wynne expands on this in his critique of the notion that islands, being self-contained, are ideal museums or laboratories for research. To understand islands, one needs to study both land and water and how each, separately and together, shape an island's history, economy, and culture.

The rest of the book demonstrates the point. The four chapters in Section II, Shaping Abegweit, focus on people and the environment; the five chapters in Section III examine development and the environment. The distinction is impossibly neat, of course, for people and development figure in most chapters.

Archaeologists Keenleyside and Kristmanson begin the analysis of people and the environment by recounting the long arc of Aboriginal use and occupation of the Island over some 5000 years. The difficulties inherent in estimating pre-contact numbers of Aboriginal people mean it is also difficult to assess their imprint on the land, which appears to have been extensive yet sustainable. This shifted as the increasing numbers of European newcomers quickly disrupted the ancient balance (pp. 77–79). The European settlers came initially from France after 1720 and Britain some 50 years later, changing the Island landscape forever. As environmental biologist (and published CFN author) Sobey shows, forests provided them with resources at many levels, from personal to industrial. Early settlers were farmers and farming meant clearing forested lands. Two-thirds of the original forest cover had disappeared by 1900, 77% by 1910 (p. 107). Surprisingly, Sobey's is the first attempt to provide a complete overview of the history of forest use on the Island (p. 82). While the need to conserve the forest was recognized as early as 1902 (p. 108), conservation for environmental reasons rather than as a guarantee of continuing use did not become a movement until much later, a topic demonstrated in the regulations contained in the appendix and informing the next chapter, Curley's exploration of public attitudes toward wildlife and habitat.

As with several of the authors, biologist Curley begins with the long view, touching on Aboriginal resource use before quickly moving to the impacts of early settlers' commercial exploitation of wildlife. These included the extinction of several species and the pollution and degradation of waterways through agricultural activities. Curley explores the slowly changing attitudes of citizens to these impacts and offers cautious hope that efforts such as the creation of parks and other protected areas, engagement through citizen science, and better-informed government action will make a positive difference. This chapter and Novaczek's study of marine species, which covers similar themes, are perhaps of most interest to field naturalists. That said, the histories of land use help us understand that PEI nature is now couched in centuries of human activities. To understand it, having some appreciation of those histories is useful.

The third section shifts the focus to development, although people cannot be left out. Agriculture is analysed extensively in two papers that differ in approach and style. McFayden's treatment of the 1869–1971 period attempts to critique if not dispel several of the 'normal' concepts of agriculture using a wide variety of sources, including social accounts. Bringing the discussion up to 2014, former provincial director of forestry Arsenault presents a fact-based account, heavily dependent on government studies and reports, that mixes in observations of failure to act with some notes of tentative progress and hope for the future.

But an island includes its waters, and MacDonald and Becke offer a fascinating account of the changing nature of Island fisheries. The focus shifts from species to species – mussels, oysters, lobster – but the human element is also changing, a result of continually advanc-

ing technologies and expanding market economies. Villages that coalesced along shorelines when all the work was muscle-powered disappeared under the effects of improved roads and transportation, industrial technologies, and the ability to reach far-away markets.

These changes contribute to new perceptions of the shoreline and nostalgia for a romanticized past. The historian MacEachern explores the resulting tension in his analysis of tourism guides, published annually by the PEI government for over 60 years. His study reveals shifting perceptions of both the beauty of nature and the nature of beauty, with resulting changes of emphasis and description of PEI's natural attributes, such as its forests, no longer wilderness as Sobey demonstrated, and its beaches, no longer sites of fisheries, now spots for tourists to enjoy.

I can vouch for the Island's beauty, having visited every summer for the past 25 years, but evidences of the modern industrial world are increasing everywhere. One omission from this discussion is the impact of the Confederation Bridge, a divisive issue for Islanders at the time that receives only occasional and passing reference. Perhaps it's simply too soon to assess its impact.

These industrial changes are not all negative; for example, reforestation is increasing, as elsewhere in the world, as farmland is abandoned. And, as Stuart notes in her optimistic look at energy, an island with no oil or capacity for hydro-electric production has had to learn early on to innovate if it wants to stay warm and get work done. Stuart asserts that this necessitates a ready, pragmatic acceptance of new energy technologies. The result is higher than average use of 'green power', firsts in Canada in such initiatives as household waste management, and experience with alternative energy sources such as wind power.

Evidence is accumulating that Islanders are generally, though not yet universally, coming around to the view that protection of the environment and its biodiversity is increasingly urgent and essential. As noted above, that biodiversity has been understudied, even compared to other Maritime provinces. It is here that field naturalists can no doubt make their greatest contributions. Hopefully, *Time and a Place* will inspire just such an outcome.

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Crossing Home Ground: A Grassland Odyssey through Southern Interior British Columbia

By David Pitt-Brooke. 2016. Harbour Publishing Co. Ltd., P.O. Box 219, Madeira Park, BC, Canada, V0N 2H0. 310 pages, 32.95 CAD, Cloth.

Resettling the Range: Animals, Ecologies, and Human Communities in British Columbia

By John Thistle. 2015. University of British Columbia Press, 2029 West Mall, Vancouver, BC, Canada, V6T 1Z2. 218 pages, 29.95 CAD, Paper.

The two books reviewed here form a "literary cartography of place" – in this case, the dry grasslands of British Columbia's interior valleys. For most travellers, our only exposure to these grasslands is through our car window as we drive the Trans Canada Highway along the Thompson River Valley through Kamloops or south from there through Merritt on the Coquihalla Highway. Heat waves in the summer sun, wind-drifted snow in the winter. The two books could not be more different. *Crossing Home Ground* takes the form of daily diary entries, ruminations, and reflections of David Pitt-Brooke's 75-day pilgrimage from near the USA border north and west to Williams Lake in the Chilcotin country. He wanted to experience that dry interior intimately, and over two years he walked over a thousand kilometres, one foot in front of the other. On the other hand, John Thistle's book, *Resettling the Range*, is an academic treatise, laden with over 40 pages of notes and references, that explores the ecology and history (human and non-human) of the same grasslands through the lens of attempted eradication of "wild" horses and grasshoppers in the late nineteenth and early twentieth centuries. But they are complementary.

Each of the seven chapters in *Crossing Home Ground* covers a geographical area or length of time or season on Pitt-Brooke's journey. Many of his daily entries dwell on the logistics of finding a route and somewhere to camp that was relatively flat and had potable water, preferably on public land, in areas where there are no hiking guidebooks. At times he suffered from mild dehydration because of a shortage of water in the hot, dry climate. He sprinkles in lessons on the natural history of the bunchgrass meadows and Ponderosa Pine-Douglas-fir parklands that he hikes through and camps in. Long hours and days alone lead to reminiscences of growing up in the Okanagan, ruminations and reflections on what it means to love a landscape, to understand the intricacies of its ecology, and anger over desecration by all-terrain vehicles (ATVs), mines, cattle, and rampant housing development. He wonders "what if we started to see land not as a possession but as a cherished responsibility, like a child or a spouse or an ageing parent?".

The first third of Pitt-Brooke's journey was spent linking together remnants of native grasslands, pockets of bunchgrass that were often on steep slopes too

rugged for logging or livestock. Many of these were legally protected, although some were still suffering abuse, particularly from ATVs. He felt like an urban backpacker, seeking out "little corridors of greenery through the concrete and asphalt", as many of these remnants were surrounded by decades of development, subdivisions, malls, vineyards – the "uglification" of paradise. He likened this to reverse alchemy, changing gold into lead.

But as Pitt-Brooke bushwhacked his way west from Vernon, he rose up onto the high plateau that lies between the Columbia and Fraser river valleys, where there are still vast valleys of native grassland. This isn't to say that these are all healthy ecosystems. As Thistle details in *Resettling the Range*, the Nicola Valley grasslands and those along the Thompson River between Kamloops and Ashcroft and the Fraser River between Lillooet and Williams Lake (nearly 500 000 ha or 1.2 million ac), have been heavily impacted by grazing and associated activities since the 1858 Fraser River gold rush brought thousands of head of cattle, sheep, mules, and horses to the area. Prior to that there were no large herds of grazing animals. Bison never made it to these grasslands and, while horses evolved in North America, they died out 11 000 – 13 000 years ago and were only reintroduced in the 15th and 16th centuries by the Spanish invaders. By the time settlers arrived, First Nations peoples had been using horses for travel, hunting, warfare, trade, and profit for several hundred years. While not branded like settler horses, most of these animals were owned, although there were horses that became feral when their owners died in the 1862 smallpox epidemic. And settlers themselves often let their horses roam and graze freely on Crown (provincial) land.

By the turn of the 19th century, most of the available grasslands were owned, or leased from the provincial government, by three large corporate ranches (Gang Ranch, Douglas Lake Cattle Company, and the BC Cattle Company) and numerous smaller family ranches. Meanwhile, starting in 1861, First Nations groups were being squeezed onto smaller and smaller reserves. One of the big problems was that settler lands included lowlands where they could grow forage (often irrigated) to winter their livestock, while the reserves were usually in uplands (meadows interspersed with forest) where neither winter forage nor water was available – the "biogeography of dispossession". Settlers considered First Nations' horses as "useless" (not part of the capitalist economy) and competing for grass with their cattle. Thus started a war on wild horses, which included hiring shooters to kill horses found on Crown land between January and May, which Thistle describes as being "little more than a proxy war on Aboriginal people". His contention is supported by many excerpts from letters and reports, showing at a minimum paternalistic viewpoints and often outright racism. During the period 1924–1955, over 13 000 horses were killed, the vast majority of which belonged to First Nations people.

Through much of this same period the government was also waging a war on grasshoppers. Major irruptions occurred in 1898, 1907, 1914, and 1922. Even decades later entomologists struggle to understand what triggered the large outbreaks, but their abundance and distribution was a response to a range of environmental variables: weather (hot, dry conditions in early spring and fall), predation, parasitism, and disease. By the early 1900s, some range managers were starting to sound the alarm about overgrazing of Crown lands, which exacerbated the other variables and made the outbreaks more destructive. But rather than tackle the thorny issues of land allocation and range monopoly, and the need to reduce herd sizes to something resembling carrying capacity, the government took the politically expedient route and started poisoning grasshoppers, first using arsenic and later DDT. Neither eliminated the grasshoppers but did wreak havoc on the grasslands, impacting not only wildlife, but also the health of livestock and people.

After the grasshopper war (the use of military terminology was good psychology for bringing people onside) there were new enemies for settlers to battle: fire suppression was allowing tree encroachment into grasslands, while bark beetles killed swathes of forest that impacted fences and travel to far pastures. By the late 1960s, refrigeration and easier transportation gave rise to factory feedlot systems, to which large corporate ranches had the resources to adapt, while smaller family ranches and First Nations ranchers did not.

As Pitt-Brooke said, "Falsifying the past destroys any value it might have had as a guide to the future". While *Resettling the Range* is not an easy read, Thistle has done an admirable job of sifting through the details of early settler history to document how we arrived at the state of our present-day grasslands. But read *Crossing Home Ground* for its message of hope. As Pitt-Brooke observes, "given half a chance they [grasslands] do come back. And it doesn't take centuries … Protection and lots of time. That's the key".

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NEW TITLES

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ZOOLOGY

Pacific Reef and Shore – A Photo Guide to Northwest Marine Life. By Rick Harbo. 2017. Harbour Publishing, P.O. Box 219, Madeira Park, BC, Canada, VON 2HO. 96 Pages, 12.95 CAD, Paper.

*** Ecology of Salmonids in Estuaries around the World: Adaptations, Habitats, and Conservation**. By Colin D. Levings. 2016. University of British Columbia Press, 2029 West Mall, Vancouver, BC, Canada, V6T 1Z2. 388 pages, 75.00 CAD, Cloth.

Peterson Reference Guide to Woodpeckers of North America. By Stephen Shunk. 2016. Houghton Mifflin Harcourt, 125 High Street, Boston, MA, USA, 02110. 320 pages, 40.00 USD, Cloth, 35.00, E-book.

Peterson Reference Guide to Owls of North America and the Caribbean. By Scott Weidensaul. 2015. Houghton Mifflin Harcourt, 125 High Street, Boston, MA, USA, 02110. 352 pages, 40.00 USD, Cloth.

One Wild Bird at a Time: Portraits of Individual Lives. By Bernd Heinrich. 2016. Houghton Mifflin Harcourt, 125 High Street, Boston, MA, USA, 02110. 224 pages, 28.00 USD, Cloth.

Handbook of Larval Amphibians of the United States and Canada. By Ronald Altig, and Roy W. McDiarmid. 2015. Cornell University Press, Sage House, 512 East State Street, Ithaca, NY, USA, 14850. 368 pages, 75.00 USD, Cloth.

Slugs and Snails. By Robert Cameron. 2017. HarperCollins Canada, 2 Bloor Street East, 20th Floor, Toronto, ON, Canada, M4W 1A8. 528 pages, 135.00 CAD, Cloth, 66.99 CAD, Paper, 49.99 CAD, E-book.

Eco-evolutionary Dynamics. By Andrew P. Hendry. 2016. Princeton University Press, 41 William Street, Princeton, NJ, USA, 08540-5237. 336 pages, 65.00 USD, Cloth.

Freshwater Dinoflagellates of North America. By Susan Carty. 2014. Cornell University Press, Sage House, 512 East State Street, Ithaca, NY, USA, 14850. 272 pages, 95.00 USD, Cloth.

Listening to a Continent Sing: Birdsong by Bicycle from the Atlantic to the Pacific. By Donald Kroodsma. 2016. Princeton University Press, 41 William Street, Princeton, NJ, USA, 08540-5237. 336 pages, 29.95 USD, Cloth.

Coyote America: A Natural and Supernatural History. By Dan Flores. 2016. Basic Books, 1290 Avenue of the Americas, New York, NY, USA, 10104. 288 pages, 35.99 CAD, Cloth.

Birds of British Columbia and the Pacific Northwest: A Complete Guide. By Richard Cannings, Tom Aversa, and Hal Opperman. 2016. Heritage House Publishing Co. Ltd, 103 - 1075 Pendergast Street, Victoria, BC, Canada, V8V 0A1. 464 pages, 29.95 CAD, Paper.

At Sea with the Marine Birds of the Raincoast. By Caroline Fox. 2016. Rocky Mountain Books, 103 - 1075 Pendergast Street, Victoria, BC, Canada, V8V 0A1. 272 pages, 25.00 CAD, Paper.

The Book of Frogs: A Lifesize Guide to Six Hundred Species from Around the World. By Tim Halliday. 2016. University of Chicago Press, 1427 East 60th Street, Chicago, IL, USA, 60637. 656 pages and 1230 colour plates, 55.00 USD, Cloth, 33.00 USD, E-book.

ENTOMOLOGY

The Bees In Your Backyard: A Guide to North American's Bees. By Joseph S. Wilson, and Olivia Messinger Carril. 2016. Princeton University Press, 41 William Street, Princeton, NJ, USA, 08540-5237. 288 pages, 29.95 USD, Paper.

Butterflies: A Complete Guide to Their Biology and Behavior. By Dick Vane-Wright. 2015. Cornell University Press, Sage House, 512 East State Street, Ithaca, NY, USA, 14850. 128 pages, 19.95 USD, Paper.

Diving Beetles of the World. Systematics and Biology of the Dytiscidae. By Kelly B. Miller, and Johannes Bergsten. 2016. Johns Hopkins University Press, 2715 North Charles Street, Baltimore, MD, USA, 21218-4363. 336 pages, 150.00 USD, Cloth.

The Future of Phylogenetic Systematics: The Legacy of Willi Hennig. Systematics Association Special Volume Series. Edited by David Williams, Michael Schmitt, and Quentin Wheeler. 2016. Cambridge University Press, 1 Liberty Plaza, Floor 20, New York, NY, USA, 10006. 508 pages, 155.00 USD, Cloth.

Monarchs in a Changing World: Biology and Conservation of an Iconic Butterfly. Edited by Karen S. Oberhauser, Kelly R. Nail, and Sonia Altizer. 2015. Cornell University Press, Sage House, 512 East State Street, Ithaca, NY, USA, 14850. 352 pages, 35.00 USD, Cloth.

Metamorphosis: Astonishing Insect Transformations. By Rupert Soskin. 2015. Bloomsbury Natural History, Bloomsbury Publishing Inc., 1385 Broadway, 5th Floor, New York, NY, USA, 10018. 256 pages, 50.00 USD, Cloth.

Sting of the Wild: The Story of the Man Who Got Stung for Science. By Justin O. Schmidt. 2016. Johns Hopkins University Press, 2715 North Charles Street, Baltimore, MD, USA, 21218-4363. 280 pages, 24.95 USD, Cloth.

BOTANY

Bogs & Fens: A Guide to the Peatland Plants of the Northeastern United States and Adjacent Canada. By Ronald B. Davis. 2016. University Press of New England, 1 Court Street, Suite 250, Lebanon, NH, USA, 03766. 304 pages, 24.95 USD, Paper.

Mosses, Liverworts, and Hornworts: A Field Guide to Common Bryophytes of the Northeast. By Ralph Pope. 2016. Cornell University Press, Sage House, 512 East State Street, Ithaca, NY, USA, 14850. 384 pages, 24.95 USD, Paper.

Vascular Plants of Alberta, Part 1: Ferns, Fern Allies, Gymnosperms, and Monocots. By John Packer, and A. Joyce Gould. 2017. University of Calgary Press. 300 pages, 34.95 CAD, 41.95 USD, Paper. Drawn from the 30-volume *Flora of North America*.

Fungi in Ecosystem Processes, **Second Edition**. By John Dighton. 2016. CRC Press, Taylor & Francis Group. 382 pages, 95.96 USD, Cloth.

The Fungal Community: Its Organization and Role in the Ecosystem, **Fourth Edition**. By John Dighton, and James F. White. 2017. CRC Press, Taylor & Francis Group. 602 pages, 135.96 USD, Cloth.

THE ARCTIC

Herschel Island Qikiqtaryuk: A Natural and Cultural History of Yukon's Arctic Island. Edited by Christopher R. Burn. 2012. The Wildlife Management Advisory Council (North Slope; publisher); University of Calgary Press (distributor), 2500 University Drive NW, Calgary, AB, Canada, T2N 1N4. 138 pages, 39.95 CAD, Paper.

Baffin Island: Field Research and High Arctic Adventure, 1961-67. By Jack D. Ives. 2016. University of Calgary Press, 2500 University Drive NW, Calgary, AB, Canada, T2N 1N4. 248 pages, 39.95 CAD, 39.95 USD, Paper. Open access: https://press.ucalgary.ca/books/9781552388297.

The Reindeer Botanist: Alf Erling Porsild, 1901-1977. By Wendy Dathan. 2012. University of Calgary Press, 2500 University Drive NW, Calgary, AB, Canada, T2N 1N4. 748 pages, 44.95 CAD, 51.95 USD, Paper. Open access: https://press.ucalgary.ca/books/9781552385869.

Future Arctic: Field Notes from a World on the Edge. By Edward Struzik. 2015. Island Press, 2000 M Street NW, Suite 650, Washington, DC, 20036. 216 pages, 27.00 CAD, Cloth, 21.99 CAD, Paper, 3.99 CAD, E-book.

The Arctic Guide: Wildlife of the Far North. By Sharon Chester. 2016. Princeton University Press, 41 William Street, Princeton, NJ, USA, 08540-5237. 542 pages, 27.95 USD, Flexi-binding.

OTHER

Life in the Dark: Illuminating Biodiversity in the Shadowy Haunts of Planet Earth. By Danté Fenolio. 2016. Johns Hopkins University Press, 2715 North Charles Street, Baltimore, MD, USA, 21218-436. 312 pages and 446 colour photos, 39.95 USD, Cloth, 39.95 USD, E-book.

Deep Life: The Hunt for the Hidden Biology of Earth, Mars, and Beyond. By Tullis C. Onstott. 2016. Princeton University Press, 41 William Street, Princeton, NJ, USA, 08540-5237. 512 pages, 35.00 USD, Cloth.

*** The Sustainability Dilemma – Essays on British Columbia Forest and Environmental History**. By Robert Griffin, and Richard A. Rajala. 2016. Royal BC Museum, 675 Belleville Street, Victoria, BC, Canada, V8W 9W2. 448 pages, 34.95 CAD, Paper.

† Protecting the Planet: Environmental Champions from Conservation to Climate Change. By Budd Titlow, and Mariah Tinger. 2016. Prometheus Books, 59 John Glenn Drive, Amherst, NY, USA, 14228. 587 pages, 26.00 USD, Cloth, 11.99 USD, E-book.

*** Alexander Wilson: Enlightened Naturalist**. Edited by Edward H. Burtt, Jr. 2016. Aperçus: Histories Texts Cultures Series. Rowman and Littlefield, 4501 Forbes Boulevard, Suite 200, Lanham, MD, USA, 20706. 202 pages, 80.00 USD, Cloth, 39.99, Paper, 39.99, E-book.

*** Coexistence: The Ecology and Evolution of Tropical Biodiversity**. By Jan Sapp. 2016. Oxford University Press, 198 Madison Avenue, New York, NY, USA, 10016. 296 pages, 49.95 USD, Cloth.

Animal Metropolis: Histories of Human-Animal Relations in Canada. Edited by Joanna Dean, Darcy Ingram, and Christabelle Sethna. 2017. University of Calgary Press, 2500 University Drive NW, Calgary, AB, Canada, T2N 1N4. 336 pages, 34.95 CAD, Paper.

Galapagos: Preserving Darwin's Legacy, Second Edition. By Tui de Roy. 2016. Bloomsbury Publishing Inc., 1385 Broadway, 5th Floor, New York, NY, USA, 10018. 240 pages, 50.00 USD, Cloth.

Secrets of the Seas: A Journey into the Heart of the Oceans. By Callum Roberts. Photographs by Alex Mustard. 2016. Bloomsbury Publishing Inc., 1385 Broadway, 5th Floor, New York, NY, USA, 10018. 240 pages, 40.00 USD, Cloth.

Wildlife, Land, and People: A Century of Change in Prairie Canada. By Donald G. Wetherell. 2016. McGill-Queen's University Press, Douglas Library Building, 93 University Avenue, Kingston, ON, Canada, K7L 5C4. Carleton Library Series Number 238. 640 pages, 49.95 CAD, Cloth or E-book.

The Complete Naturalist. By Nick Baker. 2015. Bloomsbury Publishing Inc., 1385 Broadway, 5th Floor, New York, NY, USA, 10018. 352 pages, 34.00 USD, Paper.

Why Ecology Matters. By C. Krebs. 2016. The University of Chicago Press, 1427 East 60th Street, Chicago, IL, USA, 60637. 208 pages, 75.00 USD, Cloth, 25.00 USD, Paper.