

AN ABC RESOURCE SURVEY METHOD FOR ENVIRONMENTALLY SIGNIFICANT AREAS WITH SPECIAL REFERENCE TO BIOTIC SURVEYS IN CANADA'S NORTH. By JAMIE D. BASTEDO. Department of Geography Publication Series No. 24. Waterloo: Department of Geography, University of Waterloo, 1986. 135 p., 12 figs., 13 tables. Softbound. Cdn\$18.75.

This book addresses the perennial problem of collecting and presenting information on the distribution and extent of biophysical resources in a logistically efficient and scientifically effective way. Essentially, it is a handbook for field workers, but a handbook with considerable conceptual embellishment. I expect it will prove to be a useful and popular tutorial text for tertiary level students in land evaluation and natural resource management courses.

The method presented in the book was designed specifically to identify parts of previously designated environmentally significant areas (ESAs) that should have priority for land use planning. If it proves useful, the method has wider application. The derivation of ESAs is explained in the preface, which is essential reading if you are not Canadian, and probably important for the background to the book even if you are.

The book is well organized, well presented and generously illustrated. The writing is clear and concise, and there is a valuable glossary of terms that might be unfamiliar or, perhaps more likely, ambiguous to many readers.

There are four chapters and nine appendices. Most appendices are field guides for the recording of different components of the landscape. However, Appendix A develops the concept of ESAs, and Appendix B considers requirements for resource surveys peculiar to northern environments. A short chapter 1 establishes a planning framework and the place of resource surveys within that framework. It is a useful, though not original and certainly not the only possible, land use planning framework.

Chapter 2 focuses down onto resource survey methods. Six criteria for appraising resource survey methods are listed and discussed: economy, flexibility, replicability, ecological validity, communicability and applicability. Four different kinds of resource survey methods are identified and appraised in terms of these criteria. Two fundamentally different approaches are represented in these four kinds of surveys. One advocates mapping and describing land resources separately. The product of a survey would include, for example, a landform map, a soils map, a vegetation map, etc. The other approach advocates integration of the resources onto a single map base. The map unit descriptions include a component from each resource recorded.

Jamie Bastedo's ABC (abiotic, biotic and cultural) method is a hybrid of both approaches and is described in detail in Chapter 3. The method begins with the compilation of raw data on appropriate variables (examples include landforms, vegetation composition, vegetation cover, habitat features and land tenure). These variables are retained in their non-integrated form at this level. The second step is to integrate them into three maps; an abiotic significance map, a biotic significance map and a cultural significance map. To proceed from the raw data to significance maps it is necessary to apply a series of indices derived from "ecological theory, . . . human values, . . . and practical management consideration . . ." (p. 42). This is the most difficult part to follow and scientifically the most worrying. Indices are notorious for arbitrariness, problems of definition and measurement and problems of data quality. The indices relevant to biotic resource evaluation, for example, are: community diversity, uniqueness, recoverability, faunal diversity, faunal dependence and fire susceptibility. Three comments illustrate the three classes of problem.

1. Each index is scaled from 1 to 5. Thus, 8 vegetation communities = 10 + mammals = 29 + birds = closed lodgepole pine forest (high fire susceptibility) = conifer forest at treeline (low recoverability). This is extremely arbitrary.

2. Uniqueness refers to the frequency and extent of vegetation communities. As something is either unique or not, why not use rarity?

3. Faunal dependence is some function of the degree to which species

occurring in a community are dependent on that community. Do the Canadians know the autecology of their mammals and birds (used as surrogates for all fauna) well enough to describe that function for all species? It would be impossible in Australia.

These problems are by no means peculiar to Jamie Bastedo's resource survey method; in fact, they are pervasive. Considerable research effort is required in this area if progress is to be made in the development of resource survey methods. One obvious direction would be to quantify the relationships between wildlife and vegetation communities.

Following the derivation of the three significance maps, abiotic, biotic and cultural, a single ecological significance map is derived. This is the third and final step. Thus, attention is concentrated on areas where high values for all three components coincide, and presumably those areas are accorded some priority for land use planning.

Chapter 4 is an honest and valuable appraisal of the ABC method using the six criteria the author used in Chapter 2 to appraise other survey methods. Here the problem of predicting animal species distributions from plant community distributions is raised. So, too, the related problem of finding rare features that may be extremely significant but only discovered by accident. Clearly, a great deal of research remains to be done. But land use change is proceeding, and if we wait until all the problems associated with the collection and dissemination of biotic resource information are solved, there will be much less left to plan for.

This book is an important contribution to the development of natural resource survey methods, and I look forward to reading of tests and modifications of the method itself, as well as the debate on concepts and philosophical approach it is sure to generate.

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ALASKA TREES AND SHRUBS. By L.A. VIREECK and E.L. LITTLE, JR. Fairbanks: The University of Alaska Press, 1986. vii + 265 p., 269 illus., maps. Softbound. US\$12.95.

Alaska Trees and Shrubs is an older book that has now found a new publisher. The book was originally published in 1972 by the United States Department of Agriculture, and publication now lies in the hands of the University of Alaska Press. Both the authors and the publisher are to be congratulated, as the book is clearly an important document for anyone working in Alaska or northern Canada. The 1986 publication is essentially the same as the 1972 publication.

In his preface to the new printing, Dr. Viereck provides a lucid history of the publication and expresses regret that time and money precluded him from revising the book before the present printing. We are promised that a new edition will be forthcoming.

The book is organized in a logical format, taking the reader through a very clear overview of the vegetation of Alaska from the coastal forests through the state's interior forests to the tundra zone. The vegetation subsets dealt with include: coastal spruce-hemlock forests, closed spruce-hardwood forests, open low-growing spruce forests, treeless bogs, shrub thickets, moist tundra, wet tundra and alpine tundra. In the 1972 printing of the book there was a fold-out map of the major ecosystems of Alaska; this has been omitted from the present publication because the original plates have been lost. While this is unfortunate, the value of the book remains very great.

The major purpose of the book, the identification of Alaska trees and shrubs, is dealt with in pages 24-253. It begins with a comprehensive set of keys that include: a key to trees based primarily on leaf characteristics, a winter key to deciduous trees, a genera key for shrubs and a

winter key to the shrubs that goes to the species level for all but *Salix* species.

While the book does not include a key to the various plant families, this is not necessary both because of the comprehensive keys referred to earlier and because the book only deals with 128 species. The authors do however provide family descriptions in the main part of the book before presenting individual species keys and descriptions for members of each family. Before writing this review I tested the keys on a number of specimens and found them to be very laudable in their accuracy, ease of use and distinct lack of reliance on obscure characteristics known only to those well versed in taxonomic terminology. Though not essential, it would have been nice if the authors had included a glossary to cover the few less well-known terms they do use. Even the keys to the genus *Salix* are usable and provide a means of identifying species primarily on vegetative characteristics. All in all it is apparent that the keys have been developed by individuals with a great amount of field experience who have been confronted with the difficult task of studying plants in the field during all seasons. Such keys could not have readily been written by purely "lab scientists."

Supplementing the keys is a series of carefully selected and beautifully drawn illustrations that have been extracted with acknowledgement from a number of sources. The only concern that could legitimately be expressed about the illustrations is that they are so good the users could be seduced into the bad scientific practice of "picture keying" specimens and ignoring the text. While range maps are provided for the distribution of each species in Alaska, the authors have not seen fit to include ranges in the neighbouring areas of Canada that are shown on the map base. Though technically the book need not include such distributions, they would be very nice to have as northern scientists tend to view "the North" as the entity they study rather than specific political jurisdictions. Perhaps the authors will again draw upon the work of Professor Hulten when they prepare the next edition and include such distributions.

Individual species entries are carefully written and include: common and scientific names, synonymy, species descriptions, autecological notes and notes on worldwide distribution.

From the production standpoint, the book is soft cover in 6" x 9" format, perfect bound with both glue and stitching. The stitching should ensure that the book will stand up to the abuse that books of this nature usually experience at the hands of field workers.

In summary, this book is of very high quality both from the technical and production standpoints and should be a constant companion of both researchers and interested naturalists who enjoy the delightful offerings of western North American northlands. A price of only US\$12.95 for an academic book of this quality is a singularly fine buy. I commend the book very highly.

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COOKING ALASKAN. By THE EDITORS AND FRIENDS OF *Alaska* MAGAZINE. Anchorage: Alaska Northwest Publishing Company, 1983. 476 p., bib., index. US\$17.95 + \$1.00 postage.

Cooking Alaskan was sent to me, at *Arctic*, several years ago as a review copy. It is impossible to review a cookbook until one has tried enough of the recipes to make a judgment about the volume. Over the years I have used quite a few of those contained in this comprehensive collection, and I can now report that for anyone interested in cooking fish, game, or harvest foods, in the field or in the urban kitchen, this book will be an invaluable addition to the cookbook shelf.

Fish and shellfish: From cleaning to storage (including how-to's for field-smoking your catch) to filleting all shapes and sizes, and myriad

cooking techniques, the information is as complete as I have found anywhere. (The cardinal rule: fresh fish require 10 minutes per inch — 2.5 cm — at the thickest point, regardless of cooking method; frozen, they take twice as long.) You'll learn how to remove sand from clams and cockles and how to shuck them by alternative methods. You'll also learn about PSP — paralytic shellfish poisoning — and how best to avoid it. This is *not* a Pollyanna-ish guide to the wild. Every consumable denizen of Alaska's seas, rivers, and lakes is covered in detail in the "From the Waters" section, which includes some unexpected treats, such as Whale Oil Sugar Cookies (from Helen Fisher, of Kenai).

Wild birds and four-legged game animals are dealt with extensively, and many native Alaskan preparation techniques are included. To my knowledge, no one since Mrs. Beeton has given such detailed instructions for butchering and skinning-out game animals. The editors conscientiously provide references to more explicit books on field-dressing and preparation of large and small game both in Alaska and in the Lower 48 (references are provided throughout the book). Nutritional information is included in each section.

An exhaustive survey is given in "From the Earth" of Alaskan wild and home-grown food plants. Greens, berries, mushrooms, tea plants of various kinds, "mousetuts" (cottongrass, or *Eriophorum angustifolium*), water plants, and cultivated plants are given thorough treatment, including cautions about poisonous varieties and stages of development during which the harvester should avoid certain plants.

In case you're feeling a sudden starch deficit, read on! The editors devote 31 pages to sourdough alone, followed by dozens of recipes for "cache and cupboard" delicacies using flour, yeast, sugar, and powdered milk. In this section you'll find not only breads and desserts, but also sauces, savories, and stuffings galore to complement the recipes in earlier chapters.

The final chapter, "Stocking the Cache," is a sort of appendix of preservation methods. Freezing, canning, salting, smoking, pickling, curing, corning, drying, jelling, and more esoteric methods such as making fruit leather and "oil-capping" (press the berries into a jar to release the juice, then "cap" with a ¼-inch layer of cooking oil and store underground near the permafrost layer until the weather is cold enough to freeze the berries!) are all described step by step. And in the last section of this chapter, recipes are provided for bottled delights made from harvest foods. My personal favorite is Northern Comfort (donated anonymously, perhaps because of the requirement for a liberal portion of 190-proof Everclear!).

A bibliography is included of other Alaskan cookbooks, and there is a listing of contributors both individual and elsewhere published. Finally, a cookbook wouldn't be complete without a comprehensive cross-referenced index, and in this case it is 20 pages long, covering the 1000+ recipes.

Besides being a useful cookbook, this is a lot of fun to read. First-person bush experiences lend local color, in which few North Americans excel so proudly as Alaskans. Historical food-preparation techniques involving a generous dollop of folklore and ethnology are also described, courtesy of various native and non-native historical societies from the Kenai Peninsula to the Aleutian Chain. And even those of you who live far south of the 60th — or even the 49th — parallel can surprise your dinner guests with Seagull Egg Cake or judiciously substitute beef for moose or caribou in any of the multitude of red-meat recipes.

The book is well produced and I found no glaring typos (high praise from an obsessive editor!). Recipes are laid out in the time-honored fashion, with a list of ingredients and amounts followed by a step-by-step description of what to do with them. So far, I have had no failures using the recipes from this compendium, and I can recommend it without reservation.

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