AN ABC RESOURCE SURVEY METHOD FOR ENVIRONMEN-
TALLY 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 present-
ing 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 illus-
trated. 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 envi-
ronments. 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, communicabil-
ity and applicability. Four different kinds of resource survey methods
are identified and appraised in terms of these criteria. Two fundamen-
tally different approaches are represented in these four kinds of
surveys. One advocates mapping and describing land resources sepa-
rately. 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 vari-
ables (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 man-
agement 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 distri-
butions from plant community distributions is raised. So, too, the
related problem of finding rare features that may be extremely signifi-
cant 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. VIERECK 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 publica-
tion because the original plates have been lost. While this is unfortu-
nate, 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 characteris-
tics, a winter key to deciduous trees, a genera key for shrubs and a