All of these authors describe their learning processes in terms that may feel comfortable to scientists. In Settling Down, Scott Russell Sanders also questions one reason why scientists may nevertheless undervalue place-based knowledge: "If you stay put, won't you be narrow, backward, dull? You might. I have met ignorant people who never moved; and I have also met ignorant people who never stood still. Committing yourself to a place does not guarantee that you will become wise, but neither does it guarantee that you will become parochial. Who knows better the limitations of a province or a culture than the person who has bumped into them time and again?" (p 87).

At Home on the Earth suggests that too-sharp boundaries between work and home, or between literature and science, can make each side into a refuge from the other, a way of not "bumping into" the other's limitations. When that happens, the only way forward may lie in challenging the boundaries themselves.

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TERRESTRIAL ECOREGIONS OF NORTH AMERICA: A CONSERVATION ASSESSMENT.

By Taylor H Ricketts, Eric Dinerstein, David M Olson, Colby J Loucks, William Eichbaum, Dominick DellaSala, Kevin Kavanagh, Prashant Hedao, Patrick T Hurley, Karen M Carney, Robin Abell, and Steven Walters. Washington (DC): Island Press. $75.00 (paper). xxv + 485 p; ill.; index. ISBN: 1-5963-722-6. 1999.

A team of scientists from the World Wildlife Fund has produced a comprehensive assessment of the current status of biodiversity in North America excluding Mexico. The book has the completeness and attention to detail reminiscent of a catalog, an encyclopedia, or an almanac. The majority of the book is comprised of five appendixes that provide a description of each ecoregion. Conservation contact information and addresses, a comprehensive glossary, an index, and extensive references are also provided.

Terrestrial Ecoregions is information-rich, and includes 19 special essays. These sidebars are enticing, and make the book an attractive read, even if they break up the flow of the main story. The sidebars discuss a wide array of subjects, including freshwater ecoregions, marine and coastal ecoregions, movement rules and corridors, species endemism and richness, and range maps by taxonomic group.

Ecoregion delineations are based on Omernik in the U.S., Ecological Stratification Working Group (ESWG) in Canada, and Galland et al. in Alaska. The three regionalizations were altered to become seamlessly integrated. The authors state that the plethora of alternative ecoregion versions "show more similarity than differences when scrutinized carefully" (p 12), but this point is arguable. Nevertheless, their fused ecoregion map for North America contains 116 ecoregions, grouped into ten Major Habitat Types (MHTs), roughly equivalent to biomes.

Out of necessity, Ricketts et al. relied heavily on expert assessment, convening a workshop of 35 ecologists to collectively assess each ecoregion for a number of criteria into rough categorical rankings, shifting their boundaries if necessary. The authors describe the approach as "subjective, but quantified" (p 3). There is, however, an undertone of guilt for this subjectivity, as heroic effort is made to construct a veneer of objectivity for what remains an inherently subjective process. Minute details of decision rules and methods are described in Appendixes.

Assessment of each region was based on two main factors: a Biological Distinctiveness Index (BDI) and an estimate of a Conservation Status Index (CSI). The assessment of the BDI takes a scale-based approach, using four levels of distinctiveness: globally, regionally, bioregionally, or nationally. It is interesting that "national" distinctiveness represents the lowest possible scale here. Species distribution data for over 20,000 North American species were combined to produce an integrated total, and then categorized into the four levels. The CSI was assessed in five levels: critical, endangered, vulnerable, relatively stable, and relatively intact, then tempered with the expected degree of future threat. Conservation status and biological distinctiveness were integrated using a five by four matrix approach, resulting in assignment of each ecoregion into five final classes of Conservation Action.

Thirty-two ecoregions in North America (excluding Mexico) were ranked globally outstanding, the highest category of BDI. In the CSI, most of the eastern U.S. was deemed critical, and almost all of the U.S. except the southwest is included when endangered ecoregions are added. Most of the Class I priorities are distributed along the west coast, the Chihuahuan desert, the tallgrass prairie, and the Appalachians/coastal plain complex.

In the chapter, Recommendations, the authors argue for an organized and coordinated approach to conservation, rather than a piecemeal, reactionary one. The assessment found 13 ecoregions that match the Everglades in biological distinctiveness, yet face even greater threats. These include the Sierra Nevada forests, Appalachian forests, southeastern mixed and conifer forests, and tallgrass prairie. At the other end of the spectrum, the study found 11 ecoregions with relatively intact landscapes.

The abundant color maps are beautiful, but the

legend index numbers are small and hard to read. No ecoregion legend is provided in the final Conservation Classes map, but one can read the index elsewhere in the volume. Unfortunately, *Terrestrial Ecoregions* shares a shortcoming common to many ecoregion books—failure to provide digital dataset versions of the color maps suitable for use with a Graphic Input System (GIS). No CD-ROM is provided, and no companion website is mentioned for downloading such digital maps. The products resulting from this considerable body of work are, alas, not available for easy use. This unfortunate omission may represent the greatest impediment to the adoption of the regionalization offered here.

Ricketts et al. have tackled a monumental task, and have done an admirable job. The writing is clear and free of jargon. *Terrestrial Ecoregions* is valuable as a reference, possibly even as a textbook, and is well worth the money. It would have been much more useful if a CD-ROM had been included.

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ENVIRONMENTAL ECONOMICS.

By Charles D Kolstad. Oxford and New York: Oxford University Press. $59.95. xiii + 400 p; ill.; author and subject indexes. ISBN: 0-19-511954-1. 2000.

RESTORING NORTH AMERICA'S BIRDS: LESSONS FROM LANDSCAPE ECOLOGY.

By Robert A Askins; illustrations by Julie Zickefoose. New Haven (Connecticut): Yale University Press. $30.00. xvi + 320 p; ill.; index. ISBN: 0-300-07967-2. 2000.

This enjoyable and informative book places current thinking on bird ecology and conservation into themes of particular relevance to land managers and birders. Loosely organized to present conservation issues by regions and habitats, the book ranges over many temporal and geographic scales. Replete with natural history commentary, it documents how birds are influenced by their habitats and landscapes through both review of historic changes in North American landscapes and summary of current research. The presentations of research results are well suited for anyone impatient with details, as they generally retain some information content at a high level of abstraction.

Readers should be aware that the book is strongly focused on landbirds (primarily passerine birds) and their habitats during the breeding season. Although case studies target a few nonpasserine species, there is little discussion of habitat and landscape associations of waterfowl, marsh birds, shorebirds, or colonial waterbirds. Even with this (somewhat) limited scope, the combination of topics leads to a complicated discussion, and I found it inconvenient to sort through the footnotes to identify the references. The North American Breeding Bird Survey (BBS) is used in the book as the primary source of information on bird populations, even though the BBS is a recent innovation (post-1966), and is also quite controversial for many species and regions.

The emphasis on habitat and landscape influences on populations makes this book an important and useful contribution to the bird conservation literature. In essence, it provides a series of conceptual models for predicting the effects of land management activities on bird populations. This way of thinking about bird populations is critical for rational management, and the discussion in this book can be a starting point for developing more formal approaches for management. The final chapter discusses applications of landscape-sensitive management, but it would be useful to also direct readers to topics such as adaptive management, in which models and monitoring are directly used to assess the value of alternative management actions.

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BUGS IN THE SYSTEM: REDESIGNING THE PESTICIDE INDUSTRY FOR SUSTAINABLE AGRICULTURE.

Edited by William Vorley and Dennis Keeney. London: Earthscan Publications Ltd; distributed by Iowa State University Press, Ames (Iowa). $64.95 (hardcover); $29.95 (paper). xviii + 222 p; ill.; index. ISBN: 1-85383-430-0 (hc); 1-85383-429-7 (pb). 1998.

This edited volume examines the claims and counterclaims in redesigning the pesticide industry for a sustainable agriculture. Most of the chapters were written by economists and sociologists but, for better balance, the volume should have had contributions from pest management specialists and agricultural ecologists.

Vorley and Keeney make a valuable suggestion that it would be helpful for the "greening" of the pesticide industries if services for an information-intensive agriculture were sold. This would not mean that industries would cease selling pesticides, but that the pesticides would be included as a part of their services. In this situation, the pesticide industries would act as "consultants" to recommend ways in which pesticides may be used judiciously. The pesticide industry would be making their essential profits, but would give the appearance of recommending the prudent use of pesticides. The chemical companies might then actually serve as technical agricultural-consultants to large farmers, providing advice on soil and water conservation, what seeds to plant, what chemicals to use, and the best markets for