

be considered, enjoyed and lamented as phenomena which have existed but sometimes passed us by.

I enjoyed reading about present and past giant trees and was entertained different times looking for interesting facts and diagrams. It is not a book to be read at one sitting, even though short, because the tree species stand alone and reading several is like reading a list which can go on too long. A short reading of one or two tree descriptions at each visit is sufficient with another few minutes reading the next descriptions at

another time. Soon the book becomes a reference for tree species and musings of how much we have missed and what we might visit. I have shown it to my students and they spent time with it as a picture and description book to browse and marvel. Al Carder has given us a little gem of knowledge and history for entertainment based on good science and research.

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ENVIRONMENT

Fire and Avian Ecology in North America – Studies in Avian Biology Number 30

Edited by Victoria A. Saab and Hugh D.W. Powell. 2005. Cooper Ornithological Society. 193 pages.

This technical work is a collection of 11 papers, ten of which address the role and effect of fire in one or more ecosystems (e.g., Boreal Forest, Oak Woodlands, Interior Chaparral); the first chapter is a cogent summary of the ten others.

The chapters more or less follow a logical pattern in their layout. Each paper shows a map of the distribution of the habitat(s) discussed, and normally one or two other figures. A table of pertinent literature is presented in each chapter, which also includes responses to fire of a number of bird species. The papers describe historic fire regimes, including the use of fire by aboriginals, as well as the effect of fire suppression on

birds (and by default, the plants making up the habitat for them); sections on conservation strategies, including the use of prescribed burns and withholding of fire suppression end each chapter.

The only irritant to me was lumping all the references at the end of the book; normally, each paper should be concluded with its own collection of references. Should someone want to photocopy one chapter, they would have to photocopy the entire compilation of references, instead of just the pertinent ones. None-the-less, it is a solid work.

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Fisheries Assessment and Management in Data-Limited Situations

Edited by G. H. Kruse, V. F. Gallucci, D. E. Hay, R. I. Perry, R. M. Peterman, T. C. Shirley, P. D. Spencer, B. Wilson, and, D. Woodby. 2005. Alaska Sea Grant, Fairbanks, Alaska. Publication Number: AK-SG-05-02. 958 pages. Price: \$50.00 US, ISBN:156612-093-4.

Maintaining sustainable fisheries resources requires the combined efforts of scientists, fisheries managers and policy makers. Balancing fisheries growth and conservation is a difficult task, particularly in situations where available information is limited. Data-limited fisheries are often plagued by a lack of long-term data on the basic biology, ecology and productivity of the species that are relevant to these resources. A number of successful fisheries have been developed by combining a scientific background with robust policy management to successfully develop sustainable fisheries, even in situations where data is limited. However, newly developing and small-scale fisheries often operate without sufficient data to develop production models, assessment techniques and sustainable management strategies.

To address these challenges, a symposium entitled "Assessment and Management of New and Developed Fisheries in Data-limited Situations" was held in Anchorage, Alaska, in 2003. The purpose of this symposium was to share knowledge, research and manage-

ment strategies for newly developing and small-scale fisheries by bringing together fisheries scientists, managers and policy makers from all over the world. The result is a proceedings book titled "Fisheries Assessment and Management in Data-limited Situations." Specifically, this book is a collection of forty-six peer-reviewed research papers that provide case studies and management considerations for fisheries with limited data. The book is divided into seven sections: (1) case studies of fishery failures and successes; (2) indicators of stock health and productivity from limited sampling programs; (3) involvement of fishermen and use of local knowledge; (4) multi-species and ecosystem indicators and models; (5) precautionary management approaches; (6) stock assessment models; and (7) stock assessment surveys and applications. The first two sections focus on science-based assessments of fishery case studies while the final five sections identify and discuss management and assessment strategies. Throughout many of the case studies in this book, several key management themes emerge that are highly relevant to fisheries managers in data-limited situations.

Section one provides insight into the failures and successes of the world's fisheries. Several case studies on a variety of species are described, and management implications are discussed. A key paper in this sec-

tion provides a general overview of the world status of data-limited fisheries using landings statistics with a Bayesian approach (Vasconcellos and Cochrane). Each of the subsequent case studies describes techniques for managing both struggling and successful fisheries. These case studies focus on the development of new or developed fisheries that have limited data (Bechtol and Trowbridge; Bureau and Hand; Therriault et al.) and the recovery and management of struggling resources (Bargmann et al.; Kruse et al.; Stephenson and Jackson). Despite their geographically and species-specific nature, the general knowledge contributed by these case studies may be highly relevant to similar fisheries in data-limited situations in other parts of the world.

The second section focuses on developing indicators of stock health and productivity from limited data sets. Each paper describes a case study where early warning signs can be detected in order to predict the state of fisheries resources. The indicators that are described include biological indicators (LeBlanc et al.; Tribuzio et al.), performance indicators and stock dynamics (Hay et al.; Orensanz; Raid et al.; Ziegler et al.) and management indicators (Howland and Tallman; Scandol; Weyl et al.). A key paper from this section is a simulated study of Yellowfin Bream (*Acanthopagrus australis*) where empirical stock-status indicators were assessed using quality control methods (Scandol).

The third section focuses on the integration of local fishermen and traditional ecological knowledge in fisheries management. A key paper in this section by Freire describes the use of data provided by anglers in the assessment of Brazil's growing recreational fisheries industry. This paper represents the first data of their kind from South America and illustrates the potential value of recreational anglers as a key data source for improving fisheries management in data-limited situations. The fourth section contains papers that are geared towards the assessment of the effects of fisheries at the ecosystem level by using ecosystem indicators (Stoberup et al.) or models (Ainsworth and Pitcher; Cheung and Pitcher; Morato and Pitcher). This section contains an interesting study by Cheung and Pitcher that outlines possible strategies for evaluating fisheries management policies that aim to conserve biodiversity. The fifth section contains a number of studies that take a precautionary approach to data-limited fisheries management. The majority of the studies in this section focus on fisheries uncertainty (A'mar and Punt; Campbell and Dowling; Punt and Methot; Welch; Zheng). One key paper involves an evaluation of a multi-stage approach to data-limited fisheries management. Perry et al. assesses the four-stage approach to new and developing fisheries (i.e., data collection, design of key studies, implementation of selected strategies and establishment of the new fishery) designed by Fisheries and Oceans Canada. One of the most challenging factors in this staged framework, as with the management of many of the world's fisheries, is the

contradiction between the demands of access to fisheries and the conservation of these resources. This paper addresses some key points that are relevant to balancing these challenges.

The sixth section contains several papers that address the use of models in stock assessment. Stock assessment bias and sensitivity are addressed by two key papers in this section (Ernst and Valero; Mesnil). Also, Catch-Survey Analysis (CSA) is discussed by two papers to estimate stock abundance (Collie et al.) and to address concerns over sensitivity and bias (Mesnil). Similarly, the seventh section addresses stock assessment methods and surveys. In this section, several key methods are described, including population density assessments using scuba (Byerly and Bechtol) and the applications of acoustical estimations (Kaljuste et al.). This section also addresses sampling designs for estimating bycatch (Menon et al.), methods for accounting for climate variability in models (Shotwell) and assessments to address concerns over recreational overharvesting (Therriault and Hay). A case study discussing the modeling of climate variability in relation to forecasting Pacific salmon spawner-recruit dynamics (Shotwell et al.) is particularly relevant to data-limited fisheries that require the input of variable environmental data into forecast models.

This book contains an excellent assemblage of well-written, highly relevant research papers on data-limited fisheries. Several management themes emerge from this book, including (1) the development of key rapid assessment tools, (2) the integration of traditional knowledge from fishermen and local ecological knowledge, (3) the adoption of a precautionary approach to fisheries management, (4) the evaluation of sensitivity and bias in stock assessment models, and (5) the development of robust stock assessment methods. These key strategies recur throughout many of these studies and are relevant to fisheries worldwide. Further, several novel strategies for managing data-limited fisheries are discussed, including the development of key modeling and assessment tools. This book offers one of the first attempts to assemble key literature on data-limited fisheries into a single volume. This is an invaluable resource for the management of new or developing fisheries.

The intention of this collection is to provide scientific background to new and developing fisheries. Each research paper attempts to suggest applications of their case study to other similar data-limited fisheries resources. However, the seven sections contained in the book are organized with little or no preface or interpretation of this research. Throughout the book, the links between the results of each case study to a broader application are often tenuous. For most proceedings books in this style, it is common to omit interpretations by the authors or editors in each section. However, the nature of this research demands a synopsis in each section to highlight the applications and extensions of this research. Managers require the interpretation of fisheries experts who are experienced with data-limited

situations to identify how the methods described in this book can be applied to their own data-limited situations. In summary, the management themes that emerge from this collection are highly relevant to all fisheries managers, policy makers and scientists working with data-limited fisheries. However, this book would be considerably more useful to these stakeholders if the context

of each section was clearly described in a one to two page preface and synopsis summary that outlines how this knowledge could be applied in practice.

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Lapland – A Natural History

By D. Redcliff. 2006. Yale University Press, P.O. Box 209040, New Haven, Connecticut 06520-9040. 352 pages, U.S. \$60. Cloth.

Lapland: a Natural History by the late Derek Redcliff, is a remarkable account of the birds and higher plants of northern Scandinavia. This book begins with a general description in land use and the geological background terms followed by a skillful history of the earlier naturalist visitors. The book is mainly given over to a detailed evaluation of the various habitats found in this area. These include Boreal Forests, Forest Peatlands, Lakes and Rivers, Coastlands, Tundra and Man-influenced habitats. Each of these chapters is divided into vegetation and flora and birds. The birds section is subdivided into key groups such as wildfowl, waders (shorebirds), birds of prey, songbirds and birds that are of particular importance in that habitat (e.g., wildfowl or grouse).

The author writes in a style reminiscent of a professor giving a lecture to keen students and as a result the book is easy and pleasant to read. The accounts are packed with information drawn from many research sources, backed up by the author's own observations. The text does contain references, but not in sufficient number to impede the flow of ideas. Every few pages there are four half-page photos. These depict habitats, plants, birds and bird nests. Particularly impressive are the almost two dozen photos of shorebird nests (have you ever tried to find a shorebird nest?). These photos, most by the author, are of very fine quality. Interspersed with the text are some engaging black-and-white illustrations by Mike Unwin, reminiscent of those in the journal, *British Birds*.

I particularly enjoyed the way Redcliff linked the occurrence of a species with the other components of the habitat. He does a wonderful job of showing the inter-dependence of each constituent of a habitat and the consequences of disruptions to the balance, both natural and man-induced.

Even though I found this a treasure trove of information (and wisdom) I did have several problems. I hoped, while doing this review, I could compare the plant life of Northern Canada, Svalbard and Lapland. The author's inconsistent use of scientific names became a source of frustration for making this comparison. The worst case was his discussions of Dwarf Azalea. As he does not include the scientific name it is hard to be sure which plant he is referring to. Lapland Rose-

bay (Canada) or Lapland Rhododendron (Europe) is *Rhododendron lapponica*, but the author quotes this plant separately. Indeed, he includes a beautiful photo of this lovely plant. He also includes a photo of "Dwarf Azalea", but it is a very un-Rhododendron-like plant (more like a saxifrage or even Moss Campion). After much searching and consultation with Bill Cody (author of several books etc. on northern plants) I was still unclear until I found a reference to *Loiseleuria procumbens* as Trailing Azalea (and several other English names) while identifying plants from Cambridge Bay, Nunavut. Similarly I was never sure if the Finnmark Primrose was the same as *Primula erecta* or *nutans* or if it was a new species or subspecies.

Also the book only covers the higher plants well. There is relatively scant mention of the lichens and other more primitive plants. I am sure that there must be well over 500 species of lichens in this area, yet the book refers to only a handful. Other groups are even more poorly represented. On the animal side, birds are well covered. Mammals get an introduction and other groups (reptiles, amphibians, butterflies and dragonflies) get an honourable mention. Other wildlife such as beetles and bugs do not get any attention.

I also had problems with many of Redcliff's terms. To start with, he does not really define what he means by Lapland, Fennoscandia, Fennoscandinavia and Scandinavia. As he uses terms like "Southern Lapland", I felt it important to understand the region's precise location. His map showing the location is vague so I thought I would check further. Lapland is somewhat well defined (northern Norway, Sweden, Finland and Russia – or the home of the Sami). Actually I have found Finnmark, Nordland, Nord-Trøndelag and Troms [counties of Norway], Lapland [a province of Finland], Jämtlands Län, Norrbottens Län and Västerbottens Län [counties of Sweden], and Murmansk [an oblast – or "province" – of Russia] form Lapland. Knowing at least where the county of Finnmark is located is most useful when reading the text. However, the other terms vary from source to source. They could include some or all of Norway, Sweden, Denmark, Finland, Iceland and the Faeroes. Similarly I had trouble with the terms flark, fell, strang, patterned fen and mire. Eventually I did get them sorted out but a glossary would have been so helpful.

I have several problems with the index. First, it does not reference any scientific names, only English ones. None of the photos are listed. Some of the entries are