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Book review

Conservation Biology in Sub-Saharan Africa, John W. Wilson, Richard B. Primack. Open Book Publishers (2019). ISBN Paperback: 978-1-78374-750-4; ISBN Hardback: 978-1-78374-751-1; ISBN Digital (PDF): 978-1-78374-752-8; ISBN Digital ebook (epub): 978-1-78374-753-5; ISBN Digital ebook (mobi): 978-1-78374-754-2

Conservation Biology in Sub-Saharan Africa focuses on conservation challenges in Africa, south of the Sahara. It comprises three thematically organised sections which include (i) an easy to read introduction which covers an overview of conservation and the linkages between biodiversity and human livelihoods in Africa; (ii) a detailed description of the main threats to biodiversity; and (iii) up-to-date solutions and suggestions for addressing the present-day challenges to African biodiversity discussed in (ii). Throughout the book are 54 boxes highlighting case studies from conservation practitioners from many African countries and to a lesser extent, elsewhere. Wilson & Primack aim to enable mainly African students who wish to study conservation biology and pursue careers in conservation.

Additional important information is included in the appendices section. Readers, particularly the students, should find this information useful. The appendices comprise (i) selected sources of information comprising a small catalogue of important online databases; (ii) a comprehensive list of prominent conservation and environmental organisations and agencies operating in Africa – but are not necessarily based in Africa; (iii) advice on how to apply for funding to support conservation projects; and (iv) the Environmental calendar highlighting important anniversary dates of key environmental treaties and initiatives by conservation organisations.

The book covers (i) biodiversity protection – in protected areas including parks, private and communal land; it examines the many benefits of conserving biodiversity such as ecosystem services and tourism; (ii) animal behaviour, translocations, and metapopulation dynamics; (iii) climate change; (iv) pollution; (v) overharvesting of living wildlife resources; (vi) invasive species; (vii) disease; (viii) extinction; (ix) applied population ecology; (x) ecosystems; (xi) law enforcement; and (xii) citizen science and how it can be used to benefit conservation efforts. Each chapter has a list of recommended readings and literature cited. This allows readers to delve deeper into the subject matter and to understand the technical aspects of conservation topics of interest to them. Furthermore, the authors have included some questions that are designed to help the students/readers to think in greater depth about Africa's many conservation challenges. Of particular interest, is the need for space to satisfy human needs (Chapter 5), which often leads to habitat fragmentation. These are exacerbated by the growing human and livestock populations that require additional space, sometimes at the expense of wildlife. This usually leads to increased incidents of human and wildlife conflicts.

The case studies come from all the regional blocks of Sub-Saharan Africa. The authors have sought balanced representation, though more

contributions come from southern and eastern Africa than central and western Africa. South African practitioners have the most contributions. This may reflect the uneven institutionalization of conservation organisations and research institutions across Africa and or the dominant languages in different regions. The authors are Anglo-phones and may have less access to publications in French. There were almost twice as many male contributors to the case studies than females. This may be indicative of disparities in women's access to education and employment in conservation fields.

Anthropogenic activities are at the centre of a majority of environmental disasters including species extinctions, ecosystem collapse, habitat loss, and climate change. Humans are capable of determining, catalysing and shaping the direction in which the environment around them should go. Some of the changes occur because we naively cause them, while others occur because whereas actors are aware, livelihoods are intimately connected with the resources and there are no alternatives. Even when there are alternatives, there is usually active lobbying that ensures that we rely on the same resources, usually to the detriment of the environment. Often, policies take too long to be made into law and when they do become law it takes even longer to enforce them. In addition, by the time new laws are enforced, every so often the damage is too great, and it is nearly impossible to reverse.

The chapter on Biodiversity and the Law (Chapter 12) is crucial because conservation to be successful in Africa, law enforcement must be effective. Examples abound demonstrating the importance of enforcement accompanied by effective governance structures. Unfortunately poverty is also a major threat to biodiversity and people who live in poverty generally live close to protected areas; and as population grows, so does the need for space. In such cases, values and perceptions of justice polarize enforcement against human livelihoods as far as access to resources is concerned (Dovers et al., 2015; McClanahan and Abunge, 2018). The role of policies that guide natural resource management within and across borders is adequately covered. However, over and above the international conventions, economic blocks also have policies which strive for regional integration. For example the Southern African Development Community (SADC) has in place several natural resource management protocols (such as the SADC Protocol on Wildlife and Law Enforcement). Likewise, other economic blocks such as East African Community (EAC), Intergovernmental Authority on Development (IGAD), Commission of Central African Forests (COMIFAC), and Economic Community of West African States (ECOWAS) all have in place policies aimed at guiding natural resource management and conservation of biodiversity. The effectiveness of these policies is not evaluated in the book, perhaps because the parties to these agreements have not evaluated them. This work needs to be done.

Not too technical in approach, *Conservation Biology in Sub-Saharan Africa* is thus a great introductory book for African and non-African undergraduate students who don't speak English as a first language. The authors go to great lengths to define complex terminology and to explain ecological principles and concepts. Besides students, the book can be a useful resource for policy makers and non-practitioners who work

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in other sectors including public works programmes, agriculture, economics, etc., who don't require an in-depth knowledge of ecology, but who's work directly and indirectly impact the environment. For example, on page 140, the book describes edge effects and how fragmentation contributes to habitat loss and by extension, biodiversity loss. Generally, public works programmes, which are responsible for infrastructure development should be aware of their impact, particularly when the planned infrastructure is in a major migration route or could interfere with a given ecosystem service. Similarly, the case studies present empirical evidence of conservation in practice with real-life examples. For instance, the sacred forests of Benin (Houngbo – page 30) and Uganda (Tabuti – page 146) have persisted for centuries because of cultural beliefs and norms. However, as space and agricultural production become more pressing issues, the sacred forests are unlikely to persist without timely intervention and active enforcement. Here the book shows linkages between cultural beliefs (indigenous knowledge), history and conservation. The book can also be an important resource for those intending to do conservation work in Africa and want a succinct but thorough introduction to conservation practices in the region. The book is extremely timely, as conservation challenges are escalating in Africa.

It is for the above reasons that *Conservation Biology in Sub-Saharan Africa* is such an important subject and book. It deals with human activities that aim to address ecological challenges that are both intricately and unambiguously interlinked with human livelihoods. The book seems to be rooted in the principles of conserving living natural resources including fauna and flora (Mangel et al., 1997) although the book covers all aspects of Ecology. The principles suggest that conservation science should be multidisciplinary and must consider all aspects of human social dynamics and ecology to be successful. The book is published at a time when it has become even more apparent that Conservation in Africa cannot be practiced in isolation from human

aspirations and needs (Ludwig et al., 2001). The authors regard matters of values-and-equity as central to conservation. They seek to integrate knowledge from human history, religion, philosophy, geography, economics, political sciences, international relations, and development.

Conservation Biology in Sub-Saharan Africa provides a wonderful and useful toolkit with relevant guidelines for aspiring conservation biologists and anyone who wishes to understand the dynamics associated with conservation practice in Africa.

Declaration of competing interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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