Achieving Biodiversity Protection in Megadiverse Countries

A Comparative Assessment of Australia and Brazil

Edited by Paul Martin, Márcia Dieguez Leuzinger, Solange Teles da Silva, and Gabriel Leuzinger Coutinho



First published 2020 by Routledge 2 Park Square, Milton Park, Abingdon, Oxon OX14 4R N

and by Routledge 52 Vanderbilt Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2020 selection and editorial matter, Paul Martin, Márcia Dieguez Leuzinger, Solange Teles da Silva, and Gabriel Leuzinger Coutinho; individual chapters, the contributors

The right of Paul Martin, Márcia Dieguez Leuzinger, Solange Teles da Silva, and Gabriel Leuzinger Coutinho to be identified as the authors of the editorial material, and of the authors for their individual chapters, has been asserted in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data A catalog record has been requested for this book

ISBN: 978-0-367-26527-4 (hbk) ISBN: 978-0-429-29623-9 (ebk)

Typeset in Bembo by codeMantra 1172587

Contents

	List of figures List of tables List of contributors Foreword Preface List of acronyms and abbreviations	xi xiii xv xix xxi xxi
1	The issues, methods and evidence Introduction 1 Biodiversity governance in Brazil and Australia 6 Biodiversity governance in Australia 9 Biodiversity governance in Brazil 12 Initial investigations 14 Book structure 16	1
2	Controlling the biodiversity impacts of agriculture Introduction 25 The impact of agriculture 26 Expansion and habitat loss 32 Invasive species 32 Contamination 34 Financial constraints 35 Public programmes 36 Water, climate and biodiversity 37 Socio-ecological issues 38 Overview 39	25
3	Biodiversity risk management in mining Introduction 47 Governance frameworks 48 Mine approval in Australia 50 The Bulga case 50	47

viii Contents

	Adani Carmichael case 52	
	Mine disasters in Brazil 53	
	Conclusions and implications 61	
4	Creating and managing marine protected areas	67
	Introduction 67	
	Marine biodiversity conservation and international agreements 68	
	Australia's marine governance 70	
	Brazil's marine governance 74	
	Implementing Brazil's protected areas 75	
	Implementing Australia's protected areas 82	
	Conclusions 84	
5	Social justice and the management of protected areas	88
	Introduction 88	
	Brazilian Indigenous and Traditional people's stewardship 89	
	The Rio de Janeiro Law 2.393/1995 94	
	Serra do Mar State Park 95	
	Contributions to conservation 95	
	Co-management in Australia 96	
	Native title and statutory rights 96	
	Uluru-Kata Tjuta National Park 98	
	Comparing Australia and Brazil 100	
	Conclusions 101	
6	Low impact recreational use and biodiversity protection	105
	Introduction 105	
	Surfing reserves and conservation innovation 106	
	Surfing reserves and biodiversity 107	
	Australian surfing reserves 109	
	Brazilian surfing reserves 111	
	Perspectives on surfing reserves 112	
	Conclusions 117	
7	Partnered governance of biodiversity	125
	Introduction 125	
	Cotton case studies 130	
	Australia 131	
	Brazil 131	
	Sugar case studies 132	
	Australia 133	
	Brazil 133	

		Contents	1X
	Beef case studies 134		
	Australia 134		
	Brazil 135		
	Dairy case studies 136		
	Australia 136		
	Brazil 137		
	Receptiveness to partnered arrangements 138		
	Conclusions 140		
8	Biodiversity intelligence from satellites		148
	Introduction 148		
	The need for low-cost precision 149		
	Satellites technologies 150		
	Murray-Darling Basin case 152		
	Monitoring habitat loss 153		
	Mato Grosso land clearing 154		
	Queensland land clearing 158		
	Discussion and conclusion 160		
9	The challenge of using drones		168
	Introduction 168		
	Drone technology evolution 169		
	Expanding uses 171		
	Incremental adoption and learning 173		
	Governance challenges 174		
	Human impact risk 174		
	Social interests 176		
	Lethal drones 177		
	Biodiversity impacts 178		
	Intentional damage 179		
	Drones and data 180		
	Conclusion 180		
10	Funding biodiversity conservation		188
	Introduction 188		
	Resource limitations 190		
	The funding gaps 191		
	Funding strategies 193		
	Brazil 195		
	Australia 198		
	Protected areas funding 204		
	Conclusions 205		

x Contents

11	Governing the governance system	210
	Introduction 210	
	Key terms 211	
	Meta-governance 212	
	The governance challenge 213	
	Biodiversity strategies 214	
	Australia's meta-governance 219	
	Brazil's meta-governance 223	
	Conclusions 229	
12	Strategies to improve outcomes	236
	Introduction 236	
	Politics and regression 237	
	Undermining existing laws 239	
	Architectures, not just instruments 241	
	Weak accountability and continuous improvement 245	
	Citizen participation arrangements need improvement 247	
	Meta-governance is inadequate 249	
	Looking to the future 251	
	Appendix A: legislation list	257
	Appendix B: international material	261
	Appendix C: cases	264
	Index	265