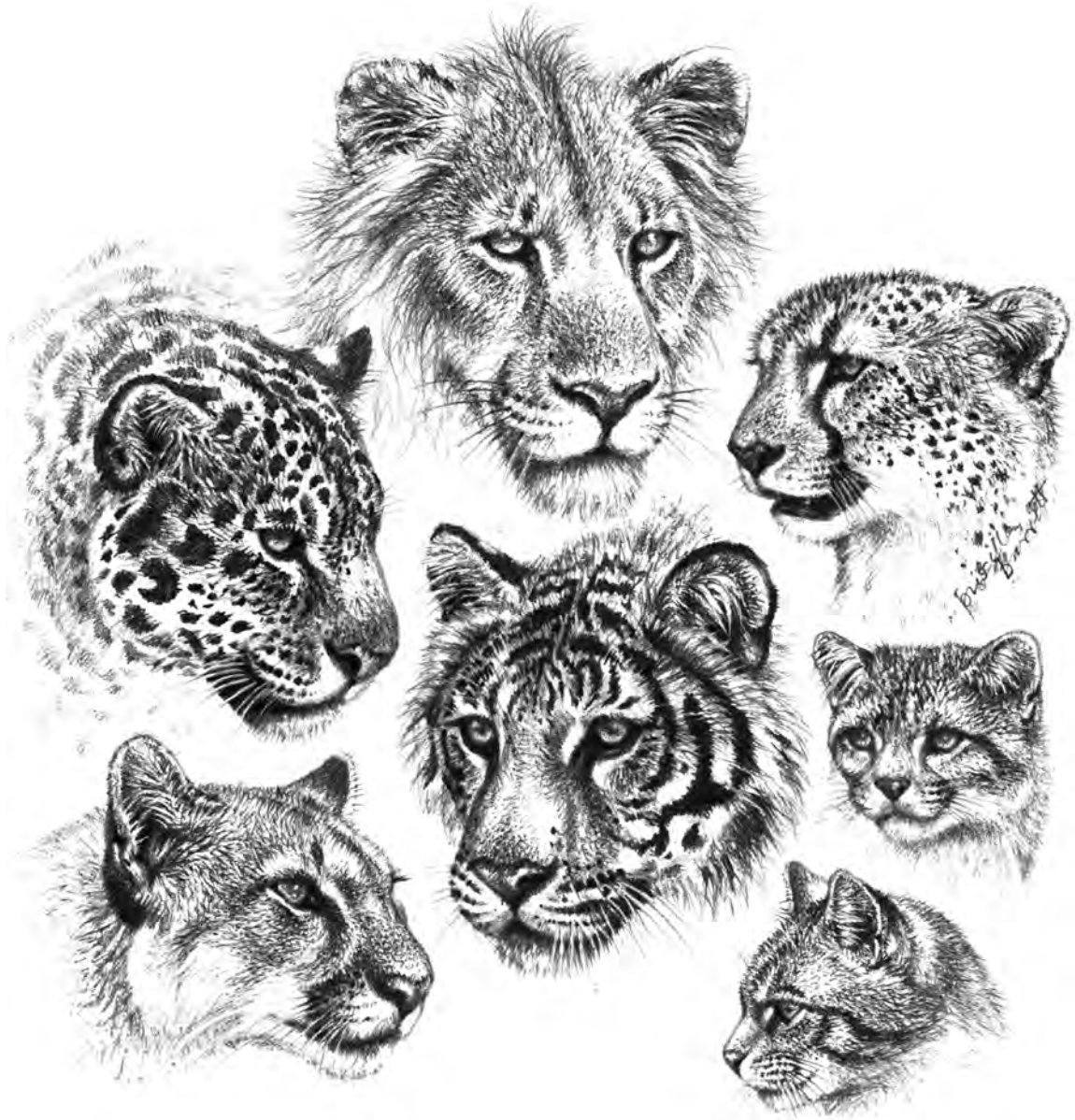


Biology and Conservation of Wild Felids

Edited by

DAVID W. MACDONALD AND ANDREW J. LOVERIDGE

OXFORD
UNIVERSITY PRESS



From top left, clockwise: Jaguar, African Lion, Cheetah, Andean cat, Scottish Wildcat, Tiger, and Puma.
Drawn by Priscilla Barrett.

*To Tom and Dafna Kaplan and their family,
in grateful recognition of their unique contribution
to felid conservation*



© Andy Rouse

Contents

<i>Preface</i>	xi
<i>List of contributors</i>	xv

Part I Reviews

1 <i>Dramatis personae</i> : an introduction to the wild felids	3
David W. Macdonald, Andrew J. Loveridge, and Kristin Nowell	
2 Phylogeny and evolution of cats (Felidae)	59
Lars Werdelin, Nobuyuki Yamaguchi, Warren E. Johnson, and Stephen J. O'Brien	
3 Felid form and function	83
Andrew C. Kitchener, Blaire Van Valkenburgh, and Nobuyuki Yamaguchi	
4 Genetic applications in wild felids	107
Melanie Culver, Carlos Driscoll, Eduardo Eizirik, and Göran Spong	
5 Felid society	125
David W. Macdonald, Anna Mosser, and John L. Gittleman	
6 People and wild felids: conservation of cats and management of conflicts	161
Andrew J. Loveridge, Sonam W. Wang, Laurence G. Frank, and John Seidensticker	
7 Many ways of skinning a cat: tools and techniques for studying wild felids	197
K. Ullas Karanth, Paul Funston, and Eric Sanderson	
8 Felids <i>ex situ</i> : managed programmes, research, and species recovery	217
David Wildt, William Swanson, Janine Brown, Alexander Sliwa, and Astrid Vargas	
9 Wild felid diseases: conservation implications and management strategies	237
Linda Munson, Karen A. Terio, Marie-Pierre Ryser-Degiorgis, Emily P. Lane, and Franck Courchamp	

Part II Case Studies

10 Ecology of infectious diseases in Serengeti lions	263
Meggan E. Craft	

11	African lions on the edge: reserve boundaries as 'attractive sinks' Andrew J. Loveridge, Graham Hemson, Zeke Davidson, and David W. Macdonald	283
12	Tiger range collapse and recovery at the base of the Himalayas John Seidensticker, Eric Dinerstein, Surendra P. Goyal, Bhim Gurung, Abishek Harihar, A.J.T. Johnsingh, Anil Manandhar, Charles W. McDougal, Bivash Pandav, Mahendra Shrestha, J.L. David Smith, Melvin Sunquist, and Eric Wikramanayake	305
13	Amur tiger: a case study of living on the edge Dale G. Miquelle, John M. Goodrich, Evgeny N. Smirnov, Phillip A. Stephens, Olga Yu Zaumyslova, Guillaume Chapron, Linda Kerley, Andre A. Murzin, Maurice G. Hornocker, and Howard B. Quigley	325
14	An adaptive management approach to trophy hunting of leopards (<i>Panthera pardus</i>): a case study from KwaZulu-Natal, South Africa Guy A. Balme, Luke T. B. Hunter, Pete Goodman, Hayden Ferguson, John Craigie, and Rob Slotow	341
15	Cheetahs and ranchers in Namibia: a case study Laurie Marker, Amy J. Dickman, M. Gus L. Mills, and David W. Macdonald	353
16	Past, present, and future of cheetahs in Tanzania: their behavioural ecology and conservation Sarah M. Durant, Amy J. Dickman, Tom Maddox, Margaret N. Waweru, Tim Caro, and Nathalie Pettorelli	373
17	Jaguars, livestock, and people in Brazil: realities and perceptions behind the conflict Sandra M. C. Cavalcanti, Silvio Marchini, Alexandra Zimmermann, Eric M. Gese, and David W. Macdonald	383
18	The ecology of jaguars in the Cockscomb Basin Wildlife Sanctuary, Belize Bart J. Harmsen, Rebecca J. Foster, Scott C. Silver, Linde E.T. Ostro, and C. Patrick Doncaster	403
19	Snow leopards: conflict and conservation Rodney M. Jackson, Charudutt Mishra, Thomas M. McCarthy, and Som B. Ale	417
20	Pumas and people: lessons in the landscape of tolerance from a widely distributed felid Tucker Murphy and David W. Macdonald	431
21	Long-term research on the Florida panther (<i>Puma concolor coryi</i>): historical findings and future obstacles to population persistence Dave Onorato, Chris Belden, Mark Cunningham, Darrell Land, Roy McBride, and Melody Roelke	453

22	Reversing cryptic extinction: the history, present, and future of the Scottish wildcat	471
	David W. Macdonald, Nobuyuki Yamaguchi, Andrew C. Kitchener, Mike Daniels, Kerry Kilshaw, and Carlos Driscoll	
23	The changing impact of predation as a source of conflict between hunters and reintroduced lynx in Switzerland	493
	Urs Breitenmoser, Andreas Ryser, Anja Molinari-Jobin, Fridolin Zimmermann, Heinrich Haller, Paolo Molinari, and Christine Breitenmoser-Würsten	
24	Iberian lynx: the uncertain future of a critically endangered cat	507
	Pablo Ferreras, Alejandro Rodríguez, Francisco Palomares, and Miguel Delibes	
25	Cyclical dynamics and behaviour of Canada lynx in northern Canada	521
	Mark O'Donoghue, Brian G. Slough, Kim G. Poole, Stan Boutin, Elizabeth J. Hofer, Garth Mowat, and Charles J. Krebs	
26	Black-footed cats (<i>Felis nigripes</i>) and African wildcats (<i>Felis silvestris</i>): a comparison of two small felids from South African arid lands	537
	Alexander Sliwa, Marna Herbst, and M. Gus L. Mills	
27	Ocelot ecology and its effect on the small-felid guild in the lowland neotropics	559
	Tadeu G. de Oliveira, Marcos A. Tortato, Leandro Silveira, Carlos Benhur Kasper, Fábio D. Mazim, Mauro Lucherini, Anah T. Jácomo, José Bonifácio G. Soares, Rosane V. Marques, and Melvin Sunquist	
28	Highland cats: ecology and conservation of the rare and elusive Andean cat	581
	Jorgelina Marino, Mauro Lucherini, M. Lillian Villalba, Magdalena Bennett, Daniel Cossíos, Agustín Iriarte, Pablo G. Perovic, and Claudio Sillero-Zubiri	

Part III A Conservation Perspective

29	Felid futures: crossing disciplines, borders, and generations	599
	David W. Macdonald, Andrew J. Loveridge, and Alan Rabinowitz	
	References	651
	Index	739

Preface

To undertake a major edited book on the biology and conservation of an entire taxonomic family of wild carnivores might seem foolhardy. Having done so once (on the Canidae) then to do it again (for the Felidae) may be the hallmark of a slow-learner! Nonetheless, that is the task we have shouldered in producing the *Biology and Conservation of Wild Felids*, the sister volume of the *Biology and Conservation of Wild Canids* by David Macdonald and Claudio Sillero-Zubiri, which was published by Oxford University Press in 2004. We believe that the two, as a pair, are more than the sum of their parts.

This book had several beginnings, as did our own interests in felids. In 1978, as the culmination to a study of farm cats, one of us (David W. Macdonald) produced a BBC TV documentary on the intricacies of their sociality, which reported for the first time such then emerging phenomena as communal nursing and infanticide. There were two upshots of this documentary, *The Curious Cat* (World About Us). First, and this will not surprise those who have stood watch over the interminable sleepiness of felids, is that *Private Eye* magazine produced a lengthy satirical spoof on David W. Macdonald, who was portrayed radio-tracking a family of slugs in order to discover how long it would take them to circumnavigate the globe! Second, in the behaviour of those farm cats Lucky, his father Tom, mother Smudge, and aunts, Pickle and Domino were shadows of all the images that have made lion society rivetingly interesting to a generation of behavioural ecologists. Thus began a journey from domestic to wild felids, which initially dwelt—in the context of the preciously rare Scottish wildcat—on the technically and philosophically tricky question of what is a wildcat (Chapter 22, this volume). Then, in 1995, as the two of us sat by moonlight at a waterhole in Zimbabwe, chatting over a thermos flask of coffee while radio-tracking jackals, our great friend the late Lionel Reynolds confided in us his fears for the future of lions in

Zimbabwe and beyond. Lionel, a pillar of the Zimbabwean Hunters and Guides Association, feared that excessive hunting quotas, pursuit of easy money, and a tangle of lions in conflict with communities, presaged sinister, but then unheeded, warnings for the lion's future. Thus began the WildCRU's (Oxford University's Wildlife Conservation Research Unit's) Hwange Lion Project, which celebrated its 10th anniversary in 2009 (see Chapter 11, this volume). Meanwhile, the WildCRU initiated projects on felids large and small, which now span Andean cats of Bolivia to the manul in Mongolia to the bay cat in Borneo, the jaguar to the cheetah to the tiger, and the leopards—spotted, clouded, and snow. Indeed, of the 128 world-leading felid experts contributing to this book, 18 are, or have been, from the WildCRU stable.

Thus, with 'the canid book' published in 2004, it seemed that the obvious next step was 'the felid book'. Learning from the former, the process began with an international conference—from 17 to 20 September 2007 some 300 delegates from around the world gathered in Oxford to discuss felids. At the same time, we organized two workshops, one an IUCN red-listing session workshop (with Mike Hoffmann and Jan Schipper), the second a think tank on conflict and its resolution. All these events were sponsored by Panthera which, at that time, was exploding on the scene as a major new force in felid conservation. Many of the speakers who attended the Felid Biology and Conservation Conference in Oxford are authors in this book. However, this book is not a conference proceedings, and its chapters are much more than the written version of conference speeches. Rather, the brainstorming excitement of the conference and associated workshops were part of a process of identifying the world leaders in felid biology, and the ideas that most excited them. These people have been assembled into carefully constructed teams to produce the two types of chapter that dominate this book. These,

the Review chapters and the Case Studies, serve different functions, but together are intended to make the contents of the book both topical and enduring, both meticulously encyclopaedic and vibrantly empirical. Together, they offer a view that reveals both the woods and the trees.

Each Review chapter tackles an overarching theme in felid biology. We deliberately recruited at least three accomplished authors for each review, ideally from different institutions, perspectives, and even continents. Bringing together their heterogeneous experience, and sometimes conflicting styles and opinions, has been a major task for them, and for us as editors. However, the resulting syntheses are truly original, and both broad and deep. In contrast, the Case Studies are written by teams, sometimes assembled specially for this book, who have deep insight into a particular species or guild and a particular set of issues. We agonized over whether or not to include chapters specifically on domestic cats, and while no single chapter is dedicated to them, domestic cats feature heavily in many of the reviews and, in the case of the threat they now pose to wild cats, in the Case Study of Scottish wildcats (Chapter 22). In addition to the Review and Case Study Chapters, the book begins with a *dramatis personae* (Chapter 1) which introduces every living species of wild felid, and it ends, as did the sister volume on canids, with a substantial essay on conservation (Chapter 29). It is in this concluding chapter that the inescapable need for interdisciplinarity that is the hallmark of this book becomes most strident. Issues in felid conservation encompass not only the biological and social sciences, but lead us through dilemmas in governance and development to, ultimately, difficult judgements and thus politics.

Although this Preface comes first in the book, inevitably it was written last! The task of writing and editing the book leaves us with almost nothing left to say, except that when we started we thought we knew quite a lot about felids, but we surely know a lot more now—and we believe that for years to come this will be the experience of anybody who reads these pages. Above all, we are immensely grateful to everybody who has joined us on this journey—most importantly, the authors have worked tirelessly and

fruitfully. They will tell you that as editors we have been relentless, demanding, intrusive, and nit-picking—they must often have been reminded of the words of the Bob Dylan song ‘knowing you is such a drag!’—we apologize, and we hope that they, the authors, and you, the reader, will think with hindsight that our harassing has been worthwhile in the end!

In addition, we want to thank the core team of people who helped us bring both the conference and the book to fruition. In alphabetical order, the tireless endurance runners in this race have been Dawn Burnham, Susan Cheyne, Joelene Hughes, Kerry Kilshaw, Joanne Loveridge, and Rosalind Shaw—they are few in number which emphasizes the heavy burden that each has shouldered. Naming these few is not to diminish our gratitude for the huge effort of the many in the wider WildCRU team who were selflessly devoted to working behind, around, and in front of the scenes, in order to make the conference a success. The book is enhanced by its illustrations, and we are particularly grateful to Andy Rouse, who is extraordinarily generous in his support of the WildCRU in allowing us to use his stunning photos, and to Priscilla Barrett whose frontispiece to the book captures the beauty that drives us to care so deeply for the felids whose lives and travails are explained in these pages. At Oxford University Press, Ian Sherman has nurtured both canid and felid projects, and Helen Eaton has been tirelessly supportive. Closer to home, and mindful that when, all too rarely, at home we have been steadfastly and unsociably glued to editorial computer screens for well over a year, we thank our wives, Jenny and Joanne, and families for their tolerance.

Finally, our personal research in particular, and the WildCRU’s felid initiatives in general, owe much to the support, vision, and friendship of Tom Kaplan, his family, and our friends Alan Rabinowitz, Luke Hunter, and others at Panthera and in the extended family of its Cat Advisory Council. As we conclude this book, the new Panthera Buildings at WildCRU are also being completed—creating a centre where future generations of felid conservationists will be trained for work in far distant, remote corners of the world. In acknowledgement of all that they

have made possible, we are proud to dedicate this book to Tom and Dafna. Already, our diploma course has recruited so-called WildCRU Panthers from Albania, Bhutan, Bolivia, China, Iran, Kenya, Madagascar, South Africa, Tanzania, and Zimbabwe. Hopefully this book will be an inspiration and guide to these dedicated people and many others like them, and will create a foundation for the under-

standing and conservation of wild felids for many years to come.

David W. Macdonald & Andrew J. Loveridge
*Wildlife Conservation Research Unit,
Department of Zoology
and Lady Margaret Hall
Oxford University*



Andrew Loveridge and David Macdonald radio-collar an immobilised lion, Hwange National Park, Zimbabwe.

© A. J. Loveridge

List of Contributors

- Som B. Ale**, University of Minnesota, Dept of Fisheries, Wildlife and Conservation Biology, College of Food, Agricultural and Natural Resource Sciences, St Paul, MN 55108, United States
- Guy A. Balme**, Panthera, 8 West 40th Street, 18th Floor, New York, NY 10018, United States
- Chris Belden**, United States Fish and Wildlife Service, South Florida Ecological Services Office, 1339 20th Street, Vero Beach, Florida 32960, United States
- Magdalena Bennett**, Departamento de Ecología, Pontificia Universidad Católica de Chile, Alameda 340, Santiago (6513677), Chile
- Stan Boutin**, Department of Biological Sciences, CW-405 Biological Sciences Building, University of Alberta, Edmonton, Alberta T6G 2E9, Canada
- Urs Breitenmoser**, Institute for Veterinary Virology, University of Berne, Länggassstrasse 122, CH-3012 Bern, Switzerland
- Christine Breitenmoser-Würsten**, KORA, Thunstrasse 31, 3074 Muri b. Bern, Switzerland
- Janine Brown**, Center for Species Survival, Smithsonian's National Zoological Park, Front Royal, VA 22630, United States
- Tim Caro**, Department of Wildlife, Fish and Conservation Biology, University of California, Davis, CA 95616, United States
- Sandra M. C. Cavalcanti**, Panthera, R. Guajuvira, 537 — Atibaia, SP, 12946–260, Brazil
- Guillaume Chapron**, Grimsö Wildlife Research Station, Swedish University of Agricultural Sciences, 73091 Riddarhyttan, Sweden
- Daniel Cossios**, Département de Sciences Biologiques, Université de Montréal, Pavillon Marie-Victorin., Montréal H3C 3J7, Canada
- Franck Courchamp**, Laboratoire Ecologie, Systématique et Evolution, University Paris-Sud, Orsay F-91405, France
- Meggan E. Craft**, Boyd Orr Centre for Population and Ecosystem Health, Division of Ecology and Evolutionary Biology, University of Glasgow, Glasgow, G12 8QQ, United Kingdom
- John Craigie**, Ezemvelo KwaZulu-Natal Wildlife, P.O. Box 13053, Cascades, 3202, South Africa
- Melanie Culver**, Arizona Cooperative Fish and Wildlife Research Unit, USGS, and School of Natural Resources, University of Arizona, Tucson, AZ, United States
- Mark Cunningham**, Florida Fish and Wildlife Conservation Commission, 1105 SW Williston Rd, Gainesville, FL 32601, United States
- Mike Daniels**, John Muir Trust, Tower House, Station Road, Pitlochry, PH16 5AN, United Kingdom
- Zeke Davidson**, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom
- Tadeu G. de Oliveira**, Depto. Biologia, Universidade Estadual do Maranhão & Instituto Pró-Carnívoros, Rua das Quaresmeiras, Qd-08 No. 14, São Luís, MA 65076–270, Brazil
- Miguel Delibes**, Department of Conservation Biology, Estación Biológica de Doñana, CSIC C/Américo Vespucio s/n 41092 Sevilla, Spain
- Amy J. Dickman** Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom
- Eric Dinerstein**, World Wildlife Fund, United States, 1250 24th Street, NW, Washington D.C. 20037–1193, United States
- C. Patrick Doncaster**, School of Biological Sciences, University of Southampton, Southampton SO16 7PX, United Kingdom
- Carlos Driscoll**, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom
- Sarah M. Durant**, Institute of Zoology, Zoological Society of London, Regents Park, London, NW1 4RY, United Kingdom
- Eduardo Eizirik**, Centro de Biologia Genômica e Molecular, Faculdade de Biociências, PUCRS, and Instituto Pró-Carnívoros, Porto Alegre, Brazil

- Hayden Ferguson**, Ezemvelo KwaZulu-Natal Wildlife, P.O. Box 13053, Cascades, 3202, South Africa
- Pablo Ferreras**, Instituto de Investigación en Recursos Cinegéticos, IREC (CSIC-UCLM-JCCM), Ronda de Toledo s/n, 13005, Ciudad Real, Spain
- Rebecca J. Foster**, Panthera, 8 West 40th Street, 18th Floor, New York, NY 10018, United States
- Laurence G. Frank**, Panthera, 8 West 40th Street, 18th Floor, New York, NY 10018, United States
- Paul Funston**, Department of Nature Conservation, Tshwane University of Technology, Private Bag X680, Pretoria, 0001, South Africa
- Eric M. Gese**, USDA/WS/National Wildlife Research Center, Department of Wildland Resources, Utah State University, Logan, UT 84322, United States
- John L. Gittleman**, Odum School of Ecology, University of Georgia, Athens, GA 30602, United States
- Pete Goodman**, Ezemvelo KwaZulu-Natal Wildlife, P.O. Box 13053, Cascades, 3202, South Africa
- John M. Goodrich**, Wildlife Conservation Society, 2300 Southern Blvd, Bronx, NY, United States
- Surendra P. Goyal**, Wildlife Institute of India, P.O. Box 18, Chandrabani, Dehradun 248 001, Uttarakhand, India
- Bhim Gurung**, University of Minnesota, Department of Fisheries, Wildlife and Conservation Biology, 200 Hodson Hall, 1980 Folwell Avenue, St Paul, MN 55108, United States
- Heinrich Haller**, Swiss National Park, Neues Nationalpark Zentrum, 7530 Zernez, Switzerland
- Abishek Harihar**, Wildlife Institute of India, P.O. Box 18, Chandrabani, Dehradun 248 001, Uttarakhand, India
- Bart J. Harmsen**, Panthera, 8 West 40th Street, 18th Floor, New York, NY 10018, United States
- Graham Hemson**, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom
- Marna Herbst**, South African National Parks, Scientific Services, Kimberley, South Africa
- Elizabeth J. Hofer**, Box 5428, Haines Junction, Yukon Territory YOB 1LO, Canada
- Maurice G. Hornocker**, Selway Institute, Inc, P.O. Box 929, 40 Heronwood Lane, Bellevue, Idaho 83313, United States
- Luke T. B. Hunter**, Panthera, 8 West 40th Street, 18th Floor, New York, NY 10018, United States
- Agustín Iriarte**, Fundación Biodiversitas, Ismael Valdés Vergara 514, 52, Santiago, Chile
- Rodney M. Jackson**, Snow Leopard Conservancy, 18030 Comstock Ave, Sonoma, CA 95476, United States
- Anah T. Jácomo**, Jaguar Conservation Fund, C.P. 193 Mineiros, GO 75830-000, Brazil
- A. J. T. Johnsingh**, Nature Conservation Foundation, Mysore and WWF-India
- Warren E. Johnson**, Laboratory of Genomic Diversity, National Cancer Institute, Frederick, MD 21702-1201, United States
- K. Ullas Karanth**, Wildlife Conservation Society, New York & Centre for Wildlife Studies 26-2, Aga Abbas Ali Road (Apt: 403), Bangalore Karnataka-560 042, India
- Carlos Benhur Kasper**, PPG Biologia Animal-UFRGS, Rui Barbosa, Caixa Postal 121, Arroio do Meio, RS 95940-000, Brazil
- Linda Kerley**, Zoological Society of London, England, and Lazovski State Zapovednik, Lazo, Primorski Krai, Russia
- Kerry Kilshaw**, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom
- Andrew C. Kitchener**, Department of Natural Sciences, National Museums Scotland, Chambers Street, Edinburgh, EH1 1JF, United Kingdom
- Charles J. Krebs**, Department of Zoology, 6270 University Blvd, University of British Columbia, Vancouver, British Columbia V6T 1Z4, Canada
- Darrell Land**, FL Fish and Wildlife Conservation Commission, 298 Sabal Palm Road, Naples, FL 34114, United States
- Emily P. Lane**, Zoological Pathology and Research Program, National Zoological Gardens of South Africa, Pretoria, South Africa
- Andrew J. Loveridge**, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom
- Mauro Lucherini**, Grupo de Ecología Comportamental de Mamíferos, Departamento de Biología,

- Bioquímica y Farmacia, UNS-CONICET, San Juan 670, 8000 Bahía Blanca, Argentina
- David W. Macdonald**, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom
- Tom Maddox**, Zoological Society of London, Regents Park, London, NW1 4RY, United Kingdom
- Anil Manandhar**, WWF-Nepal, P.O. Box 7660, Baluwatar, Kathmandu, Nepal
- Silvio Marchini**, Escola da Amazônia, Cristalino Ecological Foundation, Avenida Perimetral Oeste, 2001, Alta Floresta, MT 78580-00, Brazil
- Jorgelina Marino**, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom
- Laurie Marker**, Cheetah Conservation Fund, P.O. Box 1755, Otjiwarongo, Namibia
- Rosane V. Marques**, Unidade de Assessoramento Ambiental, Ministério Público do Rio Grande do Sul, Rua Andrade Neves 106, 10° andar, Porto Alegre, RS 90210-210, Brazil
- Fábio D. Mazim**, Instituto Pró-Pampa, Rua Padre Anchieta No 1277, sala 201, Pelotas, RS 96015-420, Brazil
- Roy McBride**, Ranchers Supply Inc., 26690 Pine Oak Road, Ochopee, Florida 34141, United States
- Thomas M. McCarthy**, Panthera and Snow Leopard Trust, 4649 Sunnyside Ave. N., Suite 325, Seattle, WA, 98103, United States
- Charles W. McDougal**, International Trust for Nature Conservation, C/o Tiger Tops Pvt Ltd, P.O. Box 242, Kathmandu, Nepal
- M. Gus L. Mills**, Kgalagadi Cheetah Project, P. Bag X5890, Upington, 8800, South Africa and Tony and Lisette Lewis Foundation, South Africa
- Dale G. Miquelle**, Wildlife Conservation Society Russia Program, 2300 Southern Blvd, Bronx, NY, United States
- Charudutt Mishra**, Snow Leopard Trust and Nature Conservation Foundation, 4649 Sunnyside Ave, Suite 325, Seattle, WA 98103, United States
- Paolo Molinari**, KORA, Thunstrasse 31, 3074 Muri b. Bern, Switzerland
- Anja Molinari-Jobin**, KORA, Thunstrasse 31, 3074 Muri b. Bern, Switzerland
- Anna Mosser**, Department of Ecology Evolution and Behaviour, University of Minnesota, 1987 Upper Buford Circle, St Paul, MN 55414 United States
- Garth Mowat**, Fish and Wildlife Branch, Ministry of Environment, #401 — 333 Victoria Street, Nelson, British Columbia V1L 4K3, Canada
- Linda Munson**, Department of Pathology, Microbiology, and Immunology, School of Veterinary Medicine, University of California, Davis, CA 95616, United States
- Tucker Murphy**, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom
- Andre A. Murzin**, Pacific Institute of Geography, Far Eastern Branch of Russian Academy of Sciences, Vladivostok, Primorski Krai, Russia
- Kristin Nowell**, CAT, P.O. Box 332, Cape Neddick, ME 03902, United States
- Stephen J. O'Brien**, Laboratory of Genomic Diversity, National Cancer Institute, Frederick, MD 21702-1201, United States
- Mark O'Donoghue**, Fish and Wildlife Branch, Yukon Department of Environment, Box 310, Mayo, Yukon Territory Y0B 1M0, Canada
- Dave Onorato**, FL Fish and Wildlife Conservation Commission, 298 Sabal Palm Road, Naples, FL 34114, United States
- Linde E. T. Ostro**, The New York Botanical Garden 200th str. Kazimiroff Boulevard, Bronx, NY 10458-5126, United States
- Francisco Palomares**, Department of Conservation Biology, Estación Biológica de Doñana, CSIC C/ Américo Vespucio s/n 41092 Sevilla, Spain
- Bivash Pandav**, WWF-International, C/o—WWF-Nepal, P.O. Box 7660, Baluwatar, Kathmandu, Nepal
- Pablo G. Perovic**, Instituto de Bio Y Geociencias, Museo de Ciencias Naturales, Universidad Nacional de Salta, Mendoza 2, Salta (4400), Argentina
- Nathalie Pettorelli**, Institute of Zoology, Zoological Society of London, Regents Park, London, NW1 4RY, United Kingdom

- Kim G. Poole**, Aurora Wildlife Research, 1918 Shannon Point Road, Nelson, British Columbia V1A 6K1, Canada
- Howard B. Quigley**, Director, Western Hemisphere Felid Programs, Panthera Foundation, P.O. Box 11363, Bozeman, MT 59719, United States
- Alan Rabinowitz**, Panthera, 8 West 40th Street, 18th Floor, New York, NY 10018, United States
- Alejandro Rodríguez**, Department of Conservation Biology, Estación Biológica de Doñana, CSIC C/Amrico Vespucio s/n 41092 Sevilla, Spain
- Melody Roelke**, Laboratory for Genomic Diversity, National Cancer Institute, Frederick, Maryland, 21702, United States
- Andreas Ryser**, KORA, Thunstrasse 31, 3074 Muri b. Bern, Switzerland
- Marie-Pierre Ryser-Degiorgis**, Centre for Fish and Wildlife Health, Institute of Animal Pathology, Vetsuisse Faculty, University of Bern, Postfach 8466, CH-3001 Bern, Switzerland
- Eric Sanderson**, Living Landscapes Program, Wildlife Conservation Society, 2300 Southern Blvd, Bronx, NY 10460, United States
- John Seidensticker**, Conservation Ecology Center, Smithsonian's National Zoological Park, Washington DC 2008 United States
- Mahendra Shrestha**, Save the Tiger Fund, National Fish and Wildlife Foundation, 1133 Fifteenth St, NW, Suite 1100, Washington D.C. 20005, United States
- Claudio Sillero-Zubiri**, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom
- Leandro Silveira**, Jaguar Conservation Fund, C.P. 193 Mineiros, GO 75830-000, Brazil
- Scott C. Silver**, The Wildlife Conservation Society, 2300 Southern Blvd., Bronx, New York 10460, United States
- Alexander Sliwa**, Cologne Zoo, Riehler Str. 173, Cologne 50735, Germany
- Rob Slotow**, School of Life and Environmental Sciences, University of KwaZulu-Natal, Durban, 4041, South Africa
- Brian G. Slough**, 35 Cronkhite Road, Whitehorse, Yukon Territory Y1A 5S9, Canada
- Evgeny G. Smirnov**, Sikhote-Alin State Biosphere Zapovednik, Terney, Primorski Krai, Russia
- J. L. David Smith**, Department of Fisheries, Wildlife and Conservation Biology, University of Minnesota, St Paul, MN, United States
- José Bonifácio G. Soares**, Instituto Pró-Pampa, Av. Nossa Senhora das Graças 294, Arroio Grande, RS 96330-000, Brazil
- Göran Spong**, Department of Wildlife, Fish, and Environmental Studies, Swedish Agricultural University, Sweden
- Phillip A. Stephens**, Biological and Biomedical Sciences, University of Durham, South Road, Durham, DH1 3LE, United Kingdom
- Melvin Sunquist**, Department of Wildlife Ecology and Conservation, University of Florida, Gainesville, FL United States
- William Swanson**, Centre for Conservation and Research of Endangered Wildlife, Cincinnati Zoo and Botanical Garden, Cincinnati, OH 45220, United States
- Karen A. Terio**, Zoological Pathology Program, University of Illinois, Maywood, IL 60153, United States
- Marcos A. Tortato**, CAIPORA Cooperativa para Conservação da Natureza, Rua Desembargador Vitor Lima No 260, Ed. Madison Center, sala 513, Florianópolis, SC 88040-400 Brazil
- Blaire Van Valkenburgh**, Department of Ecology and Evolutionary Biology, 621 Young Drive, S., University of California, Los Angeles, Los Angeles, CA 90095-1606, United States
- Astrid Vargas**, Iberian Lynx Conservation Breeding Programme, El Acebuche Centre, Doñana National Park, Matalascañas, Huelva 21760, Spain
- M. Lilian Villalba**, Andean Cat Alliance, Achumani, calle 17 No 41, La Paz, Bolivia
- Sonam W. Wang**, Chief of Nature Conservation Division, GP Box no. 684, Thimpu, Bhutan
- Margaret N. Waweru**, Tanzania Wildlife Research Institute, Box 661, Arusha, Tanzania
- Lars Werdelin**, Department of Palaeozoology, Swedish Museum of Natural History, Box 50007, S-104 05 Stockholm, Sweden
- Eric Wikramanayake**, Conservation Science Program, World Wildlife Fund, United States, 1250 24th Street, NW, Washington D.C. 20037-1193, United States
- David Wildt**, Center for Species Survival, Smithsonian's National Zoological Park, Front Royal, VA 22630, United States

Nobuyuki Yamaguchi, Department of Biological and Environmental Sciences, University of Qatar, P.O. Box 2713 Doha, Qatar, Arab Emirates

Olga Yu Zaumyslova, Sikhote-Alin State Biosphere Zapovednik, Terney, Primorski Krai, Russia

Alexandra Zimmermann, North of England Zoological Society and the Wildlife Conservation

Research Unit, Department of Zoology, University of Oxford, The Recanati-Kaplan Centre, Tubney House, Abingdon Road, Tubney, OX13 5QL, United Kingdom

Fridolin Zimmermann, KORA, Thunstrasse 31, 3074 Muri b. Bern, Switzerland