

The Good, Green Gold of Spring

A Conservation Sociology of the Island
Marble Butterfly

by

Jon Dahlem

Bellevue University

**Critical Perspectives on
Social Science**



VERNON PRESS

Copyright © 2022 Vernon Press, an imprint of Vernon Art and Science Inc, on behalf of the author.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of Vernon Art and Science Inc.

www.vernonpress.com

In the Americas:
Vernon Press
1000 N West Street, Suite 1200
Wilmington, Delaware, 19801
United States

In the rest of the world:
Vernon Press
C/Sancti Espiritu 17,
Malaga, 29006
Spain

Series in Critical Perspectives on Social Science

Library of Congress Control Number: 2022945913

ISBN: 978-1-64889-523-4

Product and company names mentioned in this work are the trademarks of their respective owners. While every care has been taken in preparing this work, neither the authors nor Vernon Art and Science Inc. may be held responsible for any loss or damage caused or alleged to be caused directly or indirectly by the information contained in it.

Cover design by Vernon Press. Cover image by Jon Dahlem. Island Marble Butterfly on Field Mustard.

Every effort has been made to trace all copyright holders, but if any have been inadvertently overlooked the publisher will be pleased to include any necessary credits in any subsequent reprint or edition.

Table of Contents

	<i>List of Figures</i>	<i>v</i>
	<i>List of Tables</i>	<i>v</i>
	<i>Acknowledgements</i>	<i>ix</i>
Chapter 1	Introduction	1
Chapter 2	Conservation Sociology: What, Why, and How	25
Chapter 3	Describing Pluralized Conservationism(s): Positionality, Meaning-making, and Boundaries in Conservation Science and Action	45
Chapter 4	Theorizing Perceptions and Actualities of Power in Island Marble Butterfly Conservation	75
Chapter 5	Problems of Time: Describing Temporal Obstacles to Species Conservation at the Intersection of Society and Ecology	101
Chapter 6	Conclusion	125
	<i>Appendix A</i>	<i>137</i>
	<i>References</i>	<i>139</i>
	<i>Index</i>	<i>157</i>

List of Figures

Figure 1.1.	Island Marble Butterfly on Field Mustard	4
Figure 1.2.	American Camp	6
Figure 1.3.	Foxes at American Camp	6
Figure 1.4.	Electric Fence at American Camp	7
Figure 1.5.	Release of Captive-reared Butterfly	8
Figure 1.6.	Chrysalises in the American Camp Captive-rearing Lab	10
Figure 5.1.	Critical Realist Ontology of Time with Selected Examples	109

List of Tables

Table 1.1.	Characteristics of Interview Participant Group	16
Table 3.1.	Paradigms of Conservationism in IMB Conservation	52
Table 5.1.	Problems of Time with Associated Ontological Positions	110

For Gimli.

Acknowledgements

I thank the Island Marble conservationists whose interviews made this project possible for their thought and insight. Thanks especially to the National Park Service for their kindness and assistance in the early stages.

Thanks to those who read and suggested revisions to the manuscript, especially Jennifer Sherman, Erik Johnson, and Jessica Goldberger. Thanks to those who read and provided comment on the book, especially Pierce Greenberg, Robert Fletcher, Oliver Pergams, and Jordan Fox Besek.

Thanks to friends and colleagues for their support throughout the project, especially Spencer Dickey, Dana Dickey, Kasey Cranfill, Kyle Knowles, Kyle Rakowski, and Aleksey Reshetnikov. Thanks to my family, the Theils, Dahlems, Dzialos, and Kings.

Thanks to Mabel for assistance in typing the manuscript.

Thanks to Liz Dahlem, who inspired, encouraged, edited, advised, and in all other ways made this book possible.

Thanks to the forests of Ohio and their inhabitants.

Chapter 1

Introduction

Commuting between the dry, early summer of eastern Washington's foothills and the perpetually rain-shadowed world of the San Juan Islands, there has not been a rainfall heavy enough to wash away the car's thickening coat of dead insects. Some might call it an unintended consequence, a bit of irony, or maybe a reason to hose down the car, but to an environmental sociologist, this is data. Here is some small evidence of a metabolic rift between planetary ecology and the machinations of human society. Whatever we breathe out, the natural environment breathes in. And on the road from Pullman to Friday Harbor, there is much more data: the Palouse's rolling, lunar hills mark the sacrifice of a state's greater ecosystem in the name of high-yield wheat production; near Washtucna, some small stands of wild regrowth cling to little rivers, gathering places for magpies and crows; through Ellensburg, drivers respectfully pass around two dead dogs discarded in the highway, frozen with rigor mortis; then cows, hundreds, packed in their pens; Snoqualmie Pass guides me through the Cascades, where steep, wooded slopes defy the economic rationality of saws; an hour of traffic keeps me slowly burning gasoline through the Emerald City's plant-decorated cement sprawl; Skagit County's more than ninety varieties of crop are an agricultural atlas along the roadside; and when the ferry pushes off from Anacortes, 55 dollars have bought me the privilege of leaving it all behind for the floating natural paradise of the San Juan Islands. I stand near the prow alone, watching cormorants in flight emerge and vanish through a thick mist, whistling to myself something low, tuneless, and melancholy, daydreaming of the orca songs faintly shivering through the cold, dark water below.

I am here searching for data that will help me understand the environmental sociology of the severely threatened Island Marble Butterfly. Over months of research, I will formally interview or casually chat with dozens of people involved with Island Marble conservation, and most will ask me, "Why the Island Marble?" In a betrayal of science, I tell them all that I am following intuition. In a roundabout way, I pose the question back to them: What motivates you to work on butterfly conservation? When did you start trying to save an insect from extinction, and when will you stop? What does the butterfly need from humans in order to thrive? What does the butterfly mean to you? In reply, I hear stories of hope, of fear, of duty, of the pursuit of knowledge, of healing, of despair, of balance, of anger, of pride, and of

purpose. So much rests on the butterfly, inscribed on the species like scrimshaw. Like so many other species, I learned that the Island Marble is situated within the broken link between humanity and ecology. Everywhere, the socioenvironmental rift propelling this butterfly toward extinction and the remedial labor of its human allies are manifest in town, in research, in wild spaces, in art, and in so much more. Standing in the coastal prairie of American Camp, San Juan Island, WA, among the last of the Island Marble Butterflies in flight, watching the last of the southern resident orcas pass by offshore, I learn that what has led me here is not intuition at all. It is data.

This book presents original environmental sociological research based on a dissertation pertaining to social aspects of species conservation in the context of the Island Marble Butterfly (IMB) native to San Juan County, WA. The manuscript is composed for environmental sociological audiences first, general sociological audiences second, and general conservation science audiences third. Each section of the book contains language indicating which audience will find the section most readable and useful. Use of classical and contemporary sociological theory, research, and jargon, prominent use of external citations, and implicit use of a social constructivist perspective will clarify the manuscript's purpose to some readers while obscuring it for others. As such, I ask that non-sociological readers indulge me the adoption of a conditional curiosity for the sociological, and I ask that sociological readers indulge me occasional momentary pursuits of trans-disciplinary or persuasive prose. To this last point, I will clarify immediately that this manuscript is a product of both scientific research and environmental advocacy. This dual impetus is realized without conflict through a coupling of objectivity in empirical research and rationality in subsequent policy and action recommendation. Readers will recall that this research occurs in the socio-biophysical context of a rapid, global, anthropogenic ecological transformation amounting to a calculus of astonishing danger to known ecology and humanity.

In this light, this work puts forward three substantive chapters of environmental sociological research concerning human activities toward IMB conservation, as well as a chapter outlining existing theory and research on the social components of species conservation. Extinction and conservation are a small part of a greater environmental calamity and effort to abate it, and the IMB is a smaller part still. We will come to understand the breadth of human society's intersection with the natural environment through coming to understand the intersections' component parts. In particular, this research will put forward localized findings and theory to help understand why—despite scientific consensus and the prevalence of an urgent pro-environmental ethic—environmental calamity (including rapid biodiversity loss) progresses without meaningful human address. I describe a “conservation sociology” as

well, not as a novel subdiscipline but rather a rally for sociologists to further study the phenomenon of species extinction and the social forces at work in species conservation. Unlike a “sociology of conservation,” the conservation sociology described in this book (Chapter Two) seeks to develop sociological research that directly contributes to efforts to conserve biodiversity. In the process, I render as much as possible the sociological realities of the IMB’s case: its history, discourse, social significance both local and global, and its embeddedness in broader social systems. I endeavor to tether these findings to existing sociological theory and research, to add to the construction of relevant theory, and to present findings that may inform future research. In sum, readers will find this manuscript a resource for understanding the social world of the IMB, as well as understanding the sociology of species conservation and portions of environmental sociology writ large.

This book consists of six chapters: three substantive article-length research reports, one literature and theory review, an introduction, and a conclusion. The literature and theory review synthesizes existing literature from environmental sociology, conservation biology, and other analogous disciplines, therein defining, positioning, and offering recommendations for a conservation sociology. Each substantive chapter addresses a distinct topic (meaning, power, and time) and presents a different contribution of conservation sociology to conservation science and action (empirical description, theory, and application, respectively). These chapters pose and respond to research questions such as: How are knowledge and meaning produced among stakeholders of IMB conservation? What is the function of social power in IMB conservation, and how do stakeholders perceive power? How do reckonings of social and biophysical time manifest in IMB conservation, how do these disparate reckonings relate to obstacles to conservation goals, and how can conservation sociology help conservation collaborations overcome such obstacles? The result is a set of disparate but related conclusions and a complex, multi-faceted discussion of the details of the IMB’s case, the collaborations and contestations among actors therein, and the embeddedness of this case within a broader social context. In brief terms, the project finds that power and control of knowledge and action both among IMB stakeholders and between the conservation collaboration and its broader political-economic context render IMB conservation through local and global social systems, a product not only of science but of social forces. In particular, meaning and knowledge are rendered through a process of contestation among IMB stakeholders; power is invested in and divested from IMB conservation work by the ideological and material machinations of a capitalist political-economic context; and temporal obstacles to IMB conservation vary in recognition and treatment as they take sociocultural,

PAGES MISSING
FROM THIS FREE SAMPLE

References

- Abson, D. J., H. von Wehrden, S. Baumgärtner, J. Fischer, J. Hanspach, W. Härdtle, H. Heinrichs, A. M. Klein, D. J. Lang, P. Martens, and D. Walmsley. 2014. "Ecosystem Services as Boundary Object for Sustainability." *Ecological Economics* 103:29-37.
- Adam, Barbara. 2002. "The Gendered Time Politics of Globalization: Of Shadowlands and Elusive Justice." *Feminist Review* 70:3-29.
- Affolderbach, Julia, Alex Clapp, and Roger Hayter. 2012. "Environmental Bargaining and Boundary Organizations: Remapping British Columbia's Great Bear Rainforest." *Annals of the Association of American Geographers* 102(6):1391-1408.
- Agrawal, Arun, and Clark C. Gibson. 2001. *Communities and the Environment: Ethnicity, Gender, and the State in Community-Based Conservation*. Piscataway, NJ: Rutgers University Press.
- Agarwal, Bina. 2009. "Gender and Forest Conservation: The Impact of Women's Participation in Community Forest Governance." *Ecological Economics* 68:2785-2799.
- Agnone, Jon. 2007. "Amplifying Public Opinion: The Policy Impact of the U.S. Environmental Movement." *Social Forces* 85(4):1593-1620.
- Aguiar, Luis L. M., and Christopher J. Schneider. 2012. *Researching Amongst Elites: Challenges and Opportunities in Studying Up*. New York, NY: Routledge.
- Allen, Barbara L. 2004. "Shifting Boundary Work: Issues and Tensions in Environmental Health Science in the Case of Grand Bois, Louisiana." *Science as Culture* 13(4):429-448.
- Aminzade, Ronald. 1992. "Historical Sociology and Time." *Sociological Methods & Research* 20(4):456-480.
- Ando, Amy W. 1999. "Waiting to Be Protected under the Endangered Species Act: The Political Economy of Regulatory Delay." *The Journal of Law & Economics* 42(1):29-60.
- Andrews, Tom. 2012. "What is Social Constructionism?" *The Grounded Theory Review* 11(1):39-46.
- Arendt, Hannah. 1970. *On Violence*. Orlando, FL: Houghton Mifflin Harcourt Publishing Company.
- Artelle, Kyle A., Melanie Zurba, Jonaki Bhattacharyya, Diana E. Chan, Kelly Brown, Jess Housty, and Faisal Moola. 2019. "Supporting Resurgent Indigenous-led Governance: A Nascent Mechanism for Just and Effective Conservation." *Biological Conservation* 240:108284.
- Ban, Natalie C., Alejandro Frid, Mike Reid, Barry Edgar, Danielle Shaw, and Peter Siwallace. 2018. "Incorporate Indigenous Perspectives for Impactful Research and Effective Management." *Nature Ecology & Evolution* 2:1680-1683.
- Banaszak-Holl, Jane, and Marilyn A. Hines. 1996. "Factors Associated with Nursing Home Staff Turnover." *The Gerontologist* 36(4):512-517.

- Bates, Thomas R. 1975. "Gramsci and the Theory of Hegemony." *Journal of the History of Ideas* 36(2):351-366.
- Bazeley, Patricia, and Lyn Richards. 2000. *The NVivo Qualitative Project Book*. Thousand Oaks, CA: Sage Publications Inc.
- Beck, Ulrich. 1992. *Risk Society: Towards a New Modernity*. Newbury Park, CA: Sage Publications.
- Becker, Penny Edgell. 2000. "Boundaries and Silences in a Post-Feminist Sociology." *Sociology of Religion* 61(4):399-408.
- Bekoff, Marc. 2013. *Ignoring Nature No More: The Case for Compassionate Conservation*. Chicago, IL: University of Chicago Press.
- Belsky, Jill M. 1999. "Misrepresenting Communities: The Politics of Community-Based Rural Ecotourism in Gales Point Manatee, Belize." *Rural Sociology* 64(4):641-666.
- Belsky, Jill M. 2002. "Beyond the Natural Resource and Environmental Sociology Divide: Insights from a Transdisciplinary Perspective." *Society & Natural Resources* 15(3):269-280.
- Bennett, Nathan J., Robin Roth, Sarah C. Klain, Kai Chan, Patrick Christie, Douglas A. Clark, Georgina Cullman, Deborah Curran, Trevor J. Durbin, Graham Epstein, Alison Greenberg, Michael P. Nelson, John Sandlos, Richard Stedman, Tara L. Teel, Rebecca Thomas, Diogo Veríssimo and Carina Wyborn. 2017. "Conservation Social Science: Understanding and Integrating Human Dimensions to Improve Conservation." *Biological Conservation* 205:93-108.
- Bergmann, Werner. 1992. "The Problem of Time in Sociology: An Overview of the Literature on the State of Theory and Research on the 'Sociology of Time', 1900-82." *Time Society* 1:81.
- Berkes, Fikret. 2021. *Advanced Introduction to Community-based Conservation*. Northampton, MA: Edward Elgar Publishing.
- Bernstein, Richard J. 2011. "Hannah Arendt's Reflections on Violence and Power." *Iris* III:3-30.
- Besek, Jordan F., and Richard York. 2019. "Toward a Sociology of Biodiversity Loss." *Social Currents* 6(3):239-254.
- Bhaskar, R. 2005. *Critical Realism and the Theory and Practice of Interdisciplinarity*. Lecture presented at the 27th World Congress of the International Institute of Sociology, Stockholm Sweden.
- Black, Scott Hoffman, and Mace Vaughan. 2002. "Petition to Emergency List the Island Marble Butterfly (*Euchloe ausonides insulanus*) as an Endangered Species under the U.S. Endangered Species Act." The Xerces Society, Center for Biological Diversity, Friends of the San Juans, and the Northwest Ecosystem Alliance.
- Black, Scott Hoffman. 2012. "Invertebrates and the Endangered Species Act." *WINGS: Essays on Invertebrate Conservation* Spring:22-28.
- Bourdieu, Pierre. 1963. "La Societe traditionnelle. Attitude a l'egard du temps et conduit economique." Pp. 24-44 in *Sociologie du Travail*.
- Bourdieu, Pierre. 1968. "The Attitude of the Algerian Peasant Toward Time." Pp.55-72 in *Mediterranean Countrymen*, edited by J. Pitt-Rivers. Paris: The Hague.

- Brady, Henry E., Mary Sprague, Fredric C. Gey and Michael Wiseman. 2002. "Seasonal Employment Dynamics and Welfare Use in Agricultural and Rural California Counties." Pp.147-175 in *Rural Dimensions of Welfare Reform*, edited by Bruce A. Wever, Greg J. Duncan, and Leslie A. Whitener. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- Brand, Fridolin S., and Kurt Jax. 2007. "Focusing the Meaning(s) of Resilience: Resilience as a Descriptive Concept and a Boundary Object." *Ecology and Society* 12(1):23 [online] <http://www.ecologyandsociety.org/vol12/iss1/art23/>
- Breitmeier, Helmut, Arild Underdal and Oran R. Young. 2011. "The Effectiveness of International Environmental Regimes: Comparing and Contrasting Findings from Quantitative Research." *International Studies Review* 13(4):579-605.
- Brooke, Cassandra. 2008. "Conservation and Adaptation to Climate Change." *Conservation Biology* 22(6):1471-1476.
- Brosius, J. Peter. 2006. "Common Ground between Anthropology and Conservation Biology." *Conservation Biology* 20(3):683-685.
- Brown, Gardner M. and Jason F. Shogren. 1998. "Economics of the Endangered Species Act." *Journal of Economic Perspectives* 12(3):3-20.
- Budowski, Gerardo. 1976. "Tourism and Environmental Conservation: Conflict, Coexistence, or Symbiosis?" *Environmental Conservation* 3(1):27-31.
- Burawoy, Michael. 1998. "The Extended Case Method." *Sociological Theory* 16(1):143-144.
- Burawoy, Michael. 2009. *The Extended Case Method: Four Countries, Four Decades, Four Great Transformations, and One Theoretical Tradition*. Berkley, CA: University of California Press.
- Burger, Joanna. 2000. "Landscapes, Tourism, and Conservation." *The Science of the Total Environment* 249:39-49.
- Burrows, Roger. 2016. "'Studying Up' in the Era of Big Data." In *An End to the Crisis of Empirical Sociology? Trends and Challenges in Social Research*, edited by Linda McKie and Louise Ryan. New York, NY: Routledge.
- Büscher, Bram. 2010. "Anti-Politics as a Political Strategy: Neoliberalism and Transfrontier Conservation in South Africa." *Development and Change* 4(1):29-51.
- Büscher, Bram, Sian Sullivan, Katja Neves, Jim Igoe, and Dan Brockington. 2012. "Towards a Synthesized Critique of Neoliberal Biodiversity Conservation." *Capitalism Nature Socialism* 2:4-30.
- Büscher, Bram, Wolfram Dressler, and Robert Fletcher. 2014. *Nature Inc.: Environmental Conservation in the Neoliberal Age*. Tucson, AZ: The University of Arizona Press.
- Büscher, Bram, and Robert Fletcher. 2020. *The Conservation Revolution: Radical Ideas for Saving Nature Beyond the Anthropocene*. Brooklyn, NY: Verso.
- Buttel, Frederick H. 1978. "Environmental Sociology: A New Paradigm." *The American Sociologist* 13(4):252-256.
- Buttel, Frederick H. 2003. "Environmental Sociology and the Explanation of Environmental Reform." *Organization & Environment* 16(3):306-344.
- Buttigieg, Joseph A. 1995. "Gramsci on Civil Society." *boundary 2* 22(3):1-32.
- Cahill, Rowan. 2007. "On Winning the 40 Hour Week." *Illawarra Unity* 7(1):16-25.

- Caine, Ken J. 2016. "Blurring the Boundaries of Environmentalism: The Role of Canadian Parks and Wilderness Society as a Boundary Organization in Northern Conservation Planning." *Rural Sociology* 81(2):194-223.
- Caldwell, Christopher. 2019. "The Problem with Greta Thunberg's Climate Activism." *The New York Times* August 2, 2019. <https://www.nytimes.com/2019/08/02/opinion/climate-change-greta-thunberg.html> Accessed February 2, 2020.
- Camou-Guerrero, Andrés, Victoria Reyes-García, Miguel Martínez-Ramos, and Alejandro Casas. 2008. "Knowledge and Use Value of Plant Species in a Rarámuri Community: A Gender Perspective for Conservation." *Human Ecology* 36:259-272.
- Campbell, Jock, and Philip Townsley. 2012. "Biodiversity and Poverty in Coastal Environments." Pp. 100-112 in *Biodiversity Conservation and Poverty Alleviation: Exploring the Evidence for a Link*, edited by D. Roe, J. Elliott, C. Sandbrook, and M. Walpole. Hoboken, NJ: John Wiley & Sons.
- Cannon, John R. 1996. "Whooping Crane Recovery: A Case Study in Public and Private Cooperation in the Conservation of Endangered Species." *Conservation Biology* 10(3):813-821.
- Cardinale, Bradley J., J. Emmett Duffy, Andrew Gonzalez, David U. Hooper, Charles Perrings, Patrick Venail, Anita Narwani, Georgina M. Mace, David Tilman, David A. Wardle, Ann P. Kinzig, Gretchen C. Daily, Michel Loreau, James B. Grace, Anne Larigauderie, Diane Srivastava, and Shahid Naeem. 2012. "Biodiversity loss and its impact on humanity." *Nature* 486(7401):59-67.
- Carolan, Michael S. 2005. "Society, Biology, and Ecology: Bringing Nature Back Into Sociology's Disciplinary Narrative Through Critical Realism." *Organization & Environment* 18(4):393-421.
- Carolan, Michael S. 2008. "From Patent Law to Regulation: The Ontological Gerrymandering of Biotechnology." *Environmental Politics* 17(5):749-765.
- Carr, Anna, and Roger Wilkinson. 2005. "Beyond Participation: Boundary Organizations as a New Space for Farmers and Scientists to Interact." *Society & Natural Resources* 18(3):255-265.
- Catton, William R., and Riley E. Dunlap. 1978. "Environmental Sociology: A New Paradigm." *The American Sociologist* 13:41-49.
- Center for Biological Diversity. 2019. "The Endangered Species Act: A Wild Success." Retrieved October 1, 2019 https://www.biologicaldiversity.org/campaigns/esa_wild_success/index.html
- Chalkiti, Kalotina, and Marianna Sigala. 2010. "Staff Turnover in the Greek Tourism Industry." *International Journal of Contemporary Hospitality Management* 22(3):335-359.
- Chomsky, Noam, and Michel Foucault. 1971. "Human Nature: Justice vs. Power." Retrieved October 2, 2019 (<https://chomsky.info/1971xxxx/>).
- Christensen, Ken. 2017. "On a Wing and a Prayer: A Butterfly Rescue on San Juan Island." *OPB* Oct. 26, 2017. <https://www.opb.org/television/programs/ofg/segment/washington-island-marble-butterfly-san-juan-island/> Accessed February 4, 2020.
- Cifrić, Ivan. 2010. "Ekologija veremena. Vrijeme kao integrativni I dezintegrativni čimbenik." *Socijalna ekologija* 19(1):5-32.

- Cifrić, Ivan and Tijana Trako. 2010. "Društvo I okoliš u vermenskoj perspektivi. O sociologiji vremena I menadžmentu vremena." *Sociologija I prostor* 48(1):19049.
- Clark, Brett, and Richard York. 2005. "Carbon Metabolism: Global Capitalism, Climate Change, and the Biosphere." *Theory and Society* 34:391-428.
- Clark, Brett and John Bellamy Foster. 2009. "Ecological Imperialism and the Global Metabolic Rift: Unequal Exchange and the Guano/Nitrates Trade." *International Journal of Comparative Sociology* 50(3-4):311-334.
- Clayton, Susan and Amara Brook. 2005. "Can Psychology Help Save the World? A Model for Conservation Psychology." *Analyses of Social Issues and Public Policy* 5(1):87-102
- Cockburn, Jessica, Mathieu Rouget, Rob Slotow, Debra Roberts, Richard Boon, Errol Douwes, Sean O'Donoghue, Colleen Downs, Shomen Mukherjee and Walter Muskawa. 2016. "How to Build Science-Action Partnerships for Local Land-Use Planning and Management: Lessons from Durban, South Africa." *Ecology and Society* 21(1):28.
- Cook, Carly N., Michael B. Mascia, Mark W. Schwartz, Hugh P. Possingham, and Richard A. Fuller. 2013. "Achieving Conservation Science that Bridges the Knowledge-Action Boundary." *Conservation Biology* 27(4):669-678.
- Cordano, Mark, Stephanie Welcomer, Robert F. Scherer, Lorena Pradenas, and Víctor Parada. 2010. "Three Theories of Pro-Environmental Behavior: A Comparison Between Business Students of Chile and the United States." *Environment and Behavior* 43(5):634-657.
- Czech, Brian, Paul R. Krausman, and Rena Borkhataria. 1998. "Social Construction, Political Power, and the Allocation of Benefits to Endangered Species." *Conservation Biology* 12(5):1103-1112.
- Czech, Brian, and Paul R. Krausman. 2001. *The Endangered Species Act: History, Conservation Biology, and Public Policy*. Baltimore, MD: The Johns Hopkins University Press.
- Damania, Richard, and Erwin H. Bulte. 2001. "The Economics of Captive Breeding and Endangered Species Conservation." *CIES Working Paper* No. 0139:1-44.
- Damania, Richard, and Erwin H. Bulte. 2007. "The Economics of Wildlife Farming and Endangered Species Conservation." 62(3-4):461-472.
- Danermark, Berth, Erkström, Jakobson, Liselotte, and Jan Ch. Karlsson. 2005. *Explaining Society: An Introduction to Critical Realism in the Social Sciences*. New York, NY: Routledge.
- Devall, W. B. 1970. "Conservation: An Upper-middle Class Social Movement: A Replication." *Journal of Leisure Research* 2(2):123-126.
- Donoghue, Christopher and Nicholas G. Castle. 2009. "Leadership Styles of Nursing Home Administrators and Their Association with Staff Turnover." *The Gerontologist* 49(2):166-174.
- Dunlap, Riley E., George H. Gallup Jr., and Alec M. Gallup. 1993. "Of Global Concern: Results of the Health of the Planet Survey." *Environment: Science and Policy for Sustainable Development* 35(9):7-39.

- Dunlap, Riley E. 1995. "Public Opinion and Environmental Policy" Pp. 63-114 in *Environmental Politics and Policy: Theories and Evidence*, edited by James P. Lester. Durham, NC: Duke University Press.
- Dunlap, Riley E., Chenyang Xiao, and Aaron M. McCright. 2001. "Politics and Environment in America: Partisan and Ideological Cleavages in Public Support for Environmentalism." *Environmental Politics* 10(4):23-48.
- Dunlap, Riley E. 2008. "The New Environmental Paradigm Scale: From Marginality to Worldwide Use." *The Journal of Environmental Education* 40(1):3-18.
- Dunlap, Riley E., and Richard York. 2008. "The Globalization of Environmental Concern and the Limits of the Postmaterialist Values Explanation: Evidence from Four Multinational Surveys." *Sociological Quarterly* 49(3):529-563.
- Durkheim, Émile. 1951. *Suicide: A Study in Sociology* (1st pub. 1897), edited by George Simpson. Translated by John A. Spaulding, and George Simpson. Glencoe, IL: Free Press.
- Durkheim, Émile. 1982. *The Rules of Sociological Method and Selected Texts on Sociology and its Method*, edited by Steven Lukes. Translated by W. D. Halls. New York, NY: Free Press.
- Elder, Glen H. Jr., Monica Kirkpatrick Johnson, and Robert Crosnoe. 2003. "The Emergence and Development of Life Course Theory." Pp. 3-19 in *Handbook of the Life Course*, edited by Jeylan T. Mortimer, and Michael J. Shanahan. Boston, MA: Springer US.
- Elliott, Joanna and Daudi Sumba. 2012. "Conservation Enterprise: What Works, Where and for Whom?" Pp. 206-222 in *Biodiversity Conservation and Poverty Alleviation: Exploring the Evidence for a Link*, edited by D. Roe, J. Elliott, C. Sandbrook and M. Walpole. Hoboken, NJ: John Wiley & Sons.
- Esbjörn-Hargens, Sean. 2010. "An Ontology of Climate Change: Integral Pluralism and the Enactment of Multiple Objects." *Journal of Integral Theory and Practice* 5(1):143-174.
- Flatt, Courtney. 2018. "A Butterfly Only Found in the Northwest is Headed for Endangered Species List." *NWPB/Earthfix*. April 11, 2018. <https://www.opb.org/news/article/butterfly-endangered-san-juan-island-marble-list/> Accessed February 2, 2020.
- Fleckenstein, John, and Ann Potter. 1999. "1997, 1998 project summary Puget prairie butterfly surveys." Washington Department of Natural Resources and Washington Department of Fish and Wildlife, Olympia, Washington.
- Fletcher, Robert. 2012. "Using the Master's Tools? Neoliberal Conservation and the Evasion of Inequality." *Development and Change* 43(1):295-317.
- Fletcher, Robert. 2014. "Orchestrating Consent: Post-Politics and Intensification of Nature™ Inc. at the 2012 World Conservation Congress." *Conservation and Society* 12(3):329-342.
- Forester, Deborah J., and Gary E. Machlis. 1996. "Modeling Human Factors that Affect the Loss of Biodiversity." *Conservation Biology* 10(4):1253-1263.
- Foster, John Bellamy. 1999. "Marx's Theory of Metabolic Rift: Classical Foundations for Environmental Sociology." *American Journal of Sociology* 105(2):366-405.
- Foucault, Michel. 1980. *Power/Knowledge: Selected Interviews & Other Writings, 1972-1977*, edited by Colin Gordon. New York, NY: Pantheon Books.

- Fox, Helen E., Caroline Christian, J. Cully Nordby, Oliver R. W. Pergrams, Garry D. Peterson, and Christopher R. Pyke. 2006. "Perceived Barriers to Integrating Social Science and Conservation."
- Franks, Jeremy. 2010. "Boundary Organizations for Sustainable Land Management: The Example of Dutch Environmental Co-operatives." *Ecological Economics* 2(15):283-295.
- Frickel, Scott M. 2004. *Chemical Consequences: Environmental Mutagens, Scientist Activism, and the Rise of Genetic Toxicology*. New Brunswick, NJ: Rutgers University Press.
- Frickel, Scott, Sarah Gibbon, Jeff Howard, Joanna Kempner, Gwen Ottinger, and David J. Hess. 2010. "Undone Science: Charting Social Movement and Civil Society Challenges to Research Agenda Setting." *Science, Technology, & Human Values* 35(4): 444-473.
- Fuller, Sylvia, and Leah F. Vosko. 2008. "Temporary Employment and Social Inequality in Canada: Exploring Intersections of Gender, Race and Immigration Status." *Social Indicators Research* 88(1):31-50.
- Gaard, Greta. 2001. "Women, Water, Energy: An Ecofeminist Approach." *Organization & Environment* 14(2):157-172.
- Gadgil, Madhav, Fikret Berkes, and Carl Folke. 1993. "Indigenous Knowledge for Biodiversity Conservation." *Ambio* 22:151-156.
- Gamboa, Glenn. 2021. "Bezos Plans to Spend \$10 Billion by 2030 on Climate Change." AP News 3/9/2021. Retrieved July 3, 2021. <https://apnews.com/article/climate-climate-change-jeff-bezos-bee1aea9cffc377400048dcb5b7405f0>
- Gates, Bill. 2021. *How to Avoid Climate Disaster: The Solutions We Have and the Breakthroughs We Need*. New York, NY: Random House Inc.
- Geißler, K.A. 1993. "Anfang und Ende. Zur Sozialökologie der Zeitordnung." Pp. 179-185 in *Ökologie der Zeit - Vom Finden der rechten Zeitmaße*, edited by M. Held, and K. A. Geißler. Stuggart: S. Hirzel Verlag
- Gieryn, Thomas F. 1983. "Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists." *American Sociological Review* 48:781-795.
- Gieryn, Thomas F. 1999. *Cultural Boundaries of Science: Credibility of the Line*. Chicago, IL: Aldine.
- Glaser, Barney G., and Anselm L. Strauss. 1999. *Discovery of Grounded Theory: Strategies for Qualitative Research*. New York, NY: Routledge.
- Gould, Kenneth A., David N. Pellow, and Allan Schnaiberg. 2008. *Treadmill of Production: Injustice and Unsustainability in the Global Economy*. Boulder, CO: Paradigm Publishers.
- Gould, Stephen Jay. 1987. *Time's Arrow, Time's Cycle: Myth and Metaphor in the Discovery of Geological Time*. Cambridge, MA: Harvard University Press.
- Gouldner, Alvin W. 1954. *Patterns of Industrial Bureaucracy*. New York, NY: Free Press.
- Gray, Noella J. 2016. "The Role of Boundary Organizations in Co-Management: Examining the Politics of Knowledge Integrations in a Marine Protected Area in Belize." *International Journal of the Commons* 10(2):1013-1034.
- Guppy, Crispin, and Jon Shepard. 2001. *Butterflies of British Columbia: Including Western Alberta, Southern Yukon, the Alaska Panhandle, Washington, Northern*

- Oregon, Northern Idaho, and Northwestern Montana*. Vancouver, B.C: University of British Columbia Press.
- Gurvitch, Georges. 1964. *The Spectrum of Social Time*. Dordrecht, D: Reidel Pub. Co.
- Gurvitch, Georges. 1973. "Social Structure and the Multiplicity of Times." Pp. 171-84 in *Sociological Theory*, edited by Edward A. Tiryakian. London, UK: Routledge.
- Gustafsson, Karin M., Anurag A. Agrawal, Bruce V. Lewenstein, and Steven A. Wolf. 2015. "The Monarch Butterfly through Time and Space: The Social Construction of an Icon." *BioScience* 65(6):612-622.
- Guston, David H. 2001. "Boundary Organizations in Environmental Policy and Science: An Introduction." *Science, Technology, & Human Values* 26(4):399-408.
- Gramsci, Antonio. 1992-2007. *Prison Notebooks*. (Ed. by Joseph A. Buttigieg) New York, NY: Columbia University Press.
- Haenn, Nora. 2016. "The Middle-Class Conservationist: Social Dramas, Blurred Identity Boundaries, and Their Environmental Consequences in Mexican Conservation." *Current Anthropology* 57(2):197-218.
- Haines-Young, Roy and Marion Potschin. 2010. "The Links Between Biodiversity, Ecosystem Services and Human Well-Being." Ch. 6 in *Ecosystem Ecology: A New Synthesis*, edited by D. Raffaelli, and C. Frid. New York, NY: Cambridge University Press.
- Halpern, Megan K. 2011. "Across the Great Divide: Boundaries and Boundary Objects in Art and Science." *Public Understanding of Science* 21(8):922-937
- Hanson, Thor, Ann Potter, James Miskelly, and Susan Vernon. 2009. "Surveys for the Island Marble Butterfly (*Euchloe ausonides insulanus*) in San Juan County, Washington, 2008." Washington Department of Fish and Wildlife, Olympia, WA.
- Hanson, Thor, Ann Potter, and Susan Vernon. 2010. "Surveys for Island Marble Butterfly (*Euchloe ausonides insulanus*) in San Juan County, Washington, 2009." Washington Department of Fish and Wildlife, Olympia, WA.
- Harrington, Winston, Richard D. Morgenstern, and Thomas Sterner. 2004. *Choosing Environmental Policy: Comparing Instruments and Outcomes in the United States and Europe*. Washington, DC: Resources for the Future.
- Harvey, F., and N. Chrisman. 1998. "Boundary Objects and the Social Construction of GIS Technology." *Environment & Planning* 39(9):1683-1695.
- Hassard, John. 1990. *The Sociology of Time*. New York, NY: St. Martin's Press.
- Hassard, John, and Keith Grint. 1999. "Images of Time in Work and Organization." Pp.327-344 in *Studying Organization: Theory and Method*, edited by Stewart R. Clegg, and Cynthia Hardy. Newbury Park, CA: Sage Publications.
- Hastings, Jesse G. 2011. "International Environmental NGOs and Conservation Science and Policy: A Case from Brazil." *Coastal Management* 39(3):317-335.
- Held, M. 1993. "Zeitmaße für die Umwelt. Auf dem Weg zu einer Ökologie der Zeit."
- Hinshaw, Ada Sue, and Jan R. Atwood. 1984. "Nursing Staff Turnover, Stress, and Satisfaction: Models, Measures, and Management." *Annual Review of Nursing Research* 1:133-153.

- Hoban, Sean and Christian Vernesi. 2012. "Challenges in Global Biodiversity Conservation and Solutions that Cross Sociology, Politics, Economics and Ecology." *Biology Letters* 8(6):897-899.
- Hoffman, John P. 2004. "Social and Environmental Influences on Endangered Species: A Cross-National Study." *Sociological Perspectives* 47(1):79-107.
- Hoppe, Robert. 2005. "Rethinking the Science-Policy Nexus: From Knowledge Utilization and Science Technology Studies to Types of Boundary Arrangements." *Poiesis & Praxis* 3(3):199-215.
- Huitema, Dave, and Esther Turnhout. 2009. "Working at the Science-Policy Interface: A Discursive Analysis of Boundary Work at the Netherlands Environmental Assessment Agency." *Environmental Politics* 18(4):576-594.
- Hunter, Lori M., and Joan Brehm. 2003. "Qualitative Insight into Public Knowledge of, and Concern with, Biodiversity." *Human Ecology* 31(2): 309-320.
- Hunter, Lori M., and Lesley Rinner. 2004. "The Association Between Environmental Perspective and Knowledge and Concern with Species Diversity." *Society and Natural Resources* 17:517-532.
- Hunter, Lori M., Alison Hatch, and Aaron Johnson. 2004. "Cross-National Gender Variation in Environmental Behaviors." *Social Science Quarterly* 85(3):677-694.
- Hunter, Lori M., Jason D. Boardman, and Jarron M. Saint Onge. 2005. "The Association Between Natural Amenities, Rural Population Growth, and Long-Term Residents' Economic Well-Being." *Rural Sociology* 70(4):452-469.
- Huvila, Isto. 2011. "The Politics of Boundary Objects: Hegemonic Interventions and the Making of a Document." *JASIST* 62(12):2528-2539.
- Igoe, Jim and Dan Brockington. 2007. "Neoliberal Conservation: A Brief Introduction." *Conservation & Society* 5(4):432-449.
- Isaac, Larry W. 1997. "Transforming Localities: Reflections on Time, Causality, and Narrative in Contemporary Historical Sociology." *Historical Methods* 30(1): 4-12.
- Jaques, Elliott. 1982. *The Form of Time*. New York, NY: Crane, Russak.
- Jasanoff, Sheila. 1990. *The Fifth Branch: Science Advisors as Policymakers*. Cambridge, MA: Harvard University Press.
- Johnson, Erik W. 2008. "Social Movement Size, Organizational Diversity and the Making of Federal Law." *Social Forces* 86(3):967-993.
- Jones, Samantha. 2005. "Community-Based Ecotourism: The Significance of Social Capital." *Annals of Tourism Research* 32(2):303-324.
- Jorgenson, Andrew K. 2006. "Unequal Ecological Exchange and Environmental Degradation: A Theoretical Proposition and Cross-national Study of Deforestation, 1990-2000." *Rural Sociology* 71(4):685-712.
- Jordan, Sarah Foltz, Scott Hoffman Black, and Sarina Jepsen. 2012. "Petition to List the Island Marble Butterfly, *Euchloe ausonides insulanus* as an Endangered Species under the U.S. Endangered Species Act." The Xerces Society for Invertebrate Conservation.
- Kaufman, Scott. 2004. *The Pig War: The United States, Britain, and the Balance of Power in the Pacific Northwest, 1846-72*. Lanham, MD: Lexington Books.

- Kellert, Stephen R. 1985. "Social and Perceptual Factors in Endangered Species Management." *The Journal of Wildlife Management* 49(2):528-536.
- Kennedy, Emily Huddart, Thomas M. Beckley, Bonita L. McFarlane, and Solange Nadeau. 2009. "Why We Don't 'Walk the Talk': Understanding the Environmental Values/Behaviour Gap in Canada." *Research in Human Ecology* 16(2):151-160.
- Kennedy, Emily H., and Liz Dzialo. 2015. "Locating Gender in Environmental Sociology." *Sociology Compass* 9(10):920-929.
- Kimmerer, Robin Wall. 2013. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*. Minneapolis, MN: Milkweed Editions.
- Kirchhoff, Christine J., Maria Carmen Lemon, and Nathan L. Engle. 2013. "What Influences Climate Information Use in Water Management? The Role of Boundary Organizations and Governance Regimes in Brazil and the U.S." *Environmental Science and Policy* 26:6-18.
- Kirksey, Eben. 2014. *The Multispecies Salon*. Durham, NC: Duke University Press.
- Knight, Danica K., Jennifer E. Becan, and Patrick M. Flynn. 2012. "Organizational Consequences of Staff Turnover in Outpatient Substance Abuse Treatment Programs." *Journal of Substance Abuse Treatment* 42(2):143-150.
- Kollmuss, Anja, and Julian Agyeman. 2002. "Mind the Gap: Why do People Act Environmentally and What Are the Barriers to Pro-Environmental Behavior?" *Environmental Education Research* 8(3):239-260.
- Kümmerer, K. 1993. "'Zeiten der Natur – Zeiten des Menschen.'" Ein Beitrag zur Ökologie der Zeit." Pp.85-104 in *Ökologie der Zeit - Vom Finden der rechten Zeitmaße*, edited by M. Held and K. A. Geißler. Stuttgart: S. Hirzel Verlag.
- Kurath, Monika Maria. 2015. "Architecture as a Science: Boundary Work and the Demarcation of Design Knowledge from Research." *Science and Technology Studies* 28(3):81-100.
- Laidley, Thomas. 2013. "Climate, Class and Culture: Political Issues as Cultural Signifiers in the US." *The Sociological Review* 61(1):153-171.
- Lambert, Amy Michelle. 2011. "Natural History and Population Ecology of a Rare Pierid Butterfly, *Euchloe ausonides insulanus* Guppy and Shepard (Pieridae)." (Dissertation: University of Washington).
- Lamont, Michèle, and Virag Molnar. 2002. "The Study of Boundaries in the Social Sciences". *Annual Review of Sociology* 28:167-195.
- Landesman, Charles, and Roblin Meeks. 2003. *Philosophical Skepticism*. Malden, MA: Blackwell Publishers, Ltd.
- Langpap, Christian, and Joe Kerkvliet. 2010. "Allocating Conservation Resources Under the Endangered Species Act." *American Journal of Agricultural Economics* 92(1):110-124.
- Latour, Bruno. 2005. *Reassembling the Social: An Introduction to Actor-network-theory*. Oxford, NY: Oxford University Press.
- Lave, Rebecca, Philip Mirowski, and Samuel Randalls. 2010. "Introduction: STS and Neoliberal Science." *Social Studies of Science* 40(5):659-675.
- Lee, Yong-ki, Sally Kim, Min-seong Kim and Jeang-gu Choi. 2014. "Antecedent and Interrelationships of Three Types of Pro-Environmental Behavior." *Journal of Business Research* 67(10):2097-2105.

- Leisher, Craig, M. Sanjayan, Jill Blockhus, S. Neil Larsen, and Andreas Kontoleon. "Does Conservign Biodiversity Work to Reduce Poverty? A State of Knowledge Review." Pp. 145-159 in *Biodiversity Conservation and Poverty Alleviation: Exploring the Evidence for a Link*, edited by D. Roe, J. Elliott, C. Sandbrook, and M. Walpole. Hoboken, NJ: John Wiley & Sons.
- Leonard, Madeleine. 2016. *The Sociology of Children, Childhood and Generation*. London, UK: Sage Publications Ltd.
- Li, De-Zhu, and Hugh. W. Pritchard. 2009. "The Science and Economics of *Ex Situ* Plant Conservation." *Trends in Plant Science* 14(11):614-621.
- Livingstone, Frank B., and Theodosius Dobzhansky. 1962. "On the Non-Existence of Human Races." *Current Anthropology* 3(3):279-281.
- Lukes, Steven. 1986. *Power*. New York, NY: New York University Press.
- Lukes, Steven. 2005. *Power: A Radical View*. New York, NY: Palgrave MacMillan.
- Machlis, Gary E. 1992. "The contribution of sociology to biodiversity research and management." *Biological Conservation* 62:161-170.
- MacLaren, Ian S. 2011. "Rejuvenating Wilderness: The Challenge of Reintegrating Aboriginal Peoples in the 'Playground' of Jasper National Park." In *A Century of Parks Canada 1911-2011*, edited by C. Campbell. Calgary, CA: Calgary University Press.
- Manfredo, Michael, Tara Teel, and Alan Bright. 2003. "Why are Public Values Toward Wildlife Changing?" *Human Dimensions of Wildlife* 8(4):287-306.
- Mascia, Michael B., J. Peter Brosius, Tracy A. Dobson, Bruce C. Forbes, Leah Horowitz, Margaret A. McKean, and Nancy J. Turner. 2003. "Conservation and the Social Sciences." *Conservation Biology* 17(3):649-650.
- Mayer, Karl Ulrich. 2009. "New Directions in Life Course Research." *Annual Review of Sociology* 35:413-433.
- McCright, Aaron M. 2010. "The Effects of Gender on Climate Change Knowledge and Concern in the American Public." *Population and Environment* 32:66-87.
- McKinney, Laura A., Edward L. Kick, and Gregory M. Fulkerson. 2010. "World System, Anthropogenic, and Ecological Threats to Bird and Mammal Species: A Structural Equation Analysis of Biodiversity Loss." *Organization & Environment* 23(1):3-31.
- McNeely, Jeffrey A. 1995. *Expanding Partnerships in Conservation*. Washington D.C.: Island Press.
- Mead, George H. 1932. *The Philosophy of the Present*. Chicago, IL: Open Court Publishing Co.
- Meier, Kenneth J. and Gregory C. Hill. "Bureaucracy in the Twenty-First Century." Pp. 51-71 in *The Oxford Handbook of Public Management*, edited by Ewan Ferlie, Laurence E. Lynn Jr., and Christopher Pollitt. Oxford, UK: Oxford University Press.
- Meyer, John W., David John Frank, Ann Hironaka, Evan Schofer, and Nancy Brandon Tuma. 1997. "The Structuring of a World Environmental Regime, 1870-1990." *International Organization* 51(4):623-651.
- Mies, Maria, and Vandana Shiva. 2014. *Ecofeminism*. London, UK: Zed Books.

- Miller, Clark. 2001. "Hybrid Management: Boundary Organizations, Science Policy, and Environmental Governance in the Climate Regime." *Science, Technology, & Human Values* 26(4):478-500.
- Miskelly, James W. 2000. "Habitat requirements and conservation of the butterflies *Euchloe ausonides insulanus* (Pieridae) and *Euphydryas editha taylori* (Nymphalidae) in southwestern British Columbia." Master of Science Thesis, University of Victoria.
- Miskelly, James 2005. "2005 surveys for Island Marble butterfly (*Euchloe ausonides insulanus*) in northern coastal Washington." Washington Department of Fish and Wildlife report.
- Miskelly, James, and John Fleckenstein. 2007. "Surveys for Island Marble Butterfly (*Euchloe ausonides insulanus*) in San Juan County, Washington, 2006." Washington Department of Natural Resources report.
- Miskelly, James, and Ann Potter. 2009. "Surveys for Island Marble Butterfly (*Euchloe ausonides insulanus*) in San Juan County, Washington, 2007." Washington Department of Fish and Wildlife report.
- Mitchell, Ronald B. 2003. "International Environmental Agreements: A Survey of Their Features, Formation, and Effects." *Annual Review of Environmental Resources* 28:429-461.
- Mohai, Paul. 1985. "Public Concern and Elite Involvement in Environmental-Conservation Issues." *Social Science Quarterly* 66(4):820-838.
- Mol, Arthur P.J., David A. Sonnenfeld, and Gert Spaargaren. 2009. *The Ecological Modernisation Reader: Environmental Reform in Theory and Practice*. London, UK: Routledge.
- Moon, Katie, Tom D. Brewer, Stephanie R. Januchowski-Hartley, Vanessa M. Adams, and Deborah A. Blackman. 2016. "A Guideline to Improve Qualitative Social Science Publishing in Ecology and Conservation Journals." *Ecology and Society* 21(3):17.
- Mortimore, Michael. 2012. "Linking Biodiversity and Poverty Alleviation in the Drylands—The Concept of 'Useful' Biodiversity." Pp. 113-126 in *Biodiversity Conservation and Poverty Alleviation: Exploring the Evidence for a Link*, edited by D. Roe, J. Elliott, C. Sandbrook, and M. Walpole. Hoboken, NJ: John Wiley & Sons.
- National Park Service. 2018. "Island Marble Butterfly." Retrieved October 2, 2019 <https://www.nps.gov/sajh/learn/nature/island-marble-butterfly.htm>
- National Park Service. 2021. "The First Ones." Retrieved July 2, 2021 <https://www.nps.gov/sajh/learn/historyculture/the-first-ones.htm>
- Nel, Jeanne L., Dirk J. Roux, Amanda Driver, Liesl Hill, Ashton C. Maherry, Kate Snaddon, Chantel R. Petersen, Lindie B. Smith-Adao, Heidi Van Deventer, and Belinda Reyers. 2015. "Knowledge Co-Production and Boundary Work to Promote Implementation of Conservation Plans." *Conservation Biology* 30(1):176-188.
- Norgaard, Kari M. 2011. *Living in Denial: Climate Change, Emotions, and Everyday Life*. Cambridge, MA: The MIT Press.
- Nowotny, Helga. 1992. "Time and Social Theory: Towards a Social Theory of Time." *Time and Society* 1(3):421.

- Nyland, Chris. 1990. "Capitalism and the History of Work-time Thought." Pp. 130-151 in *The Sociology of Time*, edited by John Hassard. New York, NY: St. Martin's Press.
- Ojeda, Diana. 2012. "Green Pretexts: Ecotourism, Neoliberal Conservation and Land Grabbing in Tayrona National Park, Colombia." *The Journal of Peasant Studies* 39(2):357-375.
- Owens, Susan, Judith Petts, and Harriet Bulkeley. 2006. "Boundary Work: Knowledge, Policy, and the Urban Environment." *Environment and Planning C: Government and Policy* 24(5):633-643.
- Pailthorp, Bellamy. 2019. "Conservation Pleas to Private Landowners: Skip Red Tape and Help the Island Marble Butterfly." *KNKX*. Nov. 12, 2019. <https://www.knkk.org/post/conservation-plea-private-landowners-skip-red-tape-and-help-island-marble-butterfly>. Accessed February 2, 2020.
- Papworth, Sarah. 2017. "Decision-Making Psychology Can Bolster Conservation." *Nature Ecology & Evolution* 1:1217-1218.
- Parker, John N., and Edward J. Hackett. 2012. "Hot Spots and Hot Moments in Scientific Collaborations and Social Movements." *American Sociological Review* 77(1):21-44.
- Pedersen, Helena and Vasile Stenescu. "Conclusion: Future Directions for Critical Animal Studies." Pp. 262-276 in *The Rise of Critical Animal Studies: From the Margins to the Centre*, edited by Nik Taylor and Richard Twine. New York, NY: Routledge.
- Pellow, David N., and Hollie Nyseth Brehm. 2013. "An Environmental Sociology for the Twenty-First Century." *Annual Review of Sociology* 39:229-250.
- Pergams, Oliver R. W. 2019. "Conservation sociology." Retrieved October 2, 2019 (<https://pergams.com/conservation-sociology>).
- Perlow, Leslie. 1997. *Finding Time: How Corporations, Individuals, and Families Can Benefit from New Work Practices*. Ithaca, NY: Cornell University Press.
- Peterson, M. Nils, Markus J. Peterson, and Tarla Rai Peterson. 2005. "Conservation and the Myth of Consensus." *Conservation Biology* 19(3):762-767.
- Peterson, M. Nils, Markus J. Peterson, and Tarla Rai Peterson. 2006. "Why Conservation Needs Dissent." *Conservation Biology* 20(2):576-578.
- Peterson, M. Nils, Markus J. Peterson, Tarla Rai Peterson, and Kirsten Leong. 2013. "Why Transforming Biodiversity Conservation Conflict is Essential and How to Begin." *Pacific Conservation Biology* 19(2):94-103.
- Petts, Judith and Catherine Brooks. 2006. "Expert Conceptualisations of the Role of Lay Knowledge in Environmental Decisionmaking: Challenges for Deliberative Democracy." *Environment and Planning A: Economy and Space* 38(6):1045-1059.
- Pham, Thu Thuy, Bruce M. Campbell, Stephen Garnett, Heather Aslin, and Hoang Minh Ha. 2010. "Importance and Impacts of Intermediary Boundary Organizations in Facilitating Payment for Environmental Services in Vietnam." *Environmental Conservation* 37(1):64-72.
- Pinchot, Gifford, and Elizabeth Pinchot. 1994. *The End of Bureaucracy & the Rise of the Intelligent Organization*. San Francisco, CA: Berrett-Koehler Publishers, Inc.

- Plumwood, Val. 1993. *Feminism and the Mastery of Nature*. New York, NY: Routledge.
- Postone, Moishe. 1993. *Time, Labor, and Social Domination: A Reinterpretation of Marx's Critical Theory*. Cambridge, UK: Cambridge University Press.
- Potter, Ann, Thor Hanson, and Susan Vernon. 2011. "Surveys for the island marble butterfly (*Euchloe ausonides insulanus*) in San Juan County, Washington, 2010." Washington Department of Fish and Wildlife report. Olympia, Washington.
- Press, Daniel, Daniel F. Doak, and Paul Steinberg. 1996. "The Role of Local Government in the Conservation of Rare Species." *Conservation Biology* 10(6): 1538-1548.
- Puckett, Emily E., Dylan C. Kesler, and D. Noah Greenwald. 2016. "Taxa, Petitioning Agency, and Lawsuits Affect Time Spent Awaiting Listing Under the US Endangered Species Act." *Biological Conservation* 201:220-229.
- Purcell, Kate. 2000. "Gendered Employment Insecurity?" Pp. 112-139 in *The Insecure Workforce*, edited by Edmund Heery, and John Salmon. London, UK: Rutledge.
- Rabb, George B., and Carol D. Saunders. 2005. "The Future of Zoos and Aquariums: Conservation and Caring." *International Zoo Yearbook* 39(1):1-26.
- Rager, A. 2001. "Die Zeit im Griff – Im Griff der Zeit. Zeitmanagement und die Suche nach einer neuen Zeitkultur." Pp.7-9 in *Werkstattbericht der Zeitakademie des Tutzingener Projekts "Ökologie der Zeit"*, edited by M. Held, and K. A. Geißler. Stuttgart: S. Hirzel Verlag.
- Reheis, F. 2009. "Ökologie der Zeit und politische Bildung." Online: <https://www.politische-bildung-bayern.net/2009/item/173-die-oekologie-der-zeit-dr-fritz-reheis-auf-dem-netzwerkforum-2009>. Accessed February 2, 2020.
- Restani, Marco, and John M. Marzluff. 2002. "Funding Extinction? Biological Needs and Political Realities in the Allocation of Resources to Endangered Species Recovery: An Existing Priority System, Which Should Guide the Fish and Wildlife Service in Endangered Species Recovery, Is Ineffective, and Current Spending Patterns Decrease Long-term Viability of Island Species." *BioScience* 52(2):169-177.
- Rice, James. 2007. "Ecological Unequal Exchange: Consumption, Equity, and Unsustainable Structural Relationships within the Global Economy." *International Journal of Comparative Sociology* 48(1):43-72.
- Ricklefs, Robert E. 2008. *The Economy of Nature*. New York, NY: W.H. Freeman.
- Robinson, Enders A. 1990. *Einstein's Relativity in Metaphor and Mathematics*. Englewood Cliffs, NJ: Prentice Hall.
- Roe, Dilys, Joanna Elliott, Chris Sandbrook, and Matt Walpole. 2013. *Biodiversity Conservation and Poverty Alleviation: Exploring the Evidence for a Link*. Hoboken, NJ: John Wiley & Sons Ltd.
- Rogers, Rolf E. 1969. *Max Weber's Ideal Type Theory*. New York, NY: Philosophical Library.
- Rosa, Eugene A. 1999. "The Quest to Understand Society and Nature: Looking Back, but Mostly Forward." *Society & Natural Resources* 12:371-376.
- Rose, David C. 2014. "The Case for Policy-Relevant Conservation Science." *Conservation Biology* 29(3):748-754.

- Roth, Robin, and Wolfram Dressler. 2012. "Market-Oriented Conservation Governance: The Particularities of Place." *Geoforum* 43(3):363-366.
- Royer, Ronald A., Austin, Jane E., and Wesley E. Newton. 1998. "Checklist and 'Pollard Walk' Butterfly Survey Methods on Public Lands." *The American Midland Naturalist* 140(2):358-371.
- Rust, Niki A., Amber Abrams, Daniel W. S. Challender, Guillaume Chapron, Arash Ghoddousi, Jenny A. Gilkman, Catherine H. Gowan, Courtney Hughes, Archi Rastogi, Alicia Said, Alexander Sutton, Nik Taylor, Sarah Thomas, Hita Unnikirhsnan, Amanda D. Webber, Gwen Wordingham, and Catherine M. Hill. 2017. "Quantity Does Not Always Mean Quality: The Important of Qualitative Social Science in Conservation Research." *Conservation Biology* 30(10):1304-1310.
- San Juan Preservation Trust. 2018. "Welcome to the World of the Island Marble Butterfly." Retrieved October 2, 2019 (<https://sjpt.org/what-we-do/care-for-land/stewardship/stewardship-projects/island-marble-butterfly-project/>).
- Sandbrook, Chris, William M. Admas, Bram Brüscher, and Bhaska Vira. 2013. "Social Research and Biodiversity Conservation." *Conservation Biology* 27(6):1487-1490.
- Sarkki, Simo, Hannu I. Heikkinen, and Riika Puhakka. 2013. "Boundary Organisations Between Conservation and Development: Insights from Oulanka National Park, Finland." *World Review of Entrepreneurship, Management and Sustainable Development* 9(1):37-63.
- Saunders, Carol D. 2003. "The Emerging Field of Conservation Psychology." *Human Ecology Review* 10(2):137-149.
- Saunders, Carol D., and Olin Eugene Myers Jr. 2003. "Exploring the Potential of Conservation Psychology." *Human Ecology Review* 10(2):iii-v.
- Schelhas, John. 2002. "Race, Ethnicity, and Natural Resources in the United States: A Review." *Natural Resources Journal* 42(4):723-763.
- Schor, Juliet. 1998. "Time, Labour and Consumption: Guest Editor's Introduction." *Time & Society* 7(1):119-127.
- Schutz, Alfred. 1973. *The Structures of the Life-World*. Evanston, IL: Northwestern University Press.
- Schwartz, Mark W. 2008. "The Performance of the Endangered Species Act." *Annual Review of Ecology, Evolution, and Systematics* 39:279-299.
- Scoville, Caleb. 2017. "'We Need Social Scientists!' The Allure and Assumptions of Economistic Optimization in Applied Environmental Science." *Science as Culture* 26(4):468-480.
- Settersten, Richard A. Jr. and Jaqueline L. Angel. 2011. *Handbook of Sociology of Aging*. New York, NY: Springer.
- Shaffer, Mark L. 1981. "Minimum population sizes for species conservation." *BioScience* 31(2):131-134.
- Shandra, John M., Christopher Leckband, Laura A. McKinney, and Bruce London. 2009. "Ecologically Unequal Exchange, World Polity, and Biodiversity Loss: A Cross-National Analysis of Threatened Mammals." *International Journal of Comparative Sociology* 50(3-4):285-310.
- Shandra, John M., Laura A. McKinney, Christopher Leckband, and Bruce London. 2010. "Debt, Structural Adjustment, and Biodiversity Loss: A Cross-

- National Analysis of Threatened Mammals and Birds." *Human Ecology Review* 17(1):18-33.
- Sherman, Jennifer. 2009. *Those Who Work, Those Who Don't: Poverty, Morality, and Family in Rural America*. Minneapolis, MN: University of Minnesota Press.
- Sherman, Jennifer. 2018. "Not Allowed to Inherit My Kingdom': Amenity Development and Social Inequality in the Rural West." *Rural Sociology* 83(1):174-207.
- Sherman, Jennifer. 2021. *Dividing Paradise: Rural Inequality and the Diminishing American Dream*. Oakland, CA: University of California Press.
- Shogren, Jason F., John Tschirhart, Terry Anderson, Amy Whritenour Ando, Steven R. Beissinger, David Brookshire, Gardner M. Brown Jr., Don Coursey, Robert Innes, Stephen M. Meyer, and Stephen Polansky. 1999. "Why Economics Matters for Endangered Species Protection." *Conservation Biology* 13(6):1257-1261.
- Shove, Elizabeth, Frank Trentmann, and Richard Wilk. 2010. *Time, Consumption and Everyday Life: Practice, Materiality and Culture*. New York, NY: Berg.
- Simaika, John P., and Michael J. Samways. 2018. "Insect Conservation Psychology." *Journal of Insect Conservation* 22:635-642.
- Skibins, Jeffrey C., and Robert B. Powell. 2013. "Conservation Caring: Measuring the Influence of Zoo Visitors' Connection to Wildlife on Pro-Conservation Behaviors." 32(5):528-540.
- Smith, Mick. 1999. "To Speak of Trees: Social Constructivism, Environmental Values, and the Future of Deep Ecology." *Environmental Ethics* 21(4):359-376.
- Smith, Rich. 2016. "All the Island Marble Butterflies on San Juan Island Might Die if Jenny Shrum and her Team Don't Save Them." *The Stranger* Dec. 6, 2016. <https://www.thestranger.com/features/2016/12/06/24730138/hello-lets-talk-about-butterflies>. Accessed February 2, 2020.
- Sommerer, Thomas and Sijeong Lim. 2016. "The Environmental State as a Model for the World? An Analysis of Policy Repertoires in 37 Countries." *Environmental Politics* 25(1):92-115.
- Sorokin, Pitirim A. and Robert K. Merton. 1937. "Social Time: A Methodological and Functional Analysis." *American Journal of Sociology* 42(5):615-629.
- Sorokin, Pitirim A. 1943. *Sociocultural Causality, Space, Time: A Study of Referential Principles of Sociology and Social Science*. New York, NY: Russell & Russell.
- Spencer, Martin E. 1970. "Weber on Legitimate Norms and Authority." *The British Journal of Sociology* 21:2(123-134).
- Speth, James Gustave. 2014. *Angels by the River: A Memoir*. White River Junction, VT: Chelsea Green Publishing.
- Star, Susan Leigh, and James R. Griesemer. 1989. "Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39." *Social Studies of Science* 19(3):387-420.
- Stern, Paul C., Thomas Dietz, Troy D. Abel, Greg Guagnano, and Linda Kalof. 1999. "A Value-Belief-Norm Theory of Support for Social Movements: The Case of Environmentalism." *Research in Human Ecology* 6(2):81-97.

- Stern, Paul C. 2000. "Toward a Coherent Theory of Environmentally-Significant Behaviour." *Journal of Social Issues* 56:407-424.
- Stich, Amy E., and Julia E. Colyar. 2015. "Thinking Relationally About Studying 'Up'." *British Journal of Sociology of Education* 36(5):729-746.
- Strauss, Anselm, and Juliet M. Corbin. 1997. *Grounded Theory in Practice*. Thousand Oaks, CA: Sage Publications, Inc.
- Teel, Tara L., and Michael J. Manfredo. 2010. "Understanding the Diversity of Public Interests in Wildlife Conservation." *Conservation Biology* 24(1):128-139.
- Thompson, E. P. 1967. "Time, Work-Discipline, and Industrial Capitalism." *Past and Present* 38:56-97.
- Thrift, Nigel J. 1983. "On the Determination of Social Action in Space and Time." *Environment and Planning D: Society and Space* 1:23-57.
- Tindall, D.B., Scott Davies, and Céline Mauboulès. 2003. "Activism and Conservation Behavior in an Environmental Movement: The Contradictory Effects of Gender." *Society and Natural Resources* 16:909-932.
- Turner, Will R., Katrina Brandon, Thomas M. Brooks, Claude Fascon, Holly K. Gibbs, Keith Lawrence, Russell A. Mittermeir, and Elizabeth R. Selig. 2012. "The Potential, Realised and Essential Ecosystem Service Benefits of Biodiversity Conservation." Pp. 21-35 in *Biodiversity Conservation and Poverty Alleviation: Exploring the Evidence for a Link*, edited by D. Roe, J. Elliott, C. Sandbrook, and M. Walpole. Hoboken, NJ: John Wiley & Sons.
- Turner, Chris. 2013. *The War on Science: Muzzled Scientists and Willful Blindness in Stephen Harper's Canada*. Vancouver, CA: Greystone Books.
- Urry, John. 2016. *What is the Future?* Cambridge, UK: Polity Press.
- USFWS (U.S. Fish and Wildlife Service). 2006. Endangered and threatened wildlife and plants; 12-month finding on a petition to list the island marble butterfly (*Euchloe ausonides insulanus*) as threatened or endangered. *Federal Register* 71(219):66292- 66298.
- Vasseur, Michael. 2014. "Convergence and Divergence in Renewable Energy Policy Among US States from 1998 to 2011." *Social Forces* 92(4):1637-57.
- Vosko, Leah F., Nancy Zukewich, and Cynthia Crawford. 2003. "Precarious Jobs: A New Typology of Employment." *Perspectives on Labour and Income* 15(4):16-26.
- Wajcan, Judy. 2008. "Life in the Last Lane? Towards a Sociology of Technology and Time." *The British Journal of Sociology* 59(1):59-77.
- Wittmer, Heidi, Augustin Berghöfer, and Pavan Sukhdev. 2012. "Poverty Reduction and Biodiversity Conservation: Using the Concept of Ecosystem Services to Understand the Linkages." Pp. 36-51 in *Biodiversity Conservation and Poverty Alleviation: Exploring the Evidence for a Link*, edited by D. Roe, J. Elliott, C. Sandbrook, and M. Walpole. Hoboken, NJ: John Wiley & Sons.
- Wood, Alexander, Pamela Stedman-Edwards, and Johanna Mang. 2000. *The Root Causes of Biodiversity Loss*. UK: Earthscan Publications Ltd.
- Wyborn, Carina. 2015. "Connectivity Conservation: Boundary Objects, Science Narratives and the Co-Production of Science and Practice." *Environmental Science and Policy* 51:292-303.
- Wynne, Brian. 1996. "May the Sheep Safely Graze? A Reflexive View of the Expert-Lay Knowledge Divide." Pp. 44-83 in *Risk, Environment, and Modernity: Towards*

- a New Ecology*, edited by Scott M. Lash, Bronislaw Szerszynski, and Brian Wynne. London, UK: Sage Publications.
- York, Richard, and Brett Clark. 2010. "Critical Materialism: Science, Technology, and Environmental Sustainability." *Sociological Inquiry* 80(3):475-499.
- Youdelis, Megan. 2013. "The Competitive (Dis)advantages of Ecotourism in Northern Thailand." *Geoforum* 50:161-171.
- Youdelis, Megan. 2016. "They Could Take You Out for Coffee and Call It Consultation!": The Colonial Antipolitics of Indigenous Consultation in Jasper National Park." *Environment and Planning A* 48(7):1374-1392.
- Youdelis, Megan. 2018. "Austerity Politics and the Post-Politicisation of Conservation Governance in Canada." *Conservation & Society* 16(3):257-267.
- Zahrán, Sammy, Samuel D. Brody, Himanshu Grover and Arnold Vedlitz. 2006. "Climate Change Vulnerability and Policy Support." *Society and Natural Resources* 19(9):771-789.
- Zerubavel, Eviatar. 1981. *Hidden Rhythms: Schedules and Calendars in Social Life*. Chicago, IL: Chicago University Press.

Index

A

American Camp, 2, 5, 6, 7, 8, 9, 10,
20, 49, 54, 57, 71, 89, 93, 94, 101,
112, 113, 118, 120, 128
Ann Potter, 5
authority, 14, 52, 62, 64, 76, 86, 91,
94, 95, 98

B

BLM, 9, 20, 114
boundary objects, 47, 48, 62, 67,
69, 70
boundary organizations, 47, 49
boundary theory, 67, 68
boundary work, 43, 47, 48, 62, 67,
68
Brassica rapa, 4, 6

C

Cabbage White, 6, 131
conservation sociology, 2, 3, 21, 22,
23
critical realism, 107, 108

D

Durkheim, 41, 102, 103, 144

E

ecological Marxism, 38
ecological modernization theory,
38

environmental sociology, 1, 3, 21,
22, 37, 38, 53, 71, 77, 79, 91, 102,
106, 107, 123, 126
ESA, 9, 10, 18, 56, 59, 62, 65, 80, 81,
82, 84, 86, 92, 93, 94, 95, 98, 99,
115, 116, 127
Euchloe ausonides insulana, 4
Extended Case Method, 11

F

Foucault, 35, 77, 142, 144
Friends of the San Juans, 9, 140
FWS, 8, 9, 10, 54, 55, 56, 83, 92,
112, 113, 114, 119, 120, 131

G

Gary E. Machlis, 144
Gramsci, 87
Grounded Theory, 13

H

Hannah Arendt, 76, 140
hegemony, 70, 77, 87, 88, 90, 95,
98, 132

I

Island Marble Butterflies, 4
IUCN, 40

J

John Fleckenstein, 5

K

Kwíah̄t, 9

L

Lopez Island, 5, 14, 17, 18, 112,
118, 120

M

mark-release-recapture, 54, 94
Michael Burawoy, 11

N

neoliberalization of species
conservation, 22, 126
NPS, 5, 7, 8, 9, 10, 49, 63, 64, 71,
93, 97, 112, 113, 114, 120, 131

P

Pollard Walk, 8, 153

R

rabbits, 5, 7, 9, 66, 118

S

San Juan County Land Bank, 9
San Juan Preservation Trust, 5, 7,
8, 9, 153
Sand-verbena moth, 54, 57, 64
southern resident killer whales, 5,
113
Steven Lukes, 77

T

The Pig War, 5, 147

W

WDFW, 5, 8, 9, 10, 114, 120, 131

X

Xerces Society, 9, 10, 81, 92, 93,
140, 147