

SOCI 437: Issues in Environmental Sociology and Climate Change

Summer 2018 – The Sociology of Fossil Fuels

Instructor:	J. P. Sapinski	Schedule:	May 15 to June 29
Office hours:	Tuesdays, 2:30 – 4:30 or by appointment		Tuesdays and Thursdays 12:30 – 2:20; Fridays 12:30 – 1:20
Office:	Cornett A326	Room:	Cornett A129
Email:	sapinski@uvic.ca		
Phone:	(250) 721-6527		

Course description

The main objective of this course is to understand the role fossil fuels play in mediating the metabolic relationship between human society and the other elements of the biosphere. Since the late 18th century, a new way of producing commodities has emerged at the heart of the British Empire, mediated by the energy embodied in fossilized plants, and with it a new mode of relating to the biosphere. After providing some basic concepts to discuss how human groups relate to the biosphere, the course will trace back the origins of the use of fossil fuel energy in industrial production, and assess the key role this form of energy has played in the development of the capitalist economy. We will discuss in-depth how fossil fuel extraction and consumption have since then organized capitalist society in all its aspects, with special emphasis on the multiple ways individual and corporate agency inserts itself within broad scale economic, political and ecological structural processes. The second half of the course will address current issues of fossil fuel expansion, and the political and cultural influence of the sector in Canada and elsewhere. In counterpoint to corporate agency, we will also examine the growing movements of resistance and opposition to fossil fuel expansion, as well as the varied and contending proposals for a transition away from fossil fuels and toward an economy based on renewable energy.

Course learning outcomes

Coming out of this course, students will be able to:

- Conceptualize and describe the metabolic relationship between humans and the lands they inhabit, with a focus on energy systems;
- Explain how fossil fuels mediate and shape this metabolic relationship through corporate-led production, distribution, consumption and disposal in the atmosphere;
- Discuss the implications of the fossil fuel mediated economy for past, present and future societies and ecosystems, emphasizing the environmental and climate impacts of the extraction and use of fossil fuels;
- Critically discuss academic and popular articles relating to the sociology of fossil fuels, orally and in writing.

Textbook and readings

There will be no textbook for this course. All required readings will be made available on the course website. An expanded bibliography will be provided at the beginning of the the term, from which students will be able to draw when planning their final essay.

Course format

The course is based on in-class discussion of the required readings. It will be largely based on discussion, either in pairs or as a group. It is thus fundamental that each person comes to class prepared to engage in thoughtful and

constructive discussion of the themes addressed in the required readings. Preparation should include writing down reading notes, personal reflexions, and clarification questions that can be shared with the group.

Each class (starting on the second week), pairs of students will briefly present (10 minutes) their critical commentaries on one of the assigned readings. The presentations will summarize the key concepts and arguments of the author(s), develop a critical discussion of the text, and propose three items to discuss in class. These can be questions formulated to expand the analysis or apply it to a different context, or to address unclarities in the text and the author's argument. Students will be given a few minutes to discuss in pairs these questions and perhaps others that I will submit to you, following which we will discuss the questions as a group. Class discussion will be interspersed with short lectures that will address remaining issues and synthesize the readings and the topic at hand, and then introduce briefly the next set of readings. These lectures will also be an opportunity to revisit and clarify issues brought up in the previous session.

Evaluation

1 Commentary essays and presentations (total 35%)

- You will be asked to write critical commentaries on the assigned readings, twice in the term (4-5 pages).
- The critical commentaries will (a) summarize the key concepts and arguments of the author(s), and (b) develop a critical discussion of the text, each part taking up about half the length of the paper.
- With a partner, you will present one of the two commentaries to the class (10 minutes in total). The presentations will serve to launch class discussion of the topic. For this, the two partners will be asked to prepare together three questions regarding the text you are presenting, so as to push analysis further, apply the author's approach in a different context, and/or clarify certain aspects of the argument.
- For each of the commentaries, the written part will be worth 15% of your final grade, and the presentation will be worth an additional 5%.

2 Final essay (total 50%)

You will write a final essay in which you will develop a sociological argument on a topic of your choice related to the course content. There are three steps to this project: (1) You will hand-in a title, short abstract (200-250 words), and list of 6-8 relevant academic references that you will use in the final paper. At least four references should be from outside the required course readings; (2) You will present an early version of your essay in class during the last two weeks of the course. This will provide you with an opportunity to discuss your work with the group and receive feedback, which you will integrate as you write the final version of the essay; (3) You will hand-in a final essay (15 pages, double-spaced, 12pt serif font equivalent to Times New Roman). The deadlines and marks attributed for each aspect are as follows:

- **June 8** – Hand in title, short abstract and list of references (5%)
- **June 21-28** – Class presentation (15%)
- **July 6** – Hand in final essay (30%)

3 Class participation (total 15%)

As explained above, this course will follow a participatory seminar format. I expect you to come to class ready to discuss the assigned readings. This means that as you read, you should take extensive notes about the text's content, personal reflexions, and specific and/or conceptual questions that come up and that you can bring to the group. Class participation will be worth 15% of the final grade.

Feedback and course evaluation

Your constructive feedback on the course is important to me throughout the term. I will collect anonymous course appreciation forms at multiple points during the term, that I will use to adjust the various aspects of the course and my future teaching. I also welcome your written or in-person feedback at any point during the term.

Course policies

1 Device-free course

Electronic devices are not conducive to learning and discussion. It has been demonstrated that screens in class can be disruptive to your own learning as well as that of your peers.¹ Hence, for everyone's benefit, I respectfully ask that you turn off all devices, including cellphones, tablets and laptop computers, unless you have an accommodation letter for learning disability, or if you have informed me that you are an EMT or firefighter or are waiting for a personal emergency call. Parents with children in school may choose to keep their phones on, using the vibration mode.

2 Inclusiveness, diversity and sensitive topics

My goal is that everyone feels they are welcome in the course and able to share freely their opinions and analyses. I will not tolerate any participation that demeans other students. This includes, but is not limited to, racist, sexist, heterosexist, ableist and classist remarks. That being said, it is sometimes difficult to know when we have offended someone else, and I do not want to discourage you from talking about sensitive subjects. If you are ever offended by remarks made by other students, or by me, please feel free to let me know. We are all struggling to understand difficult subjects, and to learn from others' experiences. If you feel like the classroom situation does not correspond to your life experience, please feel free to discuss that with me as well.

3 Global warming denial

This course builds on existing climate science to understand some of the social, political and economic underpinnings of global warming and climate change. Global average temperature has already increased by 1.1°C since the 1800-1870 period² largely because of the extraction and combustion of fossil fuels, with devastating effects on human and natural systems; further anticipated warming poses an existential threat to humanity and to non-human species. We will not spend time in class or in assignments debating the existence of global warming, or whether its causes are anthropogenic or not. Those interested in learning about the latest climate science are encouraged to register for a natural science course in climatology instead (such as EOS 110 Oceans and Atmosphere, or GEOG 272 Introduction to Climatology if you have the prerequisite).

Campus resources

Centre for Academic Communication: <https://www.uvic.ca/learningandteaching/home/home/centre/>

UVic Counselling Services: <https://www.uvic.ca/services/counselling/>

Centre for Accessible Learning: <https://www.uvic.ca/services/cal/>

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- 1 See for example Lepp, Andrew, Jacob E. Barkley, and Aryn C. Karpinski. 2015. "The Relationship Between Cell Phone Use and Academic Performance in a Sample of U.S. College Students." *SAGE Open* 5(1):1-9; Ravizza, Susan M., David Z. Hambrick, and Kimberly M. Fenn. 2014. "Non-Academic Internet Use in the Classroom Is Negatively Related to Classroom Learning Regardless of Intellectual Ability." *Computers & Education* 78:109-14.
 - 2 NASA. 2018. *Global Climate Change: Vital Signs of the Planet*. Consulted May 9, 2018 (<https://climate.nasa.gov/>).

Course outline

* Stars indicate blog posts that are not suitable for critical commentaries.

Week 1 – May 15, 17, 18a) *Introduction*

- Introductions, course presentation and syllabus
- Key concepts in environmental sociology: nature, ecology, economy, capitalism

No required readingsb) *Fossil fuels in society*

- Fundamental concepts: Energy, Social metabolism
- A socio-historical approach to the study of fossil fuels and society

Required readings:

Smil, Vaclav. 2010. "Energy systems: Their basic properties." Pp. 1-24 in *Energy Transitions: History, Requirements, Prospects*. Praeger.

Malm, Andreas. 2016. "Who Lit This Fire? Approaching the History of the Fossil Economy." *Critical Historical Studies* 3(2):215–48.

c) *The "anthropocene"*

- Critical introduction to the anthropocene debate

Required readings:

Crutzen, Paul J. 2002. "Geology of Mankind." *Nature* 415(6867):23.

Steffen, Will, Wendy Broadgate, Lisa Deutsch, Owen Gaffney, and Cornelia Ludwig. 2015. "The Trajectory of the Anthropocene: The Great Acceleration." *The Anthropocene Review* 2(1):81–98.

Malm, Andreas. 2015. "The Anthropocene Myth: Blaming All of Humanity for Climate Change Lets Capitalism off the Hook." *Jacobin Magazine* (www.jacobinmag.com/2015/03/anthropocene-capitalism-climate-change/), 8 pages.

Suggested reading:

Malm, Andreas and Alf Hornborg. 2014. "The Geology of Mankind? A Critique of the Anthropocene Narrative." *The Anthropocene Review* 1(1):62–69.

Week 2 – May 22, 24

** No class on May 25

a) *Climate change, social metabolism and the carbon rift*

- The notion of social metabolism as the exchange of energy and matter between human societies and the biosphere, and as the relationship to the land
- The cycle of carbon and the notion of the carbon rift in a capitalist economy

Required readings:

Clark, Brett and Richard York. 2005. "Carbon Metabolism: Global Capitalism, Climate Change, and the Biospheric Rift." *Theory and Society* 34(4):391–428.

Turner, Nancy. 2008. "Wealth and value in a changing world." Pp. 19-40 in *The Earth's Blanket: Traditional Teachings for Sustainable Living*. Vancouver and Toronto: Douglas & McIntyre.

*Angele Alook. 2017. "Letter of concern on the land rights and water rights of Bigstone Cree Nation" *Parkland Blog*, Edmonton: Parkland Institute, March 22 (https://www.parklandinstitute.ca/letter_of_concern_on_the_land_rights_and_water_rights_of_bigstone_cree_nation), 9 pages.

b) *Fossil energy politics in history*

- The transition to coal and labour organizing in 19th century Britain
- Oil extractivism, labour, and democracy in the Middle East during the 20th century

Required reading:

Malm, Andreas. 2013. "The Origins of Fossil Capital: From Water to Steam in the British Cotton Industry." *Historical Materialism* 21(1):15–68.

Optional reading:

Mitchell, Timothy. 2011. "Machines of democracy." Pp 12-42 in *Carbon Democracy: Political Power in the Age of Oil*. London and New York: Verso.

Week 3 – May 29, 31, June 1

a) *Guest speaker: Emery Hartley, Natural gas extraction on Treaty 8 territory*

b) *Fossil fuels in Canada*

- The political economy of "extreme oil" in Canada
- Alberta: A petrostate?

Required readings:

Pineault, Éric. 2015. "The Capitalist Pressure to Extract, an Ecological and Political Economy of Extreme Oil in Canada." *Studies in Political Economy*, Forthcoming.

Carter, Angela V. and Anna Zalik. 2016. "Fossil Capitalism and the Rentier State: Toward a Political Ecology of Alberta's Oil Economy." Pp. 52–77 in *First world petro-politics: The political ecology and governance of Alberta*, edited by Laurie E. Adkin. Toronto: University of Toronto Press.

Optional reading:

Carroll, William K. 2017. "Canada's Carbon-Capital Elite: A Tangled Web of Corporate Power." *Canadian Journal of Sociology* 42(3):225–60.

c) *The culture of fossil energy*

- People, lifestyles, and fossil energy

Required readings

Hern, Matt and Am Johal. 2018. "Fort McMurray." Pp. 81-114 in *Global Warming and the Sweetness of Life: A Tar Sands Tale*. Boston: MIT Press.

Huber, Matthew T. 2009. "The Use of Gasoline: Value, Oil, and the 'American Way of Life.'" *Antipode* 41(3):465–86.

Week 4 – June 5, 7, 8

a) *The climate change denial machine*

- The climate change denial movement

- Soft denial and environmental privilege

Required readings:

Brulle, Robert J. 2014. "Institutionalizing Delay: Foundation Funding and the Creation of U.S. Climate Change Counter-Movement Organizations." *Climatic Change* 122(4):681–94.

Norgaard, Kari Marie. 2012. "Climate Denial and the Construction of Innocence: Reproducing Transnational Environmental Privilege in the Face of Climate Change." *Race, Gender & Class* 19(1/2):80–103.

Optional reading:

Nevins, Joseph. 2014. "Academic Jet-Setting in a Time of Climate Destabilization: Ecological Privilege and Professional Geographic Travel." *The Professional Geographer* 66(2):298–310.

b) *Fossil fuel and climate politics in Canada*

- Current debates around the development of oil and other fossil fuels in Canada
- Climate policy in Canada and BC

Required readings:

Environment and Climate Change Canada. 2016. *Pan-Canadian Framework on Clean Growth and Climate Change*, Ottawa (<https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework/climate-change-plan.html>).

*Lee, Marc. 2016. "Don't Believe the Hype on BC's Carbon Tax." *CCPA Policy Note*, March 2, 2016 (<http://www.policynote.ca/dont-believe-the-hype-on-bcs-carbon-tax/>).

Lee, Marc. 2017. *Extracted Carbon: Re-Examining Canada's Contribution to Climate Change through Fossil Fuel Exports*. Vancouver, BC: Canadian Centre for Policy Alternatives (<https://www.policyalternatives.ca/publications/reports/extracted-carbon>).

Optional readings:

Stephenson, Eleanor, Alexander Doukas, and Karena Shaw. 2012. "Greenwashing Gas: Might a 'Transition Fuel' Label Legitimize Carbon-Intensive Natural Gas Development?." *Energy Policy* 46:452–59.

Adkin, Laurie. 2017. "Crossroads in Alberta: Climate Capitalism or Ecological Democracy." *Socialist Studies* 12(1).

c) *Guest speaker: Larissa Stendie, The Statoil tar sands divestment campaign*

Week 5 – June 12, 14, 15

a) *Alternatives to fossil fuels*

- Can renewable energy replace fossil fuels?
- Renewable energy, political power, and energy democracy

Required readings

Jacobson, Mark Z. and Mark A. Delucchi. 2011. "Providing All Global Energy with Wind, Water, and Solar Power, Part I: Technologies, Energy Resources, Quantities and Areas of Infrastructure, and Materials." *Energy Policy* 39(3):1154–69.

Burke, Matthew J. and Jennie C. Stephens. 2018. "Political Power and Renewable Energy Futures: A Critical Review." *Energy Research & Social Science* 35:78–93.

*Watts, Jonathan. 2015. “Uruguay Makes Dramatic Shift to Nearly 95% Electricity from Clean Energy.” *The Guardian*, London, December 3 (<https://www.theguardian.com/environment/2015/dec/03/uruguay-makes-dramatic-shift-to-nearly-95-clean-energy>).

Optional readings:

Dunlap, Alexander. 2018. “Counterinsurgency for Wind Energy: The Bii Hioxo Wind Park in Juchitán, Mexico.” *Journal of Peasant Studies* 45(3):630–52.

York, Richard. 2012. “Do Alternative Energy Sources Displace Fossil Fuels?” *Nature Climate Change* 2(6):441–43.

b) *Indigenous peoples, fossil fuels, and environmental justice*

- Indigenous and community-based responses to fossil energy expansion
- Concept of environmental justice

Required readings

*Hill, Nicole, Angele Alook, and Ian Hussey. 2017. “Ten Things to Know about Indigenous People and Resource Extraction in Alberta.” *Parkland Blog*, June 21. Edmonton: Parkland Institute.

Urquhart, Ian. 2018. “First Nations: Resistance and Compromise.” Pp. 138-174 in *Costly Fix: Power, Politics, and Nature in the Tar Sands*. Toronto: University of Toronto Press.

Awâsis, Sâkihitowin. 2014. “Pipelines and Resistance across Turtle Island.” Pp. 253-266 in D’Arcy, Stephen, Toban Black, Tony Weis, and Joshua Kahn Russell, eds. *A Line in the Tar Sands*. Toronto: Between the Lines.

Optional reading:

Wiebe, Sarah Marie. 2016. “Chapter 4. Home Is Where the Heart Is: Lived Experience in Aamjiwnaang.” In *Everyday Exposure: Indigenous Mobilization and Environmental Justice in Canada’s Chemical Valley*. Vancouver: UBC Press.

Week 6 – June 19, 21, 22

a) *Community resistance to fossil fuel expansion*

- Indigenous and community-based resistance to fossil energy expansion: Case studies

Required readings

Shaw, Karena, Stephen D. Hill, Amanda D. Boyd, Lindsay Monk, Joanna Reid, and Edna F. Einsiedel. 2015. “Conflicted or Constructive? Exploring Community Responses to New Energy Developments in Canada.” *Energy Research & Social Science* 8:41–51.

Bowles, Paul and Fiona MacPhail. 2017. “The Town That Said ‘No’ to the Enbridge Northern Gateway Pipeline: The Kitimat Plebiscite of 2014.” *The Extractive Industries and Society* 4(1):15–23.

Optional reading:

Albo, Greg and Lilian Yap. 2014. “From the Tar Sands to ‘Green Jobs’? Work and Ecological Justice.” Pp. 297-309 in *A line in the tar sands: Struggles for environmental justice*, edited by Toban Black, Stephen D’Arcy, Tony Weis, and Joshua Kahn Russel. Between the Lines.

b) *Presentations*

c) *Guest speaker: Emi Belliveau (School of Environmental Studies), The fossil fuel divestment movement on Canadian campuses*

Week 7 – June 26, 28, 29

a) *Presentations*

b) *Concluding discussions: Moving forward*

Department of Sociology Evaluation and Writing Expectations

100-level courses	
Minimum writing requirement	In-class or take-home assignment spanning at least 5 pages in length.
Evaluation	Primarily multiple-choice exams, short assignment, possibly written component on exams.
Format	Lectures and tutorials. Primarily textbook readings. Students also read original sociological research.
200-level courses	
Minimum writing requirement	At least one assignment involving library research that spans at least 8 pages in length.
Evaluation	A combination of multiple choice and written exams, including short-answer and essay questions.
Format	Lectures. Primarily textbook readings. Students also read original sociological research.
300-level courses	
Minimum writing requirement	An essay involving literature reviews and applications of concepts. A minimum of 10 pages in length.
Evaluation	Short-answer and primarily essay-type exams, written assignments.
Format	Lectures. Assigned readings include scholarly articles and/or primary sociological writing. Readings may also include textbook chapters.
400-level courses	
Learning outcomes	One term paper, involving advanced literature reviews and the application of a sociological model, spanning at least 15 pages in length.
Evaluation	Major paper, short-answer and primarily essay-type exams.
Format	Lectures/seminars. Assigned readings include scholarly articles, original monographs, and primary sources. Textbooks are not used.

Official Grading Standards

Undergraduate Records, University of Victoria, 2012

Passing Grade	Grade Point Value	Percentage	Description
A+	9	90 – 100	Exceptional, outstanding and excellent performance. Normally achieved by a minority of students. These grades indicate a student who is self-initiating, exceeds expectation and has an insightful grasp of the subject matter.
A	8	85 – 89	
A-	7	80 – 84	
B+	6	77 – 79	Very good, good and solid performance. Normally achieved by the largest number of students. These grades indicate a good grasp of the subject matter or excellent grasp in one area balanced with satisfactory grasp in the other areas.
B	5	73 – 76	
B-	4	70 – 72	
C+	3	65 – 69	Satisfactory, or minimally satisfactory. These grades indicate a satisfactory performance and knowledge of the subject matter.
C	2	60 – 64	
D	1	50 – 59	Marginal Performance. A student receiving this grade demonstrated a superficial grasp of the subject matter.
COM	Excluded Grade		Complete (pass). Used only for 0-unit courses and those credit courses designated by the Senate. Such courses are identified in the course listings.
Failing Grades	Grade Point Value	Percentage	Description
E	0	TBD	Conditional supplemental.
F	0	0-49	Unsatisfactory performance. Wrote final examination and completed course requirements; no supplemental.
N	0	0-49	Did not write examination or complete course requirements by the end of term or session; no supplemental.
N/X	Excluded Grade		Did not complete course requirements by the end of the term; no supplemental. Used only for co-op work terms and for courses designated by Senate. Such courses are identified in the course listings. The grade is EXCLUDED from the calculation of all grade point averages.
F/X	Excluded Grade		Unsatisfactory performance. Completed course requirements; no supplemental. Used only for co-op work terms and for courses designated by Senate. Such courses are identified in the course listings. The grade is EXCLUDED from the calculation of all grade point averages.

University Course Policies***Examination and Assignment Policy***

As per university policy, absence is only permitted in cases of illness, accident, family affliction, or religious obligations. Missing an exam for other reasons will result in an “F.” Students are responsible for providing official documentation to justify their absence, e.g. a doctor’s note. In cases of justified absences, the student has the right to request a make-up exam. Please note that exams will not be rescheduled to accommodate students’ personal circumstances, including travel plans. There are no exceptions to this policy.

Grading

In accordance with Senate Regulations, grading on the curve is not permitted. The grades students receive in this course reflect their performance in relation to specified academic expectations. Students should retain a copy of all submitted assignments (in case of loss) and should retain all their marked assignments in case they wish to apply for a Review of Assigned Standings. Students have the right to view their marked examinations with their instructor, providing they apply to do so within a month of receiving their final grades. All exams remain the property of the University of Victoria.

Attendance

As per university policy, attendance to all classes is mandatory. Students who are unavoidably absent because of illness, accident or family affliction should report to the instructor as soon as possible. Absences that cannot be justified in accordance with university policies will be subject to penalty at the discretion of the instructor. If you are absent for reasons other than those specified under university policies, then it is not the responsibility of the instructor or the TA to help you catch up with missed lecture material.

Academic Integrity

The Department of Sociology fully and rigorously enforces the Senate Policy on Academic integrity. It is of utmost importance that students who do their work honestly be protected from those who do not. Because this policy is in place to ensure that students carry out and benefit from the learning activities assigned in each course, it is expected that students will cooperate in its implementation. Students caught cheating in the course will be expelled and reported to the Chair of the Department of Sociology and the Dean of Social Sciences for disciplinary action.

Plagiarism and Cheating

Students must note the statement on “Plagiarism” in the UVic Calendar, and all regulations under the “Policy on Academic Integrity.” Quotes and citations must be used for any material longer than 5 words in succession that is not the student’s original work.

Harassment

The Department of Sociology supports the University’s policies on harassment, and is committed to ensuring that all students, staff, and faculty are able to exercise fully their rights to participate in activities at the University without fear of harassment.

Accommodations

The University of Victoria accommodates students with disabilities who have registered with the Disability Resource Centre. The University accommodates students whose religious obligations conflict with attendance, submitting assignments, or completing scheduled tests and examinations. Please let your instructor know in advance, preferably in the first week of class, if you will require any accommodation on these grounds. As per university policy, students who plan to be absent for varsity athletics, family obligations, or other similar

commitments, cannot assume they will be accommodated, and should discuss their commitments with the instructor before the drop date.

Classroom Etiquette

Distractions can easily hinder the difficult process of conveying knowledge. Please observe standard classroom etiquette. Entering the classroom after the instructor's presentation has started can be distracting both to the instructor as well as to other students. While occasional lateness may be unavoidable, your dedication to being on time is greatly appreciated.

Commitment to Inclusiveness and Diversity

The University of Victoria is committed to promoting, providing and protecting a positive and safe learning and working environment for all its members. The Department of Sociology is committed to inclusiveness and to a welcoming, friendly learning and working environment. We condemn sexism, ageism, racism, ethnocentrism, homophobia and inappropriate behaviour toward people with a disability.

SOCI 437: Issues in Environmental Sociology and Climate Change

Summer 2018 – The Sociology of Fossil Fuels

Course bibliography

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* Stars indicate books at the library reserve

** Two stars indicate books that I own and can lend briefly to consult or copy (1 hour loan maximum)

Fundamental texts in environmental sociology

General

- Catton, William R. and Riley E. Dunlap. 1980. "A New Ecological Paradigm for Post-Exuberant Sociology." *American Behavioral Scientist* 24:15–47.
- Catton, William R., Jr. and Riley E. Dunlap. 1978. "Environmental Sociology: A New Paradigm." *The American Sociologist* 13(1):41–49.
- **Dunlap, Riley E. and Robert J. Brulle. 2015. *Climate Change and Society: Sociological Perspectives. Report of the American Sociological Association's Task Force on Sociology and Global Climate Change*. Oxford: Oxford University Press.
- Redclift, M. R. 2010. *The International Handbook of Environmental Sociology*. Edward Elgar.
- Lever-Tracy, Constance. 2010. *Handbook of Climate Change and Society*. Milton Park: Routledge (<http://voyager.library.uvic.ca/vwebv/holdingsInfo?bibId=2785569>).

Metabolic rift theory

- Foster, John Bellamy. 1999. "Marx's Theory of Metabolic Rift: Classical Foundation for Environmental Sociology." *American Journal of Sociology* 105(2):366–405.
- Foster, John Bellamy. 2000. *Marx's Ecology: Materialism and Nature*. New York: Monthly Review Press.
- Foster, John Bellamy, Brett Clark, and Richard York. 2010. *The Ecological Rift: Capitalism's War on the Planet*. New York: Monthly Review Press.
- Magdoff, Fred and John Bellamy Foster. 2011. *What Every Environmentalist Needs to Know about Capitalism: A Citizen's Guide to Capitalism and the Environment*. NYU Press.

The treadmill of production

- Gould, Kenneth A., David N. Pellow, and Allan Schnaiberg. 2004. "Interrogating the Treadmill of Production: Everything You Wanted to Know About the Treadmill but Were Afraid to Ask." *Organization & Environment* 17(3):296–316.
- Schnaiberg, Allan. 1980. *The Environment: From Surplus to Scarcity*. New York: Oxford University Press.
- Schnaiberg, Allan, David N. Pellow, and Adam Weinberg. 2002. "The Treadmill of Production and the Environmental State." *Research in Social Problems and Public Policy* 10:15–32.

Ecological modernization theory

- Mol, Arthur P. J., David A. Sonnenfeld, and Gert Spaargaren. 2014. "Ecological Modernization Theory: Taking Stock, Moving Forward." Pp. 15–30 in *Routledge international handbook of social and environmental change*, edited by Stewart Lockie, David A. Sonnenfeld, and Dana R. Fisher. New York: Routledge.
- Mol, Arthur P. J. and Gert Spaargaren. 2002. "Ecological Modernization and the Environmental State." *Research in Social Problems and Public Policy* 10:33–52.
- Spaargaren, Gert and Arthur P. J. Mol. 1992. "Sociology, Environment, and Modernity: Ecological Modernization as a Theory of Social Change." *Society & Natural Resources* 5(4):323–44.

The growth machine

- Logan, John R. and Harvey L. Molotch. 2007. *Urban Fortunes: The Political Economy of Place*. Berkeley and Los Angeles: University of California Press.
- Molotch, Harvey. 1976. "The City as a Growth Machine: Toward a Political Economy of Place." *American Journal of Sociology* 82(2):309–32.

Unequal ecological exchange

- Bunker, Stephen G. 1985. *Underdeveloping the Amazon: Extraction, Unequal Exchange, and the Failure of the Modern State*. Chicago: University of Chicago Press.
- Hornborg, Alf. 1998. "Towards an Ecological Theory of Unequal Exchange: Articulating World System Theory and Ecological Economics." *Ecological Economics* 25(1):127–36.
- Jorgenson, Andrew K. and Brett Clark. 2009. "Ecologically Unequal Exchange in Comparative Perspective: A Brief Introduction." *International Journal of Comparative Sociology* 50(3–4):211–14.
- Rice, James. 2007. "Ecological Unequal Exchange: International Trade and Uneven Utilization of Environmental Space in the World System." *Social Forces* 85(3):1369–92.

World-ecology

- Araghi, Farshad. 2009. "Accumulation by Displacement: Global Enclosures, Food Crisis, and the Ecological Contradictions of Capitalism." *Review: A Journal of the Fernand Braudel Center* 34(1):113–46.
- Moore, Jason W. 2011. "Ecology, Capital, and the Nature of Our Times: Accumulation and Crisis in the Capitalist World-Ecology." *Journal of World-Systems Research* 17(1):107–46.
- Moore, Jason W. 2015. *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. London: Verso.

The anthropocene debate

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