



History of Science & the Environment

Fall 2020 HIS 380K

TH 3:30-6:30PM

Professor Megan Raby

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Office Hours: By appointment via Zoom
or phone: 512-475-7925

Course Description:

This seminar will introduce students to the historiography and methods of two fields: the history of science and environmental history. Both historical subfields center on nature, yet the core questions of each field are distinct. Environmental historians seek to understand the dynamic relationship between humans and nature over time. Historians of science are concerned with the production of knowledge about the natural world. This seemingly subtle difference in orientation creates profound theoretical and methodological tensions. Environmental historians draw on science in order to reconstruct environmental change and nature's active role in human history. In contrast, historians of science take a more critical stance toward science—for them, science is the object of explanation rather than a methodological tool. By interrogating the tensions and intersections of these two fields, we can hone our historical thinking. How should scholars understand non-humans as actors or agents in human history? What position should the natural sciences hold in historical argumentation and narrative? Why does a historian's stance toward matter matter?

This course will be an exploration of interdisciplinary historical approaches to materialism and the construction of knowledge. It will not focus narrowly on the history of the environmental sciences, although this topic will be addressed in multiple ways. Throughout the course, we will ground ourselves in a selection of foundational texts from each field, while also exploring a wide range of new scholarship that inhabits the growing borderlands between them.

Readings:

Article and chapter-length readings will be posted on our course's Canvas site: <http://canvas.utexas.edu>. You will also use Canvas to communicate with the class, check grades, and submit assignments. For Canvas support, call 1-855-308-2494 or contact canvas@utlists.utexas.edu.

All course books are available [on reserve](#) as ebooks through the UT Library system or via hathitrust.org (with UT log-in) or www.archive.org. **Note: these sources may limit the number of users who can view the book simultaneously.** They are also available for purchase at the [UT Co-op Bookstore](#), or at local bookstores through www.indiebound.org.

The following books are required. We will read these in their entirety:

- Merchant, Carolyn. *The Death of Nature: Women, Ecology, and the Scientific Revolution*. San Francisco: Harper & Row, 1980.
- Degroot, Dagomar. *The Frigid Golden Age: Climate Change, the Little Ice Age, and the Dutch Republic, 1560-1720*. Cambridge: Cambridge University Press, 2018.
- Coen, Deborah R. *Climate in Motion: Science, Empire, and the Problem of Scale*. Chicago: The University of Chicago Press, 2018.
- Zilberstein, Anya. *A Temperate Empire: Making Climate Change in Early America*. Oxford: Oxford University Press, 2016.
- Sellers, Christopher C. *Hazards of the Job: From Industrial Disease to Environmental Health Science*. Chapel Hill: University of North Carolina Press, 1997.
- Hennessy, Elizabeth A. *On the Backs of Tortoises: Conserving Evolution in the Galápagos Islands*. New Haven, CT: Yale University Press, 2019.

The following books are optional. We will read selections from these authors, but you may choose to read the entire book to supplement our discussion for the day, or for one of your book review assignments:

- Latour, Bruno. *Science in Action: How to Follow Scientists and Engineers Through Society*. Cambridge, MA: Harvard University Press, 1987.
- Kohler, Robert E. *Lords of the Fly: Drosophila Genetics and the Experimental Life*. Chicago, IL: University of Chicago Press, 1994.
- Worster, Donald. *Dust Bowl: The Southern Plains in the 1930s*. New York: Oxford University Press, 1979.
- Varlık, Nükhet. *Plague and Empire in the Early Modern Mediterranean World: The Ottoman Experience, 1347-1600*. New York: Cambridge University Press, 2015.
- Mitman, Gregg, Marco Armiero, and Robert S. Emmett, eds. *Future Remains: A Cabinet of Curiosities for the Anthropocene*. Chicago: The University of Chicago Press, 2018.

Assignments and Evaluation:

Introducing Discussions (10%)

Book Reviews (20%)

Participation (30%)

Final Project (40%)

Participation

This is a discussion-centered seminar, so it is imperative that you attend and are prepared to actively participate during every class session. Read and be ready with the assigned texts, your notes, and a curious and questioning mind. This is a history course, but the approaches and participants will come from many disciplines. Respect and be open to these differences. Please feel free to ask if you have questions about the norms and expectations for reading and writing in a history course.

Given that we are living in the unusual historical moment of a global pandemic, and that many of us may have little experience with online graduate courses, a few additional notes on participation are in order:

Do your best to be present in the moment with your peers in this course. Please commit to being as distraction free as possible during our time together. Do not multitask. Unless there is a real emergency, emails and texts can wait until class is over. At the same time, I want to acknowledge that you may have little control over your surroundings while learning from home. Please know that I understand that you may be responsible for childcare or sharing space with others. We are also all likely to encounter technical difficulties. Let's have patience with one another! Keep your sense of humor and reach out for help if you need it.

During our Zoom sessions, I encourage you to use headphones to reduce speaker feedback and external noise. Ideally, we will all be able to use the video function, but please feel free to turn off your video feed if your internet becomes unstable. To conserve bandwidth, I strongly encourage you to close any that apps you will not be using during our meeting. Restarting your computer before the meeting can also help. If your microphone fails, feel free to use Zoom's chat function to participate in the discussion (I will read it out loud to the group).

If you encounter serious internet problems, please call in to our Zoom session via phone.

For Zoom support, contact UT's ITS Service Desk at 512-475-9400 or email zoom@utexas.edu.

Weekly Discussion Board Post

As one component of participation, each student will share a brief Discussion Board post each week, reflecting on the day's assigned readings on the Canvas discussion board for that date. Your post should let us know what you want discuss during our Zoom session. It can be phrased as a formal discussion question, or (recommended!) you can simply start off your post with "I want to talk about..." In either case, your post should (a) focus on a specific quote from one of the readings, or (b) draw a connection or comparison across the day's readings or with a

reading from a previous week. A few sentences or a paragraph is sufficient. This post is **due each week by noon before our class meeting**. You are responsible for reading your peers' discussion questions in preparation for class. Feel free to reply or "like" others' posts if you have similar interests or questions.

Introducing Discussions

You will sign up to introduce/initiate class discussion twice during the semester, with 1-2 other students as partners. On these dates, you and your partner(s) will collaborate to provide a **~10 minute semi-formal introduction** to the assigned texts at the beginning of class.

In this introduction, please:

- (1) Tell us briefly who the authors are. (What is their disciplinary background? What are some works are they known for? This may require a few minutes of sleuthing online.)
- (2) State each author's central thesis concisely, in just a couple of sentences. (You should not attempt to summarize the entire book or article. As a class, we will continue to refine our understanding through our discussion.) Then describe the types of evidence used to support it. (Pay attention to the primary sources cited; for example, is the author using a specific set of archival records? Also consider how they have been used or interpreted.)
- (3) Contextualize the readings within the larger scholarly conversations. (This means closely considering the secondary sources referenced by each author—who are they in conversation with? In preparation, you should consult a selection of published reviews of the assigned book(s), and perhaps also some reviews of key works cited by the author. Pay attention to what journals these reviews appear in. This also gives a clue to which scholarly communities the books are in conversation with.)
- (4) Identify a few key themes, cross-cutting ideas, or major points of contention among the texts. Based on these, offer ~3 central guiding questions to start our discussion off on the right foot. Please type these questions into the Chat sidebar in Zoom.
- (5) You may use a Zoom screenshare to show slides or images (for example, primary sources or maps relevant to the reading). This is encouraged if you feel it will support and enhance your introduction, but it is not required.

Book Reviews

You will write 2 book reviews over the course of the semester, on assigned or optional books of your choice (you will sign up in advance). These can be, but don't have to be, for the dates you introduce discussion. Your book reviews must follow the length, formatting, and style guidelines for reviews in the journal *Environmental History* (see https://academic.oup.com/envhis/pages/Book_Review_Guidelines) and the department's *Not Even Past* site, [notevenpast.org \(https://liberalarts.utexas.edu/history/files/downloads/graduate/guidelines-for-books-recommendations.pdf\)](https://liberalarts.utexas.edu/history/files/downloads/graduate/guidelines-for-books-recommendations.pdf). (The 2 sets of guidelines intersect nicely. Both venues also provide good examples of the genre.) The class will workshop/peer review these reviews and you will submit a revision. You are strongly recommended to submit at least one book review

for possible publication on *Not Even Past*.

Each book review will be **due by noon** before the class period during which we discuss the book, **posted on the Canvas Discussion Board for that date**. You are also responsible for reading your peers' book reviews in preparation for class.

Final Project

You have a choice of final projects for this course, which should be geared toward your future research and teaching goals:

- (1) You may write a **6,000–8,000 word historiographic essay**, including Chicago Style footnotes and bibliography, on the intersection of the history of science and environmental history, centered on a particular topic/theme (e.g. the body, the Columbian exchange, environmental justice, indigenous knowledge, the ocean, animals) or theoretical tradition/set of approaches (e.g. feminist, Marxist, ANT, transnational, envirotech). This essay must draw on all relevant course texts, as well as additional secondary research. It should evaluate the current state of the field, identifying major historiographic problems and potential directions for future scholarship. Examples of historiographic essays include the articles by Hersey & Vetter (2019), Nyhart (2016), and Lewis (2014) that we will read during the first 4 weeks of class. I suggest using this project to explore a dimension of historiography relevant to your dissertation/dissertation proposal.
- (2) You may discuss with me the possibility of an **alternative assignment relevant to your home discipline** (though still fundamentally historical), of equivalent length and rigor to the above option. You must meet with me and have this option approved **before** submitting your proposal.

I encourage you to discuss your project with me at an office hour appointment. Be prepared to share work-in-progress with your peers periodically throughout the semester. The following will be submitted on Canvas no later than 3:30pm on the following due dates:

ASAP or by September 10: Project choice and 1-page proposal.

September 24: Annotated bibliography of 7-10 relevant sources identified so far (see "How to Write an Annotated Bibliography" www.trentu.ca/history/node/159).

October 20 (Tuesday): Outline and at least 5 draft pages.

November 12: Complete (not "rough") 1st draft.

December 1 (Tuesday): Revised and polished final project.

Student Support and Policies

Office Hours

I encourage you to meet with me via Zoom or by phone to discuss course material, your progress in this class, or strategies for effective research, reading, and writing. My office hours are by appointment.

Writing Center

The University Writing Center (UWC) provides free programs to support and empower all UT graduate students. UWC consultants provide one-on-one feedback on any project at any stage of your writing process. To schedule an appointment, go to: <http://uwc.utexas.edu/grad> The UWC is located in PCL 2.330.

Accessibility and Accommodations

If you are a student with a disability, or think you may have a disability, and need accommodations please contact Services for Students with Disabilities (SSD). You may refer to SSD's website for contact and more information: <http://diversity.utexas.edu/disability/>. If you are already registered with SSD, please deliver your Accommodation Letter to me as early as possible in the semester so we can discuss your approved accommodations.

COVID-19 Guidance

To understand the resources and emergency assistance funds available to UT students during the pandemic, please see: <https://coronavirus.utexas.edu/students>

To help keep everyone at UT and in our community safe, it is critical that students report COVID-19 symptoms and testing, regardless of test results, to [University Health Services](#) as soon as possible. For guidance on prevention, testing, and what to do if you have been exposed or have symptoms, see: <https://healthyhorns.utexas.edu/coronavirus.html>

Behavior Concerns Advice Line

If you have concerns about the behavior or well-being of another member of the campus community, call [BCAL](#) at 512-232-5050.

Academic Integrity

Using the words and ideas of others without giving credit with an appropriate citation is plagiarism and a violation of the University of Texas Honor Code. Whether accidental or intentional, plagiarism will result in a failure of the assignment and could lead to further disciplinary action. Please feel free to come talk to me about effective note-taking and citation strategies to help you avoid plagiarism.

Course Schedule

This schedule is subject to modification. I will announce any changes via Canvas.

Week 1: August 27 Introductions

Williams, Raymond. "Nature" and "Science." In *Keywords: A Vocabulary of Culture and Society*, 184–89, 232–235. New York: Oxford University Press, 1985.

Hersey, Mark D., and Jeremy Vetter. "Shared Ground: Between Environmental History and the History of Science." *History of Science* 57, no. 4 (2019): 403–40..

Edwards, Paul N. "How to Read a Book." <http://pne.people.si.umich.edu/PDF/howtoread.pdf>

Week 2: September 3 The Death of Nature and its Afterlives

Merchant, Carolyn. *The Death of Nature: Women, Ecology, and the Scientific Revolution*. San Francisco: Harper & Row, 1980.

Park, Katharine. "Women, Gender, and Utopia: The Death of Nature and the Historiography of Early Modern Science." *Isis* 97, no. 3 (2006): 487–95.

Mitman, Gregg. "Where Ecology, Nature, and Politics Meet: Reclaiming the Death of Nature." *Isis* 97, no. 3 (2006): 496–504.

Week 3: September 10 The Nature of the History of Science

Proposal Due

Nyhart, Lynn K. "Historiography of the History of Science." In *A Companion to the History of Science*, edited by Bernard Lightman, 7–22. Hoboken, NJ: John Wiley & Sons, Inc, 2016.

Latour, Bruno. *Science in Action: How to Follow Scientists and Engineers Through Society*. Cambridge, MA: Harvard University Press, 1987. Read the Introduction (pp. 1–17) and Chapters 2–4 (pp. 63–176).

Kohler, Robert E. *Lords of the Fly: Drosophila Genetics and the Experimental Life*. Chicago, IL: University of Chicago Press, 1994. Read the Preface and Chapters 1–3 (pp. xii–90).

Week 4: September 17 Science and Environmental History

Lewis, Michael. "And All Was Light?—Science and Environmental History." In *The Oxford Handbook of Environmental History*, edited by Andrew C. Isenberg, 207–26. 2014.

Worster, Donald. "Grass to Dust: The Great Plains in the 1930s." *Environmental Review* 1, no. 3 (1976): 2–11.

Optional alternative: Worster, Donald. *Dust Bowl: The Southern Plains in the 1930s*. New York: Oxford University Press, 1979.

Cronon, William. "A Place for Stories: Nature, History, and Narrative." *The Journal of American History* 78, no. 4 (1992): 1347–76.

Schubert, Siegfried D., et al. "On the Cause of the 1930s Dust Bowl." *Science* 303, no. 5665 (2004): 1855–59.

Charenko, Melissa. "Reconstructing Climate: Paleoecology and the Limits of Prediction During the 1930s"

Dust Bowl." *Historical Studies in the Natural Sciences* 50, no. 1-2 (2020): 90-128.

Week 5: Climate, Part 1

Please attend, if at all possible, the IHS talk (Zoom webinar) by Dagomar Degroot on Monday September 21, 12:00-1:30 PM.

September 24

Annotated Bibliography Due

Degroot, Dagomar. *The Frigid Golden Age: Climate Change, the Little Ice Age, and the Dutch Republic, 1560-1720*. Cambridge: Cambridge University Press, 2018.

Degroot, Dagomar. "Is There a Better Way To Do Climate History? Testing a Quantitative Approach." *HistoricalClimatology.com*, August 31, 2018.

Degroot, Dagomar. "Some places flourished in the Little Ice Age. There are lessons for us now." *The Washington Post*, February 20, 2018.

Week 6: October 1 Climate, Part 2

Zilberstein, Anya. *A Temperate Empire: Making Climate Change in Early America*. Oxford: Oxford University Press, 2016.

Chakrabarty, Dipesh. "The Climate of History: Four Theses." *Critical Inquiry* 35, no. 2 (2009): 197-222.

Locher, Fabien, and Jean-Baptiste Fressoz. "Modernity's Frail Climate: A Climate History of Environmental Reflexivity." *Critical Inquiry* 38, no. 3 (2012): 579-98.

Week 7: October 8 Climate, Part 3

Coen, Deborah R. *Climate in Motion: Science, Empire, and the Problem of Scale*. Chicago: The University of Chicago Press, 2018.

Coen, Deborah R. "Big is a Thing of the Past: Climate Change and Methodology in the History of Ideas." *Journal of the History of Ideas* 77, no. 2 (2016): 305-21.

Week 8: October 15 Biology and History

Ritvo, Harriet. "Species." In *Critical Terms for Animal Studies*, edited by Lori Gruen, 383-94. Chicago: University of Chicago Press, 2018.

Haraway, Donna. "Teddy Bear Patriarchy: Taxidermy in the Garden of Eden, New York City, 1908-1936." *Social Text* (1984): 20-64.

Russell, Edmund. "Evolutionary History: Prospectus for a New Field." *Environmental History* 8, no. 2 (2003): 204-28.

Choose at least one essay in the AHR Roundtable "History Meets Biology," *The American Historical Review* 119, no. 5 (2014) and read the final commentary essay, Gordin, Michael D. "Comment: Evidence and the Instability of Biology." *The American Historical Review* 119, no. 5 (2014): 1621-29.

Espinosa, Mariola. "The Question of Racial Immunity to Yellow Fever in History and Historiography." *Social*

Science History 38, no. 3-4 (2014): 437–53.

Week 9: Of Plagues and Primary Sources

Outline and 5+ Pages of Final Project Due Tuesday, October 20

October 22

Attend the IHS talk (Zoom webinar) by Nükhet Varlık, 3:30-4:30 PM, during the first hour of our class meeting time.

Read the peer draft you have been assigned to workshop.

Varlık, Nükhet. "New Science and Old Sources: Why the Ottoman Experience of Plague Matters." *The Medieval Globe* 1 (2014): 193–227.

Optional: Varlık, Nükhet. *Plague and Empire in the Early Modern Mediterranean World: The Ottoman Experience, 1347-1600*. New York: Cambridge University Press, 2015.

Week 10: October 29 Field Work

White, Richard. "Are You an Environmentalist or Do You Work for a Living?" In *Uncommon Ground: Rethinking the Human Place in Nature*, edited by William Cronon, 171–85. New York: WW Norton, 1995.

Kohler, Robert E., and Jeremy Vetter. "The Field." In *A Companion to the History of Science*, edited by Bernard Lightman, 282–95. Malden, MA: John Wiley & Sons, 2016.

Schneider, Daniel W. "Local Knowledge, Environmental Politics, and the Founding of Ecology in the United States: Stephen Forbes and 'the Lake as a Microcosm' (1887)." *Isis* 91, no. 4 (2000): 681–705.

Strang, Cameron B. "Deep History, Deep South: Slavery and Geology in the Antebellum Era." In *Frontiers of Science: Imperialism and Natural Knowledge in the Gulf South borderlands, 1500-1850*, 245–86. Chapel Hill: Omohundro Institute of Early American History and Culture and the University of North Carolina Press, 2018.

Uekotter, Frank. "Farming and Not Knowing: Agnotology Meets Environmental History." In *New Natures: Joining Environmental History with Science and Technology Studies*, edited by Dolly Jørgensen, Finn Arne Jørgensen, and Sara B. Pritchard, 37–50. 2013.

Week 11: November 5 Bodily Knowledge

Sellers, Christopher C. *Hazards of the Job: From Industrial Disease to Environmental Health Science*. Chapel Hill: University of North Carolina Press, 1997.

Sellers, Christopher. "To Place or Not to Place: Toward an Environmental History of Modern Medicine." *Bulletin of the History of Medicine* 92, no. 1 (2018): 1–45.

Week 12: November 12 Technopolitics and the Agency of Nature***Final Project Complete 1st Draft Due***

Mitchell, Timothy. "Can the Mosquito Speak?" In *Rule of Experts: Egypt, Techno-Politics, Modernity*, 19–53. University of California Press Berkeley, 2002.

Maher, Neil M. "Bringing the Environment Back in: A Transnational History of Landsat." In *How Knowledge Moves: Writing the Transnational History of Science and Technology*, edited by John Krige, 201–24. University of Chicago Press, 2019.

Mateos, Gisela, and Edna Suarez Diaz. "Technical Assistance in Movement: Nuclear Knowledge Crosses Latin American Borders." In *How Knowledge Moves: Writing the Transnational History of Science and Technology*, edited by John Krige, 345–67. University of Chicago Press, 2019.

Week 13: November 19 Turtles all the Way Down

Hennessy, Elizabeth A. *On the Backs of Tortoises: Conserving Evolution in the Galápagos Islands*. New Haven, CT: Yale University Press, 2019.

Week 14: November 26 No Class Meeting**Week 15: Reflections and Projections*****Final Project Due Tuesday, December 1*****December 3**

Attend the IHS talk (Zoom webinar) by Jared Farmer, 3:30-4:30 PM, during the first hour of our class meeting time.

Read at least 2 of your peers' final projects.

Farmer, Jared. "Technofossils." In *Future Remains: A Cabinet of Curiosities for the Anthropocene*, edited by Gregg Mitman, Marco Armiero, and Robert Emmett, 191–99. Chicago: University of Chicago Press, 2017.

Optional: Mitman, Gregg, Marco Armiero, and Robert S. Emmett, eds. *Future Remains: A Cabinet of Curiosities for the Anthropocene*. Chicago: The University of Chicago Press, 2018.