



**ROYAL INSTITUTE
OF TECHNOLOGY**

AK1204 Environmental History (7,5 hp)

Course-PM VT-23

Content and learning outcomes

Course contents

The course is a general introduction to environmental history. It is divided by three cornerstone years in this history. It has two shorter sections, “1492” (Columbus arrives in the New World) and “1802” (von Humboldt and his entourage climb Chimborazo in Peru). They cover, respectively, ancient periods including the Early Modern global expansion of Europe, and the new biogeophysical understanding of the world that emerged under the industrial and globalizing era. Its larger third section, “1972”, marks the rise of the environment and climate change as major social and political phenomena since the middle of the twentieth century and up until the present. In this last section, the course also covers several themes such as social movements, media, institutions, the sociology of climate opinion, animal studies as well science, infrastructure and technologies that have provided the framework conditions for human ecological footprints. The perspective is global but numerous individual examples are about Sweden. The chronological focus of the course will be on the modern period, in particular the 20th and 21st centuries.

Intended learning outcomes

After the course the student shall:

- have general knowledge about the environment as a limiting and enabling factor in human societies from the oldest times to the present modern society,
- be able to describe and explain how and why the environment, now also including climate change, has become a major political, economic and technological issue in modern societies,
- be familiar with some of the most significant historical events, processes and personalities that have marked the development of environmental history with a focus on the modern period, after c. AD 1500,

- be familiar with the significance of recent concepts in the understanding of the human-Earth relationship such as Extinctions, the Anthropocene, Planetary boundaries, Sustainable Development Goals, Carbon budget and be able to contextualize them as part of the emerging system of Global Environmental Governance.
- have knowledge about some of the most important institutions and instruments of governance and policy, globally and in Sweden,
- have acquired a basic ability to think and reflect historically.

Course disposition

The course consists of 14 sessions, which vary in form, from lectures and discussion seminars to student presentations. The sessions are divided into three parts named; 1492, 1802, 1972. The years should be seen as symbolic years of major historical transformations of the human-earth relationship, implying shifts in the view of nature, with an emphasis on Europe in its wider extent as the modern Western world. The content, goals and readings for each class are given below. Compulsory texts should be read before class. Many sessions also have additional recommended or side readings. They are there as a service for students with special interest, or just curiosity, in a special topic. They may be referred to in class.

Students are expected to follow the classes and do reading and other work between classes. Before, or in some cases after each class students are required to write a short, c. 500 words, piece on the readings. These should be handed in minimum 24 hours before the start of next class, or maximum 24 hours after. These pieces we call text reflections. Their primary purpose is to make sure students read the literature continuously and before each session to get most out of the teacher/student interaction in class.

Attendance of classes need to be minimum 80% of the total. If a student is missing more than two classes, s/he can compensate for the missed class, after agreement with the teaching assistant, by writing a more comprehensive text reflection, typically minimum 1000 words and with more extensive coverage of the text content. (It is of course appreciated if a student submits a text reflection for the first and second missed class as well, but not a requirement.)

Readings and books

Most texts will be available as web-links or pdf-files on the course website on Canvas. On rare occasions, that may not be the case and you will have to search and find the texts on your own.

Books to keep throughout the course will be only two. They will come in handy at different phases of the course, especially in the latter half, when they will be used actively. They can also be read in parallel with other assigned readings. These are books that it might be a good idea to buy and keep during and after the course.

J. Donald Hughes, *What Is Environmental History?* (2005), 2nd ed. (Cambridge: Polity, 2015).

[Read also this short review: <https://blogs.lse.ac.uk/lseviewofbooks/2016/01/22/book-review-what-is-environmental-history-by-j-donald-hughes/>]

Libby Robin, Paul Warde & Sverker Sörlin, *The Environment – a History of the Idea* (Baltimore & London: Johns Hopkins University Press, 2018).

[Multiple reviews of this book are also available online.]

Detailed course plan

Session 1: Course introduction: Practical introduction, attendance and environmental history as field of knowledge

Time: **Monday 20 March 10:00-12:00**

Place: [D42, Lindstedtsvägen](#)

Teacher: Sverker Sörlin

Course introduction. Calling students. Go through the outline of course, mandatory parts and preparations. Present learning objectives and how we will work with them.

Literature:

Richard J. Evans, *In Defence of History* (1997), (New York, 1999), “Introduction”, pp. 1-13 + 1 chapter of your choice. Online: https://kupdf.net/download/richard-evans-in-defense-of-history_59e064df08bbc5de14e65540, pdf.

For those who read Swedish:

Klas Åmark, *Varför historia? En ämnesintroduktion för nya studenter* (Lund: Studentlitteratur, 2018), 99 pages.

Text reflection:

What is good with history? What can be bad?

[Hand in after: deadline Monday morning 27 March at 9 am.. Discuss briefly in session on 27 March.]

Session 2: Documentary film, “Anthropocene: The Human Epoch” (2018)

Time: **Thursday 23 March 13:00-15:00**

Place: No IRL meeting.

Teacher: No teacher present. Self-organized student work.

Assignment:

Watch the documentary film, “Anthropocene: The Human Epoch” (2018), by Jennifer Baichwal, Nicholas de Pencier & Edward Burtynsky. Individually or in groups.

<https://theanthropocene.org/film/>

If you watch in a group, it would be great if you talked about the film. You may also contact each other to chat or talk online.

Literature:

Read online about the Anthropocene concept. There is a vast amount of material.

Heather Anne Swanson (2016) Anthropocene as Political Geology: Current Debates over how to Tell Time, *Science as Culture*, 25:1, 157-163, DOI: [10.1080/09505431.2015.1074465](https://doi.org/10.1080/09505431.2015.1074465)

Warde, P., Robin, L., & Sörlin, S. (2017). Stratigraphy for the Renaissance: Questions of expertise for 'the environment' and 'the Anthropocene.' *The Anthropocene Review*, 4(3), 246–258. <https://doi.org/10.1177/2053019617738803>

Side readings:

Christophe Bonneuil and Jean-Baptiste Fressoz, *The shock of the Anthropocene: The Earth, History and Us* (London: Verso, 2017).

For those who read Swedish:

Sverker Sörlin, *Antropocen: En essä om mänsklighetens tidsålder* (Stockholm: Weyler, 2017, pocket 2018). Read selectively. The opening chapter is a good idea to get a quick grasp. The final chapter discusses the possible future of the concept.

Text reflection: Is the Anthropocene a good idea? [Hand in after.]

Session 3: 1492: Ecological imperialism

Time: **Monday 27 March 10:00-12:00**

Place: [D32, Lindstedtsvägen](#)

Teacher: Sverker Sörlin

Understanding the modern world as a result of 'ecological imperialism'.

Lecture on the theory of ecological imperialism and its reception. This is the core message of the 1492 block.

Literature:

Alfred W. Crosby, *Ecological Imperialism – the Biological Expansion of Europe 900-1900* (Cambridge University Press, 1986). Also available in Swedish translation (SNS förlag 2006). Selection of c. 90 pages: chapters 1, 2, 8, 9.

Recommended reading:

Gustaf Utterström (1955) Climatic fluctuations and population problems in early modern history, *Scandinavian Economic History Review*, 3:1, 3-47.
DOI:10.1080/03585522.1955.10411467

Side reading:

Richard Grove, *Green imperialism: Colonial expansion, tropical island Edens and the origins of environmentalism, 1600–1860* (Cambridge University Press, 1995). Personal selection of pages to read.

Text reflection: Describe in your own words what you perceive as the strengths and weaknesses of the theory of ecological imperialism.
[Hand in before]

Session 4: 1492: The environmental history of pre-modern societies

Time: **Thursday 30 March 13:00-15:00**

Place: [V23, Teknikringen](#)

Teacher: Sverker Sörlin

The environmental history of pre-modern societies.

Literature:

David Graeber & David Wengrow, *The Dawn of Everything: A New History of Humanity* (London: Allen Lane, 2021). Selection c. 80 pages. TBD.

Also available in Swedish translation: *Början på allt: en ny historia om mänskligheten* (Stockholm: Volante, 2022). Selection c. 80 pages. TBD.

Online: web pages on the reception of *The Dawn of Everything*. Reviews, comments, etc.

Side reading:

Joseph Tainter, *The Collapse of Complex Societies* (Cambridge UP, 1988).

Text reflection: What is the main message of *The Dawn of Everything*? Hand in before class. Readings cover individual and different parts of the book so topics of text reflection will differ. Prepare brief oral presentation of reading.

Session 5: 1492: Health, water and older conceptions of ‘environment’ in history

Time: **Monday 3 April 10:00-12:00**

Place: [E31, Lindstedtsvägen](#)

Teacher: Sverker Sörlin

Lecture on health, water and older conceptions of ‘environment’ in history.

Literature:

On Airs, Waters, and Places by Hippocrates. Translated by Francis Adams. Provided by The Internet Classics Archive.

Available online at: <http://classics.mit.edu/Hippocrates/airwatpl.html> and as text version: <http://classics.mit.edu/Hippocrates/airwatpl.mb.txt>

Libby Robin, S. Sörlin, Paul Warde, “Geographies: Are Human and Natural Futures Determined or Chosen?”, in *The Future of Nature* (2013), 117-120.

In the same volume: Ellsworth Huntington, *The Pulse of Asia* (1907), excerpt. Commentary by Carole Crumley, in *The Future of Nature* (2013), 121-133.

In the same volume: Griffith Taylor, “Nature versus the Australian” (1920). Commentary by Carolyn Strange, in *The Future of Nature* (2013), 134-144.

Available in Canvas.

Text reflection: What were ideas of ‘environment’ in the past? Hand in 24h before class.
[Hand in before]

Session 6: 1802: Humboldt and Buffon (seminar)

Time: **Monday 5 April 13:00-15:00**

Place: [E52, Osquars backe](#)

Teacher: Erik Isberg

This session is a seminar activity on the 1802 moment and the emerging biogeophysical image of the world, focusing on Humboldt and Buffon.

Literature (available on Canvas):

Obligatory reading:

Alexander von Humboldt, *Essay on the Geography of Plants* (original 1806), excerpt.
On Canvas.

Andrea Wulf, Excerpt from *The Invention of Nature: Alexander von Humboldt's New World* (New York: Vintage, 2015).
On Canvas.

Optional reading:

Patrick Anthony - Mining as the Working World of Alexander von Humboldt's Plant Geography and Vertical Cartography - Isis 2018

THE EPOCHS OF NATURE: Georges-Louis Leclerc, le Comte de Buffon, translated, edited and compiled by Jan Zalasiewicz, Anne-Sophie Milon and Mateusz Zalasiewicz; with an introduction by J. Zalasiewicz, S. Sörlin, J. Grinevald & L. Robin (Chicago, IL & London: The University of Chicago Press, 2018), xxxiv+288 pp.

Also for those who read Swedish and are interested:

Sverker Sörlin, ”Miljö –en global, globaliserande, globaliserad historia”, i *Natur & Kulturs globalhistoria 1 & 2*, ed. Klas-Göran Karlsson (Stockholm, 2022), 221-271.

Text reflection: Why are von Humboldt and Buffon important characters in environmental history? Hand in 24h before class.

Session 7: 1802: From Conservation to Sustainability

Time: **Monday 17 April 10:00-12:00**

Place: [D34, Lindstedtsvägen](#)

Teacher: Sverker Sörlin

The lecture will look at how environmental concerns became increasingly important in industrial and agrarian societies in the 18th and 19th centuries and how they were addressed with strategies of ‘conservation’, ‘reserves’, or so called ‘sustainable use’ and through population and resource politics.

Literature:

Required reading:

Hans Carl von Carlowitz, *Sylvicultura oeconomica* (1709), excerpt, with a commentary by Paul Warde. In *The Future of Nature* (2013), pp. 67-77.
Available on Canvas.

Thomas Malthus, “An Essay of the Principle of Population” (1798), with a commentary by B.-O. Linnér. In *The Future of Nature* (2013), pp. 19-30.
Available on Canvas.

Libby Robin, Paul Warde & Sverker Sörlin, *The Environment – a History of the Idea* (Baltimore & London: Johns Hopkins University Press, 2018), chapter 6, pp. 122-150.

Text reflection: “Why has ‘sustainability’ been an attractive idea for such a long time?”
[Hand in before/after]

Session 8: Pre 1972: The concept of ‘the Environment’

Time: **Thursday 20 April 13:00-15:00**

Place: [E36, Lindstedtsvägen](#)

Teacher: Sverker Sörlin

The lecture will present the early development of ‘the environment’ as a concept and a policy idea from c. the 1940s through to the late 20th century, including the United Nations Stockholm conference in 1972.

Literature:

Required reading: Libby Robin, Paul Warde & Sverker Sörlin, *The Environment – a History of the Idea* (Baltimore & London: Johns Hopkins University Press, 2018), chapters 1 and 2, pp. 1-46.

William Vogt, *Road to Survival* (1948), excerpt. The
In *The Future of Nature* (2013), pp. 187-194.
Available on Canvas.

Rachel Carson, *Silent Spring* (1962), excerpt. With a commentary by Christof Mauch. In *The Future of Nature* (2013), pp. 195-203.
Available on Canvas.

Side reading: Robin, Warde & Sörlin, *The Environment – a History of the Idea* (2018), chapters 3 and 4, pp. 47-94.

Sörlin, S., “The environment as seen through the life of a journal: *Ambio* 1972-2022,” *Ambio: A Journal of Environment and Society* 50(2021):1, pp. 10-30.

Open Access: <https://link.springer.com/article/10.1007/s13280-020-01421-w>

Text reflection: “Why did ‘the environment’ become so successful as a concept in science and policy?” Hand in 24h before session.

Session 9: 1972: Climate science/Earth System Science

Time: **Monday 24 April 10:00-12:00**

Place: [B25, Brinellvägen](#)

Teacher: Sverker Sörlin

The lecture will describe developments in climate science and so called Earth System Science, and how these fields of knowledge have informed contemporary environmental thought and policy, especially after 2000, through concepts such as Planetary Boundaries and the Anthropocene.

Literature:

Libby Robin, Paul Warde & Sverker Sörlin, *The Environment – a History of the Idea* (Baltimore & London: Johns Hopkins University Press, 2018), chapter 5, pp. 96-121.

Will Steffen, Katherine Richardson, Johan Rockström, Sarah E. Cornell, Ingo Fetzer, E. M. Bennett, Reinette Biggs, Stephen R. Carpenter, Wim de Vries, Cynthia A. de Wit, Carl Folke, Dieter Gerten, Jens Heinke, Georgina M. Mace, Veerabhadran Ramanathan, Belinda Reyers, Sverker Sörlin 2015. “Planetary boundaries: Guiding human development on a changing planet”, *Science* 347(2015): 6223, pp. 736-746.

Available at: <https://www.science.org/doi/10.1126/science.1259855>

Steffen, W., Richardson, K., Rockström, J. *et al.* “The emergence and evolution of Earth System Science”. *Nature Reviews Earth & Environment* 1, 54–63 (2020).

<https://doi.org/10.1038/s43017-019-0005-6>

Text reflection: “Why is Earth System Science important for environment and climate change, which are, after all, societal issues?” Hand in 24h before session.

Session 10: 1972: The Environmental Turn in Postwar Sweden

Time: **Thursday 27 April 13:00-15:00**

Place: Zoom

Teacher: David Larsson Heidenblad

Guest lecture: On the emergence of modern environmentalism with a particular focus on the big social breakthrough in the late 1960s and early 1970s.

Literature:

David Larsson Heidenblad, *The Environmental Turn in Postwar Sweden: A New History of Knowledge* (Manchester University Press, 2021). Everyone reads chapter 1 and 8 (introduction and conclusion, c. 40 pages), and choose an additional chapter (c. 20-25 pages).

Open access: <https://www.lunduniversitypress.lu.se/books/9650284/>

For those who read Swedish:

David Larsson Heidenblad, *Den gröna vändningen: En ny kunskapshistoria om miljöfrågornas genombrott under efterkrigstiden* (Lund: Nordic Academic Press, 2021).

Open access: <https://kriterium.se/site/books/m/10.21525/kriterium.28/>

Text reflection: What was new with the ‘environmental turn’? Hand in 24h before session.

Session 11: 1972: On Institutions and Agency

Time: **Thursday 4 May 13:00-15:00**

Place: [B23, Brinellvägen](#)

Teacher: Gloria Samosir

Preliminary description (TBD): The lecture will point to the role of institutions in the formation of global environmental governance, both new institutions such as UNEP and IPCC, and the responses to environmental challenges and governance needs in existing organizations such as OECD, the EC/EU and the World Bank.

Literature:

TBD

Text reflection TBD. Hand in 24h before session.

Session 12: 1972: Animal History

Time: **Monday 8 May 10:00-12:00**

Place: [E51, Osquars backe](#)

Teacher: Karin Dirke

Preparing for the lecture/seminar about Human-animal studies

The lecture is about considering non-human animals in history and concerns historical, ethical as well as philosophical issues. The first part is a lecture which will introduce aspects of how animals came to matter in history, philosophy and policy. The lecture will be followed by a group discussion departing from the reading and the short video clips in which human-animal studies scholars define key concepts within the field.

Reading:

Garry Marvin & Susan McHugh: "In it together. An introduction to Human-Animal Studies" in *Routledge Handbook of Human-Animal Studies* (2014), 14-21.

Available on Canvas.

Tom Tyler, "If horses had hands..." in Tom Tyler & Manuela Rossini: *Animal Encounters* (2009), 13-26.

Available on Canvas.

Viewing:

Watch the following short video clips from the series "Defining Human-Animal Studies". Prepare a question or comment you would like to raise concerning at least two of the defined words.

Antropocentrism: <https://www.animalsandsociety.org/resources/resources-for-scholars/defining-human-animal-studies-an-asi-video-project/defining-anthropocentrism-with-helen-kopnina/>

The Animal Turn: <https://www.animalsandsociety.org/resources/resources-for-scholars/defining-human-animal-studies-an-asi-video-project/defining-the-animal-turn-with-harriet-ritvo/>

Animal Geography: <https://www.animalsandsociety.org/resources/resources-for-scholars/defining-human-animal-studies-an-asi-video-project/defining-animal-geography-with-julie-urbanik/>

Biosemiotics: <https://www.animalsandsociety.org/resources/resources-for-scholars/defining-human-animal-studies-an-asi-video-project/defining-biosemiotics-with-alison-sealey/>

Animal agency: <https://www.animalsandsociety.org/resources/resources-for-scholars/defining-human-animal-studies-an-asi-video-project/defining-animal-agency-with-sarah-mcfarland/>

Text reflection: "What is the animal turn and how has it informed environmental history?"
Hand in 24h before session.

Session 13: 1972: Climate denialism

Time: **Thursday 11 May 13:00-15:00**

Place: Zoom

Teacher: Martin Hultman

This session deals with climate denialism.

Literature:

Required reading:

Stoddard et al, "Three Decades of Climate Mitigation: Why Haven't We Bent the Global Emissions Curve?" (2021).

Hultman & Nordlund, "Energizing Technology" (2013).

Anshelm & Hultman, "A Green Fatwa" (2014).

Side reading:

Kall & Hultman, “Women for peace and small scale renewables. Anti-nuclear mobilization in 1970s Sweden” (2018).

Hultman & Ekberg, “A Question of Utter Importance: The Early History of Climate Change and Energy Policy in Sweden, 1974–1983” (2021).

All readings available on Canvas.

Text reflection: “Why are climate denialists so often old, white men?” Hand in 24h before session.

Session 14: 1972: Stockholm as an environmental hub, walking seminar to visit field locations

Time: **Monday 15 May 09:00-12:00 [Please, note the time!]**

Place: Walking tour. Meeting point TBD.

Teachers: Eric Paglia and Sverker Sörlin

We will walk around the Frescati area north of the KTH campus and visit/see institutions that have contributed in various ways to the environmental history of Sweden.

Meeting point: TBD.

Literature:

Brief manuscript excerpts from a forthcoming book, Sörlin & Paglia, *The Human Environment: Stockholm and the Rise of Global Environmental Governance* (Cambridge University Press). 30 pp. Available here soon.

Text reflection: “What are the main arguments to propose that Stockholm has played an outsize role in the shaping of environmental governance on the international level?” Hand in 24h before session.

Session 15: Student presentations

Time: **Tuesday 23 May 10:00-12:00**

Place: [D34, Lindstedtsvägen](#)

Teacher: Sverker Sörlin

This session will be devoted to the student essays. We will make sure a range of essays can inform the session. The precise format for the discussion is still under development. TBD.

Literature: TBD

No text reflection.

Literature and preparations

Specific prerequisites

Completed upper secondary education including documented English corresponding to English A/ English 6.

Literature

The course literature is that indicated in the detailed schedule above. The literature is available via Canvas/KTHB.

Support for students with disabilities

Notify the course responsible and contact KTH's unit for support for students with disabilities. Contact: funka@kth.se.

Examination and completion

Grading scale

A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

The grades will be based on these criteria: final essay (submission on time, richness of material, quality of argument, clarity of presentation, standard of writing) 50%, presence and activity in class including presentations 25%, delivery and quality of written text reflections 25%.

Essay. The major individual product of the course is an essay, which means less formal than a research article and with no demand of originality. It should be written toward the end of the course. The purpose of the essay is to give an opportunity for the student to choose and develop a topic from the course as whole and thus mobilize knowledge from both readings and classes. The essay is in English, in a non-fiction format and the author should use references (in parentheses or in footnotes). The desired length is 2 000 words of running text (not counting references/footnotes) with an accepted range of maximum 500 words upward or downward. All references are collected into a bibliography at the end; this too is not part of the word count. The essay should be carefully crafted with respect for scientific method, sound argument, and accuracy and in an accessible and readable style. (You may think about an assumed reader as a last grade high school student.) Plagiarism is strictly forbidden. If you wish to cite, use quotation marks, and limit quotes to the most essential words.

The essay due date is 17 May at 5 pm.

Reporting of results

Results on the course are reported no later than three weeks after the final submission date for the essay.

Further information

Changes for this course cycle

Previous years have seen a lot of online teaching. In VT23, the course will be given on site at KTH Campus and course responsible will be Sverker Sörlin. This has meant a major revision of the entire course.

Contacts

Course communication

Course responsible

Sverker Sörlin, KTH, Division of History of Science, Technology and Environment.

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Course assistant

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Additional teachers

Erik Isberg, KTH

David Larsson Heidenblad, Lund University

Gloria Samosir, KTH

Karin Dirke, Stockholm University

Martin Hultman, Chalmers University of Technology

Eric Paglia, KTH

Examiner

Per Högselius, perho@kth.se

Additional contacts

Help with registration and such: kursexp@abe.kth.se