What is nature?

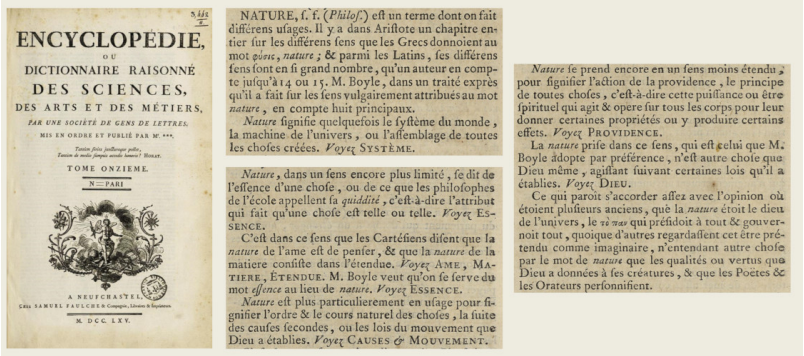
Auteur :
DUCARME Frédéric, Chercheur en philosophie de l'écologie, Centre d'Écologie et des Sciences de la Conservation, Muséum National d'Histoire Naturelle, Paris.

05-01-2025



Nature is a common notion, which everyone is familiar with as long as we are not asked to define it. This is normal: there is no consensus definition of it, and the term is rejected by most academic disciplines in both the sciences and the humanities. Yet it stays, and even better: it is eminently political - and even more so at a time when the idea of "protecting nature" is pressing. In this article, we attempt to unravel its mysteries, tracing its origin, its evolution and the succession of issues in which it has found itself in a central position. The aim is to identify the different realities it embraces, and the particular ways in which we relate to them in the era of global crises.

1. How do we define "nature"?



ENCYCLOPÉDIE,
OU
DICTIONNAIRE RAISONNÉ
DES SCIENCES,
DES ARTS ET DES MÉTIERS,
PAR UNE SOCIÉTÉ DE GENS DE LETTRES.
MIS EN ORDRE ET PUBLIÉ PAR M. ***.
TOME ONZIEME.
N—PARI
A NEUFCHASTEL,
M. DCC. LXV.

NATURE, f. f. (*Philoſ.*) eſt un terme dont on fait différens uſages. Il y a dans Ariſtote un chapitre entier ſur les différens ſens que les Grecs donnoient au mot φύσις, *nature* ; & parmi les Latins, ſes différens ſens ſont en ſi grand nombre, qu'un auteur en compte juſqu'à 14 ou 15. M. Boyle, dans un traité exprès qu'il a fait ſur les ſens vulgairement attribués au mot *nature*, en compte huit principaux.

Nature ſignifie quelquefois le ſyſtême du monde, la machine de l'univers, ou l'aſſemblage de toutes les choſes créées. *Voyez* SYSTÊME.

Nature, dans un ſens encore plus limité, ſe dit de l'eſſence d'une choſe, ou de ce que les philoſophes de l'école appellent ſa *quiddité*, c'eſt-à-dire l'attribut qui fait qu'une choſe eſt telle ou telle. *Voyez* ESSENCE.

C'eſt dans ce ſens que les Cartéſiens diſent que la *nature* de l'ame eſt de penſer, & que la *nature* de la matiere conſiſte dans l'étendue. *Voyez* AME, MATIERE, ÉTENDUE. M. Boyle veut qu'on ſe ſerve du mot *eſſence* au lieu de *nature*. *Voyez* ESSENCE.

Nature eſt plus particulierement en uſage pour ſignifier l'ordre & le cours naturel des choſes, la ſuite des cauſes ſecondes, ou les lois du mouvement que Dieu a établies. *Voyez* CAUSES & MOUVEMENT.

Nature ſe prend encore en un ſens moins étendu, pour ſignifier l'action de la providence, le principe de toutes choſes, c'eſt-à-dire cette puiſſance ou être ſpirituel qui agit & opere ſur tous les corps pour leur donner certaines propriétés ou y produire certains effets. *Voyez* PROVIDENCE.

La *nature* priſe dans ce ſens, qui eſt celui que M. Boyle adopte par préférence, n'eſt autre choſe que Dieu même, agiſſant ſuivant certaines lois qu'il a établies. *Voyez* DIEU.

Ce qui paroît s'accorder aſſez avec l'opinion où étoient pluſieurs anciens, que la *nature* étoit le dieu de l'univers, le τὸ πᾶν qui préſidoit à tout & gouvernoit tout, quoique d'autres regardaſſent cet être prétendu comme imaginaire, n'entendant autre choſe par le mot de *nature* que les qualités ou vertus que Dieu a données à ſes créatures, & que les Poëtes & les Orateurs perſonnifient.

Figure 1: Cover of Volume XI of the Encyclopedia of Diderot and d'Alembert (N - PARI), with some definitions of the term nature, This part was written by Louis de Jaucourt. [Source: Digitized copy of the Mazarine Library © Licence CC BY-NC-ND 3.0 FR / URL: http://enccre.academie-sciences.fr/encyclopedie/m/vueVol/11]

Few encyclopaedias have a "**nature**" article. The one written by Diderot and d'Alembert, in 1751, was already wary of "this rather vague term, often used, but seldom defined, which philosophers tend to use too much", and Buffon, who was in charge of writing it, quickly abandoned the project. He was urgently replaced by d'Alembert and de Jaucourt, who only provided a timid catalogue of "*its various meanings [which] are so numerous that one author can count as many as 14 or 15"* , an article consisting essentially of cross-references to terms deemed more satisfactory, albeit **heterogeneous**, such as "System of the world", "Cause", "Essence", "Providence" and even "God" (Figure 1).

Even today, **specialized encyclopaedias** still seem to carefully avoid the concept of "nature": this is for example the notable case of the *Oxford Dictionary of Science* (2005), but also of the *Encyclopedia of environmental ethics and philosophy* (2008). The *Encyclopaedic Dictionary of Ecology and Environmental Sciences* gives it three lines that do not say much, and the *Dictionary of Ecological Thought* (2015), for its part, takes the precaution of specifying its articles ("nature in philosophy", "ordinary nature"), thus carefully circumventing the idea of nature itself - although this does not prevent its use in many articles. The same observation can be made on **philosophers**: nature does not stand among the "major notions of philosophy" in the main university textbooks, has never been on the *syllabus* of any French examination or competition, and one of the few textbooks to deal with it, André Lalande's *Vocabulaire technique et critique de la philosophie* (regularly updated since 1902) imitates d'Alembert by recommending rigorous thinkers to **avoid the use of this word, which can mean everything and its opposite**. Moreover, the term is openly circumvented by many scientists, who prefer better defined and above all measurable hyponyms - because in the modern age there is no science without quantification - such as "biosphere", "biodiversity", "biocenosis", "ecosystems" and other "physicalities" among anthropologists.



Figure 2. Portraits: left, Jean-Jacques Rousseau (1712-1778), right, David Hume (1711-1776). [Source : Jean-Jacques Rousseau, Pastel by Maurice Quentin de La Tour (1753) / David Hume, Allan Ramsay, Public domain, Creative Commons]

Thus, "nature" remained essentially a **"casual" term** in European languages, and has almost never been the subject of advanced academic theorization, except for the expression "human nature", which had its moment of glory in the 18th century under the impetus of David Hume or Jean-Jacques Rousseau [1] (Figure 2).

Yet the **ecological crisis** has brought the idea of nature back to the forefront, and the word is now everywhere: this fact shows

that it may not mean "nothing", and that it is not really substitutable either. At a time when nature is said to be "in crisis", when everyone would like to "protect" or even "act" on it, it is more imperative than ever to have a **clear idea of this concept and its ramifications**, which is what this article proposes to do [2].

2. Story of a mysterious word

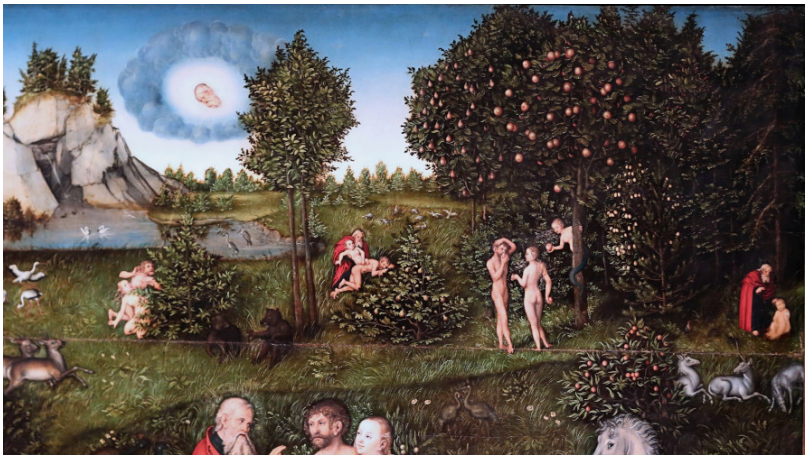


Figure 3. Paradise. Painting by Cranach the Elder, 1530. [Source: Photo Jean-Louis Mazières © / CC BY-NC-SA 2.0]

Etymology is often an excellent way to shed light on the depth of a term; however, the term "nature" largely escapes this approach. The word is formed from the Latin verb *nascor*, which means "to get born", here in a verbal form called supine, a form that can be used to construct the future participle (which does not seem to be the case here, at least no usage in this sense is known) or, like the other Latin words in -ure (culture, temperature) designates a way of being. Etymologically, it would therefore be the way in which one gets born, a kind of primordial character - which then excludes any absolute usage (effectively absent throughout the pre-classical period). In the Classical period, when young Romans from good families went to Greece to complete their intellectual education, this word was chosen to translate the Greek *phusis*, and became its standard translation. *Phusis* is one of the most complex concepts of Greek philosophy, both omnipresent (almost all the great works of the pre-Socratic philosophers are titled *Peri phuseos*, this concept appearing as the object of any scientific or philosophical enterprise), but with a meaning and usage that varies enormously from one author to another, or more precisely from one philosophical school to another. At the end of the apogee of Greece, Aristotle attempts a catalogue of these meanings, and lists **four main** ones [3]:

generation of that which grows;

the first immanent element from which growth proceeds;

principle of the first movement for every natural being;

and the primeval background from which any artificial object is made or comes from.

These four definitions could be roughly summarized as: growth, principle, power and substance. So here we are in the realm of **physics** - a term that is occasionally coined - and still far from biology and the environment. Greco-Roman nature does not yet designate a set of objects, but rather the dynamics that animate matter, whether living or not (the term is not often used in the Philosopher's biology books).

It is in fact the **Christianisation** of Europe that will change the meaning of the word *natura*. Indeed, in the Christian cosmology (Figure 3), all dynamics can only come from God: it is him alone who creates the world and animates it, he is beyond nature and nothing is beyond him - whereas among the Greeks, the gods were subject to nature, they were still, in their own way, animals, animated by impulses, passions and needs. In the Abrahamic monotheisms, the whole of reality is now only a *creation*, a set of passive objects conceived and arranged by the demiurge, and from which only Mankind emerges, which is at once part of this creation but is **called to transcend it**. This hierarchy is an extremely original idea, which does not seem to be present in any other great civilizational basin: Mankind is then no longer completely a part of nature, and all the value of their existence lies in fact beyond nature, in the Kingdom of God. There is therefore no longer *natura naturans*, the creative principle which is a simple synonym of God, and *natura naturata*, which is his creation - knowing that the good Christian must despise earthly things [4], since it is through asceticism that one rises to God. The very word nature will thus become scarcely used in the Middle Ages, essentially returning to its etymological use.



Figure 4. Nature adorning the three graces (upper part). Table by Rubens and Bruegel the Elder. The statue in the centre represents the "Mother Earth", the mother figure of Isis traditionally depicted with many breasts on her chest. [Source: Peter Paul Rubens, Public domain, via Wikimedia Commons]

It was not until the **Renaissance** that nature made a comeback in the European intellectual landscape, following the rediscovery of ancient texts, but without any real theorization of its meaning: nature is then seen either as the whole of creation (including Man or not), the set of physical forces that regulate the world ("natural laws"), or even a kind of abstract power of reality, sometimes allegorized in "Nature" with capital letters, a sort of earthly emissary of the divine will, even a feminine and benevolent counterpart of the Almighty Father (nature was already allegorized at the end of antiquity under the maternal figure of Isis, who was later secularized in the idea of "Mother Nature" [5]) (Figure 4). The fact that Plato, the meta-physician par excellence, **does not seem to have been interested in this concept**, which was too material, whereas philosophers gradually erected him during the classical age as the chief arbiter of what is or is not a philosophical concept, probably contributed later on to its scorn by most of the European academic tradition, and this until today.

3. Diversity of uses of the word

Despite this dislike of the academic world, "nature" remains the **419th most used word** in the French language out of the 60,000 words listed in the usual dictionaries. It has undergone a number of one-off fashion effects, both during the Romantic period and with the cultural revolution of the 1960s and 1970s, in particular because of its fundamentally subversive nature, since the opposition between "nature" and "culture" makes it the perfect recourse when it comes to challenging the established order ("return to nature") - even though "established order" is also precisely one of the meanings of "nature" [6]...

A study published in 2020 [7] attempted to review the meanings and uses of the word "nature", based on a review of dictionaries, some of which have as many as 20 different and often contradictory definitions. All these ramifications seem to be summarized in **four main ideas**:

The totality of **material reality** that does **not result from human will** (as opposed to artifice, intention and culture);

The **whole universe** as a place, source and result of material phenomena, including man or at least his body (as opposed to the supernatural, the metaphysical or the unreal);

The **force at the principle of life and change** (opposing inertia, fixity and entropy [8]);

The **essence**, the set of specific physical properties and qualities of an object, living or inert (opposing denaturation).

These four definitions appear extremely heterogeneous in many aspects: some include humans while others explicitly exclude them, and some refer to objects and others to abstract phenomena or characters. They can therefore form the basis for radically

different or even contradictory "**conservations of nature**" , and even, for some, make such an idea absurd: we have grouped these definitions and what they could represent in terms of conservation in Table 1.

Definition	Opposed concept	Particularities	Object of protection
The whole of material reality, considered as independent of human activity and history	Culture, artifice, rational intention	Static, Excludes Mankind	Pristine nature, wilderness
The whole universe, as it is the place, the source and the result of material phenomena (including man or at least man's body)	Supernatural, metaphysical, unreal	Static, Includes Mankind	Nothing (or everything)
The specific force at the core of life and change	Inertia, fixedness, entropy	Dynamic, Includes Mankind	Natural functions and processes, biodiversity, biogeochemical cycles
The essence, inner quality and character, the whole of specific physical properties of an object, live or inert	Transmutation, denaturation	Static, Includes Mankind	Archetypal state of a system or object

Table 1. The four main definitions of "nature", their characteristics and what they may represent from a conservation perspective

4. What to protect?

As we have seen, nature is multiple: it follows that its protection is also crossed by **several currents**, which have added up rather than succeeded each other over time, at the rate of the emergence of new issues.

4.1. Protecting nature as a set of resources



Figure 5. Pinchot National Forest (Washington, USA) and portrait of Gifford Pinchot [Source: Left, free image, needpix.com / Right, photo Pirie MacDonald, Public domain, via Wikimedia Commons]

Historically, human societies first protected natural "**resources**" (wood, game, "useful" animals and plants...) [9], "nature" itself being too abstract and too massive to be the object of direct human action. As early as the Mesolithic period, sedentary human groups began to save part of their resources to ensure their reproduction and permanence. This management was later entrusted to specialized corporations, such as in France the Administration of Water and Forests, created by Philippe le Bel in 1291, before being modernized by Colbert in 1669. In the US, it was Gifford Pinchot (trained at the Ecole de Nancy) who was the great protector of natural resources at the end of the 19th century, faced with the increasingly ferocious appetite of loggers (Figure 5).

4.2. Protecting nature as a living environment



Figure 6. Park of the Palace of Versailles, illustrating the concept of locus amoenus. [Photo © Frédéric Ducarme]

With sedentarisation, came along ideas of **health** and **safety**. Indeed, human settlements attracted a whole host of commensal or parasitic species, not always desirable, both animal and plant, and even bacterial. The organization of the **living environment** has therefore rapidly become a necessity for all human societies, notably through the extirpation of a certain number of animals declared undesirable, often by means of exogenous domestic predators (dogs, cats, mustelids, viverrids, chickens, etc.), and then by using pesticides. This development came along with the anthropisation of the landscape, firstly through morphological (canals, terraces, flattening) and vegetal (fruit trees, ornamental trees, hedges) development. This new, comfortable living environment soon came as a standard of *what nature should be*, but a nature here **cultivated and tamed**, and radically opposed to wild nature, considered hostile and dangerous. This nature is thus resolutely a socio-ecosystem, a nature thought an environment for human activities to take place in, and goes largely against other conceptions of nature. It is this ideal that Latin pastoralists called *locus amoenus*, a kind of natural garden (Figure 6). This ideal is indeed also found in the history of gardening, landscaping and urban planning, particularly in the 19th century with the fashion for urban parks (Hyde Park was founded in 1820, Bois de Boulogne in 1852, Central Park in 1869). As this is an ideal, we can link it to the 4th definition of nature, that of a **normative archetypal state**.



Figure 7. The first pollution of great importance emerged with the industrial revolution. [Source: Eugen Bracht, Public domain, via Wikimedia Commons]

The protection of this nice and aesthetic natural environment is known under the particular name of **environmentalism**, a term that contains its anthropocentric dimension very well, and which should be distinguished from ecologism. In fact, it is above all a question of protecting humans, first against wild nature and then rapidly against human nuisances themselves: it is in this respect that various regulations of these nuisances appeared, whether it be the creation of sewers and latrines in ancient times, then more important measures with the Industrial Revolution (Figure 7): in France, for example, the Imperial Decree of 15 October 1810 relating to "*Manufactures and Workshops which spread an unhealthy or inconvenient odour*", and in England the creation in 1815 of the *Commons Open Spaces & Footpaths preservation society*. Most of the first environmental laws fall within this framework, and protect a very specific "nature", which is **domesticated nature** seen as Mankind's support - and is not necessarily less legitimate for all that.

4.3. Protecting nature as a set of monuments and landscapes



Figure 8. Devonian placoderm fossil (MNHN). [Photo © Frédéric Ducarme]

The idea of nature underwent a revolution in the 18th century: Westerners then finished **mapping the entire planet**, which suddenly seemed surprisingly small. At the same time, explorers gave an idea of the spatial distribution of the different species,

making it possible to understand that some of them had indeed irretrievably disappeared, whereas until then one could always imagine residual populations (even for fossil species, Figure 8). One thus becomes aware that God does not seem to "re-create" his creations if Men destroy them, and the relationship with nature then changes abruptly with the first romantic generation: nature then passes from the mysterious mother of infinite abundance to the **fragile battlefield of the human history**.



Figure 9. Rainbow over a geyser in Yellowstone National Park, Wyoming, USA. [Source: copyright free image, pikrepo.com]

It was thus in the 19th century and under the effect of the industrial revolution that the idea of "**protecting nature**" gradually germinated in the West - and this time it was mainly artists, intellectuals and writers who contributed to this movement, such as Charles Beauquier in France or John Muir in the United States. The fourth definition will essentially be used again: protection concerns the archetypal state of a site, which we will try to preserve as it is and make it a monument, under various administrative designations (national park, natural monument, classified site, etc.). It is therefore mainly spectacular **landscapes** and biological or geological **features** that are protected at that time, from the Yellowstone geysers (Figure 9) to the colonial hunting reserves, along with the Fontainebleau forest, which obtained protection in 1861 thanks to the naturalist painters of the Barbizon school, coined as an "artistic series", since it was the last place around Paris where one could still admire very old trees. This "nature" is therefore essentially a landscape setting that will be protected, but this time not for direct use as a living environment, but for a rarer aesthetic and intellectual use. There is also the idea that these places must be protected from the defilement of civilization, joining for the occasion the first definition, which will be taken to extremes in America, where **wilderness** will be seen as an image of paradise precisely because it has remained as God created it, and not corrupted by the activity of men [10]. At the same time, the birth of nationalist currents will anchor this protection of the natural heritage in a particularly marked approach to identity [11]. The protection of emblematic species followed at the end of the 19th century in a very similar fashion.

4.4. Protecting nature as a set of ecosystems

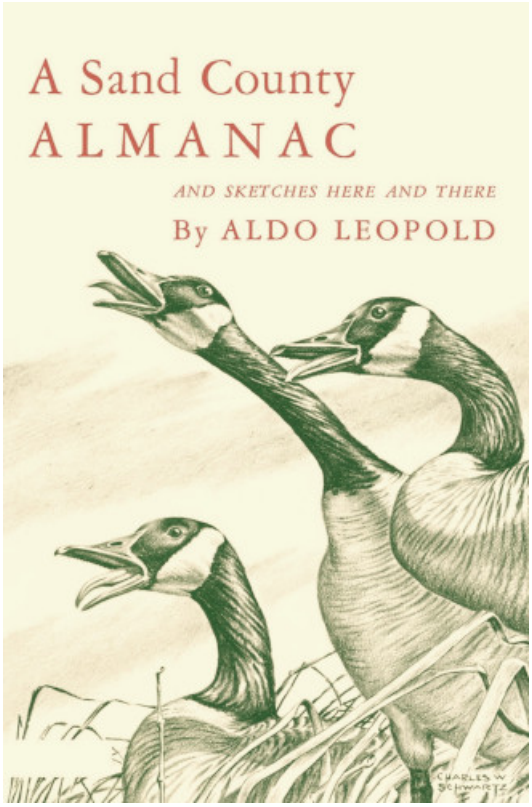


Figure 10. Cover of the first edition of Aldo Leopold's "Almanac of a County of Sands"

It was not until the emergence of the **ecosystem** concept in 1935 that the vision of "nature" as a scientific object was renewed, first as a scientific object and then as an object of conservation. While the conservationist tradition was resolutely fixist and attached itself to inert or little changing objects (or at least treated as such), a more dynamic vision of nature was to develop under the impetus of Darwin, and restore the prestige of the third definition we have given. One of the guardian figures of this transition is the famous American forester Aldo Leopold, author of a posthumous work *(A Sand County Almanac*, 1949) considered as the "bible" of American ecology (Figure 10). Although Leopold was still unfamiliar with the term ecosystem, he nonetheless called for the active conservation of "biotic communities", later (1992) renamed "**biodiversity**". Leopold contributed to the creation of undeveloped forest reserves, protected not for aesthetic or touristic reasons but clearly for their biological and ecological importance, in contrast to the national parks, which until then had been almost all located in arid or mountainous areas.

This new protection of nature seen as a set of ecosystems is therefore based this time on essentially **scientific** criteria, such as biodiversity, endemism and ecological functionalities - leading to the christening of "ordinary nature" in conservation, since the major functions rely for a large part on the most abundant species [12]. Abstract notions of biological functions, material flows of matter (water, carbon, nitrogen) and energy will also come into play, and their importance for human societies will be embodied in 2005 by the concept of "**ecosystem services**", popularized by the *Millennium Ecosystems Assessment* report commissioned by the UN in 2000. Nature is thus no longer inert and passive, and is becoming a platform for exchanges between biotic communities, of which humanity is one actor among others, powerful but also fragile and dependent.

4.5. Protecting nature as a set of conditions favourable to life as we know it



Figure 11. Mount Toby Farm (Sunderland, MA, USA) works closely with the USDA (Department of Agriculture) and NRCS (Natural Resources and Conservation) to preserve the environment. This kind of model is still exceptional in America, unlike Europe. [Public domain]

The scale changed radically at the end of the twentieth century: it was no longer a question of protecting objects, but rather phenomena, on an ever-increasing scale, and finally on a **global** scale. The very idea of reserve finds its limits here, since these flows and phenomena overflow them largely, and it is therefore the whole **organization of human societies that needs to be reviewed**, because this protection can no longer be satisfied with a handful of desert or mountainous areas that are sanctuarized because they were unproductive anyway. The climate, the circulation of water and the balance of biodiversity depend less on Yellowstone Park or the Monument Valley than on the use of the fertile soils of the great river plains where all human activities are concentrated, and the artificial separation of nature and humans seems quite illusory [14] (Figure 11).

The new challenge of nature conservation in the 21st century will therefore be to protect nature at the very heart of anthropized spaces, which now largely dominate the planet and, above all, the flows of matter that pass through it - this is what some call the "**anthropocene**" [15]. In addition to the careful protection of the last remaining unexploited ecosystems, this new nature conservation must also focus on socio-ecosystems, inhabited by a great diversity of human, non-human, living and non-living agents, all of which maintain complex relationships (read: Biodiversity is not a luxury, but a necessity). One of the approaches dealing with this new nature is called "**ecology of reconciliation**" [16], which aims to make anthropized spaces favourable to biodiversity, through a whole series of techniques and developments. Agriculture must also be rethought so that it no longer forms monospecific deserts saturated with toxic agents, but rather harbors biodiversity that maintains the quality of the soil, the health of the plantations and that of the people who live there [17].

In addition to the technical and administrative challenge, we are therefore witnessing a real **philosophical revolution**: nature is no longer "outside" Man, and the boundaries between the attention paid to nature and to human populations, hitherto strictly separated in the West between material sciences and human sciences, are fading. This **epistemological upheaval** is therefore logically accompanied by a new philosophical production, marked in the US by academics such as J. Baird Callicott or in France by authors such as the anthropologist Philippe Descola, the sociologist Bruno Latour, the philosopher Catherine Larrère, grouped together under the label of "**environmental humanities**".

5. Messages to remember

The concept of "**nature**" is particularly complex to grasp, and has evolved substantially over its history. Even today, four main definitions of nature can be identified, which are extremely heterogeneous and often contradictory; nature would be :

The totality of **material reality** that does **not result from human will** (as opposed to artifice, intention and culture)

The whole universe as a place, source and result of material phenomena, including man or at least his body (as opposed to the supernatural, metaphysical or unreal)

The force at the core of life and change (opposing inertia, fixity and entropy)

The **essence**, the set of specific physical properties and qualities of an object, living or inert (opposing denaturation).

The idea of "**protecting nature**" **varies** enormously depending on the reference frameworks used, and **various traditions** of nature protection have developed over time, with distinct, and here too, readily **contradictory** objects, techniques, concepts and

objectives.

The very vagueness that surrounds the idea of nature prevents its recuperation by a particular disciplinary field (philosophy, biology, politics...) and thus forces the sciences and institutions to confront a popular word rich in varied connotations, conveying many social affects.

This **diversity** prevents the idea of technocratization by preserving a diversity of choices and opportunities **open to democratic dialogue**.

In this article, only the **"Western" concept** of nature has been discussed, but its equivalents (or lack of equivalents) in other languages have been the subject of a study published in 2020 [18].

Notes and References

Cover image. [Source: Photo © Frédéric Ducarme]

[1] We will not discuss this usage here, and refer to the work of Jean Ehrard, notably *L'Idée de nature en France dans la première moitié du XVIII^e siècle*, Paris: Albin Michel, 1963, or to Franck Burbage's *Nature* opuscule in the "corpus" collection by Garner Flammarion (2013).

[2] This article is largely inspired by the author's doctoral thesis, defended at the Muséum National d'Histoire Naturelle in 2016, and by two publications that have come out of it: Ducarme F, Couvet D. (2020) What does "nature" mean? *Nature Humanities and Social Sciences Communications*, 6(14):1-8. DOI:10.1057/s41599-020-0390-y ; Ducarme F, Flipo, F., Couvet D. (2020) How the diversity of human concepts of nature affects conservation of biodiversity, *Conservation Biology*, 34(5), DOI: 10.1111/cobi.13639.

[3] Aristotle, *Metaphysics*, Delta 4, 1014b.

[4] Matthew 6:19.

[5] Hadot P. *Le Voile d'Isis*. Paris: Gallimard, Folio essais; 2004. 515 p.

[6] On the (mis)uses of the idea of nature in a moral context, the work of reference is undoubtedly John Stuart Mill, "On Nature", in *Three Essays on Religion*. London: Longman Green; 1874.

[7] Ducarme F, Couvet D. (2020) What does "nature" mean? *Nature Humanities and Social Sciences Communications*, 6(14):1-8. DOI:10.1057/s41599-020-0390-y

[8] Beware, here the notion of entropy is taken not in the sense that it has in astrophysics but in its popular sense and on an extremely small scale, that of the energy that tends to dissipate or of the ecosystem that tends to be impoverished.

[9] Ducarme F. (2020), "Evolution et transmutations de l'objet 'nature' dans l'histoire de sa conservation", colloquium *De la réserve intégrale à la nature ordinaire, les figures changeantes de la protection de la nature*, AHPNE/Archives Nationales, Paris, 29-30 September 2020.

[10] On the concept of "*wilderness*", theorized by Roderick Nash (Nash R., *Wilderness and the American Mind*. New Haven: Yale University Press; 1967), see in particular the numerous works of J. Baird Callicott (such as Callicott JB, Nelson MP, eds., *The Great New Wilderness Debate*. University of Georgia Press; 1998. 697 p.).

[11] Luigi Piccioni (2014), "Les instruments conceptuels de la patrimonialisation du paysage et de la nature dans l'Europe de la Belle Époque", *"Projets de paysage", dossier thématique "Paysage(s) et Patrimoine(s): connaissance, protection, gestion et valorisation"*, https://journals.openedition.org/paysage/11109.

[12] On this expression, see the works of Catherine Larrère or Rémi Beau, such as Beau R., "Nature ordinaire" in Bourg D, Papaux A, *Dictionnaire de la pensée écologique*. Paris: PUF; 2015.

[13] Millennium Ecosystems Assessment. *Ecosystems and human well-being*. Washington DC: World Resources Institute; 2005.

[14] Phalan B, Onial M, Balmford A, Green RE. Reconciling food production and biodiversity conservation: land sharing and land sparing compared. *Science*. 2011; 333(September):1289-91.

[15] Lewis SL, Maslin MA. Defining the Anthropocene. *Nature* 2015; 519(7542):171-80.

[16] Rosenzweig ML. *Win-Win Ecology. How the Earth's Species Can Survive in the Midst of Human Enterprise*. Oxford: Oxford University Press; 2003. For a summary in French, see Couvet D, Ducarme F. L'écologie de la réconciliation, du défi biologique au défi social. *Journal of Ethnoecology*. 2014;6:13.

[17] Butler SJSJ, Vickery JAJA, Norris K. Farmland biodiversity and the footprint of agriculture. *Science*, 2007; 315:381-4.

[18] Ducarme, F., Flipo, F. and Couvet, D. (2020), "How the diversity of human concepts of nature affects conservation of biodiversity" *Conservation Biology* 34:6, doi:10.1111/cobi.13639

L'Encyclopédie de l'environnement est publiée par l'Université Grenoble Alpes - www.univ-grenoble-alpes.fr

Pour citer cet article: **Auteur :** DUCARME Frédéric (2025), What is nature?, Encyclopédie de l'Environnement, [en ligne ISSN 2555-0950] url : http://www.encyclopedie-environnement.org/?p=12392

Les articles de l'Encyclopédie de l'environnement sont mis à disposition selon les termes de la licence Creative Commons Attribution - Pas d'Utilisation Commerciale - Pas de Modification 4.0 International.
