# Ethical principles for research involving nature and the environment and a proposal for organising ethical review in Finland (DRAFT)

## UNOFFICIAL TRANSLATION (FIRST VERSION)

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## 1. Introduction

The ethical principles for research on nature and the environment and the proposal for organising ethical review in Finland (hereafter the *LYTE recommendation*) form part of the Finnish research community's system of research ethics co-regulation.

The aim of the LYTE recommendation is to support researchers in identifying and structuring ethical issues related to research on nature and the environment, as well as to protect nature, the environment, and living organisms from the negative impacts of research. Another objective is to safeguard researchers' opportunities to continue conducting research on nature and the environment.

The recommendation has been prepared as part of the LYTE project carried out by the Finnish National Board on Research Integrity TENK in 2023–2026.[1]

The LYTE recommendation includes both ethical principles for research on nature and the environment and a proposal for organising ethical review in Finland. It presents two general research ethics principles and two specifying research ethics principles. These national-level guidelines emphasise respectful treatment of the research subject. Individual disciplines may develop complementary ethical guidelines or recommendations.

To minimise potential harm caused by research, possible ethical review is carried out at the research design stage. The LYTE recommendation proposes a model for organising ethical review for research on nature and the environment in Finland. Organisations conducting such research and recognising the need for ethical review may consider establishing an ethics committee for this purpose. The recommendation is intended to support both researchers and ethics committees in their work.

A model for ethical review of research involving human participants has existed in Finland since 2009 and was updated in 2019. The Finnish research community has widely committed to the guidelines *Ethical principles of research with human participants and ethical review in the human sciences in Finland* (TENK 2019).[2]

## 2. Scope of the Recommendation

The LYTE recommendation applies to all research activities[3] that are broadly directed at nature or the environment, and in which the actions involved have direct or indirect impacts on nature or the environment during the research lifecycle or after it.

In Finland, all research activities follow the guidelines on good research practices issued by the Finnish National Board on Research Integrity TENK, i.e. the *RI Guidelines*.[4] Research organisations are responsible for ensuring that researchers within their research community are familiar with guidelines and recommendations related to research ethics and ethical review and that they comply with them.

Research activities targeting nature and the environment are regulated by several laws. Identifying and complying with these laws is the responsibility of the principal investigator of the research project. This recommendation should be read as a set of ethical principles that complement legal regulation, guiding the identification and consideration of research ethical issues and the minimisation of ethical risks in conducting research. This recommendation is not intended as guidance for the application of legislation.

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[1] More information on the project *Ethical guidelines and ethical review for research on nature and the environment (LYTE)*, funded by the Ministry of Education and Culture, is available on TENK's website: https://tenk.fi/fi/hankkeet/lyte-hanke, https://tenk.fi/en/projects/lyte-project

[2] *The ethical principles of research with human participants and ethical review in the human sciences in Finland*. Finnish National Board on Research Integrity TENK guidelines 2019: https://tenk.fi/sites/default/files/2021-01/Ethical_review_in_human_sciences_2020.pdf

[3] Includes scientific and artistic research, research, development and innovation activities (RDI), and other possible research activities. In the LYTE recommendation, this whole is referred to as *research activities*.

[4] *The Finnish Code of Conduct for Research Integrity and Procedures for Handling Alleged Violations of Research Integrity in Finland.* Finnish National Board on Research Integrity TENK, 2023: https://tenk.fi/sites/default/files/2023-11/RI_Guidelines_2023.pdf

The LYTE recommendation should also be applied in international collaborative projects outside Finland, as well as in national and international research cooperation with companies and other actors. Researchers follow the ethical principles described in this recommendation and promote their application also when working in higher education teaching and supervising theses.

To the extent that research activities involve human participants, TENK's guideline *Ethical principles of research with human participants and ethical review in the human sciences in Finland* must be applied. If artificial intelligence is used in research, researchers must also take into account TENK's recommendation on the responsible use of artificial intelligence in research.[5]

In research conducted with the Sámi community or in their homeland areas, the collective right to self-determination of Indigenous peoples must be respected.[6] Researchers must obtain the Sámi community's collective free, prior and informed consent for the implementation of the research and apply the ethical principles for research concerning the Sámi.[7]

## 3. Valuation of Nature and the Environment

Nature and the environment can be valued using a three-part framework[8]. This framework helps researchers and ethics committees identify multiple perspectives when assessing the potential risks and harms of research on nature and the environment.

Nature and its individual components, such as organisms, can be understood as having **intrinsic value**: that is, they can be considered valuable in themselves, regardless of any benefits they provide or other values assigned by humans.

Nature can also be seen as having **instrumental value** for humans, where it is valued according to its usefulness, for example as a source of services, materials, or food. Ethical questions linked to this instrumental perspective include issues such as land ownership and land rights, ownership of animals, human and animal habitats, and the health impacts of nature.

Values related to **meaningful human–nature relationships** refer to the diverse ecological, cultural, and social values that emerge through interaction with nature. These include, for example, aesthetic and landscape values, intangible and tangible cultural heritage, as well as questions of identity and relationships to nature and place. These meanings may be connected to both intrinsic and instrumental value.

Responsible research concerning nature and the environment is based on the premise that the researcher respects both the intrinsic and instrumental value of the research subject, for example by recognising nature and the environment as sources of human well-being and livelihoods. Respecting values related to meaningful human–nature relationships requires that the researcher seeks to understand the historical and local interconnections between nature and culture, and positions themselves in relation to their research subject.

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[5] *Tekoälyn käyttö tutkimuksessa: hyvä tieteellinen käytäntö ja eettiset periaatteet.* Recommendation of the Finnish National Board on Research Integrity TENK, to be published in June 2026.
[6] *United Nations Declaration on the Rights of Indigenous Peoples*, 2017.
[7] *Ethical Guidelines for Research Concerning the Sámi in Finland*, 2024: https://oulurepo.oulu.fi/handle/10024/50115
[8] For example, IPBES 2022: The assessment report on the diverse values and valuation of nature: https://www.ipbes.net/the-values-assessment

# 4. Research Ethics Principles Guiding Research on Nature and the Environment

Section 16 of the Constitution of Finland safeguards the freedom of science and research.[9] This freedom must be exercised responsibly, and respect for the research participants and subjects is always the foundation of ethical research. The researcher must weigh the benefits and harms of the study and conduct the research in such a way that its benefits outweigh its harms.

The research ethics principles presented below have been developed to support research directed at nature and the environment. Their aim is, on the one hand, to protect nature, the environment, and living organisms from the direct and indirect negative impacts of research, and on the other hand, to safeguard human possibilities to conduct research on nature and the environment while living and acting as part of both human society and nature. Deviation from these principles is justified only for on serious grounds.

## 4.1 General Research Ethics Principles

### *4.1.1 Safeguarding biodiversity, ecological functioning, and resilience*

The researcher must respect nature, the environment, and living organisms as research subjects, and recognise their existence as having intrinsic value. Safeguarding biodiversity, ecological functioning, and resilience is the starting point for ethical research on nature and the environment.

The researcher must ensure that the research does not cause significant harm, damage, or risks to nature, the environment, or living organisms.[10] Particular care must be taken to avoid harm to endangered habitat types and populations of threatened species, as well as their ecological communities and habitats.[11]

To avoid risks, damage, and harm, the researcher must already at the planning stage become familiar with the characteristics of the research area, including its natural environment, species composition, and threat classifications. When selecting research sites, valuable environments, endangered habitat types, and sites that may be especially sensitive to data collection impacts should be avoided.

Research must be conducted in a way that does not cause widespread, long-term, or permanent pollution of soil, bedrock, waters, or the atmosphere, nor create risks of significant emissions. Research should also avoid generating harmful waste in space or causing disturbance to space environments.

### *4.1.2 Considering impacts on human activities, cultures, and living environments*

When designing the research, the researcher must consider the potential impacts of the study on people, livelihoods, cultures, and built environments. The researcher must always familiarise themselves with the past and present use of the area, as well as its historical[12] and cultural values. This is especially important in research conducted in Indigenous territories.

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[9] Constitution of Finland 731/1999
[10] See Nature Conservation Act 9/2023
[11] The Red List of Finnish Species (2019). Hyvärinen et al. (eds.). https://helda.helsinki.fi/items/2ec69a48-d943-488c-927f-19bbf9f92cb5. ISBN 978-952-11-4974-0
[12] See Antiquities Act 295/1963

Research must not cause immediate significant harm to human well-being or activities, local nature-based cultures, or environments as part of cultural heritage. The researcher must take into account ecological, cultural, social, aesthetic, and landscape values related to people's relationships with nature.

## 4.2 Specific Research Ethics Principles

### *4.2.1 Respectful treatment of animals and ensuring their welfare*

Every animal has intrinsic value that is not dependent on its usefulness to humans. Animals act in their environment according to species-specific needs. They have not chosen to participate in research, and they have not assigned human meanings to it.

The researcher must apply the following principles, taking into account both direct and indirect impacts of the research. All animals are included in this consideration:

a. The researcher must avoid causing pain, suffering, severe stress, or other significant harm to animals. Research designs involving handling or other actions leading to the death of animals must be avoided.[13] If non-lethal methods are not available, capturing and killing animals must be minimised.[14]
b. The researcher must treat animals involved in research with respect for their autonomy. Taking into account the animal's level of development, the researcher must support the fulfilment of species-specific behavioural needs and individual well-being.[15] Particular attention to animal welfare is required in research designs that fall below the legal threshold defined in animal experimentation legislation.

In research involving companion or production animals, the researcher must, in addition to impacts on animals, recognise and minimise potential impacts on people and their professional, livelihood-related or recreational activities.

### *4.2.2 Careful collection and responsible management of research data*

New data should be collected from nature or the environment only if the information cannot otherwise be obtained with sufficient accuracy. At the planning stage, the researcher must determine whether similar or sufficient data already exist.

If data are being collected, or have previously been collected, from the same area in multiple studies, the researcher must ensure that cumulative impacts do not cause significant harm to the area.

Research data should be made as openly available as possible to the scientific community, in order to avoid unnecessary repetition of data collection and to minimise associated harm.[16] [17]

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[13] Act on the Protection of Animals Used for Scientific or Educational Purposes 497/2013

[14] In all research involving animals or having indirect effects on animals, the Animal Welfare Act and the Act on the Protection of Animals Used for Scientific or Educational Purposes must be applied. Compliance with the law is the responsibility of the principal investigator of the research project, and it is supervised by several authorities.

[15] Animal Welfare Act 693/2023

[16]

[17] (combined note as in original context)
Research data should be opened as widely as possible to the research community to avoid unnecessary duplication of data collection and to minimise resulting harm.

Already at the research design stage, the researcher must assess the need to protect information from the perspective of individuals,[18] society, or nature, and ensure a balance between data protection and openness.

## 5. Ethical Review in Research Targeting Nature and the Environment

The proposed model for ethical review in research on nature and the environment is intended for research designs for which ethical review is not specifically required by legislation. Ethical review helps the researcher ensure that the research ethics principles described above are implemented in the planned study.

In LYTE ethical review, the implementation of the above ethical principles is assessed, as well as the harms and risks posed to nature, the environment, organisms, and ecological communities in relation to the potential knowledge value of the research and the expected significance of its results.

The ethical review is conducted by an ethics committee within the research organisation at the request of the researcher. Ethical review must be carried out at the research planning stage, before data collection begins. An ethical review statement is not issued retrospectively for research that has already been conducted. If the research design changes significantly during the study, a review statement may be requested later for those actions that have not yet been carried out.

### 5.1 Weighing Benefits and Harms

In the LYTE recommendation, **significant harm** refers to negative consequences of environmental change that are difficult to manage, long-term, widespread, irreversible, or affect a large number of individuals.

When designing the research, the researcher must weigh the harms and benefits that may arise for example for nature, environments, animals being studied, other animals or species, populations, ecosystems, people involved in the research or their living environments or livelihoods, other people, humanity, or outer space.

Regardless of whether the research undergoes ethical review, researchers are encouraged to include in their research plans a section describing ethical risks and weighing them against the expected informational value of the study. The plan should sufficiently explain why the potential harms are justified and present a strategy for minimising them.

### 5.2 Research Designs Requiring Prior Review

It is recommended to request an ethical review for research targeting nature and the environment if the study[19] involves any of the following:

- The research may cause significant harm or pose a threat to geological, biological, or genetic diversity

[18] From the perspective of an individual (e.g. personal data protection).
[19] Including technologies used or developed in the research.

- The research may cause significant harm to endangered species or threatened habitat types
- The research may significantly degrade soil, bedrock, or water conditions, or pose a significant risk to them
- The research may cause significant harm to ecological functioning or recovery capacity
- The research may cause significant harm to urban or cultural environments or be in substantial conflict with local naturecultures
- The research may cause animals pain, suffering, stress, or other significant harm, or impair their health or welfare[20]
- The research uses non-standard methods of animal capture or sampling, or involves large-scale killing of invertebrates or cephalopods
- The research may significantly disturb space environments or generate harmful waste in space

In addition, research must undergo ethical review if it includes any research design described in the TENK guidelines on ethical review in the human sciences that requires such review.[21]

If the research project requires, by law, a licence for animal experimentation or another official permit, a separate ethical review statement is not required.

## 5.3 Responsibilities in the Ethical Review Process

The researcher is always responsible for the ethical integrity of their research. Any ethical review does not transfer responsibility for ethical decisions to the ethics committee.

Ethical reflection must be continued throughout the research project, and the need for ethical review may need to be reassessed. A new ethical review statement must be requested if the research design changes in a way that may increase risks, damage, or harm arising from the research. A new statement must also be sought if the research plan is expanded to include a design, sub-study, or dataset not mentioned in the original plan, and which affects the ethical evaluation of the study.

[20] In research settings where a project licence under the Act on the Protection of Animals Used for Scientific or Educational Purposes is not required. If such a licence is required, a separate ethical review is not needed.
[21] See TENK's guidelines on ethical review in human sciences, which specify research designs requiring prior ethical review. The TENK guidelines on ethical review in human sciences define the following research designs that require ethical review:
a) Research deviates from the principle of informed consent.
b) The research involves intervening with the physical integrity of participants.
c) The research involves participants under the age of 15, without separate consent or notification of a guardian, where the guardian would have the opportunity to prevent participation.
d) The research exposes participants to exceptionally strong stimuli.
e) The research involves a risk of causing psychological harm that exceeds the limits of normal daily life to the participants or their close ones.
f) Conducting the research may pose a safety risk to participants, the researcher, or their close ones.

If the research has undergone ethical review and the researcher fails to comply with the statement issued during the review process, this may, in the most serious cases, constitute a research integrity violation. A suspected research integrity violation may, if necessary, be investigated in the RI process.[22]

Research-performing organisations must provide research ethics and integrity training for their staff and students, thereby strengthening researchers' capacity to follow ethical principles in research.

Health and safety risks to the researcher are not assessed in the ethical review process.

## 5.4 Proposal for Organising Ethical Review

[content to be added later]

[22] *The Finnish Code of Conduct for Research Integrity and Procedures for Handling Alleged Violations of Research Integrity in Finland*. Finnish National Board on Research Integrity TENK, 2023: https://tenk.fi/sites/default/files/2023-11/RI_Guidelines_2023.pdf