

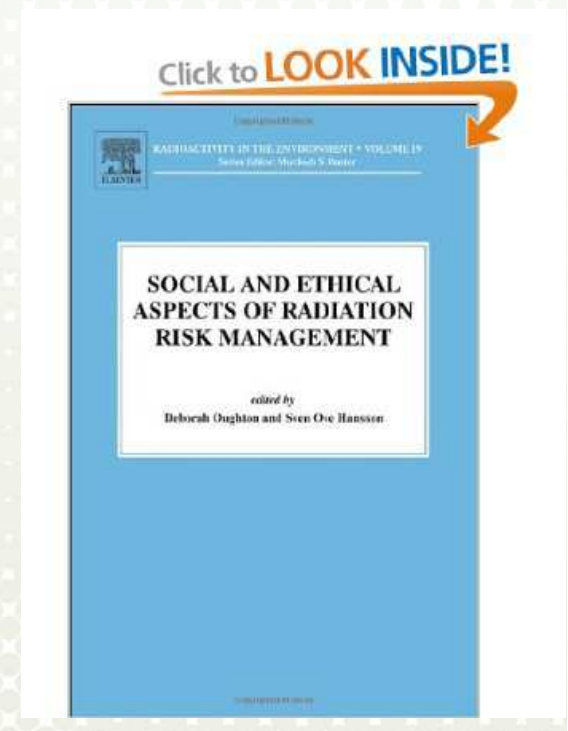
Ecological Ethics
deborah.oughton@nmbu.no



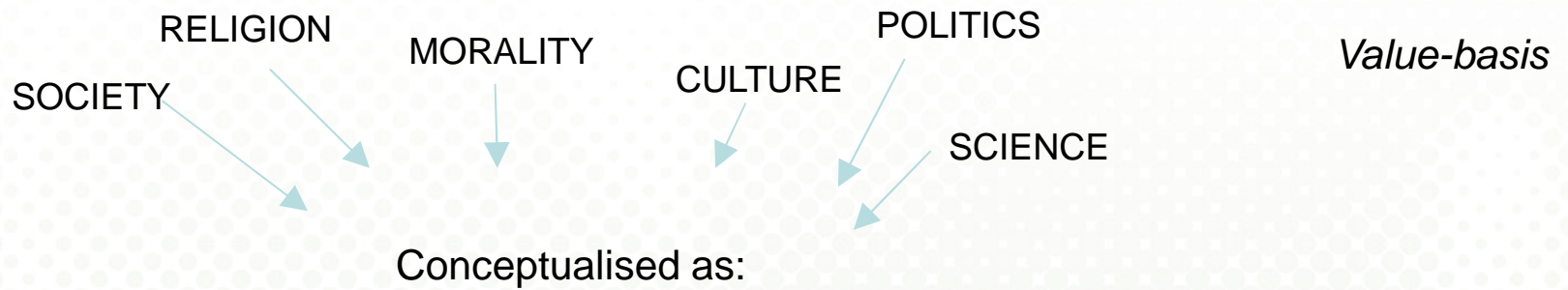
Centre for Environmental Radioactivity (CERAD)
ICRP Committee 4: TG94 Ethics

TG94: The Ethical Foundation of Radiological Protection

- Historical Context – e.g. Jack Valentine paper in Elsevier book
- Principle-based ethics – Brief into - this is what ICRP framework represents
- Ethical theories – Short section
- Common Values – The main area of elaboration
- Applications/Implementation in areas
 - Biomedical
 - Environmental Health and Society
 - Nuclear Safety and Workers
 - Ecological Aspects
- Case studies (and challenges)



Biomedical Ethics

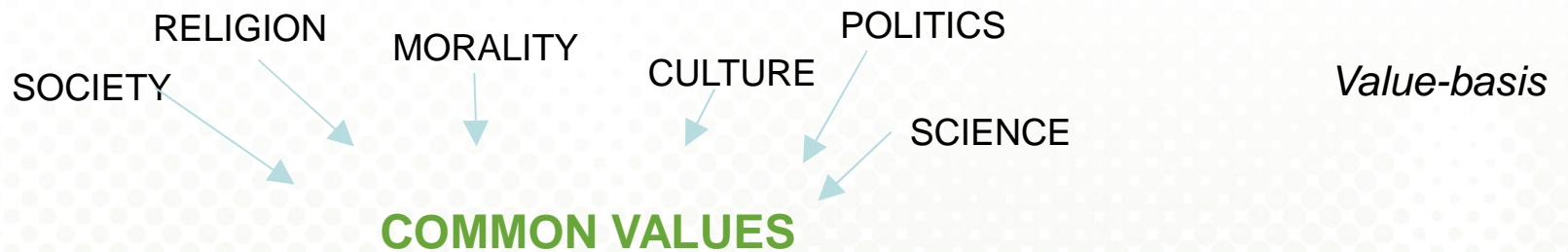


Broadly compatible with the principles of:





Radiological Protection – Principle-Based Ethics



- DIGNITY/RESPECT
 - JUSTICE
 - WELL BEING
 - COMMUNITY VALUES
- ++

Conceptualised as:

- UTILITARIANISM
 - DEONTOLOGY
 - VITRUE ETHICS
- ++ *Ethical Theories*

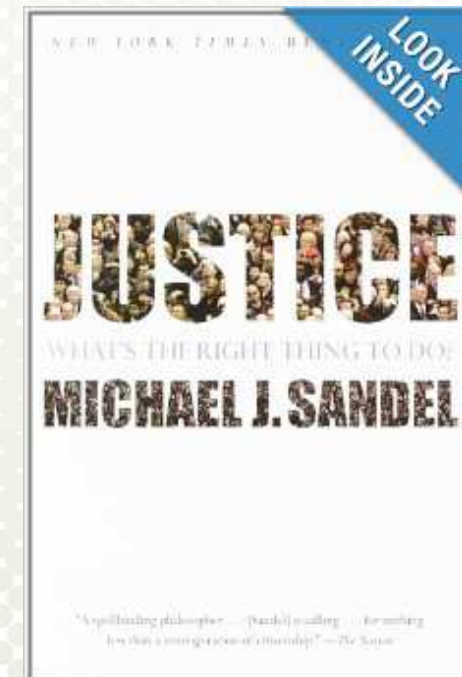
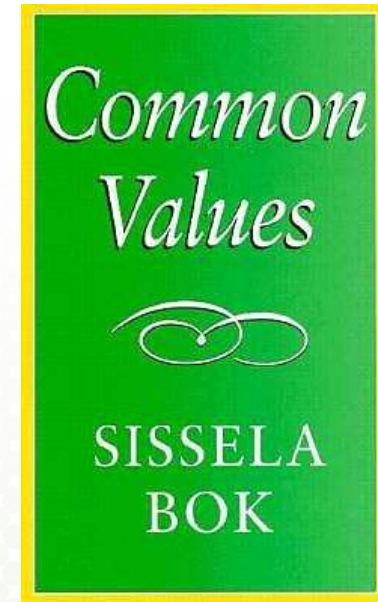
Broadly compatible with the **principles** of:

- Justifcation
 - Optimisation
 - Dose Limits
- Protection Principles*

Underlying Ethical Values

- **Autonomy** and Dignity, Personal Control
- **Justice** and Distribution of Risks
- **Community Values** and Societal Impacts

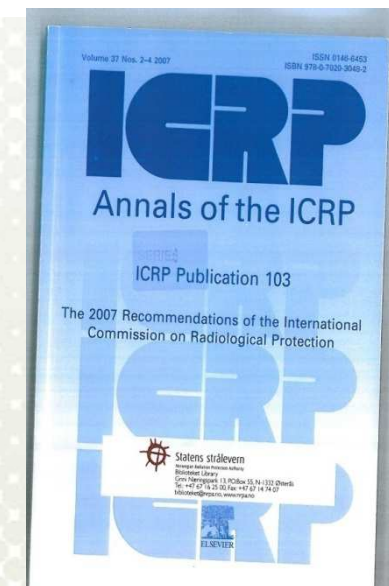
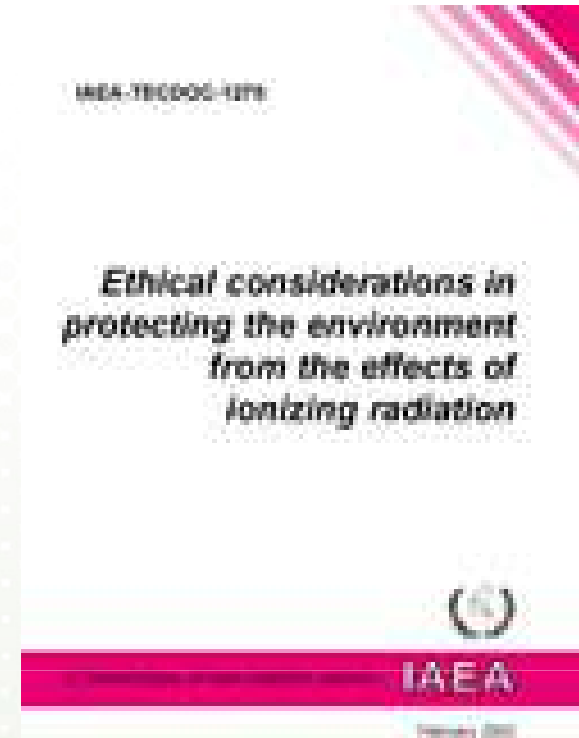
Relevance can be grounded in ethical theories, common cultural values, biomedical principles, ...



... Environmental Protection

- Traditional focus on humans: "If man is adequately protected, then other living things are also likely to be sufficiently protected" (ICRP, 1977, 1991)
- Emerging consensus that radiation protection should also consider the effects of ionising radiation on non-human species
- Requirement for enormous amount of information on transfer, uptake and effect of ionising radiation

ICRP 103, 108,



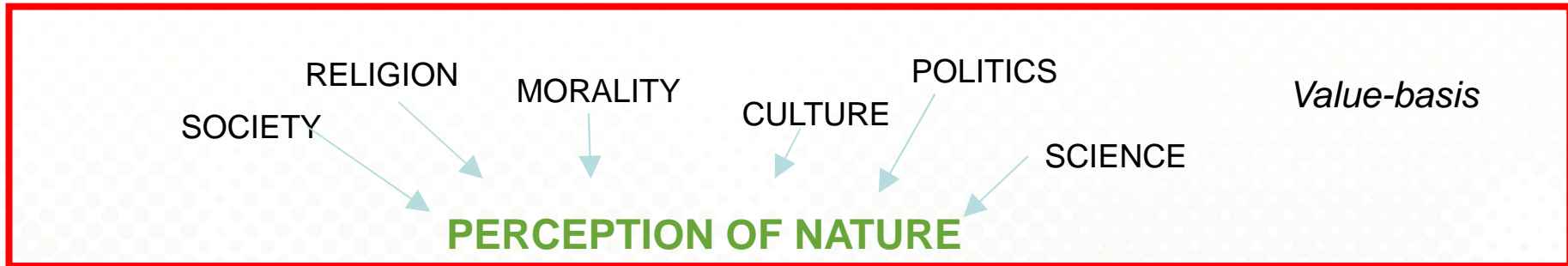
Overview

- History of Environmental Ethics
- Ethical Considerations in Protecting the Environment...
- Perception of Nature
- Theories of Environmental Ethics
- Recent Developments
 - Ecological Economics
 - Remediation

Children's drawing of scientists (Sjoberg, S. 2005: www.uio.no/svein-sjoberg)



Ecological Ethics



Conceptualised as:

ANTHROPOCENTRIC

BIOCENTRIC

ECOCENTRIC

Philosophical worldviews

Broadly compatible with the principles of:

Conservation

Biodiversity

Sustainability

Environmental justice

Human dignity

Primary Principles of Environmental Protection

Precautionary Principle
ALARA
Polluter Pays

Best Available Technology
Stakeholder Involvement

2nd Level management principles

History: Environmental Philosophy and Ethics

- Nature (animals and the environment) and man's relation to it is a central concept in many religions and worldviews
- In Western philosophy, the issue has been addressed since Greeks; for many centuries the dominant view was that of Christian theology
- UK Cruelty to Animals Act (1876)
- 1962 *Silent Spring*, Rachel Carson
- Increased interest in animal welfare, environmental politics and philosophy in the 1970'-1980's (USA and Europe)
- Strong links to developments in science
 - evolution theory, ecology, biology, genetics, animal sentience



Western Christianity

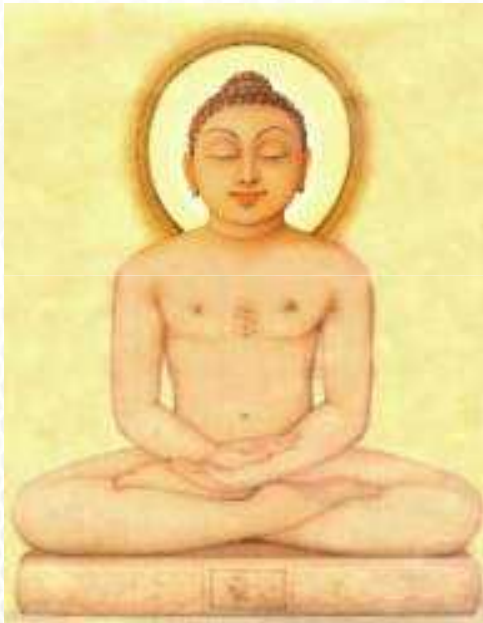
- Christian-Jewish religion has been cited as the source of modern ecological destruction

Let us make man in our image, after our likeness: and let them have dominion over all the fish of the sea and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepth upon the earth (Genesis 1:26-30)



White, *Science*, 1967

Non-Western Ideas



Other influences on human perceptions of nature (Arriansen, 1996)

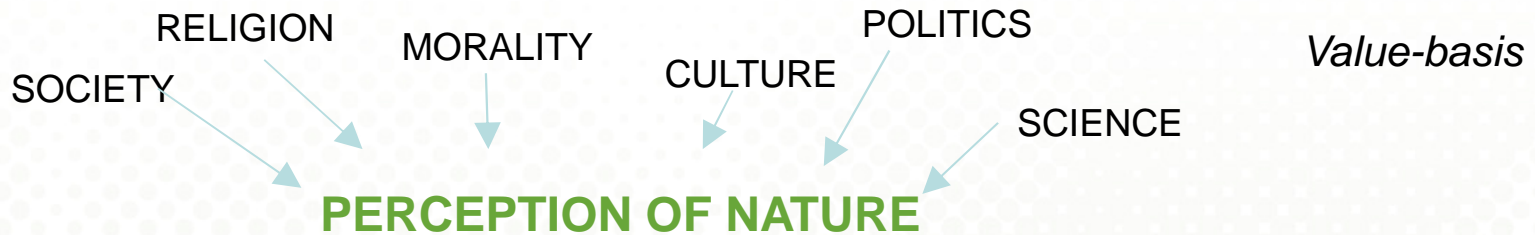
- Technological Development (Man's triumph over nature)
- Commerce, trade and capitalism (exploitation of nature's resources)
- Age of Enlightenment
 - Reductionism in Science
 - Animal sentience, genetics, ecology, ...



Charles Darwin, 1840 (Downe House, Downe, Kent, Great Britain/Art Resource, NY)



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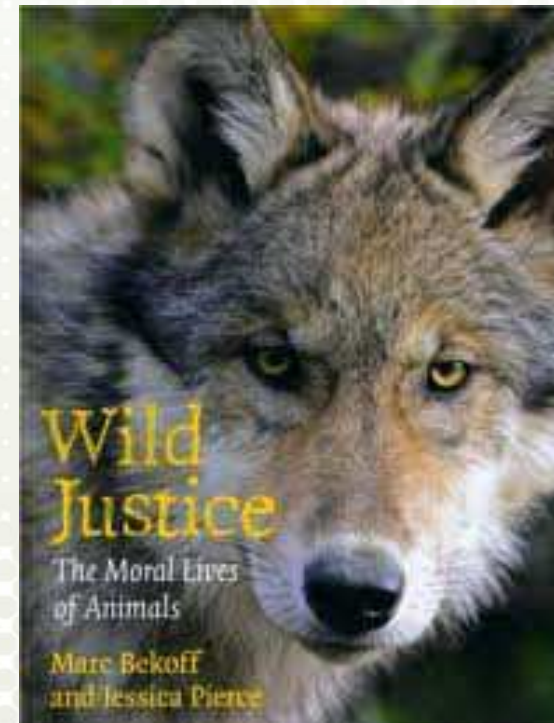
Precautionary Principle
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Best Available Technology
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*2nd Level
management
principles*

Anthropocentrism

- Non-human species and the environment have value only in so much as they satisfy human interests – “extrinsic value” (Frankena, Bookchin)
- Humans are the only entities that have moral standing
- Environmental effects matter only to the extent that they affect human interests
- Humans are the only “valuers”



Valuing the Environment?



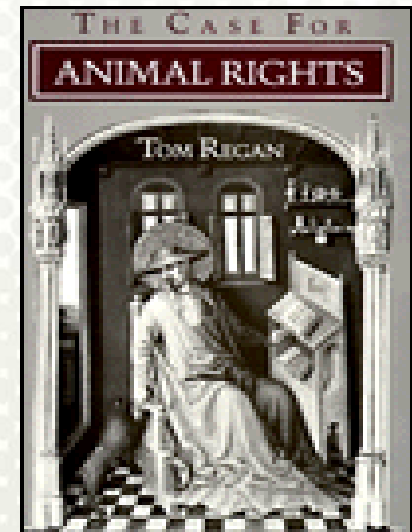
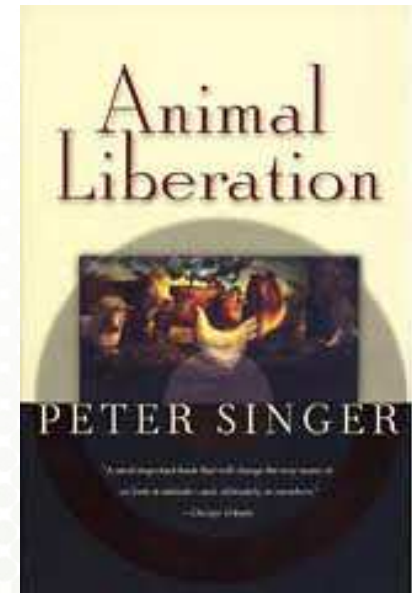
Bentham's question (1789)

"The day may come when the rest of the animal creation may acquire those rights which never could have been withholden from them but by the hand of tyranny. The French have already discovered that the blackness of the skin is no reason why a human being should be abandoned without redress to the caprice of a tormentor. It may one day come to be recognized that the number of the legs, the villosity of the skin, or the termination of the os sacrum, are reasons equally insufficient for abandoning a sensitive being to the same fate. What else is it that should trace the insuperable line? Is it the faculty of reason, or perhaps the faculty of discourse? But a full-grown horse or dog is beyond comparison a more rational, as well as a more conversable animal, than an infant of a day, or a week, or even a month, old. But suppose they were otherwise, what would it avail? The question is not, Can they *reason*? nor, Can they *talk*? but, Can they *suffer*?"



Biocentrism (Animal Ethics)

- Utilitarian (Peter Singer)
 - Ethical realm concerns all sentient creatures “can they feel pain, do they suffer”
- Kantian/deontological (Tom Regan)
 - animal rights, duty based ethics. Animals are capable of experience, thus have similar claim to rights as humans



Biocentrism

- All biocentrics claim that individual non-human organisms can have moral standing
- Disagree on the basis by which we draw a moral distinction between humans and animals?
 - Rationality
 - Sentience
 - Inherent or instrumental worth
- Disagree on which organisms have moral standing

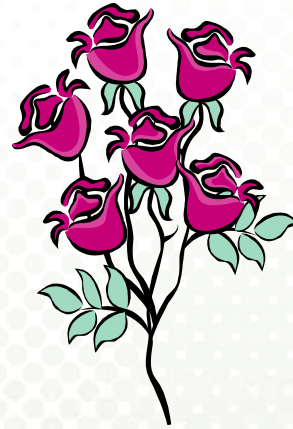


Case: GloFish[®]

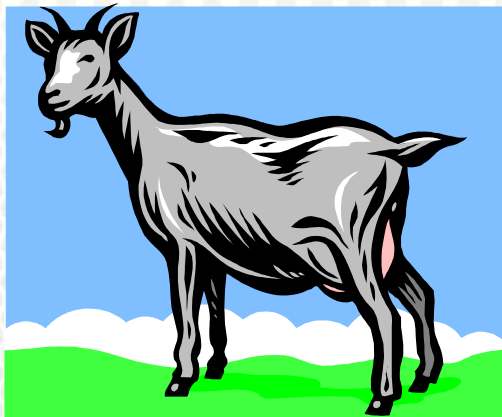
- GloFish are genetically modified fish that glow under ultraviolet light
- They were originally created for use in ecotoxicological studies, but are now marketed commercially in the US.
- Should they be permitted to be sold in the EU?



**Leave the flowers
for others to
enjoy!**



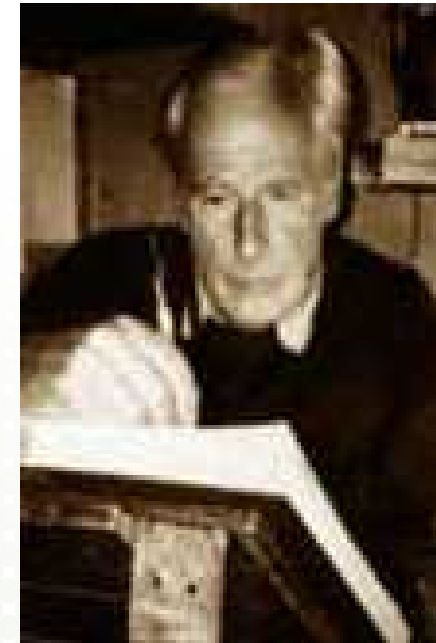
**Let the
flowers live!**



**The introduction of goats on an island
is threatening a rare flower. There is
nowhere to move the goats. Should
they be exterminated?**

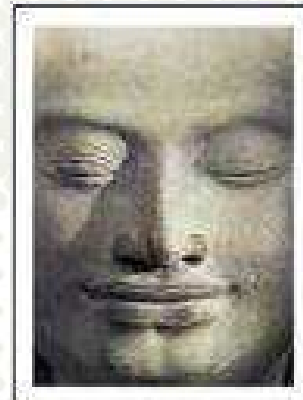
Ecocentrism

- Ecosystems and/or their components have intrinsic or inherent value - "value in themselves" (Callicott, Holmes-Rolston III)
- *A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community; it is wrong when it tends otherwise, Leopold*
- Humans have no right to interfere with the richness and diversity of the ecosystem except to satisfy vital needs (Næss)
- Proponents of ecocentrism claim that both biotic and abiotic components of the ecosystem can have moral standing - "holistic"
- Disagree on the reasons for and solutions to environmental problems (human arrogance, male dominance, social and economic hierarchy)



Summary (at the time of the IAEA publication)

- All three theories can support the need to protect the environment
- Anthropocentrism can give powerful grounds for addressing the environmental impacts of ionising radiation
- Biocentric and ecocentric views reflected in many religions and cultures
- Need to recognise and preserve diversity

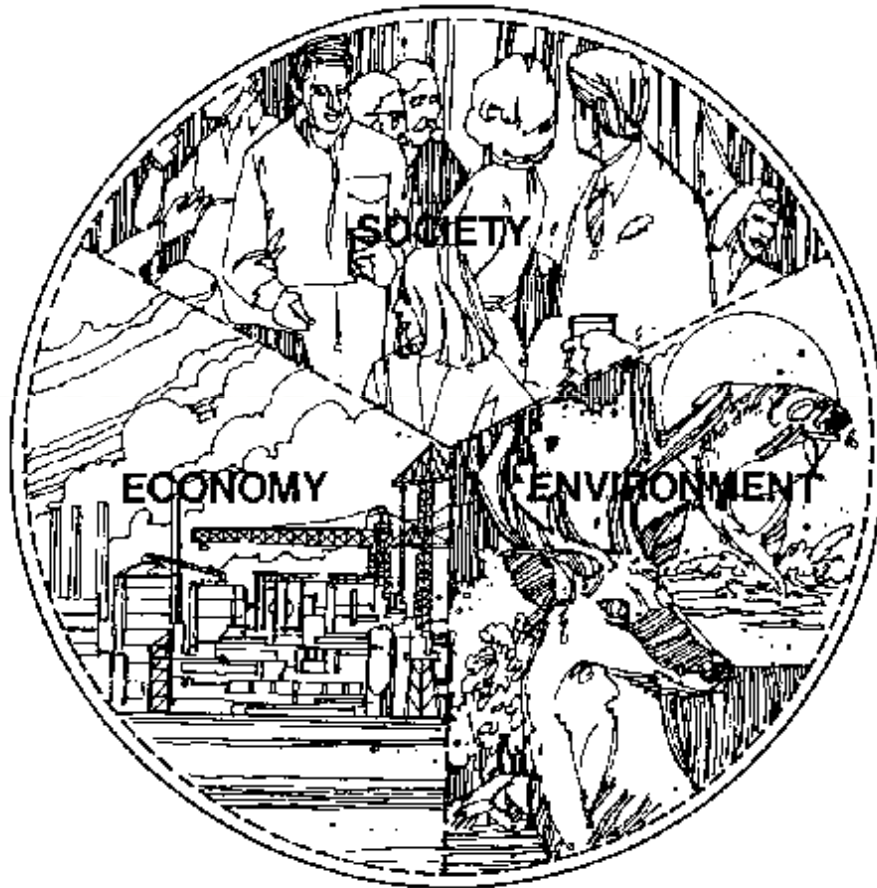


Three Challenges

- Ecosystem approach and ecological economics
- Ecosystem changes: What is harm?
- Environmental consequences of remediation

Oughton, D.H. 2013. Ecological Ethics, in: Oughton and Hansson (eds.), *Social and Ethical Aspects of Radiation Risk Management*, Elsevier

Recent work: Ecosystem Approaches – Human – Environment – Economic Interactions



Hartig and Valentine 1989



What is the economic cost of marine contamination after Fukushima??

Shunsuke Managi,
Tokohu University

<http://www.whoj.edu/website/fukushima-symposium/overview>

What is Harm? (Slide courtesy of Tom Hinton)

Wildlife defies Chernobyl radiation

By Stephen Mulvey
BBC News

« It contains some of the most contaminated land in the world, yet it has become a haven for wildlife - a nature reserve in all but name. »

20 April 2006



Chernobyl 'not a wildlife haven'

By Mark Kinver
Science and nature reporter BBC News

« The idea that the exclusion zone around the Chernobyl nuclear power plant has created a wildlife haven is not scientifically justified, a study says. »

14 August 2007

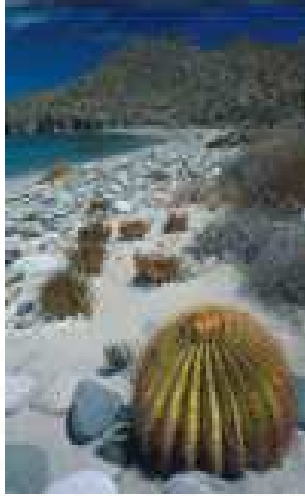


Remediation

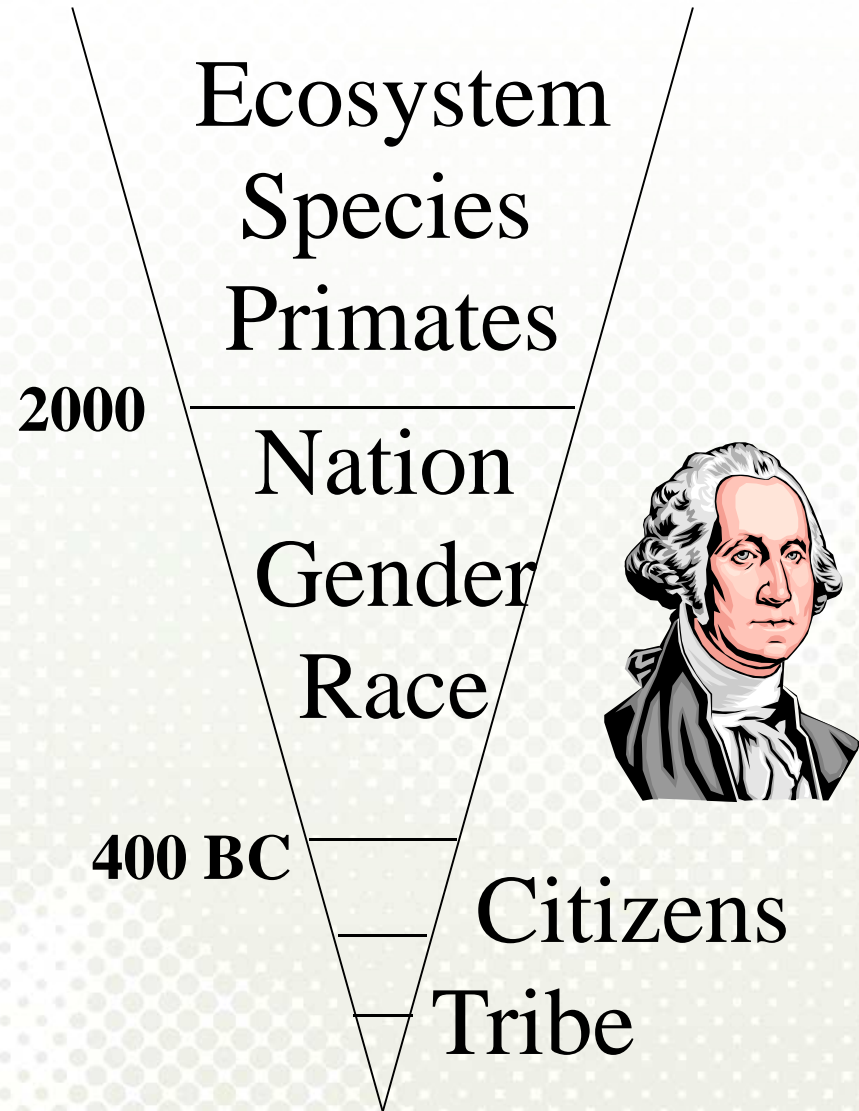
- If environmental ethics directs that we should protect the environment and non-human biota from ionising radiation – what about intervention and remediation after accidents?
- Divergence between the three theories
- Human intervention and management a source of controversy environmental ethics and policy
- “Causing harm and saving lives” (acts of commission and acts of omission) a long-standing debate in moral philosophy.

See debates in Holmes–Rolsten III,
Environmental Ethics, 1988

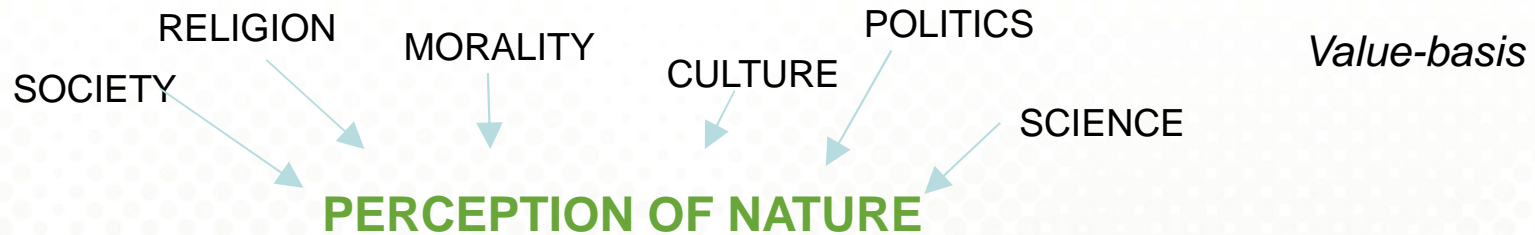




Historical evolution in the realm of moral and legal standing in Western Philosophy



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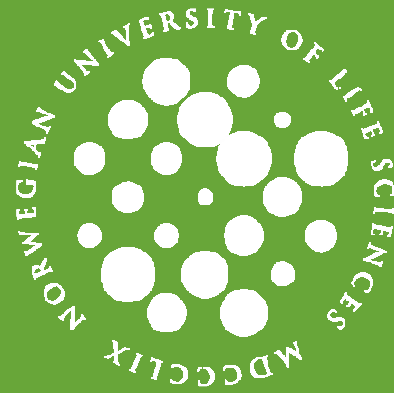
2nd Level management principles

Literature

- Singer, P. 1981. Animal liberation and animal rights
See also: <http://www.utilitarian.net/singer/by/1979----.htm>
- Oughton, D.H. 2003. Protection of the Environment, *J. Environ Radioact.*
- IAEA 2002. Ethical considerations in protecting the environment from the effects of ionizing radiation . IAEA-TECDOC-1270
- Oughton and Howard 2012. The Social and Ethical Challenges of Radiation Risk Management, *Ethics, Policy and Environment*,
- Arriansen, P. 1996. Milføilosofi.
- Shunsuke Managi, The Economic Consequences of Chernobyl. Fukushima Oceans Conference Tokyo Nov 2012. Presentation available from: www.whoj.edu/website/fukushima-symposium/overview

Thank you!

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Social management strategies (Oughton et al., 2006; Oughton and Forsberg, 2007, 2009)

For example:

- Dietary advice
- Provision of counting/monitoring equipment
- Compensation scheme
- Information/Advice bureau
- Education programme in schools
- Medical check up
- Stakeholder and public engagement

Policy and Research Implications

- Policy
 - Potential to give insight into disagreements on policy
 - Provides a foundation for environmental principles, policy and legislation
- Research
 - Metaethical: The nature of environmental harm; The origin of human morality
 - Normative Ethics: Empirical data on stakeholder perceptions; uncertainty and risk (precautionary approach)
 - Applied Ethics: Ecological economics;

What is the Right Thing to Do?

Ethical Theories

- Utilitarianism - Welfare?
- Deontology – Autonomy/Freedom?
- Virtue Ethics – The common good?
- Contractarianism – Distribution of risks and benefits?

... IN WESTERN PHILOSOPHY

