

Protection of Habitats and Species: a scientific & technical introduction

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Focus on the interaction between species, habitats and the environment

Excited to discuss with lawyers, as the future of protection of nature lies on law; the implementation and the enforcement of the law, because we know how to manage the land, the nature, we have all the needed experience on species and habitats, but implementation and enforcement is the problem.

Had a discussion with the judge recently, where it was said that when he/she is handling environmental cases, he/she is not so strict as in cases of murder, rape etc. The aim of this presentation is to show that this field of work is also important.

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Biodiversity

**What is biodiversity,
what are the main
threats, biodiversity
loss matters**

02

Conservation

**Definition, approaches
to conservation,
species' requirements**

Today's agenda:

- 1) Biodiversity, but from a different perspective
- 2) Conservation: Definition, approaches to conservation, and how flora and fauna see the environment and how this is different from the way we see the environment



01

Biodiversity

What is biodiversity...This?

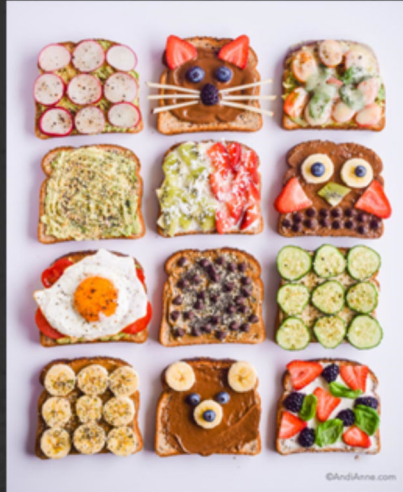


3 components of biodiversity:

- 1) Biodiversity of the genes (genetic diversity)
- 2) All the living creatures (species diversity)
- 3) Biodiversity of the ecosystem (ecological diversity)

But for me biodiversity is not this.

Or is biodiversity this?

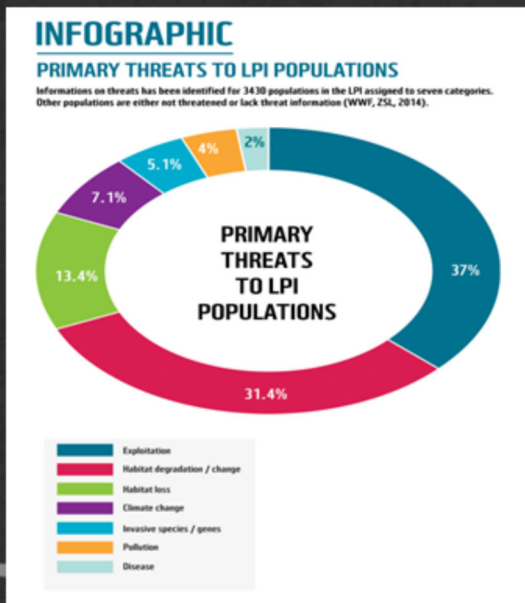


It is what you had for breakfast, drinks etc. Even the furniture (i.e. wood) around us is biodiversity.

This is biodiversity and this is what we our **common responsibility** is.

Without biodiversity, our civilization will get lost, thus it is important to protect this.

Threats to biodiversity



Living Planet Index (LPI)

See: **The Living Planet Report 2024**
WWF (2024) Living Planet Report 2024 –
A System in Peril. WWF, Gland, Switzerland.



Unfortunately, there are major threats.

Tool: ***Living Planet Index (LPI)***:

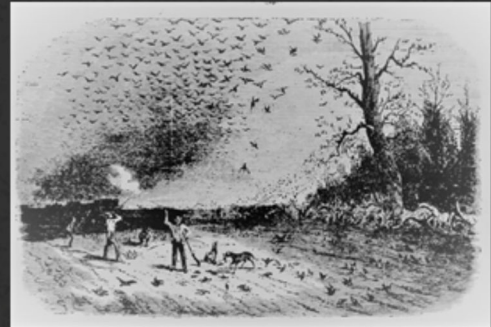
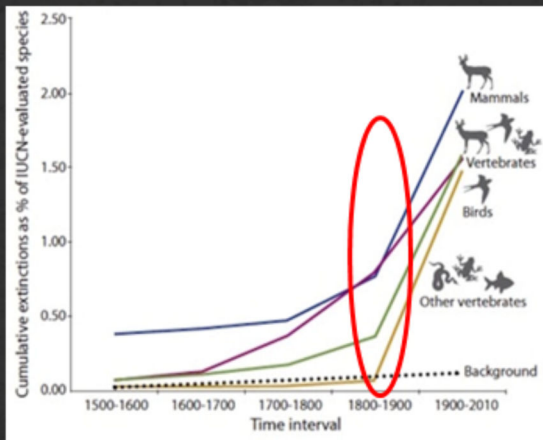
- created by World Fund for Nature
- monitoring the population of around 3000 species around the globe, since 1970
- Results: dramatic.
 - In 50 years, 70% of decline of species (*50y → tiny moment in the history of this planet)

Reasons: refer to the diagram on the slide

- The biggest individual threat (37%): exploitation (cutting the trees, killing species etc)
- 40%+ (red and green part of the diagram): habitat degradation and loss → half of the threats to biodiversity is because we are spreading around.

The art of survival here is how to accommodate the development and protection. We know what is needed, and you (lawyers) know how to do it.

Species extinction...something new?



No! Just 1000x faster than ever!

Illustrated on the picture: '**The passenger pigeon**': a tragic example

- Most widespread species in America 200 years ago
- *'the clouds of these birds were so dense, you couldn't see the sun'*
- But then came white men, and in 20-30 years they killed all of them

Regarding the diagram:

- The curves were ok.
- And then the industrial age started, when we invented the idea to transfer energy from one place to another, the problem started, together with another big problem → beginning of the 20th century, when our race exploded, 200 years ago → 2 billion people, now → 8 billion, in only 50-100 years. This is the core of environmental problems.
- Conservationists and those responsible for decisions to be implemented work hand by hand, otherwise these curves will continue, and at the end of the vertebrates is **human**.

Is extinction something new? No, this always happened, it is natural.

The only problem is the **speed of extinction**. Today the speed of extinction is 1000 times faster than ever in the history of this planet, and of course it is connected to **climate change**.

Biodiversity Loss Matters

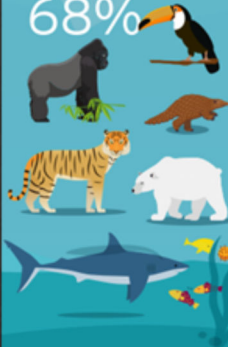
BIODIVERSITY LOSS: AN URGENT BUT SILENT CRISIS

Source: WWF, WRI, IPBES, WEF

A mass extinction is underway, with more animal and plant species under threat than ever before in human history. Dismissing biodiversity loss is not an option, however, as biological diversity has wide ranging benefits for society, human health, business operations, supply chains, and economic growth.

Since 1970 years the **global wildlife population** has fallen by an average of

68%



0:06

In 2019 every six seconds one football pitch of primary rainforest was lost

1 million

animal and plant species are threatened with extinction **because of human activities**



\$44 trillion

of economic value generation is moderately or **highly** dependent on nature

The background is a dark gray rectangle. A light gray geometric frame is overlaid on it, consisting of several lines that form a series of connected angles, creating a stylized, abstract border. The number '02' is centered in the upper half of the frame.

02

Conservation

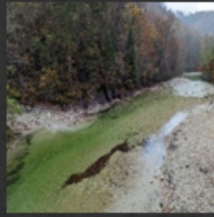
Conservation is...

Species



Kingfisher *Alcedo atthis* (Species)

Habitat

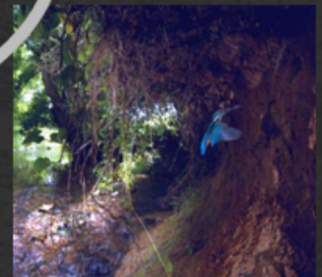


River (Habitat / Ecosystem)

Natural process



Erosion (Natural process)



What is conservation?

1st picture: Kingfisher *Alcedo atthis* (Species)

- Most beautiful bird in Europe
- It feeds on fish

2nd picture: River

- **Its habitat/ecosystem**
- **Yellow arrow on the 4th picture: where the bird nests. It cannot nest on trees/ground. But this means erosion.**
- **The 'damage' the nature is doing to human properties. This is the core of the problem. *What is damage for us, is an essential component for many species to survive.***
- **So how to do it? We can't just leave all the rivers to erode the land, because there are farmers/houses etc. But on the other hand, if we don't leave it. the bird will disappear.**

If we want to protect nature (here represented by species), we have to protect its habitat.

- Eg kingfisher feeds on the small fish that live on small rivers and streams, that have to be clean, not polluted, as fish will disappear otherwise.
- **Habitat protection is also important if we want to protect the species.**
- But not enough; if we do not protect the natural process that will allow this bird to have a nesting area in the riverbank, the bird will disappear.

→ Nature **conservation** is a combination of protection of: (3 components, like biodiversity)

1. Species;
2. Their habitats, and;
3. Their natural processes. But unfortunately, some of these are against our human aspirations for space and natural resources.

Conservation is also...

...an anthropocentric process.
We specifically protect species and habitats/ecosystems that are threatened or in serious decline. They are listed in the Red List of Threatened Species.

We only protect the species we know, especially those that are charismatic.



Three approaches in conservation



Species protection



Habitat protection



Triglav national park

Natura 2000 site

**Area protection
(Protected/conserved areas...)**

Sometimes, we only need to protect one component of conservation.

1st approach/picture:

- Example: people catching and stealing parrots from tropical forests to sell them
- If you, as lawyers, can stop this, then we can protect the species.

2nd approach/picture:

- This type of horses need water to survive.
- If you protect their water, then the species and habitat will survive.

But, in many cases, especially when there is the problem with natural processes → dedicate special areas → 'Area protection'

(3rd picture): 2 tier system in Europe

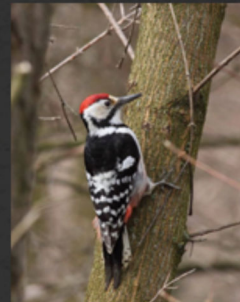
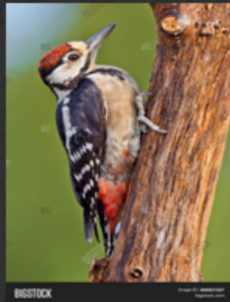
- 1st layer of protection → national legislation eg Triglav national park, Slovenia
- 2nd layer of protection → EU legislation eg Natura 2000 site

These 2 layers combined should contribute to the protection of nature

Ecological generalists & specialists

Different requirements for their existence (active and passive protection measures)

Great Spotted Woodpecker
(generalist)



White-backed Woodpecker
(specialist)



Sustainable
managed
landscapes -
generalists



Protected areas
with restrictions in
land uses
specialists



1. Generalists:

- species that can live almost everywhere
- Sustainable managed landscapes

2. Specialists:

- totally different requirements than the generalist
- Eg White-backed Woodpecker → cannot survive in a forest that any logging is going on, cannot adapt to human presence
- Need restrictions- protected areas: special areas dedicated to the protection of each species
- Need to understand the importance of their restrictions – need to look from the perspective of species

Protected areas...the most effective tool for conservation

Example: Whinchat (*ecological specialist*)



**Strict
Reserves**

The 'massacre' of whinchat:

- Breeds on grasslands with branches, that the bird can sit to prey, and it breeds on the ground in the grassland
- Everything was going well for this species, until the '90s, because 500 years farmers across Europe were following the same agriculture practice on grassland, but then they started using plastic bags for hay. The hay is put in the plastic bags when it is still damp, meaning one month ahead. All the birds that are in nests, they are all cut by the machines.
- Almost disappeared in Central Europe → but still think that as long as there are grasslands, it is sustainable. The truth is that the practice has changed, and this change is detrimental. The time period is too short for evolution of the bird to adopt to this change

How to prevent this?

- **By establishing a protected area.**
- It is mandatory to continue with the land use practices on sustainable matter.
- Legal problem: we are requesting landowners to change their usual way.
- Eg *Sweden*: there the problem is solved, as national parks if not state-owned land, are not national parks. Here you buy the land (becomes state-owned) and there is no problem with landowners. But in all other parts of Europe, the problem persists.
- Problem for judges: there is a public interest you are interfering with the property rights
 - Easiest way: buy the land
 - But nature conservation not priority for countries
- 4th picture: yellow circles indicate areas where the Slovenian government were persuaded to buy the land. But enforcement is still very weak.