Biodiversity loss

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Introduction. Biological diversity is the resource upon which families, communities, nations and future generations depend. It is the link between all organisms on earth, binding each into an interdependent ecosystem, in which all species have their role. **It is the web of life**. The Earth's natural assets are made up of plants, animals, land, water, the atmosphere and humans.

Materials and methods. The loss of biodiversity or biodiversity loss is the ongoing extinction of the species worldwide. The latter phenomenon can be temporary or permanent, depending on whether the environmental degradation that leads to the loss is reversible through ecological restoration ecological resilience or effectively permanent (e.g. through land loss). Global extinction has so far been proven to be irreversible. Even though permanent global species loss is a more dramatic phenomenon than regional changes in species composition. Even minor changes from a healthy stable state can have dramatic influence on the food web and the food chain insofar as reductions in only one species can adversely affect the entire chain, leading to an overall reduction in biodiversity, possible alternative stable states of an ecosystem notwithstanding. Ecological effects of biodiversity are usually counteracted by its loss. Reduced biodiversity in particular leads to reduced ecosystem services and eventually poses an immediate danger for food security.

Results and discussion. The current rate of global diversity loss is estimated to be a 1000 times higher than the (naturally occurring) background extinction rate and expected to still grow in the upcoming years. Locally bounded loss rates can be measured using species richness and its variation over time. Raw counts may not be as ecologically relevant as relative or absolute abundances. Taking into account the relative frequencies, a considerable number of biodiversity indexes has been developed. Besides richness, evenness and heterogeneity are considered the main dimensions along which diversity can be measured. As with all diversity measures, it is essential to accurately classify the spatial and temporal scope of the observation.

Major factors for biotic stress and the ensuing accelerating loss rate are:

1. Habitat loss and degradation.
2. Climate change through heat stress and drought stress.
3. Excessive nutrient load and other forms of pollution.
4. Over-exploitation and unsustainable use (e.g. unsustainable fishing methods); we are currently using 25% more natural resources than the planet.
5. Invasive alien species that effectively compete for a niche, replacing indigenous species.
6. Land use intensification (and ensuing land loss/habitat loss) has been identified to be a significant factor in loss of ecological services due to direct effects as well as biodiversity loss.

Conclusions. As a conclusion I want to say that the wealth of the Earth's natural assets (plants, animals, land, water, atmosphere) are a crucial part for biodiversity and humanity, for our hopes and plans for the bright future.