

Biodiversity

Life below Water

Life on Land

SDG 14 – Oceans and Coastal Areas
SDG 15 – Terrestrial Ecosystems

Issues for Discourse with Youth

Bahá'í Discourse - Biodiversity

Sustainable Development Goal 14

14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development



Ocean Emergency

- Coastal eutrophication (over-fertilization): causing algal blooms and dead zones
- Ocean acidification: 30% higher than in pre-industrial times
- Ocean warming: sea-level rise and affecting marine ecosystems
- Plastic pollution: 17 million metric tons in 2021, 2-3x more by 2040
- Over-fishing: more than a third of global fish stocks are overfished (1/5 illegal)

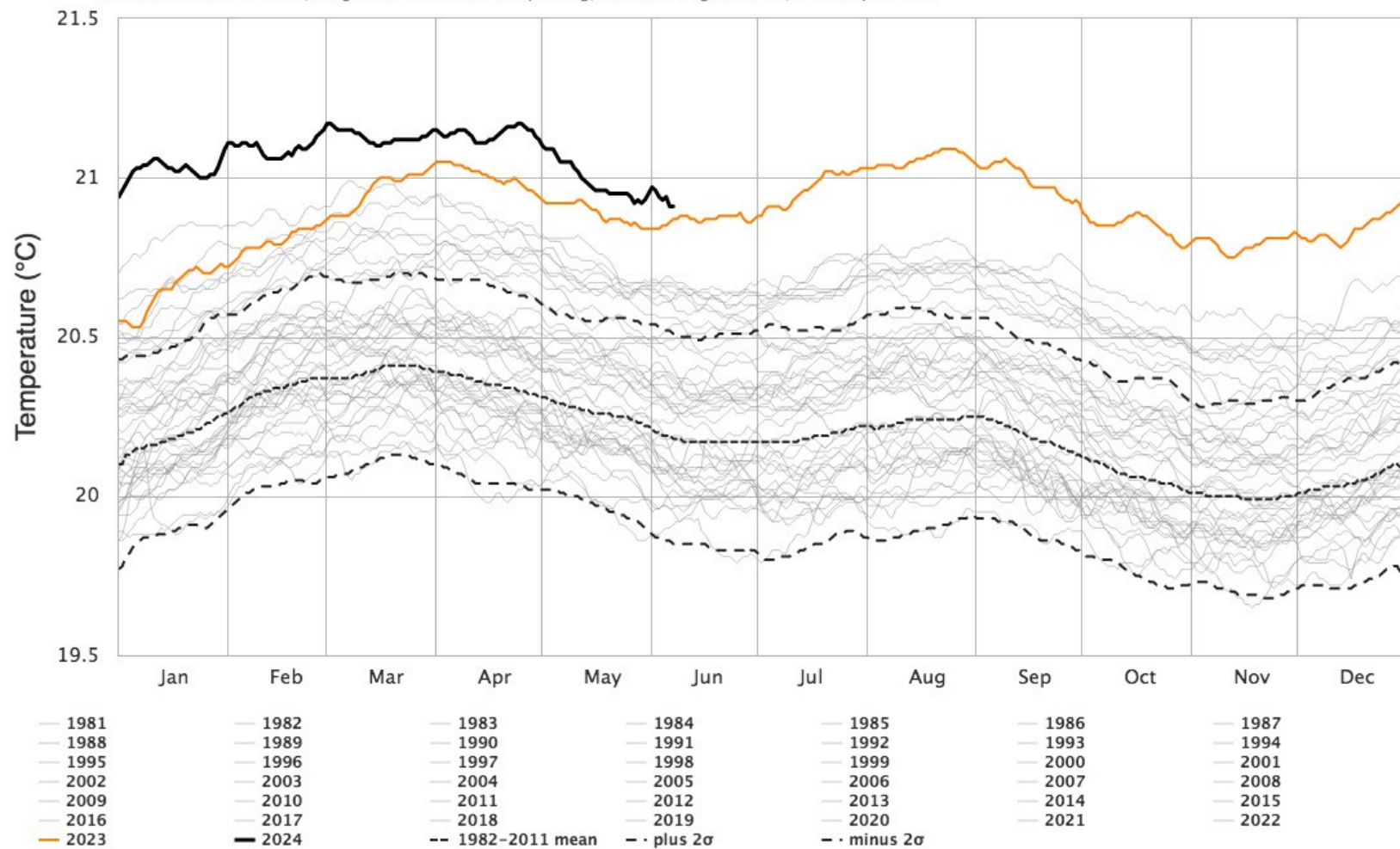
(UNDESA, <https://sdgs.un.org/goals/goal14>)



Coral reefs are first major ecosystem under threat

Daily Sea Surface Temperature, World (60°S–60°N, 0–360°E)

Dataset: NOAA OISST V2.1 | Image Credit: ClimateReanalyser.org, Climate Change Institute, University of Maine



Global sea surface temperature 6 June 2024



4th global coral bleaching event now happening [\(Catlin photo\)](#)

Sustainable Development Goal 15

15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



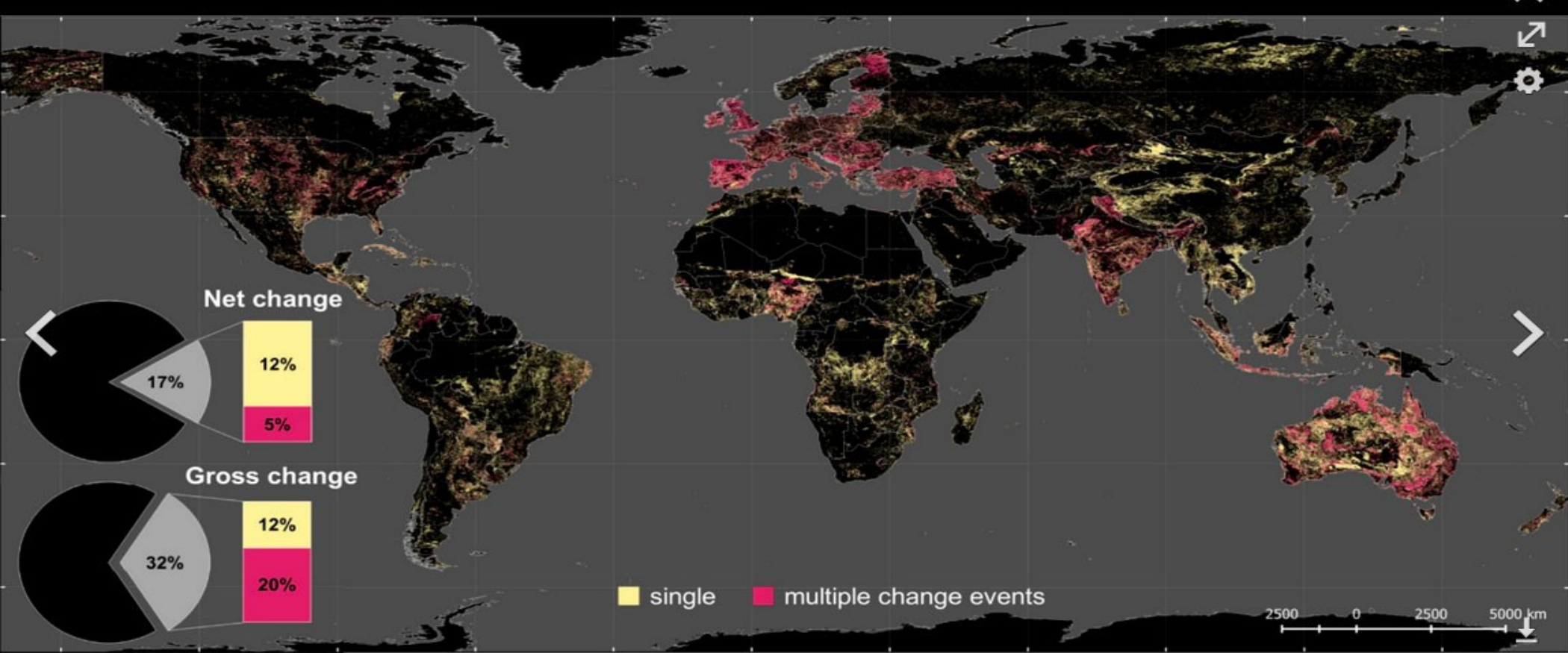
Land Use

Land use change has affected 32% of global land area in just six decades (1960-2019)

Deforestation and agricultural expansion in the Global South and afforestation and cropland abandonment in the Global North

Links to effects of global trade on agricultural production

(Winkler et al.2021 <https://doi.org/10.1038/s41467-021-22702-2>)



Share of the total land surface without and with consideration of multiple changes between six major land use/cover categories (urban area, cropland, pasture/rangeland, forest, unmanaged grass/shrubland, non-/sparsely vegetated land) in 1960–2019

 **More details**

Authors of the study: Karina Winkler, Richard Fuchs, Mark Rounsevell & Martin Herold - <https://www.nature.com/articles>

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Land Surface Change

Land Use and Climate Change

Agriculture, forestry and other land use accounted for 13-21% of global total anthropogenic greenhouse gas (GHG) emissions in the period 2010-2019

(IPCC 6th Assessment)

Safe and Just Earth System Boundaries

BIOSPHERE

Global Intact Nature: at least 50-60% natural ecosystem area (safe and just). BREACHED AT 45-50%

Local Managed nature: at least 20-25% natural ecosystems in every square kilometer (safe and just). BREACHED FOR TWO-THIRDS OF HUMAN-DOMINATED LAND AREA

Safe and Just (global intact nature): >50-60% natural ecosystem area

Safe and Just (local managed nature): >20-25% natural ecosystems in every km²

BIODIVERSITY LOSS

- Extinction rate (species per million species per year)
preindustrial 0.1-1, actual **1000**
- Global warming 2°C = 20% species loss; 4°C = 50%
- The annual cost of forest loss is \$2-5 trillion
- Loss of insect biomass in Europe 80%
- Global vertebrate biomass reduced by 60%
- 1 million of 8 million species threatened with extinction
- resulting in collapse of essential ecosystem services

Forests

- 31 per cent of land area, 80 per cent of the world's terrestrial biodiversity, store more carbon than the atmosphere.
- 1.6 billion people depend on forests for subsistence, livelihood, employment and income
- 2 billion people, 1/3 of world's population and 2/3 of households in Africa, depend on wood fuel for cooking and heating.
- Forests and trees provide clean air and water

Forest loss

- 10 million hectares of forests lost annually
- Forests are at risk from illegal or unsustainable logging, forest fires, pollution, disease, pests, fragmentation and the impacts of climate change, including severe storms and other weather events.
- Zoonotic diseases (75% of emerging infectious diseases) occur when natural landscapes, such as forests, are cleared.

Forest restoration

- Restoring forests and planting trees are an essential part of an integrated one health approach for people, species and the planet.
- Two billion hectares of degraded land worldwide have the potential to be restored
- UN target: increasing global forest area by 3 per cent by 2030
- This will create new jobs, prevent soil erosion, protect watersheds, mitigate climate change, and safeguard biodiversity.

(<https://www.un.org/development/desa/un-desavoice/things-you-need-to-know/2023/05#5318>)

Microbial Biodiversity

There are at least 6 million species of terrestrial fungus, but only 140,000 have been fully characterised. For up to a trillion species of prokaryotes like bacteria, DNA-based microbial surveys are only beginning. Protists, complex unicellular organisms like slime molds, number 200,000. This represents the majority of the Earth's biodiversity.

Microbial Extinction

A large microbial extinction event may already be underway. Species of soil fungi that produce mushrooms have diminished by nearly half in the Netherlands over 30 years, and more generally by 45 percent across Europe in the past century. The main causes are probably air pollution, and intensive forest management that removes the food of wood-decaying fungal species. Since most species are undescribed, they will go extinct without our knowing it. Not only are fungi decreasing in abundance, but the same common ones come to dominate and more exotic ones disappear, with intense homogenisation. Recent studies have shown that microorganisms are sensitive to the same pressures as higher organisms, including habitat loss, invasive species, pollution and wildfires. (<https://iefworld.org/node/1404>)



Sustainable Use of Natural Resources

As trustees, or stewards, of the planet's vast resources and biological diversity, humanity must learn to make use of the earth's natural resources, both renewable and non-renewable, in a manner that ensures sustainability and equity into the distant reaches of time. This attitude of stewardship will require full consideration of the potential environmental consequences of all development activities. It will compel humanity to temper its actions with moderation and humility, realizing that the true value of nature cannot be expressed in economic terms.

Sustainable Use of Natural Resources

It will also require a deep understanding of the natural world and its role in humanity's collective development - both material and spiritual. Therefore, sustainable environmental management must come to be seen not as a discretionary commitment mankind can weigh against other competing interests, but rather as a fundamental responsibility that must be shouldered - a pre-requisite for spiritual development as well as the individual's physical survival.

(Bahá'í International Community, *Valuing Spirituality in Development: Initial Considerations Regarding the Creation of Spiritually Based Indicators for Development*. A concept paper written for the World Faiths and Development Dialogue, Lambeth Palace, London, 18-19 February 1998)

Prosperity from the Earth

Every man of discernment, while walking upon the earth, feeleth indeed abashed, inasmuch as he is fully aware that the thing which is the source of his prosperity, his wealth, his might, his exaltation, his advancement and power is, as ordained by God, the very earth which is trodden beneath the feet of all men. There can be no doubt that whoever is cognizant of this truth, is cleansed and sanctified from all pride, arrogance, and vainglory....

(Bahá'u'lláh, Epistle to the Son of the Wolf, Wilmette, Bahá'í Publishing Trust, 1988, p. 44)

Nature

Nature in its essence is the embodiment of My Name, the Maker, the Creator. Its manifestations are diversified by varying causes, and in this diversity there are signs for men of discernment. Nature is God's Will and is its expression in and through the contingent world.

Love of Nature

Bahá'u'lláh loved the beauty and verdure of the country. One day He passed the remark: *'I have not gazed on verdure for nine years. The country is the world of the soul, the city is the world of bodies.'*

(‘Abdu'l-Bahá, in J. E. Esslemont, *Bahá'u'lláh and the New Era*. Chpt. 3, p. 35)

Diversity

Know that the order and perfection of the universe require that existence should appear in countless forms.... There must be differences of degrees and stations, of kinds and species, for existence to shine forth with the utmost perfection.

(‘Abdu’l-Bahá, Some Answered Questions, Chapter 32)

Diversity

Consider the world of created beings, how varied and diverse they are in species, yet with one sole origin. All the differences that appear are those of outward form and colour. This diversity of type is apparent throughout the whole of nature.... It is just the diversity and variety that constitutes its charm; each flower, each tree, each fruit, beside being beautiful in itself, brings out by contrast the qualities of the others, and shows to advantage the special loveliness of each and all.

Preservation of ecological balance

...the economic and social development of all countries is of vital importance and is a matter on which the Teachings have much to say in principle if not in detail. In this area, agriculture and the preservation of the ecological balance of the world are of fundamental interest....

(Universal House of Justice, 31 March 1985 to an Association for Bahá'í Studies)



The elements and lower organisms are synchronized in the great plan of life. Shall man, infinitely above them in degree, be antagonistic and a destroyer of that perfection?

('Abdu'l-Bahá, talk at Leland Stanford Junior University, Palo Alto, California, 8 October 1912. Promulgation of Universal Peace. Wilmette, Bahá'í Publishing Trust, 1982. p. 350)

Cooperation

Consider for instance how one group of created things constituteth the vegetable kingdom, and another the animal kingdom. Each of these two maketh use of certain elements in the air on which its own life dependeth, while each increaseth the quantity of such elements as are essential for the life of the other. In other words, the growth and development of the vegetable world is impossible without the existence of the animal kingdom, and the maintenance of animal life is inconceivable without the co-operation of the vegetable kingdom. Of like kind are the relationships that exist among all created things.

Transformation and Change

In the physical realm of creation, all things are eaters and eaten: the plant drinketh in the mineral, the animal doth crop and swallow down the plant, man doth feed upon the animal, and the mineral devoureth the body of man.

Physical bodies are transferred past one barrier after another, from one life to another, and all things are subject to transformation and change, save only the essence of existence itself - since it is constant and immutable, and upon it is founded the life of every species and kind, of every contingent reality throughout the whole of creation.

(‘Abdu’l-Bahá, Selections from the Writings of ‘Abdu’l-Bahá, p. 157)

Interdependence

The natural world, in all its wonder and majesty, offers profound insight into the essence of interdependence. From the biosphere as a whole to the smallest microorganism, it demonstrates how dependent any one life-form is on numerous others—and how imbalances in one system reverberate across an interconnected whole.

(Bahá'í International Community, One Planet, One Habitation, §1)

The Natural Environment

Bahá'ís believe that the crucial need facing humanity is to find a unifying vision of the nature and purpose of human life. An understanding of humanity's relationship to the natural environment is an integral part of this vision.

(Bahá'í International Community's Seven Year Plan of Action on Climate Change, 2009)

Kindness to Animals

Burden not an animal with more than it can bear. We, truly, have prohibited such treatment through a most binding interdiction in the Book. Be ye the embodiments of justice and fairness amidst all creation.

(Baha'u'llah, *The Kitáb-i-Aqdas*, paragraph 187 , page 87)

Kindness to Animals

He should show kindness to animals, how much more unto his fellow-man, to him who is endowed with the power of utterance.

(Baha'u'llah, *Gleanings*, page 265, and *The Kitab-i-Iqan*, page 194)

Kindness to Animals

...it is not only their fellow human beings that the beloved of God must treat with mercy and compassion, rather must they show forth the utmost loving-kindness to every living creature.... The feelings are one and the same, whether ye inflict pain on man or on beast.

Train your children from their earliest days to be infinitely tender and loving to animals. If an animal be sick, let the children try to heal it, if it be hungry, let them feed it, if thirsty, let them quench its thirst, if weary, let them see that it rests.

(‘Abdu’l-Bahá, Selections from the Writings of ‘Abdu’l-Bahá, p. 158-159)

Kindness to Animals

*Unless ye must,
Bruise not the serpent in the dust,
How much less wound a man.
And if ye can,
No ant should ye alarm,
Much less a brother harm.*

(‘Abdu’l-Bahá, Selections from the Writings of ‘Abdu’l-Bahá, p. 256)

Animals and Music

Even over animals, music has an effect. For example: When they wish to take a camel over a desert road, they attach to him some bells, or they play upon a flute, and this sound prevents him from realizing the fatigue of the journey; his nerves are affected, but he does not have an increase of thought, he feels nothing but physical sensation.

(`Abdu'l-Baha, in Music, Compilation of Compilations, page 79)