



Living in harmony with nature

Health and Biodiversity

Though we may seldom realize it, our health is heavily dependent on biodiversity, which sustains our food supply, is a source of nutrients and medicines, and supports the provision of clean air and fresh water, while also contributing to economic development, cultural and spiritual enrichment. Indeed, we cannot have healthy societies without biodiversity, and yet the threats to biodiversity are making the achievement of universal good health an even greater challenge.

Sudden and gradual changes to biodiversity can have severe and unpredictable effects on the health of all living things, including people. For example, clearing land for agricultural or residential purposes can bring people into closer contact with wildlife that may transmit diseases to humans and also promote the spread of disease from humans to animals. It may also reduce populations of predators that hold disease-carrying organisms in check. In addition, clearing of land may bring about the loss of plants and other organisms useful in medical research or that may contain substances used as medicines.

People in developing countries face particularly heavy health burdens from a loss of biodiversity, with impacts on food supply and quality, medicines, and cultural and religious values. It has been estimated that approximately 80% of the world's population from developing countries rely mainly on traditional medicines derived from plants and that 25% of prescriptions dispensed in United States pharmacies contained plant extracts or active ingredients derived from plants. Also, as the number of crop varieties has shrunk in the past 50 years: with 90% of the world's calories coming from a dozen crops, people's diets have been simplified and nutritional diseases have arisen in part as a result. Obesity and diabetes, as well as many other emerging plagues such as mental health ailments, including depression, can all in part be connected to biodiversity loss.

It is now also widely recognized that biodiversity loss and climate change are mutually reinforcing: the loss of biodiversity hastens climate change, which in turn threatens biodiversity. This has a negative impact on human health as we struggle to adapt to the impact of both these environmental challenges. A climate resilient human community will have access to protected ecosystem services, and biodiversity is an essential component of any climate change adaptation strategy.

While we can improve upon our understanding of how biodiversity loss affects health, we can also make clearer what is at stake for ourselves and all life when we lose species and damage ecosystems. We thus become better equipped to plan our development projects and societies in the healthiest possible way. The continuing efforts to protect, restore, and understand local and global biodiversity will have both immediate and long-term benefits for human and ecosystem health.

Here's how you can help:

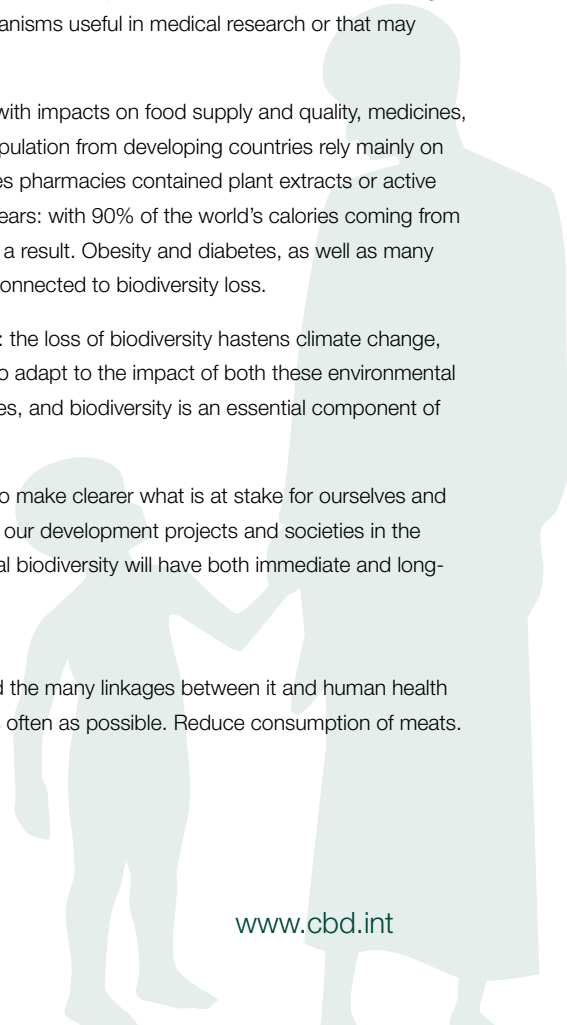
Learn as much as you can, and teach others, about the multiple threats to biodiversity today, and the many linkages between it and human health. Know where your food comes from and purchase locally harvested fresh fruits and vegetables as often as possible. Reduce consumption of meats. This will benefit your health and the planet's.

Walk or ride a bicycle, take and support public transport, and use your car as little as possible.



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Do an energy audit of your home and figure out how you can make it more energy efficient, so you can simultaneously reduce your ecological footprint and save money

Get active: Lobby local and national politicians to support international biodiversity conservation efforts, join a non-governmental organization, purchase eco-friendly products, and/or donate to habitat protection projects

Promote biodiversity in your own backyard: compost and recycle, house local fauna on your roof space, keep a diversified (pesticide-free) garden, collect rainwater, and use non-polluting household products.

Fast Facts

- ▶ Paclitaxel, used in treating breast, ovarian, and other cancers, comes from the Pacific Yew tree (*Taxus brevifolia*)
- ▶ Each year at least three million children under the age of five die due to environment-related diseases
- ▶ Artemisinin, from the sweet wormwood plant, is one of the most effective anti-malarial drugs
- ▶ Schistosomiasis, a parasitic disease afflicting over 200 million people annually, is carried by freshwater snails. Overfishing may reduce populations of snail predators, resulting in a greater risk of human schistosomiasis. Deforestation in the tropics tends to favour snails that carry schistosomiasis and mosquitoes that carry malaria
- ▶ A third of the world's hundred largest cities rely on forest protected areas for a substantial proportion of their drinking water supply (Running Pure: The importance of forest protected areas to drinking water, 2003 by Nigel Dudley and Sue Stolton (Eds.), A research report for the World Bank / WWF Alliance for Forest Conservation and Sustainable Use)
- ▶ Nature can contribute to disease prevention as it has positive effects on blood pressure, cholesterol, outlook on life and stress-reduction (Healthy Parks Healthy People, The Health Benefits of Contact with Nature in Park Context, 2008 by School of Health and Social Development, Faculty of Health, Medicine, Nursing and Behavioural Sciences, Deakin University, Melbourne, Australia)
- ▶ Overweight and obesity are now on the rise in low- and middle-income countries, particularly in urban settings. In 2010, around 43 million children under five were overweight. Supportive environments and communities are fundamental, as well as healthier choice of foods and regular physical activity

Learn More

The Center for Health and the Global Environment at Harvard Medical School

▶ <http://chge.med.harvard.edu>

The Consortium for Conservation Medicine ▶ www.conservationmedicine.org/index.htm

Food and Agriculture Organization of the United Nations, Natural Resources and Environment ▶ www.fao.org/nr

Global Environmental Change and Human Health ▶ www.gechh.unu.edu/index.html

United Nations University Institute for Water, Environment and Health
▶ www.inweh.unu.edu/index.html

The World Health Organization ▶ www.who.int

This fact sheet is based on the book *Sustaining Life: How Human Health Depends on Biodiversity* (E. Chivian and A. Bernstein, editors), Oxford University Press, New York, NY 2008 and the World Health Organization website, unless cited otherwise.

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