

An Updated Look at Population and the Environment: Biodiversity



The global population growth rate peaked in the 1960s, sparking concerns about the challenges posed by such growth for natural resources and the environment. While the rate of growth has slowed, the world's population has since more than doubled in size. World population is projected to grow through most of the 21st century, though with significant diversity in population trends: The populations of some countries today are young on average and growing rapidly, those of others are older and growing more slowly, and those of others still have peaked and are now slowly decreasing in size.

Shifts in patterns of production, consumption, and technological change continue to mediate the impact of human activity on the planet. Does population growth matter? And if so, how? This series looks at how today's population trends interact with environmental and natural resource challenges, including often overlooked insights on how these trends relate to planetary boundaries, gender equity, and *reproductive agency*—the capacity of individuals and couples to make their own decisions about conceiving and bearing children.

HOW DO POPULATION TRENDS INFLUENCE BIODIVERSITY?

As human numbers grow, aggregate ecological footprints increase pressure on all drivers of biodiversity loss: Land-use change, overexploitation, climate change, pollution, and invasive species.

The loss of abundance of wild plants and animals, and the overall diversity of wild organisms, impoverishes the natural world.

1 MILLION

Species currently at risk of extinction.⁴

69%

Average decline in wild vertebrate populations since 1970.⁵



The Great Acceleration: Over the last 50 years, human expansion has outstripped planetary boundaries.

2x

Human population increase.

4x

Global economic expansion.¹

10x

Increase in global trade.²

96%

The share of the biomass of all land mammals now taken up by human beings and their livestock.³



Land-use change—the appropriation of formerly wild land for human uses—is the leading cause of biodiversity loss, largely driven by the expansion of land for crops and livestock grazing.

>1/3

The share of Earth's land surface that is already used for agriculture.⁶

35% to 56%

The projected increase in total global food demand by 2050.⁷

50%

The share of the Earth's land that will see increased human-wildlife overlap, heightening ecosystem pressures.⁸



HEALTHY BIODIVERSITY, GENDER EQUITY, AND REPRODUCTIVE AGENCY ARE LINKED

Gender equity and reproductive agency matter not only for health and wellbeing, but also for biodiversity and environmental sustainability.

Gender equity tends to have a positive association with environmental outcomes and has been associated with stronger environmental stewardship and greater support for environmental legislation, for example.⁹ Investing in gender equity and reproductive agency also influences population trends, by contributing to preventing unintended pregnancies and enabling couples and individuals to choose the timing and spacing of births, thereby slowing population growth. When women have the agency to make informed reproductive choices, they tend to opt for smaller families. Even modest shifts in fertility can significantly alter future population trajectories, with direct implications for land use, resource demand, and pressures on habitats. With nearly half of all pregnancies globally unintended, as reported in the United Nations (UN) Population Fund *State of World Population 2022* report, the potential gains from addressing this gap are substantial.¹⁰

Population dynamics are never the sole cause of

biodiversity loss, but they shape its scale and trajectory. Supporting gender equity and reproductive agency therefore operates not as an environmental “quick fix,” but as a long-term enabling condition that can ease structural pressures while advancing human wellbeing.

Integrated approaches combining conservation with reproductive health, rights, and livelihood initiatives, have demonstrated gains across health, resilience, gender, and environmental dimensions.¹¹ Leading international environmental bodies such as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), International Union for Conservation of Nature, and UN Environment Programme have similarly emphasized the links between population trends, reproductive agency, gender equity, and environmental sustainability. The IPBES *Assessment Report on Land Degradation and Restoration*, for example, highlights that measures addressing population growth and consumption patterns can deliver lasting environmental and social benefits, including by improving access to education, voluntary family planning, and gender equity.¹²

FROM THE FIELD: LINKING REPRODUCTIVE AGENCY AND CONSERVATION IN ACTION

The Center for Biological Diversity’s “Endangered Species Condoms” project uses colorful, species-themed packaging to creatively demonstrate that reproductive agency and environmental sustainability are synergistic. The project affirms how empowered family planning can directly alleviate the cumulative human pressure on the habitats of at-risk wildlife.

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Endangered species condoms. Art by Shawn DiCriscio. Package design by Lori Lieber.

FROM THE FIELD: POPULATION DYNAMICS, BISON, AND CONSERVATION EFFORTS IN THE NORTHERN GREAT PLAINS



American bison in the Northern Great Plains. Photo courtesy of American Prairie Reserve.

The Northern Great Plains grassland ecosystems are among the most threatened globally, largely because of increasing agricultural pressures. In 2022 alone, almost 2 million acres of grasslands were converted to croplands across the U.S. and Canadian portions of the region.¹³ The Northern Great Plains example illustrates that, just as human population growth contributes to biodiversity loss, population stabilization or decline can create conditions that support ecological recovery. Areas experiencing long-term population decline, such as the Northern Great Plains' Montana American Prairie reserve, can present opportunities for biodiversity restoration, particularly for large-scale rewilding initiatives.¹⁴ The revocation of the reserve's bison grazing permits in January 2026, reallocating grazing land exclusively to domestic

cattle despite the risk of ecological degradation, reminds us that population dynamics are not a standalone solution for environmental problems. But population dynamics do contribute to shaping the context within which broader behavioral, social, and economic processes influence conservation efforts.

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UNDERSTANDING POPULATION TRENDS IS VITAL TO UNDERSTANDING OUR WORLD AND PLANNING FOR THE FUTURE

The future path of population change is relevant for healthy biodiversity, and that path is not fixed—it responds to policies, programs, and investments.

A population lens invites deeper inquiry into drivers of population growth that are linked to inequity, including barriers that women and girls experience that limit their rights and opportunities. Integrating gender considerations, including by advancing reproductive health and rights into biodiversity policies, research, and discourse, is foundational for gender equity and environmental sustainability.

Addressing biodiversity loss requires integrated action across the interlinked drivers of the loss and degradation of the natural world. Improvements in technology and efficiency, changes in consumption patterns, and shifts in behavior are needed. But they will eventually prove insufficient if the overall scale of human demand for land, energy, and resources continues to grow.

In many ways, embracing the shift toward lower fertility—a shift based entirely on the reproductive choices of individuals and couples—presents opportunities for both people and the planet.

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