

ESSENTIAL POINTS FOR POLICY MAKERS

Scientists' Consensus on

Maintaining Humanity's Life Support Systems in the 21st Century

Earth is rapidly approaching a tipping point. Human impacts are causing alarming levels of harm to our planet. As scientists who study the interaction of people with the rest of the biosphere using a wide range of approaches, we agree that the evidence that humans are damaging their ecological life-support systems is overwhelming.

We further agree that, based on the best scientific information available, human quality of life will suffer substantial degradation by the year 2050 if we continue on our current path.

Science unequivocally demonstrates the human impacts of key concern:

- **Climate disruption**—more, faster climate change than since humans first became a species.
- **Extinctions**—not since the dinosaurs went extinct have so many species and populations died out so fast, both on land and in the oceans.
- **Wholesale loss of diverse ecosystems**—we have plowed, paved, or otherwise transformed more than 40% of Earth's ice-free land, and no place on land or in the sea is free of our direct or indirect influences.
- **Pollution**—environmental contaminants in the air, water and land are at record levels and increasing, seriously harming people and wildlife in unforeseen ways.
- **Human population growth and consumption patterns**—seven billion people alive today will likely grow to 9.5 billion by 2050, and the pressures of heavy material consumption among the middle class and wealthy may well intensify.



Illustration by Cheng (Lily) Li

By the time today's children reach middle age, it is extremely likely that Earth's life-support systems, critical for human prosperity and existence, will be irretrievably damaged by the magnitude, global extent, and combination of these human-caused environmental stressors, **unless we take concrete, immediate actions to ensure a sustainable, high-quality future.**

As members of the scientific community actively involved in assessing the biological and societal impacts of global change, we are sounding this alarm to the world. For humanity's continued health and prosperity, we all—individuals, businesses, political leaders, religious leaders, scientists, and people in every walk of life—must work hard to solve these five global problems, starting today:

1. *Climate Disruption*
2. *Extinctions*
3. *Loss of Ecosystem Diversity*
4. *Pollution*
5. *Human Population Growth and Resource Consumption*