

US EPA ARCHIVE DOCUMENT



EPA's Endangerment Finding

Environmental and Welfare Effects

The key effects that support the EPA's determination that current and future concentrations of greenhouse gases endanger public welfare include:

Sea Level Rise

- The global sea level gradually rose in the 20th century and continues to rise.
- The most serious potential adverse effects are the increased risk of storm surge and flooding in coastal areas from sea level rise and more intense storms. Observed sea level rise is already increasing the risk of storm surge and flooding in some coastal areas.
- The U.S. East Coast and Gulf Coast are particularly vulnerable to sea level rise because the land is relatively low with respect to mean sea level and also sinking in many places.

Water and Implications for Water Use

- Rising temperatures will decrease the size of snow packs in the Western United States, affecting seasonal water supplies, relied on by humans and wildlife.
- Climate change will likely put more pressure on already stressed water resources in some areas of the United States.

Agriculture and Forestry

- There is a potential for a net benefit in the near term for certain crops, but there is significant uncertainty about whether this benefit will last given the potential adverse impacts of climate change on crop yield, such as the increasing risk of extreme weather events. Other aspects of this sector may be adversely affected by climate change, including livestock management and irrigation requirements, and there is a risk of adverse effect on a large segment of the total crop market.
- Climate change has very likely already increased the size and number of wildfires, insect outbreaks, and tree mortality in the interior West, the Southwest, and Alaska, and will continue to do so.

Energy and Infrastructure

- Climate change is likely to affect U.S. energy use (e.g., heating and cooling requirements), and energy production (e.g., effects on hydropower), physical infrastructures and institutional infrastructures.

Ecosystems

- Changes in climate will cause some species to shift north and to higher elevations, which may fundamentally rearrange U.S. ecosystems, and in combination with other stresses such as development, habitat fragmentation, invasive species, could have negative consequences on biodiversity and the benefits that healthy ecosystems provide to humans and the environment.
- Climate change impacts outside of the United States may exacerbate problems that raise humanitarian, trade, and national security issues for the United States.