

Needed: Climate Change Legislation for Massachusetts

How Will Climate Change Impact Massachusetts?

Recent reports of the Intergovernmental Panel on Climate Change (www.ipcc.ch) make clear that the Earth is warming more quickly and to a greater degree than in any previous climate changes. The consensus of more than 2,000 contributing scientists is that some impact on natural and manmade systems is inevitable.

Impacts on the people, productivity and the natural communities of Massachusetts are already occurring. The extent of these changes depends on our readiness to reduce greenhouse gas emissions and the speed and effectiveness with which we enable human and natural communities to adapt. The cost of doing nothing in the face of climate change is enormous.

- **Changing temperatures** will alter lands, lakes, rivers and oceans that support plants and animals. Some natural communities may be able to adapt, others will not:
 - Iconic New England tree species like our sugar maples will migrate north, removing their fiery fall foliage and trademark Massachusetts syrup that attracts tourists.
 - Forest health and resiliency will be weakened due to a proliferation of invasive insects and diseases that have the potential to exterminate entire tree species.
 - The forestry economic sector will face significant adjustments in range and distribution of forest species they manage and harvest.
 - Migratory fish sensitive to temperature, like herring and salmon, will alter their patterns to the detriment of entire ecosystems.
 - Our rivers may become too warm to sustain freshwater fish species like native brook trout.
 - Two Massachusetts state symbols, the black capped chickadee and the cod, are likely to be driven from the state.
- **Greater precipitation** of up to 20 percent will increase river and stream flows:
 - More rapid water flow and frequent flooding in rivers and streams will stress aged and weakened dams and could cause catastrophic dam failures.
 - Greater erosion and flooding could damage and wash away topsoil from farms, diminishing their productivity.
- **Rising ocean levels and warmer water** will erode valuable shoreline:
 - Fish populations already stressed by destruction of their nursery habitats may not have the resiliency to survive.
 - Fragile estuaries and marshes will be inundated by higher water levels and storm surges and will be unable to reestablish inland.
 - Catastrophic storm events may become more common.
 - Fresh water will become saltier, affecting habitat and drinking water.
 - Invasive parasites that thrive in warmer waters could decrease fish stocks.

What can the Legislature do?

The Nature Conservancy and our partners support Massachusetts legislation to address the impacts of climate change by reducing greenhouse gas emissions and developing programs to help natural systems be more resilient in the face of climate change impacts.

Two-Pronged Approach

The Conservancy supports the adoption of the Global Warming Solutions Act (GWSA), which reflects the two-pronged approach recommended by international scientists and economists. GWSA requires the Secretary of Energy and Environmental Affairs (EEA) to develop and implement an economy-wide cap and trade system that would reduce emissions by 80 percent by the year 2050.

In addition, the bill requires EEA to:

- assess climate change impacts on all types of ecosystems and habitat;
 - develop and implement a statewide plan to help animals, plants and their habitat adapt to and survive climate change impacts; and
 - form an advisory board to assist with the creation of the plan.
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Supporting Adaptation Opportunities

Reducing greenhouse gas emissions is a priority. Our readiness and speed will determine the degree of climate change through the next 100 years. In addition, some impact is inevitable; some change is already underway. Directing a portion of state efforts and resources to enable critical natural systems to adapt is vital. Our commitment to such innovative strategies will shape how Massachusetts responds to these changes.

Consistent guidelines for effective adaptation strategies must be developed. The Conservancy supports strategies to:

- Connect lands and waters to allow species to migrate as temperatures change; especially in fragmented landscapes that might prevent migration;
 - Protect and restore habitat on which already stressed species depend. Maintaining our natural systems protects the valuable ecological services these systems provide, such as flood control, clean water and clean air;
 - Identify and monitor early effects of climate change in Massachusetts; and
 - Integrate climate change adaptation strategies into environmental plans.
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Additional Resources and More Information

The Nature Conservancy's science staff, which specialize in freshwater, forest, and coastal and marine biodiversity conservation, are available to work with policy makers. For more information on the Conservancy's efforts to address climate change, please see www.nature.org/initiatives/climatechange, or contact Steve Long at slong@tnc.org or 617-227-7017 ext. 313.

The Nature Conservancy is a nonprofit conservation organization. We have 1.1 million members, over 32,000 in Massachusetts. Our mission is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. With the support of the government and local partners, we have preserved over 23,000 acres of land across Massachusetts.