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## Needed: Climate Change Legislation for Massachusetts

### How Will Climate Change Impact Massachusetts?

Recent reports of the Intergovernmental Panel on Climate Change ([www.ipcc.ch](http://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 impacts on natural and manmade systems is inevitable and already demonstrable in Earth's most vulnerable regions. There are already impacts on people, productivity and the natural communities of Massachusetts. The extent of our experience depends on our readiness to reduce greenhouse gas emissions and the speed and effectiveness with which we enable human and natural communities to adapt to change. The cost of doing nothing to adapt to climate change is enormous.

- **Changing temperatures** will cause changes to the lands, lakes, rivers and oceans that support plants and animals. Some natural communities may be able to adapt, others will not. Examples of changes likely to occur are:
  - 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.
  - Temperature-sensitive migratory fish like herring and salmon will alter their patterns to the detriment of entire ecosystems. Freshwater fish species like native brook trout may find our rivers too warm to sustain them.
  - 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. For example:
  - 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 and therefore diminish their productivity.
- **Rising ocean levels and warmer water** will cause salt water to infiltrate further inland and coastal storms surges will erode valuable shoreline. For example:
  - Fish populations already stressed by destruction of their nursery habitats may not have 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 more salty affecting habitat and drinking water.
  - Invasive parasites that thrive in warmer waters could decrease fish stocks.

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**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 directing a small percentage of funds to help natural systems adapt to climate change.

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### **Reducing Emissions**

The Conservancy is working to support federal, regional and state policies to reduce emissions of harmful greenhouse gases, including:

- Supporting the adoption of the Regional Greenhouse Gas Initiative (RGGI), a cap and trade policy that provides an efficient manner to reduce greenhouse gases by capping emissions from power plants;
  - Using RGGI funds to support the reduction of emissions, including:
    - Energy efficiency and conservation for consumers and the development of renewable energy sources; and,
    - Natural resources management -- managing, restoring, and preserving forests and agriculture to use trees, plants and soil -- to function naturally to absorb carbon dioxide (known as carbon sequestration).
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### **Supporting Adaptation Opportunities**

Reducing greenhouse gas emissions is a priority. Our readiness and speed will determine the degree climate change through the next 100 years. Some impact is inevitable. Some change is already underway. Directing a portion of resources to enable critical natural systems to adapt to the impacts of climate change is vital. Our commitment to such innovative strategies will shape how Massachusetts can weather inevitable changes.

The Conservancy strongly supports using up to 10% of the revenue generated by auction of carbon allowances under RGGI to fund adaptation strategies. Ten percent is a small portion of the revenue stream and a reasonable level to direct toward the most affected natural systems on which we depend. 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 thus protecting resources. Maintaining the integrity of our natural systems protects ecological, valuable services these systems provide such as flood control, clean water, and clean air;
  - Identify and monitor early effects of climate change on Massachusetts' natural systems; and
  - Integrate climate change adaptation strategies into environmental plans.
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### **Administration of Allowance Funding**

Funding for adaptation should be directed to a trust or appropriate state agency with natural resources management experience, with advisory input from natural resource conservation stakeholders.

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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](http://www.nature.org/initiatives/climatechange), or contact Steve Long at [slong@tnc.org](mailto:slong@tnc.org) or 617-227-7017 ext. 313.

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*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.*