



## Getting Ready for

# The Warming

by John O'Leary

It seems that not a day goes by but we hear a news story about climate change. Often the story seems to conflict with the one we read the day before, and many appear to be influenced by the political bent of the writer. While this leaves much of the public wondering, the debate about whether or not climate change is actually occurring is over; the popular media discussion has finally shifted from “Is climate really changing?” to “How much will it change, and how soon?” While the answers to those questions remain debatable, the Division of Fisheries and Wildlife must act responsibly and plan ahead. The agency is now in the process of working collaboratively with the Manomet Center for Conservation Sciences and The Nature Conservancy to develop a set of “adaptation strategies” that will help us deal with the effects of climate change on our wildlife landscape.

As the readers of this magazine probably know, the Massachusetts Division of Fisheries and Wildlife (MassWildlife) is the state agency responsible for the conservation and management of the Commonwealth’s fish and wildlife resources. Our biologists and technicians are not swayed by news stories in the popular press; faced with the reality of climate change, their job as wildlife scientists is to gather and analyze all available scientific information on the subject, determine what likely effects the changing climate may have on the biodiversity of Massachusetts, and then develop conser-

vation and management strategies that will best address the potential threats and instability climate change will bring to the Commonwealth’s wildlife communities and native species.

Our assumptions about future climate conditions are based on the predicted results of the latest Global Climate Models (GCMs). These are large scale models that take an immense number of geographic, weather, air composition, ocean currents, temperature and other variables into account. They have been tested by running them back through time to see how accurately they predict historical climates, and then run again with present-day data to see how well they predict existing climate variations around the globe. We must rely on climate models to predict future conditions because it is impossible to perform global-scale experiments where in one world we release low levels of carbon dioxide (CO<sub>2</sub>) or other greenhouse gases, and in another we release high levels, and then compare the results to see how climates respond.

Fortunately, our ability (or rather our computers’ abilities) to accomplish the enormous calculations necessary to run these models has increased dramatically in recent decades, and today research groups all over the world have the computing capability to develop, test and run new GCMs. When many researchers are provided with accurate data and can investigate the same issue from their dif-















