

Dr. Richard Primack's presentation,  
**Climate Change comes to Thoreau's Concord:  
Impacts on Plants, Birds, and Butterflies**

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On May 20, 2012, the BMC's annual Culinary Meeting featured a talk by BMC member Dr. Richard Primack, Boston University professor and researcher into the effects of global warming and climate change on living things. The talk included illustrations and data drawn from New England sources and ended with the question of whether our Club might be able to contribute. Dr. Primack showed clearly that many real and alarming changes have occurred among living things over the last century right here in Massachusetts. How severely these changes will impact life in the future may be an open question, but Dr. Primack's data make it clear that these changes are not just remote but very local as well.

### **Evidence of Climate Change**

Dr. Primack and the students in his lab have been studying the timing of seasonal events, such as flowering times of plants; bird migrations; the first appearances of insects in the spring; leaf development; and the unusual appearance of species in a season, such as a formerly fall-only species appearing in both spring and fall. Dr. Primack pointed out that these seasonal changes could have a profound effect on predator/prey relationships and food availability, thus shifting the balance of nature. Among the resources that Dr. Primack and his students have been using are Henry David Thoreau's diaries; the Arnold Arboretum archives, including their extensive specimen collections; records kept at the Blue Hills reservation; and any accurately-dated old photos that clearly illustrate the seasonal state of flora.

Their investigations have shown that in recent times there are increasingly early flowering of plants, arrivals of migrating birds, appearances of insects, and leafing out of trees. In one dramatic example, an 1868 photo showed bare trees, while another photo taken on the same date in 2010 at the same location showed those same trees fully leafed-out.

### **Prospective Mushroom Data**

Except for a limited amount of research being done in England and in Michigan, there are not much data yet on how mushrooms are responding to climate change. However, Dr. Primack is always looking for new data sources. Since our Club keeps detailed records of species found and identified on all Club forays, a Club member suggested that it might be possible to collect data useful to his research, both in upcoming seasons and from the archives of the Club, which we assume to go back to 1895, if they can be located. Club members seemed interested in the problem and enthusiastic about participating in the project.