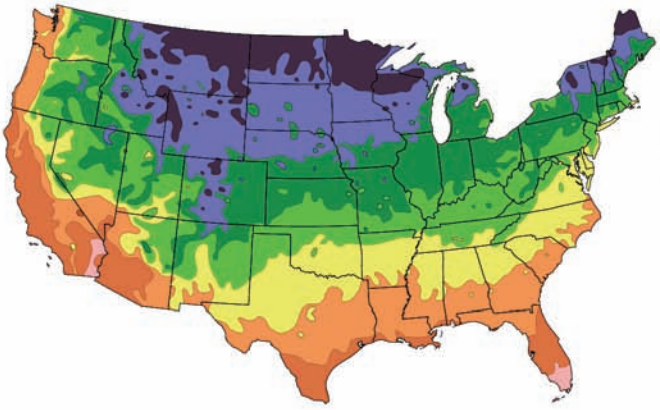
Global Warming Grows Trouble for Gardeners

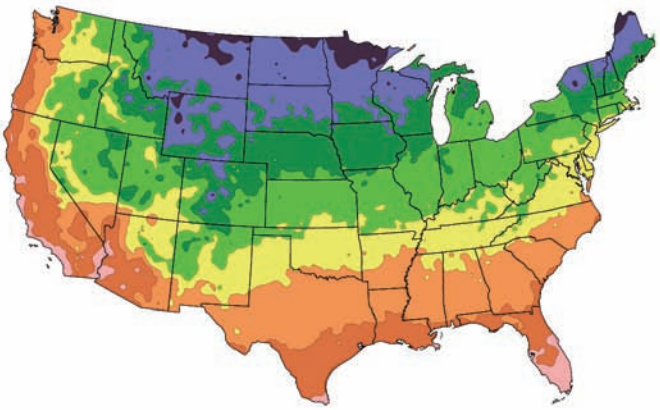
Differences between 1990 USDA hardiness zones and 2006 arborday.org hardiness zones reflect warmer climate

1990 Map



After USDA Plant Hardiness Zone Map, USDA Miscellaneous Publication No. 1475, Issued January 1990

2006 Map



National Arbor Day Foundation Plant Hardiness Zone Map published in 2006.

A report from international climate scientists released in February of 2007 projects that the Earth's average temperature will rise by 4-11 degrees before the end of this century if our dependency on fossil fuels continues unabated. As any gardener knows, even just one degree difference between 32 and 33 degrees Fahrenheit over a period of time can make a huge difference in a garden.

GARDENS IMPACTED NOW

Scientists are now finding what many gardeners have already been noticing; earlier leaf out and bloom times, earlier emergence of butterflies and other insects, and arrival of new bird species at the backyard feeder. Many of the "hardiness zone maps" that gardeners rely on to identify which plants to choose for their gardens are already being adjusted to account for the impacts of global warming. An example is The Arbor Day Foundation chart which recently shifted Illinois, Indiana, Ohio and part of Michigan from Zone 5 to a warmer Zone 6 along with other zone changes.

In many states, the climate change may be so intense that states may no longer have a favorable climate for their official state tree or state flower before this century is out. Imagine Virginia or North

Carolina without the flowering dogwood; Louisiana without bald cypress and magnolia; Kansas without the sunflower; or Ohio without the Ohio buckeye *(see table on page 3 for list of official state trees and flowers in jeopardy)*.

Changes in climate due to global warming will no doubt create some enormous new challenges for gardeners given the strong relationship between our garden plants and climate variables such as temperatures and rainfall. As numerous studies show, any potential benefits from a longer growing season will only be outmatched by a host of problems.

SEVERE WEATHER THREAT

Heavier downpours and more intense storms will lead to extensive flooding in vulnerable areas. At the other extreme, severe drought conditions plaguing parts of the nation over the past few years lead to watering restrictions for our gardens. With global warming, lack of sufficient water for gardens will become even more of a problem.

GARDEN PESTS RISE

Droughts and heat waves also encourage some of the most damaging garden pests such as aphids, spider mites, locusts and whiteflies. Garden weeds such as dandelion and lambsquarters are expected to thrive with global warming.

While weeds and pests in the garden can be frustrating and time consuming to control, the invasive species encouraged by global warming can wreak absolute havoc in a garden as they gain more of a foothold. Scientists estimate that global warming will enable 48 percent of the invasive plants and animals in this country to move further north as temperatures rise.

INVASIVES TAKE OVER

Higher average temperatures and changes in precipitation patterns will enable some of the most problematic species, including kudzu, garlic mustard, purple loosestrife and Japanese honeysuckle, to move into new areas. In addition, global warming will contribute to more severe infestations and habitat damage from both native and exotic insect pests, including black vine weevil, gypsy moth, bagworm and mountain pine beetle.

The complete *Gardeners Guide to Global Warming* can be found at **www.nwf.org/gardenersguide**