Successful and Sustainable Gardening in a Changing Climate

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Global Warming, 1884 –
- variation through time
- variation across space

This is EVIDENCE, not opinion

Global Warming, 1884 –

1884

Source: NASA Goddard Space Flight Center Scientific Visualization Studio

Where is global warming going?

- Atmosphere 2.3%
- Continents 2.1%
- Glaciers & ice caps 0.9%
- Arctic sea ice 0.8%
- Greenland Ice Sheet 0.2%
- Antarctic Ice Sheet 0.1%

Ocean 93.4%

Severe Weather
“Global warming is contributing to an increased incidence of extreme weather because the environment in which all storms form has changed ...”

Dr. Kevin Trenberth, June 2011
National Center for Atmospheric Research

- warmer air
- warmer ocean
- more water vapor in air
- higher sea level

This is the New Normal

The NEW NORMAL for Gardens
1. More CO₂: Is this a benefit? NO.
2. Rising temperatures
   - warmer winters, earlier springs
   - more extremely hot days, fewer cool nights
   - increased temperature variability
3. Heavier downpours, more severe weather
4. More possibility of drought
5. Possibility of salination (Eastern Shore)

Climate Change

Gardening

Gardeners can be part of the solution!!
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Effects of Climate Change: Temperature
LONGER FROST-FREE SEASON
+18 +9 +6 +10
+21 +5
- Fewer cold nights for required plant chilling
  - perennials, bulbs, some fruit trees (apples)
  - Georgia peaches

False Spring in Your Garden
Warm February, freeze in March or April
- cover up if possible
- Flowering trees may lose the year’s blooms

Is it really hot?? Shade helps!
Tomato plants 30% shade, July 2012
- Shaded
- NOT shaded

Adapting to effects of climate change
Too much water
- Improve drainage
- Monitor food safety
Too little water
- Drip irrigation

Pests appear earlier, reproduce more quickly and may differ year to year.
- Be vigilant (learn signs of damage!)
- Consider row covers
- Decide on control strategy before pests arrive
- Call in the experts at Home & Garden Information Center

Climate Friendly Gardening
Gardeners are part of the solution!
Climate Change
mitigation
Gardening
Climate-Friendly (Sustainable) Gardening

Yard tools → 5% US emissions
- Use hand tools (or electric)
- Reconsider weed whackers, blowers
- Weed smart, weed early, mulch
- Cover crops, NO bare soil

Climate-Friendly Gardening

Build up the soil!
- Organic material holds water, yet drains
- Add compost (compost your leaves this year!)
- Plant cover crops
  - add organic material
  - can add nitrogen
  - feed soil microbes
- Control erosion

Climate-Friendly Gardening

Reduce emissions:
No-till planting plus mulch
- Leaves soil structure, worms,
- Keeps decomposable carbon underground
- Bonus: keeps weed seed underground

Reduce Lawn!!
- 42 million acres!!
- Consider “eco-landscaping”, bayscaping, permaculture

Climate Friendly Gardening

Control erosion
- Garden design, raingardens
- Native plants (bayscaping)

Thank you!

Email me anytime with questions:
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