

# Update on the Latest Global Warming Science

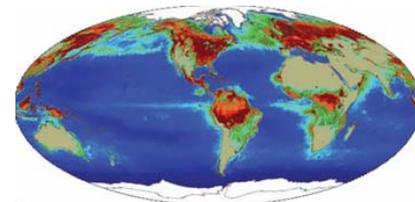
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<http://dge.ciw.edu>

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**GLOBAL ECOLOGY**



# IPCC procedures

- Hundreds of top scientists
- Comprehensive assessment
- Multi-stage, broad-based, monitored review
- Plenary approval line-by-line, by governments



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



UNEP

# Findings of the AR4

- Warming is unequivocal  
1.3°F over last 100 years
- Most warming over last 50 years very likely due to human influences
  - “fingerprints” for human influences



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# Findings of the AR4: 2

- Warming will continue
- "No policy" range for 2100
  - Lowest scenario: 2.0-5.2°F
  - Highest scenario: 4.3-11.5°F



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# Findings of the AR4: 3

- Decreasing water security in the West
- Increased loss to wildfires
- Increased heat waves

# Findings of the AR4: 4

- Damages from climate change
  - \$3 to \$95 per ton  $CO_2$
  - \$110 to \$3,600 billion per year
- Costs of  $CO_2$  stabilization
  - 3% of GDP to a net benefit for GDP



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# New Observations

- Rapidly increasing  $CO_2$  emissions
- Rapidly shrinking arctic ice
- Warming in Antarctica

Raupach et al. 2007, PNAS  
Comiso et al. 2008, GRL  
Steig et al. 2009, Nature



## In sum

- Wide range of documented impacts
- Increased confidence in human causation
- Critical risk areas for the US
- Modest costs for mitigation