



# Florida and Climate Change

## The costs of inaction

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# The message in brief

- Doing something about climate change may seem expensive, *but...*
  - Doing **nothing** about climate change will be **REALLY** expensive
  - Four effects of inaction will amount to **5% of Florida state income by 2100**
- Other critical impacts of climate change cannot be priced

# The Cost of Inaction

Our report describes the best and worst ***probable*** climate outcomes for Florida.

The “cost of inaction” is the difference between these worst and best cases.

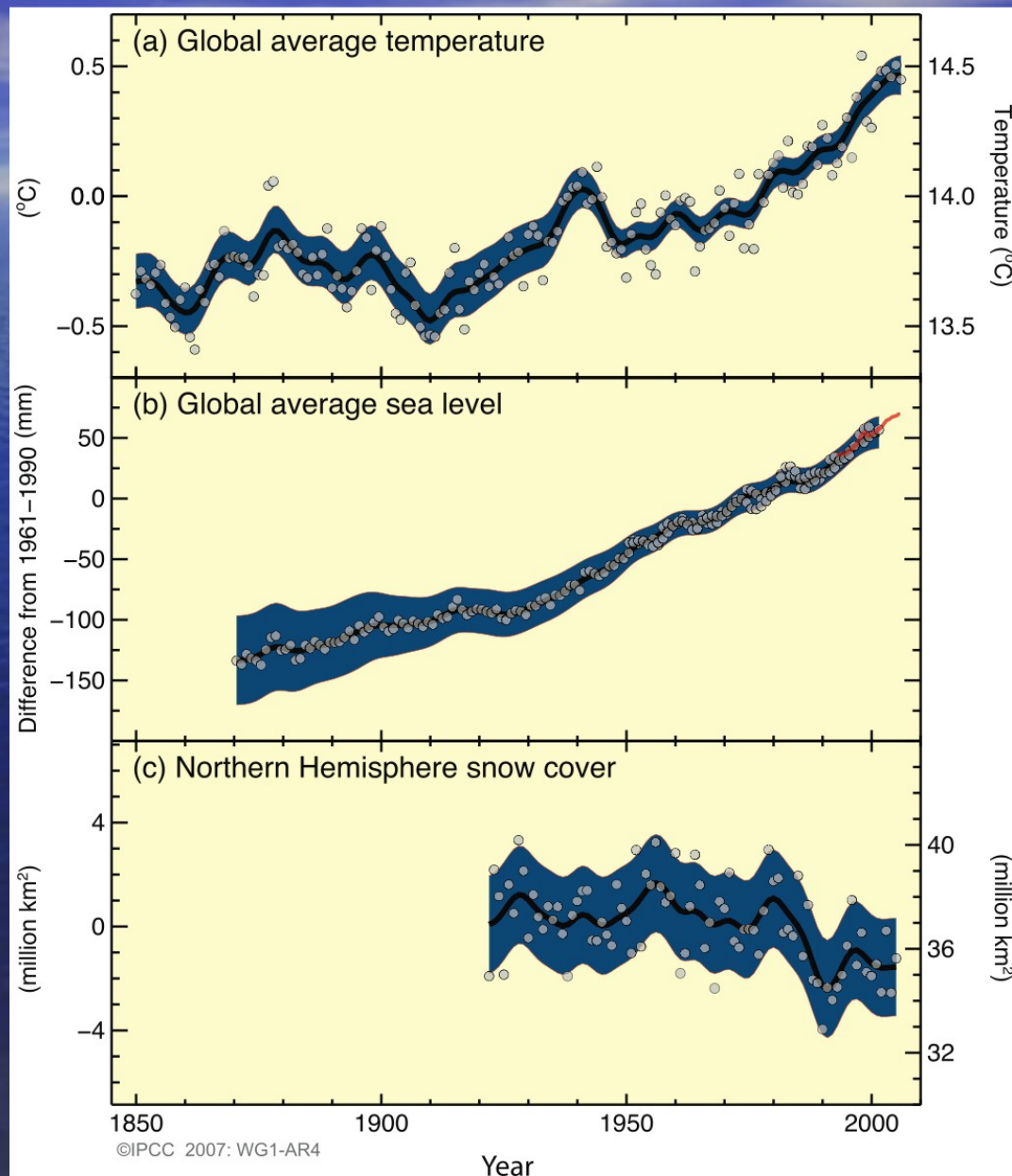
It’s the damage that we can avoid by acting to stop, or slow, climate change.

# The latest evidence (IPCC, 2007)

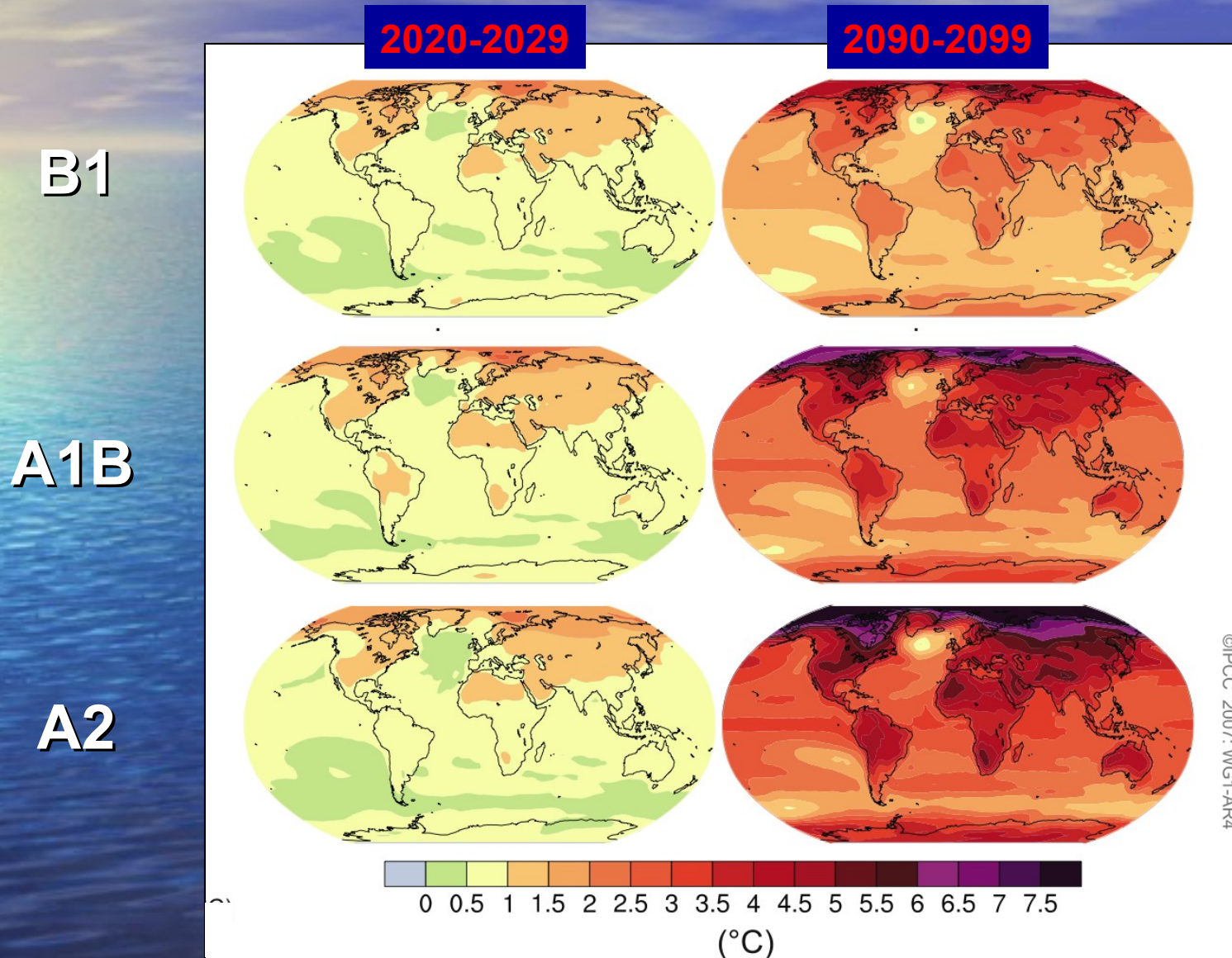
The world is getting hotter

Sea levels are rising

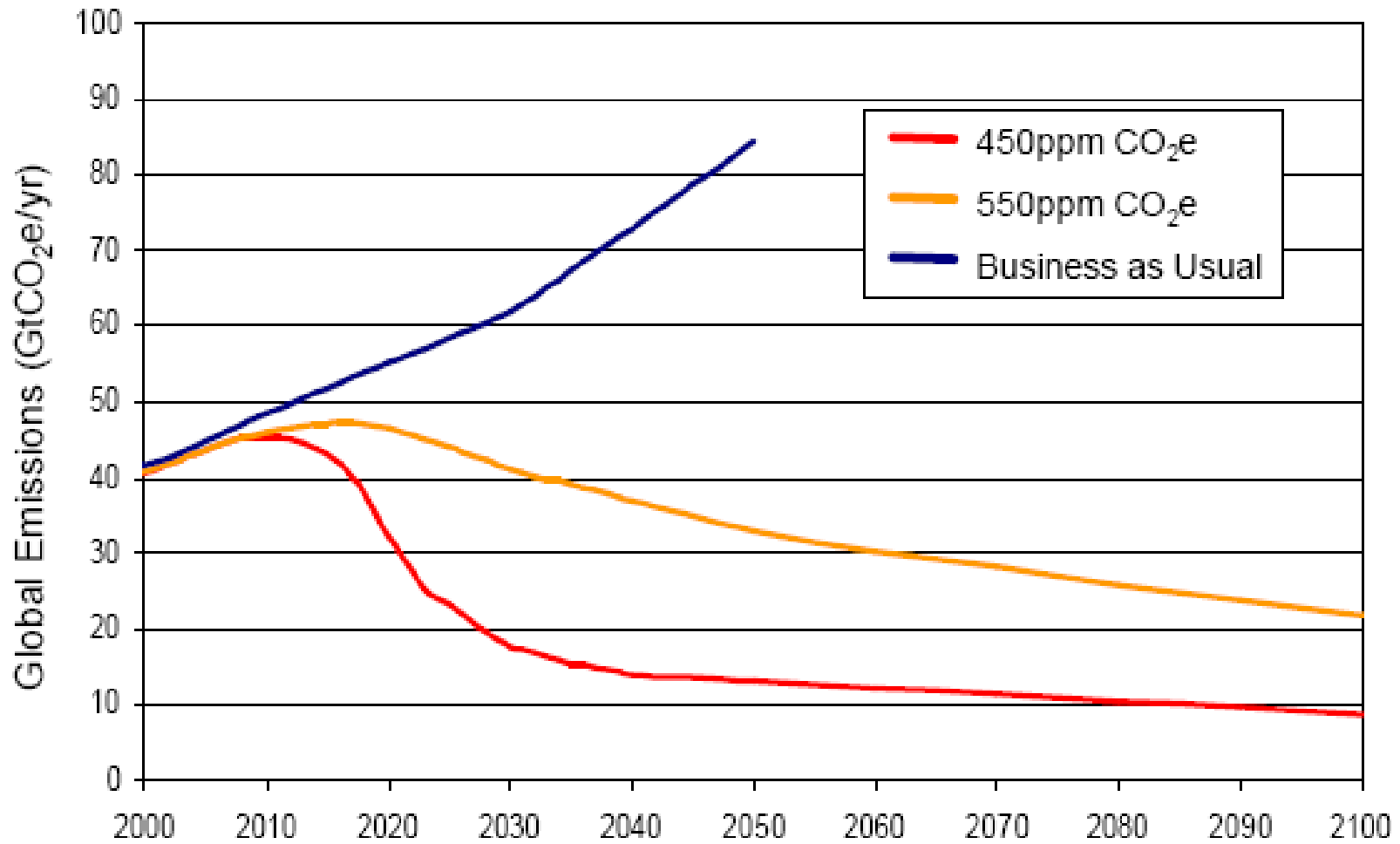
Snow cover is decreasing  
(Northern Hemisphere, March-April)



# Temperature change (relative to 1980-99)

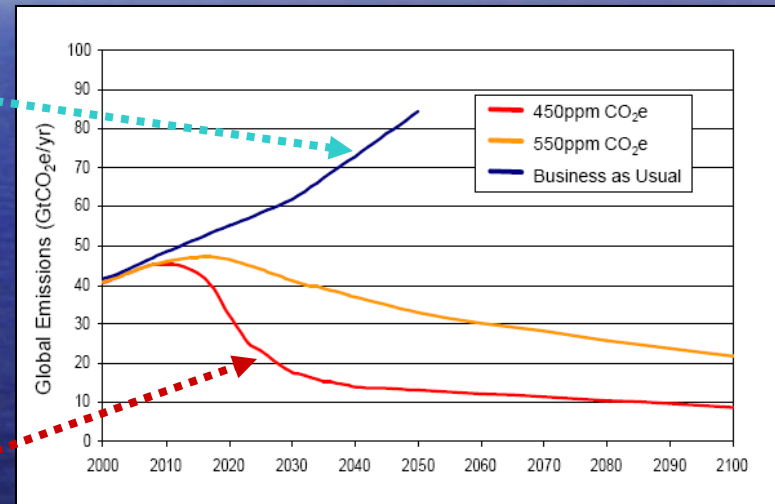


# Emissions Paths to Stabilization



# Two scenarios for Florida's climate

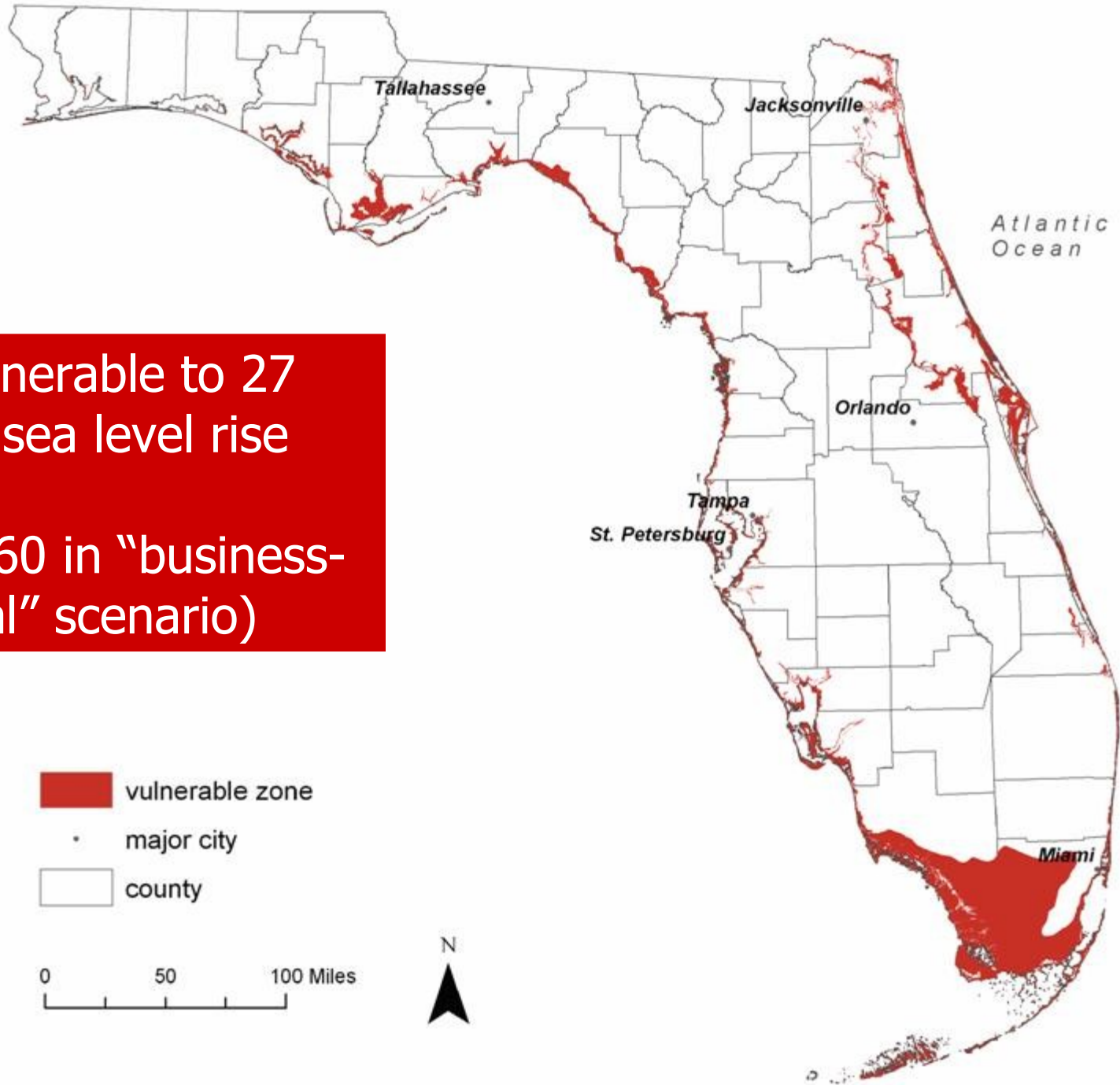
- Business as usual
  - CO<sub>2</sub> emissions continue rising
  - 10°F temperature increase
  - 45 inches sea level rise
  - 10% less rainfall
  - More intense hurricanes
- Rapid stabilization
  - Success in meeting state emission targets, comparable reductions nationwide, worldwide
  - 2°F temperature change, 7 inches sea level rise
  - No change in hurricanes, rainfall



# Two scenarios for Florida's climate

# Average Annual Temperature in 2100 Business-As-Usual Case

Areas vulnerable to 27 inches of sea level rise  
(around 2060 in "business-as-usual" scenario)



# What's vulnerable to 27 inches of sea level rise?

2 nuclear reactors;

3 prisons;

37 nursing homes;

68 hospitals;

74 airports;

82 low-income housing complexes;

115 solid waste disposal sites;

140 water treatment facilities;

171 assisted living facilities;

247 gas stations;

277 shopping centers;

334 public schools;

341 hazardous-material cleanup sites  
including 5 Superfund sites;

1,025 churches, synagogues, and  
mosques;

1,362 hotels, motels, and inns; and

19,684 historic structures.

***...and 99% of Monroe County, 2/3 of Miami-Dade,  
and 10% - 20% of many other coastal counties***

# Impacts, 1: Tourism

- 10% of the Florida economy depends on tourism
  - Hotter, stormier weather, loss of beaches to sea level rise will decrease tourism
- Slowest season today is autumn
  - $\frac{3}{4}$  of annual average level of tourism
- Business-as-usual losses
  - Tourism declines to  $\frac{3}{4}$  of current share of state economy, year-round, by 2100
- Loss = \$167 billion, or **2.4% of state income by 2100**

# Impacts, 2: Sea level rise

- Two scenarios for sea level rise
  - Rapid stabilization: 7 inches by 2100
  - Business as usual: 45 inches by 2100
- Increase in residential property at risk
  - Proportional to sea level rise, state income
  - \$10 billion (rapid stabilization) vs. \$66 billion (business as usual) per year by 2100
- Difference = \$56 billion, or **0.8% of state income** by 2100

Population vulnerable to 27 inches  
of sea-level rise

# Impacts, 3: Hurricane intensity

- Rapid stabilization: no change from today
  - Damages proportional to income, population
  - \$55 billion losses, 20 deaths annually by 2100
- Business as usual: more Category 4, 5 hurricanes
  - Same number but increased *intensity* of storms
  - \$159 billion losses, 57 deaths annually by 2100
- Difference = \$104 billion, or **1.5% of state income** and **37 more deaths** a year by 2100

# Impacts, 4: Electricity costs

- Rapid growth in electric system needed to serve growing population, economy
  - Many new power plants in rapid stabilization scenario; even more in business as usual
- Effects of higher temperatures
  - More electricity needed for air conditioning
  - Power plants are less efficient, and need more cooling water, when it's hotter
  - Transmission lines become overburdened
- Increased costs for business as usual: \$18 billion, or **0.3% of state income** by 2100

# Other impacts on Florida's economy

- **Water and agriculture: worsening crisis**
  - **Hotter, drier conditions will increase demand for water, and decrease fresh water supply**
    - **Desalination is expensive, requires more electricity**
  - **Agriculture will need more irrigation water – which is simply not available**
- **Insurance industry will continue to desert the state as hurricane risks worsen**
- **Fragile ecosystems in Everglades, Keys, other coastal areas will face irreversible damages**

# Conclusion: the high price of inaction

- Doing nothing about climate change is the expensive, short-sighted choice
- Costs in just four areas reach \$345 billion annually – 5% of Florida state income – by 2100
- Florida, the nation, and the world have to stick to the current emission reduction targets
- Get it right, and your grandchildren will thank you for leaving them a liveable world

# Florida's Costs of Inaction



# **FLORIDA AND CLIMATE CHANGE**

## **THE COSTS OF INACTION**

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November 2007*

