

# Insurance & Coastal Risk in Florida

## *Lessons on Availability & Affordability*

**Florida Coastal High Hazard Study Committee  
Ft. Lauderdale, FL**



**December 13, 2005**

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# *Presentation Outline*

- **Review of Florida Hurricane Risk: An Insurance Industry Perspective**
- **Florida Exposure Analysis**
  - **How Bad is It?**
  - **Could it Get Any Worse?**
- **Are Florida's Development Patterns Rational?**
  - **Examination of Stakeholder Incentives**
- ***How Insurers Signal What Should be Built & Where***
  - **Private vs. Government-run Insurers**
- **Role of Risk Perception**
- **What Works, What Doesn't**
- **Overview of a National Catastrophe Plan**
- **Recommendations**

# Review of Florida Hurricane Risk:

*An Insurance Industry  
Perspective*





# *U.S. Insured Catastrophe Losses (\$ Billions)*

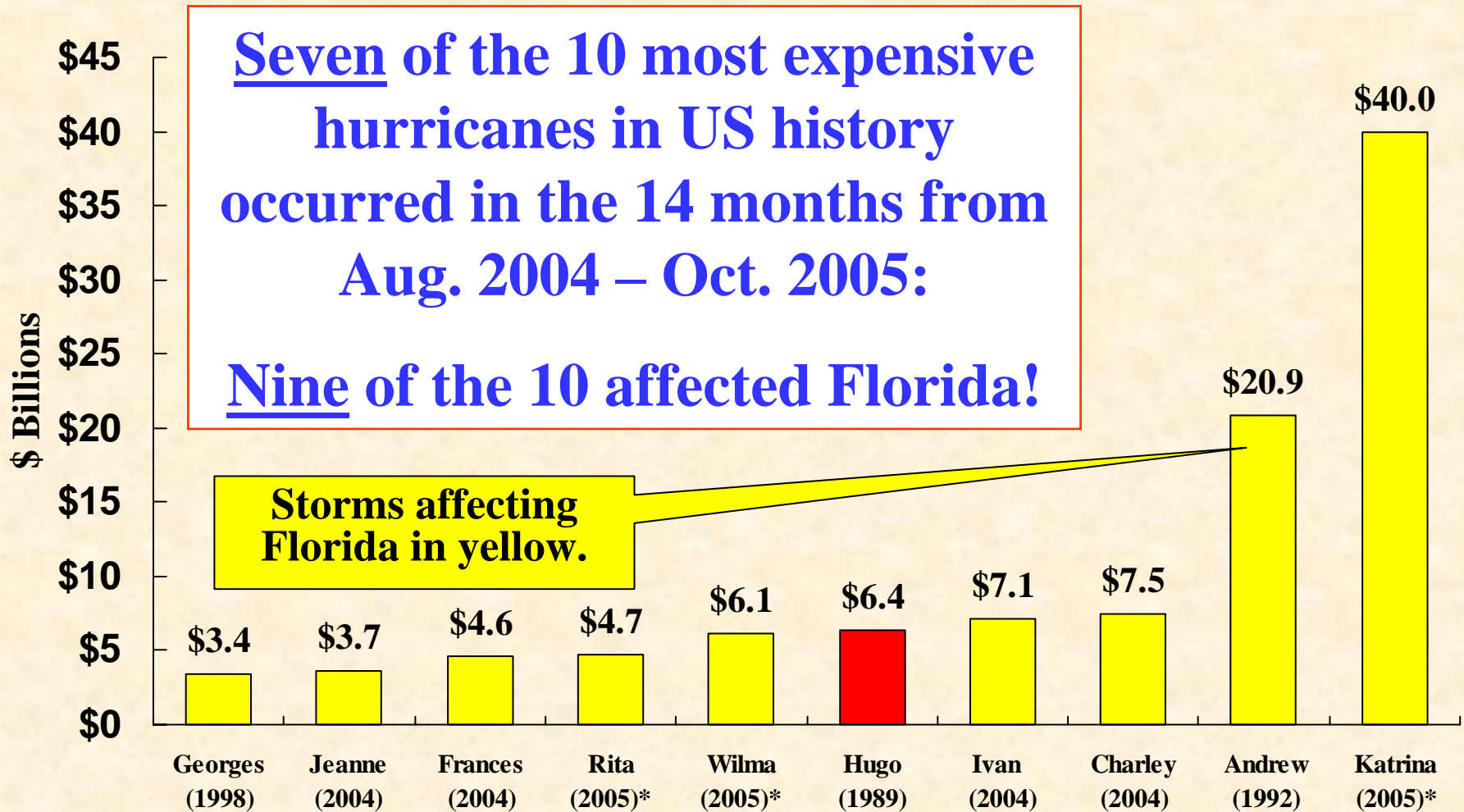
**2005 will be by far the worst year ever for insured catastrophe losses in the US at more than twice 2004's record.**



\*Includes \$50.3 billion per ISO/PCS plus \$5B offshore energy losses from Hurricanes Katrina & Rita.  
**Note:** 2001 figure includes \$20.3B for 9/11 losses reported through 12/31/01. Includes only business and personal property claims, business interruption and auto claims. Non-prop/BI losses = \$12.2B.  
**Source:** Property Claims Service/ISO; Insurance Information Institute



# Top 10 Most Costly Hurricanes in US History, (Insured Losses, \$2004)

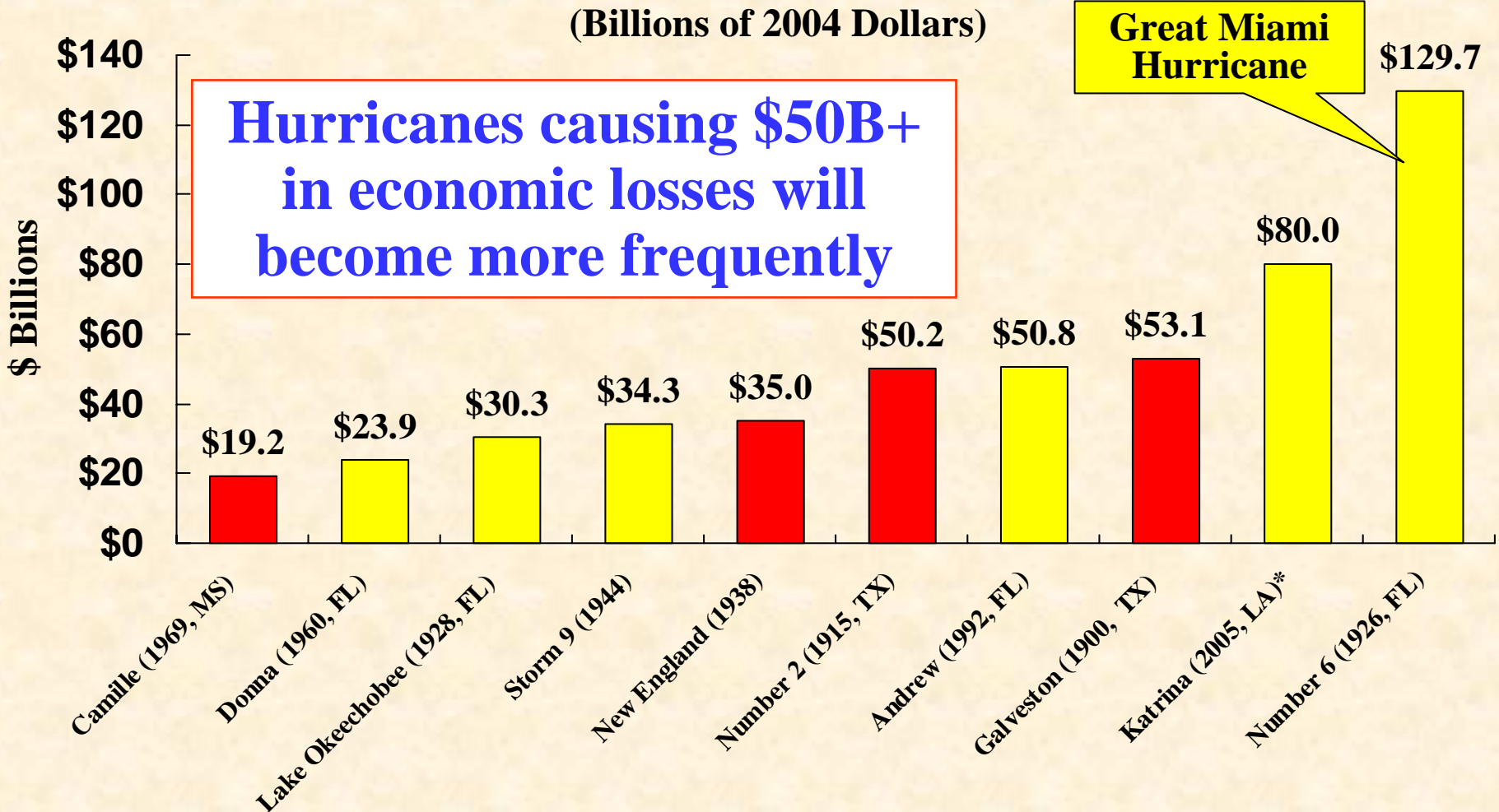


\*Hurricanes Katrina, Rita and Wilma stated in 2005 dollars.

Sources: ISO/PCS; Insurance Information Institute.



# Hurricane Damage from Top 10 Hurricanes Since 1900 Adjusted for Inflation, Growth in Coastal Properties, Real Growth in Property Values\*

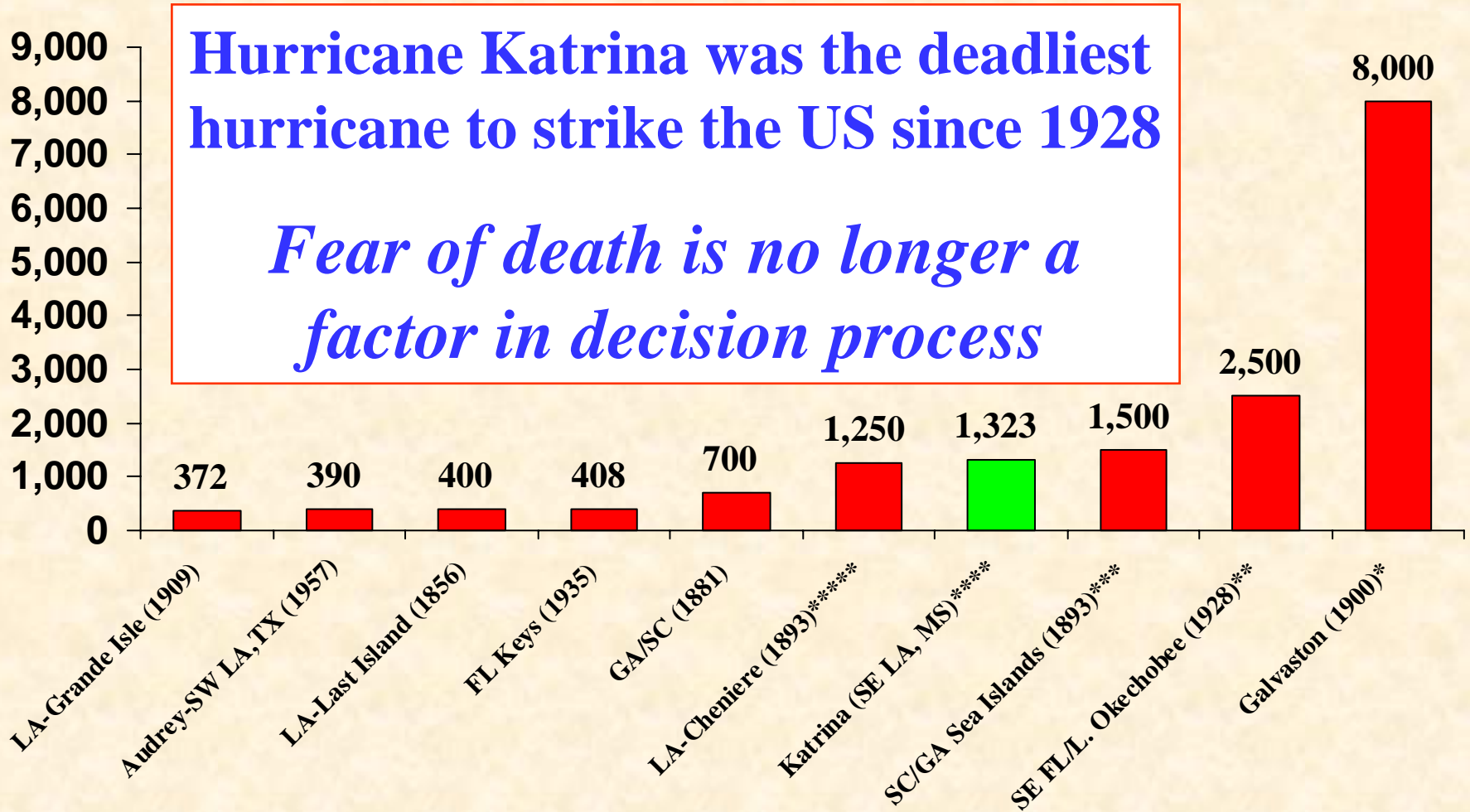


\*Includes damage from wind and storm surge but generally excludes inland flooding.

Source: Roger Pielke and Christopher Landsea, December 2005; Insurance Info. Institute.



# Top 10 Deadliest Hurricanes to Strike the US: 1851-2005



\*Could be as high as 12,000

\*\*Could be as high as 3,000

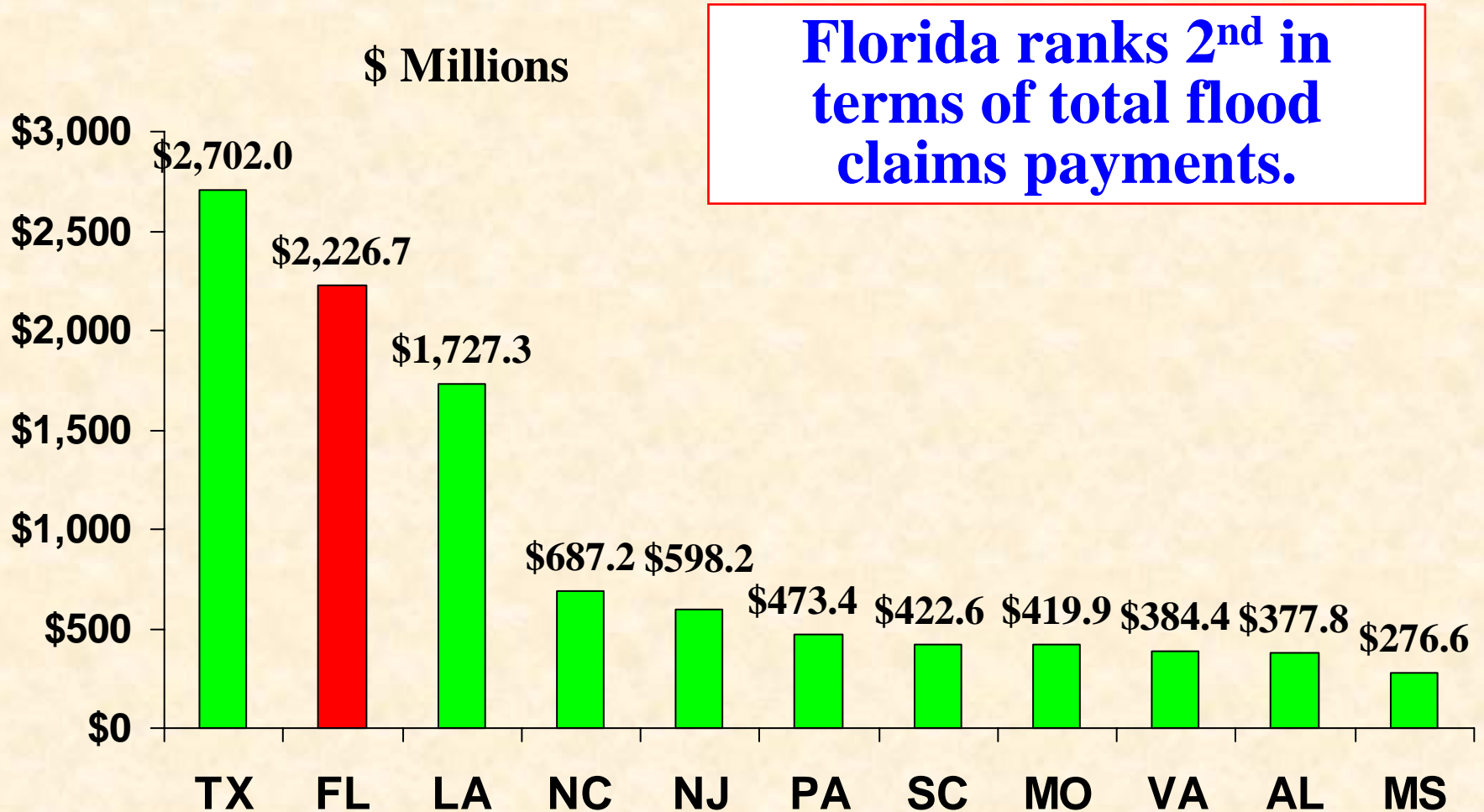
\*\*\*Midpoint of 1,000 – 2,000 range

\*\*\*\* Associated Press total as of Dec. 11, 2005. \*\*\*\*\*Midpoint of 1,100-1,400 range.

Sources: NOAA; Insurance Information Institute.



# Total NFIP Claim Payments by State (Top 10) Jan 1, 1978 - Dec. 2004





# *Property Owners Do Not Seem to React to Expectations of Increased Storm Frequency & Intensity*

	Average*	2005**	2006F
Named Storms	9.6	26	17
Named Storm Days	49.1	115.5	85
Hurricanes	5.9	14	9
Hurricane Days	24.5	47.5	45
Intense Hurricanes	2.3	7	5
Intense Hurricane Days	2.3	7	5
Net Tropical Cyclone Activity	100%	263%	195%

\*Average over the period 1950-2000.

\*\*As of December 4, 2005.

Source: Dr. William Gray, Colorado State University, December 6, 2005.



# *Probability of Major Hurricane Landfall (CAT 3, 4, 5) in 2006*

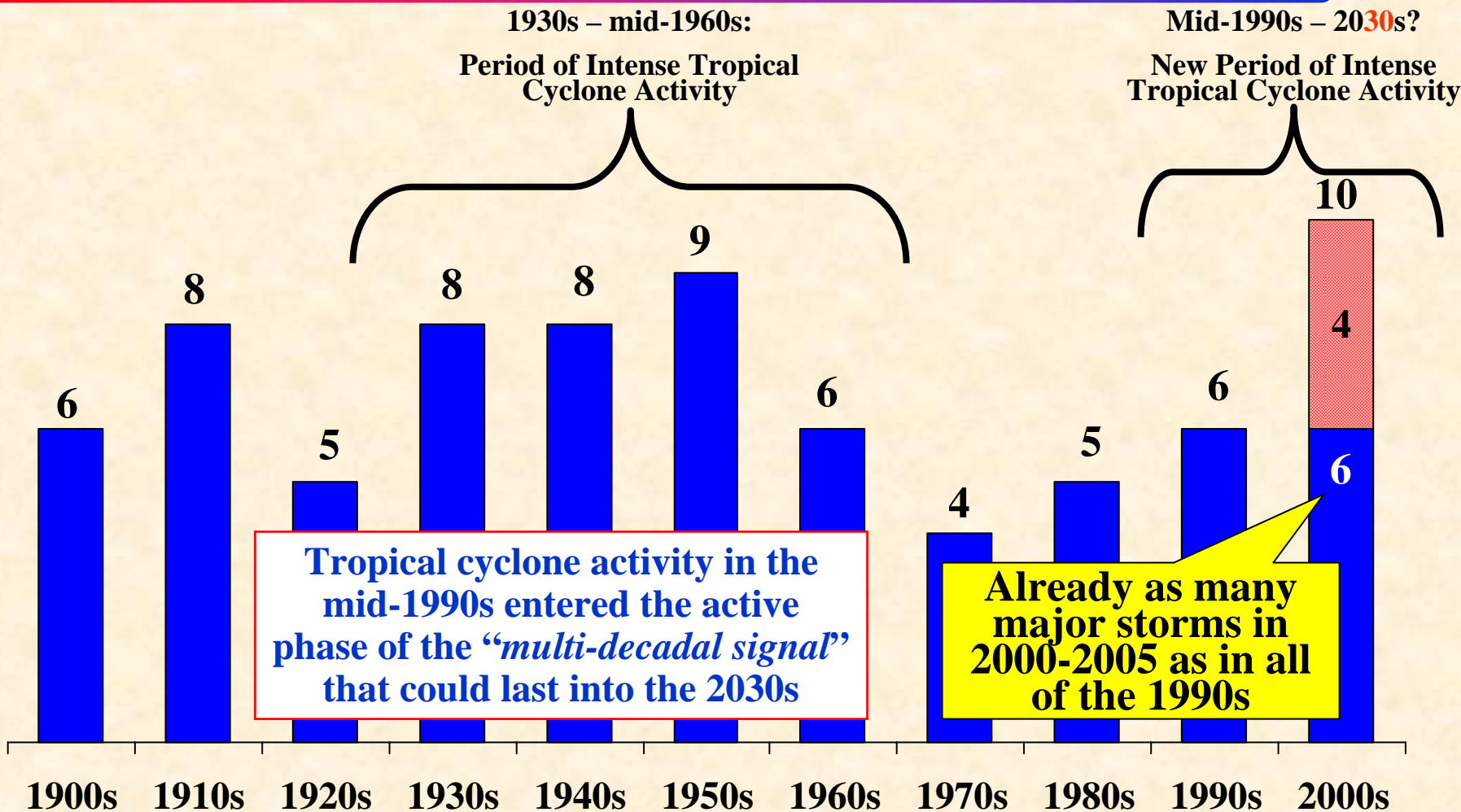
	Average*	2006F
Entire US Coast	52%	81%
US East Coast Including Florida Peninsula	31%	64%
Gulf Coast from FL Panhandle to Brownsville, TX	30%	47%
<b><i>ALSO...Above-Average Major Hurricane Landfall Risk in Caribbean for 2006</i></b>		

\*Average over past century.

Source: Dr. William Gray, Colorado State University, December 6, 2005.



# Number of Major (Category 3, 4, 5) Hurricanes Striking the US by Decade



\*Figure for 2000s is extrapolated based on data for 2000-2005 (6 major storms: Charley, Ivan, Jeanne (2004) & Katrina, Rita, Wilma (2005)).

Source: Tillinghast from National Hurricane Center: <http://www.nhc.noaa.gov/pastint.shtm>.

# Florida Hurricane Exposure Analysis:

*How Bad Is It? (Bad)*

*Could It Get Any Worse?*

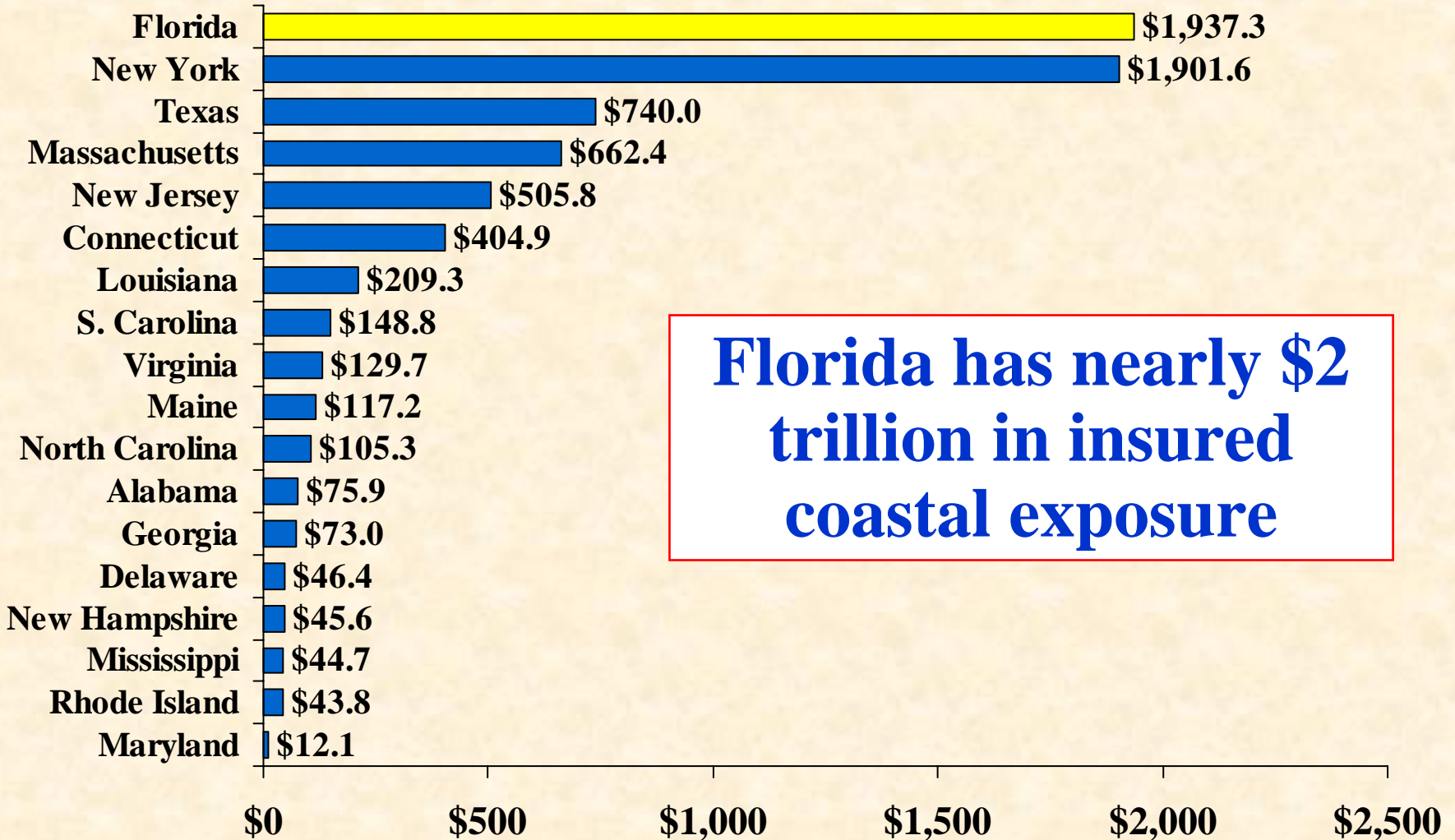
**iii**

*(Yes)*

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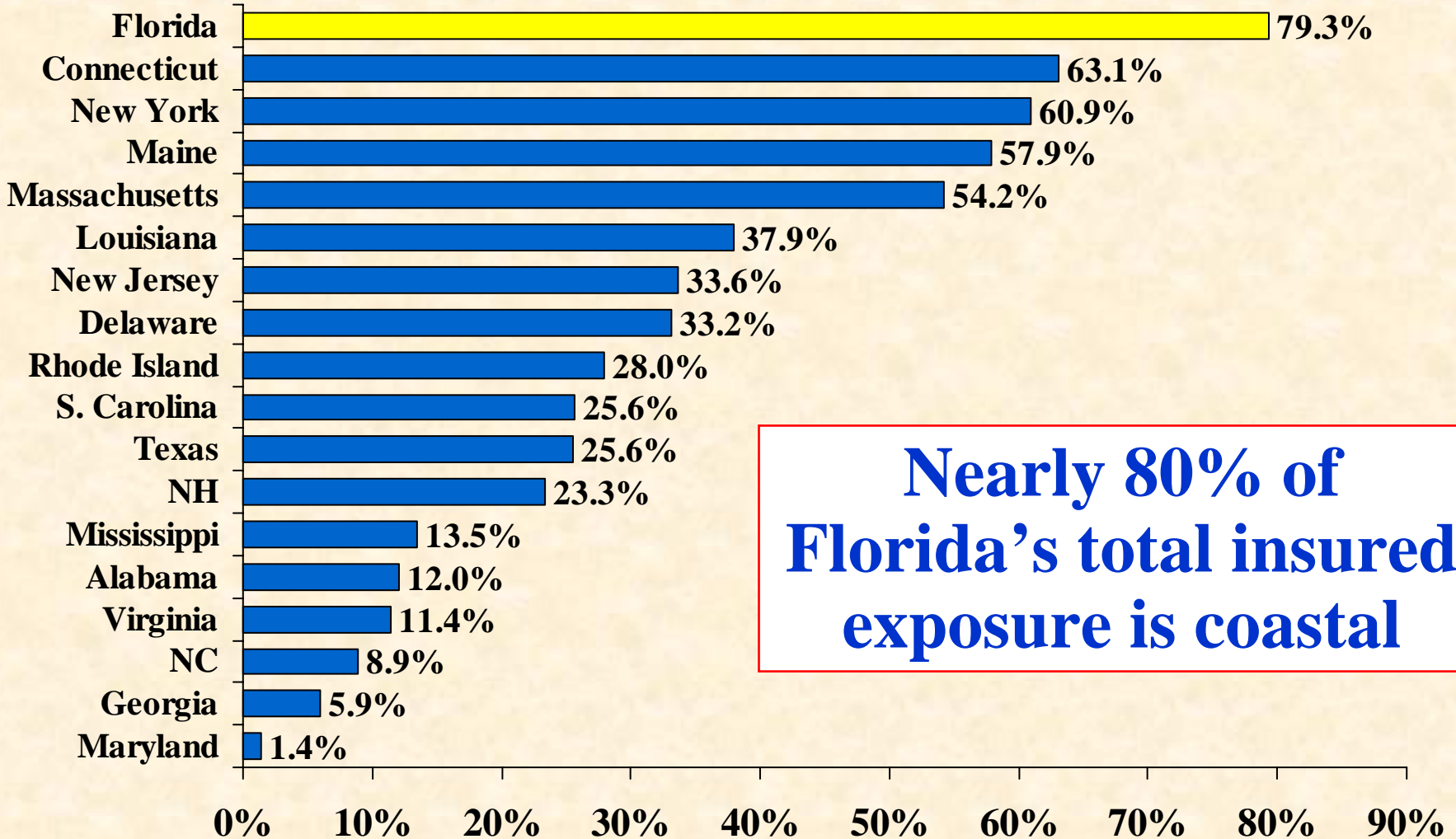


# Total Value of Insured Coastal Exposure (2004, \$ Billions)





# *Insured Coastal Exposure as a % of Statewide Insured Exposure (2004, \$ Billions)*

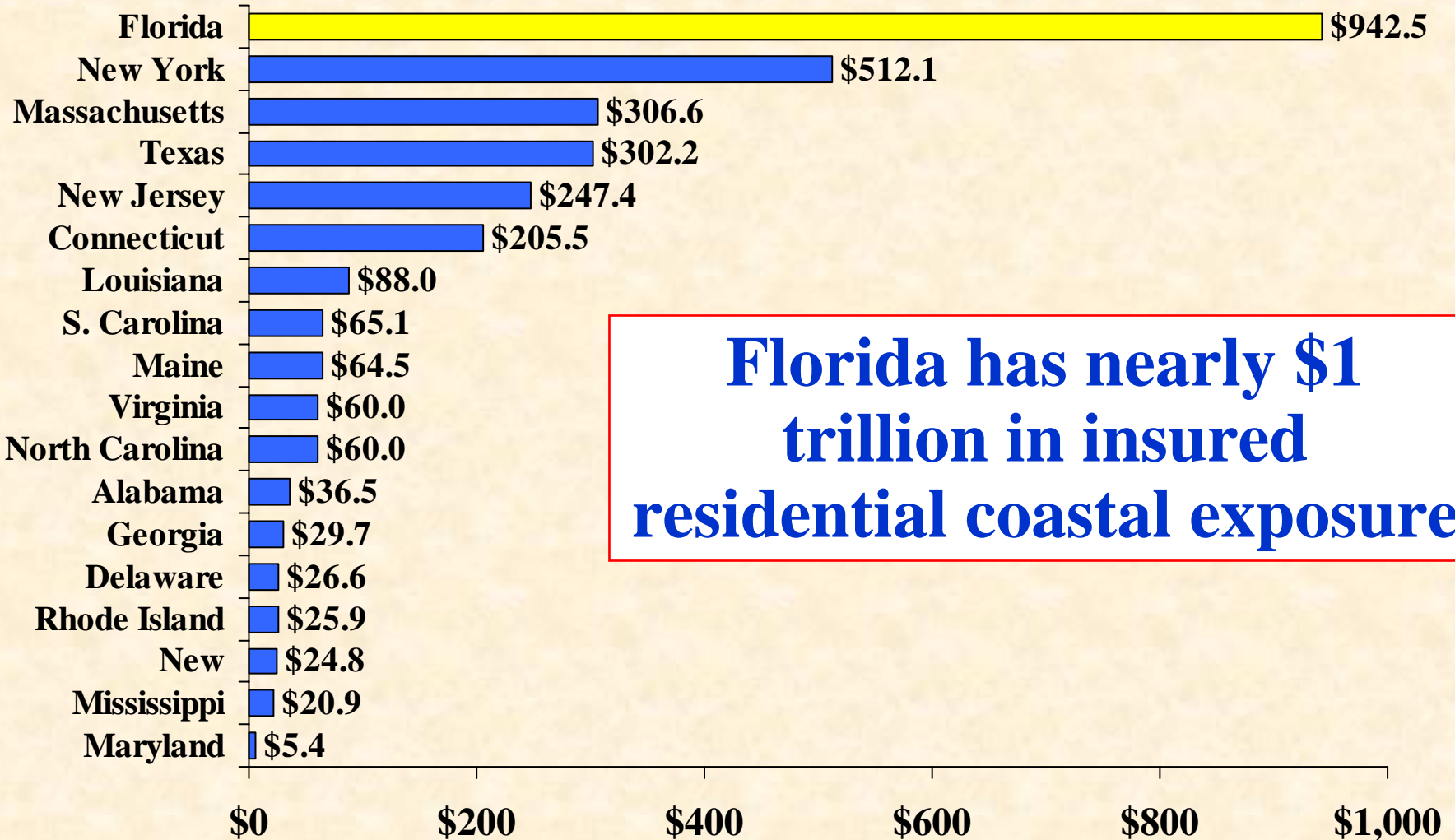


\*Ill list

Source: AIR Worldwide

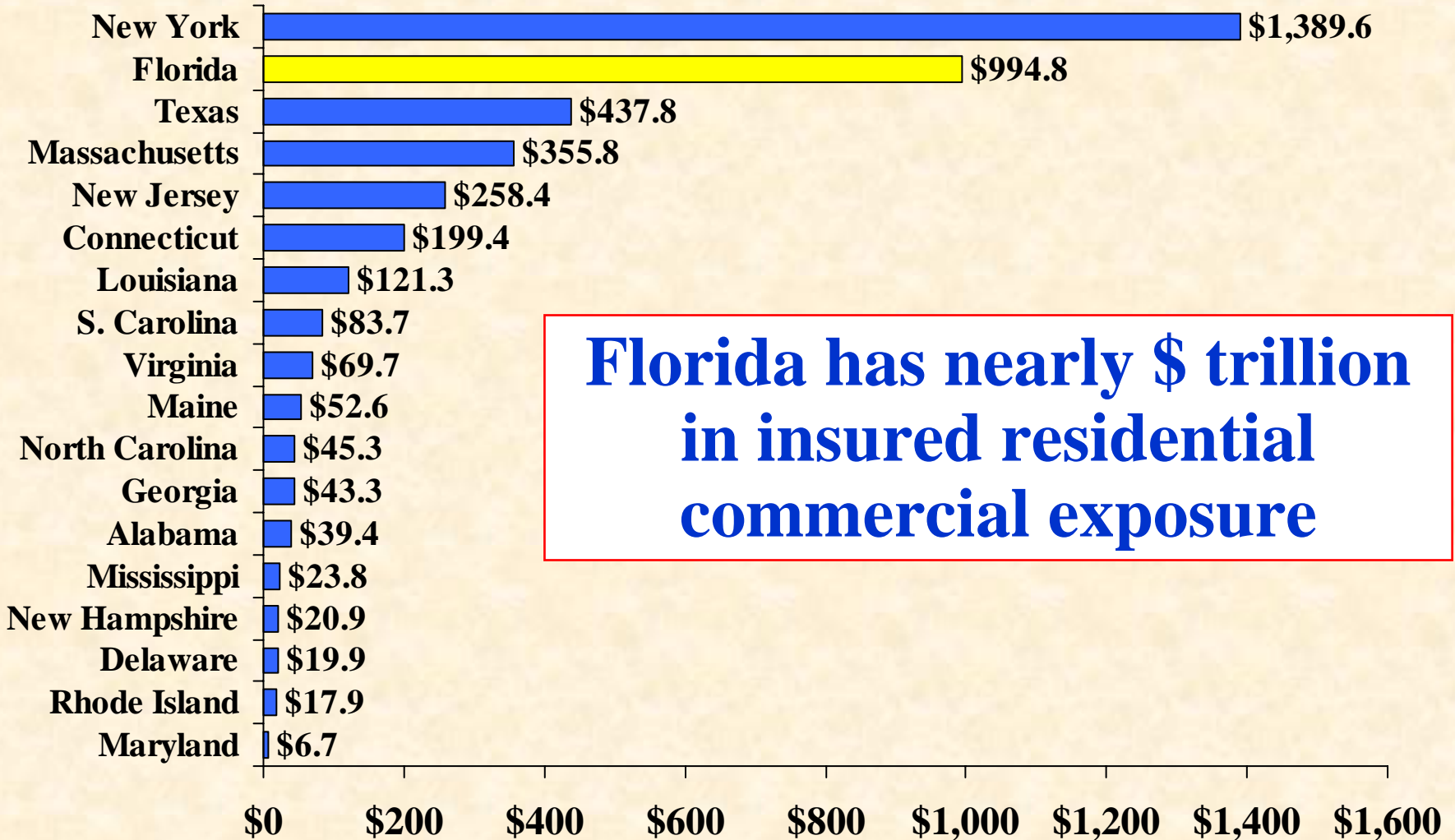


# *Value of Insured Residential Coastal Exposure (2004, \$ Billions)*





# *Value of Insured Commercial Coastal Exposure (2004, \$ Billions)*





# Florida for Sale: 24/7/365

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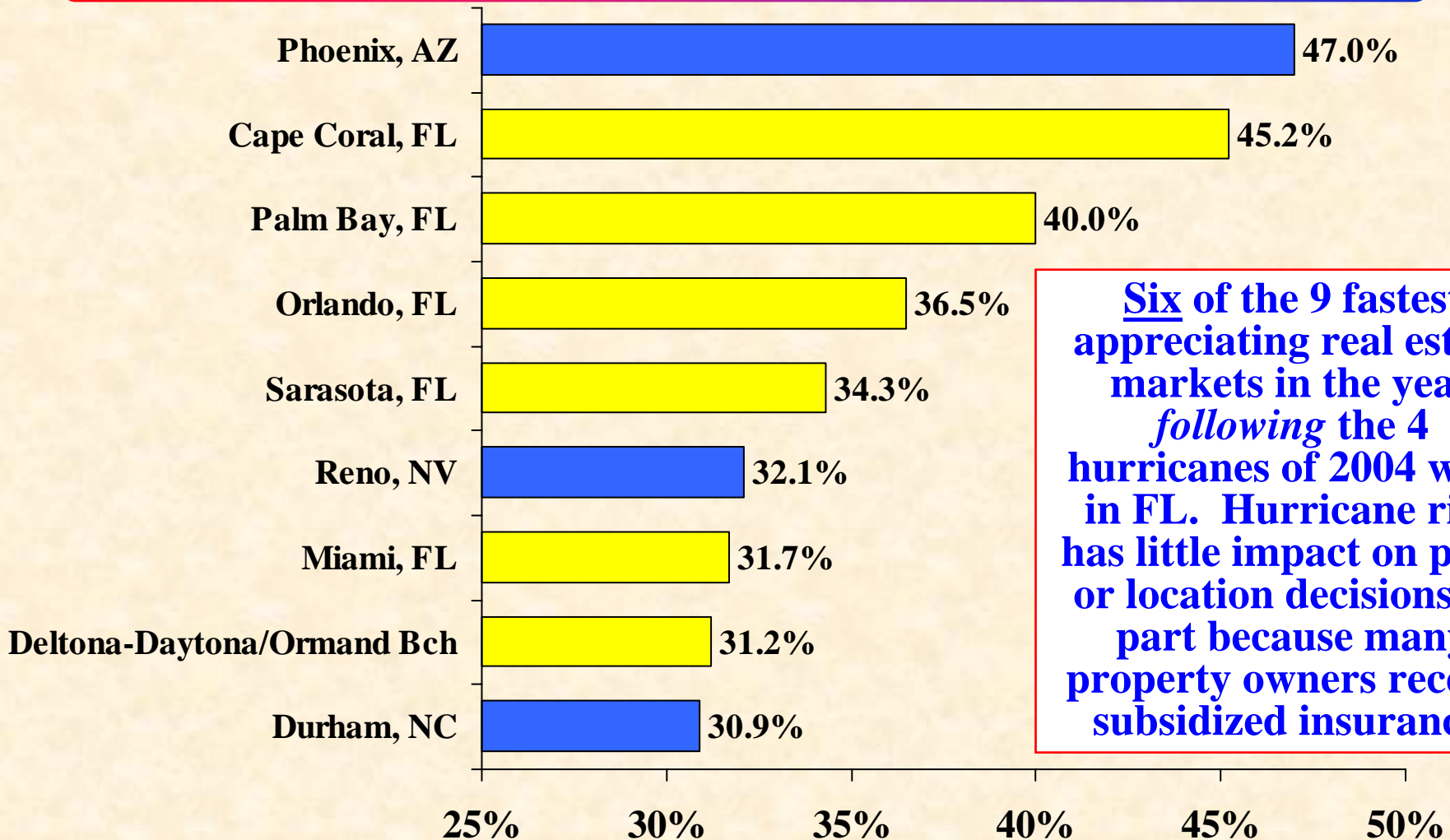
We are designed to the letter and spirit of AIA Green for the advancement of equal housing opportunities through the marketplace. The buildings are designed to enhance the quality of life through the use of green building practices. The buildings are designed to enhance the quality of life through the use of green building practices. The buildings are designed to enhance the quality of life through the use of green building practices.

THE NEW YORK TIMES MAGAZINE | DECEMBER 11, 2005 121

Florida oceanfront real estate is advertised for sale throughout the country year round, like these ads from the December 11, 2005 edition of the *New York Times Magazine*.



# Metro Areas w/ Biggest Increase in Median Home Price Over Past Year (through Sept. 2005)



**Six of the 9 fastest appreciating real estate markets in the year following the 4 hurricanes of 2004 were in FL. Hurricane risk has little impact on price or location decisions, in part because many property owners receive subsidized insurance.**

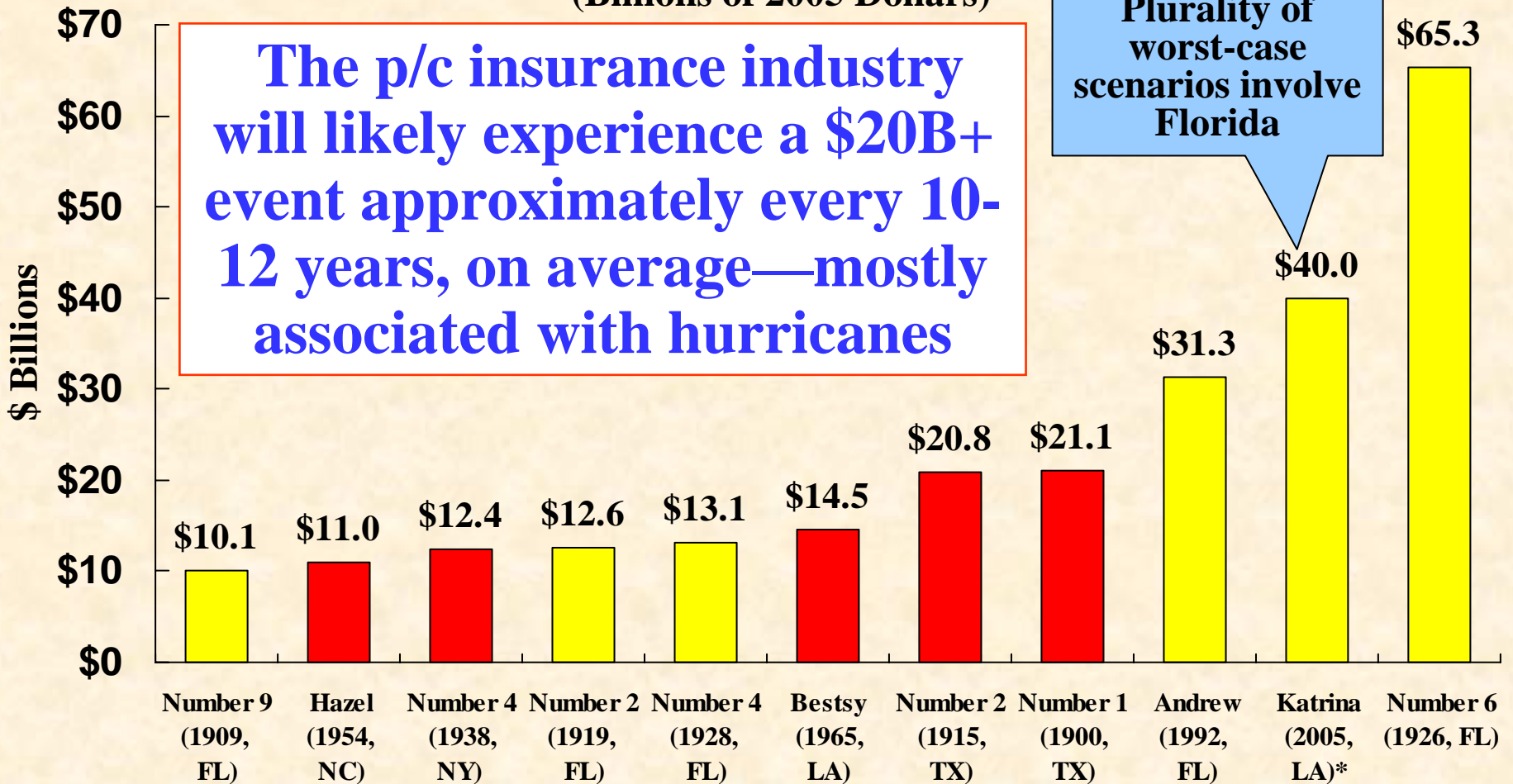


# *Insured Losses from Top 10 Hurricanes Since 1990 & Katrina Adjusted for Inflation, Growth in Coastal Properties, Real Growth in Property Values & Increased Property Insurance Coverage*

(Billions of 2005 Dollars)

**The p/c insurance industry will likely experience a \$20B+ event approximately every 10-12 years, on average—mostly associated with hurricanes**

**Plurality of worst-case scenarios involve Florida**



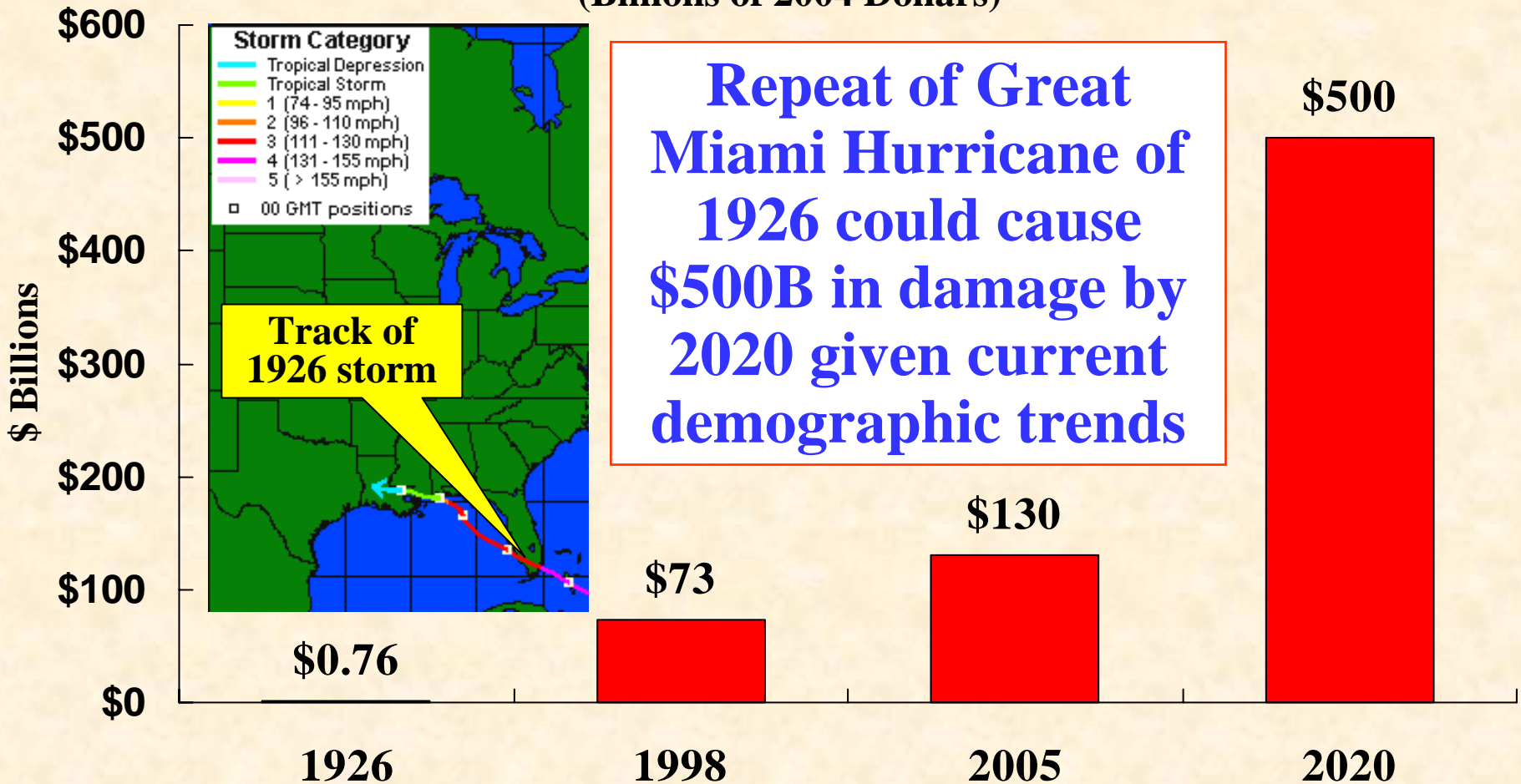
\*ISO/PCS estimate as of October 10, 2005.

Source: *Hurricane Katrina: Analysis of the Impact on the Insurance Industry*, Tillinghast, October 2005; Insurance Info. Institute.



# Great Miami Hurricane of 1926: Hurricane Damage Adjusted for Inflation, Growth in Coastal Properties, Real Growth in Property Values\*

(Billions of 2004 Dollars)



\*Includes damage from wind and storm surge but generally excludes inland flooding.

Source: Roger Pielke and Christopher Landsea, December 2005; Insurance Info. Institute.

# The Insurance Economics of Florida Hurricanes

*Drivers of Private Insurer*



*Behavior in Florida*

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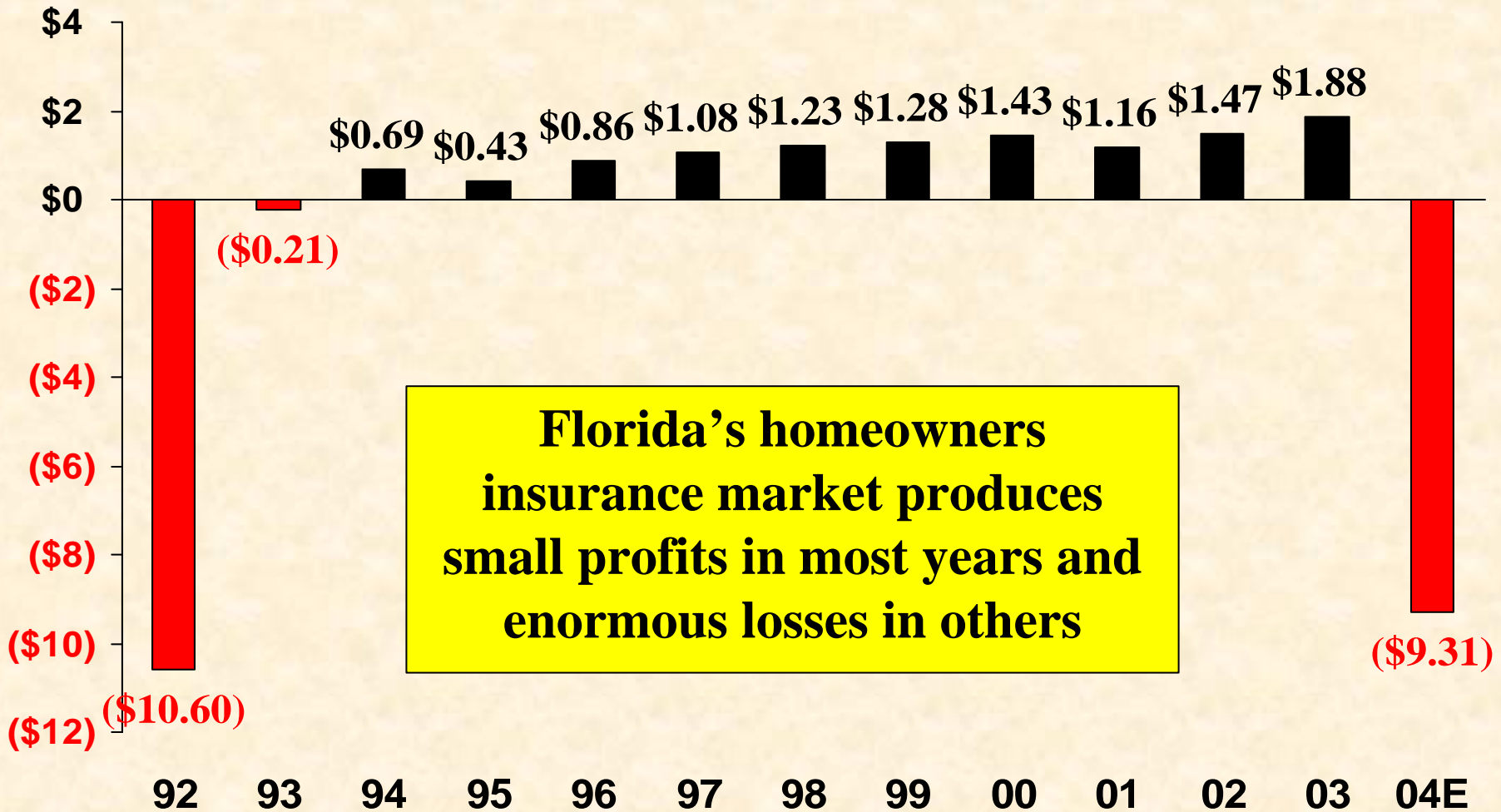
***FLORIDA HURRICANES  
& UNDERWRITING  
PERFORMANCE:***

**Homeowners Insurers  
Have Lost Billions  
in Florida**





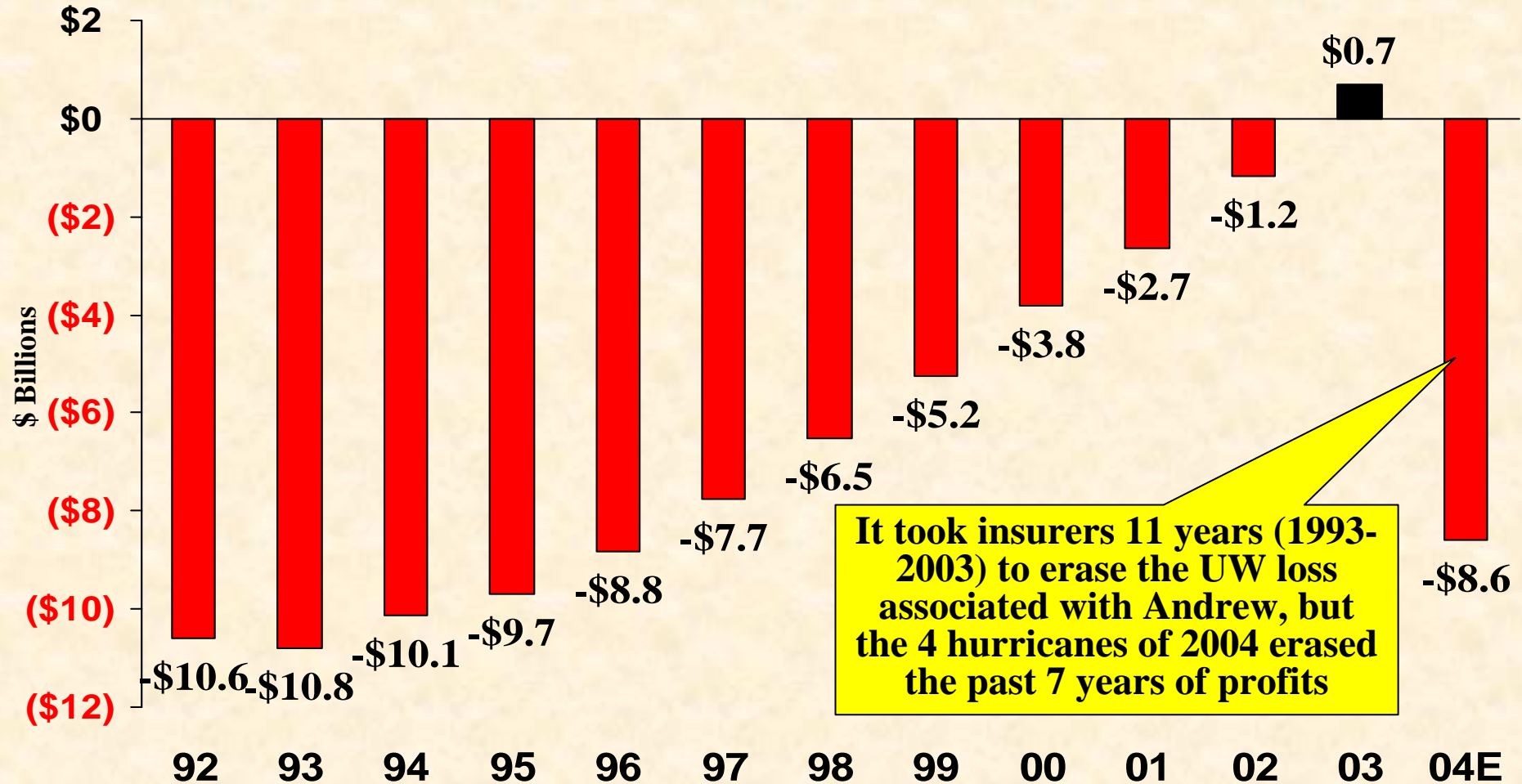
# *Underwriting Gain (Loss) in Florida Homeowners Insurance, 1992-2004E\**



\*2004 estimate by Insurance Information Institute based on historical loss and expense data for FL adjusted for estimated 2004 residential windstorm losses of \$11.2B; 2003 figure is also from III estimates of loss and expense.



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\*2004 estimate by Insurance Information Institute based on historical loss and expense data for FL adjusted for estimated 2004 residential windstorm losses of \$11.2B; 2003 figure is also from III estimates of loss and expense.

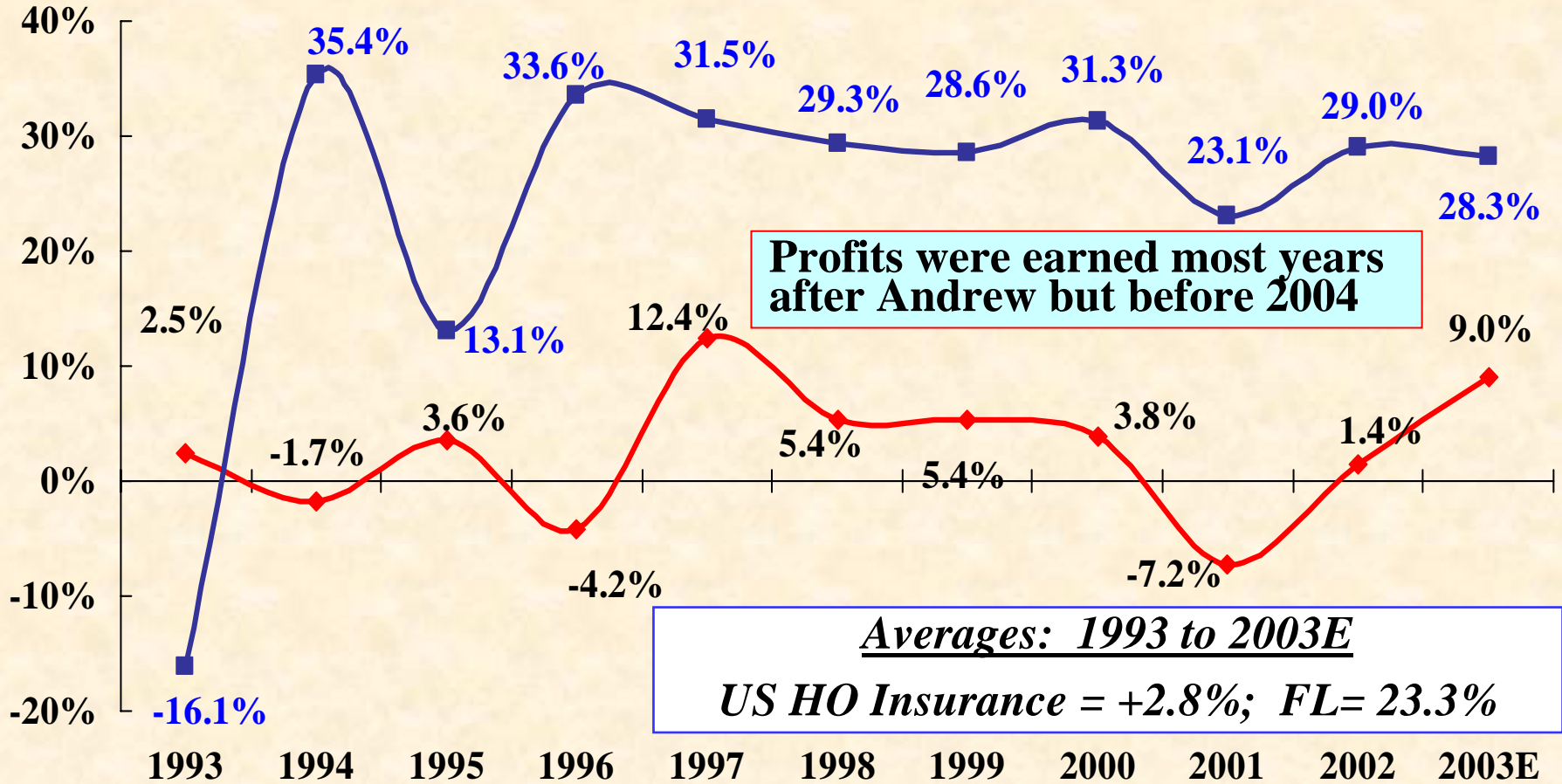
# ***FLORIDA HURRICANES & PROFITABILITY:***

**Selling Homeowners  
Insurance in Florida is  
Tremendously Unprofitable**





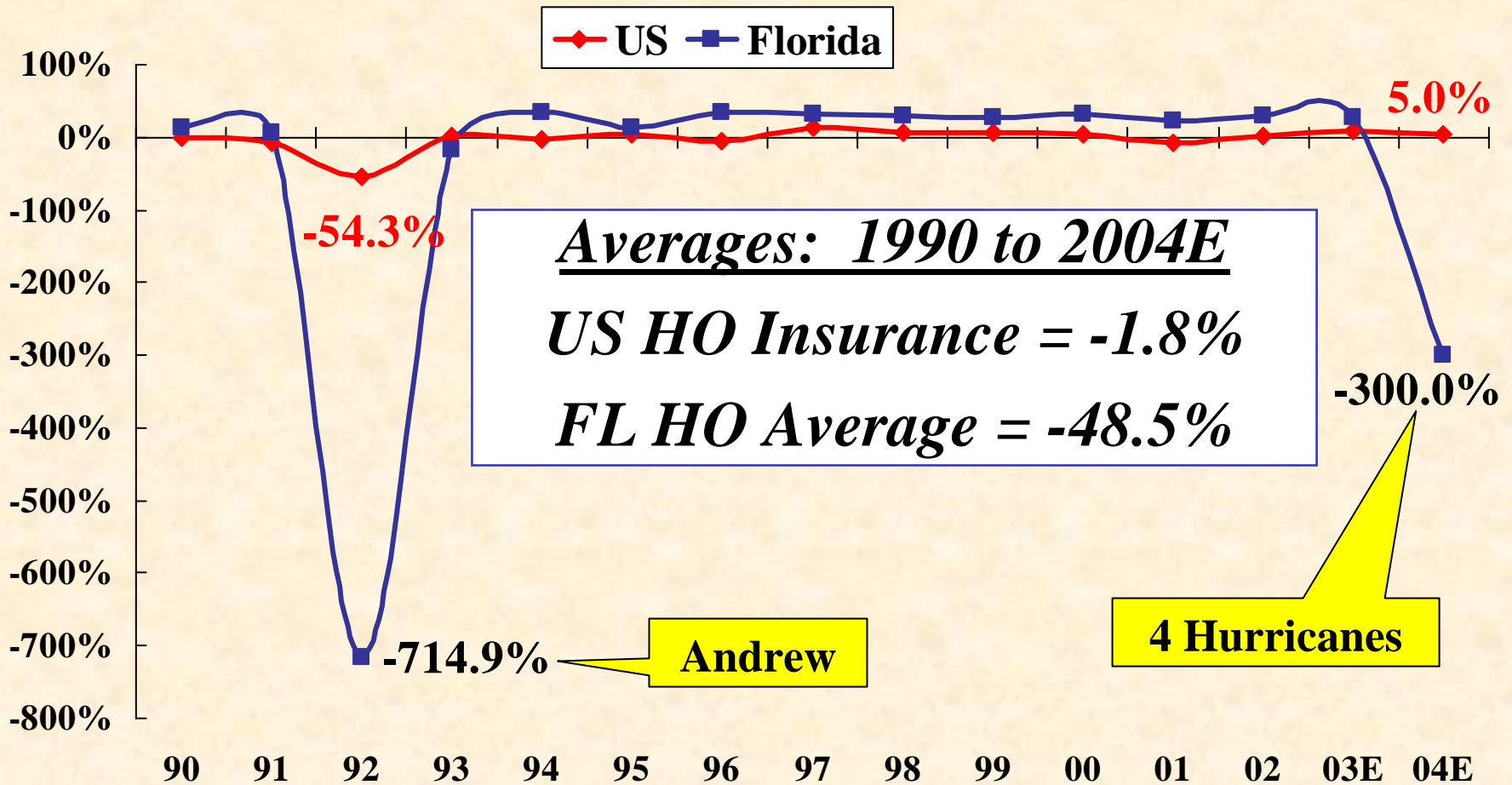
# Rates of Return on Net Worth for Homeowners Ins: US vs. Florida



Source: NAIC; 2003 US figure is Insurance Information Institute estimate. FL estimate based on average Florida homeowners RNW from 1993-2002.



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Source: NAIC; 2003 US figure is Insurance Information Institute estimate. FL figure based on average Florida homeowners RNW from 1993-2002.

# ***CAPITAL & CAPACITY CONSIDERATIONS:***

**INSURERS MUST PUT LARGE  
AMOUNTS OF CAPITAL AT  
RISK TO OFFER INSURANCE  
IN FLORIDA**





# Rating Agency Actions Following

## Hurricane Katrina (as of Oct. 6, 2005)\*

### Companies Under Review w/ Negative Implications

	<u>Company</u>	<u>A.M. Best Rating</u>
1.	Allied World	A+
2.	Allmerica Financial P&C Cos .	A-
3.	American Re	A
4.	Balboa Insurance Grp.	A
5.	DaVinci Re	A
6.	Endurance Specialty	A
7.	Florists Mutual Grp.	A-
8.	Glencoe	A
9.	Imagine Insurance Co. Ltd.	A-
10.	IPCRe	A+
11.	Louisiana Farm Bureau Mutual	A-
12.	Mississippi Farm Bureau Mutual	A+
13.	Munich Re	A+
14.	Mutual Savings Fire Ins. Co.	B-
15.	Mutual Savings Life Ins. Co.	B-
16.	Odyssey Re	A
17.	PartnerRe Group	A+
18.	PXRE	A-
19.	Renaissance Re	A+
20.	Rosemont Reinsurance Ltd.	A-
21.	Transatlantic Re	A+
22.	XL Capital	A+
23.	XL Life Insurance & Annuity	A+
24.	XL Life Ltd.	A+

### Companies on Credit Watch with Negative Implications

	<u>Company</u>	<u>S&amp;P Rating</u>
1.	Allmerica	BBB+
2.	Allstate Corp.	AA
3.	Aspen Group	A
4.	Oil Casualty Insurance Ltd.	A-
5.	Society of Lloyd's	A
6.	State Farm	AA
7.	Swiss Re	AA
8.	United Fire Group	A

### Downgrades

	<u>Company</u>	<u>S&amp;P Rating</u>	<u>A.M. Best</u>
1.	Alea	A- to BBB+	A- to B++
2.	Olympus Re	not rated	A- to B+
3.	PXRE	A to A-	A to A-
4.	Advent Synd. 780	3pi to 2pi	not rated

**“...the replenishment of capital alone may not be sufficient to sustain a company’s rating.”** A.M. Best press release Sept. 15, 2005

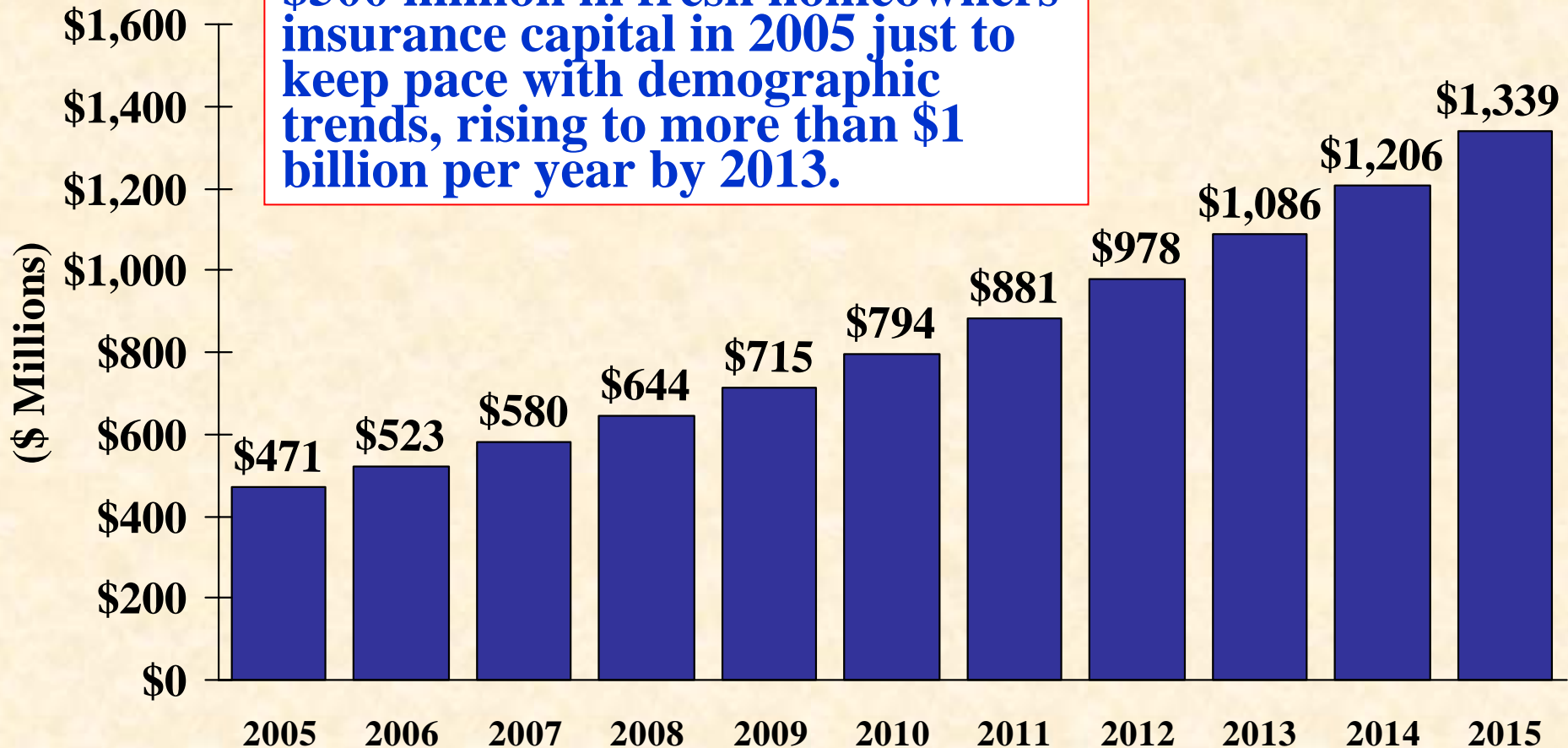
\*ACE and Montpelier Re were originally placed on watch/review but have been removed.

Source: Hurricane Katrina: Analysis of the Impact on the Insurance Industry, Tillinghast, October 2005.



# *Estimated New Insurance Capital Required to Support Growth in FL Homeownership, 2005-2015\**

**Florida needs to attract about \$500 million in fresh homeowners insurance capital in 2005 just to keep pace with demographic trends, rising to more than \$1 billion per year by 2013.**

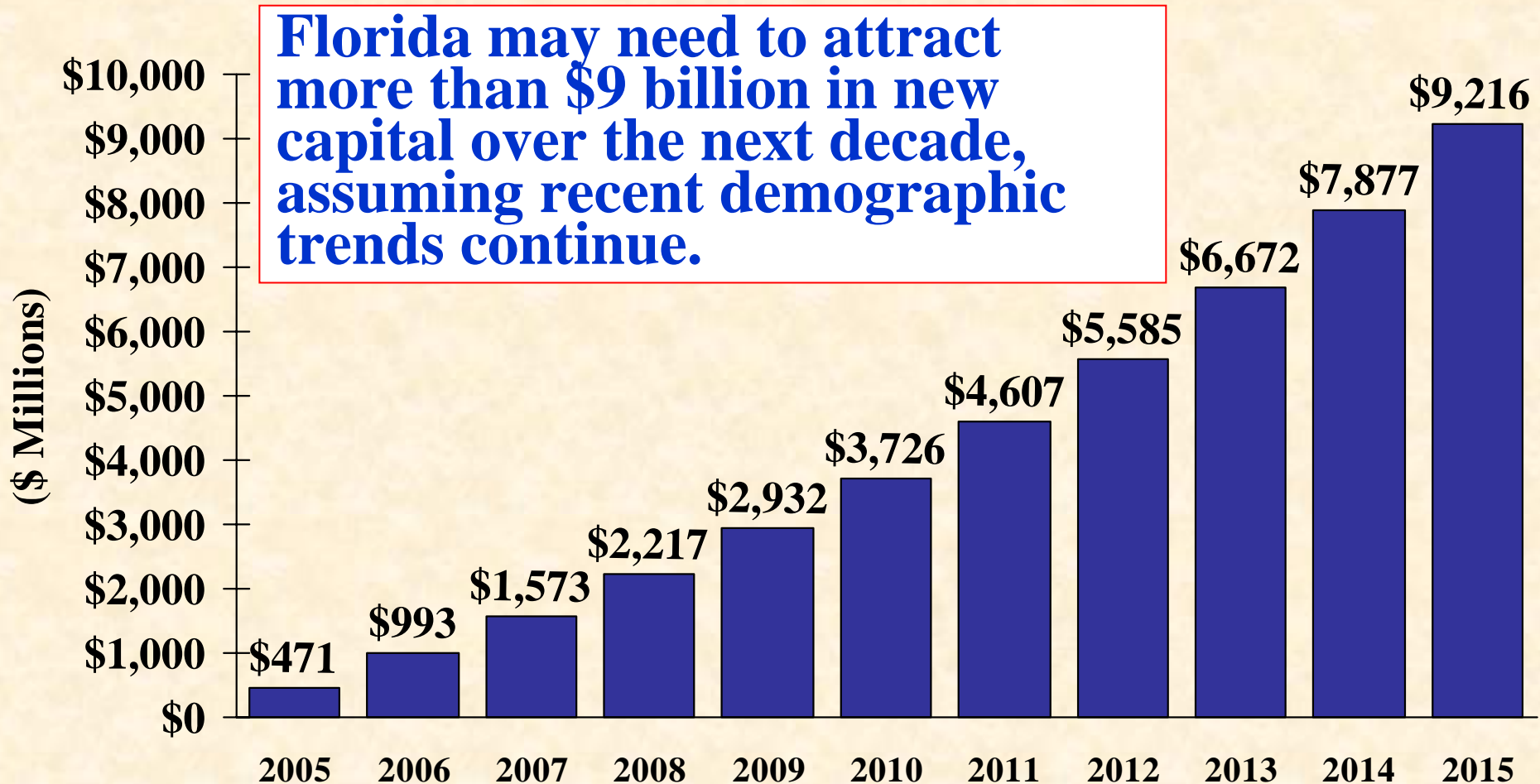


\*Estimate assumes 1:1 premium-to-surplus ratio and continuation of CAGR in direct premiums written of 11% (actual rate for period 1996-2003).

Source: Insurance Information Institute



# *Estimated Cumulative New Insurance Capital Required to Support Growth in FL Homeownership, 2005-2015\**



\*Estimate assumes 1:1 premium-to-surplus ratio and continuation of CAGR in direct premiums written of 11% (actual rate for period 1996-2003).

Source: Insurance Information Institute

# Are Florida's Development Patterns Rational?





# *Excessive Catastrophe Exposure: Outcome of Economically & Politically Rational Decision Process?*

- **Property Owners**

- Make economically rational decision to live in disaster-prone areas
- Low cost of living, low real estate prices & rapid appreciation, low/no income tax, low property tax, rapid job growth
- Government-run insurers (e.g., CPIC, NFIP) provide implicit subsidies by selling insurance at below-market prices with few underwriting restrictions
- Government aid, tax deductions, litigation recovery for uninsured losses
- No fear of death and injury

- **Local Zoning/Permitting Authorities**

- Allowing development is economically & politically rational & fiscally sound
- Residential construction creates jobs, attracts wealth, increases tax receipts, stimulates commercial construction & permanent jobs, develops infrastructure
- Increases local representation in state legislature & political influence
- Property and infrastructure damage costs shifted to others (state and federal taxpayers, policyholders in unaffected areas)

- **Developers**

- Coastal development is a high-margin business
- Financial interest reduced to zero after sale



# *Excessive Catastrophe Exposure: Outcome of Economically & Politically Rational Decision Process?*

## • **State Legislators**

- Loathe to pass laws negatively impacting development in home districts
- Local development benefits local economy and enhances political influence
- Rapid development lessens need for higher income and property taxes
- Can redistribute CAT losses to unaffected policyholders and taxpayers
- Can suppress insurance prices via state insurance regulator, suppress pricing and weaken underwriting standards in state-run insurer & redistribute losses

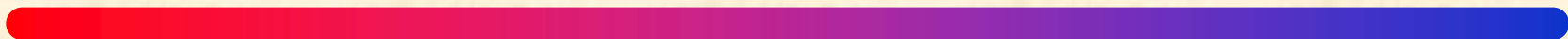
## • **Congressional Delegation**

- Home state development increases influence in Washington
  - Political representation, share of federal expenditures
- Loathe to pass laws harming development in home state/district
- Tax law promotes homeownership and actually produces supplemental benefits for property owners in disaster-prone areas
- Large amounts of unbudgeted disaster aid easily authorized
- Tax burden largely borne by those outside CAT zone & those with no representation (children & unborn)

## • **President**

- Presidential disaster declarations and associated aid are increasing
- Political benefits to making declarations and distributing large amounts of aid
- Direct impact on favorability ratings & election outcomes
- Losses can be distributed to other areas and the unrepresented

# How Insurers Signal *What* Should be Built and *Where*





# *Private Insurer Signals on Where and How to Build*

- **Questions concerning land use and zoning are devious issues in every state as concerns over urban sprawl, traffic, environmental degradation, pollution, etc.**
- **Insurers do not generally get involved in these issues directly**
- **Insurers assess risks that owners of property want to transfer**
- **Insurers send signals about relative risk through several mechanisms:**
  - Price (premiums)
  - Deductibles/retentions (e.g., 2%+ wind deductibles in FL)
  - Limits/caps on coverage (e.g., limit on value of structure to be insured)
  - Mitigation credits
  - Underwriting restrictions (limits/refusals to write coverage)
  - Capital allocation decisions, based on ROE
- **Profit motive, tight solvency regulations of private insurance industry effectively restrict unwise development**
  - Except that rates are often suppressed by regulators/political pressure
- **Government-run insurers operate very differently philosophy**



# *Government-Run Insurers Lead to Poor Development Decisions*

- **Government-run insurers (markets of last resort) serve as a vital safety valve after major market disruptions, but also serve as an enabler of unwise development...**
- **Government-run property insurers wash away market-based signals about relative risk**
- **Consequence is runaway development in disaster-prone areas**
- **Government-run insurers:**
  - Generally fail to charge actuarially sound rates
  - Have weak underwriting standards
  - Are thinly capitalized
  - Can assess losses to policyholders other than their own
  - Vulnerable to political pressure
- **Inadequate premiums, insufficient capital and weak underwriting mean that most government plans, from Citizens Property Insurance Corporation to the National Flood Insurance Program operate with frequent deficits**



# *Negative Outcomes from Flaws in Government-Run Insurers*

- **True risk associated with building on a particular piece of property is obscured**
- **Subsidies are generated leading to market distortions/inequities:**
  - Many thousands of homes likely would not have been built (or built differently) if property owner obligated to pay actuarially sound rates
  - CPIC assessments from Wilma will require grandmothers living in trailer parks on fixed incomes in Gainesville to subsidize million dollar homes in Marco Island via assessment (surcharges).
- **Serial rebuilding in disaster-prone areas is the norm**
- **Property owners come to assume that the government rate is the “fair” rate and object to moves to actuarially sound rates.**
- **Government-run insurer can’t control its own exposure**
  - Legislature mandates that CPIC offer coverage in most cases if no private insurer will offer coverage due to high risk, near certainty of destruction
  - No restrictions on value of property, so high-valued properties represent disproportionate share of potential loss
- **Taxpayer Burden: NFIP will borrow \$20B+ in 2005**

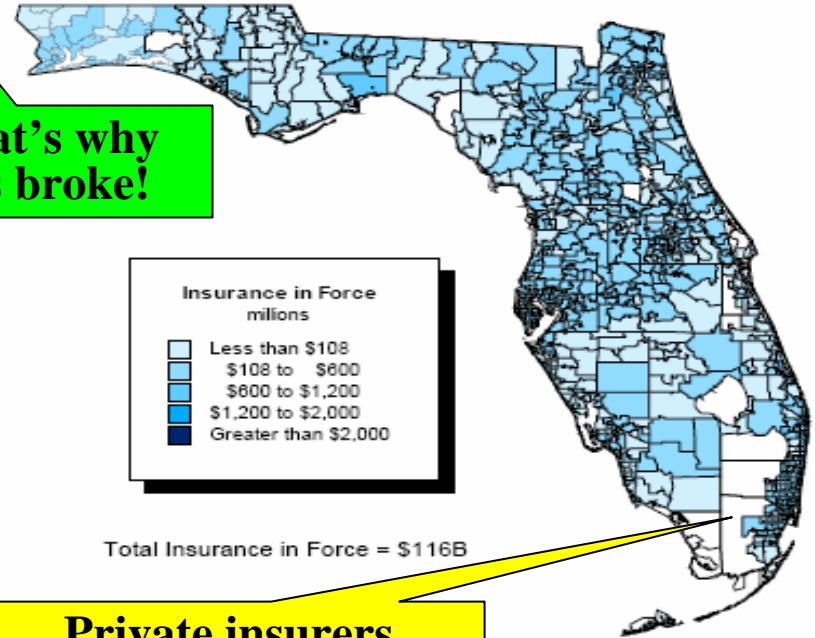
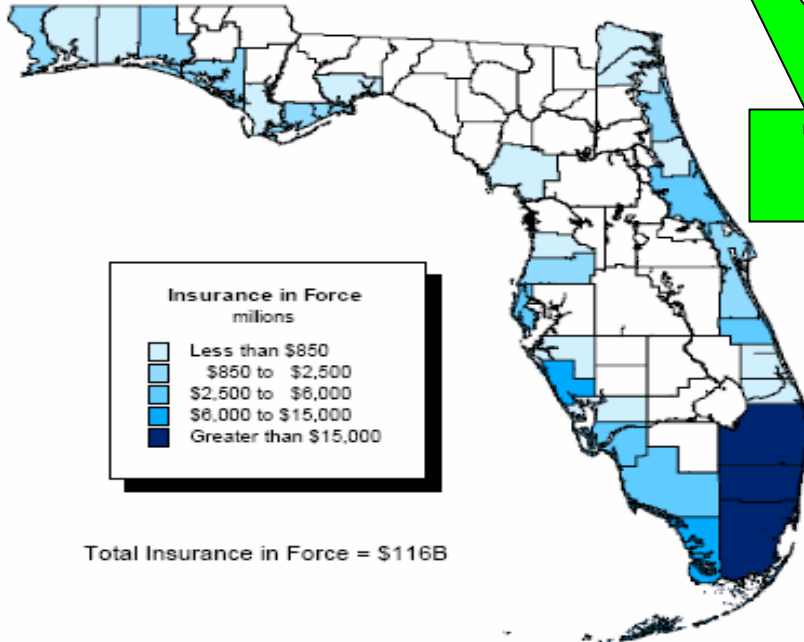


# Insurance-in-Force: CPIC vs. Voluntary (Private) Insurers

Citizens is Required to Insure More Loss Exposure Than Any Private Insurer Would Ever Consider.

Citizens High Risk Account Risk

Voluntary Insurers Portfolio



That's why it's broke!

Private insurers accept relatively little wind risk in South FL

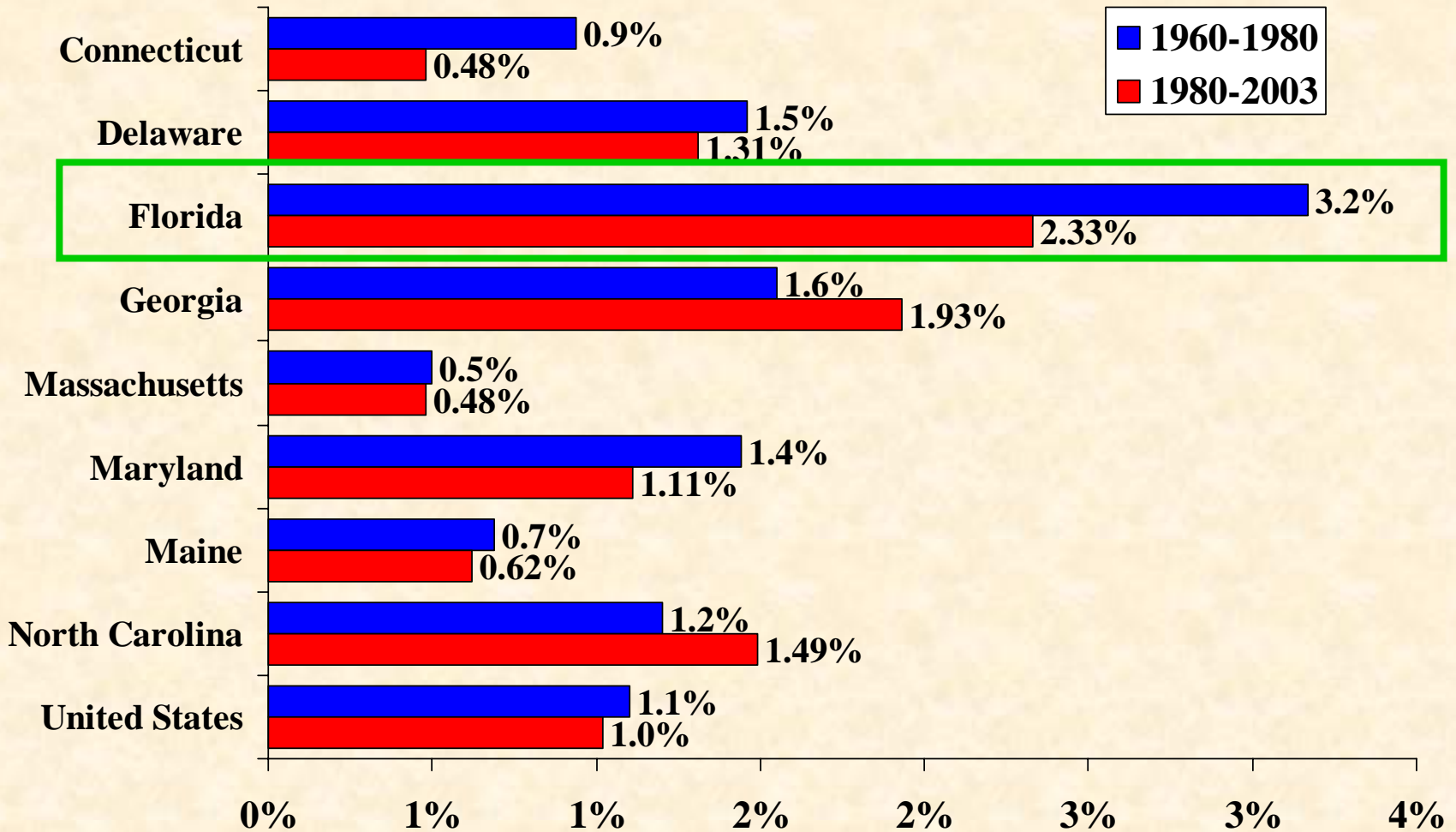
# Risk Perception

*Is Disaster Risk Factored  
into the Buy/Build/Move  
Decision?*

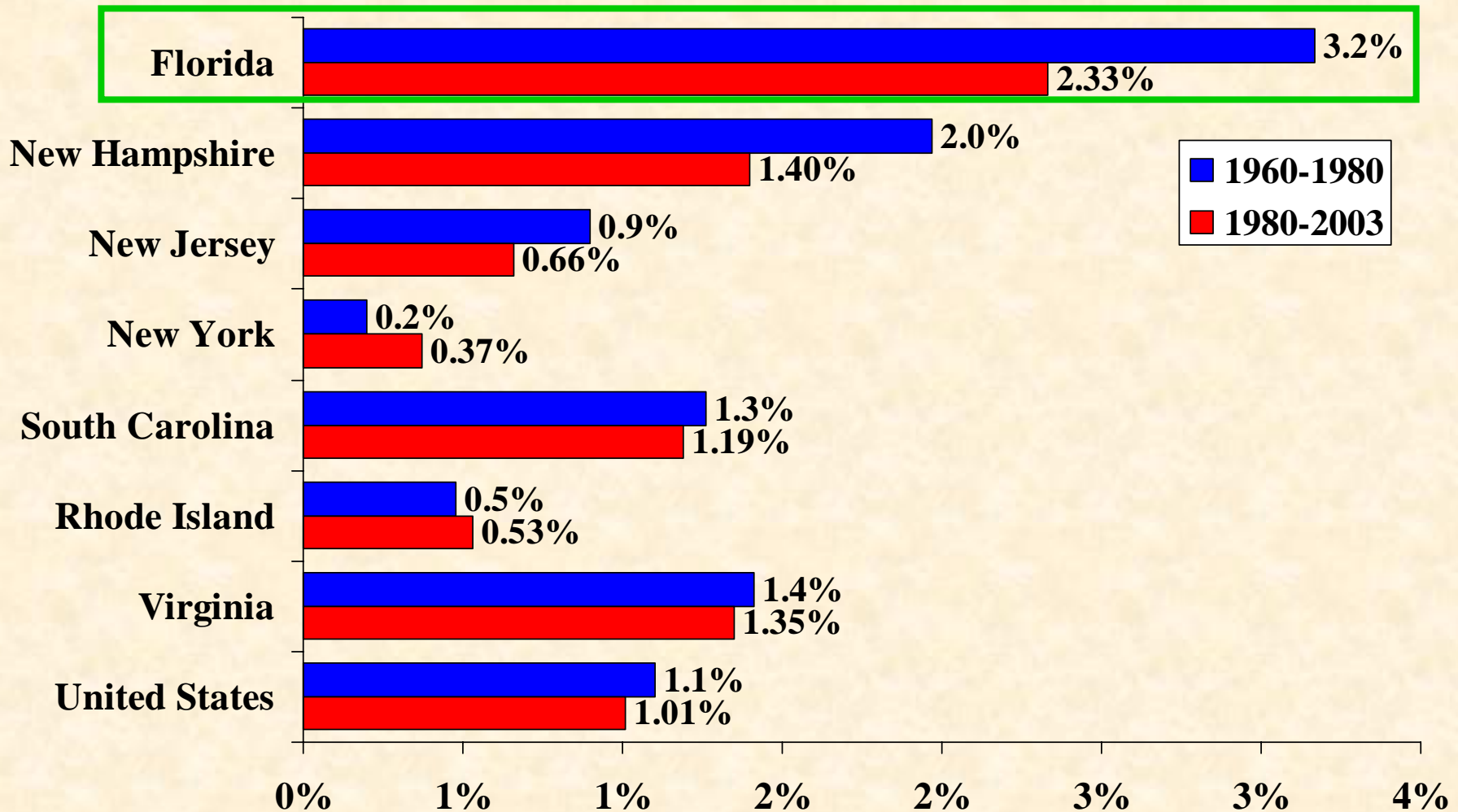




# Average Annual Population Growth Rates of Atlantic States, 1960-1980 & 1980-2003



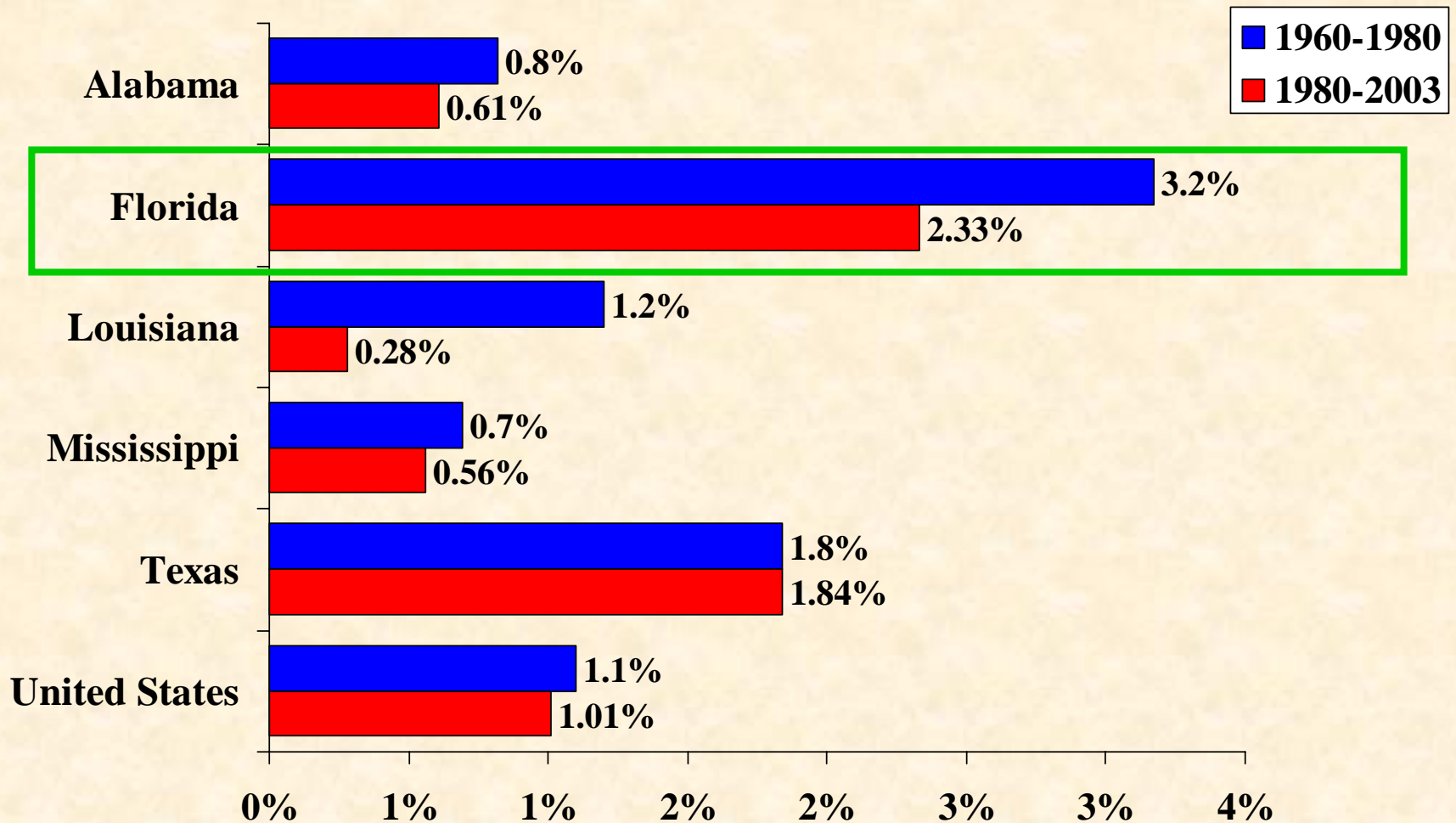
# Average Annual Population Growth Rates of Atlantic States, 1960-1980 & 1980-2003



Source: US Census Bureau.

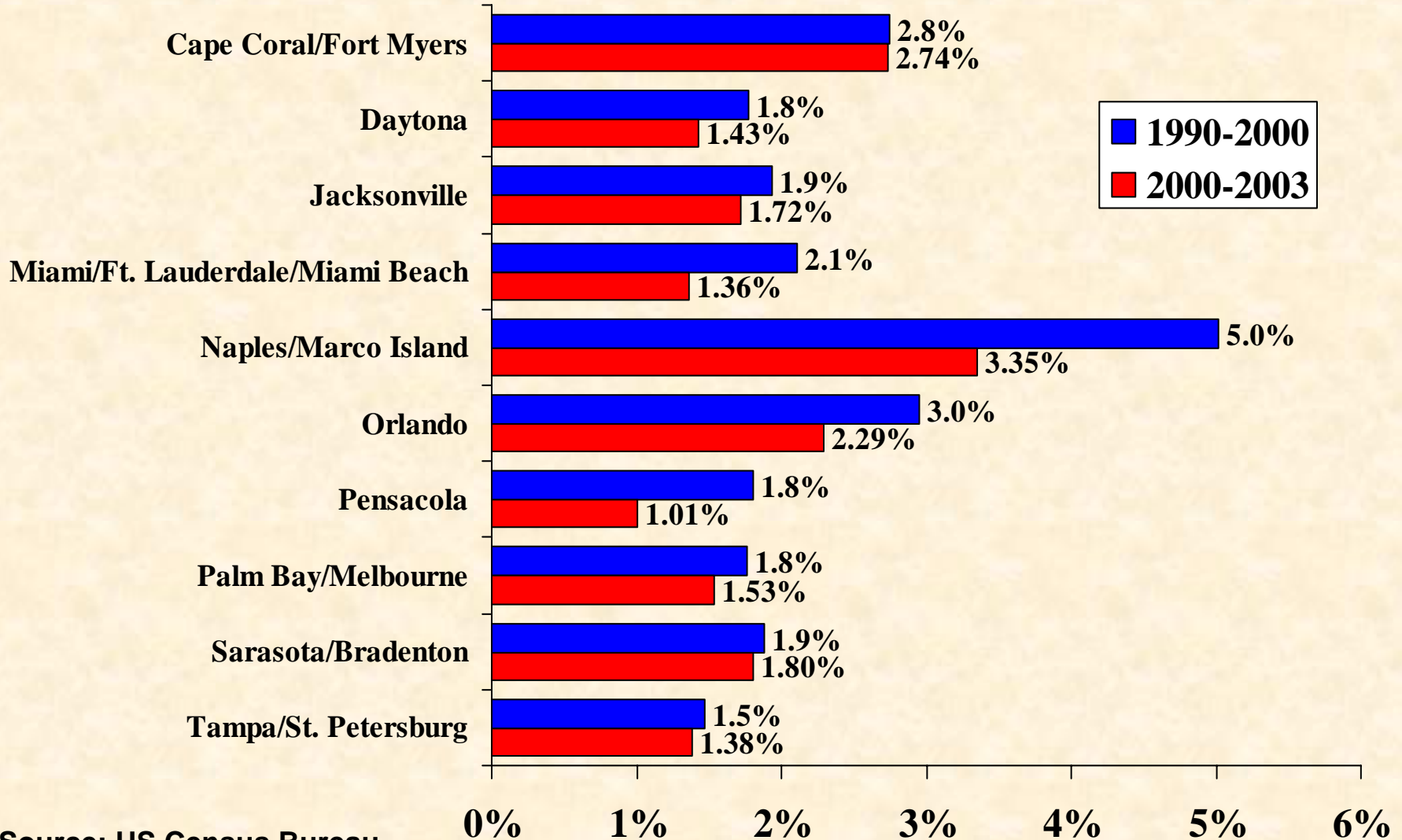


# Average Annual Population Growth Rates of Gulf Coast States, 1960-1980 & 1980-2003





# Average Annual Population Growth Rates of Florida Coastal Cities, 1990-2003

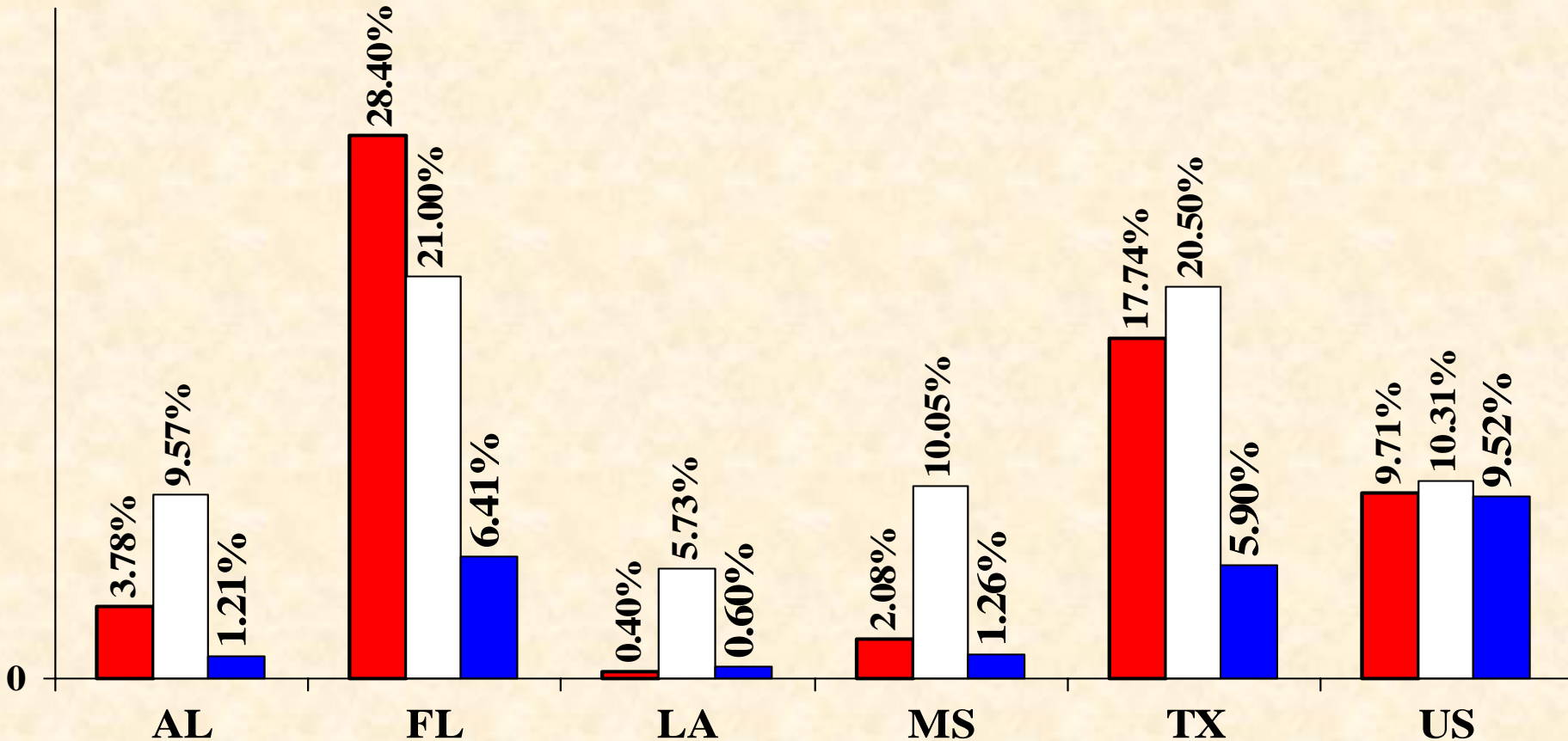


Source: US Census Bureau.



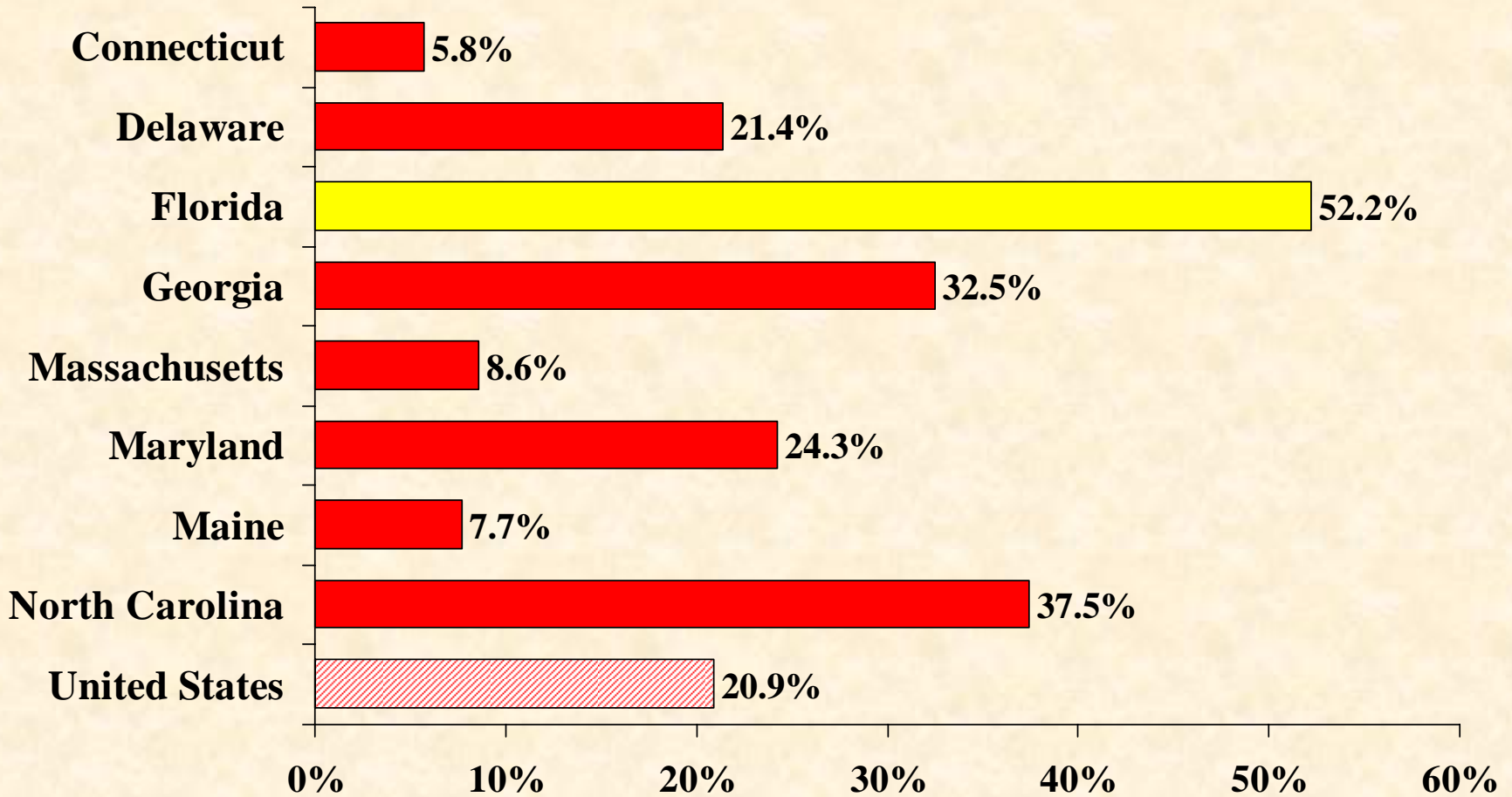
# State Population Growth Rates by Decade, Gulf Coast, 1980-2003

■ 1980-1990 □ 1990-2000 ■ 2000-2003



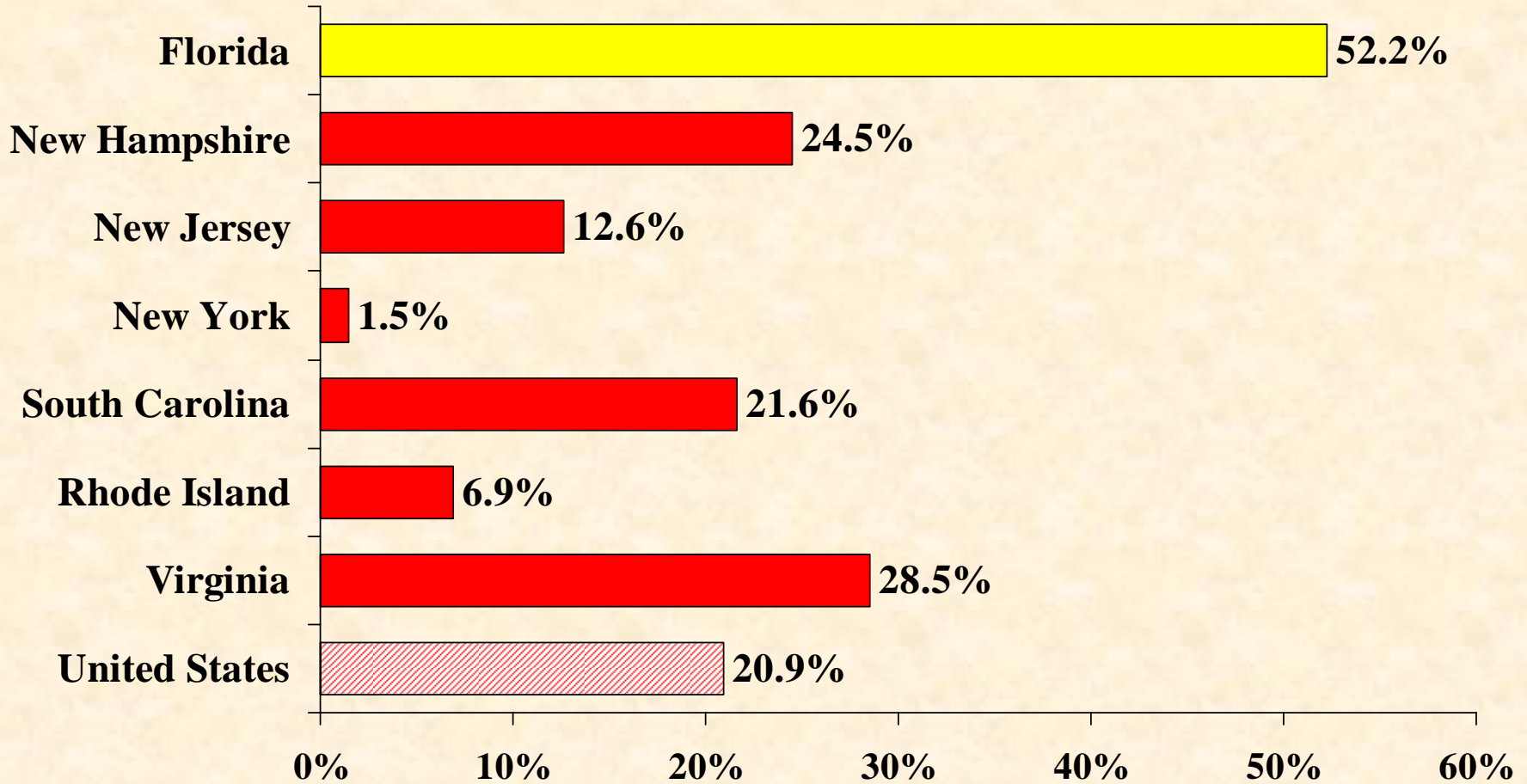


# *Projected Percent Population Growth of Atlantic States, 2003-2030*



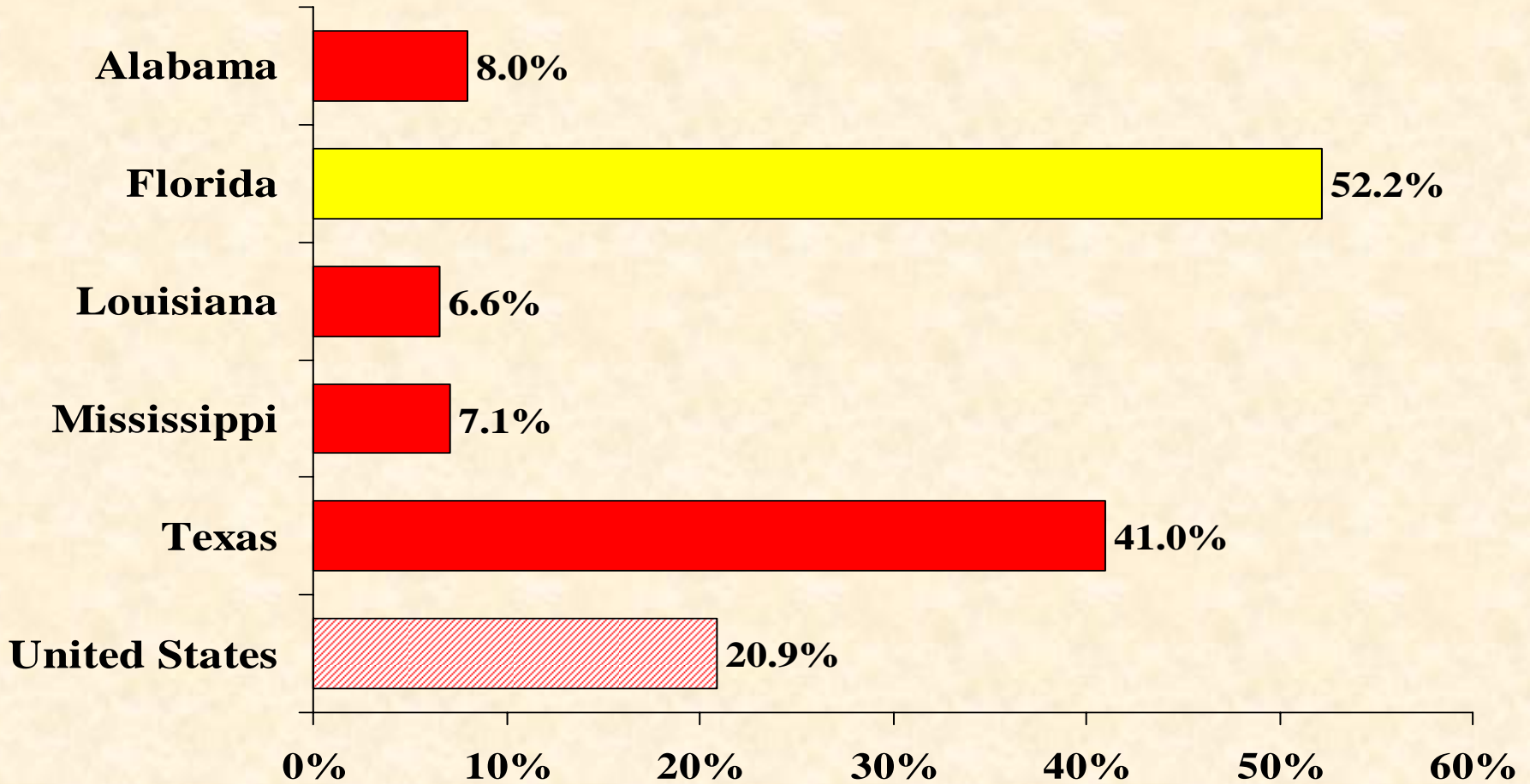


# *Projected Percent Population Growth of Atlantic States, 2003-2030*





# *Projected Percent Population Growth of Gulf Coast States, 2003-2030*

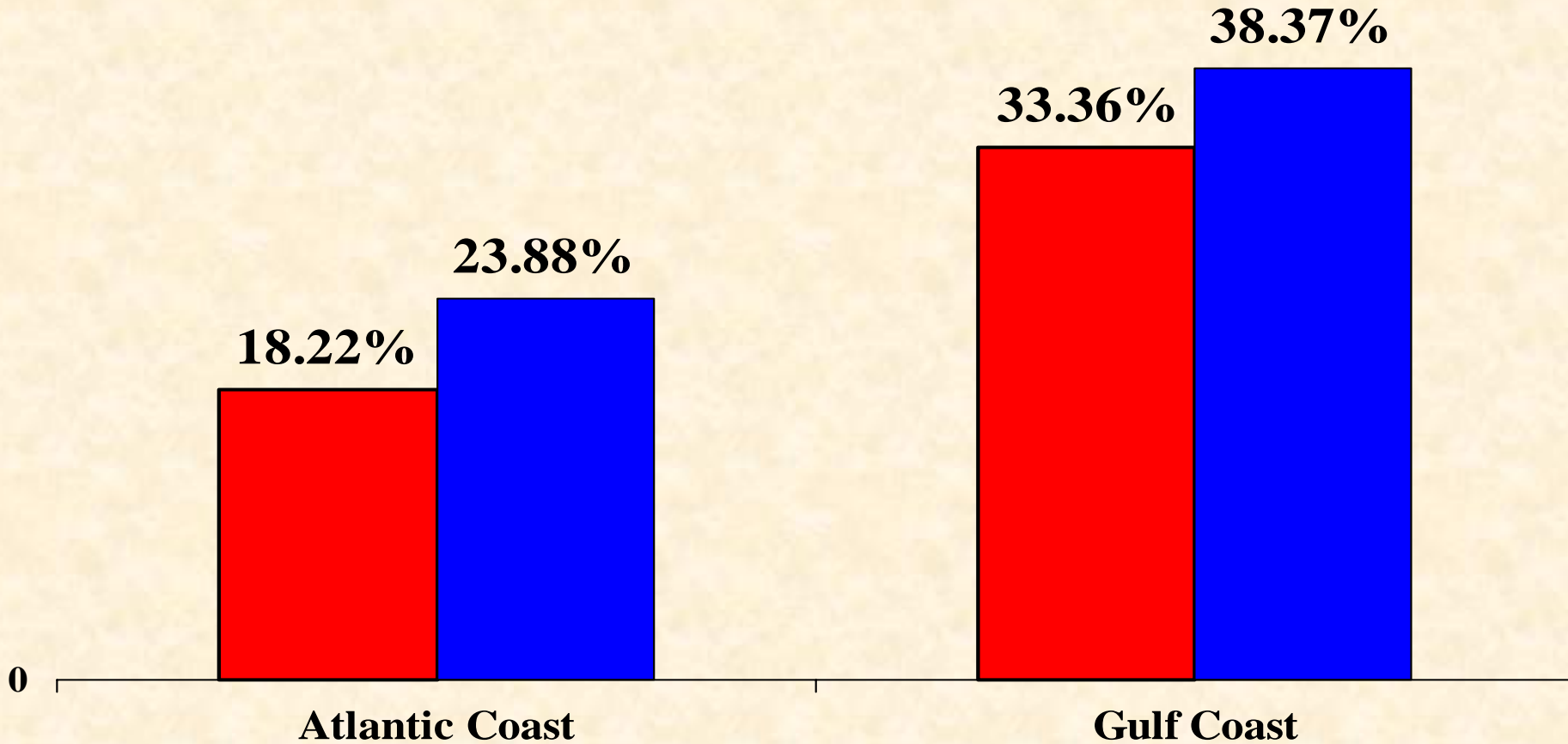


Source: US Census Bureau.



# *Percent of Atlantic & Gulf Coast Populations Living in FL, 2003 and 2030*

■ 2003 ■ 2030



# What Works, What Doesn't





# *Successful Tools for Controlling Hurricane Exposure*

- **Strengthened building codes**
- **Stringent enforcement of building codes**
- **Fortified home programs**
- **Insurance rates based on sound actuarial principles (rates that are not government controlled); Works for commercial insurers**
- **Limits on underwriting**
- **Removing impediments to capital flows**
- **Incentives to adopt mitigation**
- **Forcing communities to consider their catastrophe exposure**



# *Unsuccessful Tools for Controlling Hurricane Exposure*

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- **Insurance rates that are not actuarially sound**
- **Political interference in rate process**
- **Inadequate underwriting controls**
- **Subsidies**
  - **Intra-state (policyholders/taxpayers)**
  - **US Taxpayer**
- **Voluntary flood coverage**

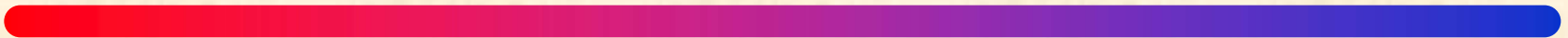


## *Problem Issues*

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- **Local control of land use and permitting creates significant incentive problems**
  - **Benefits accrue locally while many costs can be redistributed to others via taxes, insurance and aid**
- **Prospect of government aid reinforces unsound building and location decisions**
- **States don't want to raise taxes to pay for mitigation/prevention even if state is sole beneficiary**
  - **E.g., NO levees; Beach replenishment**

# Overview of Plans for a National Catastrophe Insurance Plan





# *NAIC's Comprehensive National Catastrophe Plan*

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- **Proposes Layered Approach to Risk**
- **Layer 1: Maximize resources of private insurance & reinsurance industry**
  - Includes “All Perils” Policy
  - Encourage Mitigation
  - Create Meaningful, Forward-Looking Reserves
- **Layer 2: Establishes system of state catastrophe funds (like FHCF)**
- **Layer 3: Federal Catastrophe Reinsurance Mechanism**



# *Comprehensive National Catastrophe Plan Schematic*

**1:500 Event**

**National Catastrophe Contract Program**

**1:50 Event**

**State Regional Catastrophe Fund**

**State Attachment**

**Personal  
Disaster  
Account**

**Private Insurance**

**Private Reinsurance**



## *Objectives of NAIC's Comprehensive National Catastrophe Plan*

- **Should Promote Personal Responsibility Among Policyholders**
- **Supports Reasonable Building Codes, Development Plans & Other Mitigation Tools**
- **Maximize the Risk Bearing Capacity of the Private Markets**
- **Should Provide Quantifiable Risk Management to the Federal Government**



# *Legislation: Comprehensive National Catastrophe Plan*

- **H.R. 846: Homeowners Insurance Availability Act of 2005**
  - Introduced by Ginny Brown-Waite (Rep-FL)
  - Requires Treasury to implement a reinsurance program offering contracts sold at regional auctions
- **H.R. 4366: Homeowners Insurance Protection Act of 2005**
  - Also worked on by Rep. Brown-Waite
  - Establishes national commission on catastrophe preparation and protection
  - Authorizes sale of federally-backed reinsurance contracts to state catastrophe funds
- **H.R. 2668: Policyholder Disaster Protection Act of 2005**
  - Amends IRS code to permit insurers to establish tax-deductible reserve funds for catastrophic events

# Recommendations





# *Recommendations for*

## *Controlling Hurricane Exposure*

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- **Raise public awareness of risk**
  - Mandatory risk disclosure in all residential real estate transactions
  - Require signed waivers if decline flood coverage that also waive rights to any and all disaster aid, or
  - Mandate flood coverage
- **Continue to strengthen & enforce of building codes**
- **Allow markets to determine all property insurance rates**
- **Increase incentives to mitigate**
- **Require state-run insurer to charge actuarially sound rates and limit high value exposure**
- **Require communities/counties to a financial stake in their catastrophe exposure**
  - Reimburse disaster aid to state/federal government



# *Insurance Information Institute On-Line*

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