

## Regional Landscapes of the United States and Canada

### The Southern Coastlands: on the subtropical margin

Prof. Anthony Grande

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## EXAM TWO

- New Date for 2nd Exam.
- **Monday, April 16** – the day we return from Spring Break.
- **Chapters 4-11.**
- Same format as Exam One.
- Take-home extra credit for exam 2 will be due on April 16.

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## The Southern Coastlands Region

Stretches from the Outer Banks of North Carolina along the Atlantic and Gulf coastal plains to S. Texas and the Mexican border, including all of Florida.



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## OVERVIEW

- **Low-lying coastal area** focused on the sea.
- Relatively **flat terrain** with slow flowing rivers, swamps and marshes.
- Sandy **barrier islands** and **lagoons** parallel the coastline.
- **Warm, humid climate** with ample precipitation except for the South Texas area.
- There is an annual **hurricane threat**.
- Global warming with **rising sea levels** is a major concern.

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## OVERVIEW

- **Unique human geography**
  - High percentage of retirement-aged people;
  - greater mix of ethnic groups and
  - lower percentage of African-Americans than the South.
- **Sub-regions**
  - **East:** recreation, agriculture, retirement communities
  - **West:** resource extraction, industrial production, fishing, trade

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## Length of the Frost-free Season southeastern U.S.



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### As a consequence . . .

- Results in an economy based on tourism, recreation, and crops dependent on a warm climate and/or long growing season.
- Citrus and sugar cane (highly frost-sensitive crops) can be commercially grown.
- Numerous destination resorts.
- A significant retired population (warm climate + low tax rate).

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### Trade

- **Intracoastal waterway:** protection from open water by following lagoons behind barrier islands.
- **Major ports**
  - Large river estuaries
  - Anchorages short distance inland from river mouths
- **Sheltered bays**
- **Houston Ship Channel** (built in 1873)
- **Excellent access to hinterlands:** rivers, railroads
- **New Orleans:** most important port and focus of trade to continental interior (Mississippi River basin).

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### Resources

- **Continental shelf is the underwater extension of the continent**
  - Atlantic and Gulf of Mexico shelf areas are wide
  - Prime areas for ocean fishing (commercial and sport)
  - Extensive oil and gas deposits have been identified
  - Texas and Louisiana are major regional producers
- **Salt** - salt domes mined for rock salt.
- **Political issues and environmental problems** related to the extraction and use of resources.

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### Varied Urban Areas

**Charleston** and **Savannah** are historic colonial cities.  
**Jacksonville** is the largest U.S. city in area; it's a deep water port and industrial center  
**Miami** is chief city of Florida and regional hub.  
**Fort Lauderdale, Orlando** and **Tampa** are vacation destinations  
**Mobile** is a deepwater port and aerospace center.  
**New Orleans** in the Mississippi Delta has a distinct aura with French influence  
**Houston is the region's chief city:** port and airline hub; an industrial, corporate and financial center.  
**Corpus Christi** is an industrial/agricultural port city.

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### Highest point in Florida!

near the Alabama border



Britton Hill, elevation 345 feet



The lowest  
highest point  
in any state!

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### Climates

- Most of the area is **Cfa-Humid Subtropical**.
- South Florida is **Aw-Tropical Savanna** (winter dry).
- South Texas is **BSh-Subtropical Steppe** (semi-arid with hot summers).



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## Bayou

**Defined** as either:

- (a) body of water found in flat, low-lying areas, or
- (b) an extremely slow moving stream with a poorly defined shoreline, or
- (c) marshy lake or wetland.

Probably comes from the Choctaw word **bayuk**, meaning a small stream, and applied by French Acadian immigrants to any waterway.



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## Bayou Scenes



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## The Everglades

The Everglades of S. Florida, a unique ecological region that is in danger because of fresh water diversion to Miami and farmland and because of east-west road construction.



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## Everglades National Park



It's a "river of grass" 60 mi wide flowing from south of Orlando to the tip of Florida. The mangrove forest (above) exists in briny water and may be adversely affected by sea level rise.

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## Big Cypress Swamp National Preserve (Florida)



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## Okefenokee Swamp NWR

Georgia-Florida



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## Barrier Island

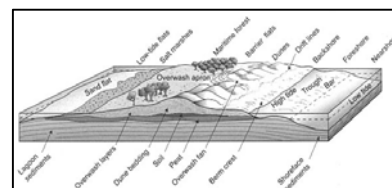
A long and narrow island, lying roughly parallel to the mainland and separated from it by a lagoon.

It is built largely of sand by waves, ocean currents and wind, and shaped by a long shore current.

Barrier islands are **temporary** geologic features.

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## Barrier Island Development



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## Barrier Islands off Mobile Bay, AL

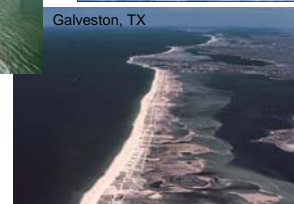


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## Barrier Islands



Galveston, TX



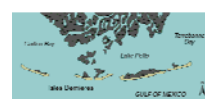
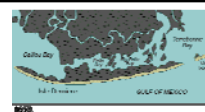
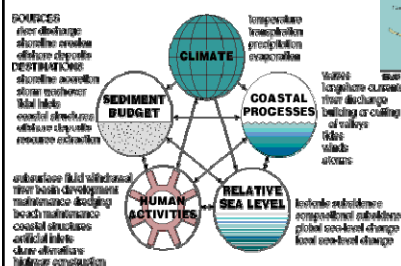
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## Miami Beach and Cape Canaveral



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## COASTS in CRISIS



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## COASTS in CRISIS



Figure 4. Photographs taken 7 weeks apart of a beach created through Tyndall Island as a result of Hurricane Andrew: A) Before - taken July 9, 1992, and B) After - taken August 30, 1992.



Figure 5. Photographs taken 7 weeks apart of the east end of Little Pine Island illustrating the severe erosion that occurred along the margin of Little Pine Island during Hurricane Andrew: A) Before - taken July 9, 1992, and B) After - taken August 30, 1992.

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## The Outer Banks

North Carolina

The **Outer Banks** is a 200 mile long string of barrier islands.

**Cape Hatteras** is the site of the noted lighthouse which has had to be moved 1500 ft. inland in 1999 to prevent it from collapsing into the sea.



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## Florida Keys

A cay or key is a low coral island (Sp. *cayo* = shoal)

- The **Florida Keys** is a chain of coral islands linked by causeways stretching 130 miles from Key Biscayne to Key West.
- The Florida Key formation comprises the world's 3<sup>rd</sup> largest barrier reef.
- **Key West** is the southernmost and most tropical part of the U.S. outside of Hawaii.

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## Florida Keys



US Route 1, the Overseas Highway, connects the Keys with the U.S. mainland.



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## Water Hazards

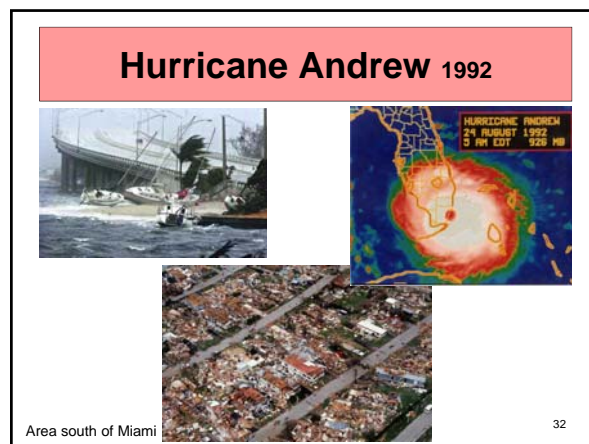
- **Coastlines subject to wave erosion and flooding**
- **Fresh water supply problem.**
  - Withdrawing water faster than replacement
  - Distant rivers
  - Land too flat for reservoirs
  - Salt water intrusion into groundwater
- **Urban areas far from rivers**
  - Need to pump water from underground water table
  - Central Florida, Cape Canaveral to Tampa (includes Orlando)
- **Subsidence and Sinkholes:** surface sags or collapses from loss of support of underground water (and/or oil in Texas).

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## Natural Hazards

- **Winter freeze**
  - Winter vegetables
  - Citrus
  - Need for cold temperatures to kill disease organisms
- **Hurricanes**
  - Areas facing tropical waters of Caribbean, southern Atlantic, Gulf of Mexico
  - Occasional monster storms with great destruction:
    - Hugo (1989) Katrina (2005)
    - Andrew (1992) Ike (2008)

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### Agriculture Setting in the Southern Coastlands

- **Humid subtropical climate**
  - Warm, humid summers; mild winters
- **Long growing season**
  - Almost everywhere from 9-10 mo.; 11-12 mo. in S FL
- **Average rainfall** greater than 50 in.
  - Almost all falls in the growing season (Apr–Oct).
- **Advantages for agriculture**
  - Can grow crops that cannot be grown elsewhere as citrus and some tropical plants as sugar cane
  - Double-cropping possible
  - Winter vegetables

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### Citrus

- **Introduced by Spanish in the 1500s.**
- **Produced only in Florida, Texas and California**
- **Location**
  - South of 29°N
  - 40% between Tampa and Orlando
  - Southward shift to avoid frost, but farther south soils are too swampy
- **Oranges and grapefruit** most important
- **Local processing** (80% as concentrate)
- **Labor-intensive:** use of migrant labor

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## A Florida Orange Grove

Large acreage groves predominate.



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## Harvesting Citrus

Older groves are labor-intensive, employing large numbers of workers.

Mechanized harvesting has taken hold in newer groves with widely spaced trees



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## Modern Orange Juice Plant



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## SUGAR CANE

Sugar cane is a tall grass that requires warm temperatures, lots of moisture and a long growing season to mature. Historically labor intensive, now nearly totally mechanized.



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## Alligator Farming

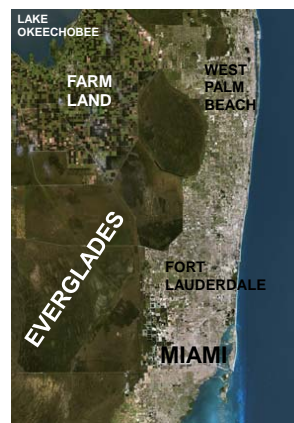
Alligators are native to the southern coast. They thrive in warm climate and swampy conditions. They have long been a source of food and their skins are used to make leather goods.



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## South Florida

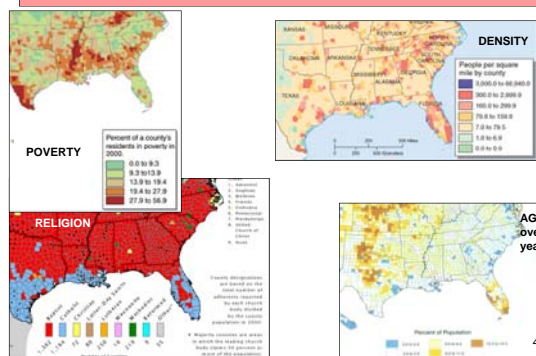
Note the proximity of the **Miami Metro area** with the **Everglades** and agricultural land south of **Lake Okeechobee**.



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## Demographics



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## "Snowbird"

- People from the northern states and Canada who spend a large portion of the winter in Florida and other "Sun Belt" states.
- A seasonal migrant who spends summer in the north and winter in the south.
- Snowbirds are retirees and business owners who can afford to be gone for long periods.
- Many use their long Sun Belt sojourns to declare residency in low-tax or no-tax states.
- Responsible for significant seasonal population change and local economic boost.

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## A distinctive regional demography

- Significant in-migration. Most residents were born somewhere else.
- A very "non-southern" population.
- Mix of retirees and refugees (Cubans, Haitians).
- The attraction of businesses attracted to a favorable climatic and tax environment.
- Unique local cultural groups – Gullahs, Cajuns, Creoles, Mexicans

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## A distinctive regional demography

- **Cajuns:** people of French Canadian descent who first migrated to North America (French Acadia now the Canadian Maritimes) and then were expelled after the French and Indian War. Settled in the U.S.
- **Creoles:** people of French/Spanish/Caribbean descent usually from the West Indies; associated with speaking a pidgin language combining words from other languages with French.
- The term was also applied to a slave born in the Americas as opposed to one brought from Africa.



Red = high % of French-speakers

## Gullah

- They are the descendants of Africans brought as slaves to cotton plantations on the Sea Islands.
- After the Civil War they remained on the Islands.
- Noteworthy for their **distinctive African language and culture**, which has been handed down by generations relatively intact.
- Once isolated, their uniqueness is now threatened by development on the coastal islands.



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## Gullah Culture



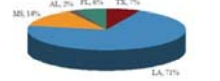
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## Fishing

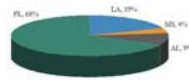
### Commercial Fishing

Distribution of Commercial Fishing Landings



### Sport Fishing

Distribution of Marine Recreational Fishing Trips



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## Commercial Fishing Boats



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## Satellite View of New Orleans



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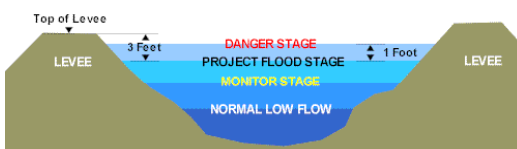
## Cross-section of New Orleans

Portions are below sea level due to subsidence.



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## Levee



A levee is an artificial embankment designed to contain the flow of a river and prevent it from flooding the surrounding territory.

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## Path of Hurricane Katrina



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## New Orleans Levee System



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## New Orleans after Hurricane Katrina (2005)



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## Industrial Development

- **Petrochemical industry**
  - Natural **gas** and **petroleum** products
  - Capital for industrial growth
    - Corpus Christi, TX to Pascagoula, MS
    - Concentration around Houston, Beaumont, Port Arthur
  - Important materials for other chemical industries
  - Cheap water transportation to customers in East Coast
- **Aluminum**
  - **Bauxite** from Caribbean and South America
  - Cheap water transportation, abundant local fuel

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## Houston



Houston is the 4<sup>th</sup> largest city of the US. It is a major industrial center and the focus of the oil industry. Its port facilities are located 40 mi from the Gulf. It is connected to it by the Houston Ship Channel.



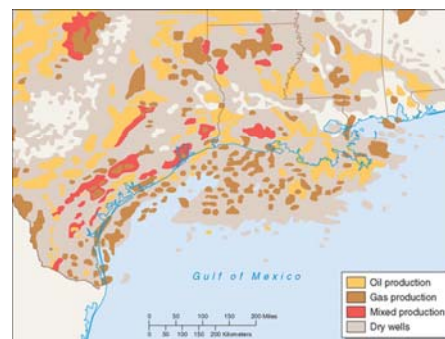
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## Southern Louisiana Oil Refinery



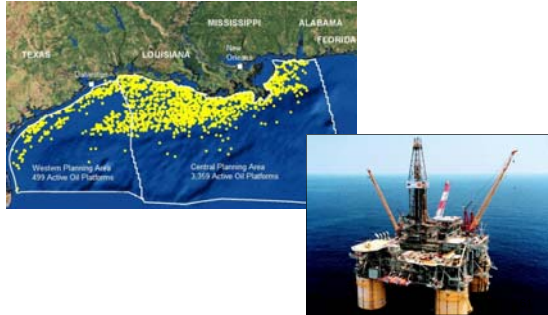
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## Gulf Coast Oil and Natural Gas Production



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### Locations of oil platforms off the Southern States

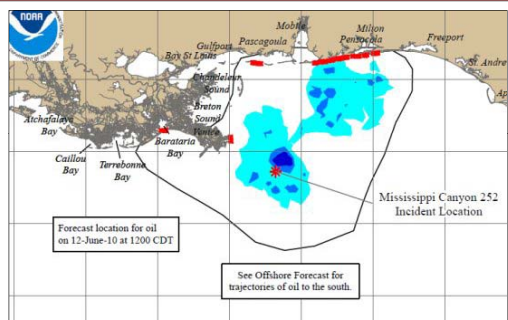


### BP Oil Rig Fire and Oil Spill

June, 2010



### Monitoring the Oil Slick



### Gulf Clean-up after BP Oil spill

