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CSU Hurricane Team Predicts Active 2006

The United States faces another very active Atlantic basin hurricane season in 2006, but with likely fewer intense hurricanes than in 2005 - the costliest, most destructive hurricane season ever - according to a report issued by Philip Klotzbach, William Gray and the Colorado State University (CSU) forecast team.

The team's first extended-range forecast for the 2006 hurricane season anticipates 17 named storms forming in the Atlantic basin between June 1 and Nov. 30. Nine of the 17 storms are predicted to become hurricanes, and of those nine, five are expected to develop into intense or major hurricanes with sustained winds of 111 mph or greater.

The entire report is available on the Web at http://hurricane.atmos.colostate.edu.

"Our analysis of current and projected global atmospheric and oceanic predictors through November indicates that the 2006 Atlantic basin hurricane season will be an active one with net tropical cyclone activity about 195 percent of the average season," Klotzbach said. By comparison, 2005 tropical cyclone activity was about 263 percent of the average season. "Enhanced major hurricane activity is likely to continue in the Atlantic basin for the next 15 to 20 years, but the probability of seeing another two consecutive hurricane seasons with as many hurricanes as was witnessed in 2004 and 2005 is very low," Gray said.

MODIS image Hurricane Wilma courtesy Liam Gumley/UW-CIMSS

The CSU hurricane forecast team also predict an 81 percent chance - much higher than average probability - that at least one major hurricane will make landfall on the U.S. coastline in 2006. The long-term average probability is 52 percent. For the U.S. East Coast, including the Florida Peninsula, the probability of an intense hurricane making landfall is 64 percent (the long-term average is 31 percent). For the Gulf Coast from the Florida Panhandle west to Brownsville, the probability is 47 percent (the long-term average is 30 percent). "The probability of landfall for any one location along the coast is very low and reflects the fact that, in any one season, most U.S. coastal areas will not feel the effects of a hurricane no matter how active a season," Klotzbach said. "However, low landfall probability does not ensure that hurricanes will not come ashore, so coastal residents should always be prepared."

Florida and the Gulf Coast were ravaged by four hurricanes in each of the past two years. Hurricanes Charley, Frances, Ivan and Jeanne caused devastating damage in 2004 followed by Dennis, Katrina, Rita and Wilma in 2005. "In 2004 and 2005, we saw a rare combination of a high number of

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Special points of interest

- Red Tide Alliance working on answers.
- Land boom drives up Florida agricultural acreage values 50 to 88 percent.
- Division welcomes a new bio-resource engineer and a new fishery biologist.

Red Tide Alliance: Working on Answers

The Red Tide Alliance (RTA) is a public/private partnership among three organizations that is committed to educating the public about the effects of the Florida red tide and other harmful algal blooms (HABs). Information provided includes mitigating adverse effects and answers to public health questions.

The Alliance consists of three entities: the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute (http://research.myfwc. com/) which is responsible for HAB studies and Mote Marine Laboratory (http://www.mote.org/), a not-for-profit marine research laboratory. These two entities have major projects pertaining to research on red tide and the development of programs to monitor and mitigate red tide and other HABs.

The third entity is Solutions to Avoid Red Tide, Inc. (http://www.start1.com/) a not-for-profit grass roots, citizen organization dedicated to funding and promoting efforts for the prevention, control, and mitigation of red tide and other HABs.

What is RTA doing?

The Alliance works with Florida's Harmful Algae Bloom Task Force to insure that an effective plan of work is being carried out to monitor, mitigate, and control red tide and other HABs. RTA also is working to insure that an effective long-range plan is being developed that provides specific goals and accountability. RTA also insures that communications to the scientific, state, and local government, legislative and business community about red tide and other HABs is clear, concise, and effective.

Current Red Tide Projects

- Monitoring and forecasting HAB's through routine sampling of Gulf of Mexico water.
- Modeling to forecast red tide.
- Weekly updates to the public on red tide conditions.
- Research on health effects
- Research on fate and effect of toxins on living marine resources such as mammals, turtles, and fish.
- Public education & outreach.

Additional information is available at RTA's web site: http://www.redtideonline.com/.

2006 Hurricane Prediction (continued from page 1)

major hurricanes forming and especially favorable hurricane steering conditions that drove many storms from the deep tropics across the Caribbean and into Florida and the Gulf Coast," Gray said. "It is statistically unlikely that the coming 2006 and 2007 hurricane seasons will have the number of U.S. landfalling major hurricanes we have seen in the past two years."

The team has also updated the Landfall Probability Web site that provides probabilities of tropical storm-force, hurricane-force and intense hurricane-force winds making landfall at specific locations along the U.S. East and Gulf Coasts within a variety of time periods. U.S. landfall probabilities are available for 11 regions, 55 sub-regions and 205 individual counties along the U.S. coastline from Brownsville, Texas, to Eastport, Maine. The Web site, available to the public at http:www.e-transit.org /hurricane, is the first publicly accessible Internet tool that adjusts landfall probabilities for regions, sub-regions and counties based on the current climate and its projected effects on the upcoming hurricane season. Klotzbach and Gray update the site regularly with assistance from the GeoGraphics Laboratory at Bridgewater State College in Massachusetts.

The hurricane team's forecasts are based on the premise that global oceanic and atmospheric conditions - such as El Niño, sea surface temperatures and sea level pressure - that preceded active or inactive hurricane seasons in the past provide meaningful information about similar trends in future seasons.

For 2006, Gray and the hurricane forecast team expect continued warm tropical and north Atlantic sea-surface temperatures, prevalent in most years since 1995, as well as neutral or weak La Niña conditions - a recipe for greatly enhanced Atlantic basin hurricane activity. These factors are similar to conditions that occurred during the 1961, 1967, 1996, 1999 and 2003 seasons. The average of these five seasons had well above-average activity, and Klotzbach and Gray predict the 2006 season will have slightly more activity than the average of these five years.

The team will issue seasonal updates of its 2006 Atlantic basin hurricane activity forecast on April 4, May 31, Aug. 3, Sept. 1 and Oct. 3. The August, September and October forecasts will include separate forecasts for each of those months.

Rising Florida Land Prices Challenge Agriculture

Global competition, fuel prices, labor costs, and hurricanes just made room for another factor that farmers must consider when deciding whether to grow or go: land prices. "Perhaps one of the greatest challenges facing aquaculture, in fact all of Florida's agriculture, is the pressure being placed on farm owners to sell their properties for development, at prices that I thought were at least 20 or 30 years out on the horizon. Prices per acre that have reportedly been paid for fish farms in Hillsborough County make it hard to continue to justify getting up every morning and facing the hard work and challenges of farming. However, at the same time, we are seeing a lot of investment in intensified production," commented Craig Watson, Director, UF-Tropical Aquaculture Lab in Ruskin.

Dr. John E. Reynolds of the Food and Resource Economics Department, University of Florida, released his 2005 Florida Land Value Survey and found value increases ranged from 50 to 88 percent from 2004 to 2005.

Survey respondents included rural appraisers, farm lenders, real estate brokers, farm managers, land investors, county extension agents, personnel from the USDA's Farm Services Agency and the Natural Resource Conservation Service, county property appraisers, and other persons who develop and maintain information about rural land values in their areas. Respondents provided 185 usable county reports for the 2005 survey.

The state was divided, based on agricultural production, into five major regions: Northwest, Northeast, Central, South, and Southeast.

The value of agricultural land increased in all regions. The value of cropland increased by 67 to 85 percent, and the value of improved and unimproved pastureland increased by 76 to 87 percent. The value of farm woods increased 81 to 84 percent. Citrus groves did not increase as much as cropland and pasture. The value of 5- to 7-year-old citrus groves increased 51 to 58 percent, and the value of grapefruit groves increased 81 to 88 percent.

The most prominent change among regions this year was in the South region where the value increased from 66 to 81 percent for cropland and pastureland. The largest increases were in the Indian River area, Okeechobee County and the Gulf Coast counties. The other regions also experienced substantial increases: 78 to 82 percent in the Central region, 69 to 85 percent in the Northwest region and 69 to 87 percent in the Northeast region.

The average value of orange groves was $9,956 per acre in the South region (about $150 per acre higher than in the Central region). The estimated value of grapefruit groves increased to $9,897 per acre in the South region ($1,705 per acre higher than in the Central region). The average value of land with 5- to 7-year-old citrus groves was $8,944 per acre in the South region ($483 per acre higher than in the Central region).

The value of irrigated cropland was $6,509 per acre in the South region, $6,356 in the Northeast region, and $4,012 per acre in the Northwest region. The value of non-irrigated cropland was $4,490 in the Northeast region and $3,332 in the Northwest region.

The value of improved pasture ranged from $6,426 per acre in the Central region to $3,337 per acre in the Northwest region. The value of

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Division of Aquaculture Welcomes New Employees

Brandon Miller was hired in October 2005 as an engineer for the Division of Aquaculture and the Office of Agricultural Water Policy. Mr. Miller will be working with the Division to: develop and review aquaculture Best Management Practices (BMPs), conduct site evaluations of existing farms to verify compliance with aquaculture BMPs, and review third party engineering plans to verify compliance with Code and BMPs. Brandon received his Bachelor of Science in Bio-Resource Engineering from the University of Maine in 1999.

Portia S. Gotwalt has joined the Division as the Environmental Supervisor at the Bartow Field Office. Ms. Gotwalt will manage aquaculture BMP compliance efforts for Central and South Florida. Portia received her Bachelor of Science degree in biology from Towson University in Maryland. She began her graduate work at Florida International University and transferred to Towson University to complete a Master of Science degree in biology with a concentration in fish physiology, awarded in 2005. Her thesis research investigated the relationship between watershed urbanization and the swimming performance of Blacknose dace, a cyprinid common to Maryland streams.

Blacknose Dace, *Rhinichthys atratulus*

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Land Prices (continued from page four)

unimproved pasture ranged from $4,715 per acre in the South region to $2,645 per acre in the Northwest region.

The value of cropland and pastureland increased from $2,100 to $2,700 per acre in the South region. The lowest agricultural land values were reported in the Northwest region ranging from $2,645 per acre for unimproved pasture to $4,012 per acre for irrigated cropland.

Transition land is defined as agricultural land that is being converted or likely to be converted to nonagricultural uses as sites for homes, subdivisions, and commercial uses. Counties were divided into metropolitan and non-metropolitan counties and transition land values were estimated for each region. The value of transition land within five miles of a major town in metropolitan counties increased from 31 to 120 percent. The value of transition land within five miles of a major town in metropolitan counties ranged from $18,423 to $46,481 per acre, except in the Southeast region where transition land values were $137,500 per acre. The value of transition land more than five miles from a major town in metropolitan counties ranged from $10,758 to $23,575 per acre, except in the Southeast region where transition land values were $66,667 per acre. The value of transition land within five miles of a major town in non-metropolitan counties ranged from $6,167 to $17,143 per acre, while transition land values more than five miles from a major town in non-metropolitan counties ranged from $5,333 to $10,600 per acre.

For the full report go to http://edis.ifas.ufl.edu/FE545.

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