

This document is the 2009 – 2014 Clay County Multi-Jurisdictional Hazard Mitigation Plan. The local mitigation plan is the representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Local plans will also serve as the basis for the State to provide technical assistance and to prioritize project funding.

For disasters declared after November 1, 2004, a local government must have a mitigation plan approved in accordance with 44CFR Part 201.6 (Disaster Mitigation Act of 2000) in order to receive Hazard Mitigation Grant project grants.

To fulfill part 201.6 (4) (iii) of the Disaster Mitigation Act of 2000, (continuing citizen participation requirement) this document is made available to the public for review and comment. This document must be updated every 5 years.

Comments on this document may be made in writing and submitted to:

Clay County Emergency Management Agency  
ATTN: EMA Planner  
P. O. Box 187  
Ashland, AL 36251

# WHY MITIGATE?

*Natural hazards* exist with or without the presence of humans and the development we produce. *Natural disasters* occur only when the developed environment happens to be in the way of a natural event and human lives are affected. Mitigation is an ongoing process that attempts to lessen the impact of natural disasters by identifying and planning for the occurrence of natural hazards.

Natural disasters are cyclical. The interval between them may vary, but not their ultimate inevitability. Communities must incorporate the expectation of future disasters into their planning and environmental consciousness. While the disasters are recurrent, the pattern of recovering and rebuilding in the same place and manner that caused the developed areas to be vulnerable in the first place need not be. Effective mitigation breaks this cycle.

The benefits of implementing hazard mitigation are plenty. The following list illustrates some of the more obvious:

- Saving lives and reducing injuries;
- Preventing or reducing property damage;
- Minimizing agricultural losses;
- Reducing economic losses;
- Protecting infrastructure from damage;
- Maintaining critical facilities in working order;
- Minimizing social dislocation and stress;
- Protecting mental health;
- Limiting legal liability of public officials;
- Fostering cooperation between community public and private entities; and,
- Providing a positive template for post-disaster government action.

## Hazard Mitigation Measures

The bedrock of all mitigation activities is a need to focus on planning for future uncertain but plausible natural events. Clay County and the incorporated areas it contains may choose from a suite of measures to lessen the potential impact of its natural hazards. Local communities usually have the responsibility of choosing which measure is best for their circumstances. Representatives of interested groups within the community that either could be impacted by a potential disaster or would be required by law to play a role should a disaster occur agree in principal to undertake steps to lessen the shock of a prospective disaster.

The physical damage from a natural disaster is typically structural, but the methods used to decrease the chances of such damage in the future need not be. A person can group mitigation measures into two large categories, non-structural and structural. A

community selects mitigation measures from within these broad categories depending upon its legal, political, institutional, fiscal and technical capabilities both before and after a disaster. Communities make plans in the relative calm of normal community life; however, disasters have a tendency to introduce the unforeseen. That is why mitigation is an ongoing process. It takes place in relative calm while incorporating the lessons of previous catastrophes.

## NON-STRUCTURAL MITIGATION ACTIVITIES

Non-structural choices are those that do not rely primarily on the construction of some type of structure to provide for mitigation in the face of a predictable future disaster. For instance, the development and use of vulnerable land such as floodplains or potentially unstable slopes might be limited through planning, land acquisition, regulation or a combination of all three. Building, zoning, planning and / or code enforcement officials usually administer these activities.

Non-structural choices are often the least costly option for local governments. Another attraction of these choices is that they can help the local government accomplish its goal of protecting the public health and welfare despite not having the power to dictate activities to local private property owners. Most owners welcome the opportunity to reduce their risk once they become aware that they have exposure. Incentives can be all owners need to act.

The following is a partial listing of useful non-structural mitigation methods:

- Comprehensive planning allowing for growth while protecting the community;
- Enacting zoning that will best protect the community's assets;
- Preserving open space providing buffer zones of protection;
- Developing and enforcing building codes;
- Managing storm water for both quantity and quality;
- Maintaining and improving existing community drainage systems;
- Relocating to less hazardous places;
- Acquiring vulnerable buildings or parcels for relocation or conversion to a more impact resistance use;
- Maintaining adequate hazard insurance;
- Taking positive measures during a hazardous event to minimize its effect such as:
  - warning the members of the community;
  - protecting critical facilities;
  - having a tested emergency response plan in place;
  - evacuation.
- Establishing an ongoing effort to inform the community of the hazards and what each person can do to decrease their risk. Typically, communities do this by:
  - publishing flood maps and data;
  - publishing maps of potentially unstable slopes;
  - publishing maps of soils unsuitable for different purposes;
  - stocking the public library with resources from private and public sources;
  - disclosing hazard potential information in real estate transactions;

- providing technical assistance;
- establishing public outreach projects;
- providing hazard education programs to all community constituencies.

Considering the protection already afforded by natural resources and maintaining that through:

- wetlands protection;
- open space set-asides;
- using Best Management Practices;
- using sediment and erosion control measures.

## STRUCTURAL MITIGATION MEASURES

Structural measures are just as the name implies. They are physical constructs typically designed by engineers to lessen the impact of a potential disaster of a particular size. Essentially, things are built to keep natural hazards out, or to keep them reigned in, or to let them pass by while causing the minimal amount of damage, or to strengthen existing buildings to withstand greater assaults. A partial list of structural mitigation techniques would include:

- Modifying stream channels so they can produce and accommodate faster flows;
- Building levees or floodwalls to keep streams within their banks;
- Building reservoirs to store excess water until they safely release it downstream;
- Building stream diversion structures to direct floodwaters away from communities;
- Building storm sewers to help drain the community as quickly as possible;
- Retrofitting existing structures to withstand greater pressure from seismic waves or high winds

Specific mitigation measures cannot be applied blindly to any situation. Community leaders may elect to construct several combinations from a palette of choices.

The [Natural Hazards Center](#), located at the [University of Colorado, Boulder, Colorado, USA](#), is a national and international clearinghouse for information on natural hazards and how human behavior changes because of hazards and disasters. The center's prime goal is to increase communication among hazard/disaster researchers and those individuals, agencies, and organizations actively working to reduce disaster damage and suffering.

With funds contributed by the National Science Foundation, the Natural Hazards Center Quick Response Program enables social scientists to travel to the site of a disaster soon after it occurs to gain valuable information concerning immediate impact and response. The findings of these studies cover a broad range of disasters - both natural and human-caused - in diverse settings affecting all types of human communities.

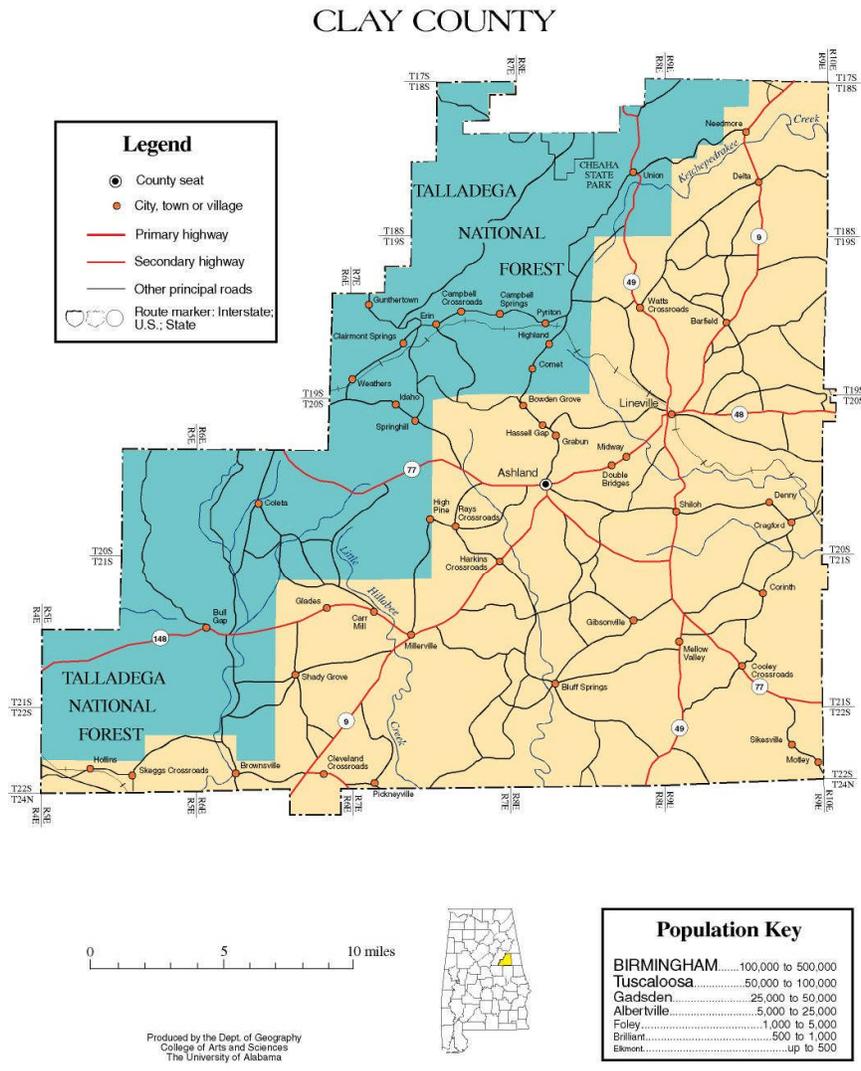
Quick Response Reports #1-#75 are available in printed form from the Natural Hazards Center. Beginning with Quick Response Report #76, the Center began offering these

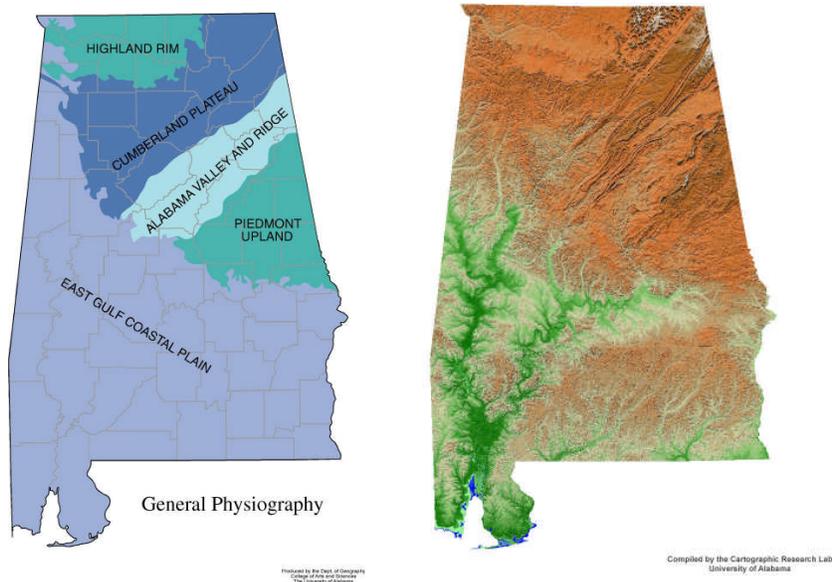
reports on-line. Where possible, this document incorporates information gathered at disaster sites by the National Hazards Center scientists.

# CLAY COUNTY OVERVIEW

Clay County was created by the Alabama Legislature on 1866 Dec. 7. It is named for U. S. Senator Henry Clay of Kentucky. The county is located in the east-central part of the state, in the foothills of the Appalachian Mountains. It encompasses 606 square miles. The Talladega National Forest is located in the western part of the county. The county seat is located at Ashland.

Clay County has a total area of 606 square miles, of this, 605 square miles are land surface and the remaining square mile is water surface.

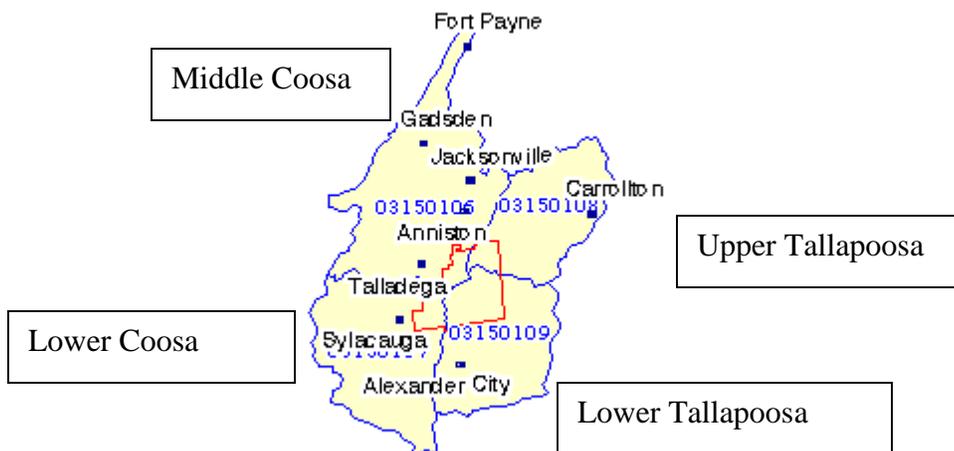




The maps above depict the general physiography of Alabama and Clay County. Clay County is located in northeast Alabama in the northernmost extensions of the Piedmont Uplands. Elevations in the county range from 2,344 feet at Hernandez Peak in the northern part of the county to a low of 620 feet along Little Hillabee Creek in the southern part of the county. The normal daily maximum and minimum temperatures are 58 and 37 degrees respectively in January; 90 and 69 degrees in July. The mean length of the freeze free period is 230 days. Precipitation averages 52 inches annually, some of which is in the form of snow. Snowfall rarely lingers on the ground for more than one or two days.

### DRAINAGE AND WATERSHEDS

Clay County lies across four watersheds, the Middle and Lower Coosa and the Upper and Middle Tallapoosa watersheds.

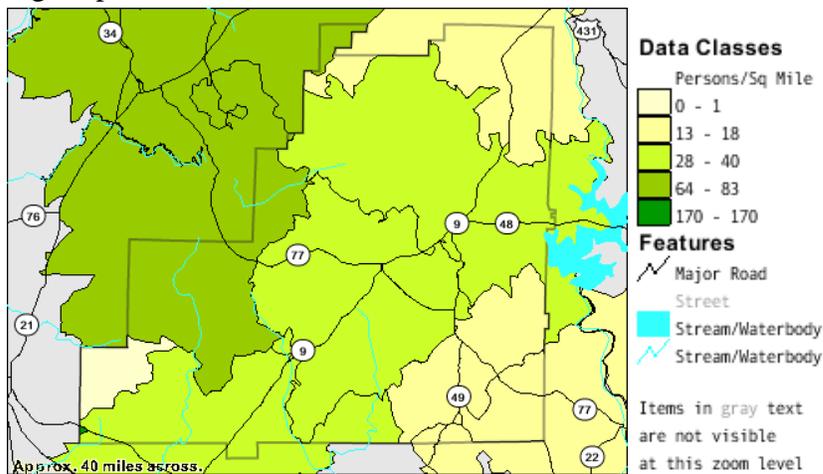


## POPULATION

There are two incorporated towns in Clay County, Ashland and Lineville. The following table depicts selected demographic characteristics for the County and its incorporated municipalities:

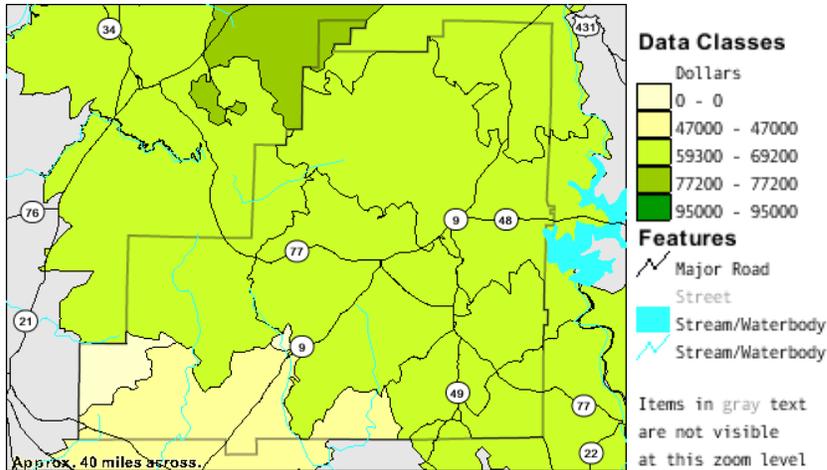
Jurisdiction	Population	Over Age 65	Under Age 18	Total Housing Units	Occupied Housing Units	Unemployed	Median Household Income	Percent of population below poverty level
Clay County	9,888	1,463	2,595	4,542	3,907	3,139 (44.1%)	27,885	17%
Ashland	1,965	449	467	975	854	859 (54.4%)	23,469	20%
Lineville	2,401	447	683	1,095	1,004	961 (49.1%)	23,468	27%

The following map shows the population distribution of persons per square mile by 5 digit zip code areas:



## HOUSING

The following map shows Clay County housing values by 5-digit zip code area:



The median age of housing structures in the county is 27 years. There are a total of 4,451 owner occupied housing units in the County while 1,314 are renter occupied.

## ECONOMY

The chart below describes the primary economic establishments within the County according to the U.S. Census' 1997 Economic Census.

Description	Establishments	Sales, Receipts or Shipments (\$1,000.00)	Annual Payroll (\$1,000.00)	Paid Employees
Manufacturing	15	212,354	49,649	2,789
Wholesale Trade	4	D	D	20-99
Retail Trade	49	45,696	4,552	379
Real Estate	6	1,094	122	22
Professional, Scientific & Technical Services	9	777	177	26
Admin, Support, Waste Management & Remediation Services	1	D	D	1-19
Health and Social Assistance	17	8,575	3,742	204
Arts and Entertainment	N	N	N	N
Accommodation and Food Services	11	3,233	838	171
Other Services (except Public Administration)	14	2,248	574	49

D = Withheld to avoid disclosure; N = Not available

## GOVERNMENT

Clay County is governed by a five-member County Commission. The Commission has rotating Chairmanship. Each commissioner is elected to serve a term of four years. It is

the responsibility of the County Commission to oversee the County government budget, ordinances, and resolutions (local laws), zoning and business regulation in the unincorporated areas and setting policies for the operation of County government. The municipalities within Clay County are each governed by a Mayor and City Council.

## WATER

There are five water systems that provide a safe reliable source of drinking water to the residents of Clay County. Collectively, these systems serve approximately 48,000 households. The table below summarizes the supply, storage and treatment capacities of the water systems in Clay County:

<b>SYSTEM NAME</b>	<b>RESIDENTIAL HOUSEHOLDS SERVED</b>	<b>RESIDENTIAL PERSONS SERVED</b>	<b>SUPPLY CAPACITY (GPD)</b>	<b>STORAGE CAPACITY (GPD)</b>	<b>TREATMENT CAPACITY (GPD)</b>
Ashland Water & Sewer Board	975	2,000	**	1,150,000	**
Clay County Water Authority	393	938	2,000,000	466,000	2,000,000
Hollins Water & FPA	400	1,200	500,000	100,000	500,000
Lineville Water & Sewer Board	875	2,500	**	575,000	**
Millerville Water Authority	486	1,300	4,000,000	100,000	4,000,000
<b>Total</b>	<b>3,129</b>	<b>7,938</b>	<b>6,500,000</b>	<b>2,391,000</b>	<b>6,500,000</b>

\*\* Purchase Treated Water

The sources for these water systems range from creeks, rivers, springs, and wells. Many of these water systems are interconnected and provide “back up” emergency mutual aid to each other. The majority of raw water is treated with chlorine. Clay County Water Authority use Filtration, Chlorine, Filtration, and coagulation. Several Water systems purchase their treated water from larger systems.

## SEWER

Clay County is serviced by two different sewer systems. The table below describes the systems:

### SEWER SYSTEM INVENTORY

Number of Residential Customers Served:	1,383
Number of Commercial Customers Served:	224
Number of Industrial Customers Served:	10
Approximate Number of Residential Persons Served:	3,361

## TREATMENT FACILITY INVENTORY

Ashland Water Works and Sewer Board	
Ashland Wastewater Treatment Plant	1.07 MGD
Lineville Water Works and Sewer Board	
Lineville Sewage Treatment Lagoon	0.50 MGD
<b>Total Treatment Capacity for Clay County</b>	<b>1.57 MGD</b>

The majority of residents in Clay County are served by individual septic systems. The Clay County Health Department has been tasked with the responsibility of issuing permits for septic tanks.

## Planning Resources

### **Coordination Among Agencies**

Staff of the East Alabama Regional Planning and Development Commission (EARPDC) prepared this document with the assistance from many local, state and federal agencies such as the Clay County Emergency Management Agency, the State of Alabama Emergency Management Agency, the National Oceanic and Atmospheric Administration, the Alabama Geological Survey, and the Birmingham Weather Service.

On a local level agencies such as the Clay County Chamber of Commerce, Clay County Commission, public works entities from the County and the cities of Ashland and Lineville provided detailed information that was used to prepare this document. Information obtained was integrated into the Hazard Profile, Vulnerability Assessment and Mitigation Strategies of this Plan.

Additionally, draft copies of the plan were sent to the following entities requesting review and input of any relevant information:

- Clay County Industrial Development Board
- American Red Cross (County Chapter)
- Cleburne County EMA
- Randolph County EMA
- Talladega County EMA
- Tallapoosa County EMA
- Natural Resources Conservation Service District Conservationist
- Jacksonville State University Institute for Emergency Preparedness
- Alabama Department of Economic and Community Affairs

### **Planning Process**

Original development of this document was completed in 2005. It was developed with the coordination of many Federal, State and local agencies and interested parties. The original document followed the processes and requirements of DMA 2000 and was approved by FEMA on March 21, 2005. One of the requirements of DMA 2000 is that planning documents be updated, at a minimum, every five years. This document serves as the 2009-2014 update of that original plan.

Funding from the Alabama Emergency Management Agency made the update of this plan possible. During a meeting of the Alabama Association of Regional Councils All Hazards Task Force, it was pointed out by AEMA staff that some plans lacked consistency and cohesiveness. These were plans that were created during the initial plan development effort of DMA 2000. The Councils inquired about the availability of fund for plan updates. The AEMA informed the RPC's that HMGP funds were available for Mitigation Plan updates.

With this information, staff of the East Alabama Regional Planning and Development Commission (EARPDC) met with the Clay County EMA Director, County Commission and Mayors of each municipality. The information of planning fund availability was shared and the entities were asked if they were interested in participating in a planning activity which would update the existing Hazard Mitigation Plan. All jurisdictions agreed to participate. With the County's permission, the Alabama Association of Regional Councils prepared and submitted a Hazard Mitigation Planning Grant application.

Upon approval of the planning grant, the EARPDC notified the EMA Director that the application had been approved and the plan update process could begin. The EARPDC verified the names of the members of the Hazard Mitigation Planning committee. Notifications were then sent out for the first Mitigation Planning meeting. The members of the Hazard Mitigation Planning Committee represent all jurisdictions in the County, as well as the County School System. The members for the Hazard Mitigation Planning Committee are:

Clay County EMA Director  
Clay County Administrator  
Clay County Engineer  
Clay County Sheriff  
Clay County School Safety Officer  
County Chamber Of Commerce Director  
Clay County Sheriff  
Mayor of Ashland  
Ashland Water Board Superintendent  
Ashland Industrial Development Board Director  
Mayor of Lineville  
Lineville Water Superintendent  
Lineville Planning Commission Chairman

At the initial Plan update meeting, the attendees reviewed the existing plan. Staff of the EARPDC presented attendees with the Scope of Work that had been submitted in the funding application. The committee reviewed the Scope of Work and approved the proposed work to the Risk and Vulnerability section (consisting of up updating the hazard history and preparing information for the committee to analyze for the vulnerability analysis), the Mitigation Strategy section (which would consist of a review of the goals and determination of their validity and identification of new strategies to be included in the plan if warranted), and the Plan Maintenance section (which would be reviewed to see if it could be simplified). It was also determined that since the project would include jurisdiction specific information that the committee need not meet for all planning issues. The Committee approved the individual jurisdiction work to be done by the EARPDC. For those committee members that were unable to attend due to scheduling conflicts, notes of the meeting were sent to them, along with a copy of the existing Plan, and followed up by telephone conversation, e-mail and fax for input and feedback on the proposed program work.

The planning committee reviewed the definition of *plan participation* that was developed in the original plan. It was determined that this definition was still valid. The jurisdictions that met this participation requirement are:

- Clay County (continuing participant)
- Clay County Schools (new participant)
- City of Ashland (continuing participant)
- City of Lineville (continuing participant)

There are no jurisdictions that are not participating in the planning process.

In order to update the risk analysis, hazard history information had to be collected. This was done by researching databases and speaking with local residents and officials in each jurisdiction. Staff of the EARPDC as well as many local jurisdictional staff and citizens contributed to the research efforts. Once an updated hazard history was compiled, the information was translated into an updated risk and vulnerability analysis. Based on that new information, the committee convened and evaluated the existing goals and strategy. Once the goals were reviewed, it was determined that they were still applicable. The individual jurisdictions proposed and discussed several mitigation action items that could be incorporated into the plan. Criteria that determined the inclusion or rejection of items included practicality of the project, and a synopsis of the cost per benefit of the proposed action item.

The plan maintenance section was reviewed by individual jurisdictions and all were in agreement that the section could be simplified. The need for this arose from discussion that as part of the maintenance, items would be added and deleted from the plan. These additions could occur during an emergency or disaster declaration and time would be of the essence. Many opportunities could be missed if the plans could not be amended almost immediately.

**Review and Incorporation of Existing Plans and studies**

As in the original plan development, jurisdictions were asked to inventory existing planning documents, studies, reports and policies in place.

There have been no new planning initiatives, studies, reports or updated policies since the original development of the Hazard Mitigation Plan (2005). The following table summarizes the existing policies and available administrative resources throughout the county.

Governmental Entity	HMP	NFIP	Zoning	Subdivision Regs	Building Code	Planner	Engineer
Clay County	Yes	N/A	No	No	No	No	Yes
Ashland	Yes	N/A	Yes	Yes	No	No	No
Lineville	Yes	N/A	Yes	Yes	No	No	No

For future planning efforts, each municipality and the county were asked to include the County EMA as a stakeholder. Through this exchange of information, the plans that may be developed in the future will ensure that mitigation is made one aspect of those plans.

Sources used to obtain information and data used in this document consist of the Hazard Mitigation Planning Committee, Citizens within the County and municipalities, Birmingham Weather Service, National Climatic Data Center, and local Insurance Agents. Information obtained from these sources was incorporated into the Hazard History, Mitigation Strategy and Plan Maintenance sections of this document.

### **Plan Update Citizen Participation**

The first public meeting was held on April 12, 2007. This meeting was advertised in the Clay Times Journal Community Notice section. The meeting was held at the Clay County EMA. No public participation was received. All other planning meetings, which were held on October 3, 2007, February 10, 2008 and February 13, 2009, were open to the public and advertised. No citizen participation was received.

Throughout the update process, staff of the EARPCD spoke at Senior Citizens Centers during their congregate meals to provide information and solicit feedback on the plan and its updates. Staff members also used council meetings as an avenue to engage the public in participating in the planning process.

The next public hearings will be held prior to adoption for each jurisdiction. The hearing will be held at regularly scheduled Commission and Council meetings. The meetings will be advertised in the Clay Times Journal.

### **Interagency and Intergovernmental Planning Coordination**

In order to solicit input and feedback from neighboring jurisdictions and other interested parties a copy of the draft plan was sent to the following entities requesting a review of the document under development:

Clay County Industrial Development Board  
American Red Cross (County Chapter)  
Cleburne County EMA  
Randolph County EMA  
Talladega County EMA  
Tallapoosa County EMA  
Natural Resources Conservation Service District Conservationist  
Jacksonville State University Institute for Emergency Preparedness  
Alabama Department of Economic and Community Affairs

No comments have been received thus far.

## HAZARD IDENTIFICATION AND PROFILES

Natural hazards that affect Clay County and the municipalities that lie within its boundaries were identified by conducting background studies through the Birmingham Weather Service, NOAA's Climactic Data Center, and the Clay County EMA. Additionally, inquiries were made to local community leaders about past events and effects. Local residents were interviewed regarding their experiences and opinions of hazards with the county. Another source used to identify hazards that can affect the County was previous disaster declarations from FEMA that included the County. The following table identifies the FEMA Disaster Declarations that Clay County has been included in since 1974:

Disaster Number	Disaster Type	Declaration Date	Declaration Type
3045	Drought	07/20/1977	PA-AB
3074	Flood	03/17/1979	PA-AB
578	Flood	04/18/1979	IA, DH, DUA IFG
856	Severe Storms	02/22/1990	IA, PA-ABCDEFGF, DH, DUA, IFG
861	Severe Storms	03/23/1990	IA, PA-ABCDEFGF, DH, DUA, IFG
3096	Snow	03/15/1993	PA-AB
1034	Severe Storms	07/08/1994	IA, PA-ABCDEFGF, DH, DUA, IFG
1070	Hurricane	10/12/1995	IA, PA-ABCDEFGF, DH, DUA, IFG
1208	Severe Storm	03/17/1998	IA, PA-ABCDEFGF, DH, DUA, IFG
1466	Flood	05/12/2003	IA, PA-ABCDEFGF, CC, DH, DUA, IFG
1549	Hurricane Ivan	9/15/2004	IA
1593	Hurricane Dennis	7/10/2005	PA
3237	Hurricane Katrina	9/15/2005	PA-B

### Declaration Type:

	DH= Disaster Housing
DUA= Disaster Unemployment Assistance	IA= Individual Assistance
IFG= Individual & Family Grant	PA= Public Assistance
PA-A= Debris Removal	PA-B= Protective Measures
PA-C= Roads & Bridges	PA-D= Water Control Facilities
PA-E= Public Buildings	PA-F= Public Utilities
PA-G= Recreational or Other	IHP= Individuals & Households

Information obtained through these avenues was presented to the Mitigation Planning Committee and through discussion of this information and the existing Hazard

Identification there were no new hazards to incorporated into the Plan. Also, after discussion, the priority of hazards for this planning document remains the same. The committee prioritized hazards that affect the County and municipalities by the frequency of the hazard and the associated costs.

Based on the hazard history and insurance information the Mitigation Subcommittee identified and prioritized the following hazards in Clay County:

Severe Storms  
Tornadoes  
Flooding  
Winter Storms

Other hazards that threaten the County less frequently were also identified due to the disruption of daily activities of government and society are:

Hurricanes and Tropical Storms  
Droughts

# Hazard Profile

## SEVERE STORMS

### Description

Severe storms are widely underrated in the damage, injury and death they can cause. Not only are dangerous winds associated with these storms, but lightning strikes and the potential for flooding rains often occur in these storms.

Wind damage from severe thunderstorms can rival that of tornadic activity. Often times the experts have to refer to damage patterns to discern tornadic wind damage from that of straight-line winds. Dangerous lighting occurs in these storms. As lightning goes through the atmosphere, it can generate temperatures up to 54,000 degrees Fahrenheit. This intense heating generates shockwaves which turn into sound waves, thus generating thunder.

Warm, humid conditions encourage thunderstorms as the warm, wet air updrafts into the storm. As warm, moisture rich air rises it forms cumulus nimbus clouds, thunderstorm clouds, usually with a flattened top or an anvil shape, reaching to 40,000 feet or more. If this air is unstable, the conditions are then there to cause hail, damaging winds and possibly tornadoes.

### History

Severe storms, unlike other hazards that can affect the county have more than one component – wind, lightning, hail and potential flooding and possible tornadoes. Flooding will be addressed separately as it can occur independently of severe storms. Tornadoes will also be address separately because they can be of such magnitude and destructive potential. The following tables describe the history of severe storms throughout the county in terms of thunderstorm winds, lighting and hail.

### Thunderstorm Winds

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 <u>CLAY</u>	12/26/1973	0745	Tstm Wind	0 kts.	0	0	0	0
2 <u>CLAY</u>	12/29/1973	1700	Tstm Wind	0 kts.	0	0	0	0
3 <u>CLAY</u>	03/21/1974	0250	Tstm Wind	0 kts.	0	0	0	0
4 <u>CLAY</u>	03/29/1977	1335	Tstm Wind	0 kts.	0	0	0	0
5 <u>CLAY</u>	01/25/1978	1900	Tstm Wind	0 kts.	0	0	0	0
6 <u>CLAY</u>	04/09/1979	0130	Tstm Wind	50 kts.	0	0	0	0
7 <u>CLAY</u>	04/13/1980	1355	Tstm Wind	0 kts.	0	0	0	0
8 <u>CLAY</u>	07/05/1981	1430	Tstm Wind	0 kts.	0	0	0	0

9 <u>CLAY</u>	07/17/1983	1430	Tstm Wind	0 kts.	0	0	0	0
10 <u>CLAY</u>	12/06/1983	0355	Tstm Wind	0 kts.	0	0	0	0
11 <u>CLAY</u>	05/03/1984	1215	Tstm Wind	52 kts.	0	0	0	0
12 <u>CLAY</u>	11/10/1984	1550	Tstm Wind	0 kts.	0	0	0	0
13 <u>CLAY</u>	04/05/1985	1740	Tstm Wind	0 kts.	0	0	0	0
14 <u>CLAY</u>	04/05/1985	1740	Tstm Wind	0 kts.	0	0	0	0
15 <u>CLAY</u>	06/07/1985	1809	Tstm Wind	0 kts.	0	0	0	0
16 <u>CLAY</u>	08/01/1985	1830	Tstm Wind	0 kts.	0	0	0	0
17 <u>CLAY</u>	08/01/1985	1830	Tstm Wind	0 kts.	0	0	0	0
18 <u>CLAY</u>	12/11/1985	1830	Tstm Wind	0 kts.	0	0	0	0
19 <u>CLAY</u>	08/09/1986	1715	Tstm Wind	0 kts.	0	0	0	0
20 <u>CLAY</u>	08/16/1986	1610	Tstm Wind	0 kts.	0	0	0	0
21 <u>CLAY</u>	08/26/1986	1740	Tstm Wind	0 kts.	0	0	0	0
22 <u>CLAY</u>	06/18/1987	1630	Tstm Wind	0 kts.	0	0	0	0
23 <u>CLAY</u>	08/02/1987	1700	Tstm Wind	0 kts.	0	0	0	0
24 <u>CLAY</u>	12/15/1987	0405	Tstm Wind	0 kts.	0	0	0	0
25 <u>CLAY</u>	03/05/1989	1730	Tstm Wind	0 kts.	0	0	0	0
26 <u>CLAY</u>	03/29/1989	1635	Tstm Wind	0 kts.	0	0	0	0
27 <u>CLAY</u>	04/04/1989	1315	Tstm Wind	0 kts.	0	0	0	0
28 <u>CLAY</u>	11/15/1989	1415	Tstm Wind	0 kts.	0	0	0	0
29 <u>CLAY</u>	02/16/1990	0746	Tstm Wind	0 kts.	0	0	0	0
30 <u>CLAY</u>	04/28/1991	1315	Tstm Wind	52 kts.	0	0	0	0
31 <u>CLAY</u>	07/24/1991	1620	Tstm Wind	0 kts.	0	0	0	0
32 <u>CLAY</u>	06/18/1992	1915	Tstm Wind	0 kts.	0	0	0	0
33 <u>CLAY</u>	07/05/1992	1340	Tstm Wind	52 kts.	0	0	0	0
34 <u>CLAY</u>	08/27/1992	1730	Tstm Wind	0 kts.	0	0	0	0
35 <u>CLAY</u>	02/21/1993	0920	High Winds	0 kts.	0	0	0	0
36 <u>CLAY</u>	04/15/1993	1530	Thunderstorm Winds	0 kts.	0	0	0	0
37 <u>CLAY</u>	08/21/1993	1610	Thunderstorm Winds	0 kts.	0	1	0	0
38 <u>Lineville</u>	05/15/1995	1423	Thunderstorm Winds	0 kts.	0	0	0.1M	0
40 <u>Ashland</u>	04/29/1996	02:25 PM	Tstm Wind	50 kts.	0	0	10K	0K
41 <u>Hollins</u>	05/27/1996	05:45 PM	Tstm Wind	52 kts.	0	0	10K	2K
42 <u>Ashland</u>	02/17/1998	04:10 PM	Tstm Wind	50 kts.	0	0	2K	0K
43 <u>Ashland</u>	07/20/1998	02:15 PM	Tstm Wind	50 kts.	0	0	10K	0K
44 <u>Millerville</u>	02/27/1999	08:35 PM	Tstm Wind	55 kts.	0	0	5K	0K
45 <u>Lineville</u>	05/04/1999	03:00 PM	Tstm Wind	50 kts.	0	0	0K	0K

46 <u>Lineville</u>	06/09/1999	06:50 PM	Tstm Wind	65 kts.	0	0	25K	OK
47 <u>Countywide</u>	01/09/2000	11:20 PM	Tstm Wind	55 kts.	0	0	4K	OK
48 <u>Bluff Spgs</u>	07/12/2000	06:29 PM	Tstm Wind	60 kts.	0	0	4K	OK
49 <u>Countywide</u>	07/20/2000	05:40 PM	Tstm Wind	60 kts.	0	0	40K	OK
50 <u>Delta</u>	07/23/2000	05:24 PM	Tstm Wind	50 kts.	0	0	2K	OK
51 <u>Hollins</u>	08/10/2000	07:05 PM	Tstm Wind	50 kts.	0	0	5K	OK
52 <u>Ashland</u>	09/23/2000	06:30 PM	Tstm Wind	50 kts.	0	0	0K	OK
53 <u>Countywide</u>	02/16/2001	04:15 PM	Tstm Wind	55 kts.	0	0	10K	OK
54 <u>Countywide</u>	07/05/2001	03:10 PM	Tstm Wind	55 kts.	0	0	2K	OK
55 <u>Lineville</u>	11/24/2001	05:57 PM	Tstm Wind	50 kts.	0	0	2K	OK
56 <u>Millerville</u>	06/27/2002	04:20 PM	Tstm Wind	55 kts.	0	0	4K	OK
57 <u>Hollins</u>	08/06/2002	03:40 PM	Tstm Wind	50 kts.	0	0	2K	OK
58 <u>Millerville</u>	08/20/2002	05:25 PM	Tstm Wind	50 kts.	0	0	3K	OK
59 <u>Highland</u>	03/06/2003	04:00 AM	Tstm Wind	50 kts.	0	0	2K	OK
60 <u>Lineville</u>	03/06/2003	04:10 AM	Tstm Wind	50 kts.	0	0	2K	OK
61 <u>Ashland</u>	05/02/2003	06:10 PM	Tstm Wind	50 kts.	0	0	10K	OK
62 <u>Delta</u>	05/07/2003	02:25 PM	Tstm Wind	50 kts.	0	0	3K	OK
63 <u>Lineville</u>	05/31/2004	04:50 AM	Tstm Wind	50 kts.	0	0	4K	0
64 <u>Ashland</u>	06/22/2004	05:40 PM	Tstm Wind	55 kts.	0	0	5K	0
65 <u>Millerville</u>	07/07/2004	05:38 PM	Tstm Wind	50 kts.	0	0	6K	0
66 <u>Millerville</u>	07/14/2004	05:23 PM	Tstm Wind	52 kts.	0	0	5K	0
67 <u>ALZ028&gt;029 - 037&gt;038</u>	09/07/2004	12:15 AM	Strong Wind	33 kts.	0	0	6K	0
68 <u>ALZ028</u>	09/16/2004	07:30 AM	High Wind	50 kts.	0	0	290K	0
69 <u>ALZ028</u>	04/06/2005	09:25 PM	High Wind	51 kts.	0	0	22K	0
70 <u>Countywide</u>	04/30/2005	04:58 AM	Tstm Wind	52 kts.	0	0	3K	0
71 <u>Countywide</u>	07/06/2005	07:20 PM	Tstm Wind	50 kts.	0	0	11K	0
72 <u>Central Portion</u>	08/22/2005	02:00 PM	Tstm Wind	52 kts.	0	0	4K	0
73 <u>Ashland</u>	04/21/2006	06:53 PM	Tstm Wind	50 kts.	0	0	2K	0
74 <u>Ashland</u>	04/21/2006	07:00 PM	Tstm Wind	50 kts.	0	0	1K	0
75 <u>Lineville</u>	07/22/2006	12:20 PM	Tstm Wind	50 kts.	0	0	5K	0
76 <u>Lineville</u>	08/15/2006	03:20 PM	Tstm Wind	50 kts.	0	0	2K	0
77 <u>Dampsey</u>	06/26/2007	19:00 PM	Thunderstorm Wind	50 kts.	0	0	20K	OK
78 <u>ALZ019 - 028</u>	12/20/2007	17:45 PM	Strong Wind	30 kts.	0	0	10K	OK
79 <u>Lineville</u>	02/26/2008	04:30 AM	Thunderstorm Wind	61 kts.	0	0	50K	OK
80 <u>Ashland Lineville Ar</u>	03/15/2008	03:00 AM	Thunderstorm Wind	60 kts.	0	0	20K	OK
81 <u>Ashland Lineville Ar</u>	07/22/2008	14:07 PM	Thunderstorm Wind	50 kts.	0	0	1K	OK

TOTALS:	2	1	100.724M	10.002M
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## Lightning

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 <u>Ashland</u>	06/20/1997	02:00 PM	Lightning	N/A	0	0	8K	0K
2 <u>Barfield</u>	05/06/1999	04:45 AM	Lightning	N/A	0	0	15K	0K
3 <u>Ashland</u>	07/16/1999	04:00 PM	Lightning	N/A	0	0	50K	0K
4 <u>Ashland</u>	06/04/2002	02:00 PM	Lightning	N/A	0	1	3K	0K
5 <u>Ashland</u>	05/07/2003	02:57 PM	Lightning	N/A	0	0	70K	0K
TOTALS:							146K	0K

## Hail

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 <u>CLAY</u>	04/26/1980	2245	Hail	1.00 in.	0	0	0	0
2 <u>CLAY</u>	06/17/1980	1505	Hail	0.75 in.	0	0	0	0
3 <u>CLAY</u>	03/16/1986	0150	Hail	0.75 in.	0	0	0	0
4 <u>CLAY</u>	04/10/1990	1500	Hail	0.75 in.	0	0	0	0
5 <u>CLAY</u>	04/09/1991	1730	Hail	1.75 in.	0	0	0	0
6 <u>CLAY</u>	04/27/1991	1631	Hail	0.75 in.	0	0	0	0
7 <u>Ashland</u>	03/27/1994	1935	Hail	0.88 in.	0	0	50K	0
8 <u>Ashland</u>	06/15/1994	1440	Hail	0.75 in.	0	0	0	0
9 <u>Millerville</u>	03/07/1995	1940	Hail	0.75 in.	0	0	0	0
10 <u>Lineville</u>	05/16/1995	1730	Hail	1.00 in.	0	0	0	0
11 <u>Lineville</u>	03/15/1996	04:28 PM	Hail	0.75 in.	0	0	12K	0
12 <u>Ashland</u>	03/18/1996	07:04 PM	Hail	0.75 in.	0	0	10K	10K
13 <u>Lineville</u>	08/24/1996	02:47 PM	Hail	0.75 in.	0	0	10K	2K
14 <u>Lineville</u>	05/09/1998	10:30 PM	Hail	0.75 in.	0	0	0K	0K
15 <u>Ashland</u>	05/06/1999	04:35 AM	Hail	0.75 in.	0	0	0K	0K
16 <u>Ashland</u>	05/13/1999	12:33 PM	Hail	0.75 in.	0	0	0K	0K
17 <u>Ashland</u>	06/04/1999	02:48 PM	Hail	0.75 in.	0	0	0K	0K
18 <u>Countywide</u>	02/13/2000	11:20 PM	Hail	0.75 in.	0	0	0K	0K
19 <u>Lineville</u>	03/10/2000	09:05 PM	Hail	1.00 in.	0	0	2K	0K
20 <u>Delta</u>	07/23/2000	05:24 PM	Hail	0.88 in.	0	0	0K	0K
21 <u>Lineville</u>	04/03/2001	08:10 AM	Hail	1.00 in.	0	0	0K	0K
22 <u>Hollins</u>	05/12/2001	01:15 PM	Hail	0.88 in.	0	0	0K	0K

23 <u>Ashland</u>	03/30/2002	11:38 AM	Hail	1.00 in.	0	0	4K	0K
24 <u>Millerville</u>	03/14/2003	06:31 PM	Hail	0.75 in.	0	0	0K	0K
25 <u>Ashland</u>	05/02/2003	06:10 PM	Hail	0.75 in.	0	0	0K	0K
26 <u>Delta</u>	05/07/2003	02:25 PM	Hail	0.75 in.	0	0	0K	0K
27 <u>Ashland</u>	05/07/2003	02:44 PM	Hail	1.00 in.	0	0	0K	0K
28 <u>Delta</u>	05/18/2004	02:30 PM	Hail	0.75 in.	0	0	0	0
29 <u>Ashland</u>	02/21/2005	08:30 PM	Hail	0.75 in.	0	0	0	0
30 <u>Millerville</u>	02/21/2005	08:39 PM	Hail	0.75 in.	0	0	0	0
31 <u>Lineville</u>	06/02/2005	06:08 PM	Hail	0.75 in.	0	0	0	0
32 <u>Ashland</u>	07/06/2005	02:58 PM	Hail	0.75 in.	0	0	0	0
33 <u>Millerville</u>	12/04/2005	01:06 PM	Hail	1.00 in.	0	0	0	0
34 <u>Lineville</u>	12/04/2005	01:56 PM	Hail	1.75 in.	0	0	0	0
35 <u>Ashland</u>	12/28/2005	01:15 PM	Hail	0.88 in.	0	0	0	0
36 <u>Ashland</u>	04/18/2006	04:44 PM	Hail	0.88 in.	0	0	0	0
37 <u>Ashland</u>	04/18/2006	05:04 PM	Hail	1.00 in.	0	0	1K	0
38 <u>Ashland</u>	04/18/2006	05:07 PM	Hail	1.75 in.	0	0	0	0
39 <u>Millerville</u>	05/13/2006	06:40 PM	Hail	0.75 in.	0	0	0	0
40 <u>Delta</u>	06/30/2006	05:55 PM	Hail	1.00 in.	0	0	0	0
41 <u>Barfield</u>	02/18/2009	18:20 PM	Hail	1.00 in.	0	0	0K	0K
42 <u>Delta</u>	04/10/2009	16:08 PM	Hail	1.00 in.	0	0	0K	0K
43 <u>Delta</u>	04/10/2009	17:26 PM	Hail	0.75 in.	0	0	0K	0K
TOTALS:					0	0	89K	12K

## Location

The entire county is susceptible to damage from severe thunderstorms. Storms can range from small isolated storm cells that do much damage, to large far reaching minor storms that do only minimal damage. It is truly the “luck of the draw” when and where the storms appear.

## Extent

Expected damages from this type of event are damaged buildings, downed trees, and damage to aerial utilities (power lines, telephone lines, and cable communications) and in some cases, casualties from airborne debris. Flooding and tornadic activity can also be triggered by these storms. There are no detailed data available for events prior to December 1973 for Clay County. The following text describes the extent of some of the more damaging events.

May 15, 1995 - Thunderstorm wind destroyed a maintenance building and a tire company building in the Lineville Industrial Park South. A house on Highway 9 east of Ashland was heavily damaged when a large tree fell on it. Several mobile homes in the area sustained light to moderate damage.

April 29, 1996 - Several trees were reported down in the Bluff Springs area.

May 27, 1996 - A tree was blown over falling onto a trailer.

June 9, 1999 - What appeared to be a rather typical evening thunderstorm produced an apparent downburst that downed trees and power lines on the south and west side of Lineville. A storm survey of the damage confirmed a divergent pattern in the scattered tree damage. Several large structures including an armory and a high school gymnasium sustained minor roof damage. The most significant damage occurred when a large limb - about a foot and a half in diameter - crashed through the roof of a well-built brick home. The area of damage was about 4 tenths of a mile wide and just short of a mile in length.

July 20, 2000 – Several trees were snapped or uprooted in various locations across the county. The total property damage amounted to \$40,000; there were no reported crop damages from this event.

May 2, 2003 - Several trees were blown down in and around Lineville. Penny size hail was also reported with this storm. Several trees were also blown down around Ashland. At least 1800 customers were temporarily without power during the storms.

May 7, 2003 - Numerous roads across the county were flooded and impassable for many hours. Numerous bridges and road sections were washed away. Lineville's City Park sustained significant damage from the flood waters. One home was struck by lightning during the storms near Ashland. A subsequent fire caused major damage to the home. Many chickens and cattle were killed.

April 6, 2005 - One home sustained roof and porch damage near Delta. This damaging wind occurred behind the line of thunderstorms near the time the rain was ending. This event was believed to be caused by a gravity wave.

August 15, 2006 - Power lines were blown down in Lineville.

February 26, 2008 - Numerous trees were blown down across the northern portion of the county. An advancing cold front moving through the state caused widespread wind damage and a few tornadoes across Central Alabama, especially in the eastern half of the state.

February 18, 2009 - A powerful low pressure system and associated cold front pushed through the area, and helped trigger numerous thunderstorms. Some

became supercells that produced long swaths of large hail, areas of damaging winds, and at least one tornado (this tornado was not in Clay County).

## Probability

The probability of a severe storm occurring in Clay County is based on the previous occurrences of storms. The numbers of hail and lightning events were not calculated into the equation as these typically occur within the severe storm. With the history of storms that have occurred within the County the probability of a severe storm occurring any time in any year is high. These storms do have a seasonal pattern to them. The springtime months (April, May and June) are the peak for severe storm (and tornadic) activity, with another rise in activity in late November or December. There is a high probability of this event occurring in the County. Over the past 36 years, 81 severe storms have been recorded throughout the County. This indicates a 100% (high) chance in any year of a severe storm.

## Tornadoes

### Description

A tornado is a rapidly rotating funnel (or vortex) of air that extends toward the ground from a cumulonimbus cloud. Most tornadoes do not touch the ground, but when the lower tip of a tornado touches the earth, it can cause extensive damage. Tornadoes often form in convective cells such as thunderstorms or at the front of hurricanes.

Tornado damage severity is measured by the Fujita Tornado Scale, which assigns a numerical value of 0 to 5 based on wind speeds, as shown in the following table. Most tornadoes last less than thirty minutes, but can exist for more than an hour. The path of a tornado can range from a few hundred feet to miles, and tornado widths may range from tens of yards to more than a quarter of a mile.

Category	Wind Speed	Description of Damage
F0	40-72 mph	Light damage. Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage to sign boards.
F1	73-112 mph	Moderate damage. The lower limit is the beginning of hurricane speed. Roof surfaces peeled off; mobile homes pushed off foundations or overturned; moving autos pushed off roads.
F2	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
F3	158-206 mph	Severe damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; cars lifted off ground and thrown.
F4	207-260 mph	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	261-318 mph	Incredible damage. Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100-yards; trees debarked.

Since the original development of this Plan, the National Weather Service has implemented the Enhanced Fujita Scale for rating tornadoes. The EF Scale will continue to rate tornadoes on a scale from zero to five, but ranges in wind speed will be more accurate with the improved rating scale. Limitations of the original F Scale may have led to inconsistent ratings, including possible overestimates of associated wind speeds. The EF Scale incorporates more damage indicators and degrees of damage than the original F Scale, allowing more detailed analysis and better correlation between damage and wind speed. The original F Scale historical data base will not change. An F5 tornado rated years ago is still an F5, but the wind speed associated with the tornado may have been somewhat less than previously estimated. A correlation between the original F Scale and the EF Scale has been developed. This makes it possible to express ratings in terms of one scale to the other, preserving the historical database.

#### Enhanced F Scale for Tornado Damage

An update to the original F-scale by a team of meteorologists and wind engineers, implemented in the U.S. on 1 February 2007.

FUJITA SCALE			DERIVED EF SCALE		OPERATIONAL EF SCALE	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

**\*\*\* IMPORTANT NOTE ABOUT ENHANCED F-SCALE WINDS:** *The Enhanced F-scale still is a set of wind estimates (not measurements) based on damage.* Its uses three-second gusts estimated at the point of damage based on a judgment of 8 levels of damage to the 28 indicators listed below. These estimates vary with height and exposure. **Important:** The 3 second gust is not the same wind as in standard surface observations. Standard measurements are taken by weather stations in open exposures, using a directly measured, "one minute mile" speed.

### History

Twenty-one tornadoes were reported in Clay County from May 1, 1953 through May 2009. There is no portion of the county that is not vulnerable to tornadoes. All tornadic events were measured utilizing the Fujita Scale. Recorded property damage has been \$25 million during this period. The total crop damage is equal to \$3,000 during the same period. The event that had the greatest impact on the County occurred on May 7, 2003, in which three different tornados touched down within the county.

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 <u>CLAY</u>	05/01/1953	1930	Tornado	F4	7	12	250K	0
2 <u>CLAY</u>	11/18/1957	1730	Tornado	F2	0	0	25K	0
3 <u>CLAY</u>	05/27/1973	1920	Tornado	F4	0	0	25.0M	0
4 <u>CLAY</u>	04/18/1978	0600	Tornado	F1	0	0	25K	0
5 <u>CLAY</u>	06/17/1980	1554	Tornado	F2	0	0	25K	0
6 <u>CLAY</u>	03/18/1981	1530	Tornado	F1	0	0	25K	0
7 <u>CLAY</u>	03/30/1981	0330	Tornado	F1	0	0	25K	0
8 <u>CLAY</u>	05/03/1984	1215	Tornado	F2	0	2	250K	0
9 <u>CLAY</u>	11/10/1984	1540	Tornado	F1	0	0	25K	0
10 <u>CLAY</u>	06/07/1985	1835	Tornado	F1	0	0	25K	0
11 <u>CLAY</u>	08/16/1985	1400	Tornado	F0	0	0	3K	0
12 <u>CLAY</u>	01/19/1988	2120	Tornado	F1	0	0	250K	0
13 <u>CLAY</u>	11/15/1989	1420	Tornado	F1	0	3	25K	0
14 <u>CLAY</u>	02/10/1990	0355	Tornado	F1	0	5	250K	0
15 <u>Lineville</u>	11/24/2001	05:10 PM	Tornado	F1	0	0	50K	0K
16 <u>Millerville</u>	05/07/2003	02:41 PM	Tornado	F0	0	0	1K	3K
17 <u>Ashland</u>	05/07/2003	02:57 PM	Tornado	F0	0	0	2K	0K
18 <u>Lineville</u>	05/07/2003	03:08 PM	Tornado	F0	0	0	3K	0K
19 <u>Millerville</u>	11/24/2004	07:10 AM	Tornado	F1	0	1	250K	0
20 <u>Ashland</u>	04/30/2005	05:14 AM	Tornado	F1	0	0	80K	0
21 <u>Gibsonville</u>	02/17/2008	14:03 PM	Tornado	F0	0	0	10K	0K
TOTALS:					7	23	26.599M	3K

## Location

All areas of the County and its municipalities are equally at risk for the occurrence of a tornado.

## Extent

Clay County and municipalities have no record of experiencing an EF5 tornado, but that is not to say it would not happen. Damages from such an event would likely cause destruction of structures, loss to agriculture and livestock, interruption in power and other utility services and casualties. The following text describes the location and extent of some of the damages related to tornadoes.

November 24, 2001 - The start of this F1 tornado was approximately 1 mile east of SR 9 on CR 58 where a roof was torn off a barn. On Black's Chapel road near

Black's Chapel, several trees were snapped off at mid-trunk. Black's Chapel itself had the steeple torn off with additional roof damage. Across the street, there was extensive damage with a barn destroyed. A path of damage extended across Ingram Road, Wakefield Road, across Foster's Bridge Road, to Monroe. Several barns were destroyed with widespread tree damage. The storm track continued northeast across Mt Moriah Road (CR 58) and crossed into Randolph County along CR 82 for about 2 tenths of a mile. The tornado appeared to have a wide path of damage, up to 300 yards at the widest point, with a total length of 6.1 miles. Witnesses in the area reported hearing the load roaring or "freight train" noise as the storm passed.

May 7, 2003 – The first tornado touched down in the western part of Clay County in the Talladega National Forest. One house sustained minor damage to the siding and exterior trim and a number of trees were downed along the path. The path extended from the west side of CR 18 across an isolated area just north of Mcgehee Mountain to just east of Bolton Road. A small tornado touched down south-southeast of Ashland just west of SR 77 and the Wellborn Cabinet Plant. The second tornado was observed by a number of people and did very little damage. Besides downing a few small trees, the tornado damaged a couple of light posts at the cabinet plant. A third tornado apparently touched down just north of the center of Lineville and moved east-northeast ending east of SR 9. Damage was very minor and included several broken trees and some minor roof damage.

November 24, 2004 - The tornado first touched down near Little Hillabee Creek and County Road 5 in far northern Tallapoosa County. The tornado snapped and uprooted numerous trees along its path until it reached the Bluff Springs Community in southern Clay County. At least 10 permanent residences suffered varying degrees of damage in Bluff Springs. Numerous out-buildings, garages and sheds were totally destroyed. Several vehicles sustained damage mainly from falling trees and flying debris. One man suffered minor injuries while inside a garage that was destroyed near Bluff Springs. The heaviest damage occurred in the vicinity of Gortney Road and CR 35. The tornado continued northeast knocking trees down along the way. The tornado dissipated near SR 49 just north of the Mellow Valley Community. The tornado damage path was 13.7 miles long and 300 yards wide at its widest point.

April 30, 2005 - National Weather Service meteorologists surveyed the tornado damage that started over extreme northern Tallapoosa County, about 2.2 miles northwest of Goldville. It appears the tornado began at 6:14 AM CDT. There was F0 damage, in the form of scattered tree damage, from Vine Road just south of the Clay County line, east to near Highway 49. The damage increased to F1 damage along Highway 49, especially to the southeast of the highway. There were several dozen trees snapped and uprooted, with many signs of convergence in the pattern of fallen trees. There were a few broken windows in two houses, and one house had its carport lifted up off most of its support columns. In the same area of

concentrated damage, four chicken houses sustained significant roof damage, and the tin was blown down the tornado track for about 100 yards. The chicken houses were just north of the county line, in Clay County. The tornado damage path was about 200 yards wide at this point. This damage occurred around 618 AM CDT. The tornado path continued to the east with more trees blown down along the Tallapoosa-Clay county line, including across Simpson Road and County Road 79. As it crossed County Road 79, around 627 AM CDT, the damage was along the Tallapoosa-Randolph county line. The total damage path of the tornado was 17.1 miles long and 200 yards wide at its widest point. For purposes of this write-up, the tornado occurred in two counties at the same time because its placement was directly on the county lines.

February 17, 2008 - The tornado touched down near Fuller Road where minimal tree damage occurred and one home sustained roof damage. It then tracked northeast before lifting near catfish road. A small catfish restaurant had a part of the roof torn off. Several trees were snapped off along the short path. One vehicle was partially lifted into the air and the roof debris was deposited underneath it. There were approximately 100 people in the catfish restaurant when the tornado hit. These people were in the basement after the owner took action when hearing the warning. No injuries were reported. A broken squall line, sparked by an advancing cold front and strong upper level storm, caused severe thunderstorms and tornadoes across Central Alabama.

**Probability**

It is impossible to determine the exact probability of tornadic activity, however, given the long reporting period that data had been recorded for tornadoes, it is reasonable to assume that the average annual occurrence of tornadoes in the County will remain constant with information previously presented. The Hazard Mitigation Planning Committee ranked probability of occurrence by the number of events over a specified time frame. The following table represents the scale of probability:

Probability Ranking	Percent chance of occurrence in any year
Low	0% - 33%
Moderate	34% - 66%
High	67% - 100%

27 events out of a 56-year reporting period averages to 48% probability annually, which is considered moderate probability of occurrence.

**Flooding**

After spring rains, heavy thunderstorms, or winter snow thaws most communities throughout the United States experience some kind of flooding. Floods have proven to be the most common and widespread natural disasters—except fire. Floods can be slow or fast rising but generally develop over a period of days. Floodwaters move very rapidly

and can destroy natural and man-made structures in its path. Walls of moving floodwater can reach heights up to 20 feet and carry large debris as cargo.

Flash flooding, as the name implies, occurs quickly and without much warning. Riverine flooding occurs when the water overtops river banks and encroaches into the flood plain. In riverine flooding, the time and height of the crest can be accurately predicted, and warnings can be issued many hours or even days in advance. Flooding in large rivers usually result from large-scale weather systems that generate prolonged rainfall over wide areas.

Clay County has not been mapped by FEMA for special flood hazards areas, and no other flood maps exist for neither Clay County nor the municipalities located within it borders. There are areas of the County and municipalities that do experience flooding, primarily due to development and drainage issues.

Clay County has experienced ten flash floods from January 1, 1998 to the present. The total Property Damage has totaled \$850,000 during this period. The total Crop Damage has totaled \$105,000 during the same period. The greatest damages from a flood occurred on May 7, 2003.

**Flooding Events:**

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 <u>Countywide</u>	01/07/1998	09:30 AM	Flash Flood	N/A	0	0	25K	5K
2 <u>Ashland</u>	07/03/1998	07:00 PM	Flash Flood	N/A	1	0	15K	0K
3 <u>Countywide</u>	04/03/2001	03:00 PM	Flash Flood	N/A	0	0	14K	0K
4 <u>Countywide</u>	09/22/2002	02:00 AM	Flash Flood	N/A	0	0	10K	0K
5 <u>Countywide</u>	05/07/2003	04:00 PM	Flash Flood	N/A	0	0	700K	100K
6 <u>Countywide</u>	05/18/2003	12:00 PM	Flash Flood	N/A	0	0	8K	0K
7 <u>Countywide</u>	07/01/2003	01:00 PM	Flash Flood	N/A	0	0	10K	0K
8 <u>Countywide</u>	09/16/2004	10:45 AM	Flash Flood	N/A	0	0	10K	0
9 <u>Countywide</u>	11/24/2004	08:30 AM	Flash Flood	N/A	0	0	11K	0
10 <u>Millerville</u>	08/13/2005	01:00 PM	Flash Flood	N/A	0	0	47K	0
<b>TOTALS:</b>					1	0	850K	105K

**Location**

As noted in the following section”Extent”, there are several areas of Clay County that are susceptible to flooding. These areas range from roads and bridges to City park facilities. Notable areas in the County and municipalities that experience repeated flooding are:

Clay County: East Bank Road  
Center Hill Road  
State Lake Road  
East Mill Road  
Ashland: Tyson Road  
Lineville: 2<sup>nd</sup> Avenue  
Talladega Street  
Intersection of Elred and Blakesferry Road  
Carver Street  
McCrary Street  
Holland Street

### **Extent**

There are areas in Clay County that are subject to periodic inundation. This results in loss of life, property damage, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base. All of these situations adversely affect the public health, safety, and general welfare.

July 3, 1998 - A flash flood, about 3 inches in an hour, washed out sections of Fuller Road in Mellow Valley. A 51 year-old man drove into the washed out area and was severely injured. He died the next day in the hospital from his injuries.

May 7, 2003 - Numerous roads across the county were flooded and impassable for many hours. Numerous bridges and road sections were washed away. Lineville's City Park sustained significant damage from floodwaters. One home was struck by lightning during the storms near Ashland. A subsequent fire caused major damage to the home. Many chickens and cattle were killed.

November 24, 2004 - Numerous roads were reported covered with water and some were temporarily impassable. Widespread rain amounts ranged from 1 to 3 inches with a few spots approaching 5 inches. Much of the rain occurred in a short period of time. Due to the terrain, runoff from these storms lasted for several hours after the heaviest rains ended.

August 13 2005 - Two bridges were covered with water and were temporarily impassable. One culvert was washed out. Both of these incidents occurred within five miles of the Mellow Valley community.

### **Probability**

Flood probability and magnitude are highly location-specific. Truly accurate determinations of flood probability and magnitude require site-specific engineering studies and data gathering that is beyond the scope of this hazard profile. Countywide,

due to development and weather patterns, floods are rated as a high hazard for the county and its municipalities.

The Hazard Mitigation Planning Committee ranked probability of occurrence by the number of events over a specified time frame. The following table represents the scale of probability:

Probability Ranking	Percent chance of occurrence in any year
Low	0% - 33%
Moderate	34% - 66%
High	67% - 100%

Jurisdiction	Number of Events	Time Frame	Annual Probability of Flooding Event per Jurisdiction
Clay County	9	11 years	82%
Ashland	9	11 years	82%
Lineville	8	11 years	73%

## Winter Storms

### Description

Winter Storms can vary from cold temperatures accompanied by freezing precipitation to blizzards. Clay County is not accustomed to snow, ice, and freezing temperatures and lacks the equipment such as snowplows to respond to such events. Winter Storms negatively affect local agriculture, transportation systems, schools, businesses, and utilities. During a winter storm event many of the structures in the county suffer from power outages (due to accumulation of ice on power lines) and lack proper heating systems rendering the structure too cold to inhabit. Temperatures below freezing also kill tender vegetation such as flowering plants and crops. Storms that did not result in any reported property or crop damage are not listed here but can be accessed at the National Climatic Data Center's web site.

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 <a href="#">North Alabama</a>	02/11/1995	1300	Snow/ice	N/A	0	0	0	0
2 <a href="#">ALZ001&gt;038</a>	01/06/1996	08:00 PM	Winter Storm	N/A	0	0	380K	38K
3 <a href="#">ALZ028&gt;029 - 035&gt;038 - 040&gt;049</a>	12/18/1996	02:00 PM	Winter Storm	N/A	0	0	240K	320K
4 <a href="#">ALZ001&gt;010 - 016 - 018&gt;021 - 028&gt;029 - 037&gt;038 - 047</a>	12/29/1997	01:00 AM	Winter Storm	N/A	0	0	0K	0K
5 <a href="#">ALZ006 - 008 - 018&gt;019 - 028</a>	01/28/2000	04:00 AM	Winter Storm	N/A	0	0	75K	0K
6 <a href="#">ALZ028</a>	02/25/2004	06:30 PM	Winter Storm	N/A	0	0	0	0
7 <a href="#">ALZ020&gt;021 - 028&gt;029 - 037&gt;038 - 047</a>	01/28/2005	07:45 PM	Ice Storm	N/A	0	0	425K	0

8 <u>ALZ021 - 024 - 027&gt;029 - 031&gt;043 - 047</u>	01/19/2008	06:00 AM	Heavy Snow	N/A	0	0	OK	OK
9 <u>ALZ021 - 024 - 027&gt;029 - 031&gt;043 - 047</u>	01/19/2008	06:00 AM	Winter Weather	N/A	0	0	OK	OK
10 <u>ALZ028 - 037</u>	03/01/2009	04:00 AM	Heavy Snow	N/A	0	0	OK	OK
TOTALS:					0	0	1.120M	358K

## Location

The entire county and all municipalities are equally at risk for snow and freezing precipitation from winter storms. What is especially treacherous is when this event occurs on the shady slopes of roadways. The terrain in Clay County is hilly and the majority of County Roads and State Highways have moderate slopes.

## Extent

Clay County has experienced many effects from winter storms such as frozen utilities (which resulted in power outages and busted water lines), icy and impassable roads and lost revenues from closed business and damaged crops. Casualties can be expected due to power outages and people being isolated with no heat sources. The most significant events occurred on January 28, 2000 and January 28, 2005. The following text describes the extent of some of the more intense storms experienced in the past.

15 March 1993 – An Emergency Declaration (FEMA-3096-EM) was issued for the state for snow removal.

04 March 1994 – A Disaster Declaration (FEMA-1013-DR) was issued for a winter storm.

January 6, 1996 – A winter storm brought a mixture of freezing rain, sleet, and snow to the northern two-thirds of Alabama. Precipitation began as freezing rain and sleet but quickly changed to snow. The precipitation coated roads and caused serious travel problems across the northern sections of the state that lasted into Monday morning (the 8th). Some higher elevations of the northeast corner of Alabama had travel problems into Tuesday. Amounts were generally light with the highest snowfall reported at Huntsville International Airport with 2 inches. Most other locations across North Alabama reported one-quarter of an inch to an inch and a half.

January 28, 2000 - A mixture of rain, sleet, and snow began falling during the early morning hours on the 28th. Snow accumulations were rather light, with most areas receiving less than 1 inch. The exception was Clay County where some locations reported up to 2 inches. The precipitation changed to mostly rain during the daylight hours on the 28th but started to mix with freezing rain and sleet again in the nighttime hours. Although the precipitation was mainly light, trees were becoming coated with ice across higher elevations of Marshall, Etowah, and

Calhoun. This lasted into the morning hours on the 29th. Several trees succumbed to the weight of the ice.

January 28, 2005 - Strong cold air damming along the Southern Appalachians provided a continuous source of surface cold and dry air from the east. This colder air, in combination with an approaching storm system with abundant gulf moisture, changed the rain to freezing rain across a large part of eastern Alabama. At least 15 vehicles slid off the roadways under the icy conditions. Exposed surfaces had ice accumulation to at least one half of an inch with a few locations reporting ice accumulations of around one inch. Numerous trees, tree limbs, and power lines were knocked down and many of the fallen trees temporarily blocked roadways. Several homes and vehicles were damaged by the fallen trees. Several area bridges became totally iced over and were very hazardous for travel. Many roads were temporarily closed due to icing. Power outages were widespread during the early morning hours with up to 30,000 homes and businesses without power. The rain changed over to freezing rain just after sunset on January 28. Icing conditions started in the early evening hours and tapered off to no additional significant accumulations early on January 29.

### **Probability**

Information obtained from the National Climatic Data Center was used to determine the frequency and probability of winter storm events for Clay County.

The Hazard Mitigation Planning Committee ranked probability of occurrence by the number of events over a specified time frame. The following table represents the scale of probability:

Probability Ranking	Percent chance of occurrence in any year
Low	0% - 33%
Moderate	34% - 66%
High	67% - 100%

Clay County and the municipalities within its borders have a high (71.4%) probability of occurrence for this type of event.

### **Hurricanes and Tropical Storms**

A hurricane is a type of tropical cyclone, which is a generic term for a low-pressure system that generally forms in the tropics. The cyclone is accompanied by thunderstorms and, in the Northern Hemisphere, a counterclockwise circulation of winds near the earth's surface. However, winds are not the only hazard that hurricanes present, hurricanes also produce storm surges, tornadoes, and inland flooding. Fresh water floods have accounted for more than half (59%) of U.S. tropical cyclone deaths over the past 30 years. These floods are why 63% of U.S. tropical cyclone deaths during that period occurred in inland counties.

Because of its distance from the Gulf Coast, Clay County is not severely susceptible to the effects of hurricanes and tropical storms. The primary risks are damaging straight-line winds, formation of tornadoes and flooding from extended rains. Ten percent of deaths in the United States that are associated with hurricanes are due to tornadoes.

## History

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
ALZ001>050	10/04/1995	1200	Hurricane Opal/high Winds	N/A	2	0	0.1B	10.0M
ALZ028	07/10/2005	04:00 PM	Tropical Storm (Dennis)	N/A	0	1	29K	0
ALZ011>015 - 017>050	08/29/2005	04:00 PM	Tropical Storm (Katrina)	N/A	0	8	34.9M	0
TOTALS:					2	9	134.919M	10.000M

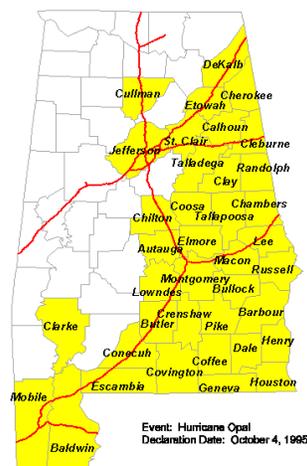
The estimates for total Property and Crop Damages are based on statewide damages and there are no estimates provided for each individual county. There were 50 counties affected by opal in Alabama and the approximate average for each county is 2 million dollars in Property Damage and \$200,000.00 in Crop Damage. The following map shows the counties most impacted by hurricane Opal.

## Location

Generally, by the time a storm approaches Clay County, it has been downgraded to a Tropical Storm. The entire County suffers the effects, with the developed areas resulting in more damages. All areas within the County are equally likely to experience the effects of a hurricane or tropical storm. It is very unlikely that a storm of this type would be small enough to effect one area and not another within the county.

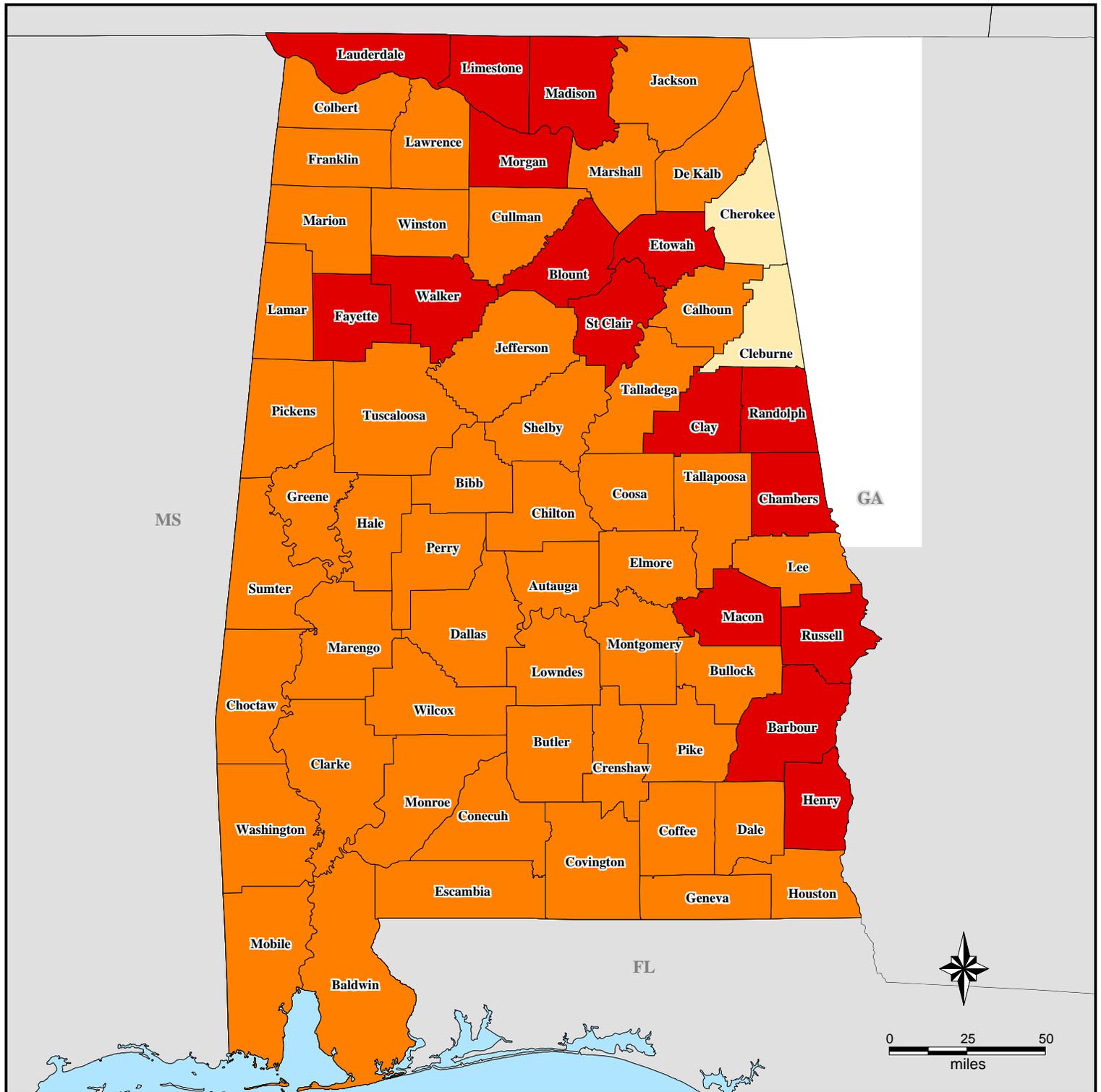
The following maps indicate the previous disaster declarations for the State of Alabama that have included Clay County: Hurricane Opal in 1995, Hurricane Ivan in 2004 and Hurricanes Dennis and Katrina in 2005.

Hurricane Opal, 1995

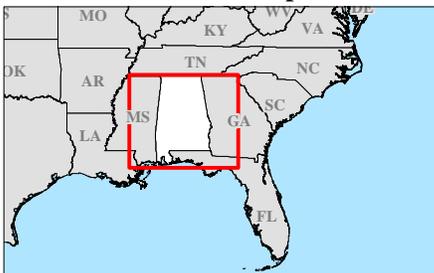


# FEMA-1549-DR, Alabama

## Disaster Declaration as of 12/03/2004



Location Map



Legend

**Designated Counties**  
(All counties are eligible for Hazard Mitigation)

- Individual Assistance
- Individual & Public Assistance
- Public Assistance



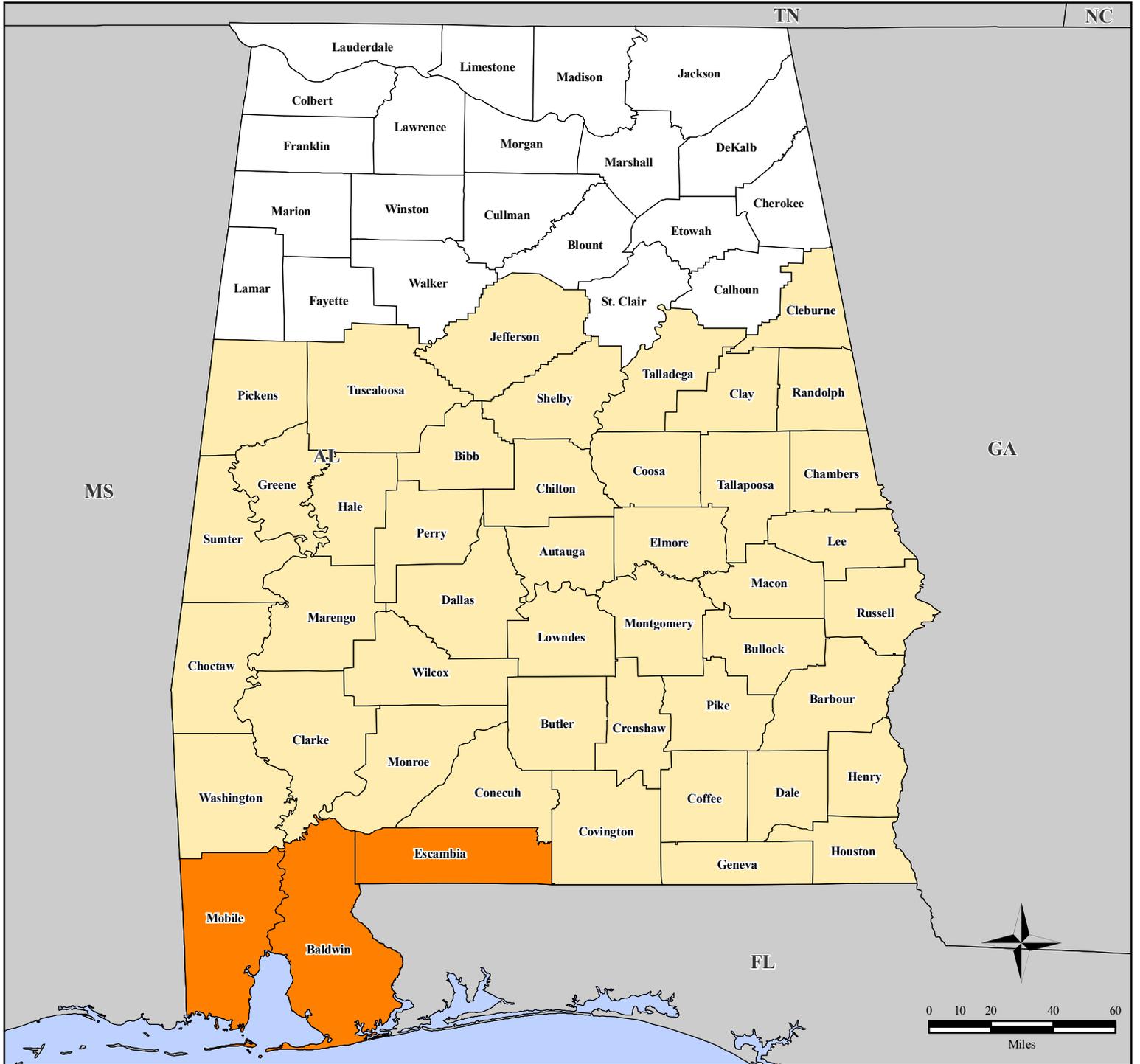
**FEMA**

ITS Mapping and Analysis Center  
Washington, DC

12/03/2004 -- 15:29:28 EST

# FEMA-1593-DR, Alabama

## Disaster Declaration as of 08/04/2005



Location Map



Legend

**Designated Counties**

- No Designation
- Individual and Public Assistance
- Public Assistance

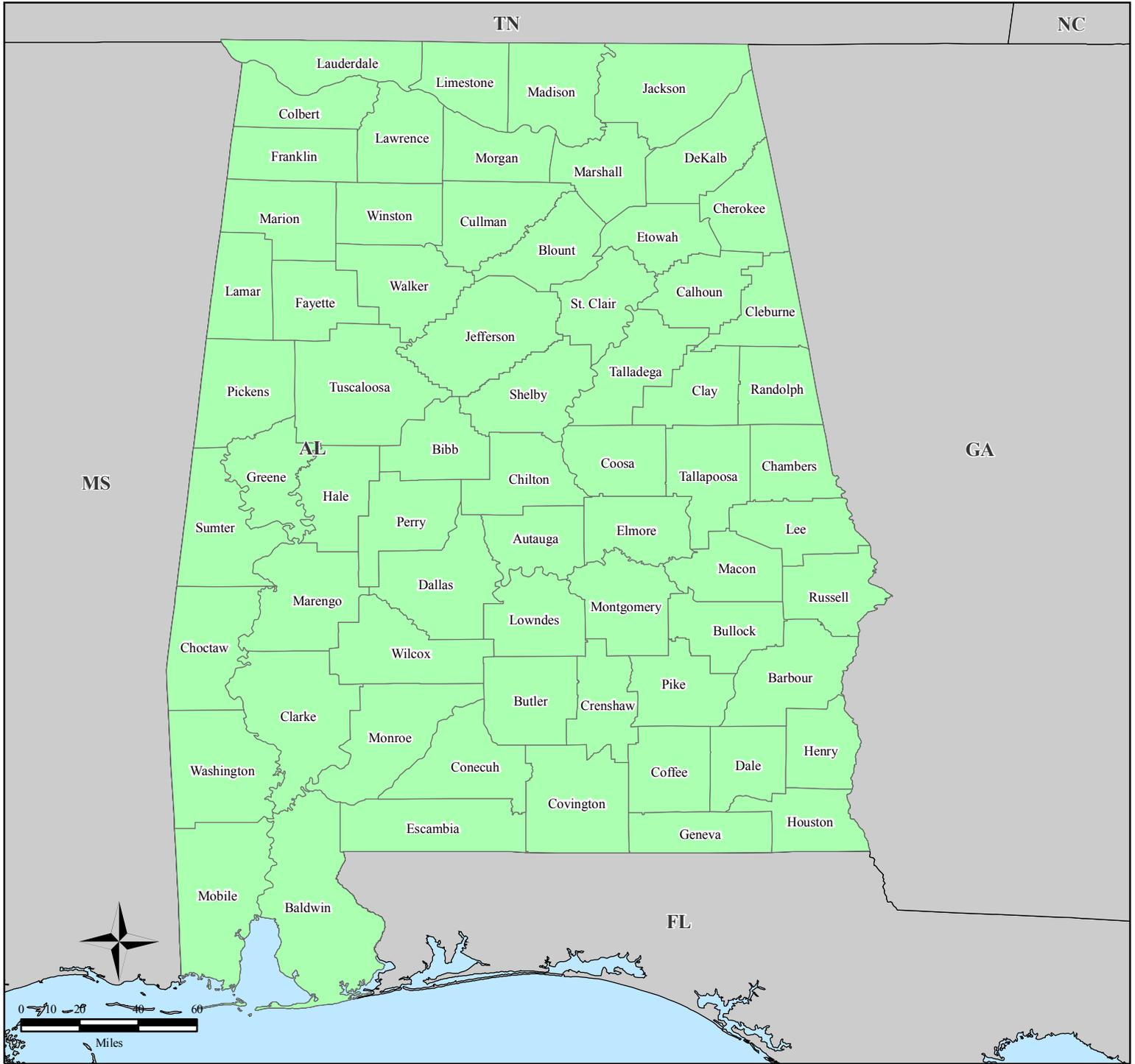


**FEMA**

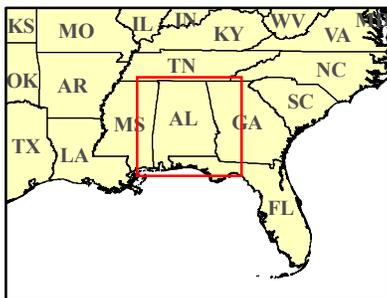
*ITS Mapping and Analysis Center  
Washington, DC  
08/05/05 -- 09:15:00 EDT*

# FEMA-3237-EM, Alabama

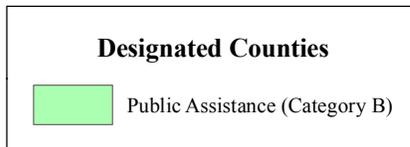
## Emergency Declaration as of 09/10/2005



Location Map



Legend



**FEMA**

ITS Mapping and Analysis Center  
Washington, DC  
09/12/05 -- 09:12:00 EDT

## **Extent**

Due to its location, approximately 250 miles from the nearest coastline, Clay County would experience secondary effects from hurricanes and tropical storms consisting of strong winds, heavy rain and tornadic activity spawned from the dying hurricane. Street flooding, property damage and damage to buildings can be the extent expected with these types of events. Frequently, power outages accompany these storms when they reach the area. In a “worst case” scenario, the effects of Hurricane Opal would exist compounded with widespread flooding. The following text describes the damages and effects incurred from the previously mentioned storms.

October 4, 1995 - Hurricane Opal moved ashore in the Florida Panhandle then moved north-northeast across the state of Alabama. Damage was extensive and no county in the state was spared some effect of the storm. Damage was the greatest in the eastern counties with damage decreasing from east-to-west across the state. Damage also decreased as you went north in the state. Damage varied with many trees, signs, and power lines downed. At the worst, 2.6 million people in Alabama were without electricity, some for over a week. The center of the storm entered the state near the Covington / Escambia County line on the Florida border. It moved north-northeast with the center moving just west of the city of Montgomery, near the City of Talladega, and near Fort Payne before exiting the state near the northeast tip. Primary damage came from strong wind, which toppled trees and power lines and damaged signs. Mobile homes were damaged both by falling trees and by strong wind. Wind speeds varied across the state. Heavy rain also caused creeks and streams to swell however, there were very few reports of water flooding buildings. Water damage occurred to structures in many locations where wind or falling trees damaged roofs. Clay County rainfall measurements made for a 24-hour period ending around 0700 CDT on October 5th recorded 2.89 inches in Lineville. Damage figures are estimates from information obtained from the American Red Cross, Alabama Emergency Management Agency, and newspaper articles, which estimate total property damage for the state at \$100 million and crop damage at \$10 million.

September 16, 2004 – Tropical Storm Ivan - Hundreds of trees were knocked down countywide due to Ivan. Twenty to thirty homes sustained varying degrees of wind damage. Maximum wind gust were estimated between 55 and 65 miles an hour. Doppler radar and ground observations indicate up to 5 inches of rain fell during the tropical system. At least 20 county roads were temporarily impassable due to high water.

July 10, 2005 – Tropical Storm Dennis -Several trees and power lines were knocked down during Dennis. A few roads were temporarily impassable due to downed trees. Several county customers were without power for a few hours. One power company employee was injured when he ran his vehicle into a downed tree.

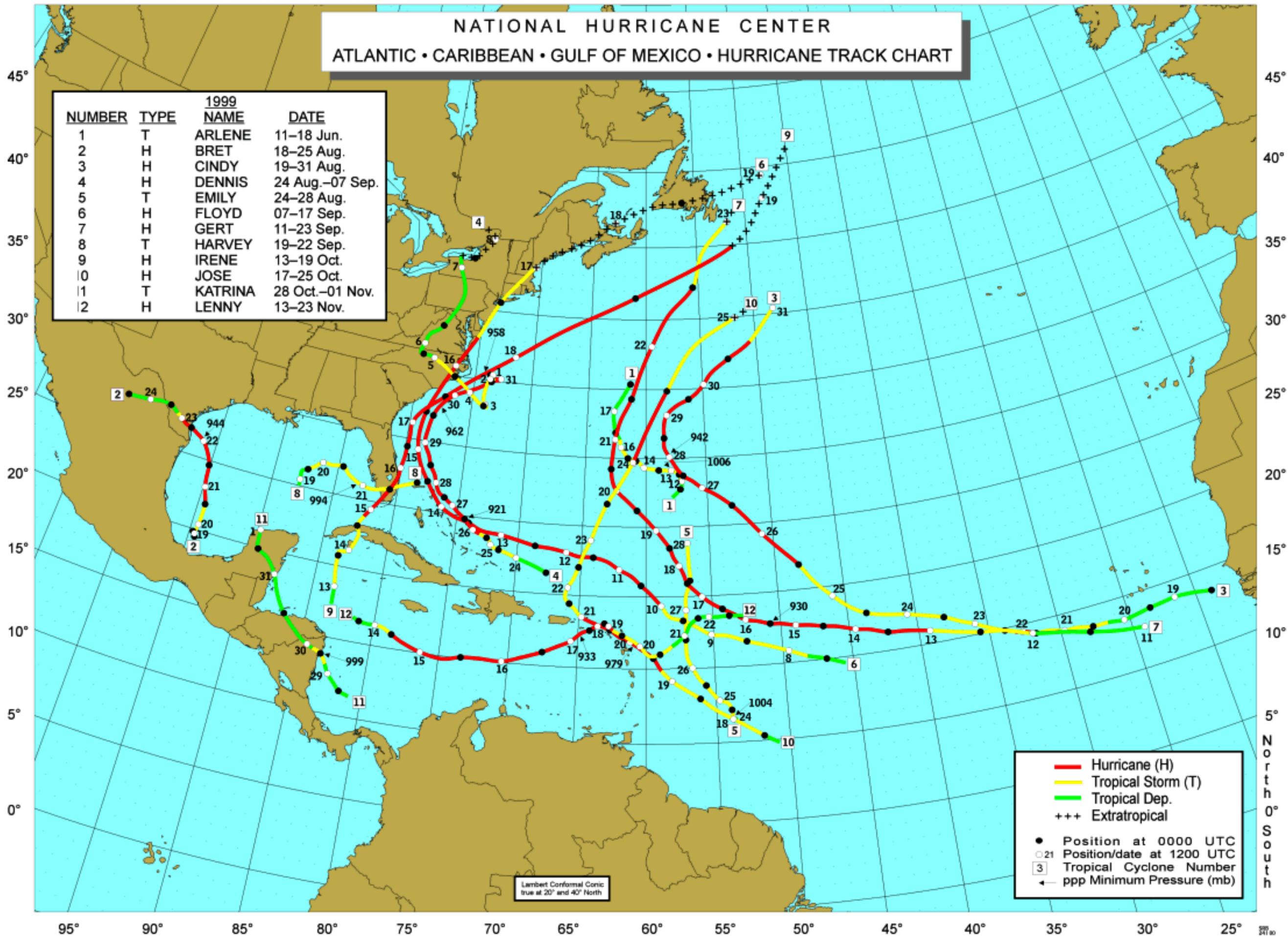
August 29, 2005 - The remnants of Hurricane Katrina moved northward along the Alabama/Mississippi state line. Katrina was still a strong tropical storm as the center passed just west of North Alabama during the evening hours of August 29th. Most of North Alabama experienced tropical storm force wind gusts for several hours with a few wind gusts as high as 60 mph being reported. While structural damage was very limited, a few homes did receive minor roof damage due to the loss of a few shingles. Numerous trees and power lines were blown down across the entire area and thousands of people lost power. Katrina moved relatively quickly to the north and thus rainfall was limited. Rainfall amounts were around four to five inches near the Alabama/Mississippi line but tapered off significantly farther to the east with locations near the Alabama/Georgia line only seeing a half inch or less.

Following the individual hurricane maps, are maps that represent the last 10 years of hurricane activity. The maps indicate that by the time storms reach Clay County they are significantly weakened from hurricane status.

120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

# NATIONAL HURRICANE CENTER ATLANTIC • CARIBBEAN • GULF OF MEXICO • HURRICANE TRACK CHART

NUMBER	TYPE	1999 NAME	DATE
1	T	ARLENE	11–18 Jun.
2	H	BRET	18–25 Aug.
3	H	CINDY	19–31 Aug.
4	H	DENNIS	24 Aug.–07 Sep.
5	T	EMILY	24–28 Aug.
6	H	FLOYD	07–17 Sep.
7	H	GERT	11–23 Sep.
8	T	HARVEY	19–22 Sep.
9	H	IRENE	13–19 Oct.
10	H	JOSE	17–25 Oct.
11	T	KATRINA	28 Oct.–01 Nov.
12	H	LENNY	13–23 Nov.



- Hurricane (H)
- Tropical Storm (T)
- Tropical Dep.
- +++ Extratropical
- Position at 0000 UTC
- Position/date at 1200 UTC
- 3 Tropical Cyclone Number
- ← ppp Minimum Pressure (mb)

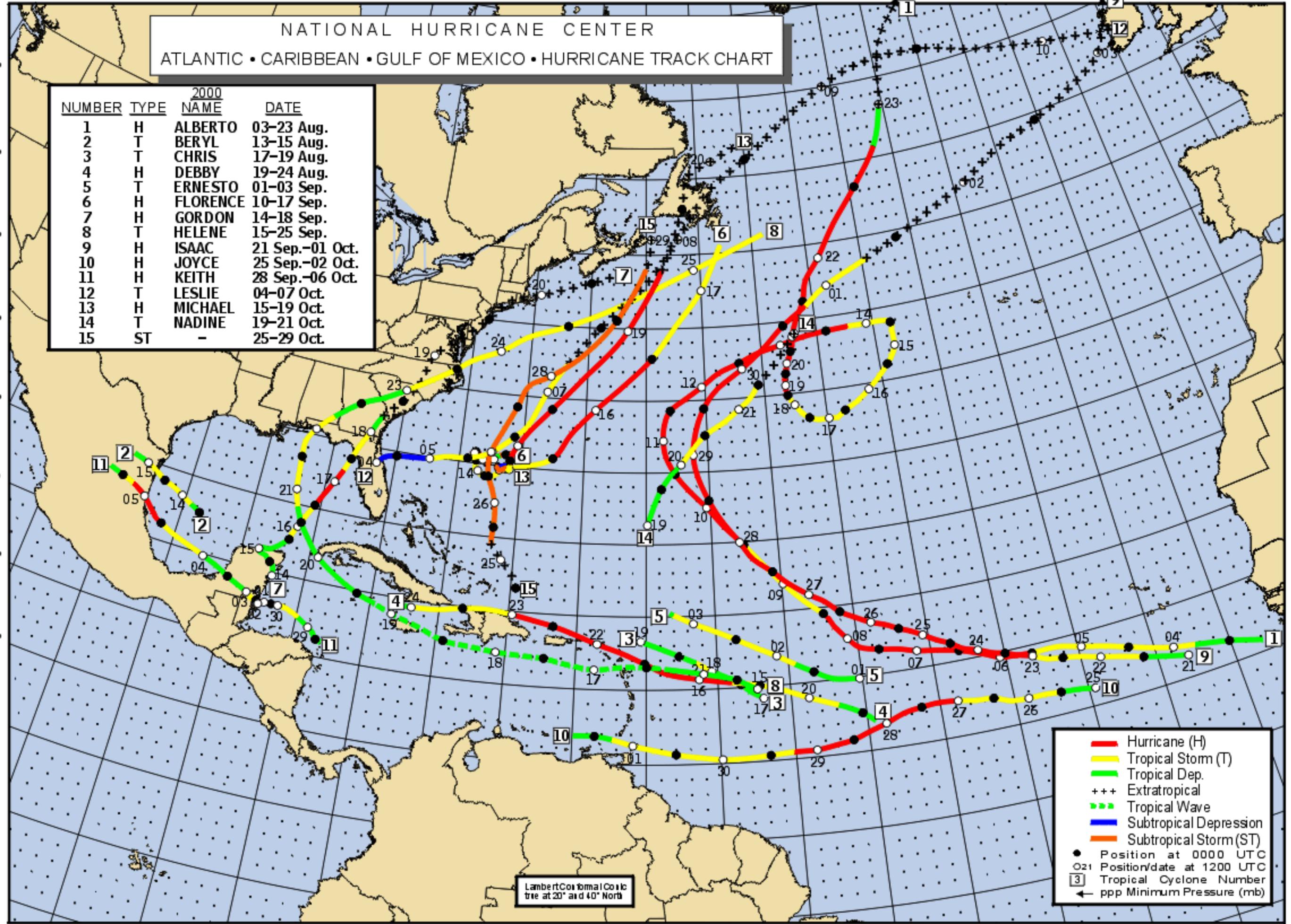
Lambert Conformal Conic  
true at 20° and 40° North

95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25°

120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

NATIONAL HURRICANE CENTER  
ATLANTIC • CARIBBEAN • GULF OF MEXICO • HURRICANE TRACK CHART

NUMBER	TYPE	2000 NAME	DATE
1	H	ALBERTO	03-23 Aug.
2	T	BERYL	13-15 Aug.
3	T	CHRIS	17-19 Aug.
4	H	DEBBY	19-24 Aug.
5	T	ERNESTO	01-03 Sep.
6	H	FLORENCE	10-17 Sep.
7	H	GORDON	14-18 Sep.
8	T	HELENE	15-25 Sep.
9	H	ISAAC	21 Sep.-01 Oct.
10	H	JOYCE	25 Sep.-02 Oct.
11	H	KEITH	28 Sep.-06 Oct.
12	T	LESLIE	04-07 Oct.
13	H	MICHAEL	15-19 Oct.
14	T	NADINE	19-21 Oct.
15	ST	-	25-29 Oct.



Lambert Conformal Conic  
Projection at 20° and 40° North

- Hurricane (H)
- Tropical Storm (T)
- Tropical Dep.
- +++ Extratropical
- - - Tropical Wave
- Subtropical Depression
- Subtropical Storm (ST)
- Position at 0000 UTC
- Position/Date at 1200 UTC
- ③ Tropical Cyclone Number
- ← mmb Minimum Pressure (mb)

5° North  
0° South

5° North  
0° South

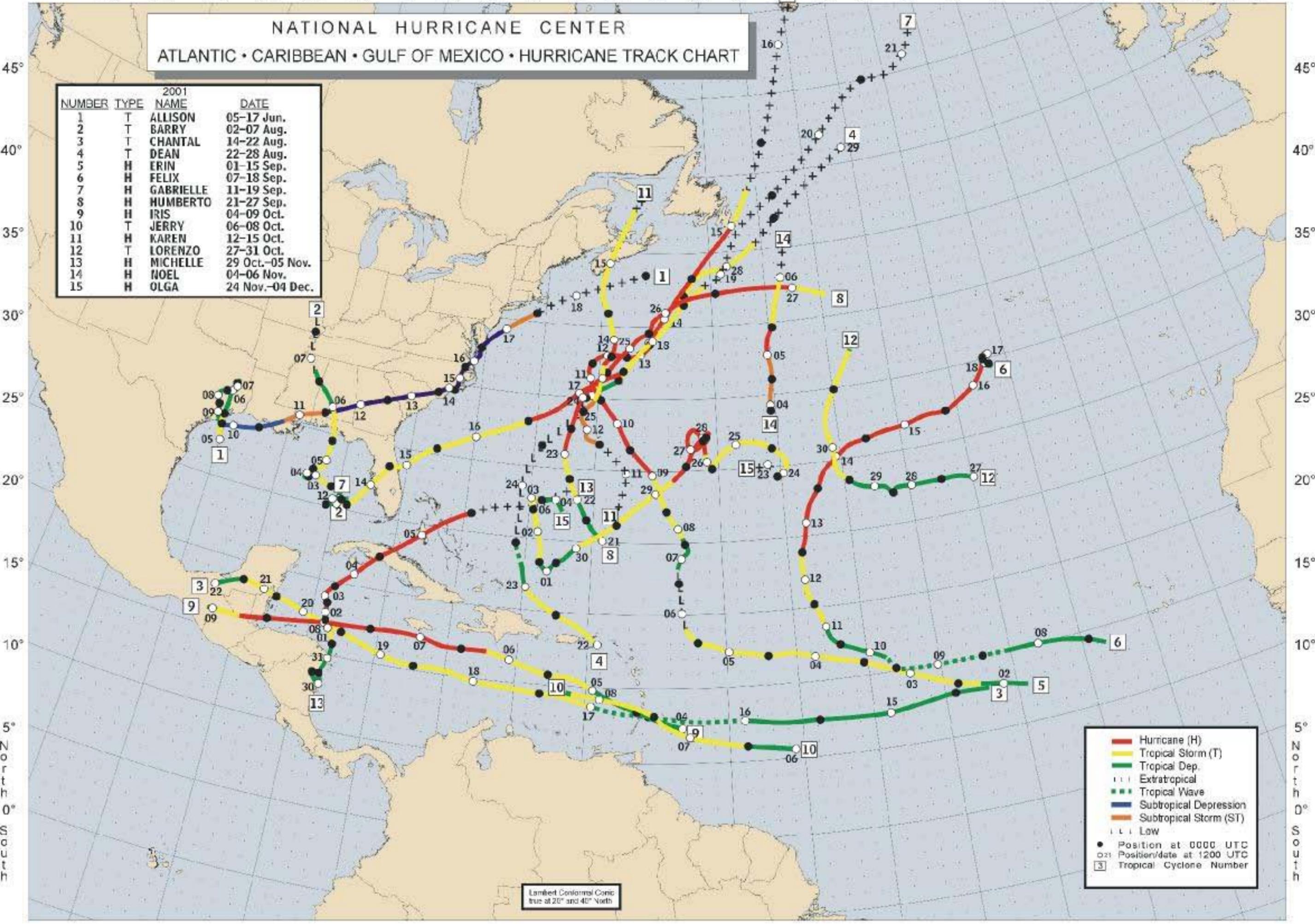
120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

# NATIONAL HURRICANE CENTER ATLANTIC • CARIBBEAN • GULF OF MEXICO • HURRICANE TRACK CHART

NUMBER	TYPE	2001 NAME	DATE
1	T	ALLISON	05-17 Jun.
2	T	BARRY	02-07 Aug.
3	T	CHANTAL	14-22 Aug.
4	T	DEAN	22-28 Aug.
5	H	ERIN	01-15 Sep.
6	H	FELIX	07-18 Sep.
7	H	GABRIELLE	11-19 Sep.
8	H	HUMBERTO	21-27 Sep.
9	H	IRIS	04-09 Oct.
10	T	JERRY	06-08 Oct.
11	H	KAREN	12-15 Oct.
12	T	LORENZO	27-31 Oct.
13	H	MICHELLE	29 Oct.-05 Nov.
14	H	NOEL	04-06 Nov.
15	H	OLGA	24 Nov.-04 Dec.

- Hurricane (H)
- Tropical Storm (T)
- Tropical Dep.
- Extratropical
- .- Tropical Wave
- Subtropical Depression
- Subtropical Storm (ST)
- + + + Low
- Position at 0000 UTC
- Position/date at 1200 UTC
- 3 Tropical Cyclone Number

Lambert Conformal Conic  
true at 20° and 40° North



North  
0°  
South

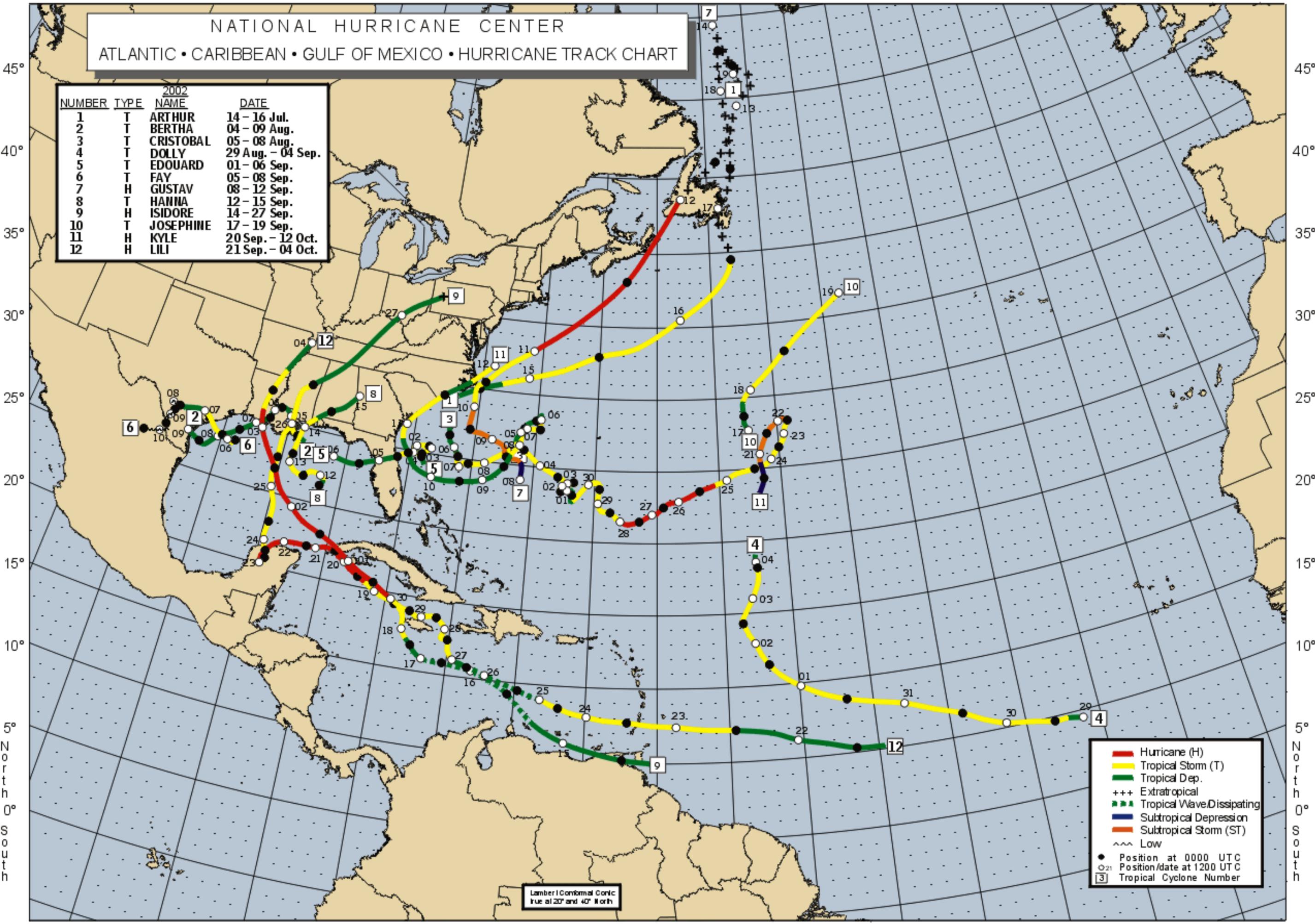
North  
0°  
South

95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25°

120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

NATIONAL HURRICANE CENTER  
 ATLANTIC • CARIBBEAN • GULF OF MEXICO • HURRICANE TRACK CHART

NUMBER	TYPE	2002 NAME	DATE
1	T	ARTHUR	14 - 16 Jul.
2	T	BERTHA	04 - 09 Aug.
3	T	CRISTOBAL	05 - 08 Aug.
4	T	DOLLY	29 Aug. - 04 Sep.
5	T	EDOUARD	01 - 06 Sep.
6	T	FAY	05 - 08 Sep.
7	H	GUSTAV	08 - 12 Sep.
8	T	HANNA	12 - 15 Sep.
9	H	ISIDORE	14 - 27 Sep.
10	T	JOSEPHINE	17 - 19 Sep.
11	H	KYLE	20 Sep. - 12 Oct.
12	H	LILI	21 Sep. - 04 Oct.



- Hurricane (H)
- Tropical Storm (T)
- Tropical Dep.
- +++ Extratropical
- - - Tropical Wave/Dissipating
- Subtropical Depression
- Subtropical Storm (ST)
- ~ Low
- Position at 0000 UTC
- Position/date at 1200 UTC
- [ ] Tropical Cyclone Number

Lambert Conformal Conic  
 True at 20° and 40° North

North  
0°  
South

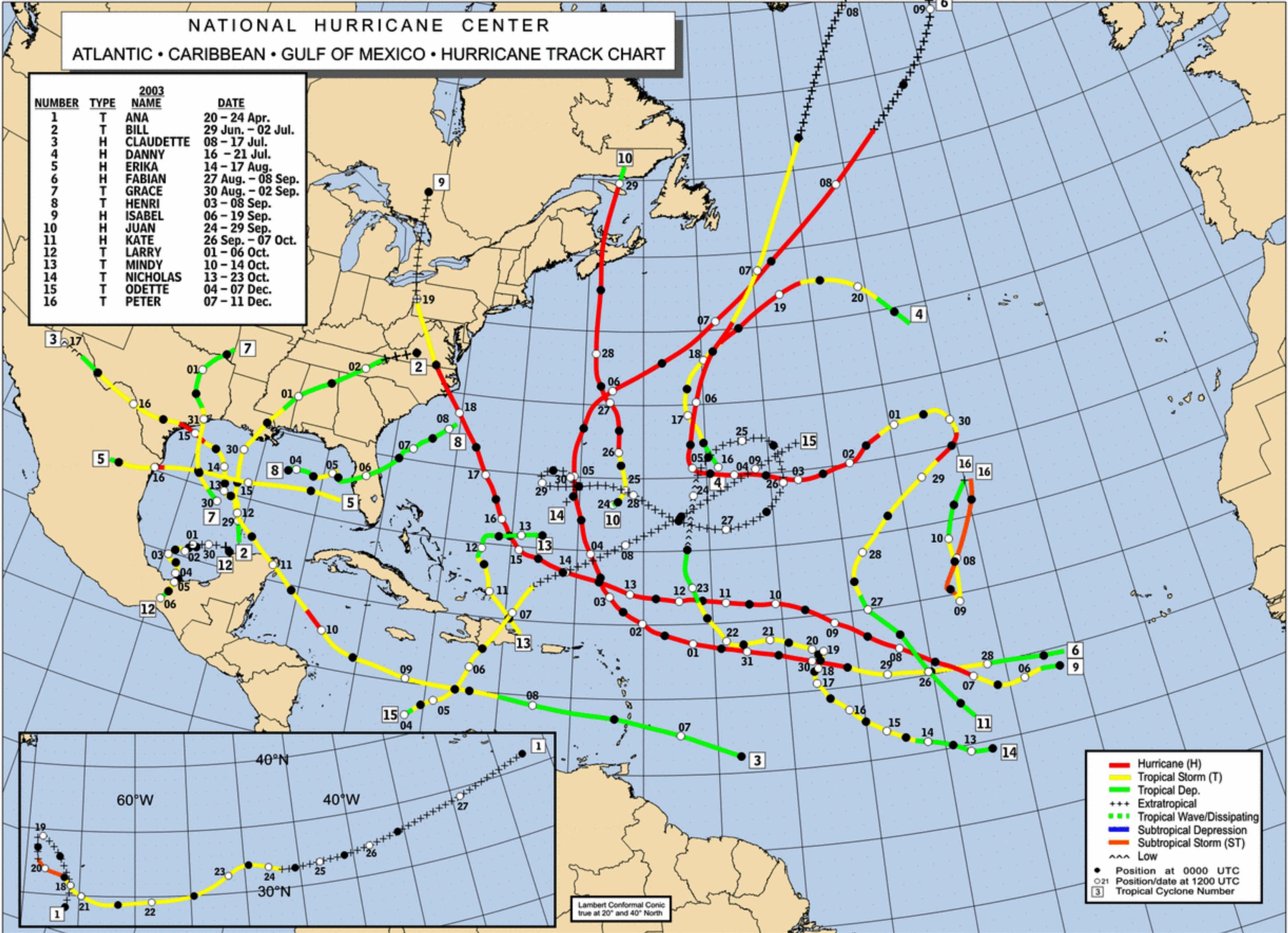
North  
0°  
South

95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25°

120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

**NATIONAL HURRICANE CENTER**  
**ATLANTIC • CARIBBEAN • GULF OF MEXICO • HURRICANE TRACK CHART**

NUMBER	TYPE	2003 NAME	DATE
1	T	ANA	20 - 24 Apr.
2	T	BILL	29 Jun. - 02 Jul.
3	H	CLAUDETTE	08 - 17 Jul.
4	H	DANNY	16 - 21 Jul.
5	H	ERIKA	14 - 17 Aug.
6	H	FABIAN	27 Aug. - 08 Sep.
7	T	GRACE	30 Aug. - 02 Sep.
8	T	HENRI	03 - 08 Sep.
9	H	ISABEL	06 - 19 Sep.
10	H	JUAN	24 - 29 Sep.
11	H	KATE	26 Sep. - 07 Oct.
12	T	LARRY	01 - 06 Oct.
13	T	MINDY	10 - 14 Oct.
14	T	NICHOLAS	13 - 23 Oct.
15	T	ODETTE	04 - 07 Dec.
16	T	PETER	07 - 11 Dec.



— Hurricane (H)  
— Tropical Storm (T)  
— Tropical Dep.  
— Subtropical Depression  
— Subtropical Storm (ST)  
 +++ Extratropical  
 --- Tropical Wave/Dissipating  
 ^^ Low  
 ● Position at 0000 UTC  
 ○ Position/date at 1200 UTC  
 [3] Tropical Cyclone Number

Lambert Conformal Conic  
 true at 20° and 40° North

95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25°

North  
0°  
South

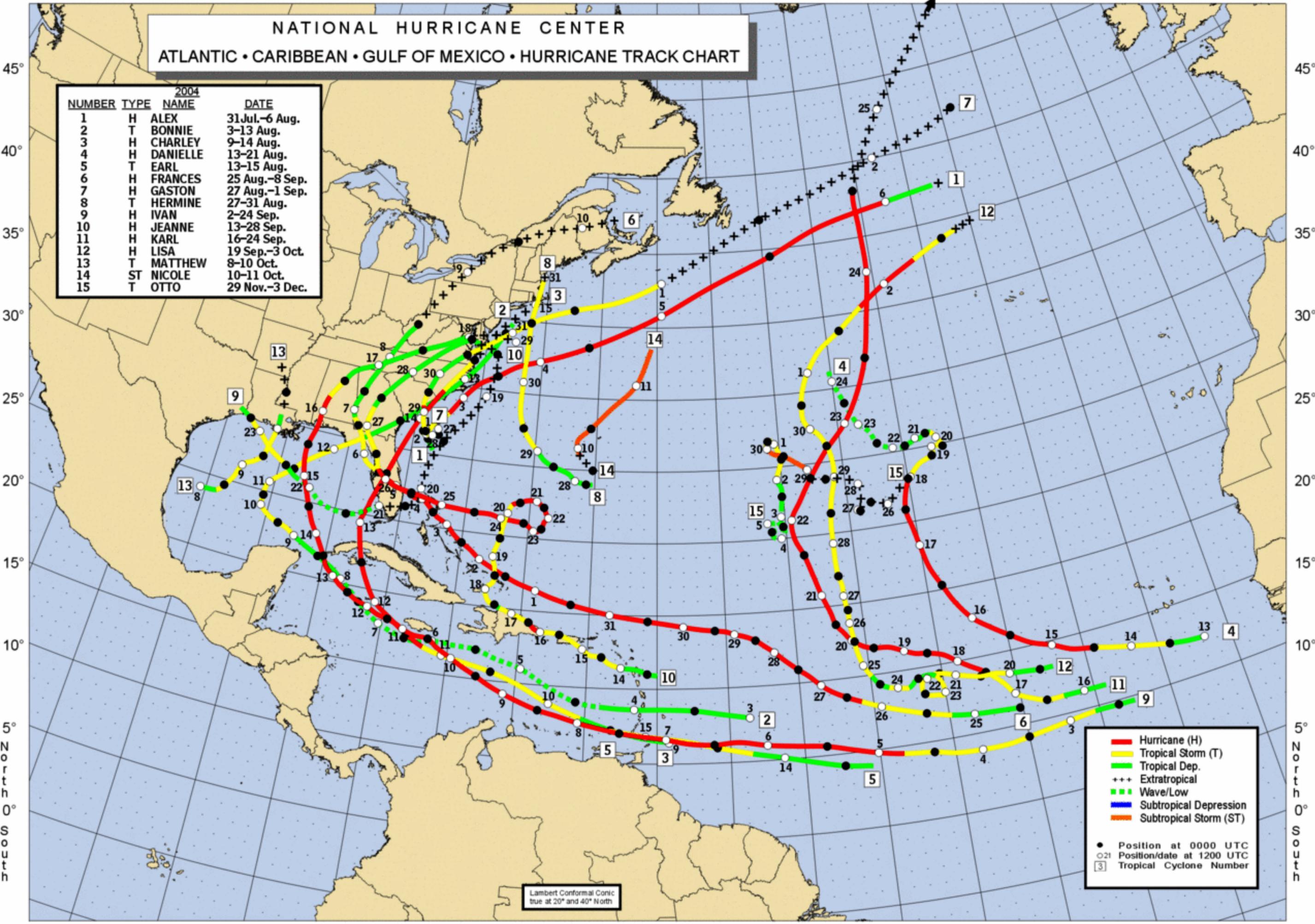
North  
0°  
South

120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

# NATIONAL HURRICANE CENTER

## ATLANTIC • CARIBBEAN • GULF OF MEXICO • HURRICANE TRACK CHART

2004			
NUMBER	TYPE	NAME	DATE
1	H	ALEX	31 Jul.-6 Aug.
2	T	BONNIE	3-13 Aug.
3	H	CHARLEY	9-14 Aug.
4	H	DANIELLE	13-21 Aug.
5	T	EARL	13-15 Aug.
6	H	FRANCES	25 Aug.-8 Sep.
7	H	GASTON	27 Aug.-1 Sep.
8	T	HERMINE	27-31 Aug.
9	H	IVAN	2-24 Sep.
10	H	JEANNE	13-28 Sep.
11	H	KARL	16-24 Sep.
12	H	LISA	19 Sep.-3 Oct.
13	T	MATTHEW	8-10 Oct.
14	ST	NICOLE	10-11 Oct.
15	T	OTTO	29 Nov.-3 Dec.



- Hurricane (H)
- Tropical Storm (T)
- Tropical Dep.
- +++ Extratropical
- - - Wave/Low
- Subtropical Depression
- Subtropical Storm (ST)

- Position at 0000 UTC
- Position/date at 1200 UTC
- ③ Tropical Cyclone Number

Lambert Conformal Conic  
true at 20° and 40° North

95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25°

North  
0°  
South

North  
0°  
South

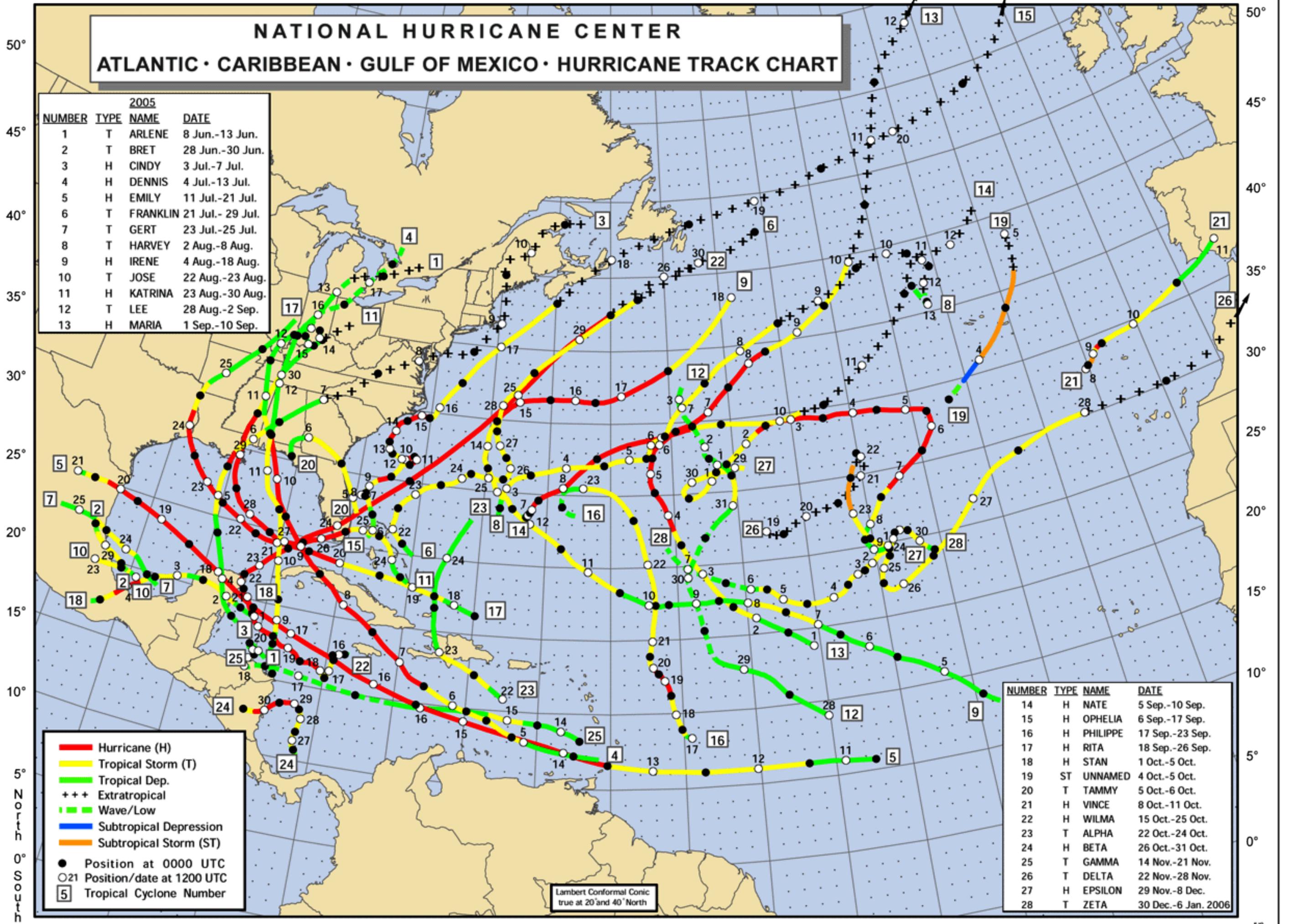
# NATIONAL HURRICANE CENTER ATLANTIC · CARIBBEAN · GULF OF MEXICO · HURRICANE TRACK CHART

2005			
NUMBER	TYPE	NAME	DATE
1	T	ARLENE	8 Jun.-13 Jun.
2	T	BRET	28 Jun.-30 Jun.
3	H	CINDY	3 Jul.-7 Jul.
4	H	DENNIS	4 Jul.-13 Jul.
5	H	EMILY	11 Jul.-21 Jul.
6	T	FRANKLIN	21 Jul.-29 Jul.
7	T	GERT	23 Jul.-25 Jul.
8	T	HARVEY	2 Aug.-8 Aug.
9	H	IRENE	4 Aug.-18 Aug.
10	T	JOSE	22 Aug.-23 Aug.
11	H	KATRINA	23 Aug.-30 Aug.
12	T	LEE	28 Aug.-2 Sep.
13	H	MARIA	1 Sep.-10 Sep.

NUMBER	TYPE	NAME	DATE
14	H	NATE	5 Sep.-10 Sep.
15	H	OPHELIA	6 Sep.-17 Sep.
16	H	PHILIPPE	17 Sep.-23 Sep.
17	H	RITA	18 Sep.-26 Sep.
18	H	STAN	1 Oct.-5 Oct.
19	ST	UNNAMED	4 Oct.-5 Oct.
20	T	TAMMY	5 Oct.-6 Oct.
21	H	VINCE	8 Oct.-11 Oct.
22	H	WILMA	15 Oct.-25 Oct.
23	T	ALPHA	22 Oct.-24 Oct.
24	H	BETA	26 Oct.-31 Oct.
25	T	GAMMA	14 Nov.-21 Nov.
26	T	DELTA	22 Nov.-28 Nov.
27	H	EPSILON	29 Nov.-8 Dec.
28	T	ZETA	30 Dec.-6 Jan. 2006

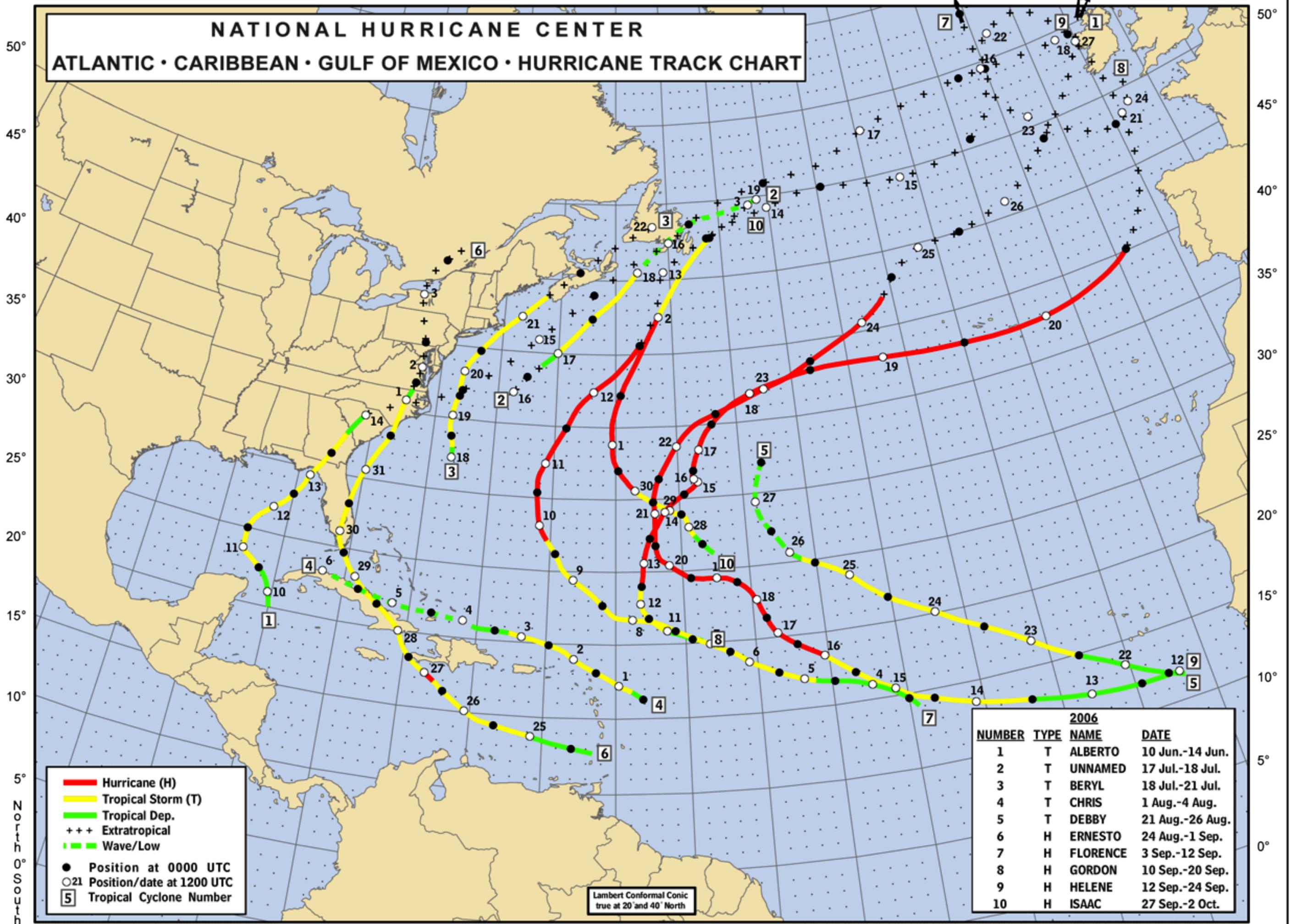
- Hurricane (H)
- Tropical Storm (T)
- Tropical Dep.
- +++ Extratropical
- - - Wave/Low
- Subtropical Depression
- Subtropical Storm (ST)
- Position at 0000 UTC
- Position/date at 1200 UTC
- 5 Tropical Cyclone Number

Lambert Conformal Conic  
true at 20° and 40° North



120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

**NATIONAL HURRICANE CENTER**  
**ATLANTIC • CARIBBEAN • GULF OF MEXICO • HURRICANE TRACK CHART**



— Hurricane (H)  
— Tropical Storm (T)  
— Tropical Dep.  
 +++ Extratropical  
- - - Wave/Low  
 ● Position at 0000 UTC  
 ○ Position/date at 1200 UTC  
 □ Tropical Cyclone Number

2006			
NUMBER	TYPE	NAME	DATE
1	T	ALBERTO	10 Jun.-14 Jun.
2	T	UNNAMED	17 Jul.-18 Jul.
3	T	BERYL	18 Jul.-21 Jul.
4	T	CHRIS	1 Aug.-4 Aug.
5	T	DEBBY	21 Aug.-26 Aug.
6	H	ERNESTO	24 Aug.-1 Sep.
7	H	FLORENCE	3 Sep.-12 Sep.
8	H	GORDON	10 Sep.-20 Sep.
9	H	HELENE	12 Sep.-24 Sep.
10	H	ISAAC	27 Sep.-2 Oct.

Lambert Conformal Conic  
 true at 20° and 40° North

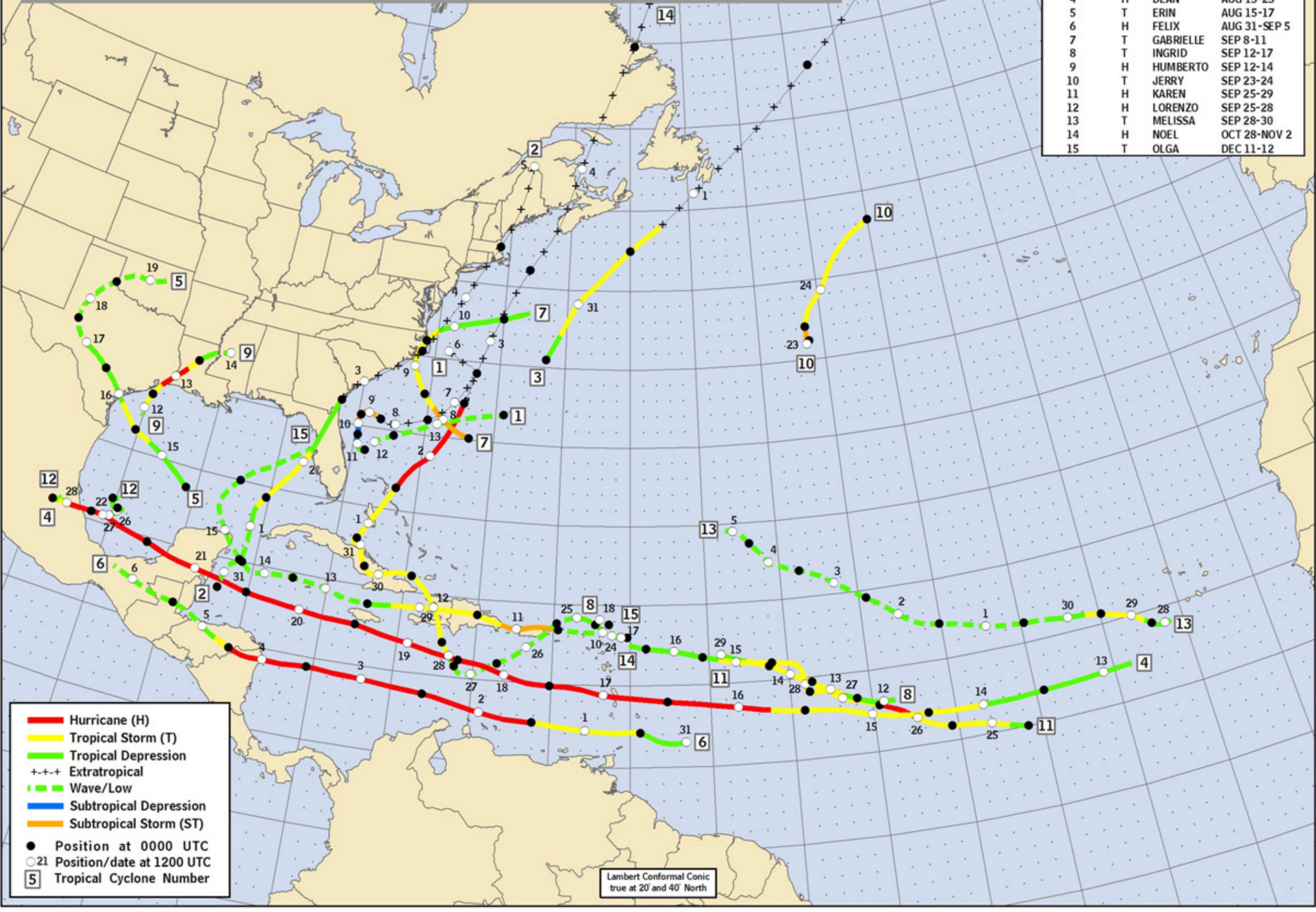
North  
 0°  
 South

90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25°

120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

# NATIONAL HURRICANE CENTER ATLANTIC • CARIBBEAN • GULF OF MEXICO • HURRICANE TRACK CHART

NUMBER	TYPE	2007 NAME	DATE
1	ST	ANDREA	MAY 9-11
2	T	BARRY	JUN 1-2
3	T	CHANTAL	JUL 31-AUG 1
4	H	DEAN	AUG 13-23
5	T	ERIN	AUG 15-17
6	H	FELIX	AUG 31-SEP 5
7	T	GABRIELLE	SEP 8-11
8	T	INGRID	SEP 12-17
9	H	HUMBERTO	SEP 12-14
10	T	JERRY	SEP 23-24
11	H	KAREN	SEP 25-29
12	H	LORENZO	SEP 25-28
13	T	MELISSA	SEP 28-30
14	H	NOEL	OCT 28-NOV 2
15	T	OLGA	DEC 11-12



- Hurricane (H)
- Tropical Storm (T)
- Tropical Depression
- +--+ Extratropical
- - - Wave/Low
- Subtropical Depression
- Subtropical Storm (ST)
- Position at 0000 UTC
- 21 Position/date at 1200 UTC
- 5 Tropical Cyclone Number

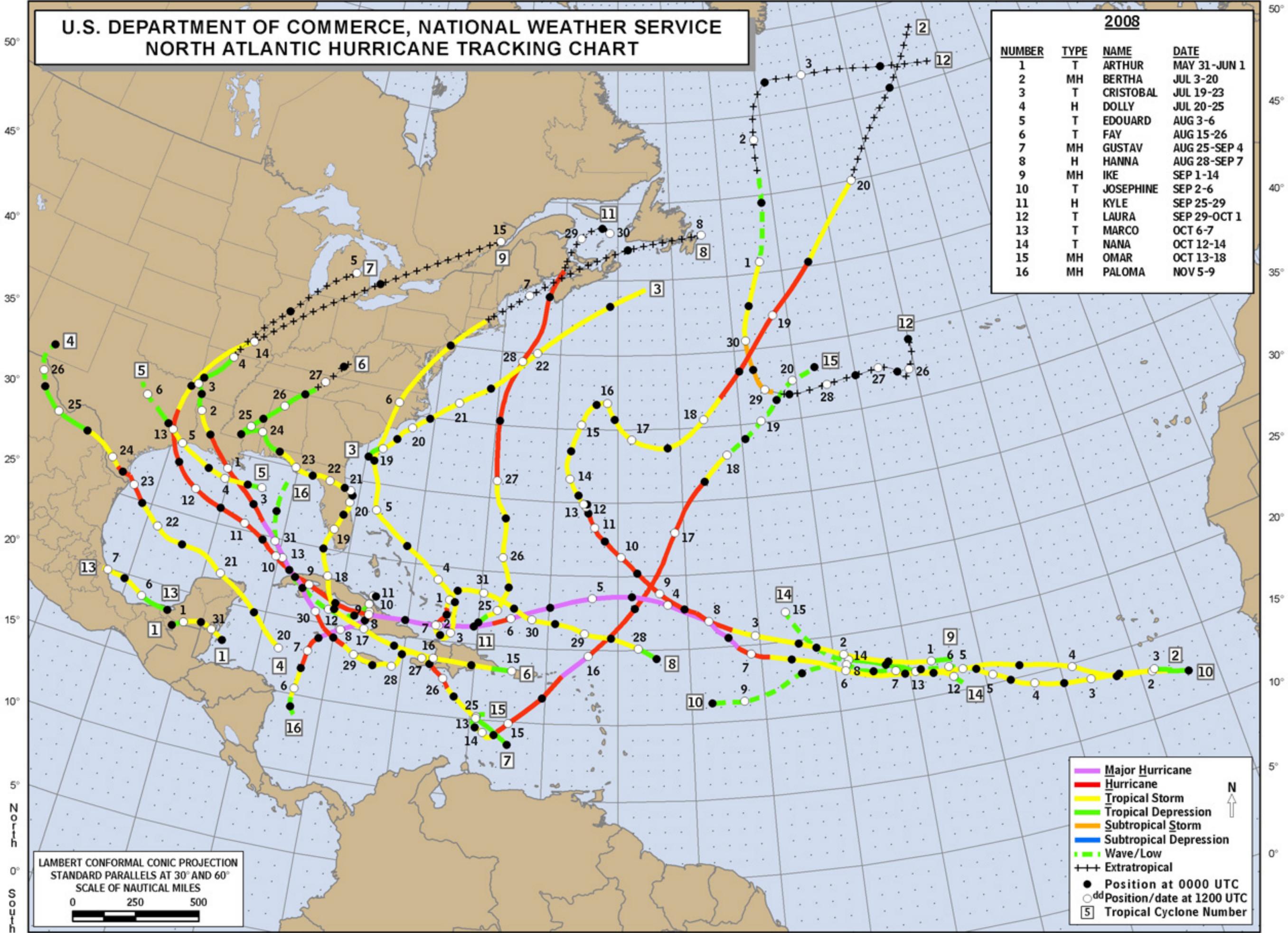
Lambert Conformal Conic  
true at 20° and 40° North

North  
South

120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

**U.S. DEPARTMENT OF COMMERCE, NATIONAL WEATHER SERVICE  
NORTH ATLANTIC HURRICANE TRACKING CHART**

2008			
NUMBER	TYPE	NAME	DATE
1	T	ARTHUR	MAY 31-JUN 1
2	MH	BERTHA	JUL 3-20
3	T	CRISTOBAL	JUL 19-23
4	H	DOLLY	JUL 20-25
5	T	EDOUARD	AUG 3-6
6	T	FAY	AUG 15-26
7	MH	GUSTAV	AUG 25-SEP 4
8	H	HANNA	AUG 28-SEP 7
9	MH	IKE	SEP 1-14
10	T	JOSEPHINE	SEP 2-6
11	H	KYLE	SEP 25-29
12	T	LAURA	SEP 29-OCT 1
13	T	MARCO	OCT 6-7
14	T	NANA	OCT 12-14
15	MH	OMAR	OCT 13-18
16	MH	PALOMA	NOV 5-9



— Major Hurricane  
— Hurricane  
— Tropical Storm  
— Tropical Depression  
— Subtropical Storm  
— Subtropical Depression  
- - - Wave/Low  
- - - Extratropical  
● Position at 0000 UTC  
○ Position/date at 1200 UTC  
5 Tropical Cyclone Number

LAMBERT CONFORMAL CONIC PROJECTION  
STANDARD PARALLELS AT 30° AND 60°  
SCALE OF NAUTICAL MILES  
0 250 500

## Drought

Drought is a normal part of virtually every climate on the planet, including areas of both high and low normal rainfall. Drought is the result of a natural decline in the expected precipitation over an extended period of time typically one or more seasons in length. The severity of drought can be aggravated by other climatic factors, such as prolonged high winds and low relative humidity.

A droughts severity depends on numerous factors, including duration, and geographic extent as well as regional water supply demands by humans and vegetation. Due to its multi-dimensional nature drought is difficult to define in exact terms and also poses difficulties in terms of comprehensive risk assessments.

Drought differs from other natural hazards in three ways. First, the onset and end of a drought are difficult to determine due to the slow accumulation and lingering if effects of an event after its apparent end. Second, the lack of an exact and universally accepted definition adds to the confusion of its existence and severity. Third, in contrast with other natural hazards, the impact of drought is less obvious and may be spread over a larger geographic area. These characteristics have hindered the preparation on drought contingency or mitigation planning by many governments.

Droughts are difficult to predict since they are based on slowly accumulating effects. Clay County has experienced a few periods of drought in the past. There is no indication that this will change in the future. Droughts are cyclical in nature and will continue to afflict the area.

## History

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 <u>ALZ011&gt;015 - 021&gt;025 - 027&gt;038 - 041 - 043</u>	07/18/2006	07:00 AM	Drought	N/A	0	0	0	0
2 <u>ALZ011&gt;015 - 017&gt;050</u>	08/01/2006	12:00 AM	Drought	N/A	0	0	0	0
3 <u>ALZ011&gt;015 - 017&gt;050</u>	09/01/2006	12:00 AM	Drought	N/A	0	0	0	0
4 <u>ALZ011&gt;015 - 017&gt;020 - 022&gt;035 - 039</u>	04/01/2007	00:00 AM	Drought	N/A	0	0	OK	OK
5 <u>ALZ011&gt;015 - 017&gt;035 - 039</u>	05/01/2007	00:00 AM	Drought	N/A	0	0	OK	OK
6 <u>ALZ011&gt;015 - 017&gt;045 - 047</u>	06/01/2007	00:00 AM	Drought	N/A	0	0	OK	OK
7 <u>ALZ011&gt;015 - 017&gt;029 - 032</u>	02/01/2008	00:00 AM	Drought	N/A	0	0	OK	OK
8 <u>ALZ011&gt;015 - 017&gt;029 - 032</u>	03/01/2008	00:00 AM	Drought	N/A	0	0	OK	OK
9 <u>ALZ011 - 013&gt;015 - 017&gt;021 - 023&gt;029 - 032&gt;038 - 040&gt;045 - 047</u>	04/01/2008	00:00 AM	Drought	N/A	0	0	OK	OK
10 <u>ALZ011 - 013&gt;015 - 017&gt;021 - 023&gt;029 - 032&gt;038 - 040&gt;045 - 047</u>	05/01/2008	00:00 AM	Drought	N/A	0	0	OK	OK
11 <u>ALZ017&gt;021 - 024&gt;029 - 036&gt;038 - 043 - 045 - 047</u>	06/01/2008	00:00 AM	Drought	N/A	0	0	OK	OK
12 <u>ALZ017&gt;021 - 024&gt;029 - 036&gt;038 - 043 - 045 - 047&gt;048 -</u>	07/01/2008	00:00 AM	Drought	N/A	0	0	OK	OK

050									
13 ALZ011 - 013>015 - 017>019 - 021 - 023>029 - 034>038 - 043 - 045>048 - 050	08/01/2008	00:00 AM	Drought	N/A	0	0	OK	OK	
TOTALS:					0	0	0	0	

**Location**

Drought is a widespread event. The precipitation that falls during rain events has a far reaching pathway that will affect many avenues of water resources such as crop irrigation, refilling lakes and ponds from runoff, ground water storage from seepage into the ground and stream and river flows. There are no areas of the County that are not susceptible to drought effects. All areas are equally at risk. Droughts are not small scale isolated events; they affect the entire county.

**Extent**

Drought impacts are wide-reaching and may be economic, environmental, and/or societal. The most significant impacts associated with drought in Clay County are those related to agriculture. Also, a lack of significant rainfall can cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding. Water supply for human consumption and activities are a major concern during periods of prolonged drought. Drought impacts increase with the length of a drought.

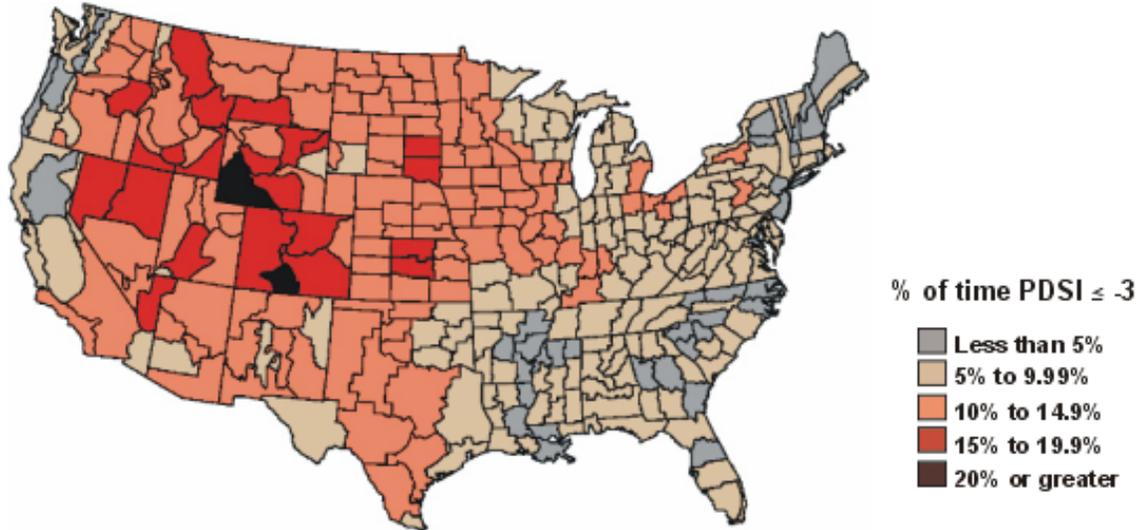
**Probability**

The probability of a drought in the County is considered low. Although the county has recently experienced drought conditions over the past two years, the long term probability of drought is considered low. The Hazard Mitigation Planning Committee reviewed the drought history from NCDC, along with discussion of previous events the committee members could recall and also by consulting the Palmer Drought Severity Index 1895-1995. Clay County experienced severe and extreme drought 5-9.99 percent of the time during that 100-year period.

# Palmer Drought Severity Index

1895–1995

Percent of time in severe and extreme drought



SOURCE: McKee et al. (1993); NOAA (1990); High Plains Regional Climate Center (1996)  
Albers Equal Area Projection; Map prepared at the National Drought Mitigation Center

## VULNERABILITY ASSESSMENT OVERVIEW

With the exception flooding, all areas within the County and its municipalities are susceptible to effects from all identified hazards. At this time due to the lack of flood maps, it is difficult to assess the structures vulnerable to flooding. Information from municipalities indicates that most flooding occurs in roadways due to inadequate drainage and culvert sizes. That's not to say flooding is not financial burden, there are several dollars and man hours invested in repairing roadways and placing protective measures (such as rip rap and barricades) along banks and hazard areas to minimize damage and the dangers of flood waters. However, when flooding does occur, it is not of the magnitude that disrupts services and daily operations of the County and municipality. So far, flooding events experienced have been short lived and isolated. Citizens were able to go about everyday activities within a few hours.

The impacts of each identified hazard on the County and its municipalities can vary greatly with the intensity of the hazard. With the exception of flooding, all areas of the county are equally at risk for all other hazards that were profiled in this document.

### POPULATION DISTRIBUTION

The following table describes the distribution of population in Clay County and its municipalities:

JURISDICTION	CENSUS 2000 POPULATION
Clay County	9,888
Ashland	1,965
Lineville	2,401

### TOTAL POPULATION EXPOSED TO HAZARDS

	Tornado	Severe Storm	Drought	Hurricane	Winter Storm	Flood+
Clay County	9,888	9,888	9,888	9,888	9,888	+
Ashland	1,965	1,965	1,965	1,965	1,965	+
Lineville	2,401	2,401	2,401	2,401	2,401	+

+ There are no identified Special Flood Hazard Areas for these municipalities.

### ESTIMATED FINANCIAL LOSS PER TYPE OF EVENT

	Tornado	Severe Storm	Drought	Hurricane	Winter Storm	Flood
Clay County	\$1.5 million	\$1,873,714	*	\$1,641,791	\$105,833	\$145,333
Ashland	\$41,000	\$2,000	*	\$1,641,791	\$105,833	\$126,714
Lineville	\$26,500	\$26,000	*	\$1,641,791	\$105,833	\$145,333

The following table summarizes the amounts that are used to calculate losses when using FEMA's Cost Benefit module for computing losses when applying to the Hazard Mitigation Grant Program. This information is useful as it can serve as a guide for communities to familiarize themselves with what kind of information will be required when applying for the Hazard Mitigation Grant Program, as well as what types of recordkeeping initiatives to put in place regarding damages and disasters.

Summary of Costs Associated with Elements Lost	
Displacement Time (Residential)	Occupants of flood damaged buildings are displaced for 30 days if building damages equal 10% of building replacement cost. Occupants are displaced for an additional 8 days for each percentage point that building damages exceed 10%, up to a maximum of 365 days total.
Displacement Time (Personal)	Damages consisting of lost time have a value of \$21.16 per person per hour.
Functional Downtime	Each day of functional downtime for police, fire and patient care facilities costs society 10 times their daily budget.
Emergency Shelter	Providing emergency shelter has a value equal to 10 times the federal per diem rate for that place. The maximum per diem rate for Birmingham Alabama is \$138 per day (FY 2009).
Electrical Service	Losing electrical service costs society \$188.00 per resident per day.
Water Service	Losing all water service costs \$103 per day per resident.
Potable Water Service	Loss of potable water only costs \$43 per day per resident.
Firefighting Service	Loss of water for firefighting services has an associated loss of \$17.50 per resident per day.
Waste Water Treatment	Treatment losses are calculated at \$33.50 per resident per day.
Roads	Loss for road use is calculated at \$32.23 per vehicle per hour of delay plus the Federal personal vehicle rate for each vehicle mile travel of detour. For FY 2009 the Federal Personal Vehicle Rate is \$0.55 per mile.

To gain an idea of the facilities that were located in each municipality, information was requested regarding the type and values of those facilities that may be considered critical to daily operations of the County and municipalities.

Clay County, Alabama*	
Facility Type	Facility Value
Water System	\$2,500,000.00
County Engineering Office and Equipment	\$1,210,000.00
County Court House	\$2,172,000.00
Sheriffs Department and Jail	\$4,200,000.00
Schools	Unavailable at this time
EMA Office	\$353,000.00

Ashland, Alabama*	
Facility Type	Facility Value
Water System	\$1,161,873
Sewer System	\$500,000.00
City Hall	\$649,287
Police Department	\$199,253
Fire Department	\$110,328

Senior Center/Recreation Facilities	\$863,227
Library	\$229,580
Equipment building	\$42,990
Building rented to Post Office	\$713,856

Lineville, Alabama*	
Facility Type	Facility Value
Water System	\$1,316,352.00
Sewer System	\$3,265,000.00
City Hall	\$ 225,000.00
Public Works Facilities - Street Department	\$ 150,000.00
Police Department	\$ 150,000.00
Senior Center/Recreation Facilities	\$ 600,000.00
Library	\$ 200,000.00

\* Information obtained from individual municipalities

The values were reviewed with the municipalities and verified as still valid during the 2009 plan update. The following table summarizes the types of structures that are located throughout the county that are vulnerable to the identified hazards.

Types of structures vulnerable to hazards						
	Tornado	Severe Storm	Hurricane/ Tropical Storm	Winter Storm	Flood+	Drought
Residential	6,612	6,612	6,612	6,612	+	6,612
Agricultural	20	20	20	20	+	20
Utilities	3	3	3	3	+	3
Manufacturing	11	11	11	11	+	11
Wholesale Trade	6	6	6	6	+	6
Retail Trade	51	51	51	51	+	51
Warehousing	15	15	15	15	+	15
Finance and Insurance	12	12	12	12	+	12
Real Estate	7	7	7	7	+	7
Professional	10	10	10	10	+	10
Waste Management and Remediation	3	3	3	3	+	3
Educational	3	3	3	3	+	3
Health Care	23	23	23	23	+	23
Food Services	12	12	12	12	+	12
Other	27	27	27	27	+	27

+ There are no identified Special Flood Hazard Areas for these municipalities.

## **MITIGATION STRATEGY**

The Mitigation Planning Committee consists of members from the private sector, Clay County, the City of Ashland and the City of Lineville. They have collectively defined the following goals of the Hazard Mitigation Plan:

- ❖ Promote partnerships among private and public sectors
- ❖ Save Lives
- ❖ Minimize property damage
- ❖ Preserve the quality of life for residents
- ❖ Minimize economic losses
- ❖ Promote safe land development practices

A review of these goals was performed by the Mitigation Planning Committee for the 2009 Plan Update and the members were in agreement that these goals are still applicable. No revisions were made.

### **Existing Mitigation Activities**

Clay County has not been mapped for special flood hazard areas. None of the jurisdictions have maps with special flood hazard areas identified and no one participates in the National Flood Insurance Program.

As of May 2009, according to records from the Alabama State Flood Plain Manager with the Office of Water Resources, there have been no repetitive loss claims in Clay County.

The county has been very proactive in mitigation action for severe storms and tornadoes. Several public shelters have been built for the protection of citizens throughout the County.

### **Cost-benefit review**

As with the development of the original plan, the planning committee reviewed various mitigation activities that could address the hazards identified and prioritized in the hazard analysis. Those that were deemed practical and cost beneficial were included in this document.

Priority mitigation projects will only be implemented if the benefits are maximized and outweigh the associated costs of the proposed projects. The Hazard Mitigation Planning Committee performed a general evaluation of each mitigation measure, which might require FEMA funds. The Committee weighed the estimated costs for each mitigation measure against the projected benefits to be derived. For example, a project to acquire properties within the flood plain would provide the following benefits: (1) the project eliminates flood damages to acquired properties, (2) the project reduces flood response costs, (3) the project reduces flood insurance claims, and (4) the project could increase the Community Rating System (CRS) rating. A more detailed benefit-cost analysis will

be required for each priority project to determine economic feasibility during the project-planning phase. Projects will also require a more detailed evaluation for eligibility and feasibility including social impact, environmental impact, technical feasibility and other criteria that measure project effectiveness. This detailed evaluation of projects will be performed in the pre-application phase of a grant request. Further, project implementation will be subject to the availability of FEMA grants and other sources of funds from year-to-year.

### **Project Prioritization**

Projects were prioritized based on the following:

The project addresses identified hazards.

The project is within the economic scope of the municipality wishing to implement it.

The project will not cause hardships for an adjacent community or interfere with another community's mitigation actions.

All of the participating municipalities are small towns and rural areas with very limited resources. These municipalities prioritized projects by analyzing the immediate benefit that would be recognized by their implementation. When possible, municipalities prioritized their projects based on immediate benefit in addition to looking at overall economic development issues and goals. The Committee prioritized (or ranked) the hazards and based on the finding that flooding and high winds (from thunderstorms and/or tornadoes) are the most costly and recurring hazards, the following list addresses the most crucial mitigation needs. Individual municipalities and the County have their own project lists.

### **Mitigation Action Items**

The Hazard Mitigation planning Committee has reviewed the existing mitigation strategy and determined that it is still valid. No new projects have been added to address identified hazards because either the project is already in the Plan, or the project proposed is in no way cost beneficial. One project has been deleted from this plan. It is the project regarding West Nile Virus and mosquito control from the City of Ashland.

The following action items have been prioritized by the mitigation committee and municipal leaders as items that are needed collectively throughout the county and municipalities. These items address existing as well as future buildings and infrastructure.

Installation of outdoor alert and warning systems in areas currently not covered.

Estimated Cost: \$14,000.00 per unit

Estimated Time Frame: 2 years

Implementing Party: County EMA and municipal leaders

Construct safe rooms within new public buildings, such as new schools, libraries, community centers where feasible.

Estimated Cost: Unknown at this time

Estimated Time Frame: As needed

Implementing Party: County EMA and municipal leaders

Acquisition of emergency power generators for critical facilities throughout the County and the municipalities.

Estimated Cost: \$180,000

Estimated Time Frame: ASAP

Implementing Party: County EMA and municipal leaders

## **CLAY COUNTY**

East Bank Road Project – East Bank Road is a County Road that currently has the creek bank eroding away the roadbed. This problem became severely pronounced in May of 2003 when an estimated 150-year flood event occurred.

The County proposes the measure of shoring up the creek bank in four locations.

Funding Sources: CDBG, HMGP, PDM, DoT, County Funds, EPA

2009-the County Engineer has reviewed this project and has continued interest in its completion. Budgetary restraints have prevented this from being implemented thus far.

Saferoom Installation – The County is at risk of tornado damage. Safe room installation in public buildings would minimize risk to residents, and give those with little refuge a safe place to go.

The County proposes a project to analyze and promote safe room installation in public and private facilities, to be implemented by the Chamber of Commerce and the County EMA.

Funding Sources: CDBG, HMGP, County Funds, Private Funds

2009 – to date several shelters have been built throughout the county. There are still areas which would benefit from shelters. This item is still valid.

Center Hill Road – Center Hill Road is a County Road that is currently experiencing severe drainage impediments. The road must be closed even during small amounts of precipitation.

The County proposes a drainage improvement project for this area to be implemented by the County Engineering Department.

Funding Sources: CDBG, HMGP, PDM, DoT, County Funds

2009-the County Engineer has reviewed this project and has continued interest in its completion. Budgetary restraints have prevented this from being implemented thus far.

State Lake Road – State Lake Road is a County Road experiencing drainage problems.

The County Proposes a drainage improvement project for this area to be implemented by the County Engineering Department.

Funding Sources: CDBG, HMGP, PDM, DoT, County Funds

2009-the County Engineer has reviewed this project and has continued interest in its completion. Budgetary restraints have prevented this from being implemented thus far.

County Road 58 (East Mill Road) –

- (a) Severe erosion along embankment requires repair and prevention
- (b) Double pipe culvert has capacity problem; requires upgrade
- (c) CCC rock culvert that has had damage in previous flooding events is narrow and requires improvements
- (d) Multi-pipe location with previous flood history and repairs on East Mill Road located in Section 13, T19S, R9E, just north of Christiana Church Road

2009-the County Engineer has reviewed this project and has continued interest in its completion. Budgetary restraints have prevented this from being implemented thus far.

## **ASHLAND**

Along Tyson Road a large metal culvert is experiencing score and erosion at entryway.

The City wishes to initiate culvert improvements on Tyson Road by replacing the pipe or building a headway at the entrance to eliminate erosion.

Funding Sources: CDBG, HMGP, PDM, DoT, County Funds

2009-the City has reviewed this project and has continued interest in its completion. Budgetary restraints have prevented this from being implemented thus far.

Concern has risen recently over the spread of West Nile Virus in Alabama. Residents and municipal leaders have looked at ways to control the mosquito population.

The City wishes to investigate various ways to control the mosquito population so that the risk of exposure to West Nile Virus is minimized.

Funding Sources: County Funds, ADPH, CDC

2009 – This item has been deleted.

## **LINEVILLE**

The City of Lineville has several areas in which flood path renovations require addressing. The City has prioritized the following streets for flooding and drainage improvements:

- 2<sup>nd</sup> Avenue
- Talladega Street
- Intersection of Elred and Blakesferry Streets
- Carver Street
- McCrary Street
- Holland Street

The City proposes drainage improvement projects along these streets to be implemented by the City Street Department.

Funding Sources: CDBG, HMGP, PDM, DoT, ADEM, EPA, FMA

2009-the City has reviewed this project and has continued interest in its completion. Budgetary restraints have prevented this from being implemented thus far.

Phillips Road – Currently the ditch and culvert along Phillips Road is too small to support the flow from higher ground.

The City proposes to install a larger culvert to handle the flow. The City Street Department will implement this project.

Funding Sources: CDBG, HMGP, PDM, ALDoT, ADEM, EPA, FMA, City Funds

2009-the County Engineer has reviewed this project and has continued interest in its completion. Budgetary restraints have prevented this from being implemented thus far.

## **Plan Maintenance**

### **Monitoring, Evaluation and Updating the Plan**

The Plan Maintenance Procedures were reviewed by the Hazard Mitigation Planning Committee and through discussion and reflection of past disaster declarations, it was determined that changes should be made regarding the verbiage of incorporation of action items into the planning document. The existing maintenance process has been determined to be successful in that several mitigation projects regarding tornadoes and strong winds have been implemented over the past three years.

Each municipality will monitor the status of their mitigation measures. The municipalities will report on an annual basis to the EMA Planner with an update of the status of the implementation items, specifically which items have been completed, are in progress or are no longer considered a viable action. This report can be made at the first meeting of the LEPC each year, or the first County Commissioners meeting of the calendar year. The following are the positions with this responsibility:

Clay County – EMA Planner and County Engineer  
Lineville – Public Works Director, City Clerk, Mayor  
Ashland – Mayor, City Clerk, Water Board Superintendent

The Plan will be evaluated one year prior to the required 5 year update. Members of the planning committee that participated in the plan development will have the obligation of evaluating the Plan. Evaluation will be completed by reviewing the goals and objectives of the Plan to determine their relevance to any changes that may have taken place in the County and municipalities and any changes in State or Federal policy. The goals and objectives will also be reviewed to ensure they are addressing current and expected conditions. Additionally, those entities responsible for implementing actions will report on the status of their projects which should include information, such as which measures have been implemented, any difficulties encountered, how coordination efforts affected implementation, and which strategies should be revised.

New projects and other information may be introduced for inclusion into the plan at the annual monitoring meeting. Should a municipality have an immediate need to incorporate information or an action item in this plan, it may do so by a special consultation held for the purpose of presenting the proposed amendments to the Hazard Mitigation Planning Committee. The entire Committee need not be consulted for this amendment however; at a minimum those consulted will consist of:

The Chief Elected Official of the Municipality wishing to amend the Plan  
A member of the EMA Staff  
A member of the Clay County Commission or the County Administrator.

In determining whether to recommend approval or denial of a Plan amendment request, the following factors will be considered:

1. There were errors or omissions made in the identification of issues or needs during the preparation of the Plan;
2. New issues or needs have been identified that were not adequately addressed in the Plan;
3. There has been a change in information, data or assumptions from those on which the Plan was based.

The Clay County Multi-jurisdictional Hazard Mitigation Plan will be updated every five years as required by the Disaster Mitigation Act of 2000. It will be the responsibility of the Director of the Clay County Emergency Management Agency to convene the Hazard Mitigation Planning Committee for this purpose. The update process to the Plan will follow appropriate legislation and guidance available from AEMA and FEMA.

### **Implementation through Existing Programs**

This plan will be adopted by the Clay County EMA as an annex to the Clay County Emergency Operations Plan. Local municipalities are responsible for their own mitigation strategies and planning activities. This document provides the foundation for integrating hazard mitigation activities into future planning efforts such as comprehensive plans, economic development plans, land use and zoning. It will be the responsibility of each individual municipality to implement these activities where appropriate. Currently, there are no active existing programs or alternative venues within the County or its municipalities in which to implement this document's activities.

Hazard Mitigation Planning Committee Members involved in future planning mechanisms will be responsible for integrating elements of the Hazard Mitigation Plan into those planning efforts. Additionally, local governments adopting this plan will encourage all other relevant planning entities under their authority to consult this plan to ensure minimization of risk to natural hazards as well as coordination of activities.

County government is very limited in scope and authority in the State of Alabama and does not have the manpower, authority or fiscal capabilities to guide and control development within the municipalities in the County. There are no mandatory State imposed planning requirements in Alabama for municipalities. A local government may participate in planning (Zoning, Comprehensive Planning, Capitol Improvements Plans) on a voluntary basis. There are provisions made in the Code of Alabama 1975 for Municipal Planning Commissions with regard to planning, zoning and subdivisions.

### **Continued Public Involvement**

The public will be able to directly comment on and provide feedback about this plan. Copies of the Plan will be maintained at the City and County Administrative offices, the County Emergency Management Agency, and the Clay County Public Library. Instruction for public comment is located on the first page of this document. Written comments on the plan will be accepted by the Clay County EMA at any time. This

document is also available to the public through the East Alabama Planning Commissions website, [www.earpdc.org](http://www.earpdc.org) where instructions for written comments are available.

Annual monitoring meetings will be open to the public, as will future planning meetings. These meetings will be advertised by publication or posting of notices throughout the County and its municipalities.