



National Weather Service

Storm Data and Unusual Weather Phenomena



September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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ALABAMA, Central

Pike County

Countywide	02	1755CST 1855CST			0	0	8K	0	Flash Flood
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Slow moving thunderstorms dropped several inches of rain across Pike County in a short period of time. Major street flooding was reported in the city of Troy around 7 pm and continued across the area for the next hour or so

ALZ046-048>050

Bullock - Russell - Pike - Barbour

07	0015CST 0600CST				0	0	4K		Strong Wind (ES33)
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Remnants of Hurricane Frances moved northward mainly along the Alabama and Georgia state line. Strong winds of 30 to 40 mph along with saturated ground conditions allowed several trees and power lines to be blown down.

ALZ021-036-045-047

Cleburne - Coosa - Macon - Lee

07	0015CST 0600CST				0	0	4K		Strong Wind (ES33)
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Remnants of Hurricane Frances moved northward mainly across the eastern counties of Central Alabama. Strong winds of 30 to 40 mph along with saturated ground conditions allowed several trees and power lines to be blown down.

ALZ020

Cherokee

07	0015CST 0600CST				0	0	1K		Strong Wind (ES33)
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Remnants of Hurricane Frances moved northward near the Alabama and Georgia state line. Strong winds of 30 to 40 mph along with saturated ground conditions allowed several trees and power lines to be blown down.

ALZ028>029-037>038

Clay - Randolph - Tallapoosa - Chambers

07	0015CST 0600CST				0	0	6K		Strong Wind (ES33)
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Remnants of Hurricane Frances moved northward near the Alabama and Georgia state line. Strong winds of 30 to 40 mph along with saturated ground conditions allowed several trees and power lines to be blown down.

ALZ043

Elmore

07	0500CST				0	1	11K		Strong Wind (EG35)
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A few trees were downed from the Remnants of Frances. One tree fell on a vehicle injuring the occupant

Lamar County

Millport	12	1805CST			0	0	0	0	Hail(0.88)
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Nickel size hail was reported in the city of Millport

Jefferson County

Birmingham Arpt	16	0000CST 2359CST			0	0			Heavy Rain
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The daily rainfall associated with the tropical system Ivan was 9.75 inches. This broke the previous daily rainfall record at the Birmingham International Airport of 8.84 inches which was established in 1916.

Montgomery County

(Mgm)Montgomery Arpt	16	0000CST 2359CST			0	0			Heavy Rain
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The daily rainfall associated with the tropical system Ivan was 5.07 inches. This broke the previous daily rainfall record at Dannelly Field of 2.18 inches which was established in 1971.



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ALABAMA, Central

Pike County

1 E Troy

16 0125CST 0.1 30 0 0 2K Tornado (F0)

A brief weak tornado was reported just east of Troy. Several trees were blown down over a short distance. This weak tornado was associated with an outer rain band of the tropical system Ivan. Approximate brief touchdown location 31.80N/85.97W.

Barbour County

2 S Clio

16 0156CST 0.2 40 0 0 2K Tornado (F0)

A brief weak tornado was reported across the extreme southwest portion of Barbour County. Several trees were knocked down. This weak tornado was associated with an outer rain band of the tropical system Ivan. Approximate brief touchdown location 31.71N/85.68W.

Pike County

13 E Troy

16 0205CST 0.1 30 0 0 2K 0 Tornado (F0)

A brief weak tornado was reported east of Troy. Several trees were blown down at the touchdown spot. This weak tornado was associated with an outer rain band of the tropical system Ivan. Approximate location 31.78N/85.74W.

Montgomery County

5 E Snowdoun

16 0249CST 0.1 35 0 0 3K 0 Tornado (F0)

A brief weak tornado was reported east of Snowdoun. Several trees were blown down. This weak tornado was associated with an outer rain band of the tropical system Ivan. Approximate location 32.23N/86.23W.

ALZ050

Barbour

16 0400CST 0 0 500K High Wind (EG60)
1300CST

Barbour County

Countywide

16 1005CST 0 0 3K Flash Flood
1200CST

A few hundred trees and power lines were knocked down or blown over countywide. At least 200 residences received varying degrees of roof damage. Several homes were without power three to four days. Maximum wind gusts were estimated around 70 miles an hour within one of Ivan's outer-rainbands. Doppler radar estimated 3 to 5 inches of rain across the county associated with Ivan. A few roads were covered with water in the southwest part of the county and were temporarily impassable.

ALZ046

Bullock

16 0400CST 0 0 2.4M High Wind (EG70)
1300CST

Bullock County

Countywide

16 1005CST 0 0 2K Flash Flood
1245CST

Thousands of trees and power lines were snapped off or blown down across the county. Hundreds of homes suffered varying degrees of wind damage. Maximum wind gusts were estimated around 80 miles an hour within one of Ivan's outer rainbands. Doppler radar estimated 3 to 5 inches of rain associated with Ivan and a few roads were flooded in western Bullock County.

ALZ042

Lowndes

16 0400CST 0 0 3.5M 200K High Wind (EG77)
1300CST

Thousands of trees and power lines were snapped off or blown down countywide. Utilities were not all restored for at least a week. Several dozen homes sustained varying degrees of wind damage. Debris removal took over a month in spots. Maximum wind gusts were estimated around 90 miles an hour.



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September 2004

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ALABAMA, Central

ALZ044	Montgomery	16	0400CST 1300CST		0	0	9M	50K	High Wind (EG65)	
	Hundreds of trees and power lines were snapped off or blown down during Ivan. At least 3300 homes sustained varying degrees of wind damage. Power was not fully restored for at least a week. Maximum wind gusts were estimated around 75 miles an hour. Three women in Montgomery were killed due to carbon monoxide poisoning after Ivan. The women had a generator running in their home because the power was out of service.									
ALZ049	Pike	16	0400CST 1300CST		0	0	3M	0	High Wind (EG65)	
	Hundreds of trees and power lines were snapped off or blown down across the entire county. Power remained out of service for around one week in places. At least 400 homes suffered some type of wind damage. Maximum wind gusts were estimated around 75 miles an hour.									
ALZ048	Russell	16	0400CST 1300CST		0	0	275K	0	High Wind (EG56)	
Russell County Countywide		16	1005CST 1300CST		0	0	25K	0	Flash Flood	
	Hundreds of trees and power lines were blown down across the county. Power was not fully restored in some locations for 4 days. At least 100 homes suffered some form of wind damage, mainly roof damage. Maximum wind gusts were estimated around 65 miles an hour. Doppler radar and ground observations indicate up to 4 inches of rain fell in a short period of time. This produced temporary flooding of some roadways. One road sustained major damage as it was washed out.									
Barbour County 8 E Clayton		16	0405CST	0.1	40	0	0	2K	0	Tornado (F0)
	A brief weak tornado was reported east of Clayton. Several trees were knocked down. This weak tornado was associated with an outer rain band of the tropical system Ivan. Approximate location 31.91N/85.30W									
Macon County 9 SE Tuskegee		16	0500CST	0.1	25	0	0	2K	0	Tornado (F0)
	A brief weak tornado was reported near Tuskegee. Several trees were blown down. This weak tornado was associated with an outer rain band of the tropical system Ivan. Approximate location 32.32N/85.52W.									
ALZ041	Autauga	16	0530CST 1400CST		0	0	2.6M	100K	High Wind (EG71)	
Autauga County Countywide		16	0915CST 1245CST		0	0	8K		Flash Flood	
	Thousands of trees and power lines were snapped off or blown down as Hurricane Ivan moved Across Central Alabama. Hundreds of homes suffered varying degrees of roof and structural damage. At least 800 households were displaced for at least one night due to hurricane damage. At least 8000 customers were without power at the height of the storm. Several residences were without power for up to 5 days. At least 75 farming operations requested aide due to wind damage. Many roadways were impassable due to fallen trees. Maximum wind gusts were estimated around 80 miles an hour. Doppler radar estimated 5 to 7 inches of rain during the event which caused a few roads to flood and become temporarily impassable.									
ALZ040	Dallas	16	0530CST		0	0	10M	200K	High Wind (EG80)	



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ALABAMA, Central

1300CST

**Dallas County
Countywide**

16	0956CST 1230CST				0	0	7K		Flash Flood
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Thousands of trees and power lines were blown down across the entire county. At least 45,000 customers were without power during the height of the storm. Some locations did not have power restored for a week and a half. At least 10 homes were totally destroyed and another 400 homes were damaged. Fallen trees blocked every roadway in the county. Maximum wind gust were estimated around 90 miles an hour. Doppler radar and ground observations indicate 6 to 9 inches of rain fell across Dallas County during Ivan. One minor mudslide occurred due to the heavy rain and a few roads were temporarily impassable due to high water. One relief worker suffered minor injuries during the cleanup operations.

ALZ043

Elmore

16	0530CST 1400CST				0	0	2M	50K	High Wind (EG62)
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**Elmore County
Countywide**

16	0915CST 1245CST				0	0	5K		Flash Flood
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Hundreds of trees and power lines were knocked down across Elmore County. Numerous homes sustained varying degrees of roof damage. At least 8000 customers were without power during the height of the storm. The power was not fully restored for 7 days in some locations. Maximum wind gusts were estimated around 70 miles an hour. Doppler radar estimated up to 5 inches of rain during the tropical system. A few creeks and roads were temporarily impassable, but the trees blocking roadways were much more significant.

ALZ047

Lee

16	0530CST 1400CST				0	0	1M		High Wind (EG60)
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Hundreds of trees and power lines were blown down across Lee County. At least 8000 customers were without power during the height of the storm. Power was not restored in all locations for at least 3 days. At least 25 homes suffered major damage and another 100 or more homes reported moderate damage. Many more homes and structures received minor damage. Maximum wind gusts were estimated around 70 miles an hour.

ALZ045

Macon

16	0530CST 1400CST				0	0	400K	35K	High Wind (EG60)
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**Macon County
Countywide**

16	1005CST 1300CST				0	0	6K		Flash Flood
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Hundreds of trees and power lines were blown down across the county. At least 300 homes suffered varying degrees of wind damage. Power was restored to most locations within two days. Debris removal took up to two weeks. Doppler radar and ground observations indicate up to 5 inches of rain fell across Macon County during Ivan. A few roads and creeks were briefly flooded. Maximum wind gusts were estimated around 70 miles an hour.

ALZ039

Marengo

16	0530CST 1300CST				0	0	10M	250K	High Wind (EG80)
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Thousands of trees and power lines were blown down or snapped off during Ivan. Several hundred homes or structures received varying degrees of wind damage. Numerous roadways were blocked from fallen trees making them temporarily impassable. Power was not fully restored for at least a week in spots. Maximum wind gusts were estimated around 90 miles an hour.

ALZ030

Sumter

16	0530CST				0	0	3.6M	80K	High Wind (EG73)
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ALABAMA, Central

1300CST

Thousands of trees and power lines were blown down with the most significant damage in the southern part of the county. At least 5500 customers were without power for up to two weeks. Several hundred homes and structures received varying degrees of wind damage. Maximum wind gusts were estimated around 85 miles an hour. One man was killed by an allergic reaction to bee stings. He was unable to phone emergency personnel because the power was out.

ALZ031

Greene

16	0600CST 1400CST				0	0	5M	75K	High Wind (EG77)
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Thousands of trees and power lines were blown down countywide. At least 3300 customers were without power at the height of the storm. Some locations did not get power back for a week. Twenty five to fifty homes suffered significant damage and many more sustained minor roof damage. Maximum wind gusts were estimated around 90 miles an hour.

ALZ032

Hale

16	0600CST 1400CST				0	0	2M	25K	High Wind (EG77)
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Thousands of trees and power lines were blown down or snapped off during Ivan. Several hundred homes or structures received varying degrees of wind damage. At least 200 trees blocked roadways making them temporarily impassable. Power was not fully restored for at least a week in spots. Maximum wind gusts were estimated around 90 miles an hour.

ALZ033

Perry

16	0600CST				0	0	3.5M	200K	High Wind (EG78)
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Thousands of trees and power lines were snapped off or blown down. At least 1100 customers were without power. Power was not completely restored in some spots for two weeks. Several hundred homes and mobile homes were damaged. Many county roads were blocked and impassable due to fallen trees. Maximum wind gusts were estimated around 90 miles an hour.

ALZ034

Bibb

16	0700CST 1400CST				0	0	350K		High Wind (EG56)
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**Bibb County
Countywide**

16	0956CST 1245CST				0	0	2K		Flash Flood
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At least one hundred trees and power lines were blown down across Bibb County during Hurricane Ivan. At least 150 households were impacted with varying degrees of wind damage. Three homes suffered extensive damage. Maximum wind gusts were estimated around 65 miles an hour. Doppler radar estimated 5 to 7 inches of rain during Ivan which caused a few roads in southern Bibb County to become temporarily impassable.

ALZ038

Chambers

16	0700CST 1400CST				0	0	340K		High Wind (EG52)
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**Chambers County
Countywide**

16	1020CST 1630CST				0	0	3K		Flash Flood
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Numerous trees and power lines were blown down across the county. Maximum wind gusts were estimated around 60 miles an hour within one of Ivan's outer rainbands. At least 8000 customers were without power during the storm. J.P. Powell Middle School had part of its roof blown off. Doppler radar and ground observations indicate 3 to 5 inches of rain fell in association with Ivan. A few roadways became temporarily impassable due to high water.

ALZ035

Chilton

16	0700CST 1400CST				0	0	700K	75K	High Wind (EG61)
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**Chilton County
Countywide**

16	0956CST				0	0	8K		Flash Flood
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ALABAMA, Central

1245CST

Thousands of trees were blown down across Chilton County. Five structures were heavily damaged and around another 150 suffered minor roof damage. At least 100 agricultural businesses sustained damage. Maximum wind gusts were estimated around 70 miles an hour. Doppler radar and ground observations indicate 6 to 9 inches of rain fell across the county during Ivan. Several roadways were temporarily impassable due to high water but even more roads were affected by fallen trees

ALZ037

Tallapoosa

16	0700CST 1400CST								
		0	0	450K	25K	High Wind (EG60)			

Hundreds of trees and power lines were snapped off or blown down across the county. The most significant damage occurred across the southern and eastern sides of the county. Power was not fully restored for at least 3 days. At least 75 homes and structures were damaged to some degree by Ivan. Maximum wind gusts were estimated around 70 miles an hour. In the southern part of the county, a man was seriously cut by a chain saw while clearing debris.

ALZ036

Coosa

16	0700CST 1400CST								
		0	0	350K	25K	High Wind (EG54)			

Hundreds of trees and power lines were blown down across the area. At least 1000 customers were without power during the tropical system. The power was not restored in all locations for at least 5 days. Two homes were totally destroyed and at least 12 more homes suffered varying degrees of wind damage. Maximum wind gusts were estimated around 65 miles an hour. Doppler radar and ground observations indicate as much as 4 to 5 inches of rain fell across parts of Coosa County, but no flooding was reported. A woman, around the age of 40, died when she fell into a well retrieving water. She was at the well because the utilities were out of service

ALZ028

Clay

16	0730CST 1700CST								
		0	0	290K	High Wind (EG50)				

**Clay County
Countywide**

16	1045CST 1700CST								
		0	0	10K	Flash Flood				

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.

ALZ024

Jefferson

16	0730CST 1500CST								
		0	0	10M	High Wind (EG60)				

**Jefferson County
Countywide**

16	1045CST 2000CST								
		0	0	500K	Flash Flood				

Hundreds of trees were blown down across all of Jefferson County. The power was not fully restored in all locations for at least 7 days. Over 500 homes sustained varying degrees of wind damage. Maximum wind gusts were estimated around 70 miles an hour. Doppler radar and ground observations indicated 6 to 9 inches of rain fell in association with Ivan. At least 250 homes suffered water damage due to flooding. Many creeks and roadways were flooded and were temporarily impassable

ALZ022

Pickens

16	0730CST 1400CST								
		0	0	600K	0	High Wind (EG56)			

Hundreds of trees and power lines were knocked down in association with Ivan. Power outages lasted as long as 5 days in some



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September 2004

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					Killed	Injured	Property	Crops	

ALABAMA, Central

locations. Hundreds of homes suffered varying degrees of wind damage. Maximum wind gusts were estimated around 65 miles an hour.

ALZ029

Randolph

16	0730CST 1700CST				0	0	125K	0	High Wind (EG56)
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**Randolph County
Countywide**

16	1045CST 1700CST				0	0	4K	0	Flash Flood
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Hundreds of trees and power lines were knocked down across the county. At least 5500 customers were without power and the power was not fully restored in a few places for 2 to 3 days. One home was totally destroyed and 10 to 20 others received mainly minor damage. Maximum wind gusts were estimated around 65 miles an hour. Doppler radar and ground observations indicate as much as 5 inches of rain fell during Ivan. A few homes received minor water damage and one road was washed out.

ALZ025

Shelby

16	0730CST 1500CST				0	0	1.2M	0	High Wind (EG62)
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**Shelby County
Countywide**

16	0956CST 1245CST				0	0	20K	0	Flash Flood
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Hundreds of trees and power lines were blown down across the county due to the tropical system Ivan. Twenty to thirty homes suffered varying degrees of damage, mainly roof damage. Power was not completely restored for at least 4 days. Maximum wind gusts were estimated around 70 miles an hour. Doppler radar and ground observations indicate up to 8 inches of rain fell across Shelby County Associated with Ivan. Several area roads and creeks flooded and several homes sustained flood damage. A male employee of Alabama Power was killed during the storm recovery efforts near Lay Dam

ALZ027

Talladega

16	0730CST 1700CST				0	2	2.5M		High Wind (EG60)
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**Talladega County
Countywide**

16	1045CST 1700CST				0	0	2K		Flash Flood
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Hundreds of trees and power lines were blown down across the county. The most significant damage occurred throughout southern areas of the county. At least 12,000 customers were without power at the height of the storm. It took at least three days to restore all the power. Thirty to fifty homes and structures were damaged. In Talladega, one woman injured her shoulder when a tree fell through the roof of her home. In Sylacauga, a man was injured when a tree limb fell on his head. Maximum wind gusts were estimated around 70 miles an hour. Doppler radar and ground observations indicate up to 7 inches of rain fell during Ivan. A few roadways were covered with water and temporarily impassable

ALZ023

Tuscaloosa

16	0730CST 1400CST				0	0	1.7M		High Wind (EG56)
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Hundreds of trees and power lines were blown down countywide. At least 28,000 customers were without power at the height of the storm. Power was not fully restored for at least 4 days. Twenty to twenty five homes suffered varying degrees of wind damage. Thousands of homes sustained minor damage. Maximum wind gusts were estimated around 65 miles an hour.

ALZ017

Blount

16	0900CST 1700CST				0	0	80K		High Wind (EG50)
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ALABAMA, Central

Blount County

Countywide	16	1200CST 1830CST			0	0	2K		Flash Flood
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Numerous trees and power lines were knocked down from Ivan's high winds across the county. Ten to twenty homes suffered varying degrees of damage, mainly minor roof damage. Maximum wind gusts were estimated between 55 to 60 miles an hour. Doppler radar estimated 4 to 7 inches of rain during Ivan which caused a few roads to become temporarily impassable.

ALZ019

Calhoun

16	0900CST 1800CST			0	0	350K		High Wind (EG50)
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Calhoun County

Countywide	16	1045CST 1800CST			0	0	3K		Flash Flood
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Hundreds, if not thousands, of trees and power lines were blown down countywide. Only 3 or 4 homes suffered significant damage, while 30 to 50 homes received mainly minor roof damage. Maximum wind gust were estimated between 55 and 65 miles an hour. Doppler radar and ground observations indicate 3 to 5 inches of rain fell across the area associated with Ivan. A few roadways became temporarily impassable but more roads were blocked by fallen trees.

ALZ020

Cherokee

16	0900CST 1800CST			0	0	350K		High Wind (EG52)
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Cherokee County

Countywide	16	1200CST 1830CST			0	0	30K		Flash Flood
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Hundreds of trees and power lines were knocked down area-wide. At least three homes sustained significant damage and many more suffered minor roof damage. Maximum wind gust were estimated around 60 miles an hour. At least 8000 customers were without power at the height of the storm. Several roadways, creeks, and homes were flooded due to the torrential rain. Doppler radar and ground observations indicate as much as 6 inches of rain fell in association with Ivan.

ALZ021

Cleburne

16	0900CST 1800CST			0	0	500K		High Wind (EG50)
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Cleburne County

Countywide	16	1045CST 1800CST			0	0	50K		Flash Flood
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Hundreds of trees and power lines were blown down across the county. At least 10 homes suffered moderate damage with many more reporting minor roof damage. The debris removal took two weeks in some locations. Power was restored to most of the county in 24 hours. Maximum wind gust were estimated between 55 and 65 miles an hour. Several roadways and creeks were flooded due to the torrential rain. One creek bridge suffered damage. Doppler radar and ground observations indicate as much as 6 inches of rain fell in association with Ivan.

ALZ018

Etowah

16	0900CST 1800CST			0	0	180K		High Wind (EG52)
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Etowah County

Countywide	16	1200CST 1830CST			0	0	2K		Flash Flood
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Numerous trees and power lines were blown down across the county. Several homes suffered mainly roof damage. Power was not fully restored for at least 2 days. The Etowah County Emergency Management Agency recorded a wind gust of 57 miles an hour during Ivan. Peak wind gusts across the county were around 60 miles an hour. Doppler radar and ground observations indicate up to 6 inches of rain occurred during the tropical system. A few roads were temporarily impassable due to high water.



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ALABAMA, Central

ALZ013	Fayette	16	0900CST 1400CST		0	0	65K		High Wind (EG50)
	At least one hundred trees and power lines were blown down during the tropical system. Utilities were not restored for 5 to 6 days in places. At least 5 homes sustained moderate damage and several more suffered minor damage. Maximum wind gusts were estimated between 50 and 60 miles an hour.								
ALZ012	Lamar	16	0900CST 1400CST		0	0	325K		High Wind (EG52)
	Hundreds of trees and power lines were blown down during the tropical system. At least 64 roadways were blocked by fallen trees and were temporarily impassable. At least 22 homes were damaged and 4 of those homes suffered major damage. Most of the power outages were restored within 12 hours, but a few spots did not receive power back for 4 days. One person was slightly injured when their automobile ran into a fallen tree. Maximum wind gusts were estimated around 60 miles an hour.								
ALZ011	Marion	16	0900CST 1400CST		0	0	920K		High Wind (EG65)
Marion County Countywide		16	1230CST 1530CST		0	0	8K		Flash Flood
	Hundreds of trees and power lines were blown down areawide. At least 10 homes were totally destroyed and another 50 homes were damaged. Power was not restored in all areas for at least a week and a half. Maximum wind gusts were estimated around 65 miles an hour. Doppler radar and ground observations indicate 4 to 5 inches of rain fell in association with Ivan. Numerous roads were flooded and were temporarily impassable.								
St. Clair County Countywide		16	0900CST 1700CST		0	0	50K		Flash Flood
ALZ026	St. Clair	16	1045CST 1800CST		0	0	100K		High Wind (EG52)
	Numerous trees and power lines were blown down across St. Clair County. Thirty to forty homes sustained mainly minor roof damage. Power outages affected some locations for 3 days. Maximum wind gusts were estimated around 60 miles an hour. Doppler radar and ground observations indicate parts of St. Clair received up to 7 inches of rain. This heavy rainfall produced flooding of several roadways and flooded some businesses in Springville.								
ALZ015	Walker	16	0900CST 1400CST		0	0	225K		High Wind (EG52)
	Hundreds of trees and power lines were blown down during Ivan. At least 28,000 customers were without power. Power was not fully restored for three or four days. Fifty to one hundred homes suffered varying degrees of wind damage. Maximum wind gusts were estimated around 60 miles an hour.								
ALZ014	Winston	16	0900CST 1400CST		0	0	200K		High Wind (EG52)
	Hundreds of trees and power lines were blown down during Ivan. Power was not fully restored for three or four days. Numerous homes suffered varying degrees of wind damage. Maximum wind gusts were estimated around 60 miles an hour.								



National Weather Service

Storm Data and Unusual Weather Phenomena



September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ALABAMA, Central

ALABAMA, North

Colbert County

Muscle Shoals

12	2100CST 2300CST				0	0			Flash Flood
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Flash flooding was reported with several inches of water over area roads.

Lauderdale County

Florence

12	2100CST 2300CST				0	0			Flash Flood
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Flash flooding was reported in Florence with several streets with several inches of water over the roads.

ALZ001>010-016

Lauderdale - Colbert - Franklin - Lawrence - Limestone - Madison - Morgan - Marshall - Jackson - Dekalb - Cullman

16	0455CST 2200CST				0	3	2.5M		High Wind (ES50)
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A tree fell on a truck and killed the driver along Alabama Highway 207 at Anderson in eastern Lauderdale county.

Cullman County

Countywide

16	1530CST				0	0			Flash Flood
17	0215CST								

Flash flooding was observed as several low spots flooded on county road eight and on county road 1718

Madison County

Countywide

16	1555CST				0	0			Flash Flood
17	0230CST								

Flash flooding was reported across much of the county with several roads throughout the county with flooded roads and several inches of water over them.

Lawrence County

Countywide

16	1600CST				0	0			Flash Flood
17	0230CST								

Flooding was reported throughout the county with several inches of water reported over area roads.

Limestone County

Countywide

16	1600CST				0	0			Flash Flood
17	0230CST								

Flooding was reported throughout the county.

Morgan County

Countywide

16	1600CST				0	0			Flash Flood
17	0230CST								

Numerous reports of flash flooding were received throughout Morgan county. Several roads had water at least six to eight inches over them.

Marshall County

Countywide

16	1636CST				0	0			Flash Flood
17	0400CST								

Flash flooding was reported throughout the county as several roads had several inches of water over them.

Colbert County

Countywide

16	1655CST				0	0			Flash Flood
17	0230CST								

Widespread flash flooding was reported throughout the county. Several inches of water was reported over many roads throughout the county.

Franklin County

Countywide

16	1655CST				0	0			Flash Flood
17	0230CST								

Widespread flash flooding was reported countywide. Several inches of water was reported over many county roads.



National Weather Service

Storm Data and Unusual Weather Phenomena



September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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ALABAMA, North

Lauderdale County

Countywide	16	1655CST			0	0			Flash Flood
	17	0230CST							

Widespread flash flooding was reported throughout the county. Several roads had several inches of water over them.

Dekalb County

Countywide	16	1730CST			0	0			Flash Flood
	17	0130CST							

Flash flooding was reported across the county with several roads with several inches of water standing.

Jackson County

Countywide	16	1800CST			0	0			Flash Flood
	17	0400CST							

Numerous reports of flash flooding were received with water over several roads several inches in depth.

Dekalb County

5 N Ft Payne to Ft Payne	17	0130CST			0	0			Flash Flood
		0400CST							

Several inches of water was reported across the road near Desoto State Park.

ALABAMA, Southeast

ALZ065>069

Coffee - Dale - Henry - Geneva - Houston

	15	1200EST			0	0	3.5M		Tropical Storm
	17	0000EST							

Hurricane Ivan weakened to a tropical storm as it moved north into southwest Alabama on September 16. The maximum sustained and peak wind gust recorded was 44 and 54 knots, respectively, at Dothan, AL. The lowest sea-level pressure was 1000 mb at Dothan. Rainfall amounts were quite heavy, ranging from five to eight inches. Minor flooding was reported in Coffee, Geneva, and Houston counties. Schools and many businesses were closed on September 16 and 17. An estimated 50,000 customers were without power, including 20 percent of Dothan. There were numerous reports of roads closed by fallen trees and power lines. In Coffee County, many county roads were closed and several trees fell on houses and vehicles. Some businesses were damaged in Enterprise. Several trees fell on vehicles and houses, and damaged two businesses in Dothan. In Geneva County, several mobile homes were destroyed in Hartford. Cotton farmers suffered significant yield losses, especially in Coffee and Geneva counties, which will be realized at the time of the autumn harvest. Coffee and Geneva counties were declared federal disaster areas.

ALABAMA, Southwest

ALZ051>064

Choctaw - Washington - Clarke - Wilcox - Monroe - Conecuh - Butler - Crenshaw - Escambia - Covington - Upper Mobile - Upper Baldwin - Lower Mobile - Lower Baldwin

	13	2100CST			0	0	2.5B	25M	Hurricane/Typhoon
	16	1500CST							



National Weather Service

Storm Data and Unusual Weather Phenomena



September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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ALABAMA, Southwest



Results of storm surge in residential neighborhood

Hurricane Ivan affected the region from September 13 through the 16th. The coastal areas were put under a hurricane watch at 900 PM CST on September 13. The area was put under a hurricane warning at 300 PM CST on September 14. The hurricane warning was dropped at 900 AM CST on September 16 and we were put under a tropical storm warning. The tropical storm warning was dropped at 300 PM CST on September 16.

Ivan made landfall around 100 AM CST near Gulf Shores, Alabama on September 16. An interesting note, as Ivan approached the Alabama coast during the day on the 15th, a buoy just south of the Alabama coastal waters recorded a peak wave height of 52 feet, before breaking loose of its mooring. This was one of the highest wave heights ever observed.

Some of the winds recorded across Southwest Alabama were as follows: Mobile Regional Airport, sustained wind of 51 knots from the north with a peak gust of 65 knots from the north northeast. Dauphin Island, sustained wind of 61 knots from the east with a gust of 89 knots from the northeast. USS Alabama, located off the Mobile Bay causeway, peak gust 91 knots (site is more than 100 feet high). Fairhope, peak gust 63 knots. Semmes, peak gust 51 knots. Grand Bay, peak gust 62 knots. WKRG in Mobile, peak gust 64 knots. Wallace Tunnel in Mobile, peak gust 51 knots. Gulf Shores Airport, sustained winds 73 knots with a peak gust of 100 knots (Doppler on Wheels site). Fairhope, sustained wind 59 knots with a peak gust of 77 knots (Doppler on wheels).

Some of the winds across Northwest Florida were as follows: Pensacola Naval Air Station, sustained wind of 76 knots from the southeast with a gust of 93 knots from the southeast. Pensacola Regional Airport, sustained wind of 67 knots from the southeast with a peak gust of 87 knots. West Pensacola, peak gust 84 knots. Pensacola, sustained wind 70 knots with a peak gust of 92 knots (Doppler on wheels). Pace, sustained wind of 73 knots with a peak gust of 87 knots (Air Products location - about 160 feet high). Escambia county EMA office peak gust 90 knots. Eglin Air Force Base sites; 2 SW of Mary Esther, peak gust 103 knots (200 feet high). 10 S Harold, peak gust 78 knots. 10 N Mary Esther, peak gust 75 knots. 5 NE Seminole, peak gust 75 knots.

Some of the lowest sea level pressures were as follows: In Alabama: Fairhope 947.9 MB. Mobile Regional Airport 964.4 MB. Brookley Field (Mobile) 956.0 MB. Semmes 967.5 MB. Dauphin Island 952.7 MB.

In Florida: Pensacola Regional Airport 970.2 MB. Pensacola Naval Air Station 965.8 MB. 5 S Harold 981.4 MB.

Two day rainfall totals ending at midnight on September 16 were as follows: In Alabama: Mobile Regional Airport (MOB) 5.56 inches. Coden 6.30 inches. Evergreen 7.25 inches. Alberta 6.85 inches. Semmes 5.00 inches. Daphne 7.5 inches. Andalusia 9.96 inches. 2 S Mobile 9.90 inches. Silverhill 10.16 inches. Robertsdale 9.35 inches. Spanish Fort 8.00 inches.

In Florida: Pensacola Naval Air Station (NPA) 8.00 inches. Pensacola (WEAR TV) 15.79 inches. Crestview 8.40 inches. Fort Walton Beach 6.06 inches. Munson 6.5 inches. Niceville 6.55 inches. Eglin Air Force Base (VPS) 7.43 inches. 10 S Mossy Head 8.92 inches.

Storm surge values along the coast from Baldwin county east to Santa Rosa county were the highest observed in over a hundred years of record keeping. The high surge values of 10 to 14 feet caused extensive damage to homes and condos located along the Gulf beachfront, as well as along the shoreline of area inland waterways. Dauphin Island had several areas that were breached by the high surge. There was less damage on Dauphin Island than with Hurricane Frederic in 1979, even with the extensive building that has occurred on the island since 1979. In Baldwin county, the coastal areas from Fort Morgan to Gulf Shores to Orange Beach saw the worst damage from a hurricane in over a hundred years. This area has seen rapid development in the past 20 years and it seemed that the homes and condo's constructed in the past five years held up better than homes that were constructed earlier. Surge values were estimated between nine and twelve feet along the Baldwin county coastline, and the beach was breached at several locations.



National Weather Service

Storm Data and Unusual Weather Phenomena



September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ALABAMA, Southwest

No one died as a result of storm surge in Baldwin county.

In Escambia county Florida, surge values were estimated at ten to fourteen feet. These coastal areas were the hardest hit, with major damage occurring from Perdido Key to Pensacola Beach. Almost every structure that was on the waterfront in Escambia county suffered some degree of damage. Generally, if the property elevation was below fifteen feet, water flooded the property. Property that was on Perdido Bay, Big Lagoon, Bayou Grande, Pensacola Bay and Escambia Bay suffered major damage. Many homes were completely washed away by the high surge. Almost all of the deaths directly attributed to Ivan in Escambia County were surge related, and occurred near Big Lagoon. The beach area from Perdido Key to Pensacola Beach was breached in several places. Fort Pickens was cut off and isolated from the rest of Pensacola Beach as a result of several breaches. The highest surge values observed during the storm were in the upper reaches of Escambia Bay. The surge, and accompanying wind waves, damaged the I-10 bridge across Escambia Bay. A trucker died on the bridge when his truck plummeted off a bridge section that had been displaced by the surge. Pensacola Naval Air Station, which is located on Pensacola Bay across from Fort Pickens, suffered major damage to structures that were located on the water. Many of the structures had been built in the late 1800's, and had been through several other hurricanes with only minor damage. In Santa Rosa county, surge values were between nine and twelve feet. Navarre Beach had several breaches, and major damage occurred to almost all structures that were on the Gulf front. Major damage also occurred along the shores of Gulf Breeze and along Blackwater Bay. Some of the highest surge values in Santa Rosa county were near Ward Basin. Surge values across most locations east of where the center of the hurricane moved ashore were higher than those of hurricane George in 1998. As in Escambia county, almost every structure that was on the water in Santa Rosa county suffered some type of damage. In Okaloosa county surge values were six to nine feet. Structures that were located on or near the beach suffered major damage. Farther to the east, storm surge values dropped off, but the wave action essentially destroyed the beach, with four to eight feet of the sand eroded away. Low lying structures on Choctawatchee Bay also suffered major damage. US Highway 98 between Fort Walton and Destin was again washed away. Structures near the beach that were part of Eglin Air Force Base also suffered major damage.

The following surge values were measured in Alabama: Middle Gage at Bayou LaBatre 4.66 feet. Mobile Bay at Cedar Point 6.90 feet. Dauphin Island Bay at Dauphin Island 7.80 feet. Mobile Bay at Dauphin Island Coast Guard 8.00 feet. Mobile River at Mobile 4.87 feet. Mobile River at Bucks 6.82 feet. Mobile Bay at Fort Morgan Front Range 7.85 feet. Perdido Pass at Orange Beach 8.81 feet.

The following surge values were measured in Northwest Florida; Perdido Bay near US Highway 98 estimated 10.00 feet. GIWW at Pensacola Gulf Beach 9.68 feet. Pensacola Bay at Fort McRee 9.70 feet. Pensacola Bay at Pensacola 10.20 feet. Escambia Bay West Bank at Highway 90 12.92 feet. Escambia Bay West Bank 1.5 miles north of I-10 12.12 feet. Escambia Bay near Pace estimated 12.00 feet. GIWW at Gulf Breeze 10.30 feet. Pensacola Beach Fire Station estimated 12 feet. Yellow River near Milton 9.66 feet. Fort Walton Brooks Bridge 6.12 feet. Destin at Choctawatchee Bay Coast Guard 5.39 feet

As Ivan moved ashore during the morning hours of September 16th, the winds caused major damage to trees along and east of the track of the storm. Hurricane force winds were felt across the entire area, including all inland counties. Most of the area probably had hurricane force winds for two to four hours. This caused 100 year old trees to break due to the constant force from the strong winds. Many of the trees fell on homes and vehicles and damaged them. While some structural wind damage would have been expected, most of the major structural damage that occurred over inland areas would not have been as substantial if it had not been for fallen trees. It was estimated that in Alabama over \$500,000,000 damage was done to timber, with an additional estimate of \$250,000,000 in Escambia, Santa Rosa and Okaloosa counties in Florida. Power was out for a week or more across the inland areas due to trees across lines.

Along the immediate coast, power was not restored for an additional several weeks, until much of the infrastructure was rebuilt.

It was estimated that six weak tornadoes occurred across the area during the afternoon and early evening of September 15th as Ivan neared the coast. These weak tornadoes occurred in Escambia and Santa Rosa counties in Florida, and in Baldwin, Escambia and Conecuh in Alabama and produced only minor damages.

Eight deaths were directly related to Ivan. Seven of these were in Escambia county with one in Santa Rosa county. In Escambia county Florida: Four people (three women and one male) drowned at different locations around Grand Lagoon as the surge inundated the area. A male drowned after his truck ran off the damaged I-10 bridge. A female died of a heart attack in a shelter just before Ivan moved ashore. A male died when a tree fell on him as Ivan was moving ashore. In Santa Rosa county, a young female died when a tree fell on their manufactured home and killed her.

Sixteen deaths were indirectly related to Ivan. In Escambia county Florida: A 7 year old boy was killed as he was watching someone remove a tree and a large limb fell on him. A 55 year old male committed suicide when he became depressed because of the damage his home sustained as a result of Ivan. A 58 year old female died when she was overcome by fumes from a generator that was not properly ventilated. A 41 year old male died in a traffic accident at an intersection with no power and no stop lights. A 83 year old male fell off a roof while repairing damage from Ivan. A 63 year old male fell out of a tree in Escambia county Alabama and was taken to a Pensacola hospital where he later died from injuries sustained in the fall. A 40 year old male died when a tree fell on him. In Santa Rosa county: A 67 year old male died of a heart attack preparing for Ivan. A 76 year old male died of a heart attack. A 56 year old male died of a heart attack cleaning up days after the storm. In Okaloosa county: A 54 year old female died of a heart attack when emergency crews could not get to her due to the storm. A 51 year old male died of a heart attack. A 50 year old female died days after Ivan from a drug overdose due to depression cause by the storm.

In Covington county a 75 year old female died from a fire caused by a candle used for light after the storm. In Conecuh county a 34 year old male died from a car accident when he hit debris still in the road from the storm. In Mobile county a 59 year old male died when a tree fell on him after the storm.

Agriculture interests suffered a major blow from Ivan with most of the soybean and pecan crop destroyed. The cotton crop also



National Weather Service

Storm Data and Unusual Weather Phenomena



September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ALABAMA, Southwest

suffered damage but not as bad as that of the soybean and pecan crop.

Ivan will be remembered as being one of the most damaging hurricanes to affect the coastal counties of Baldwin, Escambia and Santa Rosa in modern history. It will also be remembered as one of the most damaging hurricanes to affect the inland counties of Escambia, Clarke, Monroe, Conecuh and Butler in southwest Alabama.

Baldwin County

**3 SE Josephine to
1 SW Josephine**

15	1302CST 1306CST	3	30	0	0	3K	Tornado (F0)
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A weak tornado entered Baldwin county from Escambia county in Florida near Ono Island and moved rapidly west northwest and dissipated just southwest of Josephine. The weak tornado caused minor damage. Most of the area had been evacuated due to Hurricane Ivan.

Escambia County

**1 W Dixie to
4 NW Dixie**

15	1820CST 1823CST	3	30	0	0	3K	Tornado (F0)
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A weak tornado developed ahead of Hurricane Ivan just west of Dixie. The weak tornado moved quickly west northwest and dissipated about four miles northwest of Dixie. The weak tornado caused minor tree damage.

Conecuh County

**2 S Castleberry to
2 SW Castleberry**

15	1840CST 1842CST	1	30	0	0	2K	Tornado (F0)
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A weak tornado developed about two miles south of Castleberry and dissipated just southwest of Castleberry. The weak tornado caused minor damage to timber.

Baldwin County

East Portion

16	0300CST 0500CST			0	0		Flash Flood
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As Hurricane Ivan was moving inland, a band of very heavy rainfall developed east of the center. Radar estimated that five to seven inches of rain fell in a two hour period across the area. This caused most of the roads in the east part of the county to flood. This was in addition to the high winds that were blowing trees down. As the storm moved north, the water drained off the roads.

Escambia County

West Portion

16	0500CST 0600CST			0	0		Flash Flood
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As Hurricane Ivan was moving inland, a band of very heavy rainfall developed near and east of the center. Radar estimated that four to six inches of rain fell in a one hour period across the area. This caused most of the roads in the west part of the county to flood. This was in addition to the high winds that were blowing trees down. As the storm moved north, the water drained off the roads.

Monroe County

South Portion

16	0500CST 0600CST			0	0		Flash Flood
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As Hurricane Ivan was moving inland, a band of very heavy rainfall developed near and east of the center. Radar estimated that four to six inches of rain fell in a one hour period across the area. This caused most of the roads in the south part of the county to flood. This was in addition to the high winds that were blowing trees down. As the storm moved north, the water drained off the roads.

ALZ063>064

Lower Mobile - Lower Baldwin

22	2300CST			0	0		Heavy Surf/High Surf
23	1400CST						

About a week after Hurricane Ivan impacted the area on September 16th, the remnants of the storm re-entered the Gulf of Mexico after making a large clockwise loop over the southeastern United States.

As a result, high waves and surf action again impacted already heavily eroded area beaches. The high water hindered clean up efforts along the coast. The water also ended up under homes that had severe erosion a week earlier. Part of the causeway across Mobile Bay had to be closed for several hours due to high water. As the remnants of Ivan slowly moved off to the northwest over the western Gulf, the high surf subsided.