



# Storm Signals

Houston/Galveston National Weather Service Office



Volume 60

## Tropical Storm Allison Highlights a Wet Year in 2001

by Daniel Huckaby

For residents of Southeast Texas, 2001 will be remembered as the year Tropical Storm Allison brought a historic deluge to the Houston area. Although certainly the most severe, the aftermath of Allison was not the only heavy rain event of the year. Late winter was particularly wet across the region, with many locations receiving more than double their average rainfall for the month of March.

Top Ten Wettest Years for Houston		
1	1900	72.86
2	1919	72.38
3	2001	71.18
4	1973	70.16
5	1946	68.97
6	1949	64.22
7	1959	63.85
8	1961	62.97
9	1923	62.84
10	1907	62.51

Another two-week heavy rain and flooding event around Labor Day, coupled with a rainy December, helped make 2001 one of the wettest years on record.

Intercontinental Airport ended the year with 71.18 inches of rain, making 2001 the third wettest year on record for Houston, and one of only four years to have officially exceeded 70 inches. 1900, the year of the Great Storm, bettered this year's rainfall total by only 1.68 inches.

Although the official observing site for Houston is now Intercontinental Airport, other area airports exceeded Intercontinental's 2001 rainfall total. In fact, Hobby Airport easily exceeded the record from 1900, receiving 79.92 inches this year. However, no site record was set at Hobby, where 80 inches of annual rainfall has

Intercontinental Top 5 (1969-Present)			Hobby Top 5 (1929-Present)		
1	2001	71.18	1	1979	83.02
2	1973	70.16	2	1981	82.14
3	1991	61.09	3	2001	79.92
4	1997	60.23	4	1991	73.33
5	1979	58.97	5	1949	71.19

been recorded twice before. Hobby's all-time record of 83.02 inches is from 1979, during which Tropical Storm Claudette hit Southeast Houston particularly hard.

Again, Intercontinental Airport is the official observing site for Houston, and the 2001 rainfall total that goes into the record books is 71.18 inches. Consistent rainfall records for the city of Houston began in 1889. Since then, both Hobby and Intercontinental Airport have been the official climate site for the city at one time or another, but there is only one official climate site at any given time. Although records have been kept continuously at Hobby since 1929, only during the 1960s were these data used as the official climate record. The official temperature and precipitation records for the city of Houston are based on the following locations:

- 1889 - 1960      Downtown Houston
- 1960 - 1969      Hobby Airport
- 1969 - Present    Intercontinental Airport

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2001 Regionwide Rainfall Statistics		
IAH	Houston Intercontinental	71.18
HOU	Houston Hobby	79.92
SGR	Sugar Land (Hull Field)	59.18
LVJ	Pearland (Clover Field)	77.14
GLS	Galveston	42.48
HGX	League City (NWS)	75.55
LBX	Angleton/Lake Jackson	46.73
PSX	Palacios	47.08
CLL	Bryan/College Station	45.48
UTS	Huntsville	58.60
CXO	Conroe	64.06
DWH	Tomball (Hooks Airport)	67.77

Other locations around the Houston area received much more than any of the regional airports. The following are a few of the most impressive 2001 rainfall totals from National Weather Service cooperative observers:

Houston Heights	92.88
Anahuac	92.50
Deer Park	90.83
Port of Houston	87.68
Houston Westbury	73.88
Baytown	71.22

Although rainfall was well distributed throughout the calendar year, it is quite obvious that the locations that received the most rainfall from Tropical Storm Allison had some of the greatest rainfall totals for the year. Below

Port of Houston	36.99
Pearland (Clover Field)	21.41
Houston Hobby	20.84
Deer Park	20.53
Westbury	19.53
League City (NWS)	19.41
Conroe	17.48
Houston Intercontinental	16.48
Tomball (Hooks Airport)	15.02
Anahuac	13.01
Sugar Land (Hull Field)	12.17
Huntsville	12.16
Jamaica Beach	11.99
Alvin	11.23
Baytown	9.83
Galveston	9.77
Angleton/Lake Jackson	3.66
Bryan/College Station	3.49
Palacios	3.35

are some selected Allison rainfall totals (June 5-10, 2001):

As incredible as many of the storm totals are, it is interesting to note that no location in Southeast Texas received most of its yearly rainfall during Tropical Storm Allison. 2001 certainly had its share of other heavy rain events, and there was consistent rainfall throughout much of the year. Even with Allison's rainfall excluded, most locations still exceeded average yearly rainfall. In fact, Anahuac, where 13 inches of rain fell during Allison, was one of the wettest locations in the region, receiving nearly 80 inches of rain otherwise!

2002 begins with the introduction of new climate normals. Every 10 years, the National Climatic Data Center calculates 30-year temperature and precipitation normals for locations all across the United States. The new 1971-2000 normals, which became official the first day of 2002, are the first such normals to include data solely from Intercontinental Airport. The previous normals (1961-1990) were the last to include data from Hobby Airport.

The new normals include significant increases in average temperature and precipitation. Daily high and low temperatures both show increases from the previous normals. Although there are significant climatic differences between Intercontinental and Hobby, the rain and warmth of the most recent decade accounts for the increases in average temperature and precipitation. In other words, the inclusion of data from the 1990s is a far more significant factor in these changes than the elimination of the Hobby data from the 1960s. For the next decade, these new normals will serve as a summary of the present day climate of Southeast Texas.

2001 Data and Normals				
Houston				
	2001	1961-1990	1971-2000	Change in Normals
High	78.8	78.6	79.4	+0.8
Low	58.5	57.3	58.2	+0.9
Avg	68.6	67.9	68.8	+0.9
Precip	71.18	46.07	47.84	+1.77
Galveston				
High	76.4	74.3	76.6	+2.3
Low	65.2	65.0	65.7	+0.7
Avg	70.8	69.7	71.2	+1.5
Precip	58.60	42.28	43.84	+1.56
Bryan/College Station				
High	79.4	77.8	79.4	+1.6
Low	58.1	57.4	57.7	+0.3
Avg	68.8	67.6	68.6	+1.0
Precip	45.48	39.08	39.67	+0.59

Monthly Temperature/Rainfall Data and Normals								
Houston					1961-1990		1971-2000	
	High	Low	Avg	Precip	Avg	Precip	Avg	Precip
January	59.0	39.6	49.3	4.25	50.4	3.29	51.8	3.68
February	68.7	49.8	59.3	0.82	53.9	2.96	55.4	2.98
March	67.2	45.6	56.4	7.97	60.6	2.92	62.3	3.36
April	81.1	62.3	71.7	2.00	68.3	3.21	68.5	3.60
May	86.6	65.2	75.9	3.53	74.5	5.24	75.8	5.15
June	90.0	70.9	80.5	19.21	80.4	4.96	81.3	5.35
July	93.4	73.7	83.6	2.05	82.6	3.60	83.6	3.18
August	93.4	73.6	83.5	4.83	82.3	3.49	83.3	3.83
September	86.6	67.4	77.0	8.82	78.2	4.89	78.9	4.33
October	78.5	55.3	66.9	8.95	69.6	4.27	70.4	4.50
November	74.8	52.0	63.4	2.58	61.0	3.79	60.9	4.19
December	65.8	46.1	56.0	6.17	53.5	3.45	53.7	3.69
Galveston					1961-1990		1971-2000	
	High	Low	Avg	Precip	Avg	Precip	Avg	Precip
January	56.5	44.5	50.5	6.30	52.7	3.26	55.8	4.08
February	65.7	54.0	59.9	0.37	55.2	2.26	58.0	2.61
March	66.3	53.2	59.8	4.92	61.7	2.23	64.1	2.76
April	77.2	67.9	72.6	1.78	69.3	2.43	70.0	2.56
May	82.8	72.4	77.6	1.06	75.8	3.59	76.9	3.70
June	86.4	76.4	81.4	10.25	81.1	4.44	82.2	4.04
July	89.4	79.4	84.4	5.24	83.3	3.96	84.3	3.45
August	89.0	78.8	83.9	10.59	83.5	4.47	84.4	4.22
September	84.8	73.9	79.4	6.58	80.0	5.93	81.1	5.76
October	78.4	66.4	72.4	4.68	72.8	2.84	74.1	3.49
November	74.5	61.6	68.1	4.33	64.2	3.79	65.4	3.64
December	66.1	53.8	60.0	2.50	56.4	3.50	58.1	3.53
Bryan/College Station					1961-1990		1971-2000	
	High	Low	Avg	Precip	Avg	Precip	Avg	Precip
January	57.1	38.1	47.6	2.43	48.5	2.65	50.2	3.32
February	66.8	46.8	56.8	1.54	52.4	2.62	54.5	2.38
March	65.1	44.6	54.9	6.08	60.3	2.58	61.6	2.84
April	81.1	61.0	71.1	0.24	68.2	3.38	67.9	3.20
May	88.6	66.3	77.5	4.91	74.6	4.80	75.3	5.05
June	91.4	72.3	81.9	6.30	80.7	3.68	81.6	3.79
July	97.1	74.9	86.0	1.68	83.6	2.29	84.6	1.92
August	97.6	74.7	86.2	3.53	84.0	2.42	84.7	2.63
September	88.4	68.2	78.3	8.80	78.6	4.87	79.7	3.91
October	80.6	55.5	68.1	3.54	69.4	3.81	70.5	4.22
November	75.0	52.6	63.8	2.88	59.8	3.15	60.0	3.18
December	64.4	42.7	53.6	3.55	51.4	2.83	52.2	3.23

# Houston/Galveston Hurricane Workshop "Allison: Inland Flood Odyssey"

*By Gene Hafele*

The annual Houston/Galveston Hurricane Workshop will take place on Wednesday May 8 at the Pasadena Convention Center from 8am until 12 noon. This year's theme will center around Tropical Storm Allison and the problems associated with Inland Flooding.

The Workshop is still being put together as this issue of Storm Signals is being published. Dr. Steve Lyons, Hurricane Specialist at the Weather Channel, will be our featured speaker. Cecilia Sinclair of Fox 26 here in Houston will represent local media this year and Mr. Bill Read, Meteorologist In Charge of the Houston/Galveston NWS will set the stage by giving an overview of Tropical Storm Allison.

The workshop is again being sponsored by the **East Harris County Manufacturers Association (EHCA)**, the City of Pasadena and State Farm Insurance. There will be numerous vendors on hand displaying information on how to be prepared for the upcoming hurricane season. The workshop will once again be free and is open to the public.

## IFPS: A New Way of Preparing and Disseminating Weather Forecasts

*By Charles Roeseler*



The National Weather Service is currently in the process of modernizing its operations by bringing new technology into the forecast office and integrating it into the forecast process. IFPS or Interactive Forecast Preparation System is an interactive, graphic means of defining the forecast state of the atmosphere from a digital database of forecast values. Forecast products are automatically generated from this data and can be disseminated after forecaster review. Initialization of the digital forecast database is prepared from statistical and numerical models, as well as previous forecasts. From the initial forecast, tools within IFPS allow the forecaster to graphically interact and modify the database into its final form. IFPS will enable forecasters to produce a range of products with greater spatial and temporal detail. AWIPS (Advanced Weather Interactive Processing System) will format the forecast into a suite of products for dissemination such as text, voice-ready, and graphical images.

Here is a brief overview of how the process will work:

**STEP 1 - Initialize the database:** After reviewing observational and guidance data on an AWIPS workstation, the forecaster will determine which guidance data provides the best estimate of the future state of the atmosphere. The forecaster will select from a full range of guidance and previously prepared forecasts, locally

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*IFPS continued*

run models, climatology, and current observations. Forecasters will interactively select the desired forecast elements and insert them into the working forecast database.

**STEP 2 - Modify the database:** Once forecasters have initialized the database, they will adjust the information until it accurately reflects their mental image of the forecast state of the atmosphere. IFPS applications will provide a variety of tools to enter and edit the forecast data.

**STEP 3 - Generating Forecast Products:** Once satisfied that the forecast database accurately represents the future weather conditions, forecasters will create forecast products based on this data. IFPS will create text products and graphical images. As of January 1, 2002, the following text products can be produced by IFPS: Zone Forecast Product (ZFP), Revised Digital Forecast (RDF), coded cities forecast (CCF), and a Service Area Forecast (SAF) prepared for NOAA Weather Radio. Later this spring, marine and fire weather forecasts will also be available.

In addition to the aforementioned text products, graphical images will also be produced. These include:

Maximum and Minimum Temperature - daily out to 48 hours.

POP (Probability of Precipitation) - 12 hours out to 48 hours.

Relative Humidity and Wind Barb Composite - every three hours out to 48 hours.

Temperature and Wind Barb Composite - every three hours out to 48 hours.

Heat Index/Wind Chill - every three hours out to 48 hours.

The graphical images will have a white background with major cities and interstate highways noted. These images will have a spatial resolution of 5 kilometers. The legend at the bottom of each graphic will label the product type and the valid time of the product. These products will be displayed on the Houston/Galveston National Weather Service web site: [www.srh.noaa.gov/hgx](http://www.srh.noaa.gov/hgx). The images posted on our web site are customer driven. The current suite of graphical images will likely change over time based on public input. A national database will also be developed and this database will merge the data sets from other local National Weather Service offices from across the country to create a national composite of weather or temperature forecasts.

**STEP 4 - Updating the database:** After these products are generated, the forecaster has the responsibility for monitoring and maintaining the digital forecast database. With new data sets arriving from observations and guidance outputs, each forecaster will determine if this new data is significantly different from the official forecast database and whether the forecast requires an update. Update times will be somewhat irregular. Graphical images will be updated at least twice a day, once in the early morning and once in the late afternoon. Updates will occur as new model data becomes available or if conditions differ rather significantly from the current forecast.

Experimental graphics and the revised digital forecast will be posted on our homepage in the next few months. Official products will be issued routinely by the end of March. Look for the new products and let us know what you think. If there are other graphical products you would like added to our homepage, please send an e-mail to [charles.roeseler@noaa.gov](mailto:charles.roeseler@noaa.gov) or [sr-hgx.webmaster@noaa.gov](mailto:sr-hgx.webmaster@noaa.gov).

***Did you know...***

You can get current forecasts and other weather information through the NWS Interactive Weather Information Network at: <http://weather.gov>

All of the weather data gathered by the U.S. can be found through NOAA's National Climatic Data Center in Asheville, NC. They have a home page at <http://www.ncdc.noaa.gov>

# A New Year, A New Look

## The Changing Face of the NWS on the Internet

By Wendy Wong



In an effort to modernize the "face" of the National Weather Service on the World Wide Web, a new look for all NWS web pages has been developed. A standardized corporate web image for all NWS Office web sites is set to make its debut in the coming months.

What initially started out as a local product some 5 to 7 years ago by a handful of individuals in a handful of offices, has grown tremendously in popularity since that time. NWS homepages are now seeing about 1 million hits per day! This increased prominence of our webpages as a national dissemination tool has lead us to where we are today. The new corporate look of NWS homepages is intended to make data searches easier for the public as the overall layout of the homepages will be similar for each office.

To ease the transition for our users, the NWS Houston/Galveston homepage will be updated in stages beginning late February 2002. And sadly, due to time constraints and the new guidelines, we will be bidding adieu to the frames version of the webpage by March 2002.

We are excited by the changes and the improvements to services that the new webpages will bring. Please be patient and we look forward to your feedback on our new look.

## Skywarn 2002



By Matt Moreland

The Skywarn program was developed by the National Weather Service to train storm spotters to aid in severe weather operations. With trained storm spotters in the field, meteorologists at the National Weather Service have an eagle-eye view of current weather conditions and how they compare with what appears on radar. Skywarn spotters also enable us to have a severe weather verification program which helps us to improve accuracy on severe weather warnings.

### What is a Skywarn storm spotter?

A storm spotter is a trained volunteer who reports severe weather in his area to local emergency management and law enforcement officials or the National Weather Service. The storm spotter is not a storm chaser, he tends to stay close to home or work. The trained spotter is our eyes in the field and can provide us with severe weather information even where the radar cannot.

### How do you become a trained spotter?

Skywarn training classes take place in select southeast Texas counties during the late winter and early spring of each year, usually from February to April. The training course is about two hours long, held in the evening, and is open to the general public. At the end of the course, each participant will be given a certificate and a Skywarn emblem for their automobile, and information on how to participate in the Skywarn program. If you are interested in helping the National Weather Service with the valuable cause of severe weather detection, you are encouraged to attend.

If you are an emergency manager, sheriff, or other public official, and you are interested in scheduling a training class, please contact the Houston/Galveston National Weather Service Office at 281-337-5074. Please check our website at [www.srh.noaa.gov/hgx](http://www.srh.noaa.gov/hgx) for more information on training classes to be held in your area. Information will be posted and updated during the training season.

# Southeast Texas Severe Weather Awareness Week March 3-9, 2002



By Robert C. Van Hoven

Governor Rick Perry has proclaimed the week of March 3-9 as Severe Weather Awareness Week for the state of Texas.

During Severe Weather Awareness Week, the National Weather Service in coordination with the Texas Division of Emergency Management and the Insurance Information Institute will highlight various aspects of severe weather through press releases and Public Information Statements. Newspapers, broadcast media, safety organizations and other local government officials are encouraged to work with their communities to disseminate severe weather awareness information in order to prepare them for the upcoming severe weather season.

During each day of Severe Weather Awareness Week, special releases will be made by the National Weather Service to further emphasize important information about severe weather and the National Weather Service's job in warning the public.

Sunday, March 3 AM	Introduction to Severe Weather Awareness Week
Sunday, March 3 PM	Awareness and Preparedness
Monday, March 4 AM	Lightning (Facts and Safety Tips)
Monday, March 4 PM	Severe Thunderstorms (Facts and Safety Tips)
Tuesday, March 5 AM	Tornadoes (Facts and Safety Tips)
Tuesday, March 5 PM	Tornado Safety Rules and Shelters
Wednesday, March 6 AM	Flash Floods/Floods (Facts and Safety Tips)
Wednesday, March 6 PM	Watches and Warnings
Thursday, March 7 AM	NOAA Weather Radio/S.A.M.E
Thursday, March 7 PM	EMWIN
Friday, March 8 AM	Storm Ready
Friday, March 8 PM	SKYWARN



Brian Kyle, Tom Fountain and Daniel Huckaby

## 2002 Houston International Boat Show



By Brian Kyle

The 2002 Houston International Boat Show was held at the Reliant AstroHall and AstroArena from January 4th through January 13th. Similar to the past several years, NWS Houston/Galveston set up a booth among the other vendors of boats, marine products and services. As of this writing the attendance figure was not available, but the show has averaged around 140,000

people for the past several years. This was a great opportunity for the Houston/Galveston staff to meet with the marine community as they passed by the NWS booth and we enjoyed your comments and suggestions.

This year we had an internet connection available at our booth which allowed us to show off our website. In addition, we showed a sneak preview of a new graphical marine webpage many NWS offices will be implementing sometime this year. In addition to the standard text products, the NWS will also be producing graphical forecasts. Hopefully in the next month or two we will put the rough draft of the new marine page on our server for everyone to see. Keep checking the "What's New?" section of our homepage and be sure to pass along comments and/or suggestions regarding the new format once you view it.

## National Severe Weather Workshop March 1-2, 2002 Norman, OK

By Josh Lichter

The nation's premier severe weather experts will discuss their latest research findings and forecasting techniques during the second annual National Severe Weather Workshop on March 1-2, 2002 in Norman, OK. This workshop is designed for emergency managers, broadcast meteorologists, storm spotters and other weather enthusiasts. The event is sponsored by NOAA's National Weather Service, the Central Oklahoma Chapter of the American Meteorological Society/National Weather Association and the Oklahoma Emergency Managers Association. Last year's workshop was an overwhelming success, attracting more than 200 attendees from 20 different states.

This year, attendees will see severe weather experts from across the nation present the latest techniques for severe weather preparedness and response. Speakers will include National Weather Service leadership, broadcast meteorologists and emergency managers, as well as forecasters and researchers from National

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*Workshop continued*

Weather Service offices and the NOAA Weather Partners in Norman (including the Storm Prediction Center, National Weather Service Norman Forecast Office, National Severe Storm Laboratory, Radar Operations Center and the Warning Decision Training Branch).

Sponsor and vendor opportunities are available for businesses to promote their products or services during the event.

More information on this workshop can be found on the National Severe Storms Laboratory webpage at...

<http://www.nssl.noaa.gov/nsww2002/>

## THE SPRING STORM SEASON



Often in Southeast Texas, the most active season for severe weather is the collection of the spring months of March, April, and May.

With warm, moist air returning from the Gulf of Mexico and active frontal systems from the north and west, the Upper Texas Coast and Southeast Texas often experience numerous showers and thunderstorms.

There are mainly two big weather phenomena during the spring-thunderstorms and tornadoes. Tornadoes are associated with thunderstorms, but not every thunderstorm is capable of producing a tornado. However, thunderstorms can still produce significant damage without the presence of tornadoes. By definition, a thunderstorm produces lightning which is the number two weather related killer in the United States. The number one killer is flash floods which are also associated with thunderstorms. Despite the popularity or notoriety of hurricanes and tornadoes, the two main weather related killers can occur on a frequent basis. There are ways to help reduce the chances of suffering injury or damage during thunderstorms.

The best defense for spring thunderstorms is preparation. Try to keep updated to forecasts that might suggest severe weather. There are several signs that suggest a thunderstorm approaching. Thunder is often the best warning signal. Temperature changes and breezy winds also offer a clue to approaching weather. If you can hear thunder or feel cool breezes, you are close enough to the thunderstorm to be affected. If at all possible, take shelter in a sturdy building away from windows. Use phones only in case of an emergency. If a shelter is not available, find a hard top automobile and keep the windows up. A common myth about automobiles is that the rubber tires insulate the car. This is false as lightning can still strike the vehicle. But the vehicle will provide significantly more protection than the open ground. Stay away from towers, hills, and tall trees as objects protruding into the air are the ones most likely to be struck. The only time to move to higher ground is if flood waters have been seen or reported in your area. If at the lake or on the coast, get off and away from water. If caught in the open ground, find a low spot in the terrain away from trees and fences. Squat low to the ground and lean on the balls of your feet. As lightning strikes the ground,

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## The Spring Storm Season *continued*

it often spreads in several directions and can strike any object in the vicinity. By eliminating the area of ground that you are in contact with, you minimize your chance of being struck. If at all possible, stay informed by listening to advisories from commercial radio and television or to the National Weather Service's weather radio. With proper information and preparation, you can reduce the damage of severe thunderstorms to you, your family, and your property.

Tornadoes offer different problems, but many safety rules from thunderstorms apply. The best defense is again preparation. Practice tornado drills so that all members of the family or employees of business know the appropriate locations of tornado shelters. Don't panic. Move to an interior room away from windows. If at all possible cover yourself with blankets, pillows, or other soft objects. If driving, find a suitable low spot on the ground as quick as possible and abandon your vehicle. Do not try to outrun a tornado. If you reside in a mobile home, leave and find appropriate shelter as mobile homes offer little, if any, protection from tornadoes. Stay informed with the changing weather conditions.

By following these basic rules one can minimize the risk, and thus the damage, posed by the variety of spring severe weather over Southeast Texas.

### DEFINITIONS:

**Tornado Watch** - Conditions are favorable for the development of tornadoes (tornadoes are possible in the area).

**Severe Thunderstorm Watch** - Conditions are favorable for the development of severe thunderstorms (severe thunderstorms are possible in the area).

**Tornado Warning** - Tornadoes are imminent or are occurring in the area.

**Severe Thunderstorm Warning** - Severe thunderstorms are imminent or are occurring in the area.

## **TORNADO FACTS**



- \$ 800 tornadoes are reported nationwide in an average year, resulting in 80 deaths
- \$ The damage path of some large tornadoes can be in excess of one mile wide and 50 miles long
- \$ Average forward speeds of tornadoes vary from 0 to 70 mph
- \$ Tornadoes are most likely to occur between 3pm and 9 pm, but can happen at anytime
- \$ In the southern states, prime time for tornadoes occurs between March and May
- \$ The peak months for tornadoes in the northern states are during the summer
- \$ The average tornado moves southwest to northeast, but can take any direction
- \$ A tornado, or series of tornado touchdowns, can last anywhere from a minute to more than one hour

# Storm Signals Questionnaire

**Thank you to everyone that answered our questionnaire! If you have not responded yet, please do so either by email or by returning this questionnaire to us.**

We are attempting to improve the quality of "Storm Signals" and make it available to more of our users. In addition, we are trying to cut the cost of producing and mailing the publication to our readers. It is our desire to convert the majority of the distribution from mailing it to allowing you to download the publication from the internet. We would notify you via email that the latest publication is available and you would then go and download the latest issue. (You can now download our special issue on Tropical Storm Allison at [www.srh.noaa.gov/hgx/stormsignals](http://www.srh.noaa.gov/hgx/stormsignals)) At the same time, we would like to improve the content of the publication to have information that you find useful. If you would take time to answer the following questionnaire and return it to the Houston/Galveston National Weather Service Office, we would appreciate it.

**IF WE DO NOT HEAR FROM YOU EITHER THROUGH THIS LETTER OR THROUGH YOUR EMAIL REPLY, YOU WILL BE DROPPED FROM OUR MAILING LIST.**

1. Would you be willing to download "Storm Signals" from the Houston/Galveston National Weather Service homepage?

\_\_\_\_\_ Check here if you want to receive "Storm Signals" from the internet

\_\_\_\_\_ Check here if you still want to receive "Storm Signals" by regular mail

**Your information...**

**Name** \_\_\_\_\_

**Street Address** \_\_\_\_\_

**City, State, Zip** \_\_\_\_\_

**Email Address** \_\_\_\_\_

2. What features of "Storm Signals" do you enjoy?
3. What suggestions for improvement do you have for "Storm Signals" publication?  
(Different kinds of articles? Too long? Too short?)

Please return this questionnaire to: Houston/Galveston NWS  
1620 Gill Road  
Dickinson, TX 77539

or email it to [SR-HGX.NWS@noaa.gov](mailto:SR-HGX.NWS@noaa.gov).