

*A Frontline Special Section*

# Hurricane Safety

An aerial photograph of a hurricane, showing a well-defined eye and a dense, swirling cloud structure over a dark ocean. The image is the central focus of the cover, with a blue and white color palette.

*A preparedness guide  
for Fort Stewart and Hunter Army*



**Department of the Army**  
HEADQUARTERS, 3D INFANTRY DIVISION AND FORT STEWART  
42 WAYNE PLACE, SUITE 204  
Fort Stewart, Georgia 31314-5048

19 August, 2004

**MEMORANDUM FOR** All Fort Stewart and Hunter Army Airfield military and civilian personnel

**SUBJECT:** Personal Hurricane Survival

1. The threat of a hurricane to this area is real and warrants utmost attention for preparation and action. It is important that we all know what to expect during one of these storms, and what to do to reduce the risk to our families and ourselves.

2. I strongly encourage you to take appropriate preventive measures, and urge you to read this handbook that identifies changes and adapt your actions and checklists to your personal needs. Keep in mind that hurricanes are destructive storms. Your safety could depend on your actions and preparations.

John M. Kidd  
Colonel, U.S. Army  
Garrison Commander

# *I n t r o d u c t i o n*

Hurricanes can cause widespread damage without ever making landfall. Tropical systems from the Atlantic Ocean and Gulf of Mexico have caused major flooding and inland winds as far north as the mountain regions in Georgia. In addition, rapid population growth along the hurricane-prone coastline increases the risk of loss of life and extreme property damage. Everyone takes personal responsibility for taking appropriate preventive measures and prepare himself or herself in the event of a hurricane.

## *Command Hurricane Policy*

- Commanding General will make all decisions requiring evacuation of Fort Stewart and Hunter Army Airfield (HAAF). Local county Emergency Management Agencies will decide on evacuation within their jurisdictions. Battalion and company commander's will "be prepared" to use their respective battalion headquarters and company orderly rooms to shelter evacuees.
- Fort Stewart decisions will follow the principal of "**run from the water, hide from the wind.**"
- Greatest Threat is Wind Damage, Not Storm Surge.
- MARNE TV is the official source of news, information, and updates. The internet will also be used.
- Soldiers may have duties that prevent their evacuation with their families.
- If local evacuations are directed and Fort Stewart does not evacuate, Fort Stewart will accept as many military families as possible.
- On and off post families must be prepared to evacuate without their sponsors. Preparation is critical to success.
- Do not bring pets to the shelters.

# *Evacuation Policy*

## **Fort Stewart**

- The Central In-Processing Center for evacuees is Mower Gymnasium, building number 208. This serves as the Central In-processing Center for all Fort Stewart Shelters, however each shelter will have an in-processing center. The designated parking for Mower Gymnasium is the Mower Gym parking lot.
- Privately owned vehicles (POV) will be used to evacuate when possible.
- During some hurricanes, the Commanding General will decide that soldiers residing in barracks will remain there and will encourage families in Army Family Housing to also remain there.
- During other hurricanes, the Commanding General will decide that soldiers residing in barracks will evacuate to the location specified by their respective chains of command. Soldiers residing in Army Family Housing will evacuate via POV to the location specified by their respective chains of command. Family members of soldiers residing in Army Family Housing will be encouraged to evacuate to the same location as their spouses.
- Soldiers and family members residing off-post will follow the orders and directives of their respective Civilian Emergency Management Agency (EMA).

## **Hunter Army Airfield**

- There will be no shelters opened on Hunter Army Airfield (HAAF).
- During some hurricanes, the Commanding General will decide that soldiers residing in barracks and families in Army Family Housing will remain there.
- During other hurricanes, the Commanding General will decide that soldiers residing in barracks will evacuate to the location specified by their respective chains of command. Soldiers residing in Army Family Housing will evacuate via POV to the location specified by their respective chains of command. Family members of soldiers residing in Army Family Housing will be encouraged to evacuate to the same location as their spouses.
- Soldiers and family members residing off-post will follow the orders and directives of their respective Civilian Emergency Management Agency (EMA).

# *Fort Stewart Central Inprocessing Center*

Mower Gymnasium, building number 208, is the Central In-processing Center for all Fort Stewart Shelters. Designated Parking is in the Mower Gym parking lot.

## *Fort Stewart Shelters*

### **FACILITY/BUILDING**

### **RESPONSIBLE UNIT**

- **Jordan Gymnasium, Building 608, phone # 767-5079.....1st Bde.**
- **Caro Gymnasium, Building 708, phone # 767-4763.....4th Bde.**
- **Mower Gymnasium, Building 208, phone # 767-8894.....1st Bde.**
- **Newman Gymnasium, Building 439, phone # 767-3031.....2nd Bde.**
- **Diamond Elementary School, Building 5602, phone # 876-6094....Fires Bde.**
- **MARNE Bowling Center, Building 402, phone # 767-4866.....1st Bde.**
- **MARNE Chapel, Building 610, phone # 767-8801.....2nd Bde.**
- **Victory Chapel, Building 2125, phone # 767-7028.....2nd Bde.**

# *Evacuation Routes*

Soldiers and family members residing off-post will follow the orders and directives of their respective Civilian Emergency Management Agency (EMA). Once the evacuation begins it is imperative for all personnel to pay particular attention the hurricane evacuation route signing.

Additionally, the Georgia Emergency Management Agency (GEMA) in conjunction with the Georgia Department of Transportation (DOT) will have portable electronic message boards along the routes containing updated directions and information. The Coastal Georgia Evacuation Routes are:

## **Chatham County:**

Highway 21

US 80

I-16

Highway 204 to US 280

## **Bryan County:**

Highway 144 to US 301 (Glennville)

## **Liberty County:**

Highway 84 to Highway 196 to Highway 301 (Glennville)

# *Georgia Emergency Management Agency* **Hurricane Evacuation Routes**



## **Establish a “family contact”**

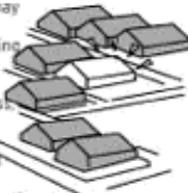
In case family members are separated from one another during a disaster (a real possibility during the day when adults are at work and children are at school), have a plan for getting back together. Ask an out-of-state relative or friend to serve as the “family contact.” After a disaster, it’s often easier to call long distance. Make sure everyone in the family knows the name, address, and phone number of the contact person.

# Civilian Shelter Locations

If soldiers and/or their families are required to evacuate their off-post residences, they should go to one of the primary or alternate inland shelters identified on the following map. Register every person arriving with you at the shelter and check-in with the Military Liaison Officer. Do not take alcoholic beverages or weapons of any kind into the shelters.

## How community shelters will be opened for coastal evacuees

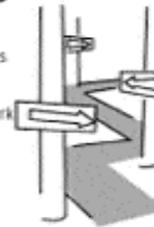
Numerous shelters may be certified in a community, but staffing restraints limit the number that are opened. The Red Cross, Georgia Emergency Management Agency and communities will decide which communities will accept evacuees.



Prior to evacuating, people should stay informed by local media to determine which communities will accept evacuees. During the drive, people can listen to Georgia Public Radio stations for updated information. (Radio stations below.)



Upon entry into that community, directions to a shelter will be marked by the Red Cross. Arrows will mark the way to the open shelter.



### Local shelters

In a Category 3, 4 or 5 there will be no shelters open in Chatham County. Other counties will make their decisions known upon an impending storm. In case of a Category 1 or 2 hurricane, these counties may open the following inland shelters:

### Ga. counties

**Chatham:** Will use selected area schools and churches. Names will be announced.

**Bryan:** Bryan County High School and Bryan County Elementary School.

**Effingham:** Guyton, Ebenezer and Sandhill elementary schools

**Liberty:** First Baptist Church and Bradwell High School in Hinesville.

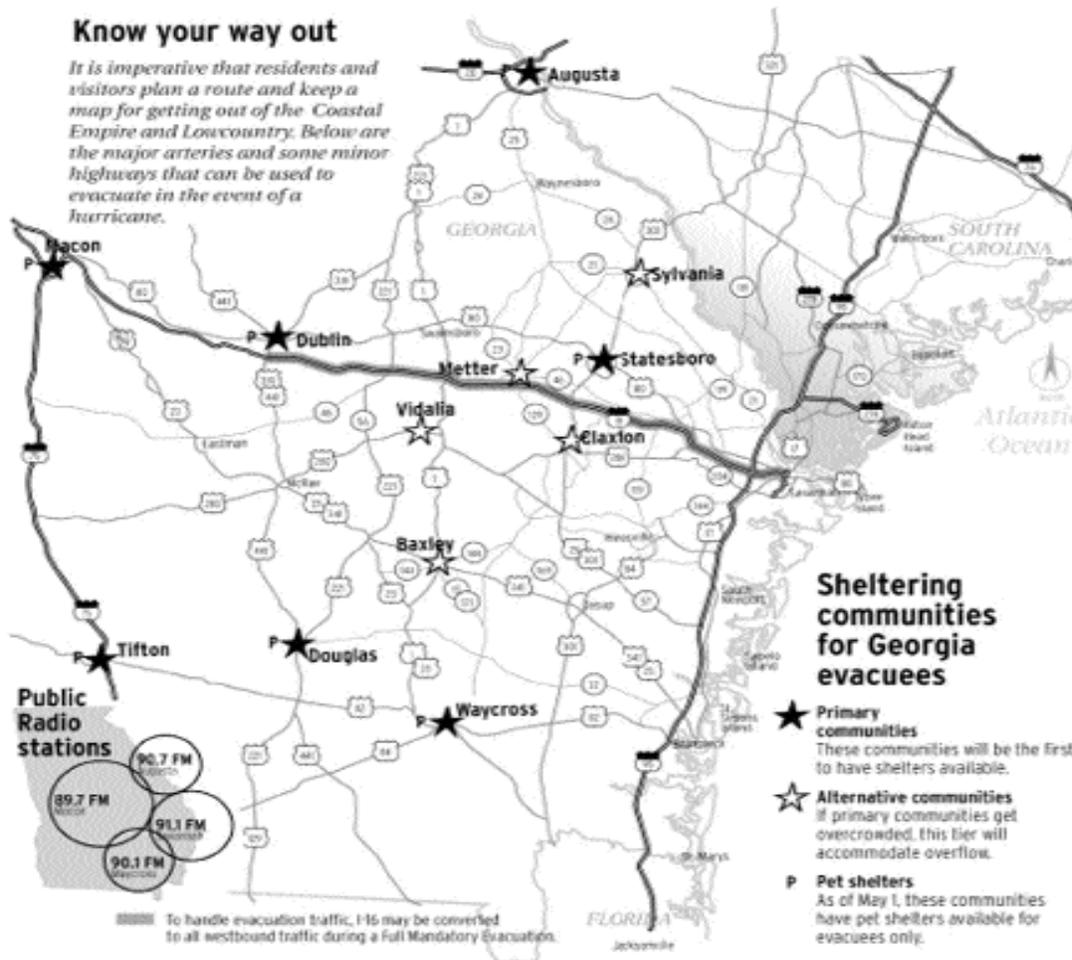
### S.C. counties

**Beaufort:** Michael C. Riley School, Bluffton: Battery Creek High, Burton: Beaufort Elementary, Beaufort.

**Jasper:** Coosawhatchie Community Center, Coosawhatchie: Jasper County High, Ridgeland: Robertville Community Center, Robertville: and Ridgeland Elementary and Middle schools, Ridgeland.

## Know your way out

It is imperative that residents and visitors plan a route and keep a map for getting out of the Coastal Empire and Lowcountry. Below are the major arteries and some minor highways that can be used to evacuate in the event of a hurricane.



## Sheltering communities for Georgia evacuees

- ★ **Primary communities**  
These communities will be the first to have shelters available.
- ☆ **Alternative communities**  
If primary communities get overcrowded, this tier will accommodate overflow.
- P **Pet shelters**  
As of May 1, these communities have pet shelters available for evacuees only.

To handle evacuation traffic, I-16 may be converted to all westbound traffic during a Full Mandatory Evacuation.

# *Where to get information*

## **Peach State Radio Frequencies**

Peach State Public Radio is Georgia's public radio network, which collaborates with the Georgia Emergency Management Agency (GEMA), and other agencies to provide "real time" information people need during a hurricane. Tune to these FM radio frequencies in the following areas for severe weather information:

**Albany** — 91.7

**Athens** — 91.7/97.9

**Augusta** — 90.7

**Brunswick** — 89.1

**Carrollton** — 90.7

**Columbus** — 88.1

**Dahlonega** — 89.5

**Demorest** — 88.3

**Fort Gaines** — 90.9

**Macon** — 89.7

**Savannah** — 91.1

**Tifton** — 91.1

**Valdosta** — 91.7

**Waycross** — 90.1

## **Hurricane-related websites**

The following partial listing of weather and hurricane related websites is provided for your information and access:

■ **The Weather Channel:** [www.weather.com](http://www.weather.com)

■ **National Hurricane Center:** [www.nhc.noaa.gov](http://www.nhc.noaa.gov)

■ **National Weather Service Forecast Office, Charleston, SC:**  
[wchs.csc.noaa.gov](http://wchs.csc.noaa.gov)

■ **Hurricane Storm Surge: Causes and Effects:**  
[www.gastormsurge.com/chathamb.html](http://www.gastormsurge.com/chathamb.html)

■ **Savannah Morning News:** [www.savannahnow.com](http://www.savannahnow.com)

■ **Links to Emergency Management & Related Sites:**  
[www.nhc.noaa.gov.aboutlinkem.html](http://www.nhc.noaa.gov.aboutlinkem.html)

■ **American Red Cross:** [www.redcross.org](http://www.redcross.org)

■ **Shelter Information:** [www.gema.state.ga.us.nsf](http://www.gema.state.ga.us.nsf)

Item	YES	NO	NA
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Are flashlights available and serviceable?

Are candles on hand?

Is there a serviceable portable radio available?

Are spare batteries on hand for flashlights and radios?

Have flood insurance policies been purchased?

Has there been family discussion about hurricane preparation and evacuation?

Do you have a secure place to store valuables?

Do you have important papers centrally located so you can take them with you during evacuation?

Have all checklists been reviewed?

Have you contacted and designated an out-of-state friend or relative to serve as your family point of contact?

Have you made hotel/motel reservations outside of the affected area (safe zone) if not planning to stay in a shelter?

**HURCON 4 (H-72 Hours)**

Is the vehicle you plan to use to evacuate in serviceable condition with a full tank of gas?

Are non-perishable foods (3 day supply) on hand?

canned meats, fruits, vegetables and soup

canned or powdered milk

staples—salt, pepper and sugar

high energy foods—peanut butter, jelly and crackers

vitamins

baby foods and formula

special foods for special dietary needs

snack items

**Item**

**YES**

**NO**

**NA**

Are sufficient medical supplies and medications on hand for the next 2 to 4 days?

bandages (assorted sizes)

adhesive tape

scissors

tweezers

antiseptic

thermometer

safety pins

cleaning agent/soap

sunscreen

aspirin or nonaspirin pain releiver

anti-diarrhea medication

syrup of Ipecac and/or activated charcoal

laxative

Are special needs type items on hand?

baby formula, diapers, powdered milk, medications

heart and high blood pressue medication

insulin

prescription drugs

dentures, contact lenses and supplies, extra eyeglasses

**Item**

**YES**

**NO**

**NA**

**HURCON 3 (H-48 Hours)**

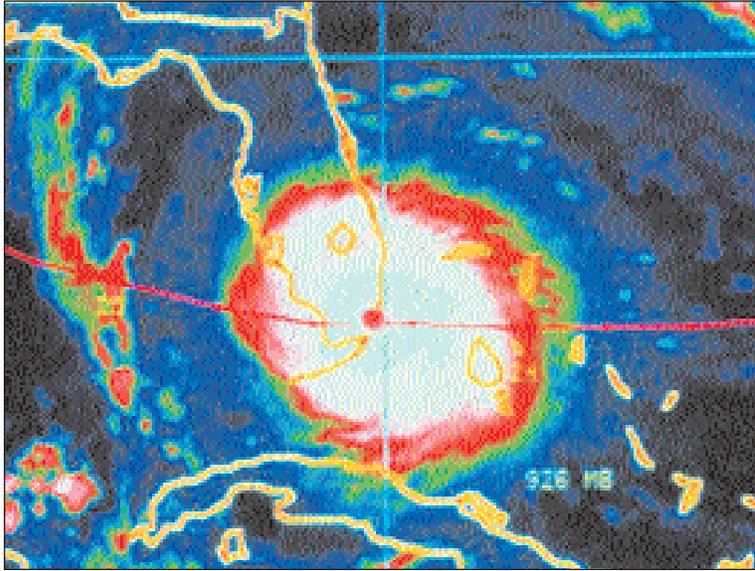
- Are radios being used to keep you informed of the hurricane's progress?
- Is your car fueled?
- Has the hospital been informed of any special-care problem that may come from evacuation of handicapped or bedridden family members?
- Are windows taped and boarded to prevent shattering?
- Have all antennas been removed from buildings?
- Are valuables moved up high to avoid water damage?
- Have outside areas been cleared or loose objects such as yard furniture, trash cans, potted plants, water hose, toys, bar-b-que grills, etc.?
- Are containers filled with several days supply of water?
- Have all trailer mounted boats and campers been secured?
- Have you turned fridge and freezer controls turned to maximize cold?
- Have private aircraft been secured?
- Has kennel space been arranged?
- Has sufficient cash been obtained to pay expenses?
- Only use phone for emergencies

**HURCON 2 (H-24 hours)**

- Have you called your next of kin to inform them of your decision to evacuate?
  
- Have you made a final check of the outside area?
  
- Have you checked with your neighbors to see if any assistance is needed?
  
- If going to a hurricane evacuation shelter, have you packed the following:
  - blankets/pillows/bedding items
  - nonperishable food items/snacks
  - baby items
  - prescription drugs and other medications
  - extra clothing items
  - personal hygiene items
  - flashlight and extra batteries
  - toys, books and other children's games

# Hurricanes

There are no other storms like hurricanes on Earth. Views of hurricanes from satellites located thousands of miles above the planet show how unique these powerful, tightly coiled weather systems are.



## What is a hurricane?

A hurricane is a type of tropical cyclone, the general term for all circulating weather systems (counterclockwise in the Northern Hemisphere) over tropical waters. Tropical cyclones are classified as follows:

- **Tropical Depression:** An organized system of clouds and thunderstorms with a defined circulation and maximum sustained winds of 38 mph (33 knots) or less.
- **Tropical Storm:** An organized system of strong thunderstorms with a defined circulation and maximum sustained winds of 39 to 73 mph (34-63 knots).
- **Hurricane:** An intense tropical weather system with a well-defined circulation and maximum sustained winds of 74 mph (64 knots) or higher. In the western Pacific, hurricanes are called "typhoons" and similar storms in the Indian Ocean are called "cyclones."

Hurricanes are products of the tropical ocean and atmosphere. Powered by heat from the sea, they are steered by the easterly trade winds and the temperate westerlies as well as by their own ferocious energy. Around their core, winds grow with great velocity, generating violent seas. Moving ashore, they sweep the ocean inward while spawning tornadoes and producing torrential rains and floods. The hurricane season begins June 1 and runs through November 30. This season's prediction includes at least 11 tropical storms, seven or more of which becomes hurricanes, and three or more become major or intense hurricanes of Category 3 or higher on the Saffir-Simpson Hurricane Scale. Most of the above-average activity will occur during the peak period of the season from August to October. The overall activity including storm duration, intensity, and the number of storm days is very high.

## Saffir-Simpson Hurricane Scale

<u>Category</u>	<u>Winds</u>	<u>Damage</u>
1	74-95	Minimal
2	96-110	Moderate
3	111-130	Extensive
4	131-155	Extreme
5	155-above	Catastrophic

Timely warnings have greatly diminished hurricane fatalities in the United States. In spite of this, property damage continues to mount. There is little we can do about the hurricanes themselves.

# How hurricanes form

## Breeding Grounds

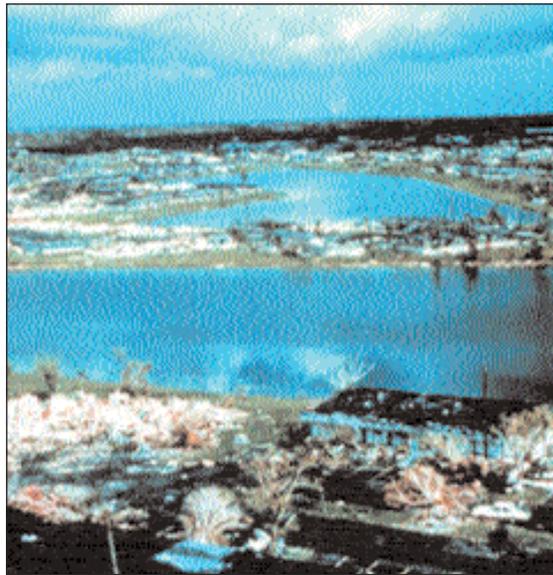
In the eastern Pacific, hurricanes begin forming by mid-May, while in the Atlantic, Caribbean and Gulf of Mexico, hurricane development starts in June. For the United States, the peak hurricane season extends through November. Over other parts of the world, such as the western Pacific, hurricanes can occur year-round. Developing hurricanes gather heat and energy through contact with warm ocean



waters. The addition of moisture by evaporation from the sea surface powers them like giant steam engines

## Storm Structure

The process by which a disturbance forms and subsequently strengthens into a hurricane depends on at least three conditions. Warm waters and moisture are mentioned above. The third condition is a wind pattern near the ocean surface that spirals air inward. Bands of thunderstorms form, allowing the air to warm further and rise higher into the atmosphere. If the winds at these higher levels are relatively light, this structure can remain intact and allow for additional strengthening. The



center, or eye, of a hurricane is relatively calm. The most violent activity takes place in the area immediately around the eye, called the eyewall. At the top of the eyewall (about 50,000 feet), most of the air is propelled outward, increasing the air's upward motion. Some of the air, however, moves inward and sinks into the eye, creating a cloud-free area.

### 2004 Hurricane

#### Names

Alex  
Bonnie  
Charley  
Danielle  
Earl  
Frances  
Gaston  
Hermine  
Ivan  
Jeanne  
Karl  
Lisa  
Matthew  
Nichole  
Otto  
Paula  
Richard  
Shary  
Tomas  
Virginie  
Walter

# Storm Fury

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## Tornadoes

Hurricanes also produce tornadoes, which add to the storm's destructive power. The tornadoes often occur in thunderstorms embedded in rain bands well away from the center of the storm, but they can also occur in the eyewall.



## Winds

Hurricane-force winds, at 74 mph or more, can destroy poorly constructed buildings and mobile homes. Debris, such as signs, roofing material, siding and small items left outside, can become deadly missiles in a hurricane. Winds

often stay above hurricane strength well inland. Hurricane Hugo battered Charlotte, N. C., which is about 175 miles inland, with gusts near 100 mph, downing trees and power lines.

## Heavy Rains & Floods

Widespread torrential rains, often in excess of six inches can produce deadly and destructive floods. This is the major threat to all areas well inland.

■ Tropical Storm Claudette (1979) brought 45 inches of rain to an area near Alvin, Texas, contributing to more than \$600 million\* in damage.

■ Long after the winds of Hurricane Diane (1955) subsided, the storm brought

floods to Pennsylvania, New York and New England that contributed to nearly 200 deaths and \$4.2 billion\* in damage.

■ Hurricane Agnes (1972) fused with another storm system, producing floods in the Northeast United States which contributed to 122 deaths and \$6.4 billion\* in damage.

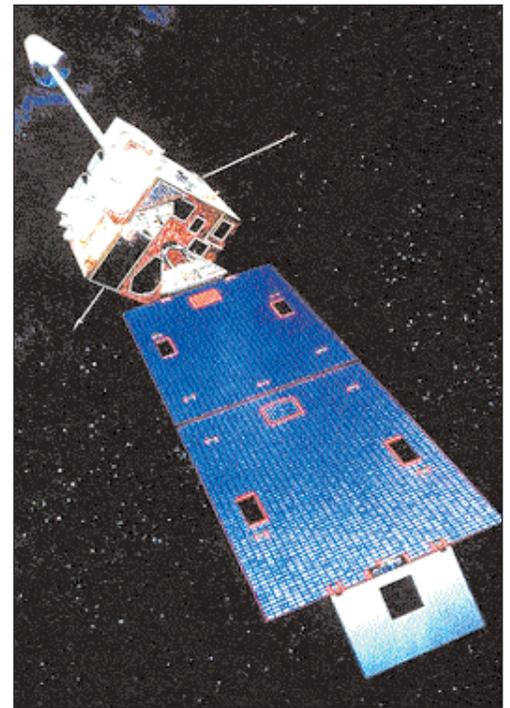
\*Adjusted to 1990 dollars

# Surveillance and Forecasting

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## Satellite

Geostationary satellites orbiting the earth at an altitude of about 22,000 miles above the equator provide imagery both day and night. The satellite imagery helps provide estimates of the storm's position and predicted landfall.



## Reconnaissance Aircraft

The U.S. Air Force Reserve provides most of the operations reconnaissance. Pilots fly aircraft into the core of a hurricane to measure wind, pressure, temperature and humidity as well as to provide an accurate location of the center of the hurricane.

## Radar

When a hurricane gets close to the coast, it is monitored by land-based weather radars.

The National Weather Service is currently installing Doppler Weather Radars across the country which will add new dimensions to hurricane warning capabilities. They will provide detailed information on hurricane wind fields and their changes. Local NWS offices will be able to provide more accurate short-term warnings for floods, tornadoes and inland high winds.

