



1998 WILDLAND FIRE OUTBREAK

From April to July, extreme wildland fires raced through Florida (Figure 1) sending residents fleeing for safety and destroying homes, vehicles, and property. Nearly a half million acres burned over the course of the outbreak, while maximum temperature records and precipitation deficits soared. Three lives were lost with many reported health impacts. In July, rainfall aided the massive firefighting response to extinguish the outbreak.

FRIDAY, JUNE 19, 1998

The Florida Times-Union ...

www.jacksonville.com JACKSONVILLE, FL © 1998 — 133rd Year — Number 170 — 9 Sections — 14 Pages

Day 4 under fire

■ Clinton declares Duval a disaster area ■ Fires controlled, but embers a concern

By Kathleen Sweeney Times-Union staff writer

It's been the worst outbreak of wildfires some fire officials have ever seen, and where they'll strike next is anyone's guess.

Over the scattered showers that passed through some Northeast Florida counties last night didn't bring much hope. It rained briefly on the West side of Jacksonville near Chaffee Road.

Duval and St. Johns counties were two of the eight counties declared a disaster area by President Clinton yesterday. The declaration authorizes federal disaster officials to send money to stricken areas.

All of Duval County's fires were under control last night, and no injuries were reported. An area south of Interstate 10 in Sanderson was evacuated last night.

Winds are carrying hot embers from the wildfires around Northeast Florida and dropping them in hidden places, leaving them to smolder in wooded areas until the next wave of dry, hot wind and low humidity ignites their flames.

"Embers are flying, some as far as a quarter-mile," Jacksonville firefighters said.

See WE HAVE, Page A-6

Rainmaking secrets bedevil rainmakers

By John Carter Times-Union staff writer

Centuries ago, Timucuan tribes in Northeast Florida had a unique way of dealing with the stress and anxiety caused by intense heat and drought. They threw up.

And we worry about how we're handling the heat.

When things started going badly, including the environment, the Timucuan would drink cassia, a strong tea made from the parched leaves of a spongy berry, said Craig Morris, park ranger at the Jacksonville Timucuan Ecological and Historic Preservation Center.

The drink, with five times the caffeine of coffee, made them rehydrated.

"The idea was to purify yourself," Morris said. "Get rid of the bad stuff. It was sort of the idea of the sweat lodge, only in the Florida humidity a sweat lodge would have probably killed them."

Morris quoted 18th century ethnographer James Adair, who studied the behavior of American Indians in the Southeast, on the subject: "Irregularities in the weather were believed to be caused by men becoming impure through improper behavior."

When the rain did come, Morris said, Timucuan believed they shouldn't seek cover too quickly or the rain would stop.

According to Adair's 1775

See EVERY, Page A-7

Gov. Lawton Chiles surveys the forest fires near Wildcat from an Army National Guard UH-60 Blackhawk helicopter yesterday. He says the state's spent up to \$20 million fighting the fires.

— WB Dickery/staff

BY THE NUMBERS

- 17,046 — Acres destroyed in Duval, Nassau, St. Johns and Clay counties by wildfires this week.
- 2,000 — Number of meals American Red Cross has provided to firefighters and evacuated residents in Duval, Nassau and Clay counties this week.
- 100 — Jacksonville residents evacuated.
- 400 — State Forestry Division firefighters battling blazes daily throughout Florida.
- 245 — Jacksonville firefighters battling blazes daily.
- 182 — Homes, buildings, vehicles damaged by wildfires.
- 80 — Fires in Florida over past two weeks.
- 8 — Counties included in President Clinton's federal disaster area declaration.
- 5 — Northeast Florida's fire readiness level, highest possible.
- 0 — Amount of significant rain in Northeast Florida since May 27.

Sources: Florida Department of Community Affairs, Agricultural Commissioner Chiles, National Weather Service.

— Compiled by Dan Beaman

"The flames were from the ground all the way up to the canopy of the trees," said Delaney, a volunteer firefighter in Lake County. Popping, crackling, and whooshing sounds accompanied the flames as they spread from one dry patch to the next. "You'd hear it when it was coming toward you," Jensen said, a Volusia County volunteer firefighter and Casselberry's fire inspector. *The Orlando Sentinel*, June 14, 1998

Figure 1. *The Florida Times-Union*, June 19, 1998.

This touchstone event summary highlights an exceptional weather event, the wildland fire outbreak of 1998, and related health outcomes in Florida. Utilizing the Florida Climate Extremes Index, technical reports, and newspapers, a touchstone event was identified for this priority hazard. It is important to note that these reports were not validated with vital statistics or notifiable disease surveillance data. Experiences and memories from historical events can highlight the importance of public health preparedness and adaptation planning.

METEOROLOGICAL SET-UP

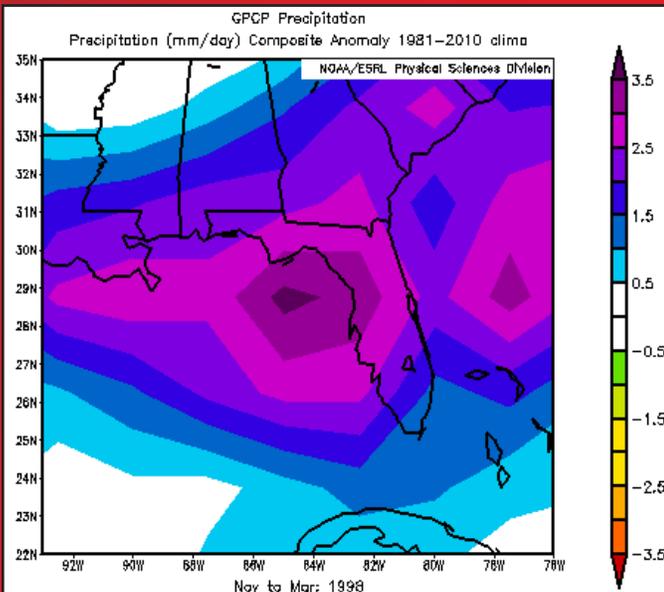


Figure 2. Precipitation Anomalies (mm/day) November 1997 to March 1998
Earth Systems Research Laboratory, NOAA

The winter of 1997/1998 consisted of mild temperatures and above average rainfall due to the presence of a strong El Niño. This supplied much growth to underbrush and vegetation (Figure 2).

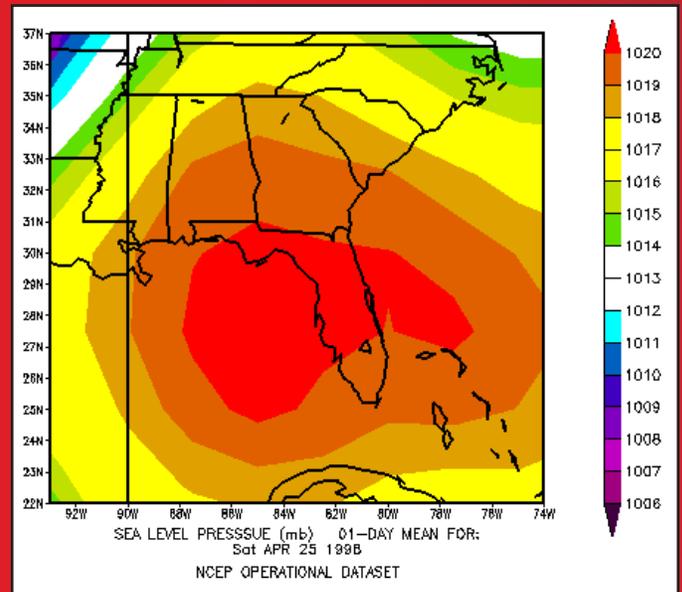
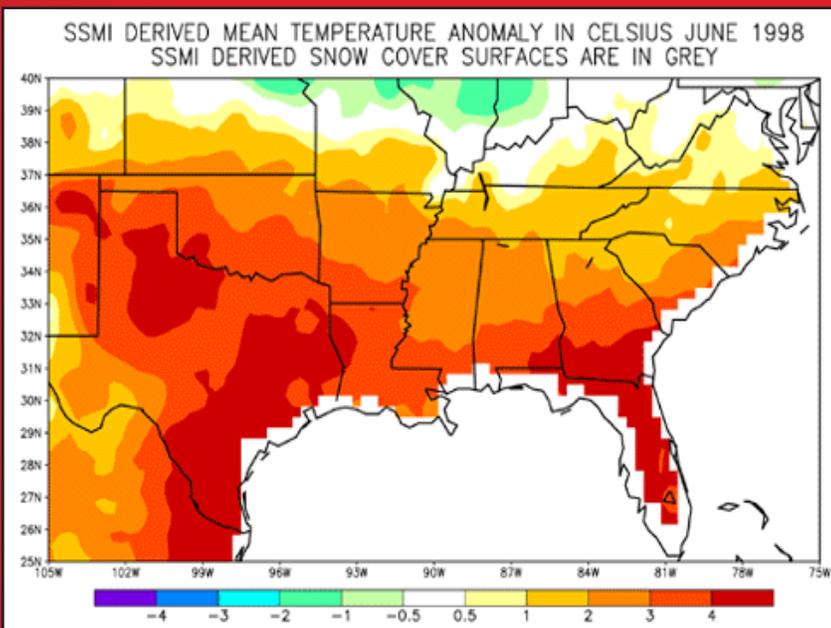


Figure 3. Sea Level Pressure (mb) April 25, 1998
Earth Systems Research Laboratory, NOAA

High pressure remained over Florida from late April to early July, causing a drought from May to June (Figure 3).



Record high temperatures set in by summer, drying out vegetation creating massive amounts of fuel for fires (Figure 4).

Ignited by lightning and arson, catastrophic fires lasted well into July.

Figure 4. Mean Temperature Anomalies (°C) June, 1998 (4°C ≈ 7°F difference)
NOAA

1998 Wildland Fire Outbreak

IMPACTS

- » Nearly 500,000 acres were burned over the course of the outbreak.
- » Fires or emergency status was reported in all 67 Florida counties, with north and central Florida having the largest concentration of fires (Figure 5).
- » Governor Chiles declared a state of emergency on June 18, 1998.
- » An estimated total of \$620 million in losses and damages was attributed to the fires.

The wildland fires affected large portions of Florida, including heavily populated areas, resulting in three indirect deaths with many reports of health outcomes:

- » Burns
- » Heat-related illnesses
- » Injuries
- » Mental health impacts
- » Respiratory issues
- » Traffic accidents

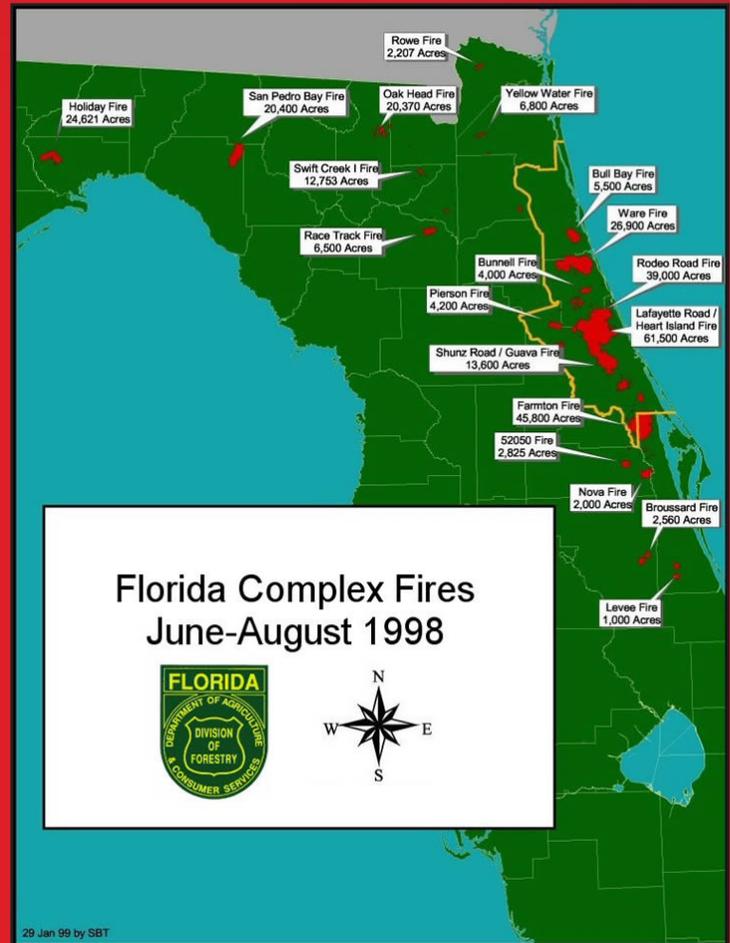


Figure 5. June-August 1998 Fire Location and Acreage Map, Florida Forest Service

MASSIVE RESPONSE

To combat the widespread fires, aid and resources from many different local, state, and federal agencies were mobilized.

- » Over 10,000 firefighters responded.
- » 40 U.S. states sent supplies and reinforcements.
- » It was the largest aerial fire suppression operation in the U.S. to date.
- » The magnitude and complexity of the operations challenged existing incident management systems.



1998 Wildland Fire Outbreak

EVACUATIONS AND EXPERIENCES

Over 120,000 Florida residents evacuated, which included entire counties at a time (Figure 6). Evacuees were directed to other counties, shelters, or hotels, unable to return to their homes for days, not knowing if they would return to anything at all (Figure 7). Meanwhile, large portions of I-95, U.S. 1, and Florida A1A were at high risk due to nearby smoke and fires, which resulted in closures of some sections.

Entire county told to flee

■ Fearing that escape routes could be cut off as fires continued to spread, Flagler County orders everyone to evacuate.

By GEOFF DOUGHERTY, PETER WALLSTEN and CRAIG PITTMAN
Times Staff Writers

BUNNELL — Flagler County turned into a ghost town Friday as all 45,000 residents were ordered to flee the wildfires rampaging across northeast Florida.

Forty homes and several businesses in Flagler fell victim to the raging inferno as it swept through the area south of St. Augustine.

With crackling fires consuming pine trees and brush to the north, south and west, residents of the towns of Flagler Beach, Palm Coast and Bunnell packed up pets, keepones and family heirlooms and hit the road, some of them for the second or third time.

Instead of a Fourth of July parade, Flagler residents held a bumper-to-bumper exodus to safety. State Road 100, lined with American flags in anticipation of holiday celebrations, was backed up for miles Friday afternoon with evacuees heading inland toward Palatka. Behind them, the sky glowed orange.

Earlier this week, some 40,000 people had been ordered out of

sparsely populated coastal county kicked into "hurricane evacuation mode," said Flagler County Sheriff Robert McCarthy.

By late afternoon, McCarthy estimated, 99 percent of Flagler County's 45,000 residents had left. Other local authorities made more conservative estimates. Richard Wieser, Flagler County Emergency Management spokesman, said about half of the county's residents had left their homes.

"People took heed," McCarthy said. "We've had some severe fires in the last several days so people knew this was no joke."

About 200 law enforcement officers drove around the county's subdivisions, their public address systems blaring the message: Evacuate immediately.

Residents responded by jamming the three main roads leaving the county and flocking to hotels in Palatka, DeLand and Orlando. Ambulances from nearby counties were called into service to transport 36 patients from Memorial Hospital-Flagler.

Steve Hull, 36, waited in a line of 25 cars at a Flagler Beach gas station so he could join the procession

More than 70,000 people have been evacuated from Flagler, Volusia and Brevard counties. Here are other numbers:

FLAGLER COUNTY: At least 43 homes burned and 15 cars damaged; 4,296 acres burned.

VOLUSIA COUNTY: Ten people injured, including eight firefighters; 12 homes and 19 other structures destroyed; 150,000 acres burned.

BREVARD COUNTY: 24 firefighters injured; at least 30 homes and 5 other structures destroyed; 30,000 acres burned.

Times photo — MARK ADAMS

Please see **FRES BA**

'People knew this was no joke'

■ As Flagler residents flee, gridlock takes over. Three main roads out of the county jam up and hotels quickly fill up.

By ALICIA CALDWELL
Times Staff Writer

For a few hours, it was gridlock as far as the eye could see.

The order for residents to leave Flagler County in the face of approaching wildfires came about 9 a.m. Friday. Authorities in this

Please see **EVACUATE 7A**

— As of 9 p.m.

Figure 6. St. Petersburg Times, July 4, 1998.

Florida's fiery agony deepens

At least 96 homes and 57 other structures statewide have been destroyed by wildfires since Memorial Day, including this one owned by Karen Bobbs of Mims.

Figure 7. St. Petersburg Times, July 3, 1998.

Coleen Harris scrambled to load up her family and her horse, Primo, as the flames approached her Rory Lane home. "I went to the front door and saw the fire was real, real close," she said. "In 10 minutes we had the horse loaded up, got the kids and the dogs and got the heck out of there."

The Orlando Sentinel, June 11, 1998

"It seemed like nothing was really stopping it. It was just so intense," said Jensen, a Volusia County volunteer firefighter and Casselberry's fire inspector. "There was fire all around you."

The Orlando Sentinel, June 14, 1998



WILDLAND FIRE VULNERABILITY IN FLORIDA

Florida has historically been vulnerable to wildland fire, although this hazard takes a different form in the state than in other parts of the continental U.S. Projected increases in dry days and warmer temperatures could lead to increased vulnerability to wildland fire in the future.

To assess vulnerability to wildland fire, the Wildland Fire Suppression Index (WFSI), developed by the Florida Forest Service, was used to determine the probability of an acre of land burning if ignited.

The WFSI model is broken down into three components measuring susceptibility to wildland fire ignition:

- » Probability of fire occurrence
- » Fire behavior
- » Fire suppression effectiveness

Wildland fire threat is greatest across the central portion of the state where vast fields of livestock and citrus, along with numerous federal, state, and county parks and scenic areas are located (Figure 8). Among the most at-risk counties with tracts in the medium threat category are Charlotte (18%), Highlands (18%), Lee (9%), Marion (10%), Osceola (15%), and Polk (19%). Overall, approximately 515,000 people living in 19 counties are at high or medium risk of wildland fire.

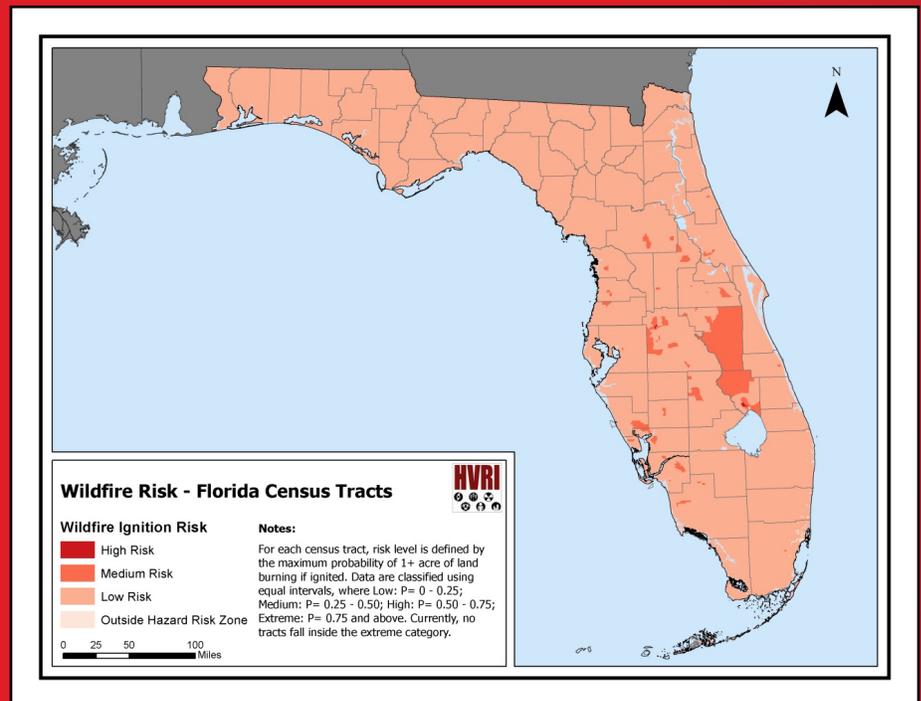


Figure 8. Wildland Fire Ignition Risk in Florida. Source: C. Emrich, University of South Carolina Hazards and Vulnerability Research Institute, 2014.

Locations that are both physically and socially vulnerable are places where a combination of hazard and social adaptation practices can maximize positive outcomes. For more information, please see the Florida BRACE Vulnerability Assessment Report.

For more information, please contact the Florida Department of Health BRACE Program or visit www.floridahealth.gov.

