Remote Sensing and Decision Support for Fire Weather at the Storm Prediction Center

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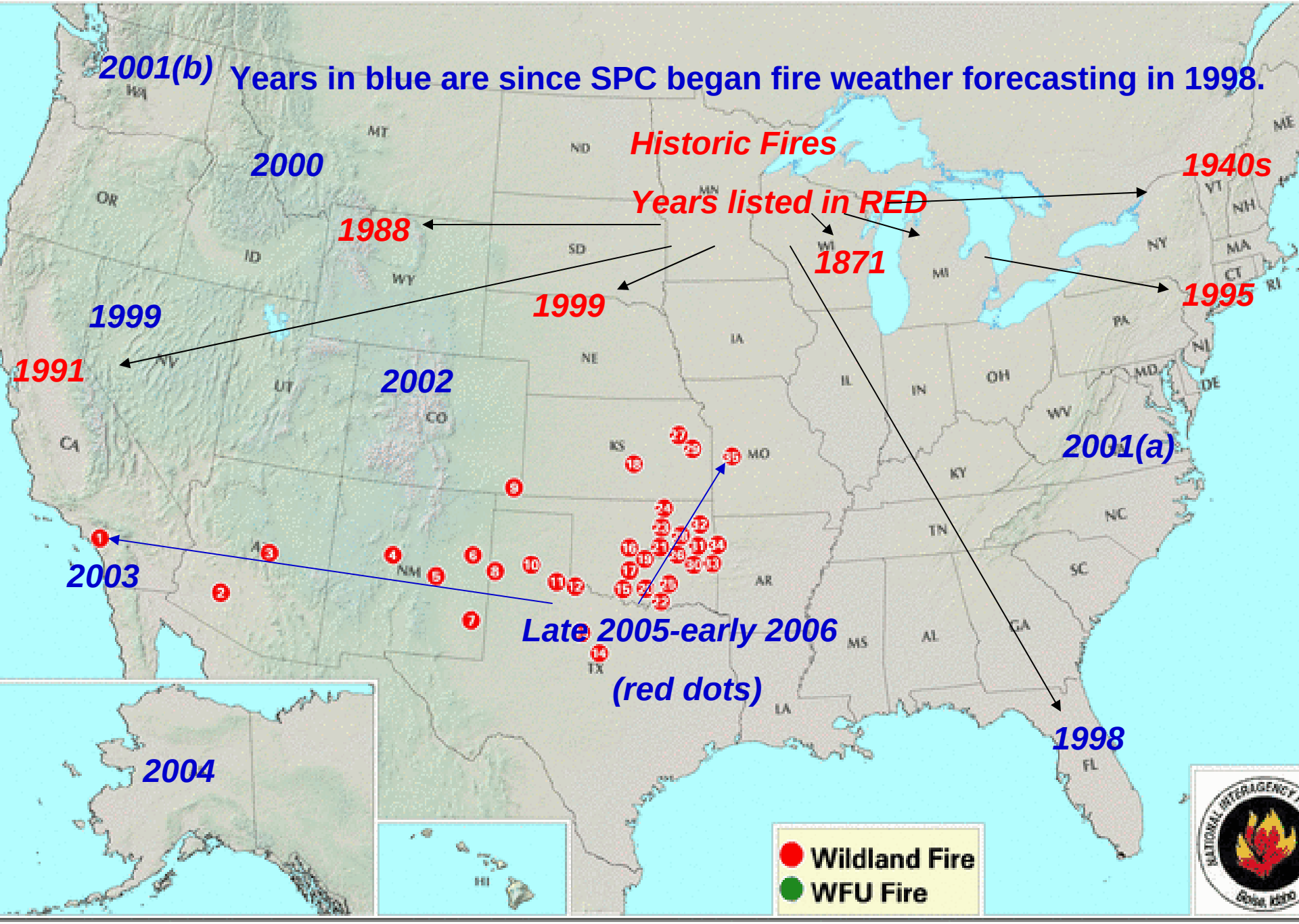
March 4, 2010

WHERE AMERICA'S CLIMATE AND WEATHER SERVICES BEGIN

Welcome to Oklahoma…

Wildfires…they can happen anywhere.
(even Oklahoma)


2001(b)
Years in blue are since SPC began fire weather forecasting in 1998.
Historic Fires
Years listed in RED
2000
1988
1871
1940s
1999
1995
1999
1991
2002
2001(a)
2003
Late 2005-early 2006
(red dots)
1998
2004
Wildland Fire
WFU Fire
1 SIERRA
10 RANSOM FIRE
19 NOBLE
28 NUYAKA #3

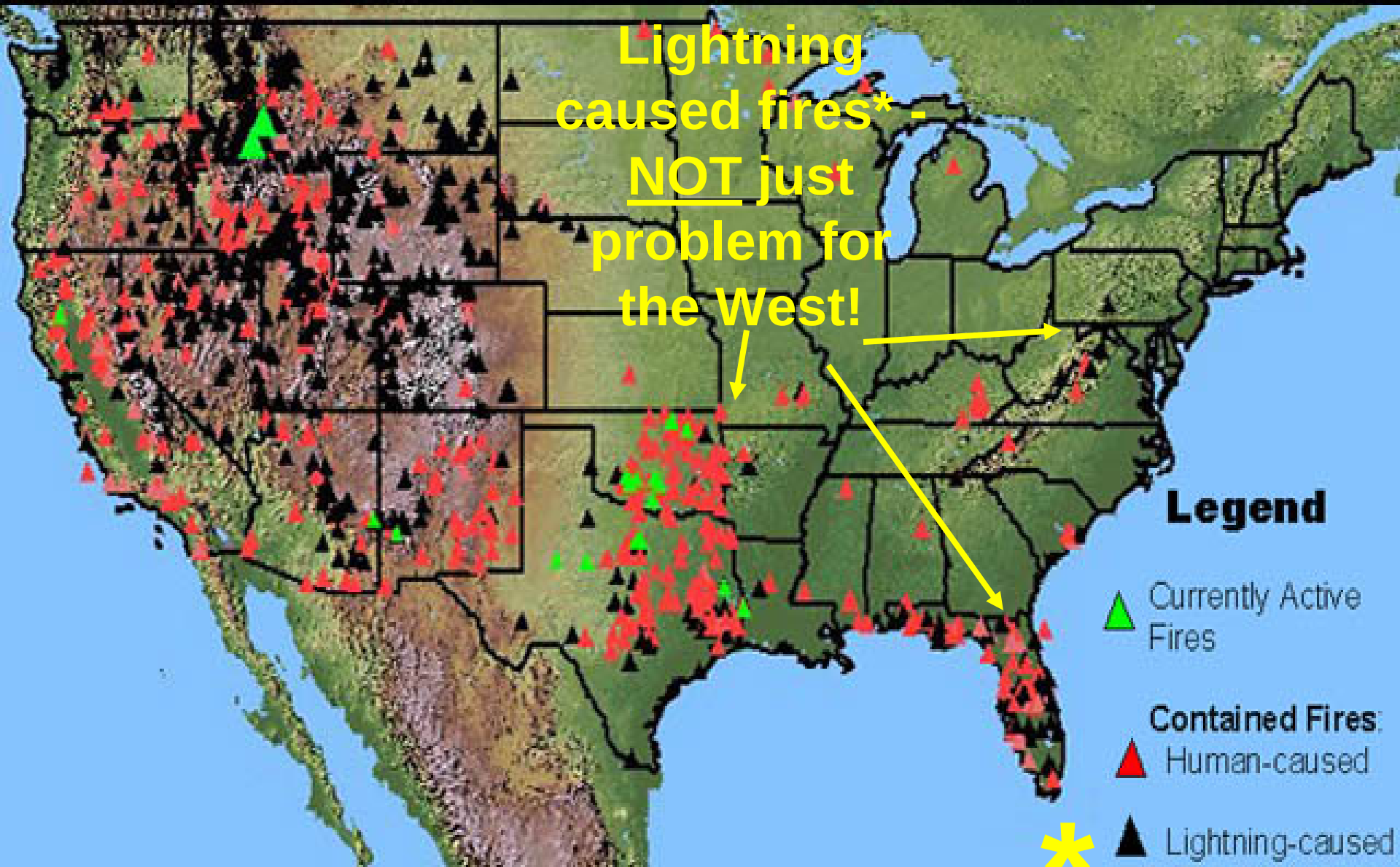
Nation-wide: 2001 to 2006 average

Lightning started wildfires are responsible for around 17% of all wildfires (from 12.5 to 20%)

Yet, lightning started wildfires are responsible for 64% of total acres burned (from 51 to 86%).

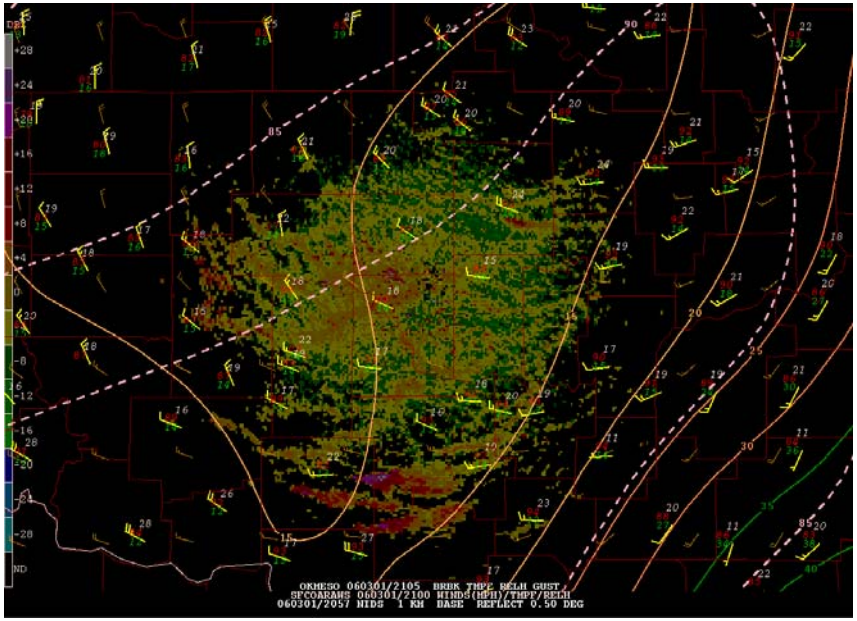
Lightning started wildfires in <u>Alaska 2004</u> were responsible for 80% of total acres burned that year

Large Fire Locations
January 1 to October 3, 2000

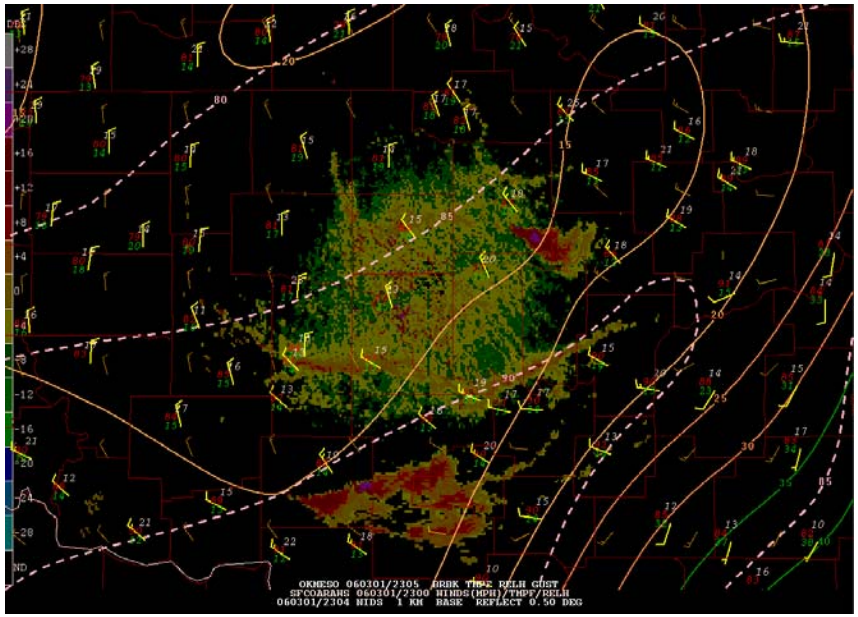


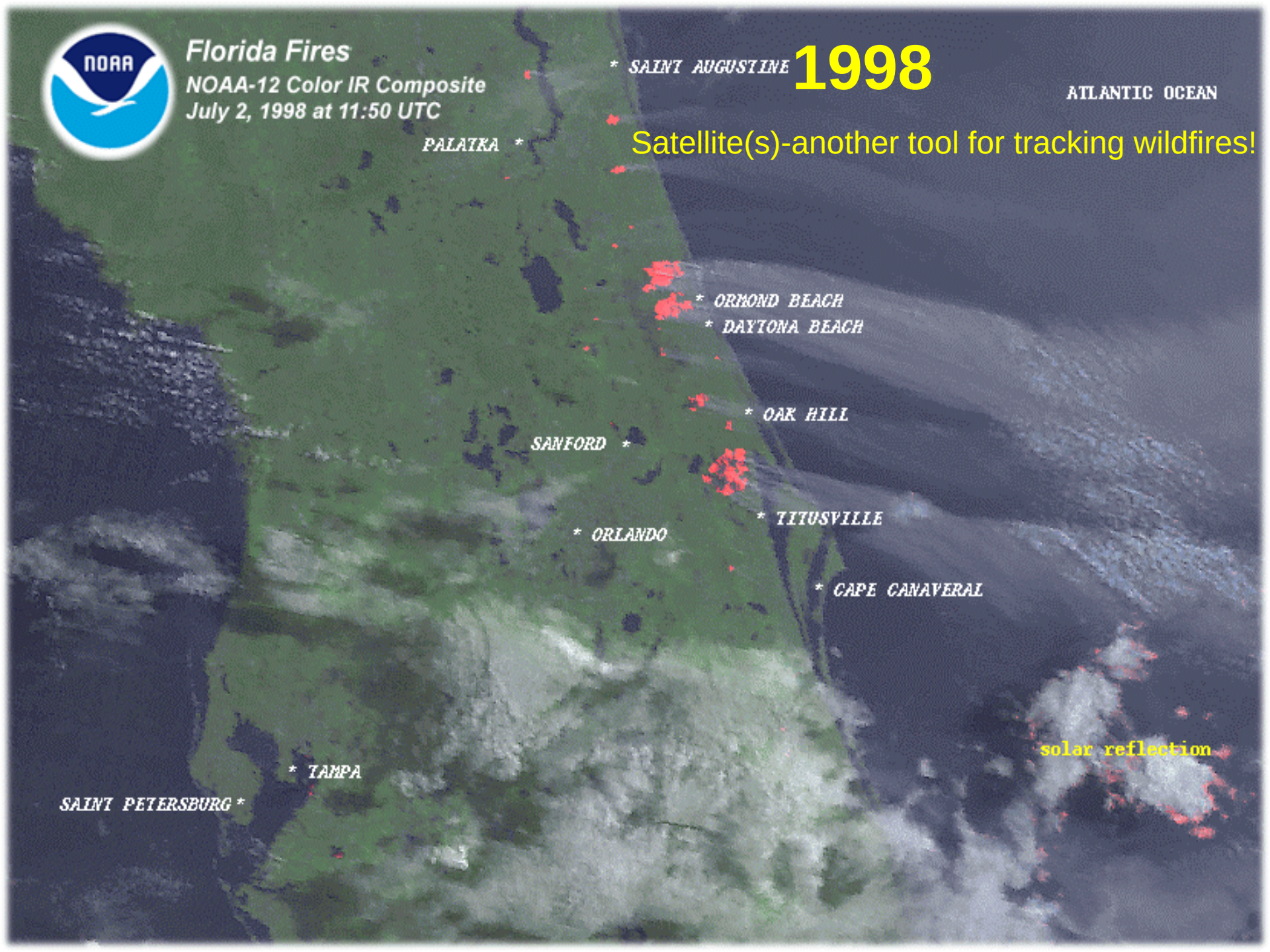
Oklahoma wildfires 03/01/06
Radar…one tool for tracking wildfires!

2100 UTC…generally westerly winds over fires



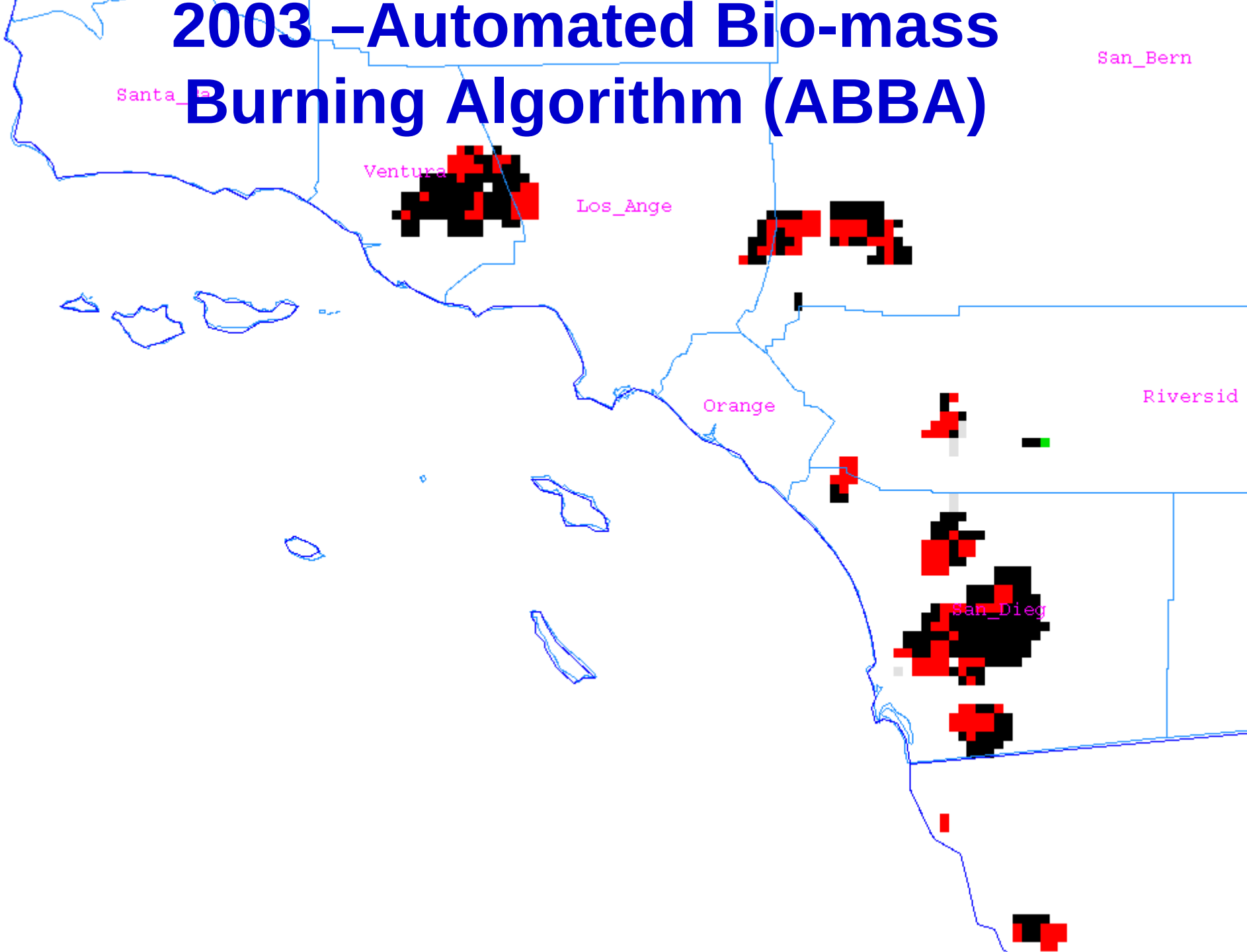
2300 UTC…winds have shifted to northwesterly (smoke plumes fan out)

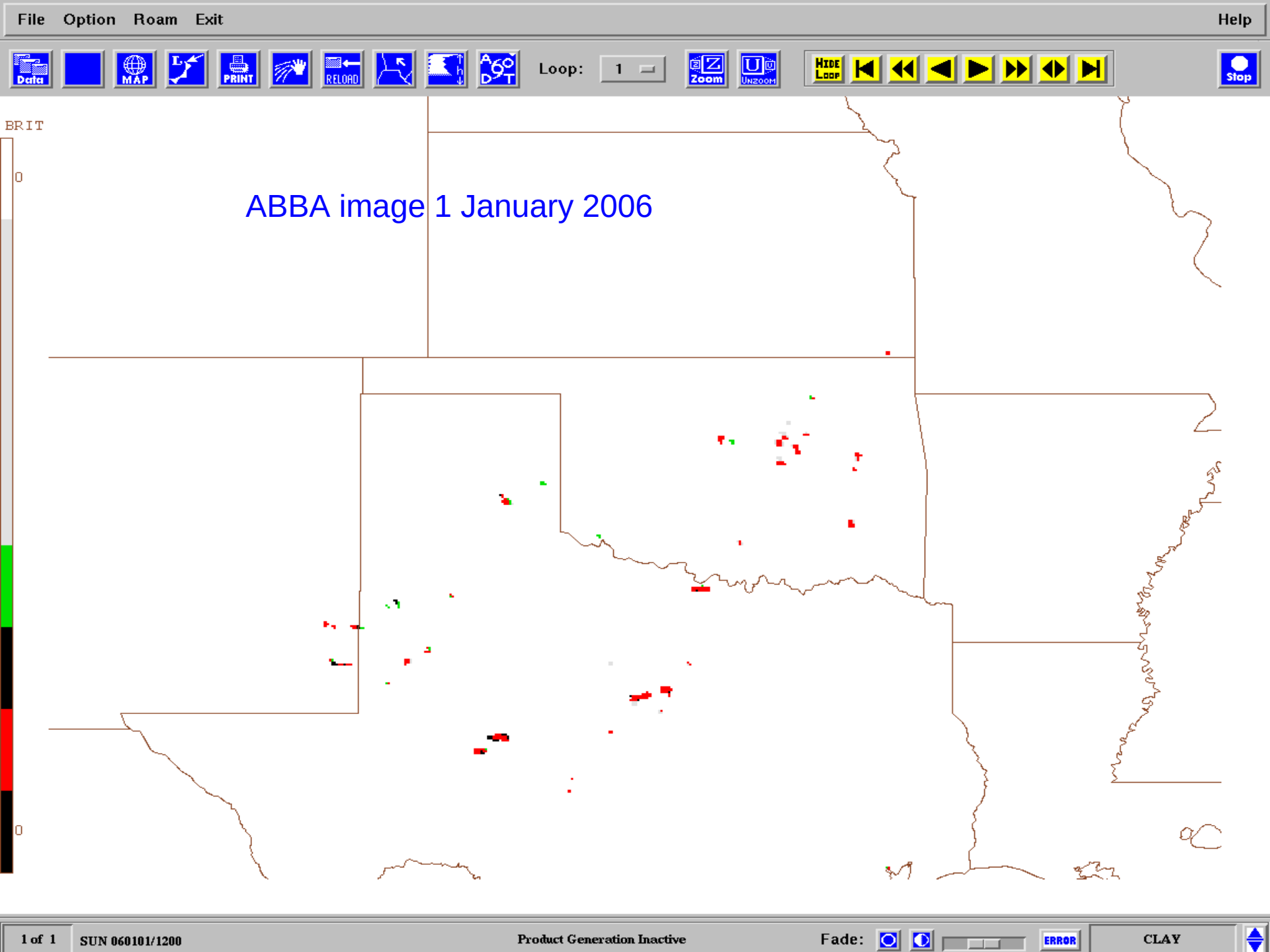


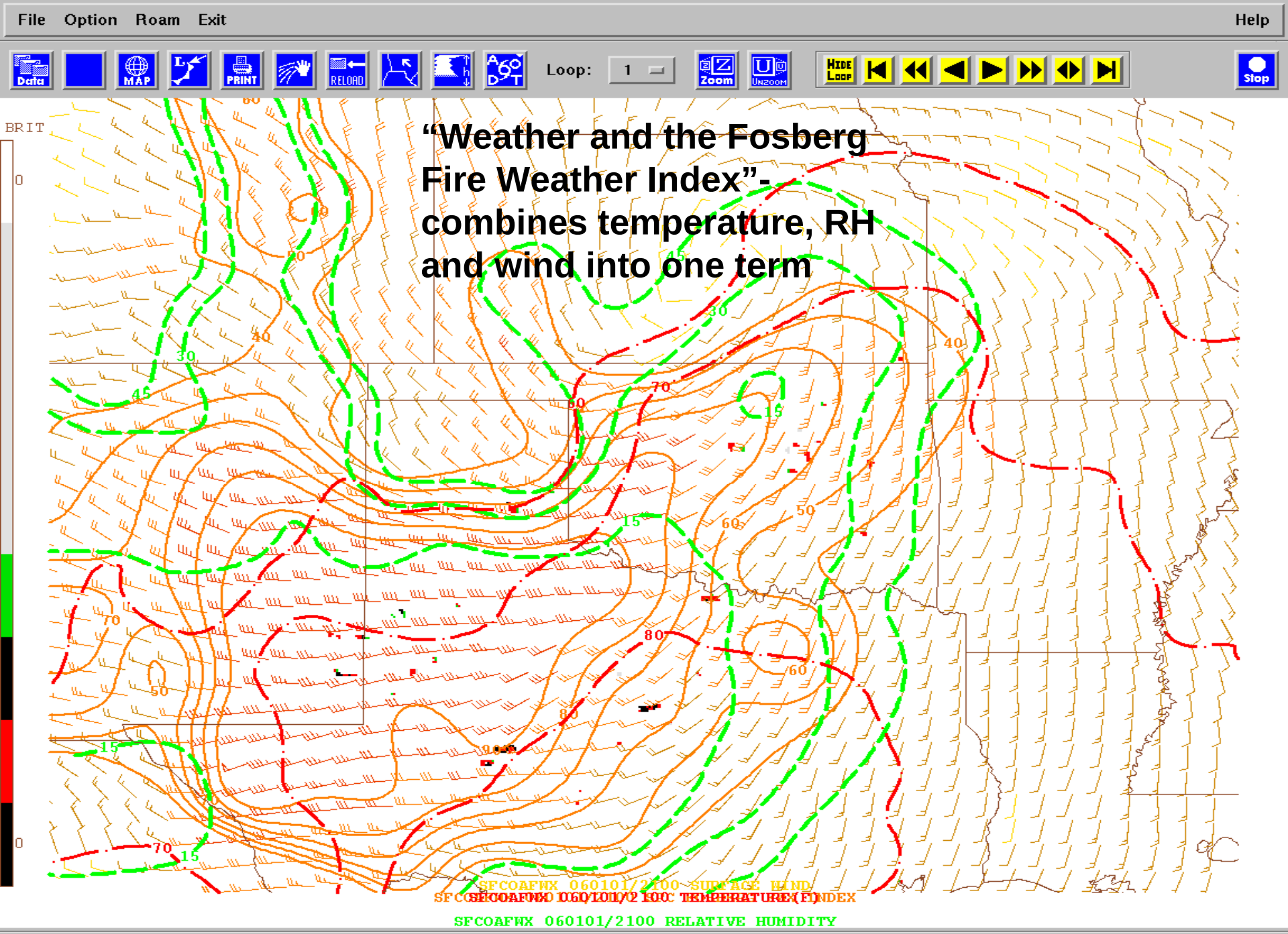

Florida Fires
NOAA-12 Color IR Composite
July 2, 1998 at 11:50 UTC
1998
Satellite(s)-another tool for tracking wildfires!
* SAINT AUGUSTINE
ATLANTIC OCEAN
PALATKA *
* ORMOND BEACH
* DAYTONA BEACH
* OAK HILL
SANFORD *
* TITUSVILLE
* ORLANDO
* CAPE CANAVERAL
solar reflection
* TAMPA
SAINT PETERSBURG *

2003

2003 –Automated Bio-mass Burning Algorithm (ABBA)

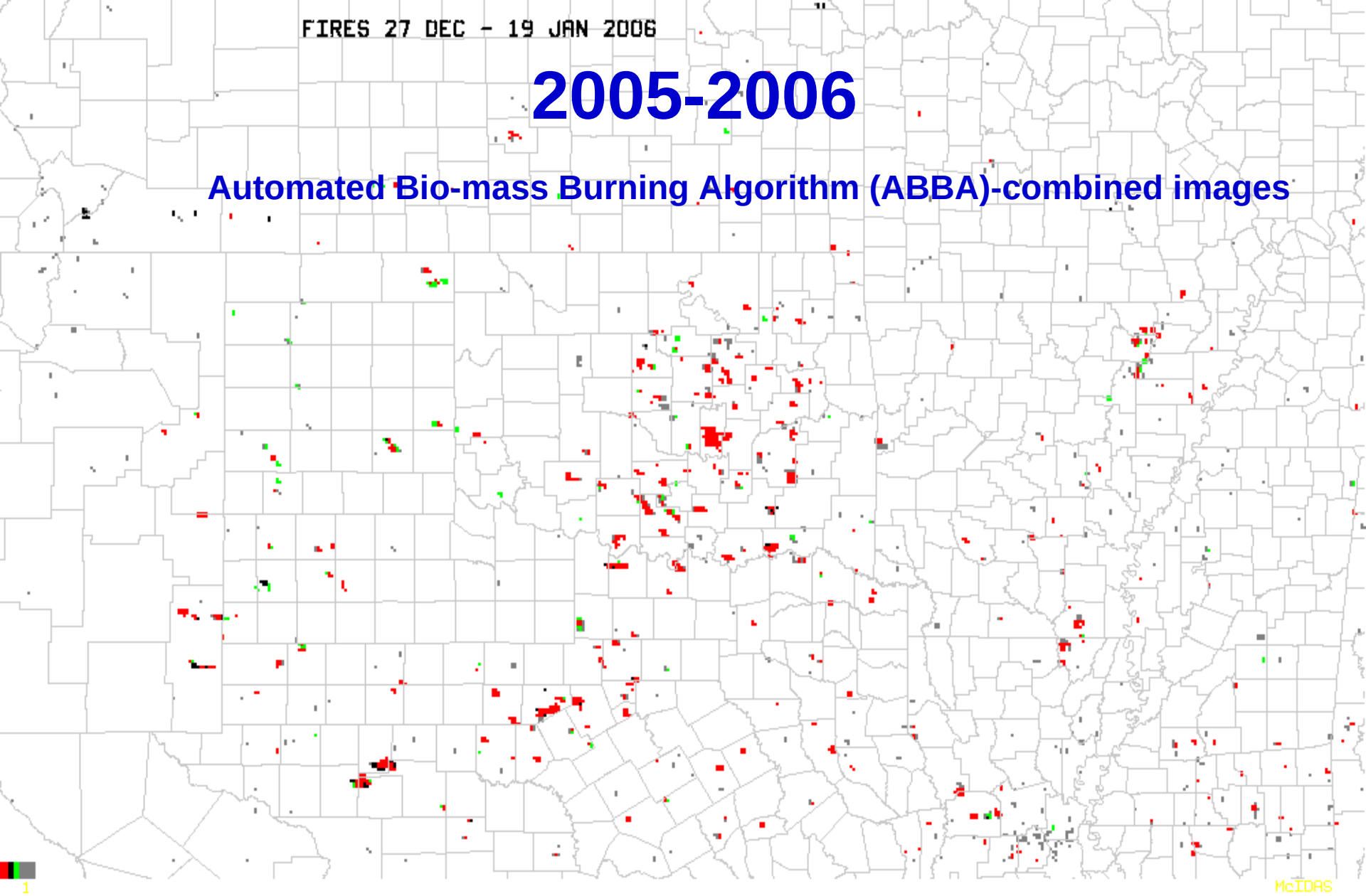



File
Option
Roam
Exit
Help
Data
MAP
PRINT
RELOAD
Loop:
1
Zoom
UNZOOM
HIDE LOOP
Stop
BRIT
0
0
ABBA image 1 January 2006
1 of 1
SUN 060101/1200
Product Generation Inactive
Fade:
ERROR
CLAY


File Option Roam Exit
Help
Loop: 1
Stop
BRIT
“Weather and the Fosberg Fire Weather Index”- combines temperature, RH and wind into one term
SFCOAFWX 060101/2100 SURFACE WIND
SFCOAFWX 060101/2100 TEMPERATURE (F)
SFCOAFWX 060101/2100 FOSBERG INDEX
SFCOAFWX 060101/2100 RELATIVE HUMIDITY
1 of 1
SUN 060101/2100V000
Product Generation Inactive
Fade:
ERROR
DICKENS

2005-2006

Automated Bio-mass Burning Algorithm (ABBA)-combined images



NOAA Satellite and Information Service
National Environmental Satellite, Data, and Information Service (NESDIS)

Satellite Services Division
Fire Products

DOC / NOAA / NESDIS / OSDPD / SSD /

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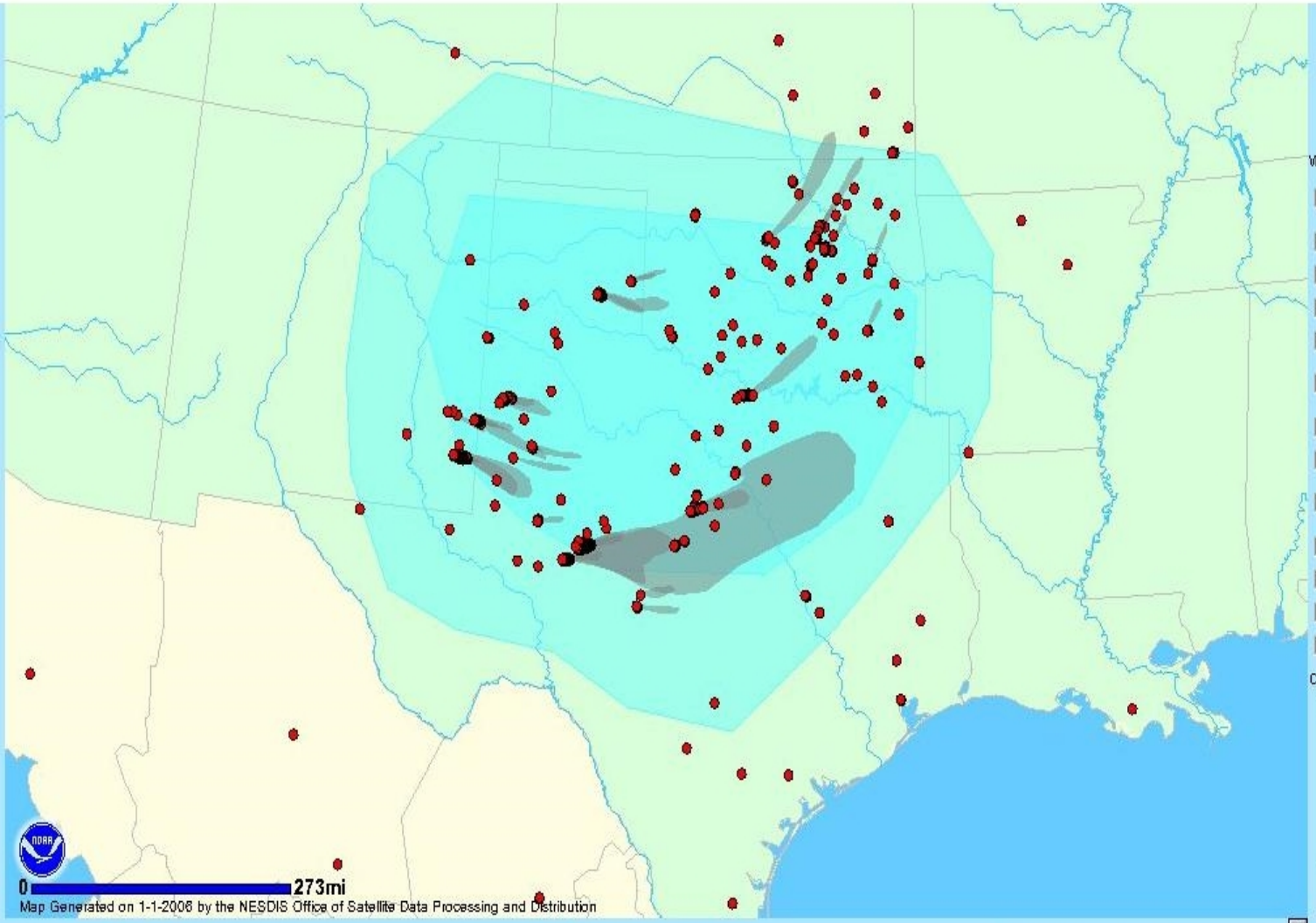
Mission Statemen



Layer / Legend

Layers

Visible Active

- Analyzed Fires from Satellites
- GOES 3hr
- GOES 24hr
- AVHRR
- MODIS
- Analyzed Smoke from Satellites
- Fire Potential
- US Interstates
- State and Province Boundaries
- Lat/Long Grid
- County Boundaries
- RGB 24hr Imagery
- Land Cover

Click BOLD text for Layer Description

Refresh Map

Download

This site best viewed using:
- Internet Explorer 6, or greater
- Netscape 7, or greater

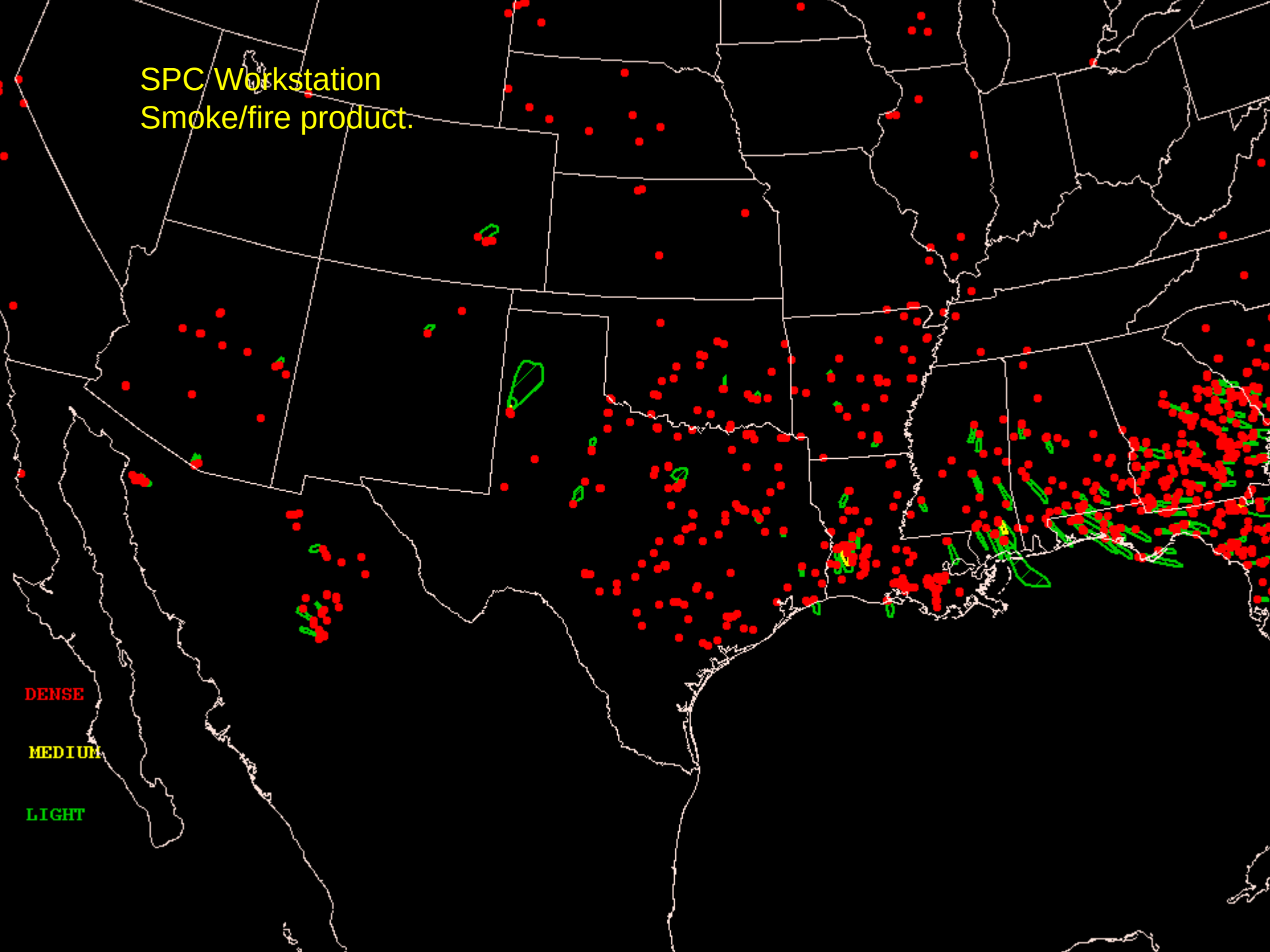
detected smoke plume detected hot spot coverage regions

Click here for important information about changes to the Mexican and Central American fire and smoke analyses.

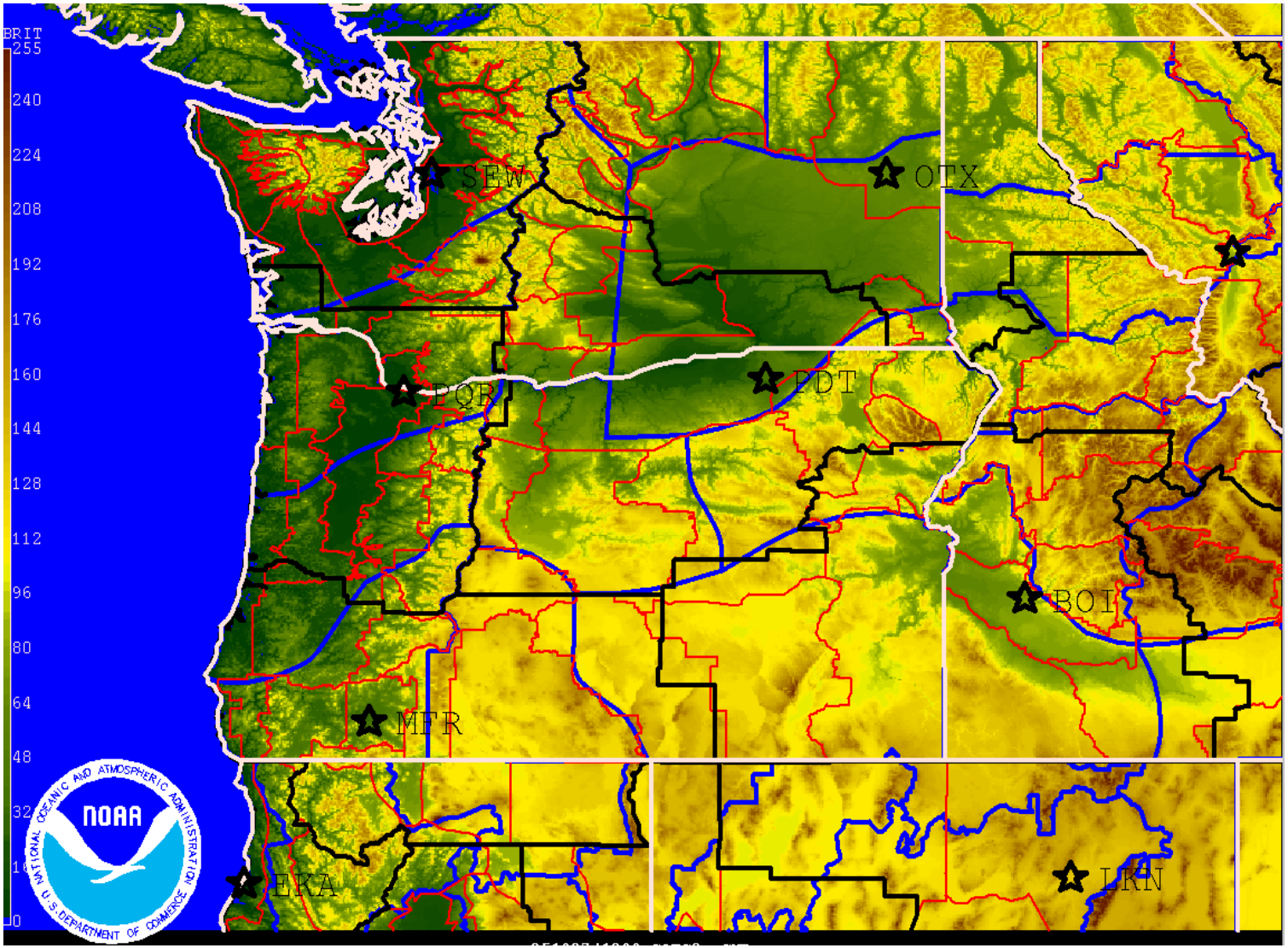
Active Tool: Pan

Home | Map Last Updated | Getting Started | Contact Us | Help | FAQ | Archive

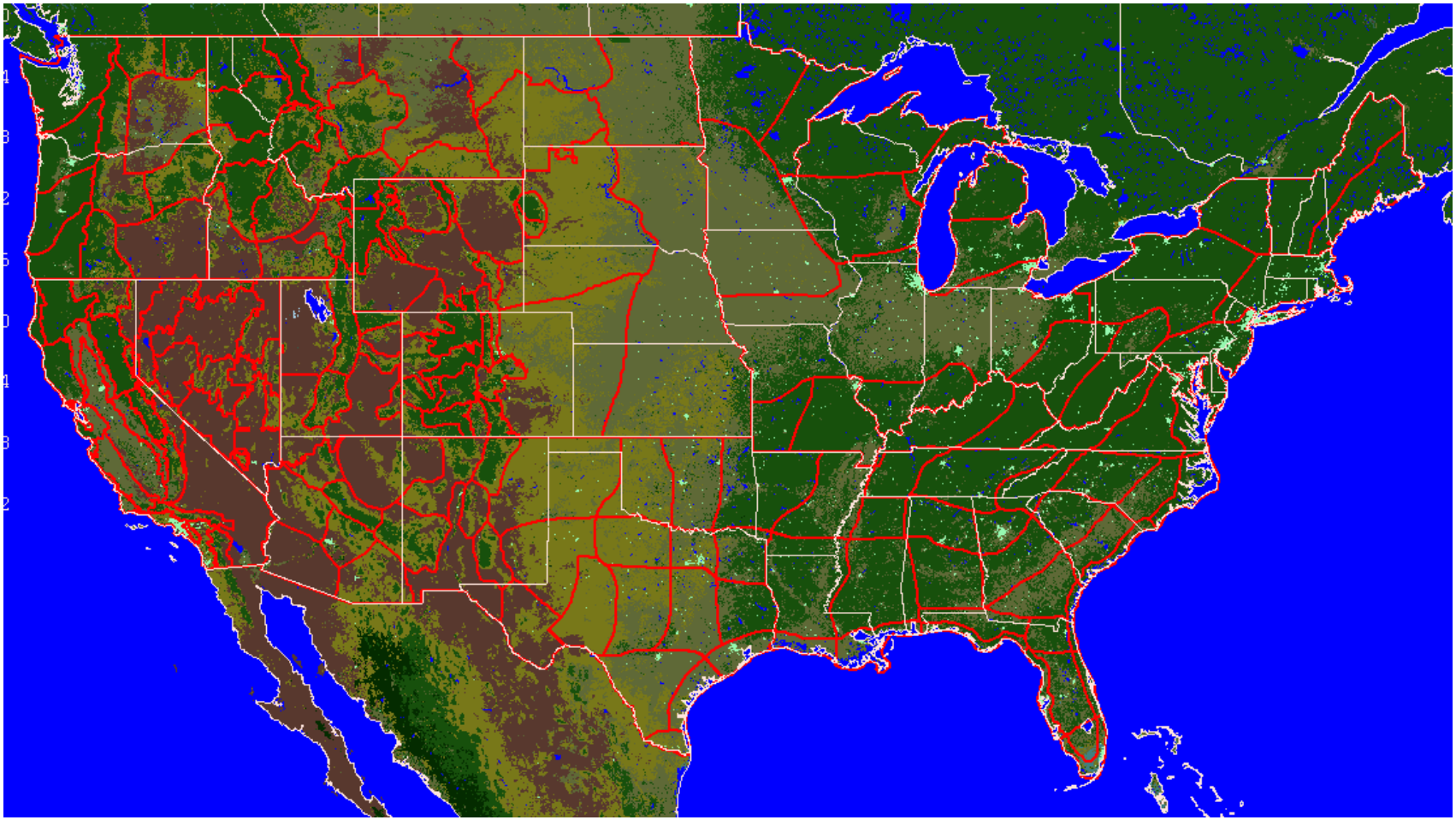
http://www.firedetect.noaa.gov/viewer.htm


SPC Workstation
Smoke/fire product.
DENSE
MEDIUM
LIGHT

NW GACC – SPC Terrain/WFOs/Fire Zones/ and PSA maps*



1 km Land use map plus Predictive Service Areas

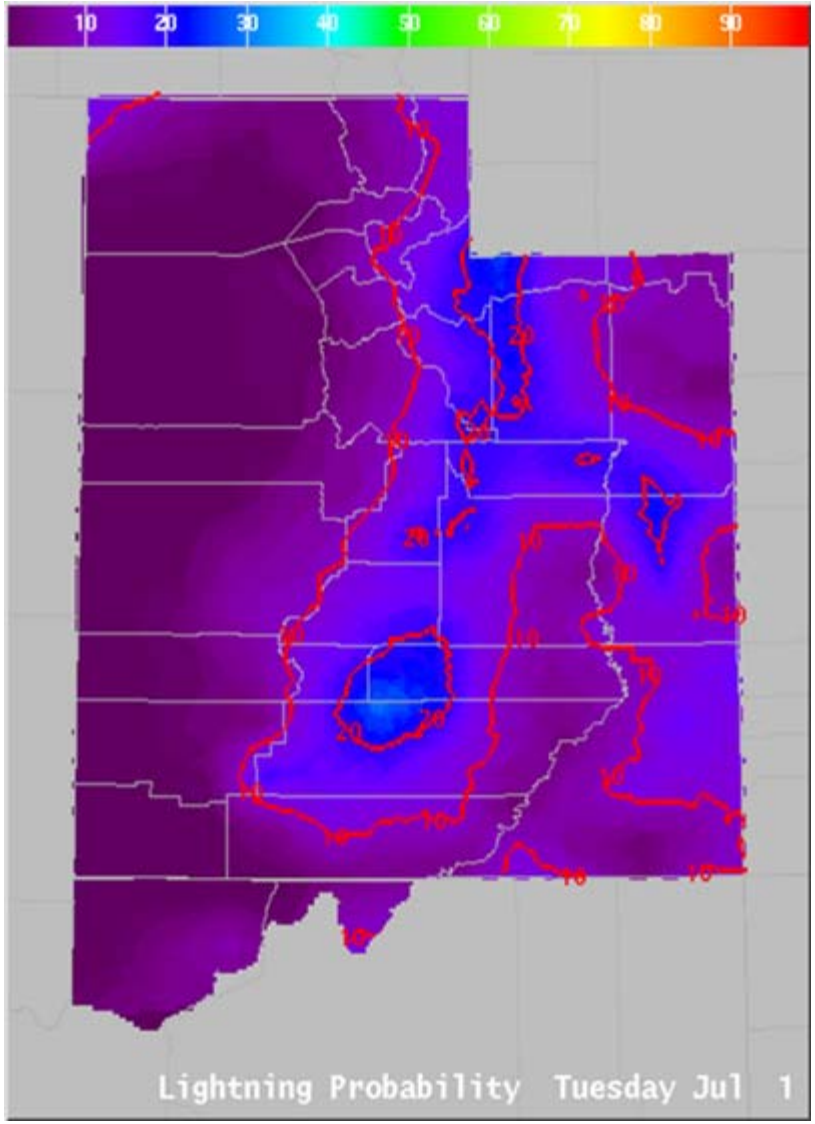
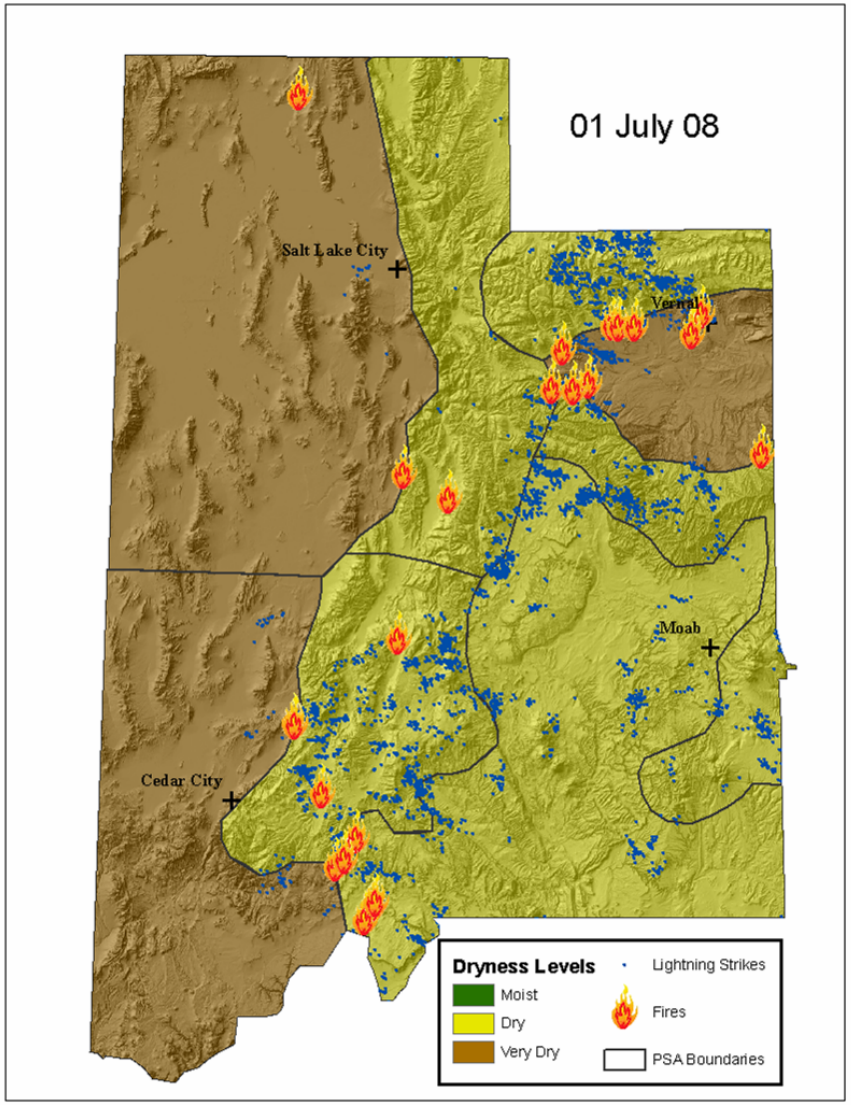


Joint NWS/Forestry Project

Example: 01 July 2008

They use 18 to 06 UTC (Day 1) and 06 to 06 UTC for other Days (2,3 and 4)

Lightning probability (10+ CG flashes)



Dryness levels, lightning and fires