

THE HIGHWAY 31 FIRE

SOUTH CAROLINA'S MOST DESTRUCTIVE WILDFIRE



Darryl Jones
SCFC Protection Chief

2009 FIRE SEASON

Mild through April 21:

Only 1,796 fires / burned 9,792 acres

- 5-year average: 2,669 fires burning 15,566 acres
- 10-year average: 3,472 fires burning 20,612 acres



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

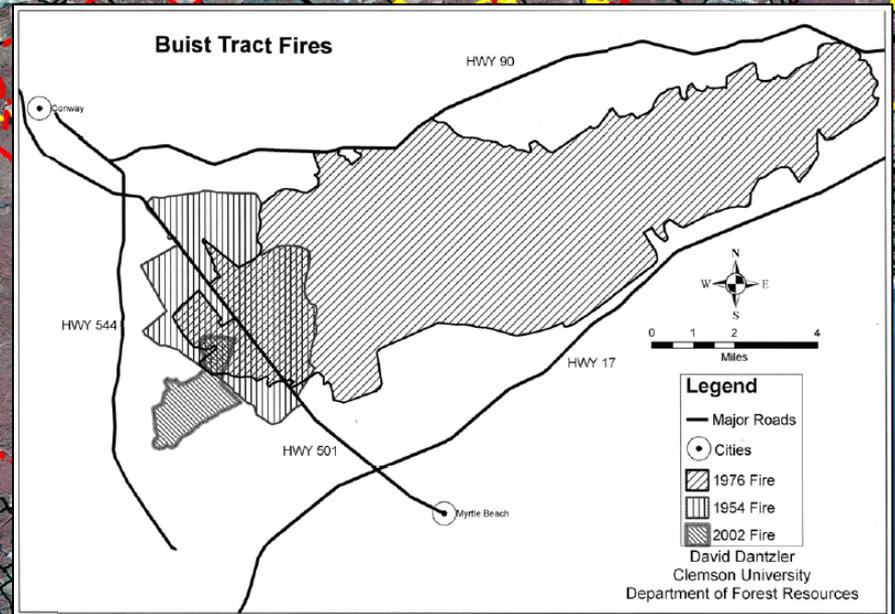
Buist Tract Wildfire History

12:00 pm
4/22

8:00 am
4/23

1954 Bombing Range Fire	10,162
1966 Rambi Raceway Fire	625
1967 Longs Crossroads Fire	1,200
1967 Socastee Plantation Fire	6,005
1976 Clear Pond Fire	30,000
1981 Cotton Patch Bay Fire	2,500
1996 Forestbrook Fire	844
2001 Long Bay Fire	1,911
2002 Legends Fire	1,658

*No homes were lost in any of these wildfires



Map Courtesy The Independent Republic
Quarterly, Volume 40, No. 1-4, 2006



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

BUIST TRACT WILDFIRE HISTORY



1954 Bombing Range Fire



1976 Clear Pond Fire



2002 Legends Fire



2001 Long Bay Fire



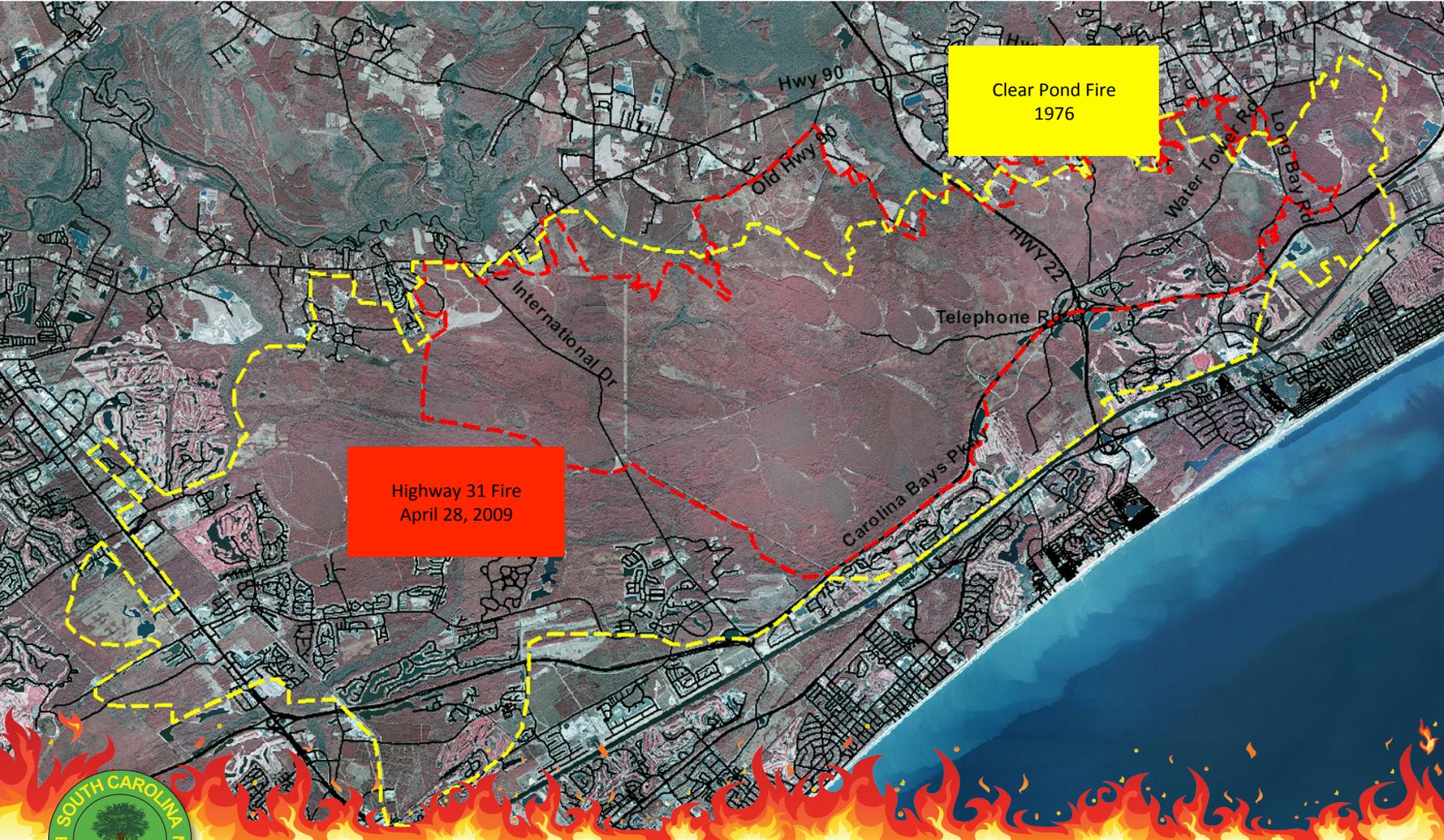
2001 Long Bay Fire



Clear Pond Fire (1976) and Highway 31 Fire (2009)

12:00 pm
4/22

8:00 am
4/23



Clear Pond Fire
1976

Highway 31 Fire
April 28, 2009



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

GROWING WILDLAND URBAN INTERFACE

Hwy 31 Fire Area in 1994



0 1 2 4 Miles



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South Carolina Forestry Commission
3000 Woodland Drive
Columbia, SC 29212
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Fire area in 1994

Hwy 31 Fire Area in 2005



0 1 2 4 Miles



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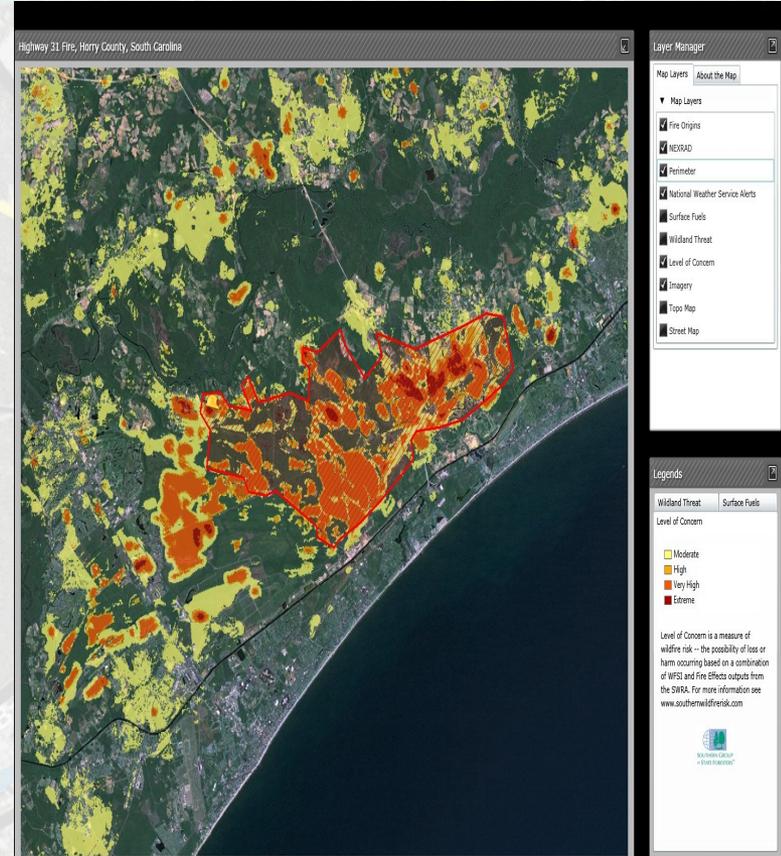
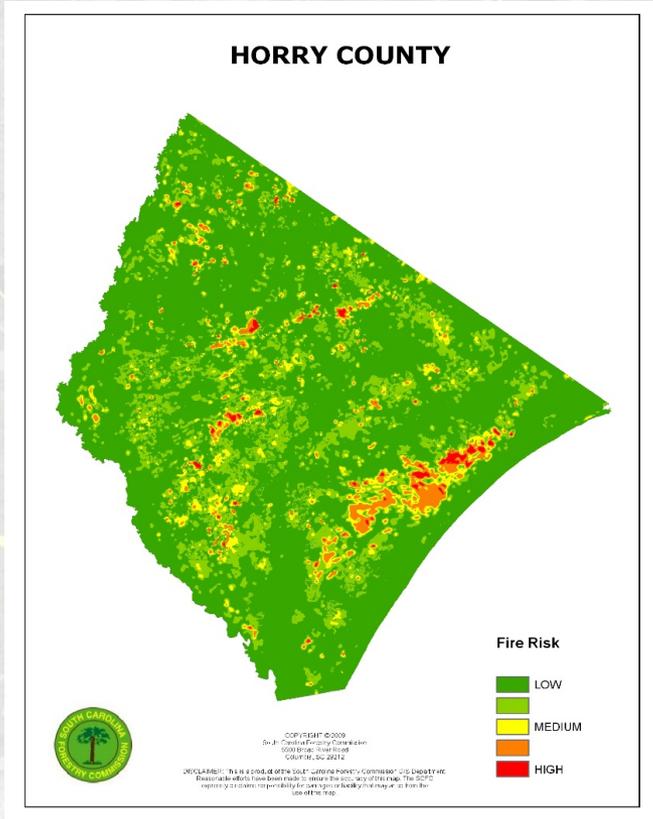
Fire area in 2005



THE HIGHWAY 31 FIRE

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SOUTHERN WILDFIRE RISK ASSESSMENT

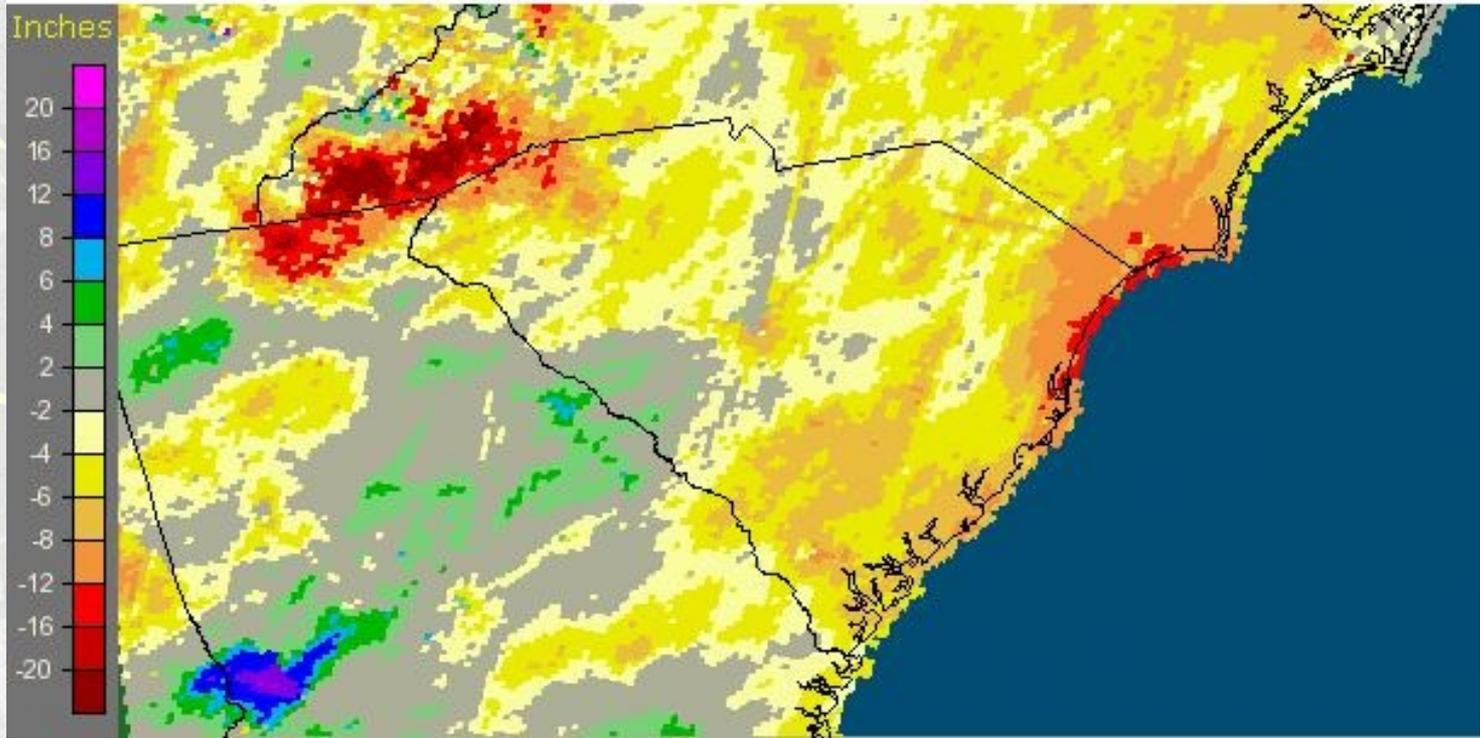


THE HIGHWAY 31 FIRE

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PRECIPITATION DEFICIT

South Carolina: Current 180-Day Departure from Normal
Precipitation
Valid at 4/23/2009 1200 UTC- Created 4/23/09 17:34 UTC



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

AN *EARTH DAY* LIKE NO OTHER!

Weather on April 22, 2009: Temperature: 71
Humidity: 24%
Winds: West at 17 mph, with gusts to 30 mph



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

HIGHWAY 31 FIRE

Forestry Commission Dispatch received a 911 call regarding a wildfire at 12:22 p.m. and Commission resources were on the fire and in the air overhead within 30 minutes.



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

Highway 31 Fire: fire perimeter at 1300, April 22, 2009

12:00 pm
4/22

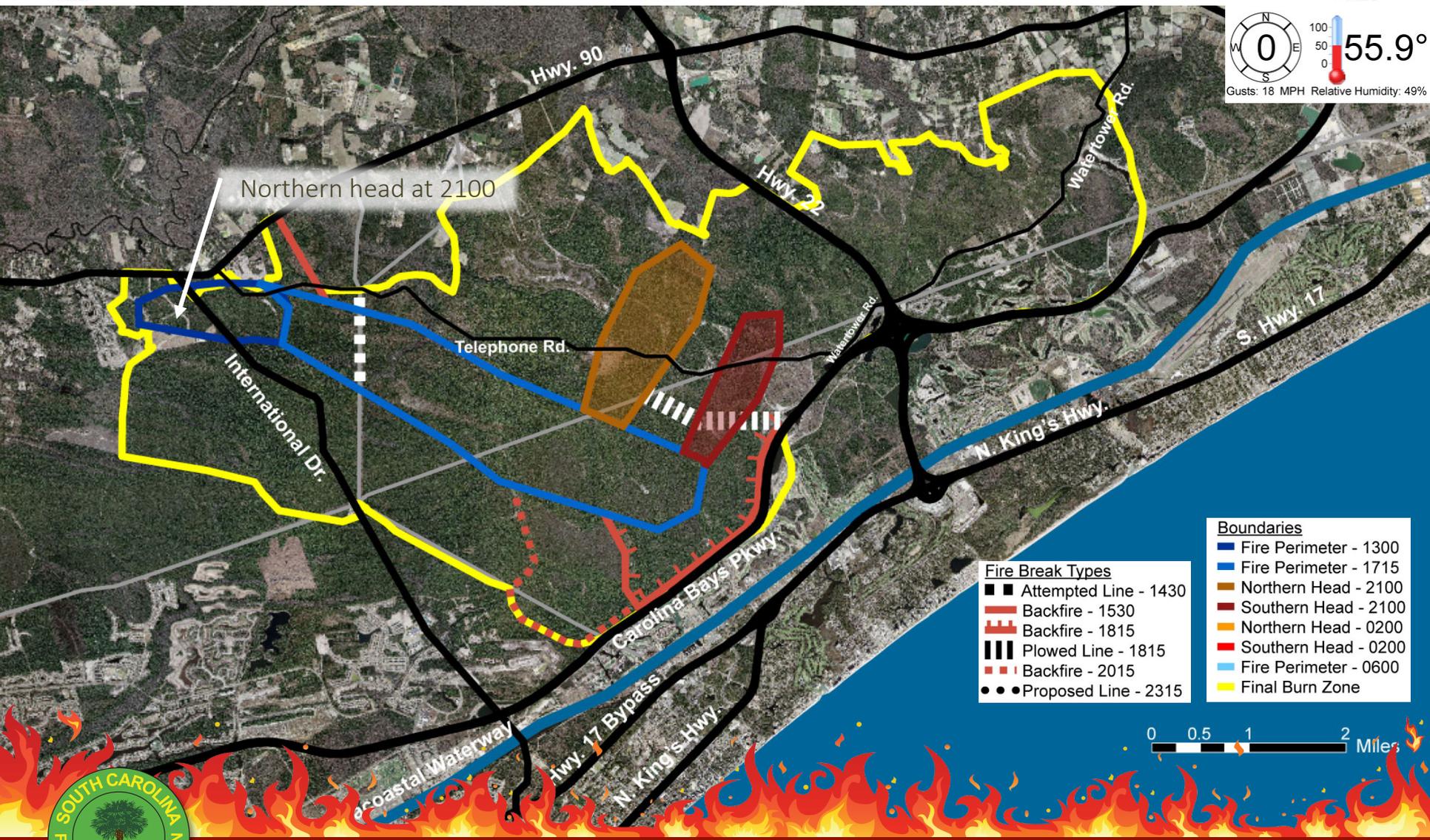
9:00 pm
4/22

8:00 am
4/23

100
50
0

55.9°

Gusts: 18 MPH Relative Humidity: 49%



Fire Break Types

- Attempted Line - 1430
- ▬ Backfire - 1530
- ▬ Backfire - 1815
- ▬ Plowed Line - 1815
- ▬ Backfire - 2015
- Proposed Line - 2315

Boundaries

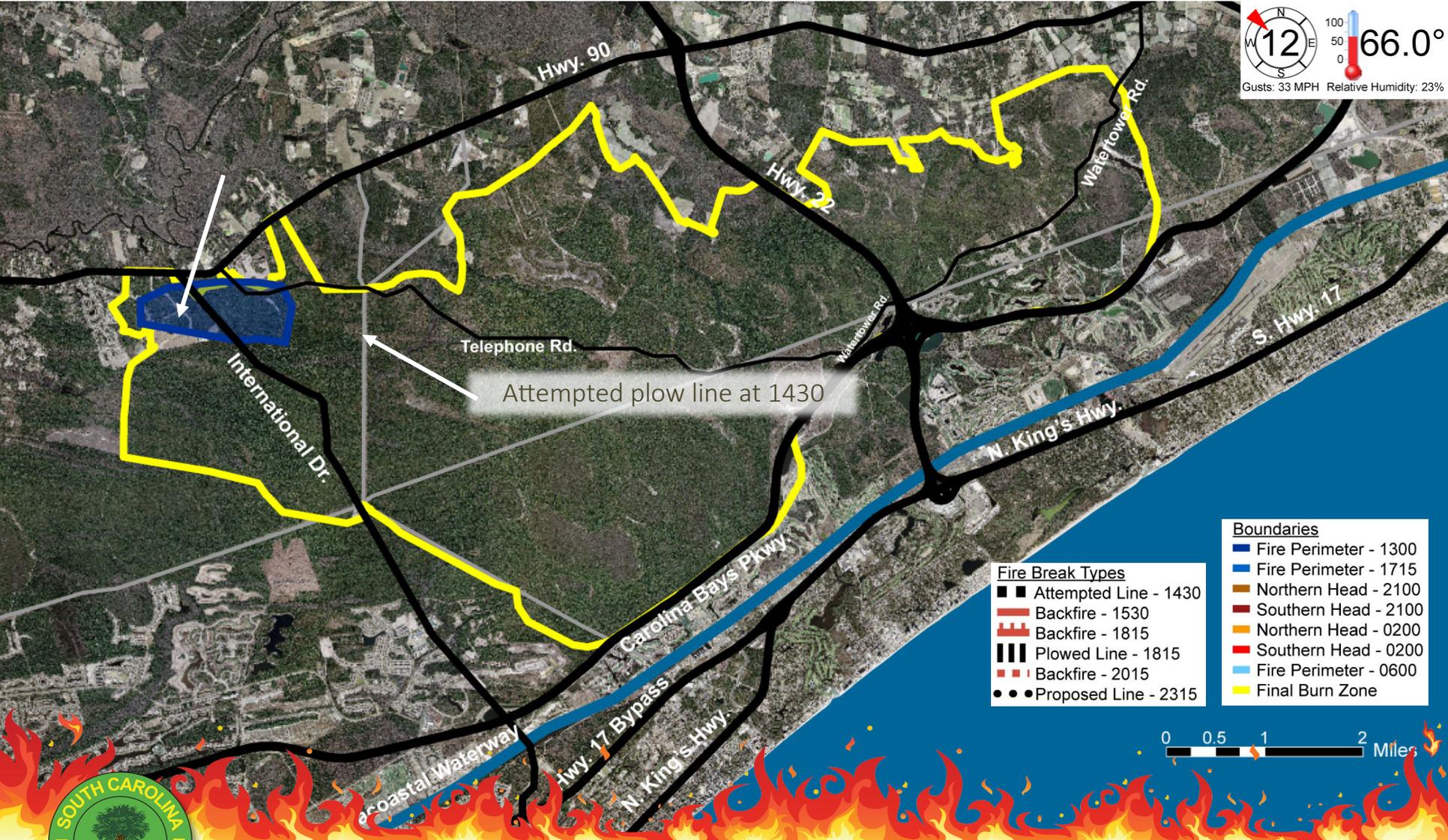
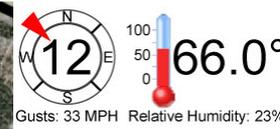
- Fire Perimeter - 1300
- Fire Perimeter - 1715
- Northern Head - 2100
- Southern Head - 2100
- Northern Head - 0200
- Southern Head - 0200
- Fire Perimeter - 0600
- Final Burn Zone



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

Highway 31 Fire: Attempted plow line at 1430, April 22, 2009



Fire Break Types

- Attempted Line - 1430
- ▬ Backfire - 1530
- ▬ Backfire - 1815
- ▬ Plowed Line - 1815
- ▬ Backfire - 2015
- Proposed Line - 2315

Boundaries

- Fire Perimeter - 1300
- Fire Perimeter - 1715
- Northern Head - 2100
- Southern Head - 2100
- Northern Head - 0200
- Southern Head - 0200
- Fire Perimeter - 0600
- Final Burn Zone



THE HIGHWAY 31 FIRE

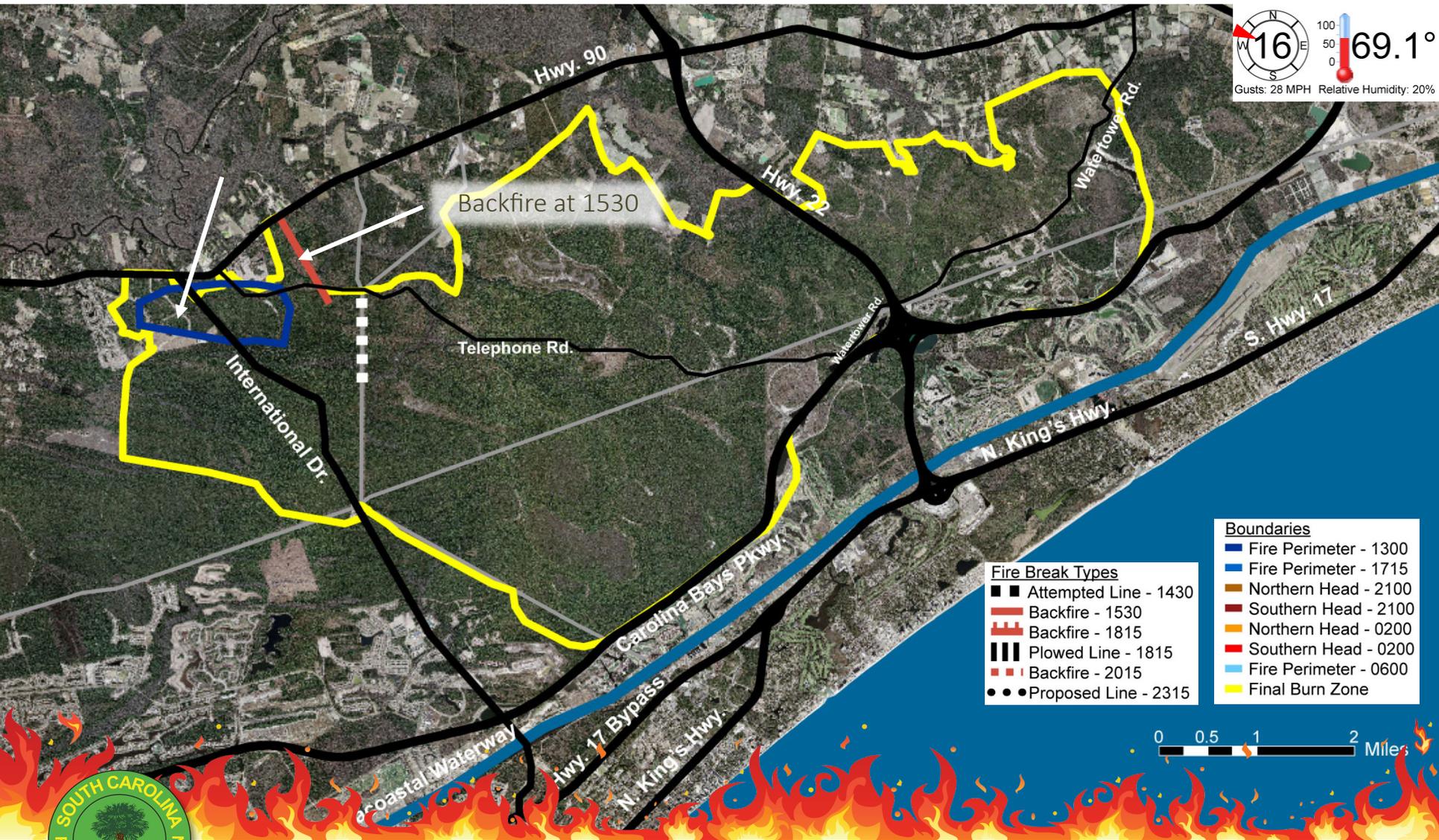
BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

Highway 31 Fire: Backfire break at 1530, April 22, 2009

12:00 pm
4/22

3:30 pm
4/22

8:00 am
4/23



16
 Gusts: 28 MPH Relative Humidity: 20%

 69.1°

Fire Break Types

- Attempted Line - 1430
- Backfire - 1530
- Backfire - 1815
- Plowed Line - 1815
- Backfire - 2015
- Proposed Line - 2315

Boundaries

- Fire Perimeter - 1300
- Fire Perimeter - 1715
- Northern Head - 2100
- Southern Head - 2100
- Northern Head - 0200
- Southern Head - 0200
- Fire Perimeter - 0600
- Final Burn Zone



THE HIGHWAY 31 FIRE

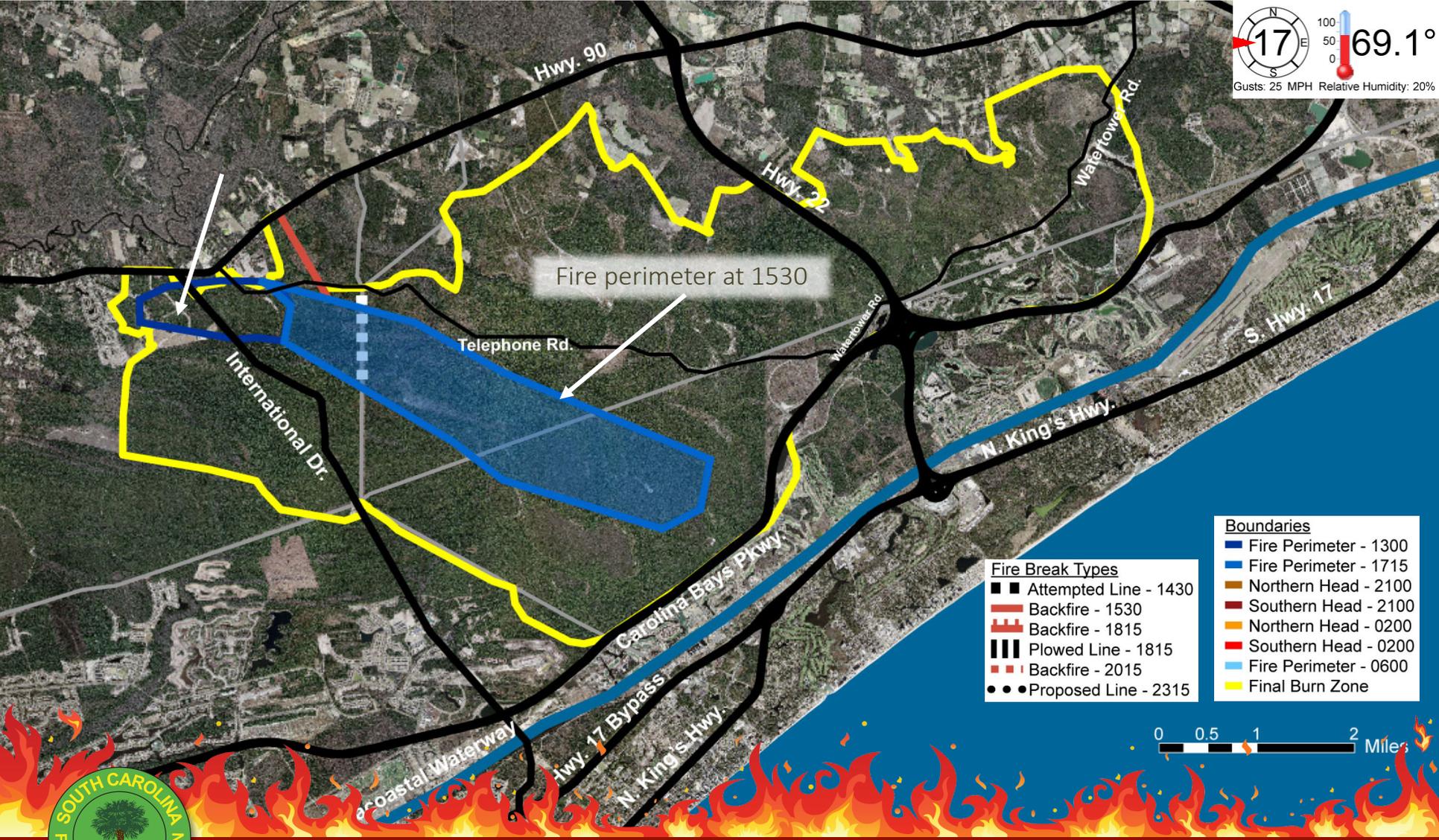
BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

Highway 31 Fire: Fire perimeter at 1715, April 22, 2009

12:00 pm
4/22

5:15 pm
4/22

8:00 am
4/23



17
Gusts: 25 MPH Relative Humidity: 20%

69.1°

Fire Break Types

- Attempted Line - 1430
- Backfire - 1530
- Backfire - 1815
- Plowed Line - 1815
- Backfire - 2015
- Proposed Line - 2315

Boundaries

- Fire Perimeter - 1300
- Fire Perimeter - 1715
- Northern Head - 2100
- Southern Head - 2100
- Northern Head - 0200
- Southern Head - 0200
- Fire Perimeter - 0600
- Final Burn Zone



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

Highway 31 Fire: Backfire and plowed line firebreaks at 1815, April 22, 2009

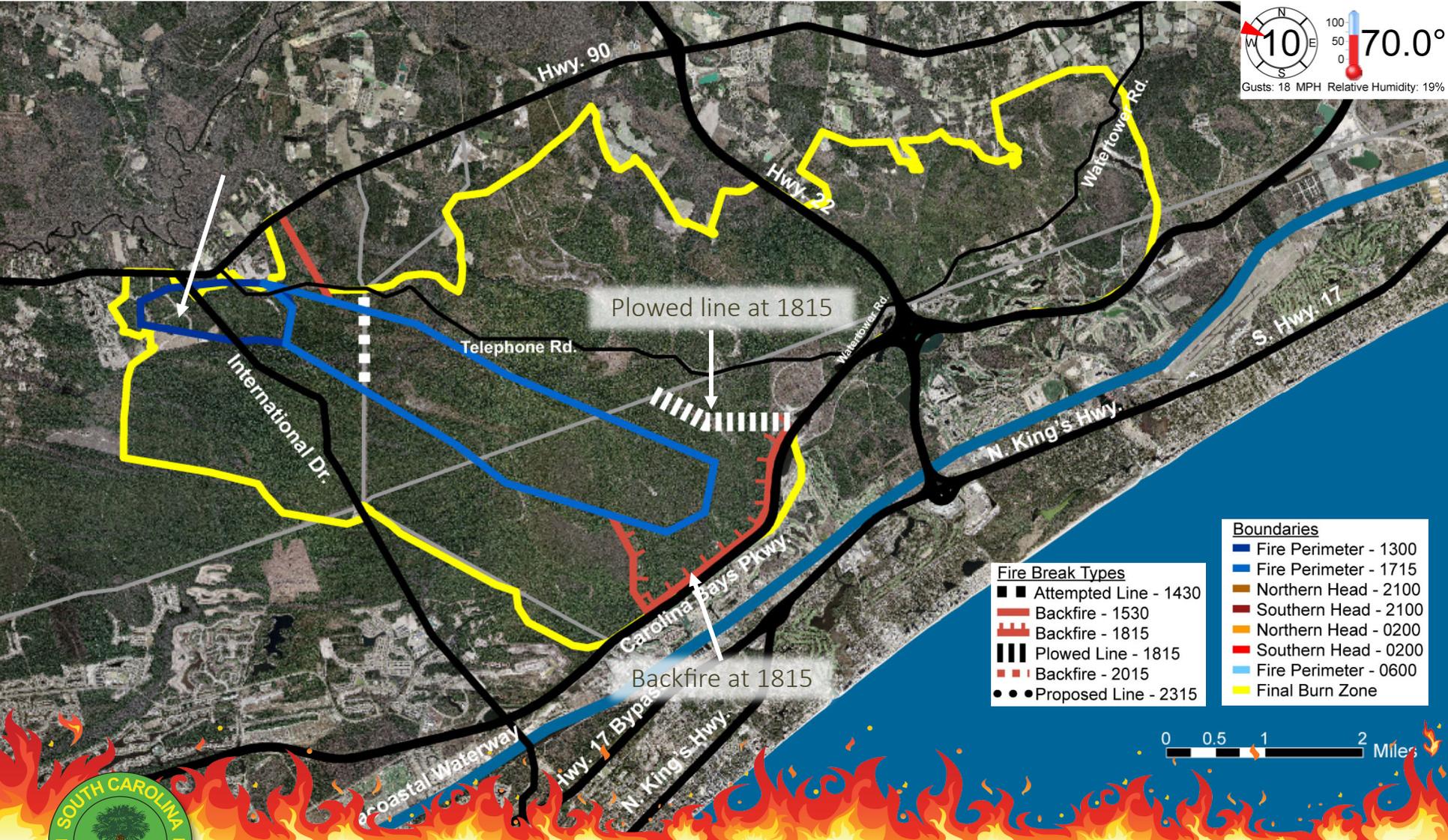
12:00 pm
4/22

6:15 pm
4/22

8:00 am
4/23

10
Gusts: 18 MPH Relative Humidity: 19%

70.0°



Plowed line at 1815

Backfire at 1815

Fire Break Types

- Attempted Line - 1430
- Backfire - 1530
- Backfire - 1815
- Plowed Line - 1815
- Backfire - 2015
- Proposed Line - 2315

Boundaries

- Fire Perimeter - 1300
- Fire Perimeter - 1715
- Northern Head - 2100
- Southern Head - 2100
- Northern Head - 0200
- Southern Head - 0200
- Fire Perimeter - 0600
- Final Burn Zone



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

Highway 31 Fire: Backfire fire break at 2015, April 22, 2009

12:00 pm
4/22

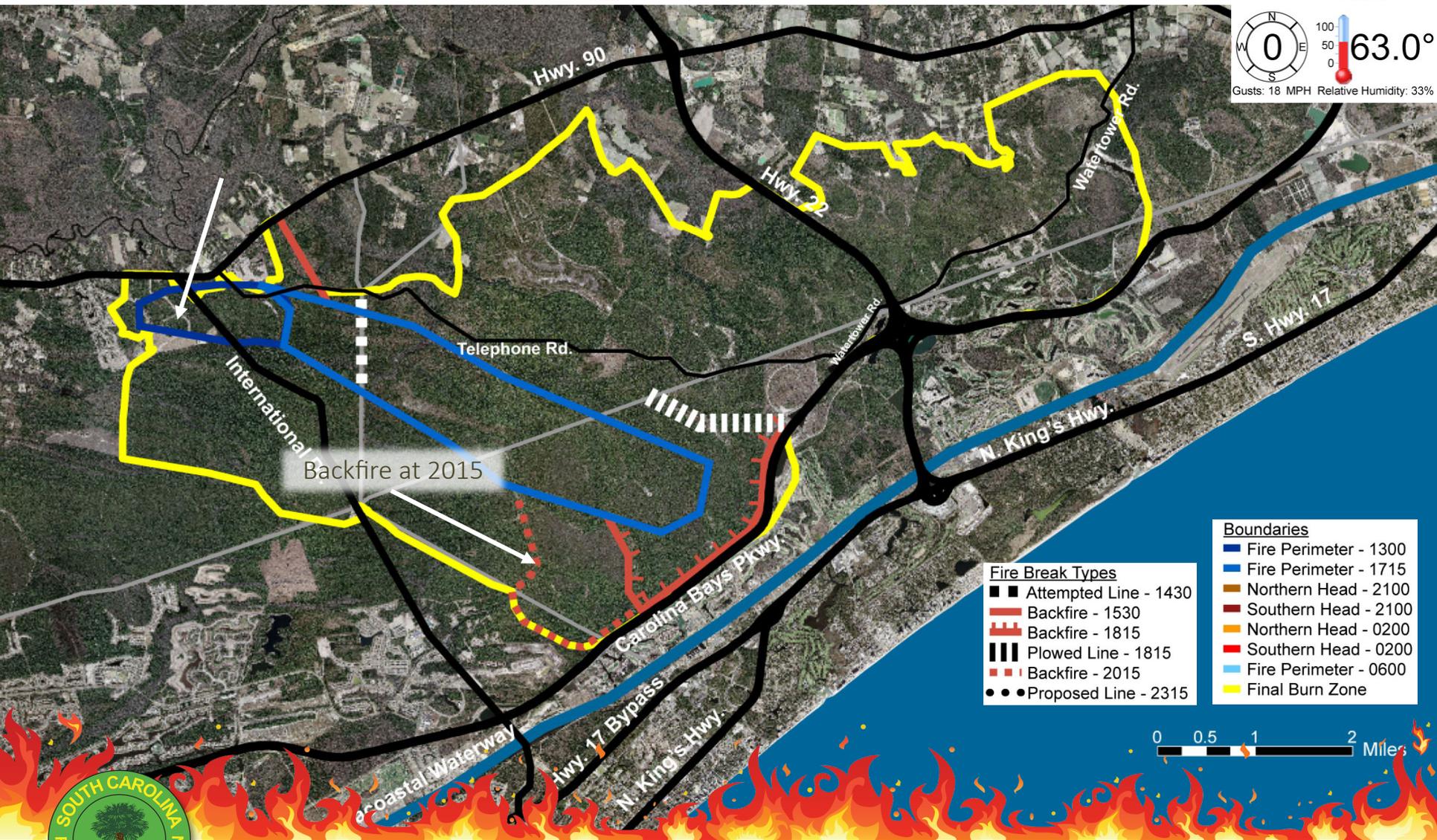
8:15 pm
4/22

8:00 am
4/23

100
50
0

63.0°

Gusts: 18 MPH Relative Humidity: 33%



Fire Break Types

- Attempted Line - 1430
- Backfire - 1530
- Backfire - 1815
- Plowed Line - 1815
- Backfire - 2015
- Proposed Line - 2315

Boundaries

- Fire Perimeter - 1300
- Fire Perimeter - 1715
- Northern Head - 2100
- Southern Head - 2100
- Northern Head - 0200
- Southern Head - 0200
- Fire Perimeter - 0600
- Final Burn Zone



THE HIGHWAY 31 FIRE

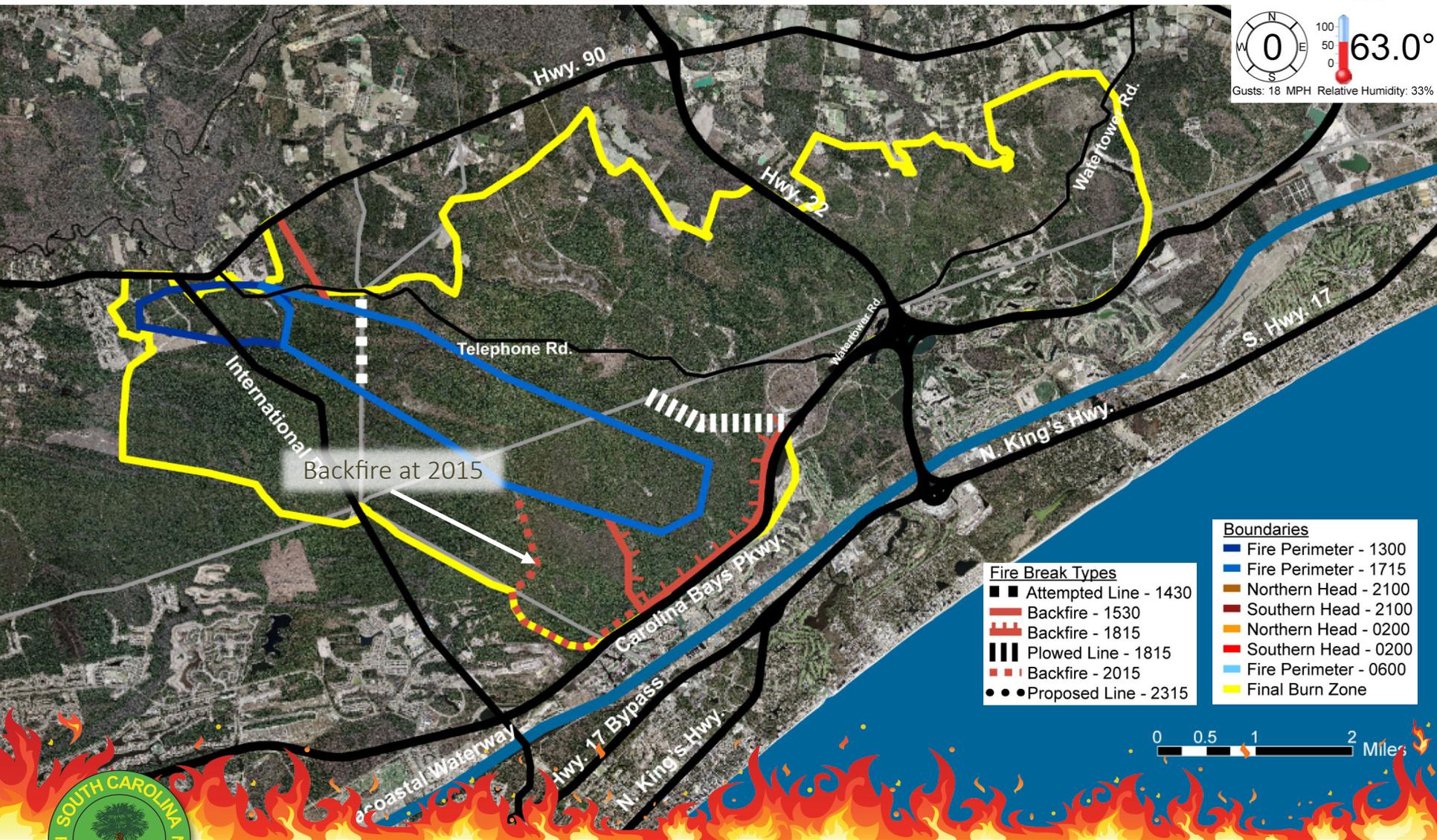
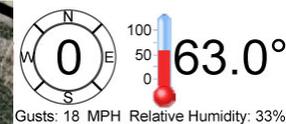
BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

Highway 31 Fire: Fire boundary—northern and southern head at 2100, April 22, 2009

12:00 pm
4/22

8:15 pm
4/22

8:00 am
4/23



Fire Break Types

- Attempted Line - 1430
- ▬ Backfire - 1530
- ▬ Backfire - 1815
- ▬ Plowed Line - 1815
- ▬ Backfire - 2015
- Proposed Line - 2315

Boundaries

- Fire Perimeter - 1300
- Fire Perimeter - 1715
- Northern Head - 2100
- Southern Head - 2100
- Northern Head - 0200
- Southern Head - 0200
- Fire Perimeter - 0600
- Final Burn Zone

Backfire at 2015



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

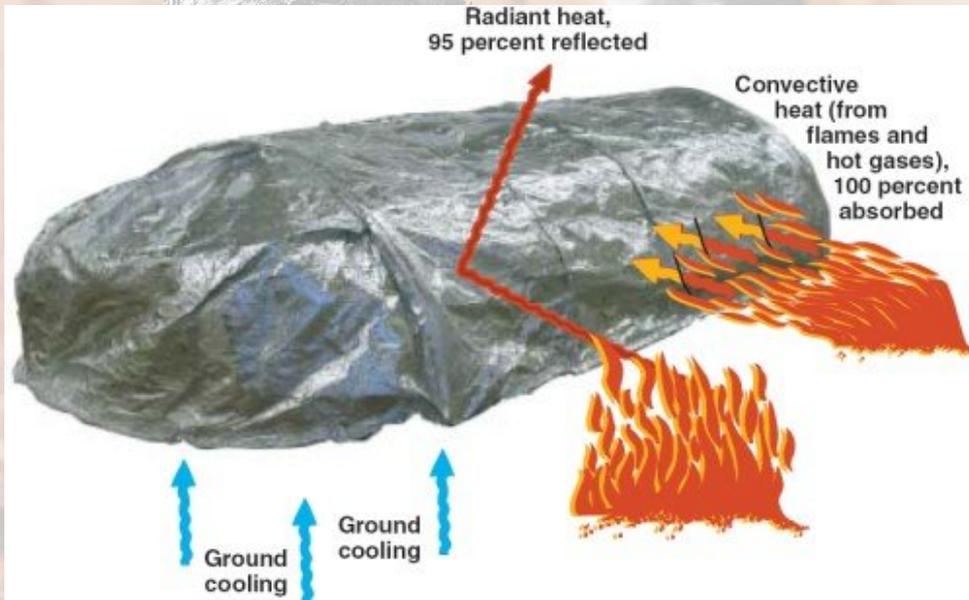
FIRE SHELTER DEPLOYMENTS

An abrupt wind shift forced two Commission employees to deploy fire shelters when their units were bogged down in a wet area. Other employees at risk were forced to take defensive safety actions in a safety zone they created earlier.



FIRE SHELTERS

A wildland firefighter's last line of defense... only deployed when there is no other option.



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

FIRE SHELTER DEPLOYMENTS

Photo taken from cell phone immediately after the fire shelter deployment...



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

Highway 31 Fire: Proposed plow line firebreak at 2315, April 22, 2009

12:00 pm
4/22

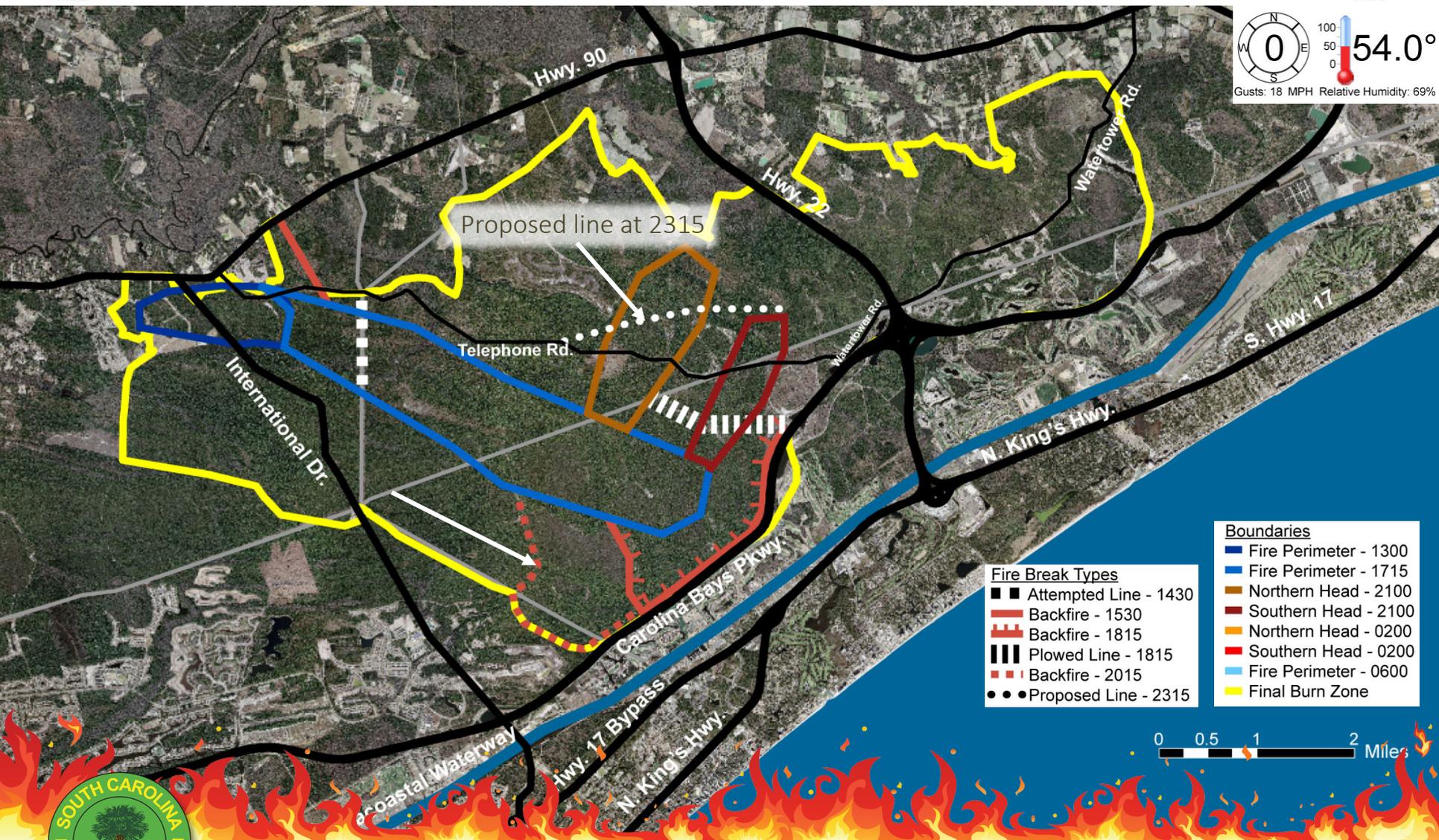
11:15 pm
4/22

8:00 am
4/23

100
50
0

54.0°

Gusts: 18 MPH Relative Humidity: 69%



Fire Break Types

- Attempted Line - 1430
- Backfire - 1530
- Backfire - 1815
- Plowed Line - 1815
- Backfire - 2015
- Proposed Line - 2315

Boundaries

- Fire Perimeter - 1300
- Fire Perimeter - 1715
- Northern Head - 2100
- Southern Head - 2100
- Northern Head - 0200
- Southern Head - 0200
- Fire Perimeter - 0600
- Final Burn Zone



THE HIGHWAY 31 FIRE

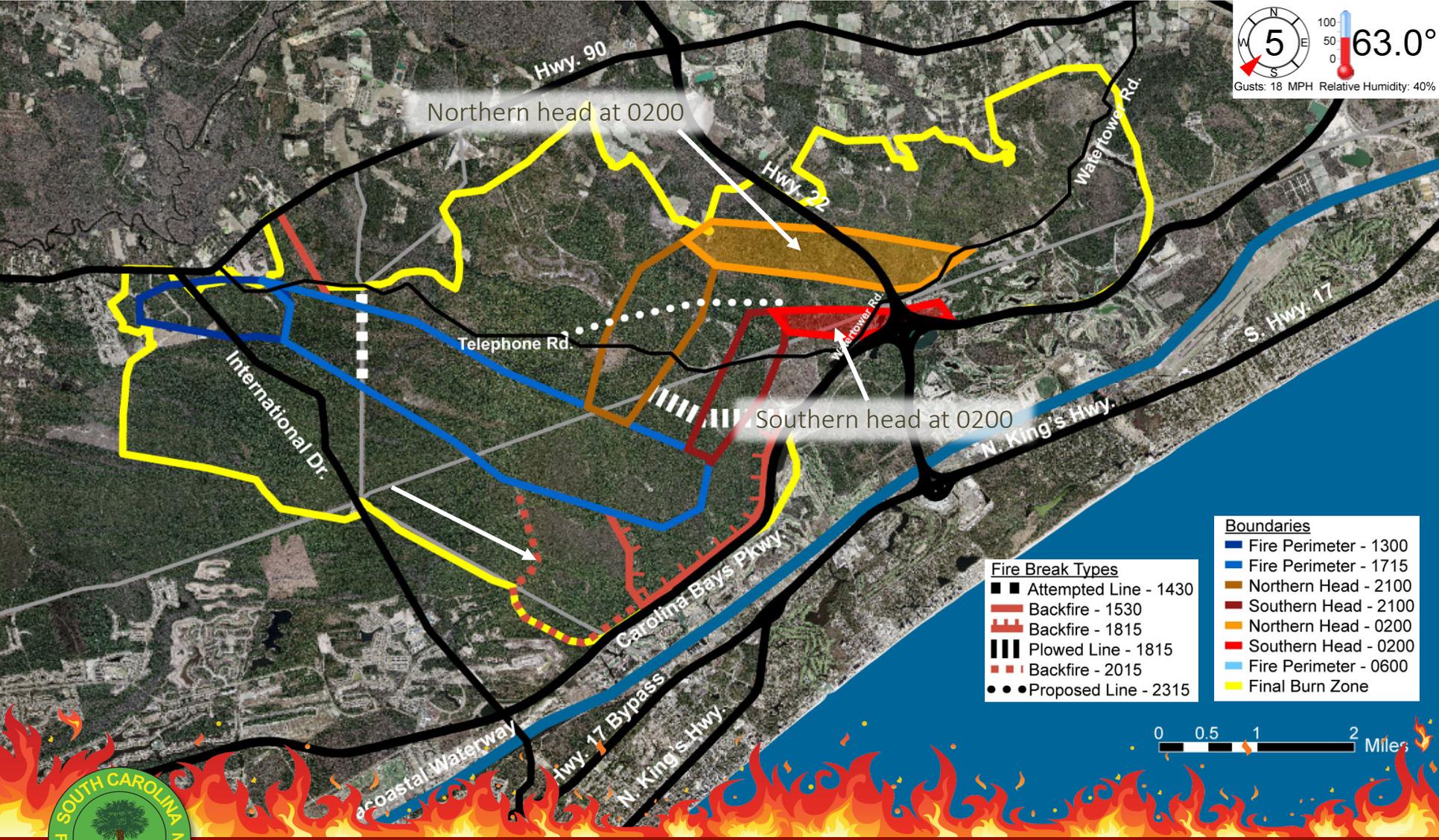
BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

Highway 31 Fire: Fire boundary– northern and southern head at 0200, April 23, 2009

12:00 pm
4/22

2:00 am
4/23

8:00 am
4/23



Fire Break Types

- Attempted Line - 1430
- Backfire - 1530
- Backfire - 1815
- Plowed Line - 1815
- Backfire - 2015
- Proposed Line - 2315

Boundaries

- Fire Perimeter - 1300
- Fire Perimeter - 1715
- Northern Head - 2100
- Southern Head - 2100
- Northern Head - 0200
- Southern Head - 0200
- Fire Perimeter - 0600
- Final Burn Zone



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

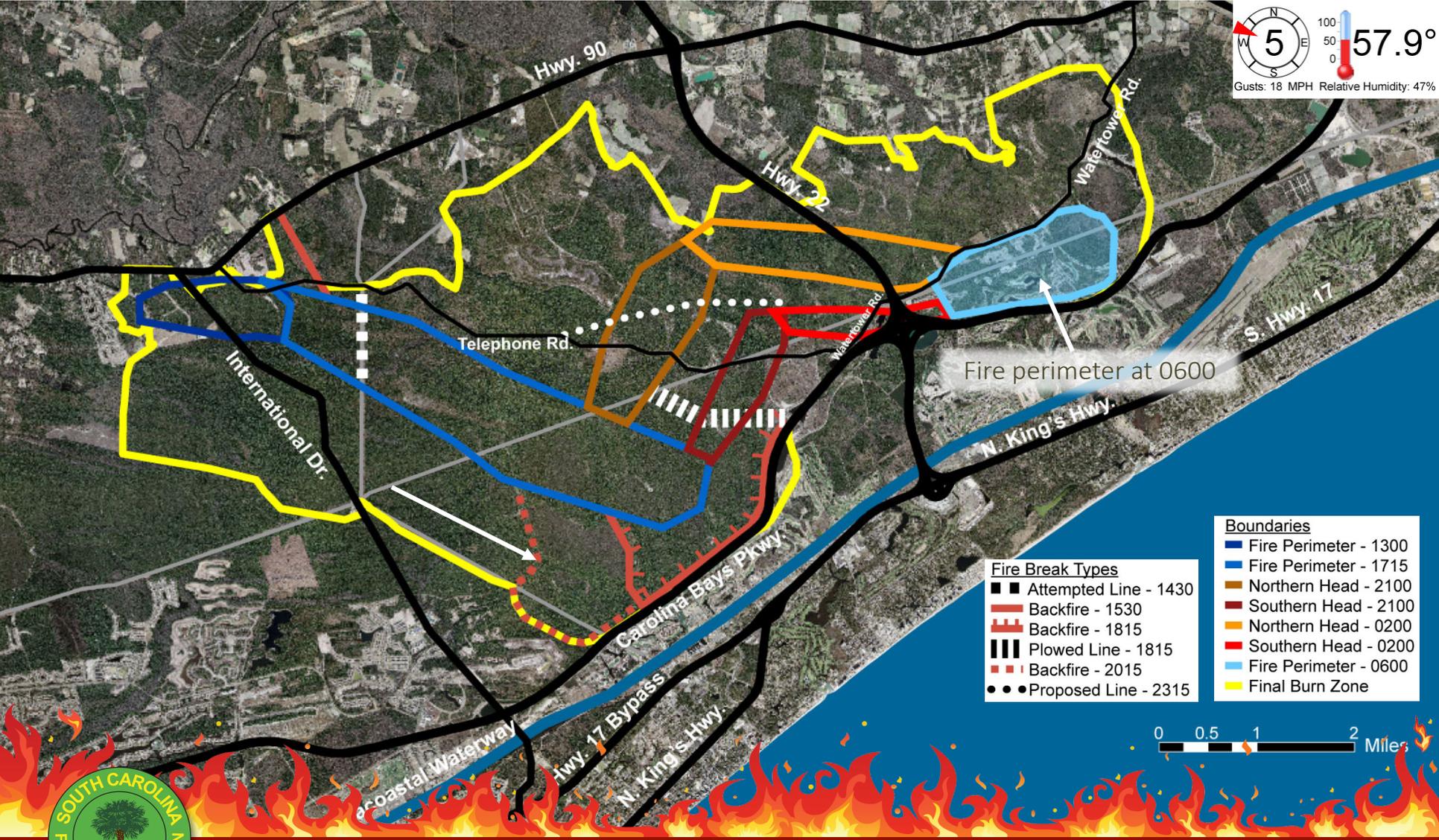
Highway 31 Fire: Fire perimeter at 0600, April 23, 2009

12:00 pm
4/22

6:00 am
4/23

8:00 am
4/23

5
57.9°
Gusts: 18 MPH Relative Humidity: 47%



Fire Break Types

- Attempted Line - 1430
- ▬ Backfire - 1530
- ▬ Backfire - 1815
- ▬ Plowed Line - 1815
- ▬ Backfire - 2015
- Proposed Line - 2315

Boundaries

- Fire Perimeter - 1300
- Fire Perimeter - 1715
- Northern Head - 2100
- Southern Head - 2100
- Northern Head - 0200
- Southern Head - 0200
- Fire Perimeter - 0600
- Final Burn Zone



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

UNUSUALLY FAST RATE OF SPREAD

1,100 acres per hour



0 0.5 1 2 Miles



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

UNUSUAL NIGHTTIME ACTIVITY



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

FIREFIGHTER RESPONSE



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

SUPPORT

Mechanics, pilots and dispatchers were a few of the support services needed by the Forestry Commission.



OUTSIDE SUPPORT



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

BAREFOOT RESORT DAMAGE



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

LIVES AFFECTED



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

HIGHWAY CLOSURES

Three major highways closed for days because of smoke and fog in the area.



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

PROPERTY SAVED

- Hundreds of homes and businesses saved
- Public utilities protected
- No deaths or injuries



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

RESOURCES

- Over 125 SCFC personnel
- Horry County Fire Rescue, North Myrtle Beach Fire Department & Public Safety, fire departments from all over the state
- Several agencies: SCEMD, DOT, DNR, Highway Patrol, DHEC, NIMO, FEMA, Coast Guard, Red Cross
- National Guard helicopters and USFS Tanker
- Over 579 personnel from other agencies



FIRE IMPACT ESTIMATES

Timber Damage:	\$17.0 million
Home Damage:	\$25.0 million
Vehicle Damage:	\$.3 million
SCFC Suppression Costs:	\$1.5 million
Cooperator Suppression Costs:	\$2 million
Indirect Economic Impact and Rehabilitation Costs:	Undetermined*
<hr/>	
TOTAL: \$45.8 million plus*	

True wildfire costs have been found to be 2 to 30 times suppression costs. If a multiplier of 15 and a total suppression cost of \$3.5 million (SCFC and others) are assumed, the total cost would be approximately \$52 million.

[Western Forestry Leadership Coalition, "The True Cost of Wildfire"]



VIDEO SLIDE #1



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE

VIDEO SLIDE #2



0 0.5 1 2 Miles



THE HIGHWAY 31 FIRE

BACKYARDS & BEYOND: 2015 NATIONAL FIRE PROTECTION ASSOCIATION WILDLAND FIRE EDUCATION CONFERENCE