



**Air Alliance Houston**

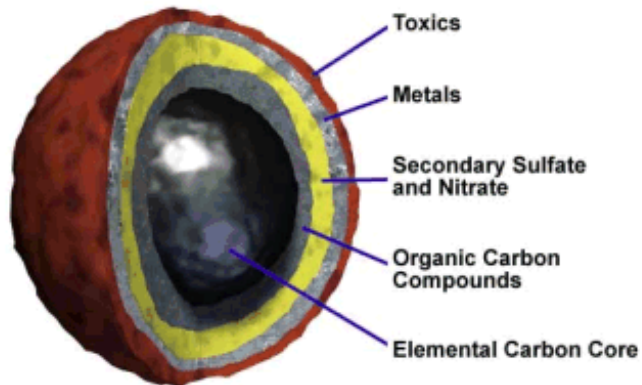
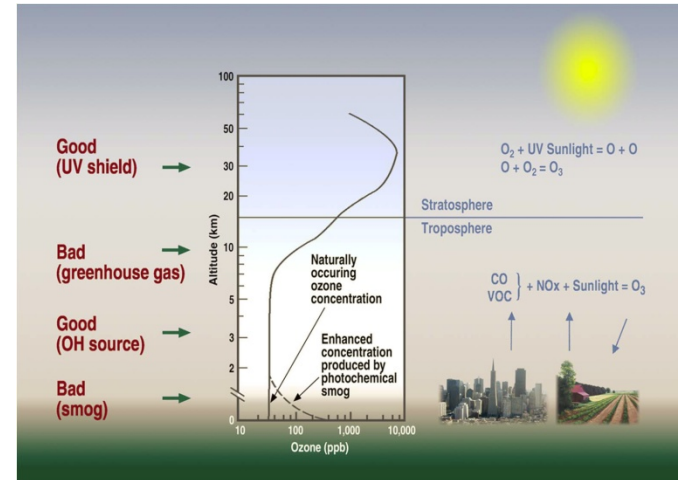
Clean Air Healthy Future

Clean air so our  
economy, quality of life,  
and children can thrive.

- I. Climate Change and Air Quality
- II. Climate Change in the Energy Capital of the World
- III. Texans Attitudes toward Climate Change
- IV. Federal Action
- V. (Lack of) State Action

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# Ground Level Ozone



# Particulate Matter

# Ground Level Ozone



## Health Impacts

- Coughing
- Wheezing
- Shortness of breath
- Chest pains
- Heart attacks
- Lung development in children

Children and the elderly are most susceptible.  
Not carcinogenic.







# CLIMATE CHANGE **AND** YOUR HEALTH

## Rising Temperatures, Worsening Ozone Pollution



Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

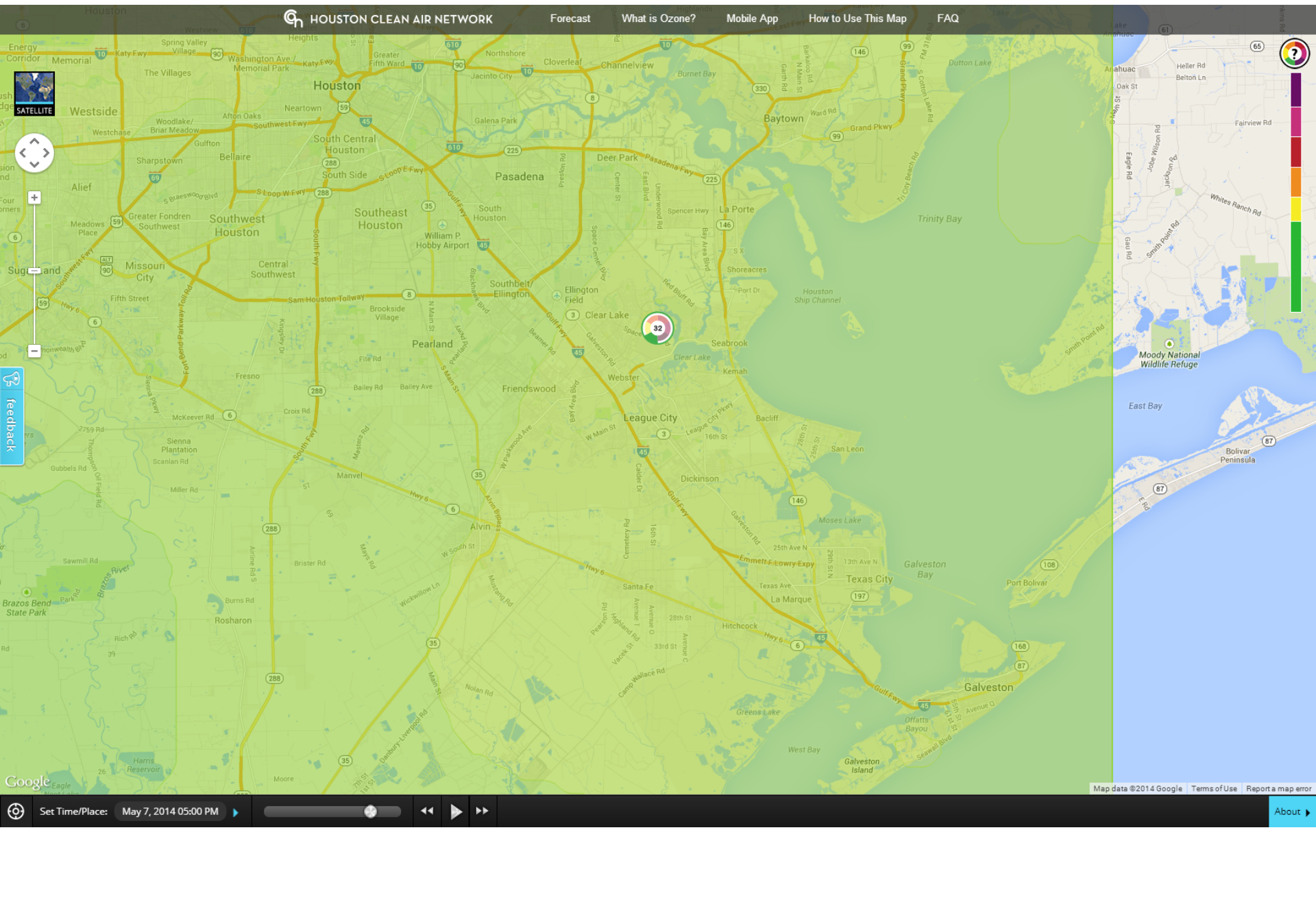
# [ Union of Concerned Scientists

**TABLE 1. Projected Increase in Ozone Concentration Caused by Climate-Induced Temperature Change in 2020 and 2050**

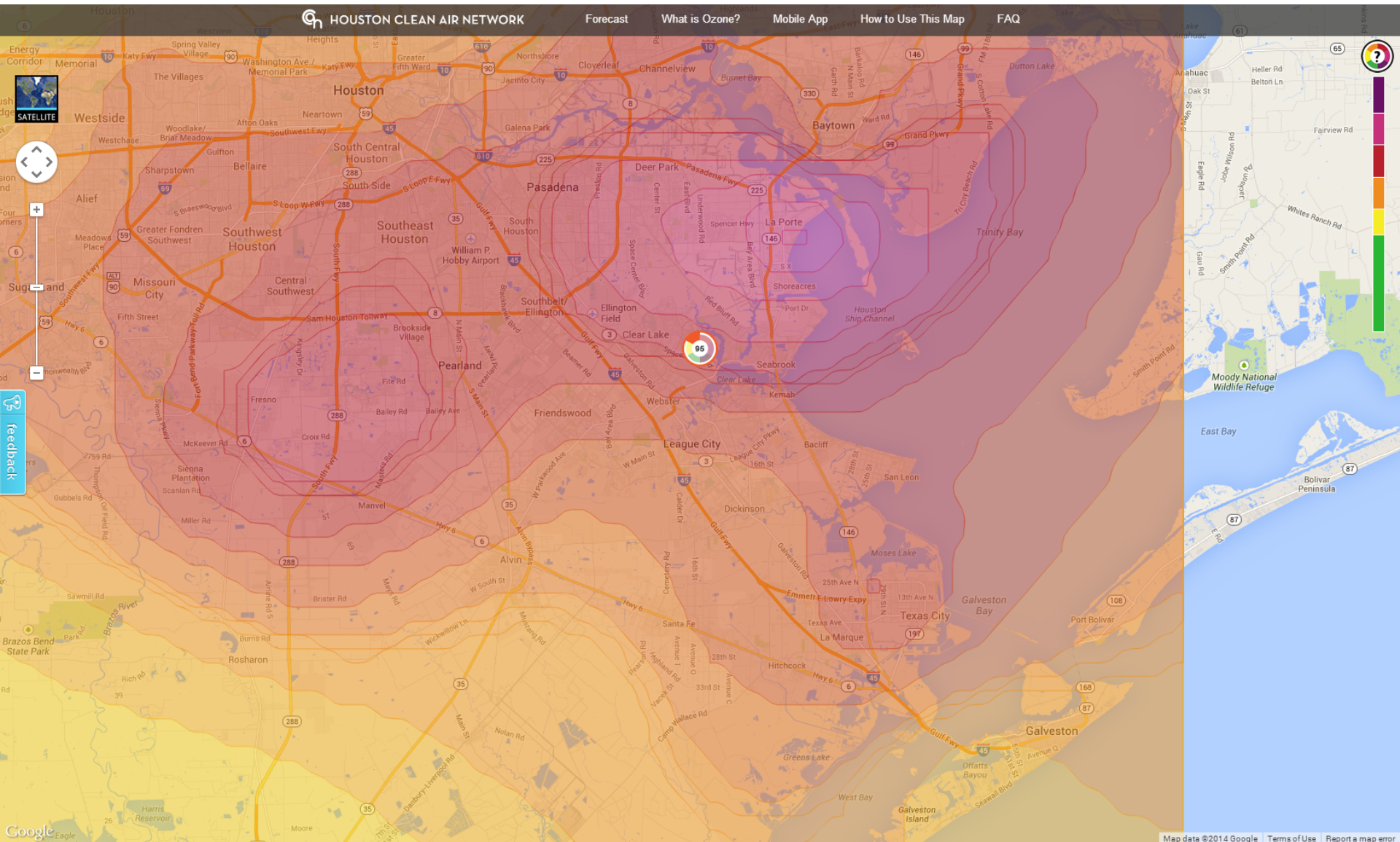
Emissions Scenario	Projected Increase in Temperature (°F)	Climate Penalty Factor (ppb/°F)	Projected Increase in Ozone (ppb)
2020 Emissions Scenario <sup>15</sup>	1–2	1.2	1–2 in 2020
2050 Higher-Emissions Scenario <sup>16</sup>	3–5.5	1.2	4–7 in 2050
2050 Lower-Emissions Scenario	2–4	1.2	2–5 in 2050

By multiplying the projected temperature-increase range by the climate penalty factor, we get the range for the projected increases in ozone in 2020 and 2050. For 2050, the temperature increase is highly dependent on whether global warming emissions continue to be released at their current rate or are reduced.

Air Quality Index Values (ozone parts per billion)		Levels of Health Concern.
136+	HAZARDOUS	Health alert: everyone may experience more serious health effects.
116-135	VERY UNHEALTHY	Health warnings of emergency conditions.
96-115	UNHEALTHY	Everyone may begin to experience health effects.
77-95	WARNING	General public not likely to be affected; People sensitive to air pollution may experience health effects.
61-76	MODERATE	Air quality is acceptable; Moderate health concern for people unusually sensitive to air pollution.
0-60	GOOD	Air quality is considered satisfactory, air pollution poses little or no risk. If you are seeing an all green box, this means there are low ozone levels. To view the value in a certain area, click on the map. Ozone level markers give a more precise value for a specific location.







# HCAN: Available for Smartphones!



Search “Ozone Map”

# Particulate Matter



## Health Impacts

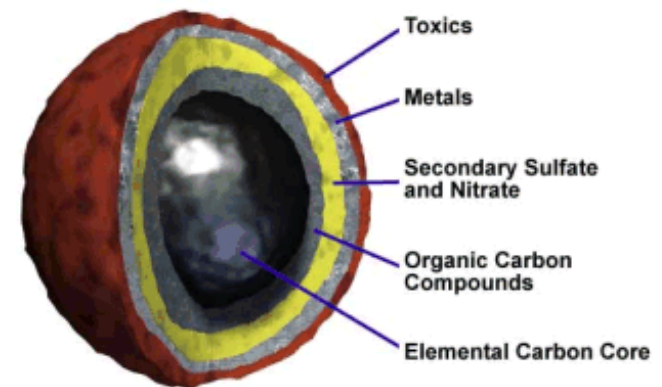
Mostly cardiovascular

Heart attacks

Premature deaths

Some pulmonary effects

Can affect all organs





*EPA Research Grant: Particulate Matter and Related Pollutants in a Changing World*

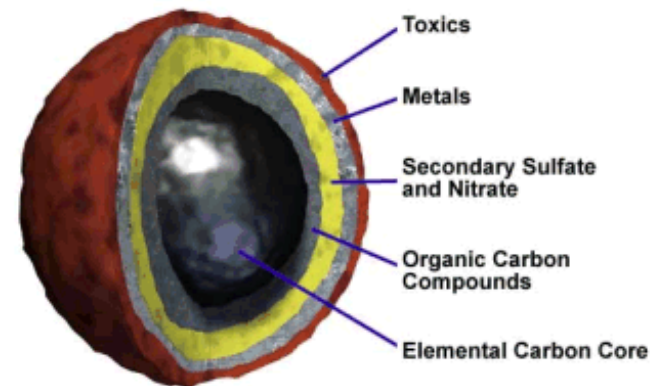
# PM & Climate Change

## Direct Impacts

- Changing meteorology
- Circulation patterns

## Indirect Impacts

- Wildfires
- Dust suspension
- Biogenic emissions
- Invasive species





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A Report from the  
**Texas Legislative Study Group**  
On the State of Our State



# Environment

*(51st=Lowest, 1st=Highest)*

- Amount of Carbon Dioxide Emissions<sup>70</sup> 1<sup>st</sup>
- Total Amount of Toxic Releases into Water<sup>71</sup> 4<sup>th</sup>
- Amount of Recognized Cancer-Causing Carcinogens Released into Air<sup>72</sup> 4<sup>th</sup>
- Amount of Hazardous Waste Generated<sup>73</sup> 1<sup>st</sup>
- Industrial Toxic Air Pollution<sup>74</sup> 10<sup>th</sup>
- Amount of Recognized Cancer-Causing Carcinogens Released into Water<sup>75</sup> 5<sup>th</sup>
- Number of Hazardous Waste Sites on National Priority List<sup>76</sup> 7<sup>th</sup>
- Total Energy Consumption Per Capita<sup>77</sup> 6<sup>th</sup>
- Energy Efficiency<sup>78</sup> 32<sup>nd</sup>



*Independent Statistics & Analysis*  
U.S. Energy Information  
Administration

- Carbon Dioxide Emissions 1<sup>st</sup>
- Energy Consumption per Capita 6<sup>th</sup>
- Energy Expenditure per Capita 5<sup>th</sup>
- Energy Production 1<sup>st</sup>
  - Crude Oil 1<sup>st</sup>
  - Natural Gas 1<sup>st</sup>
  - Coal 6<sup>th</sup>
  - Electricity 1<sup>st</sup>



# Household Energy Use in Texas

## A closer look at residential energy consumption

All data from EIA's 2009 Residential Energy Consumption Survey

[www.eia.gov/consumption/residential/](http://www.eia.gov/consumption/residential/)

- Texas households consume an average of 77 million Btu per year, about 14% less than the U.S. average.
- Average electricity consumption per Texas home is 26% higher than the national average, but similar to the amount used in neighboring states.
- The average annual electricity cost per Texas household is \$1,801, among the highest in the nation, although similar to other warm weather states like Florida.
- Texas homes are typically newer, yet smaller in size, than homes in other parts of the country.

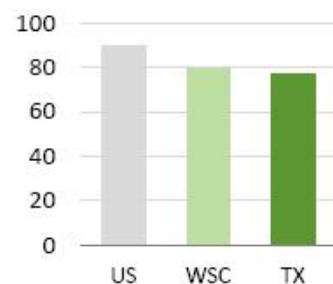


**DIVISION:** West South Central (WSC)

**STATES INCLUDED:** Arkansas, Louisiana, Oklahoma, Texas

### ALL ENERGY average per household (excl. transportation)

Site Consumption  
million Btu

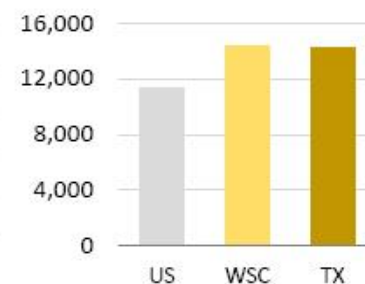


Expenditures  
dollars

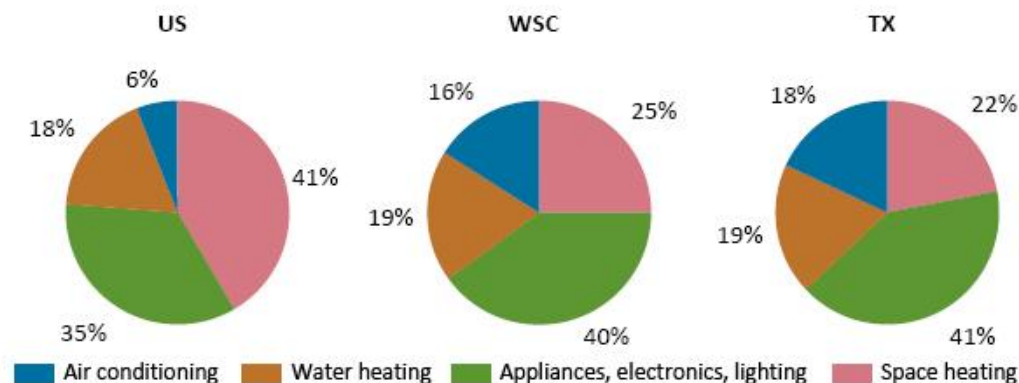
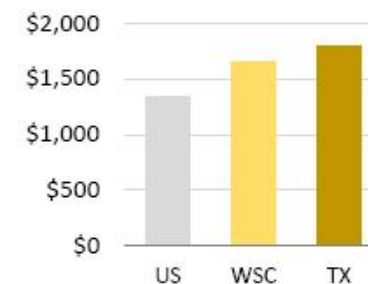


### ELECTRICITY ONLY average per household

Site Consumption  
kilowatthours



Expenditures  
dollars

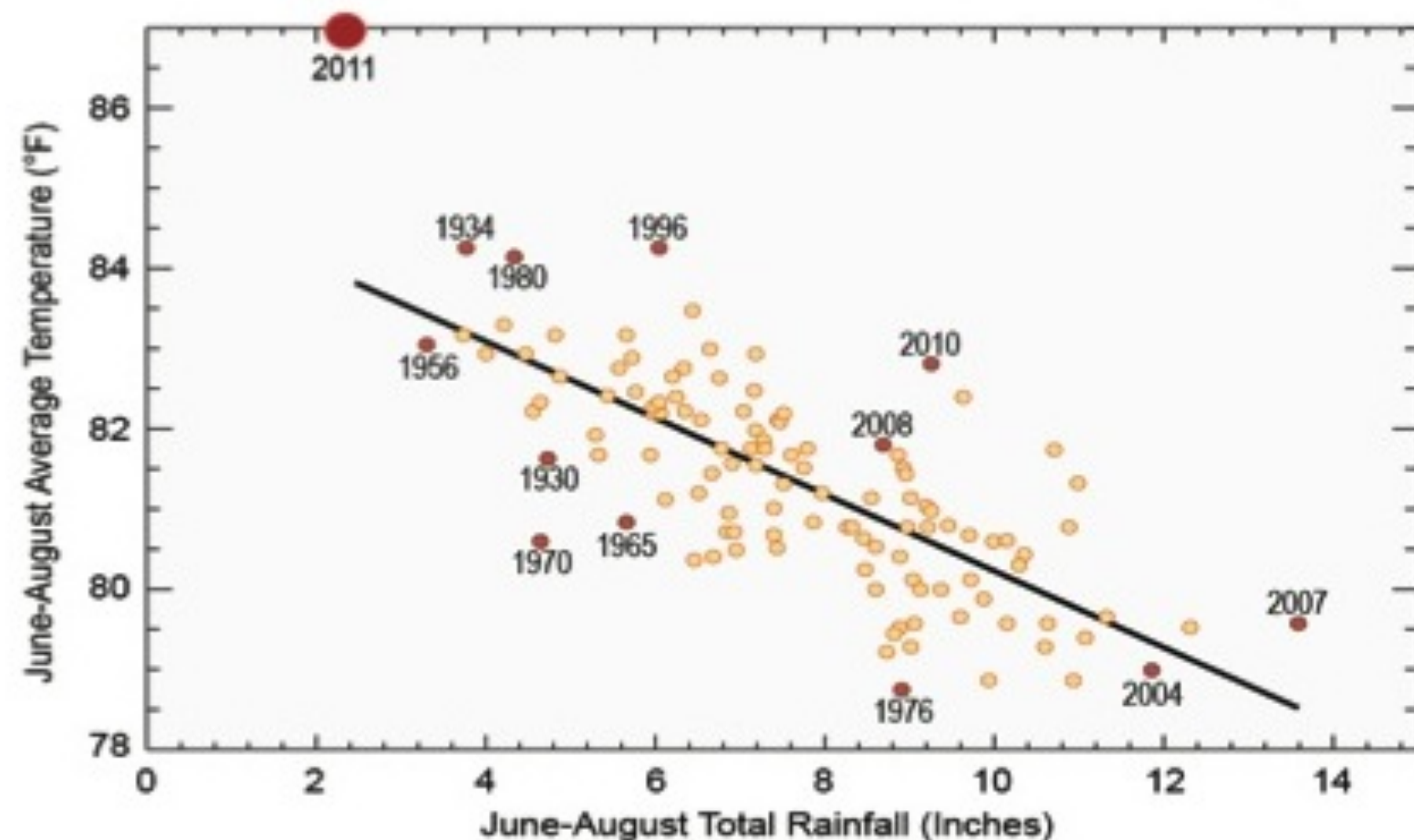


### CONSUMPTION BY END USE

Compared to other areas of the United States, the warmer weather in Texas and its neighboring states means that air conditioning accounts for a greater portion of home energy use (18%), while space heating accounts for a much smaller portion (22%).

# TEXAS CLIMATE NEWS

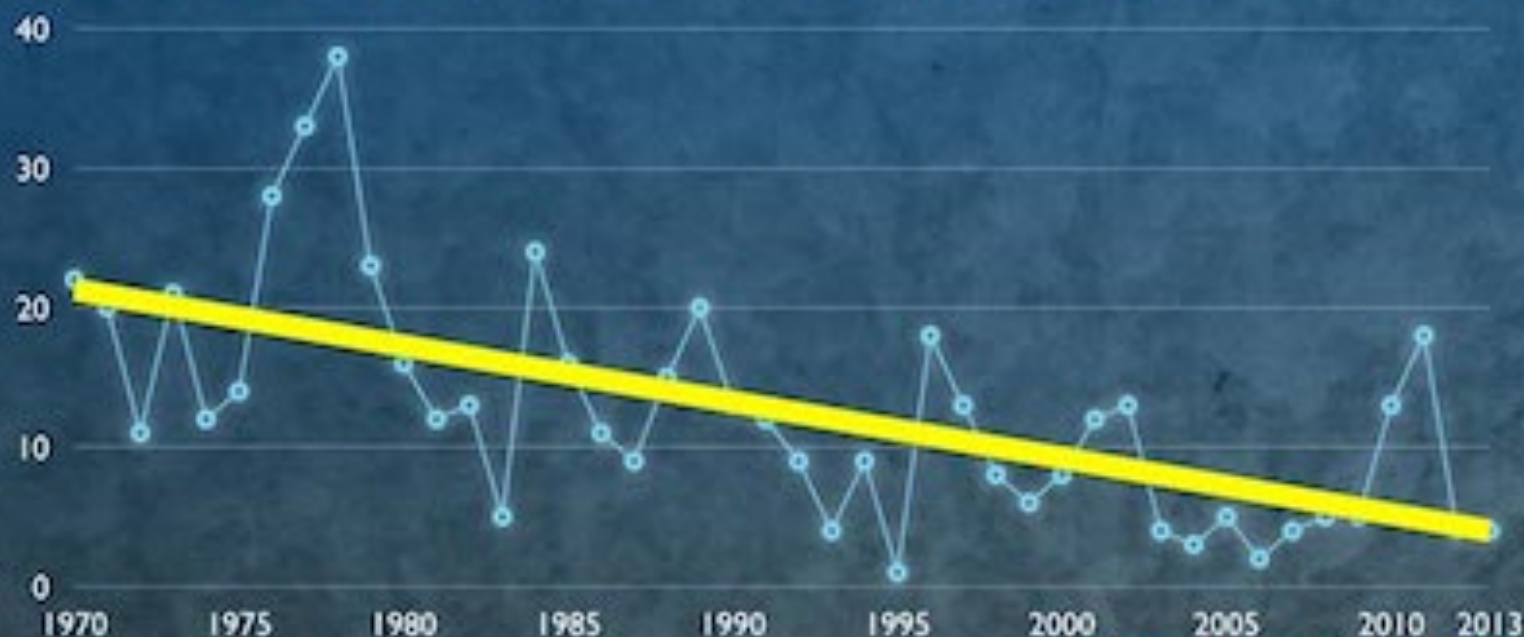
Texas Summer 2011: Record Heat and Drought



# TEXAS CLIMATE NEWS

## FEWER FRIGID NIGHTS

HOUSTON: NUMBER OF NIGHTS BELOW 32°F



Data Source: RCC-ACIS.org - Applied Climate Information System

CLIMATE  CENTRAL

# U.S. Drought Monitor

## Texas

**May 6, 2014**

(Released Thursday, May. 8, 2014)

Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	5.11	94.89	83.35	65.13	46.17	21.28
<b>Last Week</b> <i>4/29/2014</i>	9.88	90.12	74.47	52.91	37.86	17.75
<b>3 Months Ago</b> <i>2/4/2014</i>	14.95	85.05	51.68	22.34	7.95	0.71
<b>Start of Calendar Year</b> <i>12/31/2013</i>	28.48	71.52	43.84	21.15	5.82	0.79
<b>Start of Water Year</b> <i>10/1/2013</i>	6.62	93.38	70.95	25.08	4.01	0.12
<b>One Year Ago</b> <i>5/7/2013</i>	1.45	98.55	92.13	72.82	40.58	12.88

Intensity:



*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

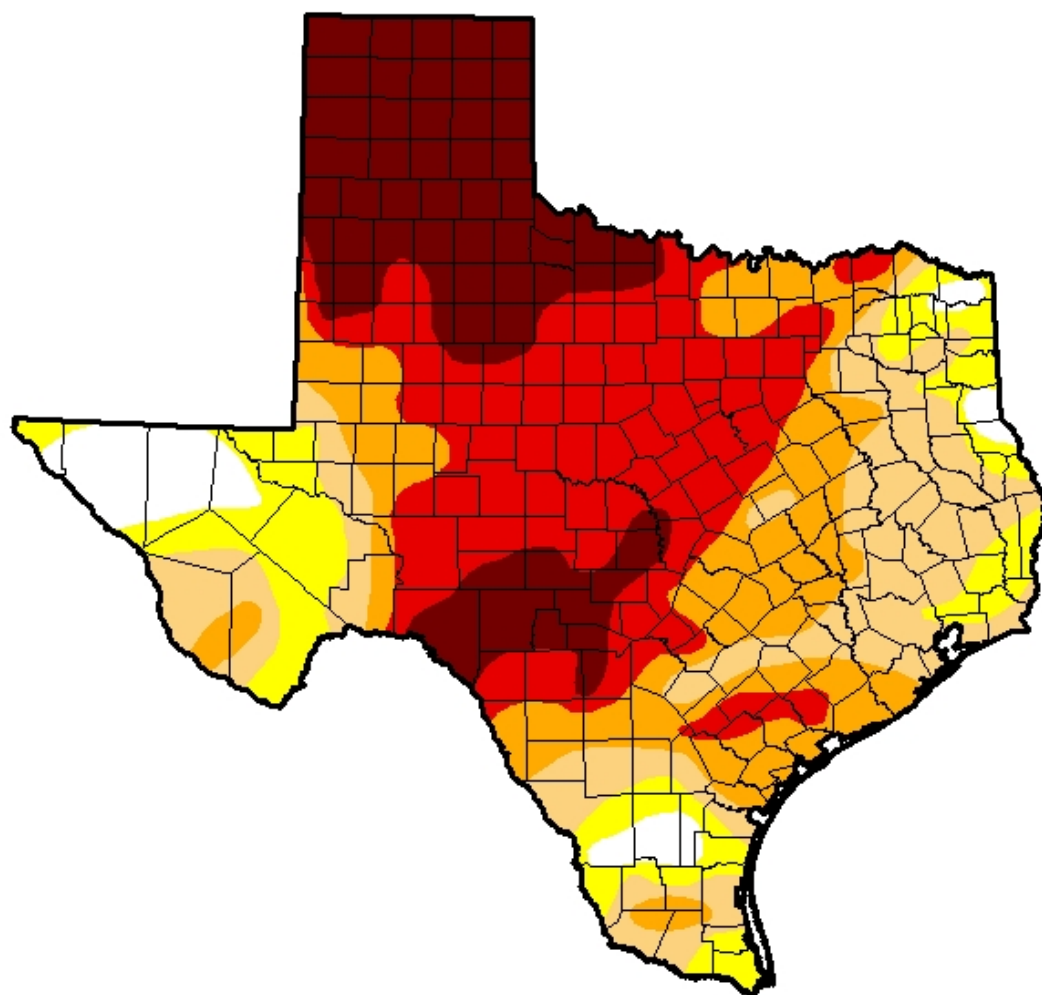
**Author:**

Mark Svoboda

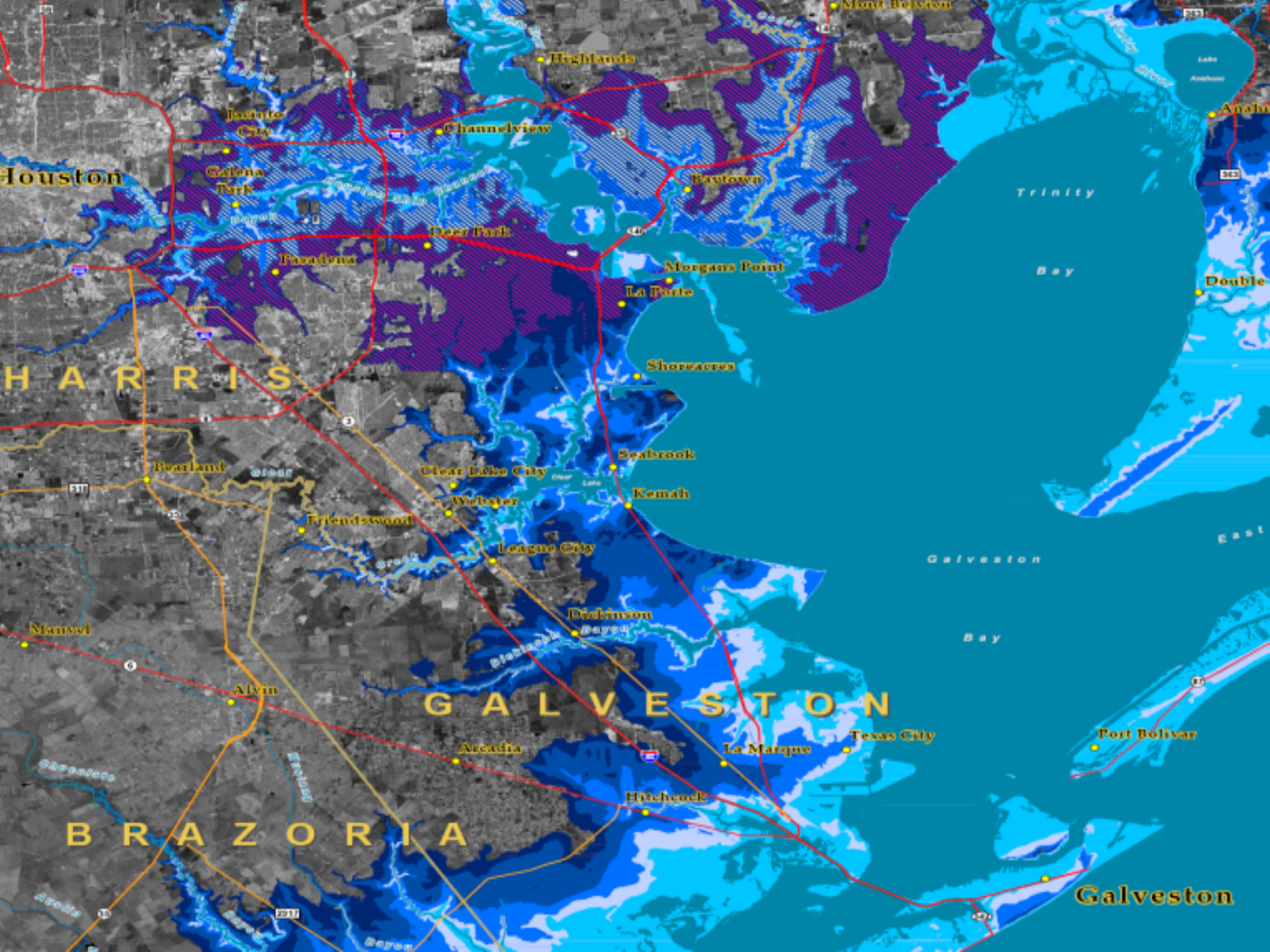
National Drought Mitigation Center



<http://droughtmonitor.unl.edu/>







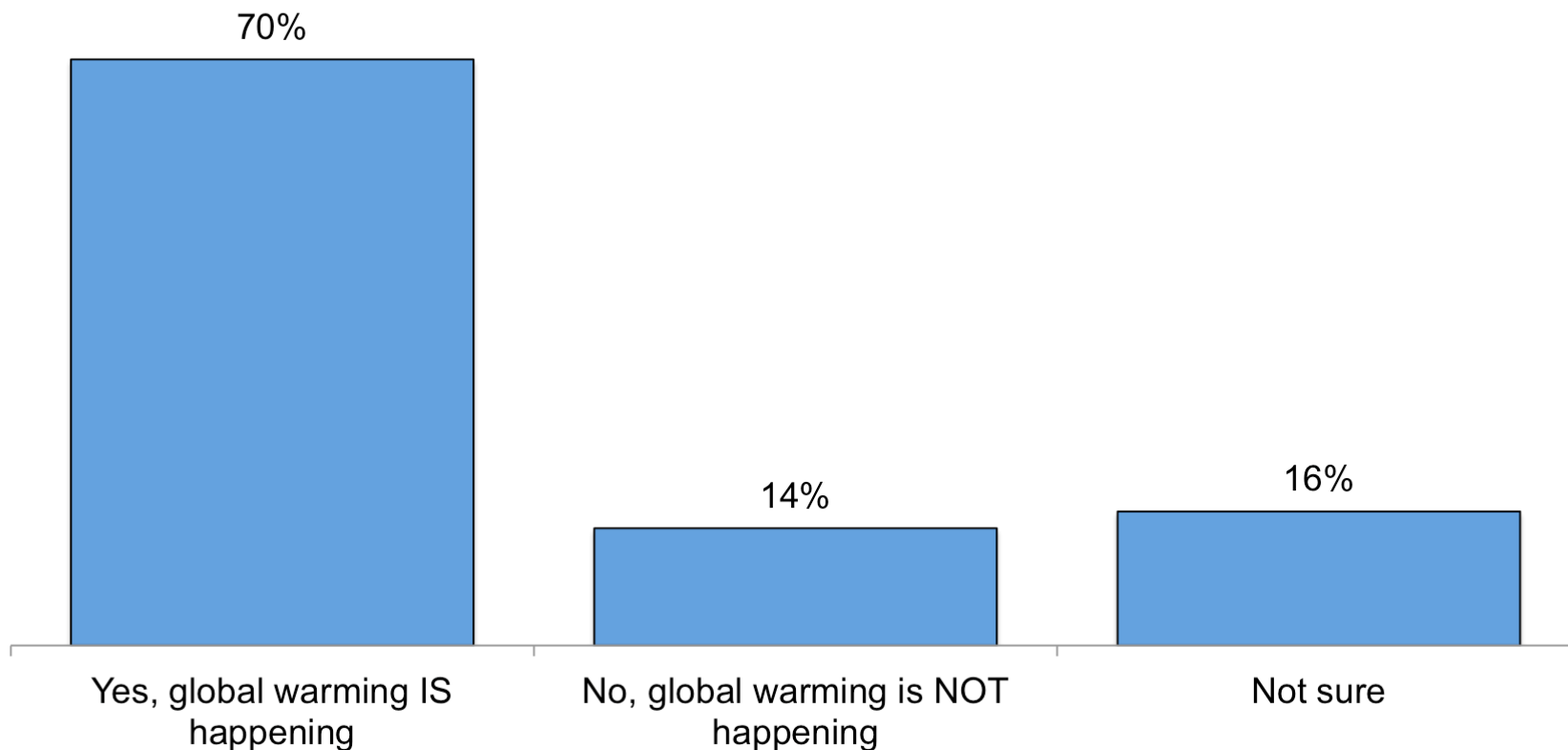
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# CLIMATE CHANGE IN THE TEXAN MIND





# Most Texans Believe Global Warming Is Happening



Recently, you may have noticed that *global warming* has been getting some attention in the news. Global warming refers to the idea that the world's average temperature has been increasing over the past 150 years, may be increasing more in the future, and that the world's climate may change as a result.

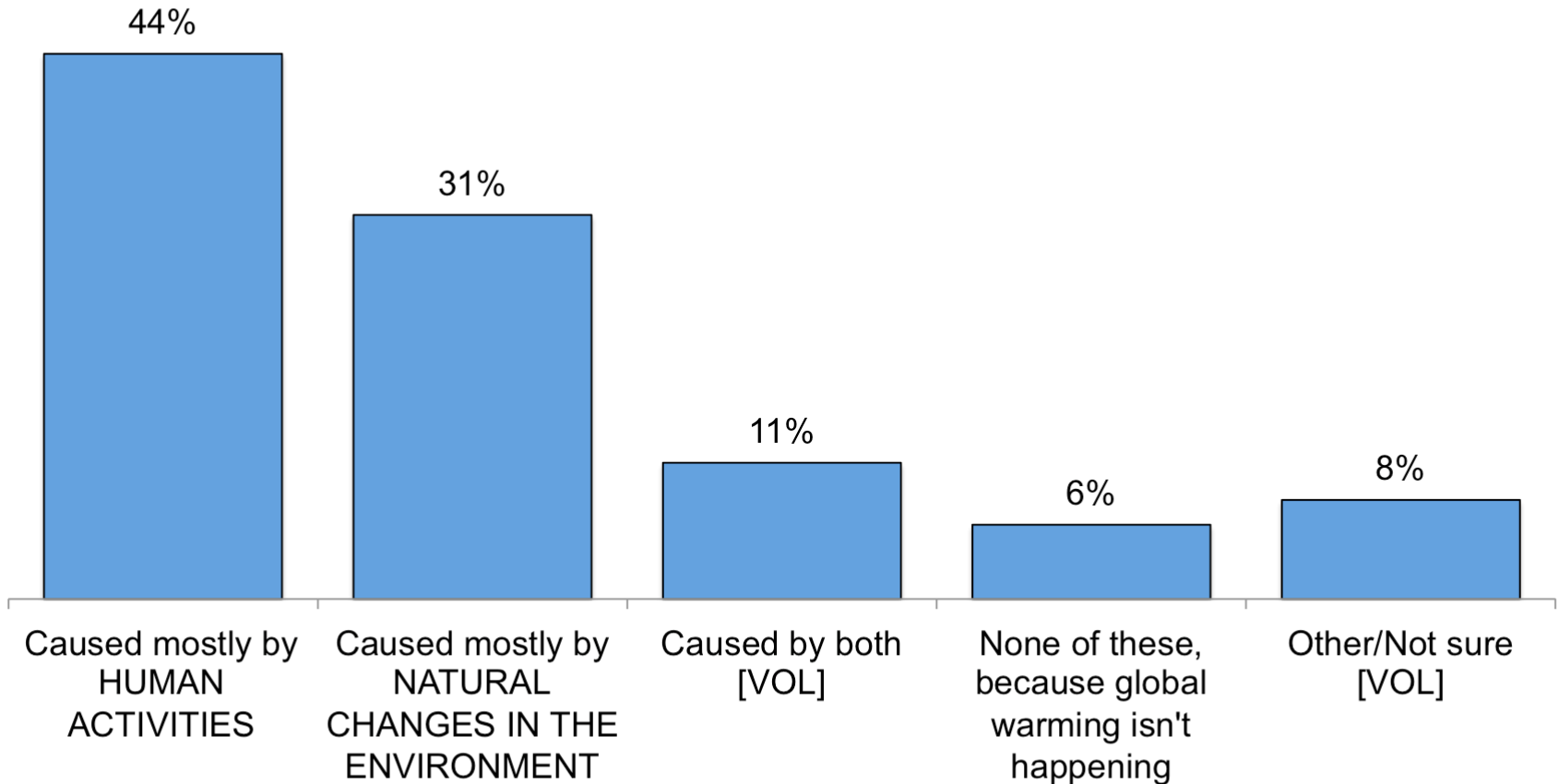
What do you think: Do you think that global warming is happening, or not? If you're not sure, just let me know.

Base: Texans 18+ (n=800).



# Four In Ten Texans Believe Global Warming Is Human Caused

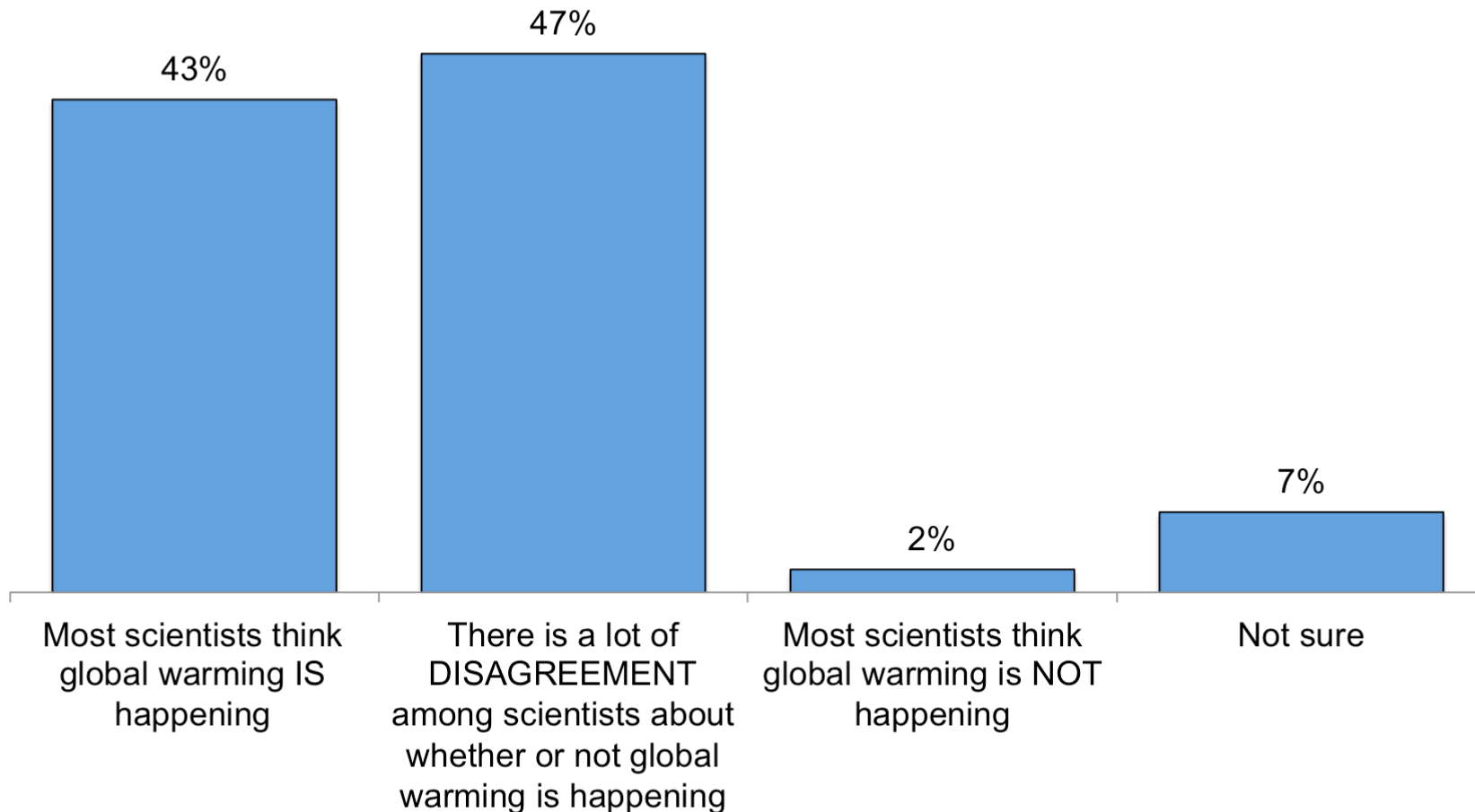
- But more than three in ten believe it is caused mostly by natural changes in the environment -



Assuming global warming is happening, do you think it is...

Base: Texans 18+ (n=800).

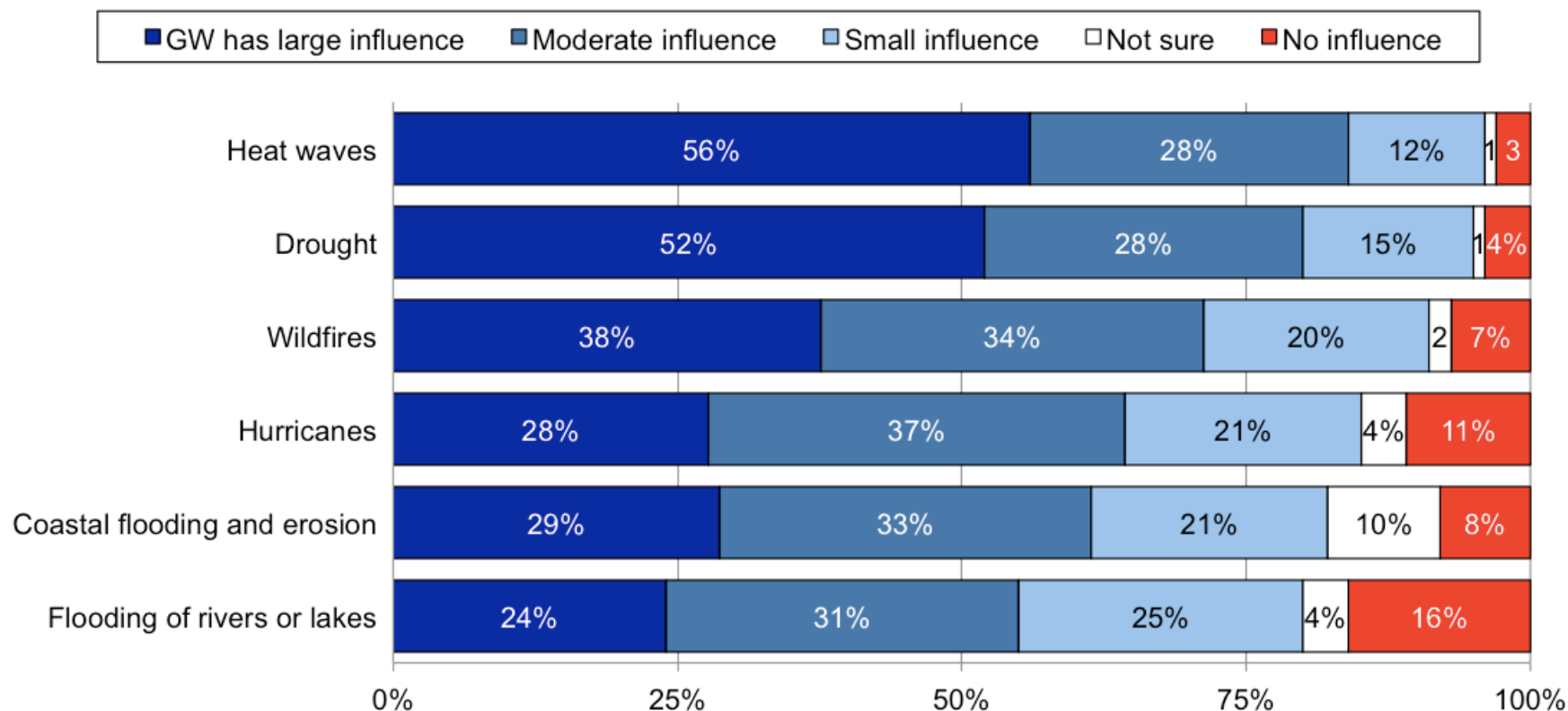
# Texans Are Split On Whether Scientists Agree Or Disagree About Whether Global Warming Is Happening



Which of the following statements comes closest to your own view? If you're not sure, just let me know.

Base: Texans 18+ (n=800).

# Majority of Texans Believe Global Warming Is Having a Large or Moderate Influence on the Severity of Weather Events



In your opinion, is global warming having no influence, a small influence, a moderate influence, or a large influence on the severity of...

Base: Texans 18+ who believe that global warming is happening (n=532).

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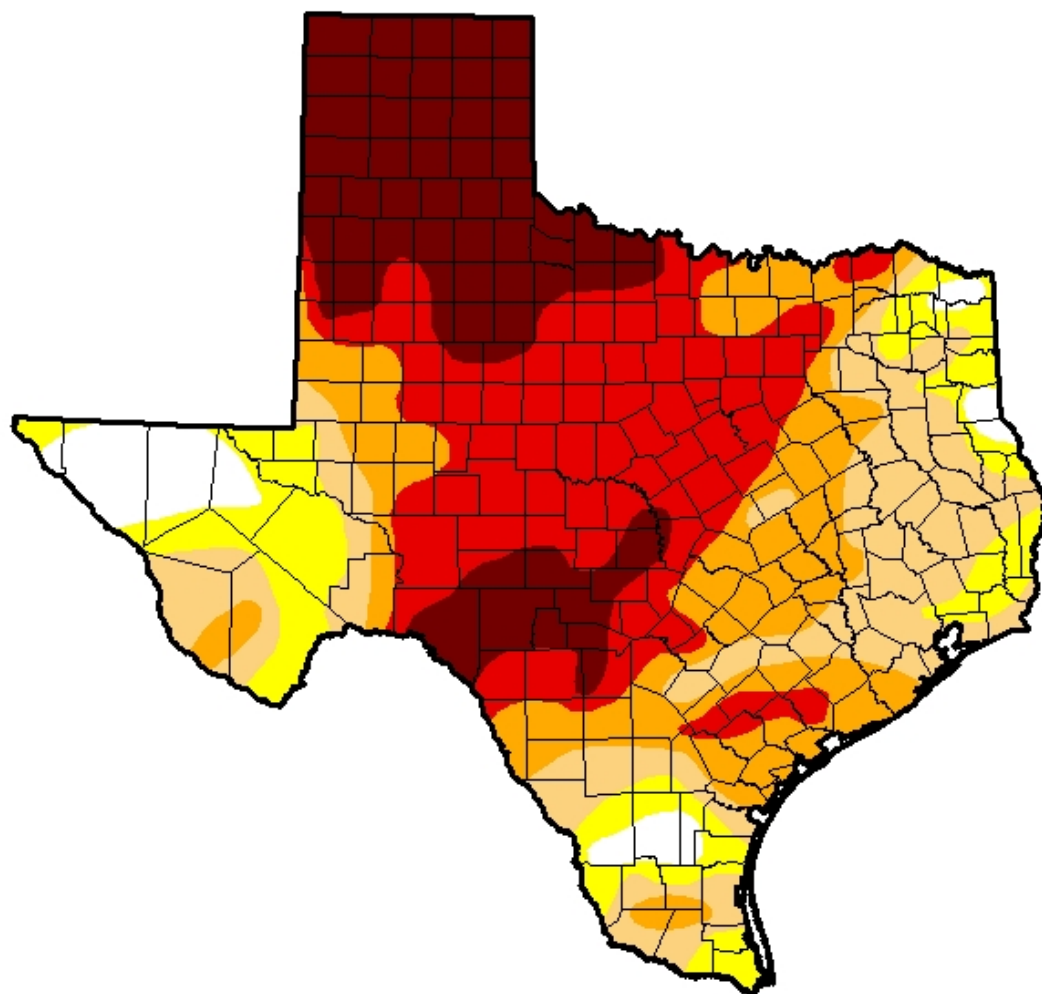
**Author:**

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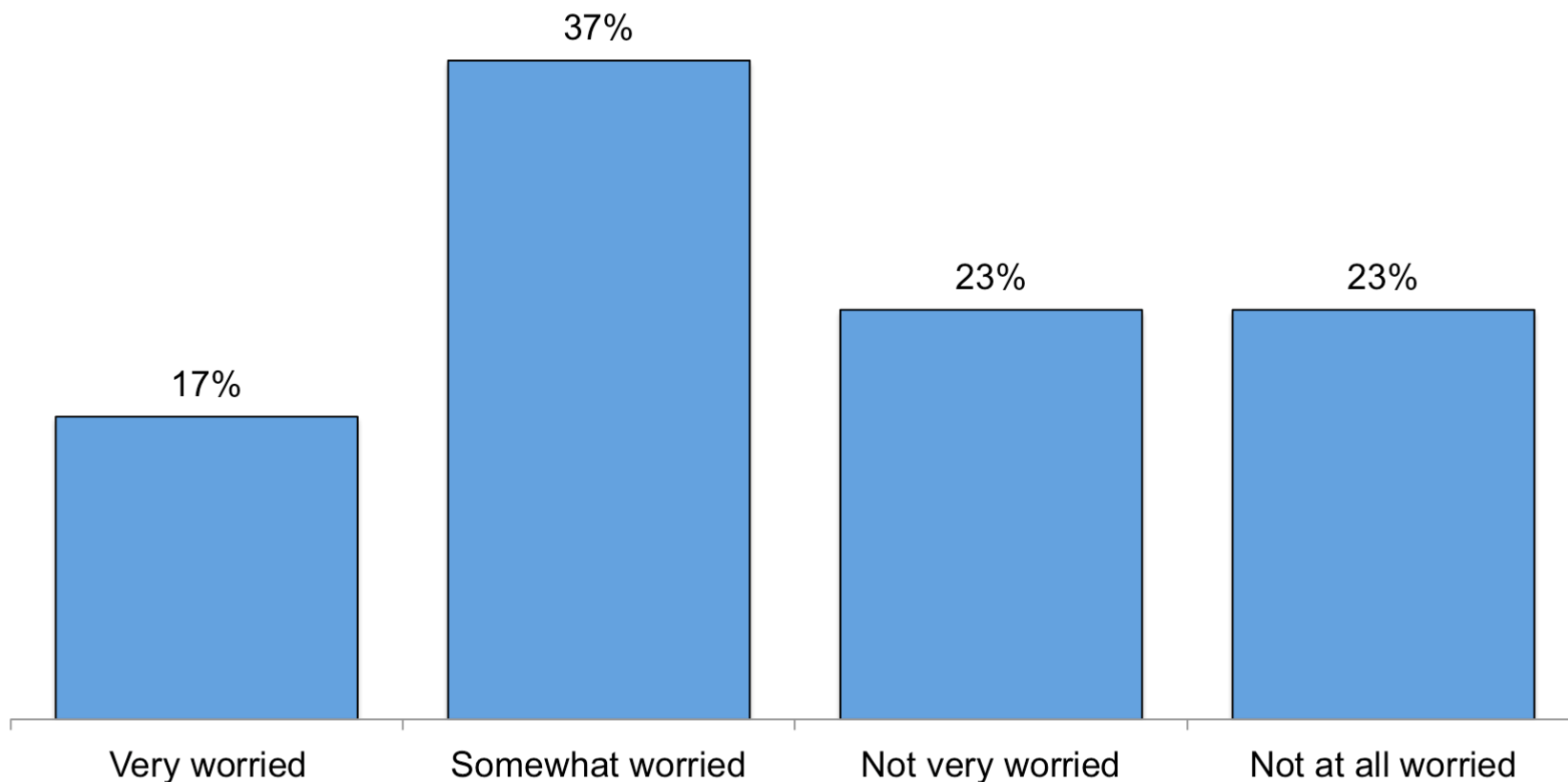
<http://droughtmonitor.unl.edu/>





# Majority of Texans Are Worried About Global Warming

- Relatively few, however, are “very” worried -



How worried are you about global warming – very worried, somewhat worried, not very worried, or not at all worried?

Base: Texans 18+ (n=800).



Public Affairs & Corporate Communications

**AP**

**ASSOCIATED PRESS**

# **THE AP-GfK POLL**

## **March, 2014**

Conducted by GfK Public Affairs & Corporate Communications

**A survey of the American general population (ages 18+)**

*Interview dates: March 20-24, 2014*

*Number of interviews, adults: 1,012*

*Margin of error for the total sample: +/- 3.4 percentage points at the 95% confidence level*



	Extremely/very confident	Extremely confident	Very confident	Somewhat confident	Not too/not at all confident	Not too confident	Not at all confident	Refused/Not Answered
Smoking causes cancer	<b>82</b>	59	23	<b>12</b>	<b>4</b>	4	1	2
A mental illness is a medical condition that affects the brain	<b>71</b>	37	34	<b>21</b>	<b>6</b>	5	1	3
Inside our cells, there is a complex genetic code that helps determine who we are	<b>69</b>	38	30	<b>22</b>	<b>8</b>	5	2	2
Overusing antibiotics causes the development of drug-resistant bacteria	<b>65</b>	36	30	<b>23</b>	<b>9</b>	8	1	3
The universe is so complex, there must be a supreme being guiding its creation	<b>54</b>	40	14	<b>18</b>	<b>25</b>	13	12	3
Childhood vaccines are safe and effective	<b>53</b>	20	33	<b>30</b>	<b>15</b>	11	4	3
The average temperature of the world is rising, mostly because of man-made heat-trapping greenhouse gases	<b>33</b>	13	20	<b>28</b>	<b>37</b>	22	15	3
Life on Earth, including human beings, evolved through a process of natural selection	<b>31</b>	14	17	<b>24</b>	<b>42</b>	16	27	3
The Earth is 4.5 billion years old	<b>27</b>	11	17	<b>33</b>	<b>36</b>	18	18	4
The universe began 13.8 billion years ago with a big bang	<b>21</b>	8	13	<b>25</b>	<b>51</b>	20	30	4

# AP-GfK Poll: Most agree with scientists on smoking, fewer buy Big Bang, evolution or warming

Published April 21, 2014 · Associated Press



23



17



1



FILE - This March 2, file 2013 file photo shows a woman smoking a cigarette while sitting in her truck in Hayneville, Ala. Few Americans question that smoking causes cancer. But as we get farther from our own bodies and the present, a new AP-GfK poll shows Americans have much more doubts in other concepts that scientists say are basic truth: global warming, evolution, and their largest question mark was in the Big Bang that created the universe. "Science ignorance is pervasive in our society, and these attitudes are reinforced when some of our leaders are openly antagonistic to established facts," said 2013 Nobel Prize in medicine winner Randy Schekman. (AP Photo/Dave Martin, File)THE ASSOCIATED PRESS

WASHINGTON – Few Americans question that smoking causes cancer. But they express bigger doubts as concepts that scientists consider to be truths get further from our own experiences and the present time, an Associated Press-GfK poll found.

Americans have more skepticism than confidence in global warming, the age of the Earth and evolution and have the most trouble believing a Big Bang created the universe 13.8 billion years ago.





Home » Articles » Houston News » Are Environmentalists Losing The Fight?

## Are Environmentalists Losing The Fight?

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Posted Tuesday, April 22nd 2014 @ 5am by KTRH's Cliff Saunders

Today is Earth Day; the day we are supposed to show support for the environment and take care of the planet. One of the biggest themes of the day has to do with global warming. That said, a new [poll](#) has the people who believe in climate change running for cover.

The Associated Press-GfK poll says forty percent of you are not confident, or simply disbelieve that the earth is actually warming. Adrian Shelley at Air Alliance Houston told KTRH it only matters what the scientists say.

"There are and will continue to be climate skeptics. But the evidence is out there. And more importantly, the scientific community reaches a consensus about this a long time ago," Shelley said.

Shelley also says if people don't believe in climate change anymore, it's because of what media outlets like FOX News have been saying over the years.

"The people hear messaging about a cold winter and it casts doubt about climate change. That's going to confuse people. There is a lot of conflicting information out there," Shelley explained.

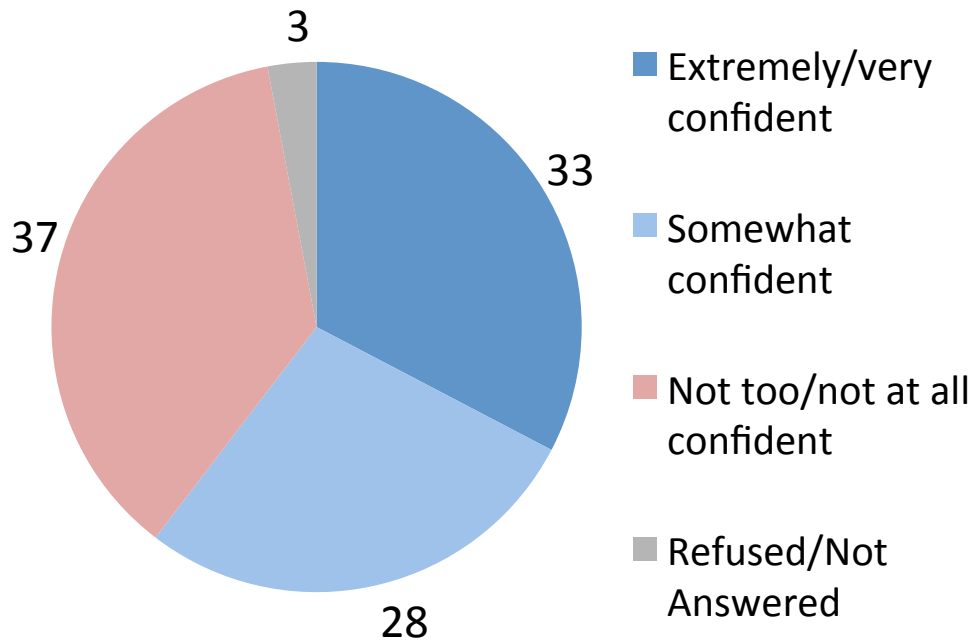
Professor [Larry Bell](#) at the University of Houston has been talking out against global warming for years and says people are finally getting tired of being told what to do to take care of the planet.

"You can only call wolf so many times," Bell told KTRH. "This has been going on since the late 1980's."

Bell also says there is another reason people like Shelley are running for cover after a poll like this. And that reason is money.

"There's a huge, multi-billion dollar industry behind this. The scientists will lose their funding when the scare goes away," Bell explained.

# THE AP-GfK POLL



**FOX NEWS**: “Americans have **more skepticism than confidence** in global warming”

**KTRH**: “...**forty percent of you are not confident**, or simply disbelieve that the earth is actually warming.”

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# CLIMATE CHANGE AND PRESIDENT OBAMA'S ACTION PLAN

PRESIDENT OBAMA HAS ANNOUNCED A SERIES OF EXECUTIVE ACTIONS TO REDUCE CARBON POLLUTION, PREPARE THE U.S. FOR THE IMPACTS OF CLIMATE CHANGE, AND LEAD INTERNATIONAL EFFORTS TO ADDRESS GLOBAL CLIMATE CHANGE.



## THE PRESIDENT'S CLIMATE ACTION PLAN

Executive Office of the President

June 2013



- Cut carbon pollution in America.
- Prepare for impacts of climate change.
- Lead international efforts to address climate change.





## Proposed Carbon Pollution Standard for **New** Power Plants Sept. 2013

- Natural gas-fired stationary combustion units
  - 1,100 lb CO<sub>2</sub>/MWh gross over a 12-operating month period, or
  - 1,000-1,050 lb CO<sub>2</sub>/MWh gross over an 84-operating month (7-year) period
- Fossil fuel-fired utility boilers and integrated gasification combined cycle (IGCC) units
  - 1,000 lb CO<sub>2</sub>/MWh gross for larger units (> 850 mmBtu/hr)
  - 1,100 lb CO<sub>2</sub>/MWh gross for smaller units (≤ 850 mmBtu/hr)



Testimony on Proposed Rule  
Feb. 6, 2014  
Lucía Oliva Hennelly, EDF  
Adrian Shelley, AAH

## Environmental Justice Communities and Climate Change

- Compromised Health
- Lack of Health Care
- Vulnerable neighborhoods
- Lack of Transportation





# Proposed Carbon Pollution Standard for **Existing** Power Plants June 2014 (projected)

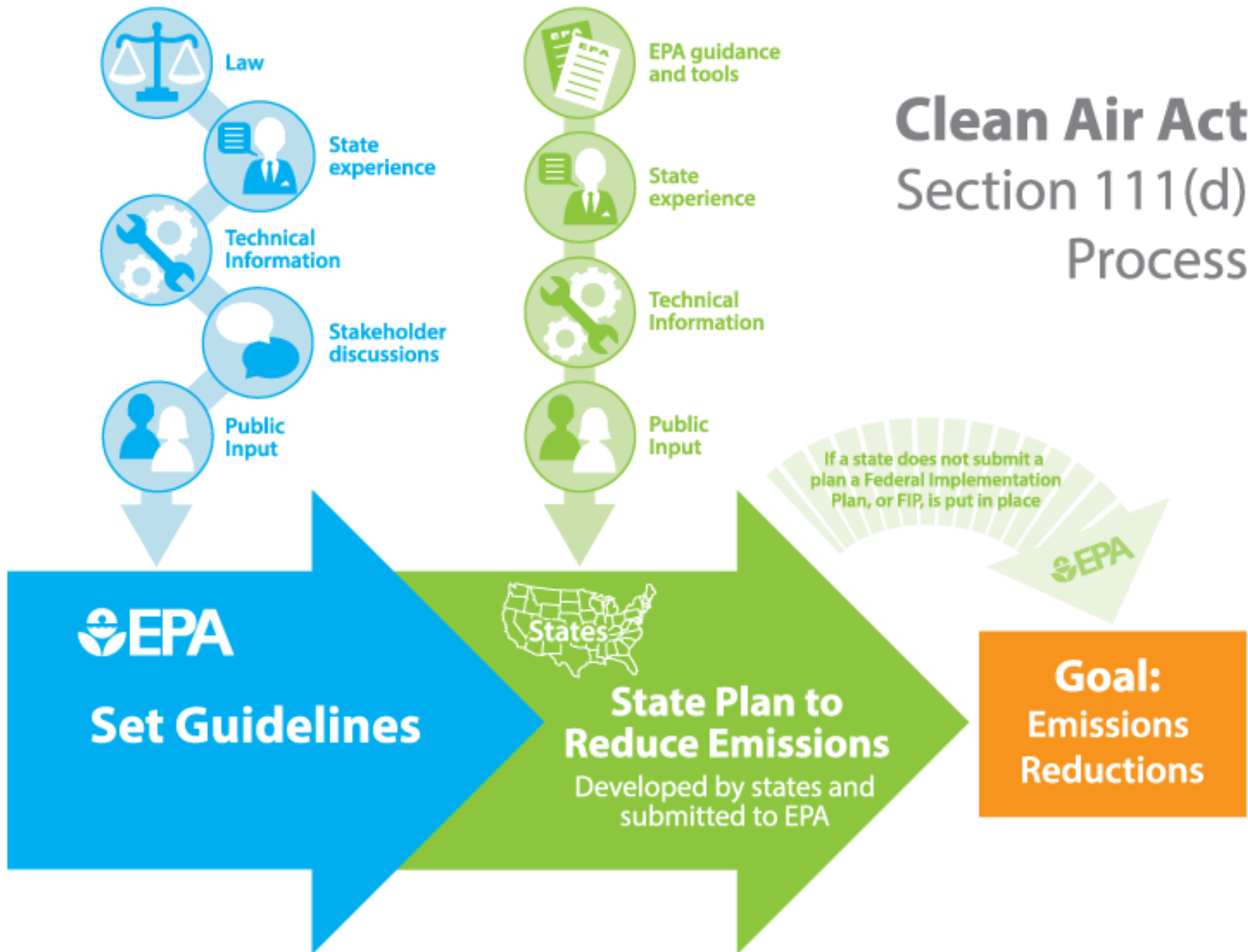
## **Section 111(d) of the Clean Air Act**

*The Legal Foundation for  
Strong, Flexible & Cost-  
Effective Carbon Pollution  
Standards for Existing Power  
Plants*



Finding the ways that work

# Clean Air Act Section 111(d) Process



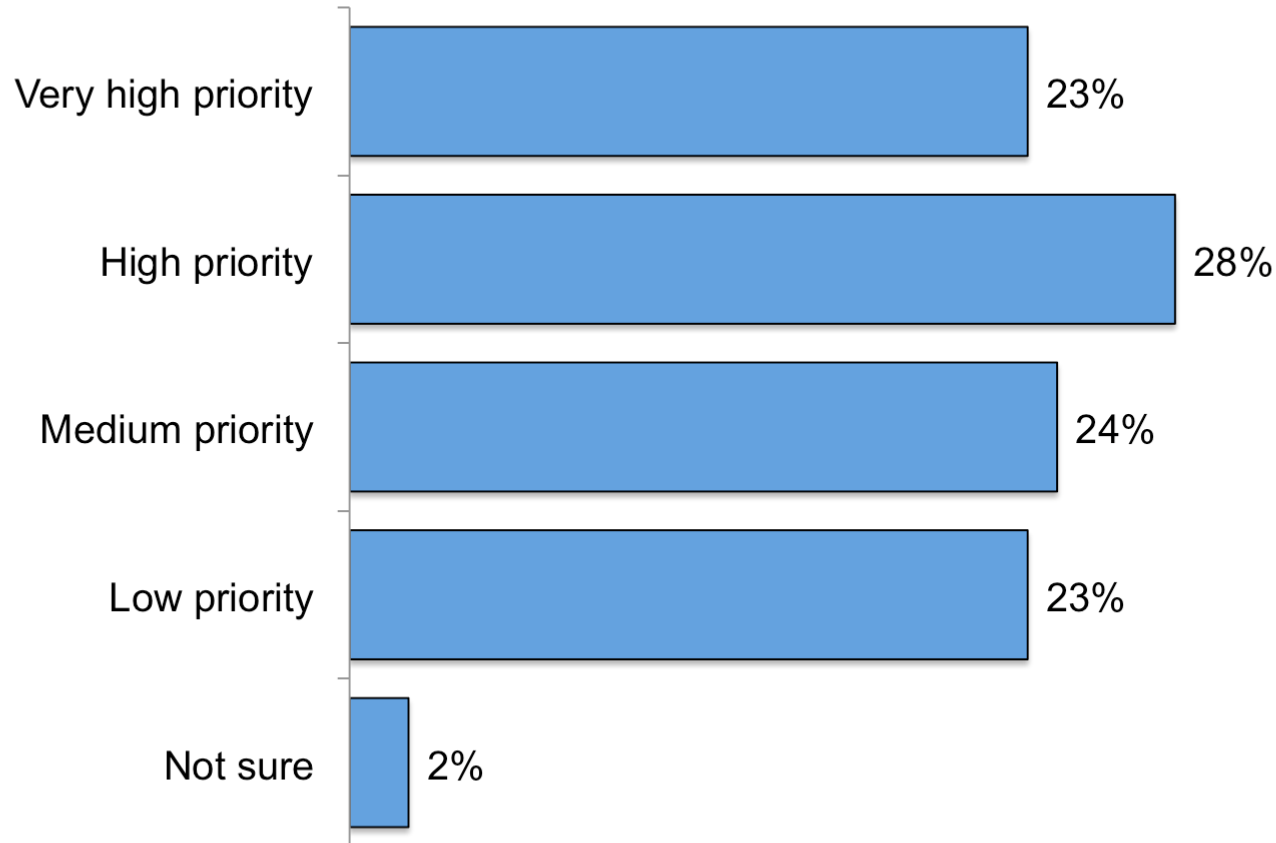


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# CLIMATE CHANGE IN THE TEXAN MIND



# Majority of Texans Believe Global Warming Should Be a Very High or High Priority for the President and Congress



Do you think that global warming should be a low, medium, high, or very high priority for the president and Congress?

Base: Texans 18+ (n=800).

Home » Articles » Houston News » **Obama Moves on Climate Change Without Congress**

## Obama Moves on Climate Change Without Congress

Recommend

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Permalink



Posted Tuesday, June 25th 2013 @ 6pm by KTRH's Theran Nicholas

President Obama is trying to make good on a promise to get tough on air pollution.

Speaking at Georgetown University on Monday the President outlined a new policy by way of executive order that creates new regulations for the emission of carbon materials into the atmosphere.

A federal court has already ruled that carbon emissions are covered by the Clean Air Act of 1970, which means the Environmental Protection Agency can regulate the amount of carbon emissions put into the air by power plants.

Originally carbon emissions were not regulated as part of the Clean Air Act of 1970 which meant coal-fired power plants only had to upgrade

their scrubbers for things like sulfur, arsenic, and mercury.

It is estimated that it will cost the power industry around \$4 billion to comply with the new rules that limit carbon emissions.

Karr Ingham with the Texas Alliance of Energy Producers says he doesn't like the President sidestepping Congress, "I think that it would be quite difficult to get these provisions passed into law, there is not a lot that would separate us from other countries that create laws good or bad with the swipe of a pen."

Adrian Shelley with Air Alliance Houston says we can't afford to wait on legislation focused on climate change, "It's time to act on climate change right now. It's been estimated that every year we delay action on climate change, will cost an extra \$500 billion dollars down the road."

Speaker of the House John Boehner says the new rules will increase U.S. energy prices and destroy jobs.





## Greenhouse Gas Permitting in Texas

- April 2007: *Massachusetts v. EPA* finds that the CAA applies to GHGs
- June 2010: Tailoring Rule applies CAA (PSD) to large GHG Sources
- Jan. 2011: EPA issues GHG permits in Texas
- May 2011: EPA promulgates FIP
- Dec. 2011: Texas fails to submit a SIP for GHG permitting

# GHG permitting in Texas: HB 788

- “To the extent that greenhouse gas emissions require authorization under federal law, the commission may authorize greenhouse gas emissions...”
- “The permit processes authorized by this section are not subject to the requirements relating to a contested case hearing...”
- “If authorization to emit greenhouse gas emissions is no longer required under federal law, the commission shall...repeal the rules...”





## Greenhouse Gas Permitting in Texas

June 2013: Texas passes GHG permitting bill

Dec. 2013: Texas submits plan to EPA for GHG permitting

Feb. 2014: EPA approves Texas plan

Apr. 2014 Rule Effective

# AAH Comments on Texas Rulemaking

- TCEQ must explicitly allow for **public review and comment** of all BACT analyses.
- TCEQ should assess add-on GHG **pollution control equipment** consistent with the federal BACT program.
- The rule should require TCEQ to compile an annual GHG **emissions inventory** of those sources required to submit emissions information under EPA's GHG Reporting Program.





# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## GHG Rule Effective April 2014

- Established GHGs thresholds.
- NO emissions fees.
- NO emissions inventory reporting.
- NO contested case hearings for permits.
- NO reportable quantity for emissions events.





Home » Articles » Houston News » Are Environmentalists Losing The Fight?

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Professor [Larry Bell](#) at the University of Houston has been talking out against global warming for years and says people are finally getting tired of being told what to do to take care of the planet.

"You can only call wolf so many times," Bell told KTRH. "This has been going on since the late 1980's."

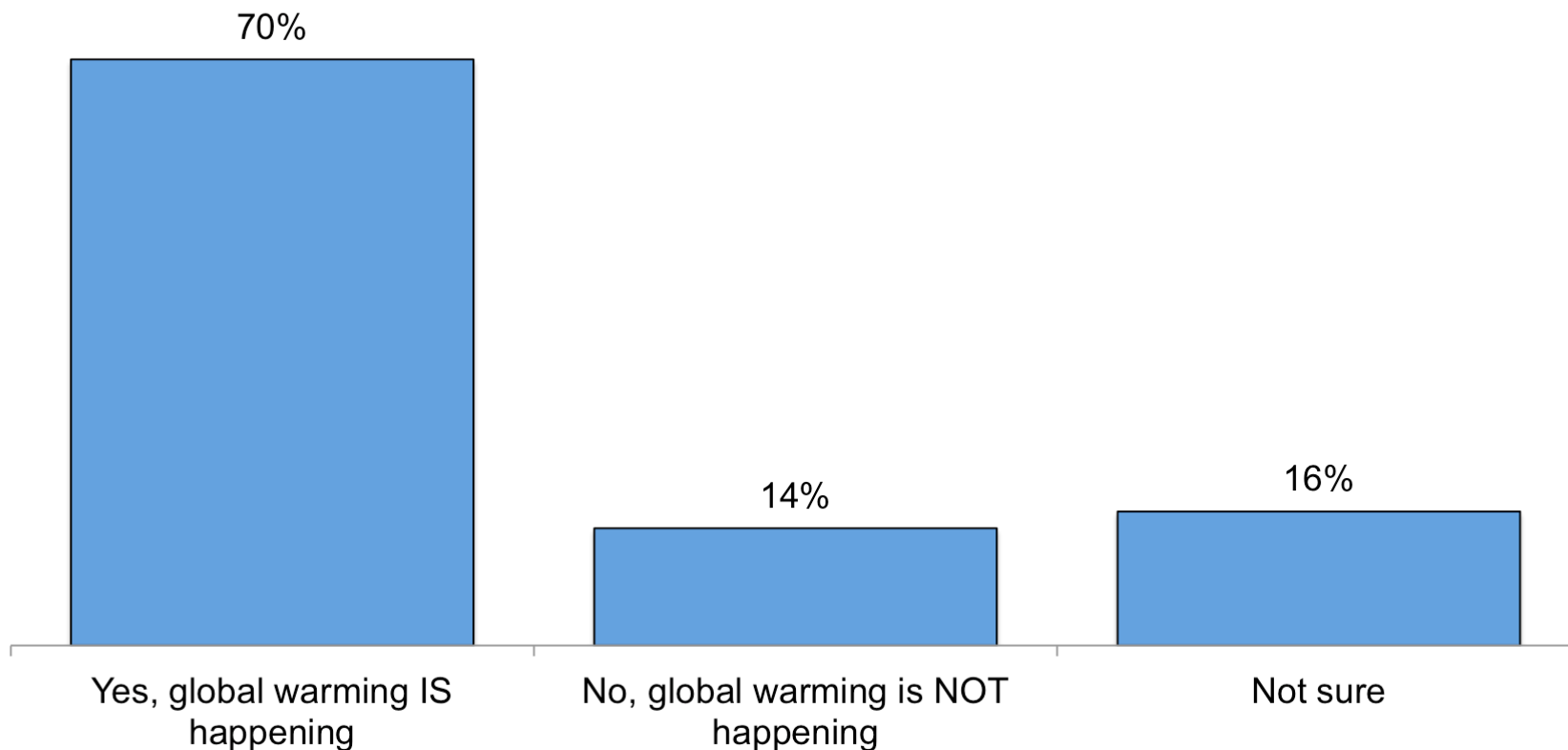
Bell also says there is another reason people like Shelley are running for cover after a poll like this. And that reason is money.

"There's a huge, multi-billion dollar industry behind this. The scientists will lose their funding when the scare goes away," Bell explained.



A Report from the  
**Texas Legislative Study Group**  
On the State of Our State

# Most Texans Believe Global Warming Is Happening



Recently, you may have noticed that *global warming* has been getting some attention in the news. Global warming refers to the idea that the world's average temperature has been increasing over the past 150 years, may be increasing more in the future, and that the world's climate may change as a result.

What do you think: Do you think that global warming is happening, or not? If you're not sure, just let me know.

Base: Texans 18+ (n=800).



Air Alliance Houston's mission is to reduce air pollution in the Houston region to protect public health and environmental integrity through research, education, and advocacy.

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