PART ONE: Errors and Alarmism in Gregg Garfin's 25 April 2018 Climate Lecture at NMSU

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Cruces Atmospheric Sciences Forum https://casf.me

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A LOOK AHEAD FOR THE SOUTHWEST: HOTTER AND MORE ARID

25 April 2018
NMSU CLIMATE CHANGE SEMINAR SERIES

Gregg Garfin, The University of Arizona

Institute of the Environment

COLLEGE OF AGRICULTURE & LIFE SCIENCES
School of Natural Resources & the Environment

The lecture is on line at this location:

https://nmsu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=87ef8f2d-fbc4-4bbe-aaca-a8cc01087786

Gregg Garfin, The University of Arizona

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This Evening's Talk

- Climate change review
- Why is climate change important…to the Southwest?
- Observed climate changes
- Projected climate changes
- Impacts overview
- What are we doing?
- Resources

Introduction: ***Bob's Criticisms of Dr. Garfin's talk***

Dr Garfin's tone is needlessly alarmist, but fully expected from a scientist wedded to the UN IPCC's charter to find ONLY human-caused CO2-fueled Global Warming. This color displays instances of errors and alarmism starting with Dr. Garfin's graphics.

Introduction mentions "Climate Change Science," which isn't science at all.

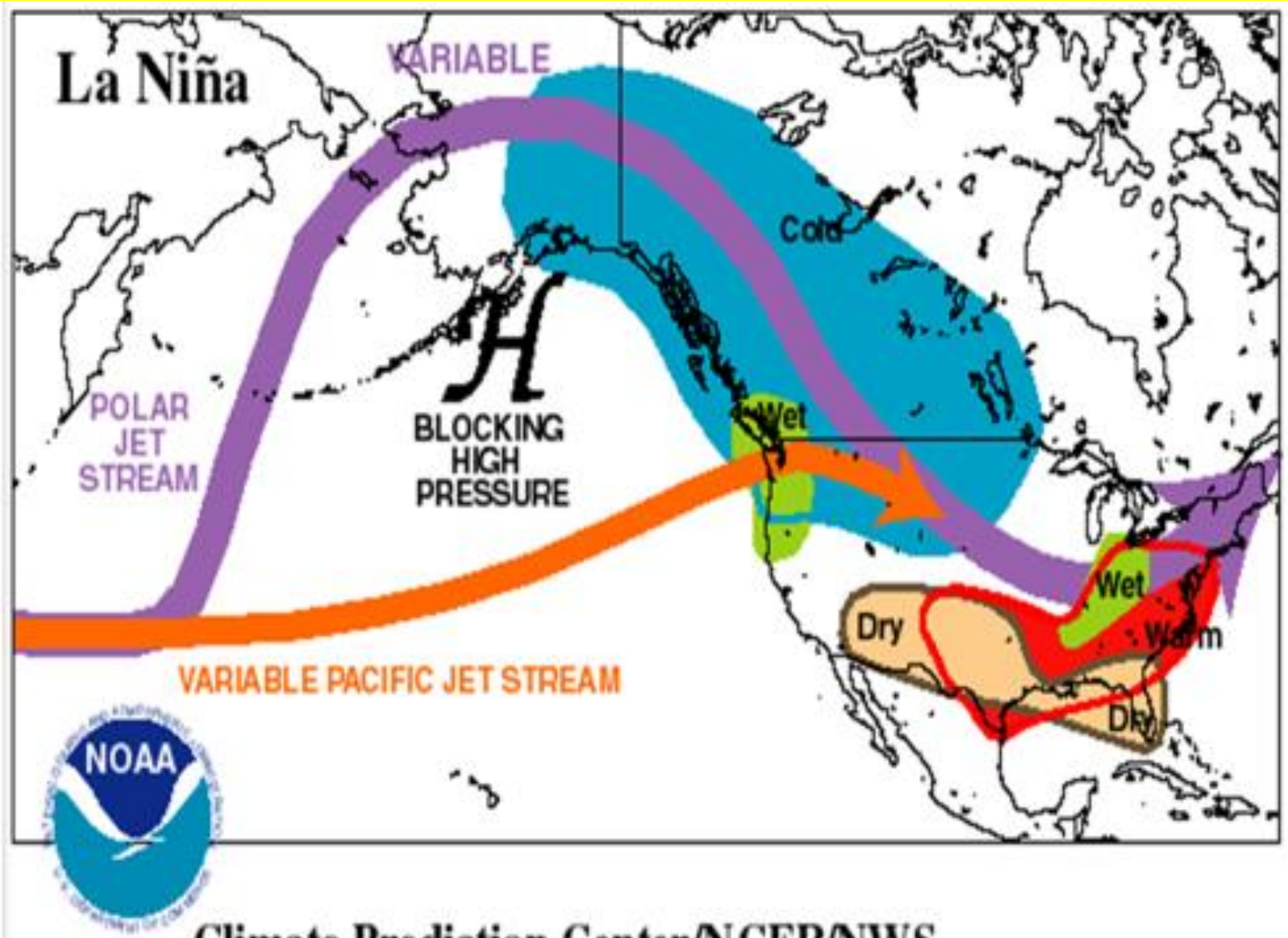
If this were science, it would present a more balanced view, including data that contradict alarmist contentions; instead, it's one-sided, even propagandistic in spots.
Example, the climate record since late 20th century: Western States' rainfall is dominated by the 60-yr-long Pacific Decadal Oscillation, discovered only in 1996.

In New Mexico, late 20th Century "PDO-Warm" period produced heaviest rains in the last 2000 years. Also, highest Great Salt Lake levels, in 1983, highest reservoir levels in the Colorado River system.

Since 2000 we've entered "PDO-Cold:" more La Ninas and more droughts here.

La Nina pattern, brings dry/drought from Arizona to Florida

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensocycle/nawinter.shtml



Bob's Criticisms of Garfin's talk, continued:

If this were science, the Pacific Decadal Oscillation and its shift from PDO-Warm to PDO-Cold around 2000 would have been at least mentioned; wasn't mentioned at all.

In coming slides, certain phrases are **underlined and in bold**

Example:

50 state records of extreme maximum temperatures

This alerts the viewer that this specific subject will be addressed in upcoming graphics on these subjects.

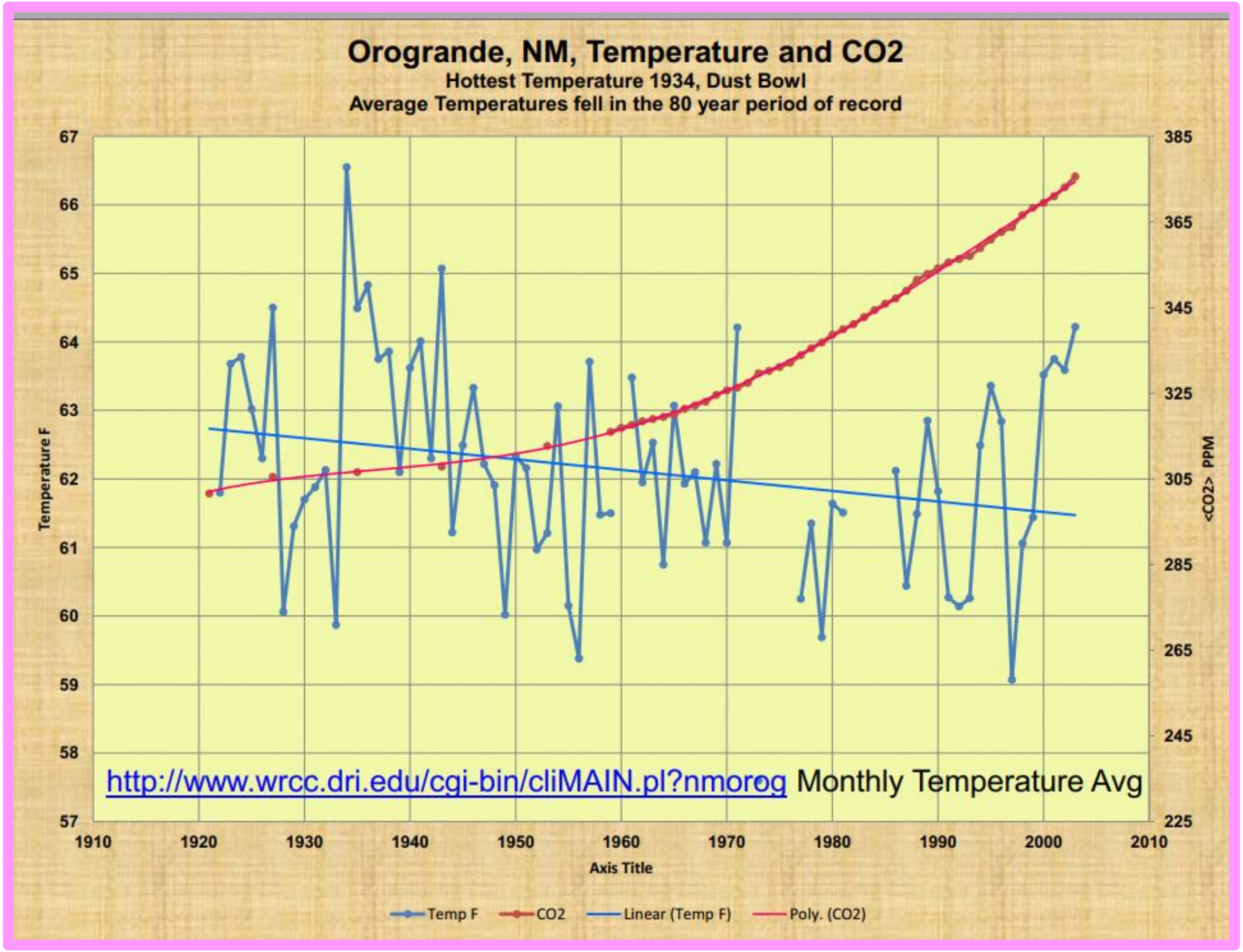
Bob's Criticisms of Garfin's talk, continued:

Garfin's content doesn't include prominent 20th Century weather and climate events in the southwest and the USA, which we know occurred, are in the historical and meteorological records, but weren't included in the talk.

Examples: the **Dust Bowl**, **Dust Bowl temperatures in southern New Mexico,** and NOAA's **50 state records of extreme maximum temperatures**, most occurred 1930s and before.

Garfin's introduction shows **ice cores** and mentions ice core "proxy" data, but never mentions this again. Garfin's content doesn't include proxy data from the ice cores, perhaps because these data confound the narrative that <CO2> controls climate.

Vostok and EPICA Dome C Ice Cores from Antarctica and GRIP and GISP2 Greenland Ice Core records show it was a lot warmer than today for extensive time periods with a lot less <CO2> in the air than today.


Orogrande, NM, Temperature and CO2
Hottest Temperature 1934, Dust Bowl
Average Temperatures fell in the 80 year period of record
Temperature F
<CO2> PPM
67
66
65
64
63
62
61
60
59
58
57
385
365
345
325
305
285
265
245
225
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Axis Title
http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?nmorog Monthly Temperature Avg
Temp F
CO2
Linear (Temp F)
Poly. (CO2)

https://www.ncdc.noaa.gov/extremes/scec/records

State Climate Extremes Committee (SCEC)

Climate Monitoring
State of the Climate
Temp, Precip, and Drought
Climate at a Glance
Extremes
Societal Impacts
Snow and Ice
Teleconnections
GHCN Monthly
Monitoring References

Overview | Operational Details | Reports | Elements Tracked | Records

Records

Download: XML

State: All States Element: Maximum Temperature

STATE	ELEMENT	VALUE	DATE	LOCATION	STATION ID	STATUS
Alabama	Maximum Temperature	112°F	September 6, 1925	CENTREVILLE	011520	E
Alaska	Maximum Temperature	100°F	June 27, 1915	FORT YUKON	26413	E

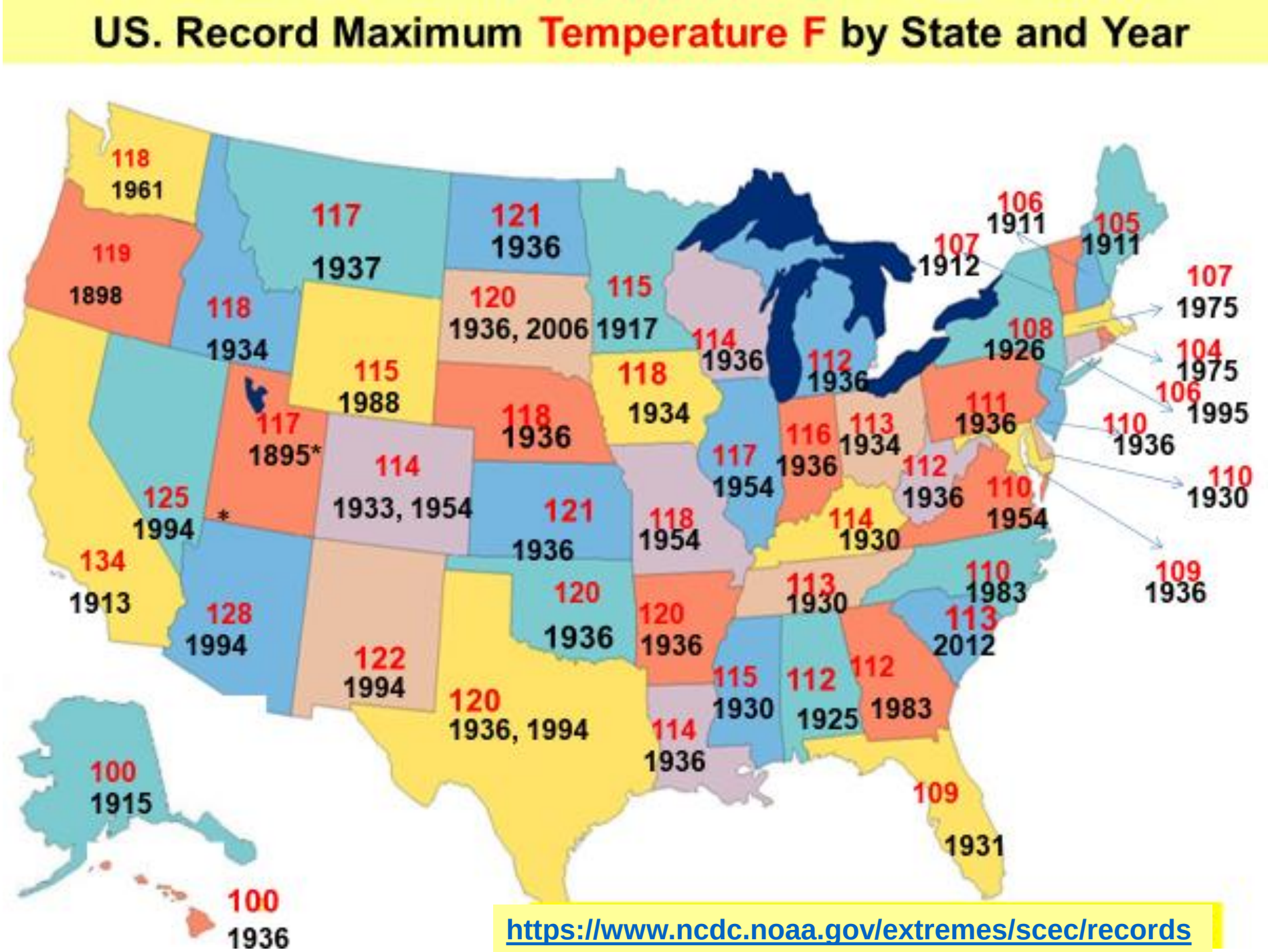
Extreme maximum temperature for each of the fifty states (plotted in red) and the year in which that extreme maximum was set (plotted in black)

Twenty-eight of the fifty states' extreme maxima were set in the 1930s or before.

The data disagree with the theory of CO2-fueled warming.

(Bob's own work)

Next graphic shows this on a temporal basis.



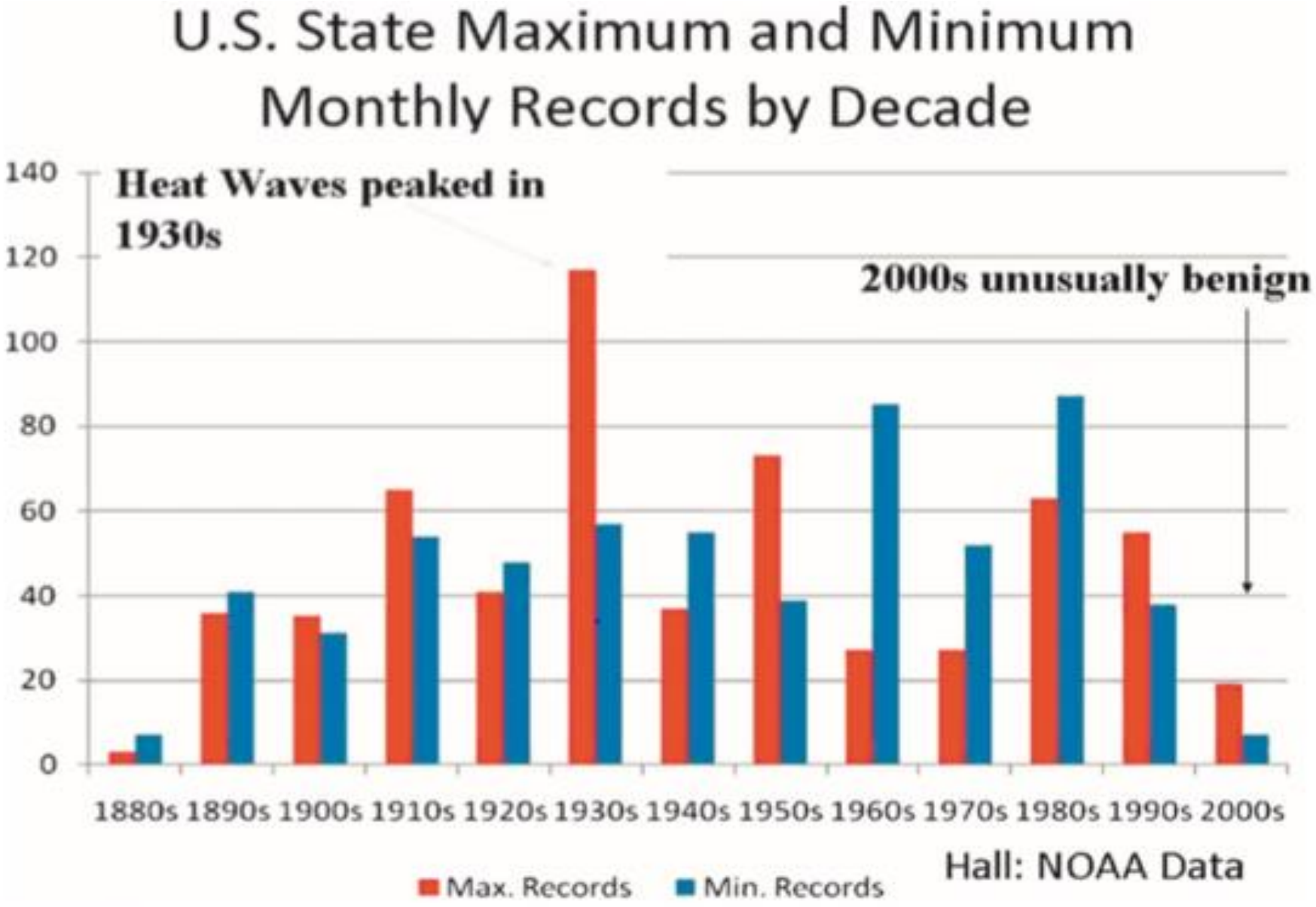


FIGURE 19 United States all-time monthly record lows and highs by decade. Compiled by Hall from NOAA NCDC data.

This graphic, similar to the NOAA Extremes data base referenced earlier, directly confounds and contradicts the notion emphasized in Dr Garfin's Lecture and the NCA that increasing <CO2> is leading to increasingly warmer temperatures.

NB peak in the 1930s, when <CO2> was ~307 PPM.

Sidebar discussion, US weather during the Dust Bowl Drought:

Weather events from the Dust Bowl years from newspaper accounts…

During the lecture Dr Garfin ignored these real weather events, which occurred in the USA and beyond, when <CO2> was ~307 PPM

This was the most extreme high temperature and drought period in the Nation's history.

How could the Dust Bowl not be mentioned, even once, in a climate lecture where one of the topics is "Observed Climate Changes?"

COMPLETE TELEGRAPHIC SERVICE OF THE UNITED PRESS

Pittston Gazette.

PITTSTON, PA., FRIDAY, MAY 11, 1934

GREAT DUST CLOUD DRIFTS FROM WESTERN STATES TO EAST

SKY IS MADE HAZY OVER A VAST AREA 1,000 MILES WIDE

NO FEDERATION ENDORSEMENT TO EARLE OR REED

RANSOM OF $75,000 IS DEMANDED FOR CALIFORNIA MAN

SEVERE STORM IS CAUSE OF DAMAGE IN THIS DISTRICT

ARMY OF OFFICERS TO PROTECT BALLOT IN PENNSYLVANIA

DROUGHT BLOCKS NEGOTIATION OF GRAIN AGREEMENT

CHICAGO BROKERS ARE SPECULATING

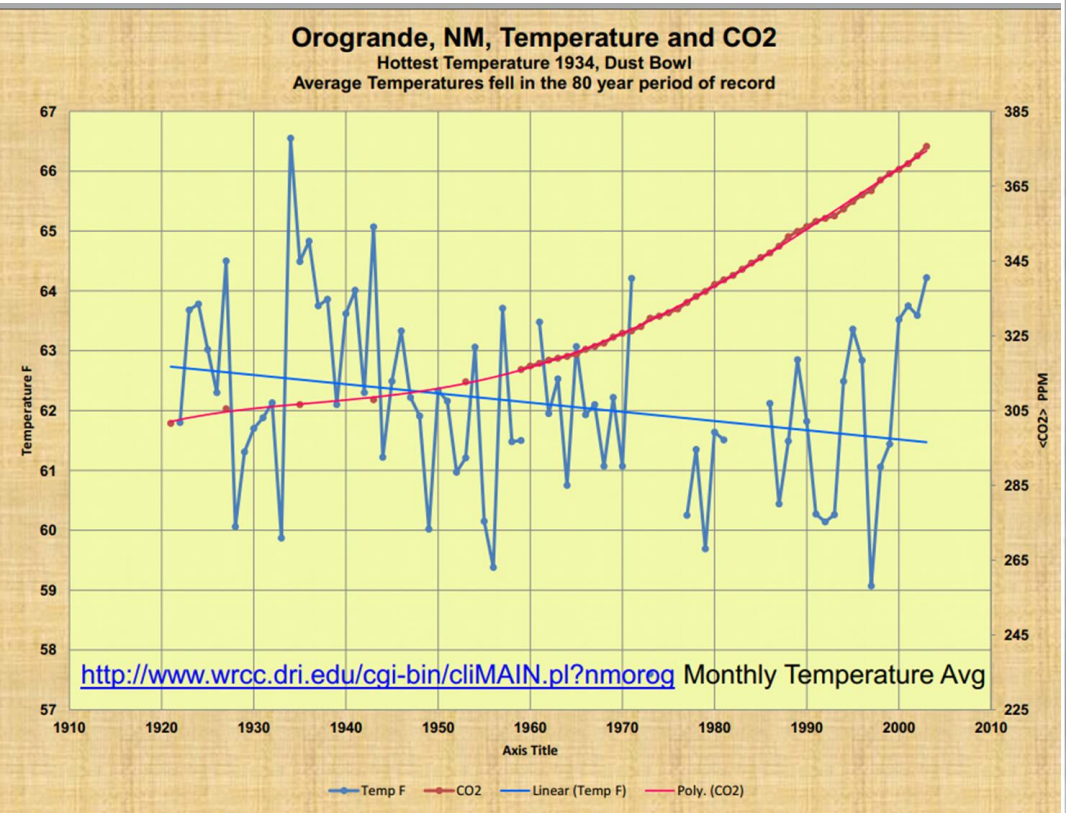
LESS THAN HALF MILLION IN GEN'L

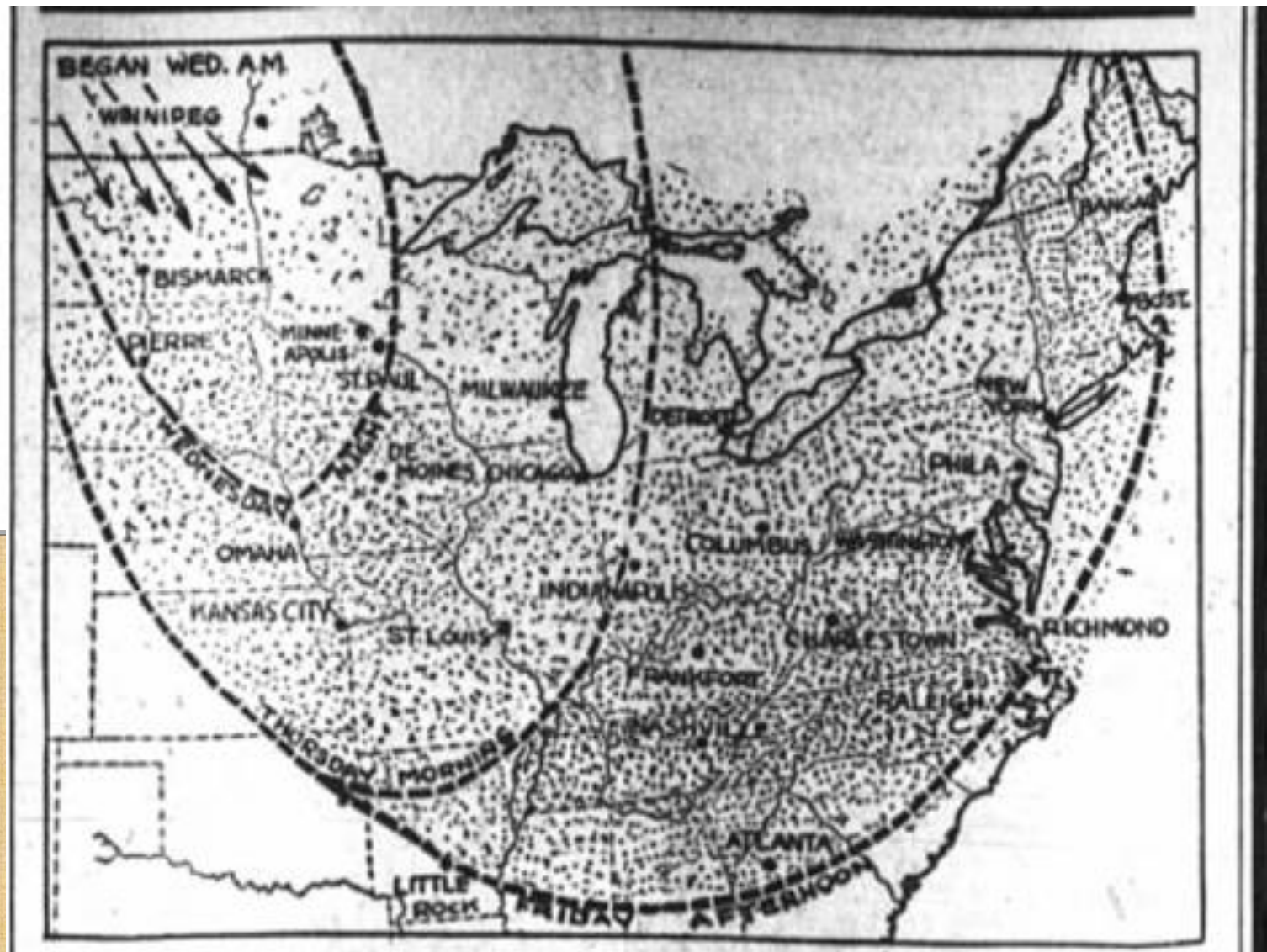
NEW PROPOSITION THAT WAR DEBTS BE PAID IN SILVER

Pennsylvania's Pittston Gazette, Friday 11 May 1934 reported a drought-induced dust cloud covering much of the United States. Carbon Dioxide was ~307 Parts Per Million.

Clipped from
The Wilkes-Barre Record, 14 May 1934, Mon, Page 10

1934 saw a drought-induced dust storm covering much of the United States, and the hottest year at Orogrande, NM.





Map shows the track of the dust storm, resulting from the prolonged drought and high winds in the Mid-West, which came east in a 1,500-mile long yellow pall and powdered New York's face with a fine layer of dust. Begining in Winnipeg, Can., the storm reached maximum intensity at Iowa and had thinned considerably before it hit Gotham and Southeast.

http://www.messynessychic.com/2015/04/03/the-ten-year-apocalypse-that-inspired-interstellar-and-nearly-destroyed-midwester-america/

https://www.denverpost.com/2011/05/12/when-deadly-dirt-devastated-the-southern-plains/

"The Dust Bowl, an environmental disaster of biblical sweep, parked over the Southern Plains from 1931 to 1939.

Black Sunday, April 14, 1935, was the worst day of all.

A dust storm carried twice as much dirt off the Southern Plains as was dug from the earth to create the Panama Canal.
In southeastern Colorado, down by Lamar and Springfield and Walsh, day became night….

"…As Timothy Egan records in his National Book Award-winning The Worst Hard Time,
many in the East did not believe the first accounts of the Dust Bowl until a May 1934 storm carried soil from the Plains over much of the nation."

"In no other instance was there greater or more sustained damage to the American land," writes historian Donald Worster, author of the 1979 history, Dust Bowl: The Southern Plains in the 1930s.

"…**the Dust Bowl… rated the No. 1 weather event of the 20th century by American meteorologists."**

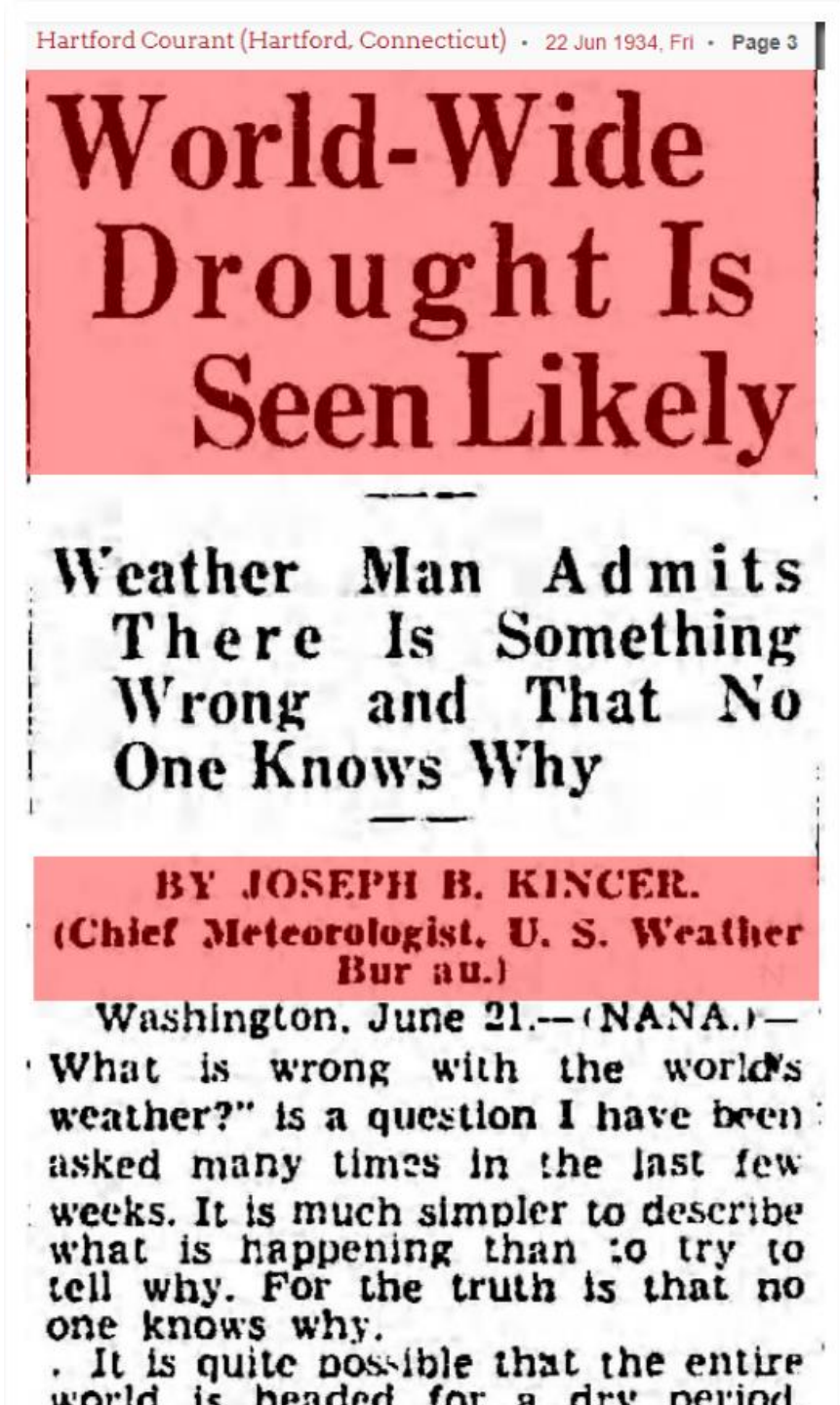
https://www.denverpost.com/2011/05/12/when-deadly-dirt-devastated-the-southern-plains/

“Cattle went blind and suffocated. When farmers cut them open, they found stomachs stuffed with fine sand.”

https://realclimatescience.com/2017/07/july-19-1934-every-state-over-90-degrees/

Connecticut's Hartford Courant

Friday, 22 June 1934.



Hartford Courant (Hartford, Connecticut) • 22 Jun 1934, Fri • Page 3

World-Wide Drought Is Seen Likely

Weather Man Admits There Is Something Wrong and That No One Knows Why

BY JOSEPH B. KINCER.
(Chief Meteorologist, U. S. Weather Bur au.)

Washington, June 21.—(NANA.)—"What is wrong with the world's weather?" is a question I have been asked many times in the last few weeks. It is much simpler to describe what is happening than to try to tell why. For the truth is that no one knows why.

. It is quite possible that the entire world is headed for a dry period

Shippensburg, Pennsylvania's
The News-Chronicle

Tuesday, 5 June 1934

The News-Chronicle (Shippensburg, Pennsylvania) • 05 Jun 1934, Tue • Page 5

SEVERE DRY SPELL SWEEPS OVER COUNTRY

Baked So Dry Only Deluge Will Suffice, Says Climate Expert

Is Longest On Record

Uncle Sam's foremost climate expert, Dr. Joseph B. Kincer of Washington, believes the present drought may perpetuate itself until "Act of God" brings relief.

Unparalleled in duration, scope and intensity he says, the drought now covering three-fourths of the United States will "breed upon

THE MERCURY, MONDAY, JUNE 4, 1934

WORLD DROUGHT

Farmers' Ruinous Losses

Almost Universal Disaster

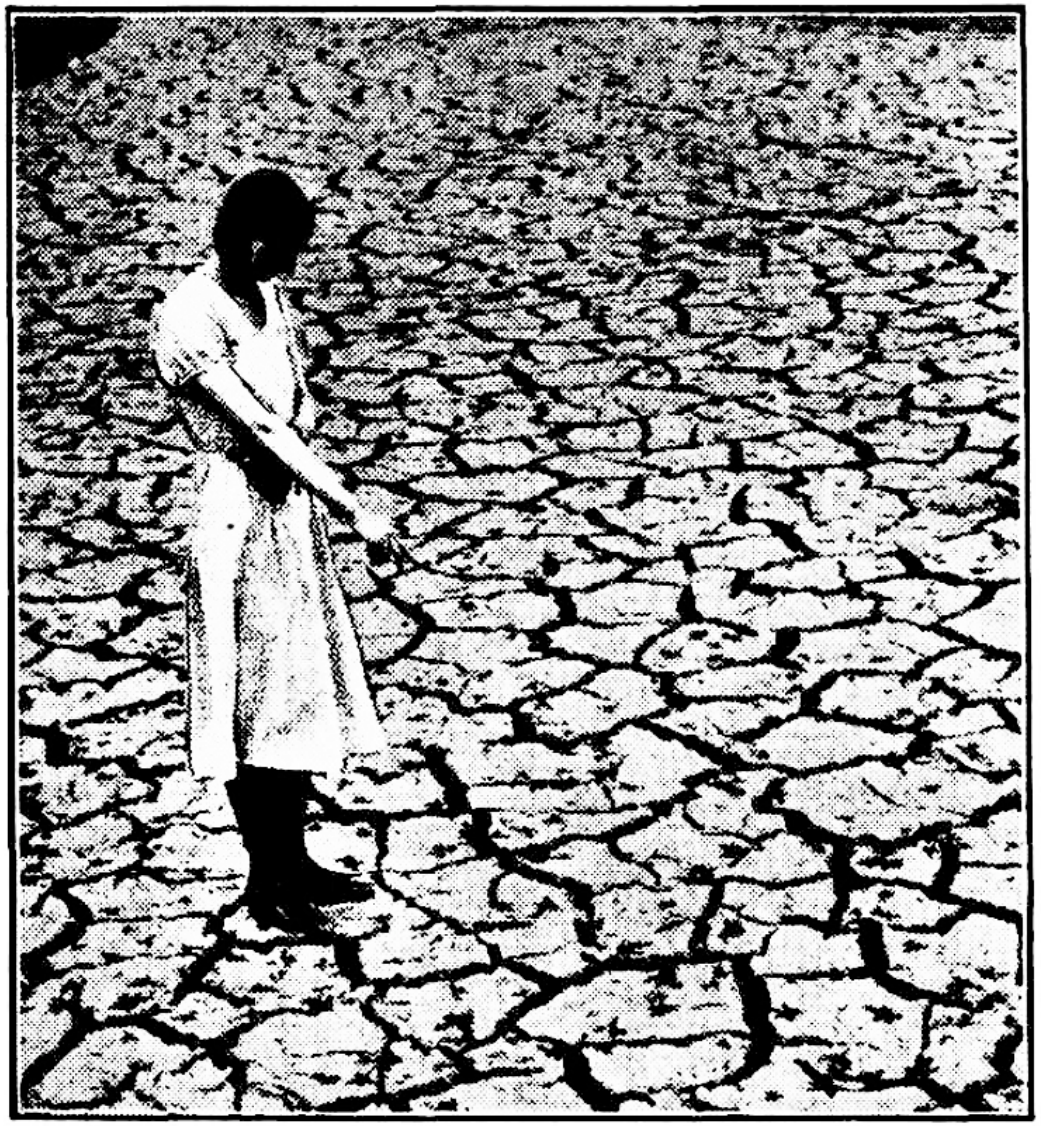
Europe Revives Pagan Rites

LONDON, June 2.

A survey of the threat of a world drought reveals ruinous losses by farmers in many parts of the world. There is an actual shortage of food, with young crops blasted in the ground by the scorching sunshine and thousands of cattle without pasture. The disaster is felt from the Mississippi, in the United States, to the Volga, in Russia, from the Yugoslavian valleys to the Western Canadian prairies. The following reports were received in London today:

From Belgrade: Three months of drought and terrific heat have caused a revival of ancient pagan rain-making rites in many parts of South-Eastern Europe. Gipsies decked with green boughs are dancing and singing prayers to the rain gods, and girls, dressed only in green leaves, danced and sang in the streets, and then ceremoniously flung heir garlands into neighbouring streams. Two youths at Dragovatz suddenly seized a priest, who was praying for rain, and hurled him into the water to appease the pagan river god. Various other forms of magic were utilised, but the over-generous gods sent heavy hail in Bosnia, destroying the crops, remaining after the drought. Even where rain has prevented a famine, it is too late to restore reasonable crops.

DROUGHT IN ENGLAND.



England has just experienced the worst drought for nearly 100 years. Above is seen a network of cracks in the dry bed of one of the Tring reservoirs in Hertfordshire.

The Manchester Guardian

Saturday, 12 May 1934

THE MANCHESTER GUARDIAN, SATURDAY, MAY 12, 1934

NEW YORK DARKENED BY VAST DUST-CLOUD

Freak Weather in United States

HEAT-WAVE AND DROUGHT HIT THE FARMERS

High Temperatures in Britain

The Sydney Morning Herald

Friday 19 January 1934

THE SYDNEY MORNING HERALD,
FRIDAY, JANUARY 19, 1934.

HEAT WAVE

IN THREE STATES.

BUSHFIRES IN SOUTH AUSTRALIA.

Heat-wave conditions are continuing over New South Wales, Victoria, and South Australia, and bushfires have occurred in South Australia and New South Wales.

A cool change may be expected in New South Wales.

Melbourne is experiencing its record heat-wave for 25 years. The maximum shade temperature in Melbourne yesterday was 107.5 degrees at 2.45 p.m. Temperatures have now exceeded the 100 mark on three successive days. In January, 1908, there were six successive days when the temperature exceeded 100 degrees. High temperatures were recorded yesterday in country districts, notably in the

In 1934, Extreme Weather was not confined to the USA… as reported by the Los Angeles Times, 30 Dec 1934.

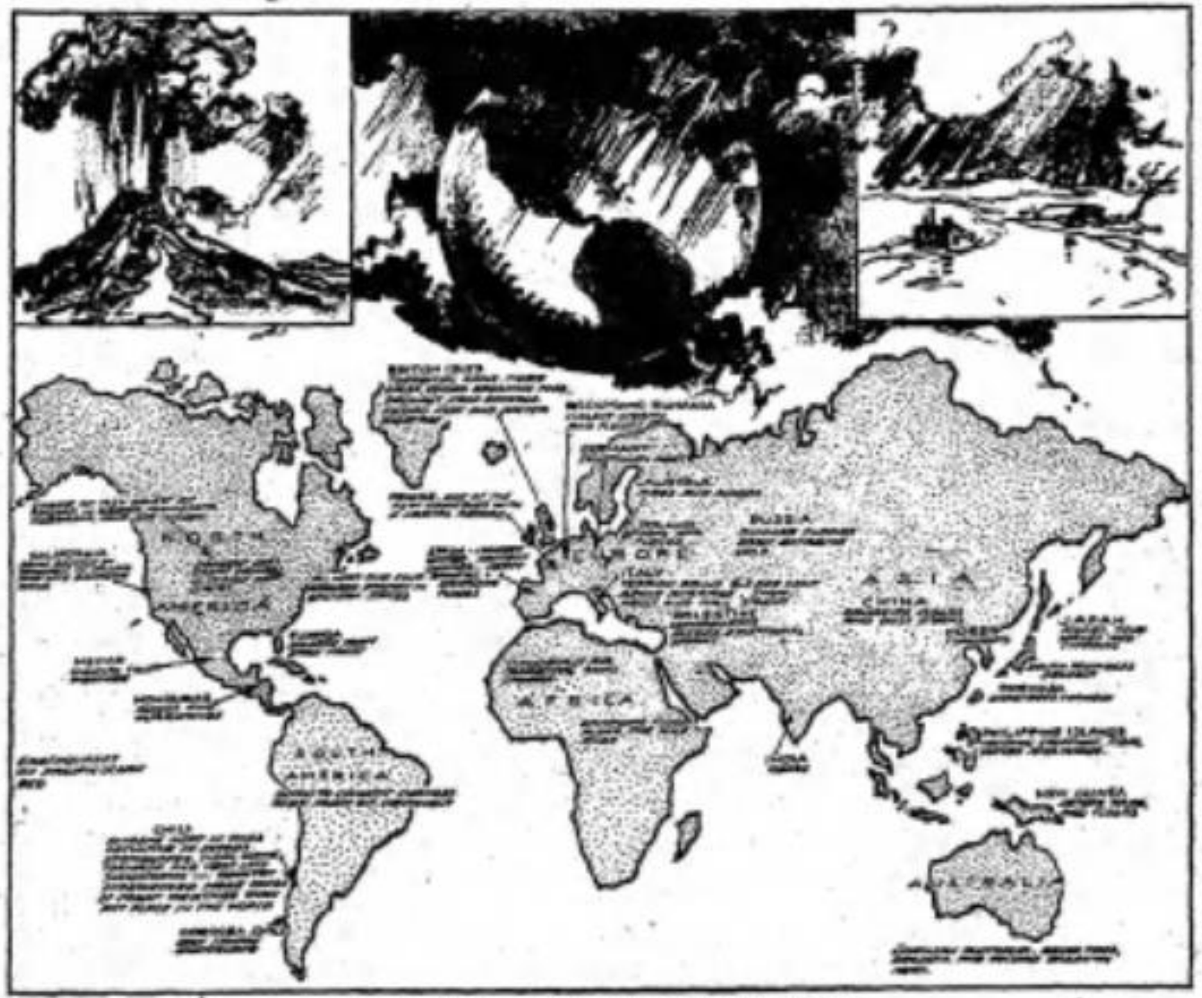
Hand of Nature Falls Heavily on Whole World in Freak Weather Year of 1934

COLD, HEAT, DROUGHT AND FLOODS SET NEW MARKS

Unprecedented Extremes Recorded in Every Corner of the Earth; Even Climate Is Changed in Spots

The following account of the world-wide "freak weather" year of 1934 is based in the main upon an exhaustive survey made by the United Press at the suggestion and request of the Los Angeles Times and is composed in large part of copyrighted articles prepared by United Press staff writers in practically every country in the world.—Editor Times.

A FREAK YEAR



World Weather Map for 1934, Drawn by Charles H. Owens.

HOW SCIENCE ACCOUNTS FOR BERSERK ELEMENTS

Assigned Reasons Vary From Spots on the Sun to Concurrences of Meteorological Cycles

CHANGE IN CLIMATE

NO FAULT OF FOX

Baltimore, Maryland's
The Sun

Sunday, 22 July 1934

Interesting that in 1934 The Sun mentions in its headline the notion of climate cycles but the National Climate Assessment doesn't mention climate cycles.

THE SUN, BALTIMORE, SUNDAY MORNING, JULY 22, 1934

Cycle Brings Recurrence Of Drought

Present Dry Spell May Be Repeater For That Of 1743, According To Weather Observers

Records Of Eighteenth Century Were Obscure But Scientists Find Data In Literature

THE recent world-wide drought in the Northern Hemisphere, severe enough in the United States to constitute a serious threat of lengthening the business depression and still more severe in Europe, is probably the severest dry period since 1743, which

THE EAU CLAIRE LEADER

Vol. LV. No. 166 — Member of the United Press — EAU CLAIRE, WISCONSIN. TUESDAY MORNING, JULY 14, 1936. — A Member of the Associated Press

MERCURY HITS 111, NEW RECORD HERE

TOWNSENDITES MAY SUPPORT THIRD PARTY

Covention to Begin Wednesday at Cleveland

LEMKE CONFERS WITH LEADER

Townsend Refuses to Endorse Candidate at This Time

CHICAGO, July 13.—(UP)—Dr. F. E. Townsend, frail California physician, refused point-blank today to endorse William Lemke, North Dakota congressman, as a third party candidate for president.

The graying founder of a plan to pay $30 a month to all persons over told Lemke he would endorse no one until instructed by delegates to his national convention at Cleveland.

The Cleveland convention, at which he expects 20,000 delegates, opens Wednesday.

Townsend conferred for a half hour with Lemke at the Townsend national headquarters and appear-

Pardon Sought for Murderer of Jake Lingle

LEO BROTHERS AND HIS MOTHER.

CHICAGO, July 13. (UP)—Wil-

SUSPENSION OF LEWIS BY A F L NOW PROBABLE

Leaders See No Way to Avoid Costly Split

DECISION MAY BE MADE TODAY

Head of Mine Unions Refuses to Join in Peace Moves

BY JOSEPH L. MILLER
Associated Press Staff Writer

WASHINGTON, July 13—Two American Federation of Labor executive council members said tonight they believed suspension from the federation was the only way to handle tactics of the rebellious union led by John L. Lewis.

Both William Hutcheson, president of the carpenters, and Daniel J. Tobin, president of the teamsters, expressed such an opinion.

William Green and other council members were known to feel the same way. In their private conversations, however, a majority said they

Girl Witness in Vice Trial of Luciano Found Branded; Police Doubt Story of Gang Vengeance

WASHINGTON, July 13—(UP)—Police pressed inquiry today into the bizarre story of a "gangland vengeance" mutilation of pretty, henna-haired Margaret Louise Bell, who claimed henchmen of Charles "Lucky" Luciano tried to "get her" for testifying against the vice czar in New York.

Chief of detectives Bernard Thompson said he was proceeding on the theory of an "attempted murder' despite a series of discrepancies in the 21-year-old girl's description of what happened early Sunday morning before police found her bound in her apartment with the initials "C. L." and the numerals "3-12" scratched on her body.

Police said two arrests were imminent, one here and another in New York. They held Miss Bell incommunicado and planned to question here again later. Her wounds were described as "superficial."

Meanwhile these discrepancies developed

1. Although Miss Bell said her assailant had gagged her, police reported they found no trace of a gag in her apartment.

2. She said the assailant struck her in the face when she opened the door but police said she bore no bruises.

3. Police said the cord which bound her feet was not strong and could have been broken had she struggled.

The marks on her body were listed by police as "scratches" which might have been made by a nail or a nail file.

Meanwhile, police revealed that Milton R. Reeves, 28-year-old bartender who accompanied Miss Bell on a round of night clubs Saturday night, had a long record of arrests on various charges.

The records disclosed that since 1920, Reeves had been arrested under several aliases on charges ranging in from possession, sale and transportation of liquor to burglary and house breaking. He is being held incommunicado pending outcome of the investigation into Miss Bell's story.

An unidentified witness was taken to police headquarters later for questioning Thompson said the man was not involved in the case but it was believed he might have some helpful information.

Ray Bell, brother of the girl, a shirt-sleeved youth, also was questioned. The girl was reported to have called her brother Saturday night for protection. It was not said whether he ever arrived at her apartment.

Frank Hogan, assistant to special reckets Prosecutor Thomas E. Dewey, arrived from New York in the afternoon and joined in the questioning.

COOL WEATHER REPULSED BY EXTREME HEAT

Expected Break Fails to Reach Baking Middle West

DEATHS MOUNT TO 1625 MARK

Little Chance of End of Hot Wave Seen Until Tomorrow

CHICAGO, July 13—(AP)—In a short but apparently decisive engagement high over the western plains, the eleven day old heat wave halted the advancing cool front today, leaving the nation without immediate prospect of relief.

"The hot air over the western areas was too dense and accordingly too stable for the cooler mass" the central forecasting office here explained. "It just didn't have the push this time."

With the cool wave smothered, the eleventh day of record topping heat was a blazing repetition of its predecessors with a stepped up list of deaths and prostrations.

Deaths Mount

s from high temperatures
dings for the period of the
s by far the most numer-

igan alone, mortalities for
few days approached 370
hs at Eloise hospital 86
Wednesday.

American Medical association an-

Jeatran Held for Part in Bank Holdup

Prominent Menomonie Businessman Named by Roberts Victims

MENOMONIE, Wis., July 13.—(Special)—Peter Jeatran, operator of a tap room here, former proprietor of the Olympia, the largest candy, confectionery, and soda fountain in the city, and a member of the vigilantes who pursued the Kraft bank robbers here in 1930, was arrested here today charged with being one of the two armed bandits who last Thursday held up and robbed the State Bank of Roberts at Roberts, St. Croix county, and fled with $600 cash and currency.

Jeatran, according to the county authorities, was arrested today only after H. T. Jensen, cashier of the Roberts bank, and Clark Webb, Roberts, who was also in the bank at the time, had positively identified Jeatran as the leader of the two bandits who forced Jensen, his daughter and the two customers to lie on the floor, while they scooped up the money and fled in a car. The authorities said that Webb and Jensen spent most of the day watching Jeatran at work, unknown to the latter. Then their identification

(Continued on Page 2, Col. 4)

DROUGHT SENDS PRICES SOARING

MORE DEATHS BLAMED UPON FIERCE HEAT

No Immediate Break Forecast in This Region

STATE DEATHS MOUNT TO 173

Scattered Showers in Some Areas Bring Slight Relief

HEAT CHRONICLE

Monday	103
Tuesday	105
Wednesday	103
Thursday	104
Friday	107
Saturday	109
Sunday	110
Monday	111

OFFICIAL TEMPERATURES
Today

6 a.m.	71
7 a.m.	82
8 a.m.	91
9 a.m.	96
10 a.m.	100
11 a.m.	105
12 a.m.	106
1 p.m.	109
2 p.m.	110
3 p.m.	110
4 p. m.	111
5 p. m.	110
6 p. m.	106
7 p. m.	102
8 p. m.	94

The Eau Claire Leader, Tuesday 14 July 1936
Wisconsin Deaths from Heat 173; in the USA, 1625 are dead.

https://realclimatescience.com/wp-content/uploads/2017/08/1280px-Dust_Bowl_-_Dallas_South_Dakota_1936_shadow.png

The Chillicothe Constitution-Tribune

Chillicothe, Missouri, Thursday, 20 August 1936

The Chillicothe Constitution-Tribune
CHILLICOTHE, MO., THURSDAY, AUG. 20, 1936

HEAT WAVE WITHIN 4 DAYS OF RECORD

Weather Observers Predict the 44 Day Record in 1934 Will Be Broken.

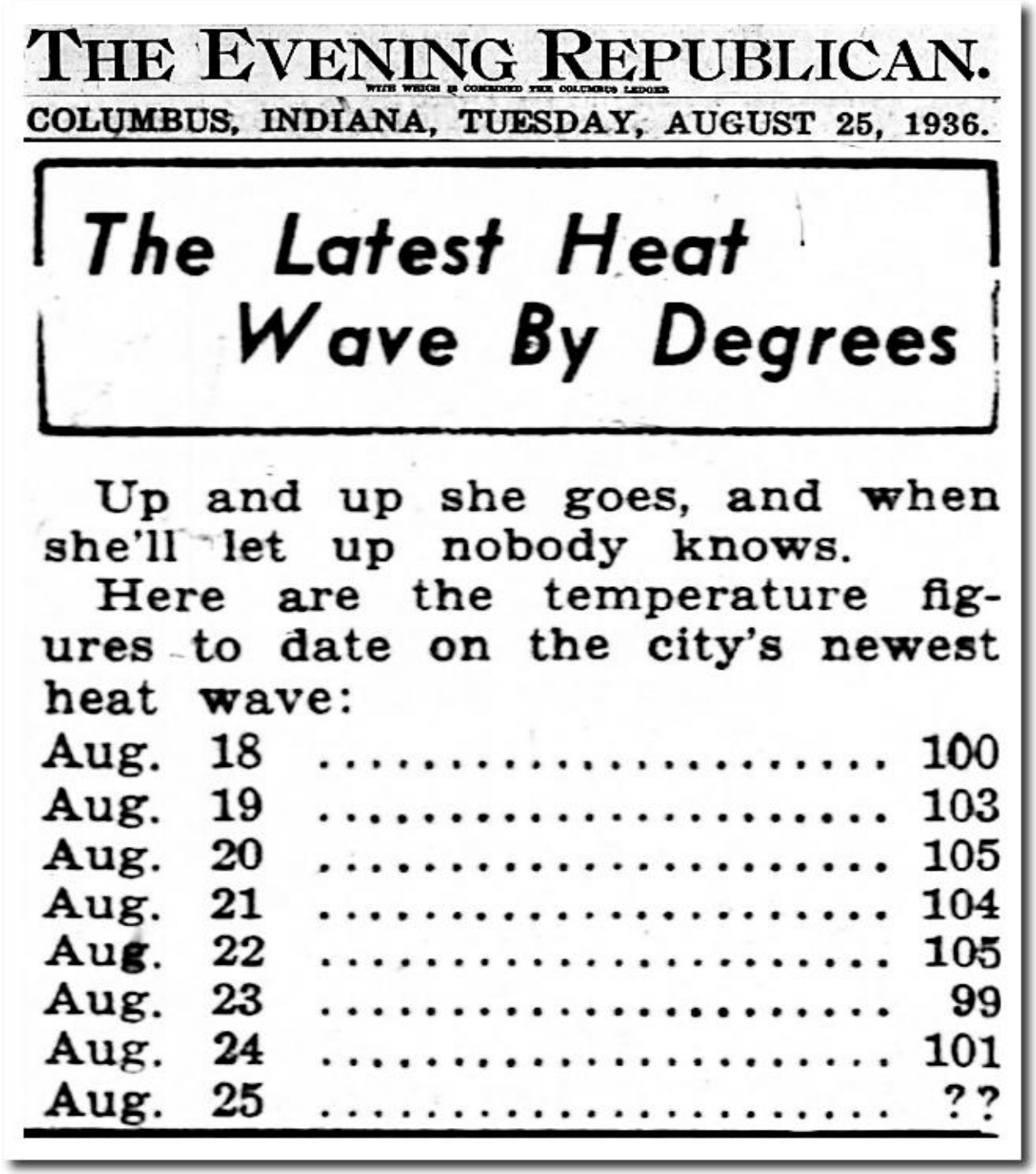
KANSAS CITY, Aug. 20—(UP). The heat wave which has laid devastating siege to the southwest for two weeks today, was within four days of setting a new all-time record here.

The anniversary of the breakup of the 1934 drouth, the most serious in history prior to this year, passed yesterday with no relief in sight. In 1934 there were 44 days of 100-plus temperatures in Kansas City. There has been 41 thus far this year.

Weather observers predict the 1934 mark will be broken. Hundreds of

The Evening Republican

Columbus, Indiana, Tuesday 25 August 1936



THE EVENING REPUBLICAN.

WITH WHICH IS CONSOLIDATED THE COLUMBUS LEDGER

COLUMBUS, INDIANA, TUESDAY, AUGUST 25, 1936.

The Latest Heat Wave By Degrees

Up and up she goes, and when she'll let up nobody knows.

Here are the temperature figures to date on the city's newest heat wave:

Aug.	18	100
Aug.	19	103
Aug.	20	105
Aug.	21	104
Aug.	22	105
Aug.	23	99
Aug.	24	101
Aug.	25	??

The Salt Lake Telegram

Friday, 14 August 1936

THE SALT LAKE TELEGRAM,
FRIDAY EVENING, AUGUST 14, 1936.

TEXAS HEAT WAVE LEAVES SCORE DEAD

DALLAS, Texas, Aug. 14 (INS)—Texas today chalked up a toll of a score dead and thousands suffering from the effects of a four-day heat wave, while hundreds were in hospitals or under the care of doctors.

The four-day heat wave was directly or indirectly responsible for 20 deaths as temperatures climbed to the high mark of 120.

Today, however, virtually the entire state was cooled by breezes.

West Texas was the state's "hottest spot" yesterday, the weather bureau temperatures recording being from three to four degrees over the century mark.

The New York Times

Tuesday, 18 August 1896

Source: The Philadelphia Record

Reported that New South Wales, Australia
reached 127F on 23 January 1896

The New-York Times.

NEW-YORK, TUESDAY, AUGUST 18, 1896.

HOTTEST OF HOT WAVES ON RECORD.

How It Struck Sweltering New South Wales in January Last.

From The Philadelphia Record.

Talking about hot weather, one day last January the mercury at Adelaide, Australia, marked 127° in the shade! Mr. George W. Beel, who was at Sydney on Feb. 1, wrote to The Record under that date as follows:

I have seen hot days in our own country—in Illinois, Iowa, Ohio, Kansas, and twenty other States—and much suffering from excessive heat, but when compared with the recent atmospheric conditions of Australia those memories fade into harmless imaginings. The following readings of the temperature were published in the Sydney papers as reports from various interior points in New South Wales for Thursday, Jan. 23:

	Deg.		Deg.
Albury	112	Cooma	102
Balranald	121	Marsdons	111
Bathurst	104	Monindo	117
Bingara	100	Molong	99
Bourke	119	Morangaroll	107
Browarrina	120	Moree	104
Broken Hill	115	Mous Vale	98
Cobar	110	Mount Hope	110
Coonabarabren	106	Mudgoo	101
Condobolin	110	Murrumbidgee	107
Cowra	111	Muswellbrook	100
Cudgellico	117	Narribri	106

Lansing, Michigan,

The State Journal

13 July 1936

THE STATE JOURNAL,

MONDAY, JULY 13, 1936

Heat Death Toll in State 332, Mostly in Detroit

(By the Associated Press)

Michigan's death list from the unprecedented wave of 100-degree heat which has swept the state for five days jumped to 332 at noon Monday with the announcement that 63 patients at Eloise hospital had died since last Wednesday of causes attributed directly or indirectly to the heat.

Hospital officials said 32 of the mental patients, most of them aged and all of them ill, had died of heat prostration. The remaining 31 succumbed from various types of ailments, aggravated by the intense heat.

The announcement brought Detroit's total deaths for five days to 217 from the heat wave, combined with an additional 115 outstate from heat or drowning, reached a total of 315.

Officials described conditions, particularly in the metropolitan area of Detroit, as approaching the proportions

SECOND SECTION

SANTA CRUZ NEWS

EVENING

FEATURES EDITORIALS

Vol. 59—No. 5 SANTA CRUZ, CALIFORIA, SATURDAY, DECEMBER 5, 1936 [Pages Seven to Ten]

Forest Fires, Occurrent In Santa Cruz Mountains For Century, Seen As Greatest Peril To Future Prosperity

First order to guard against blazes in tree-clad hills came from Governor Figueroa at Monterey to Branciforte town council in 1834, in days when California was part of Mexico and Bolcoff was alcalde here.

blazes rather than to attempt to intervene after a fire had started. His concern was less with the trees which might be destroyed than with ranch properties which might be burned.

It was ten years later that harvesting the magnificent redwood stands of those days really began in the Santa Cruz mountains.

Data compiled by state forestry department show county visited by flames almost yearly since big fire of 1868 which ran over forested summits from Watershed of the Pescadero to peaks of the Gavilans.

Data compiled by state forestry department show county visited by flames almost yearly since big fire of 1868 which ran over forested summits from Watershed of the Pescadero to peaks of the Gavilans.

SAN LORENZO PENETRATED

The valley of the San Lorenzo which, in the operations of Isaac Graham and his cronies at Zayante as early as 1842, was penetrated by roads in the sixties and a score of mills set up.

The year 1868, which saw a new high in lumber production, with 22 mills capable of cutting eleven million feet a year, also saw the first big forest fire of which there is any record. The flames, starting near Pescadero, mounted to the hill tops and roared south along the Santa Cruz-Santa Clara county line, through Corre-

heat was added to by the large fires which are raging in the forests near Soquel and Aptos. A fire near Morgan and Dabadie's mill destroyed five private bridges."

BEN LOMOND BLAZE

1888: Aug. 15, San Francisco Chronicle. "For the past few days a fire has been burning on Ben Lomond which is perhaps unequalled in the history of this county. It started near Boulder Creek and spread up over the mountain and is now running down the gulches leading from Ben Lomond. Yesterday it raged fiercely

Santa Cruz News

Saturday 5 Dec 1936

The Tribune-Republican

Scranton, PA

4 July 1911

In 1911, <CO2>was 300 PPM

The Tribune-Republican

SCRANTON, PA., TUESDAY, JULY 4, 1911.

NATION IN THROES OF HEAT TIDE

Government Forecasters in Washington Predict Most Oppressively Hot and Sweltering "Fourth" in Decade With No Relief in Sight Unless Through Local Rain.

TEMPERATURE RECORDS BROKEN AT ALL POINTS

Suicides, Deaths and Prostrations Reported in Many Cities—Thermometers Burst Under Excessive Strain in Some Places—Reaches From Fresno, Cal., to Albany.

ALL HEAT RECORDS IN NEW ENGLAND BROKEN

BOSTON, July 3.—All heat records of the weather bureau were shattered by the hot wave which encircled New England today. Three deaths and more than fifty prostrations were reported in Boston and its suburbs alone, while scores of people in other parts of New England were overcome. The White mountains of New Hampshire, famed for their cooling breezes, offered little relief, for at some points the mercury registered ninety-six in the shade. At Burlington, Vt., the weather bureau reported temperature of 100, exceeding by four degrees the highest mark reached during the seventy years that local records have been kept.

In Boston the official mark was 102, reached at 3 o'clock in the afternoon. This was half a degree hotter than the record of Sept. 7, 1881, the highest ever before recorded by the weather bureau.

DEATHS AND SUICIDE TOLL IN BALTIMORE.

BALTIMORE, Md., July 3.—The hot weather took heavy toll here today, although the official maximum temperature of ninety-five degrees was two degrees lower than that of yesterday. Three deaths, one of them a suicide, two attempts at suicide and six prostrations were reported as a result of the heat.

F. Halvorse, machinist's mate on the United States torpedoboat destroyer Monaghan, which was sent here to take part in tomorrow's marine pageant, was overcome by the heat on board the vessel and died after being removed to a hospital.

The heat toppled John Dorsch, forty-six years of age, a driver, from his wagon. One of the wagon wheels passed over his head, causing his death.

The Chicago Tribune

14 July 1936

100 dead in Detroit

Durand, MI, 112F

Chicago Tribune July 14, 1936

SIX TORRID DAYS TAKE HEAVY TOLL OF DETROIT LIVES

[Chicago Tribune Press Service.]
(Pictures on back page.)

Detroit, Mich., July 13.—[Special.]—City hospitals and the Wayne county morgue today presented a picture seen only during a major catastrophe as Detroit endured its sixth consecutive day of 100 degree weather—the worst heat wave in the history of Michigan.

Nurses and physicians worked overtime in hospitals crowded beyond capacity with hundreds of heat prostration patients. At the county morgue, where 100 bodies were received during the day, women and children wept as they moved among the crypts seeking to identify loved ones.

Chicago Tribune July 14, 1936

Other Cities Set Record.

Other Michigan cities registered higher temperatures than Detroit. Durand set an all time state high with 112. It was 111 at Saginaw, for a record, 108 at Grand Rapids, and 107 at Kalamazoo. At Adrian, Jackson, and Grand Rapids it was 106. Owosso reported 105. Battle Creek, 103, and Muskegon 101.

At Marquette in the Upper peninsula the mercury went to 104.

https://news.google.com/newspapers?nid=1243&dat=19360725&id=ueUsAAAAIBAJ&sjid=RCEEAAAAIBAJ&pg=4558,3173079

The Bend Bulletin

Bend, Oregon

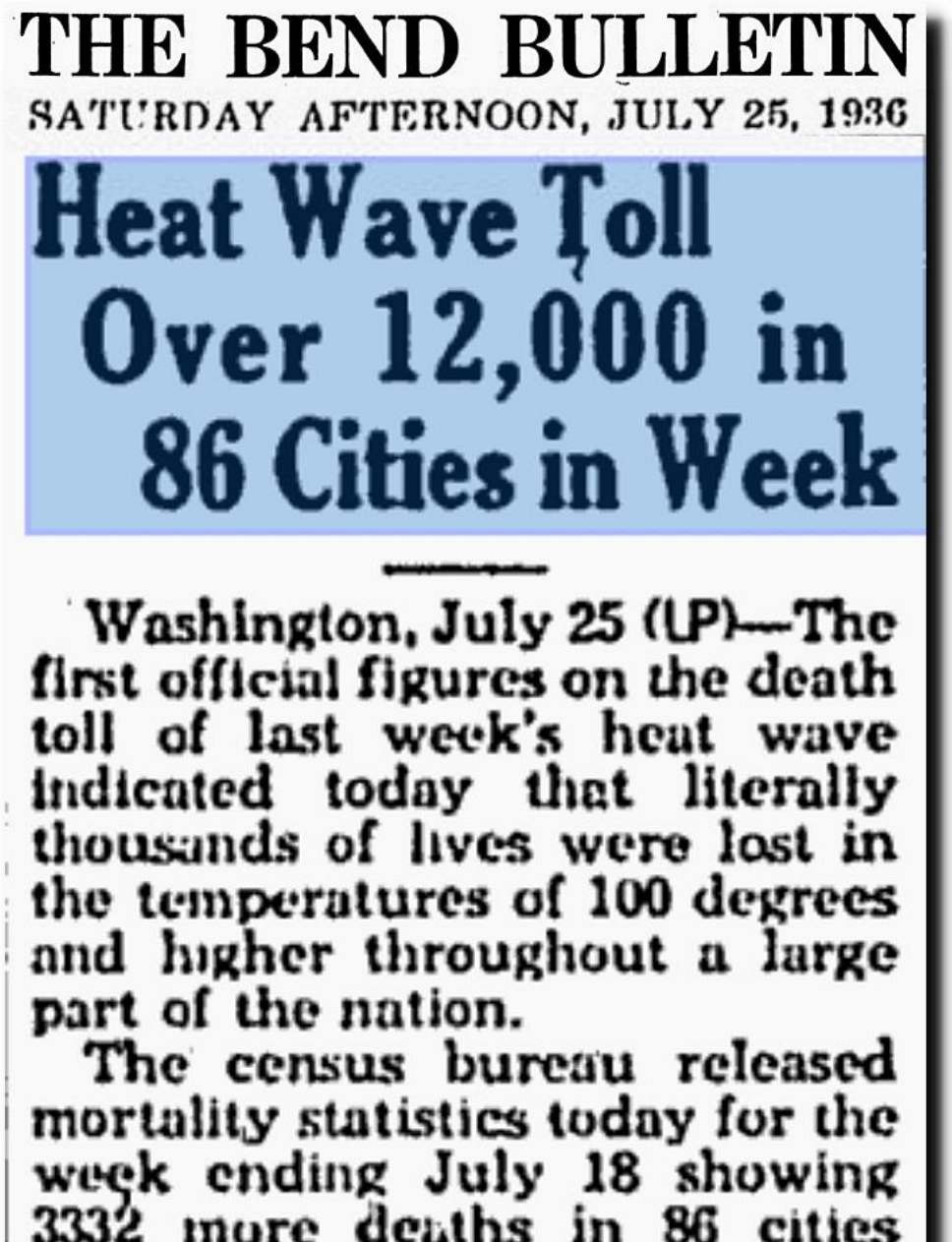
Saturday, 25 July 1936

Over 12,000 US residents died of the heat in a single week,

and this is not mentioned in a climate change lecture having

“Observed Climate Changes” as a topic?

What might the press reaction today be if 12,000 US residents died from the heat in a single week?



THE BEND BULLETIN

SATURDAY AFTERNOON, JULY 25, 1936

Heat Wave Toll Over 12,000 in 86 Cities in Week

Washington, July 25 (UP)—The first official figures on the death toll of last week's heat wave indicated today that literally thousands of lives were lost in the temperatures of 100 degrees and higher throughout a large part of the nation.

The census bureau released mortality statistics today for the week ending July 18 showing 3332 more deaths in 86 cities

https://www.nytimes.com/2005/08/03/nyregion/next-to-1936-05-is-no-sweat.html

The New York Times

N.Y. / REGION

Next to 1936, '05 Is No Sweat

By SHADI RAHIMI AUG. 3, 2005

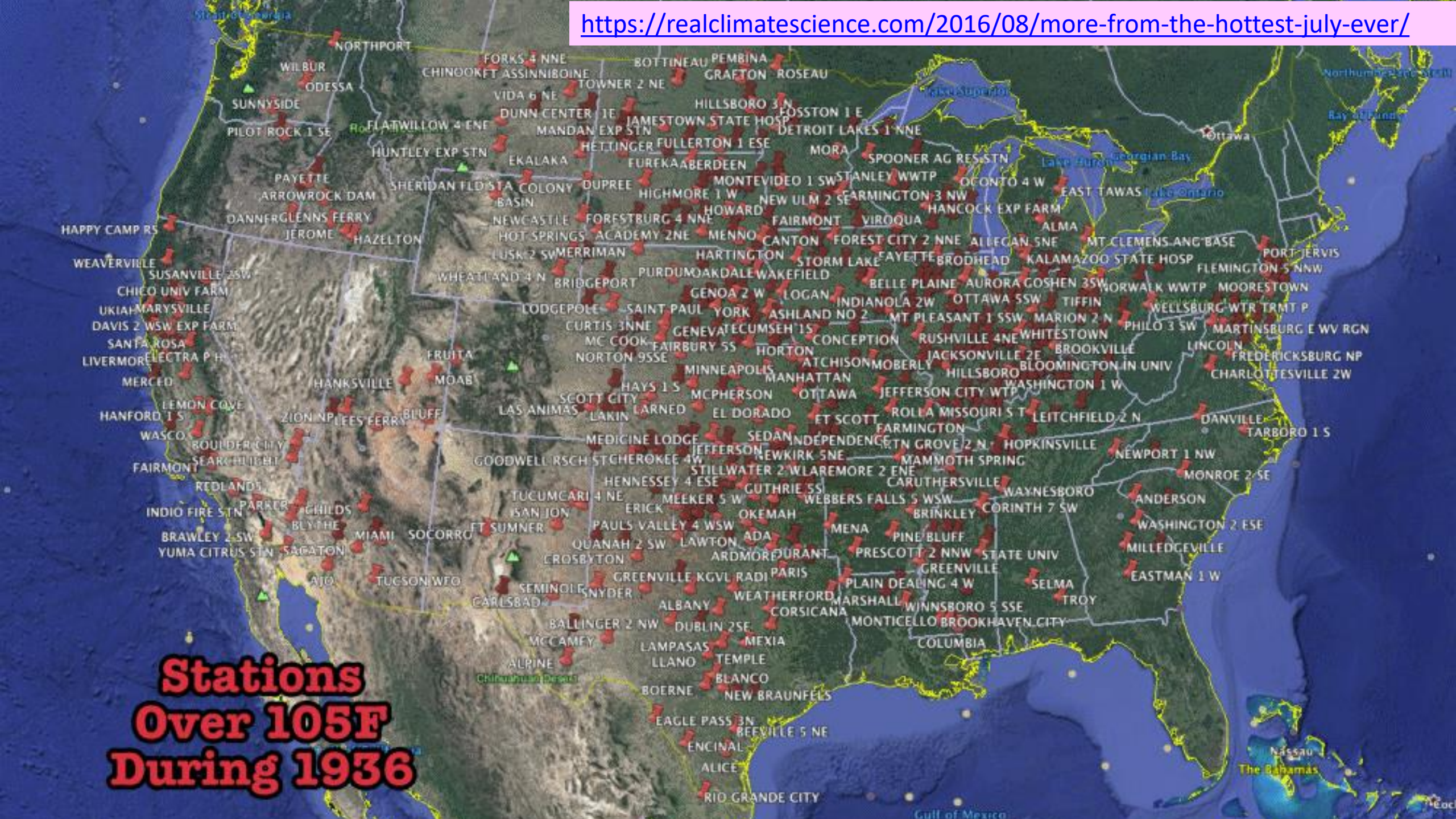
"…the high yesterday was 92. But take a minute and be glad that it's not 1936. That's when New York City hit a record high of 106, during a heat wave that lasted several months.

…though unwelcome, the broiled grasshoppers probably smelled better than the **car horses left rotting on the streets of New York City in 1896, when hundreds dropped dead from the heat at a rate faster than they could be hauled away.**

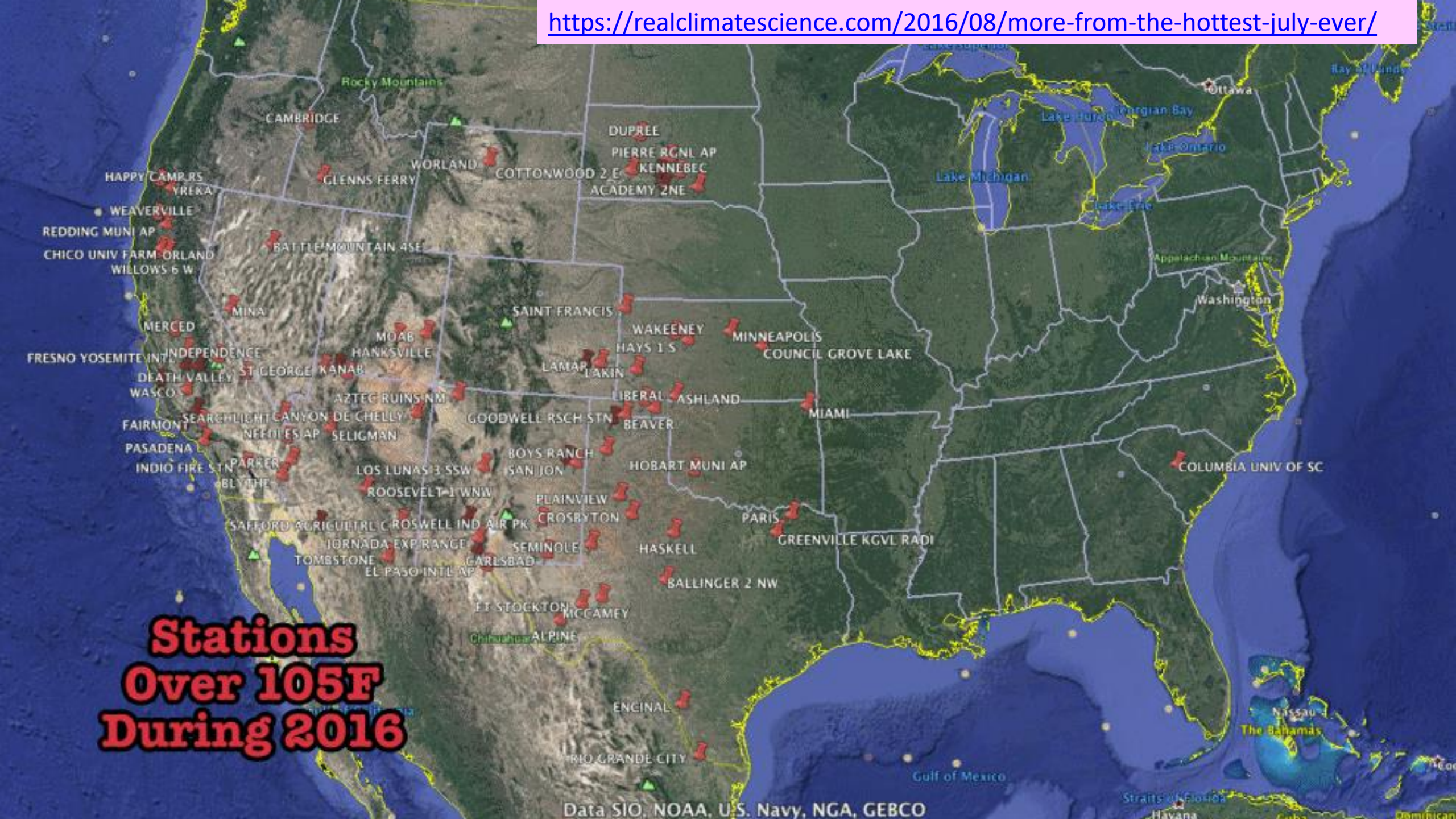
To prevent a repeat episode, in 1936, women from the Humane Society set up watering stations downtown, holding buckets of water up with gloved hands to the mouths of parched horses."

end Newspaper-based Sidebar

https://realclimatescience.com/2016/08/more-from-the-hottest-july-ever/

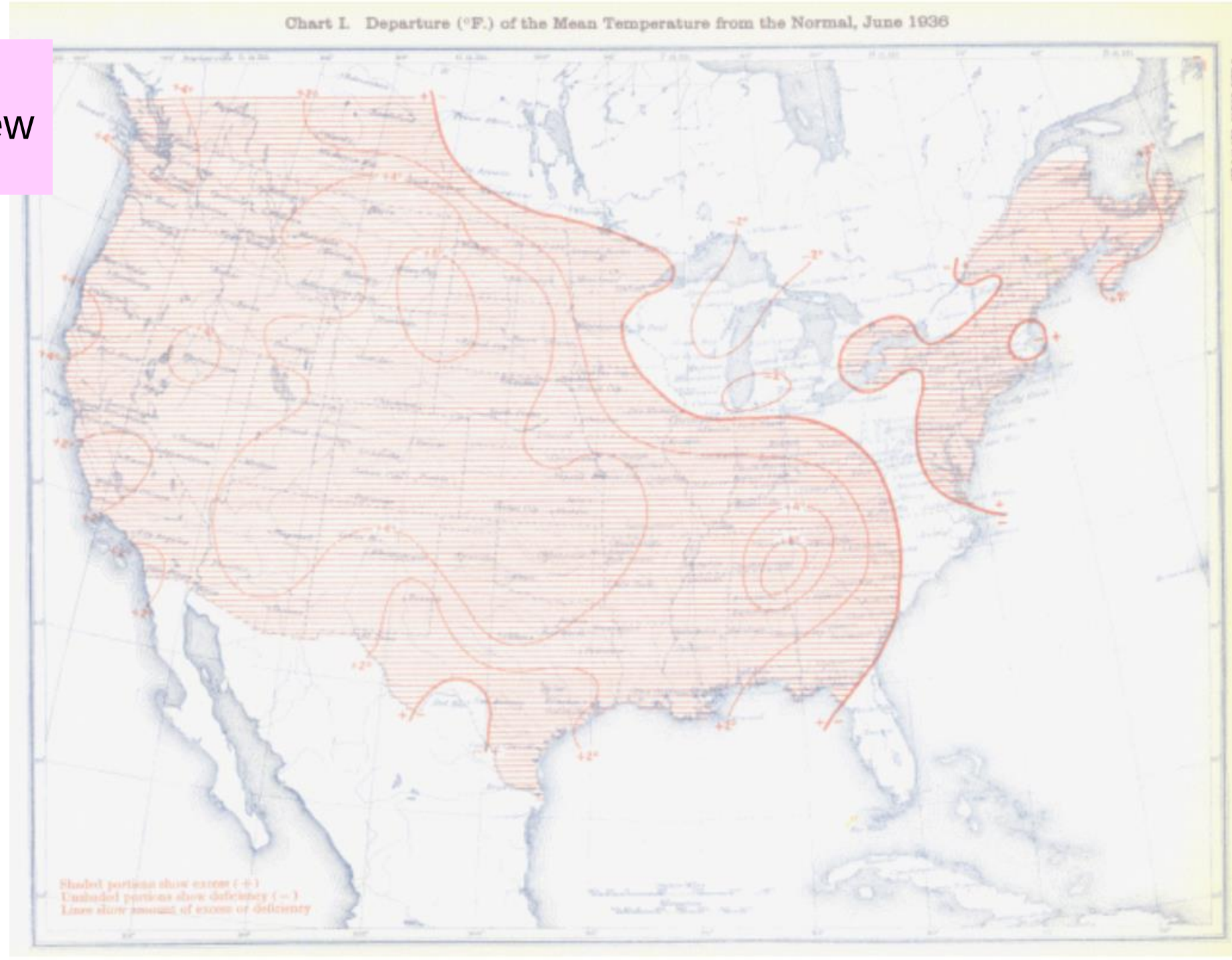


https://realclimatescience.com/2016/08/more-from-the-hottest-july-ever/



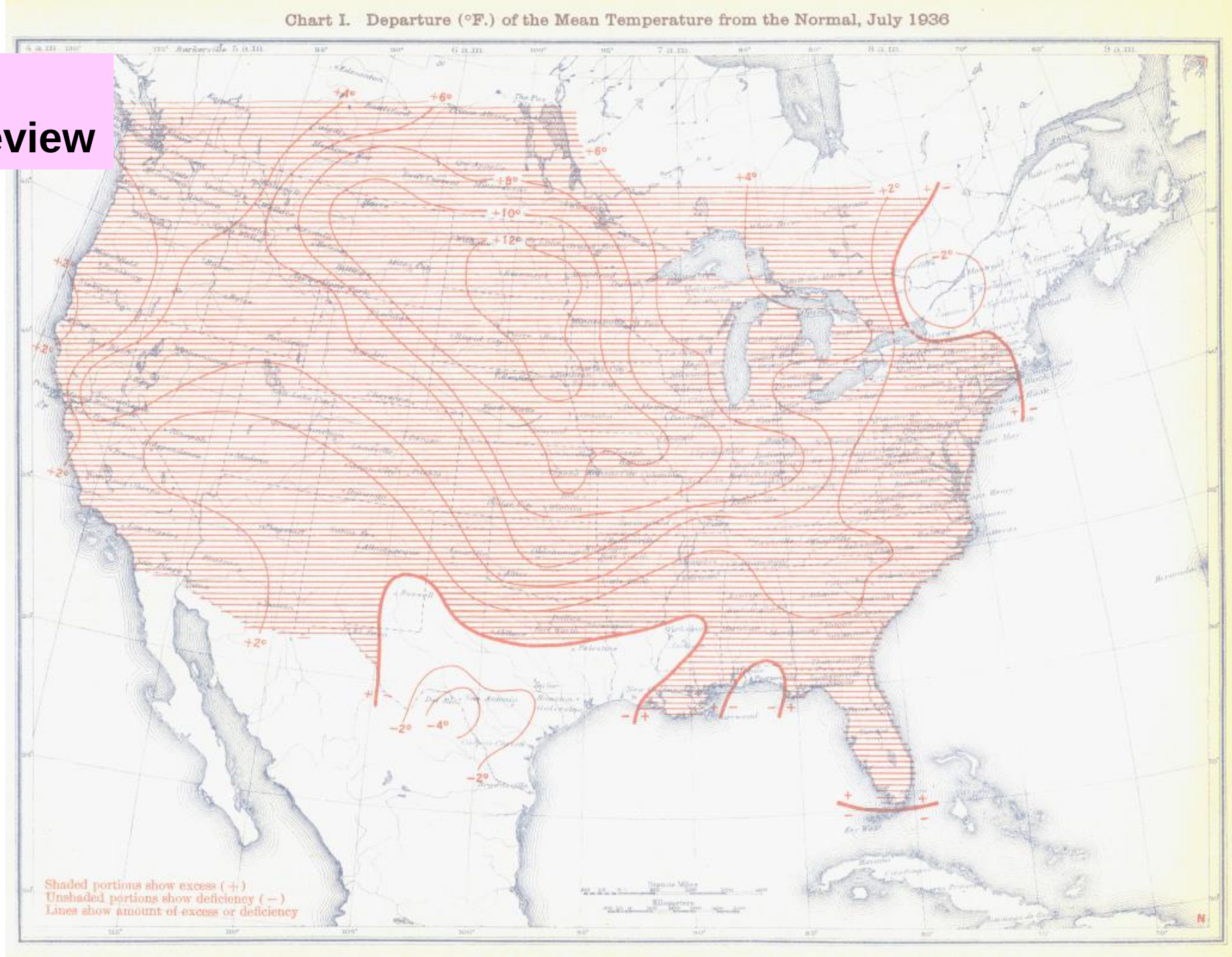
June, 1936
Monthly Weather Review

http://docs.lib.noaa.gov/rescue/mwr/064/



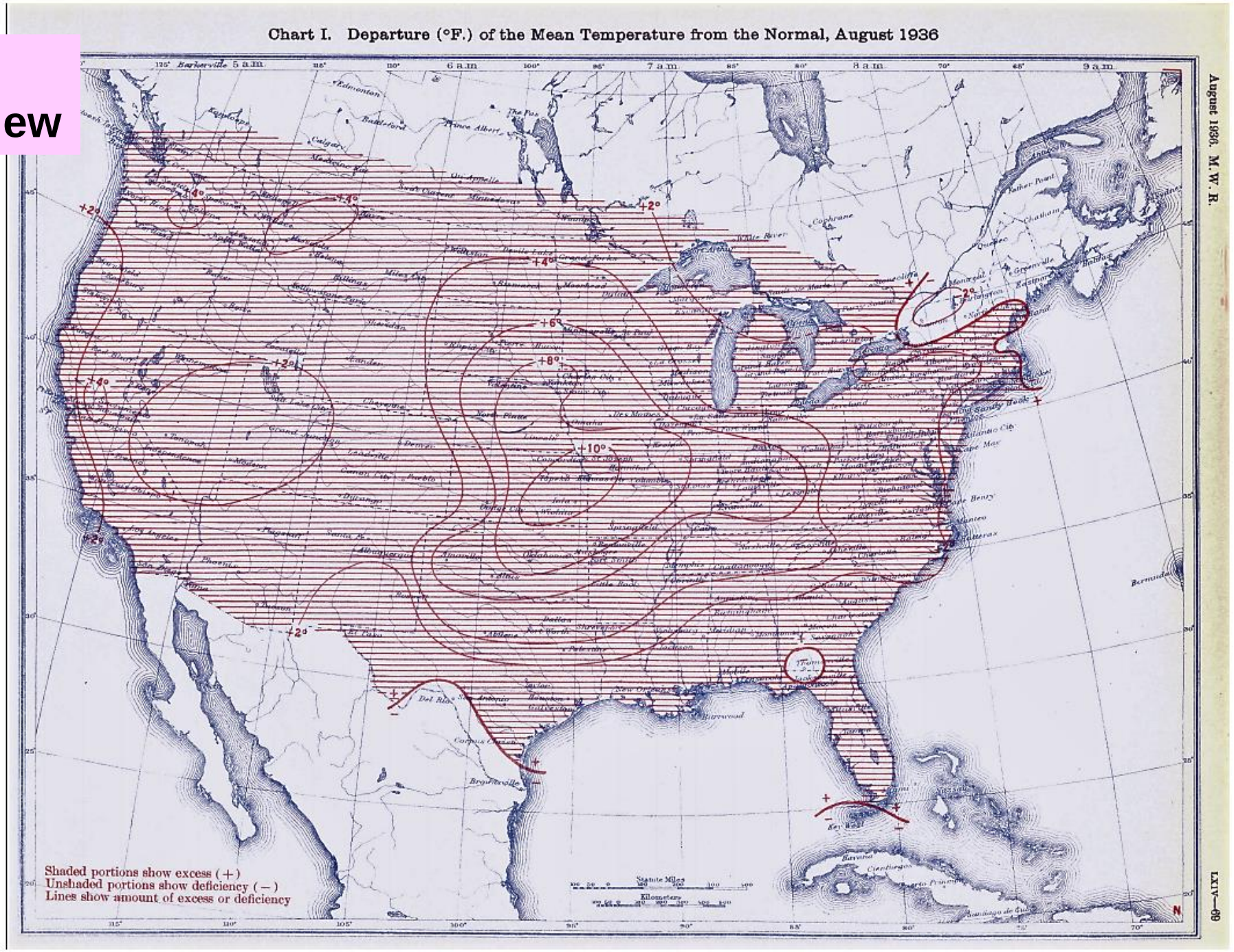
July, 1936
Monthly Weather Review

http://docs.lib.noaa.gov/rescue/mwr/064/



August, 1936
Monthly Weather Review

http://docs.lib.noaa.gov/rescue/mwr/064/



NATIONAL WEATHER SERVICE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER SAFETY INFORMATION EDUC

Local forecast by "City, St" or ZIP code

Enter location ... Go

Location Help

News Headlines

- Heat Awareness Day - June 6, 2018
- River Forecasts and Observations Discontinued at Arcadia, WI
- Meteorological Spring 2018 Summary
- Remembering the Historic Flooding of June 2008 (10 years later)

Heatwave of July 1936

Weather.gov > La Crosse, WI > Heatwave of July 1936

https://www.weather.gov/arx/heat_jul36

All-Time Records Set in July 1936

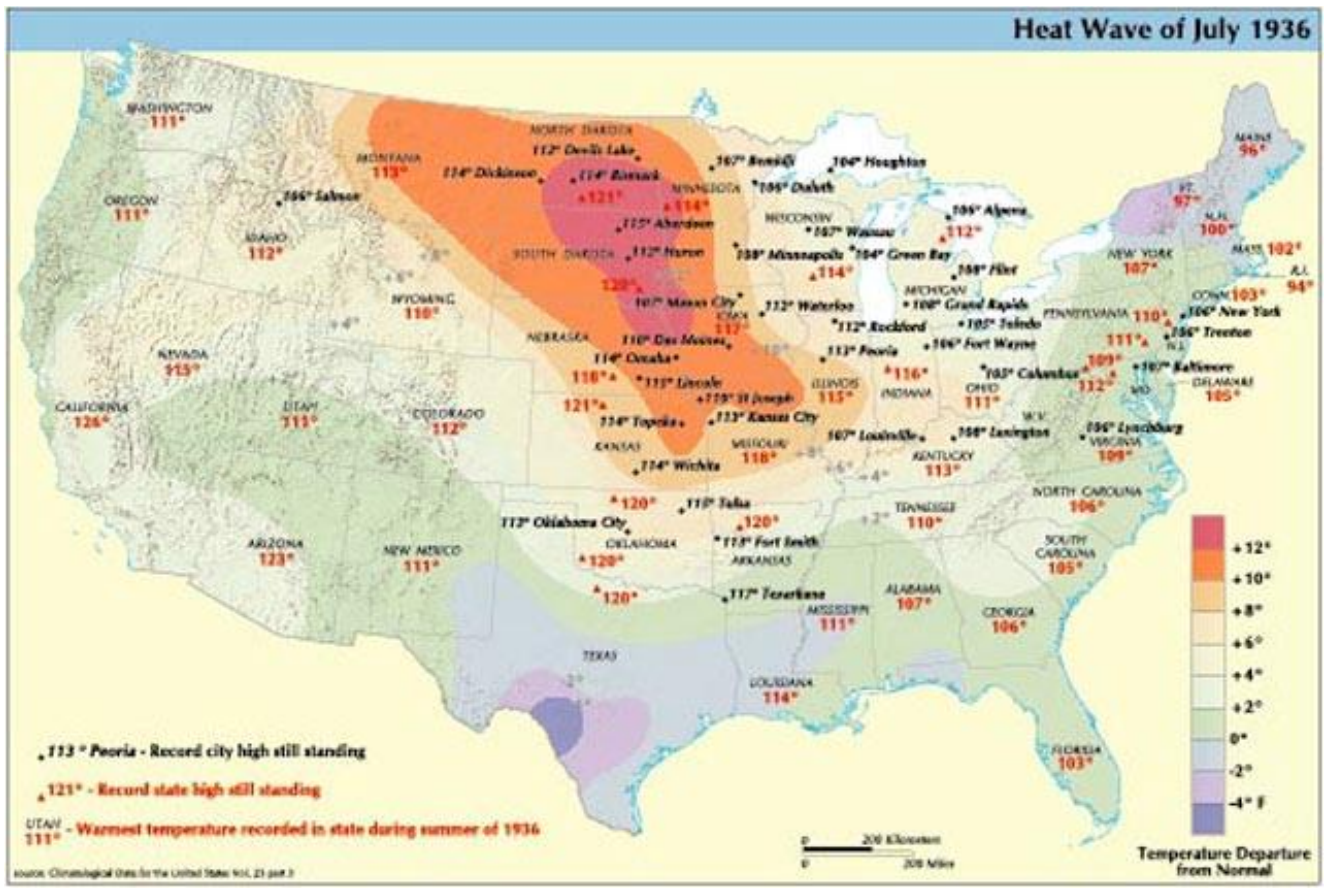
Location	Temperature	Date
Decorah, IA	111°F	July 14
Fayette, IA	110°F	July 14
New Hampton, IA	110°F	July 13
Mondovi, WI	110°F	July 14
Richland Center, WI	110°F	July 14
Rochester, MN	108°F	July 11 & 14
La Crosse, WI	108°F	July 14
Lancaster, WI	108°F	July 14
Viroqua, WI	108°F	July 13
Hatfield, WI	108°F	July 14
Osage, IA	107°F	July 14
Friendship, WI	106°F	July 14
Grand Meadow, MN	106°F	July 14
Mather, WI	106°F	July 14
Neillsville, WI	106°F	July 14
Sparta, WI	106°F	July 13
Medford, WI	104°F	July 13

https://www.wunderground.com/blog/weatherhistorian/the-great-heat-wave-of-1936-hottest-summer-in-us-on-record.html

The Great Heat Wave of 1936; Hottest Summer in U.S. on Record

By: Christopher C. Burt, 10:10 PM GMT on July 21, 2011

The Great Heat Wave of 1936; Hottest Summer in U.S. on Record

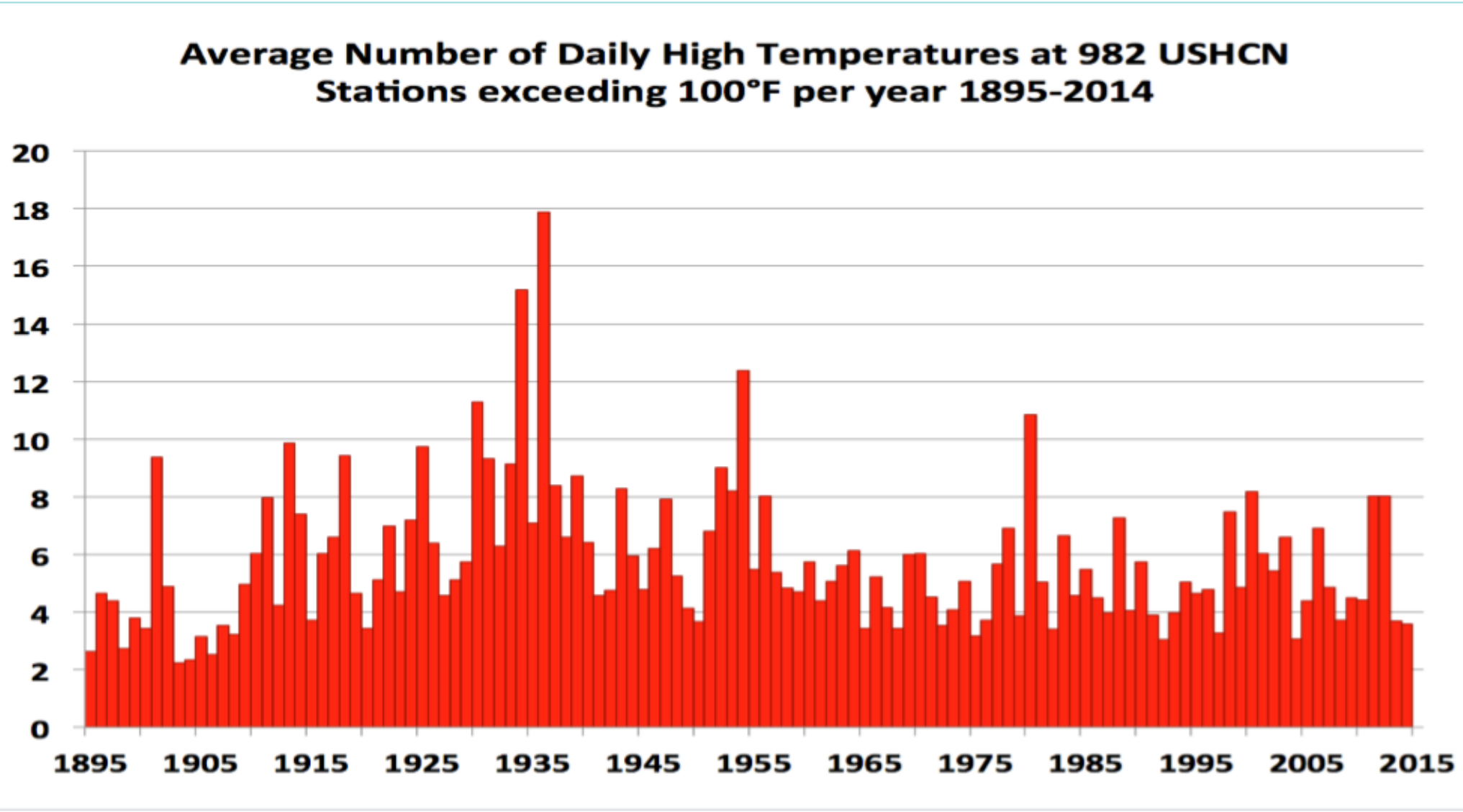


https://docs.house.gov/meetings/SY/SY00/20160202/104399/HHRG-114-SY00-Wstate-ChristyJ-20160202.pdf

Average number of days per USHCN station every year having temperatures at or over 100F.

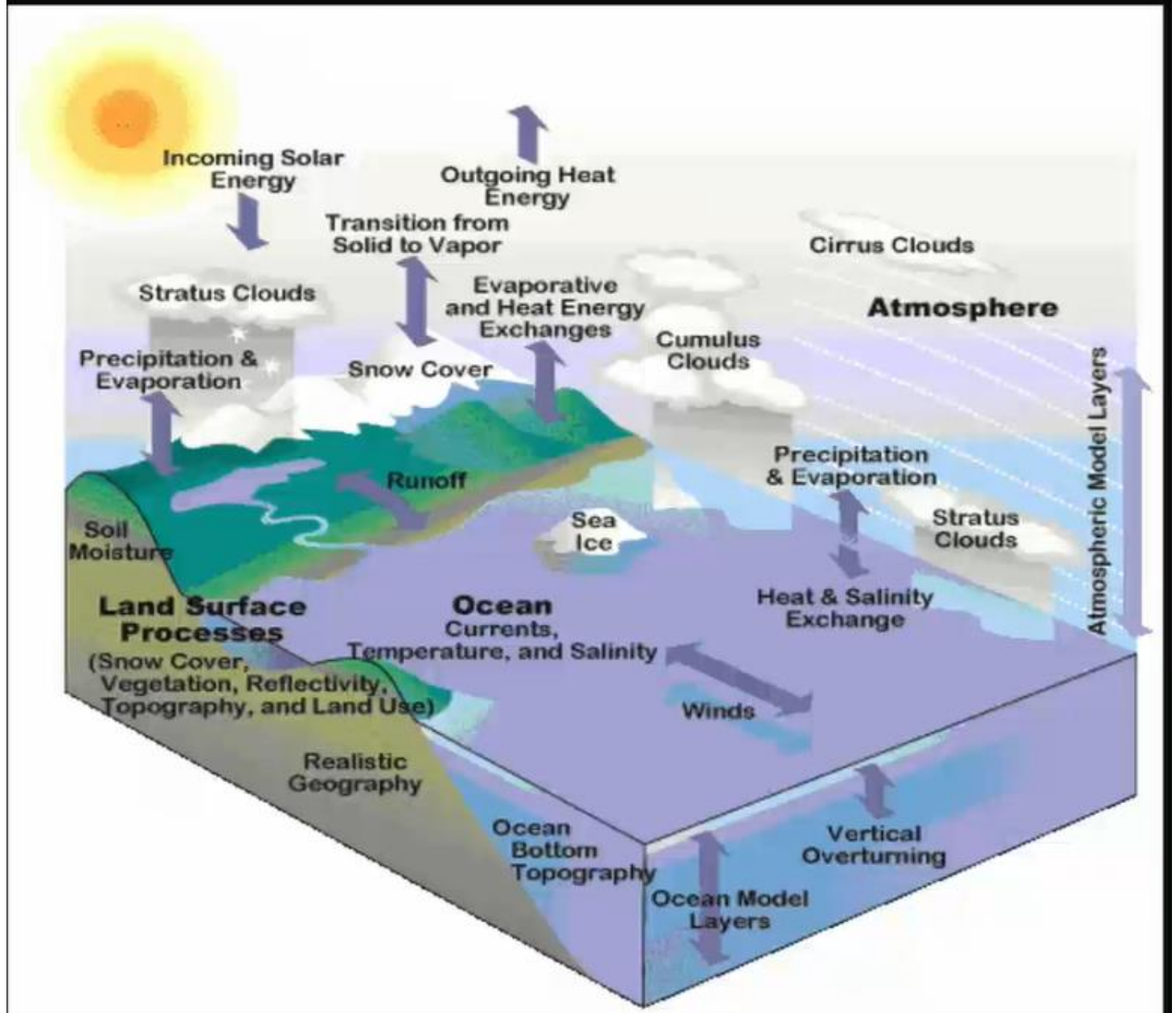
This number peaked in the Dust Bowl years of the 1930s.

These data disagree with the theory of CO2-fueled warming.

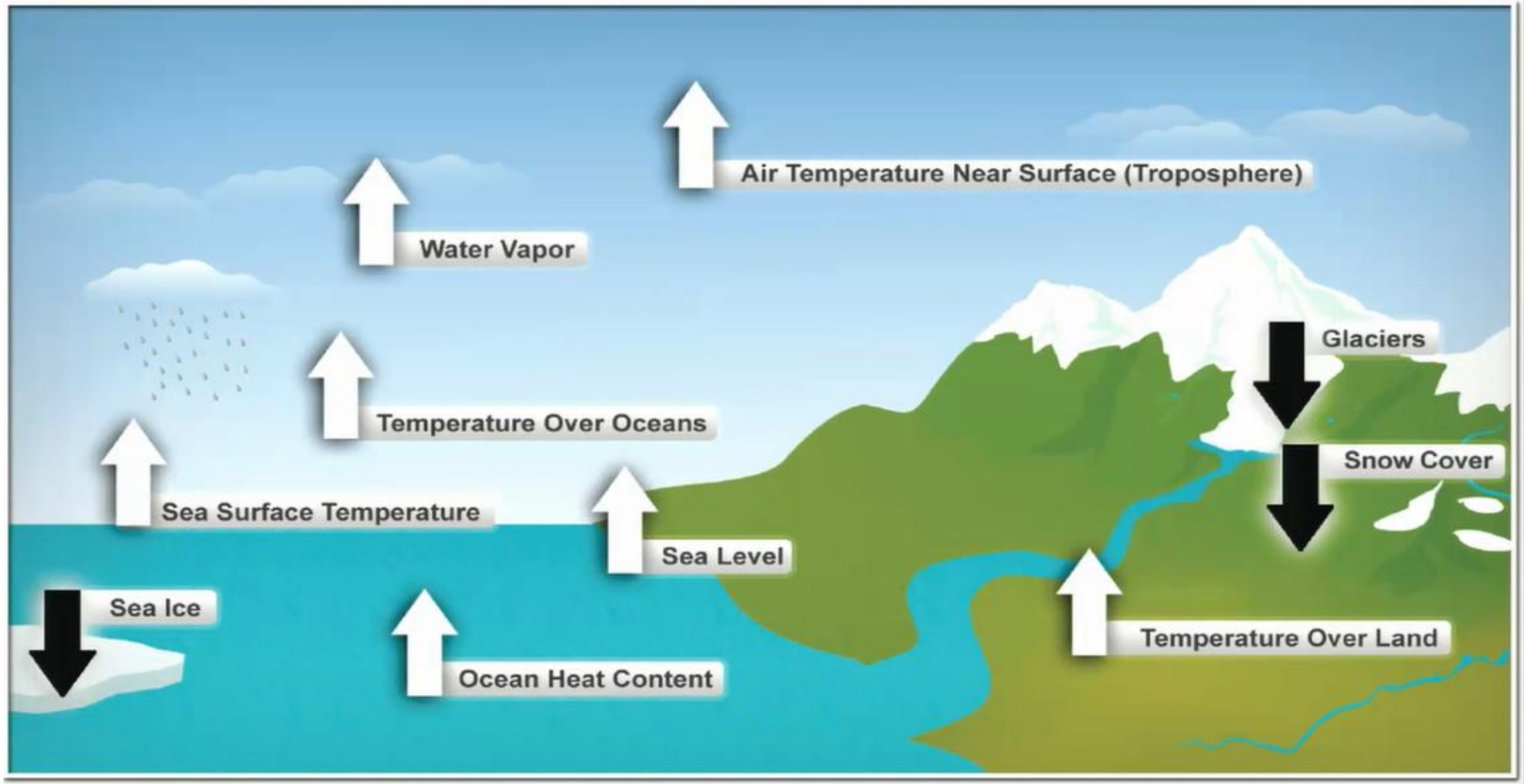


Above: Average number of days per-station in each year reaching or exceeding 100°F in 982 stations of the USHCN database (NOAA/NCEI, prepared by J R Christy).

What's in the models?



Ten Indicators of a Warming World



U.S. Global Change Research Program
National Climate Assessment

25 Apr 2018 - NMSU

Third National Climate Assessment, Chapter 2

Previous graphic doesn't take into account regular 1000-year Bond Cycles:

Bond, G., et al, A Pervasive Millennial-Scale Cycle in North Atlantic Holocene and Glacial Climates, SCIENCE, Vol. 278, 14 November 1997.

Warming temperatures are not an especially rare event at geologic time scales, contrary to the impression the previous graphic tries to convey.

Next two graphics show that, based on the GISP2 ice cores, the present rates of warming are quite small compared with temperature changes observed using the Ice Core data from Greenland, the GISP2 data.

http://wattsupwiththat.com/2011/01/24/easterbrook-on-the-magnitude-of-greenland-gisp2-ice-core-data/

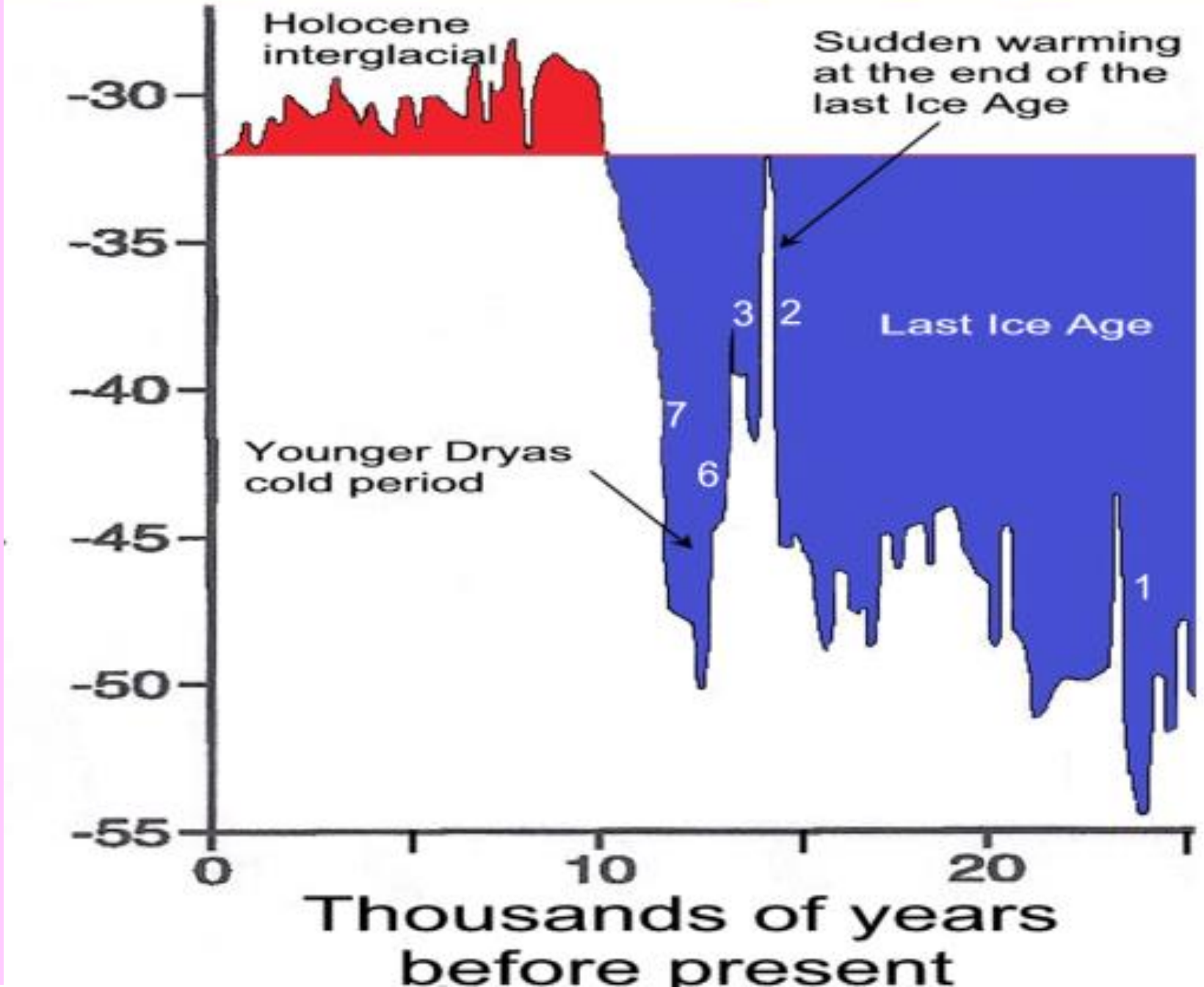
Red is the Holocene, last 10K years.

Rising and falling temperatures are the norm and not an especially unusual event as was implied by Dr Garfin's graphic.

Note the white colored Numbers: 1, 2, 3, 6, 7.

These numbers identify specific time periods' rate of temperature change per hundred years.

The present rates of change of temperature are minor in comparison with those identified … 1, 2, 3, 6, and 7.



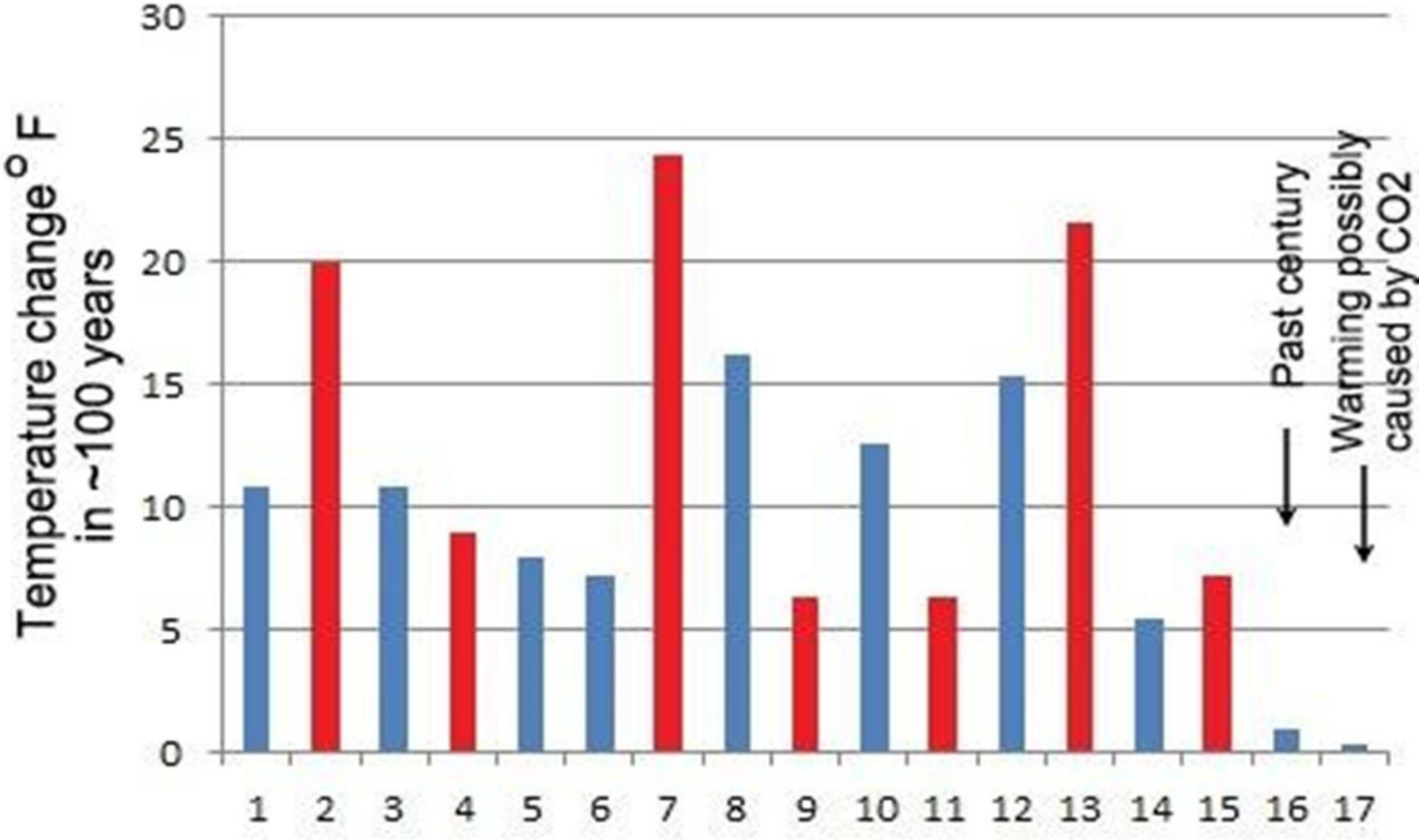
http://wattsupwiththat.com/2011/01/24/easterbrook-on-the-magnitude-of-greenland-gisp2-ice-core-data/

Seventeen sets of positive (Red) and negative (Blue) temperature change in Degrees F per 100 years
The highest rate of change of temperature was +14F in 40 years which occurred during the younger Dryas period

"Temperature changes recorded in the GISP2 ice core from the Greenland Ice Sheet show that the magnitude of global warming experienced during the past century is insignificant compared to the magnitude of the profound natural climate reversals over the past 25,000 years, which preceded any significant rise of atmospheric CO2."

Dr. Don Easterbrook.

(Underlining added)

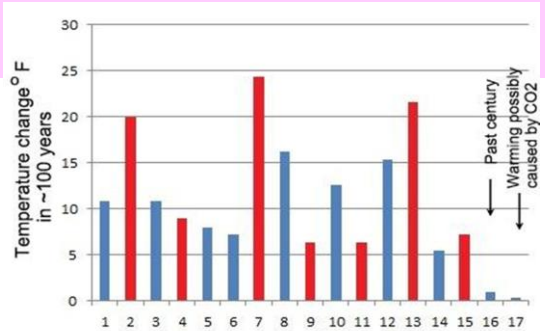


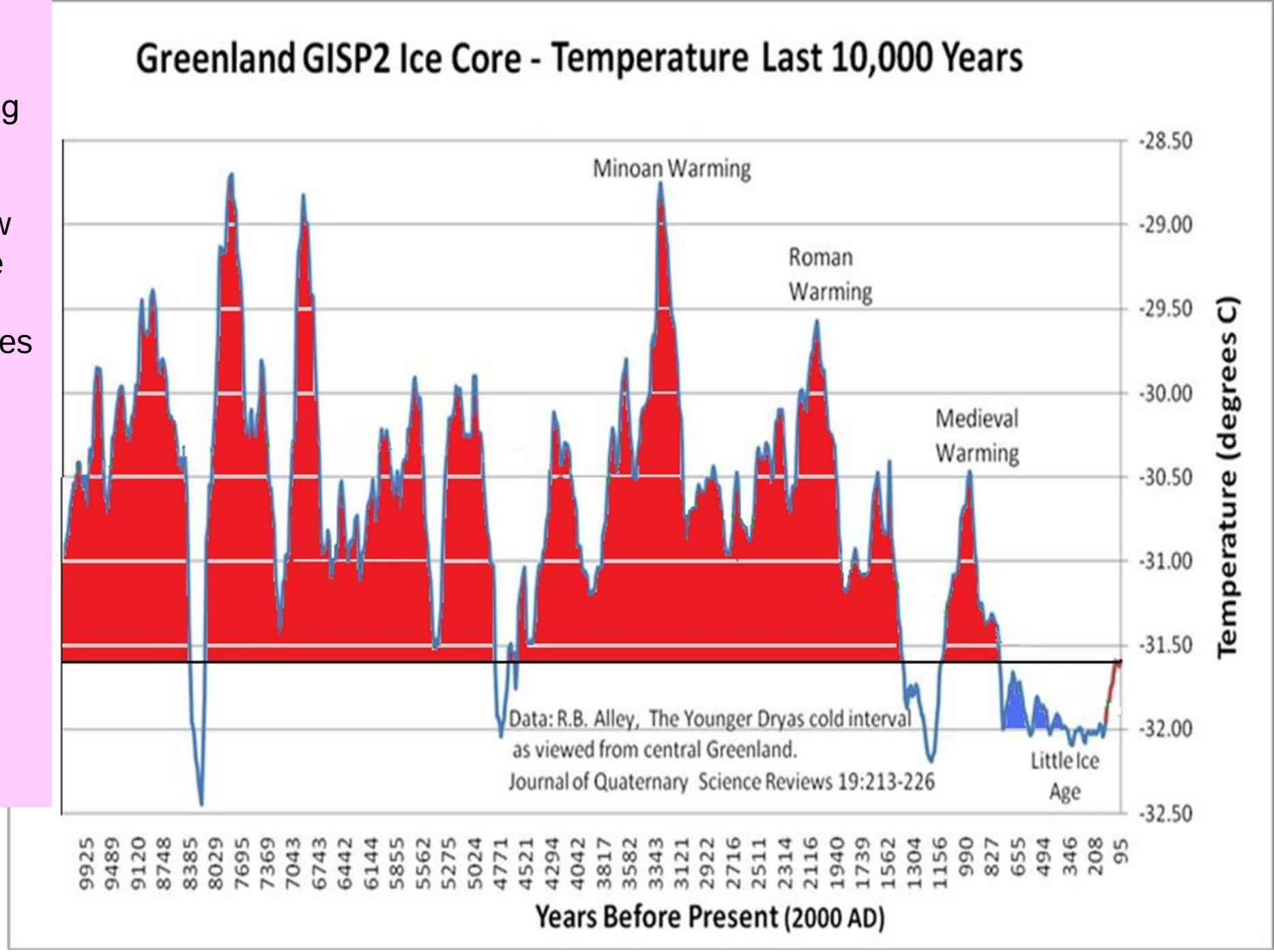
Previous Garfin chart implied temperature or climate rarely changed before…as if warming was somehow a rare event.

Data from the GISP2 core show about half the time temperature is rising, the other half it is falling, as the proxy temperatures show, right.

The 1000-1450 year cycles are “Bond Cycles.”

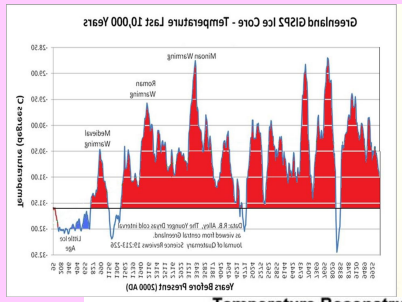
Moreover, the present rate of temperature rise is particularly benign, when compared with recent history, shown on my previous chart.

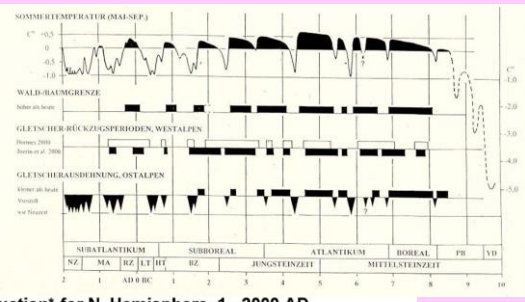




More on climate cycles and Bond Cycles:

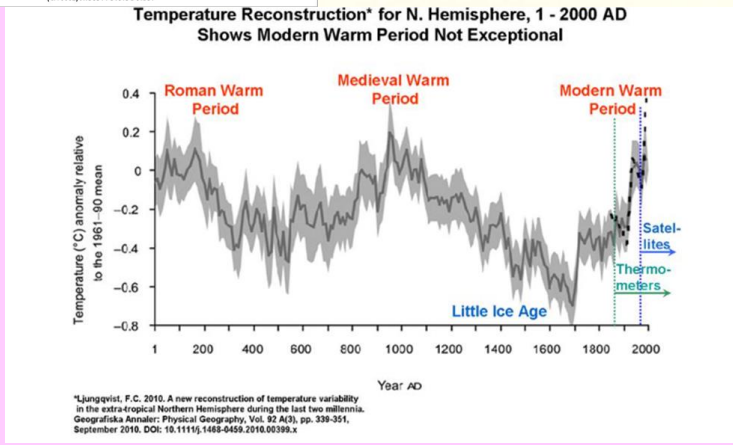
National Climate Assessment documents I've read don't use the words "Climate Cycles" nor did I find reference to El Nino, La Nina or ENSO <El Nino Southern Oscillation>





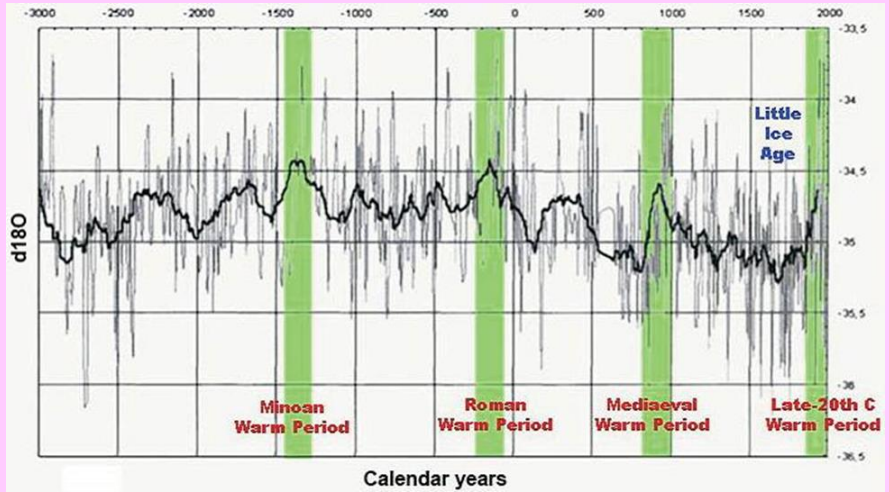
Previous GISP2 graphic showed ~12 warm periods last 10,000 years:

Previous Professor Patzelt graphic showed Alpine tree ring data:
12 warm periods the last 10,000 years.



<u>A New Reconstruction of Temperature Variability in the extra-tropical Northern Hemisphere during the last Two Millennia</u>, Ljungqvist, F. C., https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-0459.2010.00399.x shows three warm periods the last 2000 years with little indication that the present warm period is dramatically warmer despite 410 parts per million CO2.

Another plot using the O16/O18 ratio shows four warm periods in the past 3500 years: http://www.greenworldtrust.org.uk/Science/Images/Main/Warm_periods.jpg



Why no mention of climate cycles or Bond Cycles?

During the lecture's question and answer question session Dr Garfin said,

"*My understanding is that the temperatures in the Minoan, Roman and Medieval warm periods were not warmer than today."*

Data from the GRIP and GISP2 Greenland Ice Cores and the Alpine Tree Rings covered above show this statement is incorrect.

Biological Science examples also show that past temperatures were distinctly warmer than at present:

Here is a list, four separate references. Subsequent graphics display these examples:

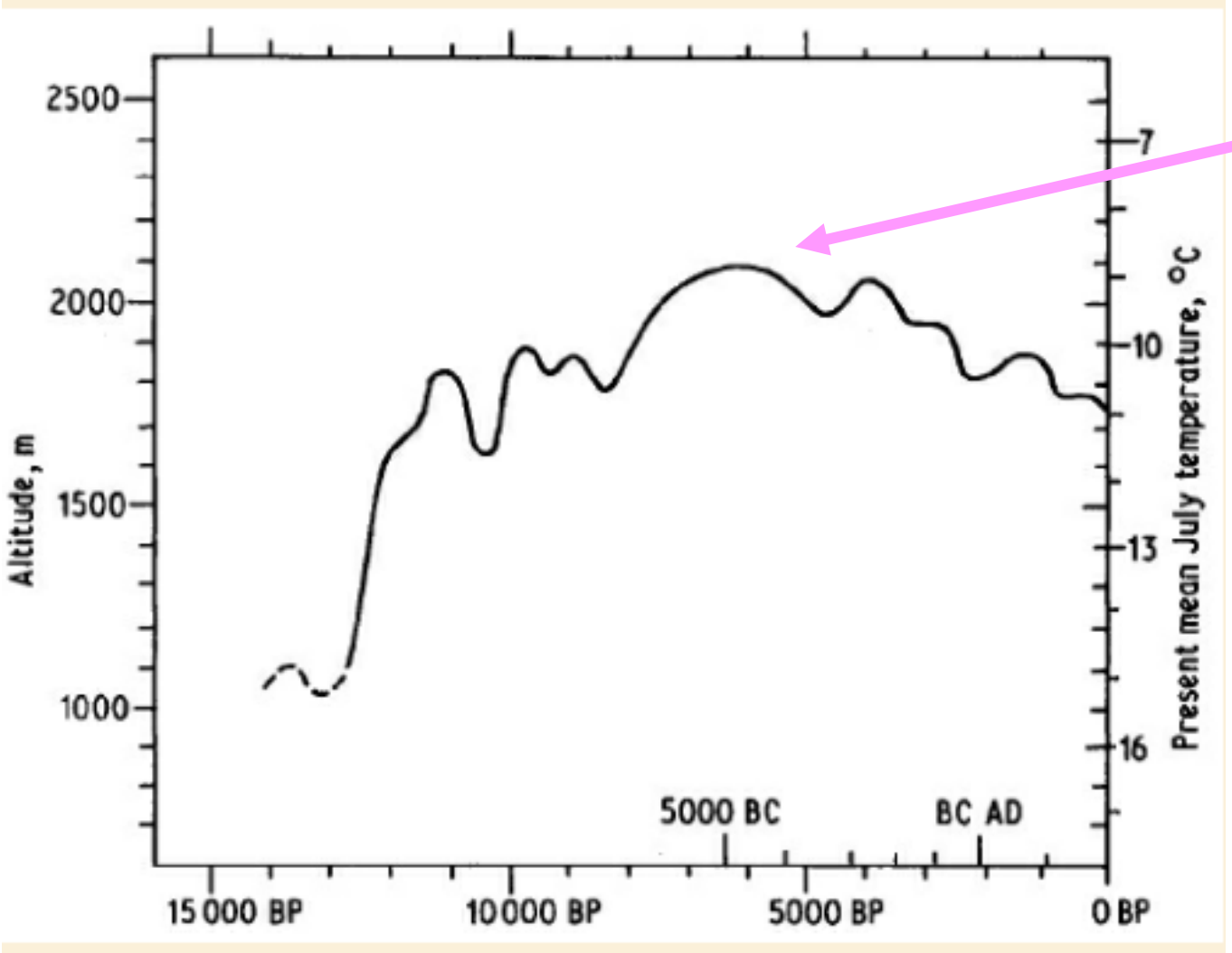
Two graphics from Lamb, Hubert H.. Climate, History and the Modern World, Taylor and Francis, Kindle Edition

Photo, Foxtail Pine above present tree line, from, A Primer on CO2 and Climate, Howard C Hayden, Vales Lake Publishing, Pueblo, CO, pg. 18.

Photo, Tree Stump, *Picea Glauca*, far north Canadian Arctic, radiocarbon dated 4940 BP, Toktoyaktuk Peninsula, http://drtimball.com/2012/sensationalist-and-distorted-climate-stories-increase-as-climate-science-failures-exposed/

X-Axis: Time, present time to the right.

Y-Axis: Height above Sea Level of the upper tree line, meters.



Higher tree lines than today => higher surface temperatures than today from 5,000 BC to present time.

Fig. 43. Average height of the upper tree line on the mountains in temperate latitudes since the last ice age. (From work by V. Markgraf. Reproduced by kind permission.)
Lamb, Hubert H.. Climate, History and the Modern World (Kindle Locations 2004-2005), Taylor and Francis Kindle Edition.

Falling heights of the tree line White Mountains of California since 2500 BC.

This shows that since ~2,500 BC temperatures in California and adjacent regions have been falling…

So…it was warmer from 2,500 BC until the present.

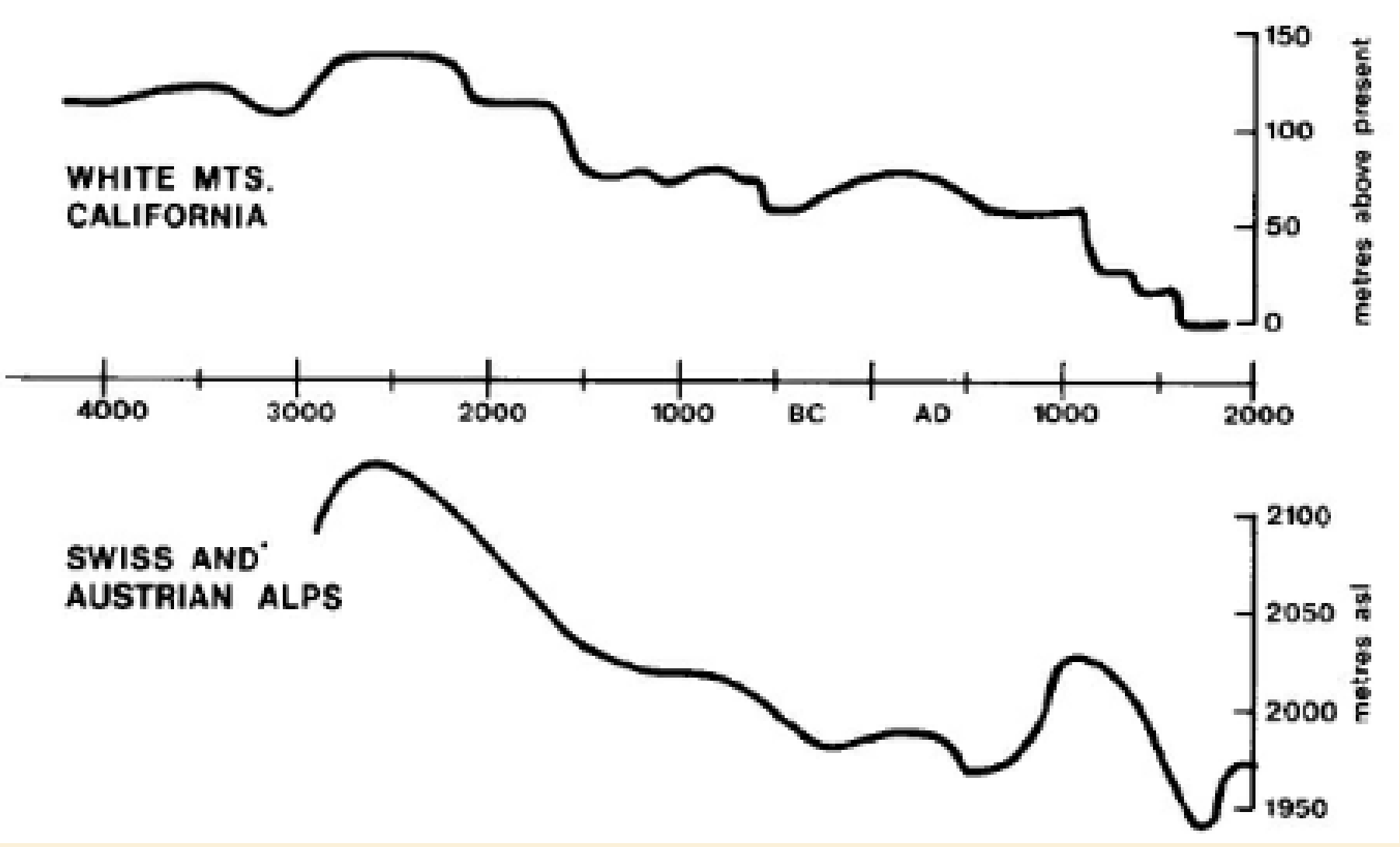


Fig. 53 Changes in the height of the upper tree line in two areas in the White Mountains, California and in the Alps in Switzerland and Austria. (From work by V.C.La Marche and V.Markgraf.)

Lamb, Hubert H.. Climate, History and the Modern World (Kindle Location 2207). Taylor and Francis, Kindle Edition

This grainy image is
a Foxtail Pine.
1000 years old; it is found
well above the present
Tree Line.

If this was warmest in the Holocene,
the trees would be higher now.

Location:
Bighorn Plateau,
Sequoia National Park,
California.

Photo from
A Primer on CO2 and Climate
Howard C Hayden,
Vales Lake Publishing,
Pueblo, CO, pg 18.

A 5000-year old Spruce in the Canadian Arctic. This tree grew during the Holocene Climatic Optimum. Trees no longer live there because the climate is colder now. This is now tundra.

Holocene landscape development and climatic change in the low arctic, Northwest Territories, Canada

Palaeogeography, Palaeoclimatology, Palaeoecology
Volume 205, Issues 3-4, 30 March 2004, Pages 221-234

Professor Glen M. McDonald,
Director UCLA Institute for the Environment,
Full Professor, UCLA Dep't of Geography.
Chairman, Department of Geography
UCLA

Similar Photo also in
"A Primer on CO2 and Climate,"
Howard C Hayden,
Vales Lake Publishing,
Pueblo, CO, pg 18.

Photo is in Dr Hubert Lamb's book,
Climate, History, and the Modern World

http://drtimball.com/2012/sensationalist-and-distorted-climate-stories-increase-as-climate-science-failures-exposed/

PLATE IV Tree stump (*Picea glauca*) in the north Canadian tundra.
The stump, radiocarbon dated about 4940 years (±140) B.P., is seen still standing on a steep

Tree Stump (Picea glauca) in the north Canadian tundra.

The stump, radiocarbon dated about 4940 (+/- 140) years BP is seen still standing on a steep bank on the Tuktoyaktuk Peninsula (69.7N 133.16W) which borders the Arctic Ocean (Beaufort Sea) east of the McKenzie Delta in extreme northwest Canada. This tree, in what is now tundra, shows wider growth rings than the nearest present day spruce forest 80-100 km further south near Inuvik n the lowest part of the McKenzie River valley.

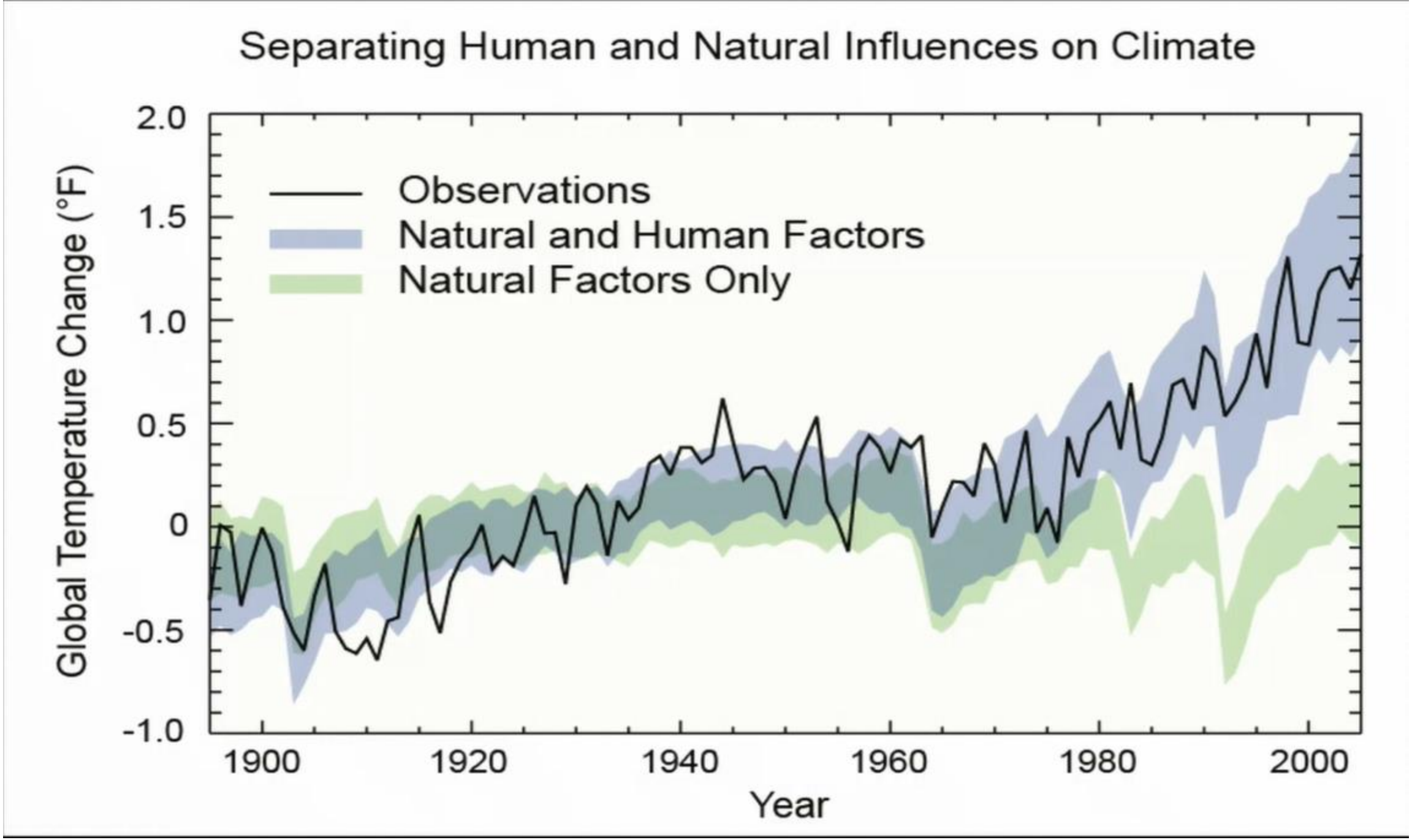
Photograph kindly supplied by Professor J. C, Ritchie of Scarborough College, Toronto University

The Tuktoyaktuk Peninsula… location of the 5,000 year-old spruce which grew during the Holocene Climate Optimum.

Tuktoyaktuk Peninsula

Alaska Canada

Area around Tuktoyaktuk today: http://www.tuktoyaktuk.ca/index.php/visiting/getting-he


Separating Human and Natural Influences on Climate
Observations
Natural and Human Factors
Natural Factors Only
Global Temperature Change (°F)
2.0
1.5
1.0
0.5
0
-0.5
-1.0
1900
1920
1940
1960
1980
2000
Year

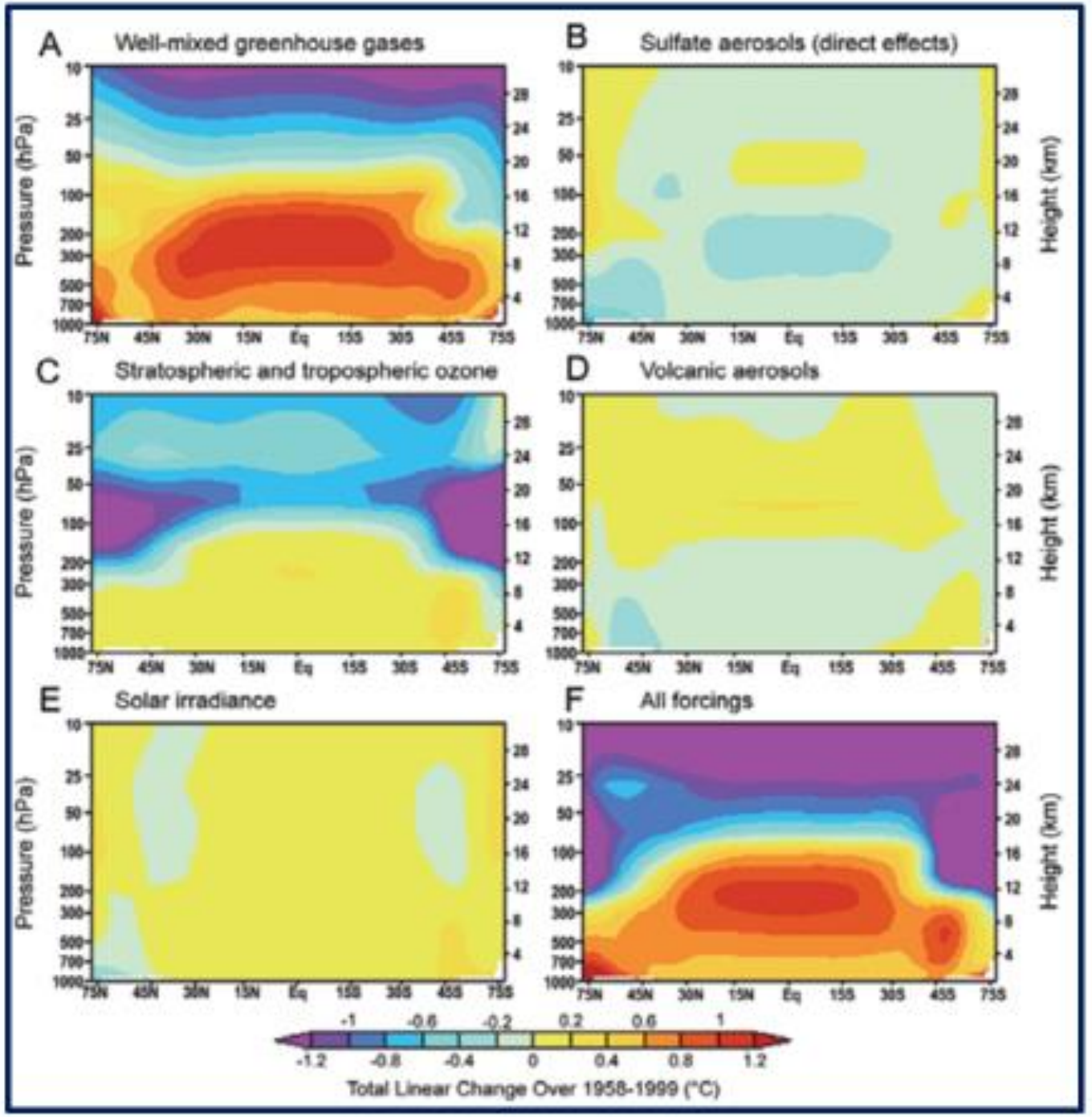
Previous graphic tries to convey that climate modeling is a successful endeavor, and climate models can diagnose natural from human caused warming and climate models are valid enterprises to determine policy.

These notions are false.

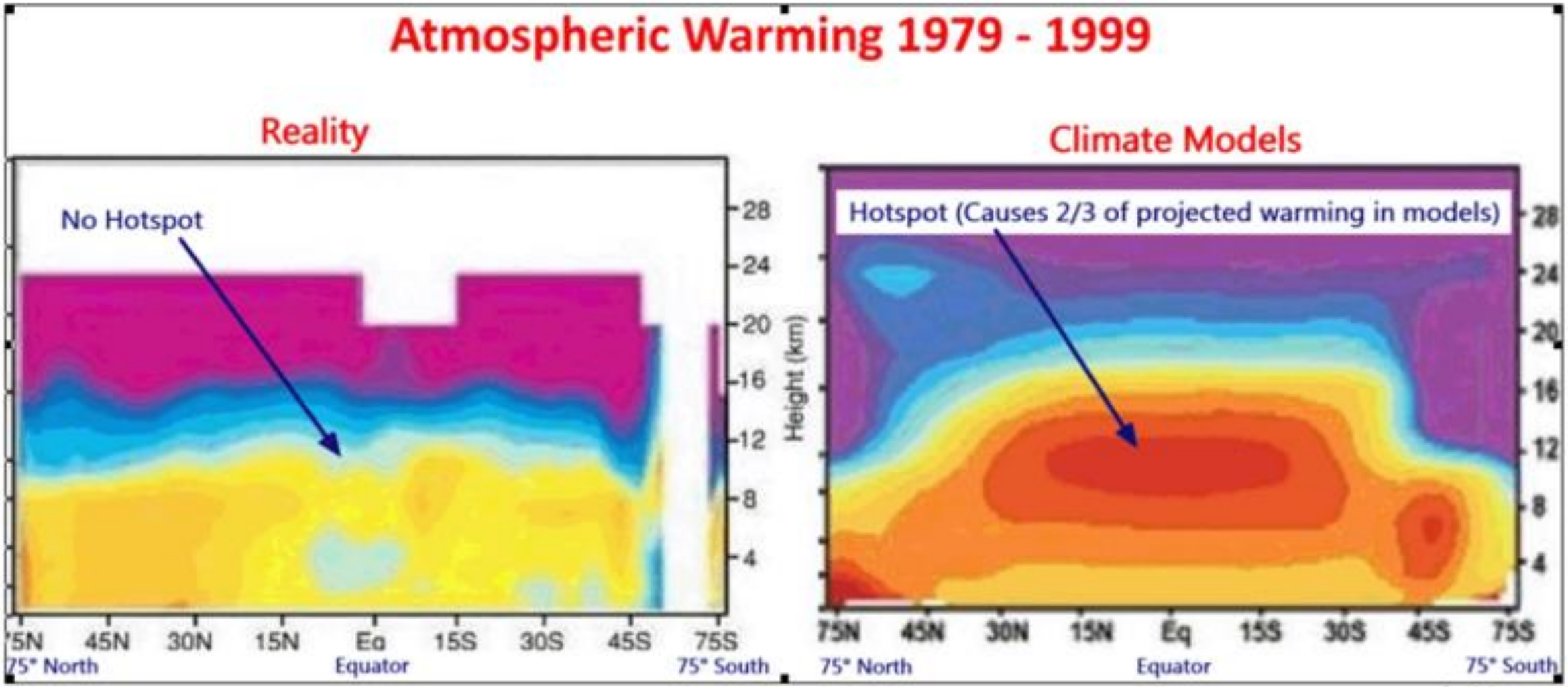
The U.S. Climate Change Science Program

https://www.gfdl.noaa.gov/bibliography/related_files/vr0603.pdf

Figure 1.3.
PCM simulations of the vertical profile of temperature change due to various forcings, and the effect due to all forcings taken together (after Santer et al., 2000)



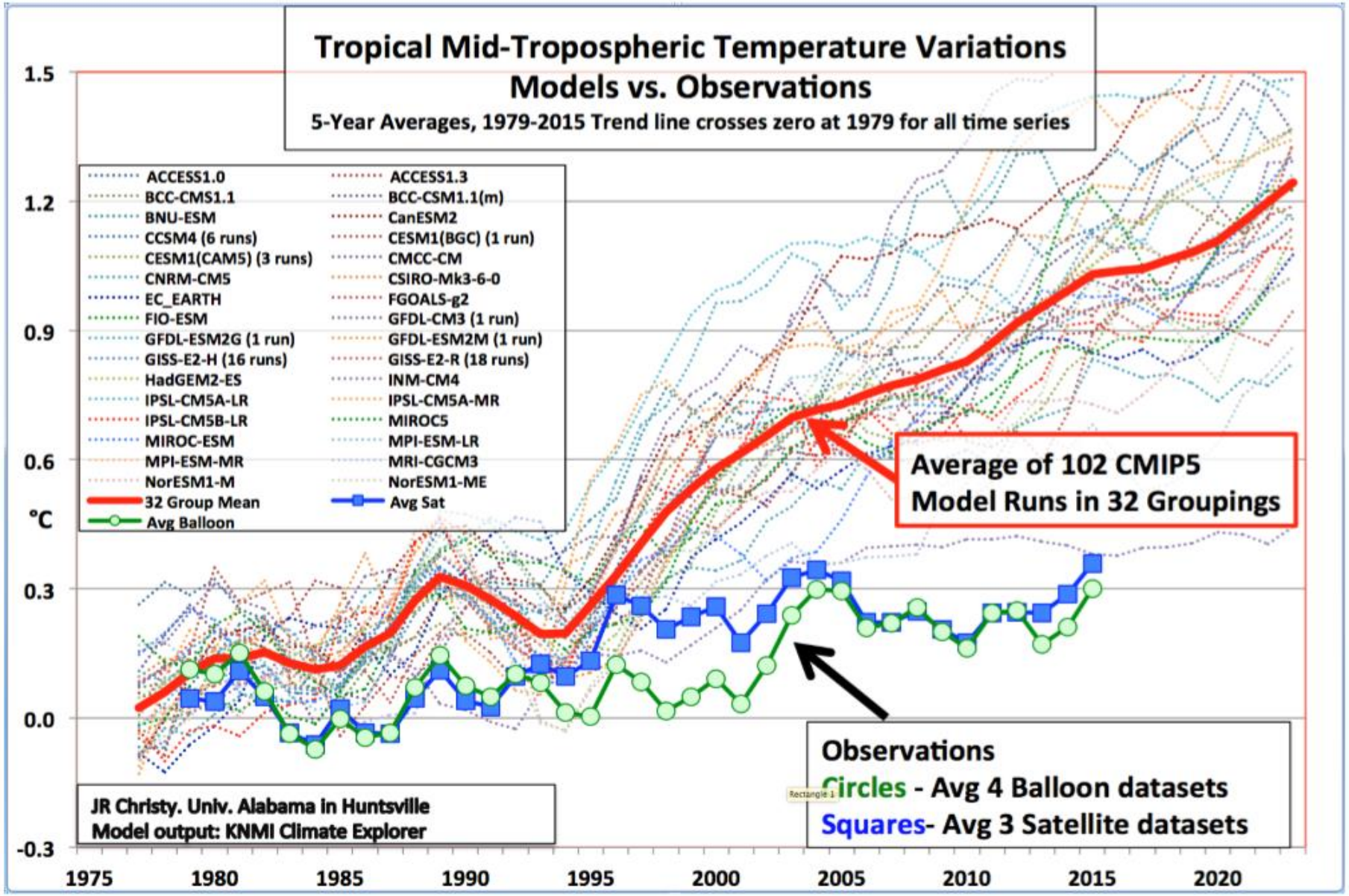
https://cbdakota.files.wordpress.com/2011/09/fourfatalpieceshotspot.gif



https://docs.house.gov/meetings/SY/SY00/20160202/104399/HHRG-114-SY00-Wstate-ChristyJ-20160202.pdf

In the models, the tropical atmosphere warms significantly in response to added CO2.

In this comparison of 102 CMIP5 model runs, the model warming is about THREE TIMES the observed warming measured by satellites and weather balloons. (radiosondes)



Above: Tropical average mid-tropospheric temperature variations (5-year averages) for 32 models (lines) representing 102 individual simulations. Circles (balloons) and squares (satellites) depict the observations.

https://science.house.gov/sites/republicans.science.house.gov/files/documents/HHRG-115-SY-WState-JChristy-20170329.pdf

X-Axis:
Temperature Rate of Change per Decade
Cooling to the Left of 0C, warming to the Right

Y-Axis:
Height MSL surface to 50,000 ft MSL

Also in Millibars, surface ~1000 mb
53,000 ft ~100 mb

Message from this graphic:

Models with Greenhouse Gases added run hot and perform worse that models without extra Greenhouse Gases added.

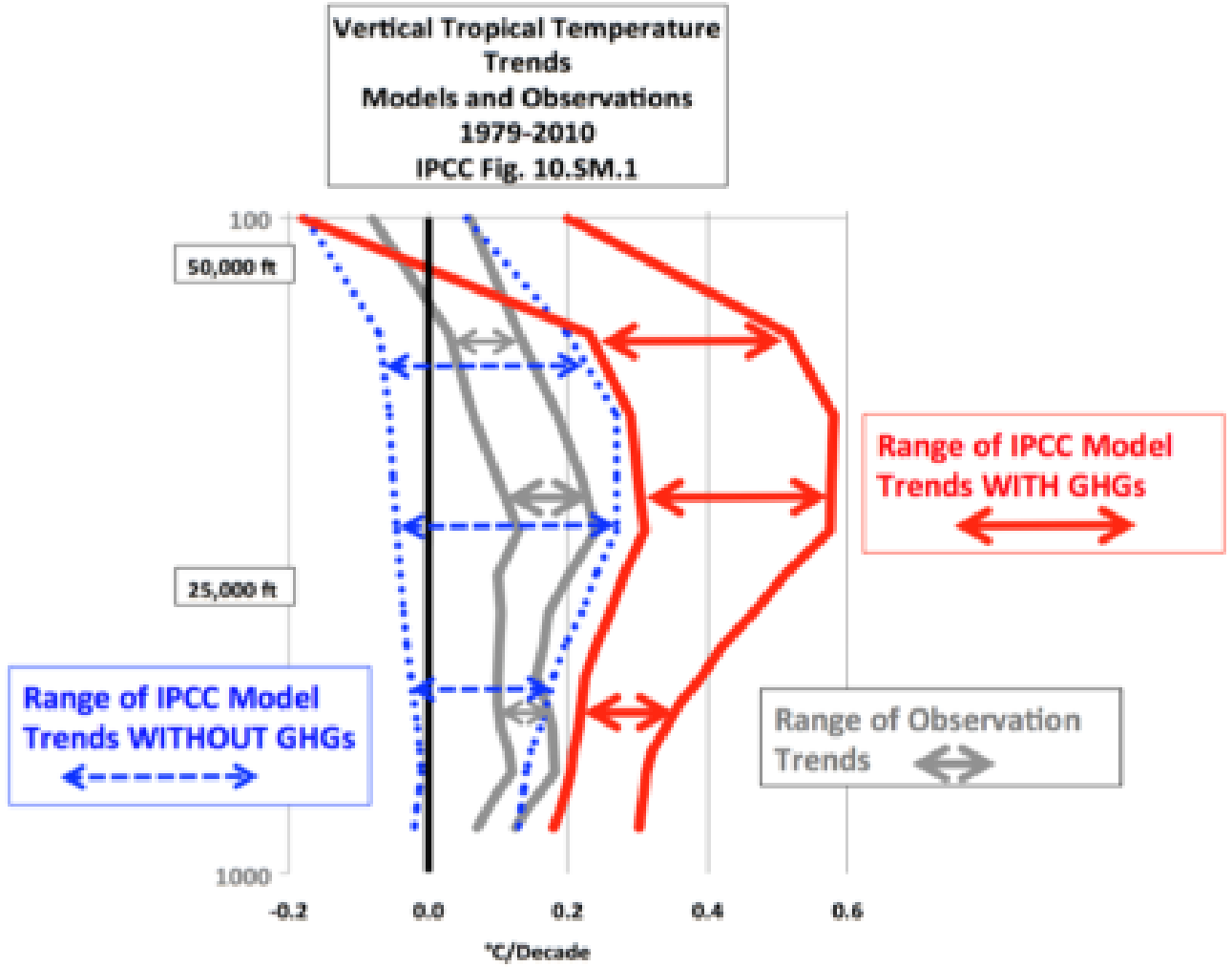
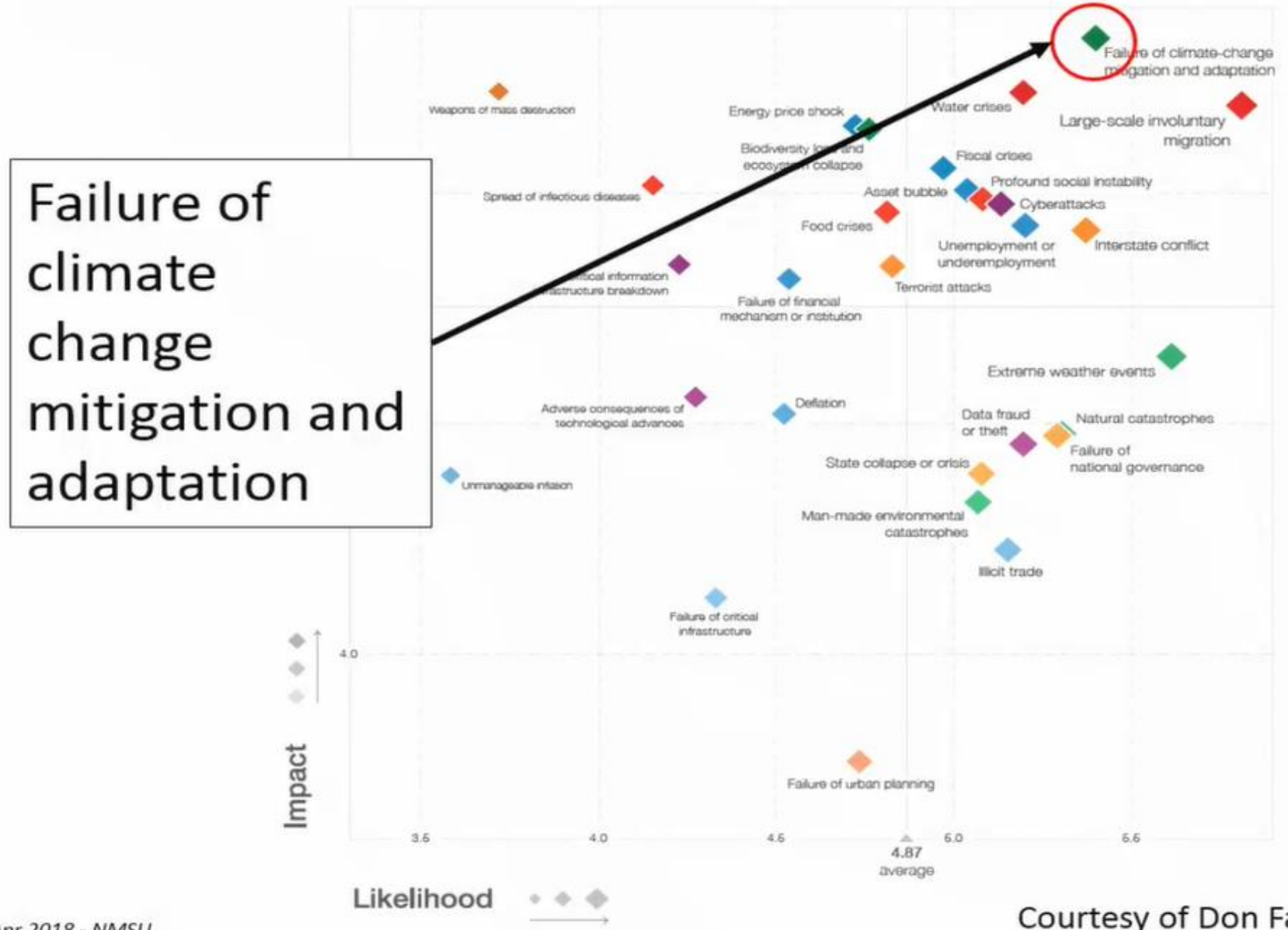


Figure 5. Simplification of IPCC AR5 shown above in Fig. 4. The colored lines represent the range of results for the models and observations. The key point displayed is the lack of overlap between the GHG model results (red) and the observations (gray). The non-GHG model runs (blue) overlap the observations almost completely.

World Economic Forum, Global Risks Report 2016, Figure 1

https://www.weforum.org/reports/the-global-risks-report-2016/

Failure of climate change mitigation and adaptation



Courtesy of Don Falk, UA LTRR & SNRE

Graphic, right, is from John Christy's Congressional testimony showing Tropical warming projected by models is **three times** that shown by measurements (satellite and weather balloons.)

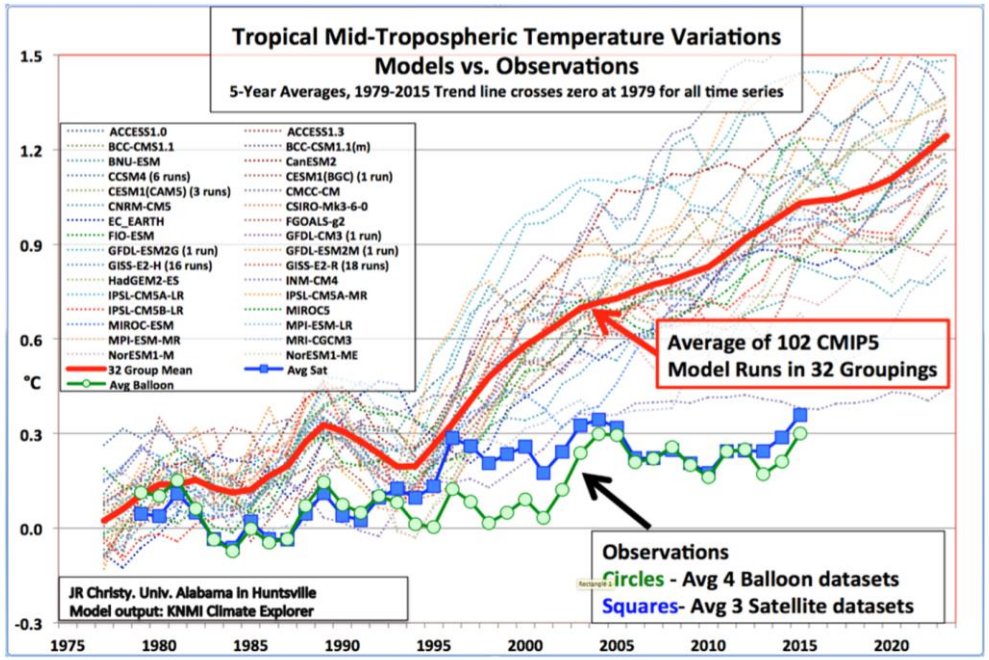
Atmosphere obeys Ideal Gas laws taught in college classes relating temperatures aloft to thickness of the atmosphere: basis for analysis and forecasting of Jet Stream patterns seen in weather reports.

When model temperature change forecasts are off by a factor of Three, <u>models are worthless for forecasting</u> the development of storm and precipitation patterns, which control the weather we experience on daily, seasonally, annually and over decades.

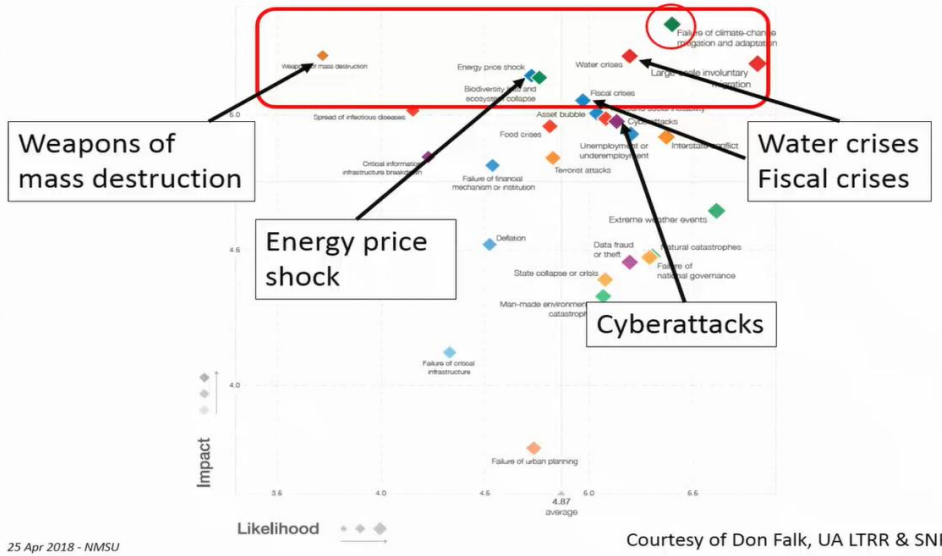
They are <u>worthless for policy decisions.</u>

That the World Economic Forum would accepts output of catastrophic climate forecasts as realistic is a measure of their ignorance of the physical world.

Perhaps this explains disastrous predictions, shown next:



World Economic Forum, Global Risks Report 2016, Figure 1
https://www.weforum.org/reports/the-global-risks-report-2016/



Courtesy of Don Falk, UA LTRR & SNRE

https://content.usatoday.com/communities/ondeadline/post/2009/12/gore-new-study-sees-nearly-ice-free-arctic-summer-ice-cap-as-early-as-2014/1

Dec 14, 2009

Gore: Polar ice cap may disappear by summer 2014

By Douglas Stanglin, USA TODAY
Updated

New computer modeling suggests the Arctic Ocean may be nearly ice-free in summer as early as 2014, Al Gore said today at the U.N. climate conference in Copenhagen.

The former vice president said the new projections suggest an almost-vanished summer ice cap could disappear much earlier than foreseen by a U.S. government agency just eight months.

"It is hard to capture the astonishment that the experts in the science of ice felt when they saw this," Gore told reporters and other conference participants at a joint briefing with Scandinavian officials and scientists, his first appearance at the two-week session.

The Voice of Southeastern North Carolina

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WEDNESDAY
DECEMBER 12, 2007
WARMTH CONTINUES
High, 60; low, 35.
Complete weather, 8B

Could all Arctic ice be gone by 2012?

Satellite images say it might be

By Seth Borenstein
Associated Press

WASHINGTON | An already relentless melting of the Arctic greatly accelerated this summer, a warning sign that some scientists worry could mean global warming has passed an ominous tipping point.

One even speculated that summer sea ice would be gone in five years.

Greenland's ice sheet melted nearly 19 billion tons more than the previous high mark, and the volume of Arctic sea ice at summer's end was half what it was just four years earlier, according to new NASA satellite data obtained by The Associated Press.

"The Arctic is screaming," said Mark Serreze, senior scientist at the government's snow and ice data center in Boulder, Colo.

Just last year, two top scientists surprised their colleagues by projecting that the Arctic sea ice was melting so rapidly that it

SEE ARCTIC | 4A

MORE CLIMATE NEWS

- Report says warming taking toll on penguins. **5A**
- World looks to post-Kyoto agreement. **5A**

The Argus-Press • Owosso, Michigan • Tues., June 24, 2008

By SETH BORENSTEIN
AP Science Writer

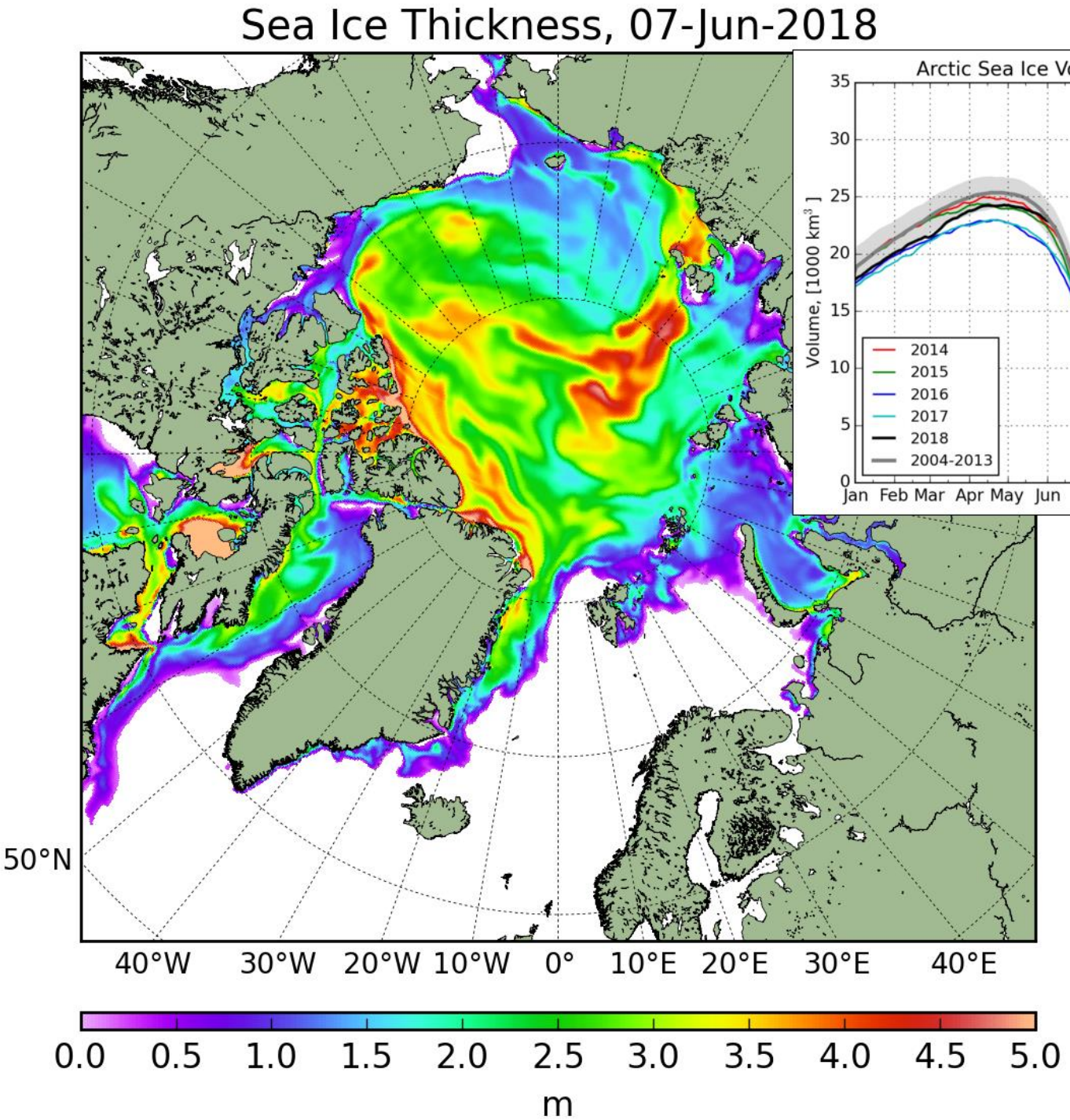
NASA scientist: 'We're toast'

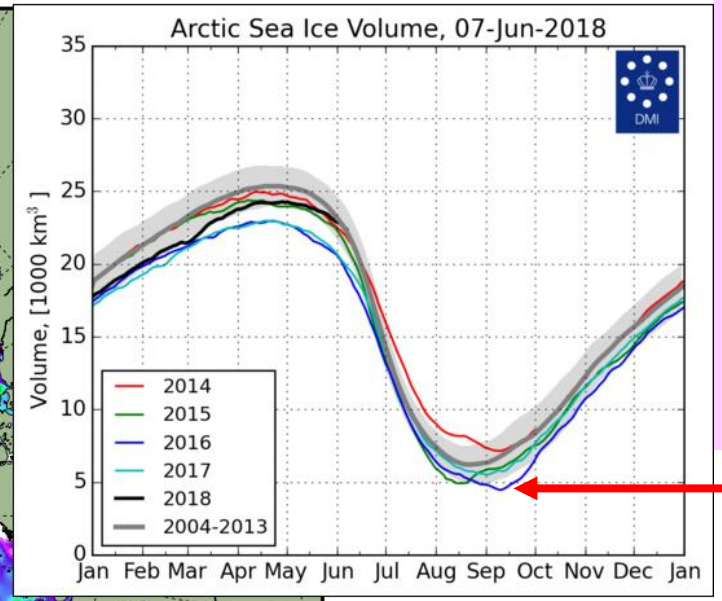
"We see a tipping point occurring right before our eyes," Hansen told the AP before the luncheon. "The Arctic is the first tipping point and it's occurring exactly the way we said it would."

Hansen, echoing work by other scientists, said that in five to 10 years, the Arctic will be free of sea ice in the summer.

Longtime global warming skeptic Sen. James Inhofe, R-Okla., citing a recent poll, said in a statement, "Hansen, (former Vice President) Gore and the media have been trumpeting man-made climate doom since the 1980s. But Americans are not buying it."

But Rep. Ed Markey, D-Mass., committee chairman, said, "Dr. Hansen was right. Twenty years later, we recognize him as a climate prophet."





Observed sea ice volume from the Danish Meteorological Institute (DMI) (smaller graph)

NB, Sea Ice Volume always exceeds 4.9X10*3 Km*3, even at seasonal minimum in September each year, arrow.

http://ocean.dmi.dk/arctic/icethickness/images/FullSize_CICE_combine_thick_SM_EN_20180607.png

Journal of Climate, American Meteorological Society

Anomalies and Trends of Sea-Ice Extent and Atmospheric Circulation in the Nordic Seas during the Period 1864–1998

TORGNY VINJE

Norwegian Polar Institute, Oslo, Norway

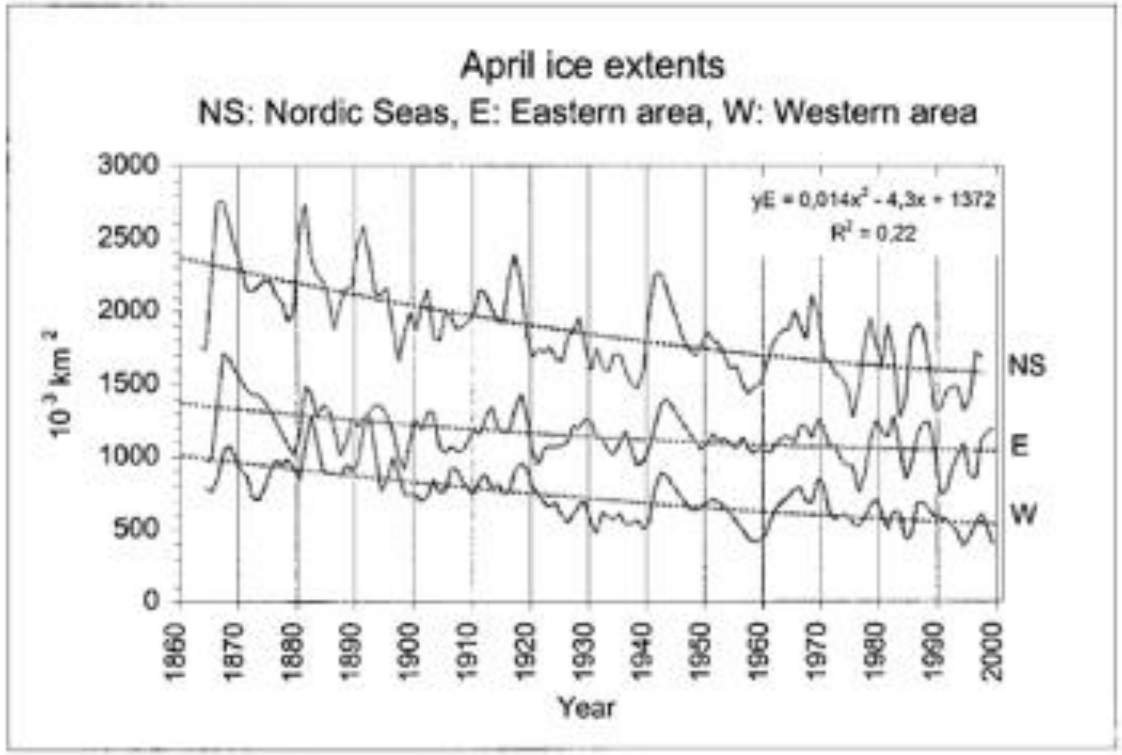


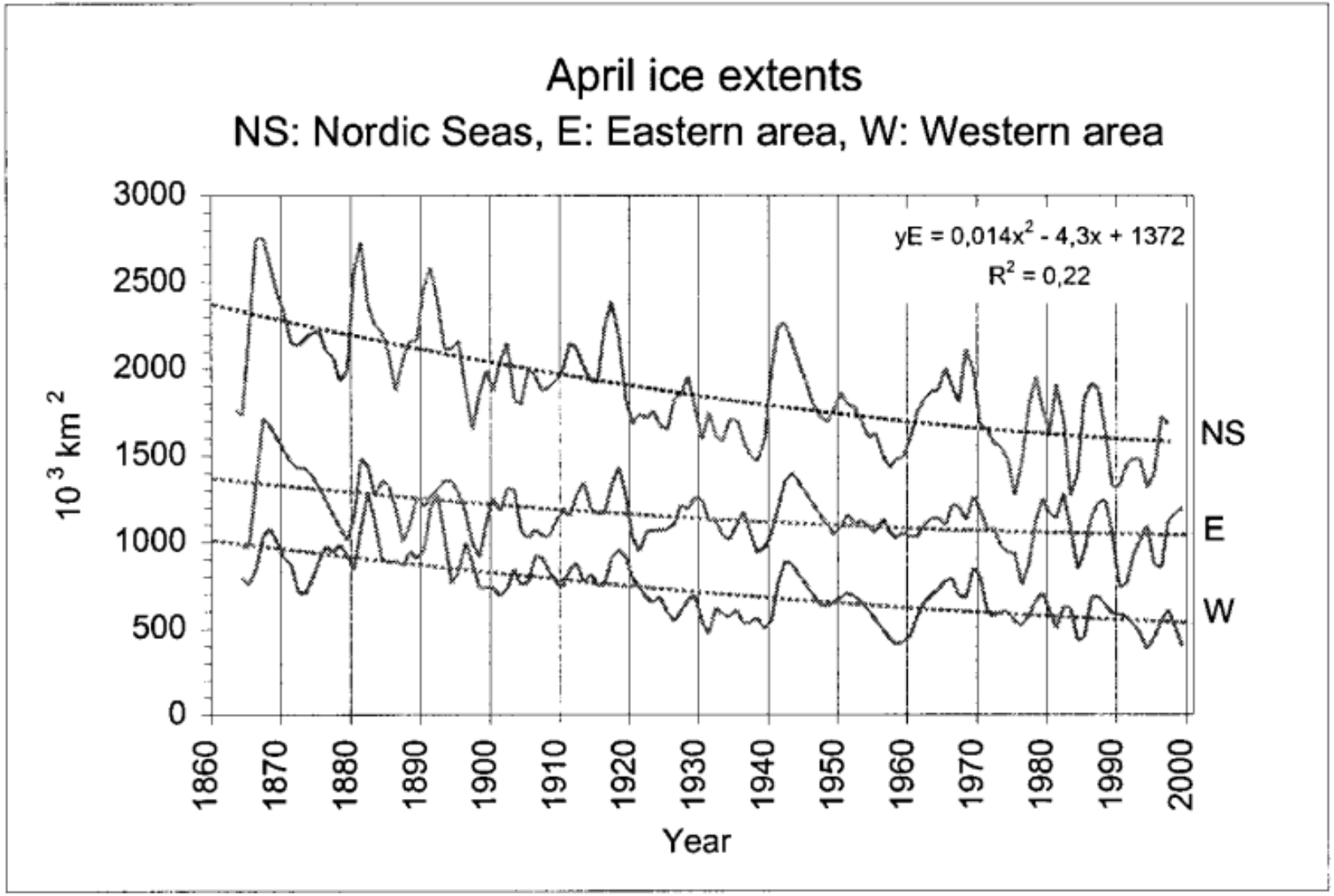
FIG. 2. Time series of the Apr ice extent in the Nordic Seas (NS), eastern area (E), and western area (W) given by 2-yr running mean and regression lines. Linear year-to-year interpolations of the ice extent have been made for the western area for 1940 and 1944–46, and for the eastern area for 1868–70, 1874–78, 1880, 1892, 1894, 1940–41, 1943–48, and 1961. Observations for Apr 1942 were kindly provided by V. Abramov.

Anomalies and Trends of Sea-Ice Extent and Atmospheric Circulation in the Nordic Seas during the Period 1864–1998

https://journals.ametsoc.org/doi/10.1175/1520-0442%282001%29014%3C0255%3AAATOSI%3E2.0.CO%3B2

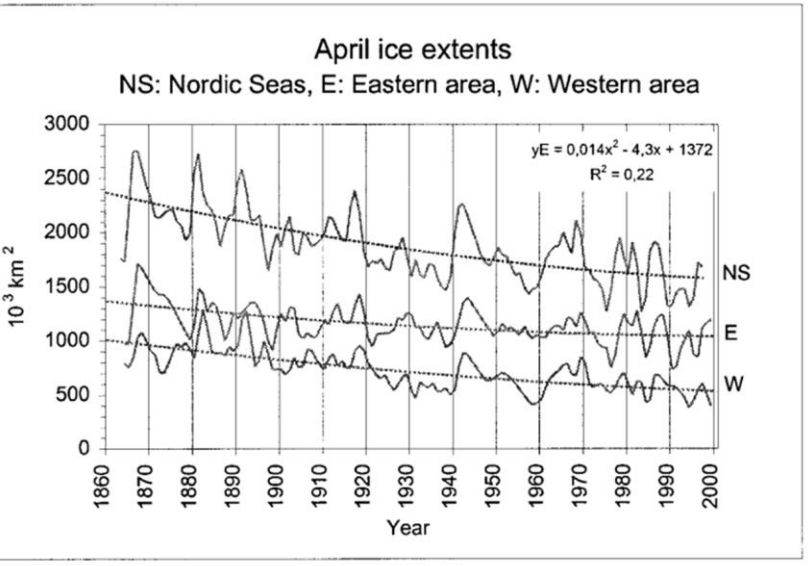
TORGNY VINJE

Norwegian Polar Institute, Oslo, Norway



https://web.archive.org/web/20121021140433/http://soa.arcus.org/sites/soa.arcus.org/files/sessions/1-1-advances-understanding-arctic-system-components/pdf/1-1-7-maslowski-wieslaw.pdf

One wonders at the critical thinking ability of modelers who extrapolate linear changes over many years when Arctic ice cover history published in AMS Journal of Climate shows Multidecadal fluctuations, X**2 below.

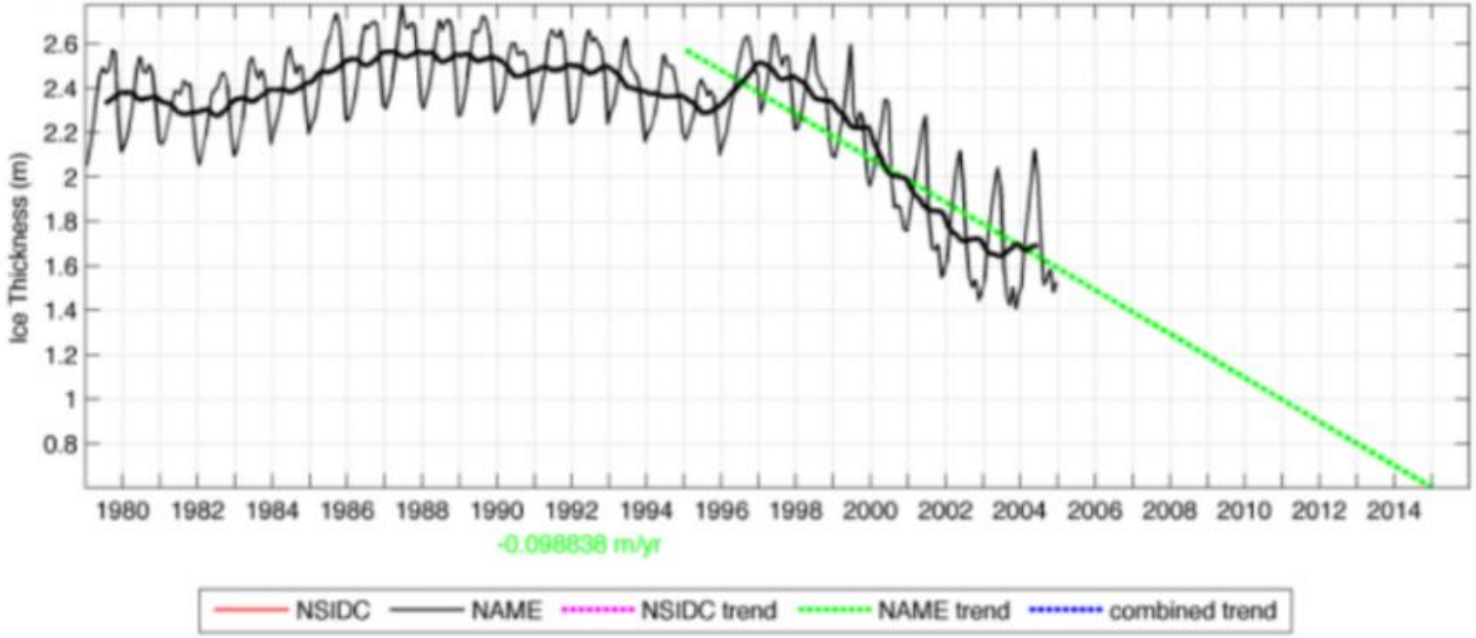


Advancements and Limitations in Understanding and Predicting Arctic Climate Change

Wieslaw Maslowski
Naval Postgraduate School

Collaborators:
Jaclyn Clement Kinney, Rose Tseng, Timothy McGeehan - NPS
Jaromir Jakacki, Robert Osinski - IOPAS
Ron Kwok, Jay Zwally - NASA JPL/GSFC

Modeled ice thickness: 1.5-2.0 m or ~35%



https://www.salon.com/2001/10/23/weather/

Stormy Weather

Floods, droughts, hurricanes and disease outbreaks — an expert explains why climate changes give us yet another reason to find terror in the skies

by Suzy Hansen

October 23, 2001 7:41pm (UTC) (Paragraphing, bolding added)

"…While doing research 12 or 13 years ago, I met Jim Hansen, the scientist who in 1988 predicted the greenhouse effect before Congress. I went over to the window with him and looked out on Broadway in New York City and said,

"If what you're saying about the greenhouse effect is true, is anything going to look different down there in 20 years?"

He looked for a while and was quiet and didn't say anything for a couple seconds.

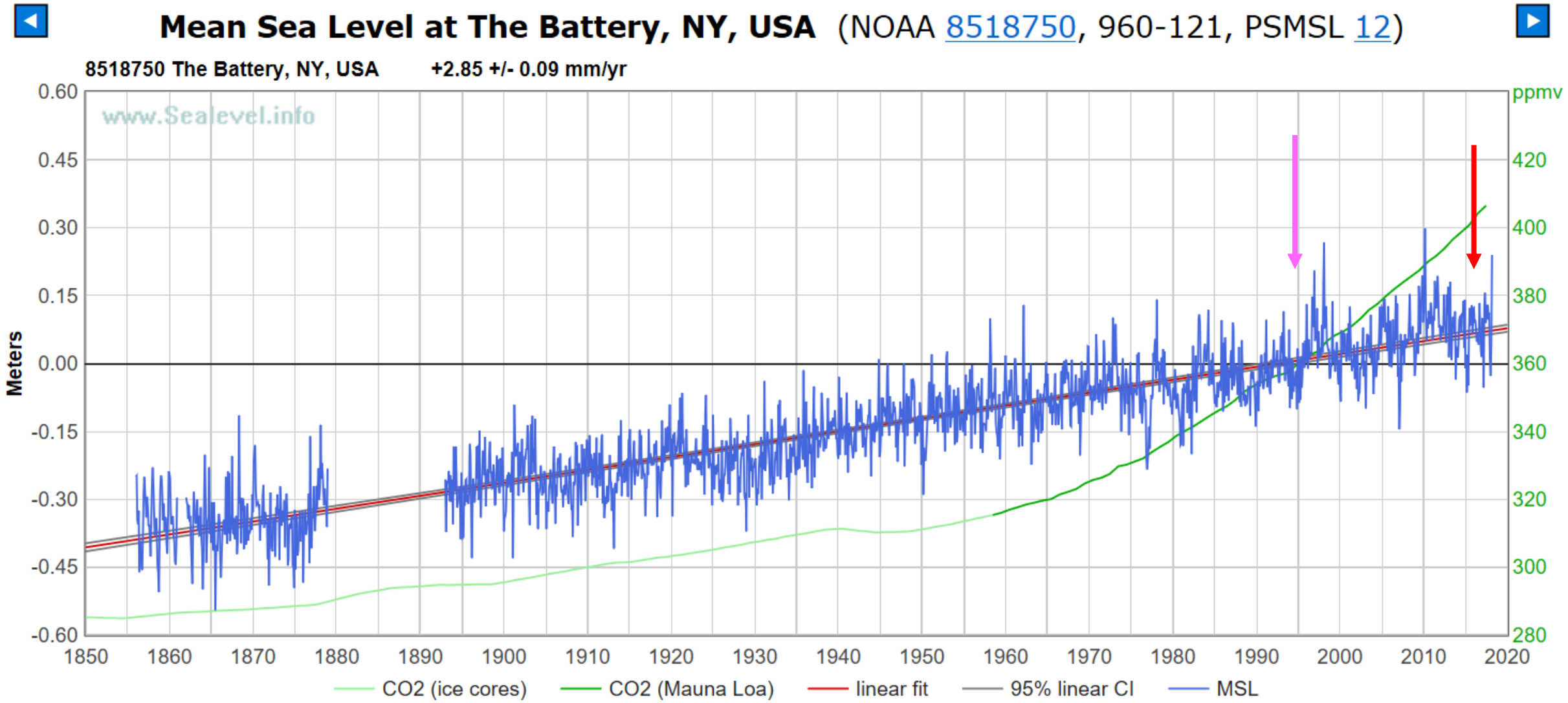
Then he said, "Well, there will be more traffic." I, of course, didn't think he heard the question right.

Then he explained,

"The West Side Highway [which runs along the Hudson River] will be under water…"

http://www.sealevel.info/MSL_graph.php?id=Battery

Sealevel.info → Data → 8518750



Suzy Hansen interviews James Hansen in 1989, purple arrow. Tide gage a few miles away at the Battery is -0.01 m
Twenty years later, 2009, red arrow, sea level at the Battery is about +0.08 m, a rise of 0.09 m or 3.5 inches.
Diurnal range between high and low tide at the Battery is 5.06 ft, 60.7 inches.

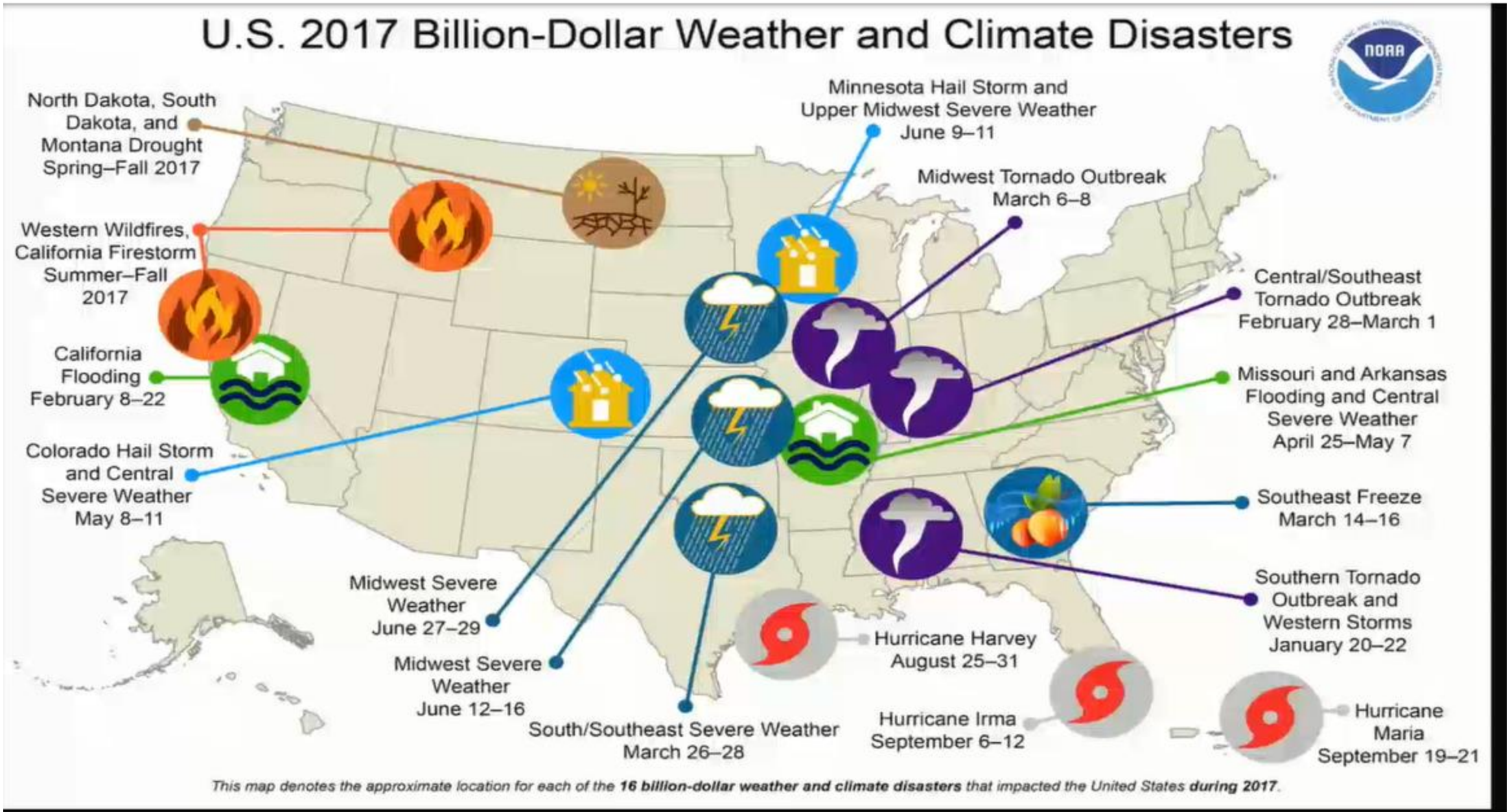
Hudson River Greenway on the Upper West Side of Manhattan; George Washington Bridge in the distance. The greenway is the walkway/bikeway.

The West Side Highway is to the right, a couple hundred feet.

The Hudson River clearly is not flooding the West Side Highway.

James Hansen's forecast is a failure.

U.S. 2017 Billion-Dollar Weather and Climate Disasters



*This map denotes the approximate location for each of the **16 billion-dollar weather and climate disasters** that impacted the United States **during 2017**.*

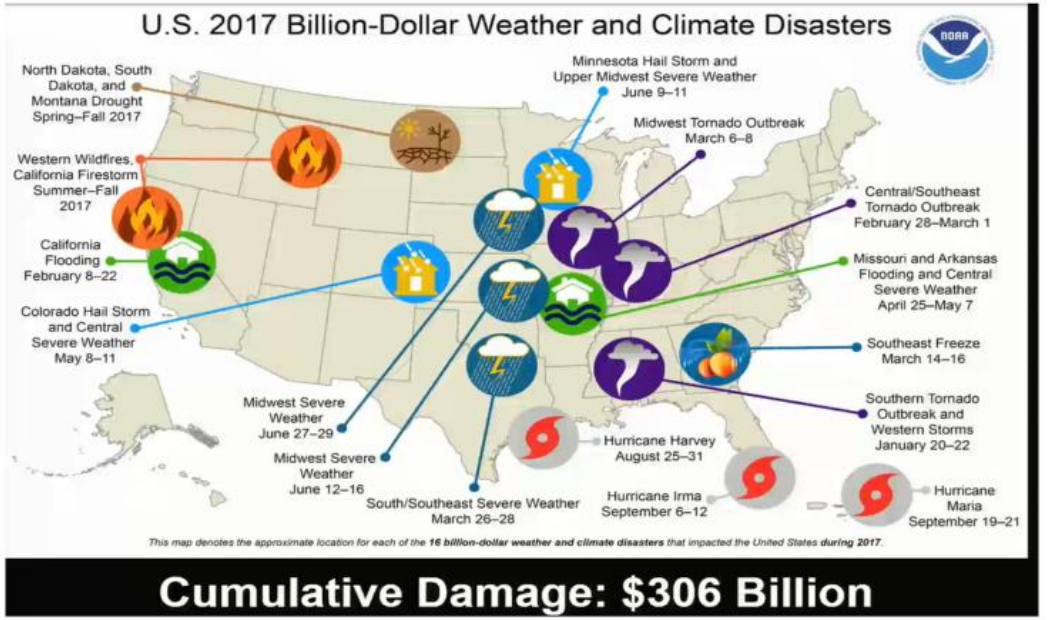
Cumulative Damage: $306 Billion

The purpose of Dr Garfin's graphic is to portray an increasingly more weather disaster-influenced country…

with human-caused, CO2- fueled storms making the situation more dire…

What do the data say?

The data show this is definitely not the case.



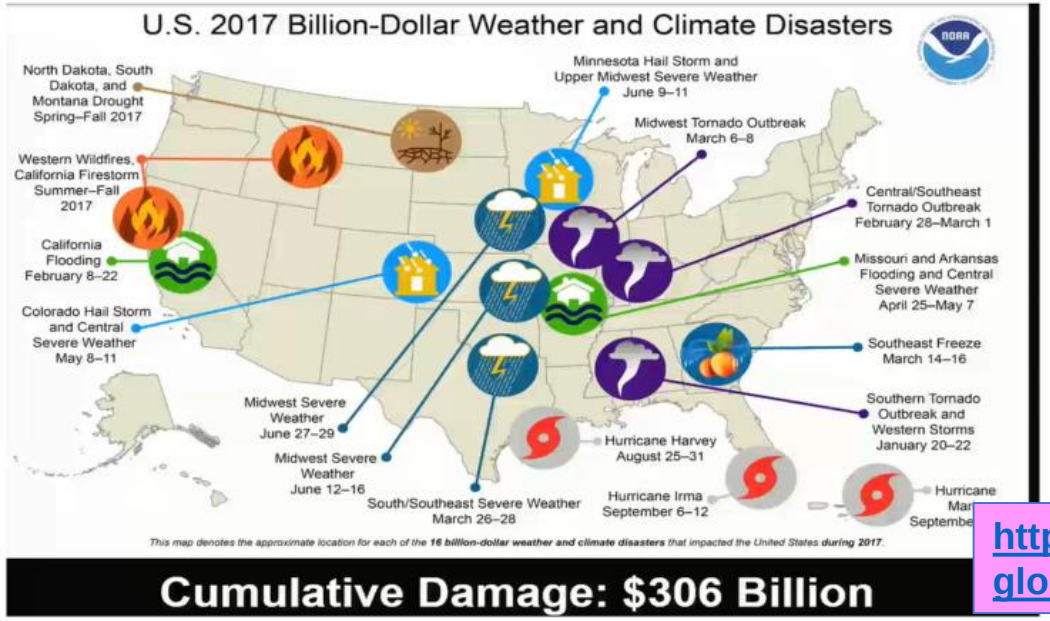
In the United States, geography has always influenced the weather.

Severe weather has always been with us.

The United States has always had the largest number of tornadoes and large hail in the world, which are caused by the location of the Chihuahuan Desert closely adjacent to the Gulf of Mexico in the Westerlies in Spring.

The F5 Tri State Tornado, which killed 1000, occurred in 1925 when CO2 was 305 PPM.

Great Natchez Tornado, killed 317, in 1840, Sabine River (Texas) to Natchez, (Mississippi) CO2 was 285 PPM.



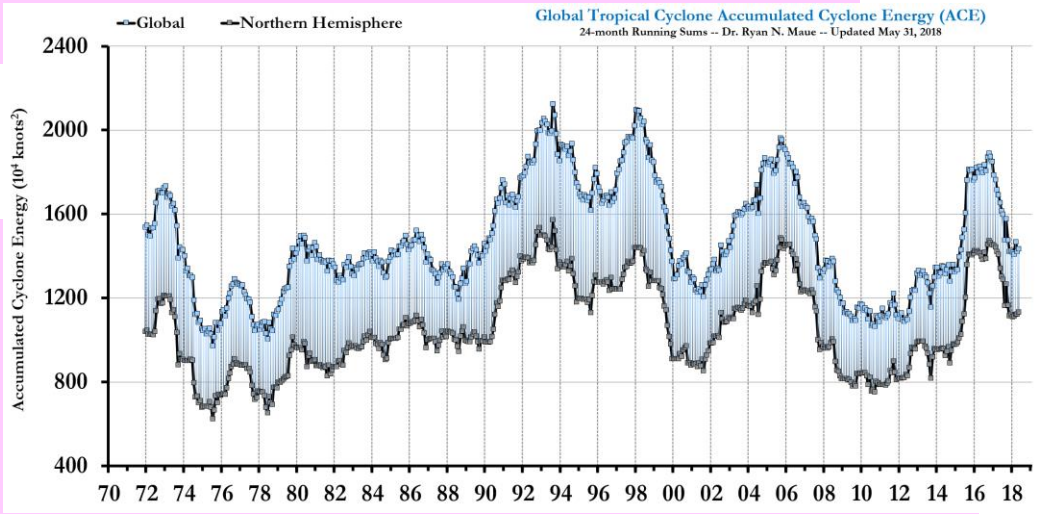
Geography of the East and Gulf Coasts of the USA

Adjacent to Atlantic Ocean and Gulf of Mexico

Always at risk for hurricanes.

Accumulated Cyclone Energy, ACE, shows no increase in risk with rising <CO2>

http://wx.graphics/tropical/global_running_ace.png



In 1886 (!) the USA was slammed by **seven hurricanes** including **Indianola, Texas, Hurricane: 15-foot storm surge destroyed the town.**

Weather Bureau, now National Weather Service, and increasingly, private firms came into being to provide tailored weather forecasts and warnings to their customers.

Examples include The Weather Channel and Accu-Weather.

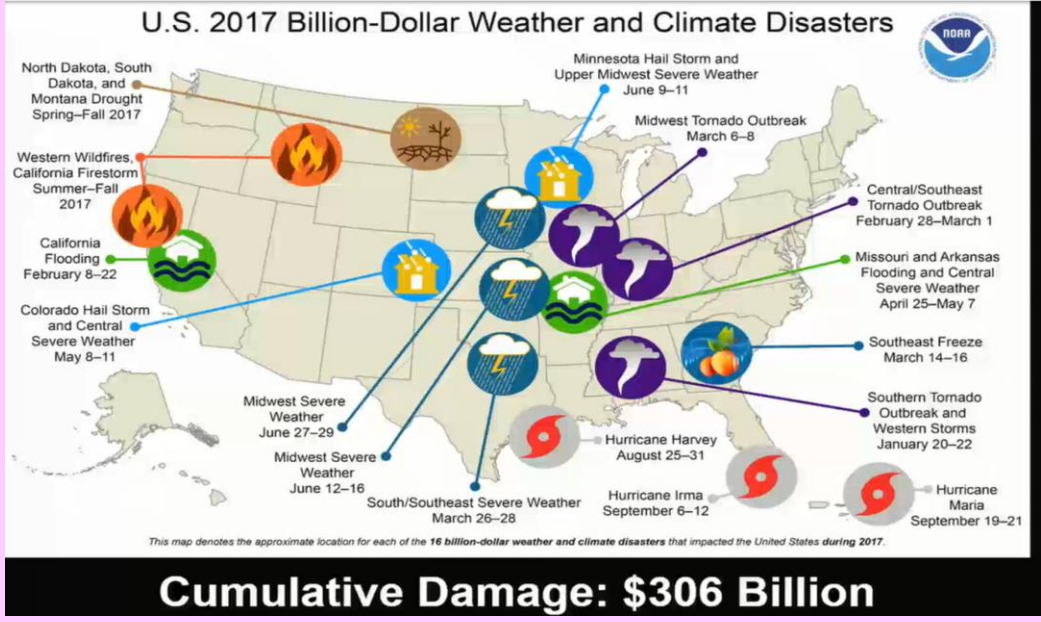
However, the data do not show that weather disasters are becoming more frequent or severe as concentrations of CO2 have increased.

Next page illustrates:

Roger Pielke Jr.'s July, 2013 Testimony before Congress:

'It is further incorrect to associate the increasing costs of disasters with the emission of greenhouse gases'

- Globally, weather-related losses ($) have not increased since 1990 as a proportion of GDP (they have actually decreased by about 25%) and insured catastrophe losses have not increased as a proportion of GDP since 1960.



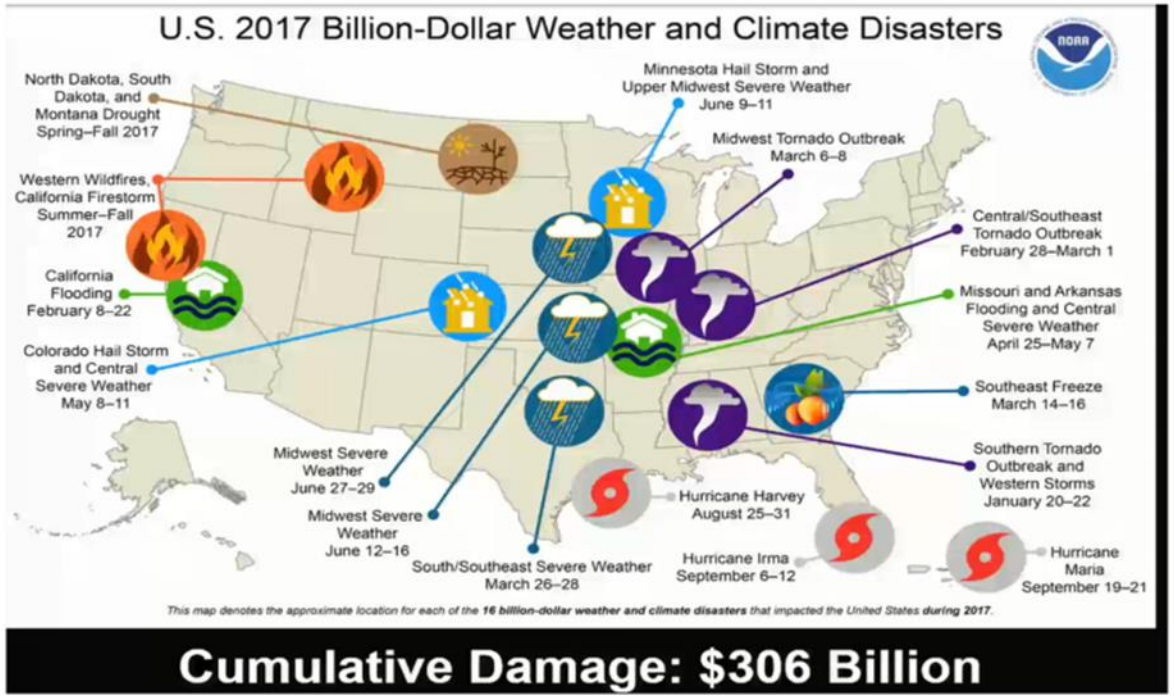
- Hurricanes have not increased in the US in frequency, intensity or normalized damage since at least 1900.
The same holds for tropical cyclones globally since at least 1970 (when data allows for a global perspective).

- Floods have not increased in the US in frequency or intensity since at least 1950. Flood losses as a percentage of US GDP have dropped by about 75% since 1940.

- Tornadoes have not increased in frequency, intensity or normalized damage since 1950, and there is some evidence to suggest that they have actually declined.

- Drought has "for the most part, become shorter, less frequent, and cover a smaller portion of the U. S. over the last century." Globally, "there has been little change in drought over the past 60 years."

- <u>The absolute costs of disasters will increase significantly in coming years due to greater wealth and populations in locations exposed to extremes.</u>



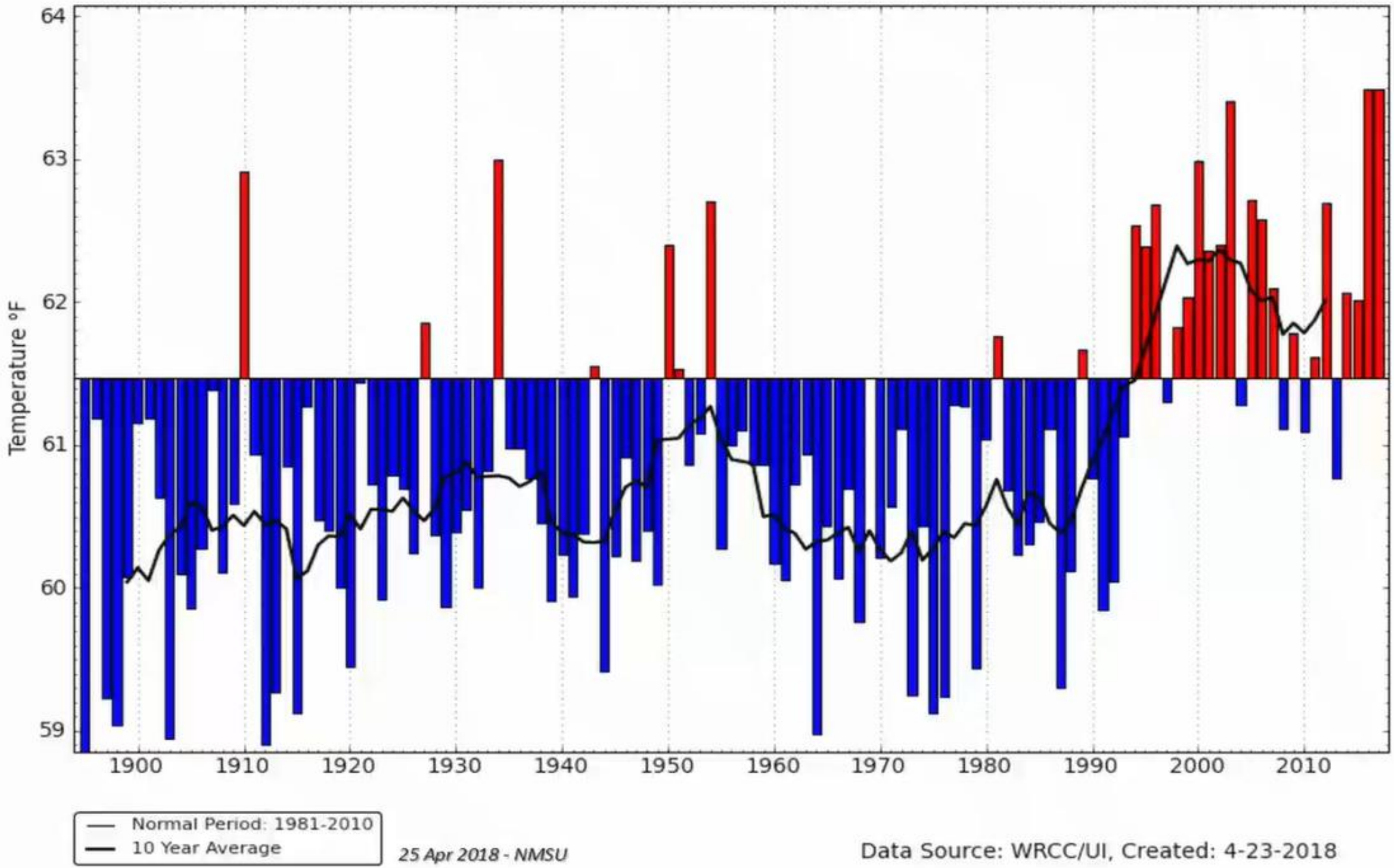
The only reason to include such a graphic is to engender a false impression on the viewers of an increasingly dangerous and disaster-prone nation, with the disasters fueled by CO2.

This is a propagandistic element of Dr Garfin's talk.

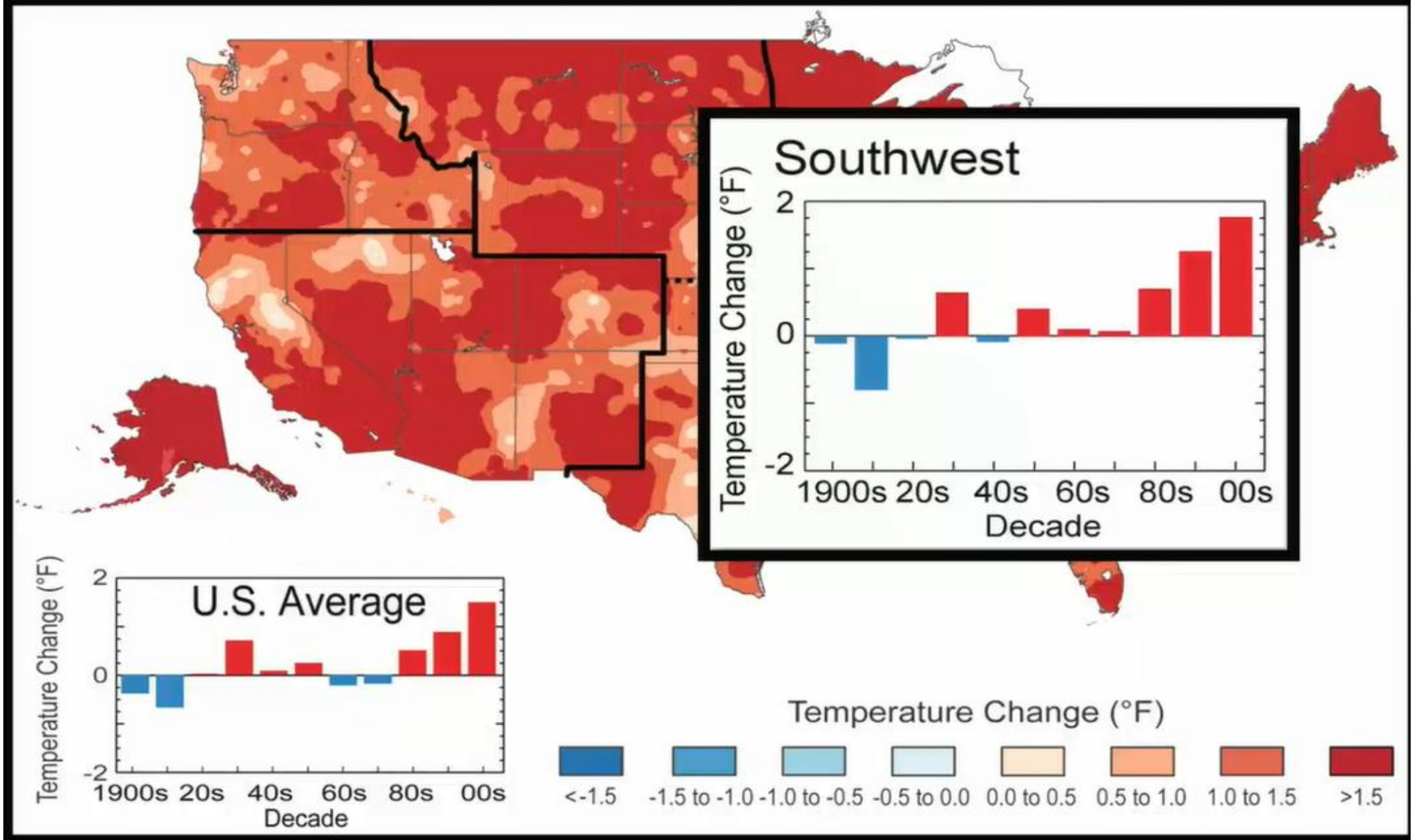
Including this slide portrays a false narrative.

(Recall from The Bend Bulletin that 12,000 US Residents died from the heat in July, 1936.
Also, the Galveston, Texas Hurricane of 1900 killed an estimate 8,000-12,000, https://en.wikipedia.org/wiki/1900_Galveston_hurricane.)

Doña Ana County Temperature



Observed Temperature Change

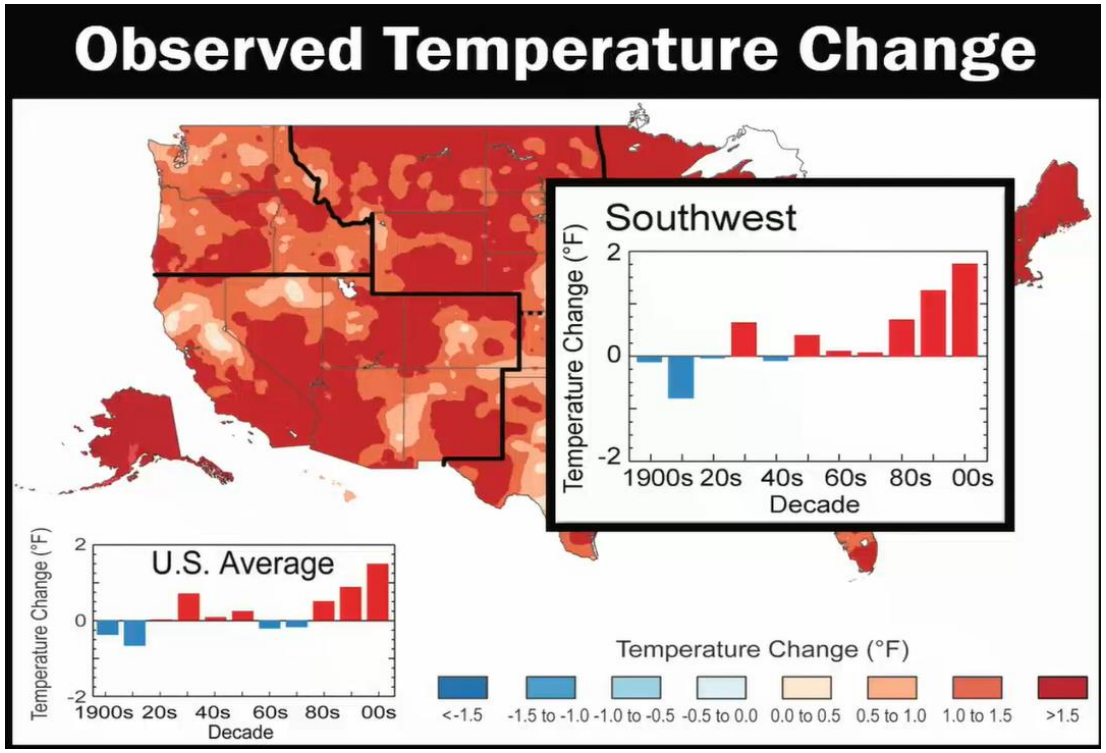


These six issues bring serious doubt to Dr Garfin's graphics and assertions:

1. Data showed by Dr Garfin to represent Southern New Mexico is seriously in error, and probably Urban Heat Island-contaminated. Three non-UHI-contaminated stations don't show steeply rising temperatures here.

2. Only 11% of NOAA's surface temperature measurements conform to NOAA's own standards.

3. It misses "The Pause" in global warming.



4. A modern climate data set, the US Climate Reference Network shows very modest warming quite unlike the graphic shown by Dr Garfin.

5. The **SNOTEL data** set, < SNOw TELemetry> operated by the US Department of Agriculture's Natural Resource Conservation Service, some 730 sites in the mountain West, **is seriously in error**.

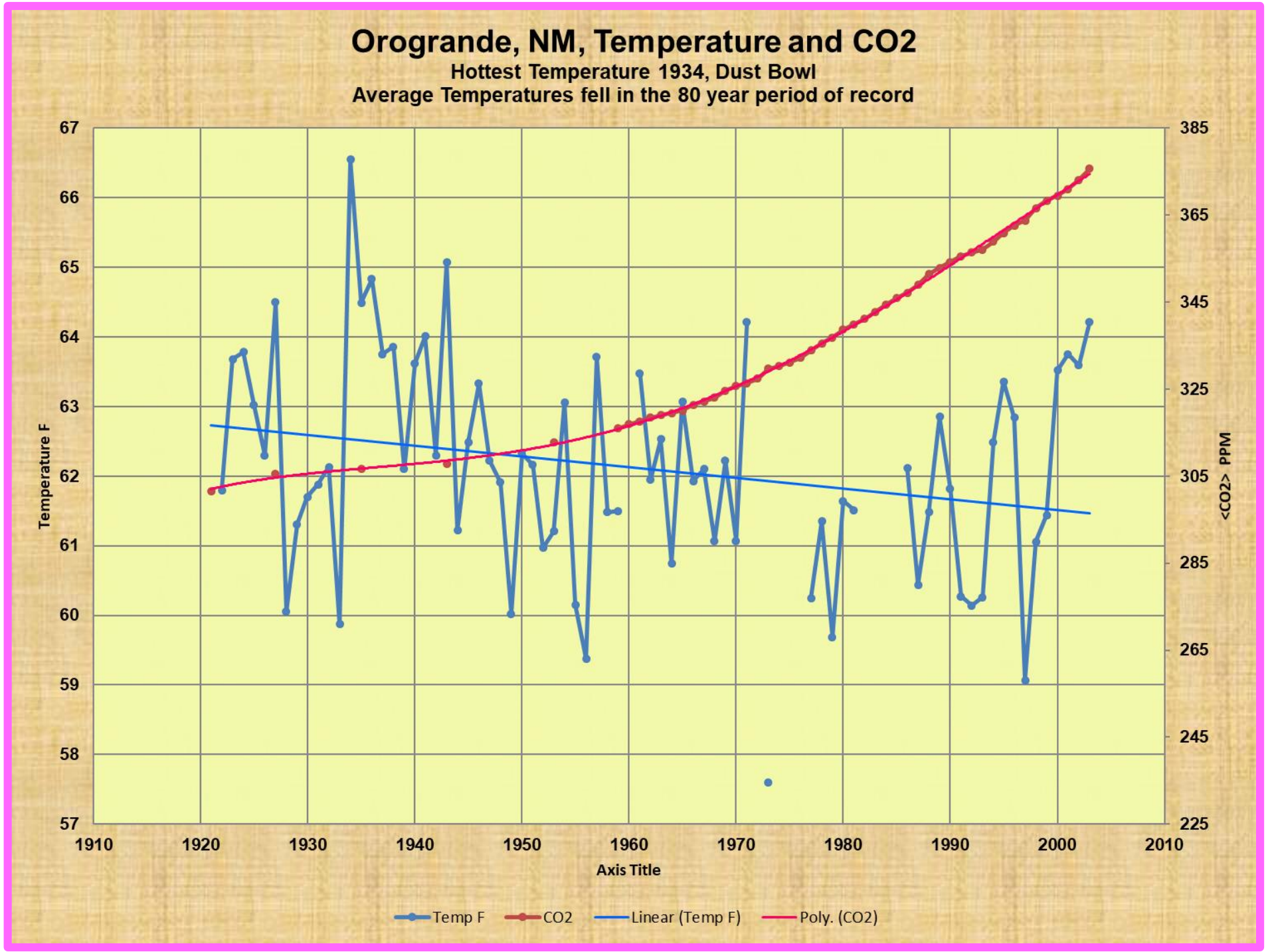
6. James Hansen, who proclaimed 'global warming is here!' in 1988, was quoted in New York Times January 1989 that the past 100 years had shown no warming; that's not what Garfin shows here.

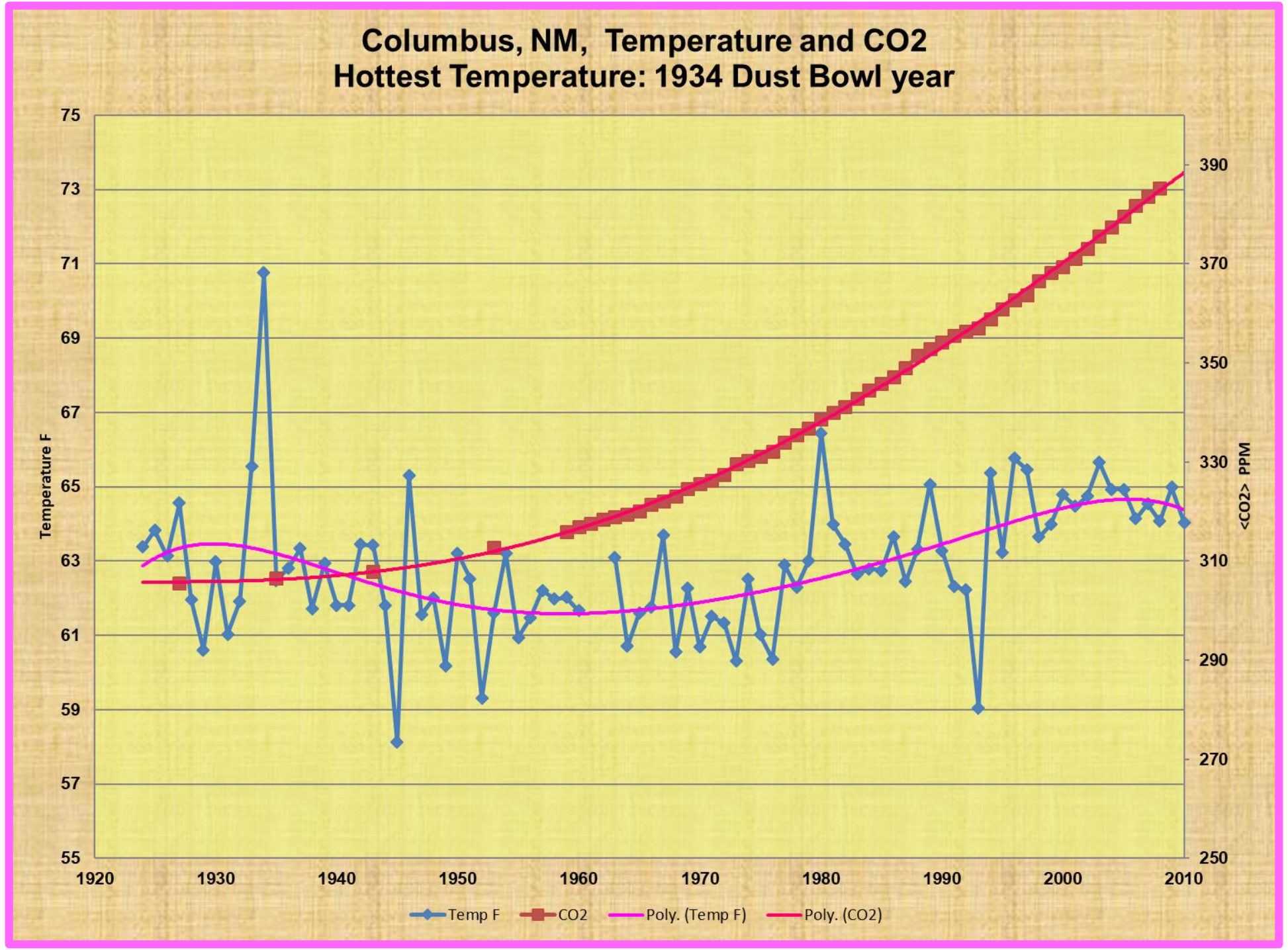
Issue 1: Dr. Garfin's Dona Ana County chart is non-representative:

The temperature chart chosen by Dr Garfin to represent southern New Mexico poorly represents this area.

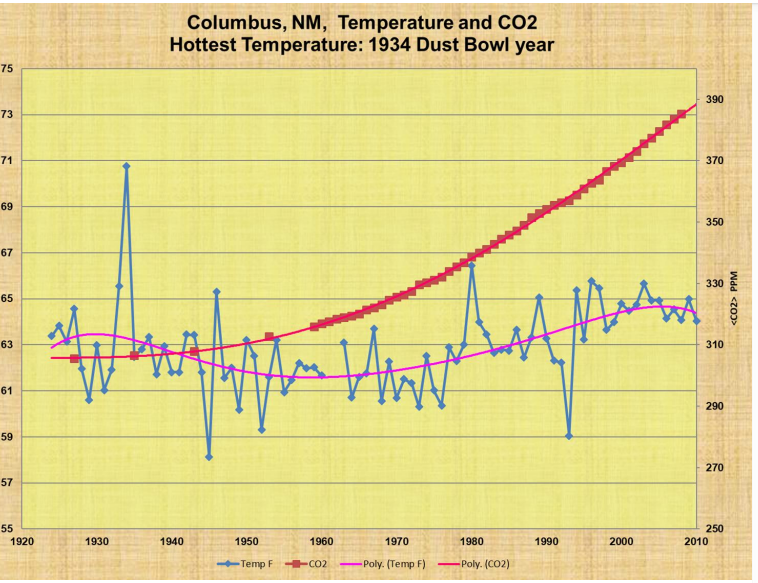
Actual measurements from rural areas in southern New Mexico do not show the sharp rise in temperature.

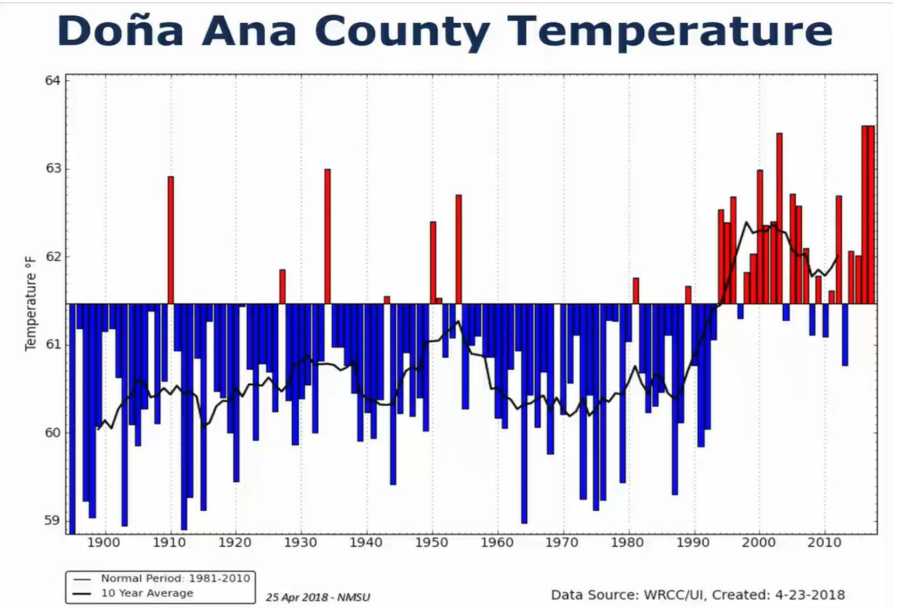
Succeeding graphics show temperatures are not rising rapidly here.

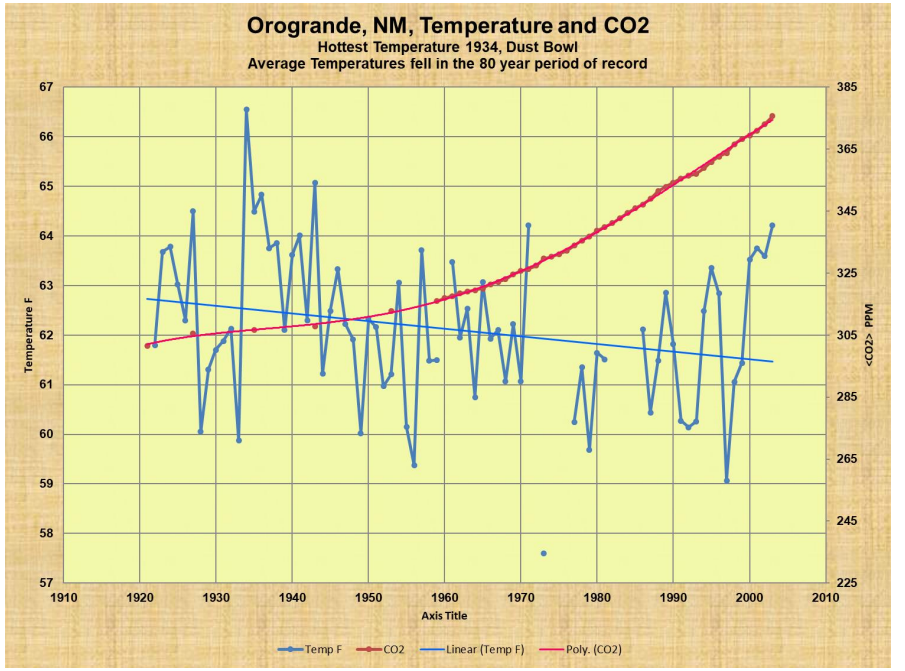

Orogrande, NM, Temperature and CO2
Hottest Temperature 1934, Dust Bowl
Average Temperatures fell in the 80 year period of record
Temperature F
<CO2> PPM
67
66
65
64
63
62
61
60
59
58
57
385
365
345
325
305
285
265
245
225
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Axis Title
Temp F
CO2
Linear (Temp F)
Poly. (CO2)


Columbus, NM, Temperature and CO2
Hottest Temperature: 1934 Dust Bowl year
Temperature F
<CO2> PPM
75
73
71
69
67
65
63
61
59
57
55
390
370
350
330
310
290
270
250
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Temp F
CO2
Poly. (Temp F)
Poly. (CO2)

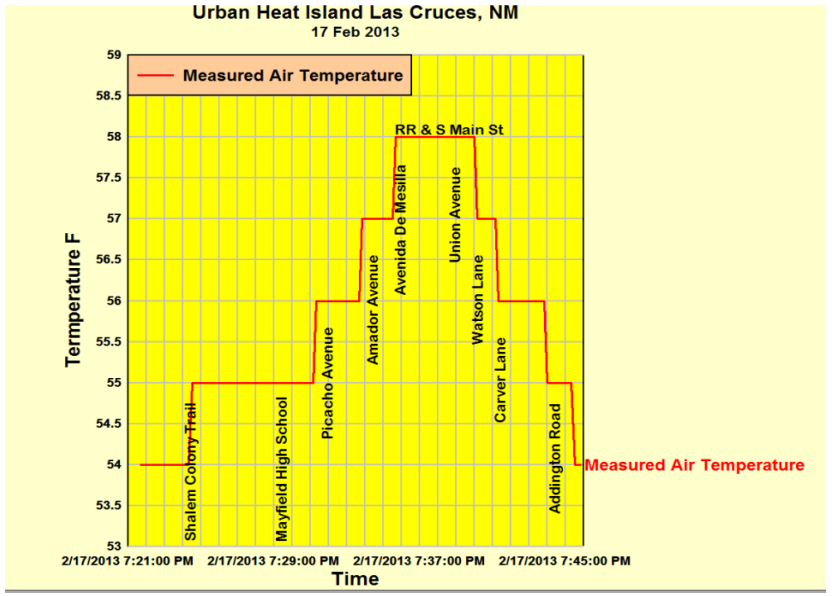
Comparative diagram shows Garfin's poor choice of the Dona Ana County temperature as representative for southern New Mexico. Both Orogrande and Columbus show highest surface temperatures in 1934, the Dust Bowl.





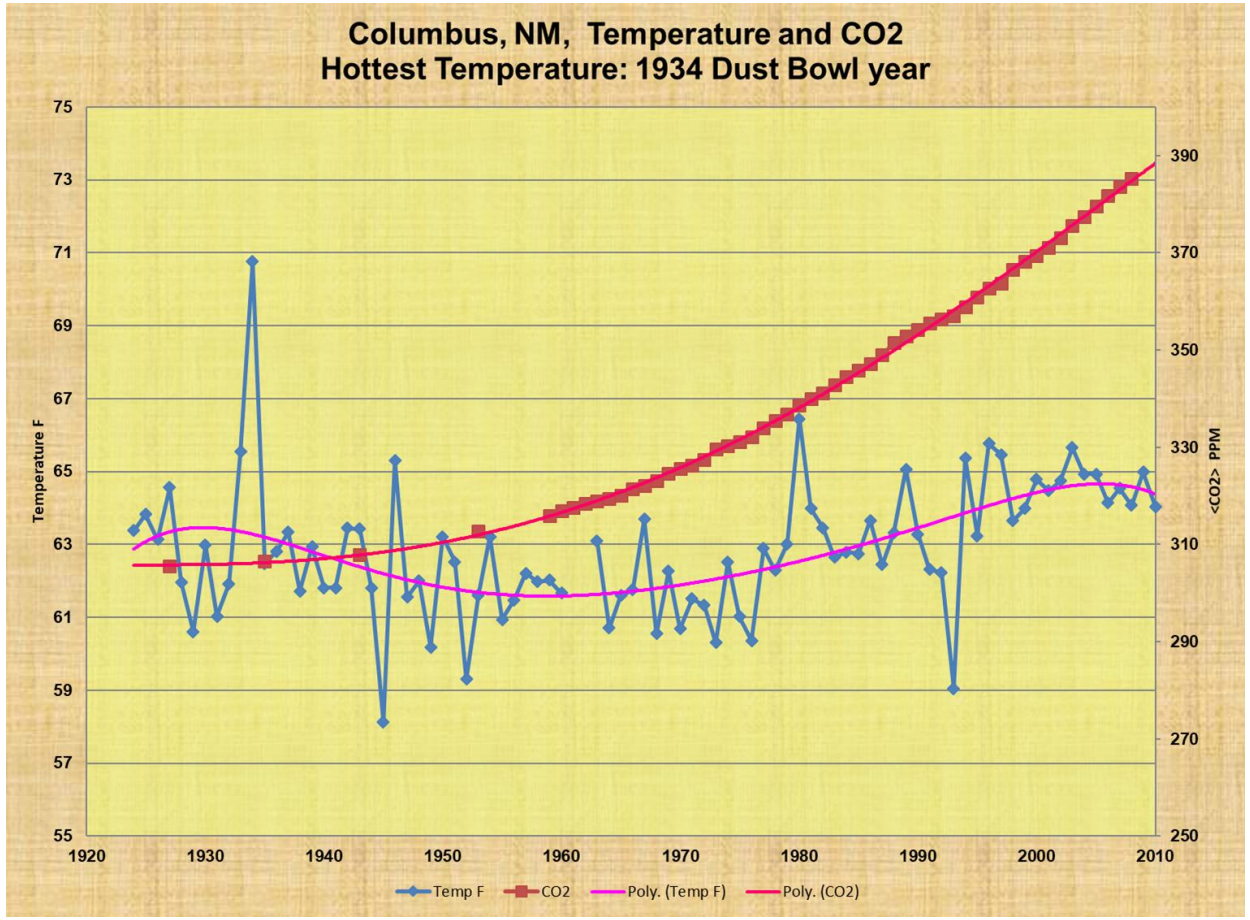


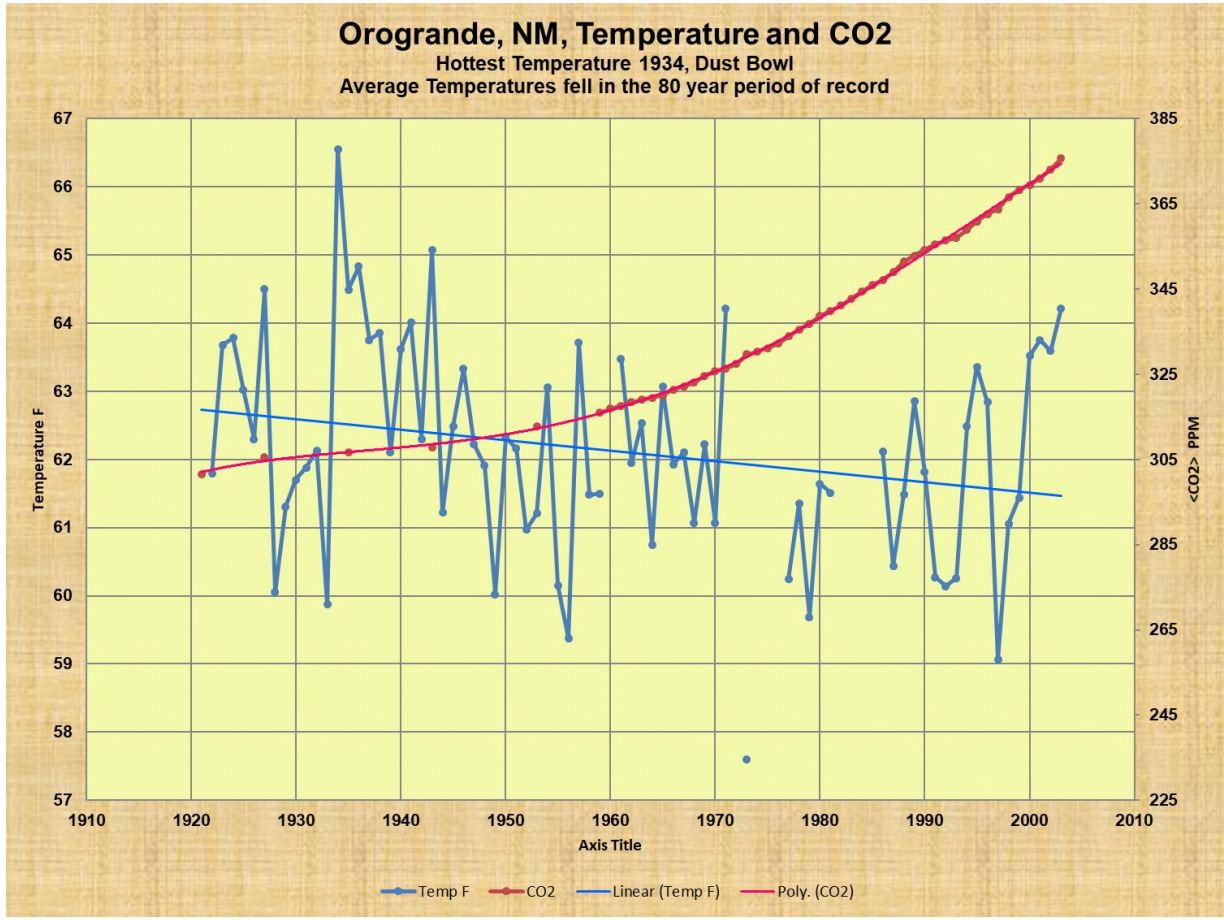
Why is Dona Ana County so different?
Probably it's the "College" station.
Rural New Mexico A & M College is now NMSU, between I-10 and I-25; near center of Las Cruces' Urban Heat Island.



http://casf.me//wp-content/uploads/2017/03/PDF_Measuring-the-Las-Cruces-Urban-Heat-Island_1_Apr_2013.pdf

SIDEBAR:
Real question for Garfin and other climate alarmists is, “With all of the CO2 and Methane in the air today, why were the temperatures the warmest in the Dust Bowl year of 1934?”





The answer is, atmospheric CO2 does not control temperatures and the CO2 warming effect is quite small.

Issue 2. Only 11% of NOAA's surface temperature measurements conform to NOAA's own standards.

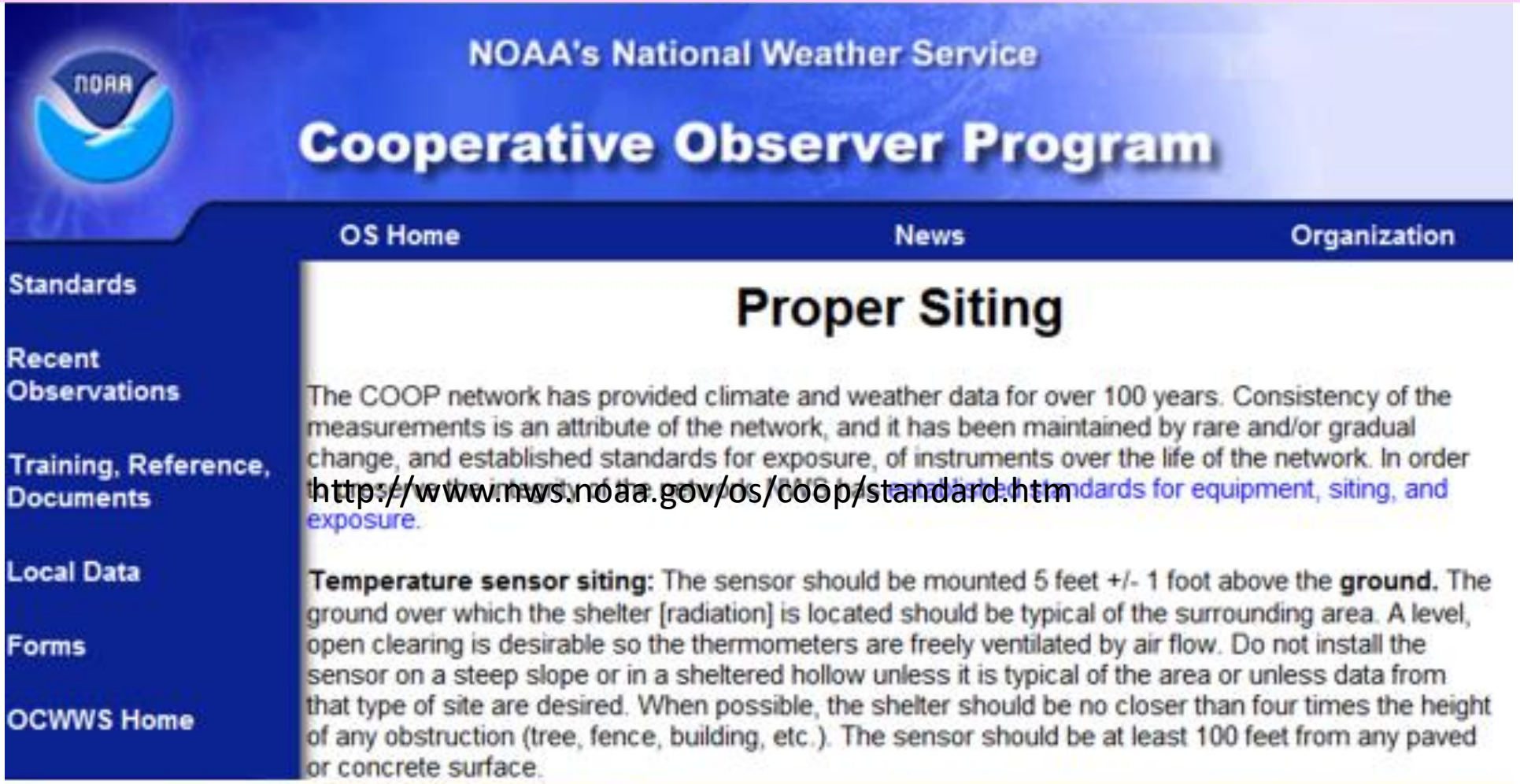
Roger Pielke, Sr. and Anthony Watts noted issues with surface temperatures and organized a "crowd-sourced" initiative to visit, audit and photographically document many NOAA surface sites; web site is http://www.surfacestations.org/

An analysis was done based on the visits, audits and photo documentation.
The report is available on-line at:
https://wattsupwiththat.files.wordpress.com/2009/05/surfacestationsreport_spring09.pdf

Report title: **"Is the US Surface Temperature Record Reliable?"**

subtitle:
"How do we know if global warming is a problem if we can't trust the US temperature record?"

http://www.nws.noaa.gov/os/coop/standard.htm



Temperature sensor siting: 5 Ft Above ground...level open clearing…freely ventilated by air flow.

Do not install on a steep slope or in a sheltered hollow.
Sensor should be at least 100 ft from any paved or concrete surface.

NOAA Temperature Classification Guide
Climate Reference Network Site Information Handbook

http://www1.ncdc.noaa.gov/pub/data/uscrn/documentation/program/X030FullDocumentD0.pdf

Classification for Temperature

Class 1 – Flat and horizontal ground surrounded by a clear surface…
Sensors located at least 100 meters from artificial heating or reflecting surfaces, such as buildings, concrete surfaces, and parking lots.

Class 2 – Same as Class 1 with the following differences. .. Artificial heating sources within 30m…

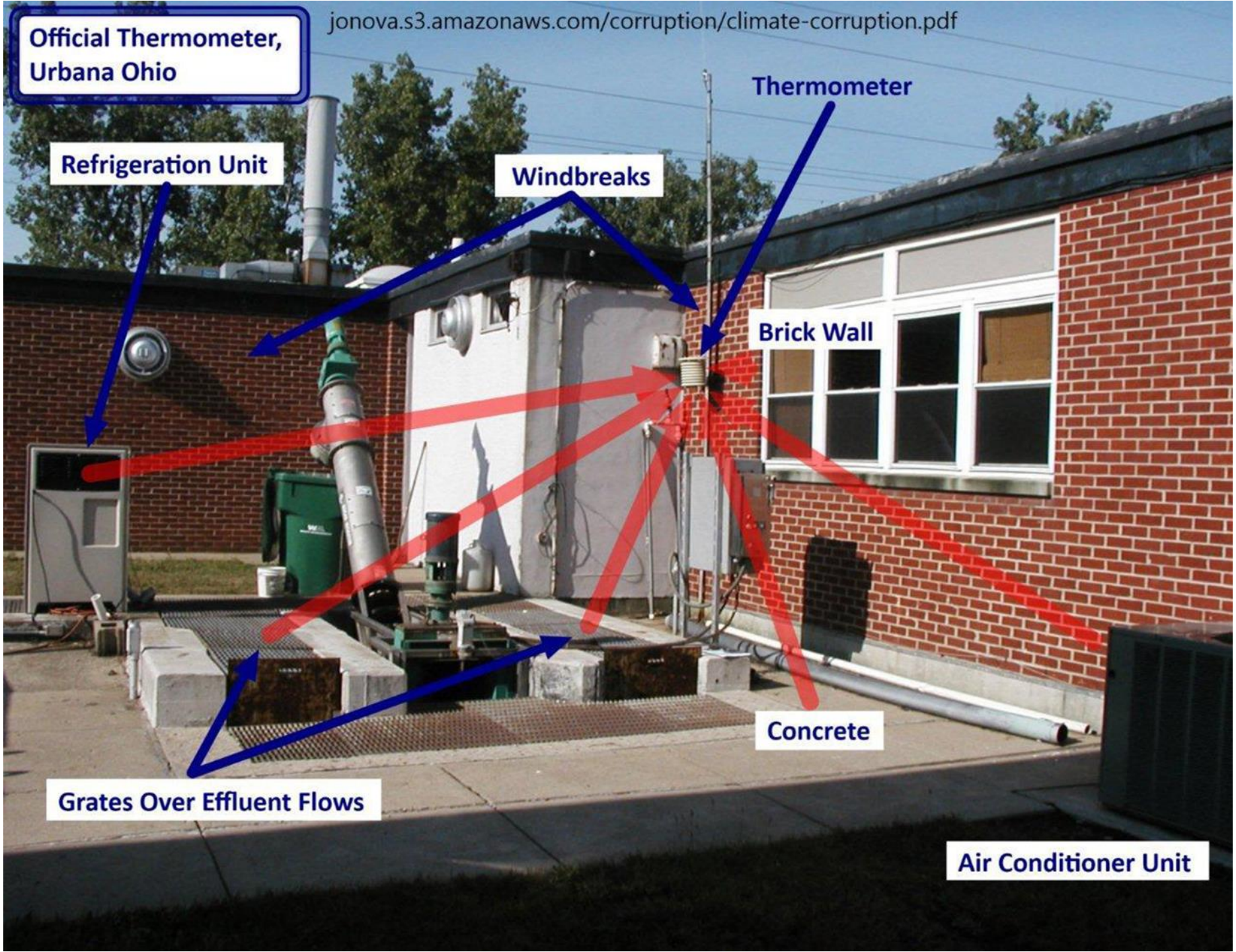
Class 3 (error ≥ 1º C) – Same as Class 2, except no artificial heating sources within 10 m.

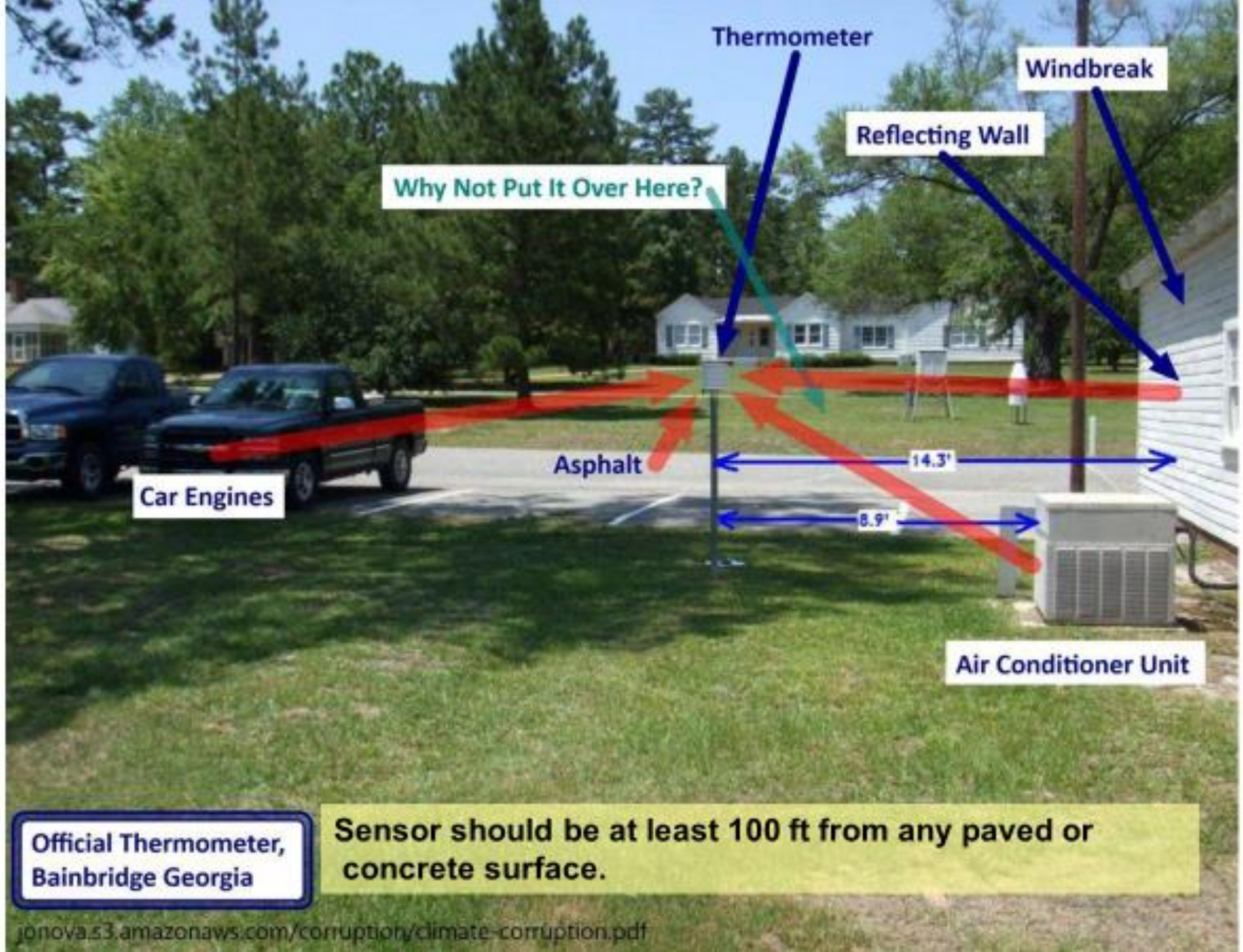
Class 4 (error ≥ 2ºC) – Artificial heating sources within 10 meters.

Class 5 (error ≥ 5ºC) – Temperature sensor located next to/above an artificial heating source, such a building, roof top, parking lot, or concrete surface.

Marysville, California, third California site examined by Anthony Watts

Thermometer, Marysville, California. Extra warming from car engines in the parking bays, air conditioner exhaust, asphalt, concrete, a wall, wind breaks, and reflections from a steel cell phone tower. Photo courtesy of Anthony Watts and www.surfacestations.org


Official Thermometer, Urbana Ohio
jonova.s3.amazonaws.com/corruption/climate-corruption.pdf
Thermometer
Refrigeration Unit
Windbreaks
Brick Wall
Concrete
Grates Over Effluent Flows
Air Conditioner Unit


Thermometer
Windbreak
Reflecting Wall
Why Not Put It Over Here?
Asphalt
14.3'
8.9'
Car Engines
Air Conditioner Unit
Official Thermometer, Bainbridge Georgia
Sensor should be at least 100 ft from any paved or concrete surface.
jonova.s3.amazonaws.com/corruption/climate-corruption.pdf

Stephenson Screen, Tucson, Arizona, located on a parking street on the University of AZ.
Textbook example - CRN Class 5 (error ≥ 5ºC) – Temperature sensor located next to / above artificial heating source … building, roof top, parking lot, concrete surface.

Analysis of USHCN Station Visits

Most USHCN stations do not meet NOAA'S own established standards.

11%, of stations meet the standards, a SMALL minority

20% of USHCN stations have >1C error

58% of USHCN Stations have >2C error

11% of USHCH Stations have >5C error

Is the US Surface Temperature record reliable when most stations have >= 2C Error?

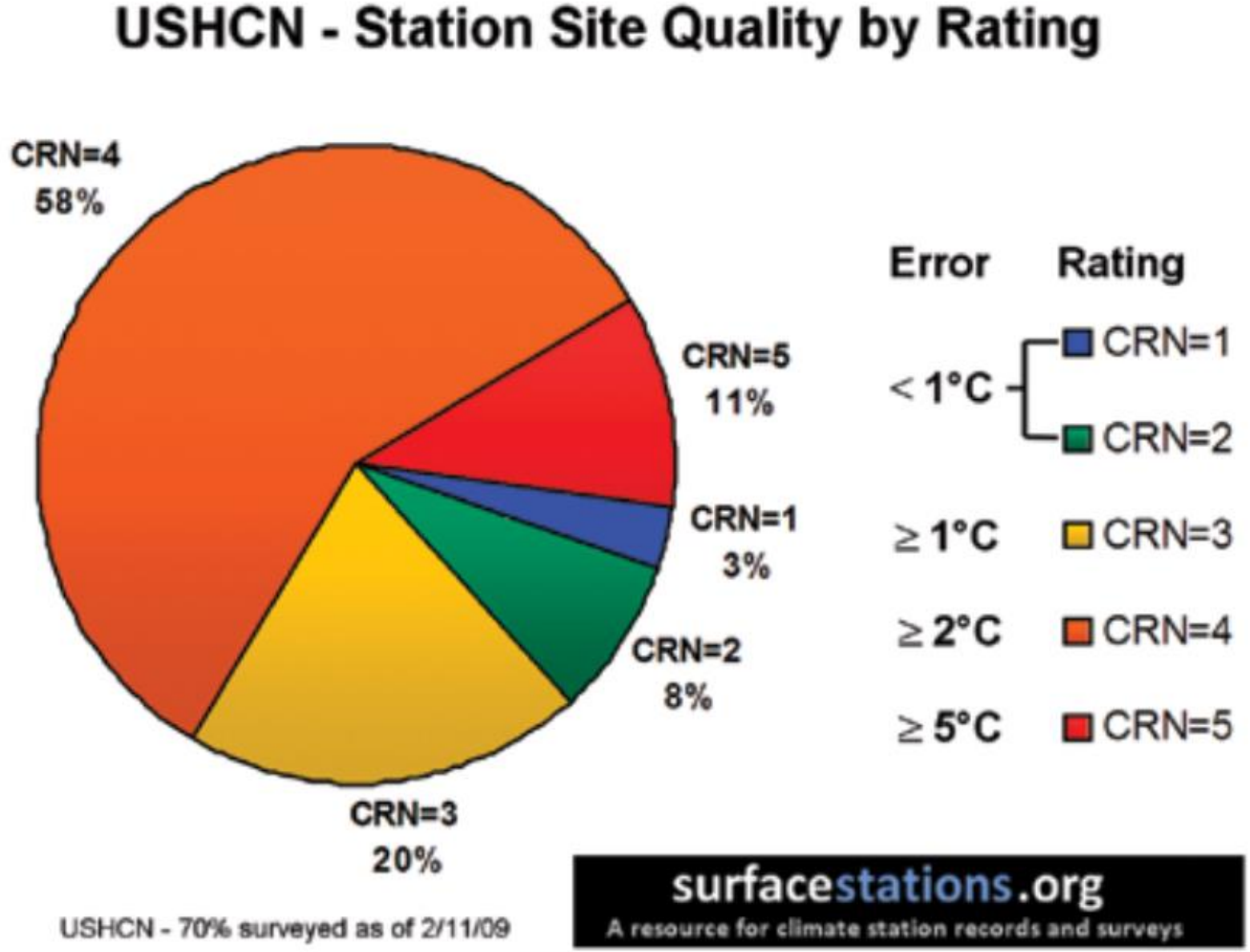
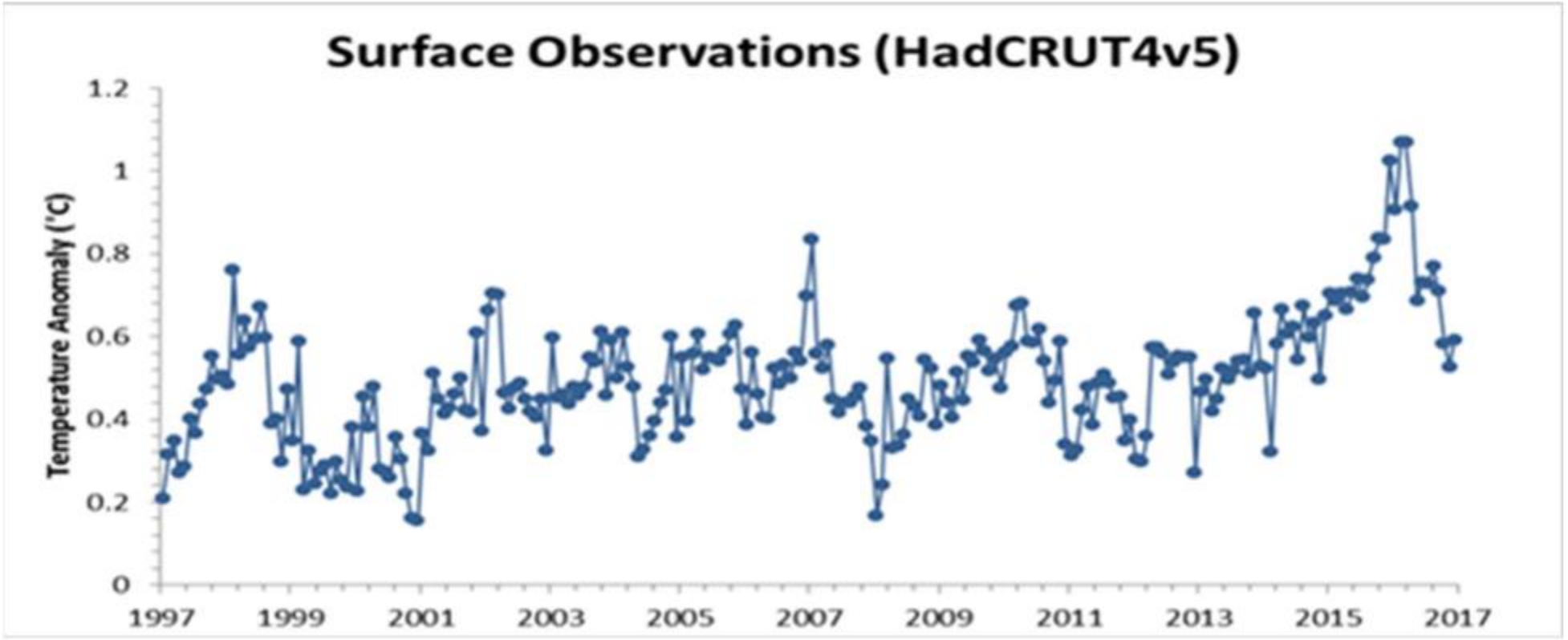


Figure 27. Most of the surveyed temperature stations in the U.S. fall into categories that mean they are unreliable. Only stations in CRN=1 and CRN=2 – 11 percent of all stations – are reliable.

Issue 3 Garfin misses The Pause in Global Warming shown in respected data sets

https://object.cato.org/sites/cato.org/files/pubs/pdf/pat-michaels-national-climate-assessment.pdf

22



Post-1998 remains controversial. There is a clear “pause” from late 1997 through 2014 (or 2002-2014, after the first ENSO cycle in this plot is complete) evident both the latest version of HadCRUT4 and the UAH lower tropospheric satellite-sensed data.

Issue 4:

USCRN data contradicts Dr. Garfin's assertions

US Climate Reference Network

To fix problems with USHCN noted by www.surfacestations.org NOAA's National Climatic Data Center (NCDC) commissioned a new Climate Reference Network (CRN) in 2002, completed 2008, stations in pristine locations, optimal measurement environments, state of the art, triple-redundant sensor systems.

Highest quality data perfect for scientific studies, unimpeachable climate data source next 50 years.

Many stations have had problems with "Urban Heat Island" effects, land use changes, equipment changes, station moves and observing practice changes.

Airport Stations support aircraft operations and most are unsuited for climatology studies.

O'Hare airport has the airport code ORD. The location was once Orchard Field: ORD.

The USCRN was designed to provide an "unimpeachable source" of climate data for the USA

US Climate Reference Network

Stations and Observations

Stations are sited in stable, open locations.

Instruments are calibrated to NIST standards.

Triplicate sensor configuration for the primary measurements of temperature and precipitation

- **internal consistency assures quality**
- **redundancy protects continuity**

Ancillary measurements support the primary measurements

- **global solar**
- **surface IR temperature**
- **low-level wind**
- **wetness**

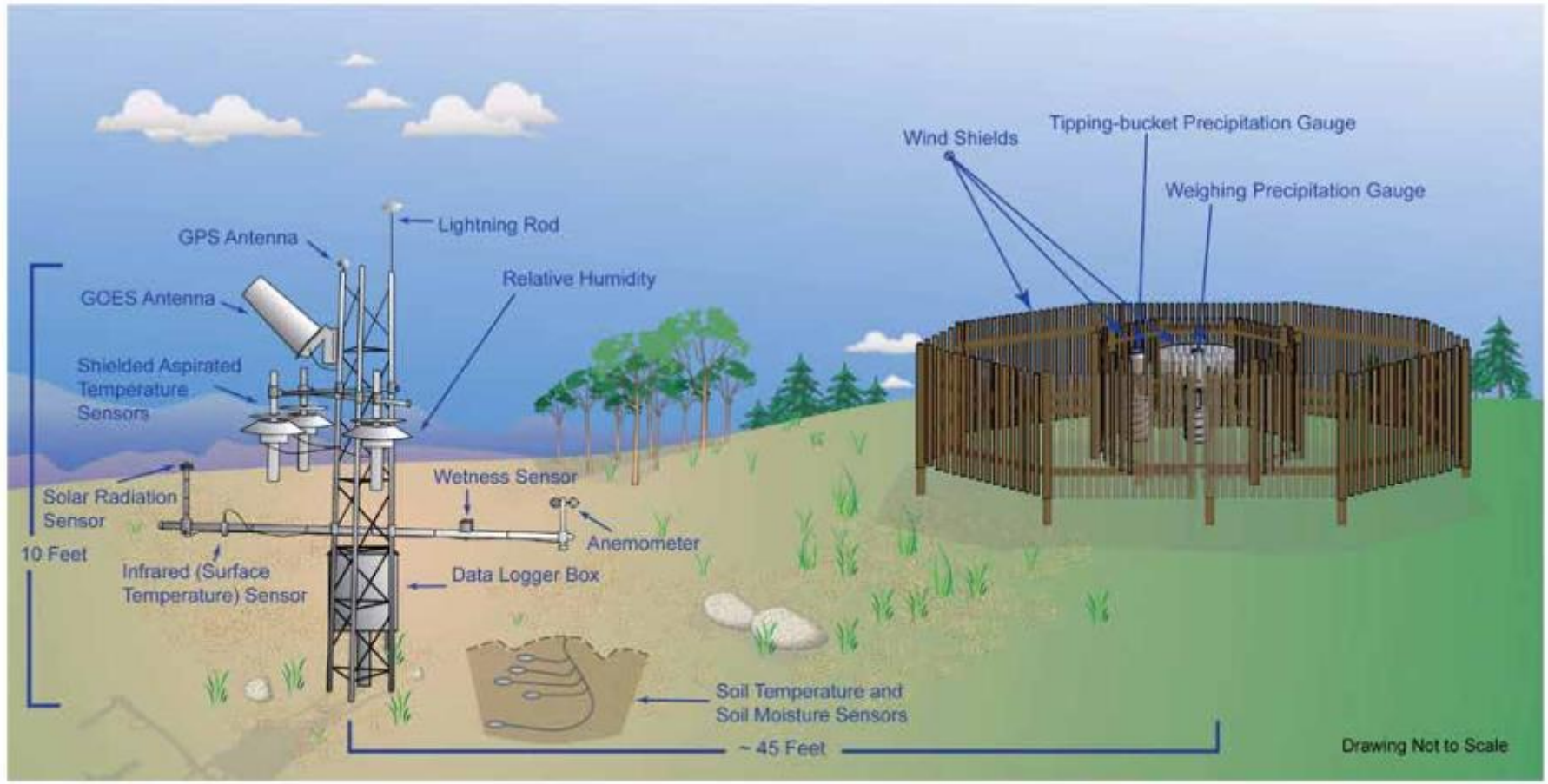
Additional measurements

- **soil moisture**
- **soil temperature**
- **relative humidity**

Data are acquired, processed and re-distributed hourly.

US Climate Reference Network

Instruments at a Typical USCRN Station



https://www.ncdc.noaa.gov/crn/

NOAA NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

U.S. Climate Reference Network

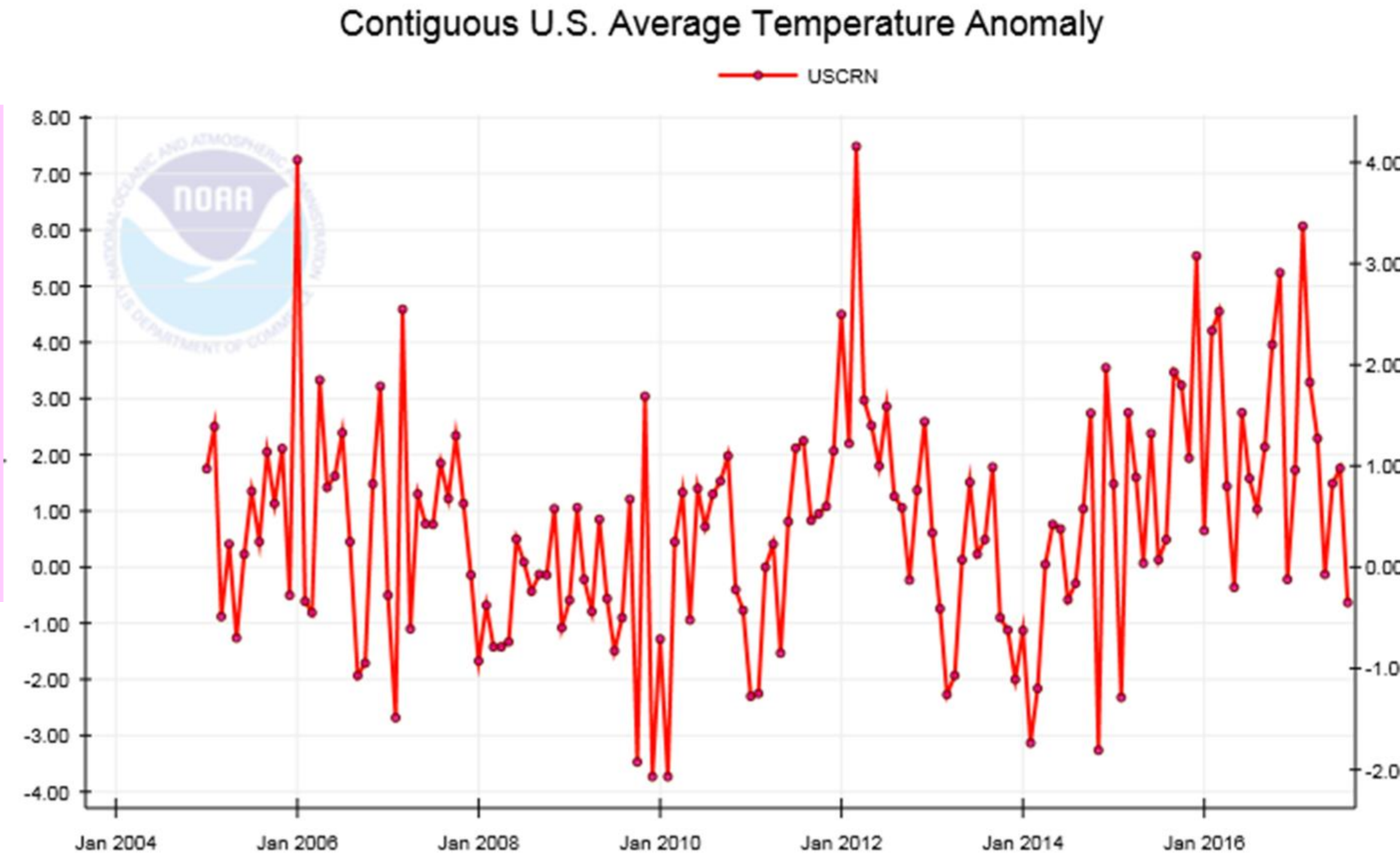
The **U.S. Climate Reference Network (USCRN)** is a systematic and sustained network of **climate monitoring stations** with sites across the conterminous U.S., Alaska, and Hawaii. These stations use **high-quality instruments** to measure temperature, precipitation, wind speed, soil conditions, and more. Information is available on what is measured and the USCRN station instruments.

The vision of the USCRN program is to provide a **continuous series of climate observations** for monitoring trends in the nation's climate and supporting climate-impact research.

https://www.ncdc.noaa.gov/temp-and-precip/national-temperature-index/time-series?datasets%5B%5D=uscrn&parameter=anom-tavg&time_scale=p12&begyear=2004&endyear=2017&month=8

The USCRN surface Temperatures for the USA 2005-2016.

This is quite different from the National Climate Assessment which shows rapidly rising surface Temperatures.



Home | Our Programs | Data Catalogs | Publications | Presentations | People | The

Meteorological data collected at USDA NMSU Jornada Range present a different picture from that presented by Dr Garfin

Science

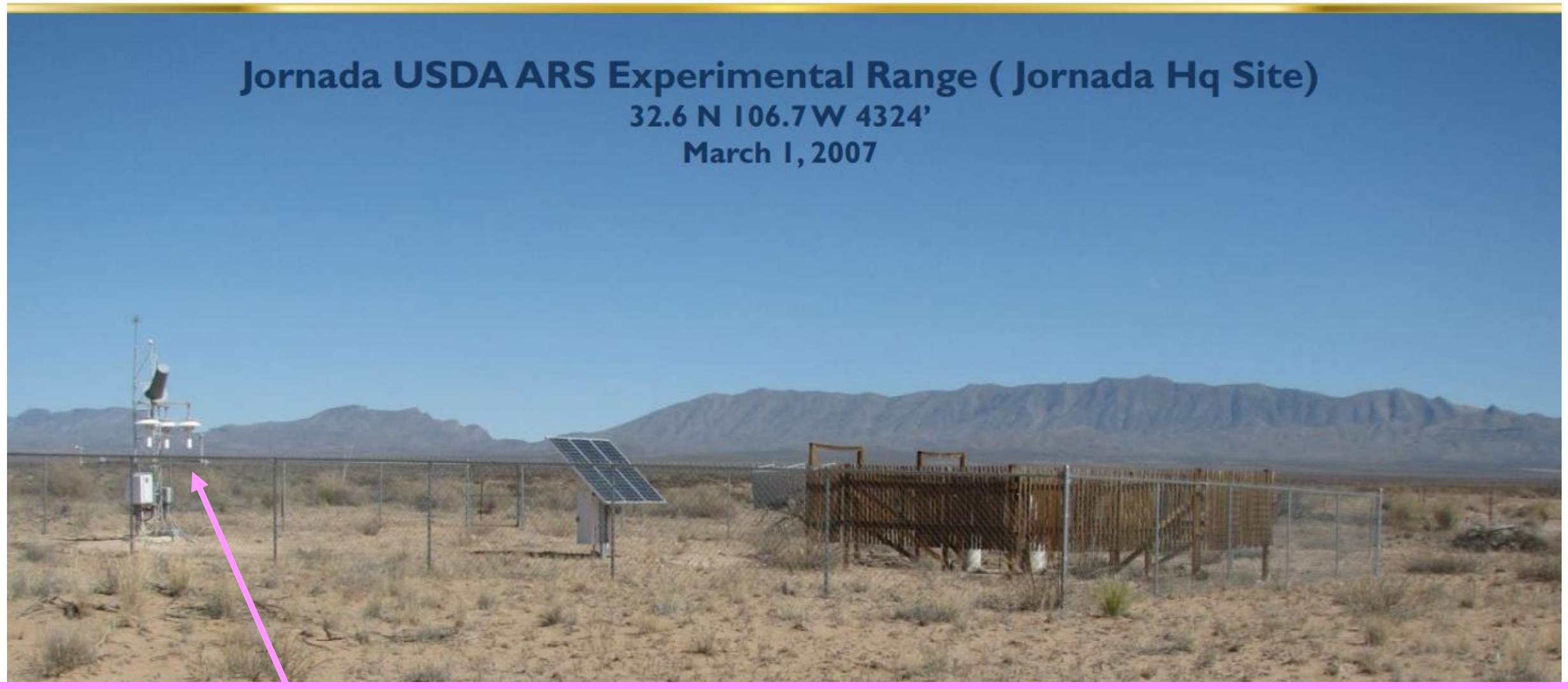
- Long Term Agricultural Research
- Long Term Ecological Research
- National Ecological Observatory Network
- National Wind Erosion Research Network

Technologies

- Assessment, Inventory & Monitoring
- Ecological Site Descriptions
- JournalMap
- Monitoring & Assessment Tools

US Climate Reference Network

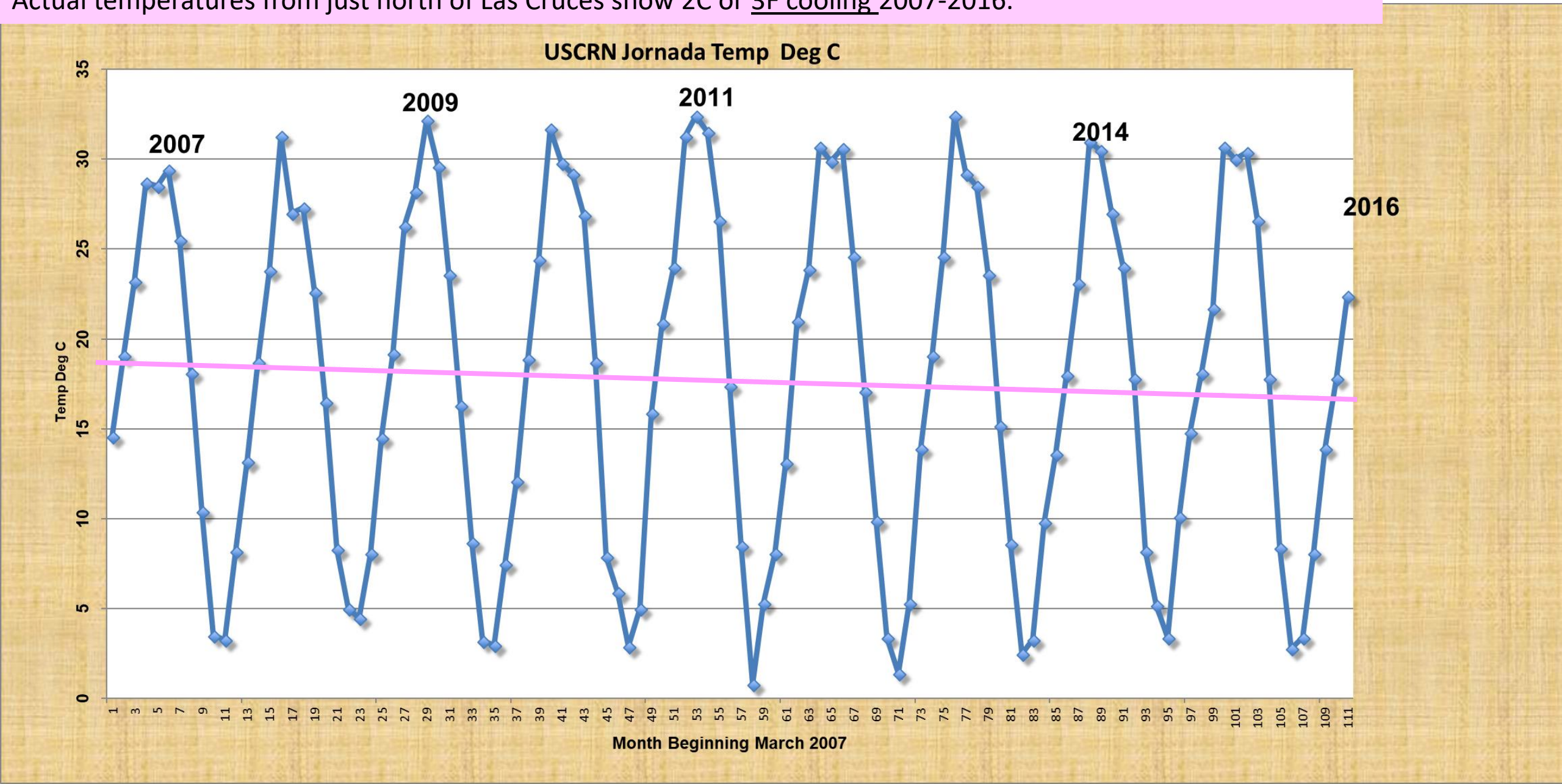
NM Las Cruces 20 N



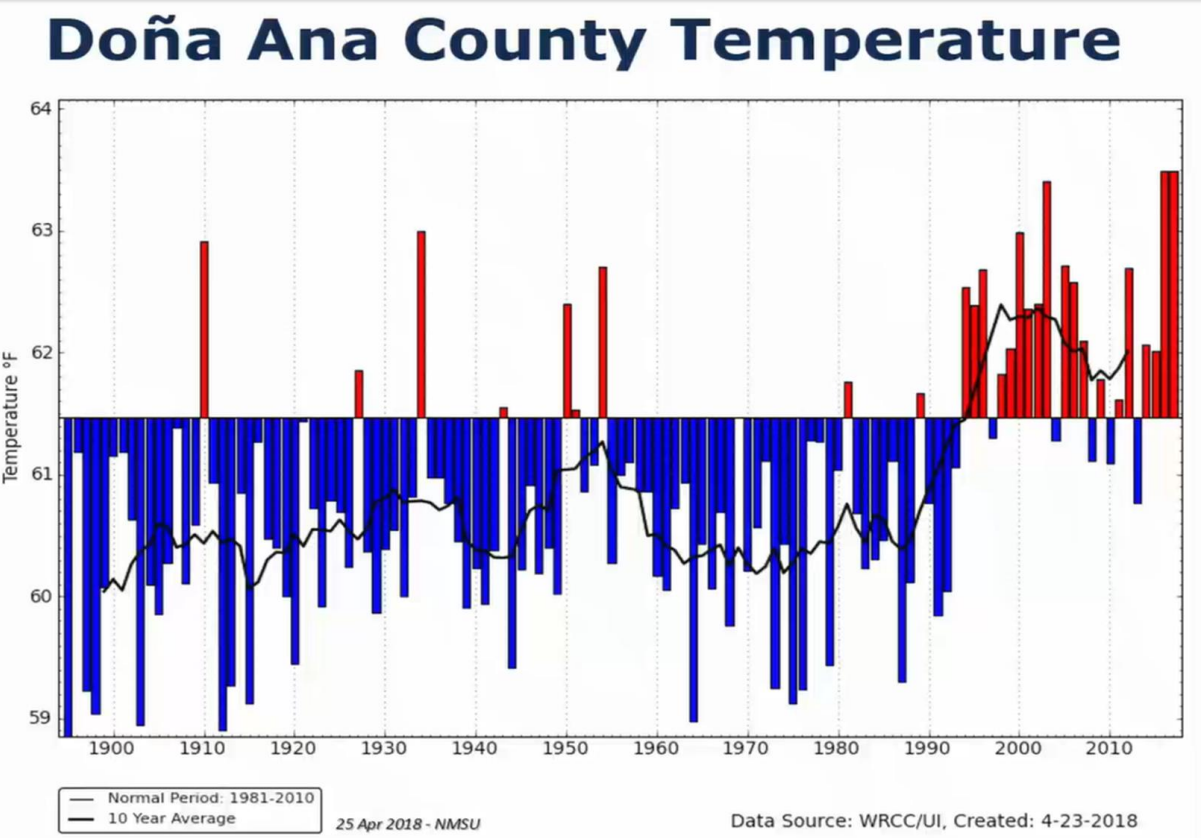
Triple-Redundant Temperatures… Aspirated Thermistors…located 20 Miles North of Las Cruces

https://www1.ncdc.noaa.gov/pub/data/uscrn/products/monthly01/CRNM0102-NM_Las_Cruces_20_N.txt

USCRN Jornada data, short period of record. Slope of the trend line dramatically different from Dr Garfin's plot. Actual temperatures from just north of Las Cruces show 2C or 3F cooling 2007-2016.

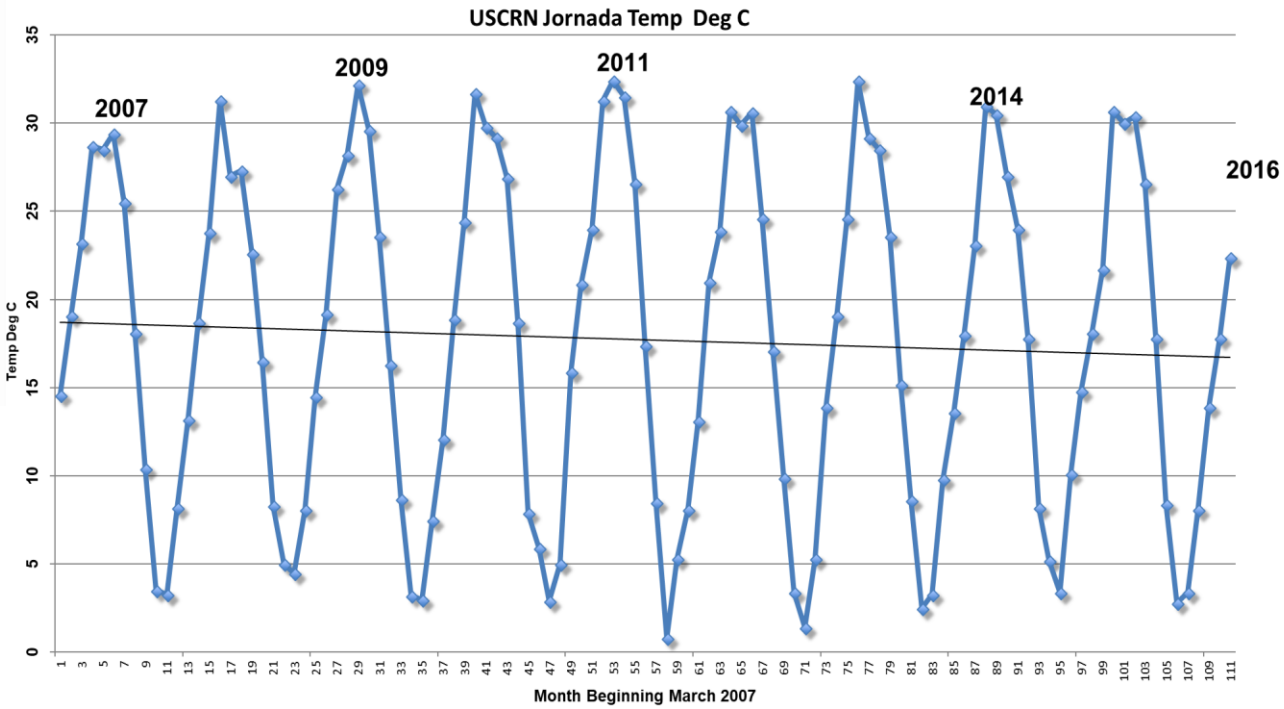


Jornada Range Temperatures



120 Year Period of Record

https://www1.ncdc.noaa.gov/pub/data/uscrn/products/monthly01/CRNM0102-NM_Las_Cruces_20_N.txt



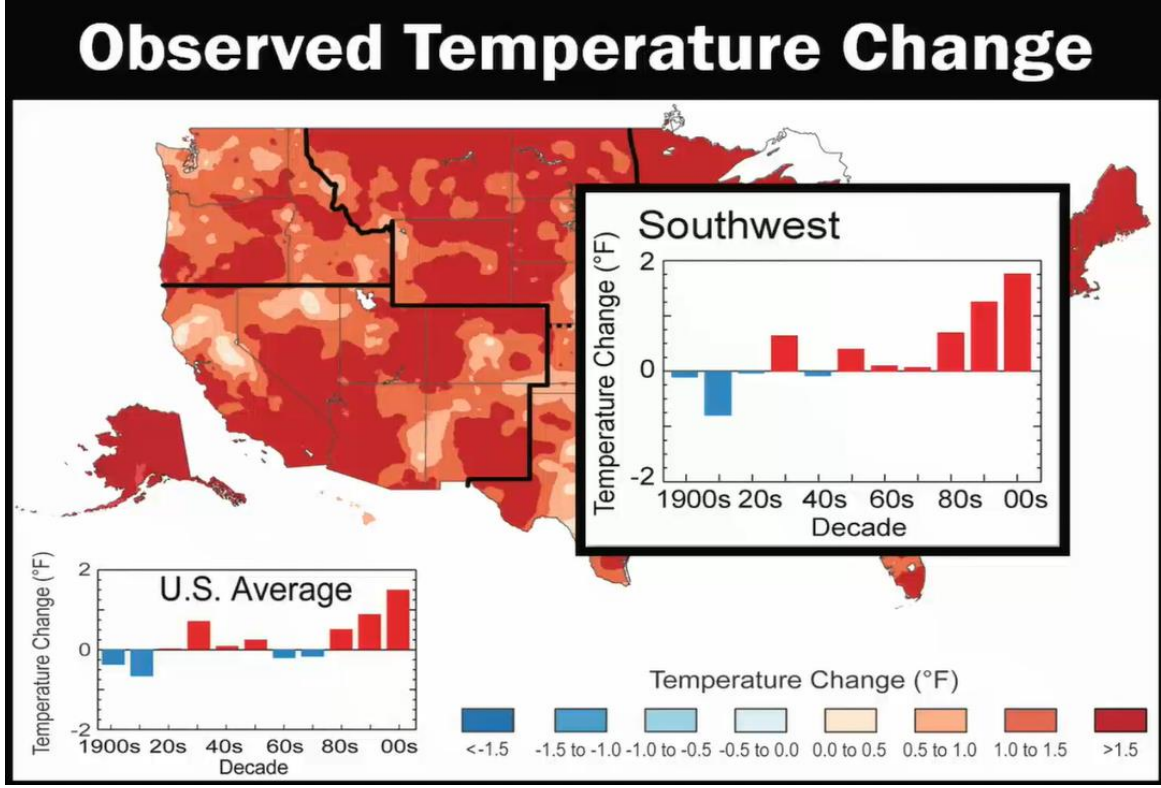
9 Year Period of Record

First Month, March 2007, Last Month, May 2016
Trend shows temperatures falling in southern New Mexico

ISSUE 5

The SNOTEL temperature data are seriously in error.

SNOTEL has an erroneous 1.16C/decade increase in temperature



SNOTEL

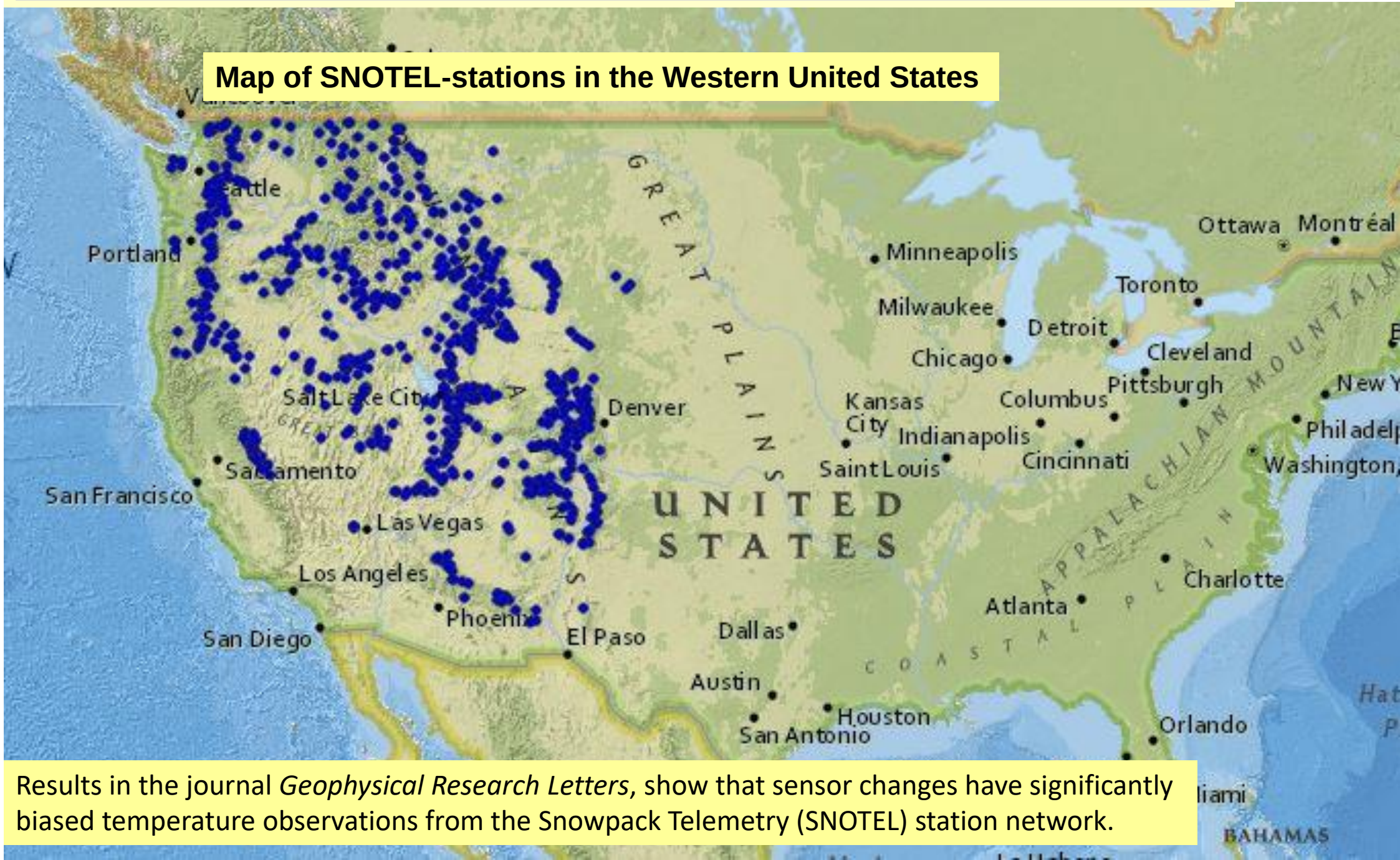
From Wikipedia, the free encyclopedia

SNOTEL is an automated system of snowpack and related climate sensors operated by the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture in the Western United States.

There are over 730 SNOTEL (or **sno**w **tel**emetry) sites in 11 states, including Alaska. The sites are generally located in remote high-mountain watersheds where access is often difficult or restricted. Access for maintenance by the NRCS includes various modes from hiking and skiing to helicopters.[1]

All SNOTEL sites measure snow water content, accumulated precipitation, and air temperature. Some sites also measure snow depth, soil moisture and temperature, wind speed, solar radiation, humidity, and atmospheric pressure. These data are used to forecast yearly water supplies, predict floods, and for general climate research.

http://wattsupwiththat.com/2015/01/12/another-bias-in-temperature-measurements-discovered/



Results in the journal *Geophysical Research Letters*, show that sensor changes have significantly biased temperature observations from the Snowpack Telemetry (SNOTEL) station network.

http://www.wcc.nrcs.usda.gov/photo_contest/images/t7_full.jpg

Picture of a Montana SNOWTEL site in summer 2014

http://onlinelibrary.wiley.com/enhanced/doi/10.1002/2014GL062803/

Geophysical Research Letters
AN AGU JOURNAL

Research Letter

Artificial amplification of warming trends across the mountains of the western United States

Jared W. Oyler ✉, Solomon Z. Dobrowski, Ashley P. Ballantyne, Anna E. Klene, Steven W. Running

With artifacts removed, network's 1991–2012 minimum temperature trend decreases from **+1.16 °C to +0.106 °C** /decade and is statistically indistinguishable from lower elevation trends.

Warming was only 9% of previous estimates

More than 700 SNOTEL sites monitor temperature and snowpack across the mountainous western U.S.

SNOTEL provides critical data for water supply forecasts.

Researchers use SNOTEL data to study mountain climate trends, mountain hydrology and ecology.

ISSUE 6

James Hansen, who proclaimed 'global warming is here!' in 1988, is quoted in New York Times 26 January 1989 that from 1895-1987, the previous 100 years, had shown no warming.

That's not what Dr. Garfin shows.

https://www.nytimes.com/1989/01/26/us/us-data-since-1895-fail-to-show-warming-trend.html?src=pm

The New York Times

U.S.

U.S. Data Since 1895 Fail To Show Warming Trend

By PHILIP SHABECOFF, Special to the New York Times
Published: January 26, 1989

Correction Appended

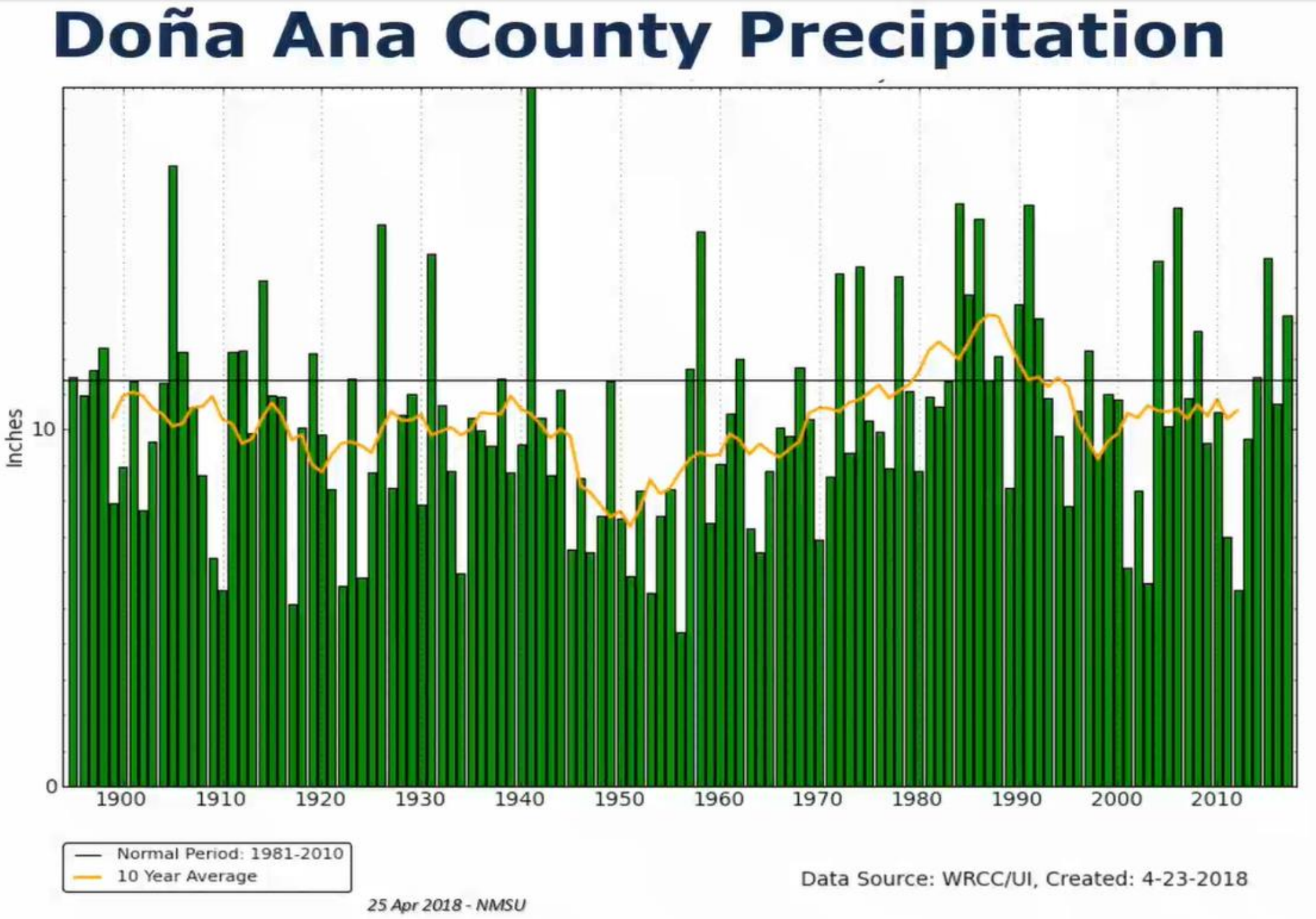
WASHINGTON, Jan. 25— After examining climate data extending back nearly 100 years, a team of Government scientists has concluded that there has been no significant change in average temperatures or rainfall in the United States over that entire period.

While the nation's weather in individual years or even for periods of years has been hotter or cooler and drier or wetter than in other periods, the new study shows that over the last century there has been no trend in one direction or another.

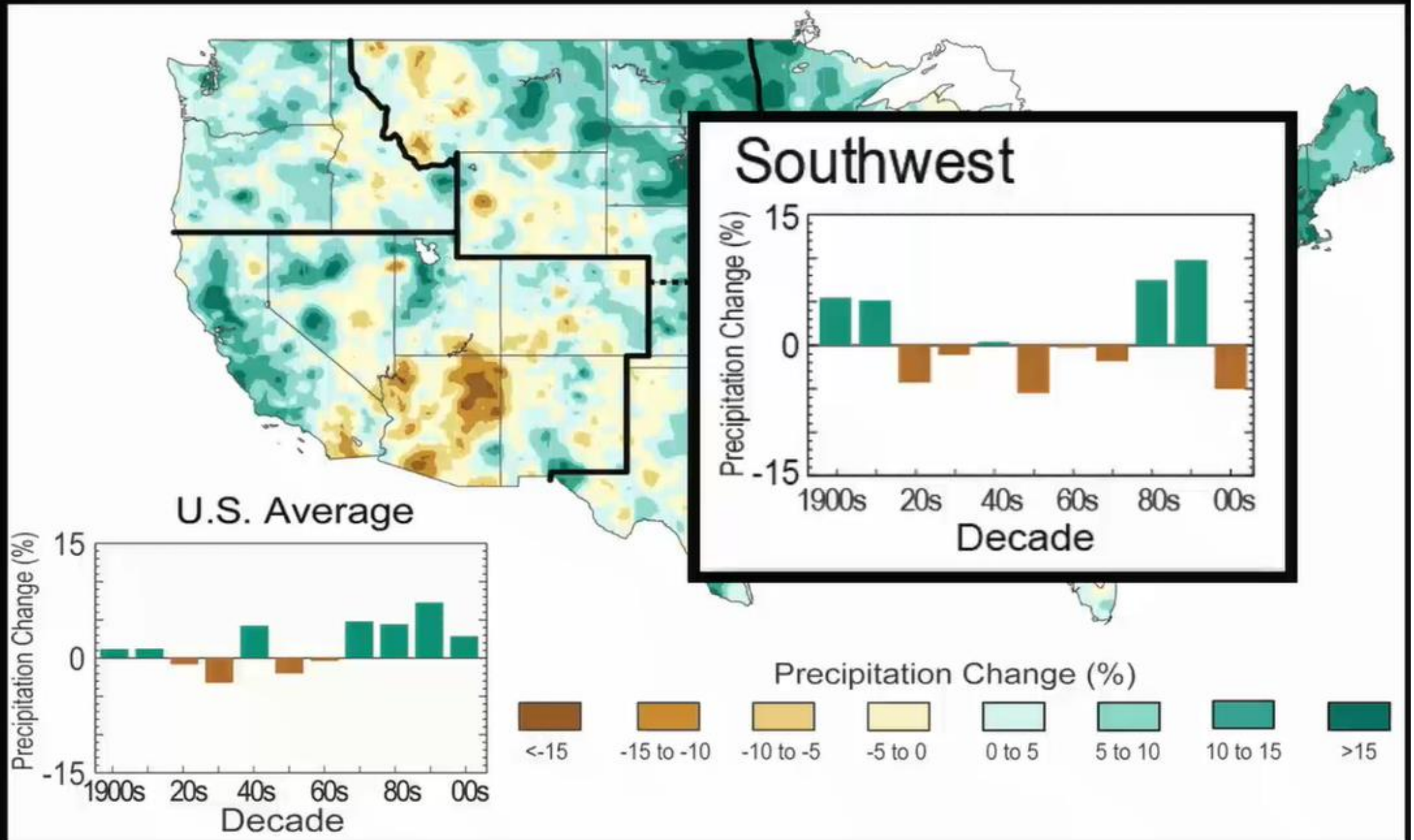
The study, made by scientists for the National Oceanic and Atmospheric Administration was published in the current issue of Geophysical Research Letters. It is based on temperature and precipitation readings taken at weather stations around the country from 1895 to 1987.

Observed

Changes



Observed Precipitation Change




Dry snow drought
Warm snow drought
25 Apr 2018 - NMSU

Reduced Runoff Efficiency

Lehner et al., 2017; McCabe et al. 2017; Chavarria and Gutzler, 2018

Dr Garfin's picture:
decreasing precipitation, drying soil, increasing drought.

University of Arizona Tree Ring Lab data in New York Times show 2000 years of rainfall and drought in NM:

Late 20th Century was wettest here in last 2000 years

NOAA data paint a different picture of USA: **Climate at a Glance** web page shows the Palmer Drought Severity Index, PDSI, since climate records began, late 1800s, shows little change.

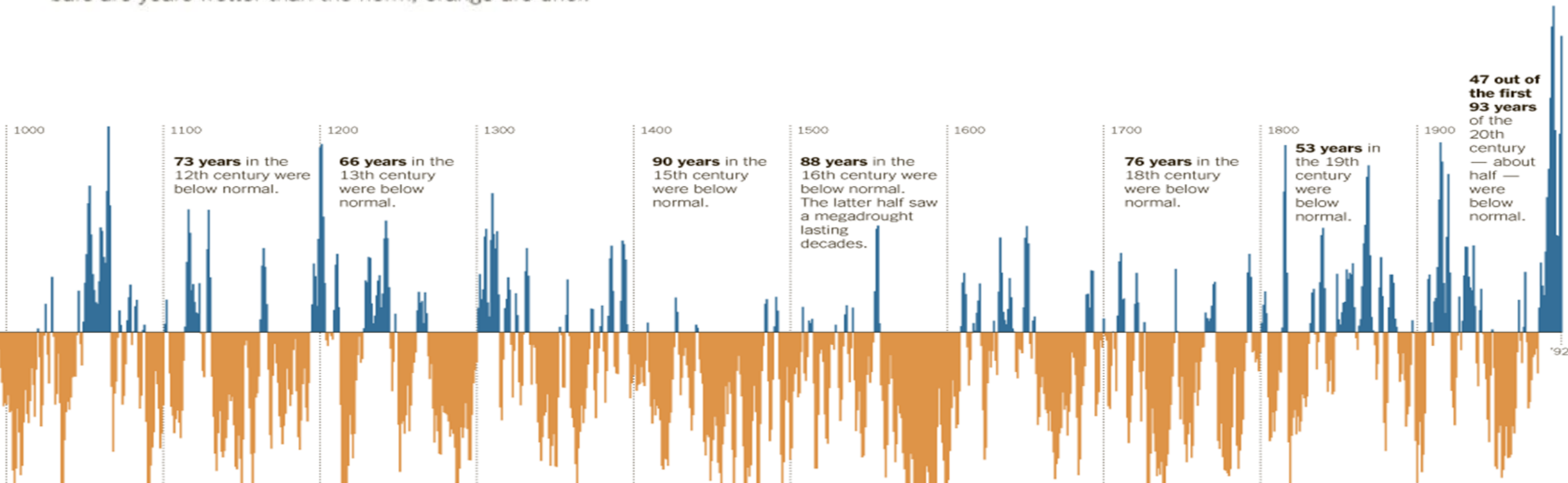
Local data also contradict Dr Garfin's assertions for this region.

https://archive.nytimes.com/www.nytimes.com/imagepages/2012/08/12/opinion/sunday/12drought-horizch.html

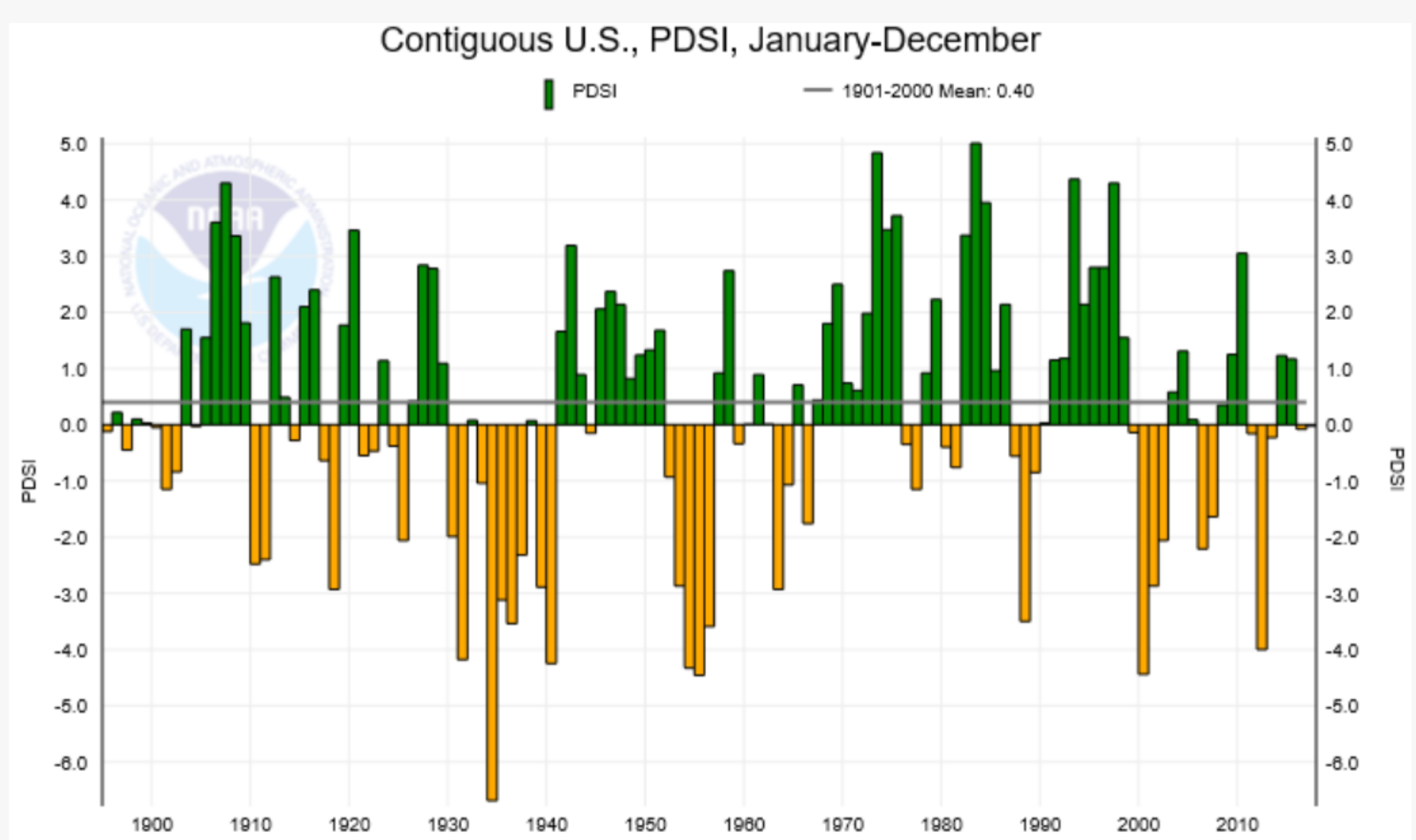
Graphic from University of Arizona Tree Ring Lab: Wettest in last 2000 years, late 20th Century PDO Warm Period

The Longest Measure of Drought: 21 Centuries of Rainfall in New Mexico

This chart shows deviation in annual rainfall levels from a 20th-century benchmark (the period from 1931 to 1990), beginning in 137 B.C. and running through 1992. Blue bars are years wetter than the norm; orange are drier.



https://www.ncdc.noaa.gov/cag/national/time-series/110/pdsi/12/12/18952017?base_prd=true&firstbaseyear=1901&lastbaseyear=2000



Length of the orange bars shows the intensity of drought using the PDSI, green bars show when PDSI shows excess rainfall. Strongest Drought was in the 1930s Dust Bowl Years, 1950s drought seems to be mimicked with the post-2000 dry period, an indication of the PDO-cold cycle which began then.

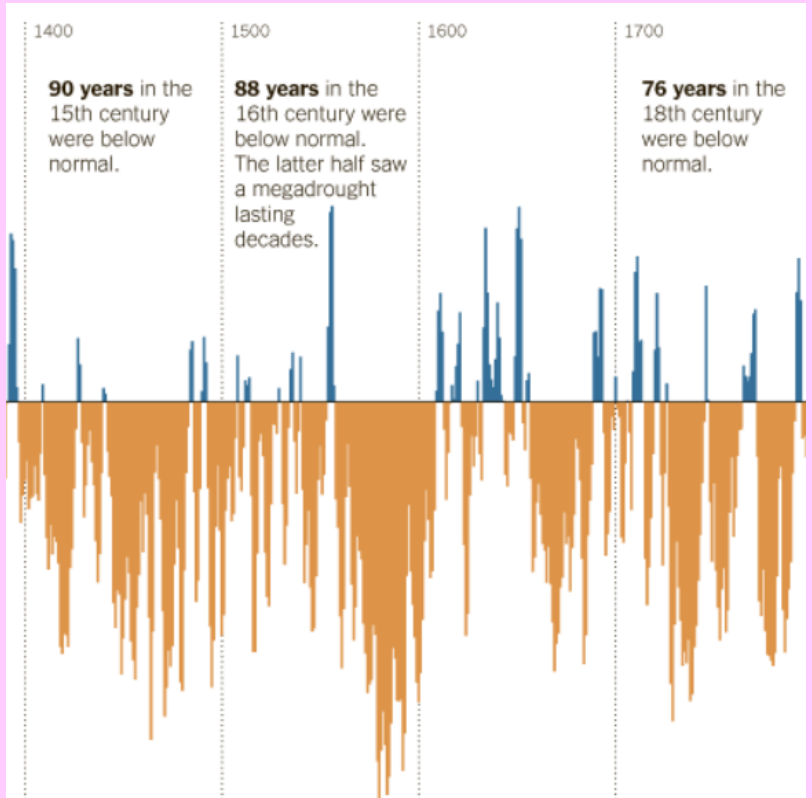
U of A Tree Ring Lab showed late 20th century was the peak rainfall last 2000 years in New Mexico.

National Climate Assessment posits that warmth brings drought and water scarcity, and that cool temperatures bring fewer droughts.

2000-year tree ring times series data show the Little Ice Age was very dry here, Spanish mission history of New Mexico's Abo' Mission in Mountainair confirms.

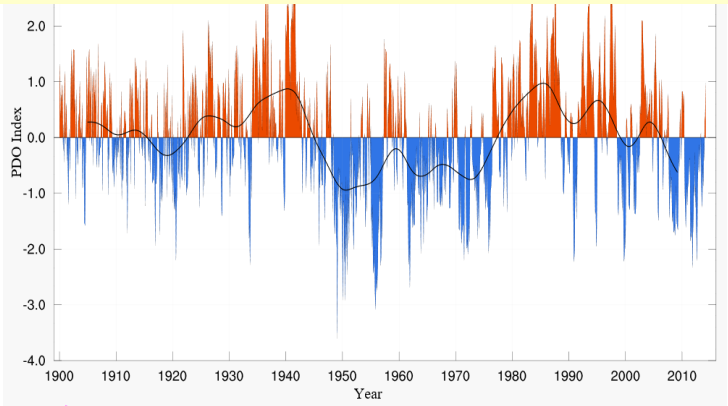
Abo' Mission Church was established in 1629, mission was expanded 1640, mission… abandoned in late1600s … **because of the punishing drought**, famine and disease,
https://www.nps.gov/sapu/learn/historyculture/abo.htm

Examining the previous graphic from 1500 to 1700 shows the story:



We have data from ~1900 showing the Pacific Decadal Oscillation; needs to be ‘shoehorned’ into last century

https://upload.wikimedia.org/wikipedia/commons/0/09/PDO.svg



https://archive.nytimes.com/www.nytimes.com/imagepages/2012/08/12/opinion/sunday/12drought-horizch.html

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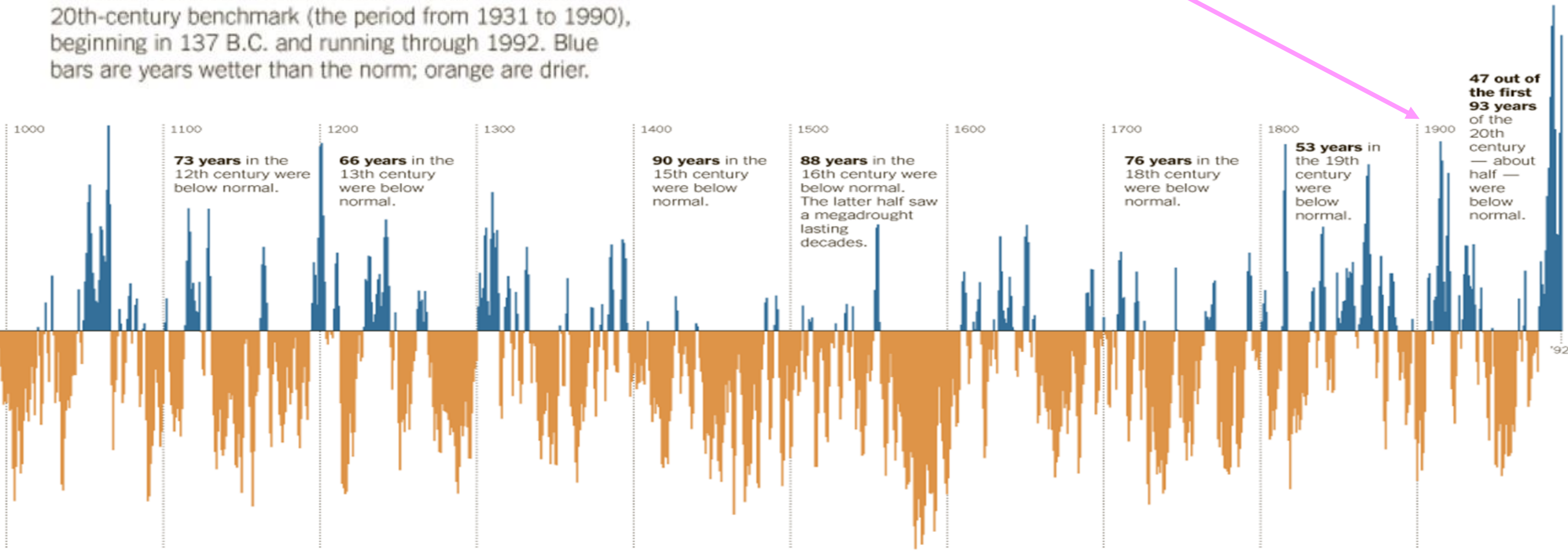
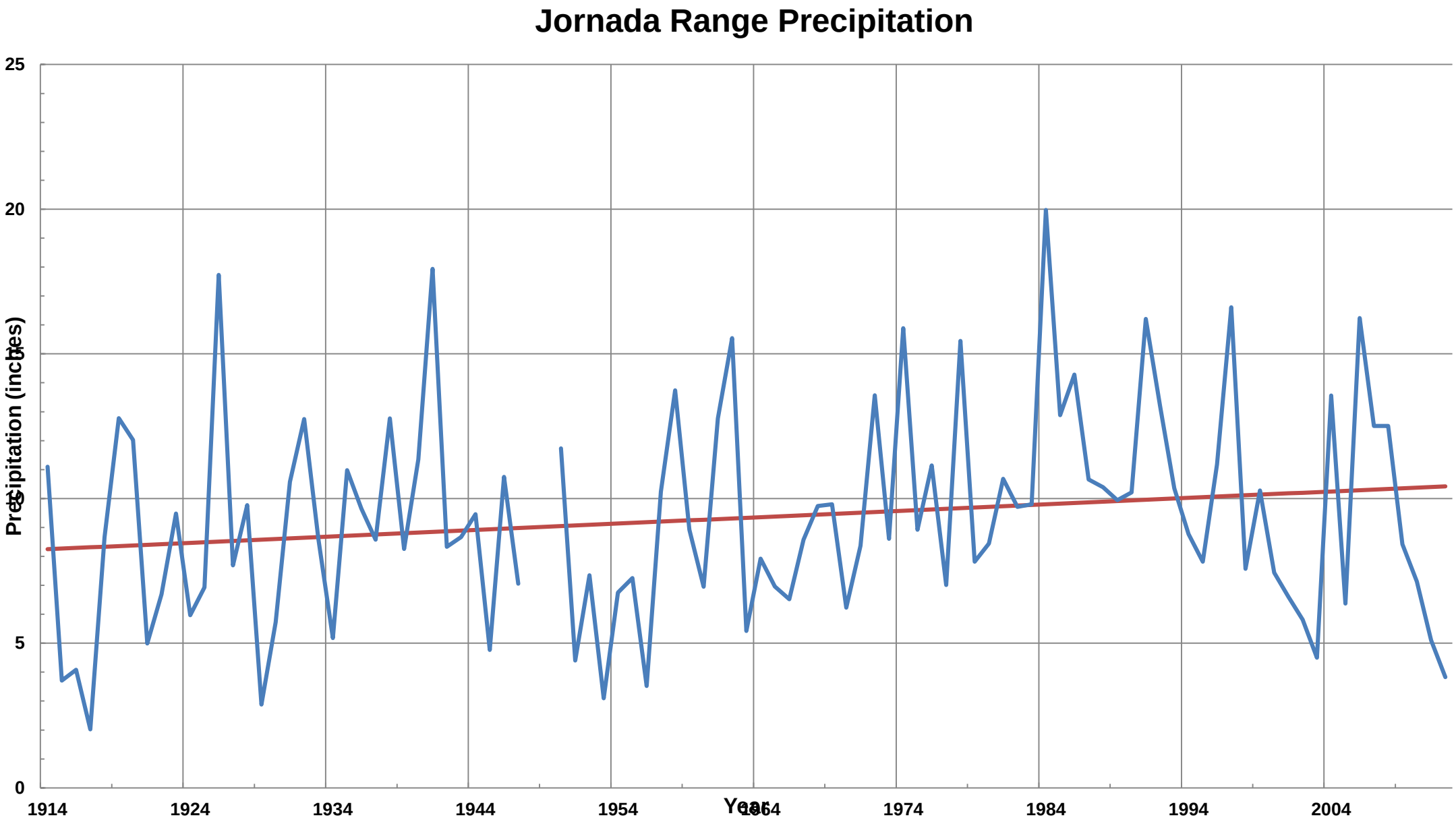
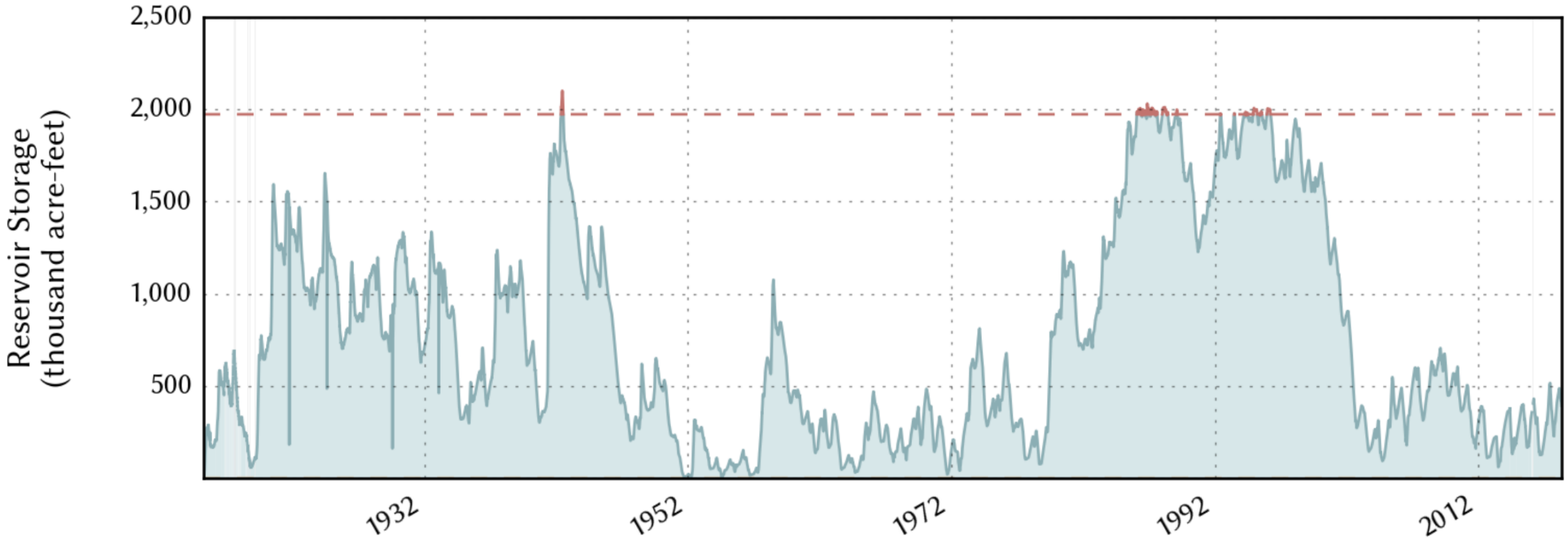


https://jornada.nmsu.edu/content/usda-noaa-nws-monthly-summary-climatological-data

Next graphics show time histories of precipitation, water storage, and the Pacific Decadal Oscillation



https://waterdatafortexas.org/reservoirs/individual/elephant-butte



https://en.wikipedia.org/wiki/Pacific_decadal_oscillation#/media/File:PDO.svg

Top graph, the Pacific Decadal Oscillation.

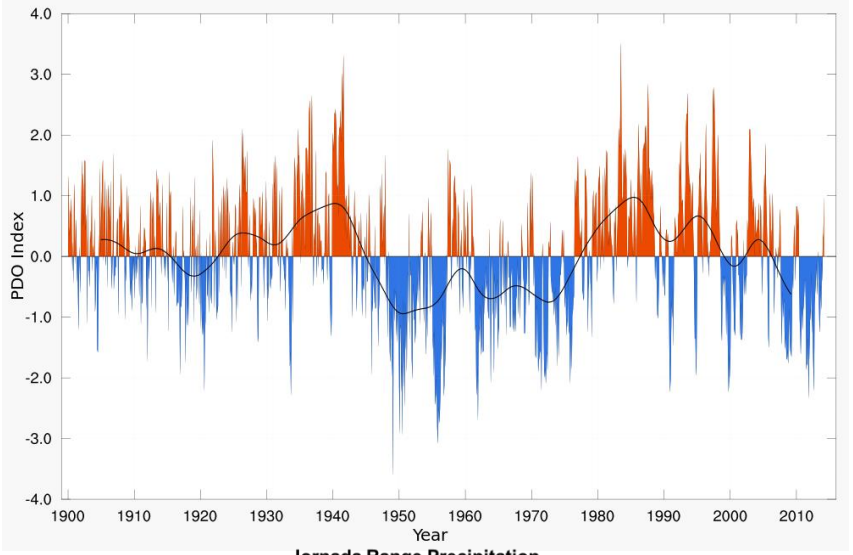
Middle graph, Jornada Range Precipitation.

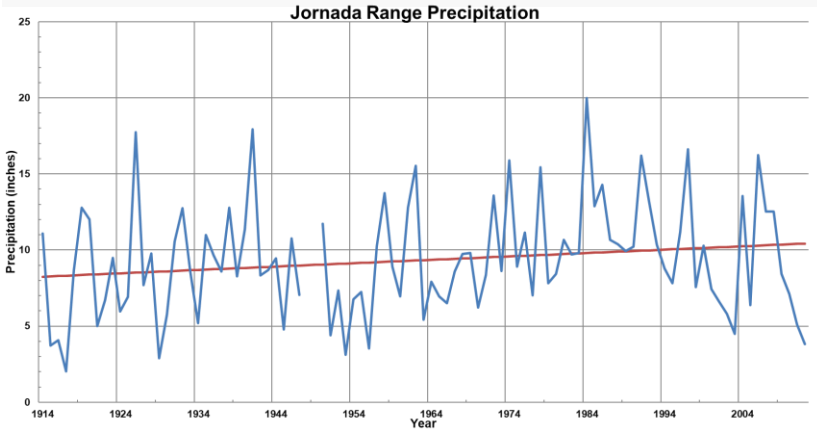
Bottom graph, Elephant Butte Reservoir Storage time series.

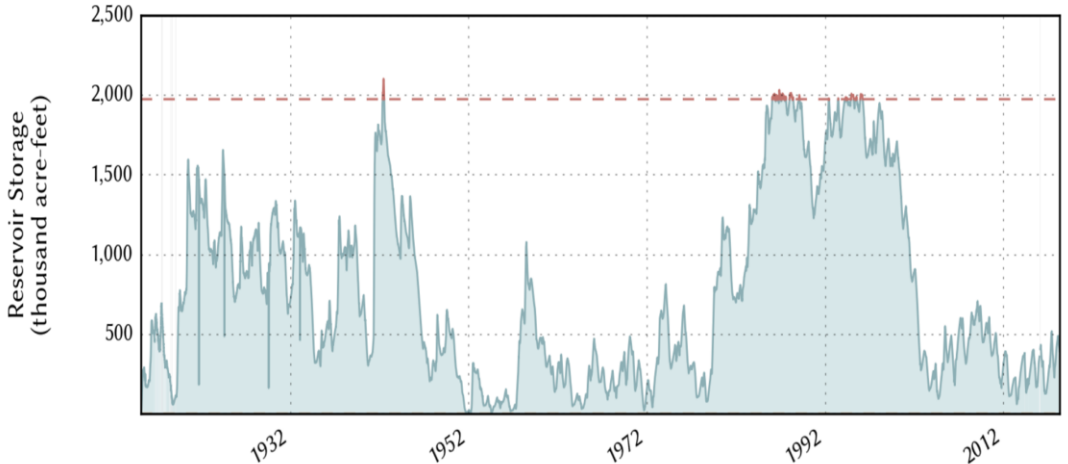
Late 20th century PDO-Warm was the cause for the extended period of high water storage at Elephant Butte Reservoir

https://jornada.nmsu.edu/content/usda-noaa-nws-monthly-summary-climatological-data

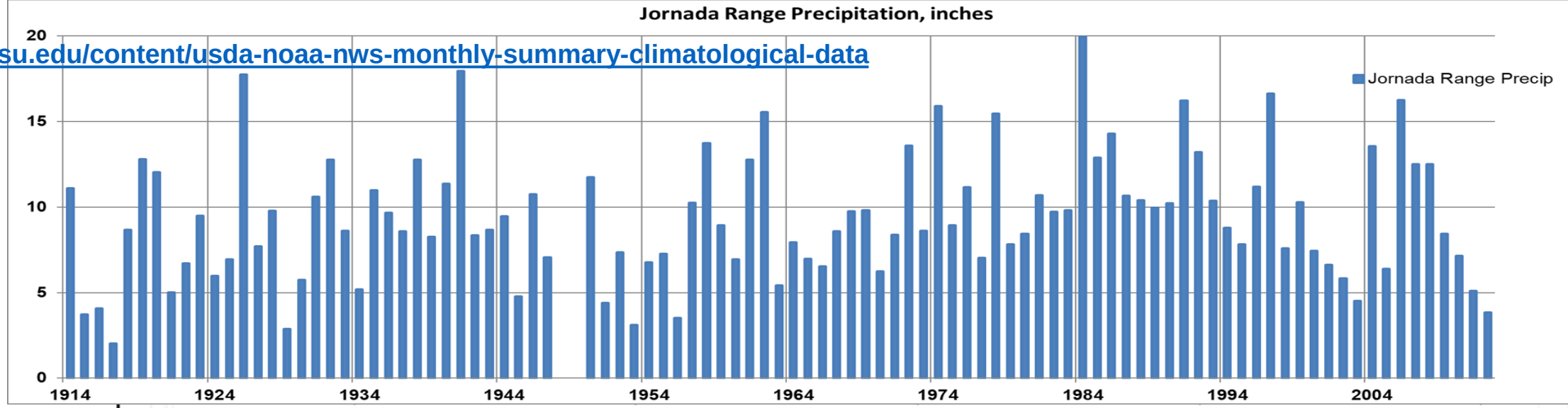
https://waterdatafortexas.org/reservoirs/individual/elephant-butte

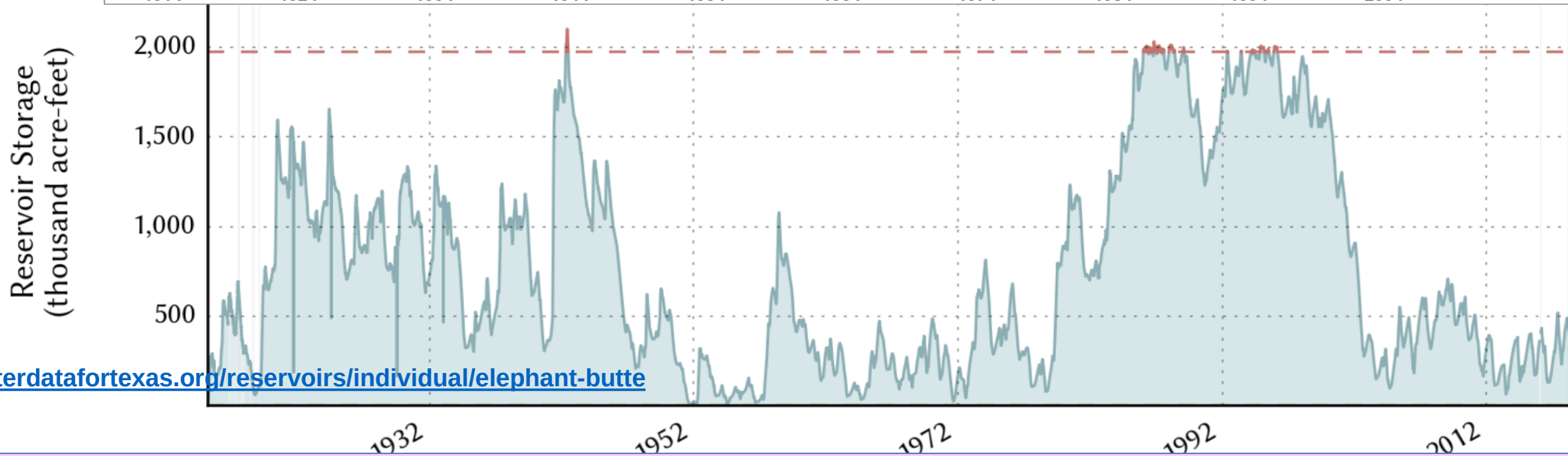






https://jornada.nmsu.edu/content/usda-noaa-nws-monthly-summary-climatological-data



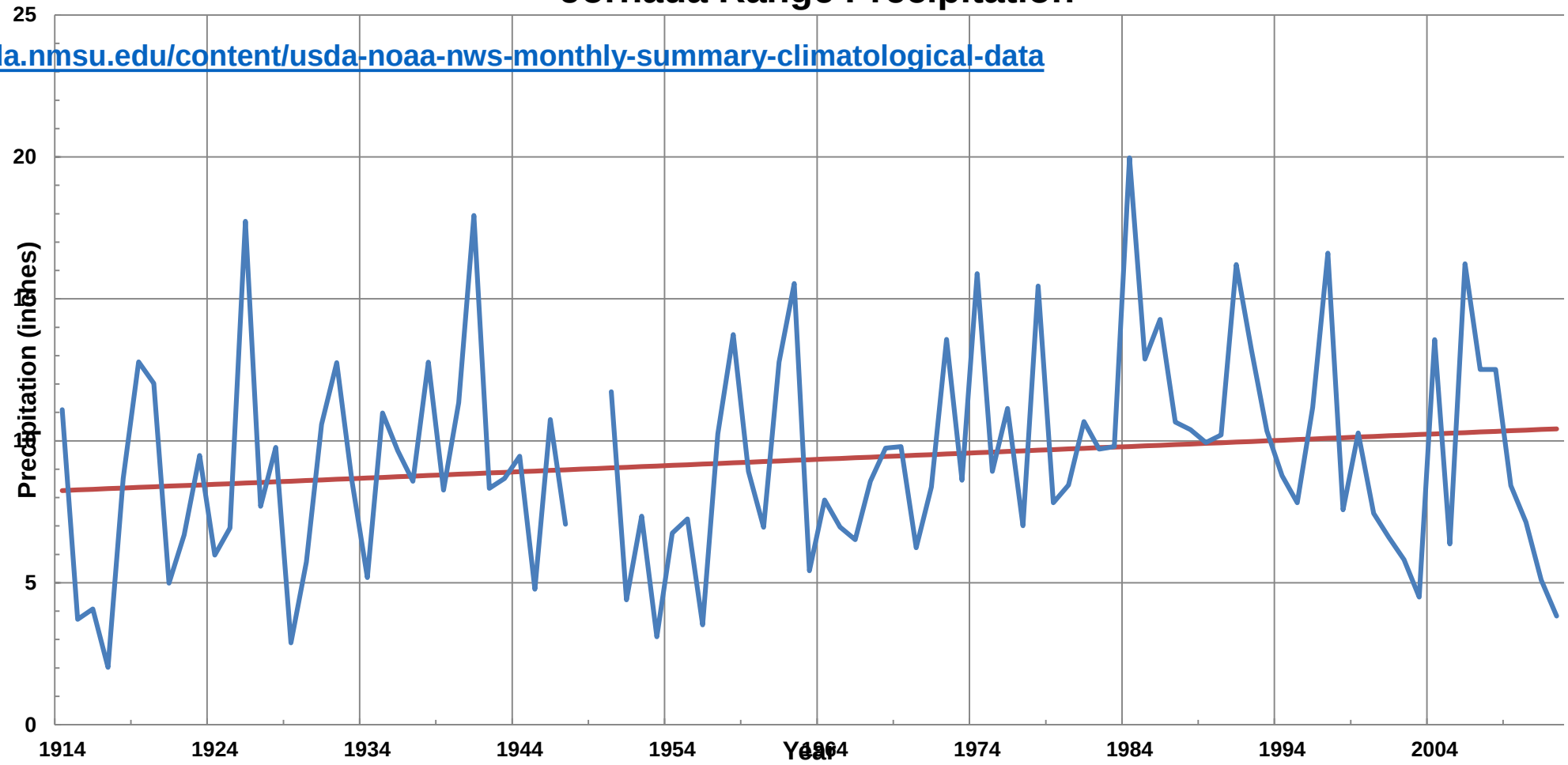


https://waterdatafortexas.org/reservoirs/individual/elephant-butte

Messages with this graphic: PDO-Warm cycle of late 20th century resulted in rainfall maximums of the 1980s-early 1990s, which filled Elephant Butte Reservoir to the brim; year 2000 shift to PDO cold, not more <CO2>, has resulted in drought years.
Low reservoir levels of recent years seems to mimic the low levels during the 1950s droughts, 60 years ago.

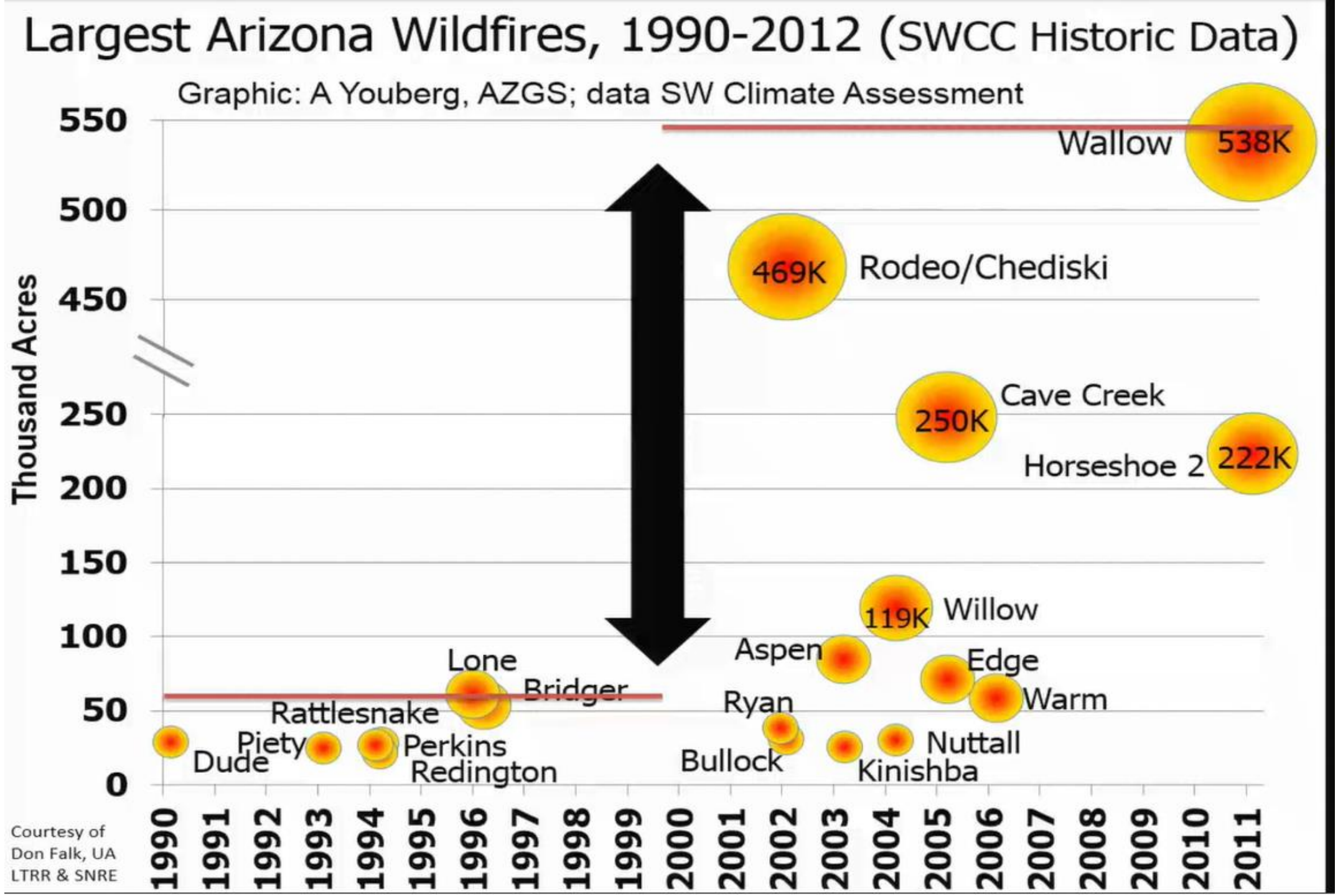
Jornada Range Precipitation

https://jornada.nmsu.edu/content/usda-noaa-nws-monthly-summary-climatological-data



A hundred years of data show that warming is bringing increasing rainfall in Southern New Mexico, as shown from measurements on the Jornada Range.

NCA says increasing <CO2> will bring drier conditions, a projection apparently made with only half a 60-year PDO cycle…very risky speculative long-range forecast.


Largest Arizona Wildfires, 1990-2012 (SWCC Historic Data)
Graphic: A Youberg, AZGS; data SW Climate Assessment
Thousand Acres
550
500
450
250
200
150
100
50
0
Wallow
538K
469K
Rodeo/Chediski
Cave Creek
250K
Horseshoe 2
222K
119K
Willow
Aspen
Edge
Warm
Ryan
Nuttall
Kinishba
Bullock
Lone
Bridger
Rattlesnake
Piety
Perkins
Redington
Dude
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Courtesy of
Don Falk, UA
LTRR & SNRE


Las Conchas
2011
25 Apr 2018 - NMSU
The Nature Conservancy

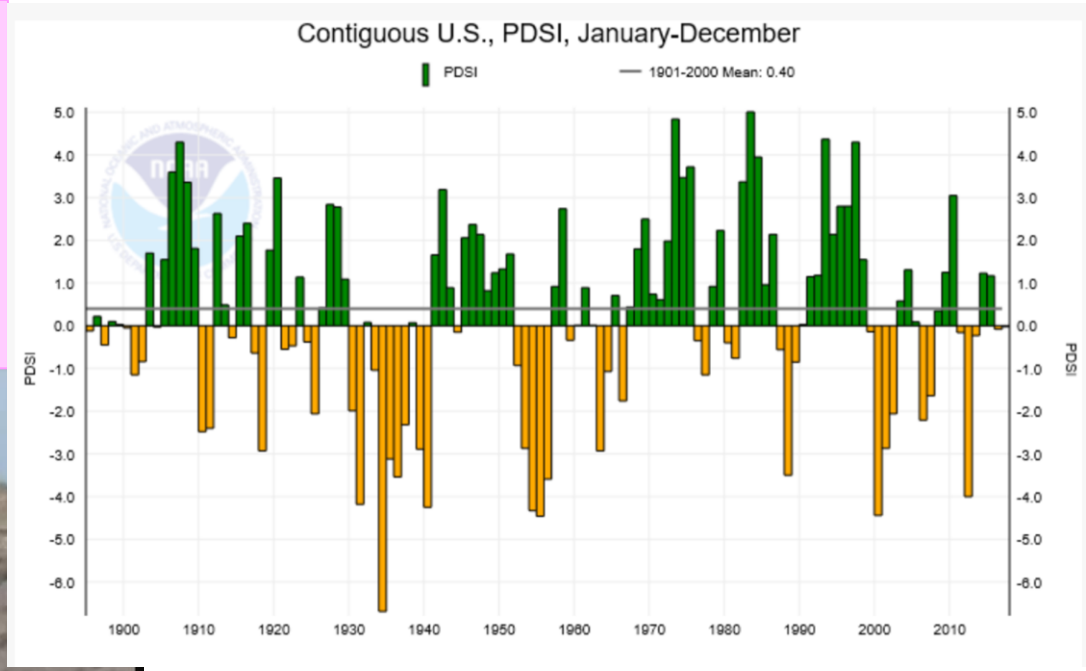
In the western United States, the area burned by wildfire from 1984 to 2015 was twice what would have burned had climate change not occurred.

Abatzoglou and Williams, 2016

At ~23:10 in the Lecture, Dr Garfin correctly says, “we have suppressed fire, and therefore we have increased the density of the forests,” which has affected the intensity of the fires.
What Garfin does not realize is that the increased density of the forests at the same average precipitation has led to the same amount of water on many more trees than can be supported by the soil and rainfall here, leads to an over-abundance of weakened trees and less resilient forests.

At 24:15, Dr Garfin quotes fire managers saying that the Jemez Mountains forest will probably not come back as a Ponderosa Pine Forest but as a Pinon Pine woodland.

Speculation? **Climate at a Glance** showed droughts a lot worse, temperatures higher in Dust Bowl Years.



At this point Dr Garfin speaks about Pine Bark Beetles, increased temperatures, decreased soil moisture and drought causing a “Knock out Punch” for the forests.

Comments on Bark Beetles are ill-informed.

Bark Beetles have been with us at least since the Triassic,
210 million years ago

Damage from Pine Bark Beetles during the Triassic
in Petrified Forest National Park was published by
the Smithsonian Institution…in 1938!

Damage from Bark Beetles is not new news.

Numerous areas in Petrified Forest National Park show bark beetle damage. One such area is on the Giant Logs Trail, southern entrance to the Park.

https://iowaclimate.org/2017/01/08/600-million-year-geologic-record/

Triassic

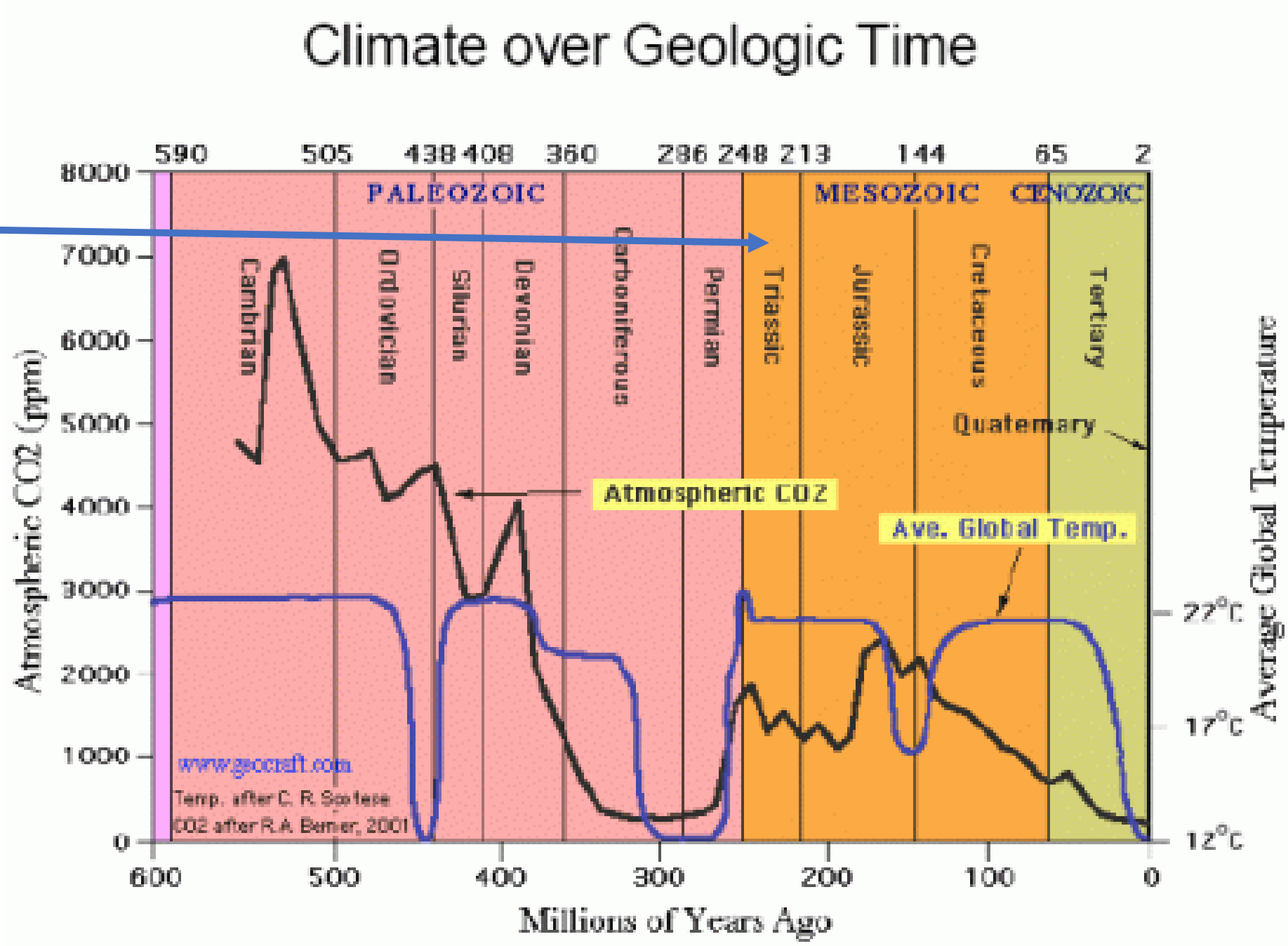


PLATE 3

Ash, Sydney R and Geoffrey R Creber,

The Late Triassic Araucarioxylon Arizonicum Trees of the Petrified Forest National Park, Arizona USA, in *Paleontology, Vol 43*,

https://onlinelibrary.wiley.com/doi/pdf/10.1111/1475-4983.00116

Tracks made by *Paleoscolytus divergus* Walker; Black Forest (of Petrified Forest NP) hammer handle is 0.7 m long.

PROCEEDINGS OF THE UNITED STATES NATIONAL MUSEUM

issued *by the*

SMITHSONIAN INSTITUTION
U. S. NATIONAL MUSEUM

Vol. 85 Washington : 1938 No. 3033

EVIDENCE OF TRIASSIC INSECTS IN THE PETRIFIED FOREST NATIONAL MONUMENT, ARIZONA

By M. V. Walker

"50 percent of the log sections show evidence of being attacked by (bark beetles)"

SUMMARY

As far as I have been able to observe, the only species of tree attacked by the borers is *Araucarioxylon arizonicum*. In no instance has there been found evidence of insect activity in either *Woodworthia* or *Schilderia*, the other two known genera of fossil trees from the Petrified Forest National Monument area.

The large channels of Group 1 resemble somewhat the work of some modern buprestids, and it seems logical to believe that many of the trees were girdled and killed. In that way one might account for such a concentration of logs as occurs at about the 300-foot level in the Chinle of this region, where it is estimated that approximately 50 percent of the log sections show evidence of being attacked by these borers.

http://msuextension.org/stillwater/beta/articles/Ag%20Articles/Managing%20Pine%20Bark%20Beetles.pdf
(Quotes from Montana State University): (editing added)

… forests.. are…killed by Mountain pine beetles when they become overmature or crowded."

"…same factors that have been contributing to large uncontrollable wildfires also have been allowing beetle populations to build: drought and overcrowded forests."

"The key to protecting trees from bark beetles is to keep them healthy."

"Each bark beetle species prefer specific tree species and often tree age groupings."

"Having a landscape covered with dense trees of the same species and age provides beetles with a large food source that can breed epidemic populations."

"…studies have shown that thinning dense groups of trees to an approximate 15 x 15 foot spacing dramatically increases their ability to survive beetle attacks"

The Law of Unintended Consequences' dramatic effects

Actions under the Endangered Species Act to protect the Northern Spotted Owl were not mentioned by Dr Garfin in describing the increasing number and size of fires:

http://www.newsweek.com/why-protecting-northern-spotted-owl-sparks-forest-fires-689546

https://www.hoover.org/research/americas-forest-fire-problem

The long-established policy of putting out all forest fires caused an over abundance and crowding of over-ripe pines, and the subsequent over-abundance of these insects and insect-damaged pines.

This clearly is a human-caused environmental mess, but it has nothing to do with greenhouse gases or slight warming of the present climate.

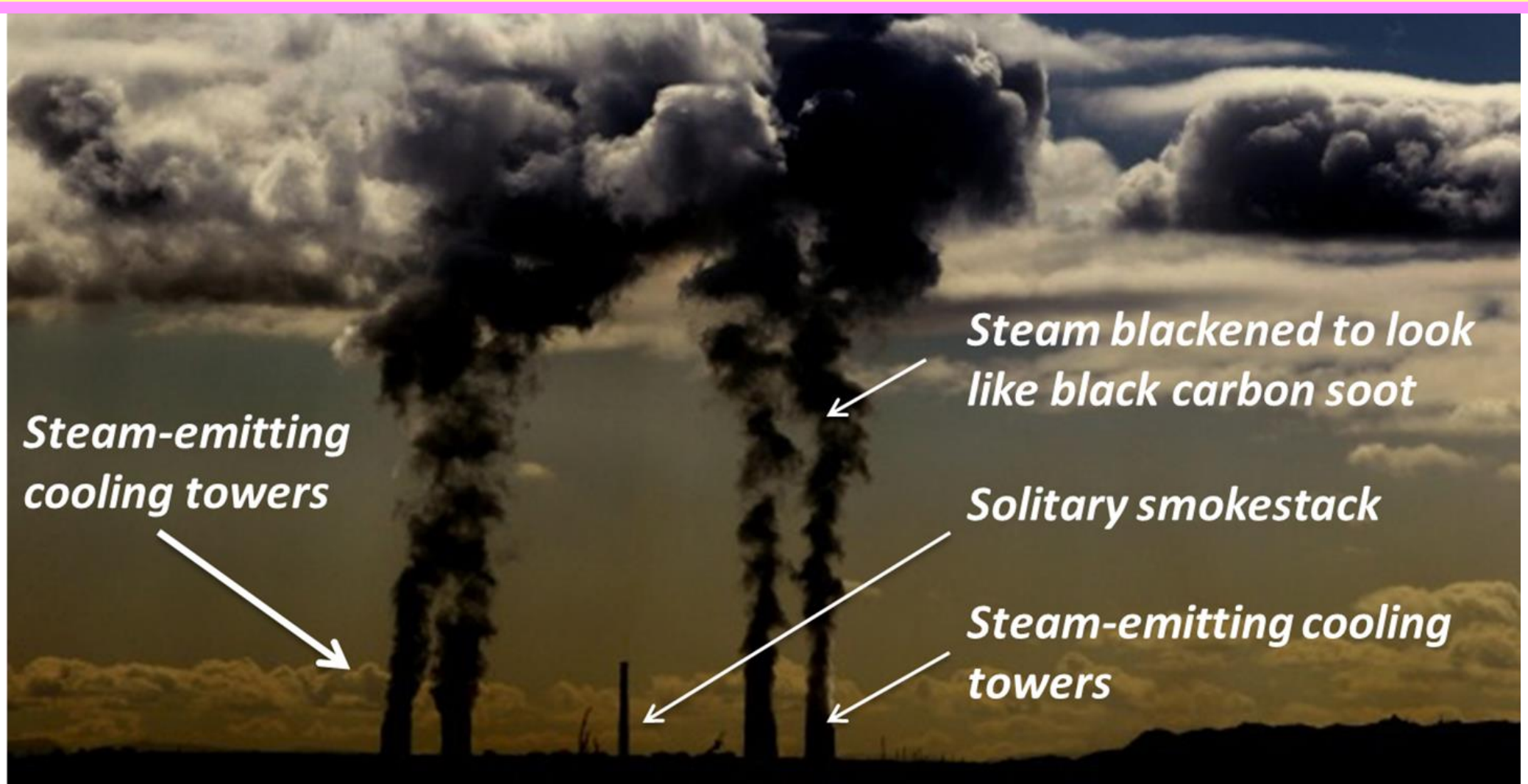
Future Emissions

Where did Dr Garfin get this image?

Seems more like propaganda than instructive

Resembles propaganda used by Climate Alarmist organizations, as seen next:

http://notrickszone.com/wp-content/uploads/2015/02/SMH-propaganda2.png Image from Australia.
Note how the water vapor emitted by the power plant's cooling towers is a sinister black. Since when are water droplets black?
Writer obviously is unable to distinguish between the smoke stack and the cooling towers.
The scant emissions from the single smokestack in the center of the image shows just how clean coal power plants have become.



The Press in Germany shows its colors

Original Photo

Edited by Der Spiegel

Example of emotional message using deep orange colors similar to used in
Dr Garfin's graphic.

http://www.stuff.co.nz/science/7193129/What-global-warming-really-looks-like

Alarmist view of the Waldo Canyon Fire, Colorado Springs, 29 June 2012

My View: Man-caused reasons for this, and it is not <CO2>

1. **Accumulation of fire fuel with decades of insufficient tree harvest.**
2. **Windy day at the end of the dry season during an extended La Nina Drought**
3. **Terrorism by Arson:**
4. https://www.youtube.com/watch?v=SFHM0rd9cX8&feature=share&fb_source=message

https://elpasoheraldpost.com/el-paso-electric-welcomes-commercial-operation-new-generating-unit/

El Paso Electric (EPE) welcomes the completion of the newest power generating unit at the Montana Power Station (MPS) located in east El Paso, Texas.
This is the third unit with an 88-megawatt (MW) turbine powered by natural gas at MPS.
Unit 3 was completed on-time and on budget and will provide electricity to more than 40,000 homes.
MPS Unit 3 follows the completion of Units 1 and 2, which became operational in March of 2015.

Right is the coal-fired Navajo Generation Station near Page, AZ, scheduled to close In 2019, putting the Kayenta Mine and its mostly Navajo workers out of work.

Navajo Generation Station was constructed in 1974.

This shows that Dr Garfin's graphic was used for emotion of the orange color and darkened droplet plumes.

Such use is not educational. It is propaganda.

Dr Garfin uses this Katherine Hayhoe quote as a paragon of excellence in climate forecasting.

The choice of Katherine Hayhoe as a prognosticator of future events is particularly poor.

Choosing this particular quote shows a complete lack of appreciation of the periodicity of the western US and Texas precipitation patterns which are governed by a multi-year weather event, El Nino, sometimes called El Nino Southern Oscillation, or ENSO.

Recall that Dr Garfin did not use the terms “cycle” or “climate cycle.”

First, let’s review El Nino and La Nina patterns for the USA.

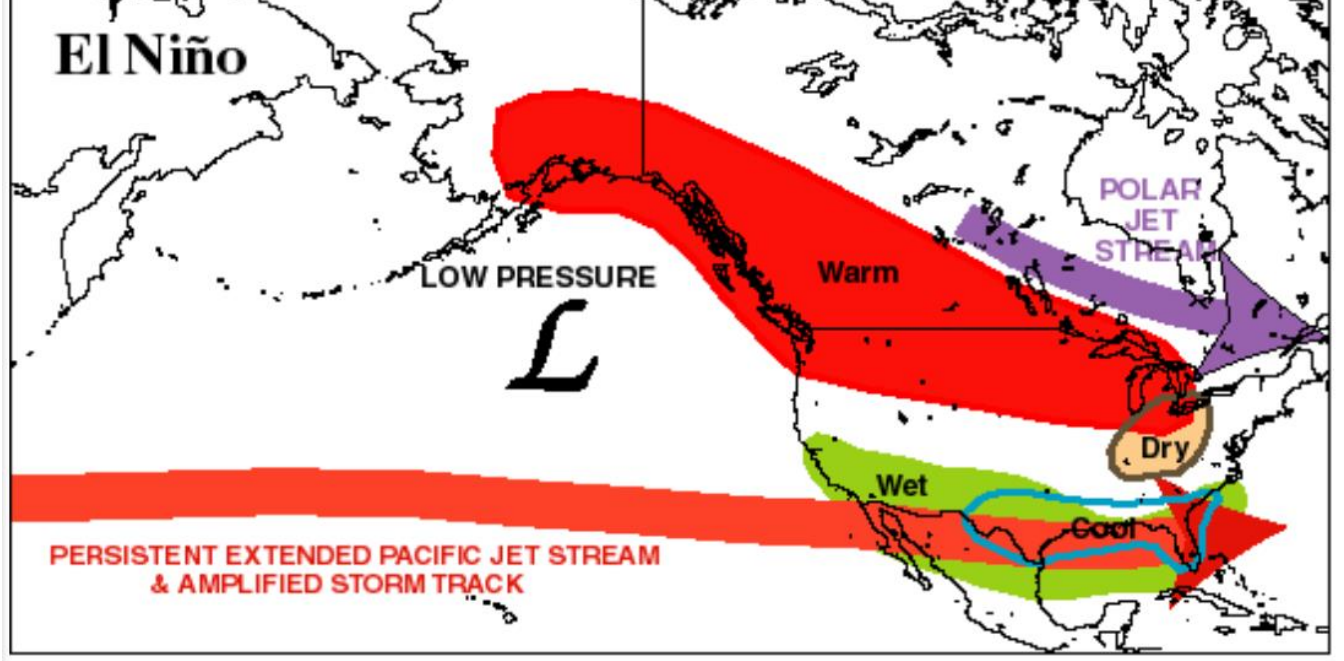
http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensocycle/nawinter.shtml

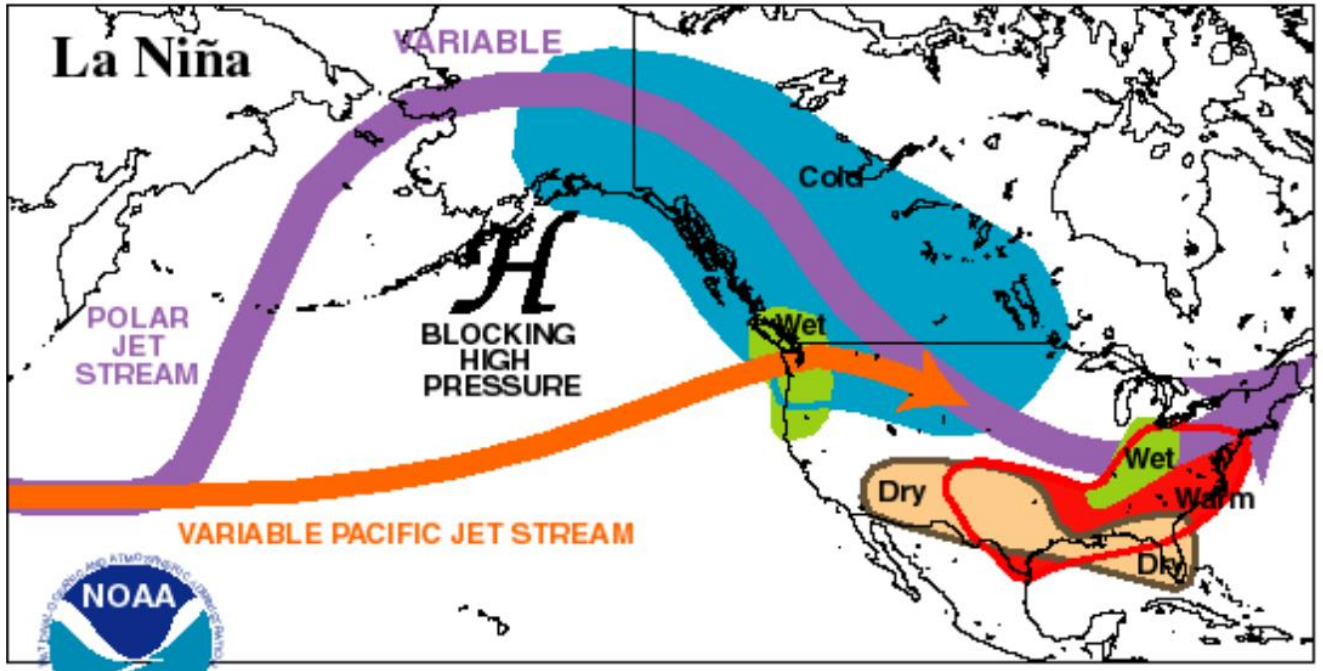
NOAA's Climate Prediction Center diagnostic graphics for El Nino and La Nina

Top right shows when El Nino is present, wet conditions persist from California to the Carolinas to Florida.

Bottom right shows when La Nina is present dry conditions occur from Arizona to South Carolina and Florida.

This has important implications for the Western states, especially New Mexico and Texas.





Following sequence shows one of Katherine Hayhoe's "desertification of Texas" forecasts, perhaps a prognostication she made in early 2015, exactly when the principal indicator of El Nino had changed to positive for several months...
http://origin.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/ONI_v5.php

El Ninos tend to bunch up in Pacific Decadal Oscillation-Positive phases, with more than average precipitation.

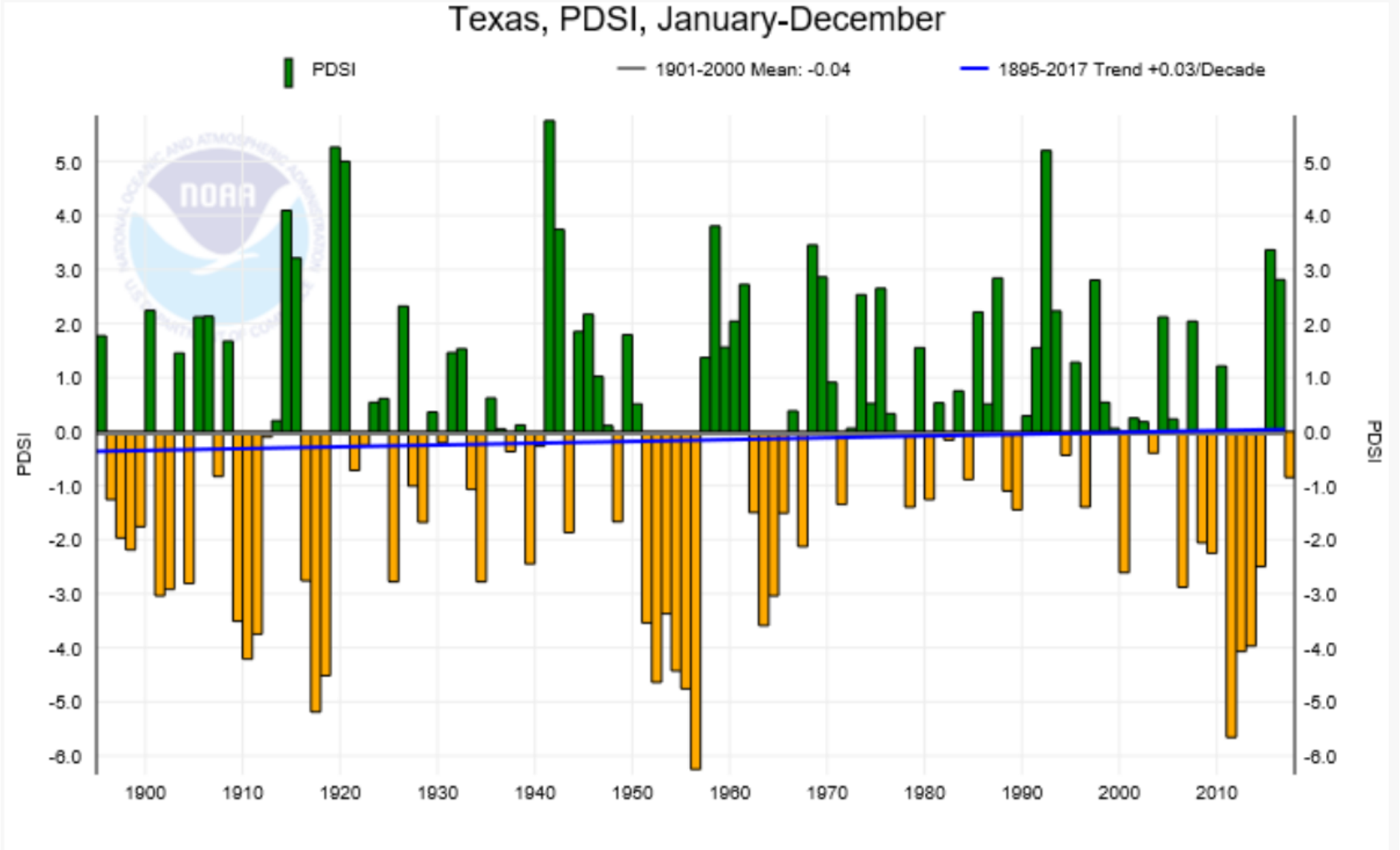
La Ninas also tend to bunch up in the PDO-Negative phase with much less that average drought periods.

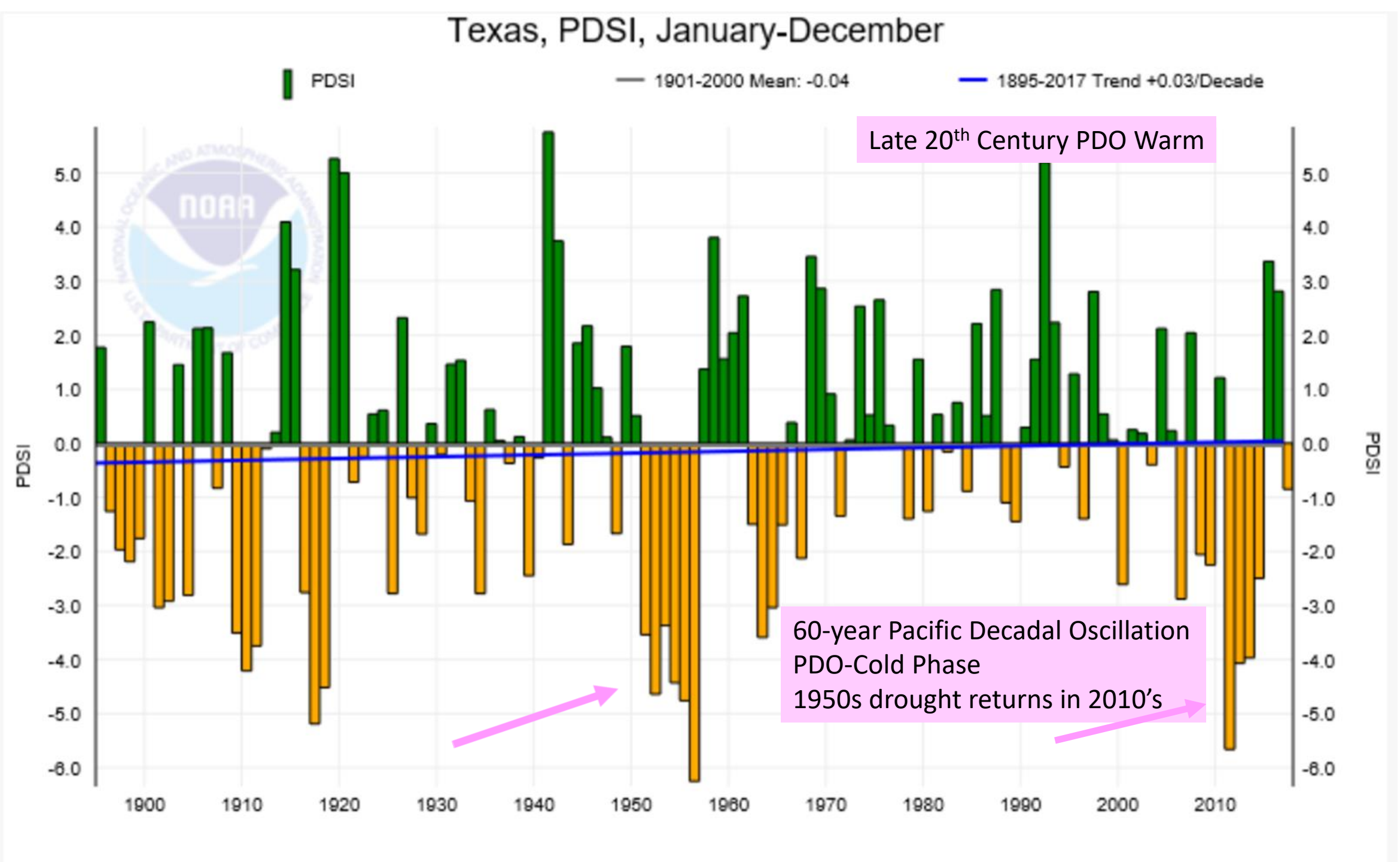
These periods show up in plots of the Palmer Drought Severity Index, PDSI, available from NOAA's "Climate At a Glance" web page: https://www.ncdc.noaa.gov/cag/global/time-series

The full 60-year cycle of the Pacific Decadal Oscillation are seen in PDSI plots for Texas which follow. NOAA's Climate At a Glance page allows the user to plot the data, and for each plot the page generates the link to the data; this link appears in the graphics which follow.

Texas Climate Division 1 is the High Plains of Texas; this choice comes from the specific and recent (2015) prognostication by Katherine Hayhoe in The New Republic.

https://www.ncdc.noaa.gov/cag/statewide/time-series/41/pdsi/12/12/1895-2018?base_prd=true&firstbaseyear=1901&astbaseyear=2000&trend=true&trend_base=10&firsttrendyear=1895&lasttrendyear=2018




Texas, PDSI, January-December
PDSI
1901-2000 Mean: -0.04
1895-2017 Trend +0.03/Decade
Late 20th Century PDO Warm
60-year Pacific Decadal Oscillation
PDO-Cold Phase
1950s drought returns in 2010's
PDSI
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010

https://newrepublic.com/article/121558/what-climate-change-doing-texas-cattle-ranch **22 April 2015**

…Soon, environmental activists and reporters began to ask whether “drought”—a temporary weather pattern—was really the right term for what was happening in the state, or whether “desertification” was more appropriate.

“We’re on our fourth year of drought,” Katharine Hayhoe, director of the climate science center at Texas Tech University in Lubbock, told the industry magazine Meatingplace.

If Katherine Hayhoe had knowledge of the PDO and had looked at the previous PDSI chart, she might have known that there were six straight years of drought in Texas in the 1950s drought.

The 2011-2014 drought, at only four years length, was weaker than the 1950s drought…
(~312 PPM <CO2>)

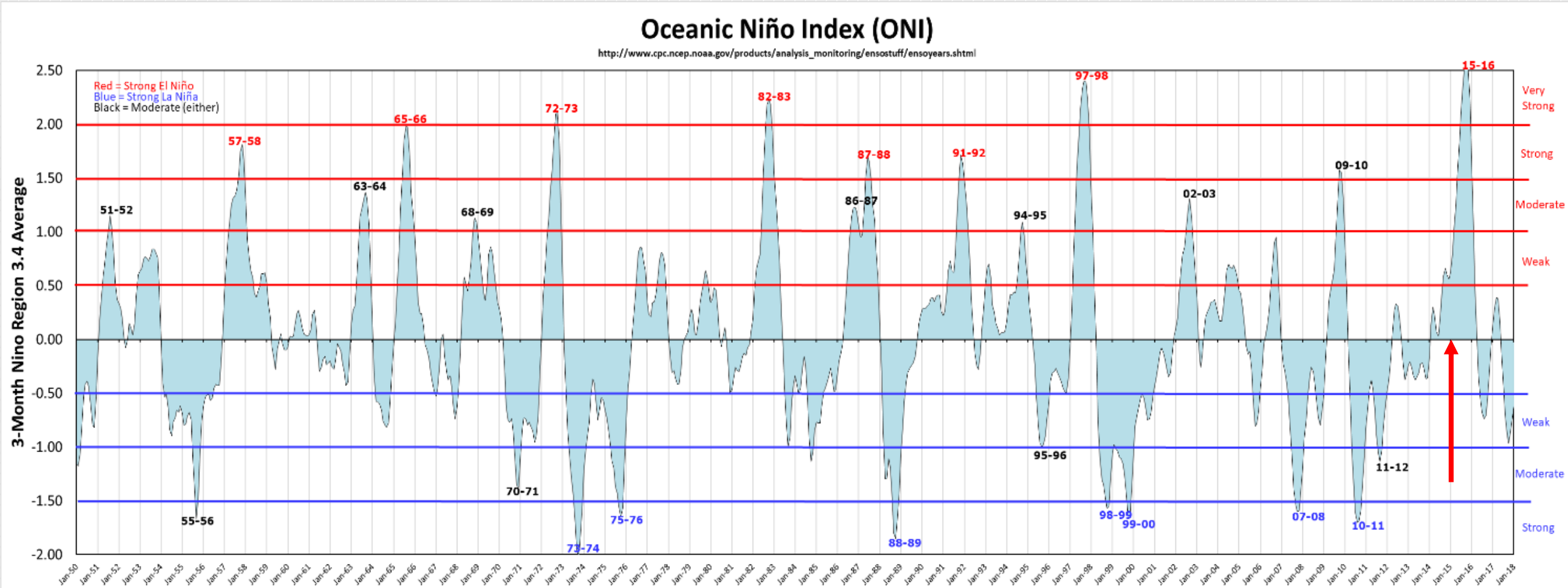
A principal ENSO diagnostic, the Ocean Nino Index, showed there was an excellent chance that El Nino was coming because **ONI had shifted to positive** months before her April 2015 comment in The New Republic.
http://origin.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/ONI_v5.php
Plots are in 3-month averages, e.g., DJF means December-January-February…

Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2010	1.5	1.3	0.9	0.4	-0.1	-0.6	-1.0	-1.4	-1.6	-1.7	-1.7	-1.6
2011	-1.4	-1.1	-0.8	-0.6	-0.5	-0.4	-0.5	-0.7	-0.9	-1.1	-1.1	-1.0
2012	-0.8	-0.6	-0.5	-0.4	-0.2	0.1	0.3	0.3	0.3	0.2	0.0	-0.2
2013	-0.4	-0.3	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.3	-0.2	-0.2	-0.3
2014	-0.4	-0.4	-0.2	0.1	0.3	0.2	0.1	0.0	0.2	0.4	0.6	0.7
2015	0.6	0.6	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.5	2.6

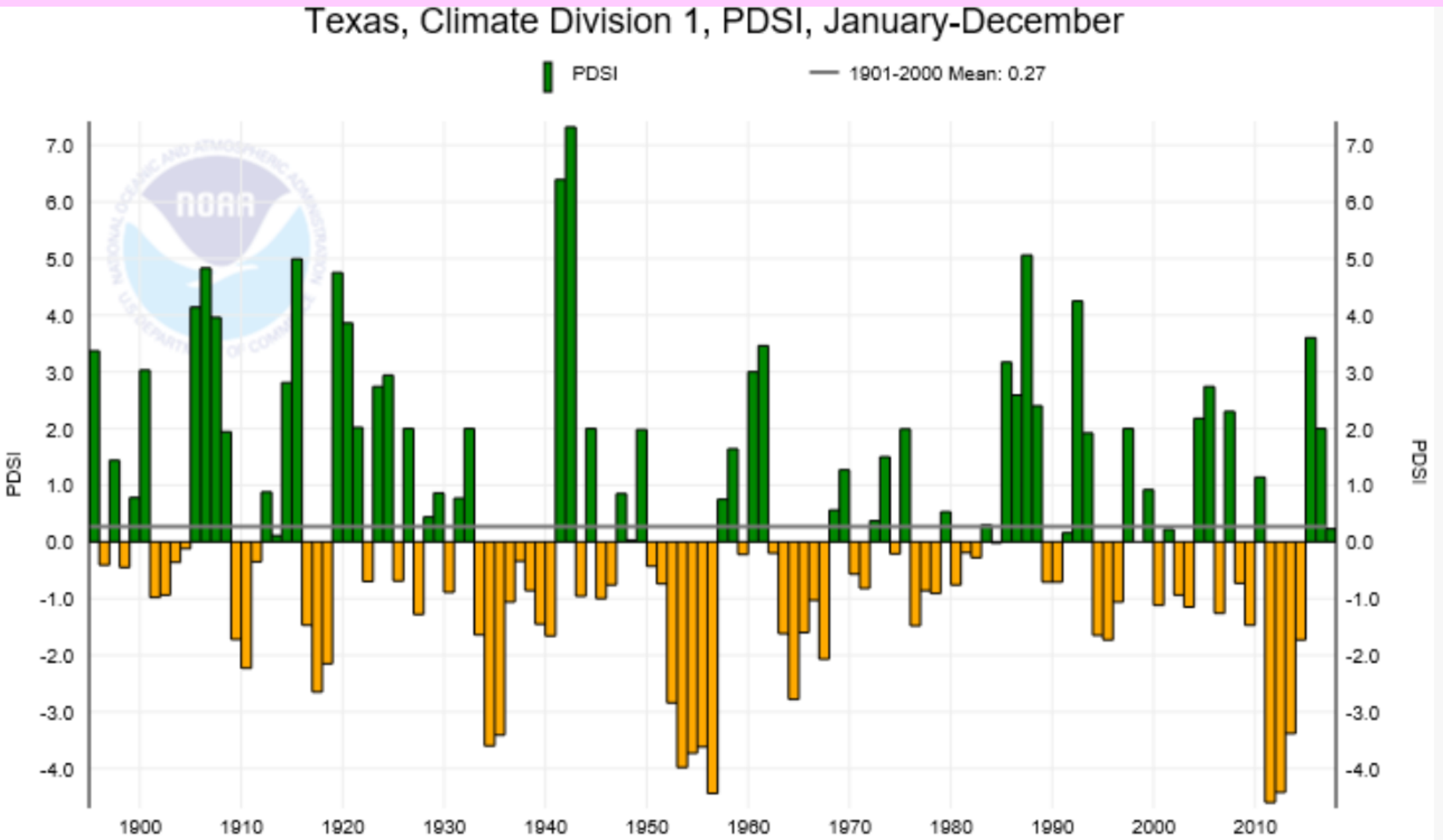
Blue numbers are La Ninas, Black are ENSO-Neutral, neither El Nino or La Nina, and Reds are El Ninos

http://ggweather.com/enso/oni.htm The Ocean Nino Index is a widely-used diagnostic of the El Nino-Southern Oscillation (ENSO) a weather event which takes up to seven years for a complete cycle. ONI data are published monthly by NOAA. The red arrow in the time series of ONI below is at 1 Jan 2015 indicating the onset of El Nino.

The article in which Katherine Hayhoe is quoted as acknowledging “desertification of Texas” was published on 22 April 2015. That Katherine Hayhoe would not know that the ONI index had shifted to a distinct El Nino condition in early 2015, foretelling the possibility of strong rainfall in Texas in the upcoming months shows her ignorance of ENSO, which accounts for the strong periodicity of precipitation and drought in Texas.



https://www.ncdc.noaa.gov/cag/divisional/time-series/4101/pdsi/12/12/1895-2018?base_prd=true&firstbaseyear=1901&lastbaseyear=2000



Mere weeks after The New Republic quoted Katherine Hayhoe
and printed the comment about “Desertification of Texas,” on 22 April 2015,
twenty-four people died in the flooding of Blanco Creek, Texas, in May 2015.

https://www.sciencedirect.com/science/article/pii/S2214581817302124

“Unprecedented rainfall across the state of Texas in May 2015 produced flooding that claimed at least 24 lives across the state.

The most devastating single event over this period occurred on 23–24 May along the Blanco River, where a fast moving floodwave resulted in eleven fatalities in the town of Wimberley.
The storm event resulted in the flood of record at the USGS gauge in Wimberley which has collected data since the 1920s.”

https://stevengoddard.wordpress.com/2015/05/23/one-month-since-katherine-hayhoe-discussed-the-desertification-of-texas/

https://www.cbsnews.com/news/homes-washed-away-deadly-texas-flooding-blanco-river/

Hundreds of homes washed away by deadly Texas flooding

A cabin is destroyed on the banks of the Blanco River after flooding in Wimberley, Texas, United States May 24,

https://www.ksat.com/content/wimberley-floods-a-year-later-timeline-recap-of-tidal-wave-of-water

Image courtesy: National Weather Service

"…Wimberley and San Marcos were ravaged by what was called a "tidal wave" along the Blanco and San Marcos rivers.

Thirteen fatalities were reported across the affected area…"

https://www.cnn.com/2015/06/07/us/texas-flooding/index.html

Another body found in Texas flood debris

22 April 2015 The New Republic publishes a story in which Katherine Hayhoe is quoted as agreeing with the notion of ongoing "Desertification of Texas."

The very next month Texas had the wettest month on record.

On 25 April 2018, Dr Garfin quoted Katherine Hayhoe as a paragon of excellence in Climate prediction methodology

Photos: Texas Flooding.
The Fischer Store Road Bridge near Wimberly was destroyed by flooding on May 24th

Torrential rains have given Texas the wettest month on record, according to Texas A&M climatologists. In all, 37.3 trillion gallons of water has fallen over the state in May, the National Weather Service said.

Editorial Comments:

Using Katherine Hayhoe as a reference with her snarky comment is an indication of the “Climate Science” community’s arrogance and ignorance of the fundamentals of Earth Science.

Don Easterbrook, http://www.kaltesonne.de/temperatures-over-the-past-10000-years/

Easterbrook is a geologist who has made accurate climate forecasts based on his observations of glacier and glacial moraines in Washington State.

Hayhoe is a “Climate Scientist” who, before the 2015-16 El Nino, forecast the “Desertification of Texas.” It’s right here:

https://newrepublic.com/article/121558/what-climate-change-doing-texas-cattle-ranch

If the climate science community wants snarkiness, how about asking the family members of the 24 people who died In the flooding of Blanco Creek in Texas, in May 2015.

https://www.sciencedirect.com/science/article/pii/S2214581817302124

“Unprecedented rainfall across the state of Texas in May 2015 produced flooding that claimed at least 24 lives across the state. The most devastating single event over this period occurred on 23–24 May along the Blanco River, where a fast moving floodwave resulted in eleven fatalities in the town of Wimberley. The storm event resulted in the flood of record at the USGS gauge in Wimberley which has collected data since the 1920s.”

https://stevengoddard.wordpress.com/2015/05/23/one-month-since-katherine-hayhoe-discussed-the-desertification-of-texas/

In the western United States, the area burned by wildfire from 1984 to 2015 was twice what would have burned had climate change not occurred.

Abatzoglou and Williams, 2016

Let's examine the claim, "In the western US, the area burned by wildfires **from 1984 -** 2015 was twice what would have burned had climate change not occurred."

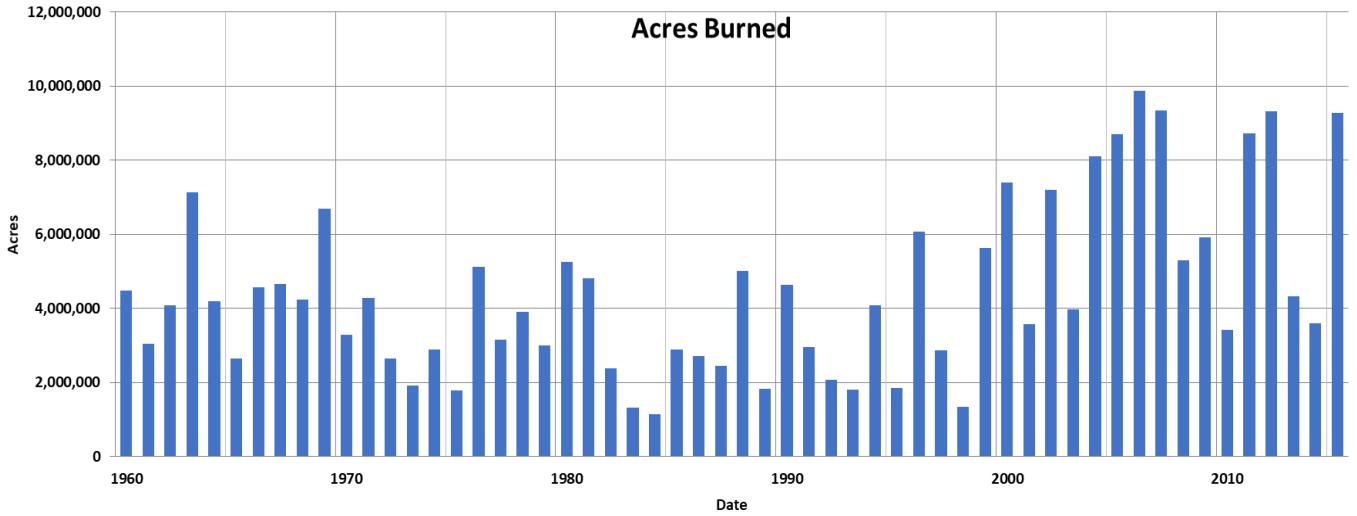
Pacific Decadal Oscillation is about 60 years for a complete cycle.

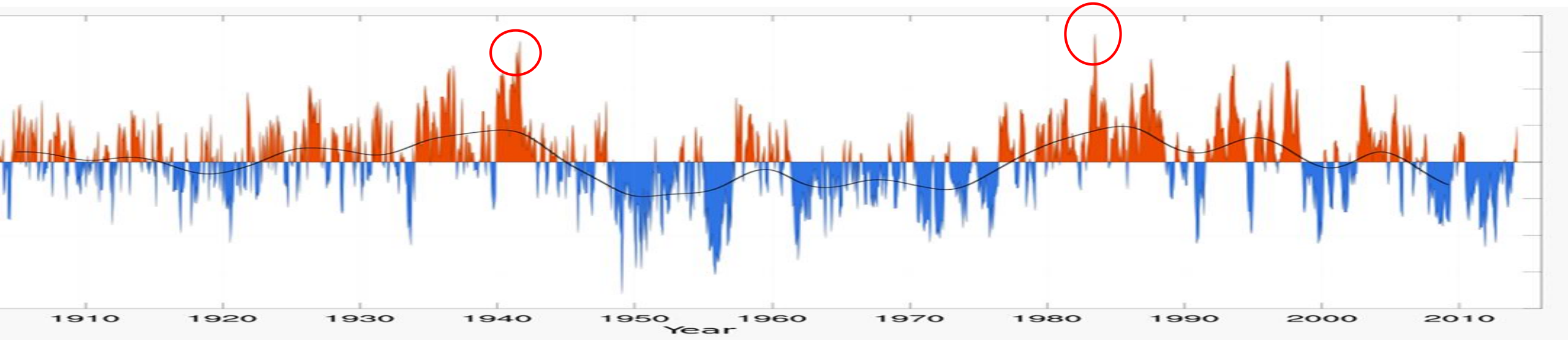
Period 1984-2015 is only 31 years, half a cycle.

Right: burn area of fires from https://www.nifc.gov/
Below: PDO index
https://en.wikipedia.org/wiki/Pacific_decadal_oscillation#/media/File:PDO.svg

Peaks in 1941 and 1983, with circles.

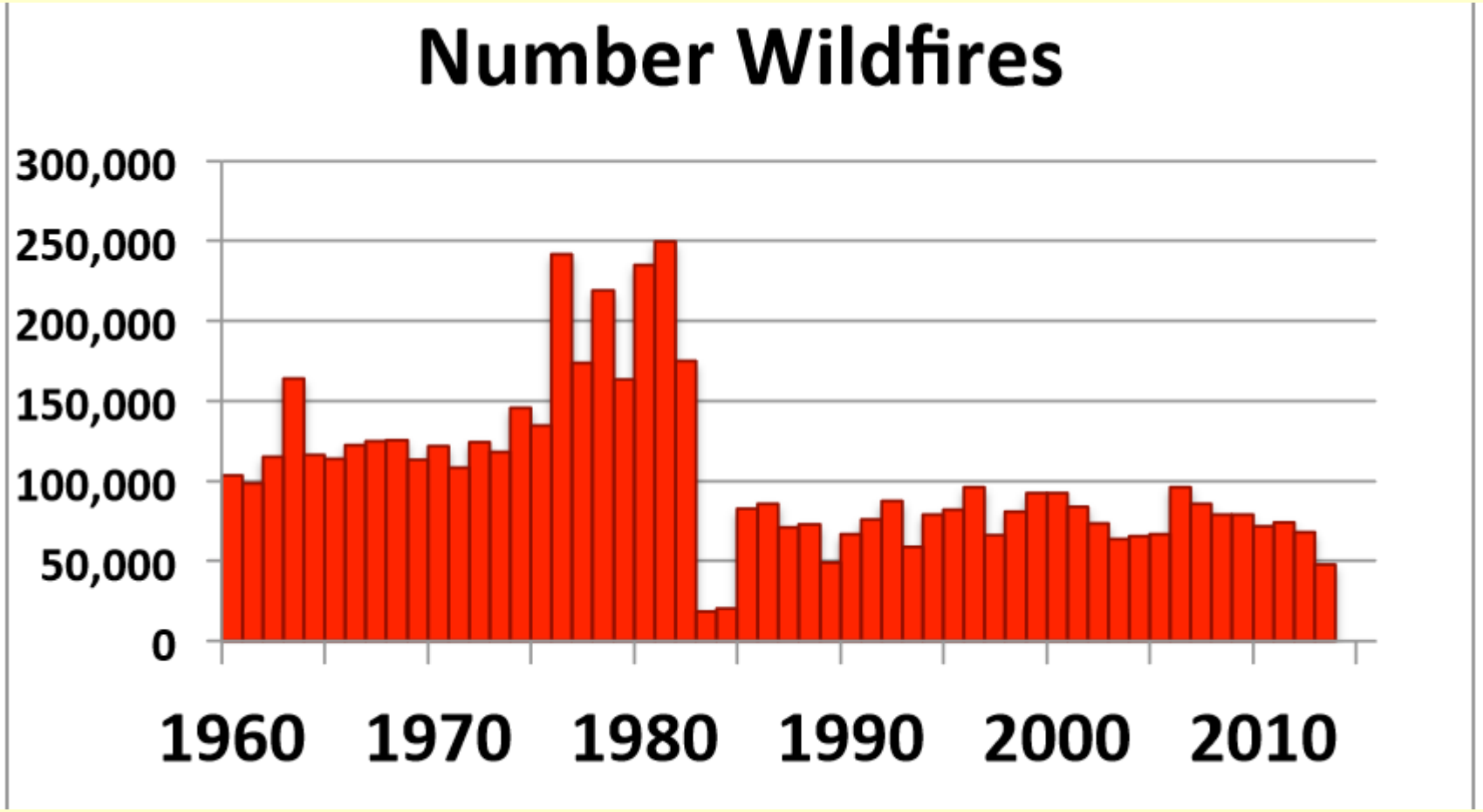
National Interagency Fire Center: Acres burned since 1960.



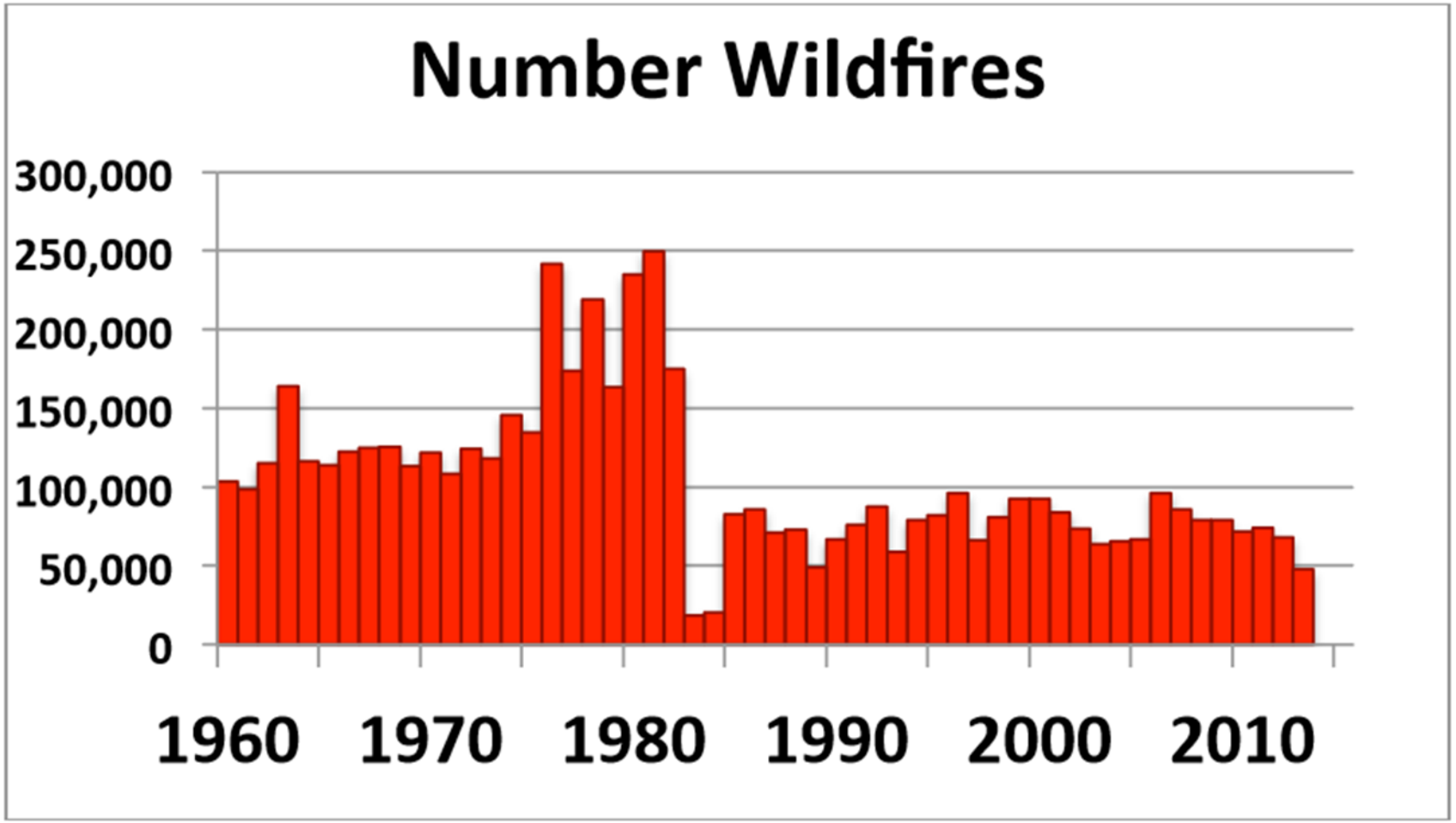


Brief Sidebar

https://docs.house.gov/meetings/SY/SY00/20160202/104399/HHRG-114-SY00-Wstate-ChristyJ-20160202.pdf



Above: Number of U.S. wildfires. As the management of these events changes, and thus the number also changes, but the number of events since 1985 has remained constant. (National Interagency Fire Center.) https://www.nifc.gov/fireInfo/nfn.htm



In my email to Dr Garfin, I noted an apparent error in this section https://nca2014.globalchange.gov/report/regions/southwest , specifically, this quote:
“There is mounting evidence that the combination of human-caused temperature increases and recent drought has influenced widespread tree mortality, increased fire occurrence and area burned, and forest insect outbreaks (Ch. 7: Forests).”

End Sidebar

1983 was the peak of the PDO-Warm phase of the late 20th century, and resulted in extremely wet conditions in USA Mountain West. The resulting peak runoff of 1983 severely affected the entire Colorado River Dam system.
These images show how close the Glen Canyon Dam came to being catastrophically effected.

Water got so high at Glen Canyon Dam that a plywood flashboard was improvised to prevent overtopping of the spillway gate
Left: https://en.wikipedia.org/wiki/Risks_to_the_Glen_Canyon_Dam#/media/File:Glen_Canyon_Spillway_Gates.jpg
Right: http://geotripper.blogspot.com/2017/02/liveblogging-deluge-concerns-panic-at.html

During the entire lifetime of Lake Mead behind Hoover Dam, the highest water mark was set in 1983, "… it was during the summer of 1983 that the Bureau of Reclamation almost lost control of the Colorado River to a rampaging flood." http://articles.latimes.com/1995-10-29/magazine/tm-62672_1_hoover-dam

1983 was also the year the spillway tunnels at Glen Canyon Dam were used and red-rock-stained water came out of the downriver spillway tunnel exits when the rampaging waters caused hydraulic instability in the tunnels which failed internally (image lower right).

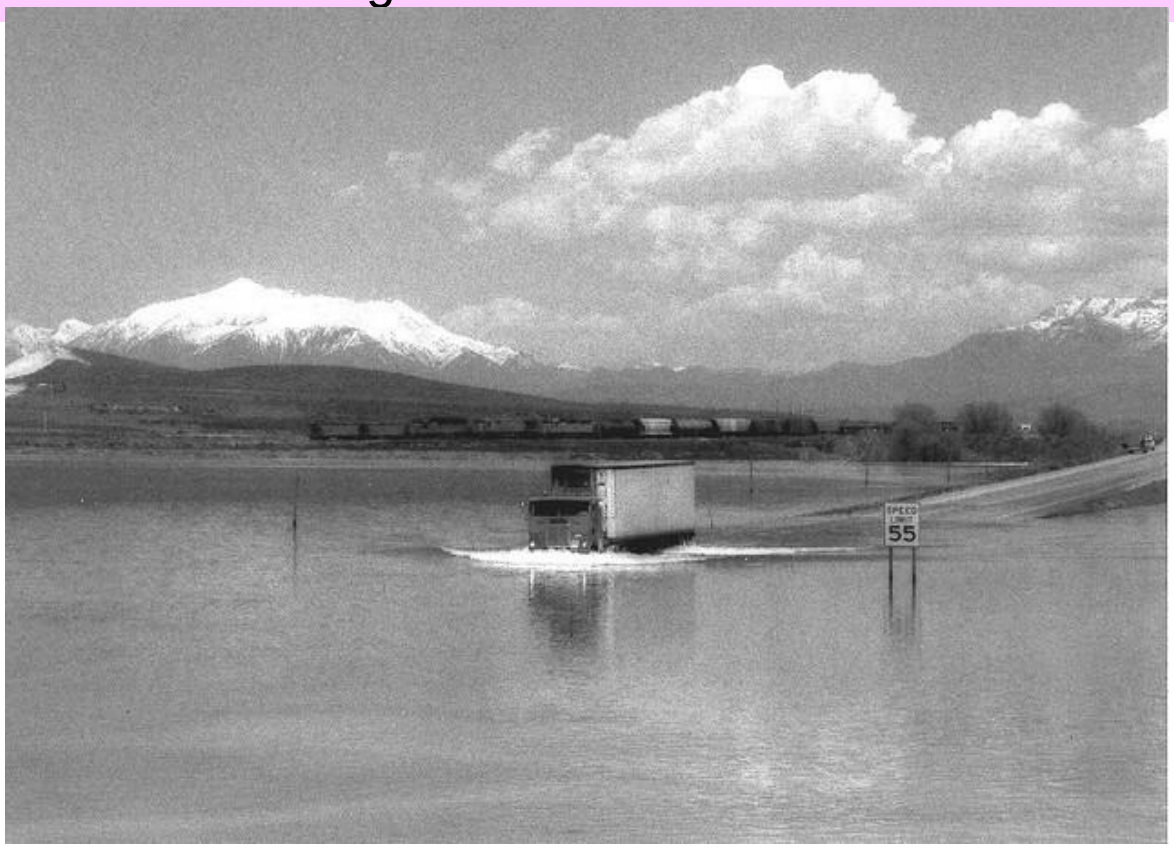
'L/z.gif

Geology, The Flood of 1983.
http://www.ipernity.com/doc/289859/33010005/in/album/45393

Damaged spillway tunnel at Glen Canyon Dam, 1983. http://geotripper.blogspot.com/2017/02/liveblogging-deluge-concerns-panic-at.html

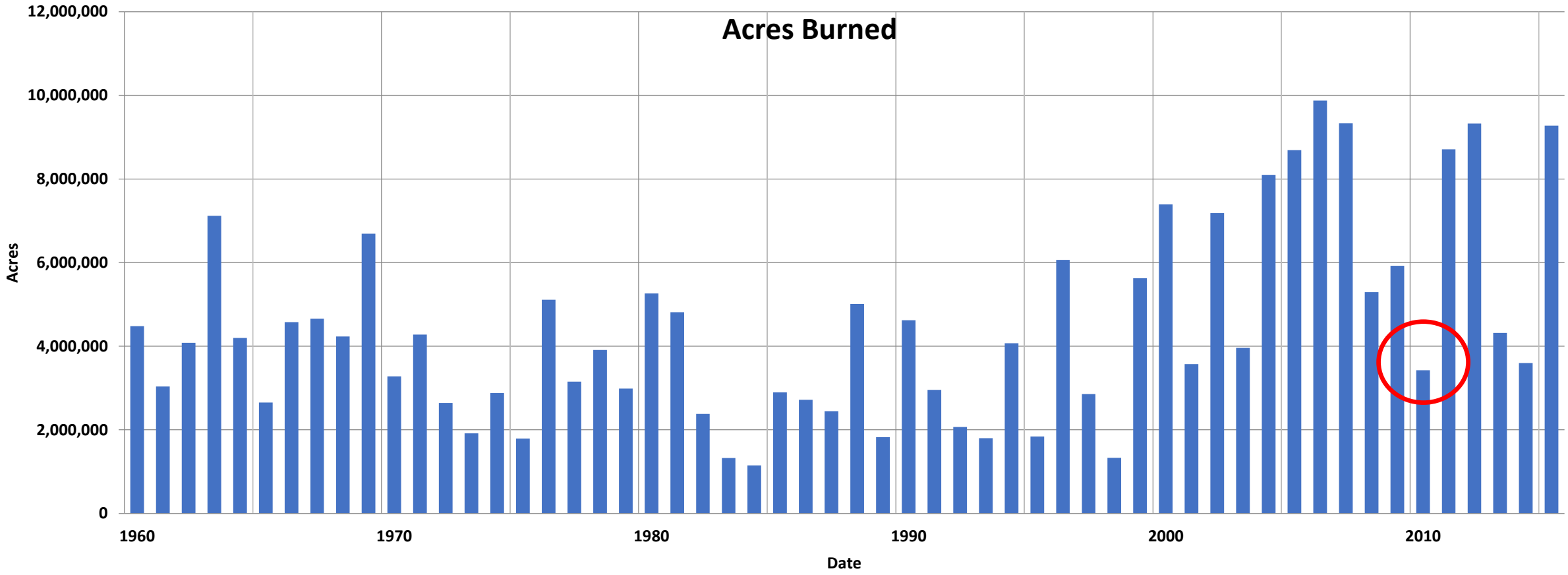
Peak PDO index 1983; claim of (human-caused CO2-fueled climate change) began 1984. This is cherry- picking, not science.

Below: Flooding of Great Salt Lake over I-15 in Utah showing extreme precipitation's dramatic effects



I-15 Near Levan, Utah, May 1983. Salt Lake has risen over the Interstate. https://www.ksl.com/?sid=15229426 "From the Archives, May, 1983 Flooding"

Springville, Utah, exit flooding, May, 1983, http://picssr.com/photos/countylemonade/interesting/page9?nsid=33970903@N02



https://www.nifc.gov/

The period 1984 to 2007 was characterized by a rising number of acres burned.
A clue in this chart: the number of acres burned dropped sharply in 2010; see circle.
2010 was a moderate El Nino year, and the lowest number of acres burned since 2000.

Analysis: “In the western United States, the area burned by wildfire from 1984 to 2015 was twice what would have occurred had climate change not occurred.”

During the PDO-Warm period of the late 20th Century, the 1983 minimum fire area corresponds to the highest PDO Index values, (and highest red spike in the index time series). (Red Circle)

As PDO decreases, especially after it goes into PDO-Cold after 2000, the number of fires increases.

Examine the moderate El Nino year of 2010 (Blue Circle). The acres burned correspond to a local minimum.

These indicators show that natural variations in ENSO and PDO correspond to changes in Mountain West Rainfall, changes in fuel moisture content, and acres burned.