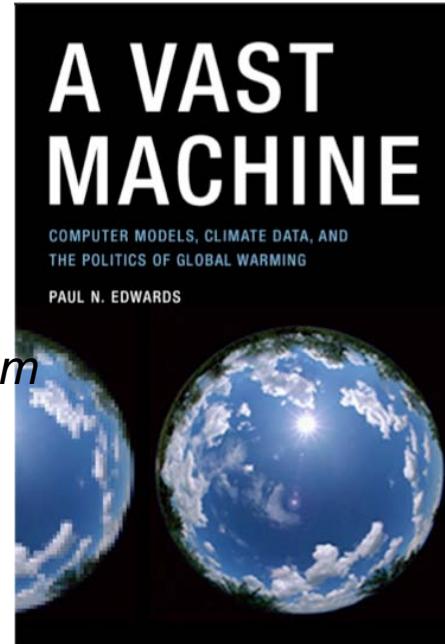


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Les controverses climatiques aux EUA: la politique des données *climate controversies in the USA: the politics of data*

Paul N. Edwards

School of Information, University of Michigan

Un peu d'histoire

a little history

- ▶ 2 moyens d'étudier le climat: les modèles et les données
 - 2 ways to study climate: models and data*
- ▶ 1960s: premiers modèles climatiques
- ▶ 1970-1995: les modèles dominent la question du changement climatique
 - models dominated the question of climate change*
- ▶ 1995: GIEC, “la plupart de l'evidence....”
 - IPCC: “the balance of evidence” shows GW is occurring and is anthropogenic*
- ▶ 2000-présent: un changement important... les sceptiques attaquent les données
 - ▶ si les données peuvent être montreées faussent ou très incertaines, il n'est pas nécessaire qu'on réagit

L'unité de sondage par micro-ondes (MSU) *the microwave sounding unit*

- ▶ Un capteur micro-ondes monté sur une satellite
 - ▶ 1979-présent: 9 capteurs différents
- Microwave sensor; 9 different instruments since 1979*



L'unité de sondage par micro-ondes (MSU) *the microwave sounding unit*

- ▶ Premières interprétes de ces données: l'Université d'Alabama à Huntsville (UAH)
UAH: first interpreters of these data
- ▶ 1995: selon UAH, les données MSU montre un refroidissement planétaire à -0.06°C par décennie dans la troposphère basse
UAH says that MSU data show a slight global cooling of about -0.06°C per decade in the lower troposphere



John Christy



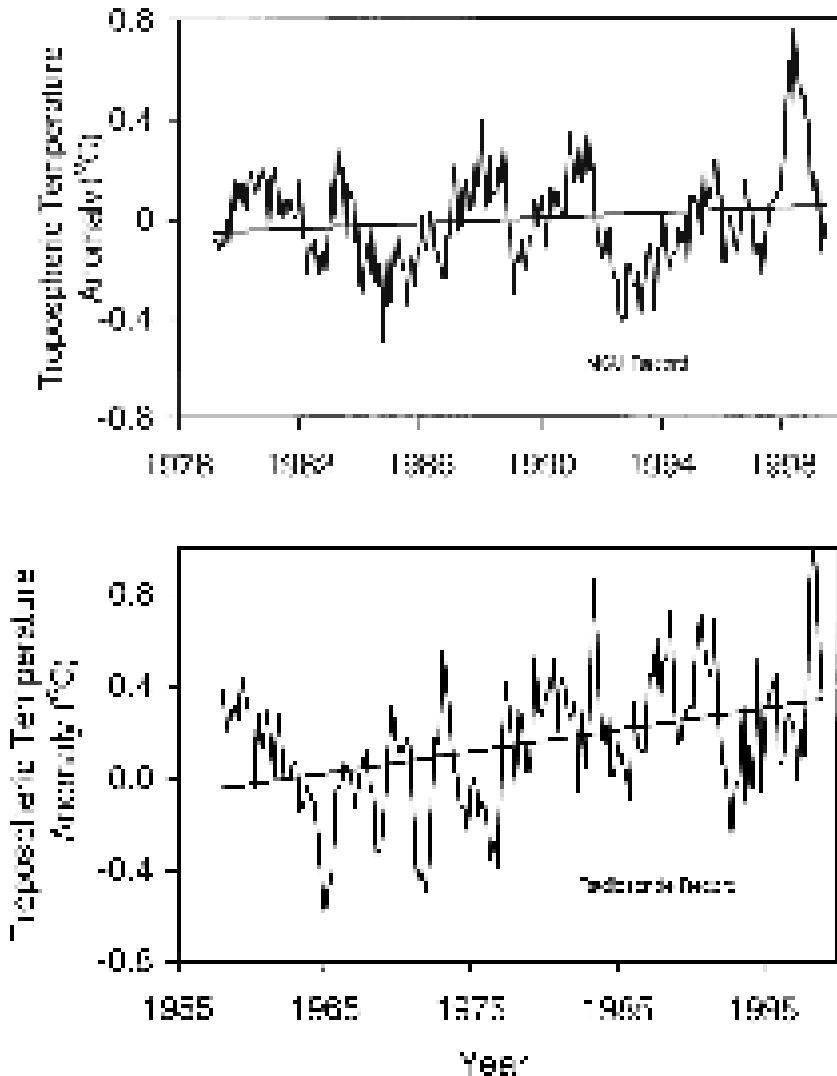
Paul N. Edwards 28 October 2010

Les auditions sur l'intégrité de la science, 1995

- ▶ 1994: 104^{eme} Congress: le soi-disant “révolution Républicaine”
 - ▶ “Les programmes de recherche scientifique doivent chercher et se laisser guider par des données empiriquement sensées”
“Science programs must seek and be guided by empirically sound data”
 - ▶ Sous-entendu: *pas par les modèles et les théories implied: not by models or theories*
 - ▶ Les sceptiques: les données MSU réfutent la réchauffement planétaire
 - ▶ Christy 1995: “Hurrell et Trenberth évaluent la température de l’atmosphère à partir d’un modèle simple de régression linéaire..., et d’un modèle climatique planétaire, ... mais les données du MSU mesure directement la température de l’atmosphère libre”
“others use models to estimate the temperature, but the MSU actually measures the temperature of the free atmosphere”
- ▶ 5 Paul N. Edwards 28/06/2010

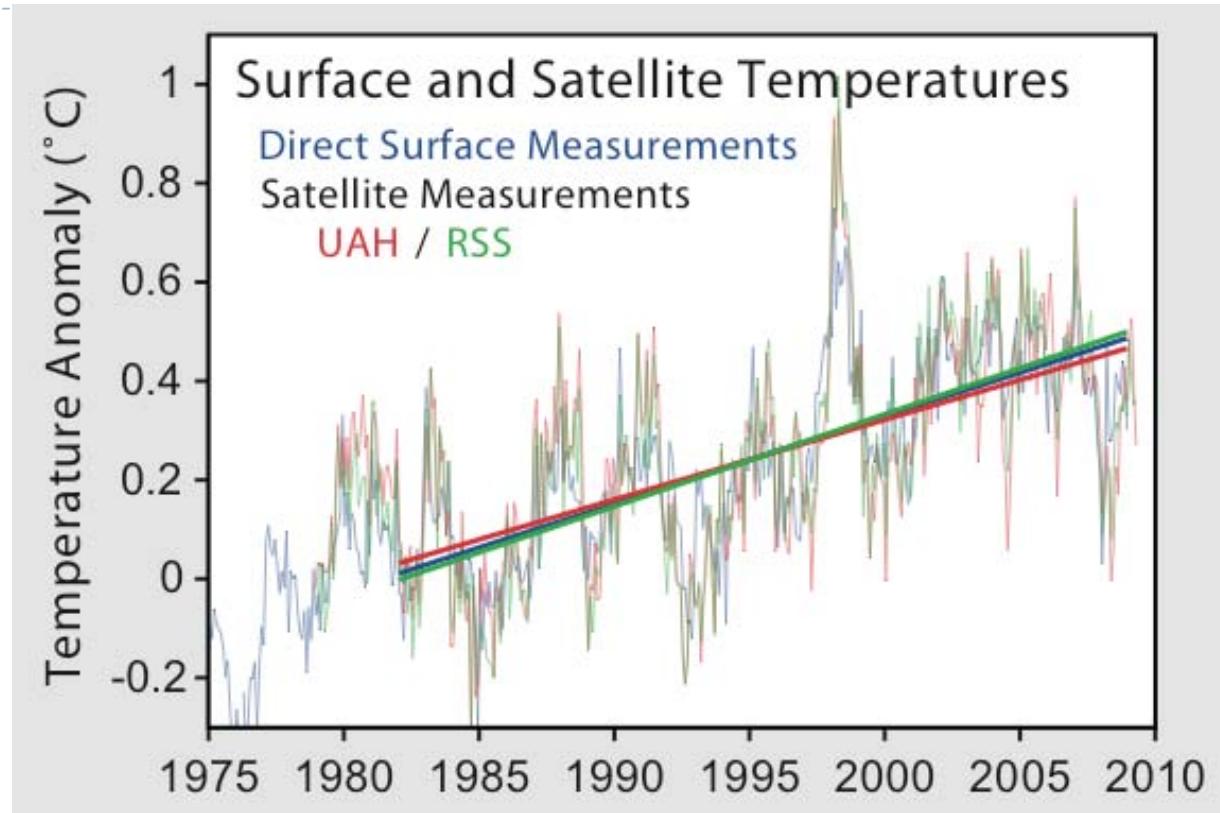
Incliner la ligne:
satellites vs.
radiosondes ca.
1999

tilting the line



Source: W. Soon et al., "Environmental Effects of Increased Atmospheric Carbon Dioxide," Climate Research 13, no. 2 (1999): 153

Incliner la ligne: surface vs. satellite 2009 *tilting the line*



Global temperature anomaly in surface data vs. lower-troposphere MSU data from UAH V5.2 and RSS V3.2. Source of surface data: HadCRUT3 (P. Brohan et al., "Uncertainty Estimates in Regional and Global Observed Temperature Changes: A New Dataset from 1850," Journal of Geophysical Research 111, D12106). Source of RSS data: TLT V3.2 (C. Mears and F. Wentz, "Construction of the Remote Sensing Systems V3.2 atmospheric temperature records from the MSU and AMSU microwave sounders," Journal of Atmospheric and Oceanic Technology, in press). Source of UAH data: TLT GLHMAM 5.2 (J. Christy, "Error Estimates of Version 5.0 of MSU/AMSU Bulk Atmospheric Temperatures," Journal of Atmospheric and Oceanic Technology 20 (2003), 613–29). All data updated through 2008. Graphic by Robert A. Ronde.



climategate

Novembre 2009

THE WALL STREET JOURNAL.

WSJ.com

OPINION EUROPE | NOVEMBER 18, 2009, 5:39 A.M. ET

Revenge of the Climate Laymen

Global warming's most dangerous apostate speaks out about the state of climate change science.

The New York Times

November 21, 2009

Hacked E-Mail Is New Fodder for Climate Dispute

Le Climatic Research Unit (CRU)

- ▶ Depuis les années 1980, maintient une base de données climatiques parmi les plus définitives du monde

maintains one of the most important climate data



Phil Jones

Climategate

- ▶ 2005 au Royaume Uni: passage d'une nouvelle loi sur la liberté de l'information administrative
 - 2005: new Freedom of Information (FOI) Act in the UK*
- ▶ Été 2009: 105 demandes pour dossiers du CRU enregistrées sous la loi FOI
 - summer 2009: 105 requests to CRU under new FOI*
 - ▶ Dont 58 de la part de Steve McIntyre, du blog Climate Audit
 - 58 in one week from Steve McIntyre*
- ▶ Une mentalité de siège développe au CRU
 - CRU develops a siege mentality*

Les courriels du CRU: une conduite pas digne de louange *the CRU emails: scientists behaving badly*

- ▶ La plupart des courriels: sans intérêt, mais...
most CRU emails uninteresting
- ▶ Quelques-uns fait preuve d'un désir de prévenir les sceptiques de gagner accès aux données climatiques
but some show a desire to keep datasets out of the hands of skeptics

Bloquer la relâche de données

blocking the release of data

From: Phil Jones <p.jones@uea.ac.uk>

To: mann@virginia.edu

Subject: Fwd: CCNet: PRESSURE GROWING ON CONTROVERSIAL RESEARCHER TO
DISCLOSE SECRET DATA

Date: Mon Feb 21 16:28:32 2005

Cc: "raymond s. bradley" <rbradley@geo.umass.edu>, "Malcolm Hughes"
<mhughes@ltrr.arizona.edu>

Mike, Ray and Malcolm,

The skeptics seem to be building up a head of steam here ! Maybe we can use
this to our advantage to get the series updated !...

...The IPCC comes in for a lot of stick.

Leave it to you to delete as appropriate !

Cheers

Phil

PS I'm getting hassled by a couple of people to release the CRU station temperature data.

~~Don't any of you three tell anybody that the UK has a Freedom of Information Act !~~

Les courriels du CRU: une conduite pas digne de louange *the CRU emails: scientists behaving badly*

- ▶ Certains courriels semblent exprimer une intention de manipuler les données qui ne supportent pas à la tendance de réchauffement

seem to express intention to manipulate data that don't support CC

*P. Jones: "I've just completed **Mike's Nature trick** of adding in the real temps to each series for the last 20 years (i.e from 1981 onwards) and from 1961 for Keith's **to hide the decline.**"*

- ▶ Mal interprété et sur-interprété par les médias et les climato-sceptiques

Les courriels du CRU: une conduite pas digne de louange *the CRU emails: scientists behaving badly*

- ▶ D'autres courriels discutent des moyens de ne pas permettre aux sceptiques de publier leurs articles dans les revues évaluée par les pairs

some discuss ways to stop skeptics from publishing in peer-reviewed journals

Une conduite illégale?

- ▶ Le sénateur républicain James Inhofe fait appel à une enquête criminelle de 17 scientifiques

Sen. Inhofe calls for a criminal investigation of 17 scientists

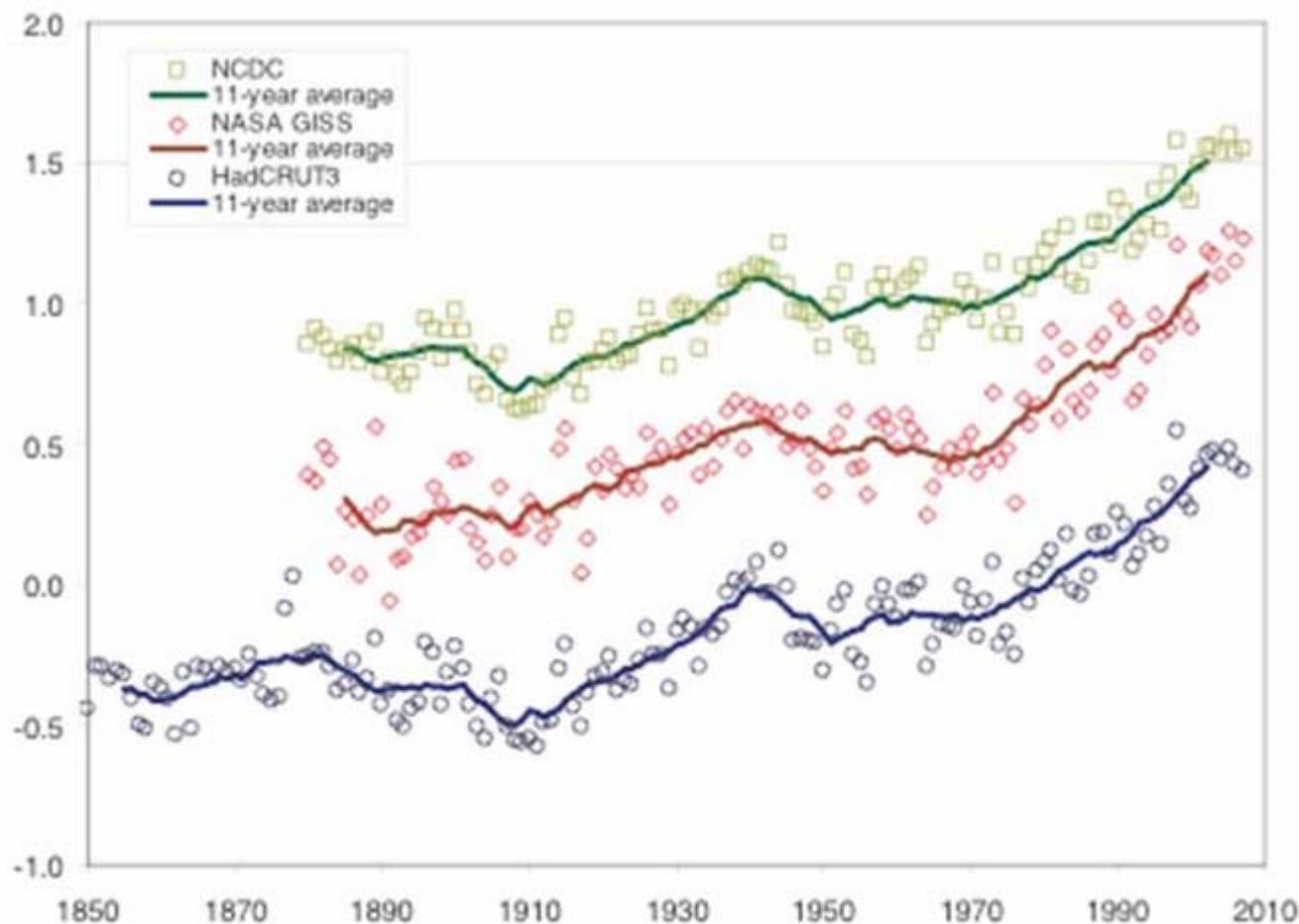
“The released CRU emails and documents display unethical, and possibly illegal, behavior. The scientists appear to discuss manipulating data to get their preferred results. On several occasions they appear to discuss subverting the scientific peer review process to ensure that skeptical papers had no access to publication. Moreover, there are emails discussing unjustified changes to data by federal employees and federal grantees.”

United States Senate Committee on Environment and Public Works,
Minority Staff report, “Consensus’ Exposed: The CRU Controversy,”
Feb. 2010

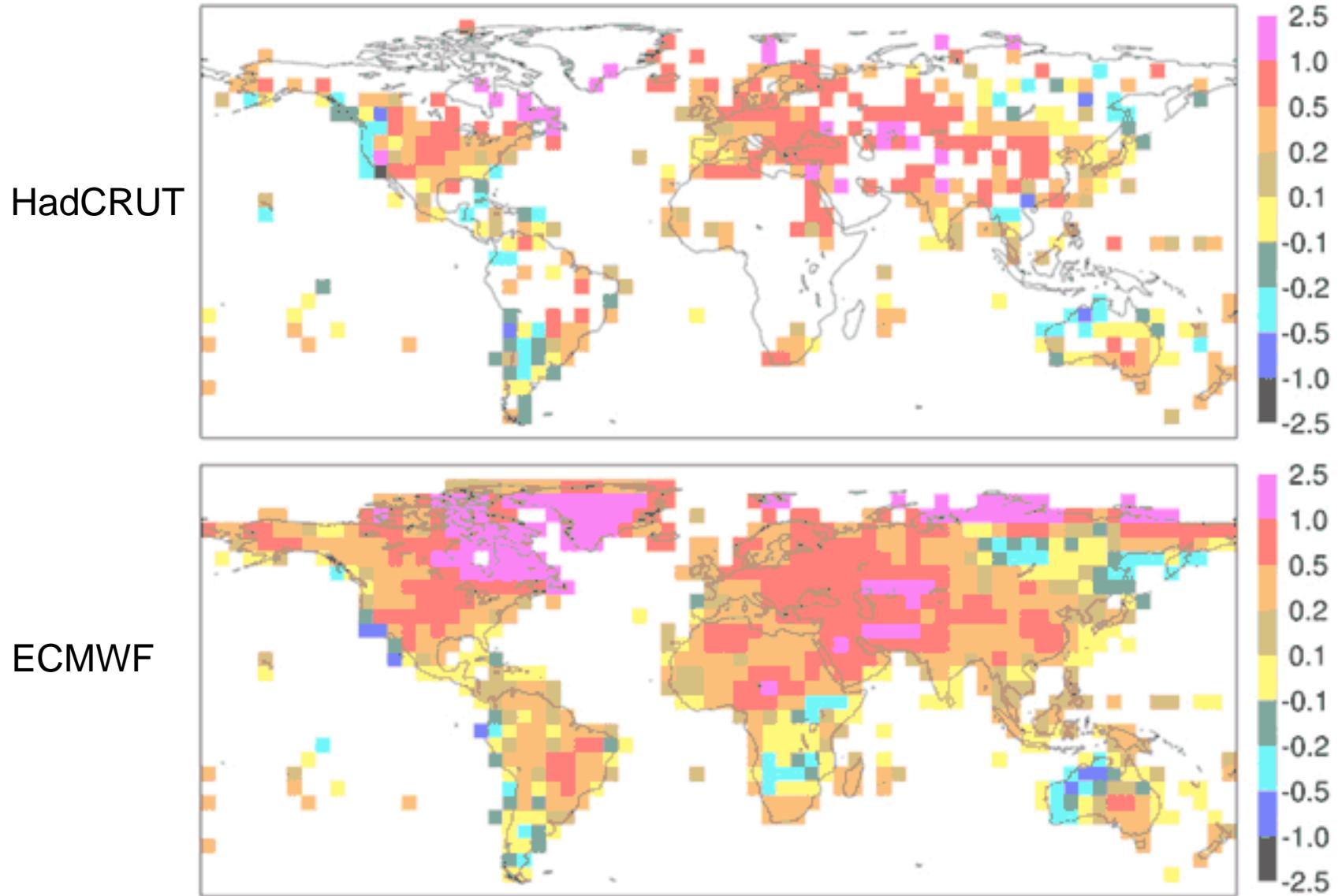


les réponses scientifiques et politiques à climategate

Cacher le déclin?



Source: Waiting for Cooling (Fawcett & Jones 2008)



Increase in mean near-surface temperature ($^{\circ}\text{C}$) from (1989-98) to (1999-2008)

19 ECMWF uses all available surface temperature measurements, plus satellites, radiosondes, ships and buoys. Source: UK Met Office, Dec.

Les réponses administratives et politiques à Climategate

official responses to Climategate

- ▶ 4 rapports disculpent le CRU, mais...
 - ▶ Rapport de Lord Oxburgh (Royal Society)
 - ▶ Rapport de Sir Muir Russell
 - ▶ House of Commons Science and Technology Committee
 - ▶ Évaluation de Pennsylvania State University (du cas de Mann)
- ▶ Ces même rapports ne font que confirmer la conviction des climato-sceptiques que le réchauffement planétaire est une conspiration des scientifiques et des élites politiques

for skeptics, the reports confirm GW is a conspiracy of scientists and political elites
- ▶ Mise en question de quel genre d'expert pourrait être un évaluateur “indépendante”

what type of expert could count as “independent”?



les effets de climategate sur l'opinion publique aux EUA

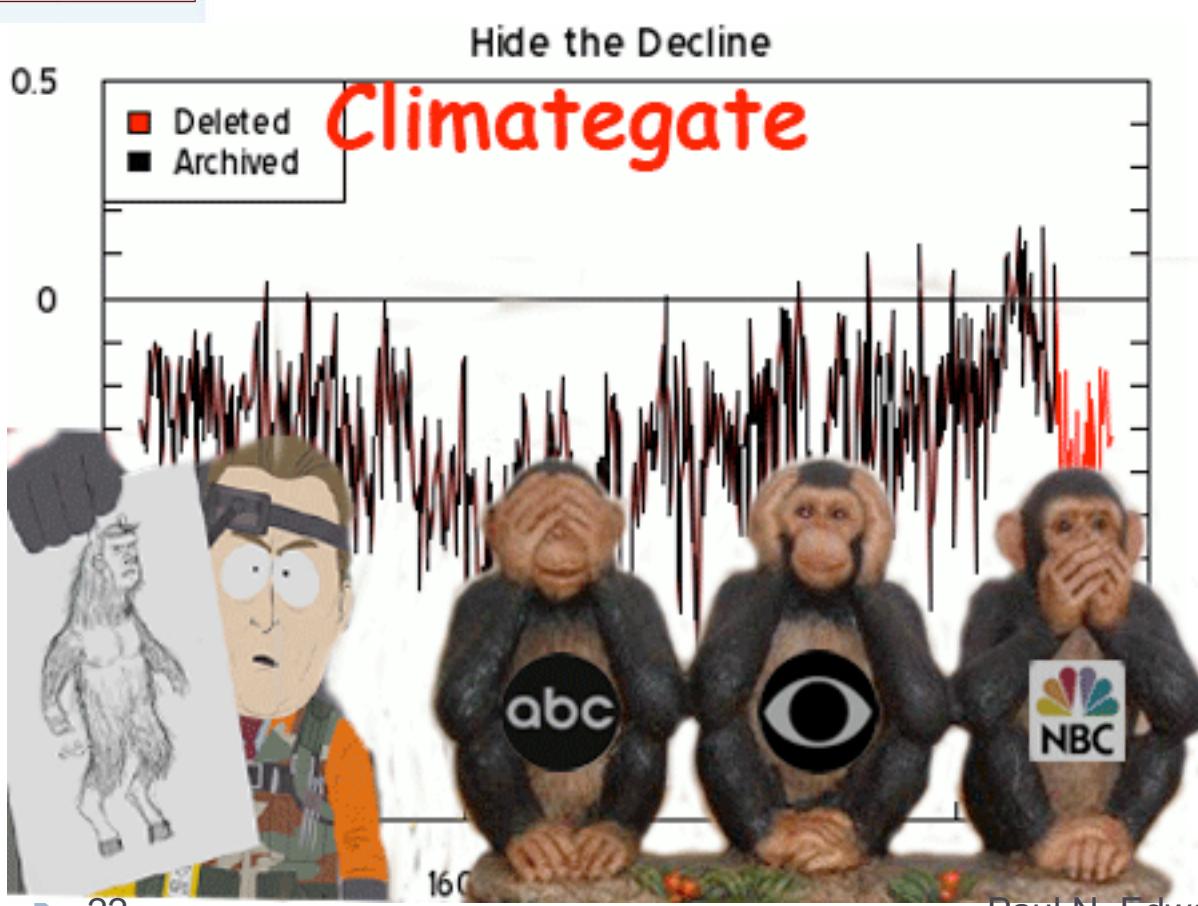


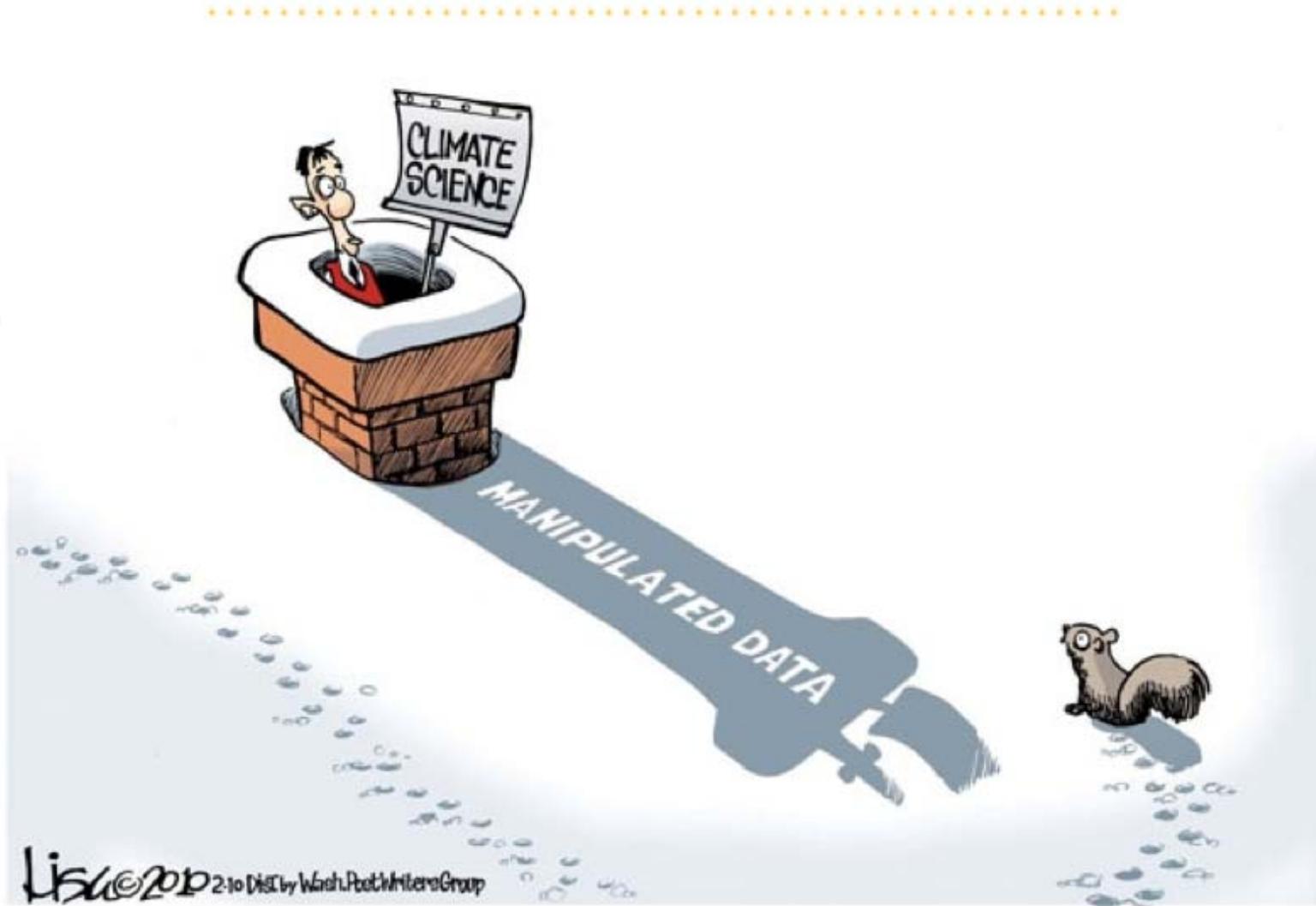
About



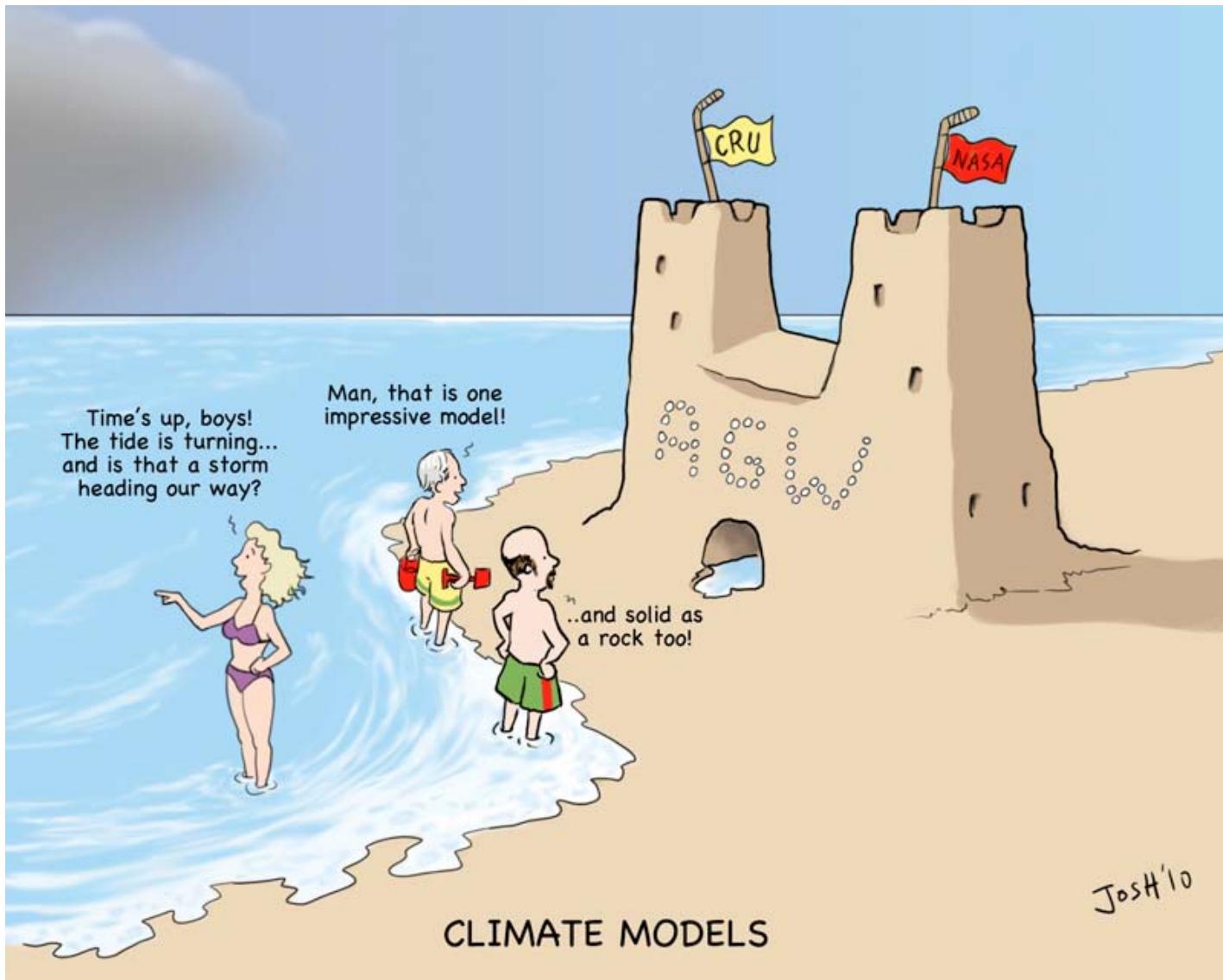
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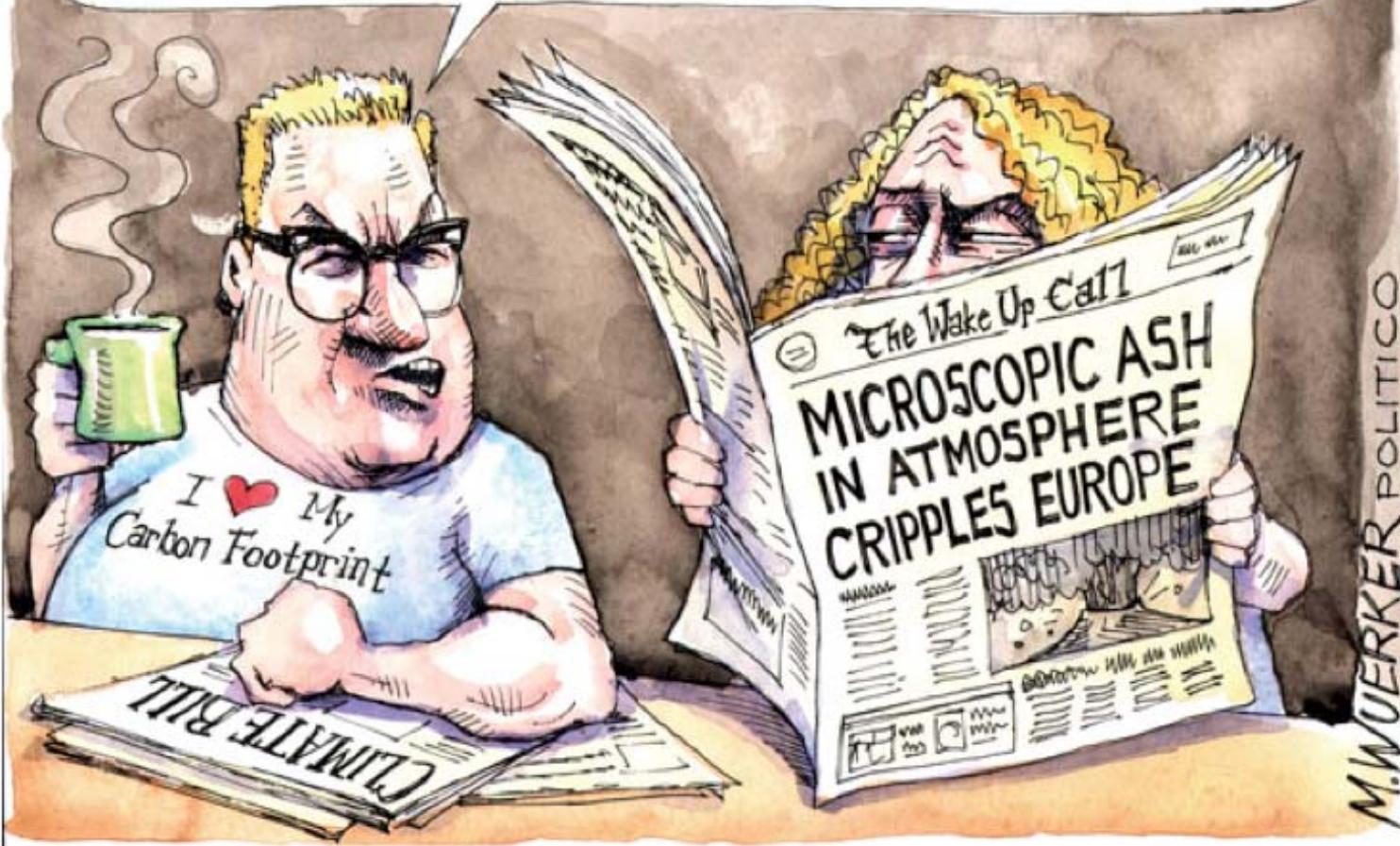




Li-Su © 2010 2-10 Disc by Wash Post Writers Group



GLOBAL SCHWARMING!!! AS IF TINY ATMOSPHERIC CHANGES COULD HURT ANYONE... THOSE WACKO ENVIROS ARE JUST TRYING TO SCARE US!



New Revelations on Climate-gate

Friday, April 23, 2010

FOX NEWS

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This is a rush transcript from "Hannity," April 22, 2010. This copy may not be in its final form and may be updated.

SEAN HANNITY, HOST: All right.

The Climate-gate scandal exposed global warming as a myth cooked up by alarmists. Now a new book investigates just how they are and how communist corporations, elitist politicians, and reckless scientists have contributed to creating a phony crisis. Let's take a look.

In his new book "Climategate," Brian Sussman asserts that the global warming hype is really just a form of communism rooted in the principles of Karl Marx. Now Sussman argues that the communist tenets of moral relativism, the belief in science over God, and the idea of de-developing successful nations to fill the needs of underdeveloped countries all describe the global warming movement.

The New York Times

Climate Change Doubt Is Tea Party Article of Faith

By JOHN M. BRODER

Published: October 20, 2010

JASPER, Ind. — At a candidate forum here last week, [Representative Baron P. Hill](#), a threatened Democratic incumbent in a largely conservative southern Indiana district, was endeavoring to explain his unpopular vote for the House [cap-and-trade](#) energy bill.

Enlarge This Image



Peter Stevenson for The New York Times

Representative Baron P. Hill after a forum in Jasper, Ind., where he tried to defend his vote for a cap-and-trade energy measure.

It will create jobs in Indiana, reduce foreign oil imports and address [global warming](#), Mr. Hill said at a debate with [Todd Young](#), a novice Republican candidate who is supported by an array of Indiana [Tea Party](#) groups and is a climate change skeptic.

“Climate change is real, and man is causing it,” Mr. Hill said, echoing most climate scientists. “That is indisputable. And we have to do something about it.”

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— 2010 Midterm Elections —

Related

Times Topics: Tea Party Movement | Global Warming | Climate and Energy Legislation

The Caucus: Why Are You Voting? Tell Us in Video (October 15, 2010)

Blog

A rain of boos showered Mr. Hill, including a hearty growl from Norman Dennison, a 50-year-old electrician and founder of the Corydon Tea Party.

“It’s a flat-out lie,” Mr. Dennison said in an interview after the debate, adding that he had based his view on the preaching of [Rush Limbaugh](#) and the teaching of Scripture. “I read my Bible,” Mr. Dennison said. “He made this earth for us to utilize.”

Paul N. Edwards 28 October 2010



la structure de la science des données climatiques

A Vast Machine

- ▶ **La friction des données**

data friction

- ▶ **Les données en tant que choses**

data are things

- ▶ **Toute opération sur les données prend du temps, consomme de l'énergie, ralentit le mouvement**

*every operation on data takes time,
consumes energy, slows motion*

- ▶ **Ramasser, traiter, transporter, stocker, gérer, accéder...**

*collect, process, move, store, manage,
access...*



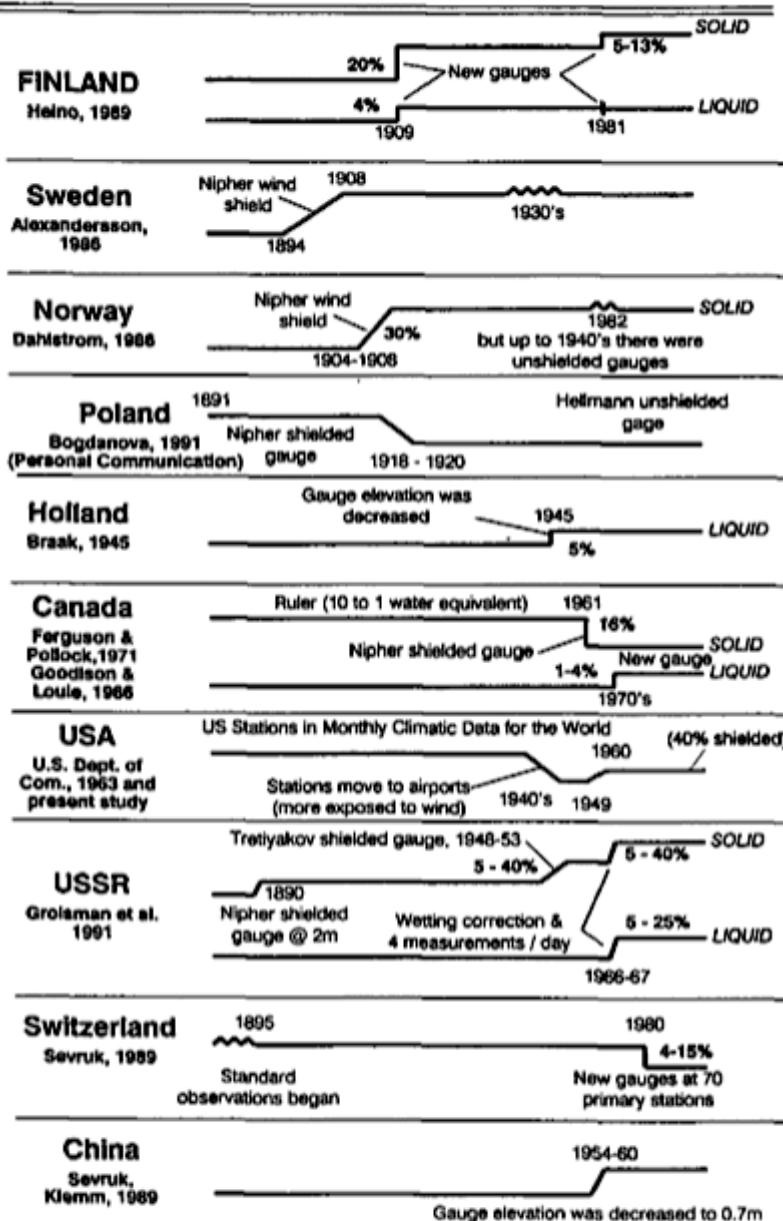
A Vast Machine

- ▶ Rendre les données globales (planétaires)
making data global
- ▶ Fabriquer une seule base de données à partir de sources de données hétérogènes
creating a single global dataset from heterogeneous data sources
 - ▶ Services météos nationaux
national meteorological services
 - ▶ Instruments différents
different instruments
 - ▶ Méthodes de mesurer différentes
different methods of measuring the same quantity

Méthodes de calculation de la température moyenne journalière

<i>Country</i>	<i>Methods used to calculate mean daily temperature</i>
Egypt	$1/2(\text{max} + \text{min})$; means of 3-hourly observations, $1/8(00 + 03 + \dots + 21)$; $1/4(09 + 21 + \text{max} + \text{min})$; $1/4(06Z + 12Z + 18Z + \text{min})$; means of 24 hourly values (exact hours unknown)
France	$1/2(\text{max} + \text{min})$; $1/3(06 + 13 + 21)$; $1/3(06 + 14 + 22)$; means of 24 hours, $1/24(01Z + 02Z + \dots + 24Z)$; means of 8 3-hourly observations
Ghana	$1/8(03 + 06 + \dots + 24)$; $1/2(\text{max} + \text{min})$
Guyana	$1/2(\text{max} + \text{min})$; $1/12(00 + 02 + \dots + 22)$; $1/3(07 + 13 + 18)$ local time; $1/2(12Z + 18Z)$.
Tunisia	Means of 24 hours (exact hours unknown); $1/2(\text{max} + \text{min})$; $1/4(07 + 13 + 19 + (19 + \text{min})/2)$
U.S.S.R.	$1/4(01 + 07 + 13 + 19)$; $1/3(07 + 13 + 21)$; $1/4(01 + 07 + 13 + 21)$; $1/4(07 + 14 + 21 + 21)$ 105°E meridian time; means of 2–4 daily observations in 53 different combinations

Source: Palutikof and Goddess, 1986



Changements de jauge de précipitation (Karl et al. 1993)

changes in precipitation gauges

FIG. 1. Some important precipitation discontinuities over the last 100 years at many primary observing stations within various mid-
32 high-latitude Northern Hemisphere countries.

L'inversion de l'infrastructure des données

inverting the climate data infrastructure

- ▶ La science du climat fonctionne (en partie) à base d'une inversion perpétuelle de sa propre infrastructure des données
 - climate science functions (in part) by a perpetual inversion of its own data infrastructure*
- ▶ Le climat, c'est l'histoire
 - climate is history*
- ▶ Les scientifiques du climat sont des historiens
 - climate scientists are historians*
- ▶ La friction des métadonnées
 - metadata friction*
- ▶ Les modèles pour l'analyse de données
 - data models*
 - ▶ Si on veut rendre global les données, les indications brutes des capteurs ne sont pas des données
 - for making data global, raw sensor readings are not data*

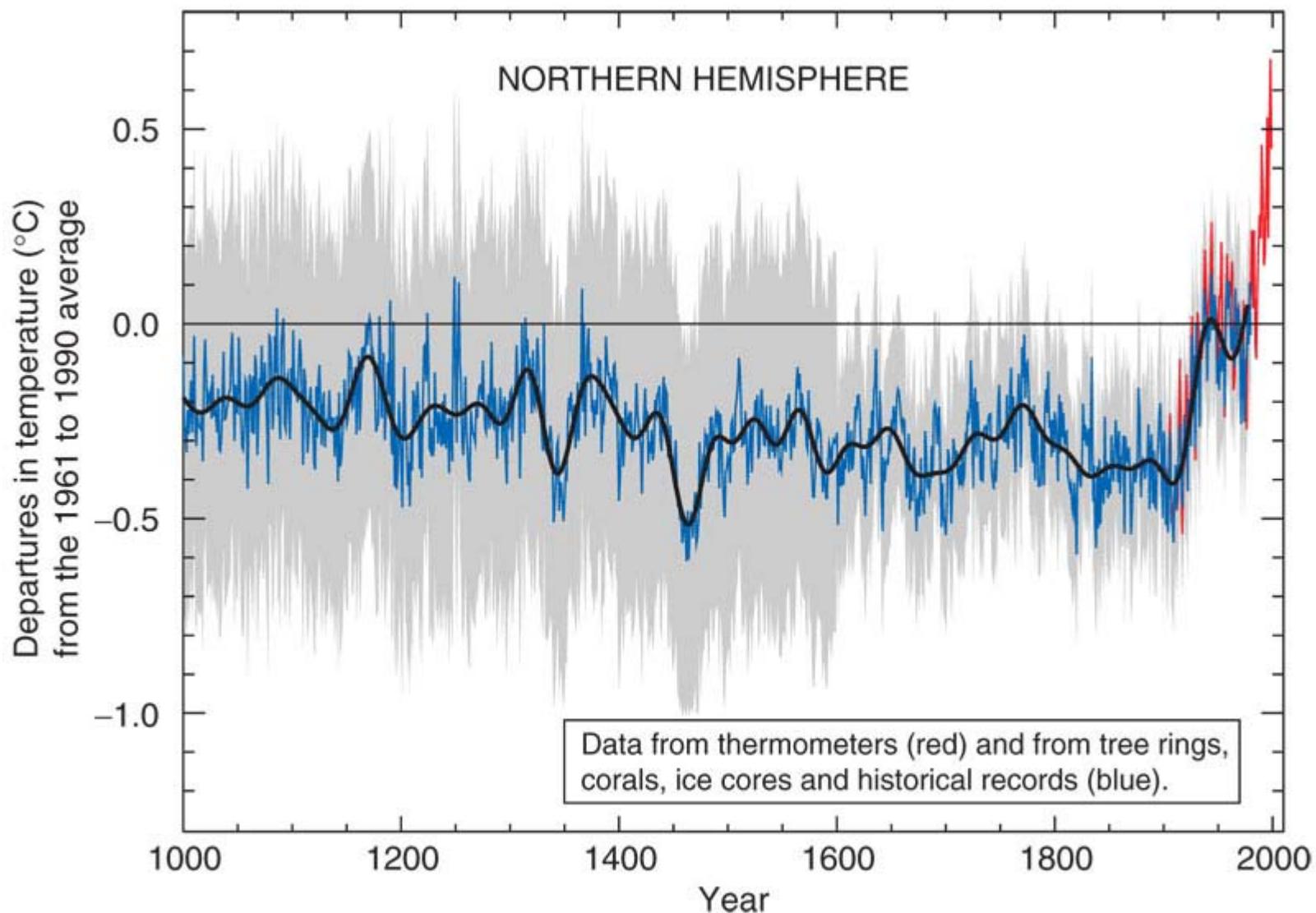
Toute connaissance du climat global — dans le passé, le présent, et le futur — est acquise par le moyen de modèles

all our climate knowledge — past, present, and future — passes through models (simulations, reanalysis, data analysis model)



les “audits” des données climatiques

La crosse de hockey



Climate Audit

by Steve McIntyre

Tip Jar

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(The Tip Jar is working again, via a temporary location)

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[Contact Steve Mc](#)

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[FAQ 2005](#)

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Categories

Select Category

Blog Rules and Road Map

Opinions expressed on Climate Audit, other than those expressed by Stephen McIntyre personally, are those of the individual posters and do not necessarily reflect the opinions of Climate Audit or myself.

Noise

Ken Fritsch makes the following comment that I support:

While your efforts to avoid the implication of censoring of opposing views should be commended, I am not a little distracted by the noise levels that I find come from

- (a) personal debates that frequently do not add to the knowledge base of the specific topic at hand,*
- (b) posters who seem to come to the discussion with the intent of having their feelings hurt or to uncover evidence of a bias towards them and/or people with their points of view,*
- (c) posters who raise to the bait of these posters and thus contribute to wasted space (*ad hominem ad infinitum*),*
- (d) posters who merely seem to want to let skeptics and agnostics know at every opportunity that the circumstantial case is closed on AGW and only fools would question what they surmise to be an overwhelming and proven consensus from the climate scientists,*
- (e) those who make their personal cases against AGW with little or no evidence to back it up and*
- (f) those who seem to want to show that they can turn your efforts as a critic of some sometimes sloppy and vague climate science publishing back on you.*

NOTICE

Click on the "Reply" link to respond to a comment.

Jan 20 CA Assistant updated. Better support for Lucia's blog; "Recent comments" improved. Frequent visitors will want this.

Search

Find

Blog Stats

3,544,118 hits since 2009-Dec-08



6

Top Blogs WIKIC
ences

Paul N. Edwards 28 October 2010

Articles

[CCSP Workshop Nov05](#)
[McIntyre/M&R Kittrick 2003](#)

Climate Audit

- ▶ Vers 2000: Stephen McIntyre demande ses données de Michael Mann

2000: McIntyre requests data from Mann

- ▶ Mann lui en donne — mais pas toutes

Mann gave him some, but not all

- ▶ McIntyre persiste, lance son blog

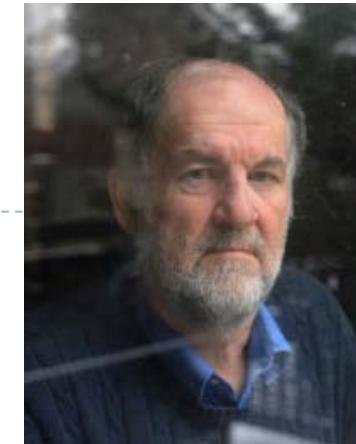
- ▶ Demande aussi le code source de ses logiciels d'analyse

McIntyre demands all data and Mann's analysis software as well

- ▶ US House Subcommittee on Oversight and Investigation

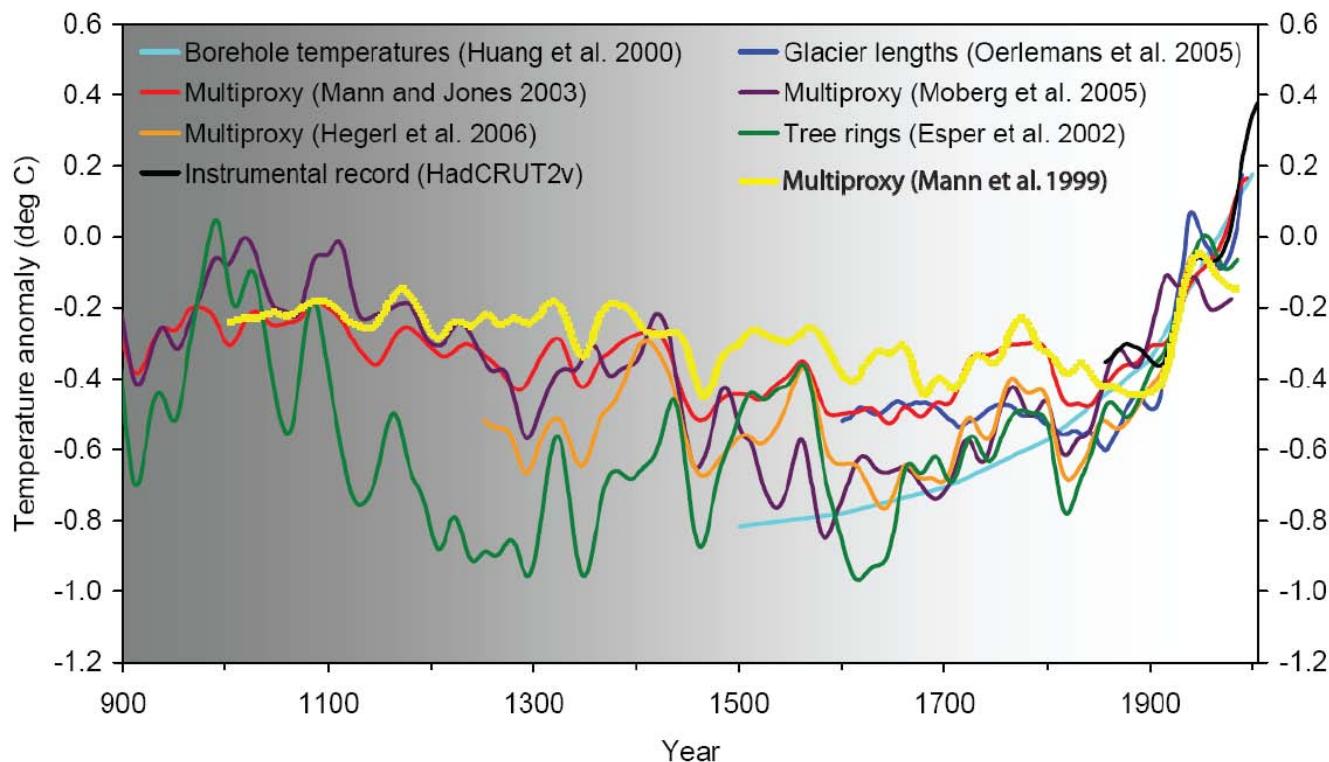
- ▶ D'autres agences engagés dans la controverse: NSF, NRC, AAAS, NAS...

other agencies drawn into the controversy



Conseil national de recherche scientifique

NRC, 2006

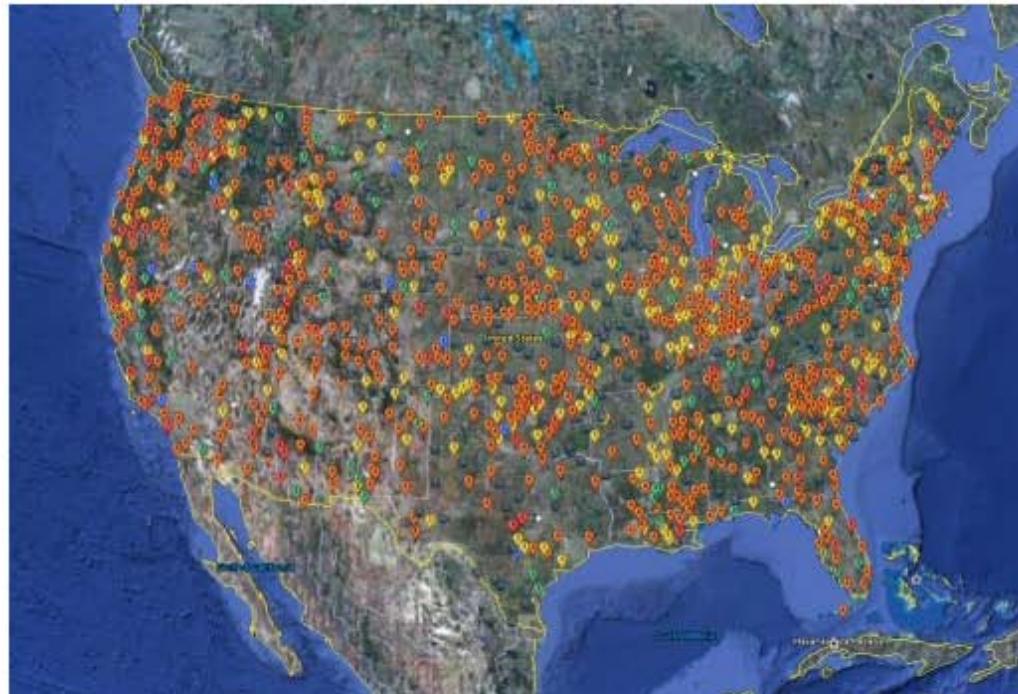




surfacestations.org

NEWS Updated 07/16/2009

Surfacestations project reaches 82% of the network surveyed. 1003 of 1221 stations have been examined in the USHCN network. The Google Earth map below shows current coverage.



CRN Rating key	1	2	3	4	5	6	7
Estimated Error in °C (per NOAA)	Error ≤1°C	Error ≤1°C	Error ≥1°C	Error ≥2°C	Error ≥5°C	Unrated	
Quality	Best	Good	Fair	Poor	Worst	Closed	

Reference for site ratings: NOAA's Climate Reference Network Site Handbook Section 2.2.1

[HOME](#) [CONTACT](#)



[Get Involved!](#) help us document weather stations in the USA and the world.



[Odd and irregular observing Sites](#) looking at some of these observing sites you have to wonder: "what were they thinking"?



[Resources](#) links to useful and pertinent documents, images, drawings, specifications, and web sites.

[Visit the blog](#) to see highlighted examples of poorly sited stations in the "[How Not to measure Temperature](#)" series.

Site launched on 06/04/07

**Progress as of
07/16/2009**

USHCN Sites surveyed so far:

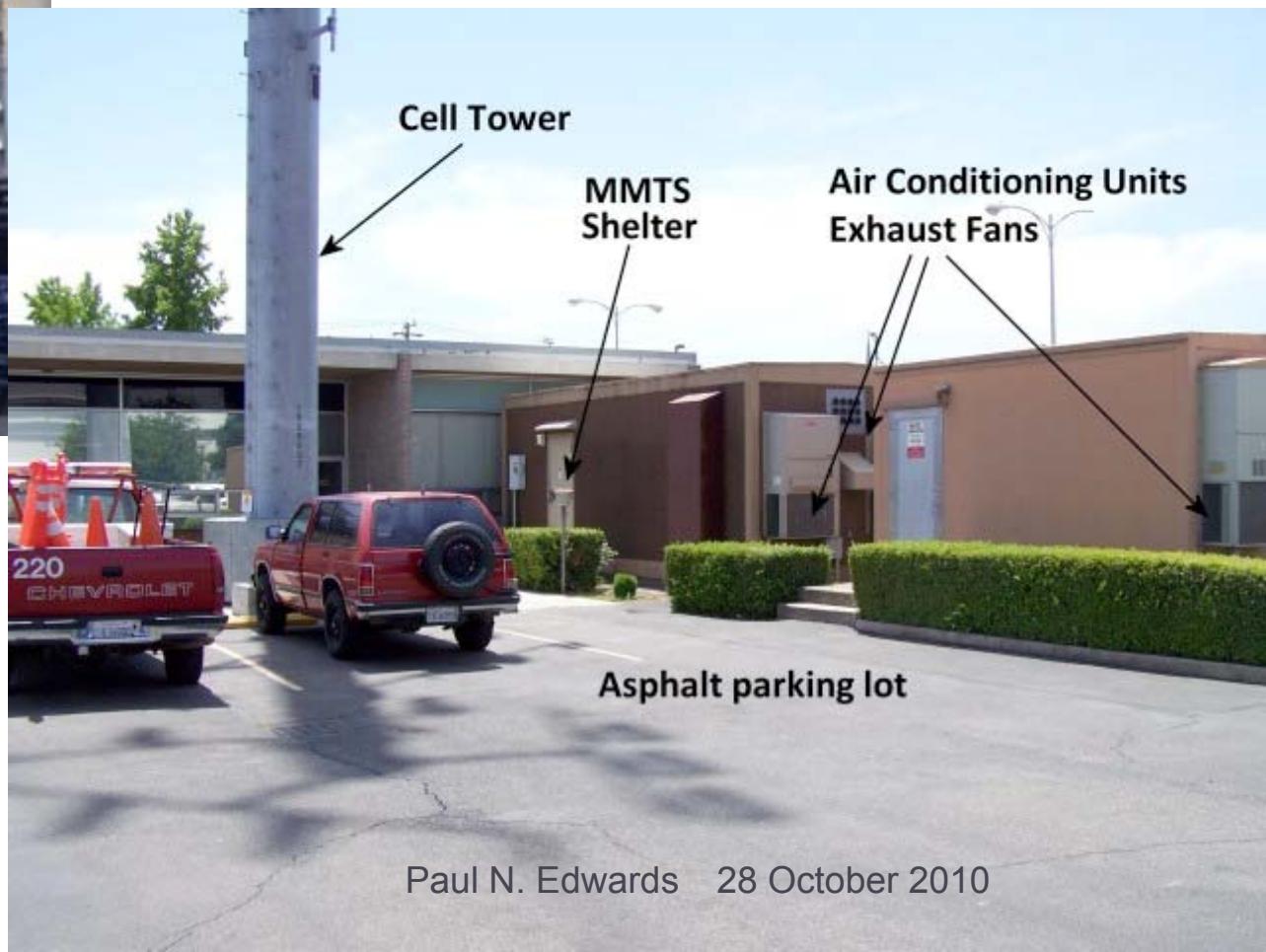
1003



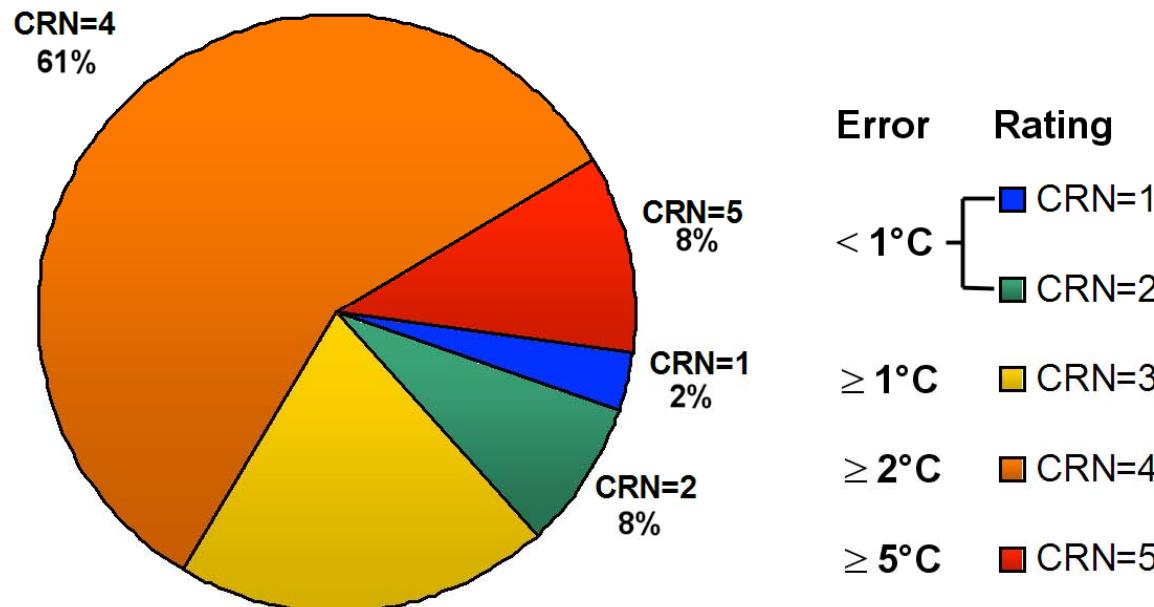
“Nous étions choqués par ce que nous avons trouvé... C'est probable que 9 sur 10 stations rapportent des températures en hausse parce qu'ils sont mal situées sur leurs sites (p. 3)”

A. Watts, “Is the U.S. Temperature Record Reliable?”, Heartland Institute, 2009

MMTS = Maximum/Minimum Temperature System (thermistor électronique)



USHCN - Station Site Quality by Rating



948 of 1221 stations rated as of 5/31/09
78% of the total

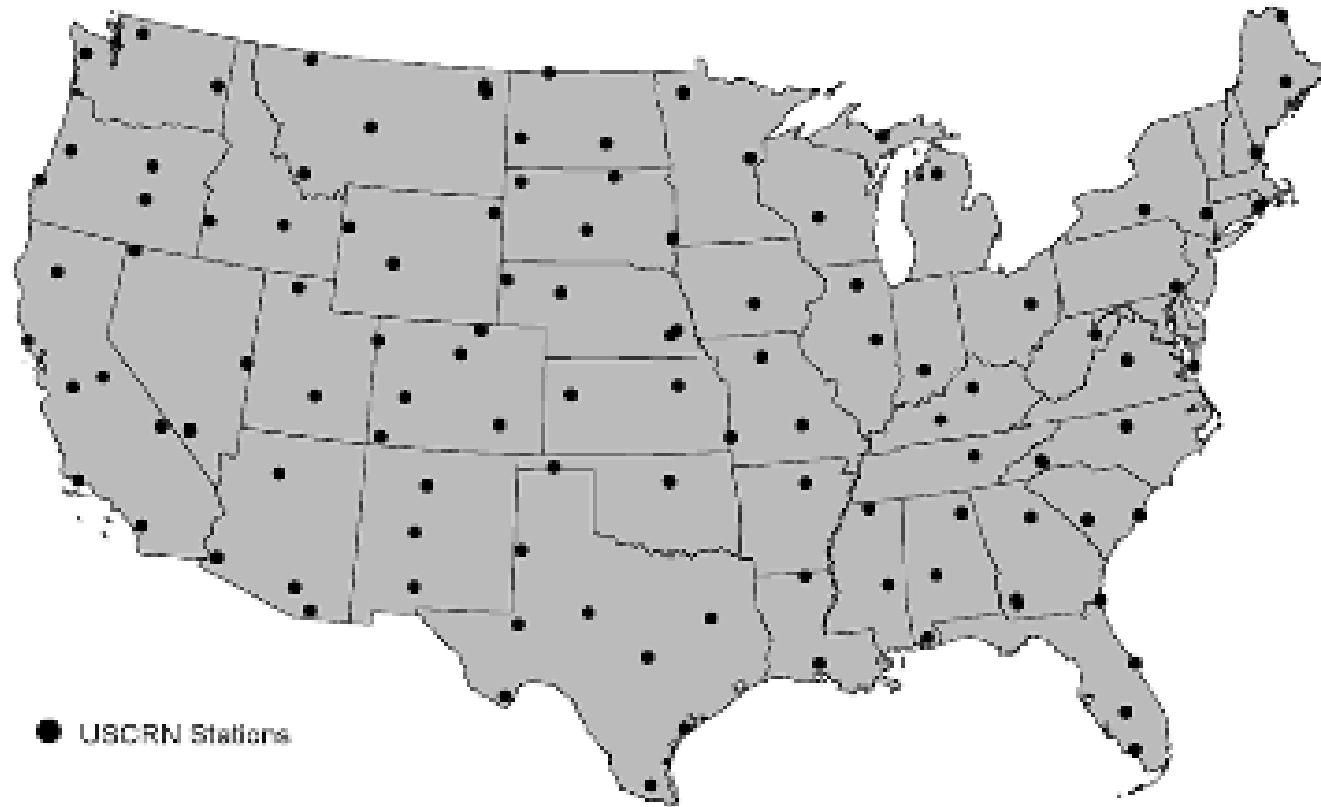
surfacestations.org
A resource for climate station records and surveys

“Évaluations de la qualité des stations d’après le protocole de NOAA/NCDC: Climate Reference Network Rating Guide - adopted [sic] from NCDC Climate Reference Network Handbook, 2002, specifications for siting (section 2.2.1)”

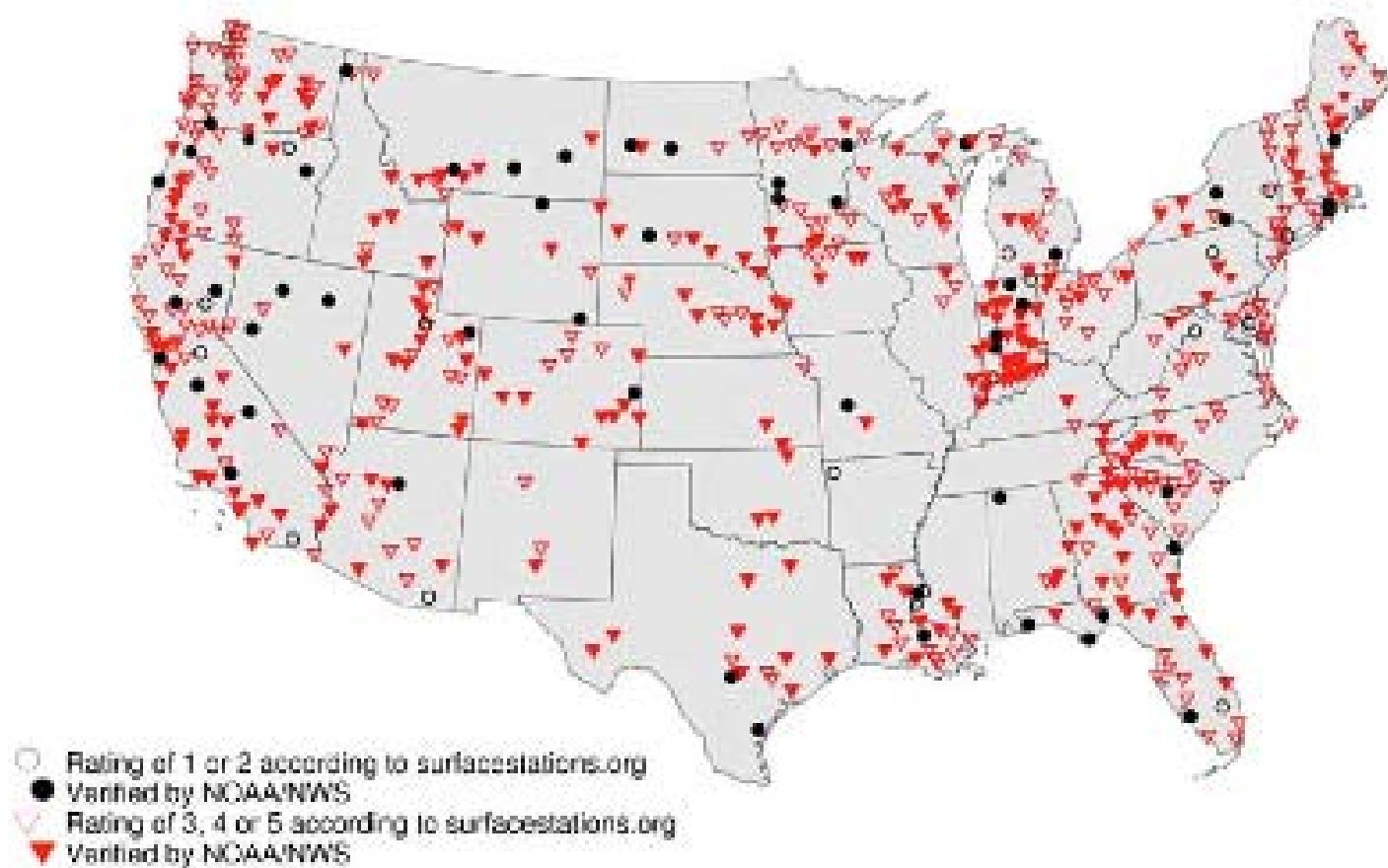
Menne et al. (2010)

- ▶ Confirment les données de surfacestations.org
confirm the metadata acquired by surfacestations.org
- ▶ Comparent les stations bien situées avec celles qui sont mal situées
compares the stations with good exposure to those with poor exposure
- ▶ Comparent les stations dans le USHCN avec celles dans le USCRN (Réseau de recherche climatique des EUA)
compares USHCN stations with USCRN
 - ▶ USCRN: 114 stations (y compris 7 en double)
 - ▶ Instruments très précis, en 3 exemplaires
 - ▶ Sites et instrumentation des stations sélectionnés selon les normes les plus rigoureux
USCRN is extremely precise, carefully built, multiple redundancies

US Climate Reference Network (USCRN)

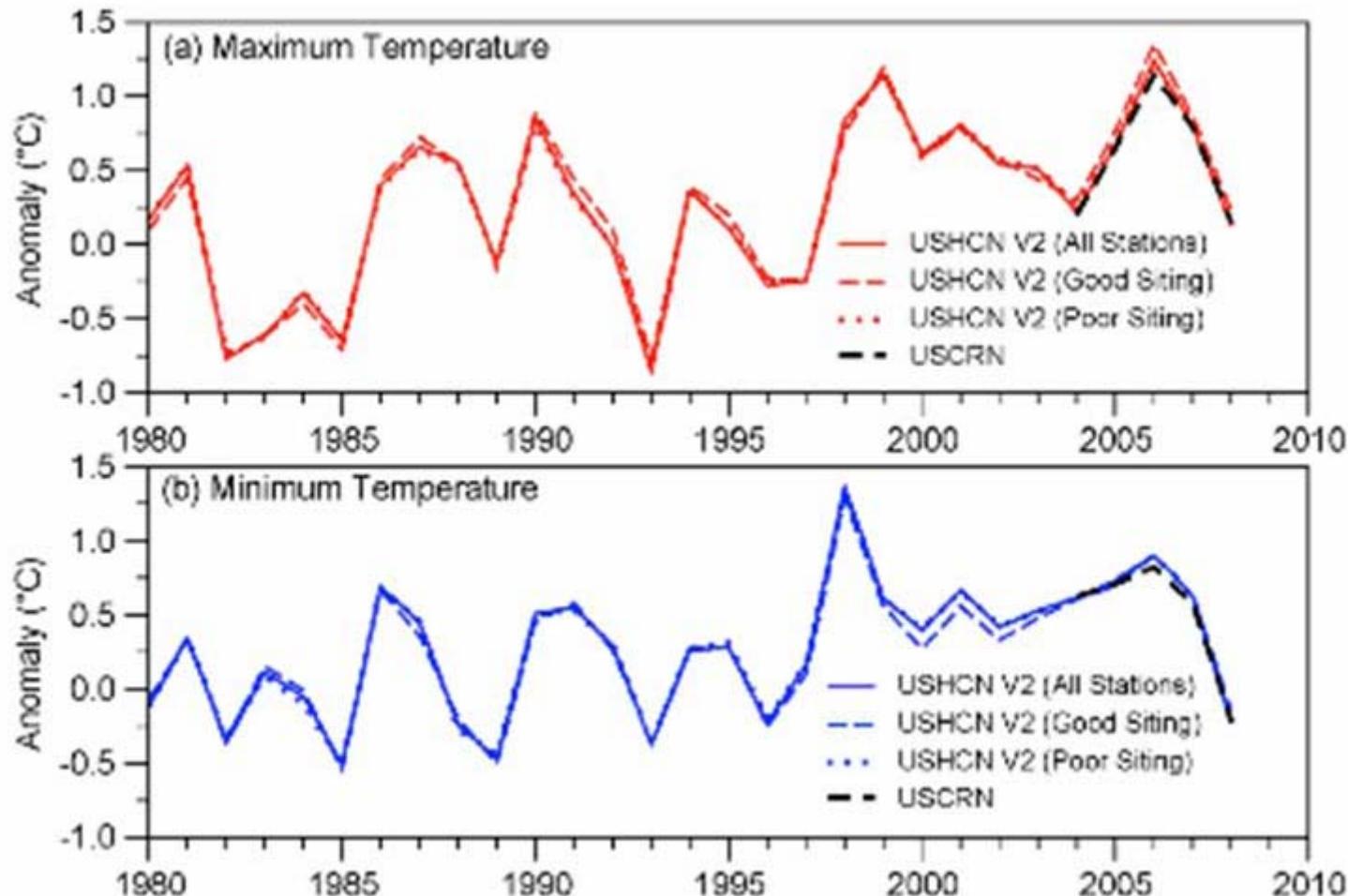


Menne et al.
(2010), Fig. 1



USHCN exposure classifications according to *surfacestations.org* (circles and triangles). Filled symbols are in agreement with independent assessments by NOAA/National Weather Service Forecast Office personnel. ...Ratings 1 and 2 are treated as “good” exposure sites; ratings 3, 4 and 5 are considered “poor” exposure.

Source: “V1.05 USHCN Master Station List”. (Downloaded from www.surfacestations.org in June 2009. A more complete set of USHCN station classifications as referenced in Watts [2009] was not available for general use at the time of this analysis).



"Comparison of the [continental US] average annual (a) maximum and (b) minimum temperatures calculated using USHCN version 2 adjusted temperatures [Menne et al. 2009] and USCRN departures from the 1971-2000 normal. Good and poor site ratings are based on surfacestations.org."

Menne et al. (2010)

- ▶ Conclusion: l'exposition mauvaise de la majorité des stations USHCN est confirmé, *mais...*

confirms the poor exposure of the majority of stations in the USHCN, but...

"The bias in **unadjusted** maximum temperature data from poor exposure sites relative to good exposure sites is, on average, *negative*..."

Adjustments applied to USHCN Version 2 data largely account for the impact of instrument and siting changes, although a small overall residual negative ("cool") bias appears to remain...

We find **no evidence that ...US temperature trends are inflated due to poor station siting.**"



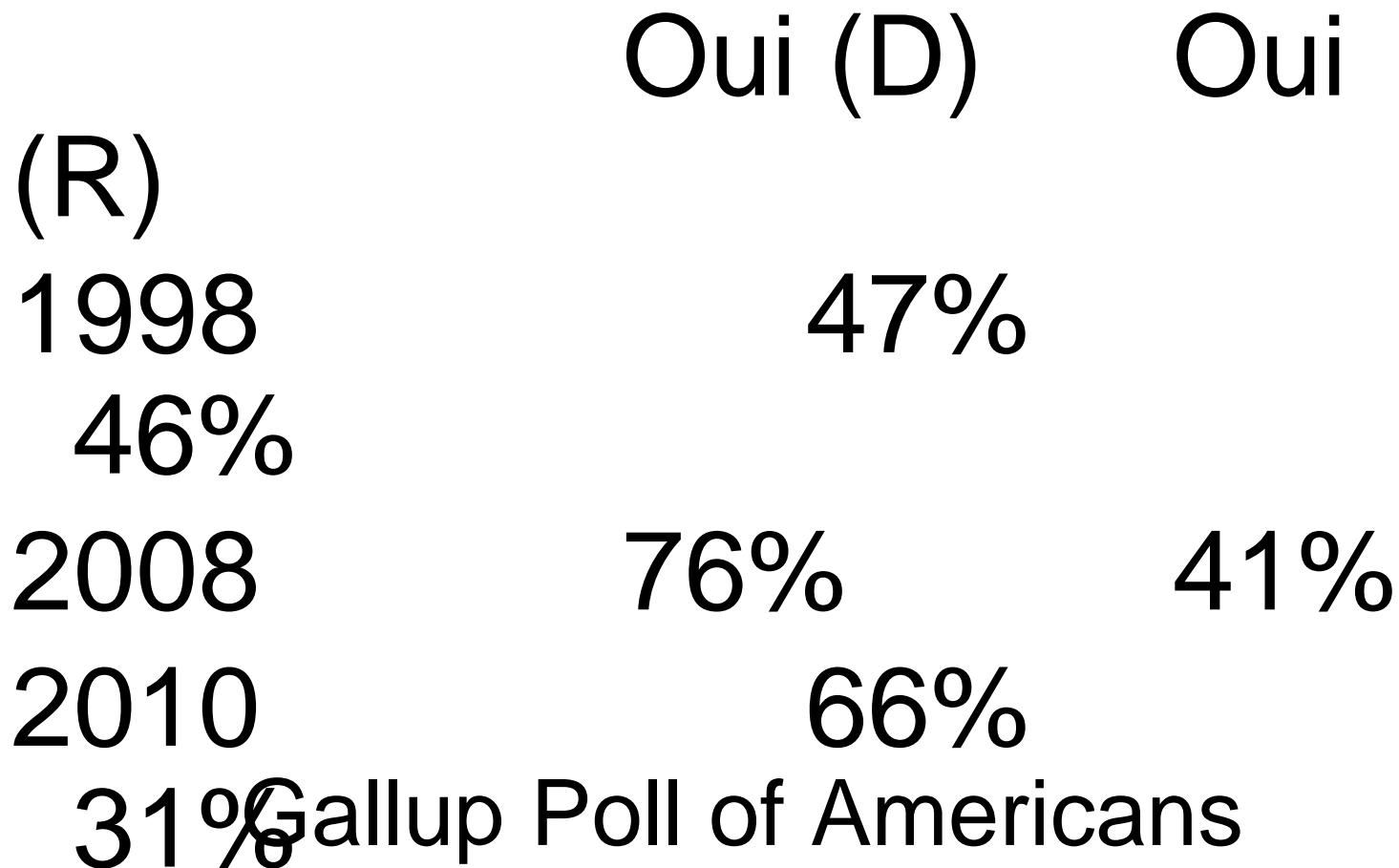
quelques conclusions

Les effets du réchauffement planétaire sont-ils déjà évident? *are global warming effects already evident?*

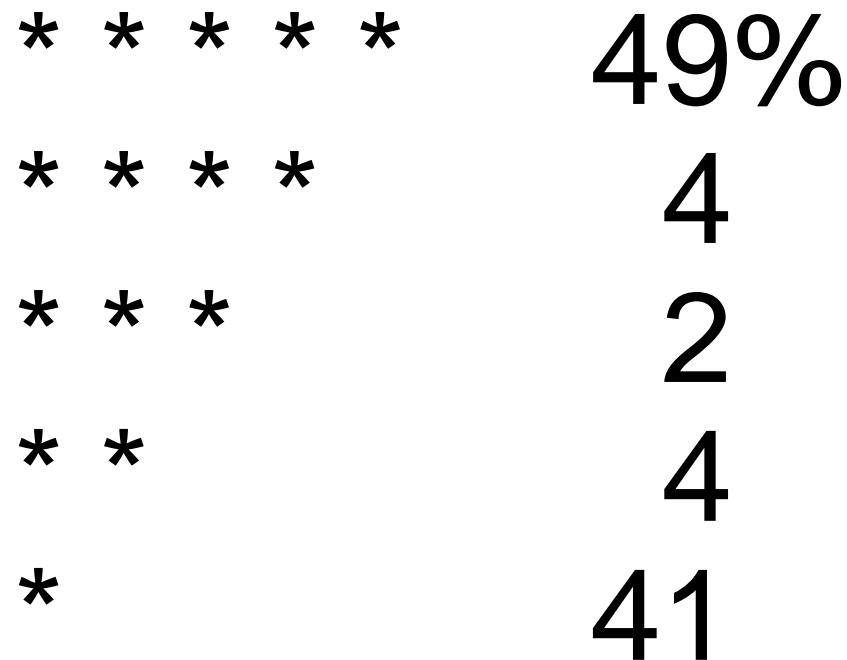
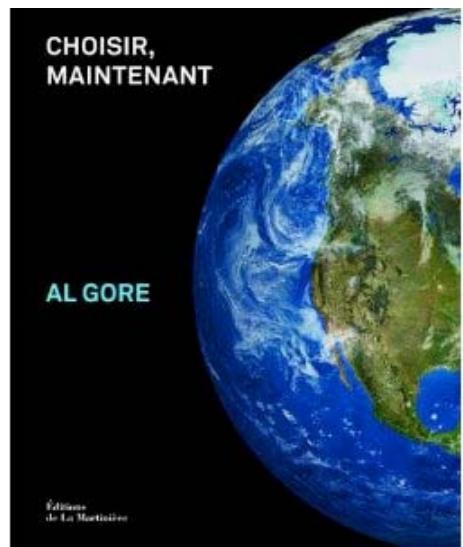
	Oui
1998	48%
2008	61%

Gallup Poll of Americans

Les effets du réchauffement planétaire sont-ils déjà évident? *are global warming effects already evident?*



Amazon.com: commentaires client sur Al Gore, *Our Choice: A Plan to Solve the Climate Crisis*



Les guerres des données: on conteste... data wars: contests over

- ▶ Les bases de données
 - datasets*
- ▶ Les modèles des données
 - data analysis models*
- ▶ ClearClimateCode.org
- ▶ Les interprétations des données
 - interpretations of data*
- ▶ L'arrivée de “experts” alternatives, indépendantes?
 - rise of alternative, independent experts?*

L'hyper-transparence et le futur de la science

hypertransparency and the future of science

▶ L'évaluation traditionnelle par les pairs

traditional peer review: editors + 2-5 expert reviewers

- ▶ Dirigée par les éditeurs des journaux
- ▶ 2-5 évaluateurs
- ▶ Les données et les modèles pour l'analyse des données peuvent être évalués — mais on le fait très rarement
 - data and data analysis models can be reviewed, but rarely are*
- ▶ Un système d'évaluation basé sur la confiance, la crédibilité, et les réputations des pairs
 - system based on confidence, credibility, reputation*

Une évaluation hyper-transparente: “pairs-plus”? *hyper-transparent review: peers-plus?*

- ▶ Blogs, listservers, preprint sites, email lists
 - ▶ Réduit le pouvoir et l'autorité des revues traditionnelles
reduce the power and authority of traditional journals
- ▶ Les “audits de la science”
 - ▶ Contournent les systèmes traditionnels de réputation et de crédibilité des scientifiques
bypass traditional systems of reputation and credibility
 - ▶ Un groupe très répandu de “évaluateurs,” avec un accès facile et pas cher à des moyens de diffusion très puissants
large groups of “reviewers,” with easy access to powerful means of distributing their opinions
 - ▶ Les scientifiques vus comme un tribu et/ou un intérêt privé parmi d'autres
scientists seen as a tribe and/or as one private interest group among others

Le système d'évaluation du futur...

the review system of the future

- ▶ Les données et les codes sources seront évalués directement (“audités”)
data and analysis software will be reviewed directly
- ▶ Des moyens légaux (par exemple le FOIA) seront utilisés pour y accéder
skeptics will use FOI laws to obtain data and models
- ▶ Dans le cas d'une faillite de ces stratégies, des fuites purposives et des “hacks” hostiles seront essayés pour surmonter les défenses légales
if these strategies fail, leaks and hostile hacks will bypass legal defenses

Quelques questions ouvertes (à la place d'une fin) *open questions in place of an ending*

- ▶ Quels changements voira-t-on dans les systèmes de crédibilité, de l'autorité, et des réputations des scientifiques — et de la science elle-même?
what will happen to scientific reputation systems?
- ▶ Quel futur pour l'évaluation par les pairs?
what is the future of peer review?
- ▶ Est-ce qu'on peut restituer la confiance publique dans la connaissance scientifique?
can we restore public confidence in scientific knowledge?
- ▶ Si oui — comment?
if so – how?