



Global average surface temperature change to date in degrees Celsius. 1.6°F: Amount that globally averaged combined land and ocean surface temperatures increased between 1901-2012. All chart credits: IPCC Working Group I.

The Five Most Sobering Charts from the IPCC Climate Report

By Andrew Freedman Climate Central: September 27, 2013

The first installment in the U.N. Intergovernmental Panel on Climate Change's latest scientific assessment on climate science came out today and it's loaded with dense terminology, expressions of uncertainty and nearly impenetrable graphics. But we'll make it simple for you. Here's what you need to know, in number and chart form.

0.54°F to 8.64°F: How high global average surface temperatures are likely to climb by 2081-2100 relative to 1986-2005 levels, depending on future amounts of greenhouse gases in the air. The report found that the global mean surface temperature change by 2100 is likely to exceed 2.7°F relative to the period betwen 1850-1900 in all but one of

the emissions scenarios.

(Chart at top of page 2) Map of multimodel mean results for different greenhouse gas concentration scenarios of annual mean surface temperature change in 2081–2100.

(Global Mean Sea Level Rise chart on page 2) **10.2 to 32 inches:** How much mean global sea level is projected to increase by 2081-2100. The scenario with the highest amounts of greenhouse gases in the atmosphere shows a mean sea level rise range between 21 and 38.2 inches, which would be devastating for numerous highly populated coastal cities at or near current sea levels, from New York to Hong Kong.

The assessed likely range is shown as a shaded band. The assessed likely ranges for the mean over the period 2081–2100

for all scenarios are given as colored vertical bars, with the corresponding median value given as a horizontal line. By comparison, the previous IPCC report in 2007 projected a global sea level rise of .7.1 to 23.2 inches by 2100 but it did not include the influence of rapid melting of the Greenland ice sheet as well as portions of Antarctica because not enough information was known at the time.

0.07 inches per year to **0.13** inches per year: Rate of global average sea level rise during the 1901 to 2010 period compared to the 1993-2010 period. The report found that the rate of sea level rise is accelerating as the oceans expand as they warm and global ice sheets melt.

34 gigatons per year to 215 gigatons per year (a gigaton is a billion tons): Average

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(Above) Decadal average surface temperatures. Map of multi-model mean results for different greenhouse gas concentration scenarios of annual mean surface temperature change in 2081–2100. The report also found that the past 30 years have been the warmest three decades since instrument records began during the 19th century and that in the Northern Hemisphere, the past 30 years have likely been the warmest in more than 1,000 years. Global mean surface temperatures increase as a function of cumulative total global CO₂emissions from various lines of evidence. Some decadal means are indicated for clarity (e.g., 2050 indicating the decade 2041–2050). Model results over the historical period (1860–2010) are indicated in black.



Pennsylvania 17255.

New Climate Change

Charts continued from page 1

rate of ice loss from Greenland during 1992-2001 and 2002-2011.

3.5 to 4.1 percent per decade: Annual mean Arctic sea ice extent rate of decline during 1979-2012. The report found that there is "medium confidence" that Arctic summer sea ice retreat and sea surface temperatures during the past 30 years were unusually high in the context of at least the past 1,450 years.

90 percent: Amount of the extra energy in the Earth's climate system that is going into the oceans, where it is being stored, eventually to manifest itself in warming air temperatures.

11.7 percent per decade: The rate of decline in June snow cover in the Northern Hemisphere during the 1967-2012 period.

Because CO_2 has such a long atmospheric lifetime, with some molecules lingering in the atmosphere for hundreds of years, scientists have to take into account the cumulative total of CO_2 emissions in order to project future warming.



Projections of global mean sea level rise over the 21st century relative to 1986–2005 from the combination of the computer models with process-based models, for greenhouse gas concentration scenarios.

Cumulative CO₂ emissions and the likely temperature changes associated with them based on the IPCC's four greenhouse gas concentration scenarios. The bottom line shows that holding global warming to at or below 3.6° F is going to be incredibly difficult.

Tracking Fracking

U.S. Builders Hoard Mineral Rights Under New Homes

By Michelle Conlin and Brian Grow, *excerpt* Reuters.com: October 9, 2013

NAPLES, Florida — Robert and Julie Davidson fell hard for the gleaming new house at the Valencia Golf and Country Club in Naples, Florida. ... But when the Davidsons paid \$255,385 in 2011 for the house on Birdie Drive, they didn't know that they had, in essence, bought only from the ground up and that their homebuilder, D.R. Horton, had kept everything underneath...

In golf clubs, gated communities and other housing developments across the United States, tens of thousands of families like the Davidsons have in recent years moved into new homes where their developers or homebuilders, with little or no prior disclosure, kept all the underlying mineral rights for themselves, a Reuters review of county property records in 25 states shows. In dozens of cases, the buyers were in the dark. ...

Homebuilders and developers have been increasingly — and quietly — hanging on to the mineral rights underneath their projects, pushing aside homeowners' interests to set themselves up for financial gain when energy companies come calling... Among the "smart" ones are private firms like Oakwood Homes in Colorado, the Groce Companies in North Carolina, Wynne/Jackson in Texas and Shea Homes, which builds coast to coast, also the Ryland Group, Pulte Homes and Beazer Homes, according to oil and gas attorneys and public land records.

D.R. Horton, the biggest U.S. homebuilder, is a heavy user of the practice. The Fort Worth, Texas company has separated the mineral rights from tens of thousands of homes in states where shale plays are either well under way or possible, including North Carolina, Alabama, Mississippi, Virginia, New Mexico, Nevada, Arizona, Oklahoma, Utah, Idaho, Texas, Colorado, Washington and California. In Florida alone, the builder has kept the mineral rights underneath more than 10,000 lots.

Wells Fargo, the nation's largest home lender, sometimes denies mortgages to homes encumbered by gas leases. And for the past year, Sovereign Bank has been including clauses in mortgages allowing it to declare borrowers in default if any part of the subsurface property has been "leased, assigned or otherwise transferred for use to extract minerals, oil or gas...

Insurance...companies are denying coverage altogether for homes where the mineral rights have been severed. Title insurance companies have been exempting anything to do with mineral rights from their policies, too.

Romanian Anti-Fracking Protesters Block Chevron Test Drilling

(AFP) – October 14, 2013

PUNGESTI, Romania — Hundreds of Romanian villagers opposed to fracking blocked a convoy of vehicles intending to start test drilling for U.S. energy giant Chevron.

Around 400 inhabitants of the eastern village of Pungesti, including many children and women, rallied on a nearby field where Chevron plans to start drilling its first exploration well.

The convoy was forced to turn around as protesters, some of whom had come in horse-drawn carts, called on Chevron to "go home..."

"We will not let them drill here if we must die for this," said one of the villagers, Gheorghe Hrum, a retired forest warden....

Read entire article at http://www. google.com/hostednews/afp/article/ eqM5i7YvNyBQXR5cL2fS7vxQfALA2_ yQ?docId=c2cca27c-7ddb-43bd-8aeb-6f7ebbdd53af&hl=en.

Water Woes With Fracking

Submitted by Allen Hengst

Suzanne Goldenberg: The Guardian, October 4, 2013

More than 80,000 wells have been drilled or permitted in 17 states since 2005. It can take 2 million to 9 million gallons of water mixed with sand and chemicals to frack a single well. The report said the drilling industry had used 250 billion gallons of fresh water since 2005. Much of that returns to the surface, however, along with naturally occurring radium and bromides, and concerns are growing about those effects on the environment ... A study published this week by researchers at Duke University found new evidence of radiation risks from drilling waste water. The researchers said sediment samples collected downstream from a treatment plant in western Pennsylvania showed radium concentrations 200 times above normal.

Update on Spectra Energy

Submitted by Angel Smith

Spectra Energy's Board of Directors say they've responded to "community concerns" by reducing noise, minimizing lighting and planting trees.

But this is not a tree farm. The company's stakeholders ask questions about substantive issues related to shutdowns, blowdowns, uncontrolled methane leaks and valve leaks, and get noise reduction, lighting and trees.

Spectra Energy's Steck-man Ridge facility is the elephant in the room in Clearville, PA. It is a 12-bil-lion cubic feet underground natural gas storage reservoir on 43 acres, with a nearly 5,000 horsepower compressor station, 13 injection/withdrawal wells and related pipeline infrastructure.

Based on unofficial re-cord keeping by Spectra Energy "stakeholder" neighbors, there have been nearly 60 incidents at the Steckman Ridge compressor/storage facility since operations began in 2009.

Planting trees is not the answer.

[Note from the editor: I'm having trouble with spacing on this page.]

What on Earth is The Go-BackClub?

We are a group of people who are willing to our lives to purposefully go backwards to using less energy, living more simply, etc. When new people sign up, I'll print their comments here and publish our new membership numbers. For comments, I'll use initials and states only. No further demands, no money, just a monthly, online newsletter. If you want to and creative tips, I'll be happy to publish reach me at gobackclub@pa.net or http:// www.gobackclub. com or 21431 Marlin Circle, Shade Gap, Pennsylvania 17255. (*I can't figure out how to get this right.*)

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How the Internet Can Lower Your Electric Bill

Energy efficiency – revolutionized by cyber networks – may carry the same impact as a new oil boom. "Negawatt" electricity users are seeing power bills cut 90%.

By David J. Unger

Christian Science Monitor: October 6, 2013

CHICAGO, Illinois — Gary Raymond had had enough of the lights in Warehouse No. 5. The old metal-halide fixtures cast a sour yellow hue on the stacks of cardboard boxes inside the storage facility. They hummed incessantly and burned out well before their due.

So Mr. Raymond, the landlord, replaced them with a brighter, smarter, Web-enabled lighting system. He hoped it would help attract and retain tenants in the increasingly competitive warehouse market on Chicago's Southwest Side. But when the next utility bill arrived, something looked very wrong.

The bill appeared to show only partial electricity use, and the bottom line was a tenth



of what it normally was. The tenant thought the new lights might be broken but, as far as Raymond knew, they worked just fine.

The local utility couldn't believe it either. Commonwealth Edison (ComEd) dispatched an engineer to double-check that the meter was operating properly and later hired a consultant to monitor the lights.

Everything checked out. The meter worked. The lights shone. The partial electricity use wasn't a result of the "intelligent" lighting system working improperly. It was a result of it working exactly as designed — and better.

"We were amazed," Raymond says. "We

thought it'd be around 80 to 90 [percent savings] and it turned out to be more than 90."

Annual electricity costs at the 177,413-square-foot warehouse dropped from about \$50,000 a year to less than \$5,000 and ComEd awarded Raymond a \$65,176.90 efficiency rebate.

Today, Raymond walks under a cool, white glow in Warehouse No. 5, extolling those lights with the intimate reverence typically reserved for the latest smart phone or luxury car. Forklifts beep past as he strolls through rows of boxes filled with the empty plastic bottles made in an adjoining plant. Twenty feet above his head, networked clusters of light-emitting-diode (LED) bulbs brighten as he moves near them and dim as he walks away.

"I assure you, you've never seen anything like this on a lighting system before," Raymond says back in an office where he demonstrates the lights' online interface, which tracks consumption data. Laughing, he adds, "This is the type of thing you'd see on 'Star Trek."

Native Tribes' Traditional Knowledge Can Help U.S. Adapt to Climate Change

Albany Tribune: October 3, 2013 From a press release

New England's Native tribes, whose sustainable ways of farming, forestry, hunting and land and water management were devastated by European colonists four centuries ago, can help modern America adapt to climate change.

That's the conclusion of more than 50 researchers at Dartmouth and elsewhere in a special issue of the journal *Climatic Change*. It is the first time a peer-reviewed journal has focused exclusively on climate change's impacts on U.S. tribes and how they are responding to the changing environments. Dartmouth also will host an Indigenous Peoples Climate Change Working Group meeting November 4th and 5th.

The special issue, which includes 13 articles, concludes that tribes' traditional ecological knowledge can play a key role in developing scientific solutions to adapt to the impacts. "The partnerships between tribal peoples and their non-tribal research allies give us a model for responsible and respectful international collaboration," the authors say.

Dartmouth assistant professors Nicholas Reo and Angela Parker, whose article is titled "Re-thinking colonialism to prepare for the impacts of rapid environmental change," said New England settlers created a cascade of environmental and human changes that spread across North America, including human diseases, invasive species, deforestation and overharvest.

The researchers identified social and ecological tipping points and feedback loops that amplify and mitigate environmental change. For example, prior to the arrival of Europeans, old growth deciduous forests were rich with animal and plant resources and covered more than 80 percent of New England. Native peoples helped to sustain this bountiful biodiversity for centuries through their land practices.

"But when indigenous communities were decimated by disease and eventually alienated from their known environments, land tenure innovations based on deep, local ecological knowledge, disappeared," the researchers say. "Colonists, and their extractive systems aimed at key animal and plant species, became the new shapers of cultural landscapes. Rapid ecological degradation subsequently ensued and New Englanders created a difficult project of stewarding a far less resilient landscape without help from indigenous land managers who would have known best how to enact ecological restoration measures."

Today's tribal members who work with natural resources, such as fisherman, farmers and land managers, can play key roles in devising local and regional strategies to adapt to climate change, the researchers say.

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Photo from Rainbow



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Dear Iona,

Best of luck to you in any future endeavors you choose to pursue. I'd love to be on your monthly email list.

Thanks — J.P., Pennsylvania

Hi Iona,

Great newsletter — I am passing it around! Copper and gold mines are deadly. We have had them here, and the pollution is devastating. Also, dams take mercury from the mosses and pollute the streams, bays and ocean, contaminating the fish and mussels that fishermen catch and sell. S. C., Newfoundland, Canada

Hello, Iona.

Sure, Steve and I would love to join! I enjoy giving [Editor's Note: They gave us delicious canned peaches; this couple does a LOT of canning], I know how much you appreciate it. Yes, Steve grew up with helping his Mom in the kitchen harvesting all the fruits and veggies. I enjoy it very much as well as the younger kids. We make a day and night of it. And it is good to eat — especially around the

holidays — to bring out the fresh fruits and vegetables of summer! I bet John's spaghetti sauce is good. I will definitely bring you some of the applesauce!

C.R. and S. T., Maryland

Dear Iona,

What I like best in what you print is it is not all doom and gloom but ways to be on Earth that will help to keep us from destruction.

S.W.E., Florida

The Go-Back Club: Patience Comes in Handy

By Iona

Have you ever wondered about life before electricity? Sometimes I do when I'm trying to reduce our electric bill or my contributions to the changing climate.

One of my favorite examples was the day I decided to hand stitch a new dress. I must express gratitude to my grandmother, mother and step-mother, all of whom had enough patience to teach me how to sew hour after hour.

First my grandmother. My memories include happy days spent making doll clothes and felt doll hats plus doing little needlework samplers by hand.

The next generation of mothers (I was blessed to have had two) helped me learn how to use patterns, choose fabric, cut it out and then use a sewing machine to create new clothes for myself. Oh my, did they ever have patience! I made dozens of garments for myself and them, too, plus curtains, bedspreads, napkins and sometimes even hankies from old flannel sheets.

I loved sewing, even mending and altering my old clothes. One day I realized that all of this sewing was using energy from coal, oil, natural gas or nuclear plants and I was dismayed.

Now what?

When my faithful Kenmore sewing machine (a high-school graduation gift) died after 30 years of service, I found an old treadle, foot-powered Singer. With glee I installed a new belt and sat down to sew, this time letting my feet do most of the work. Alas, it never worked right for me so I gave it away.

O.K., what's next?

I cut out a dress, threaded my needle and

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Photo by John Conner Iona showing off the dress she stitched entirely by hand using no electricity.

stitched it entirely by hand. Silence.

No roaring motor, no thumping pedal. My needle moved noiselessly through the material stitch by stitch. Twenty years later I can still recall the thrill of it all, not to mention that I had created a unique dress without using any energy but my own.

So far this story includes three generations but there's a fifth coming up. I have two sons whom I never taught to sew; however, one has a very clever daughter who loves to create things.

Unfortunately, I live five hours from her but one day when I was visiting, her



Hair bow Iona's granddaughter showed her how to make when she couldn't figure that out. Photo by John Conner

mother asked if I'd teach my granddaughter how to crochet. I was excited. We sat down together with a crochet hook and some yarn. My granddaughter then showed me a project she had already started to work on. She had learned how to crochet on YouTube! I was proud of her but felt kind of useless. So instead, we sat and handstitched some doll clothes for her little "girls."

This summer their whole family came to visit us. The two children spent the night while their parents had some time alone nearby.

The next morning my granddaughter and I were talking about our long hair and some problems we have styling it. I confessed that every time I try to tie a bow in my ponytail, it comes out crooked. She excitedly told me she had the answer.

After they got home, she sent me a link to a YouTube done by a pre-teen girl showing us how to make a hair bow that would lie straight with no sewing at all.

Now my granddaughter is teaching her grandmother.

All it takes is a little (or a lot) of patience and we can work together or alone to solve some of our problems, tiny or huge. Or are they really the same?

Book Review: Short Nights of the Shadow Catcher

The Epic Life and Immortal Photographs of Edward Curtis (1868 to 1952) by Timothy Egan

Review by Iona

I just read the most phenomenal book, the story of a man who devoted his life to capturing, in photographs and words, the heart and soul of Native American tribes across our country as they were vanishing.

I was simply drifting aimlessly through Barnes & Noble and spotted this book. I had never heard of Edward Curtis or Timothy Egan. I picked it up, chuckling to myself, "Gee, I hadn't intended The Go-Back Club to go THIS far back!" Then I decided to buy it. I hope you'll do the same.

Timothy Egan is eloquent. How do I put into words a book that touched my heart so deeply? I can't. So here are Egan's own words in an early part of <u>Short Nights of</u> <u>the Shadow Catcher:</u>

In 1900, census takers were in the field, making a concerted effort, at long last, to count every Indian — this at a time when all violent hostilities between the original inhabitants of the continent and the new residents had finally come to an end... The early reports of the count were not good: the number of Indians was down, dramatically so. And the population figures conformed with other indicators of decline: by 1900, the tribes owned less than two percent of the land they once possessed. Entire languages had already disappeared — more than a loss of words, a loss of a way to look at the world. All of this had been predicted for some time and was taken as accepted wisdom. As far back as 1831, the prescient observer Alexis de Tocqueville had said this of American Indians: "They were isolated in their own country and their race constituted only a little colony of troublesome strangers in the midst of numerous dominant people."

I wrote this note right in my book: "My heart is trembling; this is so hard to read."

But the story took me by the hand and led me back in time. I can't find the right words to encourage you to read this otherworldly documentary so I'll simply say, "You'll love it." It's probably the best book I've ever read.

Edward Curtis was amazing. His friend George Bird Grinnell (founder of the Audubon Society and editor of Forest and Stream), was considered the world's foremost expert on Plains Indians. Here's more from the book:

"Grinnell was impressed by [Curtis's] passion. Two years after meeting Curtis on the volcano, he saw in him a rare combination. Here was 'a professional photographer, equipped with all the skill



required in the technical part of that business but he is also an artist, seeing and loving the beautiful and longing to reproduce it. And everything below, the sweep of tradition and majesty on one of the longest days of the year — it was fantastic, yes, Grinnell said. But the view was superficial as well, offering only a glancing impression.

"Their humanity has been forgotten,' Grinnell said of the predominant way most outsiders looked at Indians — as either savages or victims. The Piegan had gathered to pay homage to the Great Mystery, Grinnell explained. And if Curtis expected to understand that mystery, in order to take pictures that were true, he would need to go down below and get to know the people. The glory was in the eyes, in the faces, in understanding how they thought and what they did in the margins of a day. ...

"If the stories are contradictory, Grinnell continued, put two or more sources together and try to settle on the truth. Ask the same *question repeatedly — but ask it of the* people themselves. Don't bother with those who profess to know Indians because they live nearby, the merchants who scorn them or the ranchers who run cattle over the old buffalo grass. Nor should he (Curtis) waste his time with the anthropologists of eastern colleges or European universities, who divided themselves between the Noble Savage school and the racial determinists who saw Darwinian road-kill in the collapse of the tribes. And he certainly should avoid the do-gooders in black robes who were oh so sorry for the poor, pathetic Indians as they worked to tally converts. Finally, Grinnell reserved special scorn for government agents, the frontline enforcers of assimilation, the faces of a conqueror who made sure no sensible policy would ever be practiced. ...

"Curtis found these people very 'likeable,' and among the most courteous he had met, of any race. At the same time, Chief White Calf warmed to him. A trust was developing but it took a great deal of time, much of it spent in silence. His questions often went unanswered. 'To ask the Piegan . . . any direct question bearing on the subject of religion yields scant light,' said Curtis. 'It is necessary to learn rather from the everyday life of the people.' When the stories came, even in dribs and drabs, the breakthrough was thrilling to Curtis — like learning to swim after hours of flailing in water. See how easy: just let yourself float."

And this is what Curtis did, travelling in primitive ways to spend time with our first dwellers. Curtis vowed not to rehash the political clashes in a mood of pathos but to highlight the dignity of the Indian spirit. He embraced them and they him. He sacrificed everything for this project, which took most of his life. It is a fascinating account, part history and part adventure thriller, written by a brilliant journalist who has won numerous awards.

In his introduction to Volume I of the extraordinary set of books Curtis published about Native Americans, he said (with interspersed comments by Egan),

"At the moment, I am seated by a beautiful brook that bounds through the forests of Apache land. Numberless birds are singing their songs of life and love. Within my reach lies a tree, felled only last night by a beaver...' That felt right: the words, like the pictures, must spring from the Earth itself. 'Nature tells the story,' he continued, the light from his candles receding, wax falling to the tent floor. Though he would herewith record group histories, as one might explain Viking clans and their many battles, the goal of this narrative of small nations was to tell them from the point of view of the land and the Indian.

"It is thus near to Nature that much of the life of the Indian still is; hence its story, rather than being replete with statistics of commercial conquest, is a record of the Indian's relations with and his dependence on the phenomena of the universe — the trees and shrubs, the sun and stars, the lightning and rain — for these to him are animate creatures. Even more than that, they are deified"