

NEWS Monterey city officials try to bring Ed Ricketts' Lab back. **8**

MONTEREY COUNTY WEEKLY



MOVIES *Looper* sends time-travel assassin after...himself. **44**

We're f%#@ed

(OK, NOT COMPLETELY, BUT STILL...)

WHAT AL GORE IS DOING NOW TO REMIND
BLIND EYES THAT THE INCONVENIENT
TRUTH HASN'T GONE ANYWHERE. **18**

By Dan Linehan



We are almost completely f0/%0#&ed

AL GORE RALLIES CITIZEN DEPUTIES TO BREAK THROUGH CLIMATE-CHANGE DENIAL WHILE THERE'S STILL (A LITTLE) HOPE.

By Dan Linehan

If Al Gore's environmental truth was inconvenient before, now it's outright uncomfortable.

Last year was the earth's hottest on record. Ever.

That triggered extremes: A drought-generated dust storm reached 50 miles wide and 6,000 feet tall, engulfing Phoenix, Ariz. Tropical Storm Irene hit Killington, Vt., which has a ski mountain tall enough to see Canada—and it's not too often you see the words "tropical" and "Canada" in the same sentence. Typhoon Megi dumped 45 inches of rain on Taiwan in 48 hours, forcing more than 350,000 people to evacuate.

And this year has scorched 2011. Over a recent month-and-a-half stretch, the U.S. Department of Agriculture designated 1,692 counties disaster areas due to drought, with about 80 percent of the country's agricultural land affected. This comes after Russia stopped exporting food due to weather-related crop failures and resulting shortages. The worst drought in more than 100 years hit both North Korea and South Korea. On July 15, Kuwait hit an all-time high of 128.5 degrees Fahrenheit.

National Geographic reports that between 1998 and 2011, there have been 87 severe weather events in the U.S., and each caused at least \$1 billion in damages, though they were comparatively modest economically compared to Hurricane Katrina, which topped out at \$146 billion. The total disaster price tag nearly doubled the cost of the previous 16-year period.

Severe weather events, like stronger hurricanes, harsher droughts, wilder floods and fiercer firestorms, are happening with greater frequency. Scientists have been warning us that this—the wall of planet warming hitting harder and more frequently—was coming.

Only leaders and policymakers have failed to put up a fight. In the presidential dialogue ahead of November's election, the environment is most conspicuous by its absence.

Last month former vice president and *Inconvenient Truth* creator Al Gore spoke in San Francisco to a select group of Climate Reality Project volunteers about that pattern of disaster and silence. The private event—designed to train people how to debunk environmental myths, educate communities on the current crisis and share solutions—drew participants from 46 states and 47 countries.

"Down in Tennessee we have an old saying: 'If you see a turtle on top of a fence post, you can be pretty sure it didn't get there by itself,'" Gore said. "If you see a turtle on top of every 10 fence posts, something's going on."

"These are turtles on the fence posts. These are the once-in-a-thousand-year events which come along every two years now. These are the kinds of conditions that are associated with the droughts and the big floods and the fires and stronger storms. This is reality. This is happening now."

Seven years have passed since Gore's *Truth* shared a reality about climate change, aka global warming, that most of

the public knew very little about. There was shock, outcry, and...fizzle. Gore's message seemed to evaporate, like boiling water forgotten on a stove, even as the crisis gets worse and urgency grows.

Just this week, *Grist* energy and politics reporter David Roberts paraphrased the results of a study by the United Kingdom's National Weather Service, Tyndall Centre for Climate Change Research and the Grantham Institute.

"The most extreme climate 'alarmists' in U.S. politics are not nearly alarmed enough," he writes. "The chances of avoiding catastrophic global temperature rise are not nil, exactly, but they are slim-to-nil, according to a new analysis prepared for the U.K. government."

So the question for Gore seems self-evident: What now?

"Even beginning the conversation about climate change can be challenging," he says. "With blogs, social media, 24-hour cable news and well-funded denial campaigns promoted by the fossil fuel industry, it's difficult to know what to believe or how to begin to solve the crisis."

"Because of this, one of the most important things you can do as an individual is to learn the facts about how the climate crisis is impacting your community. Then reach out to family, friends, and neighbors to tell your story, and together, demand that your local leaders take action."

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On the Web:

View Al Gore's reality talk.

www.mcweekly.com/climate



Melting Point: A sightseeing ship keeps its distance as massive chunks of ice fall from the Perito Moreno Glacier in Patagonia, exposing electric-blue ice and creating a flotilla of icebergs.

DAN LINEHAN

Crossing the Line: Satellite data reveals how the new record-low Arctic Sea ice coverage, from Sept. 16, compares to the average minimum coverage over the past 30 years (in yellow). Sea-ice maps use data from NASA's Nimbus-7 satellite and the Defense Meteorological Satellite Program.

Hot and Bothered: Down feathers may shield this gentoo penguin from Antarctic cold, but the rise in temperature on the Antarctic Peninsula now makes it harder for the overheated chick to cool off.



DAN LINEHAN



NASA/GODDARD SCIENTIFIC VISUALIZATION STUDIO

Coming to the world of freelance writing from a background in science and engineering, I understood the real and factual threat of global warming early on. But I still wanted to see its effects for myself.

I left my Monterey home on a 2006-07 expedition to Antarctica led by an ecological safari company filled with naturalists, a Honolulu Zoo veterinarian, hardcore birders and nature photographers who contribute to publications like *Time* and *National Geographic*.

That December, the month before I arrived in Antarctica, a king penguin was spotted on the Antarctic Peninsula very near Palmer Station, one of three U.S. research bases in Antarctic bases.

This was strange. King penguins live in warmer waters and islands hundreds of miles north of Antarctica. They are nothing like the emperor penguins we all know from *March of the Penguins*, which thrive in the abominable temperatures at the South Pole. Antarctica was opening its freezer door, becoming warm enough for some warmer-weather animals to step inside.

Before arriving at Palmer, we island-hopped by Zodiac, observing skuas, Weddell seals and blue-eyed shags. But it was the little chicks of another species of small penguin—a typical inhabitant of the area, the gentoo—that made my heart drop.

It was so hot they panted like dogs. Their little wings stretched and trembled at their sides. Their beaks sagged open, exposing their normally hidden red tongues. Each miserable short breath they took seemed a rush.

Born with thick down feathers, the chicks couldn't even dip in the ice-cold water because they would drown. They were left to wait as many as seven weeks in the heat until their swimming feathers matured.

After the trip, I got word from Moss Landing Marine Laboratories adjunct professor David Ainley—a penguin expert who has logged time in Antarctica since the early '70s and helps run penguinscience.com—that “panting” is normal for penguins when temps rise. Gentoos are adaptable enough to adverse conditions, he added, that they won't be

on the front lines of species lost to the radically changing world.

But the good news was short-lived.

Warmer air over the cold, mountainous continent holds more moisture, which means more precipitation. This can wet gentoo chicks' down feathers and—followed by a frost—prove fatal. Antarctic Peninsula winter temps have increased by 16 degrees Fahrenheit since Ainley started visiting, and mid-ocean Antarctic temperatures have ticked up.

“For that to happen,” he says quietly, “even less than a degree centigrade, that requires a mind-boggling amount of heat. That's the most scary thing.”



Straight Ahead: “Here's what the national academies say as a group: ‘The need for urgent action to address climate change is now indisputable,’” Gore says. “Sometimes I'll see the political leaders dancing around. I want to say, in a version of the old cliché, ‘What part of indisputable do you not understand?’”

This summer, I interviewed activist, author and climate-change scholar Bill McKibben, the man credited with first bringing global warming from the scientific community to wider audiences with the book *The End of Nature*. When asked why so little progress has been made by governments and citizens to stop global warming, his response was blunt: “Because the fossil-fuel industry is more powerful...They're the richest industry the planet has ever seen, and they like things the way they are.”

A couple of weeks later, McKibben
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Are You Kidding?

Enough with the B.S. already, say national and local experts.

Al Gore's not alone. Many scientists are fatigued by those who try to reframe climate change as a belief system, rather than the most rigorous of empirically researched endeavors. Here's a look at what some of them are saying.

“The public has to realize that when you see these lists of scientists who are skeptics or deniers, these are not scientists who have expertise in this field. Maybe some proctologist somewhere is against the government, and he'll put his name on it. But the people who are actually doing the research and analyzing the data, their names don't appear on these lists.”

—George Somero, National Academy of Sciences member and former Hopkins Marine Station director, who first began traveling to Antarctica in 1963

“So if you keep burning yourself on the stove over and over and over again, and you happen to notice that it is only when those little blue flames are out there, you'd be stupid not to put it together that those blue flames are hot and they're burning you. So how long do we get burnt on the stove in order to be able to finally say, ‘Yes, this is the cause?’ And if you are telling me, I don't really know what the blues flames are, you're just the gas salesman.”

—Steve Palumbi, scientist, author and director of Stanford University's Hopkins Marine Station

“About 20 to 30 percent of all plant and animal species face the risk of extinction if temperatures increase by 2.2 to 4 degrees Fahrenheit. That's about 1 million species on this planet. If the thermometer rises to 7.2 degrees Fahrenheit, which incidentally is the path we are currently on, between 40 to 70 percent of all species will disappear. In my mind it is pure hubris to think that we can allow 30 to 70 percent of all species to go extinct without it having an enormous impact on human life.”

—Larry Schweiger, president and CEO of the National Wildlife Federation

“Absolutely climate change is happening. Climate change is really the biggest problem facing our oceans today. And our oceans are basically the life support system for the entire planet. So if our life support system crashes, we are in trouble.”

—Sarah Mae Nelson, Monterey Bay Aquarium climate scientist

“The deniers are absolutely certain that the scientists are wrong. And they have a dark depiction that the scientists are in error and that they are in it for money or that they are secretly communists and it is all a plot. And they throw up all kinds of alternative explanations. But the one thing the deniers are absolutely certain of is that it couldn't possibly be caused by the 90 million tons of global warming pollution that we are putting into the atmosphere every day. They're certain of that.”

—Al Gore, The Climate Reality Project



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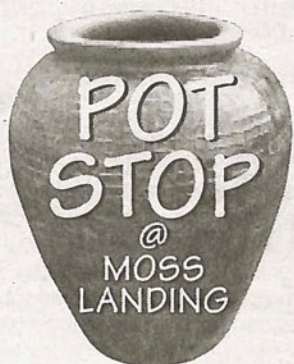


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published an article in *Rolling Stone* about three numbers that tell a terrifying story about global warming: 2; 565; and 2,795.

"The official position of Planet Earth at the moment is that we can't raise the [average global] temperature more than 2 degrees Celsius," he wrote. That number came from a under-attended 2009 Copenhagen climate conference in which global leaders estimated this temperature rise was safe enough.

Scientists, however, were dubious of the limit. McKibben quoted NASA climatologist James Hansen: "The target that has been talked about in international negotiations for 2 degrees of warming is actually a prescription for long-term disaster."

To stay below this limit of 2 degrees Celsius—and average global temperature is up about 0.8 degrees in the industrialization era, so our cup of manageable global warming pollution is already

Going, Going: A new NASA-funded study finds the Greenland and Antarctic ice sheets—West Greenland's Store Glacier is pictured here—are losing mass at an accelerating pace, three times faster than that of mountain glaciers and ice caps.



ERIC RIGNOT, NASA JPL

nearly half full—the total mass of global warming pollution in the atmosphere would need to stay below 565 gigatons.

The fossil fuel industry has an existing reserve with enough coal, oil, and natural gas that, if burned, would produce 2,795 gigatons of pollution. That's enough to fill up five cups.

"This number is the scariest of all," McKibben writes.

Gore understands that this news is hard to hear.

"We are all vulnerable to denial," he says. "If something is unpleasant to think about—and the potential end of future civilization qualifies as an unpleasant thought—then people don't want to think about. And if somebody will throw them a little lifeline and say, 'Hey, you don't have think about it. It's not real, or it probably isn't real,' then people grab hold of that thing. 'Thank goodness I don't have to think about it. Thank goodness I don't have to do anything about it.' So, in other words, these deniers don't have to win the argument; all they have to do is to create enough doubt in order to convince people that it is premature to come to a realization

that it is real." (See sidebar, this page.)

Right now, Gore adds, there are four lobbyists trying to suppress climate-change solutions for each member of Congress. That's a lot of firepower: 2,795 gigatons of fossil fuels can buy a lot of allegiance.

"The Koch brothers have a combined wealth of \$50 billion, meaning they trail only Bill Gates on the list of richest Americans," McKibben says. "They've made most of their money in hydrocarbons, they know any system to regulate carbon would cut those profits, and they reportedly plan to lavish as much as \$200 million on this year's elections."

It is not negligence that's preventing solutions to climate change; it is greed.

"We need to view the fossil fuel industry in a new light," McKibben says. "It has become a rogue industry, reckless like no other force on earth. It is public enemy number one to the survival of our planetary civilization."

Forget Occupy Wall Street. It's time for Occupy Exxon.

GORE TRUTH

In 2006's *An Inconvenient Truth*, Gore offered a dozen simple things you can do to combat global warming. That was then. This is now.

As the climate crisis spirals out of control, more needs to be done. In his Climate Reality Project talk, Gore presented a new list, summarized below, expanding on the previous 12.

Visit www.mcweekly.com/climate to view Gore's talk.

1. Don't Give Up

- Changing laws is more important than changing light bulbs.
- Tell your leaders it matters to you.
- Let them know you will support or strongly oppose them based on what they say and DO about solving the climate crisis.

2. Deepen Your Commitment

- Make consumer choices that reduce energy use.
- Consider the environmental impact of the items you buy.

3. Speak Up

- Win the conversation.
- Don't let denial go unchallenged.
- Use social and traditional media to get the word out.
- Use the #Reality hash tag.
- Write to the editor.
- Call TV and radio stations.
- Join The Climate Reality Project and other organizations committed to solving the climate crisis. ☑

The day after my Palmer Station visit, I took a hike at Neko Harbour. I was sweating like a melting glacier, even without a jacket. The expedition leader was shirtless.

When my companions returned to the landing site, I stayed back on top of bare rock where the ice had long since melted away from the glacier. I couldn't stop thinking, *This was Antarctica. It was supposed to be the coldest place on Earth.*

I watched the glaciers around me tumble in the sea. When ice breaks apart like that and comes crashing down, it sounds like cannon during battle.

The freshly revealed faces of ice behind the falling chunks glowed electric blue, the natural color of ice after pockets of air in glaciers are pressed out over the eons it takes glaciers to form.

I felt the air being pressed out of me. It was the loneliest and most helpless I've felt. But unlike those gentoo penguin chicks stuck in their down coats, I was able to take off my jacket. And I was able to raise my voice.

Telley Madina knows the feeling of helplessness.

For an hour he didn't know if his sister had been claimed by Hurricane Katrina's unflinching flood waters. For an hour there was nothing he could do. Then two. Then the hours stretched into a day, then another. And another.

He didn't sleep. He didn't eat. But he did pray.

"It was the longest four days of my life," he says. "I wouldn't wish it on my worst enemy."

His sister was rescued and packed into the New Orleans Convention center. But the deaths and anarchy that accumulated meant the rescue didn't make him feel *that* much better. Work as the coastal communities program officer for Oxfam America in New Orleans hasn't done much to ease a frustration that sent him to the Climate Reality conference.

"It feels like it is out of sight, out of mind," he says. "And I don't know why that is the case, because every storm season, we get our butts kicked."

He's scared to lose his home and his

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www.montereycountyweekly.com

city, and thinks it might be irresponsible to raise his 4-year-old son there.

"If you're gonna live here, and not do anything, I don't know how long we can have a reasonable expectation to stay and be safe," he says.

The Louisiana governor's office reports that a football-field-sized piece of wetland is inundated every 38 minutes, which means weaker storms have stronger impacts. This year's Hurricane Isaac, though only a category 1, still flooded places Katrina couldn't. "Any given day, the severity of any hurricane can increase," Madina says. "We need to be very, very clear on how climate change is affecting environment."

Susan Beckett of Boulder, Colo., and Jim Poyser of Indianapolis, Ind., didn't need to travel to hear Gore say, "We've broken more records this year just in the first eight months [than] last year. The hottest month ever measured in the U.S. was last month. Globally, this is 327 months in a row, I believe, that have been hotter than the 20th century average." They had already felt it.

Beckett, energy program manager at the Environmental Center of the University of Colorado, has repeatedly offered her house to those threatened by drought-fueled firestorms statewide. Experts estimate these fires are seven times as likely in the western states now that their average temperature has gone up 3 degrees Fahrenheit, extending fire season by 75 days since the 1970s.

In Poyser's state, crop failures and water rationing have overtaken farmlands. He fears life in America's heartland will be irreparably changed. As an editor for two independent newspapers, *Indiana Living Green* and *Nuvo*, he has written headlines like "Extreme Heat: the New Normal" amid a maelstrom of similar news around his state.

As Gore says: "There's been no year like this year."

THEN THERE'S THIS

Permafrost further complicates a hot-and-sticky climate situation.

By David Schmalz

As the earth gets warmer, the upper circle of the planet has slowly started bubbling, unleashing gases that if you're not worried about, you should be.

The Arctic permafrost—the layer of ancient organic matter like dead plants and animals sitting frozen atop the earth's crust—encircles a vast northern region from Siberia to Alaska to Canada, and is believed to hold twice as much carbon dioxide as is currently in the earth's atmosphere.

Organic matter that has been frozen since the last Ice Age, at least 12,000 years, is heating up. And in the southern parts of the permafrost, it's starting to thaw.

Complicating matters: As the permafrost thaws, it typically off-gases as methane, which is almost 30 times more potent as a greenhouse gas than CO₂.

This is where the term "positive feedback loop" enters the equation: If the greenhouse gas levels are above a certain point in the atmosphere, they will keep the earth warm enough to continue melting the permafrost, which will then off-gas enough methane to perpetuate global warming despite reductions in carbon emissions by humans.

The accepted line that has been drawn to stave off this cataclysmic loop is 350 parts per million CO₂ in the atmosphere, which was introduced by NASA scientist James Hansen in 2007. (It has since inspired climate change organizations such as Bill McKibben's 350.org.) The earth's atmosphere is currently above 390 ppm and rising, and despite the Kyoto Protocol and ongoing political talk over the last decade about

reducing emissions, results have been elusive.

While it's easy to blame the fossil-fuel industry—they've certainly lobbied against alternative energies—it's also important to put in perspective just how much energy we consume. According to a recent article in *The New Yorker* ("The Climate Fixers," May 14), humans now consume 3 cubic miles of oil every year—a trillion gallons of gas. To replace even one of those miles with carbon-neutral energy would require weekly construction of new atomic plants for 50 years, or thousands upon thousands of windmills.

There is a burgeoning branch of science, geoengineering, that seeks a solution amid the realities of our trajectory. Whether it's altering the weather by injecting sulfur dioxide into the atmosphere (mimicking the effects of a 1991 volcanic eruption in the Philippines that reduced the sunlight reaching the earth by over 10 percent), constructing carbon sinks, or stirring up the ocean to absorb more carbon, geoengineers are attempting to address a problem that most of us would rather ignore.

Any solutions, at this point, are complex and messy, and attempting to engineer the weather could indeed be catastrophic.

Nonetheless, the most certain path to disaster is the one we are currently taking: doing nothing. ☒



Climate Reality Project President Maggie Fox gets it. After working on climate change for more than two decades, it came home to her in Colorado.

"To see a fire coming over the top of a mountain less than a mile from your house that you can look directly at from your porch..." she says, choking up.

But she finds hope in the 1,000 newly minted leaders who came from as far away as Argentina and Australia to attend

the Gore-led training—and committed to giving at least 10 of their own talks.

"People exhibit leadership in a magical myriad of ways," she says.

Fox and Gore are hoping it's those citizen stories—told person-to-person by those who have felt them personally—that will affect audiences in ways photographs of distant polar bears and impassioned speeches by environmental activists cannot.

Or the truth goes from inconvenient to uncomfortable to irreversible. ☒

Mark C. Anderson contributed to this report.

Request a free Climate Reality Project talk by visiting www.climate realityproject.org.