

Jain Voice Needed in Climate Crisis

1/23/2015

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Disturbing Trends

- 2014 was hottest year on record globally
- The 10 warmest years on record have all occurred since 1997
- California drought is likely a consequence
- Coral reefs have declined by 40 percent worldwide
- US Dept of Defense: Global Warming will intensify the challenges of global instability, hunger, poverty, and conflict. They will likely lead to food and water shortages, pandemic disease, disputes over refugees and resources, and destruction by natural disasters in regions across the globe

CNA Report (Center for Naval Analyses)



National Security and the Accelerating Risks of Climate Change

CNA Military Advisory Board

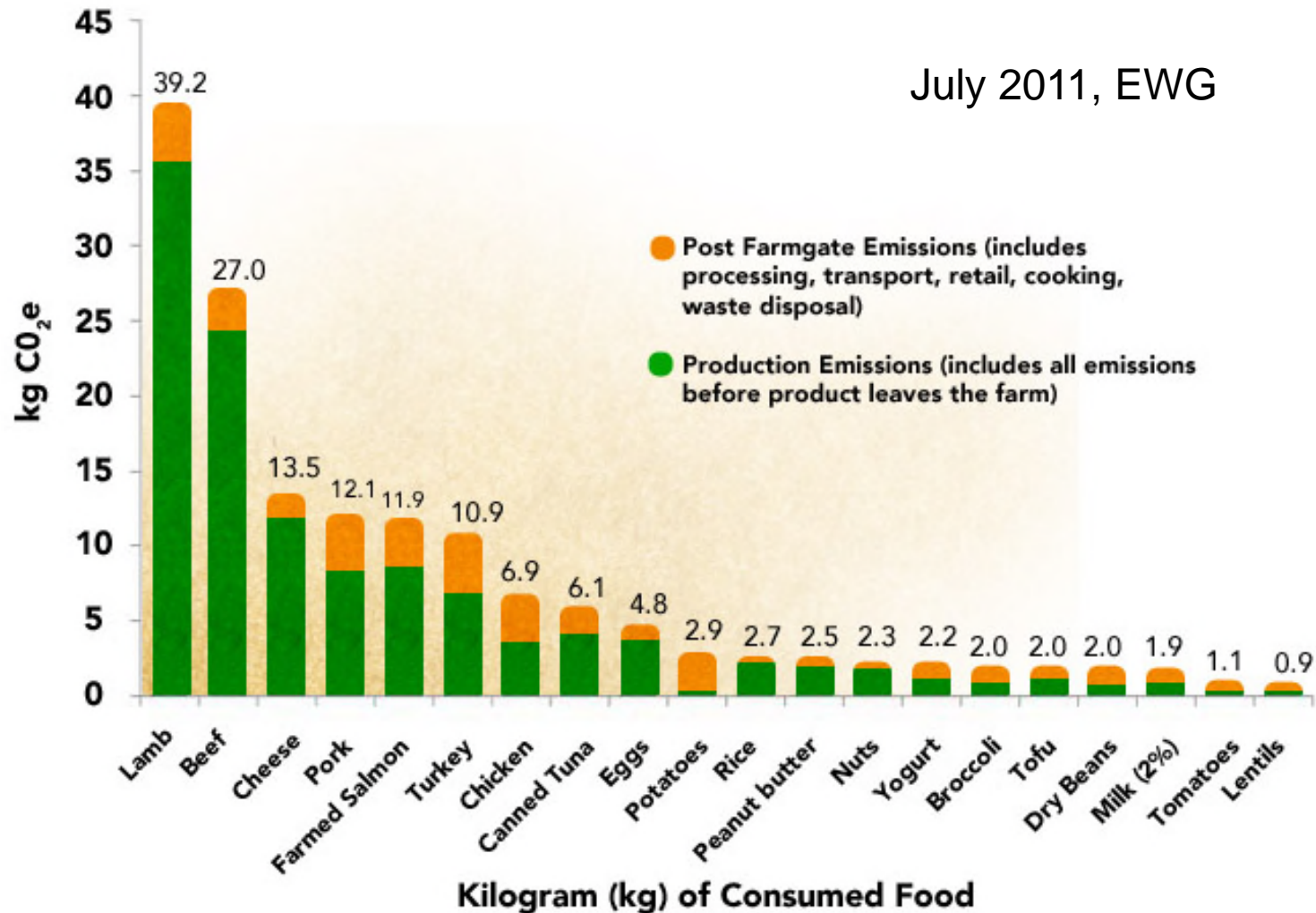
May 2014

A compelling case that climate change is no longer a future threat—it is taking place now
Climate change serves as a catalyst of conflict .

http://www.cna.org/sites/default/files/MAB_2014.pdf

Carbon Footprint of food (incl. methane)

Figure 1. Full Lifecycle Greenhouse Gas Emissions from Common Proteins and Vegetables

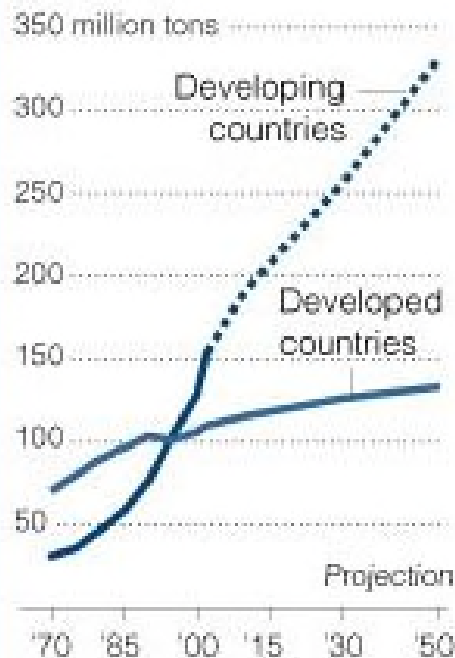


Meat and milk consumption increasing rapidly

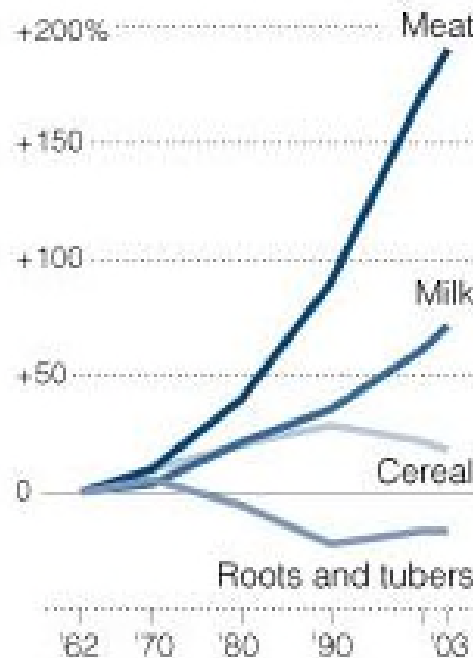
Meat Consumption and CO₂ Emissions

According to a report by the United Nations Food and Agriculture Organization, livestock generates 18 percent of greenhouse gas emissions. The problem is expected to grow, as developing countries increase their consumption of meat and byproducts.

Meat production

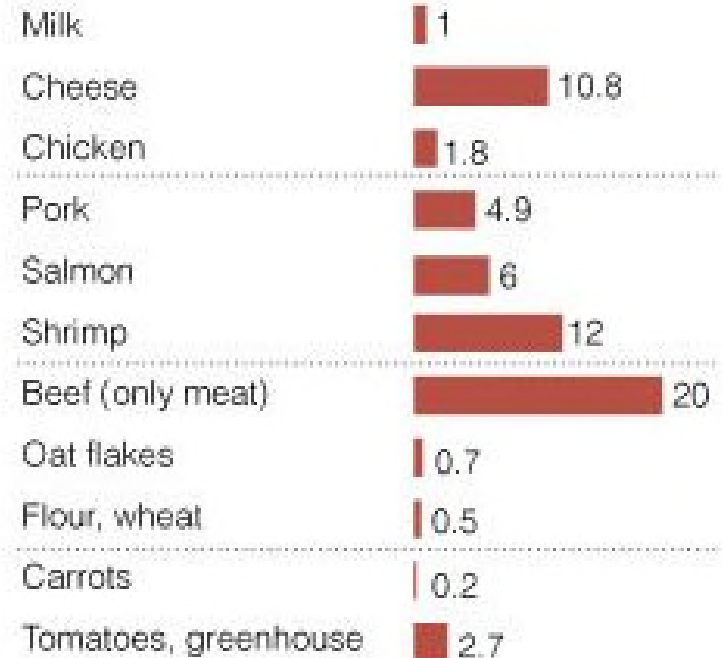


Food consumption in developing countries



CO₂ produced

Pounds of CO₂ per pound of product



Source: "Livestock's Long Shadow," by the United Nations Food and Agriculture Organization, 2006; Lantmannen

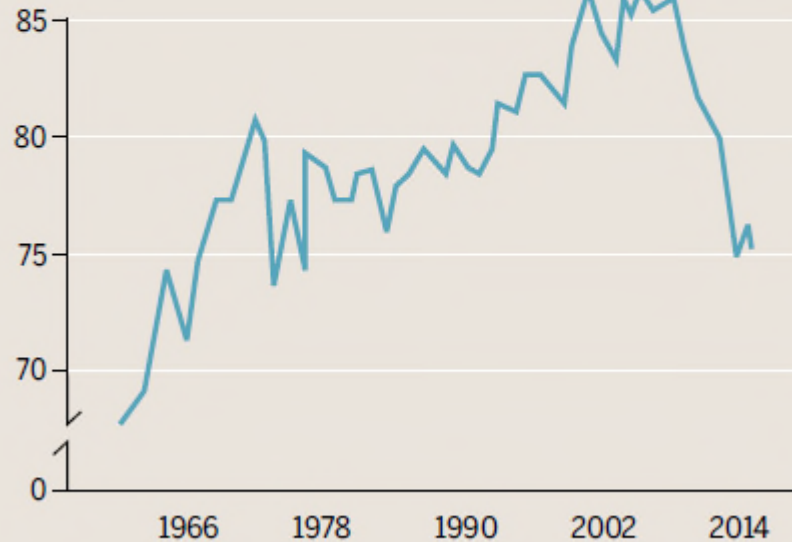
THE NEW YORK TIMES

Some Good News

Past the peak in the USA

Meat consumption per capita, kilograms, without waste and pet food 2013 and 2014: estimates

CME



But now everyone seems to be talking about Low Carb and Paleo diets so will this trend reverse?

**On average, meat-eaters contribute
46 to 51 percent more food-related greenhouse gas emissions than fish eaters,
50 to 54 percent more than vegetarians and
99 to 102 percent more than vegans.**

<http://thinkprogress.org/climate/2014/06/27/3454129/eating-meat-carbon-emissions/>

"We can't solve the climate problem with just what we are doing with fossil fuels and energy," said Doug Boucher, director of climate research at the Union of Concerned Scientists, which is lobbying for changing the pyramid. "Food is a big part of it."

<http://www.latimes.com/nation/la-na-climate-food-20150118-story.html>

We Jains need to show the world that a vegan/vegetarian diet is healthy and is critical to reduce global warming.

We need to talk with our friends about how bad a meat based diet is for all of us.

We Jains need to become vegans because of cruelty but also because cheese has the 3rd highest Carbon Footprint.

We're in 6th Major Extinction

- We are in the midst of the Sixth Great Extinction, an event characterized by the loss of between 17,000 and 100,000 species *each year*.
- The last mass extinction, around 65 million years ago, wiped out the dinosaurs.
- **It is estimated that half of all plants, animals and birds on the planet will die off before 2100.**

<http://newswatch.nationalgeographic.com/2012/03/28/the-sixth-great-extinction-a-silent-extermination/>

Previous Extinction Events

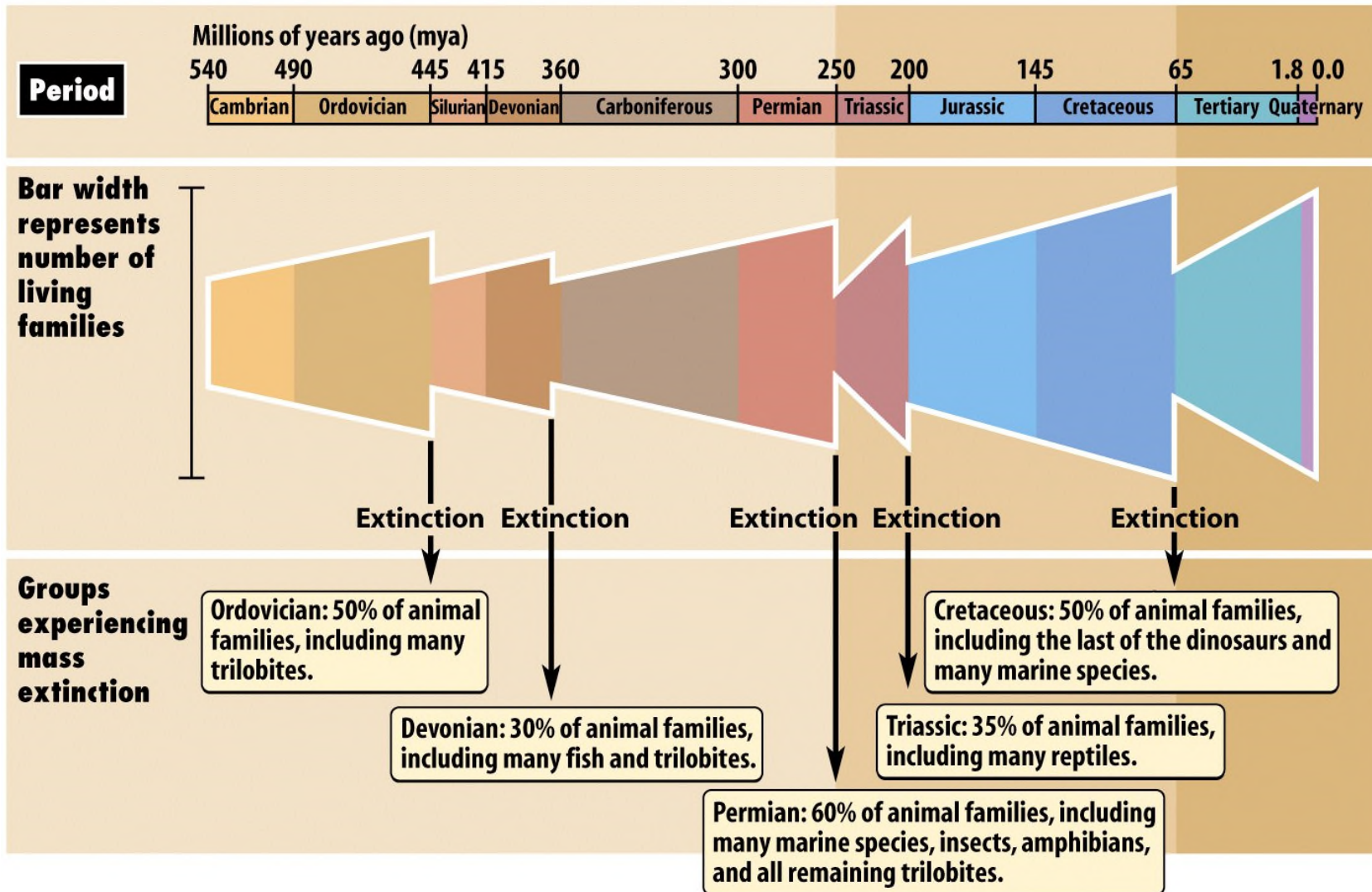


Figure 19-8 Discover Biology 3/e
© 2006 W. W. Norton & Company, Inc.

[Chicxulub crater](#) in the [Gulf of Mexico](#) – 65Ma Cretaceous

Even though we live a vegetarian or vegan lifestyle, we are contributing to this mass extinction every time we burn fossil fuels



We must be conscious of the suffering of polar bears while they are going extinct

Andy Mariani (Morgan Hill, CA)

- [Re: Winter Chill Hours](#)
- Mon Jan 19, 2015 5:02 pm (PST) . Posted by:

I have a weather station in the middle of my cherry orchard in Morgan Hill.

we've logged only 276 hours up through January 18th

This is of great concern, but

**Woe to those who attempt to grow commercial cherries;
however, water is even more critical for us at this point.**

**Why concern yourself about not having cherries when
you may not have enough water to save your trees?**



Andy Mariani

The Forum on Religion and Ecology at Yale

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CLIMATE CHANGE STATEMENTS FROM WORLD RELIGIONS

- [Baha'i](#)
- [Buddhism](#)
- [Christianity - Roman Catholic](#)
- [Christianity - Eastern Orthodox](#)
- [Christianity - Protestant Denominations and Organizations](#)
- [Confucianism](#)
- [Daoism](#)
- [Hinduism](#)
- [Indigenous Traditions](#)
- [Islam](#)
- [Jainism](#)
- [Judaism](#)
- [Shinto](#)
- [Interfaith](#)
- [More Statements from World Religions](#)

From the Yale Website on Jainism

JAINISM

Jainism Faith Statement on Ecology

2003

<http://www.arcworld.org/faiths.asp?pageID=82>

Prepared on behalf of the Institute of Jainology by Dr L. M. Singhvi, President of the Jain Institute, the main body bringing together the three distinct traditions of the Jains. From the book, *Faith in Conservation*, by Martin Palmer with Victoria Finlay, published by the World Bank in 2003.

"Jainism is fundamentally a religion of ecology and has turned ecology into a religion. It has enabled Jains to create an environment-friendly value system and code of conduct."

Given this, why is ecology not stressed more in the Pathshala curriculum in our temples?

<http://fore.research.yale.edu/climate-change/statements-from-world-religions/jainism-/>

Search on JAINA website for Climate Change

A search on jaina.org for “climate” resulted in 25 hits of which only 12 had anything to do with Climate Change.

All were articles by individuals. None were official statements by JAINA.

Roman Catholic Stance

“I don’t know if it (human activity) is the only cause, but mostly, in great part, it is man who has slapped nature in the face,” Pope Francis said. “We have in a sense taken over nature.” (Jan 2015)

For months, Francis has been drafting an encyclical on the environment and global warming which he hopes to release by June or July.

He said he wanted his encyclical out in plenty of time to be absorbed before the next round of U.N. climate change talks in Paris i

“A papal encyclical is rare. It is among the highest levels of a pope’s authority. It will be 50 to 60 pages long; it’s a big deal

Unitarian Universalist Association 2014 Business Resolution

- WHEREAS, the climate crisis threatens Earth systems through warming, destabilization of the atmosphere and climate, sea level rise, and the acidification of the oceans, of which the brunt of the burden has fallen and will fall on the poorest people in the world, who are least responsible for the crisis;
- WHEREAS, the 2006 Unitarian Universalist Association (UUA) General Assembly approved a Statement of Conscience on the Threat of Global Warming/Climate Change declaring “that we will not acquiesce to the ongoing degradation and destruction of life that human actions are leaving to our children and grandchildren”;
- WHEREAS, we have a moral responsibility to Earth, to all beings, and to future generations to **do everything in our power to bring about a swift transition from fossil fuels to a sustainable energy economy;**

Unitarian Universalist Association 2014 Business Resolution

- THEREFORE BE IT RESOLVED that **this General Assembly calls upon the UUA to cease purchasing securities of CT200* companies as UUCEF investments immediately**; and
- BE IT FURTHER RESOLVED that this General Assembly calls upon the UUA to continue to divest its UUCEF holdings of directly-held securities of CT200 companies, reaching full divestment of these companies within five years;

<http://www.uua.org/statements/statements/296727.shtml>

* 200 major fossil fuel companies listed by the Carbon Tracker Initiative (CT200),



<http://gofossilfree.org/usa/csu-chico-commits-to-full-divestment-of-fossil-fuel-holdings>

<http://gofossilfree.org/commitments>

Quaker Letter to Obama SOTU Jan 20, 2015

- Quakers and many people of faith carry an abiding concern for the welfare of humankind and the planet we live on. We carry this moral voice in our dialogue with Congress and we urge you to speak to the imperative need for increasing action for international climate action. The agreement you announced a few weeks ago with China to reduce carbon output has far-reaching implications. This is a huge step to addressing the alarming climate disruption that is costing U.S. loss of life and billions of dollars right now and that puts our planet in peril.
- The **more that you can do in your final two years in office to reduce U.S. energy use and dependence on fossil fuels and to accelerate a global response to similar reductions, will be a legacy for our children and their children and beyond**



Interfaith Power & Light

A RELIGIOUS RESPONSE TO GLOBAL WARMING

HOME

ABOUT

PROGRAMS

PUBLIC POLICY

RESOURCES

CLERGY CORNER

IN THE NEWS



NATIONAL PREACH-IN ON CLIMATE CHANGE FEBRUARY 13 • 14 • 15, 2015

Register for the National Preach-in on Climate Change

Preach about global warming over Valentine's Day weekend, and join with 100,000 people of faith in urging leaders to act...

Why is the Jain Voice so Absent given our history and teachings?

- **Ahimsa** – we should understand how our actions are leading to suffering and extinctions
- We should be the leading voice urging people to adopt vegan or vegetarian diets
- **Aparigraha** – much of the climate destruction is due to greed by people to acquire more possessions and by oil companies wanting to keep us addicted to oil.
- **Our community should lead in protecting our planet. We must give our youth the tools.**

Start with our Temples

- Build LEED Platinum Temples (net zero Carbon)
- Retrofit all temples with renewable energy
- Provide Electric Vehicle charging (free like UU in Palo Alto)
- Develop a Pathshala program that teaches ecology and climate change
- Create small discussion groups with the youth around Climate Change – Jain teachings will become more relevant to their daily lives
- Divest of fossil fuel companies (CT200)
- Participate in Interfaith events – IP&L

If everyone in the U.S. chose a vegetarian diet, it would be the equivalent of taking 46 million cars off the road or not driving 555 billion miles -- a 4.5 percent reduction in overall emissions.

<http://www.ewg.org/meateatersguide/a-meat-eaters-guide-to-climate-change-health-what-you-eat-matters/reducing-your-footprint>



Backup Slides

<http://gofossilfree.org/commitments/>

Religious Institutions

United Church of Christ – National
Massachusetts United Church of Christ
Minnesota United Church of Christ
Evangelical Lutheran Church of Oregon
First Unitarian Church of Salt Lake City, UT
First Parish Unitarian Universalist Church in Cambridge, MA
Portsmouth South Church Unitarian First Unitarian Church of Pittsford, VT
First Unitarian Society of Milwaukee, WI
First Presbyterian Palo Alto, CA
Uniting Church, New South Wales & ACT, Australia
[Dover Friends Meeting, Dover, NH](#)
Melbourne Unitarian Church, Australia
Unitarian Universalist Society of Amherst, MA
Anglican Diocese of Wellington, New Zealand
Anglican Diocese of Auckland, New Zealand
Anglican Diocese of Dunedin, New Zealand
Anglican Diocese of Waiapu, New Zealand
Anglican Diocese of Waikato and Taranaki, New Zealand
Anglican Church of Aotearoa, New Zealand and Polynesia
[Anglican Diocese of Perth, Australia](#)
[Anglican Diocese of Canberra and Goulburn, Australia](#)
[Anglican Diocese of Melbourne, Australia](#)
[Anglican National Super, Australia](#)
[Brighthelm Church, Brighton, UK](#)
[Society for Community Work](#)
[Episcopal Diocese of Massachusetts, MA](#)
[Maine Council of Churches, ME](#)
Trinity St. Paul's United Church, Toronto, Canada
[Quakers in Britain](#)
[Diakonia, Sweden](#)

[Colorado Ratnashri Sangha](#)

First Unitarian Church, Ottawa
[Union Theological Seminary, New York City](#)
[First Religious Society of Newburyport, MA](#)
[Unitarian Society of Northampton & Florence, MA](#)
[Unitarian Universalist Association](#)
Central Philadelphia Monthly Quaker Meeting, PA, USA
Lansdowne Monthly Quaker Meeting, PA, USA
Westtown Monthly Quaker Meeting, PA, USA
Lehigh Valley Monthly Quaker Meeting, PA, USA
Old Haverford Monthly Quaker Meeting, PA, USA
Newtown Monthly Quaker Meeting, PA, USA
Haverford Quarterly Quaker Meeting, PA, USA
[Jamaica Plain Unitarian Universalist, NY, USA](#)
[World Council of Churches](#)
Community Friends Quaker Meeting, OH, USA
[Uniting Church in Australia Assembly, Australia](#)
[Franciscan Sisters of Mary, MO, USA](#)
[Episcopal Diocese of Western Massachusetts, MA, USA](#)
[Church of Sweden](#)
Unitarian Universalist Congregation of South County (UUCSC), RI, USA
First Unitarian Church of Portland, OR, USA
Mountain Vista Unitarian Universalist Congregation, AZ, USA
[First Universalist Church of Pittsfield, ME, USA](#)
Unitarian Church of Los Alamos, NM, USA
Unitarian Universalist Church of Palo Alto, CA, USA
[UU Fellowship of Corvallis, OR, USA](#)
Unitarian Universalist Fellowship of Ames, IA, USA
Lake County Unitarian Universalist Church, WI, USA
First Parish (Old Ship Church), MA, USA
All Souls UU Church, MA, USA
Unity Temple UU Congregation, IL, USA

World Council of Churches

- Guillermo Kerber, the WCC programme executive on Care for Creation and Climate Justice, [explained](#), "The general ethical guidelines for investment already included the concern for a sustainable environment, for future generations and CO2 footprint. **Adding fossil fuels to the list of sectors where the WCC does not invest in serves to strengthen the governing body's commitment on climate change as expressed in various sessions of the Central Committee.**"
- The World Council of Churches represents [over 500 million Christians](#) in more than 110 countries. The WCC is an umbrella organization made up of [345 member churches](#), which include the Church of England.

India cracking down on Environmental NGOs

- In recent months, international and American-based NGOs have had their funds flowing into India frozen by the Indian Ministry of Home Affairs, and earlier this month, an Indian Greenpeace activist bound for the U.K. to discuss her work with members of parliament was “offloaded” from her flight in New Delhi.
- More recently, the Ministry moved to stop any international bank transfers by four U.S.-based groups — 350.org, the Sierra Club, Avaaz, and the Bank Information Center. Each of the groups has questioned one or more of India’s coal projects,

<http://grist.org/climate-energy/india-invites-obama-over-but-wants-350-org-and-sierra-club-to-stay-home/>

Jan 2015

What can you personally do?

Show your Priorities as Jains

- Choose for the environment, not for your ego
- Think about your Carbon Footprint in all decisions
- Get rid of all your incandescent bulbs → CFL or LED
- NO paper NOR plastic
- NO BOTTLED WATER, especially from far away (France/Italy/Fiji)
- SLEEP your computers (50 W → 5 W)
- Clean your refrigerator coils
- Pump up your car tires
 - 80 percent of the cars on the road are driving with one or more [tires](#) underinflated (AAA)
 - Camry loses 1.3 mpg when underinflated 10psi
- Eat Local -- Don't buy grapes from Chile/Peru. Mangoes?
- Eat organic (vegan is best). FL tomatoes have 8X pesticides as CA
- FAIR TRADE – no child or slave labor, workers treated fairly

What MORE can you do?

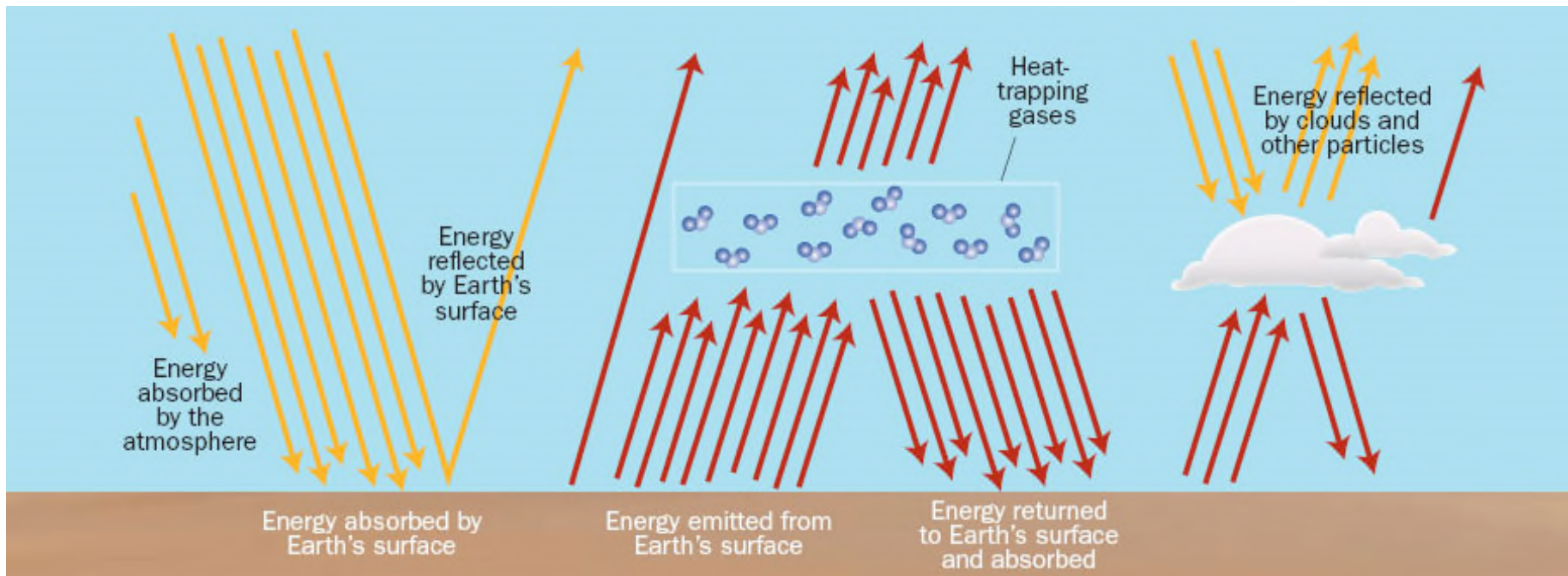
- Buy green (renewable) power from your utility
- Drive and Fly less
- Buy less. **Aparigraha -- greedlessness**

On Black Friday, celebrate Buy Nothing Day
(wikipedia/Buy_Nothing_Day)

- Think smaller : houses, cars, vacations
- Give gifts of experiences/memberships rather than stuff
- Help redefine status – compete for who is greenest
- Support Legislation to reduce CO₂ – Carbon Fee and Dividend
- SHARE THINGS – lawnmowers, tools, cars,

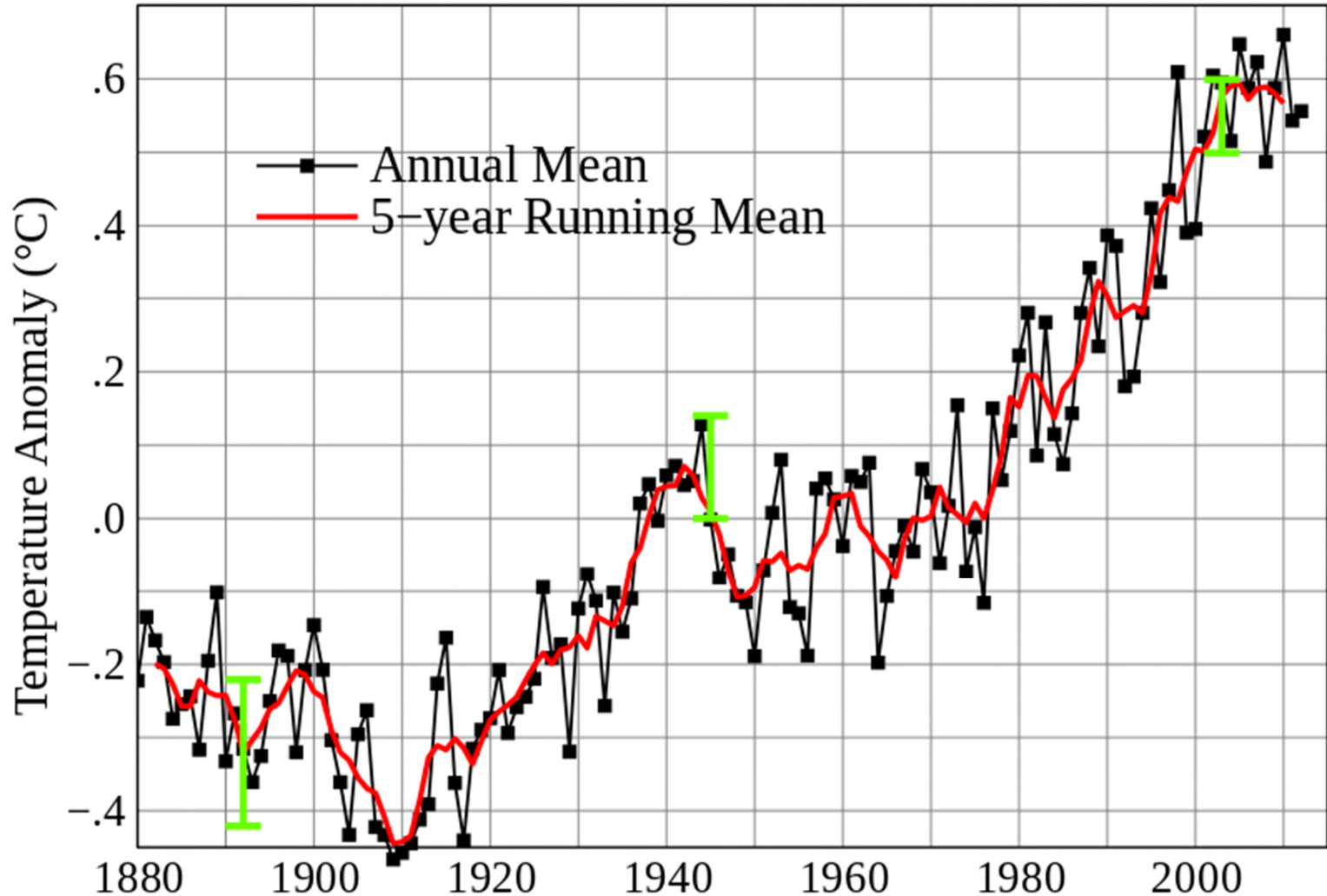
What is Climate Change?

- CO₂ and methane are heat trapping green house gasses
- Average Temperature of the planet is rising
 - 1 deg F since 1970, expected 11 degrees by end of century
 - May 2010 hottest summer in India since late 1800s,
 - 122 deg → 100 deaths in Gujarat , dozens of peacocks dead in forest reserve in U.P.
 - Imagine 11 degrees hotter

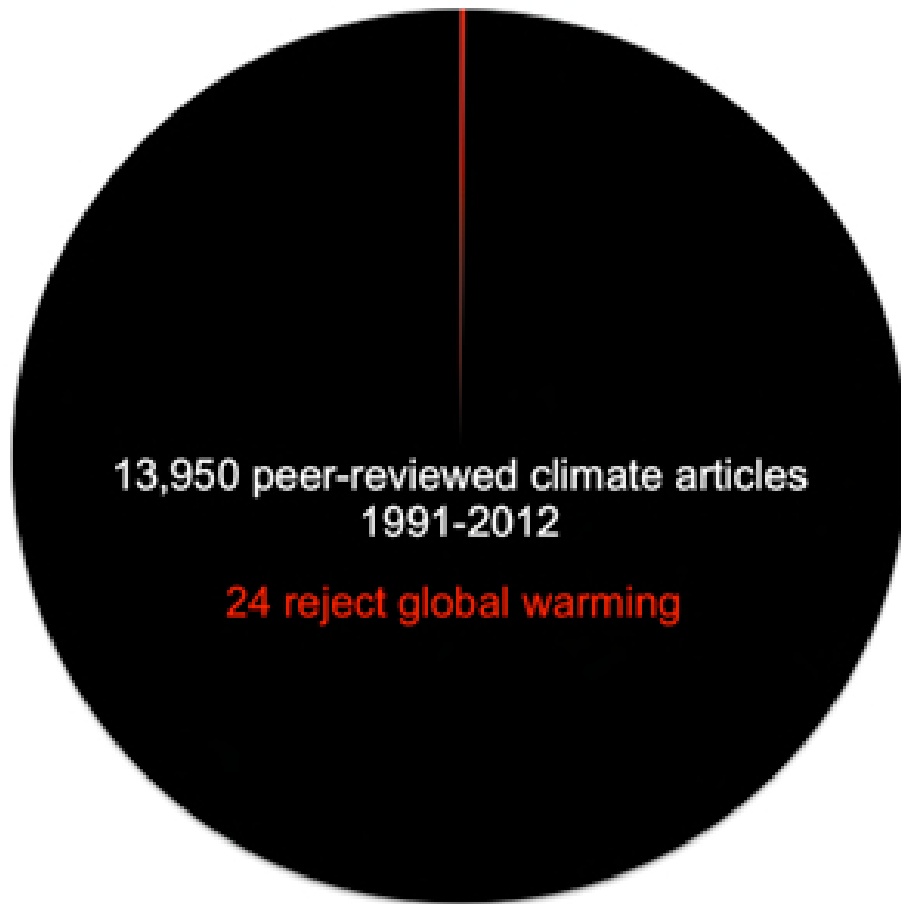


The planet is 0.8 deg C hotter in last 130 years

Global Land–Ocean Temperature Index



The Science is settled – There is no Debate



0.17% or 1 in 581

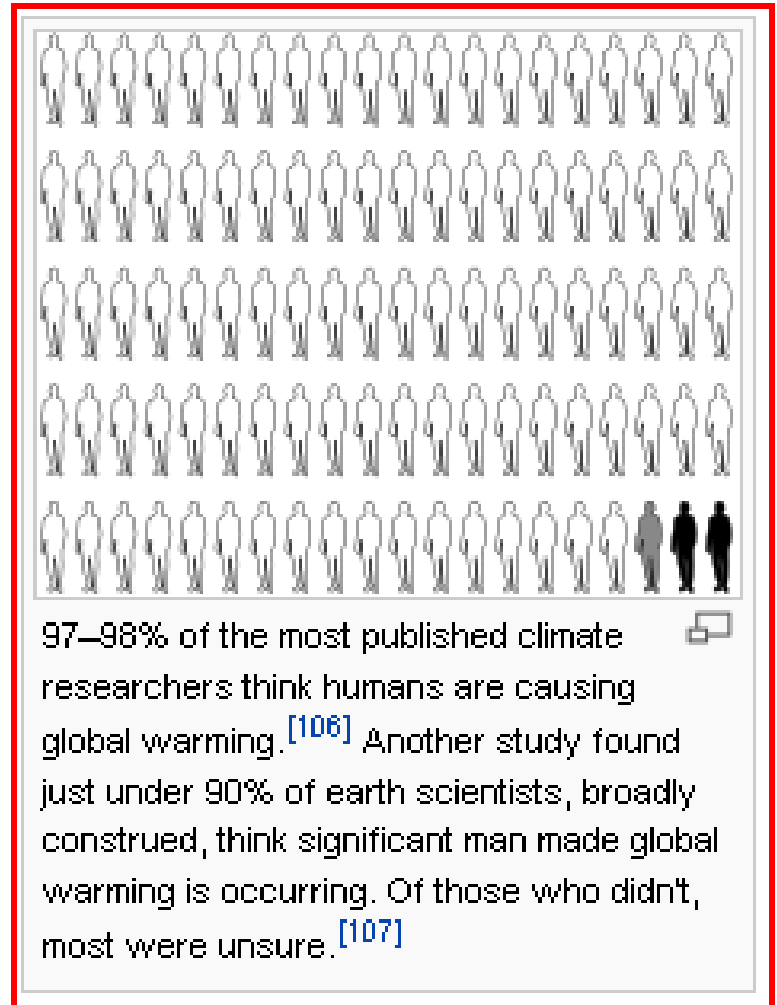
**Why Climate Deniers Have
No Scientific Credibility**

National Academies of Science

- [American Association for the Advancement of Science](#) as the world's largest general scientific society 2006:

The scientific evidence is clear: global climate change caused by human activities is occurring now, and it is a growing threat to society....The pace of change and the evidence of harm have increased markedly over the last five years. The time to control greenhouse gas emissions is now.

- [US National Academy of Sciences](#): "In the judgment of most climate scientists, Earth's warming in recent decades has been caused primarily by human activities that have increased the amount of greenhouse gases in the atmosphere.." ^[117]

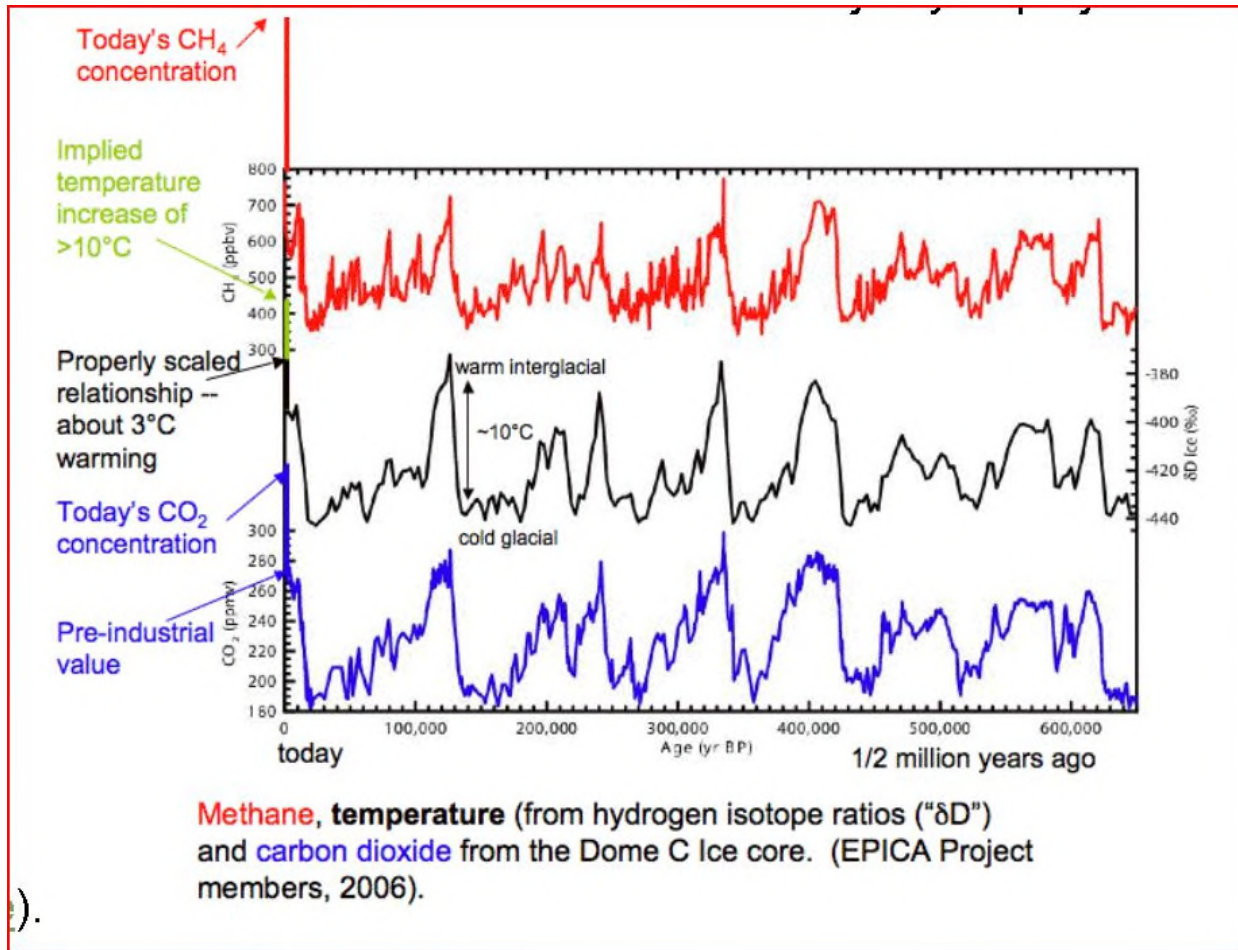


Polar Bears and Habitat Loss

- U.S. Geological Survey predicts two-thirds of the world's polar bears will disappear by 2050
- Shrinking sea ice → shrinking habitat
- Ice-floe breakup in western Hudson Bay is currently occurring three weeks earlier than it did 30 years ago which reduces the polar bear's feeding season
- Female weight : 290 kg (640 lb) in 1980 and 230 kg (510 lb) in 2004.



Temperature vs CO₂ -- historical



We are currently at **390 ppm CO₂**, 400,000 year historical high 290 ppm
 Currently **1850 ppb methane**, 400,000 year historical high 700 ppb
 Milankovitch cycles: precession: 26,000 years, obliquity: 41,000 years

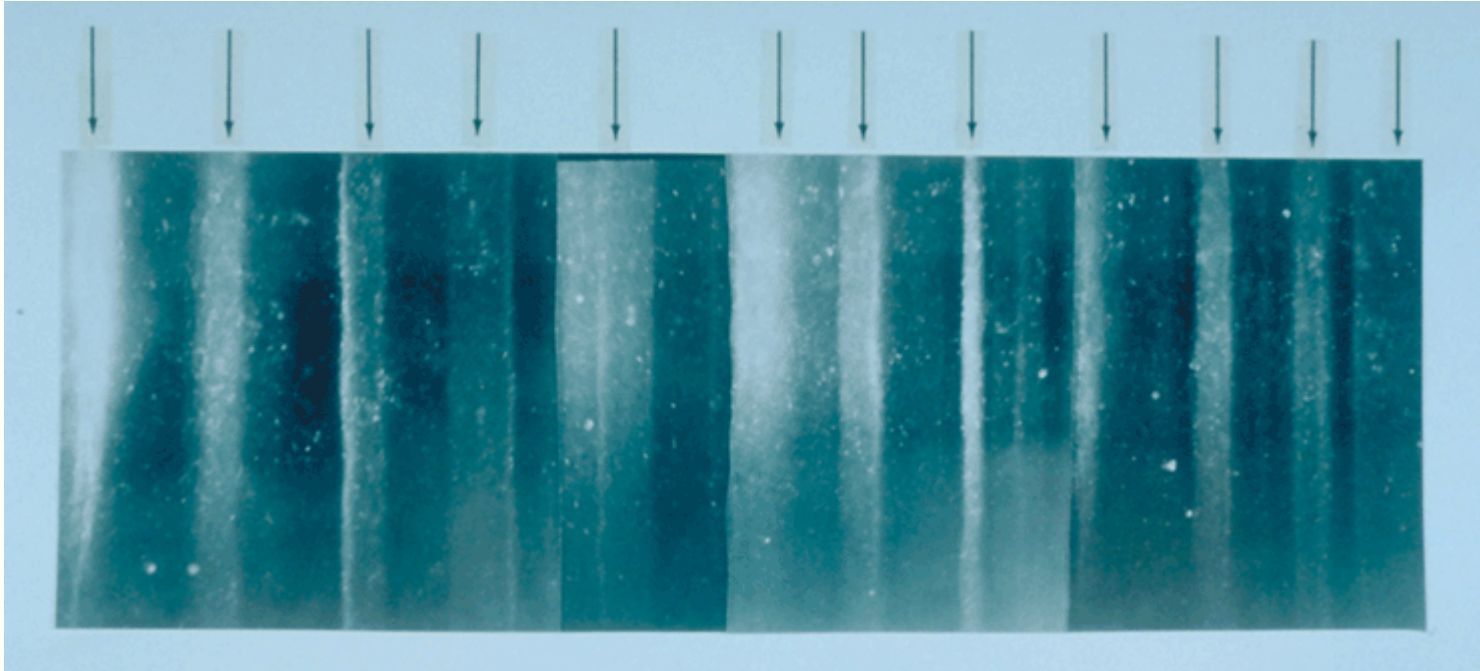
What is an Ice Core ?



Ice core is 3345 meters long = 436,000 years
Stored at -55°C

Source: http://www.ncdc.noaa.gov/paleo/slides/slideset/15/15_305_slide.html

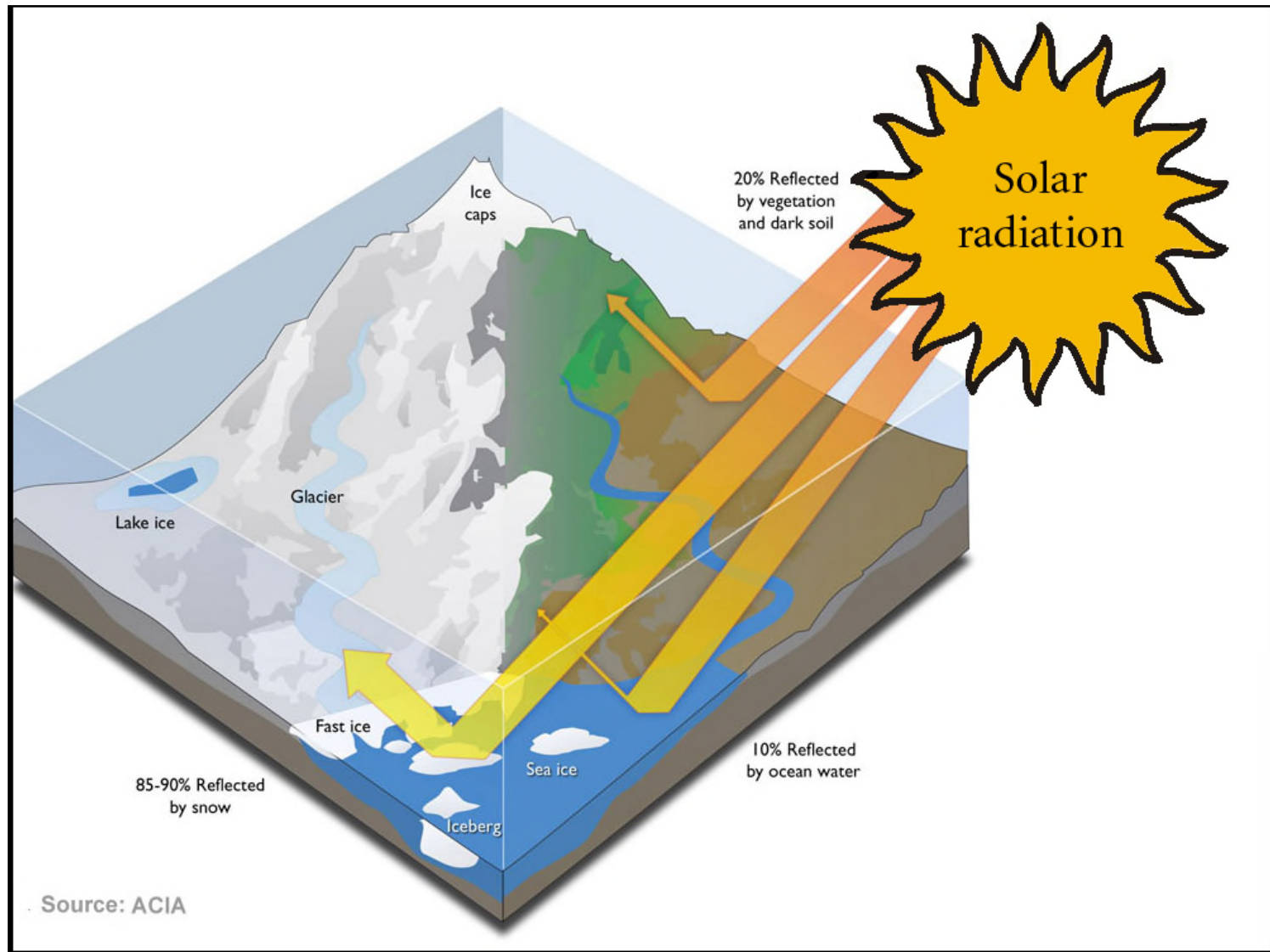
What is an Ice Core – page 2?



19 cm (7.5 inches) long section of GISP 2 ice core from 1855 m showing annual layer structure illuminated from below by a fiber optic source. Section contains 11 annual layers with summer layers (arrowed) sandwiched between darker winter layers.

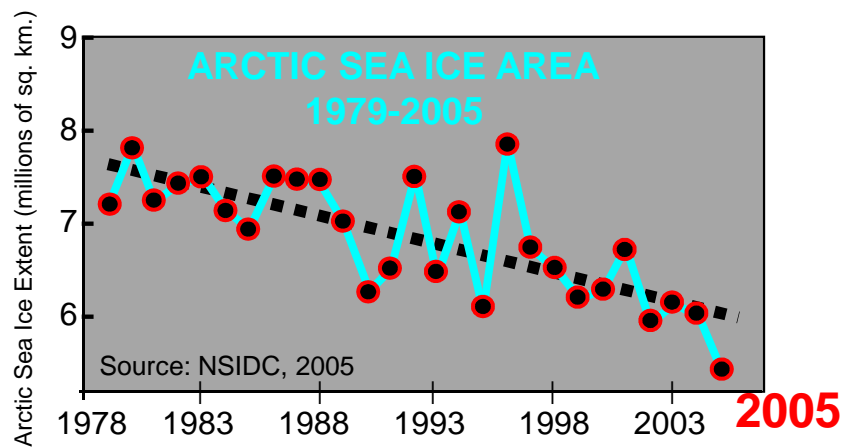
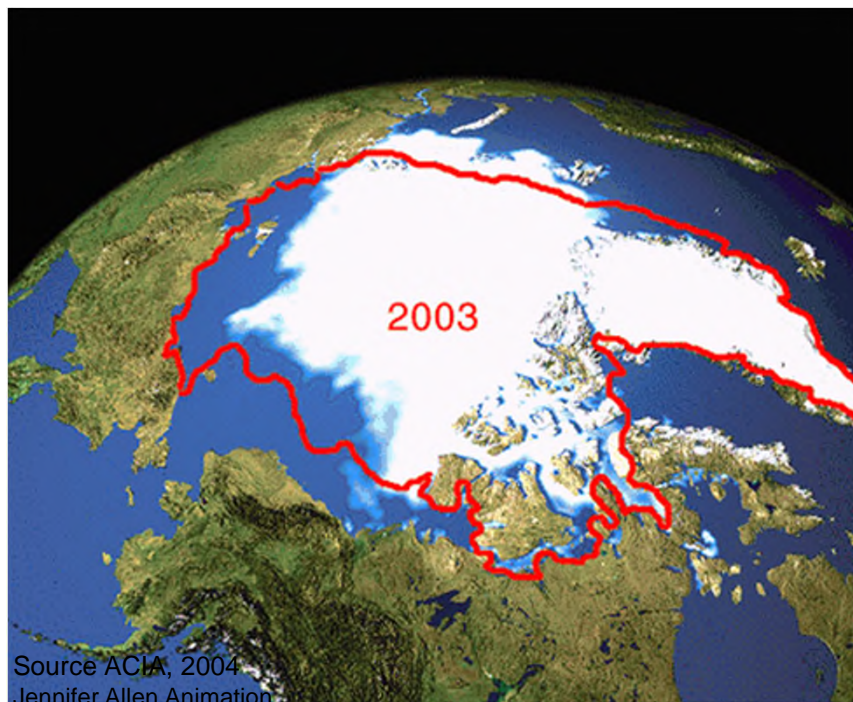
Source: http://en.wikipedia.org/wiki/Ice_core

Albedo Effect



Source: <http://www.kuuvikriver.info/uploads/science/albedo-physics.png>

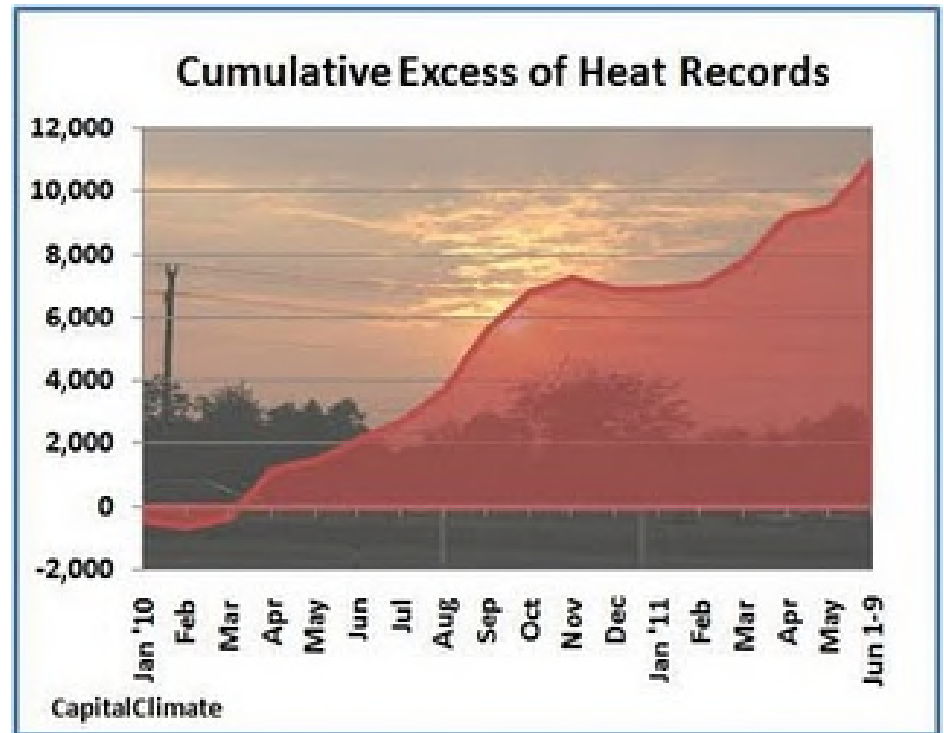
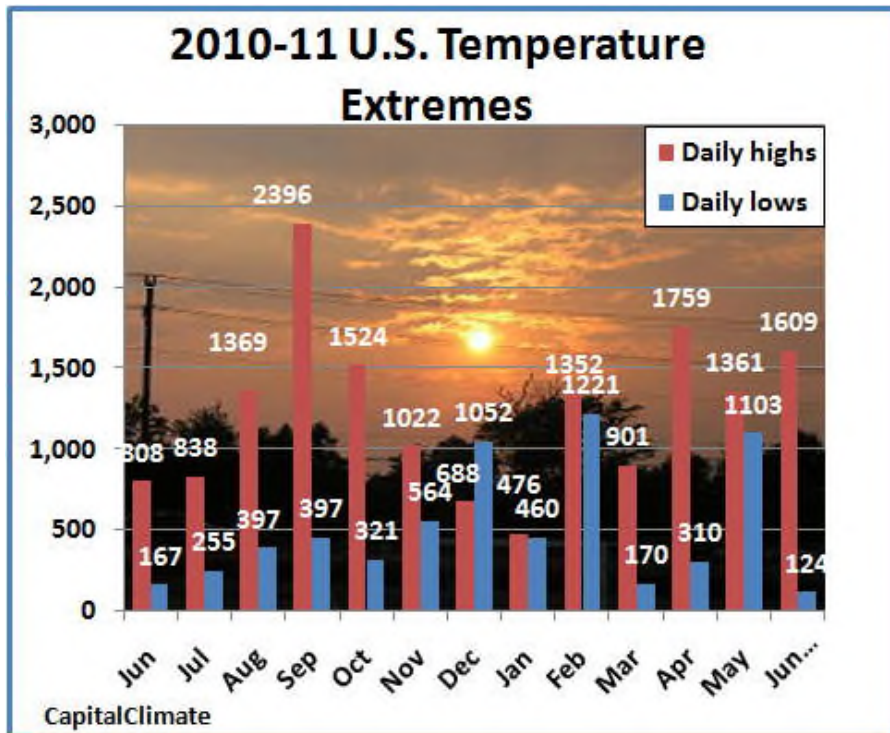
Melting Sea Ice



- An area twice the size of Texas has melted away since 1979 (over 20% decrease). (National Snow and Ice Data Center 2005)
- Ice 40% thinner. (Rothrock, D.A., et al. 1999)
- Ice only 6 – 9 feet thick at North Pole (NOAA FAQ 2007).
- Northwest passage opened Aug 21, 2007

Heat versus Cold Records

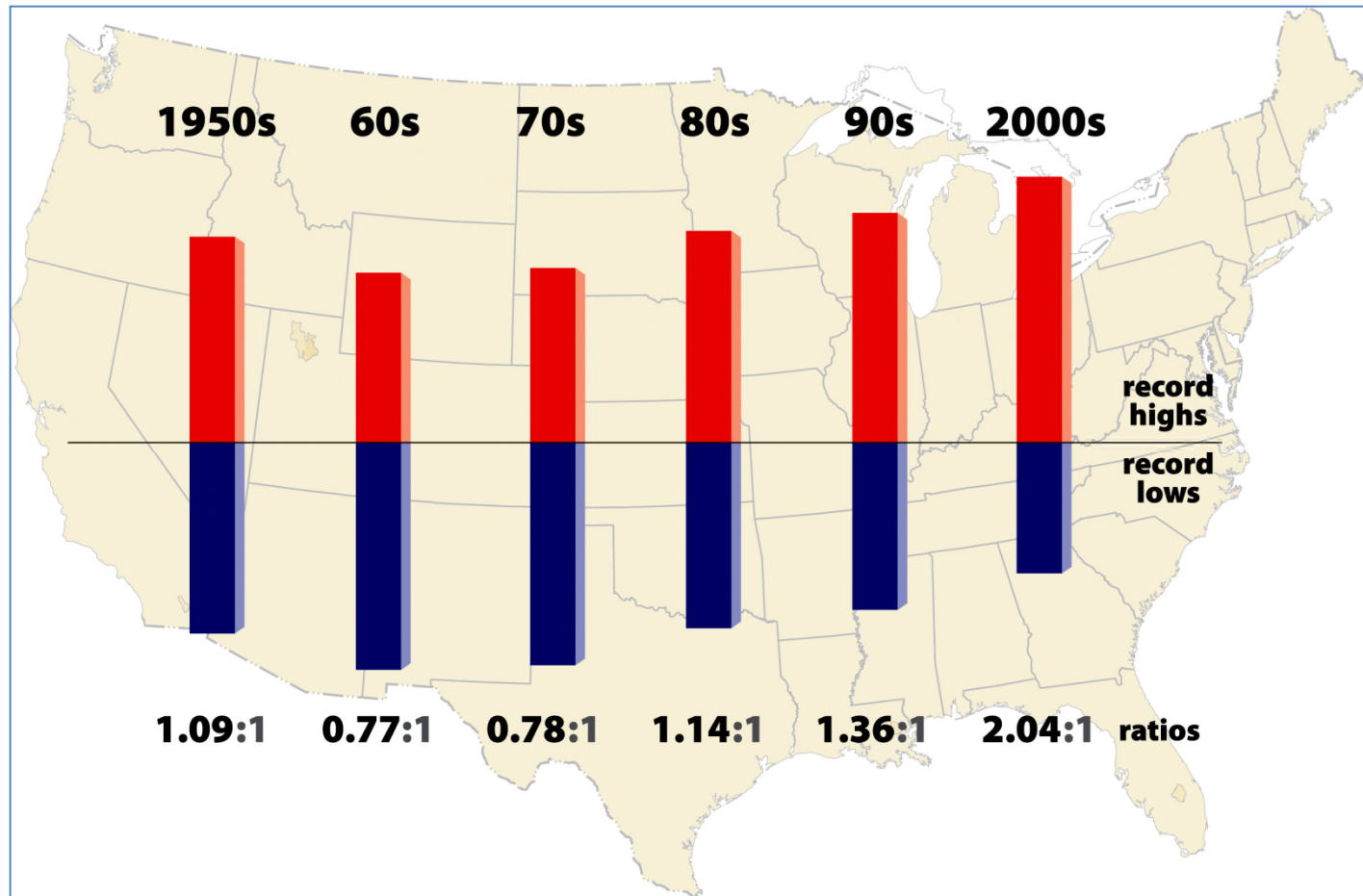
If the average temperature of the planet is rising, you would expect more High temperature records to be broken than low temperature records.



For June 2011, ratio is $1609/124 = 12.98$

Source: <http://capitalclimate.blogspot.com/2011/06/summer-2011-heat-records-crushing-cold.html>

Heat versus Cold Records (part 2)



Trend over time is more highs, problem is getting worse 1.09 → 2.04

Source: http://www.ucar.edu/news/releases/2009/images/temps_2.jpg

Sound Science – What we know

- CO2 levels highest in 1.2 million years – spanning ice ages and warm periods
- CO2 and methane are greenhouse (heat trapping) gasses
- Historically CO2 levels correlate well with temperature
- Planet is warmest in 130 years of record keeping
- At 400 PPM we are in uncharted territory – anything could happen
- Glaciers are melting at a dramatic rate
- Ice melting at poles at a dramatic rate
- Oceans are becoming more acidic
- Worldwide : 30 Billion Tons of CO2 in the air/year
- 97% of scientists agree on Anthropogenic Global Warming

Consequences of GW

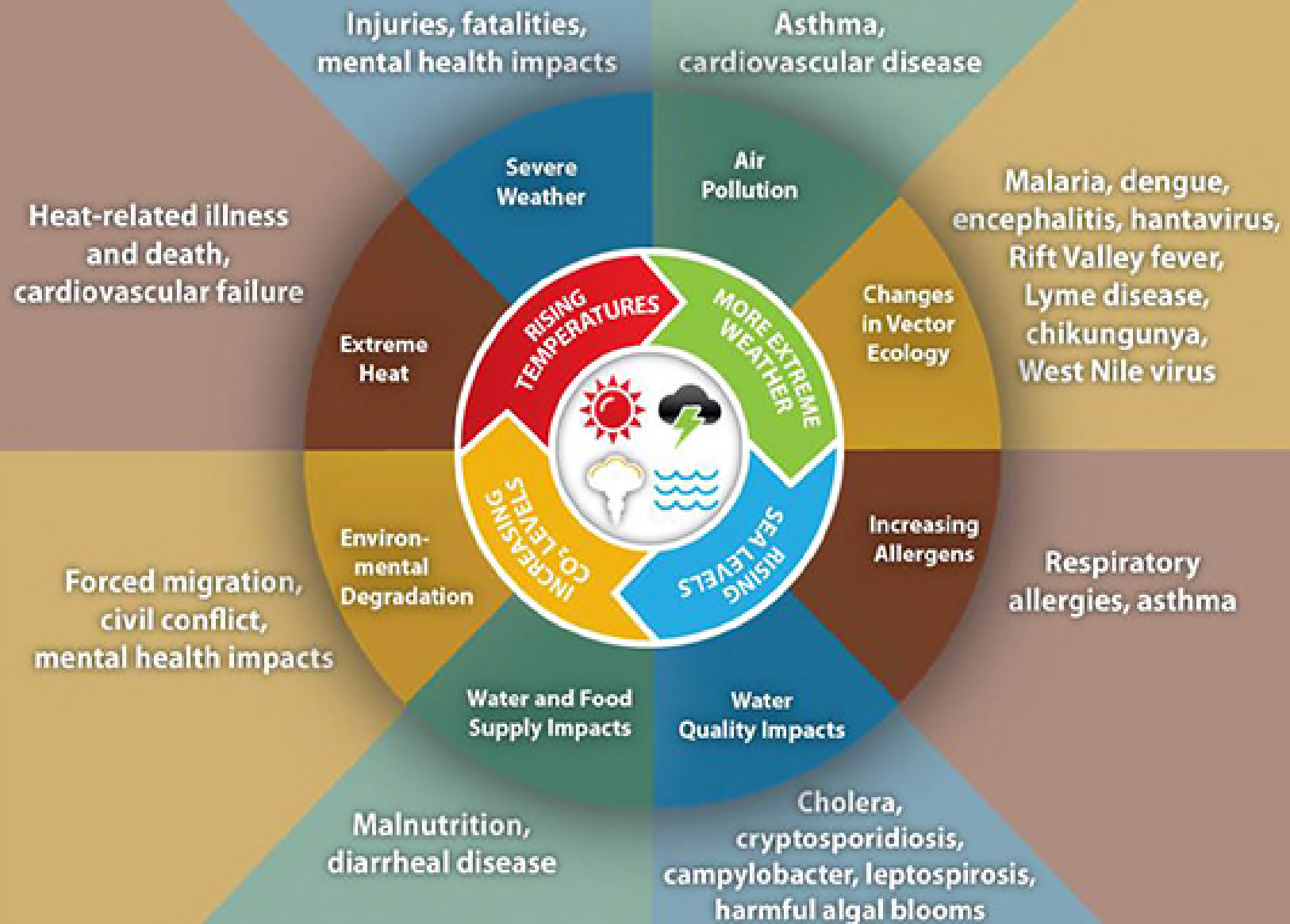
- More rain → More flooding (4 deg C → +10% precipitation)
- Increased rainfall intensity → soil erosion
- More evaporation → more droughts (Australia, Russia)
- Less snow pack → less stored water
 - (30-70% snowpack will disappear in CA by 2100)
- Hotter → heat deaths
 - (2003 heatwave Europe cause 40K deaths)
- Hotter → less crop yields → starvation
 - (1 deg C over 30 deg → -10% less yield rice, wheat, corn)

MORE Consequences of GW

- Hotter → more invasive species – Mountain Pine Beetle → forest fires
 - Milder winters reduced winter larval death from 80% to 10%
 - Montana lost a million acres of trees to the beetles → fires in Arizona (1% of state)
- Hotter → less sea ice → 3 week shorter feeding season for polar bears
- Melting Polar Caps Sea Level Rise → **Climate Refugees**
 - If Greenland's Ice sheet melts entirely sea level rises 23 feet
 - 10 meter rise affects 63 million Indians and 62 m Bangladeshis



Impact of Climate Change on Human Health



Hotter Temperatures lead to more violence

Study: Hotter temperatures lead to hotter tempers

By SETH BORENSTEIN AP

Science WriterPosted: 08/01/2013 11:03:59 AM PDT | Updated: 3 days ago

WASHINGTON—As the world gets warmer, people are more likely to get hot under the collar, scientists say. A massive new study finds that **aggressive acts like committing violent crimes and waging war become more likely with each added degree.**

The authors say the results show strong evidence that climate can promote conflict.

"When the weather gets bad we tend to be more willing to hurt other people," said economist Solomon Hsiang of the University of California, Berkeley.

http://www.mercurynews.com/ci_23776474/study-hotter-temperatures-leads-hotter-tempers

How does Jain Compassion for living things relate to Climate Change?

- Negative consequences of CC?
- Pain and suffering? Misery
- Ideas?

India's Water Problems

- India will grow from 1.2 B to 1.6 B by 2050
 - Plots are being subdivided.
 - Farmers have 21 M wells. 175 M people are fed on “mined” non-renewable water. “fossil aquifers”
 - Water tables dropped 1-2 meters per year from 1982-2000. Farmer suicides are increasing.
 - Villages in NW India are being abandoned as aquifers are being depleted and people can no longer find water.

Gangotri Glacier Photos



Gangotri glacier has been retreating at a rate of 75 feet (23 meters) annually, according to a WWF report. **Reduced glacial meltwater could leave 500 million people and 37 percent of India's irrigated land short of water.**

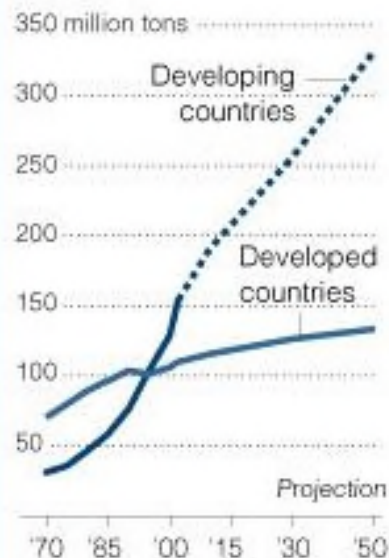
Let's talk about food

- Meat and milk consumption increasing rapidly

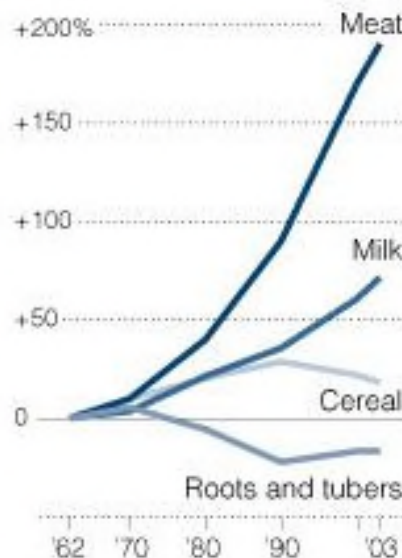
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Meat production

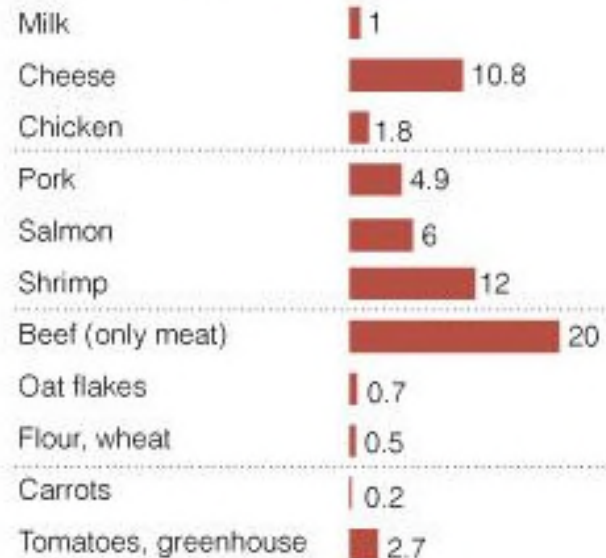


Food consumption in developing countries



CO₂ produced

Pounds of CO₂ per pound of product



Source: "Livestock's Long Shadow," by the United Nations Food and Agriculture Organization, 2006; Lantmannen

THE NEW YORK TIMES

Let's talk about food (part 2)

- Food System uses 19% of fossil fuels (Pollan)
- Food System contributes up to 37% of GHG
- GHG from meat
 - livestock sector generates **more greenhouse gas** emissions as measured in CO2 equivalent – 18 percent – **than transport**. It is also a major source of land and water degradation.

Russia Bans Grain Exports After Drought Shrivels Crop

NY-Times Aug 5, 2010



Russia, one of the world's largest wheat exporters, which is suffering the hottest temperatures recorded since record-keeping began more than 130 years ago.

1 billion people earn less than \$1/day, wheat prices almost double (450 → 785)???

If you aren't losing sleep over this, where is your compassion?

Weather Disasters/Anomalies

- Higher Sea Surface temperature will cause more intense hurricanes and typhoons
- Floods
- Droughts
- Excessive heat

Munich Re – one of world's largest insurers issued statement Sept 2010:

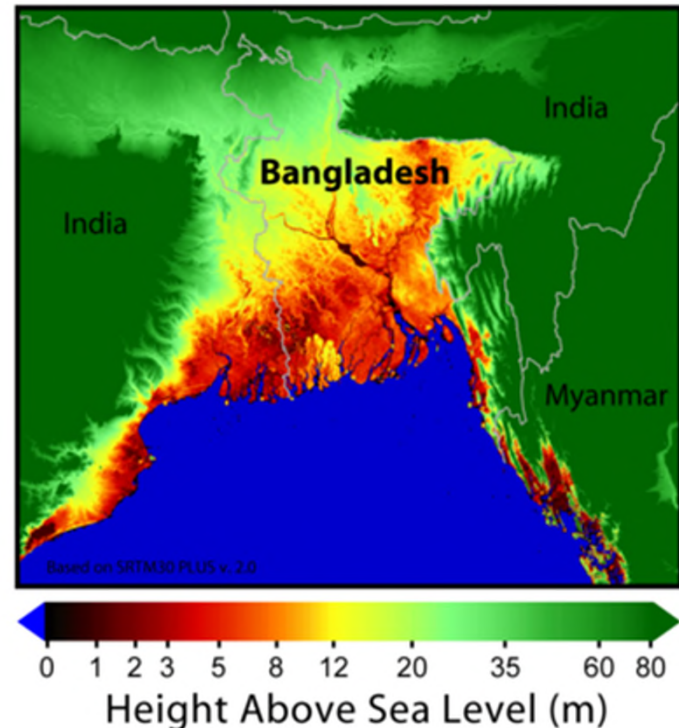
- 2010 has been the warmest year since records began over 130 years ago, the ten warmest during that period all falling within the last 12 years
- Overall losses due to weather-related natural catastrophes from January to September came to more than US\$ 65bn

[“large number of weather extremes as strong indication of climate change,”](#)

Climate Refugees

- 10 meter rise affects 63 million Indians and 62 m Bangladeshis
- 1 meter sea level rise generally predicted if no action is taken about global warming will inundate more than 15 percent of Bangladesh, displacing more than 13 million people and cut into the crucial rice crop.
- India building a wall between Bangladesh. 4000 km concrete and barbed wire fence due to be completed next year.

Sea Level Risks - Bangladesh



Climate Change Deniers

[Deniers are] spending hundreds of millions of dollars each year on misleading advertisements in the mass media; hiring four anti-climate lobbyists for every member of the U.S. Senate and House of Representatives.

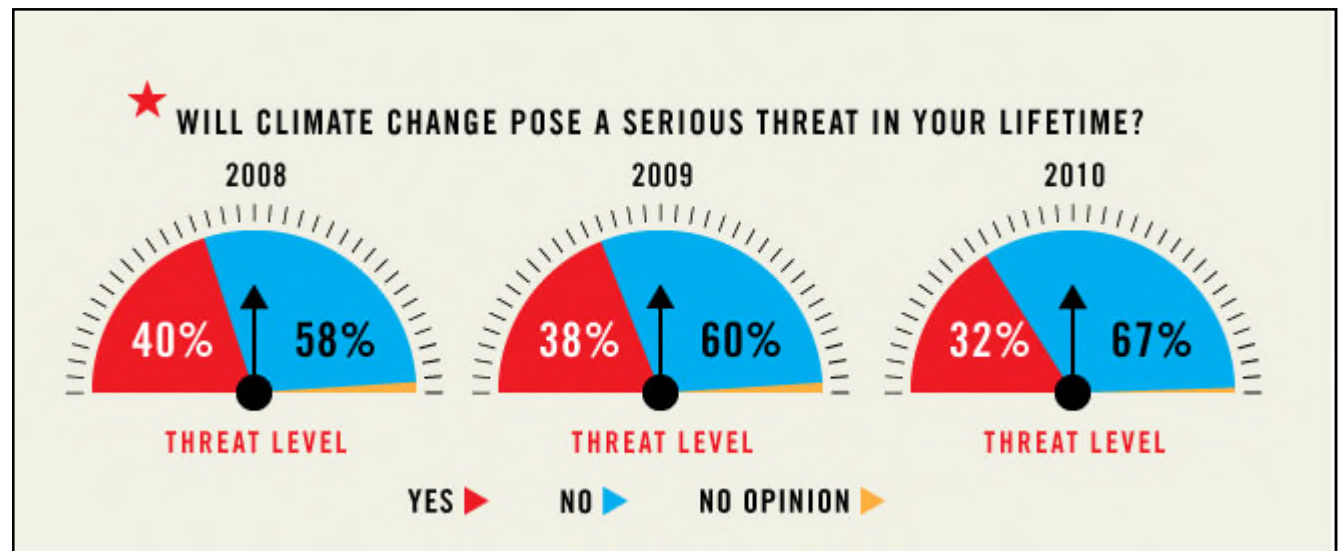
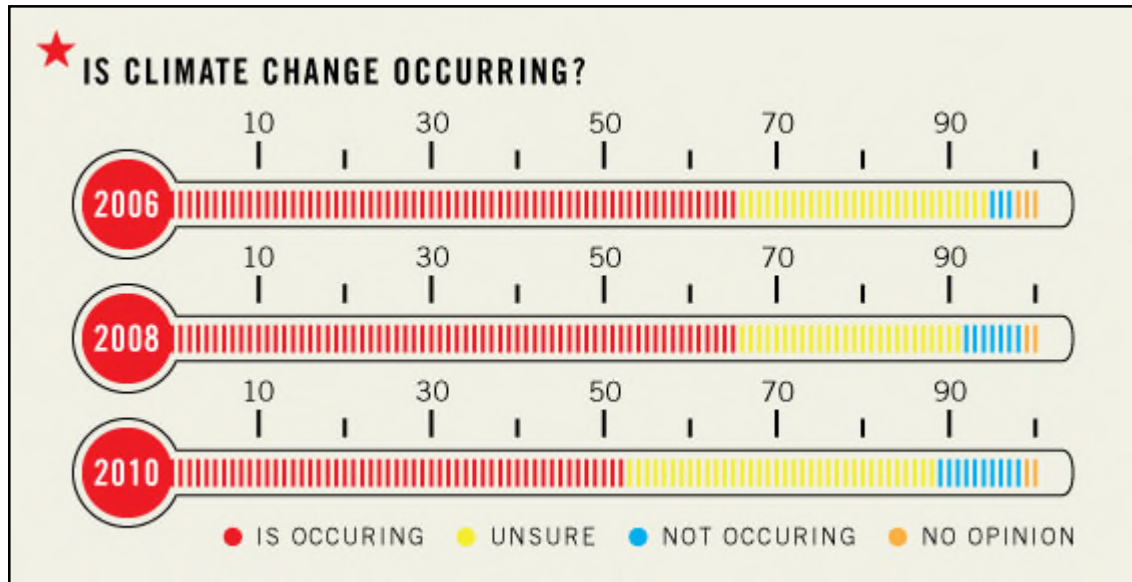
Rolling Stone Magazine: Al Gore June 22, 2011

[Greenpeace's ExxonSecrets](#) project has documented the nearly \$25 million spent by ExxonMobil since 1998 to fund climate denier groups

“It is difficult to get a man to understand something when his salary depends upon his not understanding it.”

[Upton Sinclair quotes](#) (AKA: Upton Beall Sinclair, Jr. [American Novelist](#) and polemicist, [1878-1968](#))

American Ignorance is Increasing



Jainism – Ahimsa Vegetarian impacts

- Vegetarianism very important for the planet – health, feed more people, less water, less Himsa
- Being Vegetarian has a bigger impact than automobile emissions
- But being Jain vegetarian is not enough – dairy impacts – antibiotics, methane, dairy cruelty
- **All Jains need to work hard to spread the message**

<http://www.mercyforanimals.org/ohdairy/> -- dairy cruelty

- <http://www.youtube.com/watch?v=7FPA9IRM858> – “cage free”

Jainism – Aparigraha-Greedlessness

- BMW versus Prius
- Buy less stuff
- Gold and Diamonds – child soldiers, slaves, environmental devastation (cyanide, mercury)

5 or 6 tons of ore to recover that (Troy) ounce of gold from ore

Status – let's redefine it for the planet

- We shouldn't have ego but **Status** should be how green can you be – compost, solar panels, vegan, Prius/electric, bike

Live simply, so that all may simply live.

St, Elizabeth Ann Seton (1774-1821)
Foundress of the Sisters of Charity, USA,
Speech given in the Diocese of Baltimore

Polar Bears and Habitat Loss

- U.S. Geological Survey predicts two-thirds of the world's polar bears will disappear by 2050
- Shrinking sea ice → shrinking habitat
- Ice-floe breakup in western Hudson Bay is currently occurring three weeks earlier than it did 30 years ago which reduces the polar bear's feeding season
- Female weight : 290 kg (640 lb) in 1980 and 230 kg (510 lb) in 2004. [\[107\]](#)
- Between 1987 and 2004, the Western Hudson Bay population declined by 22%. [\[119\]](#)

Direct Violence versus Indirect Violence

- Jains refrain from swatting mosquitos
- What about those milk cows penned up eating unnatural corn and needing antibiotics to keep getting infections?

<http://www.mercyforanimals.org/ohdairy/> -- VERY DISTURBING

- Many states have passed bills making it illegal to film animal cruelty on factory farms
- **It is our duty as Jain's to stop this cruelty**

THEN THERE'S CLIMATE CHANGE

- Nearly one-third of the more than 800 bird species in the United States are endangered, threatened or in decline due to climate change, habitat loss, and invasive species
- What about the billions of fish that died from the BP disaster?
- What about the end of coral reefs due to ocean acidification?
- Which is worse, shooting a polar bear or letting it starve? One could argue that shooting it is more humane?

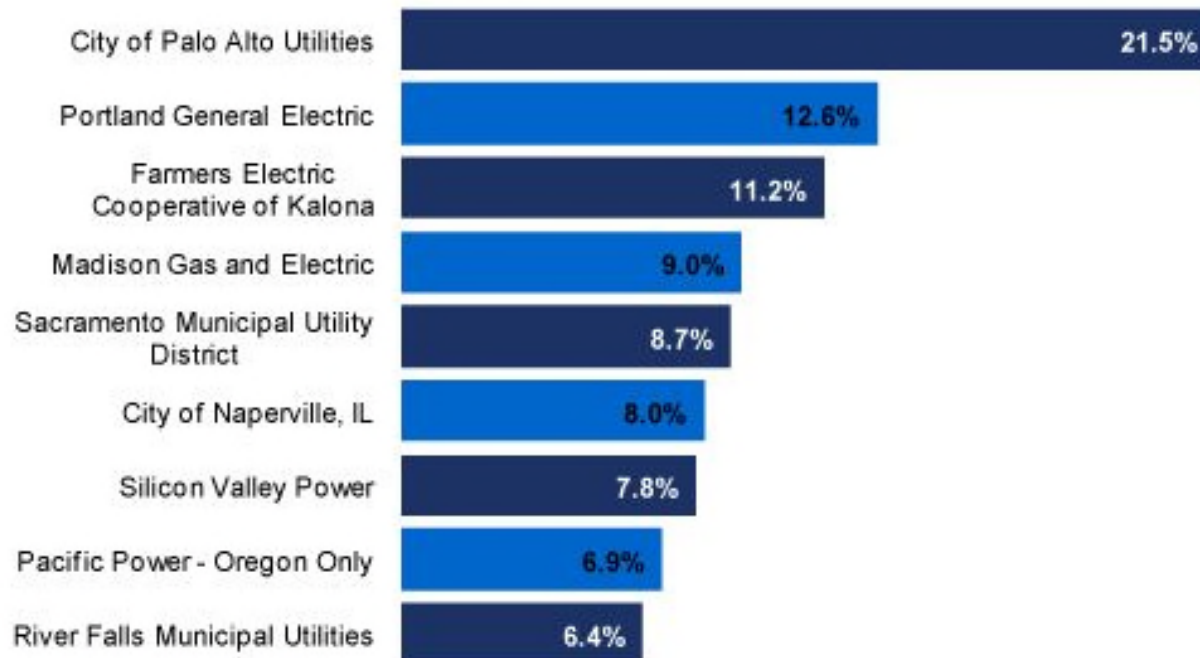
CFLs and LED bulbs

- CFL and LED bulbs use about $\frac{1}{4}$ the energy of incandescents
- CFL lasts 7500 hours, Incandescent lasts 750 hours
- Regular incandescents already banned in EU, and 2012 in USA
- If all incandescents replaced with CFLs in USA → save 23 -1GW nuclear power plants
- CFL Economics:
 - Assume: CFL = \$3.00 using 18 W Incandescent = \$0.40 using 75 W
 - Assume: 4 hours per day at \$0.10/kWh
 - $3.00 + 4 * 0.018 * D * 0.10 = 0.40 + 4 * 0.075 * D * 0.10$
 - Days = 114
 - If CFL life = 7500 hours, then = 10 incandescents. Saving \$43.75
- CFL and mercury :
 - Illegal to put in garbage
 - Dispose of properly – Home Depot, OSH, Ikea
 - Burning coal for inefficient incandescents releases more mercury

Purchasing Green Power

Top 10 Green Power Programs, by Participation Rate

(% of total customers, as of Dec. 2010)



environmental
LEADER
www.environmentalleader.com

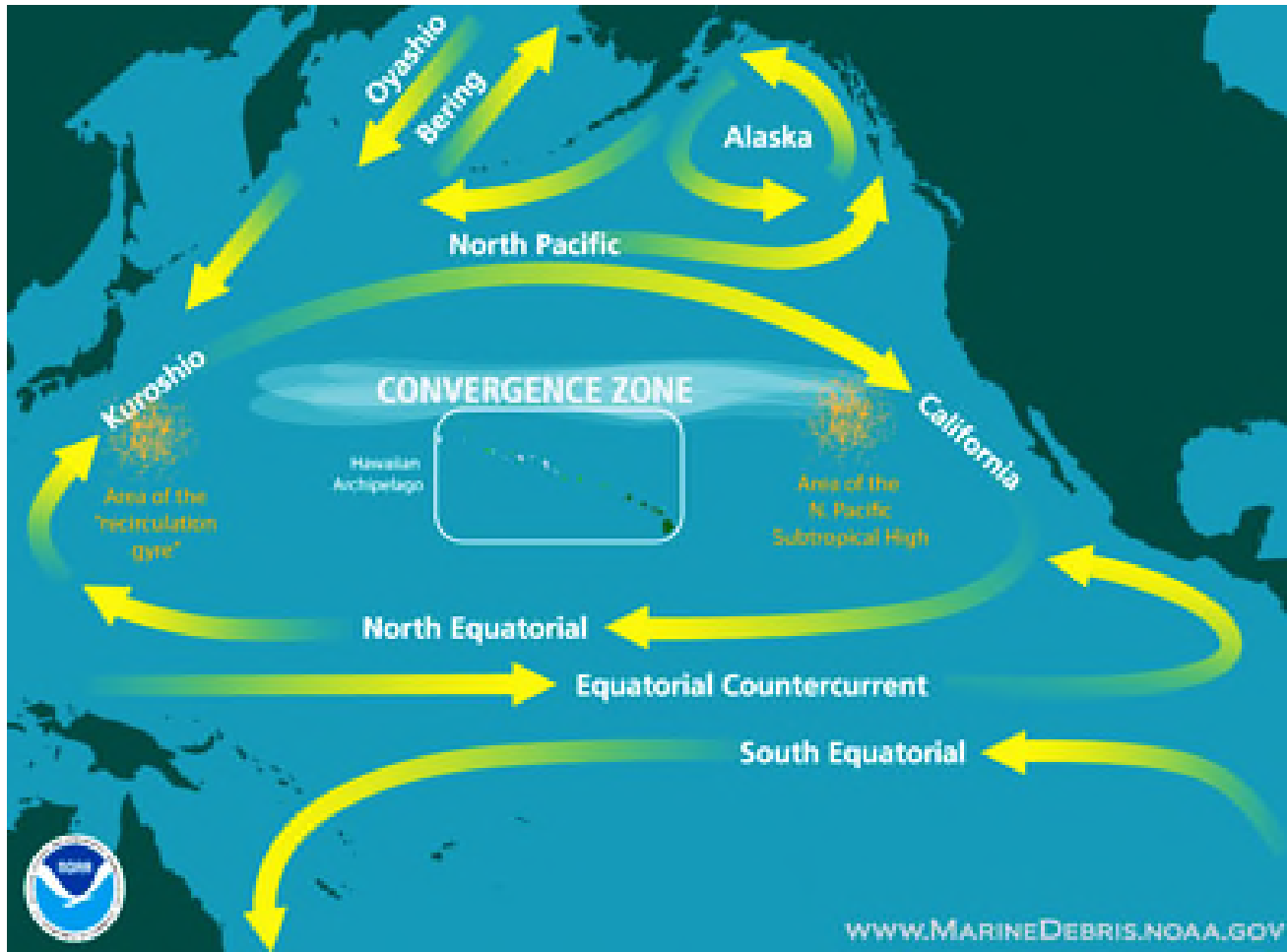
Source: DOE, National Renewable Energy Lab, May 2011

Silicon Valley Power charges 1.5 cents extra for Green (Renewable) Power

Why a Carbon Tax is needed

- Coal creates the most CO₂
- We must get off coal and oil : trade deficit, enriches dictators, global warming, coal mining accidents, oil spills, air pollution, etc
- Levelized Cost Electricity from coal is 10 cents/kWh and solar PV is 39.6 cents/kWh, Onshore wind is 14.9 cents/kWh
- We need to shift the cost balance to favor Wind and Solar
- Cap and Trade
- Carbon Tax/Fee and Dividend
- Citizen's Climate Lobby (www.citizensclimatelobby.org)

Great Pacific Garbage Patch (Pacific Trash Vortex)



<http://marinedebris.noaa.gov/info/patch.html>

Great Pacific Garbage Patch (Pacific Trash Vortex)

- [National Science Foundation](#) suggests the affected area may be twice the size of Texas
- estimated 80% of the garbage comes from land-based sources
- Charles Moore has estimated the mass of the Great Pacific Garbage Patch at 100 million tons.
- found concentrations of plastic particles at 334,721 pieces per km² (very small pieces after photodegradation)
- **killing a million seabirds and 100,000 marine mammals each year**
- <http://www.telegraph.co.uk/earth/environment/5208645/Drowning-in-plastic-The-Great-Pacific-Garbage-Patch-is-twice-the-size-of-France.html>

We need to ban plastic bags

- US EPA : somewhere between 500 billion and a trillion plastic bags are consumed worldwide each year
- Less than 1% of bags are recycled.
- Plastic bags account for over 10 percent of the debris washed up on the U.S. coastline



Bottled Water is Crazy and NOT SAFER

(Do NOT buy it, esp. Evian, San Pelegrino, Fiji)

- Plastic bottles take 700 years to begin composting
- 90% of the cost of bottled water is due to the bottle itself
- 80% of plastic bottles are not recycled
- 38 million plastic bottles go to the dump per year in America from bottled water (not including soda)
- 24 million gallons of oil are needed to produce a billion plastic bottles
- The average American consumes 167 bottles of water a year
- Bottled water is unregulated and often less safe than tap water
- For the price of one bottle of Evian, a San Franciscan can receive 1,000 gallons of tap water
- Cost is between **240x and 10,000X** tap water

What can you do?

Show your Priorities

- Choose for the environment, not for your ego
- Think about your Carbon Footprint in all decisions
- Get rid of all your incandescent bulbs → CFL or LED
- NO paper NOR plastic
- NO BOTTLED WATER, especially from far away (France/Italy/Fiji)
- SLEEP your computers (50 W → 5 W)
- Clean your refrigerator coils
- Pump up your car tires
 - 80 percent of the cars on the road are driving with one or more [tires](#) underinflated (AAA)
 - Camry loses 1.3 mpg when underinflated 10psi
- Eat Local -- Don't buy grapes from Chile/Peru. Mangoes?
- Eat organic (vegan is best). FL tomatoes have 8X pesticides as CA
- FAIR TRADE – no child or slave labor, workers treated fairly

What MORE can you do?

- Buy green (renewable) power from your utility
- Drive and Fly less
- Buy less. **Aparigraha -- greedlessness**

On Black Friday, celebrate Buy Nothing Day
(wikipedia/Buy_Nothing_Day)

- Think smaller : houses, cars, vacations
- Give gifts of experiences/memberships rather than stuff
- Help redefine status – compete for who is greenest
- Support Legislation to reduce CO₂ – Carbon Fee and Dividend
- SHARE THINGS – lawnmowers, tools, cars,

Last Thoughts

- **Priorities for Jains ?? Which has more Himsa ?**
 - Swatting mosquitos or buying non-organic grapes/oranges from Peru
 - Spraying insecticides or hurricanes
 - Eating carrots or driving a big SUV, causing habitat loss
 - Silk or products from sweatshops or farms with slaves (chocolate)

Think about dairies causing methane, antibiotics, rainforest destruction

Think about DIRECT versus INDIRECT violence

Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.

Margaret Mead⁷¹

Pentagon Report

D E P A R T M E N T O F D E F E N S E

2014 CLIMATE CHANGE
ADAPTATION ROADMAP



<http://www.acq.osd.mil/ie/download/CCARprint.pdf>

DoD Climate Change Adaptation Roadmap

- *“But the challenge of global climate change, while not new to history, is new to the modern world. Climate change does not directly cause conflict, but it can significantly add to the challenges of global instability, hunger, poverty, and conflict. Food and water shortages, pandemic disease, disputes over refugees and resources, more severe natural disasters – all place additional burdens on economies, societies, and institutions around the world.” --*
- Secretary Hagel
- Halifax International Security Forum (DoD Arctic Strategy) Nov 2013

DoD Climate Change Adaptation Roadmap

- Climate change will affect the Department of Defense's ability to defend the Nation and poses immediate risks to U.S. national security.
- Among the future trends that will impact our national security is climate change. Rising global temperatures, changing precipitation patterns, climbing sea levels, and more extreme weather events will intensify the challenges of global instability, hunger, poverty, and conflict. They will likely lead to food and water shortages, pandemic disease, disputes over refugees and resources, and destruction by natural disasters in regions across the globe.
- In our defense strategy, we refer to climate change as a “threat multiplier” because it has the potential to exacerbate many of the challenges we are dealing with today – from infectious disease to terrorism. We are already beginning to see some of these impacts.

<http://www.acq.osd.mil/ie/download/CCARprint.pdf>

CNA Report



National Security and the Accelerating Risks of Climate Change

CNA Military Advisory Board
May 2014

http://www.cna.org/sites/default/files/MAB_2014.pdf

House Votes To Deny Climate Science And Ties Pentagon's Hands On Climate Change

- With a mostly party-line [vote](#) on Thursday, the House of Representatives passed an amendment sponsored by Rep. David McKinley (R-WV) that seeks to prevent the Department of Defense from using funding to address the national security impacts of climate change.
- The amendment forces the Defense Department to ignore the findings and recommendations of the [National Climate Assessment](#) and the IPCC's [latest climate assessment](#), specifically with regard to the national security impacts of climate change.
- <http://thinkprogress.org/climate/2014/05/22/3440827/mckinley-climate-pentagon-climate-change/>

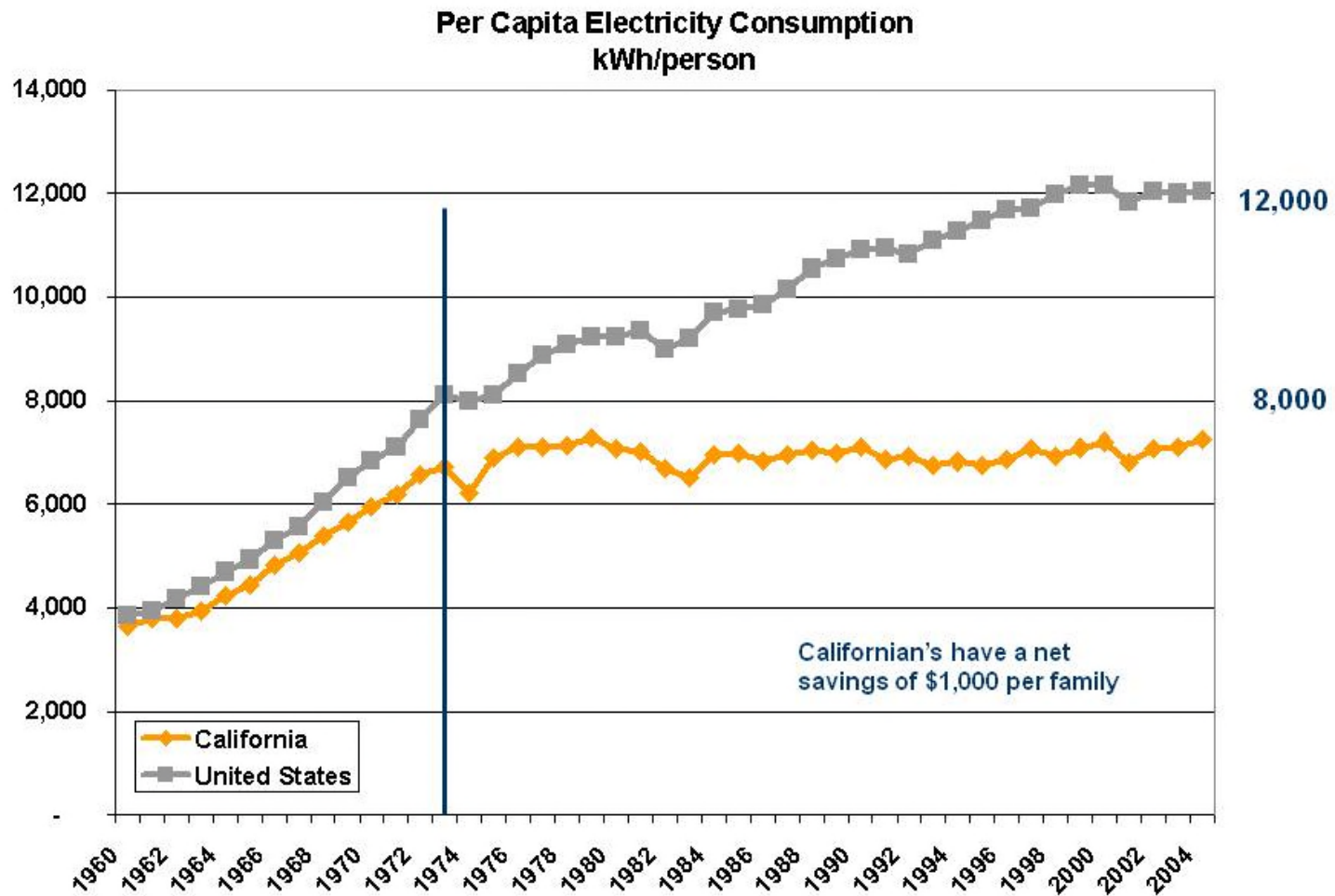
Syrian Drought and Civil War

- the **Tigris-Euphrates Basin**—comprising Turkey, Syria, Iraq and western **Iran**—**is losing water faster than any other place in the world except northern India** . During those six years, 117 million acre-feet of stored freshwater vanished from the region as a result of dwindling rainfall and poor water management policies.
- since 2003, drought and shrinking aquifers have led to a recent spate of **assassinations of irrigation department officials** and clashes between rural clans.
- Prior to Syria's civil war, the country experienced a devastating drought impacting more than 1.3 million people, killing up to 85 percent of livestock in some regions and forcing 160 villages to be abandoned due to crop failures.
- In Syria, a devastating drought beginning in 2006 forced many farmers to abandon their fields and migrate to urban centers. There's some evidence that the migration fueled the civil war there, in which 80,000 people have died. **"You had a lot of angry, unemployed men helping to trigger a revolution,"**
- Tensions between nations are also high. Since 1975, Turkey's dam and hydropower construction has cut water flow to Iraq by 80 percent and to Syria by 40 percent. Syria and Iraq have accused Turkey of hoarding water.

CFL vs Halogen vs Incandescent vs LED

100 Watt incandesc = 1750 lumens @ 120v	100 W incandescent (750 hours)	70 W halogen (3,000 hours)	23 W CFL (non-dimmable) (10,000 hours)	23 W CFL (dimmable) (10,000 hours)	70 W halogen (3,000 hours)	15 W LED 1100 lumens (30,000 hours)
Cost per bulb	\$0.83	\$4.49	\$2.00	\$8.97	\$4.49	\$93
Bulb costs (10,000 hours)	\$11.04	\$14.95	\$2.00	\$8.97	\$14.95	\$93.00
Electricity costs (10,000 hours) \$0.10/KWH	\$100.00	\$70.00	\$23.00	\$23.00	\$70.00	\$15
Electricity costs (10,000 hours) \$0.15/KWH (California residential average)	\$150.00	\$105.00	\$34.50	\$34.50	\$105.00	\$22.50
Total Cost (purchase + operation) \$0.10/KWH	\$111.04	\$84.95	\$25.00	\$31.97	\$84.95	\$108.00
Total Cost (purchase + operation) \$0.15/KWH	\$161.04	\$119.95	\$36.50	\$43.47	\$119.95	\$115.50
Savings compared to incandescent \$0.10/KWH	\$0.00	\$26.09	\$86.04	\$79.07	\$26.09	\$3.04
Savings compared to incandescent \$0.10/KWH	\$0.00	\$41.09	\$124.54	\$117.57	\$41.09	\$45.54
US Average Electricity Costs:						
http://www.eia.doe.gov/electricity/epm/table5_6_a.html						

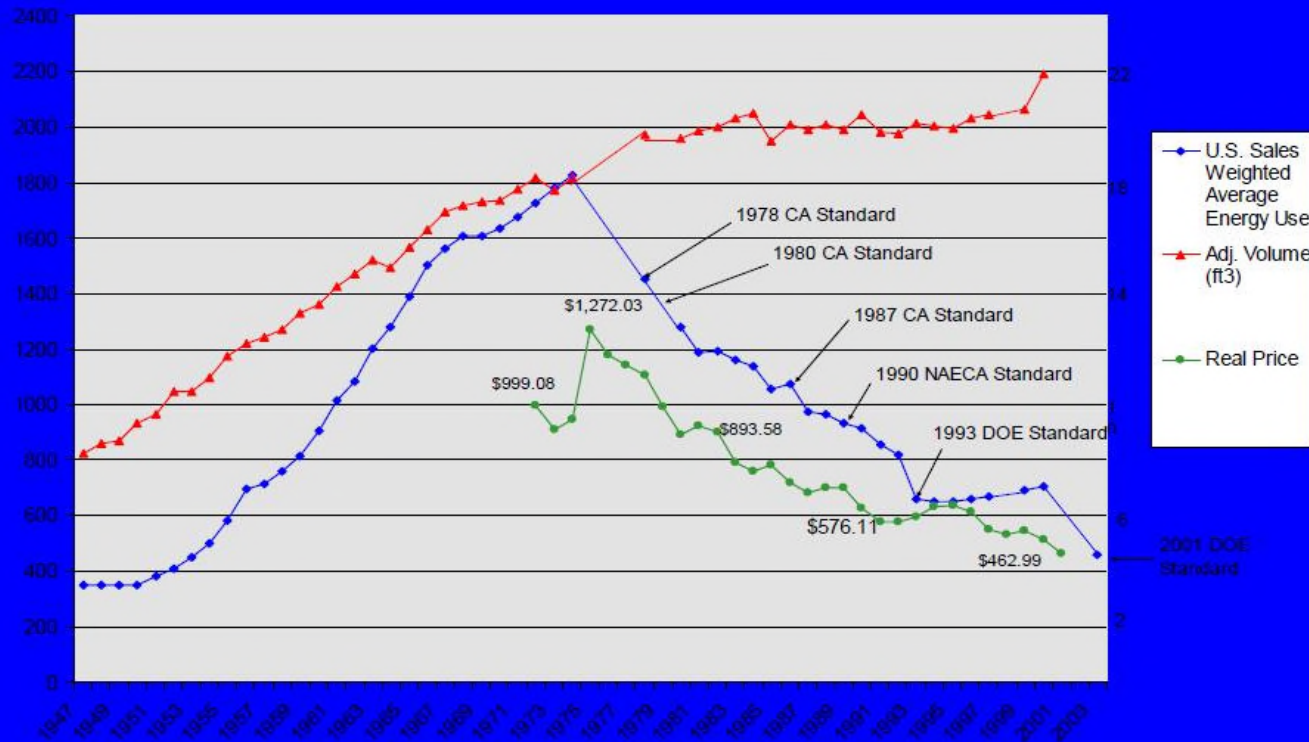
Why California is so great?



Source: http://www.eia.doe.gov/emeu/states/sep_use/total/csv/use_csv

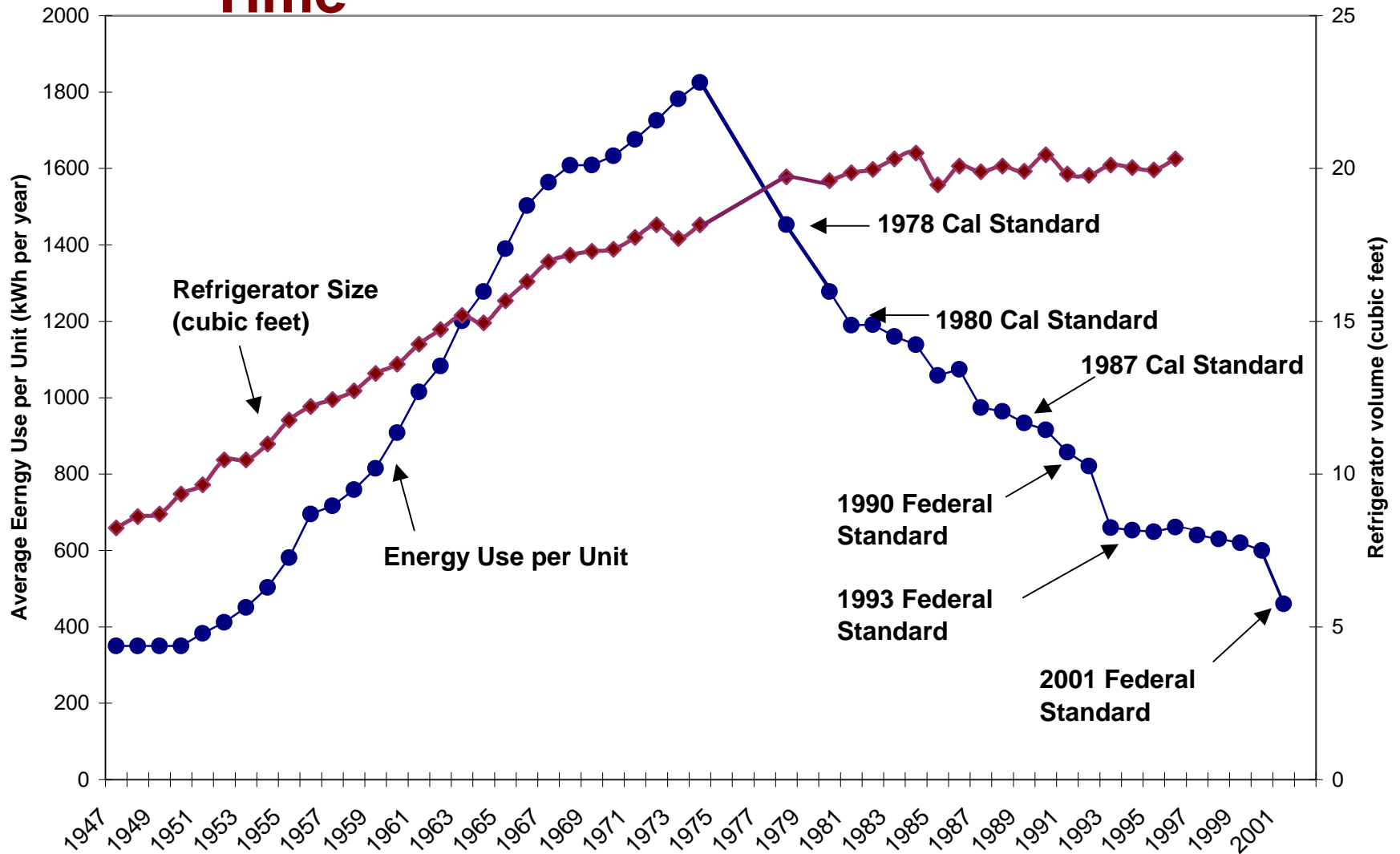
Energy Efficiency is NOT expensive

U.S. Refrigerator Energy Use v. Time with Price



400 large coal plants that were expected to be needed but now are not.

U.S. Refrigerator Energy Use vs. Time

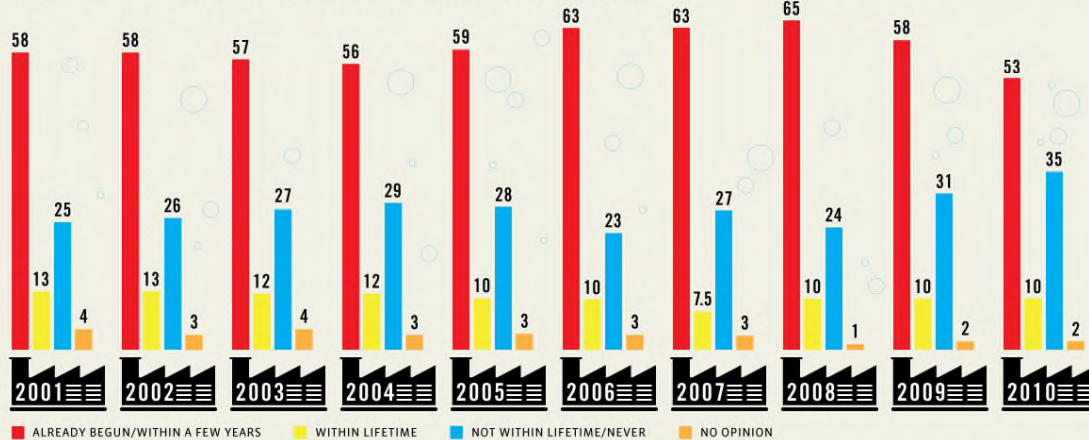


American Ignorance

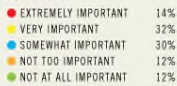
WHAT AMERICANS REALLY THINK ABOUT CLIMATE CHANGE

THE EVER-CONTROVERSIAL TOPIC HAS BECOME INCREASINGLY POLITICIZED IN RECENT YEARS, WITH THOUSANDS OF DIFFERENT THEORIES AND STATISTICS CIRCULATING AT ANY GIVEN MOMENT. IT IS IN THIS POLARIZED ENVIRONMENT THAT AMERICANS FORM THEIR OPINIONS OF CLIMATE CHANGE, AND ITS IMPORTANCE AS A LEGITIMATE THREAT TO THE FUTURE OF LIFE ON OUR PLANET. HERE WE LOOK AT HOW THESE VIEWS HAVE SHIFTED OVER THE LAST DECADE, AND WHERE AMERICANS STAND TODAY ON THE ISSUE OF CLIMATE CHANGE.

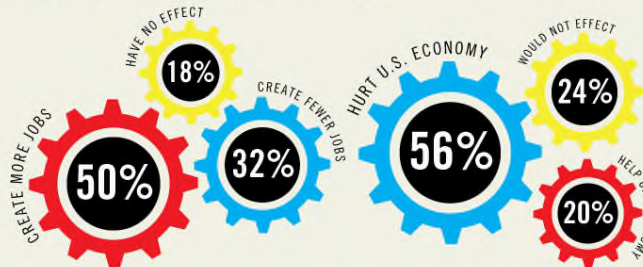
WHAT AMERICANS BELIEVE ABOUT WHEN THE EFFECTS OF CLIMATE CHANGE WILL BEGIN TO HAPPEN



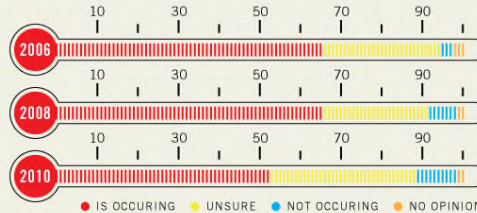
HOW IMPORTANT IS THE ISSUE OF CLIMATE CHANGE?



THE UNITED STATES'S ACTIONS TO REDUCE CLIMATE CHANGE IN THE FUTURE WOULD:



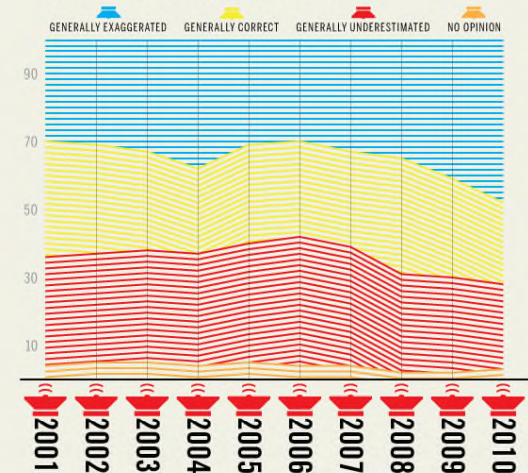
IS CLIMATE CHANGE OCCURRING?



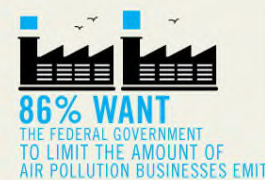
WILL CLIMATE CHANGE POSE A SERIOUS THREAT IN YOUR LIFETIME?



PERCENTAGE OF AMERICANS WHO FEEL THAT WHAT IS SAID IN THE NEWS ABOUT GLOBAL WARMING IS GENERALLY EXAGGERATED?



WHAT AMERICANS BELIEVE ABOUT U.S. GOVERNMENT ACTION REGARDING CLIMATE CHANGE



14% SAY
THE UNITED STATES SHOULD TAKE NO ACTION TO COMBAT CLIMATE CHANGE UNLESS OTHER COUNTRIES SUCH AS



DO AS WELL.

SOURCES: WOODS, STANFORD.EDU LIVESCIENCE.COM RASMUSSENREPORTS.COM

SURVEY WAS CONDUCTED IN: 2007 2010

A COLLABORATION BETWEEN GOOD AND COLUMN FIVE