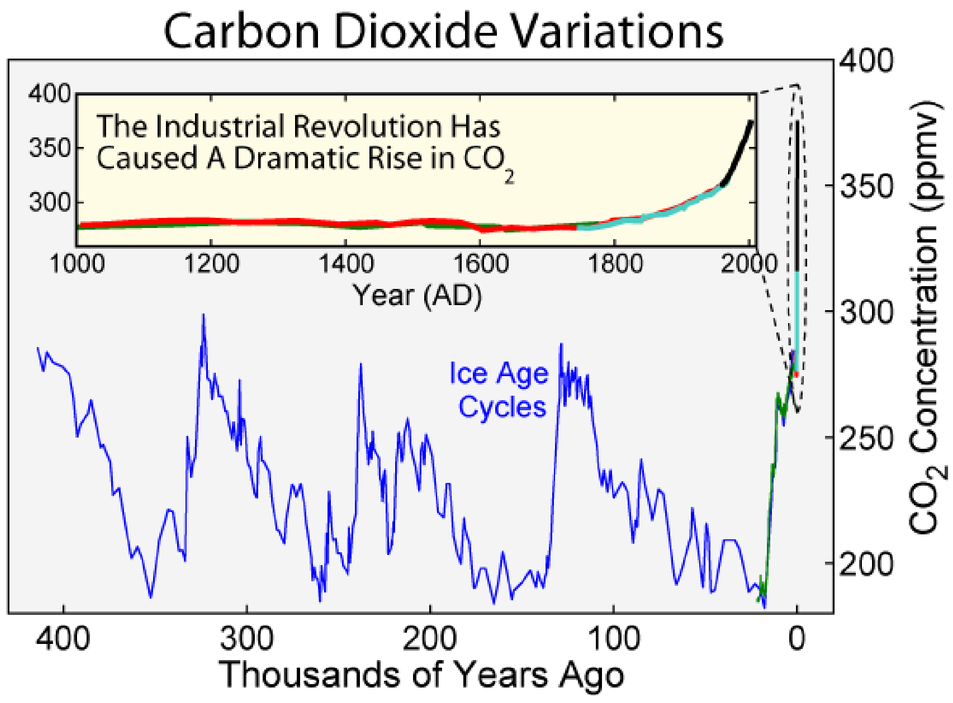
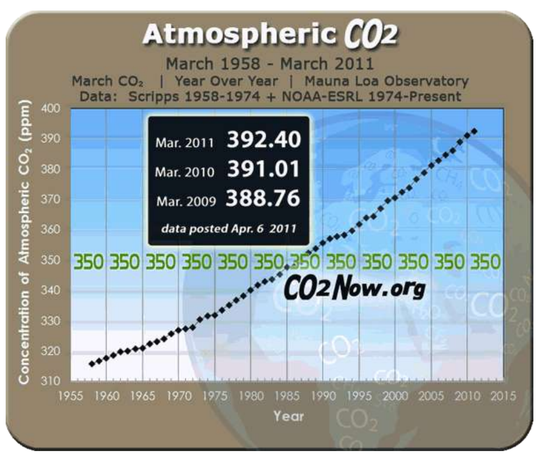
Global Warming 101

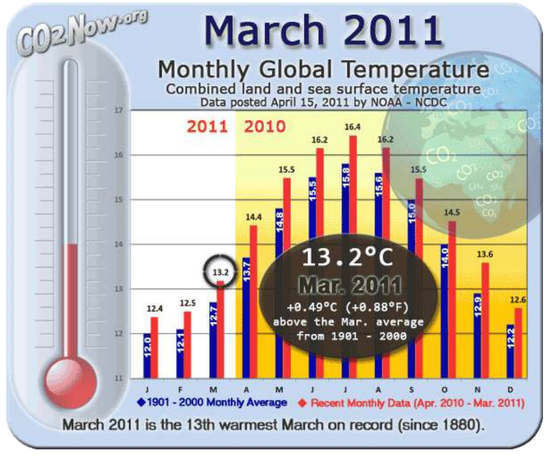
What does it mean for you, your community and your planet?

The Basics of Global Warming

Just the facts!







The greenhouse effect: A natural balance

The atmosphere has a natural supply of "greenhouse gases." They capture heat and keep the surface of the Earth warm enough for us to live on. Without the greenhouse effect, the planet would be an uninhabitable, frozen wasteland. Before the Industrial Revolution, the amount of carbon dioxide (CO2) and other greenhouse gases released into the atmosphere was in a rough balance with what could be stored on Earth.

Post - Industrial Revolution, too much greenhouse effect

Industry took off in the mid-1700s, and people started emitting large amounts of greenhouse gases. Fossil fuels were burned more and more to run our cars, trucks, factories, planes and power plants, adding to the natural supply of greenhouse gases. As a result, Earth heated up by about one degree Fahrenheit over the past century—and it has heated up more intensely over the past two decades. Even one degree is significant—especially since the unnatural warming will continue long after we put extra greenhouse gases in the atmosphere. There is more CO2 in the atmosphere now than in the last 650,000 years.

How much is too much?

Today, people have increased by 31 percent the amount of CO2, the chief global warming pollutant, compared to pre-industrial levels. Studies of the Earth's climate history show that even small changes in CO2 levels generally have come with significant shifts in the global average temperature. Scientists expect that, in the absence of effective policies to reduce greenhouse gas pollution, the global average temperature will increase, on the low end, 2.0 degrees Fahrenheit, and on the high end, 11.5 degrees Fahrenheit by 2100. At the small end of the predictions, the changes to the climate are expected to yield more intense storms, more pronounced droughts, and coastal areas severely eroded by rising seas. At the high end of the predictions, the world could face abrupt, catastrophic, irreversible consequences.

Global Warming Effects

Melting Glaciers

Melting Glaciers have already begun to trigger devastating water shortages in the Andes and the Himalayas. A 2005 survey of 442 glaciers from the World Glacier Monitoring Service found that 90% of the world's glaciers are shrinking as the planet warms. Glacier National Park now has only 25 glaciers, versus 150 in 1910 and all will likely be gone by 2030.

Thinning Ice

Extreme Weather will become more frequent—and more dangerous. The World Meteorological Organization reported that 2000-2009 was the hottest decade on record, with eight of the hottest 10 years having occurred since 2000. It's not just the heat that poses threats. Scientists say global warming is speeding up the cycling of water between the ocean, atmosphere and land, resulting in more intense rainfall and droughts at the same time across the globe.

Loss of Biodiversity

A Wildfire Surge could have a devastating impact on America's West. In 2006, the wildland fire season set new records for the number of fires (96,385) and the acres burned (nearly 10 million) in the U.S. In fall 2007, wildfires in Southern California destroyed 1,500 homes and displaced more than 900,000 people.

Wildfire Surge

Economic Dislocations will result in untold human suffering, especially for our children and grandchildren. Currently, over 980,000 people are displaced within Pakistan because of flooding. In August of 2010, 100,000 people in the Jalozza Camp for displaced people, were cut off for three days after floods destroyed a bridge to the camp.

Economic Dislocations

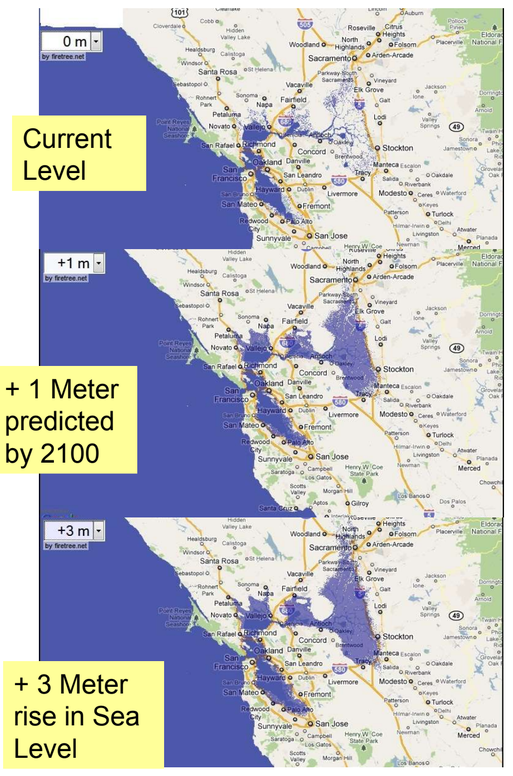
Extreme Weather

Thinning Ice and Rising Seas will result in sea levels rising 10 to 23 inches by 2100. Rising seas are one of the most certain effects of global warming as warming ocean waters expand and melting glaciers, ice caps and ice sheets add more water to the oceans. The International Panel on Climate Change scientists estimate that melting ice caps and glaciers—which are some of our most visible indicators of climate change—accounted for about 25% of sea level rise from 1993 to 2003.

Biodiversity Loss will result in thousands of species going extinct from continued warming. According to the International Panel on Climate Change, climate change will put some 20% to 30% of species globally at increasingly high risk of extinction, possibly by 2100. The effects of global warming on plant and animal species are already visible in nearly every ecological zone in America.

Sea Level Rise

Can you find Davis?



Sea Level Rise Map created by Alex Tingle of www.firetree.net using Google Maps, API NASA data, as presented on www.Geology.com

Startling facts from 2010

- **2010 tied with 2005 as the warmest year of the global surface temperature record, beginning in 1880.**
- **2010 was the wettest year on record, in terms of global average precipitation. As with any year, precipitation patterns were highly variable from region to region.**
- **In the United States, 2010 was the 14th consecutive year with an annual temperature above the long-term average. Since 1895, the temperature across the nation has increased at an average rate of approximately 0.12 F per decade.**
- **Over 1,300 tornadoes formed in the United States during 2010 - among the 10 busiest for tornadoes since records began in 1950.**
- **All-time record heat occurred in 19 nations in 2010 - - the highest number of national all-time records established in a single year.**

Sources for this poster: www.edf.org, www.CO2Now.org , www.wunderground.com , www.noaanews.noaa.gov,

Taking Action

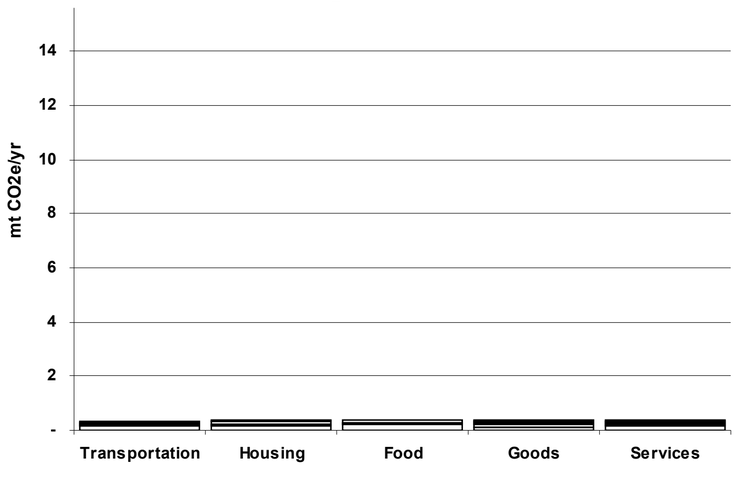
How what you do makes a difference!

Calculating your Carbon Footprint

What is your impact?

The Goal

Average global household under climate stabilization
2 metric tons carbon dioxide equivalents (CO_2e) per year

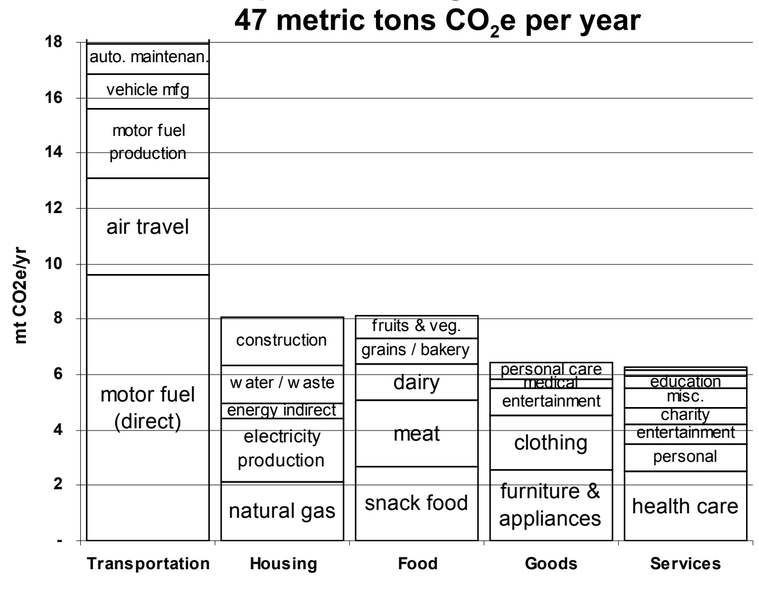


Current Average Global Household

Carbon footprint of average global household
10 metric tons carbon dioxide equivalents (CO_2e) per year

Current Average CA Household

Carbon footprint of average California household
47 metric tons CO_2e per year



How much CO2 does your household produce?

Different household sizes and incomes produce different amounts of CO2.

To calculate your actual household Carbon Footprint go to www.coolcalifornia.org

1-person CA household:
$10k/yr
Carbon footprint:
16 tCO2e/yr

1-person CA household:
$45k/yr
Carbon footprint:
31 tCO2e/yr

2-person CA household:
$70k/yr
Carbon footprint:
51 tCO2e/yr

4-person CA household:
$70k/yr
Carbon footprint:
61 tCO2e/yr

What changes can we make?

Transportation Decisions

Walk

Bike

Take the Train

Reduce your Air Travel

Reduce Frequency of Car purchase

Check your Fuel efficiency

Purchase a Hybrid or Electric Vehicles

Household Energy Use

Replace appliances

Insulate

Set your thermostat

Install Dual paned windows

Seal energy leaks in doors, windows, walls

Wash clothes in cold water

Reduce hot water use

Consider Solar solutions

The Food We Eat

Reduce meat in your diet

Examine Snacks

Reduce Packaging

Buy Local food

Buy Local goods

Shop Local

Compost

Goods and Services We Purchase

Buy what you need

Buy Local

Balance Convenience, Fashion and Status with your Carbon Footprint

Buy used

Repair

Repurpose

Reduce

Reuse

Recycle

Household CO2 emission graphs and data from : Christopher M. Jones* and Daniel M. Kammen, Energy and Resources Group, Renewable and Appropriate Energy Laboratory (RAEL) University of California, Berkeley

City of Davis --- Climate Action Goals

Carbon neutral by 2050

Reduce carbon emissions to 15% below 1990 levels by 2015

MISSION

To inspire our community,
To reduce greenhouse gas emissions,
To adapt to a changing climate, and
To improve the quality of life for all.

GOALS

Engage 75% of Davis Households by 2015

Engage businesses and community organizations in carbon reduction activities

Support the City of Davis, Yolo County, UC Davis and DJUSD in implementing their climate action plans.

What you can do…

Core Group
Working Groups
Collaborative Projects
Other community orgs & activities

Join a Project Group …

Carbon Reduction Can Be Fun!

Take the Carbon Reduction Pledge…

Calculate your carbon footprint…

Take Action in your household…

Become a Partner…

Davis Bicycles!

Your Organization Here

Lite House Project

Lite Houses are a growing network of households in the Davis community that are examples of carbon reduction and sustainability in their neighborhood.

CDI will offer tours, educational workshops and resources through the Lite House Network

The Contreras – Tebbut Household

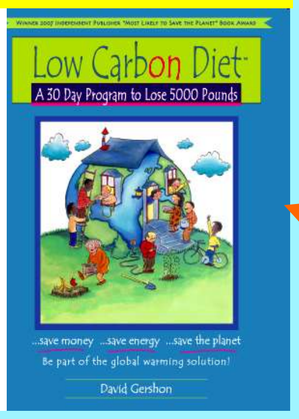
Cool Davis Festival

Carbon Reduction Fun

Low Carbon Diet Groups

Over 350 households so far.

Join neighbors, friends, church & community organization to discuss and plan practical approaches to carbon reduction



CDI Core Group
Partners
Project Group leaders and Volunteers

Make Davis Cool

(UC Davis Student Group)

Outreach to students in apartments

Earth Week – Pound for Pound challenge

2011 Spring Convergence of CA Student Sustainability Coalition

Education for Sustainable Living Program – Student taught sustainable living courses

City of Davis

Davis Waste Removal

Commercial Food Scrap Composting Project

Starts Spring 2010

Over 13 Business sites so far

Contact Davis Waste Removal or the City of Davis Recycle programs.

Your Project Here !!

Bring your ideas and energy

We'll see how we can help!