

The Science is Clear: *Climate Change is Happening NOW*

Heat-trapping carbon dioxide concentrations are at their highest levels in millions of years. Scientists have already observed the fingerprints of climate change in the atmosphere, in arctic sea ice, and in the oceans. The scientific evidence is overwhelming. Climate change IS occurring.

- **The earth is warming.** The 10 hottest years on record have all occurred since 1995 according to NOAA. Global surface temperatures are increasing at a rate of 0.19°C per decade, in line with climate model predictions.
- **Arctic sea ice is melting.** Sea ice declined to a record low in 2007 with a minimum ice extent almost 40% below the average for 1979-2000. Melting was not as extreme in 2008 and 2009, but the overall trend in September sea ice extent from 1979 through 2009 is a decline of 11% per decade.
- **The heat content of the ocean is increasing.** Most of the extra heat that the earth retains due to the build of CO₂ in the atmosphere goes into the oceans. The observed increases in the total heat content of the ocean (not just rising sea surface temperatures) demonstrates that earth is absorbing more energy from the sun than it is releasing.
- **Sea levels are rising at an accelerated rate.** This is partly due to thermal expansion as the ocean column warms and partly due to melting of land-based ice from Greenland and Antarctica.
- **The oceans are becoming more acidic.** Unless CO₂ concentrations are stabilized soon large parts of the ocean will become literally too corrosive for many ocean creatures with shells to survive.

We must act now; support comprehensive clean energy and climate legislation that will cap global warming pollution and slow the impacts of climate change.