

Integrating NOAA's Climate Forcing Observations – The NOAA Annual Greenhouse Gas Index

J.H. Butler

NOAA Earth System Research Laboratory, 325 Broadway, Boulder, CO 80305; 303-497-6898,
Fax: 303-497-6975, E-mail: James.H.Butler@noaa.gov

As Director of NOAA's Climate Monitoring and Diagnostics Laboratory (CMDL - later to become the Global Monitoring Division of NOAA's Earth System Research Laboratory - ESRL) for nearly 15 years, Dave Hofmann shepherded NOAA's long-term monitoring capability through times of significant change. When he first took the helm of CMDL, it had just been created a few years before, owing to a NOAA reorganization. Later with a new Administration, NOAA was once again reorganized, this time with matrix management. Finally, a few years before Dr. Hofmann's retirement, ESRL was created from six independent laboratories and centers, placing CMDL into the Global Monitoring Division with Dr. Hofmann at the head. Through these changes, however, he always kept his sights on preserving and promoting the value of long-term, climate relevant measurements for addressing scientific challenges, but also for aiding society in its efforts to address global issues such as stratospheric ozone depletion, baseline air quality, and climate change.

One approach to aiding society in its decision-making is to translate the complex language of scientists and try to make it understandable by a broad audience, including educators, policy-makers, and the man-on-the-street. Recognizing the Division-wide attention to accuracy, precision, and representativeness of ESRL GMD's measurements, Dr. Hofmann introduced the NOAA Annual Greenhouse Gas Index (AGGI) to express in simple terms where emissions of long-term greenhouse gases were taking us. The index, now a formal NOAA product anticipated each year by the press, builds upon the concept of radiative forcing, but is applied only to long-lived climate forcing agents. As a product that combines the high-quality, consistent monitoring capabilities throughout the Division, it demonstrates a stark reality – that in 17 years the warming influence of all long-lived greenhouse gases has increased 24% and continues to climb at a rate of about 1.5% per year, despite successes in reducing or eliminating the growth of several species. This presentation will look at how the AGGI is developed and will examine closely its value as a tool for translating science.

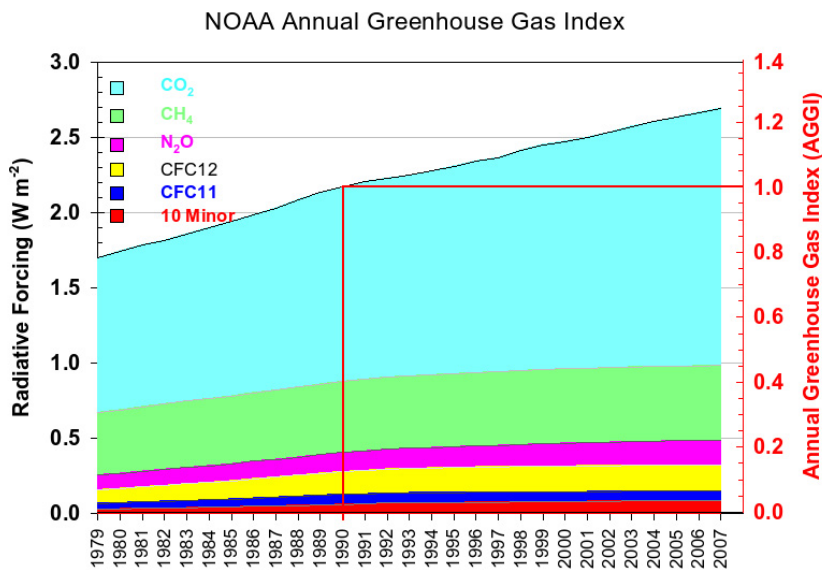


Figure 1. Radiative forcing, relative to 1750, of all long-lived greenhouse gases. The NOAA Annual Greenhouse Gas Index (AGGI), which is indexed to 1 for the year 1990, is shown on the right axis. All measurements are made by ESRL's Global Monitoring Division