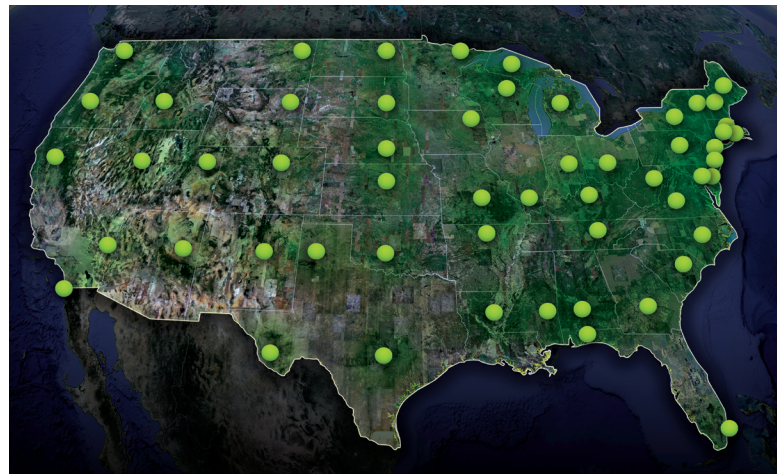


Greenhouse Gas (GHG) Network Site and Data Services

Earth Networks, in close collaboration with Scripps Institution of Oceanography, is deploying the first privately funded, large-scale, high density network of environmental measurement instruments to precisely measure atmospheric CO₂, methane and other greenhouse gases. These instruments will provide key data to further the understanding of the science behind carbon emissions and environmental patterns. This information will be available to inform the research community, policy makers and private industry with more precise environmental intelligence.



Earth Networks Greenhouse Gas (GHG) Observation network global deployment will include 100 GHG measuring instruments by mid-2010 in the following increments: 50 in the US; 25 in Europe; 25 in other worldwide locations

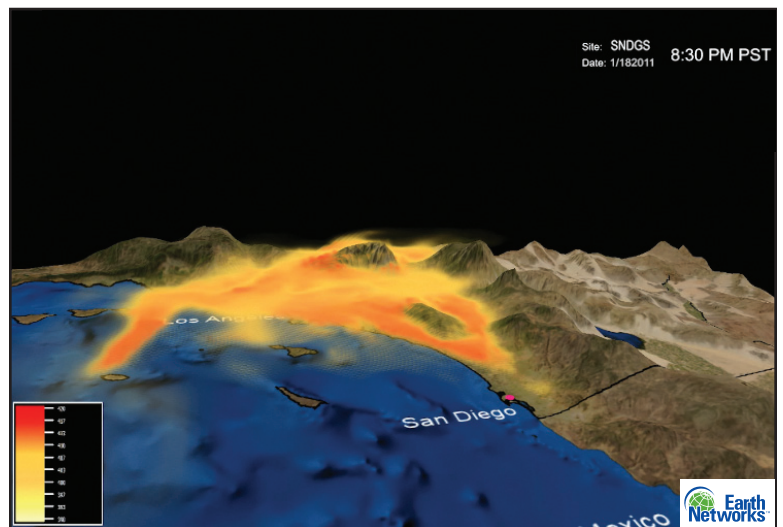
Advanced Data Models and Carbon Forecasts

GHG measurements are combined with real-time weather data from the Earth Networks weather network to create carbon forecasts and inverse modeling tracing atmospheric greenhouse gas admissions back to their source.



Earth Networks Global Weather Information Network combines information from 8,000 surface observation stations with multi-source weather observation data.

- The GHG observation network will provide precise high density measurements enabling the ability to quantify changes in atmospheric gases on regional, not continental scales.
- Earth Networks will use a top-down approach to accurately measure atmospheric greenhouse gases and how they travel.



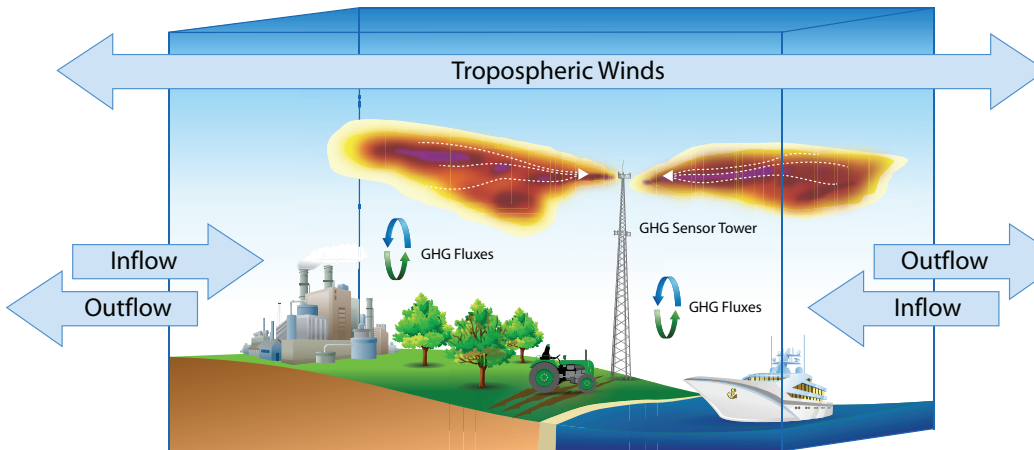
Carbon forecasts are delivered in 2D and 3D animations on the Earth Networks GHG portal. A 3D animation of the San Diego example is shown above.

- Earth Networks and Scripps Institution of Oceanography will collaborate on:
 - Instrument selection and placement
 - Development of data reliability standards and methodologies to ensure measurement precision
- Earth Networks will also collaborate with National Oceanic and Atmospheric Administration (NOAA) and National Institute of Standards and Technology (NIST) in developing data measurement standards that meet WMO requirements

Greenhouse Gas (GHG) Network Site and Data Services

Tracing the Source with Inverse Modeling

Recent advancements in “inverse modeling” have improved the ability to determine “where the air has come from”. A network with spatial and temporal density can calculate emissions or uptakes of gases in a region and show how they change over time.

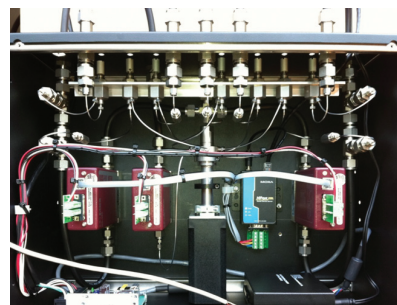


Earth Networks combines continuous atmospheric measurements, and where necessary, utilizes inversions at a coarser scale along with bottom-up GHG estimates from static or dynamic inventories of emissions.

For this analysis, atmospheric trajectories are simulated, based on the Weather Research and Forecasting (WRF) model at high spatial resolution, and surface footprints, which are computed using coupled Stochastic Time-Inverted Lagrangian Transport (STILT model).

Earth Networks GHG Observation Network Site and Data Services

• Site Planning and Consultation
• Instrument Installation
• Earth Networks Calibration System
• Site Maintenance
• Weather Station
• Data Management Services
• GHG Data Display on GHG Network Portal
• Carbon Footprint Reports



Earth Networks and Scripps Institution developed a system for calibrating gas analyzers and monitoring well being. The system includes a calibration box and two air tanks.

Earth Network Greenhouse Gas Observation Solutions Benefits

- Key data to facilitate understanding of GHGs in the atmosphere to advance climate science
- Measurement, Reporting and Verification (MRV) foundation for international climate treaties for the reduction of GHG emissions
- MRV foundations at national, regional and local sales supporting climate and GHG reduction policies and regulations, as well as emerging carbon trading programs
- Education of the public on climate changes and the role of GHGs