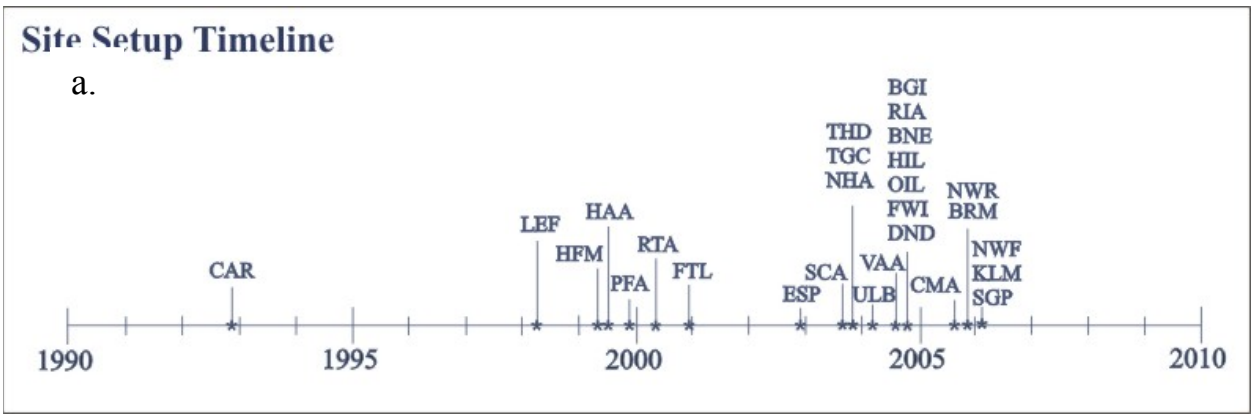
The Evolution of the GMD Carbon Cycle Greenhouse Gases Cooperative Global Aircraft Sampling Network

K.L. Partak[1], S.E. Peterson[1], and P.P. Tans[2]

[1]Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder 80309; 303-497-7063, Fax: 303-497-4299; E-mail: Karen.Partak@noaa.gov
[2] NOAA Earth System Research Laboratory, GMD, 325 Broadway, Boulder, CO 80305

The GMD Carbon Cycle Greenhouse Gases Cooperative Global Aircraft Sampling Network has undergone numerous transformations since its inception in the 1960s. What was initially a land-based air sampling network (the GMD Cooperative Global Air Sampling Network) has evolved into a network comprised of land-based air sampling, tall tower data collection, and the use of programmable flask packages (PFPs) in the Aircraft Sampling Network.

The intent of this poster is to provide background information of the evolution of the GMD Carbon Cycle Greenhouse Gases Cooperative Global Aircraft Sampling Network extending from the inception of the program to the present (1960s to 2006). Although improvements to this network were not confined to the PFPs, e.g., improvements in sample analysis and reference tank calibrations, for the purpose of this poster the focus will be on how various upgrades to the program were made in the pursuit of more precise measurements. Included are comparisons of flask types, aircraft, softwares (Hyperterminal, Operations Manager, and LabVIEW), and aircraft sites. In addition, opportunities to expand the network to other platforms will be explored. Finally, we will present graphic data to illustrate the growth of the network.



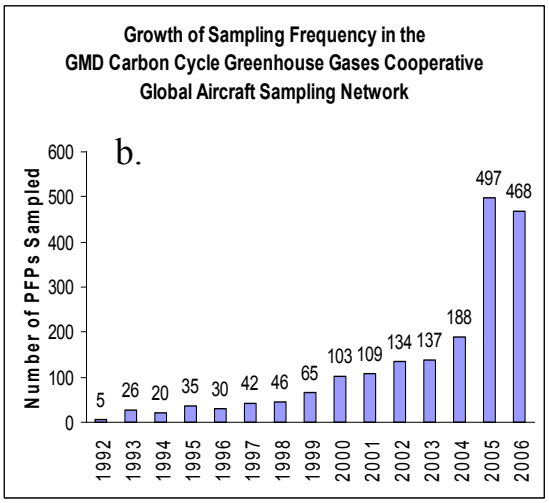


Figure 1. (a) Shows the corresponding years when more sites were added to the network. (b) Shows the rate of growth of sampling frequency in the aircraft sampling network. The value for 2006 is projected based upon scheduled sampling dates.