## **2011 Tower Network Overview**

J.D. Kofler<sup>1</sup>, A.E. Andrews<sup>2</sup>, B.M. Walsh<sup>3</sup>, J.C. Williams<sup>3</sup>, M. Trudeau<sup>1</sup>, J. Higgs<sup>3</sup>, C. Sweeney<sup>1</sup>, T. Newberger<sup>1</sup>, M. Heller<sup>1</sup>, K. Sours<sup>1</sup>, S. Wolter<sup>1</sup>, P. Lang<sup>2</sup>, D. Chao<sup>1</sup>, K. Masarie<sup>2</sup>, P. Novelli<sup>2</sup>, D. Neff<sup>1</sup>, M.J. Parker<sup>4</sup>, M. Fischer<sup>5</sup>, C. Stanier<sup>6</sup>, S. deWekker<sup>7</sup>, J. Lee<sup>8</sup>, A.R. Desai<sup>9</sup> and D.D. Baumann<sup>10</sup>

<sup>1</sup>Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, CO 80309; 303-497-4679, E-mail: Jonathan.Kofler@noaa.gov

<sup>2</sup>NOAA Earth System Research Laboratory, Boulder, CO 80305

<sup>3</sup>Science and Technology Corporation, Boulder, CO 80305

<sup>4</sup>Savannah River Nuclear Solutions LLC, Aiken, SC 29808

<sup>5</sup>Lawrence Berkeley National Laboratory, Berkeley, CA 94720

<sup>6</sup>University of Iowa, Iowa City, IA 52242

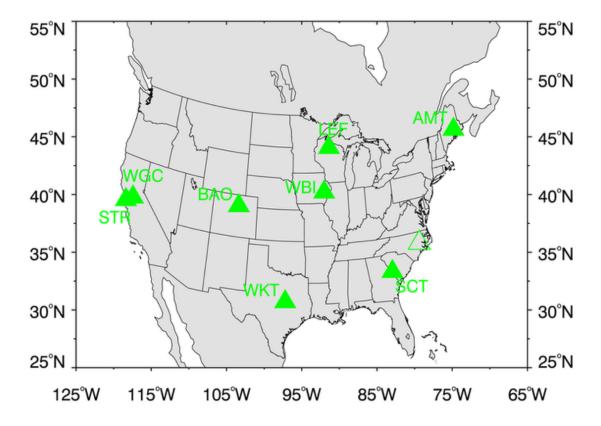
<sup>7</sup>University of Virginia, Charlottesville, VA 22904

8University of Maine, Orono, ME 04469

<sup>9</sup>University of Wisconsin, Madison, WI 53706-1481

<sup>10</sup>US Forest Service, Northern Research Station, Rhinelander, WI 54501

Partnerships with external collaborators have enabled the NOAA ESRL GMD Tower network to expand from three sites in 2006 to eleven sites in 2010. Nine sites are equipped with *in situ* systems for continuous CO<sub>2</sub> and CO measurements. Collaborations have enabled continuous methane measurements at two sites. Programmable Flask Package samples are collected daily at ten sites. Expanding the network and upgrading the equipment has required a preventative maintenance schedule, routine testing procedures, hardware upgrades, error-checking software, and a web based utility for viewing processed data. These upgrades have improved data continuity and quality. A summary of the tower network and its measurement history, species data, statistics, maintenance, and notable towers instrumentation repairs are presented, including lessons learned.



**Figure 1.** The tall tower network May 2010 – Present (May 2011).