

THE EVOLUTION OF THE CLEAN AIR STATUS AND TRENDS NETWORK (CASTNET) 1986 TO CURRENT

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The Clean Air Status and Trends Network (CASTNET) initially evolved from the National Dry Deposition Network (NDDN), which was established in late 1986 by EPA for the purposes of providing the National Acid Precipitation and Assessment Program (NAPAP) with estimates of dry deposition flux to use in model evaluation, determining spatial patterns of dry deposition, and relating deposition to ecological effects. In 1990, Congress amended the Clean Air Act (CAA) requiring emission reductions in sulfur and nitrogen oxides. A national monitoring network was mandated as part of these amendments in order to determine the effectiveness of the required emission reductions. EPA therefore established CASTNET in mid-1991, the data from which would be used to define the spatial distribution of pollutant and to detect and quantify trends in pollutants.

By the mid-nineties CASTNET consisted of approximately 50 sites with the majority located in the eastern U.S. Each site collected continuous ozone and meteorological data and measured weekly concentrations of sulfate and nitrate species as well as other various cations of interest using a filter pack system. CASTNET also featured visibility and mountain acid deposition related sub-networks. In 1994, the National Park Service (NPS) began its participation by sponsoring CASTNET sites in national parks, most of which were located in the western U.S.

Over the past decade, CASTNET has conducted numerous special studies including examining filter pack sampling artifacts and testing methods for measuring NH₃. In 2011, CASTNET initiated a new collaboration with the AmeriFlux Network at Howland, Maine. Also in 2011, EPA completed the upgrade of CASTNET ozone measurements at EPA-sponsored sites to make them compliant with 40CFR Part 58 requirements and began delivering ozone data from EPA-sponsored sites to the EPA Air Quality System (AQS). NPS-sponsored CASTNET sites have always been considered 40CFR Part 58 compliant for ozone.

In 2012, CASTNET added the Bureau of Land Management (BLM) as a sponsor with the addition of four new sites in Wyoming (a fifth BLM-sponsored site was added in 2013). Other network expansion during 2012 included three new sites in the Adirondacks, National Core (NCore) Monitoring Network instrumentation at the Bondville, IL site, and conducting continuous trace-level gas analyses at several sites. Currently, CASTNET features measurements conducted at 88 locations.

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