



# AmeriFlux Network



AMERIFLUX

## 25 Years and Going Strong

### What Is AmeriFlux?

AmeriFlux is a network of principal investigator-managed sites measuring ecosystem carbon, water, and energy fluxes in North, Central, and South America. AmeriFlux was established to connect research on field sites representing major climate and ecological biomes, including tundra; grasslands; savanna; crops; and conifer, deciduous, and tropical forests. As a grassroots, investigator-driven network, the AmeriFlux community uses tailored instrumentation to suit each unique ecosystem.

### Why Study Fluxes?

The scientific community uses flux measurements to assess responses of terrestrial ecosystems to climate, land use, and extreme events such as droughts, storms, or wild-fire, as well as to quantify carbon sequestration. Knowledge gained from this network improves understanding of important ecosystem processes and climate and atmospheric carbon predictions in Earth system models. AmeriFlux also advances foundational understanding of the Earth system to inform future energy and resource decisions.

### Research Goals



Quantify sources and sinks for terrestrial ecosystem carbon, and how they are influenced by disturbance, land use, climate, nutrients, and pollutants.



Understand processes associated with photosynthesis, respiration, and carbon storage in ecosystems.



**>670** AMERIFLUX FLUX TOWER SITES IN



**11** COUNTRIES

**499** SITES WITH DATA AVAILABLE FOR DOWNLOAD

### Research Design

The eddy covariance method derives fluxes of carbon, water, and energy between the ecosystem (vegetation and soil) and the atmosphere. This method measures the velocity of air drafts as they move up and down and the instantaneous concentration of trace gases in those drafts. At AmeriFlux sites, these fluxes are measured directly, continuously, and over large areas, without disrupting the systems being studied.

### AmeriFlux Management Project

In 2012, DOE's ESS program established the AmeriFlux Management Project (AMP) at Lawrence Berkeley National Laboratory to support the broad AmeriFlux community and AmeriFlux sites. AMP works with scientists and sites to ensure the quality and availability of the continuous, long-term ecosystem measurements necessary to understand these ecosystems and to build effective models and multisite synthesis.

### Research Locations

The AmeriFlux Network formed in 1996 with early support by DOE, Forest Service, NASA, and NOAA. Starting with just 15 sites in 1997, AmeriFlux is now entering its 28th year with 674 registered sites in North, Central, and South America. Sixty-one AmeriFlux sites have data records of 15 years or more.



### More Information

**AmeriFlux**  
ameriflux.lbl.gov



**ESS Program**  
ess.science.energy.gov



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The Environmental System Science (ESS) program within the U.S. Department of Energy's (DOE) Biological and Environmental Research (BER) program supports research to provide a robust and scale-aware predictive understanding of terrestrial ecosystems, watersheds, and coastal systems.

Front image courtesy David Gochis. Back image courtesy Rosvel Bracho