Steps towards interoperable flux data: affiliating NEON sites with AmeriFlux and FLUXNET

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Large data collection networks have led to an increase in available information. However, interoperability of these networks is paramount to continue to gain knowledge from their data. The eddy-covariance technique is widely applied to observe the exchange of energy and scalars between the earth’s surface and its atmosphere. One goal of the NEON is to provide high-quality ecosystem exchange observations to the science community. To maximize the utility of these data, affiliation of NEON sites with AmeriFlux and FLUXNET is being investigated as a pilot project.

Despite differences in specific technical configurations, community involvement, and organizational structure, a common rubric is to achieve data interoperability and comparability across projects. Over the past more than 20 years, the principle investigators of over 500 globally-distributed measurement sites have formed regional communities and networks such as AmeriFlux (over 100 active sites), and the global umbrella network FLUXNET (over 500 active sites). NEON hopes to increase the coverage of the AmeriFlux and FLUXNET efforts by incrementally contributing data from up to 47 NEON sites.

The first steps in developing this partnership will be presented in this poster. Initial efforts to unify syntactic formatting through adherence to data and metadata standards have begun for the first AmeriFlux affiliated NEON site, Central Plains Experimental Range. Additionally, general site information has been submitted for site level metadata. NEON plans to provide 30 minute processed fluxes to AmeriFlux, where higher-level processing (gap-filling, partitioning…) will be applied along with the other AmeriFlux and FLUXNET sites. In this way, the user communities gain increased eco-climatic coverage and increased representation of ecosystems.