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🌍 USDA ARS Long-Term Agroecosystem Research (LTAR) Common Experiment V.1

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Lori Abendroth¹, Mark A. Liebig², G Philip Robertson³

¹USDA Agricultural Research Service, Cropping Systems and Water Quality Research Unit, Columbia, MO;

²USDA Agricultural Research Service, Northern Great Plains Research Laboratory, Mandan, ND;

³Michigan State University KBS LTAR



Lori J. Abendroth

USDA ARS Cropping Systems and Water Quality Research Unit



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Abstract

A component of the USDA ARS Long-Term Agroecosystem Research (LTAR) network is a Common Experiment standardized across all sites. This collection contains all standardized protocols for the biophysical metrics collected in the Common Experiment.

Troubleshooting

Before start

We recommend starting with this protocol for overview and context:

Lori J. Abendroth, Mark A. Liebig, G Philip Robertson 2024. USDA LTAR Cropland Common Experiment: Standardized primary metric protocols. protocols.io
<https://dx.doi.org/10.17504/protocols.io.261ge59pyg47/v1>

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Protocol



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USDA LTAR Cropland Common Experiment: Standardized primary metric protocols

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NAME

USDA LTAR Common Experiment measurement: Aboveground biomass

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NAME

USDA LTAR Common Experiment measurement: Concentration of carbon and nitrogen in aboveground biomass

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USDA LTAR Common Experiment measurement: Concentration of phosphorus, potassium, and sulfur in aboveground biomass

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USDA LTAR Common Experiment measurement: Obtaining quality metrics in forage aboveground biomass

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USDA LTAR Common Experiment measurement: Collection of grain yield data using a yield monitor

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USDA LTAR Common Experiment measurement: Post-processing of spatial grain yield data

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USDA LTAR Common Experiment measurement: PhenoCam for Green Chromatic Coordinate

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USDA LTAR Common Experiment measurement: Soil organic carbon stocks and change

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University of Nebraska-Lincoln

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USDA LTAR Common Experiment measurement: Sediment flux

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USDA LTAR Common Experiment Measurement: Chamber-based fluxes of nitrous oxide (N₂O) and methane (CH₄) from soil

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USDA LTAR Common Experiment measurement: Rainfall

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USDA LTAR Common Experiment measurement: Irrigation water applied

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USDA LTAR Common Experiment measurement: Snow

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NAME

USDA LTAR Common Experiment measurement: Infiltration and percolation

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USDA LTAR Common Experiment measurement: Channelized surface flow discharge

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USDA LTAR Common Experiment measurement: Overland flow

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USDA LTAR Common Experiment measurement: Discharge from artificial subsurface drains

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USDA LTAR Common Experiment measurement: Depth to water table

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USDA LTAR Common Experiment measurement: Soil water content

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NAME

USDA LTAR Common Experiment measurement: Saturated hydraulic conductivity

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USDA LTAR Common Experiment measurement: Soil water potential and matric potential

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NAME

USDA LTAR Common Experiment measurement: Best practices for collection, handling, and analyses of water quantity measurements

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Protocol



NAME

USDA LTAR Common Experiment measurement: Dissolved nitrate (NO₃⁻) concentration

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NAME

USDA LTAR Common Experiment measurement: Dissolved ammonia (NH₃) concentration

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NAME

USDA LTAR Common Experiment measurement: Total nitrogen (TN) and total dissolved nitrogen (TDN) concentration

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NAME

USDA LTAR Common Experiment measurement: Total phosphorus (TP) and total dissolved phosphorus (TDP) concentration

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USDA LTAR Common Experiment measurement: Total suspended solids (TSS)

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NAME

USDA LTAR Common Experiment measurement: Best practices for collection, handling, and analyses of water quality samples

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NAME

USDA LTAR Common Experiment measurement: Cropland plant diversity

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USDA LTAR Common Experiment measurement: Non-crop plant biodiversity

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USDA LTAR Common Experiment measurement: Crop scouting for pests and diseases

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USDA LTAR Common Experiment measurement: Cereal crop mycotoxin concentration

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USDA LTAR Common Experiment measurement: Natural pest suppression

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USDA LTAR Common Experiment measurement: Butterfly diversity and abundance

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