

Data Citation

Cite this data set as follows:

Menaut, J.-C. 1996. NPP Grassland: Lamto, Ivory Coast, 1965-1987. Data set. Available on-line [<http://www.daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A.

Description

Productivity of a humid grass savanna was determined at the Lamto study site operated in collaboration with CNRS (Centre Nationale de Recherche Scientifique) - École Normale Supérieure, Paris, France. Measurement of monthly dynamics of above-ground plant matter (i.e., live biomass and dead matter for some years, total biomass in other years), and total roots (live + dead), were monitored from 1969 to the present. Net primary production has been estimated for both above and below-ground, although more data is available on the former.

The 2500-hectare Lamto Research Station (6.22 N 5.03 W) is situated 200 km north of Abidjan, near the town of Divo, at the southern edge of the humid savanna belt bordering the forest. The savanna is characterized by annual burning during the dry season in February, and by its high efficiency of nitrogen utilization. Nitrogen is remobilized from senescing leaves, and is very rapidly assimilated from decomposing plant residues without entering the soil pool of mineral nitrogen. The grass savanna occurs within a mosaic of grass, shrub, and tree savannas distributed according to drainage, slope and micro-topology.

Discontinuous data are available 1969-1986, including the effects of annual burning. Total net primary production (NPP) of the grass savanna has been estimated at 2150 g/m²/yr, of which 1320 g/m²/yr (61%) is below-ground production.

An earlier data set for a single year, thought to be mid-1960s, has been extracted from the literature, but this gives much higher biomass values and is probably less reliable.

Contact Information

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Image #LMT-1: A storm during the rainy season at the Lamto grassland site, Cote d'Ivoire. (The track shows the tropical ferruginous soil. Note also the grass layer and palm trees. Photograph taken July 1989 by Dr. P. Mordelet, CESBIO, France).



Image #LMT-2: Regrowth of the savanna during the rainy season at the Lamto grassland site, Cote d'Ivoire. (Note the three components: a continuous herbaceous layer, mostly tufted grasses; a tree/shrub layer, mostly gathered into clumps; and the palm tree overstorey. Photograph taken between March and June 1989 by Dr. P. Mordélet, CESBIO, France).



Image #LMT-3: Beginning of the dry season at the Lamto grassland site, Cote d'Ivoire. (The grass layer has reached its maximum height. Photograph taken November 1988? by Dr. P. Mordelet, CESBIO, France).



Image #LMT-4: Bush fires in the middle of the dry season at the Lamto grassland site, Cote d'Ivoire. (Note the almost total combustion of grass biomass in the foreground. This results in the release of a large amount of smoke to the atmosphere; the sky tends to remain a dirty yellow colour until the arrival of the first rains. Photograph taken January 1989 by Dr. P. Mordelet, CESBIO, France).



Image #LMT-5: Field measurements at the beginning of the dry season at the Lamto grassland site, Cote d'Ivoire. (Above-ground biomass sampling is carried out within one-metre square quadrats. Below-ground biomass is sampled from 20 x 20 cm soil cores. Photograph taken 1989 by Dr. P. Mordelet, CESBIO, France).



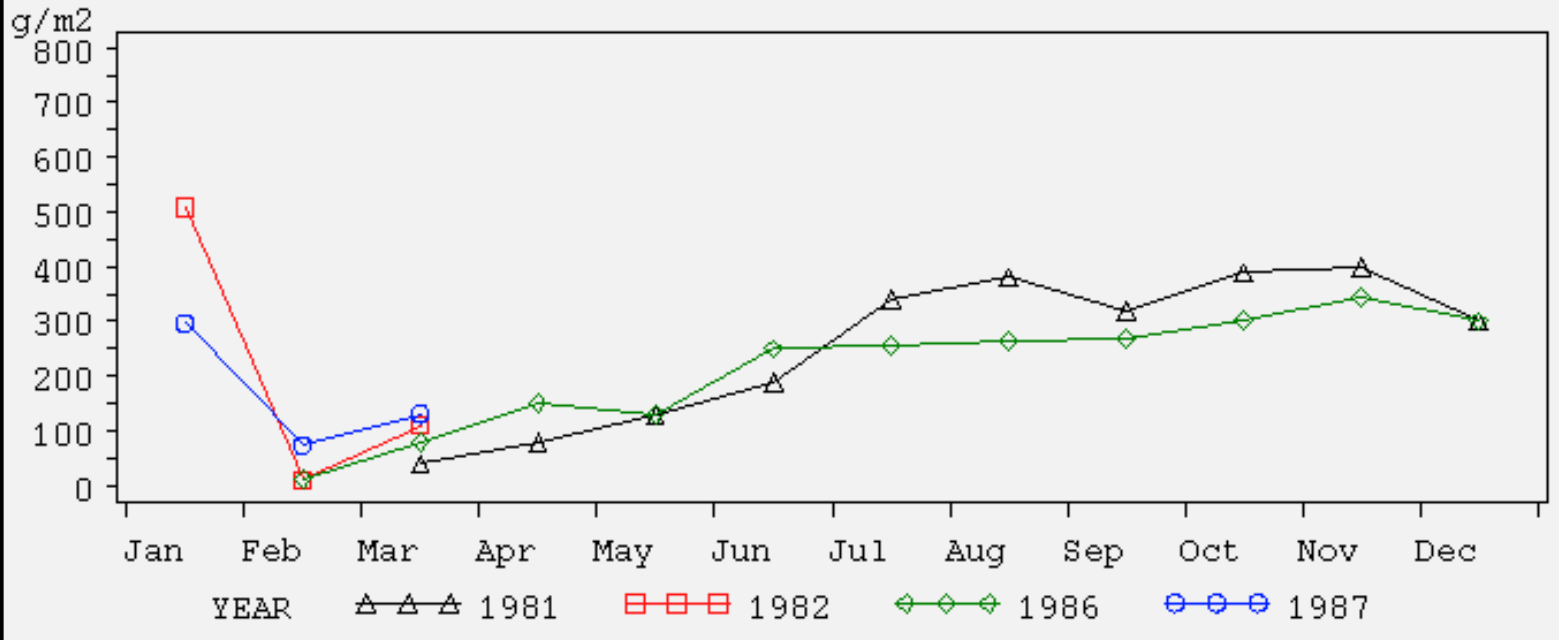
Image #LMT-6: Field measurements at the beginning of the dry season at the Lamto grassland site, Cote d'Ivoire. (Above-ground biomass sampling is carried out within one-metre square quadrats. Below-ground biomass is sampled from 20 x 20 cm soil cores. Photograph taken 1989 by Dr. P. Mordélet, CESBIO, France).



Image #LMT-7: General view about 20 km from the Lamto grassland site, Cote d'Ivoire. (Typical physiognomy of a humid (guinean) savanna, with a continuous layer of tufted grasses, scattered shrubs and the palm *Borassus aethiopicum*. The gallery forest along the temporary rivers makes up a conspicuous network isolating the savanna areas. Photograph taken July 1989 by Dr. P. Mordélet, CESBIO, France).

Aboveground Biomass for Long-term, Baseline Plots

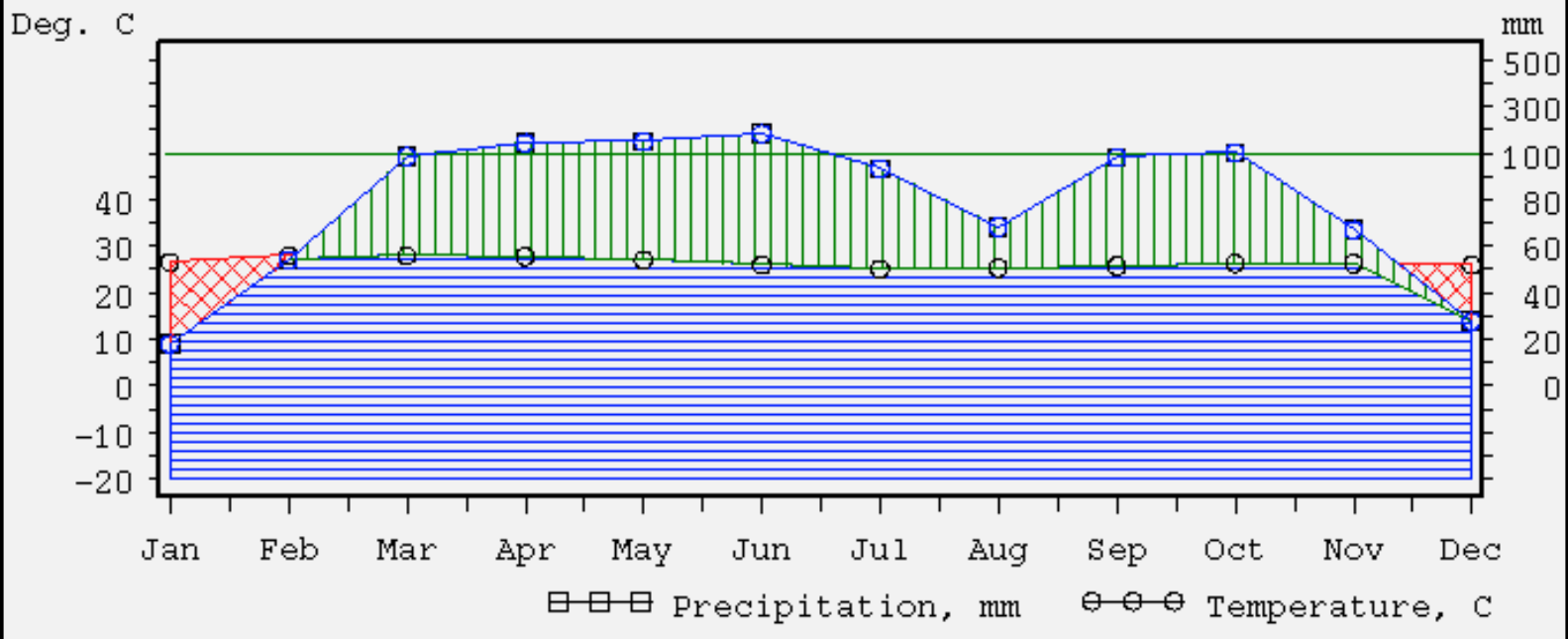
Site=Lamto Cote Ivoire, Lat/Long=6.22 N 5.03 W, Elev=300m Prec=1165mm/y



Graph #LMT-1: Above-ground biomass dynamics for each year of biomass data at the Lamto grass savanna site, Cote d'Ivoire.

Modified Walter-Lieth Climate Diagram

Site=Lamto Cote Ivoire, Lat/Long= 6.22 N 5.03 W, Elev=300m Prec=1165mm/y



Graph #LMT-2: Modified Walter-Lieth climate diagram based upon mean temperature and precipitation data for the Lamto grass savanna site, Cote d'Ivoire. (criss-cross red shading, where present - period of relative drought; vertical green shading - period of relative humid season)