

Project title

Net Primary Production (NPP) at LTER-Europe sites

Promoter: Giorgio Matteucci (National Research Council of Italy – Inst. for Agriculture and Forestry Systems in the Mediterranean – giorgio.matteucci@cnr.it)

1. Aim (for EnvEurope and LTER)

- Status and trends of NPP at LTER/EnvEurope sites
- Evaluation of the sites within the NPP range and map values in Europe (sort of representativeness)
- Changes in NPP in the last 10 years (not necessary to have annual values)
- Potential of the LTER/EnvEurope network to be considered for analysis of NPP changes in relation to pressures (e.g. climate change, land-use pattern, intensification)
- NPP is an ecological “parameter” that is relevant to all ecosystem domains (terrestrial, river and lakes, marine): potential for cross-domain analysis
- analysis of drivers of NPP across Europe (if sufficient ancillary parameters will be available)

2. Research questions and Hypothesis

3. Spatial and temporal coverage

The last 10 years, preferably with 3 (or more) sampling years.

Repetition of the assessment within Action 5 highly desirable (proxy variable)

4. Parameters used/needed* (if not only aquatic habitat are to be selected then the parameter group could be enlarged)

Parameter group (theme)	Selected parameter	Details about the parameter	Should be taken from existing data (yes/no)	Feasibility/constraints regarding existing data	Should be recorded in field (A5 work) (yes/no)	feasibility/constraints regarding field sampling
1) Climate and physical variability	Annual mean temperature and precipitation	Site-based or close-to-site	YES	Should be available at all sites	YES	Should be available at all sites
2) Biogeochemistry data	Nitrogen deposition annual totals	Measured from deposition data (wet), estimate of dry deposition (EMEP). If not measured Possibility of using gridded data from EMEP	YES (or from models, e.g. EMEP)	Mapped data (EMEP) available for all sites. Locally measured deposition data desirable for local variability	YES for the sites that have the facilities. Mapped for the other	Data will be available in early 2013
3) Structure and function of the ecosystems, communities and populations	Ecosystem structure (e.g. species, coverage, plant density, biomass, primary producers assemblage). Net Primary Production. : aboveground and, where possible, belowground (terrestrial). Index or measurement of NPP in aquatic ecosystems (including marine)	Data to define the structure/composition of the ecosystems. NPP data collected at sites (in forest differences in biomass between sampling dates can also be considered	YES. Modelling/estimation acceptable if based on detailed site-based analysis	NPP should be a key parameter for LTER sites. Not clear how many sites have complete data , repeated at least two times	Desirable, at least for a proxy variable (e.g. Leaf Area Index, Biomass)	Quite demanding if measured completely, but feasible for major components (e.g. aboveground in forests/grasslands)
4) Human population and economy	Human pressure on the ecosystem: harvesting of biomass/NPP, major management events (e.g. forest thinnings, grassland fertilisation, etc.), land-use change in the proximity of the site, acute pollution events	Text and data to understand possible human impacts on NPP	YES	Information should be available at all sites	NO, unless relevant for data in 2012	

5. METHODS USED

Measured data of Net Primary Production, possibly for all components (above- and below-ground) and primary producers

- Possibility of focusing on aboveground NPP for terrestrial sites when data on belowground are not available