



BRINGING TOGETHER THE BEST PLATFORMS IN THE FIELD, ANAEE-FRANCE IS A NATIONAL INFRASTRUCTURE ENTIRELY DEDICATED TO THE STUDY OF CONTINENTAL ECOSYSTEMS AND THEIR BIODIVERSITY. WITHIN A SINGLE NETWORK IT PROVIDES TOOLS FOR MONITORING, EXPERIMENTING, ANALYSING, MANAGING DATA AND MODELLING NATURAL SYSTEMS. It offers services allowing innovative biological research to be carried out on gene-environment interactions, biodiversity, bio-geochemistry and the operation of ecosystems. The infrastructure guarantees open access to these platforms via a single portal and encourages the wide availability of the data produced. It is also a facility providing technical demonstrations of the harmonisation of scientific methods and measurements in ecological experiments.

The AnaEE - France project Analysis and Experimentation on Ecosystems

HUMAN ACTIVITY HAS CONSIDERABLY CHANGED NATURAL ENVIRONMENTS AROUND THE WORLD, RAISING VITAL SOCIETAL QUESTIONS, SUCH AS THE ABILITY TO SUSTAIN BIOLOGICAL RESOURCES AND ECOLOGICAL SERVICES. In this context, a major scientific challenge consists of understanding and predicting the dynamics of biodiversity and ecosystems. The AnaEE-France infrastructure, «Analysis and Experiments on Ecosystems», tackles this issue by providing research facilities for developing a truly integrated biology, combining life and environmental sciences. It is run by the CNRS, Inra and the Joseph Fourier University and is France's contribution to the European AnaEE project, part of the network of major research infrastructures in biology and health.



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CNRS, Inra, Joseph Fourier University,
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Savoie University & Bourgogne University





Experimental platforms

THE INFRASTRUCTURE'S EXPERIMENTAL PLATFORMS ARE BASED ON THREE TYPES OF SERVICE

PLATFORMS FOR IN VITRO EXPERIMENTS: The Écotrons in Montpellier and Ile de France offer the ability to experiment under controlled conditions on terrestrial macrocosms (~ 35 m³) and mesocosms (~ 1 m³) and on terrestrial and aquatic microcosms (~ 1 dm³). On-line instrumentation will monitor ecosystem processes.

EXPERIMENTAL PLATFORMS IN A SEMI-NATURAL ENVIRONMENT: These are dedicated to manipulations in a semi-controlled environment, allowing communities of organisms to be studied and ecological models to be tested. They are particularly suited to studying the dynamics of terrestrial or aquatic populations and eco-toxicology and offer a wide range of enclosures and ponds of all sizes (up to an artificial lake), in which various parameters can be manipulated (temperature, agitation, etc.) These devices are supported by laboratories skilled in the preparation and monitoring of experiments and also to growing the organisms studied.

EXPERIMENTAL DEVICES IN NATURA: There are some thirty sites available, covering a wide range of terrestrial ecosystems (forests, agro-ecosystems, low and high altitude grasslands) and lake-sides, both in France and in the tropics. Some of these sites provide access to long-term experiments with the application of differentiated treatments over a long period of at least 20 years and the monitoring of key variables and parameters on how ecosystems work. The experiments relate to management procedures and the impact of global changes. All sites allow a climate and anthropic pressure gradient.



Transverse tools

ANAEE-FRANCE HAS INVESTED IN SHARED INSTRUMENTATION AND ANALYTICAL RESOURCES IN ENVIRONMENTAL MICROBIOLOGY, DEDICATED TO THE DETAILED CHARACTERISATION OF THE ENVIRONMENT AND MICRO-ORGANISMS. THE INFRASTRUCTURE WILL OFFER ACCESS TO DATA ACQUIRED ON INFRASTRUCTURE PLATFORMS AND WILL HOST MODELLING TOOLS

SHARED INSTRUMENTATION: development of mobile units for taking and conditioning samples, as well as taking measurements on the condition and structure of the main compartments (water, soil, vegetation). These units are equipped for prospecting sites, globally positioning sample sites, sampling soils and preserving them and characterising the vegetation. They will also be enhanced by spectroscopy equipment for in situ flow measurements.

ANALYTICAL SUITES: microbiology laboratories, dedicated to environmental matrices (water, soil, sediments) for characterising biodiversity with genomic and functional approaches (biochemistry). An imaging facility dedicated to the characterisation of the internal phenotype of small animals will complete the device.

THE INFORMATION SYSTEMS AIM TO FACILITATE THE MANAGEMENT OF AND ACCESS TO DATA. They will be interfaced with modelling platforms offering a range of services, such as the availability of models and calculation modules, a software environment allowing new models to be developed and utilities for running simulations.

