

Regional Observatory of Forest Ecosystems (OREF)

FORCOOP
9th March 2010

« Investir dans votre futur »

Programme de coopération transfrontalière 2007-2013 cofinancé par l'Union européenne (Fond Européen de Développement Régional)

Plan of the presentation

- Objectives
- Methodology
- Indicators
- Two complementary approaches
- Presentation of the plots
- Examples of results :
 - * botanic
 - * phenology
- Practical aspects ...

OREF objectives

To follow up in a sustainable way the evolutions of forest ecosystems, stands and biodiversity in NPC and Picardie :

- with the support of the national and regional networks, and researchers
 - establishing a protocole and defining relevant sites
 - searching for regional synergies
- to provide « **raw material** » and **feed-back opportunities** to research
- to **define orientations and adapted forest management decision tools** to forest owners
- to orientate our technical work: experimentation, guide (typology of stations)

OREF methodology :

A bilateral step (2 Regions)

- **to collect data** concerning climate change in collaboration with other bodies
 - state of the art and mid-term monitoring
- to identify **existing initiatives** (at local and national level) and networks that is possible to rely on
- **to set up a scientific committee** with the main interested bodies at regional and national level

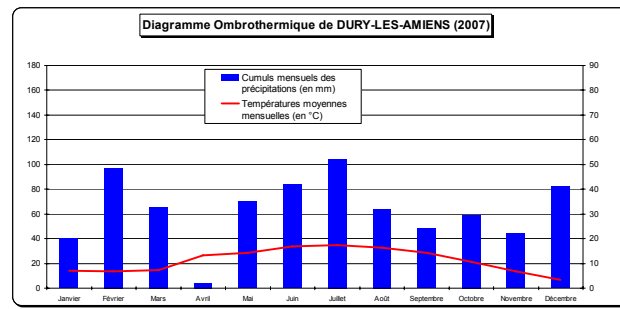
A relevant method

- **To define the right indicators**, with the support of the scientific committee
- To elaborate a **protocole** (mode of operation), and choose the sites
- To define **two complementary working axes** :
 - permanent plots and regional synthesis

Types of indicators

→ varied disciplines, relevant, simples

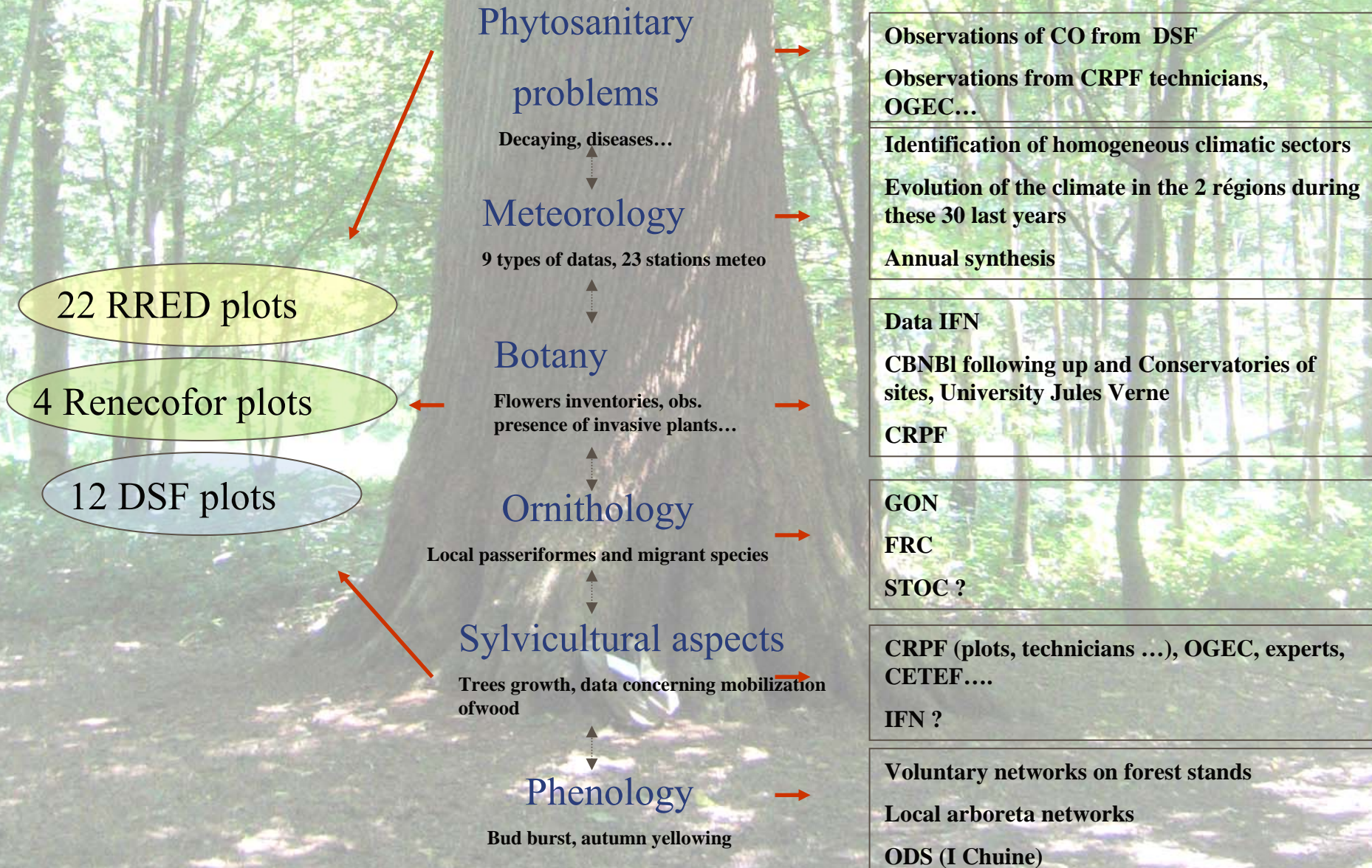
- Phenology
- Sylvicultural aspects
- Botany
- Meteorology
- Phytosanitary problems
- Ornithology



Two complementary approaches

38 permanent plots

Regional synthesis



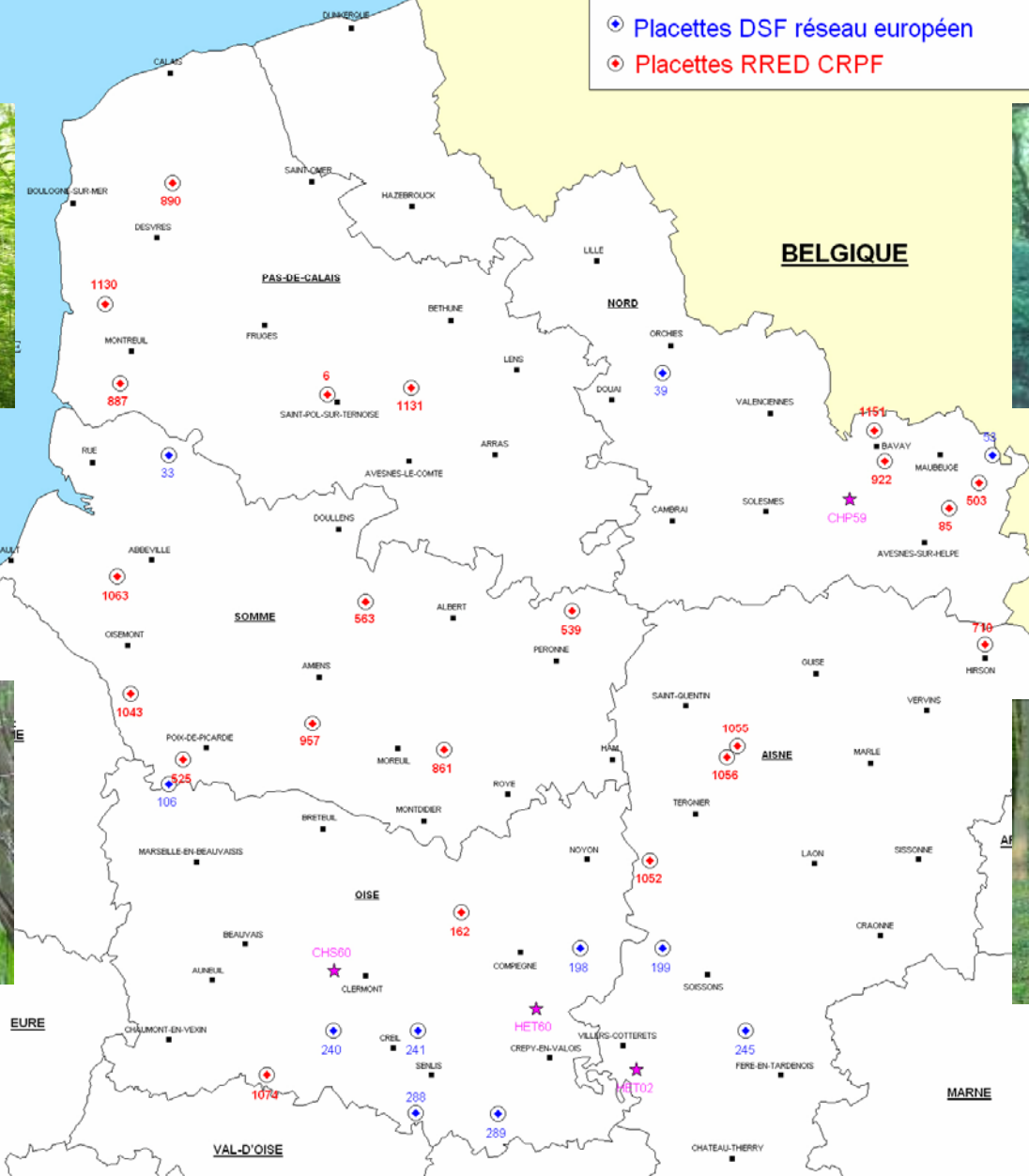
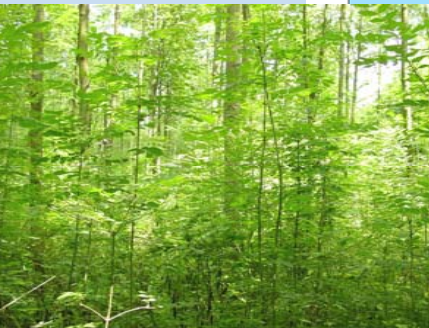
Placettes de l'OREF



MER DU NORD

- ★ Placettes RENECOFOR
- ⊙ Placettes DSF réseau européen
- ⊙ Placettes RRED CRPF

BELGIQUE



EURE

VAL-D'OISE

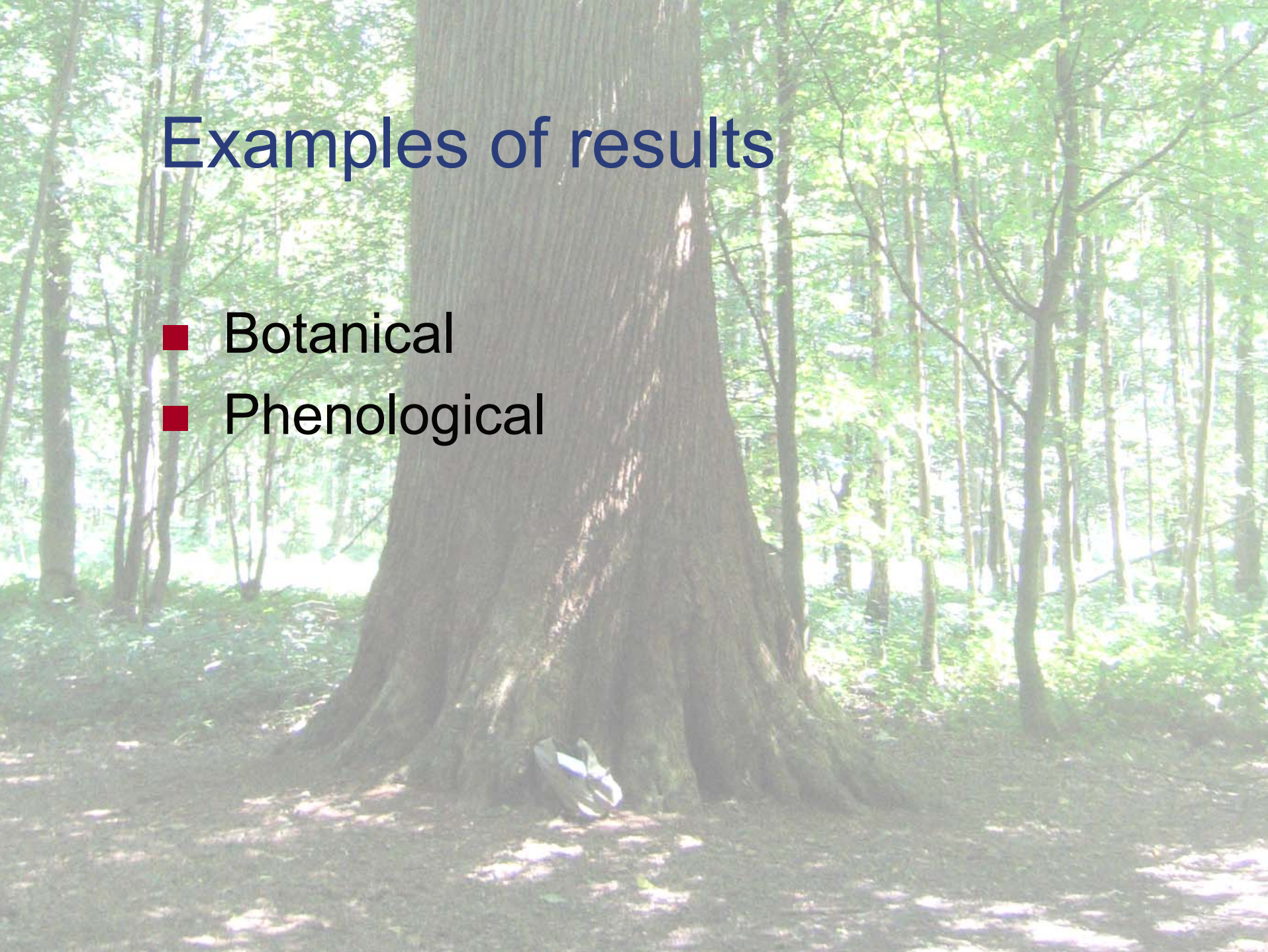
MARNE

State of progress

- 2005 : setting up the committee and the methodology (biblio, indicators, protocole, plots)
- 2006 : setting up some plots, making first evaluation
- 2007 :
 - Precision and adaptation of the protocole
 - Complete evaluation of the 38 plots
- 2008 : 1st year of complete observation
- 2009 : 2nd year of complete observation
 - Project of extension to the South of England with Forest Research (projet MULTI FOR)
 - Thinking about the partnership consolidation with CBNB, Conservatory of sites Pic, l'IFN
 - Thinking about the partnership broadening, in particular for some indicators (STOC....)

Examples of results

- Botanical
- Phenological



Flora and fauna observation

- Modifications to be evaluated :
 - Changes of area
 - Changes of behaviour (modification of the dates of migration or sedentary process for birds, earlier coming out for spring plants...)
 - Demographical changes (augmentation or decreasing)

→ *Taking into account different factors that could influence these evolutions*

Flora data observation

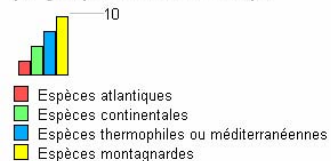
permanent network plots

- Objective : to evaluate the presence of species or groups of species within different types of areas (thermophiles species appearing towards the North, continental species progressively disappearing...)
- Complete survey every year at the moment (test phase)
- In 2008 : complete campaign : 34 plots drawn up in the inventory

(4 plots from Renecofor network in 2005, then again in 2010)



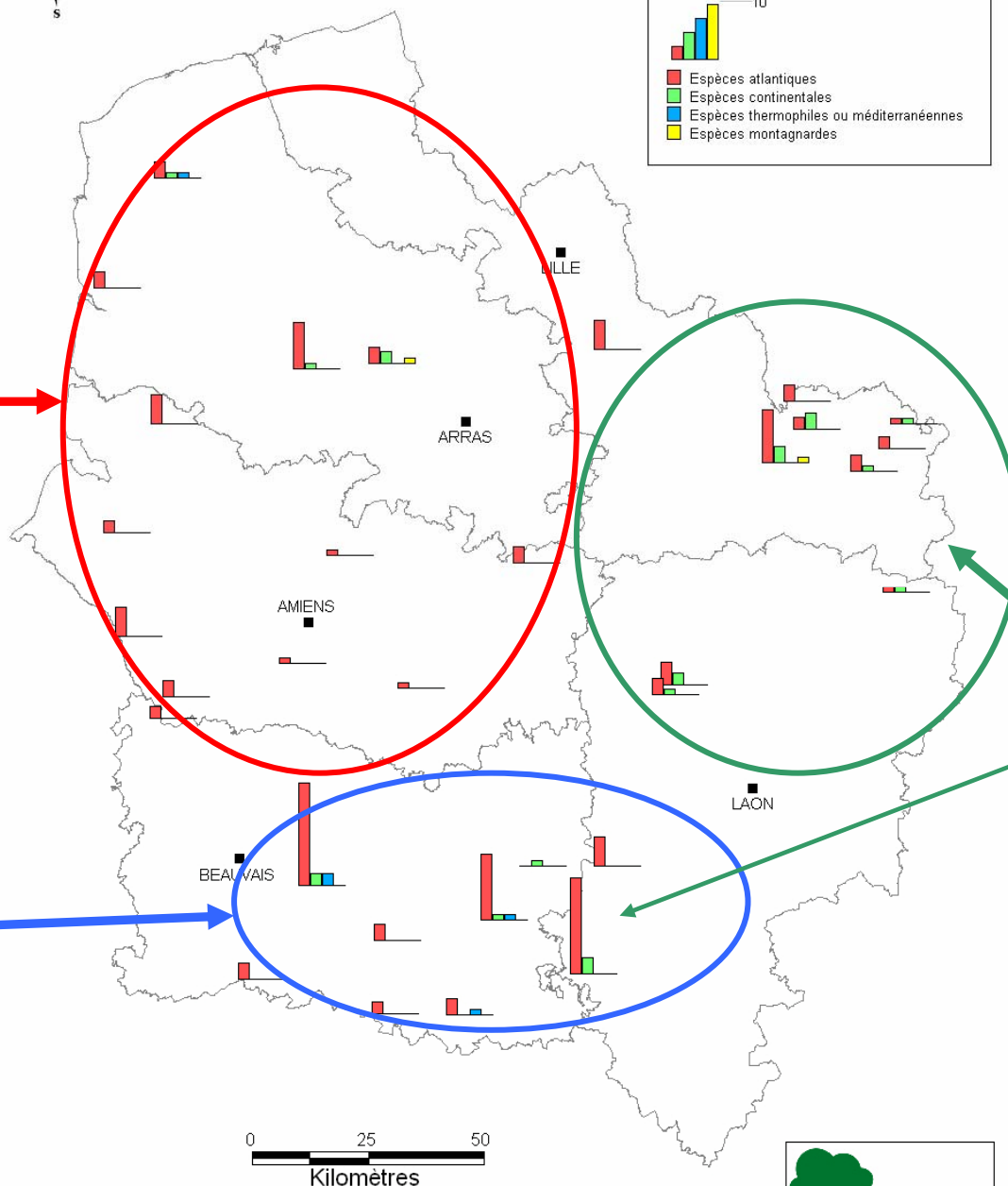
Nombre d'espèces végétales
par groupe indicateur climatique



Atlantic and
subatlantic
species

Thermophiles or
mediterranean
species

Continental
species



Flora observation 2008

permanent network plots

- All the site surveys dominated by atlantic ou sub atlantic species
- A few site surveys where those are mixed with continental species (Thiérache and Vimeu)
- No continental species on coastal plots



Placette de
St Segrée (80)



Placette de
Sanghen (62)



Placette de
Jeumont (59)

Flora observation 2008

Comparison of surveys 2007 and 2008

permanent network plots

- No major difference between the results of the two field campaigns
- Globally 19 « new » species with a rather weak covering rate have been observed
- They don't correspond to a particular indicative characteristic
- Nearly complete survey of the vegetation.

Flora observation 2008

Regional Sythesis from Rémi Francois's work

- Development of invasive plants (warmer reproduction period, milder winter, climatical accidents) :



- Myriophille du Brésil, Sèneçon du Cap
- *Ludwigia grandiflora*, *Azolla filiculoides*, *Lemna minuta* ...
- *Prunus serotina*, *Fallopia japonica*, *Solidago*, *Buddleia davidii*, *Aster lanceolatus*, *Lemna turionifera*, *Elodea canadensis*...

Flora observation 2008

Regional Sythesis from Rémi Francois's work

- Orobanches development (warmer summers ad milder winters):



Orobanche picridis



Orobanche teucrii



Orobanche alba

Flora observation 2008

Regional Sythesis from IFN data

- to evaluate the available data and conception of a method of analysis
- to work on several ranges of consolidated inventories campaigns
- to use data collected all the year long
- to free as much as possible of the effects linked to the stations and to the stand closing
- to appreciate the evolution of species grouped by climatic characteristic (indicator), but also some particular species (those identified as more sensible to CG)
- To analyse geographical variations

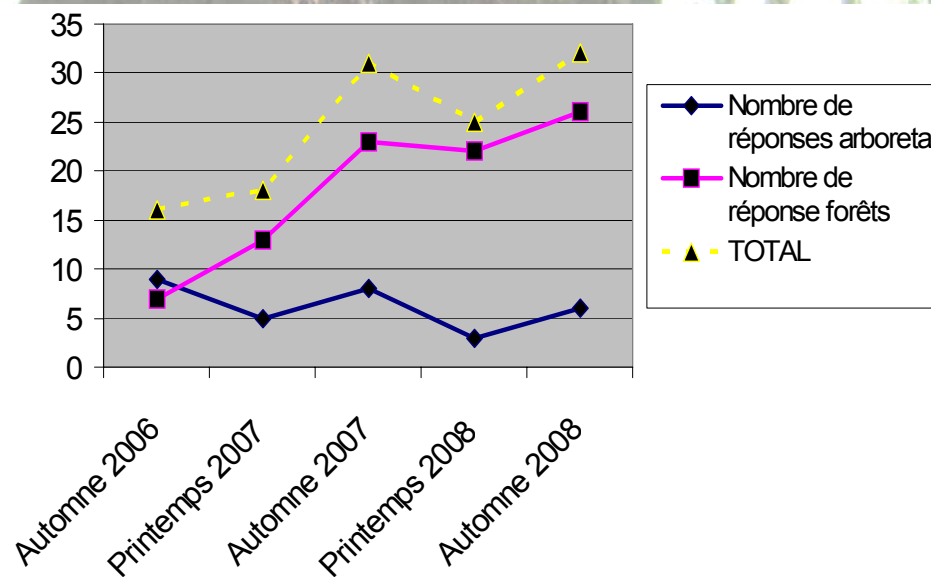
Example of results : phenology

■ Objectives :

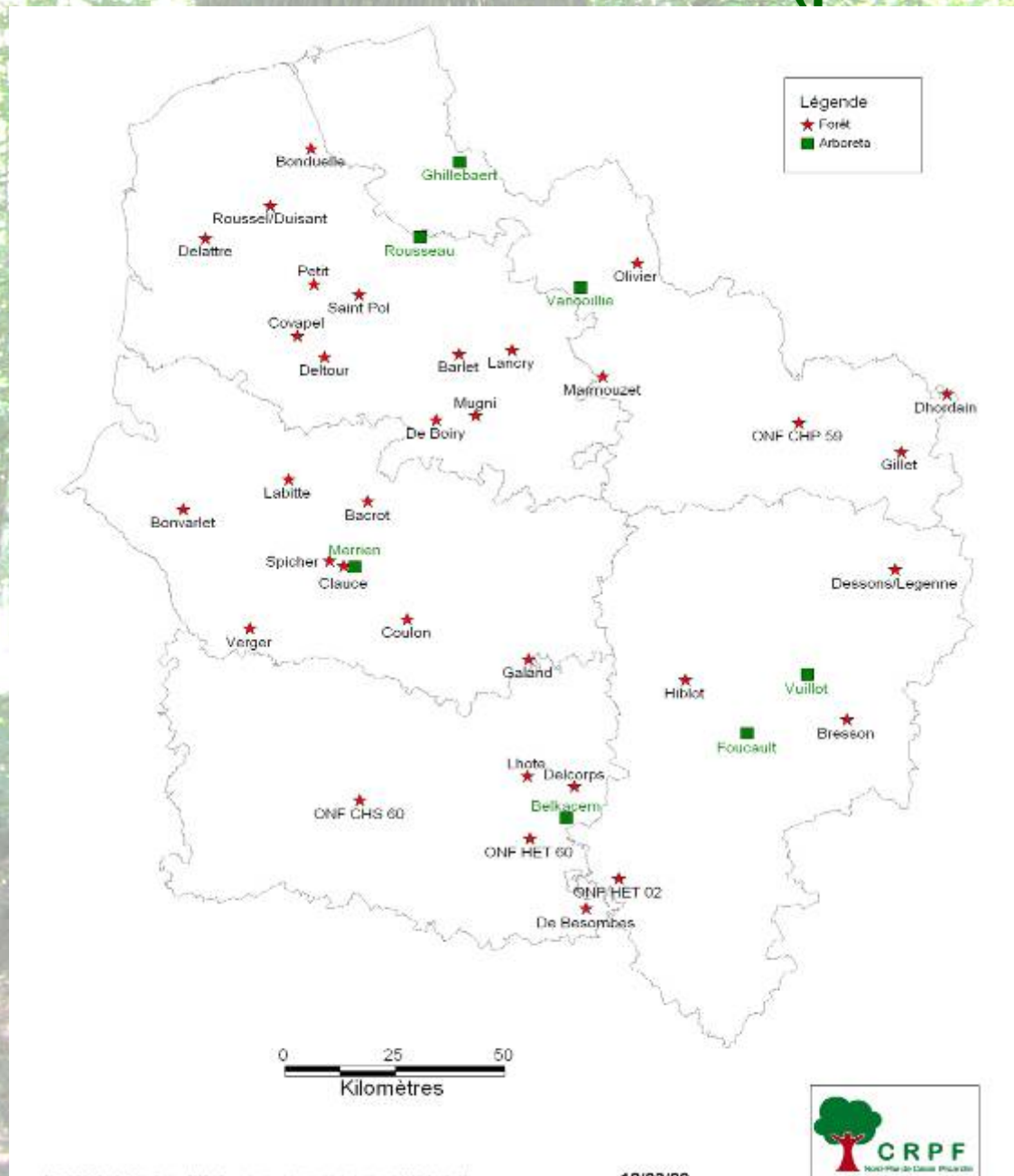
- to appreciate the evolution of the duration of the vegetation season for all species
- to characterize the behaviour of the different species
- to analyse the geographical variations
- to study the correlation with the meteorologic data

Phenology : synthesis

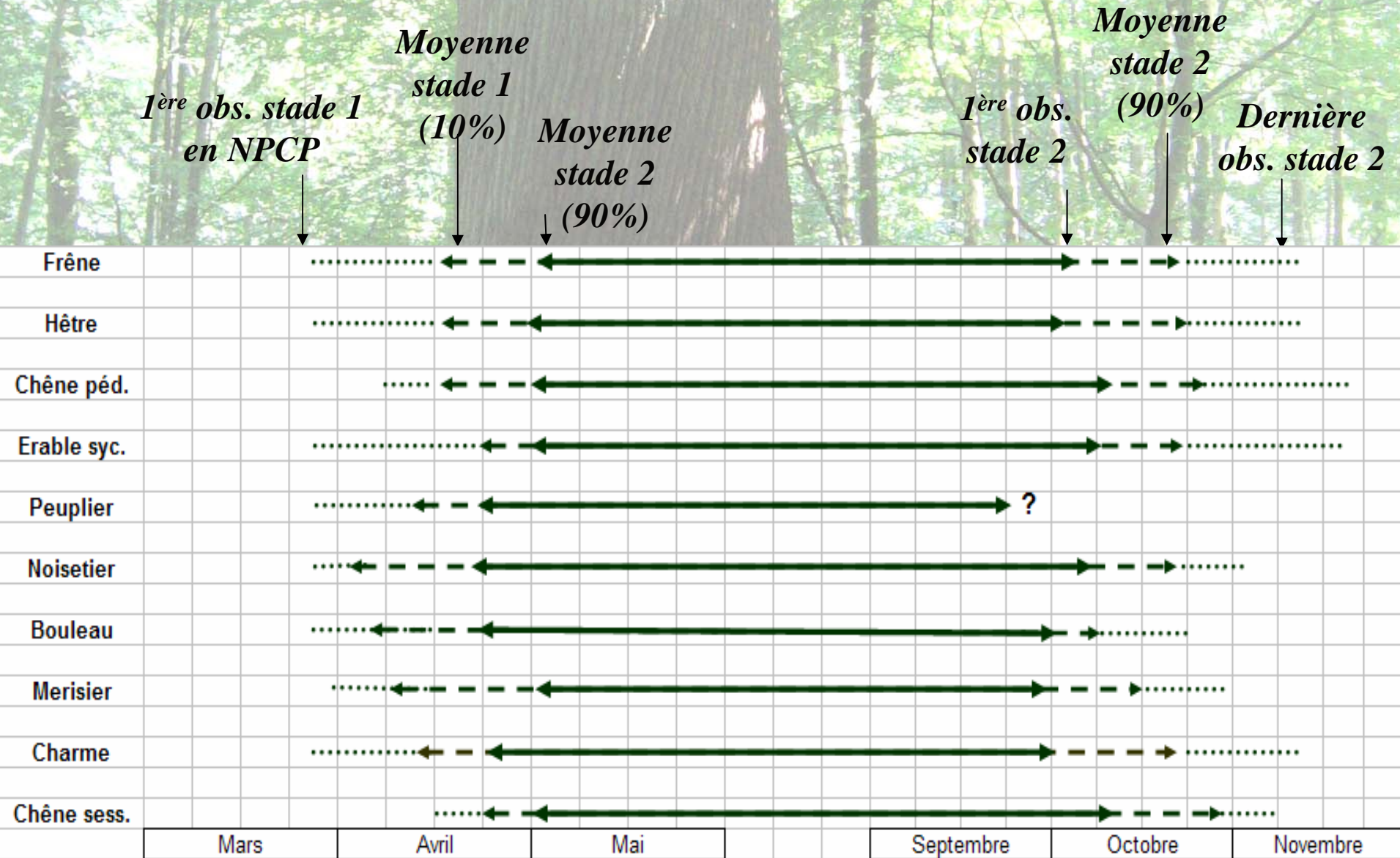
- Setting up 4 protocoles (forest areas and arboreta, spring and autumn)
- Recruitment of volunteers : article in Bois du Nord, mailing, information within CETEF and FOGEFOR



Localization of the observations (phenology)



Phenology : *results 2008*



Vegetation season comprised between entre 178 days and 198 days

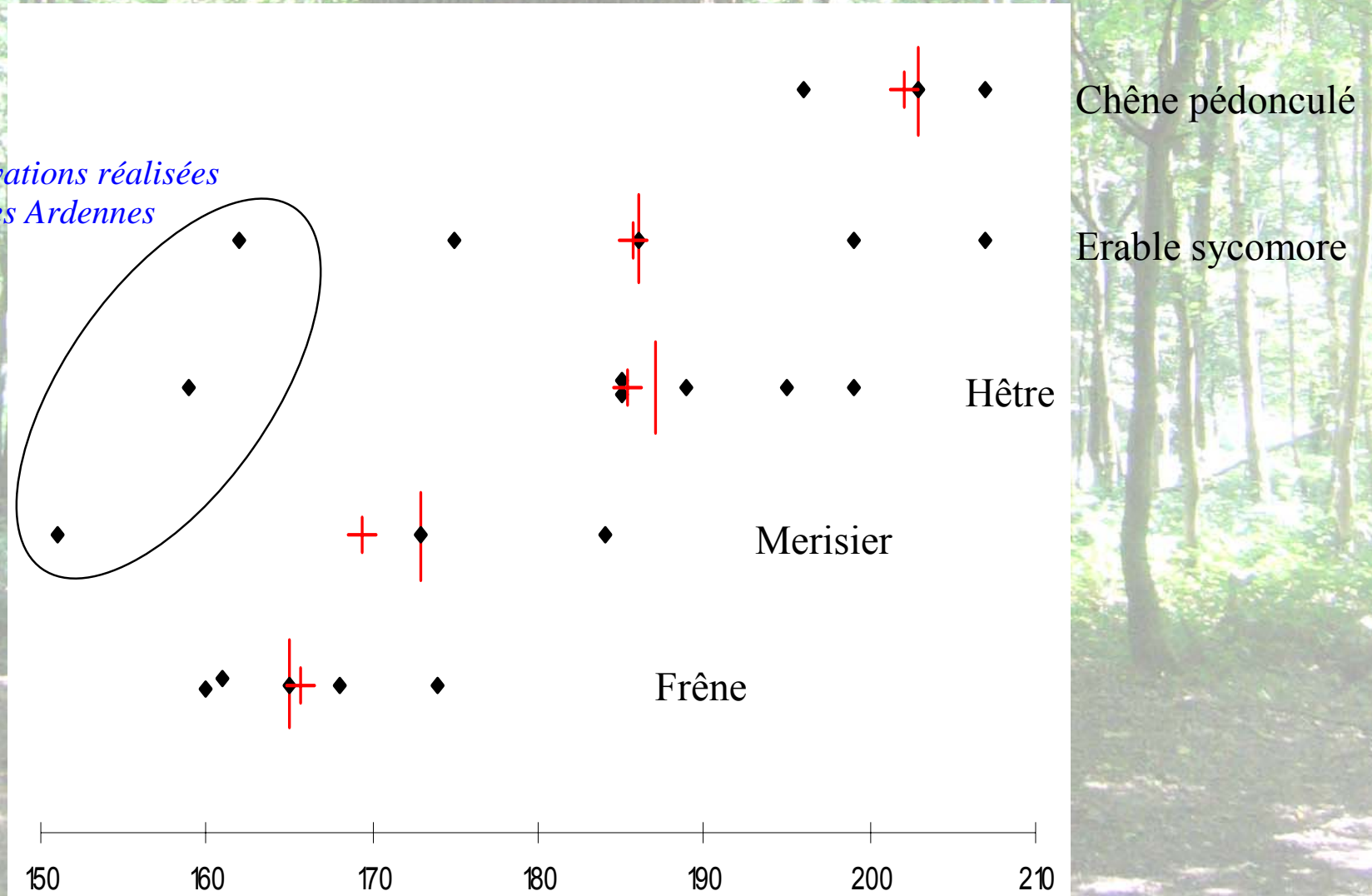
Phenology

Results 2008

- Complete campaign in 2008 : spring and autumn
- Later budburst in 2008, more representative of « usual » years, some species presenting variable behaviours :
 - Early species : common hazelnut, birch, wild cherry trees
 - Later species : hornbeam, ash, common beech, sycamore, chesnut oak
- Autumn yellowing 2008 similar to 2006 and one week later than 2007
- Vegetation season from 178 to 198 days according to the species and geographical areas (shorter season in Ardennes)

Duration of the vegetation season : results 2007 reminding

*Observations réalisées
dans les Ardennes*



And also practical aspects

- Appliance conceived to be transfered to other Regions, and to allow comparisons
- Extension of the regional covering with **catalogues and guides of forests stations** : catalogue of stations Nord Pas de Calais is being implemented
- Simulation of the possible evolutions according to climate change, concerning **the choice of species** proposed by the catalogue
- setting up and observation of **experimentations** (with CETEF) on particular species (Cedar...) and on adaptation of management practices
- **extension actions** through meetings and brochures (or simplified guides) concerning climatic forecasts and adaptation of the forest management