

# Conservation and Restoration of Fragmented Biodiversity Hot Spots: The Calcareous Grasslands of S-Belgium (BIOCORE)



- **Plant Ecology Team**

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- **Butterfly Genetics and Ecology Team**

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- **Plant Genetics Team**

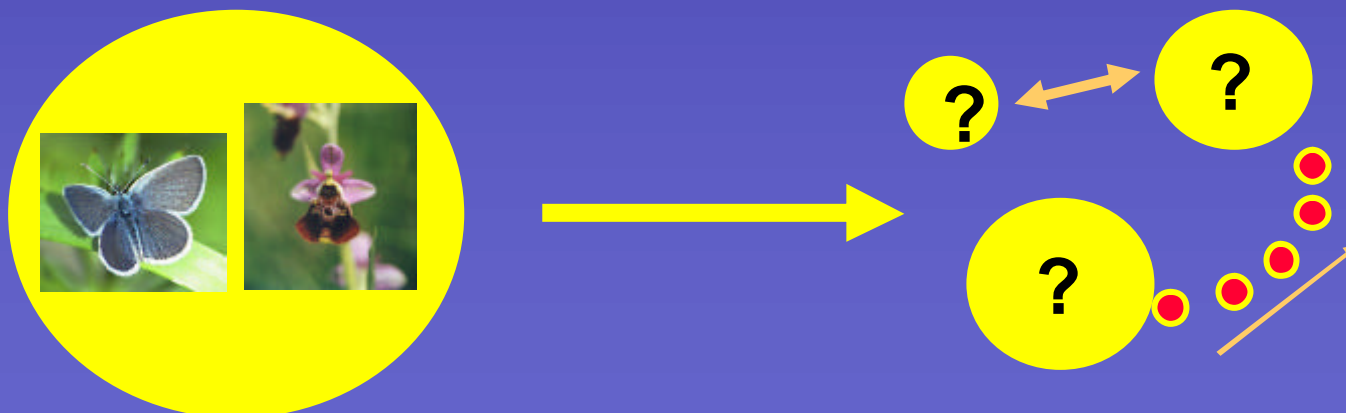
C.L.O. – DvP (Dr. I.Roldan-Ruiz)



# BIOCORE - Context

## Calcareous grasslands as threatened biodiversity hot spots

- Most species rich terrestrial ecosystems at small scale (> 50 plant species/m<sup>2</sup>)
- Urbanisation, intensified agricultural practices and abandonment of grazing practices have lead to increased **fragmentation** of the system

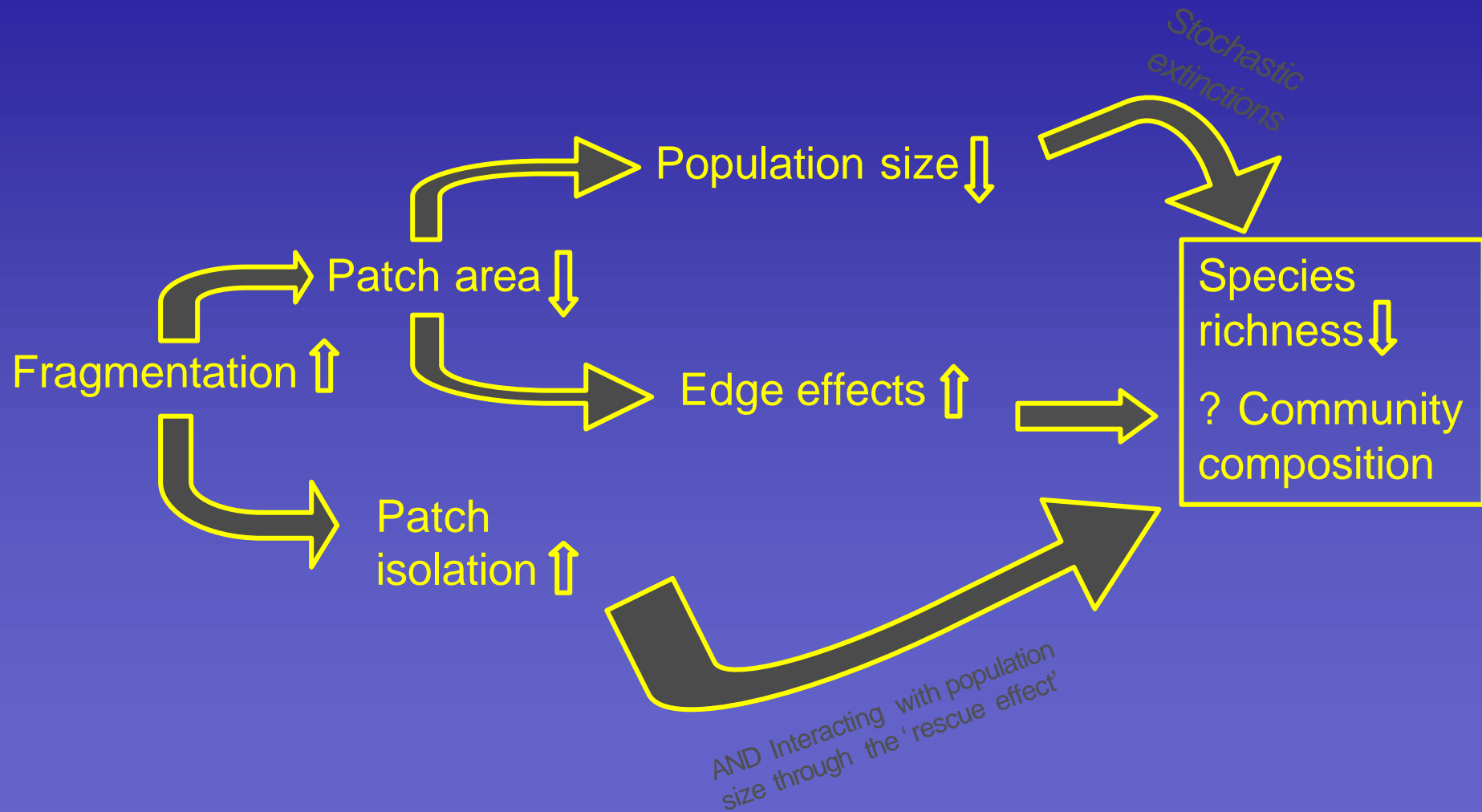


# The Viroin System

(Map of historical land use provided by the team of Prof. G. Mahy at FSAGx)



# Effects of grassland fragmentation on species richness

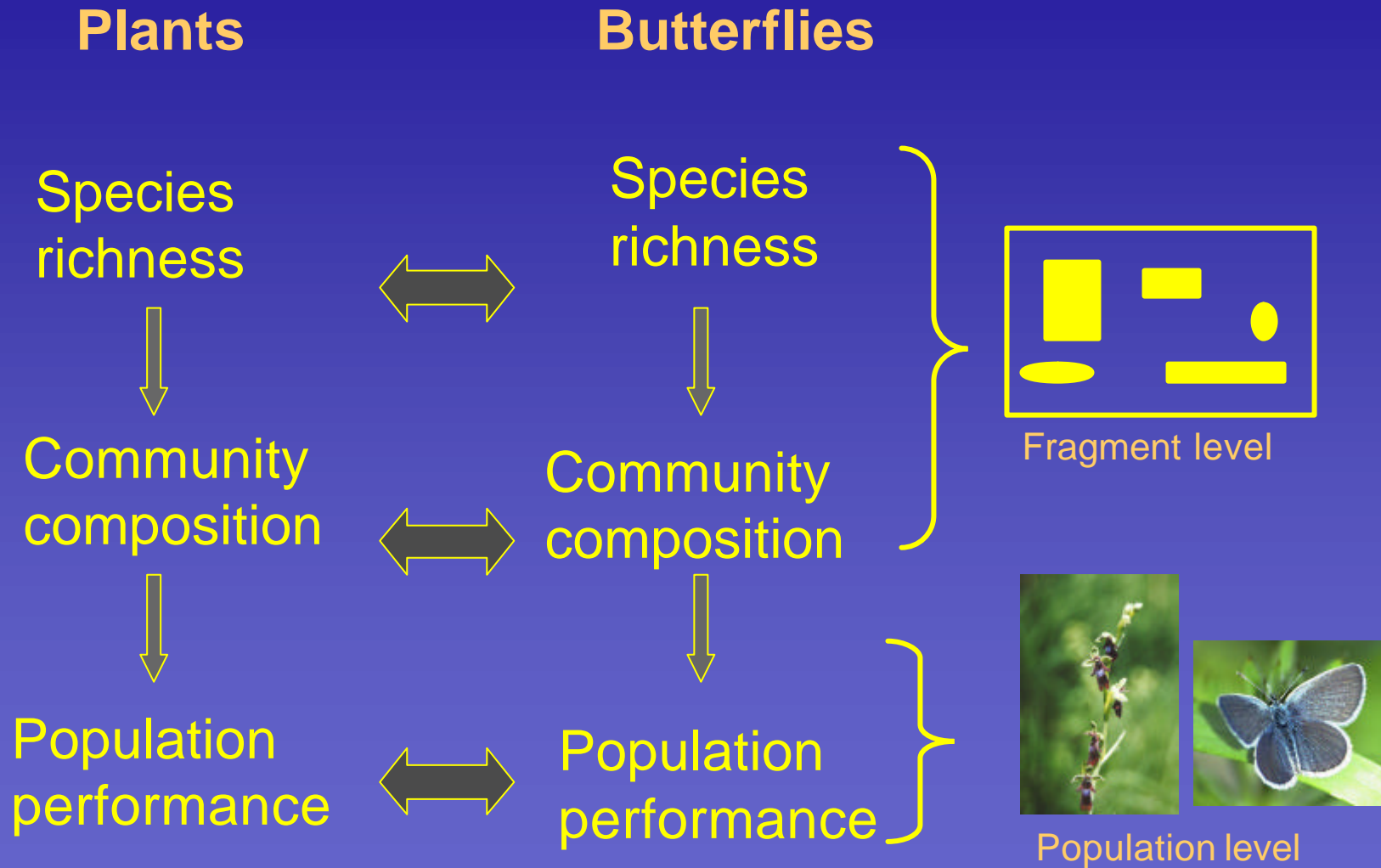


# Aims

- Determine the effects of fragmentation on :
  - Plant species richness and population performance
  - Butterfly species richness and population performance
  - The interaction between butterfly and host plant
- Gain insight in the basic ecological processes behind species decline
- Develop structured Metapopulation models
- Develop a methodological framework for studying the effects of fragmentation in a multidisciplinary way
- Provide guidelines for the remediation of the fragmentation
- Develop a toolbox for land use planners



# Methods



# Methods fragment level

	Measures	Correlates
Species richness	N, Shannon ,...	Patch area, isolation, shape
Community composition	Nestedness, checkerboardness, niche proportionality, ...	Patch area, isolation, shape



# Methods ct. Population level

## Measures

## Correlates

Demographics  
(matrix population  
models)

Rate of increase,  
sensitivity analysis,  
...

Population size,  
density, isolation, ...

Phenotypic  
fitness measures

Seed germinability,  
reproduction ...

Population size,  
density, isolation, ...

Genetics (AFLP,  
RAPD)

$F_{st}$ , Gene  
diversity...

Population size,  
density, isolation, ...

**Aim: Structured metapopulation modelling**





# BIOCORE Valorisation



- Publications in conservation biology / theoretical ecology Journals
- Publications for broad audience of nature conservationists
- Symposium for Land use planners and nature conservationists
- Toolbox for Land use planners
- Website
- ...



# Users committee

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