



Long term monitoring of the organization of agricultural landscapes and vegetation communities along the Sélune river (France)

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Long term monitoring of the organization of agricultural landscapes and vegetation communities along the Sélune river (France)

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Dams removal on the Sélune river (Manche, France) : context and issues

Scheduled to begin in 2016, the removal of two dams on the Sélune River will be one of the **largest dam removal** and river restoration projects undertaken in **Europe**.

Consequences of dam removal include benefits from restoring more natural flow regimes and sediment regimes. They also include **potential impacts on biodiversity** and associated ecosystem services due to **changes in landscape and agricultural dynamics** alongside the Sélune river.



Dam of Vezins (Manche, France)

It may be challenging to discern shifts induced by removal while natural ecological and physical processes have been suppressed or altered since the installation of dams in the 1920s.

Therefore, **long-term research is a valuable tool** i) to provide knowledge (t_0) on how present conditions came about and ii) to follow how they will evolve (after dam removal).

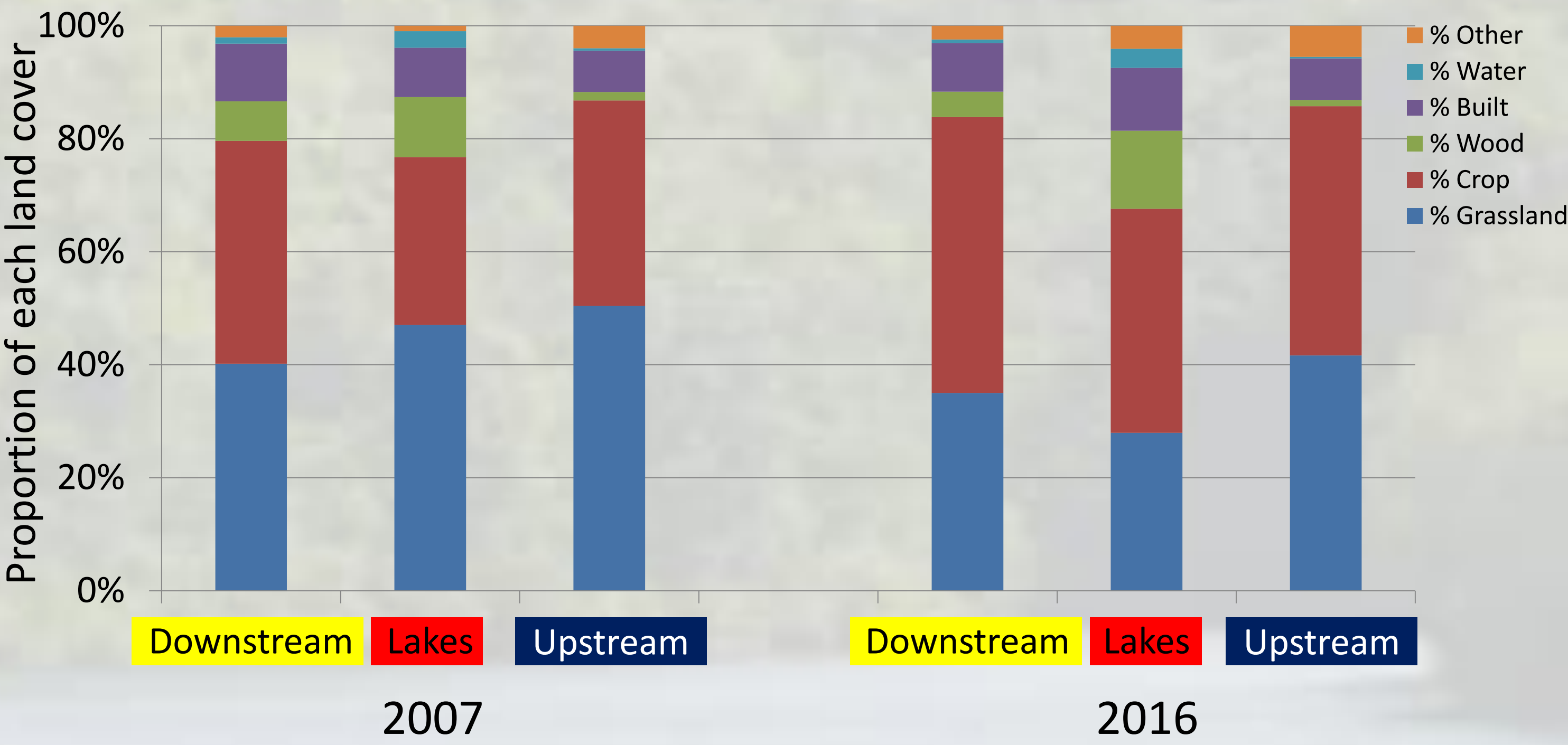
A long-term monitoring design to follow changes in agricultural landscapes

- Locating 9 1km² landscapes in three homogeneous zones along the Sélune



The three delimited zones are homogeneous according to topography and landscape composition.
downstream zone: alluvial plains ; upstream zone: plateaus

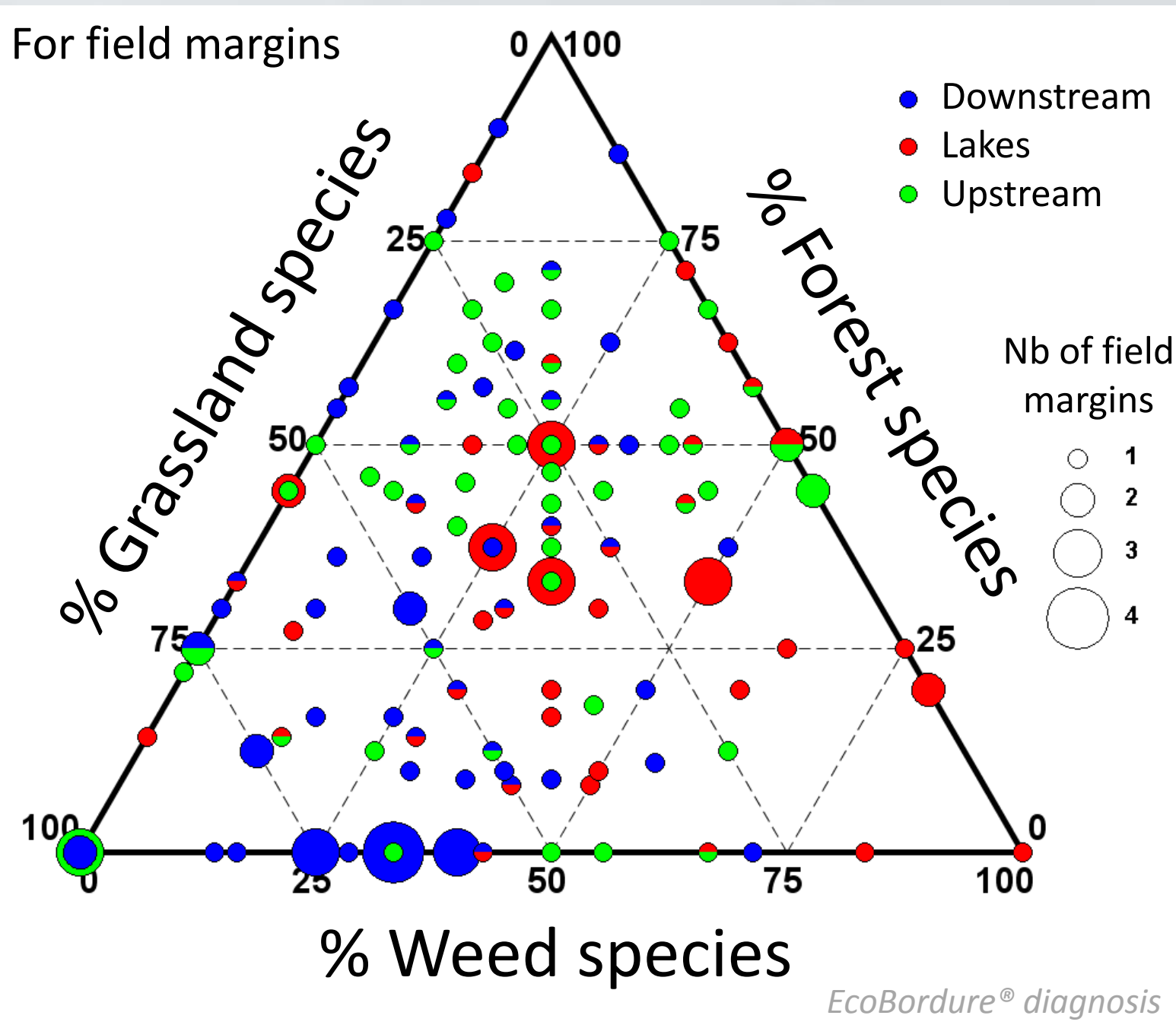
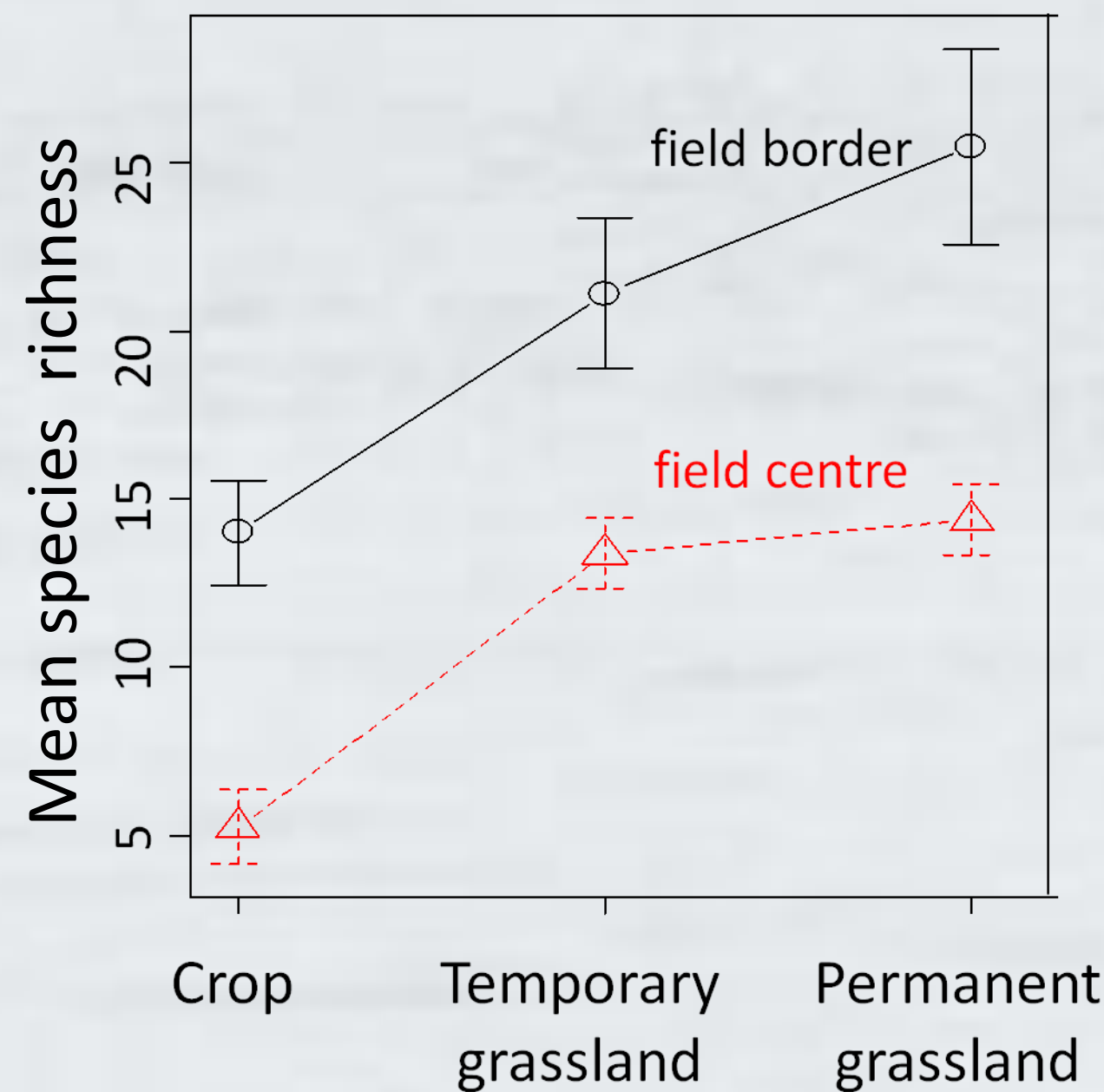
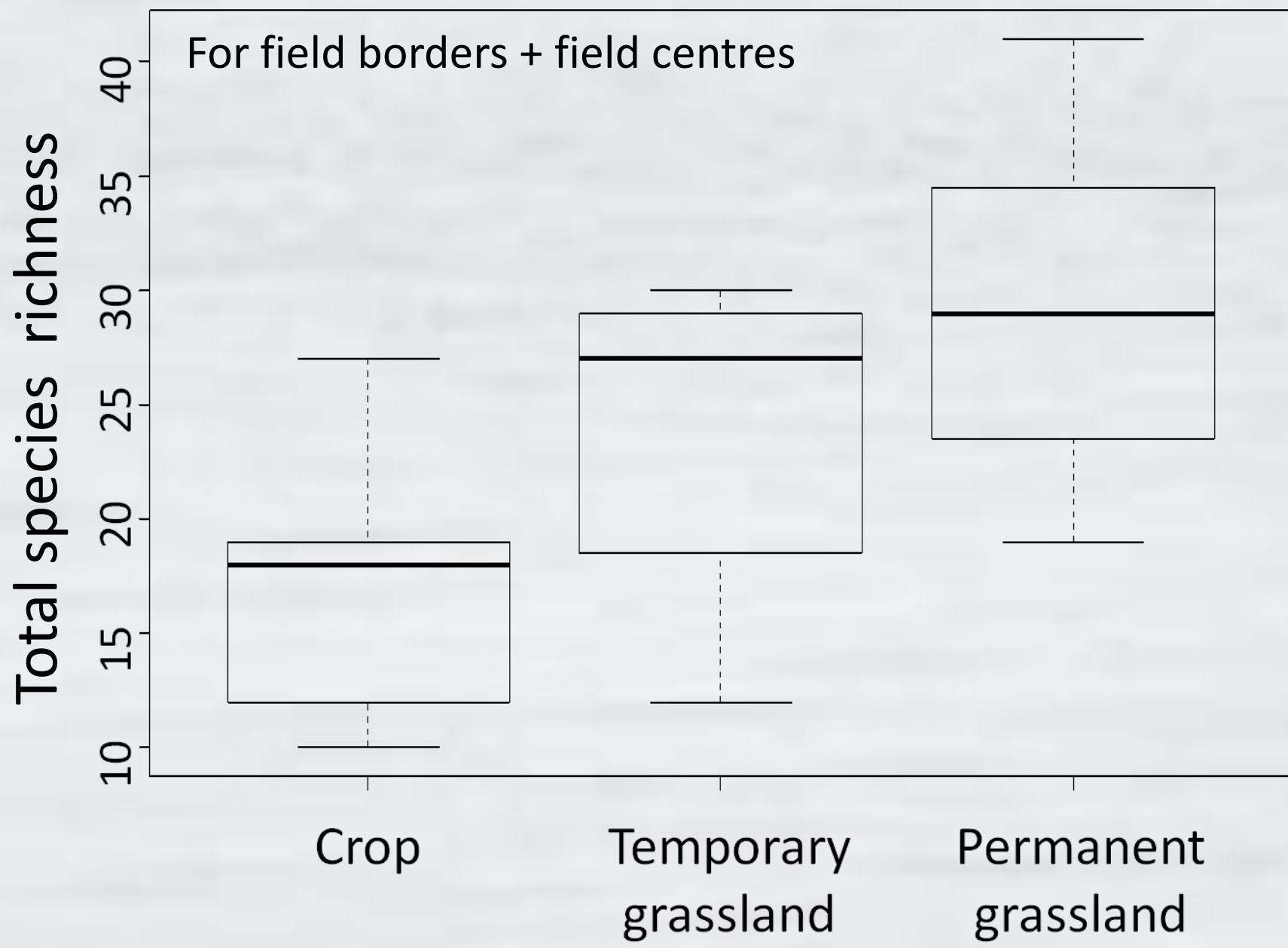
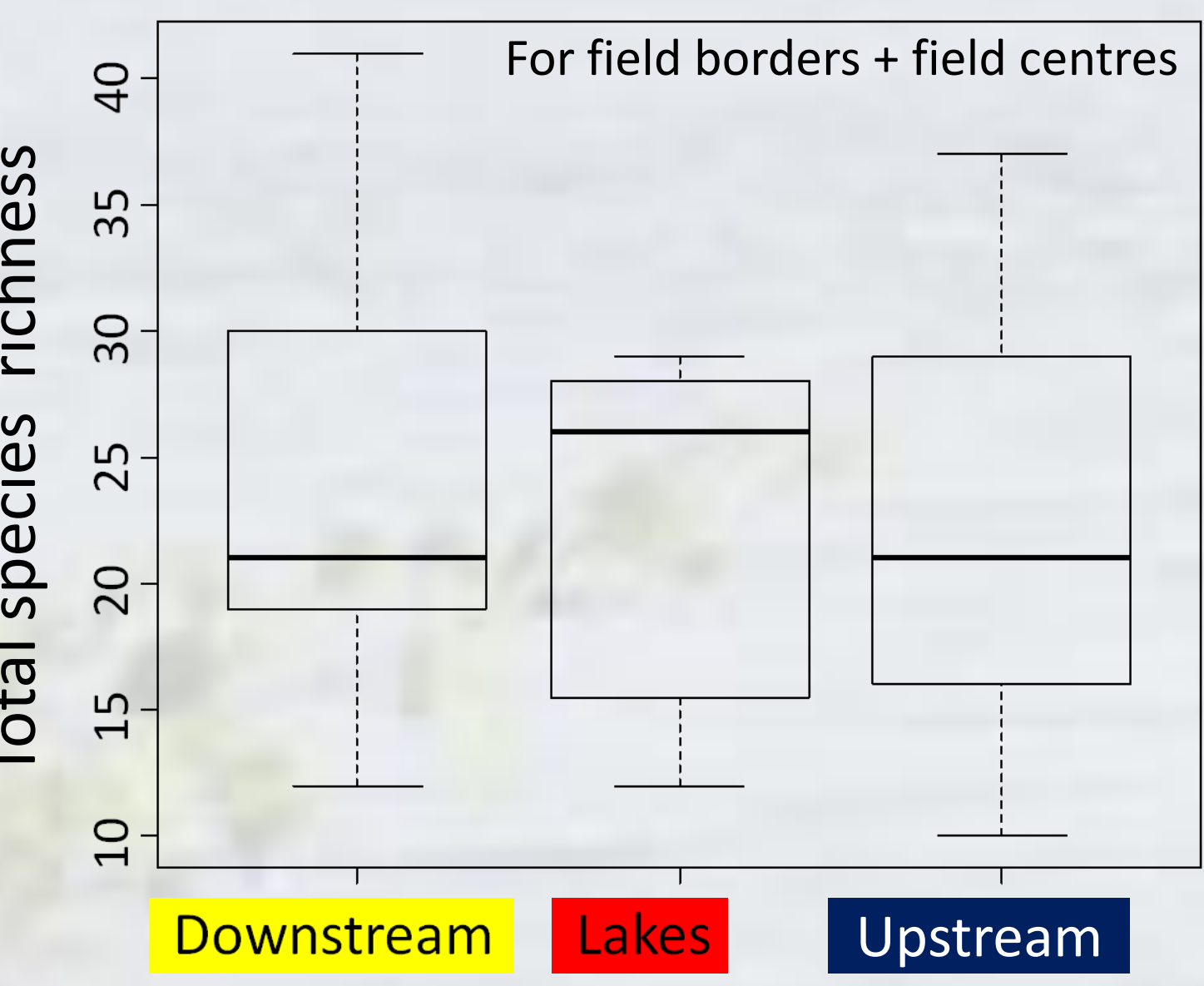
- Characterizing land cover in each landscape with GIS
- Reconstructing past landscape trajectories with GIS



Significant decrease of % *Grassland* in favor of % *Crop*.

No significant changes in Shannon diversity, mean field size nor hedgerow density.

First results for present vegetation species richness according to the zone and the land cover



No differences in species composition (PCA) according to the three zones but differences according to transect position in field.

Our long-term monitoring design allows us to i) **perform an inventory** of vegetation diversity in agricultural landscapes **before dam removal** ("point 0"), ii) **follow the evolution trajectories** of vegetation diversity in agricultural landscapes **after dam removal** by resurveys. It should enable us to **identify the conditions for retention or recovery** (resilience) of **vegetation diversity** in agricultural landscapes surrounding the Sélune river.