

« NaturAdapt,  
l'indispensable adaptation. »

# Europarc Climate Change Workshop

Key learning

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**Enlarge the pressure analysis to the watershed**



## The Regional Natural Reserve of peat bogs in Morvan

In the Natural Park of Morvan

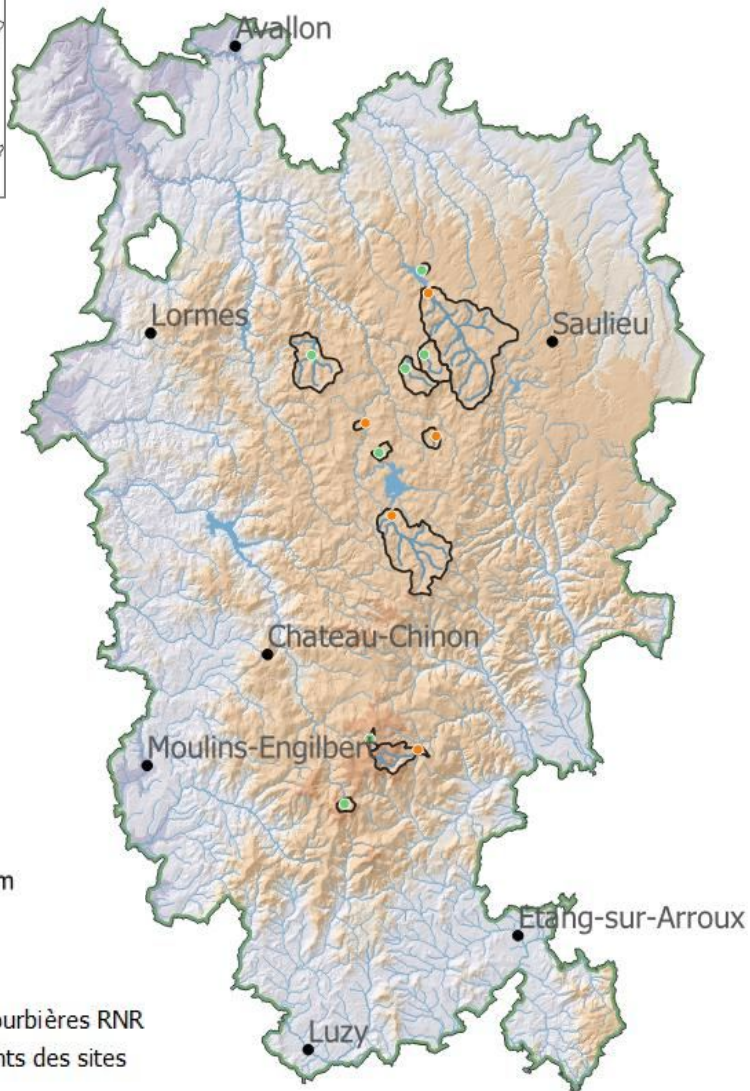
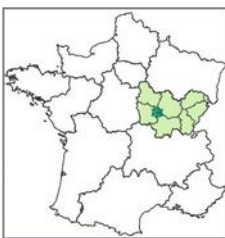
**12 sites** from 480 m to 600 m of altitude

~900 plants and animals with 200 protected or rare species

4 sites with grazing of our Highland cattles and partnerships with farmers

**266 Ha**, real peat bogs(7), peat meadows, ponds tails (3)

**But 9000 Ha** of watershed and maybe more with subsurfaces water flow in fissured granit





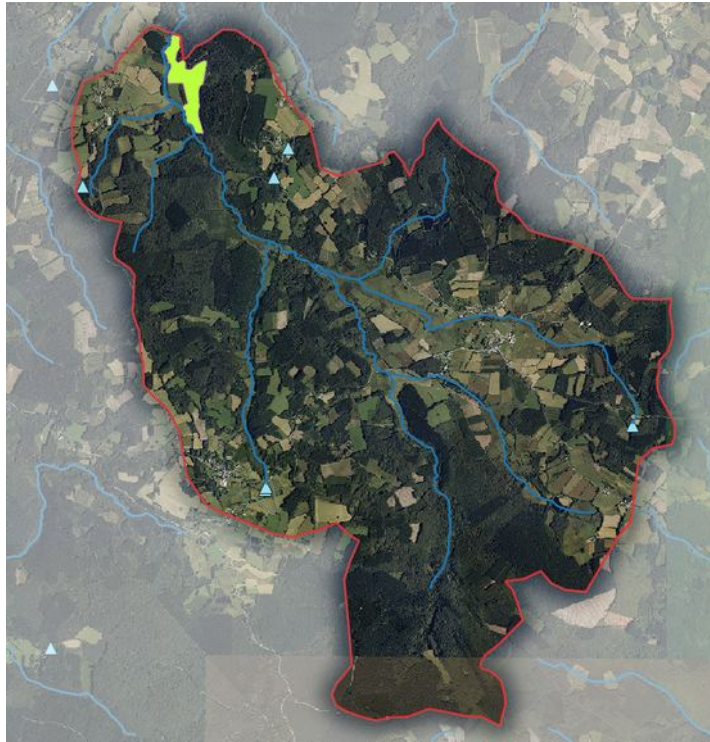
Mosaic of ombrotrophic habitats  
(sustained by rains) and  
minerotrophic habitats  
(sustained by subsurface waters).

Protected aquatic species.



Ecological trajectories are still  
uncertain on few sites





Les Vernois 15 Ha. Watershed = 2000 Ha  
Wet meadows and streams



F. Bontemps

Très exigeante sur la qualité de l'eau, la moule perlière est le témoin des ruisseaux préservés. Elle n'est plus présente en France que dans une centaine de cours d'eau, et souvent en faible densité.



Inside our perimeters, we « control » the agricultural practises, forests belong to the Reserve

Outside ? What about the water quantity and the water quality in 2050 and after ?

➡ To imagine the futur of the Reserve, we have enlarge the pressures analysis to the watershed

## What we have learnt



- Temperature has increased of  $\sim 2^{\circ}\text{C}$  since 1960 when Bourgogne has increased of  $\sim 1,5^{\circ}\text{C}$
- Rains have been stable annually
- But rivers flow has decrease, from -30 % to -50 % in August due to evapotranspiration, significantly more than in other rivers of Bourgogne

Morvan Park is well known to be rainy, cold and humid with a lot of little streams. People think that impact of climate change could be lesser important...

**... but impact of climate change on water ressources could be significantly increased compared to Bourgogne Region.** From -7 % to -30 % on rivers flow.

An awareness ! and a worrying situation for peat bogs but also for cattle labours and forestry





The evolution of habitats is uncertain :

- Lack of scientific knowledge on species sensitivity

### But we know :

- Soil mineralisation could increased with water table level lowering, active peatbogs could become less active
- Gramineous species and trees may develop
- Aquatic species are vulnerable (*Margaritifera margaritifera*, *Salmo trutta*, *Austropotamobius pallipes*)

**Water is the key factor** for the conservation of peat bogs :

- ➔ How agriculture, forestry may evolve at the watershed scale ?
- ➔ How we can mitigate the water loss ?



→ New risks identified

→ new sphere of lobbying/actions for water conservation

- On agricultural practises, on meadows :
  - limit the stocking rate,
  - avoid the change to culturing. Keep permanent pastures
  - promote hedgerows and riparian zones
- On forestry practises :
  - promote deciduous against coniferous forests
  - promote irregular forests (low density, different age trees, no clearcutting)



**Not new !** the arguments for an extensive agriculture and an irregular broadleaf forest

### **What's up ?**

- to present peatbogs and wetlands as a stakeholder who needs water
- to argue about water conservation outside of our perimeter
- to promote irregular broadleaf forests, not only for biodiversity and soil but for water conservation
- the Reserve's manager becomes an « expert » of climate change

- ➔ enlarge the pressures analysis to the water catchment area
- ➔ work outside of our perimeter

