EUROPARC Climate Change Week
20-22 April 2022

Good morning & welcome

Photos -Waterfalls in Iceland - **Brian Botos**

EUROPARC Climate Change Week

Climate Change Adaptation & Protected Areas

Olivier de Sadeleer, Project Manager, EUROPARC

20 April 2022

Photos - **Forêt de Soignes by Frédéric Demeuse**

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This webinar series has been developed with the enthusiastic support of...

Who is EUROPARC?

- A representative **federation** (NGO) **of Protected Areas** across Europe (approx. 400 members in 40 countries)
- Promotes **international collaboration** through nature conservation
- Working on **capacity building and networking**

More info on www.europarc.org

Who is EUROPARC?

Members representation

European Commission

Invest in youth

EUROPARC JUNIOR RANGER

Sustainable tourism

EUROPARC Sustainable Tourism in Protected Areas

Transboundary cooperation

Transboundary Parks EUROPARC

... and much more :)

More info on www.europarc.org

EUROPARC Climate Change Week

Program overview

How to integrate Climate Change Adaptation into Protected Area Management Practice ?

1. **Elements of methodology** - Learnings from LIFE Natur'Adapt (EUROPARC) : 20/4
2. How can **Copernicus Climate Change Service** help biodiversity conservation? (ECMWF and VITO) : 21/4
3. Results of **3 scientific literature reviews** on the effectiveness of : Corridors, free evolution and translocation (MNHN and FRB) : 20 & 22/4

Scan to read
the detailed program
on EUROPARC website :

EUROPARC Climate Change Week

Program of the day - 20/4/2022

1. **Integrating Climate Change into Protected Area Management Practice – Elements of Methodology.**
   By Olivier de Sadeleer, Project Manager, LIFE Natur'Adapt, EUROPARC

EUROPARC Climate Change Week
Program of the day - 20/4/2022

1. **Integrating Climate Change into Protected Area Management Practice – Elements of Methodology.**
   By Olivier de Sadeleer, Project Manager, LIFE Natur'Adapt, EUROPARC
2. **What is the evidence for the effectiveness of corridors for the conservation of terrestrial vertebrates in Europe?**
   By Hugo Mell, Scientific Project Manager, Museum National d'Histoire Naturelle.

EUROPARC Climate Change Week
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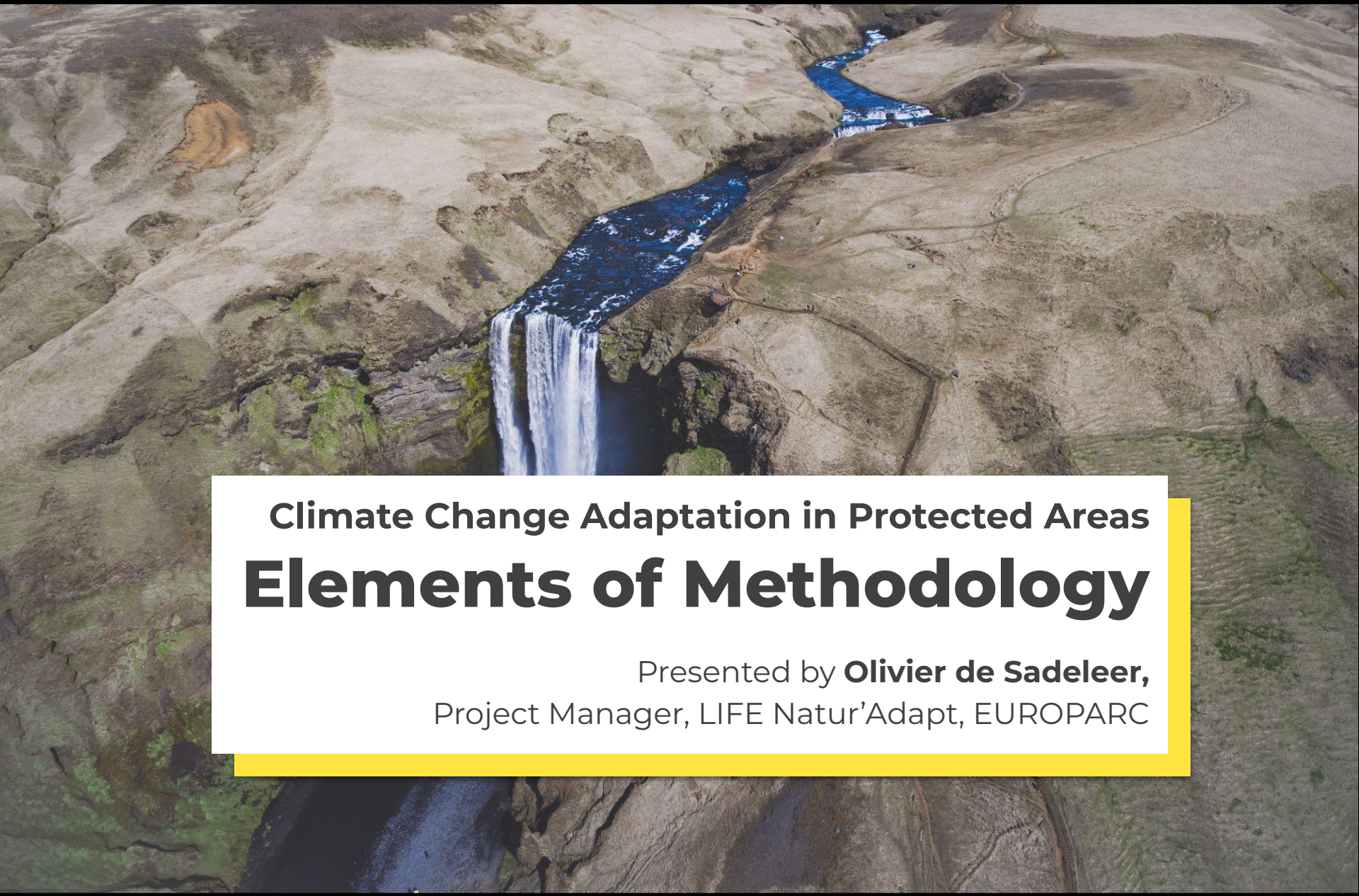
3. **Discussion**

Photos - **Forêt de Soignes by Frédéric Demeuse**



Climate Change Adaptation in Protected Areas

Elements of Methodology

Presented by **Olivier de Sadeleer,**
Project Manager, LIFE Natur'Adapt, EUROPARC

Photos - **Forêt de Soignes by Frédéric Demeuse**

LIFE NATUR'ADAPT

... in a nutshell

More info on www.naturadapt.com

LIFE NaturAdapt is a 5-year project developed with the enthusiastic support of...

LIFE Natur'Adapt is ...

- An **experiment** that aims at **integrating climate change** into protected area management practices

LIFE Natur'Adapt is ...

- An **experiment** that aims at **integrating climate change** into protected area management practices

- is the foundation of **a dynamic collective learning process**.

Concretely, we talk about...

- **CC methodology for Protected Area managers**

Concretely, we talk about...

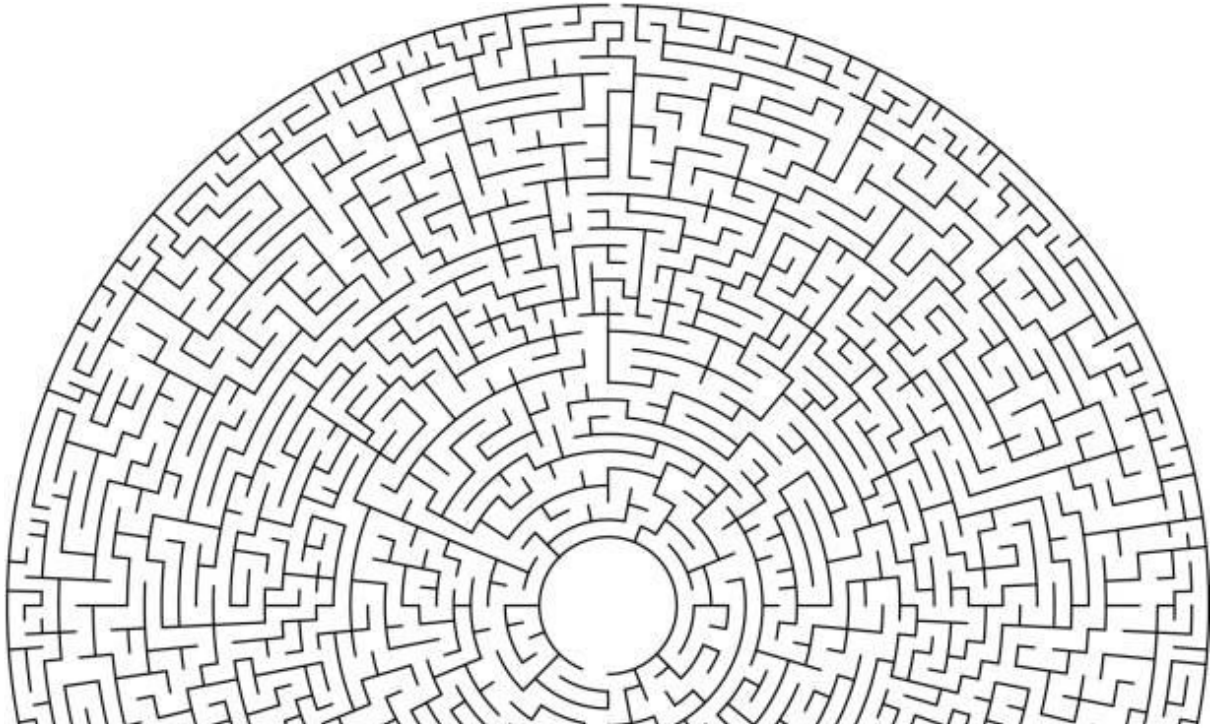
- CC Methodology for Protected Area managers
- **Vulnerability assessments**
- **Adaptation measures**

Concretely, we talk about...

- CC Methodology for Protected Area managers
- Vulnerability assessments
- Adaptation measures
- **Collaborative community & platform**
- **Online courses**

Concretely, we talk about...

- CC Methodology for Protected Area managers
- Vulnerability assessments
- Adaptation measures
- Collaborative community & platform
- Online courses
- **Policy and public engagement work**

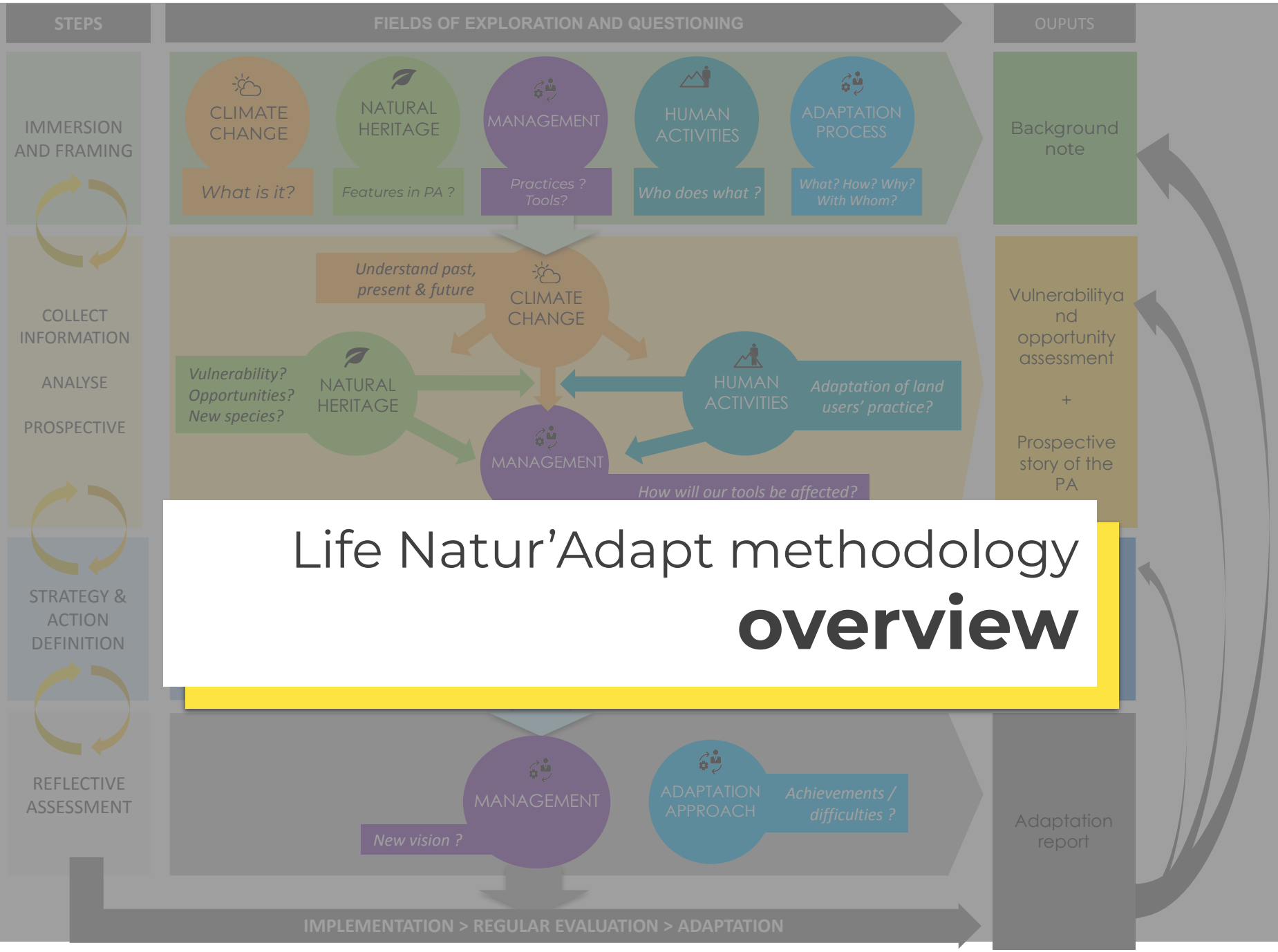


Elements of methodology*, *finally*

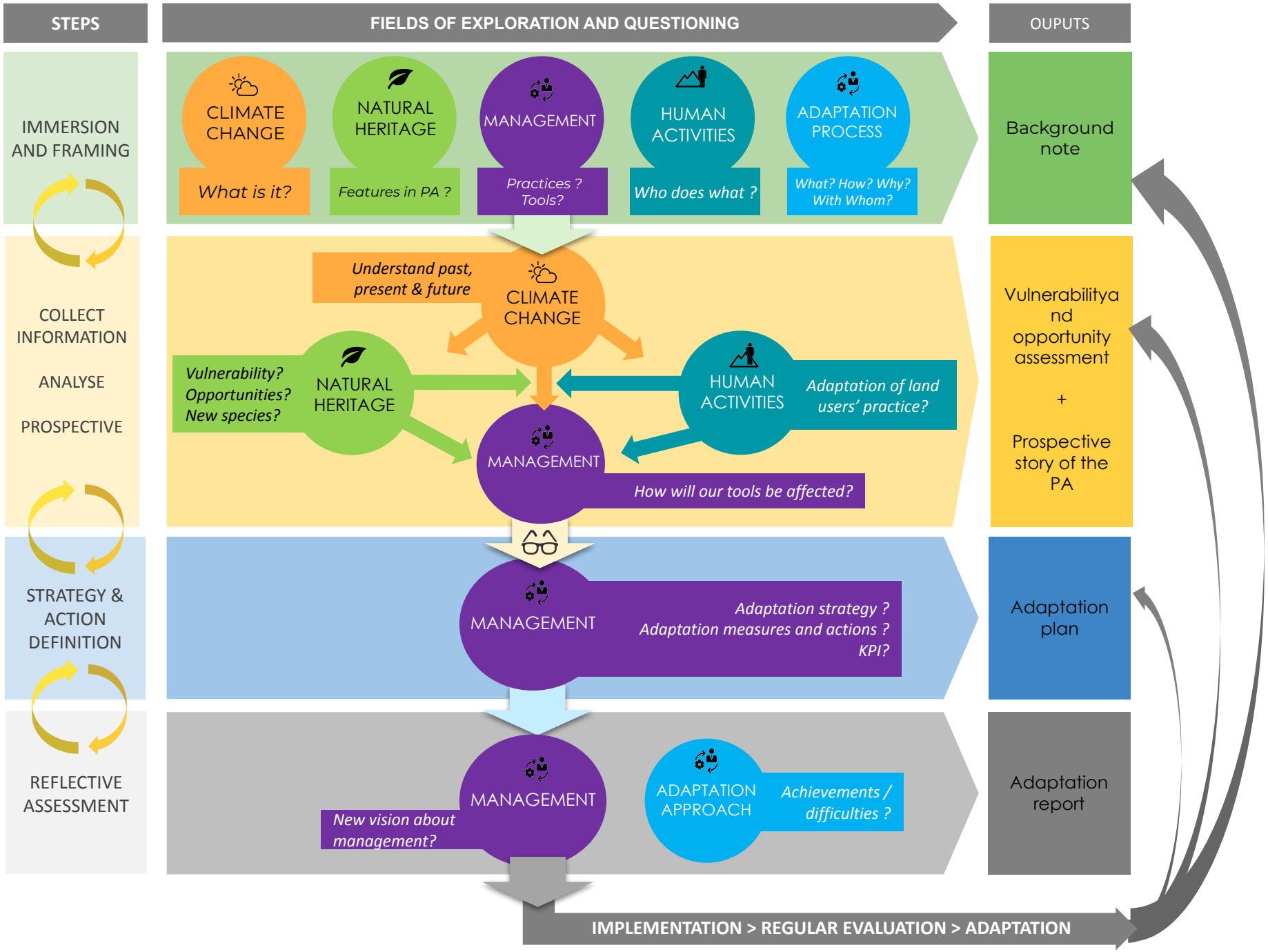
**** Based on the work lead by Christine Coudurier,*** *Chargée d'étude du projet LIFE Natur'Adapt - Réserves Naturelles de France*

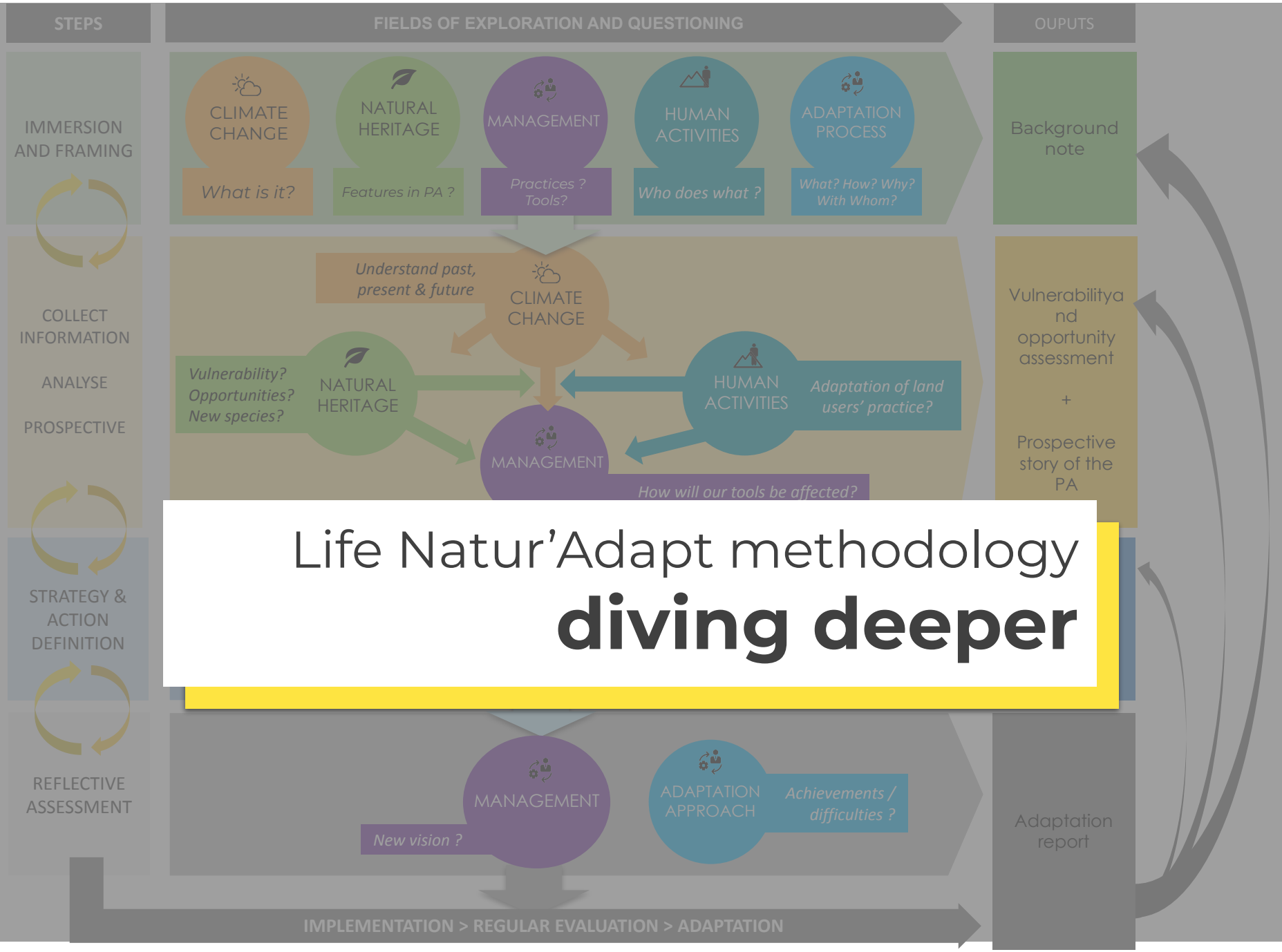
Disclaimer

- This methodology is being designed bottom-up.
- It is a work in progress.
- Don’t shoot the messenger :)



Life Natur'Adapt methodology **overview**

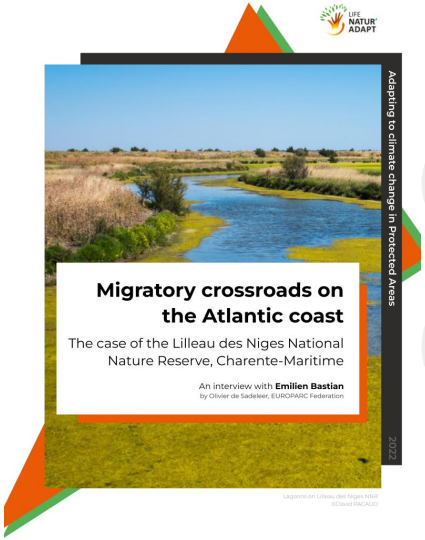

STEPS
FIELDS OF EXPLORATION AND QUESTIONING
OUPUTS
IMMERSION AND FRAMING
CLIMATE CHANGE
What is it?
NATURAL HERITAGE
Features in PA ?
MANAGEMENT
Practices ? Tools?
HUMAN ACTIVITIES
Who does what ?
ADAPTATION PROCESS
What? How? Why? With Whom?
Background note
COLLECT INFORMATION
ANALYSE
PROSPECTIVE
Understand past, present & future
CLIMATE CHANGE
Vulnerability? Opportunities? New species?
NATURAL HERITAGE
HUMAN ACTIVITIES
Adaptation of land users' practice?
MANAGEMENT
How will our tools be affected?
Vulnerability and opportunity assessment + Prospective story of the PA
STRATEGY & ACTION DEFINITION
MANAGEMENT
Adaptation strategy ?
Adaptation measures and actions ?
KPI?
Adaptation plan
REFLECTIVE ASSESSMENT
MANAGEMENT
New vision about management?
ADAPTATION APPROACH
Achievements / difficulties ?
Adaptation report
IMPLEMENTATION > REGULAR EVALUATION > ADAPTATION



Life Natur'Adapt methodology
diving deeper

Let’s learn from experience …

6 experiments available for downloads >>



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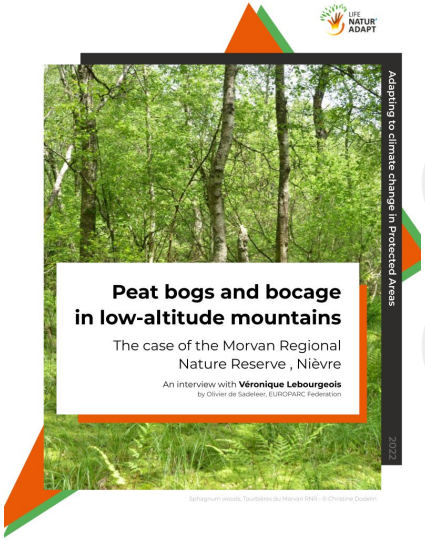

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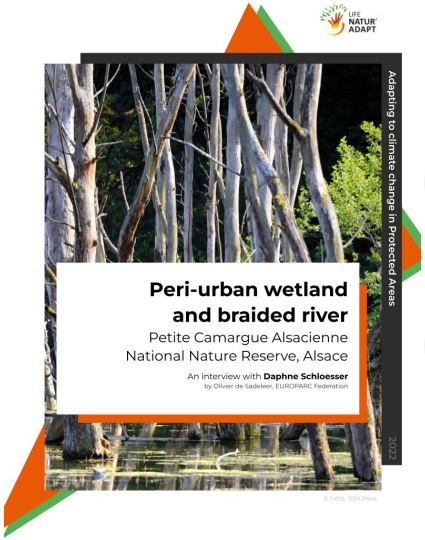

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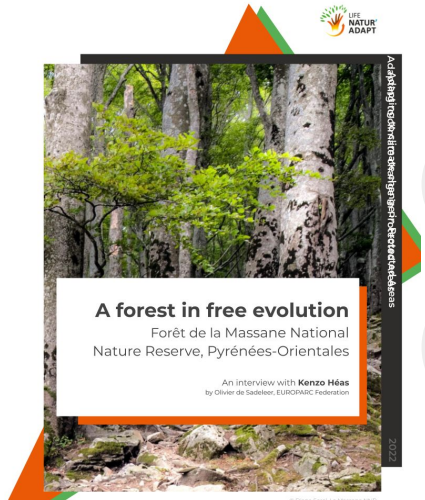

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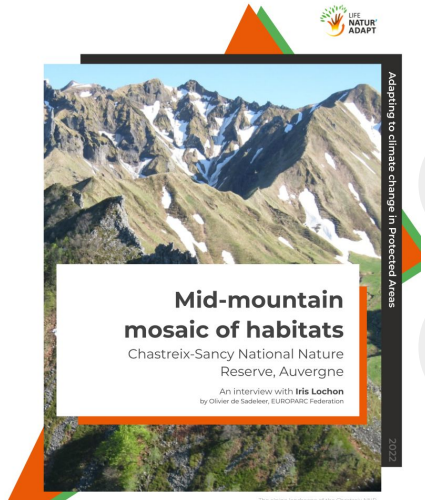

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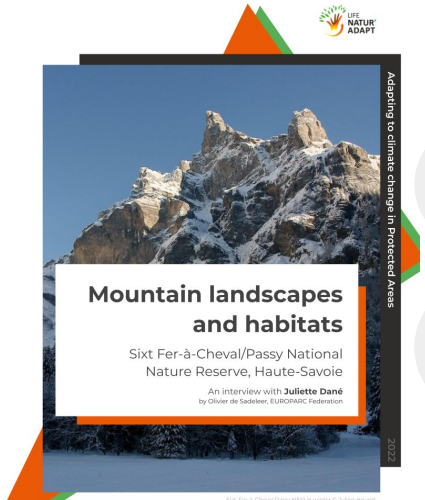

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Step 1 Framing

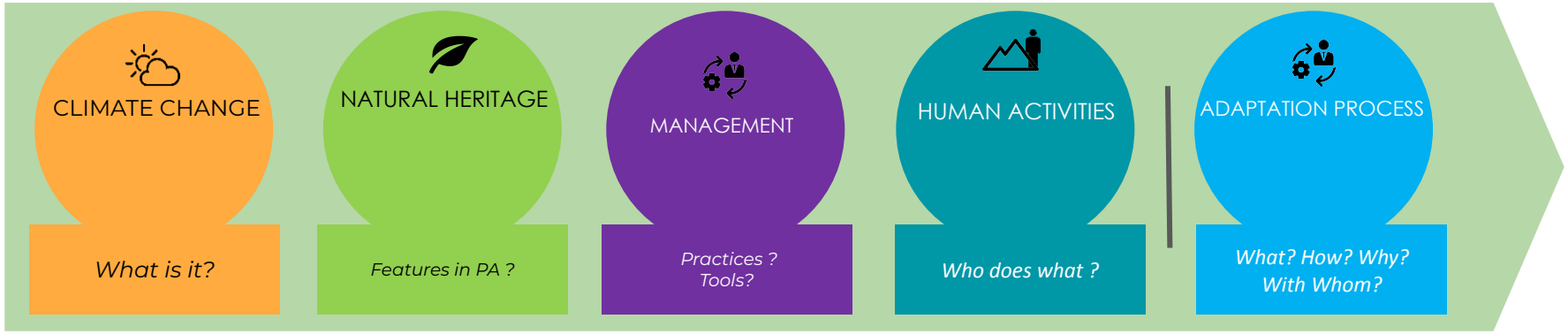
Objective:

- **Understanding the Protected Area's priorities and context.**

It will help frame the future analysis. It is usually based on management plan if it exists

- **Plan your adaptation process** and project

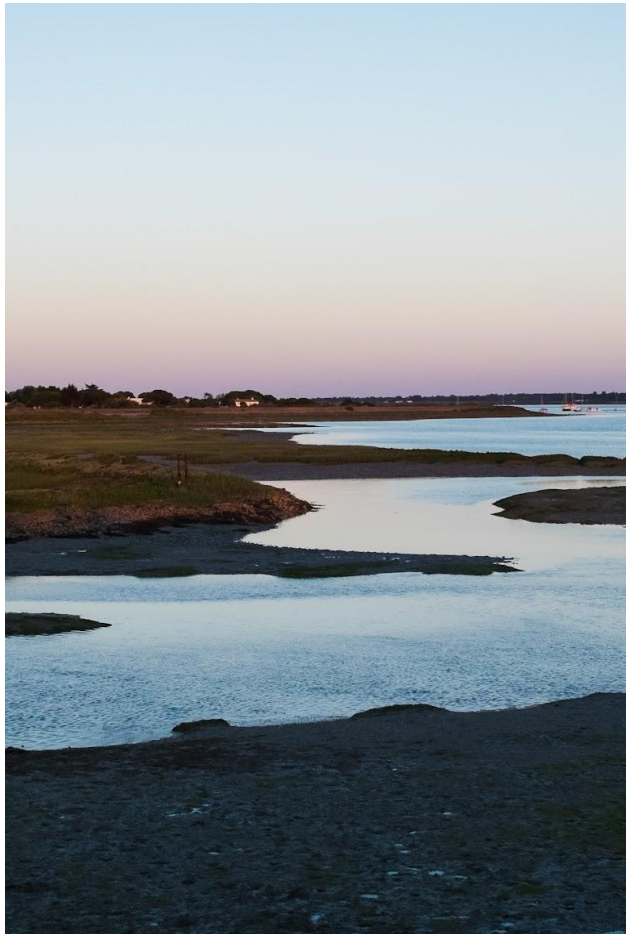
4 important areas to consider:



Output: Background note

It can include a list of important features to analyse, a ecosystemic map, a mapping of the socio economic actors' relationship, ...

Step 1 Framing - examples



NNR Lilleau des Niges:
Migratory crossroads on the Atlantic coast

- 235ha crossed by a dyke
- **Low-lying coast, salt marshes,….**
- Feeding, resting & nesting grounds of **migratory birds**.
- Salt production
- Tourism (Population *10 in summer)
- **Existing management plan under review**
- **Grazing as a management tool**
- …

Step 1 Framing - examples

Petite Camargue AlsacienneNNR
Peri-urban wetland and braided river

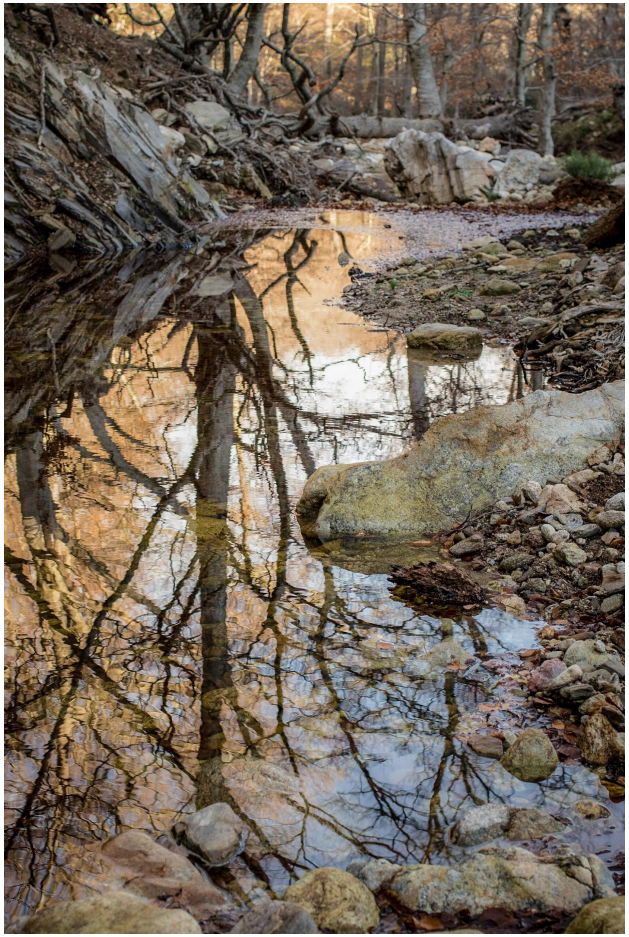
- 904 ha of wetlands
- Area on the river Rhine (Braided river)
- **slow-moving** streams, springs and small ponds, reed beds, wet meadows and a great swamp of groundwater origin
- **highly endangered orchid** Liparis loeselii
- **River flow managed by a dam** (power utility Électricité de France (EDF).
- **Highly anthropized area:** landscape with commuter towns, villages and
- intensive agriculture (cereals, maize and soya).

Step 1 Framing - examples

Morvan RNR:
Peat bogs and bocage in low-altitude mountains

- **Twelve peat bogs** covering 266 hectares
- peat bogs, ponds, peat meadows and **cool streams**
- **Catchment area of 6,000 km2.**
- Conservation grazing
- Low levels of tourism
- Surrounding farmland and forestry
- ...

Step 1 Framing - examples



NNR La Massane
A forest in free evolution

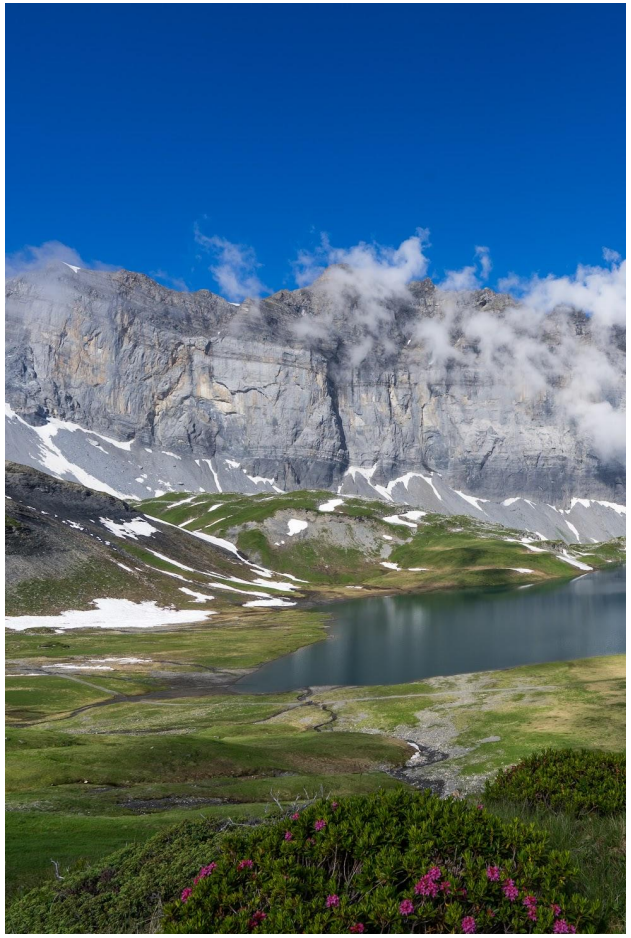
- **Old-growth Beech forest & riparian habitats**
- **Management in free-evolution**
- **A lot of scientific research**
- 326ha
- Free range cattle and trekking
- Co-managed with municipality
- Member of local federation of reserves
- UNESCO World heritage site
- …

Step 1 Framing - examples

NNR Chastreix-Sancy, Auvergne

- **Mid-range Mountain habitats**
- **Sub-alpine species = key feature**
- Tourism & outdoors sports, …
- Sheep and cattle husbandry
- Dedicated manager
- …

Step 1 Framing - examples



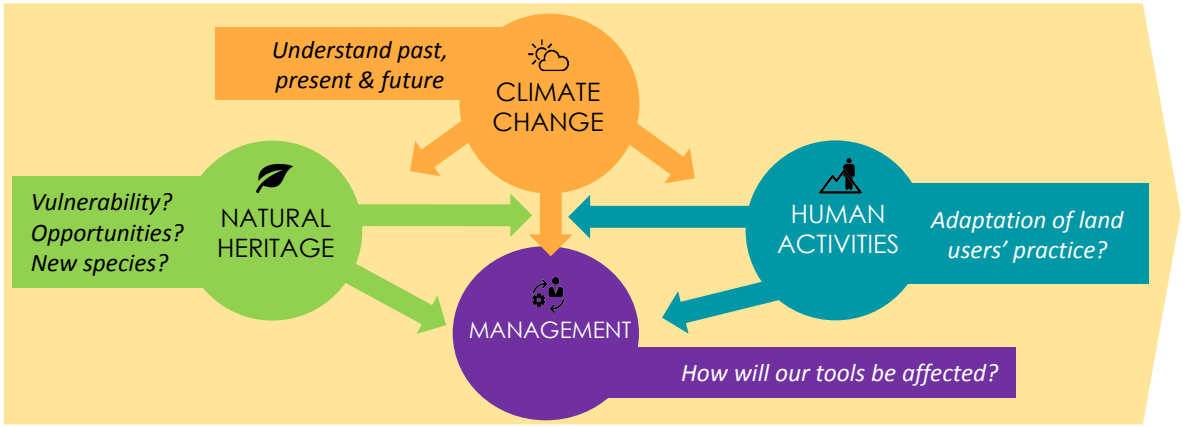
NNR Sixt Fer-à-Cheval/Passy

- **9000+ ha & 2000m+ altitudinal range**
- Mountain landscapes and habitats
- **No existing management plan**
- Tourism & outdoors sports, …
- **Conservation of Bearded Vulture**
- Sheep and cattle husbandry
- Dedicated manager
- Return of large carnivores
- …

Step 2- Vulnerability assessment

Objective 1: **Understand past, present and future climate structuring features**

Objective 2: Understand vulnerability and opportunities for PA conservation priorities and existing pressures



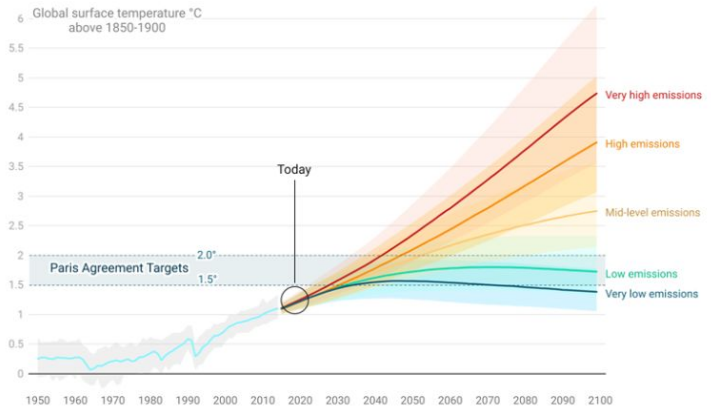
Output:

- List of relevant climate indicators
- Climate evolution scenario(s)

Output:

- Vulnerability assessment
- Prospective story

Step 2a - Understanding Climate

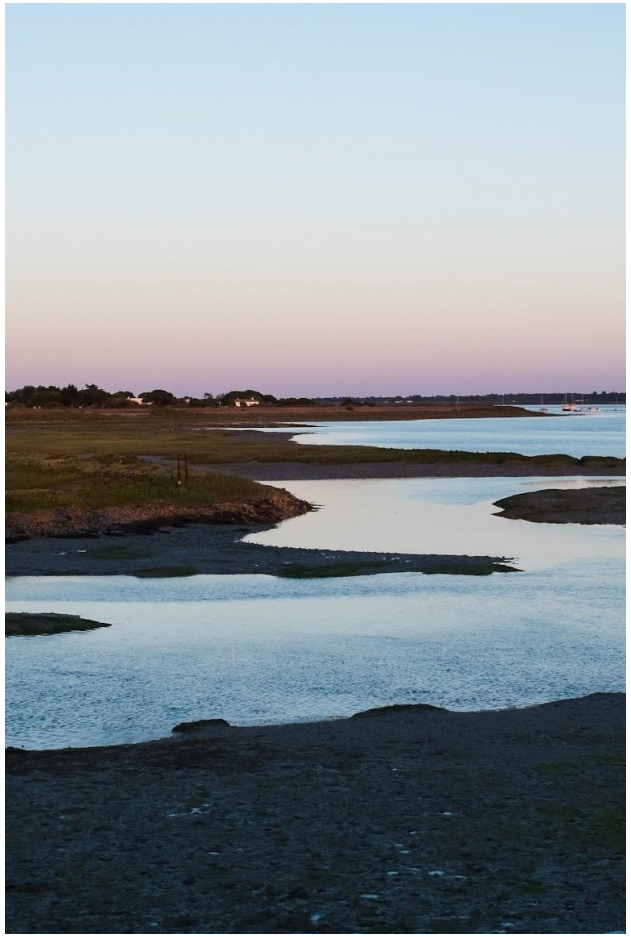


- ***Understand past & present … to imagine the probable future***

- ***What climate feature is structuring*** *natural features and human activities ?*
  (T° & precipitations >>> Snow cover, sea level, river flow, soil moisture …)

- ***Choose scenarios*** *(RCP 2.5, 4.5, 8.5?)****, climate models & time scale*** *(2030, 2050, 2100?)*

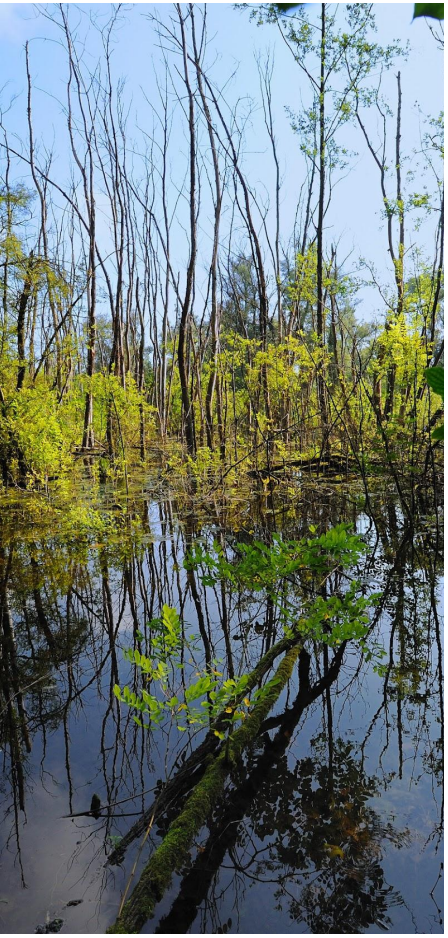
Step 2a - Understanding Climate
Example



NNR Lilleau des Niges

- Sea level rise
  +21cm between 1860 and 2010
  +25 cm expected by 2050
- More frequent and more extreme storm surges

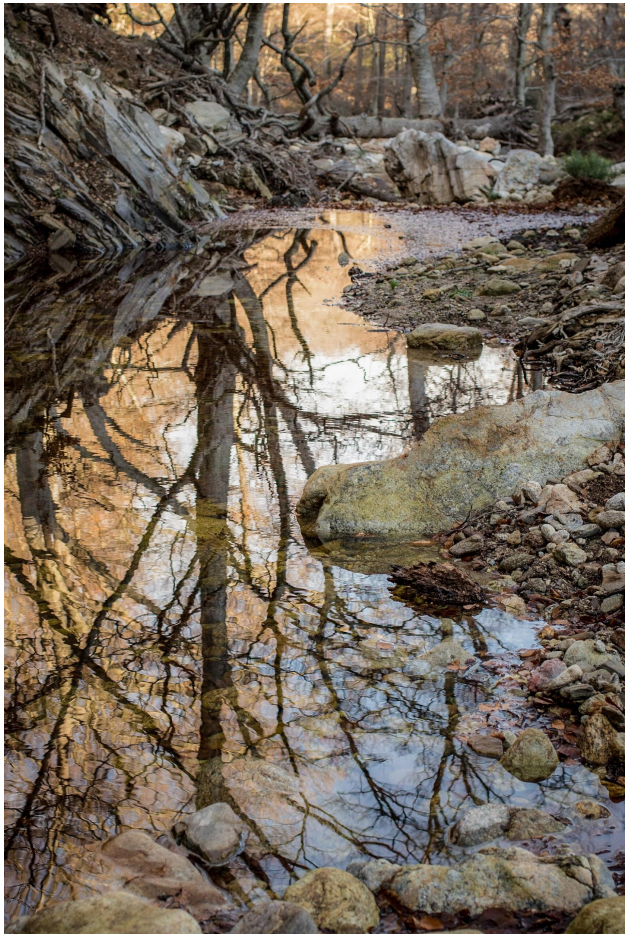
Step 2a - Understanding Climate
Examples



Wetlands

- Increase in air & water **temperature**
- **Stable avg precipitations**
- **Disruption** and modification of the **precipitation regime**
- Expected **decrease** in average summer **river flow**
- Increase in evapotranspiration

Step 2a - Understanding Climate
Example



NNR La Massane
A forest in free evolution

- **Increase** in frequency and strength **of extreme climate events**
  Heatwaves & thunderstorms

Step 2a - Understanding Climate
Example

Mountain habitats

- Periods of frost
- Duration of snow cover
- **Soil moisture & evapotranspiration**
- Evolution of winds (little data)

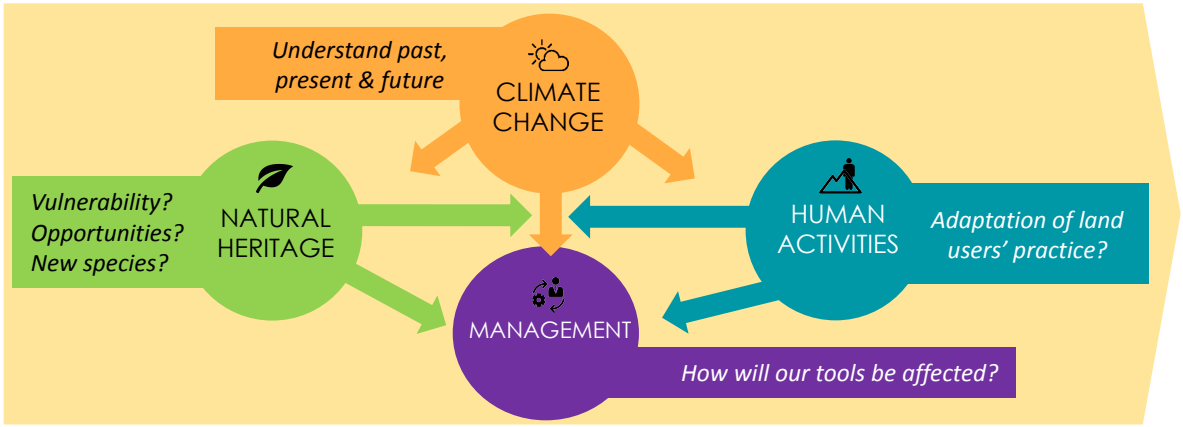
Note:

Local climate variability is important in the mountains

(In Auvergne 2200mm avg rain in Sancy vs 700mm , in Clermont 10km away as the crow flies)

Step 2b - Assess vulnerability

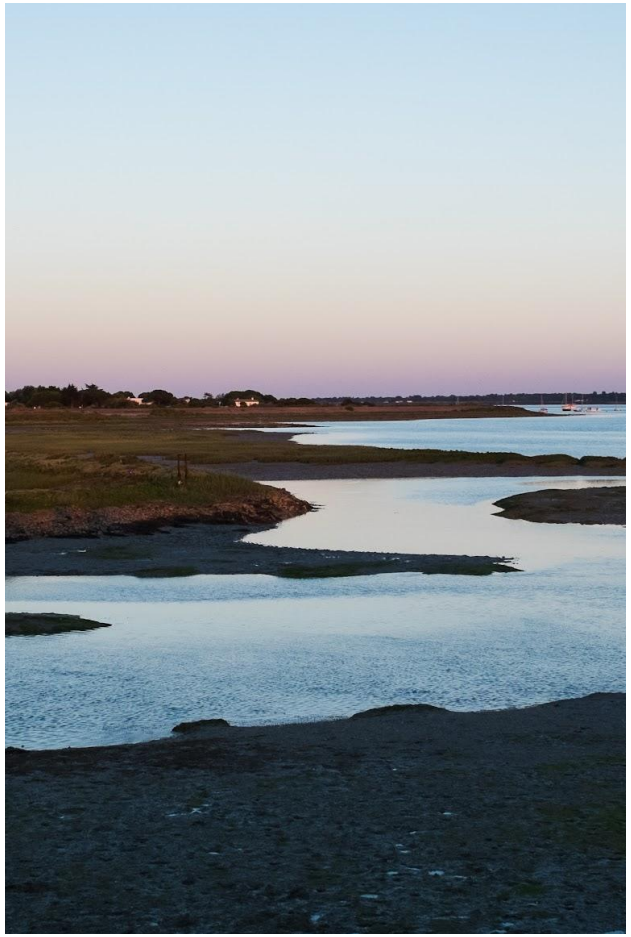
Objective 2: Understand vulnerability and opportunities for PA conservation priorities and existing pressures



Output:

- Vulnerability assessment (Natural features, human activities, PA tools, ...)
- Write (and share) a prospective story

Step 2b - Assess vulnerability
Example

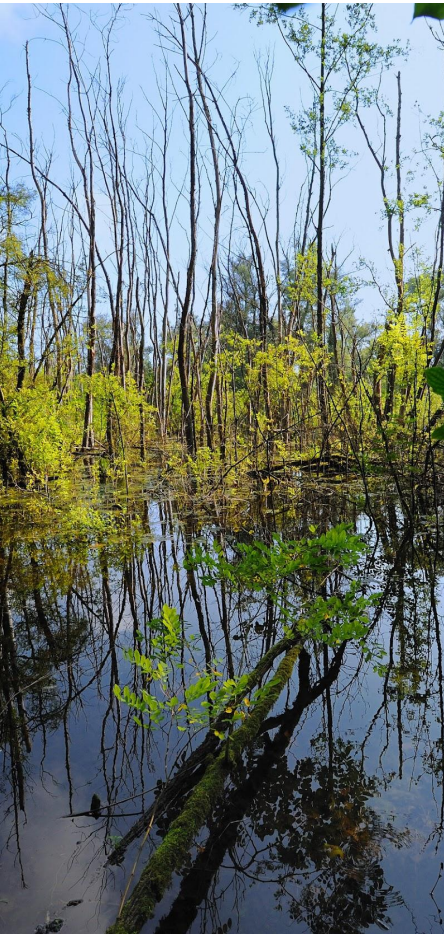


Low lying coast is subject to maritimisation

When?
How?

! threshold effect

Step 2b - Assess vulnerability
Example

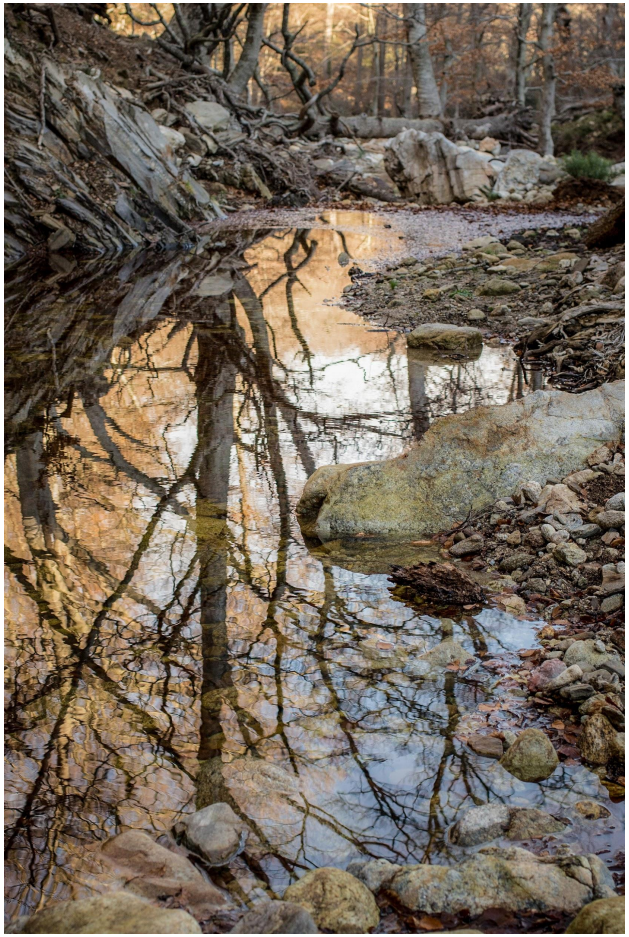


Increase in water **temperature will affect reproduction** of :

- eels in Lilleau des Niges
- Salmon in Alsace
- Trout and fresh water mussels in Morvan

Access to fresh water is under pressure in Alsace, Morvan and Auvergne

Step 2b - Assess vulnerability
Example



NNR La Massane

Frequent and extreme thunderstorm increases the risk of flooding and landslides

> forces frequent ecological reset of the river habitat > Biodiversity erosion

> increases the risk of flooding of downstream neighbourhoods.

Step 2b - Assess vulnerability
Example

Subalpine habitats likely to disappear. Designation is then vulnerable

Pressure increase on access to resource such as water and pasture

Increase pressure from tourism due to longer and hotter summers

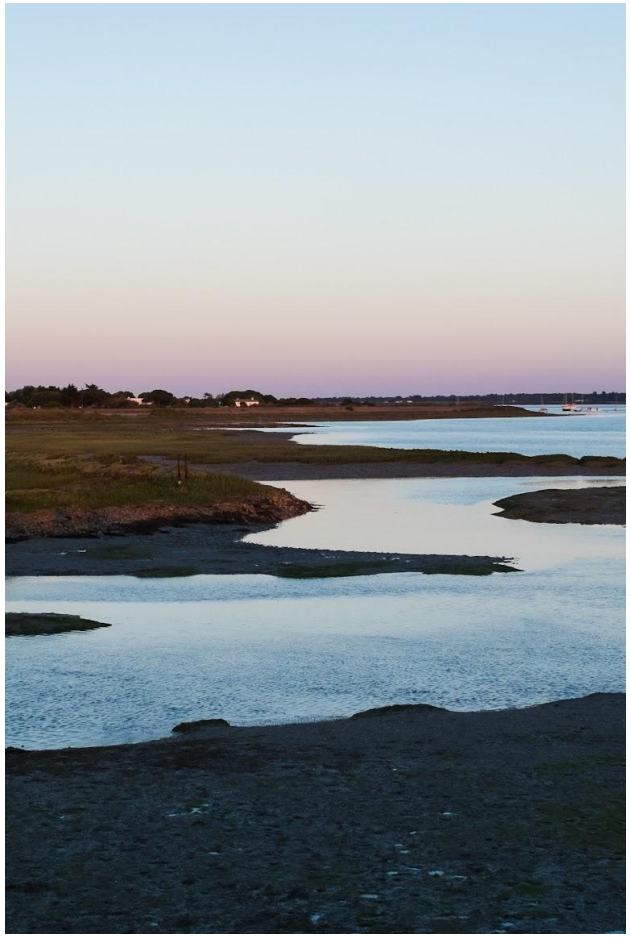
Step 3 CC Adaptation Planning

Objective: Define a CC adaptation strategy and plan actions definition

Output: Agreed adaptation strategy and action plan.

- ***Strategy:*** Resist, accompany the change, increase robustness or resilience, accept, ...
- ***Action plan****:* It can be composed of new measures, measures that we stop or others that have a higher priority. It can be integrated in the PA management plan

Step 3 CC Adaptation Planning Examples



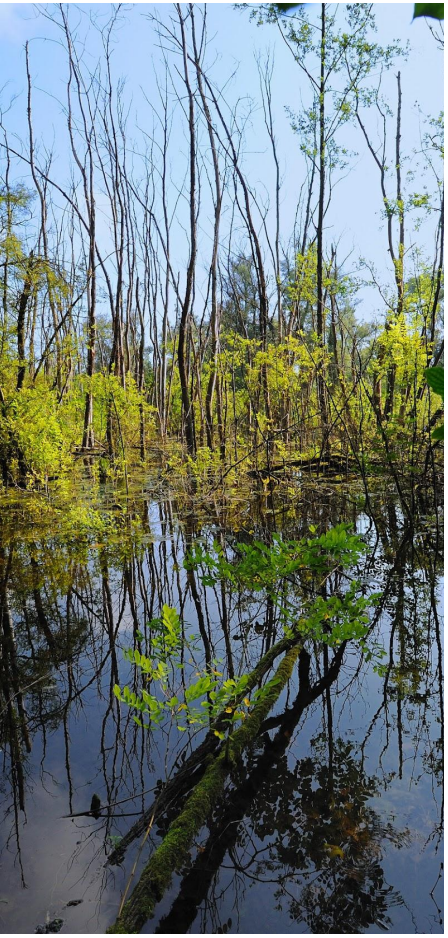
NNR Lilleau des Niges

Anticipating maritimisation

- Start working on relocating the reserve
- anticipate the effect on own tools and infrastructure. Stop grazing on the site and to dismantle related infrastructure.

Until then, continue current work

Step 2b - Assess vulnerability
Example



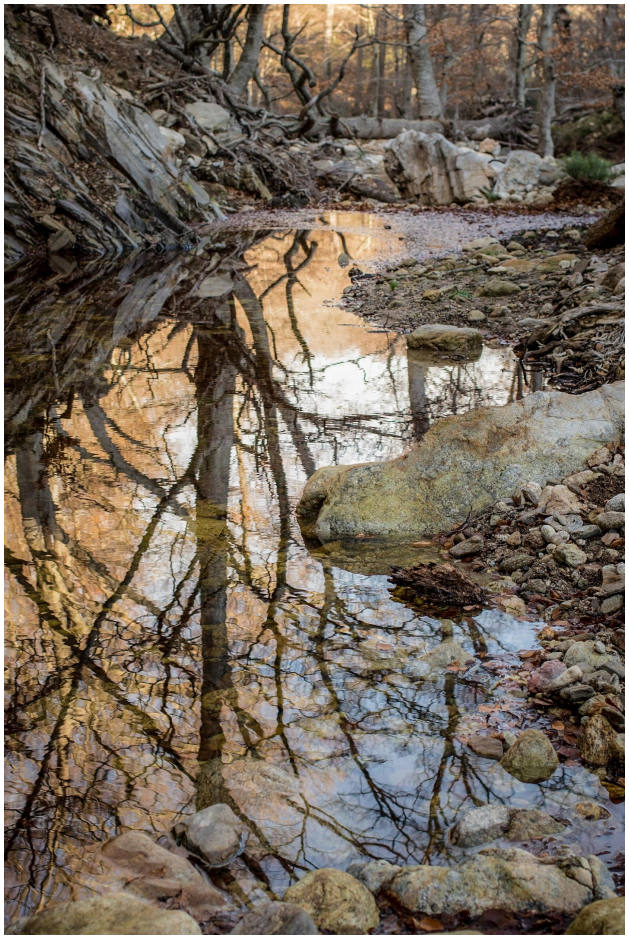
Wetlands:

Work with stakeholders on water access and availability

Make PA a stakeholder in water management plan

Restore natural habitats to decrease water t° and increase storage capacity

Step 3 CC Adaptation Planning Examples



NNR La Massane

- **High-quality soils for greater resilience -** Reduce pressure to improve the resilience of forest, riparian, aquatic and grassland ecosystems.

- Better managing human pressures to **improve the ecological richness and water absorption and storage capacity of the reserve's soils** and habitats. > Help slow run-offs down

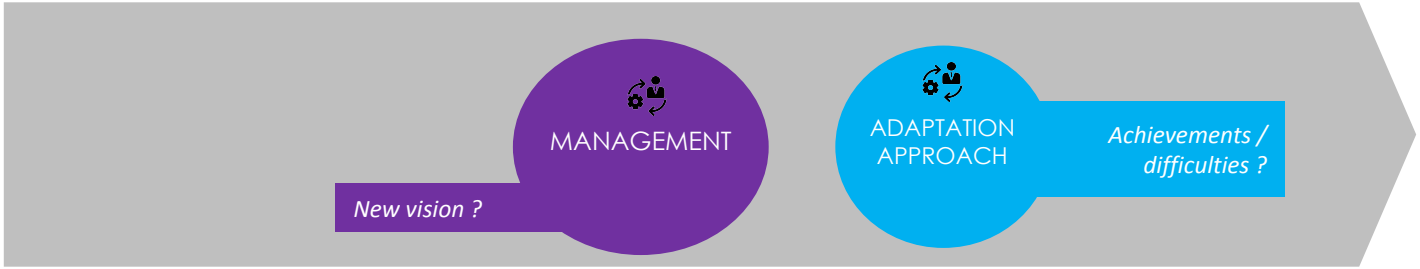
Step 3 CC Adaptation Planning Examples

NNR Chastreix-Sancy, Auvergne

- **Accept** the disappearance of subalpine species,
- **Develop integrated management** for habitats' species and land uses to improve the robustness of ecosystems, and support the ecological continuity and the mosaic of landscapes
- **Encourage dialogue** with stakeholders

Step 4 - Reflective Assessment

Objective: Assess and reflect on your journey, plans and actions. Monitor effectiveness. *Learn, rinse and repeat*!



Output: Learn, make your conservation assumptions evolve, move one step closer to adaptive management.

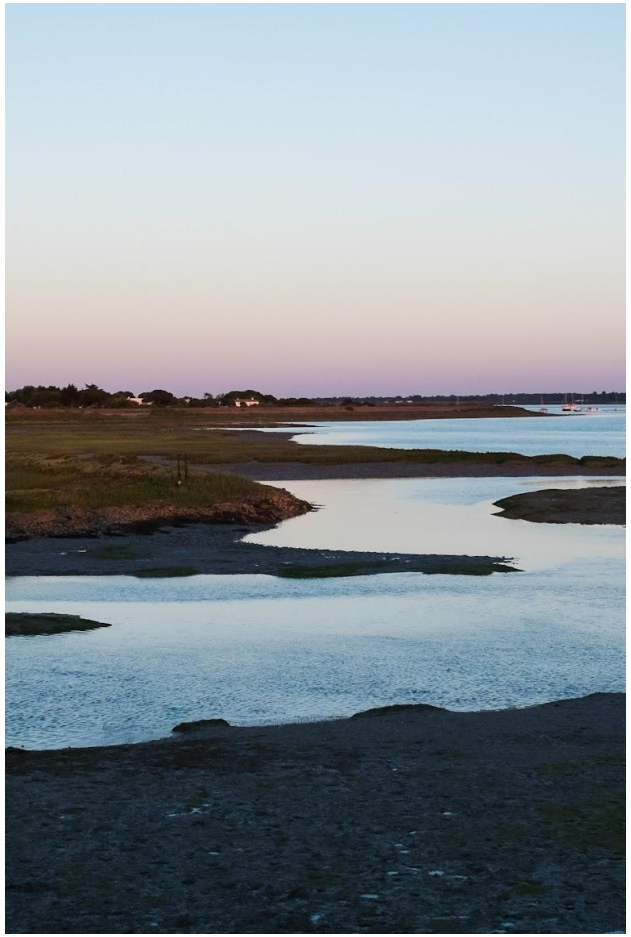
Step 4 - Reflective Assessment EXAMPLES

NNR Chastreix-Sancy, Auvergne

*"This process has been exciting and surprising. It invites us to **revise our concepts towards more integrated land management**. We are thinking about the space and time scales to be considered. We seek to take into account the mosaic of habitats and the variety of land uses beyond the formal mandate and boundaries of the reserve."*

Thierry Leroy
Conservator of Chastreix-Sancy NNR

Step 4 - Reflective Assessment EXAMPLES



Lilleau des Niges NNR

*"To adapt to climate change, **our management must take into account a threshold effect.** Projections tell us that one day, the land portion of the reserve will be submerged. It will be all or nothing, so to speak. But we don't know when or how it will happen. We know that we need to anticipate change if we are to preserve the functions of the reserve. We are therefore working together today to relocate the reserve and **develop balanced land management strategies over the long term** in order to sustain the natural environment and local communities.*

Jean-Christophe Lemesle , Conservator of the Lilleau des Niges NNR

COMMUNITY INVOLVEMENT ?

Climate change challenges
can be turned into an opportunity
to do better! **Together!**

COMMUNITY INVOLVEMENT ?

Climate change challenges can be turned into an opportunity to do better! Together!

It's all about attitude :)

Start early, listen, exchange, co-design,
look for solutions, win-wins,
be open, transparent and kind, ...

Key learnings
from LIFE Natur'Adapt's experimentation

Photos - **Petite Camargue Alsacienne**

Key learnings on integrating Climate Change Adaptation in PA Management practice

1. You have to **accept to deal with uncertainties** related to climate models and the effects of CC
2. It is critical to understand how climate change will affect the protected areas, nature and communities
3. It's an **iterative and forward-looking process** : Imagine tomorrow to decide today!
4. **Get started.** The manager's **"journey"** is as important as the adaptation plan itself.

Key learnings on integrating Climate Change Adaptation in PA Management practice

1. You have to **accept to deal with uncertainties** related to climate models and the effects of CC
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Key learnings

👓 **Are you ready to put your climate change glasses on!** 👓


SAVE THE DATE !
2022
EUROPARC Conference
Climate Change; Resilient Parks
4-7 October, Argelès-sur-Mer, France
EUROPARC
FEDERATION

Coming this October

1. Natur'Adapt methodology – French & English version
2. Natur'Adapt Open Online Course – Subtitled Videos
3. LIFE Natur'Adapt collaborative web platform naturadapt.com

In the meantime, check out the Resource Center on Climate Change Adaptation in Protected Areas hosted on *Pearltree* in:

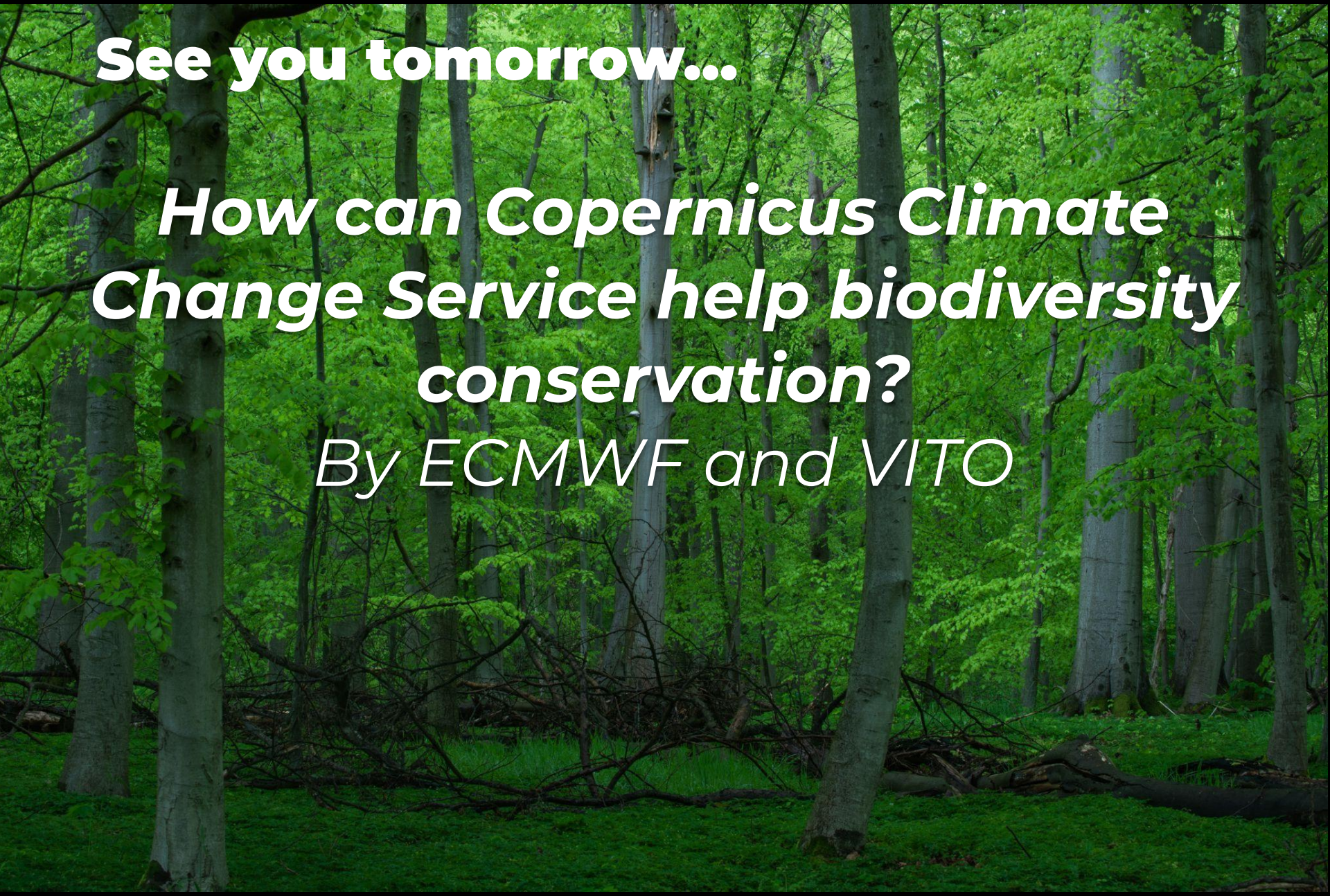
French>>

English >>

Coming next...

What is the evidence for the **effectiveness of corridors** for the conservation of terrestrial vertebrates in Europe?

By **Hugo Mell**,
Scientific Project Manager, Museum National d'Histoire Naturelle.


See you tomorrow...
How can Copernicus Climate Change Service help biodiversity conservation?
By ECMWF and VITO

Photos - **Forêt de Soignes by Frédéric Demeuse**