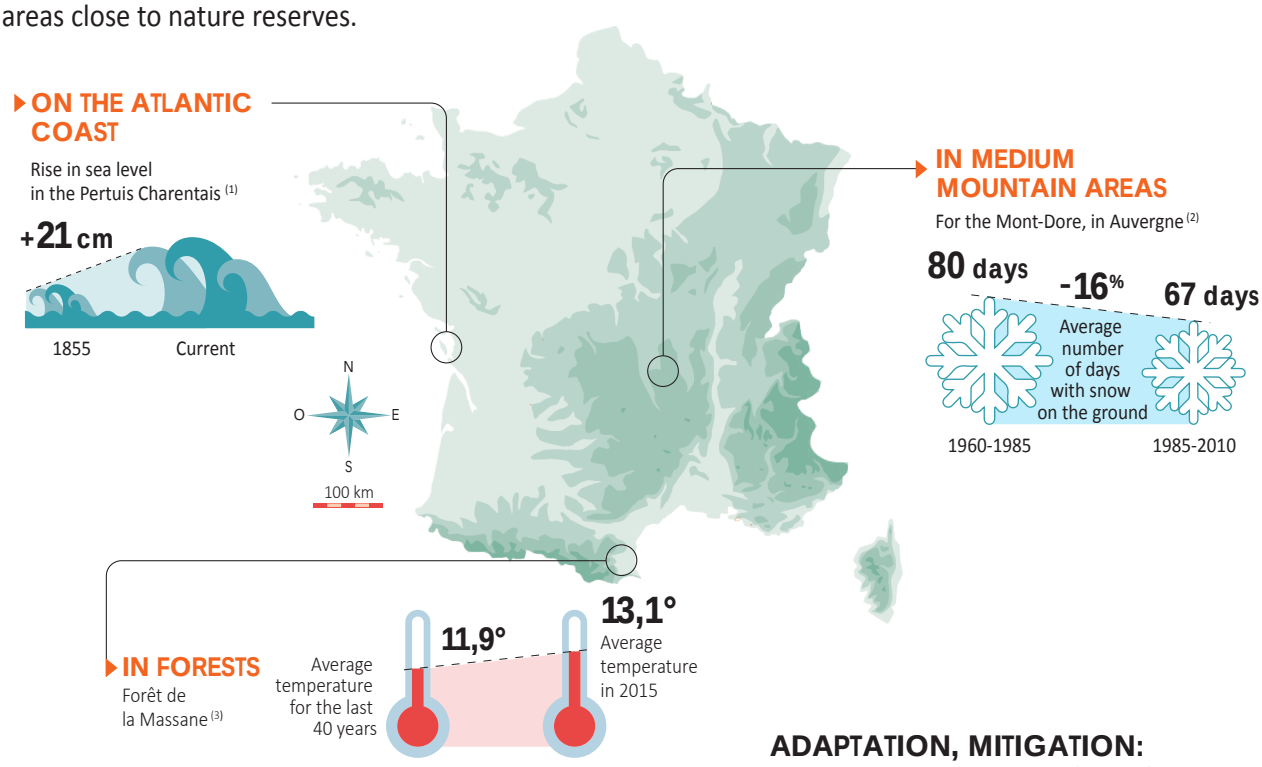
The necessary adaptation

Integrating climate change challenges
into the management of protected natural areas

LIFE
NATUR'
ADAPT

CLIMATE CHANGE IS ALREADY OBSERVED IN NATURAL AREAS ...

The reality of climate change can be measured due to noticeable effects on a local scale.
The examples below are taken from a large quantity of data collected around mainland France from areas close to nature reserves.



• Climate change is affecting our job as managers, here and now.
We are facing a collective challenge: adapting our protected area management practice to this new context.

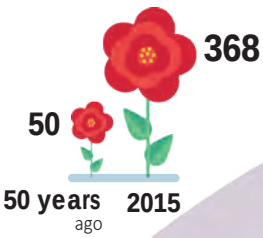
ADAPTATION, MITIGATION: WHAT ARE WE TALKING ABOUT?

- An activity helps to mitigate climate change if it **contributes to the stabilisation of greenhouse gases in the atmosphere.**
- An action helps with adaptation to climate change **when it limits the negative impacts of climate change or takes advantage of the positive effects.**

Sources: see references on the last page

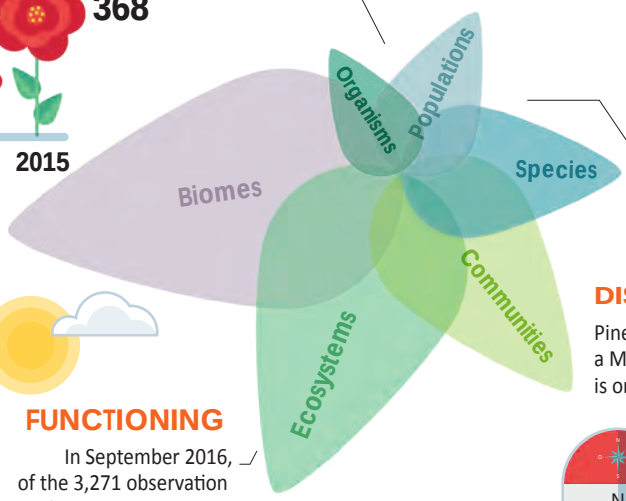
PHENOLOGY

On 1st January 2015, in England, 368 species of plants were flowering, compared to around twenty 50 years before (4).



... AND HAS DIRECT EFFECTS ON BIODIVERSITY AND ECOSYSTEMS

Biodiversity is affected by the ongoing changes, across all levels, from the organism to the biome.

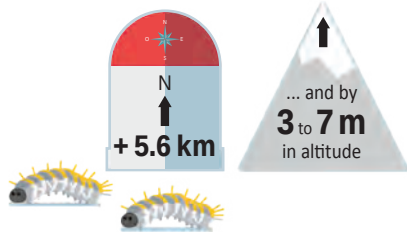


FUNCTIONING

In September 2016, of the 3,271 observation stations for waterways during the summer, 17% were entirely dry and 8% stopped flowing(6).

DISTRIBUTION AREA

Pine processionary caterpillars, a Mediterranean species, is on the move every year by...(5).



• The effects of climate change on natural areas are already being observed in France and in Europe.
It is difficult to anticipate as little is known about them.
Our management must nevertheless evolve, even if not all of the relevant facts are under control.

ALL INTERCONNECTED: INDIRECT EFFECTS WILL ALSO OCCUR

A protected natural area does not function like an isolated system:
a variety of uses (agriculture, tourism, forestry…) and many stakeholders influence the protected area from inside or from outside. Climate change shaking up "socio-ecosystems" within which protected areas exist. It creates a context in which all sectors of society must adapt.

TOURISM

Faced with the reduction in snow cover, mountain resorts use snow cannons or seek to attract tourists throughout all 4 seasons.

Credit: F. LEPAGE / CŒURS DE NATURE / SIPA

AGRICULTURE

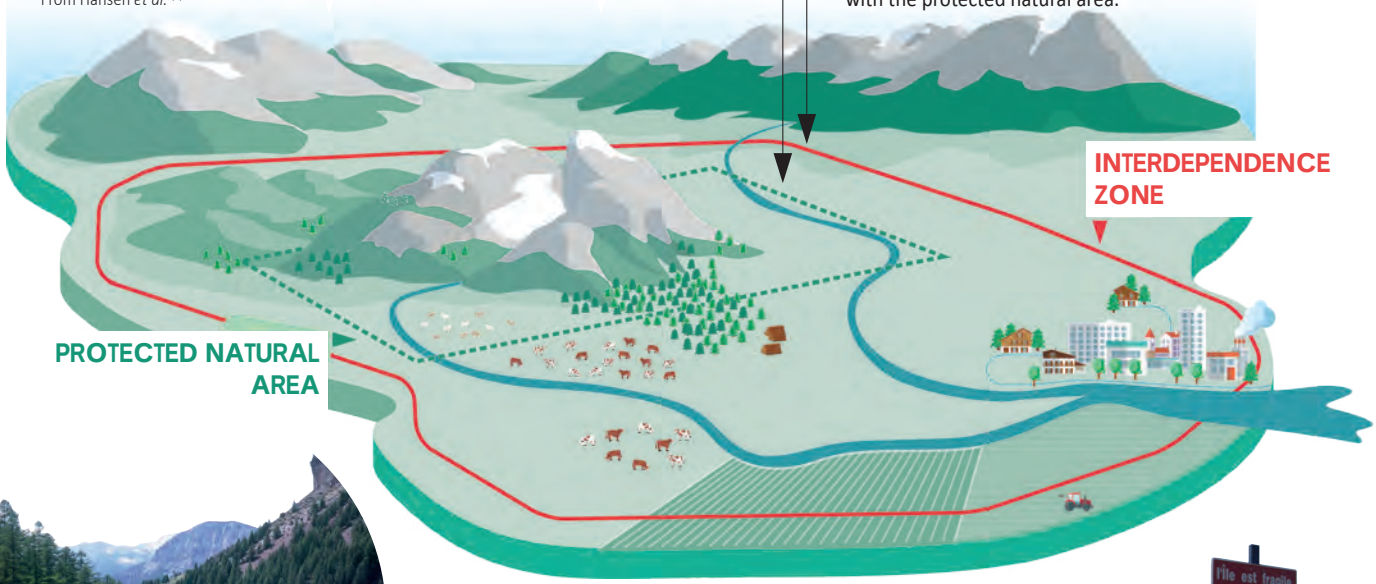
Faced with periods of drought, some farmers build backup or hillside water supplies while others use more hardy mixtures of seeds to ensure that they obtain the correct fodder, which is essential for Protected Designation of Origin.

Credit: BIOT / CŒURS DE NATURE / SIPA

SOCIO-ECOSYSTEM UNDER THE INFLUENCE OF CLIMATE CHANGE

From Hansen *et al.* [7]

This diagram depicts the protected natural area and the wider region that has an impact on it: pasture, outdoor sports and forestry are activities which interact with the protected natural area.



Credit: BIOT / CŒURS DE NATURE / SIPA

FORESTRY

Faced with the change in temperatures and in the pattern of precipitation, foresters are now advising against planting fir trees at altitudes below 700 metres and are seeking to define the modalities of forest management which will be better adapted to wood production.

Credit: AMICE / CŒURS DE NATURE / SIPA

URBAN PLANNING

Faced with coastal erosion and the risk of flooding, coastal resorts are building seawalls or are planning to relocate their activities.

• In a context of climate change, protected natural areas require a greater degree of reflection in terms of interdependence with the way land is used as well as with other stakeholders.
Options for adaptation taken by some stakeholders must not create increased pressure on others, notably on natural areas. Compatible actions must be sought.

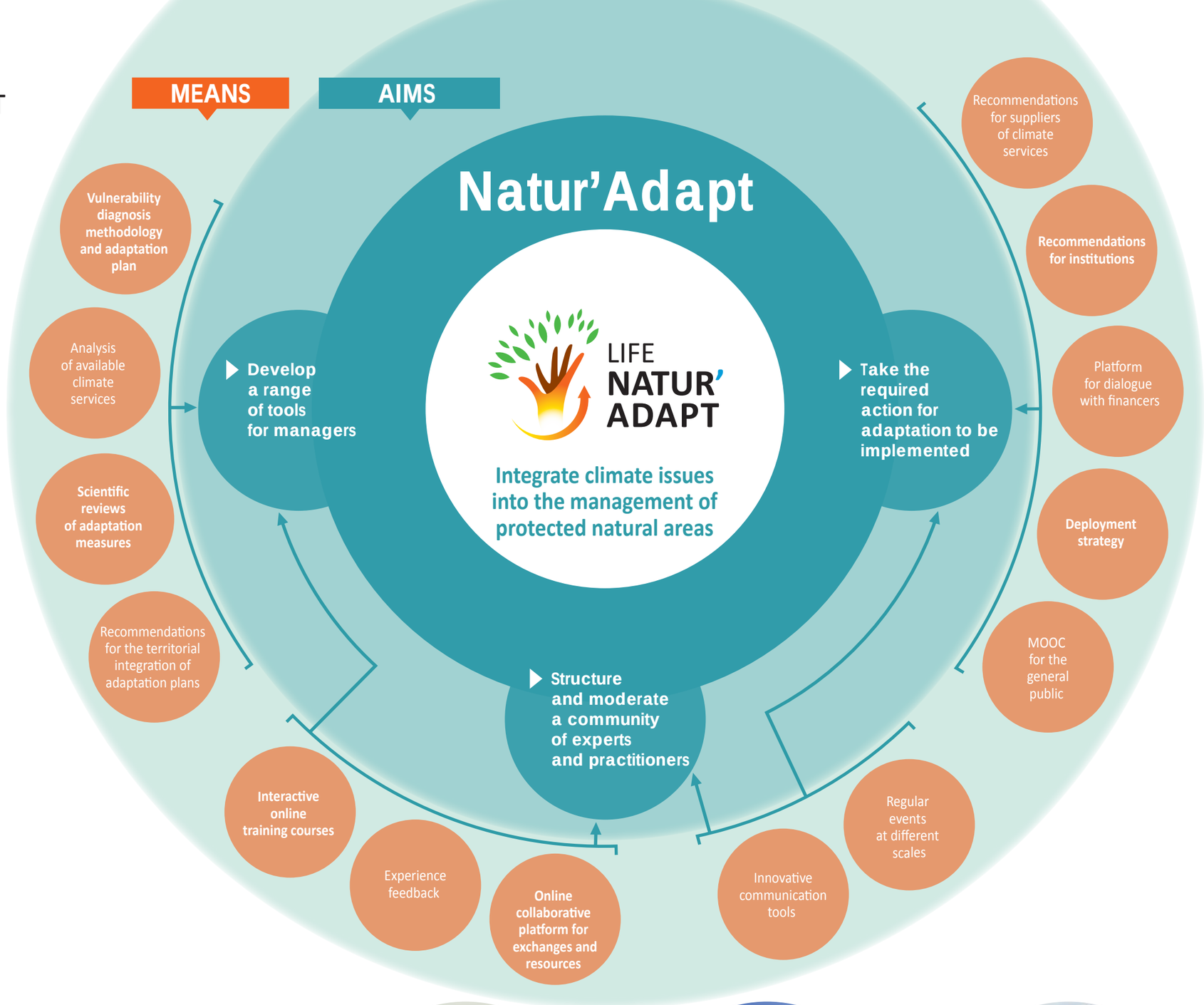
ANTICIPATE TO SUPPORT THE ADAPTATION OF PROTECTED NATURAL AREAS: LIFE NATUR'ADAPT

Currently, in France and in Europe, adaptation is not sufficiently taken into account due to a lack of appropriate tools.
Réserves Naturelles de France and a partners network have decided to address these issues and to put forward the **LIFE NATUR'ADAPT project.**

"A dynamic collective learning process for Climate Change Adaptation in Europe's protected Areas"

THE NATUR'ADAPT PROJECT

Natur'Adapt aims at triggering a transition towards the adaptive management of protected areas while laying the foundations of a dynamic collective learning process. It will provide managers with methodological tools which will be trialled and tested on pilot sites.
Within 10 years, RNF is seeking to guide 80% of Nature reserves with adaptation to climate change through adaptative management, planning and governance.



Principles of the project:

RELIANCE ON FRAMEWORKS THAT HAVE BEEN TESTED IN OTHER CONTEXTS

Solutions exist at international level.
Adaptation has become a dominant tendency in the management of protected natural areas in countries such as the USA and Mexico.

RELIANCE ON THE REQUIREMENTS AND EXPERIENCE OF MANAGERS

The aim is to develop operational tools that meet the requirements and are best adapted to the practices of users.
The main tools developed will provide several layers of implementation that are adapted to the situations and resources of administrators.

RELIANCE ON COLLECTIVE INTELLIGENCE AND PARTNERSHIP

One of the project's strengths is the cross-expertise provided by ten partners with a wide and complementary range of skills. This expertise is enriched by a network of stakeholders that has progressively been set up. The user of these tools is both the co-creator and the tester of the solutions.

RELIANCE ON EXPERIMENTATION

The tools developed (prototypes) are trialled on six pilot nature reserves, which are partners in the project, then tested on fifteen other protected natural areas.


Credit: ALVAREZ / CŒURS DE NATURE / SIPA


Credit: DAMOURETTE / CŒURS DE NATURE / SIPA


Credit: DAMOURETTE / CŒURS DE NATURE / SIPA

LIFE NATUR'ADAPT "A DYNAMIC COLLECTIVE LEARNING PROCESS FOR CLIMATE CHANGE ADAPTATION IN PROTECTED AREAS"

A 5-year project with 4 major phases, punctuated by key moments

S Seminars: these will mobilise the central core of experts on pilot sites and the LIFE group as part of an approach based on innovation through use.

Managers, you can get involved.

Managers' forum

Results sharing

Managers, you can get involved.

November 2020 / March 2021:

Two inter-regional conferences:

- mountain zone
- coastal zone

Managers, you can get involved.

Managers forum

Results sharing

Managers, you can get involved.

European conference

EUROPARC 2023

KICK OFF — S — 2018

CONCEPTION — S — 2019

F — Managers' forum

EVALUATION — S — 2020

C — Two inter-regional conferences

C — 2021

VALIDATION — S — 2022

F — Managers forum

C — European conference — 2023

CONCEPTION 10 months

EXPERIMENTATION 24 months

TESTING 16 months

DISSEMINATION 10 months

PROTOTYPES I

6 TRIAL SITES WHICH ARE PARTNERS IN THE PROJECT

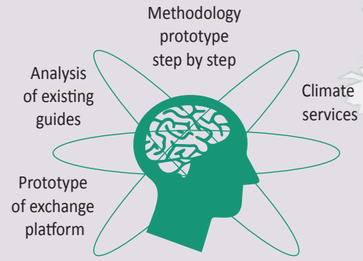
representing the 4 biogeographical zones in mainland France, 6 natural areas with a variety of administrative bodies and a wide range of uses and activities.

PROTOTYPES II

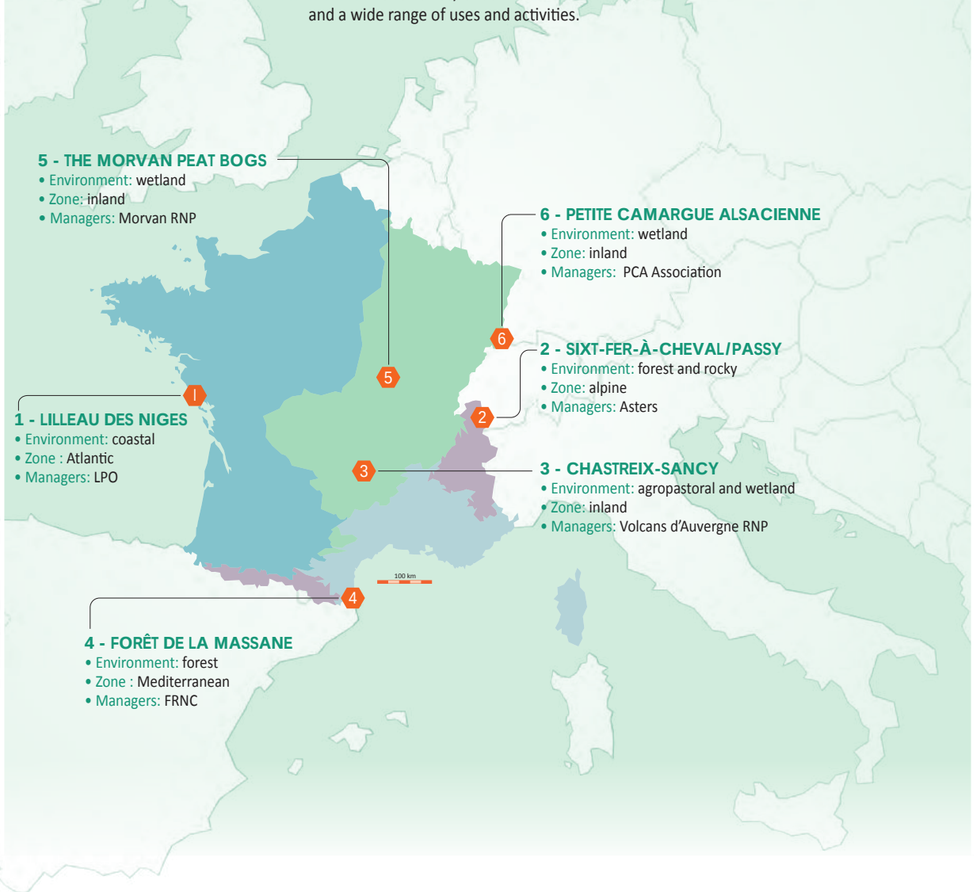
15 SITES FOR TESTING

PROTOTYPES VALIDATED

TRANSFER IN FRANCE AND IN EUROPE



Managers, you can get involved.



The 15 test sites to try the approach out will be selected at a future date (Via a call for interest) and will be provided with dedicated financial resources.

Managers, you can get involved.

Deliverables

- **Tools for learning** and professionalisation to integrate climate change, including a methodology for carrying out a vulnerability diagnosis and an adaptation plan.
- A **collaborative platform** of resources for adaptation to climate change in protected natural areas.
- **Experience feedback** from administrators in France and in Europe.
- **Communication tools** adapted to different audiences to facilitate a change in behaviour.

A dynamic in France and in Europe to adapt nature protection to the challenges of climate change.

Protected natural areas,
places of experimentation for local ecological transition,
laboratories providing solutions for territories

Are you the manager of a protected natural area?
You can get involved in the project.

LIFE NATUR' ADAPT

Project coordinator

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Partners involved in the project

EUROPARC FEDERATION
UMS PATRIMOINE NATUREL
Tela Botanica
LPO AGIR pour la BIODIVERSITÉ
Asters Conservatoire d'espaces naturels Haute-Savoie
Reserves Naturelles CATALANES
Parc naturel régional du Morvan
Parc naturel régional des Volcans d'Auvergne
Petite Camargue Alsacienne

Project co-financers

AGENCE FRANÇAISE POUR LA BIODIVERSITÉ
MINISTÈRE DE L'ENVIRONNEMENT

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LIFE 17 CCA/FR/000089-LIFE #CC #Naturadapt

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(1) Gouriou, T. (2012) "Évolution des composantes du niveau marin à partir d'observations de marégraphie effectuées depuis la fin du 18ème siècle en Charente-Maritime", Thesis, University of La Rochelle, 492p
(2) Serre, F. (2015) Les singularités du climat et son évolution récente dans le massif des Monts Dore et dans la réserve naturelle nationale de Chastreix-Sancy Parc naturel régional des Volcans d'Auvergne, 48p
(3) Garrigue, J. et al. (2016) Climatologie - Analyse des données 2015, Travaux de la Massane, Volume n° 106, 34p
(4) www.mnhn.fr
(5) www.inra.fr
AFB (2017) Waterways flow during the summer months, Summaries n°15, 12p, www.eaufrance.fr
(7) Hansel et al. (2014) Exposure of U.S. National Parks to land use and climate change 1900 —2100 ; Ecological Applications, 24(3), Ecological Society of America, pp. 484-502

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