Recherches paléoenvironnementales dans le Massif central (Limagne, Cantal et surtout très haut bassin de la Loire)

Retour d'expérience sur quelques carottages

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ANF Sondages – Arcachon
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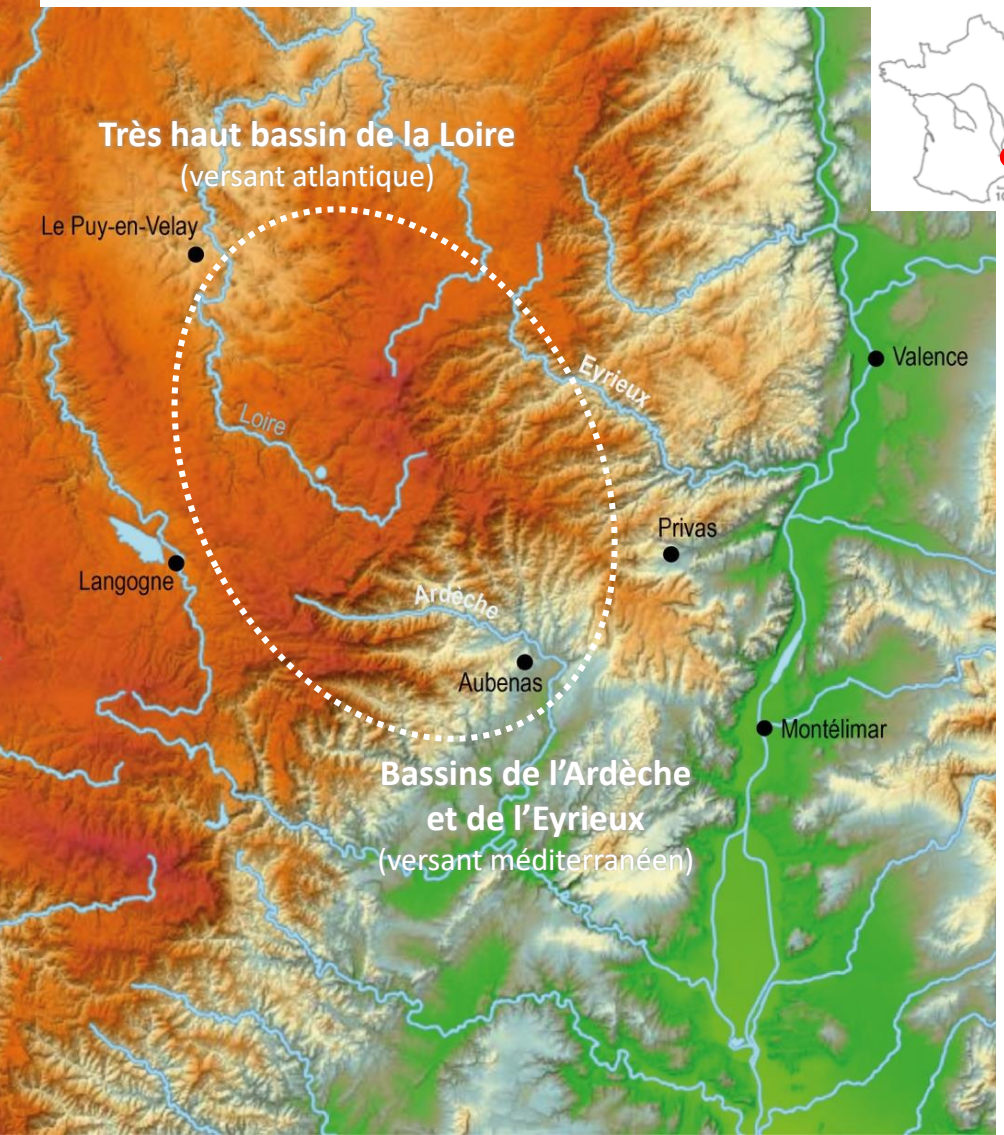
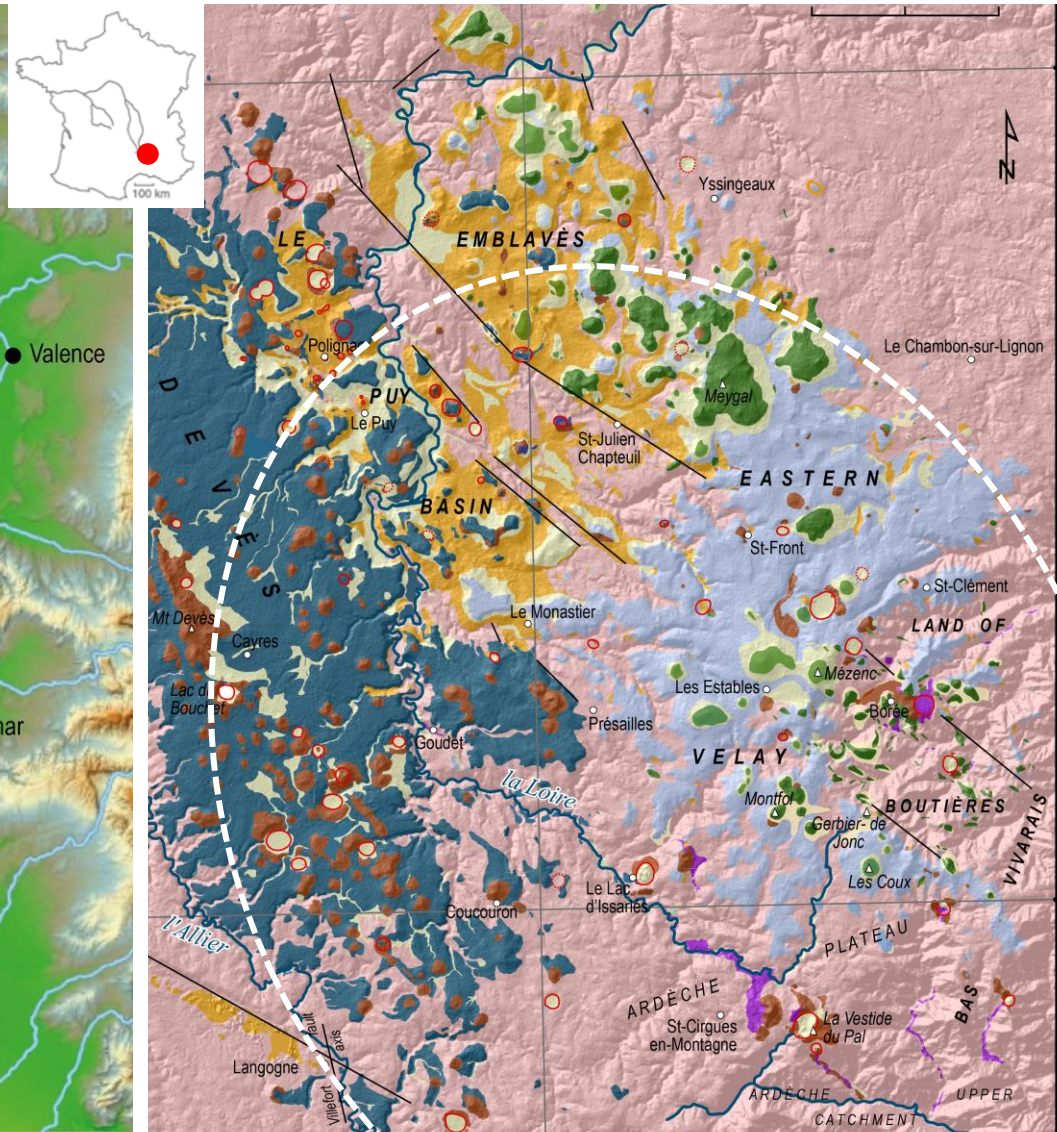
STUDY OF THE PLEISTOCENE AND HOLOCENE SEDIMENTARY ARCHIVES OF THE VERY UPPER LOIRE BASIN AND ITS RHONE MARGINS:

Paleoenvironmental reconstruction and society-environment co-evolution

Secteur cristallin volcanisé (*Velay oriental :* 15-6 Ma / ***Devès*** **: 3-1 Ma** / ***Bas-Vivarais*** **: 200-15 ka**) de moyenne montagne





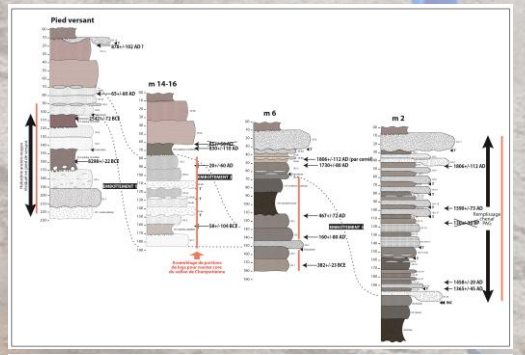
2 complementary lines of research

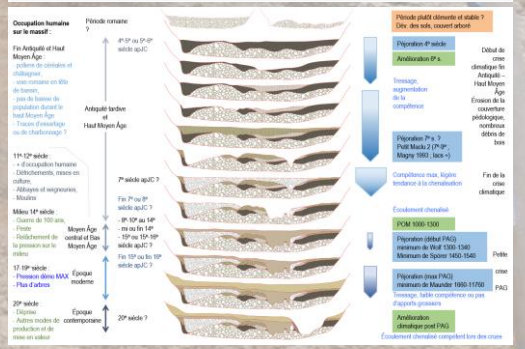
Axis 1: The short time of the Holocene

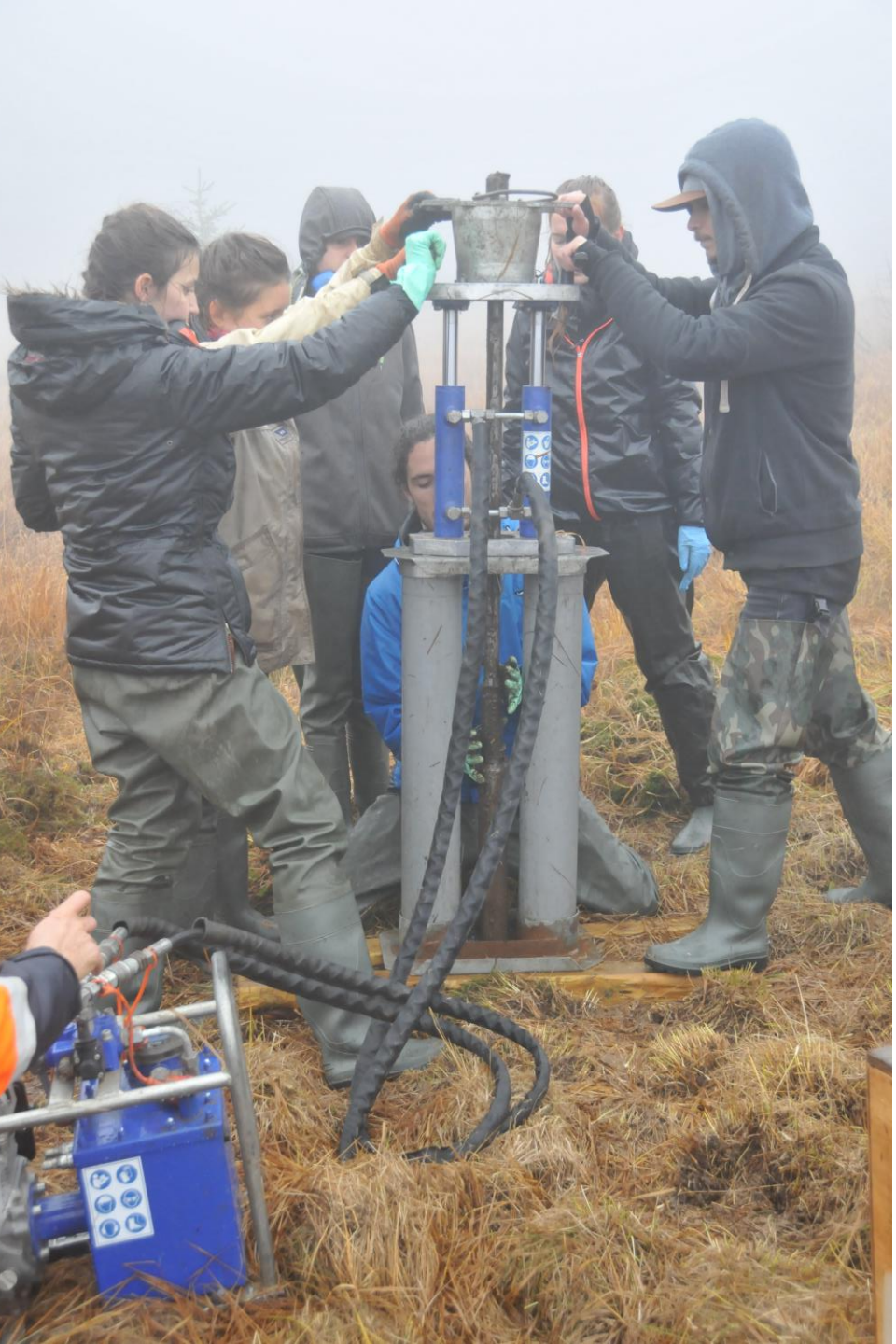
Study of the river archives of the basin heads in order to

Reconstruct the history of erosion (hydro-sedimentary flows) and landscapes...

... to take into account natural - climate, etc. - and anthropogenic forcings and to consider the modalities of society-environment co-evolution





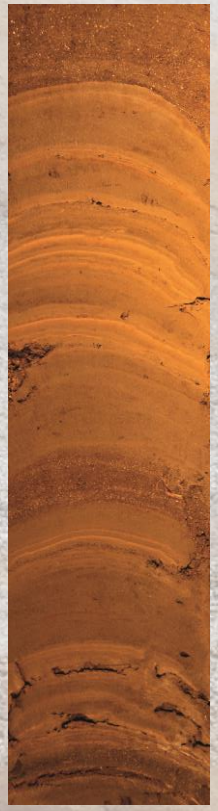



herches
héologiques

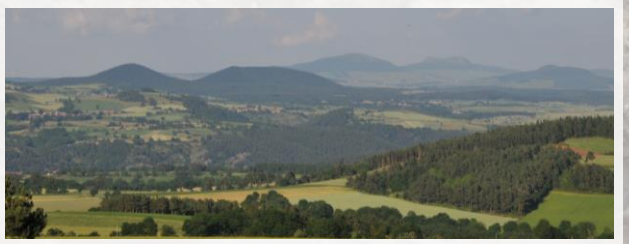
2 complementary lines of research

Axis 2: the long time of Middle and Late Pleistocene

Close link with the recent volcanism of the Bas-Vivarais:



- Interference between river dynamics and volcanism
- Environmental history recorded by lakes archives: volcanic dams and maars linked to recent volcanism in the Bas Vivarais
- Contribution to the dating of volcanism and construction of a micro-regional tephro-stratigraphic reference sequence
- Relationships between Palaeolithic Humans and their environment



Main résults

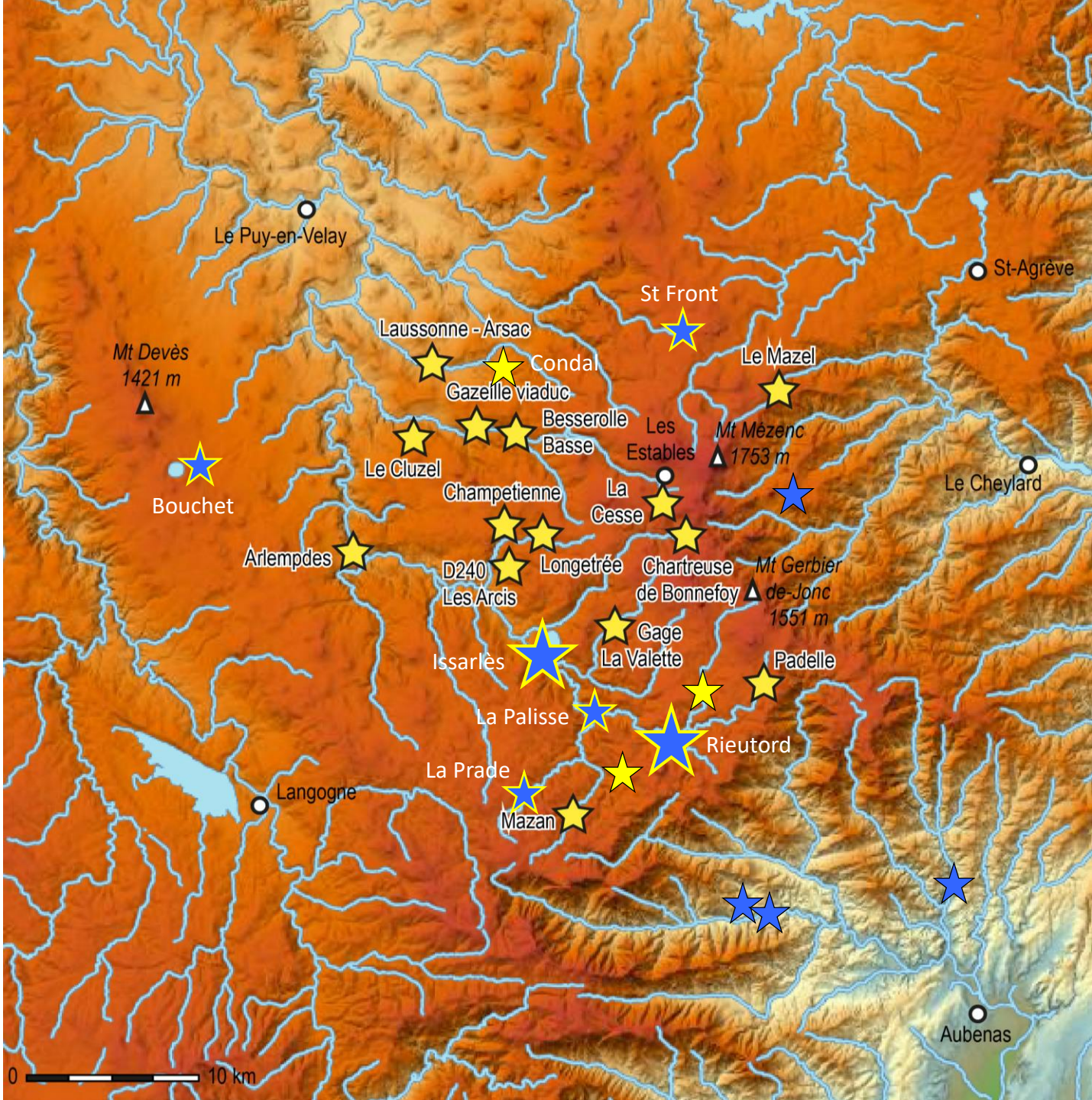
Sites Axis 2

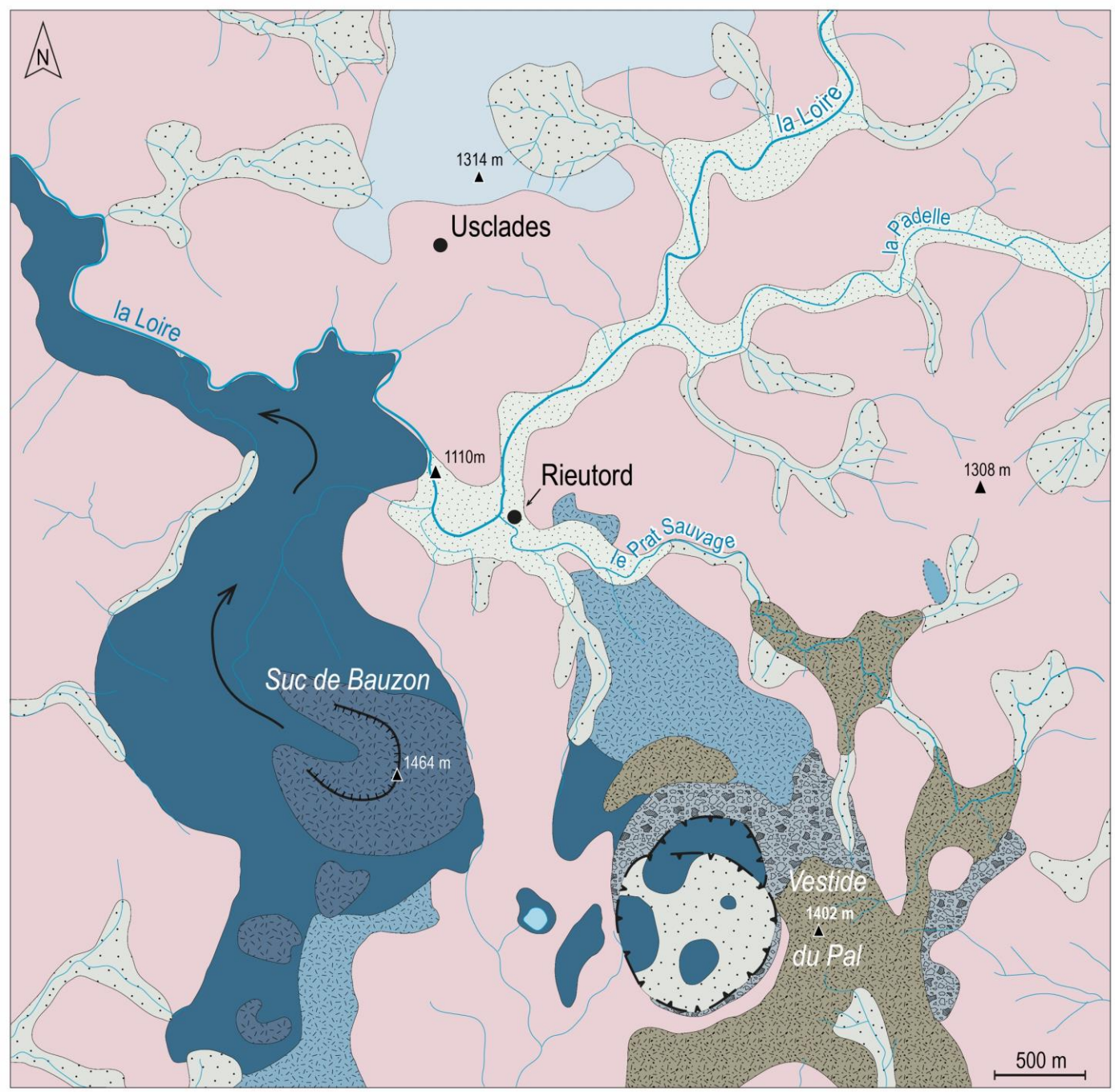
Volcanic dams and paleo-environment

Sites Axis 1

Accumulations in thalwegs and geoarchaeology

Mixed sites




N
la Loire
1314 m
Usclades
la Padelle
la Loire
1110m
Rieutord
1308 m
le Prat Sauvage
Suc de Bauzon
1464 m
Vestide
1402 m
du Pal
500 m
1
2
3
4
5
6
7
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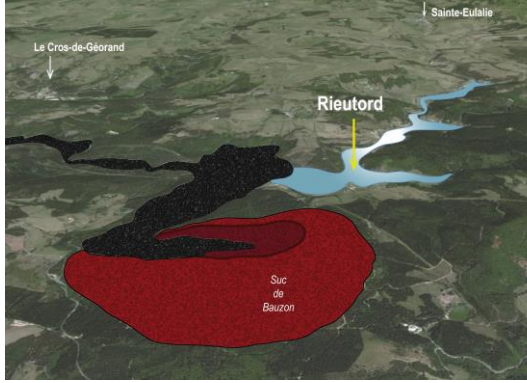
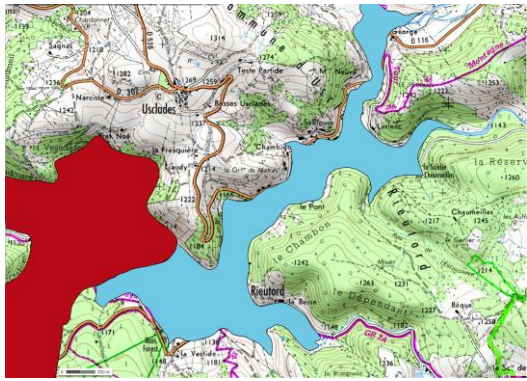
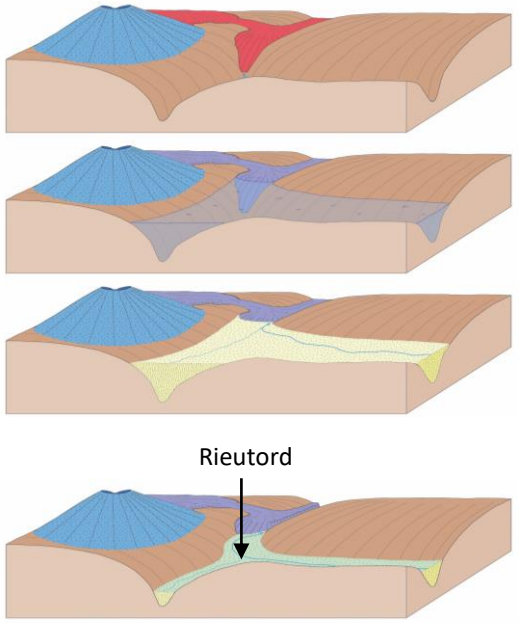
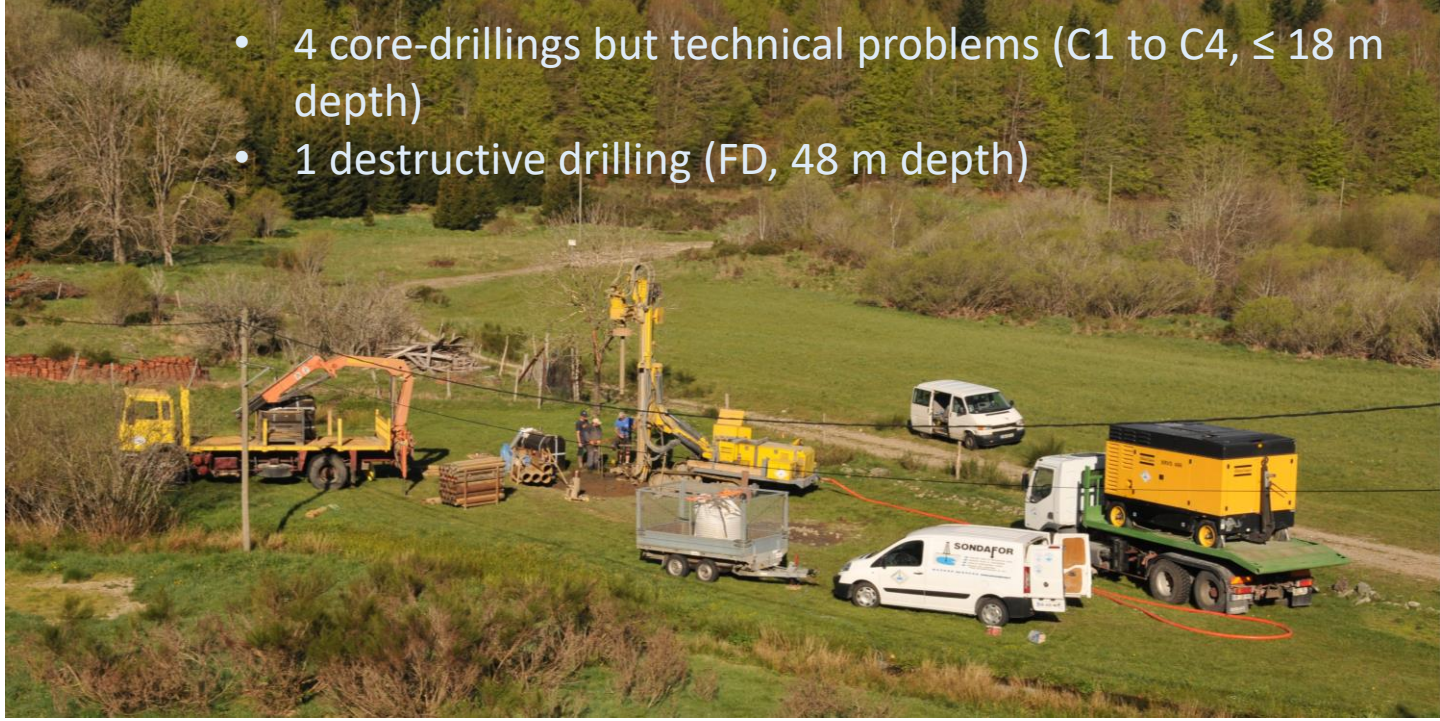
9
10
11
12

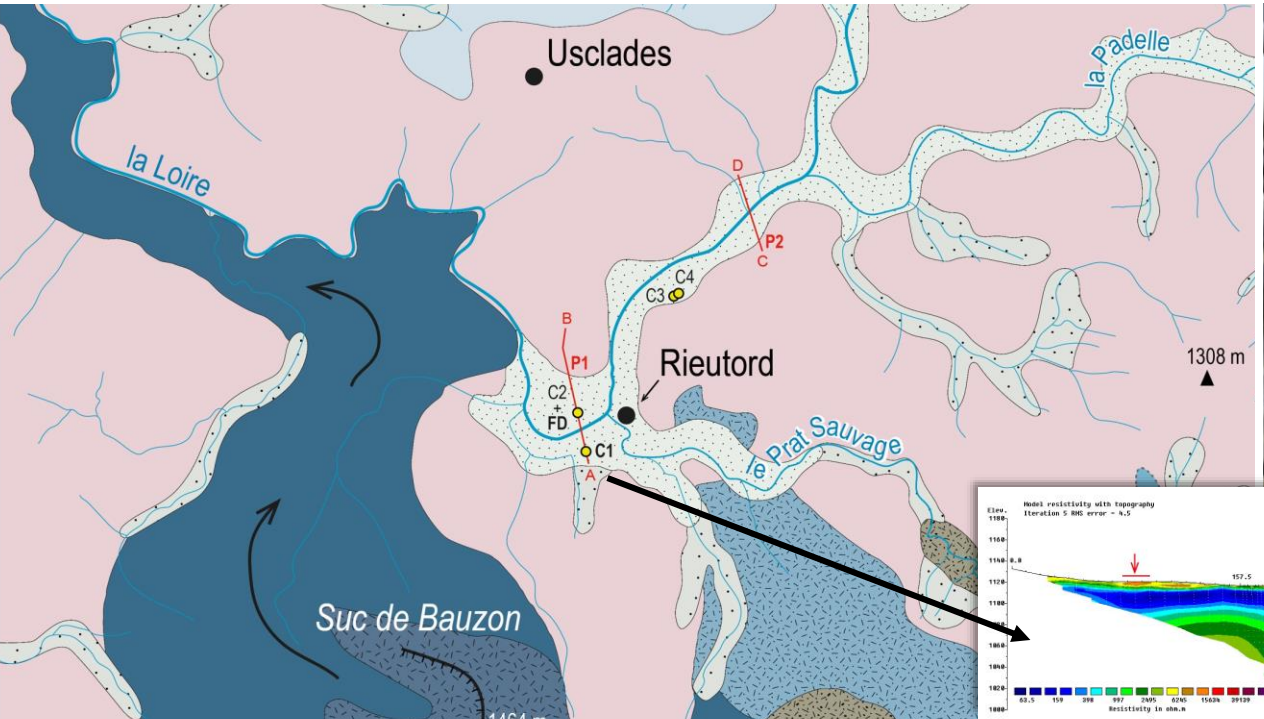

Sainte-Eulalie
Le Cros-de-Géorand
Rieutord
Suc
de
Bauzon

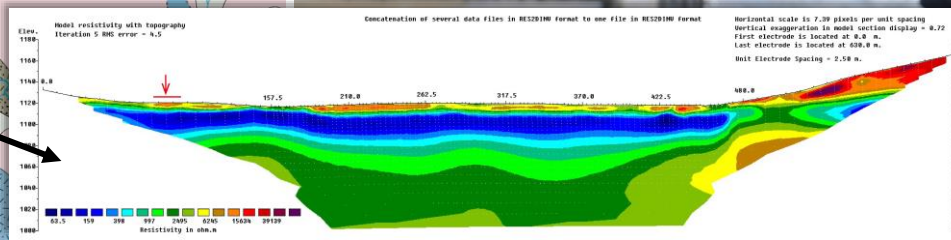

Usclades
Rieutord

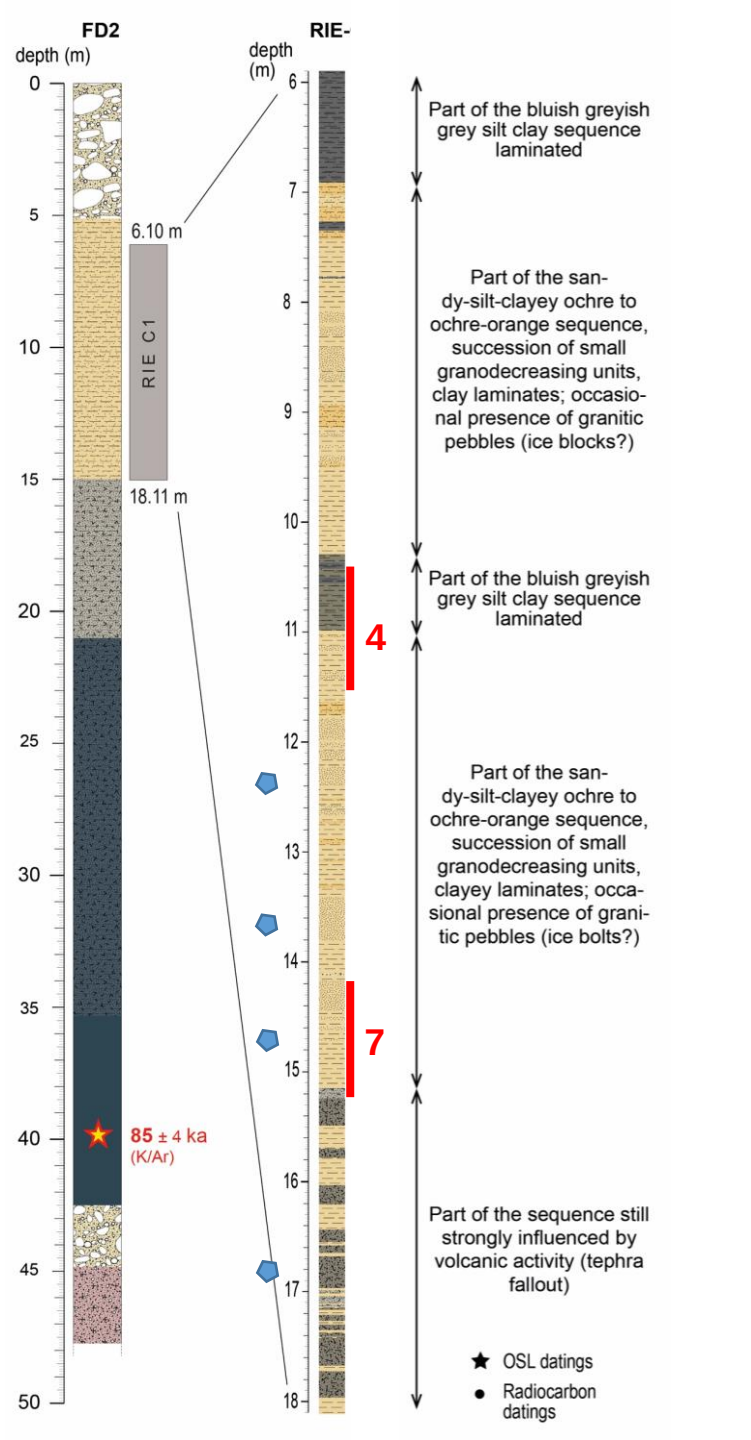

Rieutord

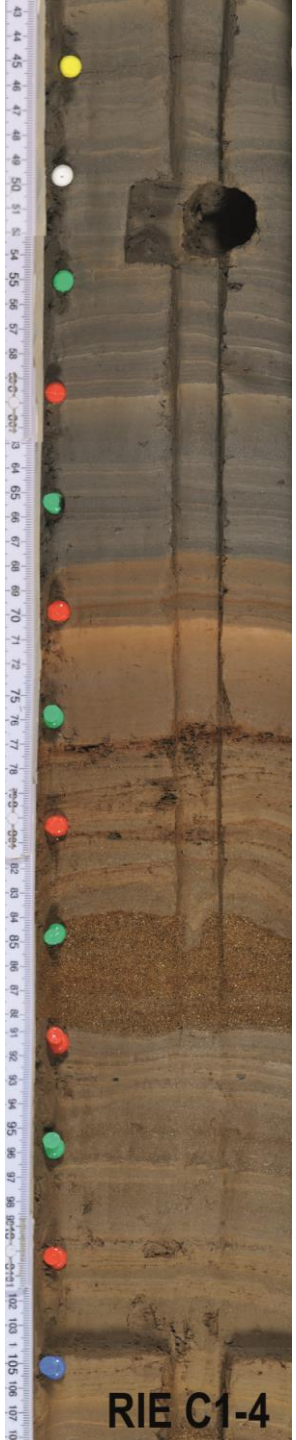


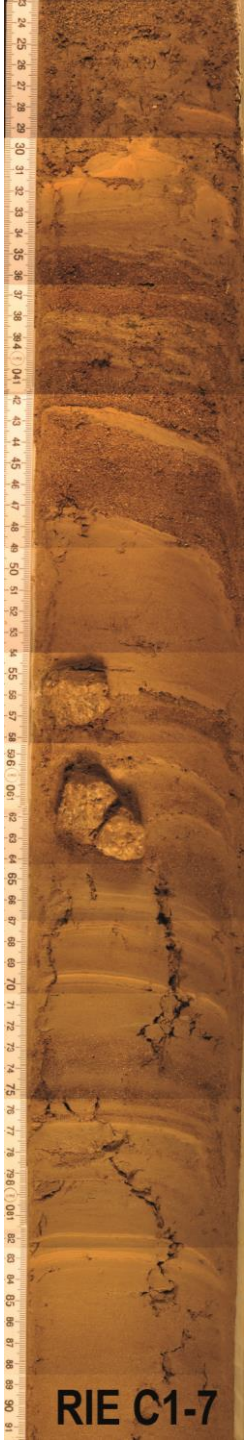
- 4 core-drillings but technical problems (C1 to C4, ≤ 18 m depth)
- 1 destructive drilling (FD, 48 m depth)











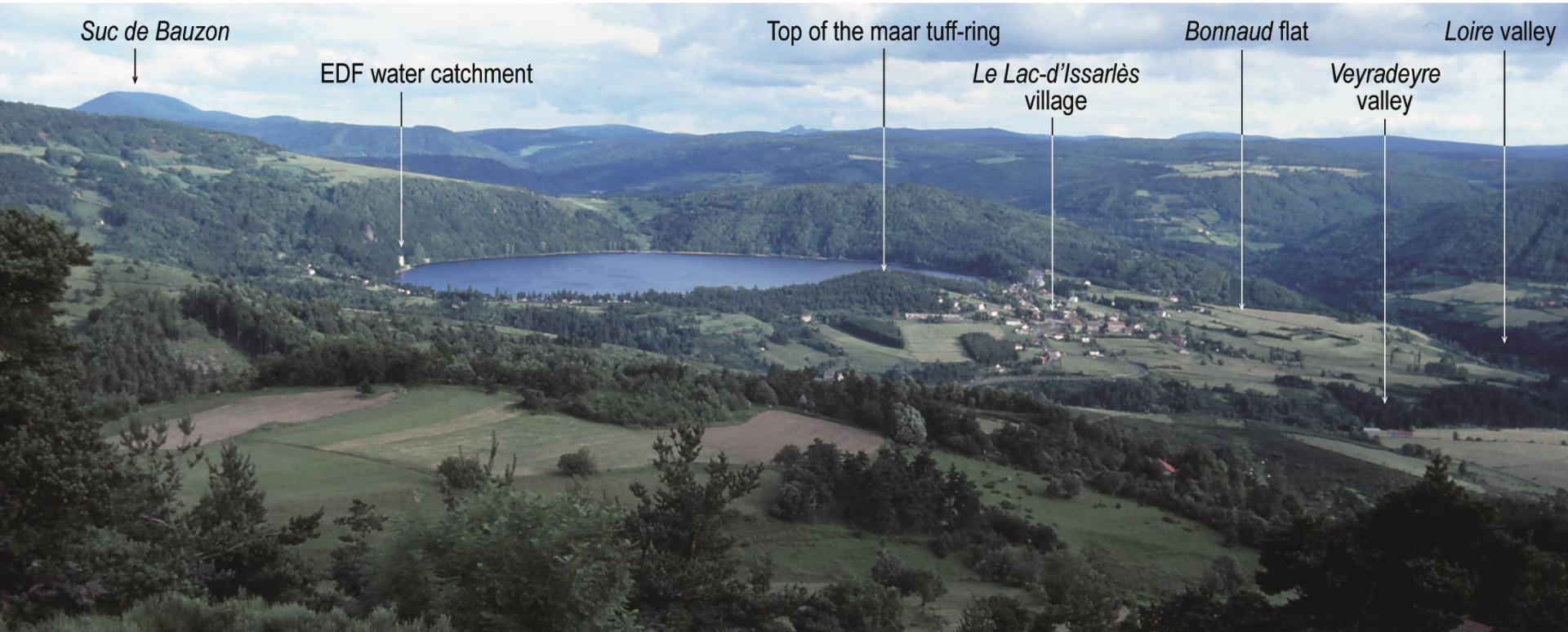
A laminated lacustrine sequence between 42 and 18 ka

- a succession of silty-clayey to silty-sandy graded bedding cm to dm units and some sandy detritic and/or tephra interbeded levels
- cm to dm stones locally included in the deposits lower half:

? → Dropstones in cold conditions
or
→ Phreatomagmatic origin in this case, which maar and where?

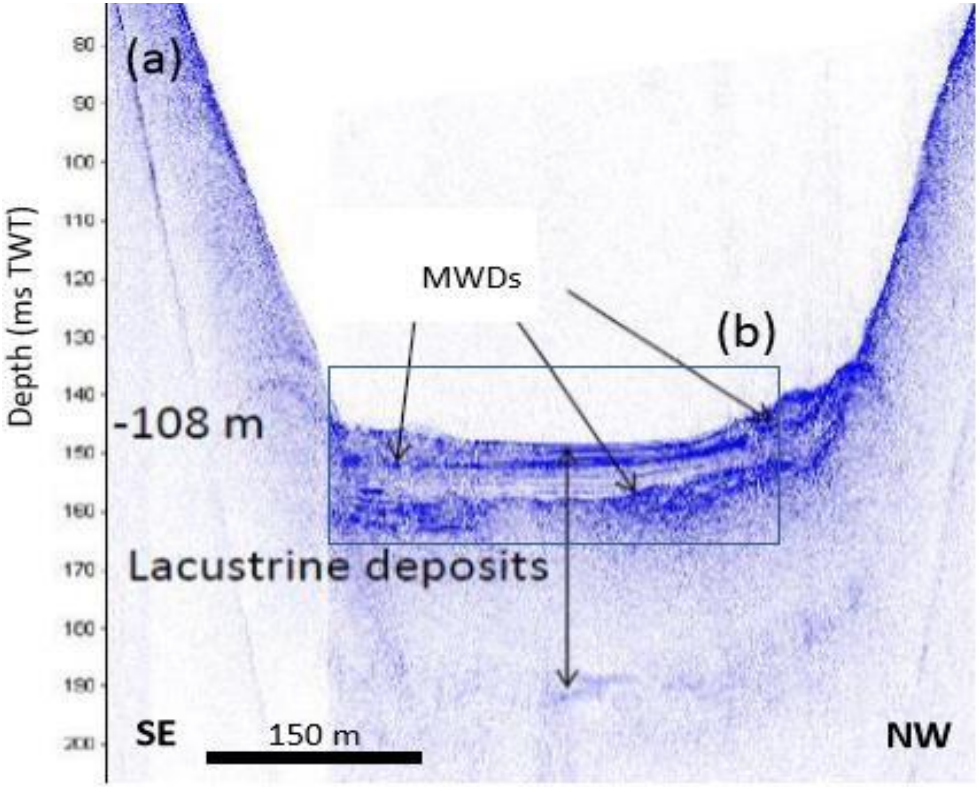
Contexte géologique et âge du maar

Rapide présentation du site



Séquence de cœur de lac – Sismique réflexion

Mouvements de masse (MWD)**, turbidites** (T)**, potentiels téphras** (R)



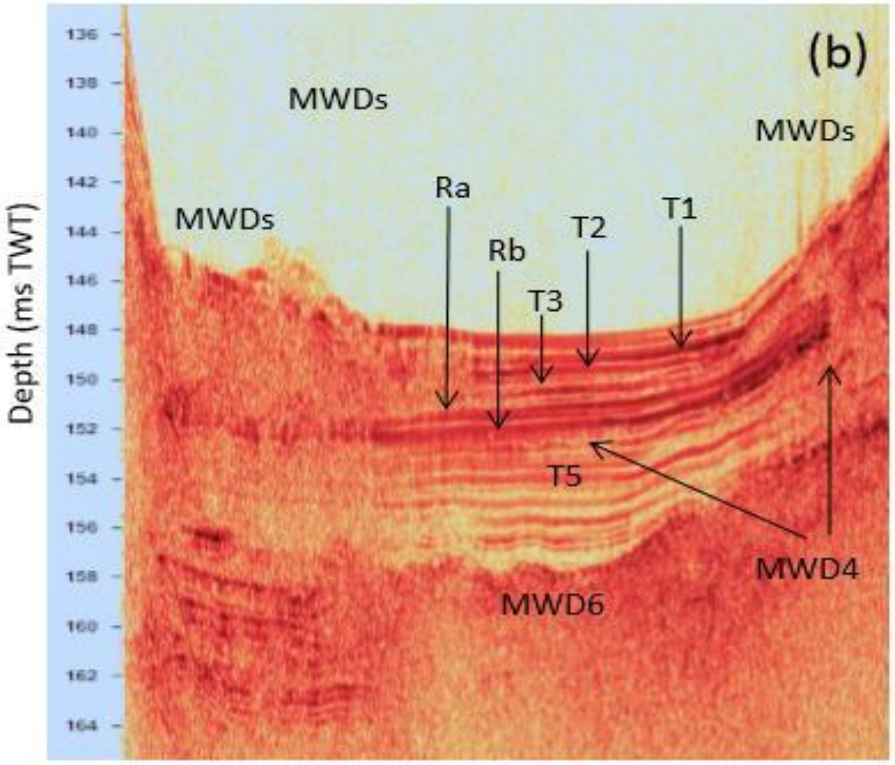
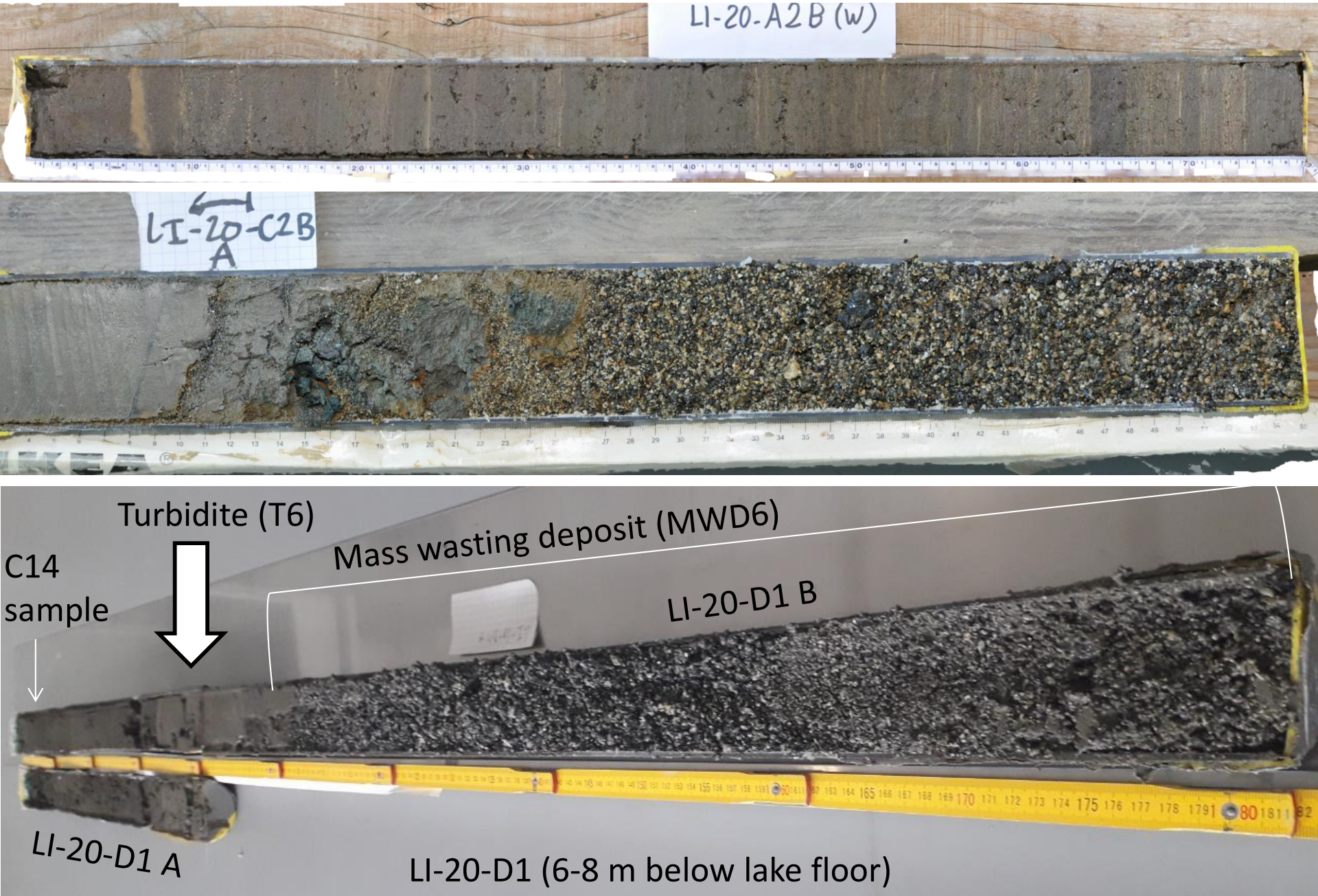


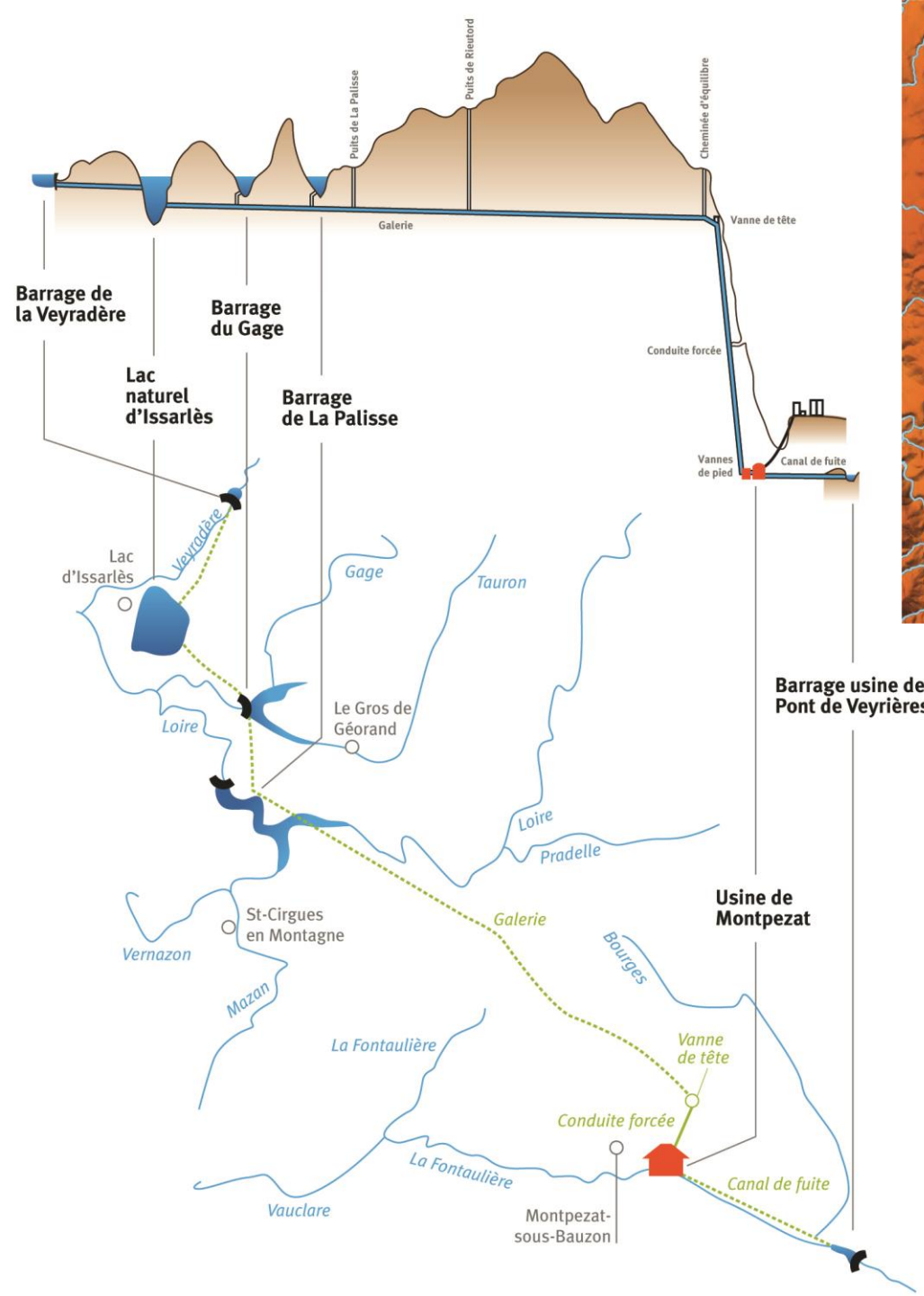
Figure 13 : Profil sismique du maar d'Issarlès montrant les différents remaniements du matériel sédimentaire (MWD) avec leur tubidites distalales (T) et deux traces de de réflecteurs plus forts (Ra et Rb) ; a) fenêtre du logiciel Seisee et b) fenêtre du logiciel EDIFISegy. L'echelle verticale est données en temps (milliseconde temps double).

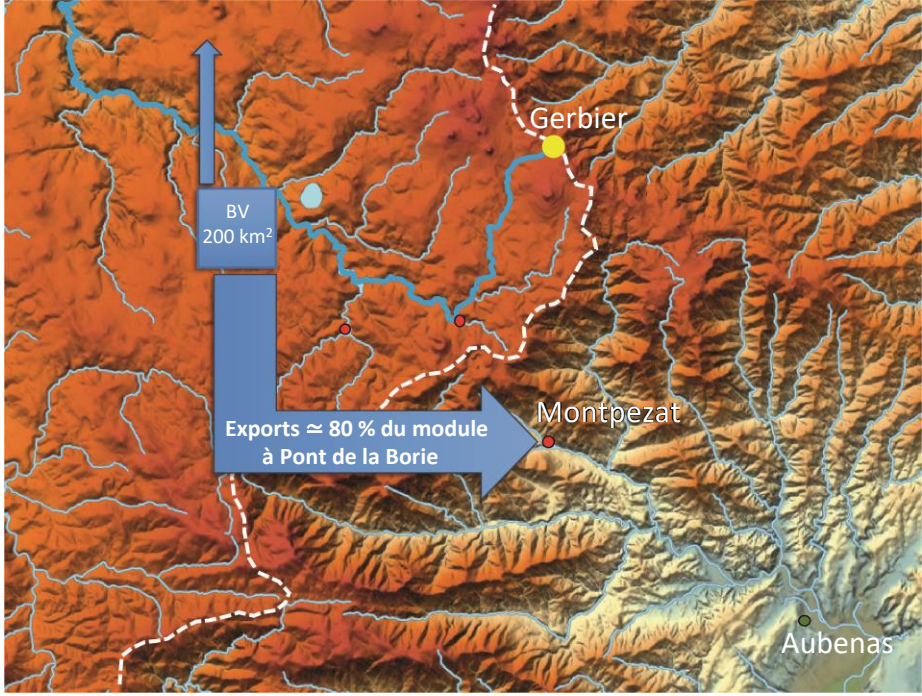
Séquence de cœur de lac - Carottage

Séquence de cœur de lac - Carottage

Séquence de cœur de lac - Faciès des sédiments





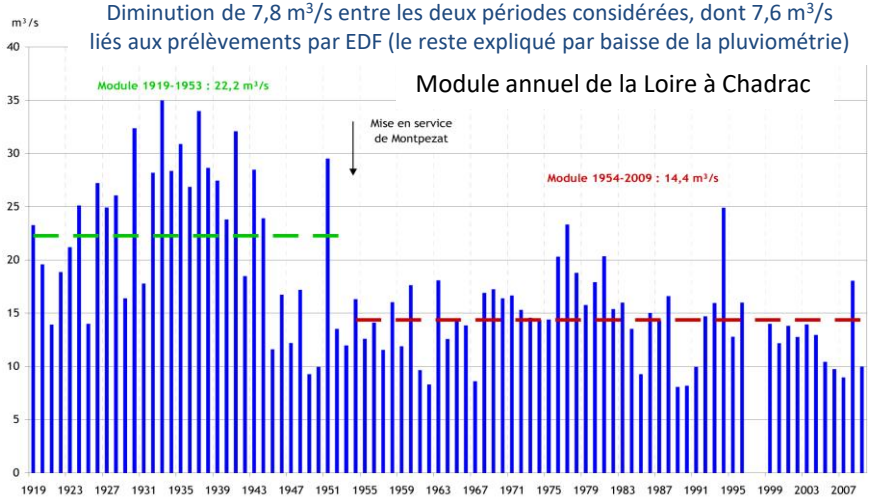


Construction et mise en service : 1949 – 1954

Objectifs :
- Hydroélectricité (15 septembre - 8 mars)
- Soutien des étiages + tourisme et loisirs le reste du temps (Ardèche et Loire)

Diminution de 7,8 m³/s entre les deux périodes considérées, dont 7,6 m³/s liés aux prélèvements par EDF (le reste expliqué par baisse de la pluviométrie)

Module annuel de la Loire à Chadrac

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22-7-54

Les questions, pour résumer :
(Merci pour vos conseils et suggestions)

- Comment retenir le train de tige du Cobra à la remontée ?

- Est-il normal que nous n'ayons pas pu mieux carotter Rieutord (trop gros diamètre ? Problème des terrains ou de la pression d'eau ?)

- Est-il normal d'incliner le mas pour retirer les carottes ?

- Recherchons tiges pour GEOTOOL GTR 780