7 Geo-walks in the Drôme

A geological history of the Drôme — Géobalade content dossier

Before the story begins: the Center of Pangaea

Anchor point: La Beaume Cornillane

Long before the warm Tethys Sea ever settled here, 250 million years ago, every continent on Earth was fused into a single landmass: Pangaea. This site marks, with a wink, the symbolic centre of that vanished supercontinent — a fitting place to begin the story of how it all split apart, drifted, and rebuilt itself into the Drôme we know today.

On this very spot, the rock beneath your feet dates back 28 million years (Oligocene): a **white lacustrine limestone**, laid down at the bottom of ancient freshwater lakes under a subtropical climate, home to fish, plankton, freshwater snails (planorbids, lymnaeids) and aquatic plants.

“Before the story I'm about to tell you, there was only one continent on Earth — and you are standing right at its centre.”

1. The sea that builds (150-65 Ma)

Anchor point: Gorges de la Bourne

150 million years ago, the Drôme didn't exist yet: in its place lay a warm, shallow sea, on the edge of a vast ocean now long gone, the Tethys. Where the water was shallow and sunlit, shellfish called **rudists** piled up on top of one another and built reefs — that's **limestone**. Where the water ran deeper (the future Diois and Baronnies), **ammonites** swam above a calm seabed where fine mud slowly settled — that's **marl**. These rocks are, today, the true archives of the ancient climate. Rock is a memory of climate.

“At the very same time, two neighbouring seas were building two different rocks: one raised walls, the other laid down a carpet.”

2. The collision that lifts (~80-5 Ma)

Anchor points: the Saoû forest and syncline / the Crest ridge

The Pyrenean-Provençal phase (late Cretaceous to Eocene, peaking around -50 Ma) folds the layers for the first time, along an east-west axis. Then the Alpine phase (Miocene, ~20-10 Ma) drives the folding to its climax: the limestone and marl beds, laid down flat on the seabed, rear up into cliffs. This is the very push that shapes the Saoû syncline, folded “like a boat”, with its steep flanks.

In Crest, a complete sequence, easily accessible right in the town centre, tells the same story on a different scale: at **28 Ma**, the same white lacustrine limestone as at Beaume Cornillane, whose upturned beds now cross the riverbed itself; at **20 Ma**, the region becomes a shallow marine shoreline where a **grey calcareous molasse** settles, rich in oysters, scallops and bryozoans — the very rock that forms the foundation of the Crest Tower and the Cordeliers staircase; at **5 Ma**, one last, powerful Alpine tectonic push tips both rocks up to vertical, carving out the “Crest ridge”, a 45°-tilted slab running down from the foot of the Tower.

“The earth doesn't collapse under pressure: it rises. What once lay flat on the sea floor now stands up and faces the sky.”

3. The erosion that carves (5 Ma to today)

Anchor point: the Cirque d'Archiane

Erosion doesn't destroy at random — it reveals. The Messinian salinity crisis (~6 Ma), the Pliocene marine refill, and then the Quaternary glaciations gradually shape the landscape. River water carves the valleys and exposes the limestone cornices; water seeping into the limestone hollows out caves and gorges. The Claps de Luc-en-Diois adds another chapter to this story, in a different way: in 1442, an entire section of the Pic de Luc (roughly 5 hectares) broke away in an instant, damming the Drôme and creating two lakes that have since dried up — proof that the mountain can also transform itself all at once, not just grain by grain.

“Water and time don't destroy the landscape: they clear away what hides the story, and let what has resisted come into view.”

4. The living world that inhabits and transforms it (present and future)

Anchor point: the Ramières du Val de Drôme nature reserve

Today, this landscape, shaped by 250 million years of history, is home to a new form of life. The river keeps braiding its bed through the Ramières reserve; biodiversity and pastoral farming carry on their dialogue with the limestone up on the Vercors high plateaus: the landscape is not a frozen backdrop, it's a system that keeps on transforming.

“The Earth hasn't finished its story: we are simply a very recent chapter.”

Map of the 7 stops

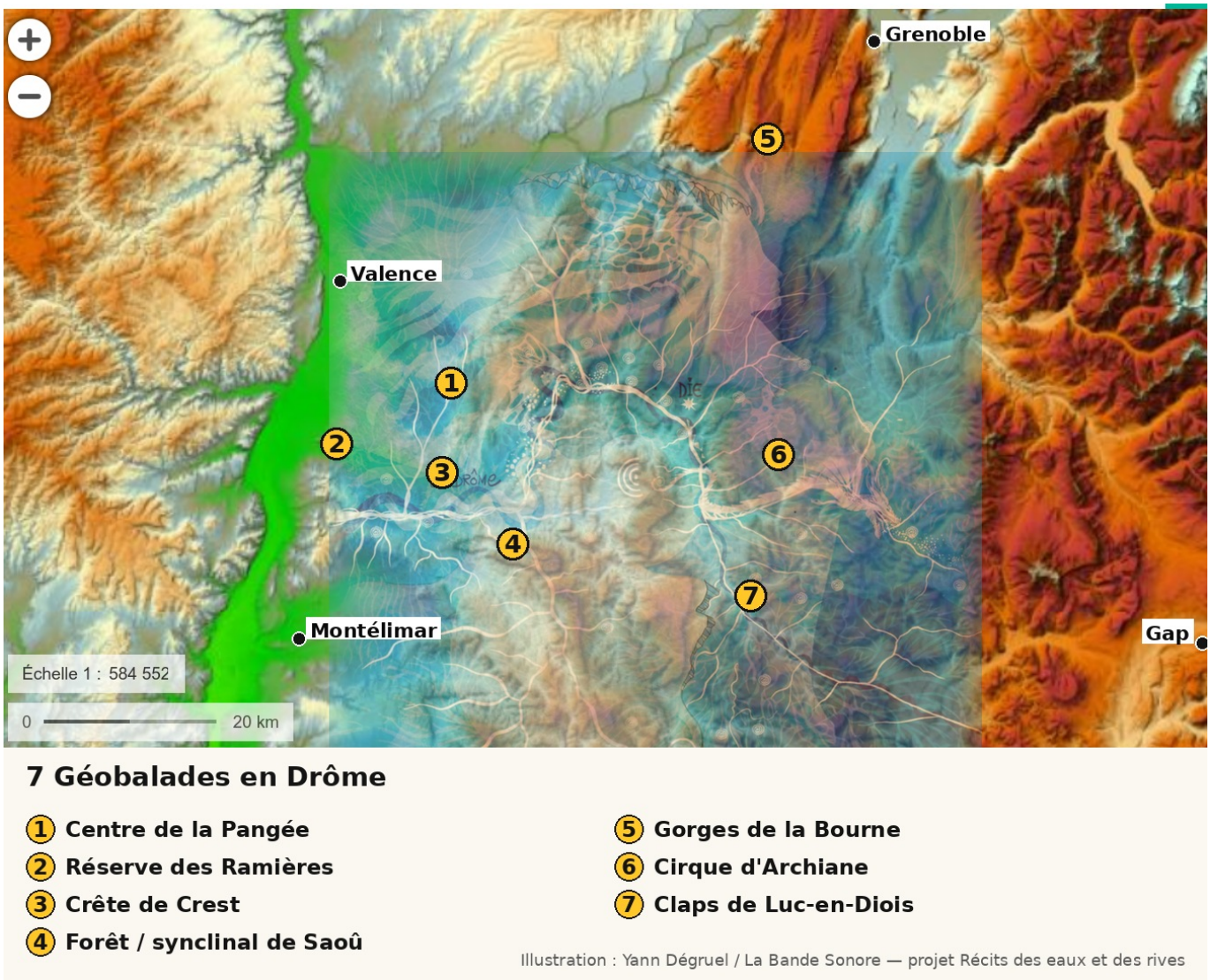

Illustration: Yann Dégruel, created for the “Récits des eaux et des rives” project (La Bande Sonore) — an interactive sound map exploring the connections between water, the land, and its people in the Diois and the Drôme valley. Place names on the map are kept in French, as on the ground.

To go further: listen to the interactive sound map “Récits des eaux et des rives”.