

On the upper part of the slope and in the Perth basin itself the Neocomian-Albian section may be seen onlapping sharp relief. Later sediments, both shallow water limestones and deeper water marls and clays follow the pre-existing relief with general conformity.

2. Naturaliste Plateau

The Naturaliste Plateau is an area of gentle relief composed of folded and faulted lower Mesozoic rocks overlain by a thin section of Upper Cretaceous to Tertiary. It is similar in structure to the Broken Ridge. A marked unconformity, similar to that recognised in the Perth Basin is present and is thought to be of the same, Neocomian, age.

On the seismic sections discontinuous reflections representing the pre-Neocomian are aligned into a series of broad anticlines and synclines with gently dipping flanks. The total thickness of the pre-Neocomian is probably variable, but in some basinal areas it certainly exceeds 2000 m. A minimum thickness of about 1000 m is present, however, over much of the plateau area.

In a number of places, reflections are absent below the unconformity (normally where shallow magnetic basement picks have been obtained), indicating high basement, intrusions or volcanics. The composition of the sequence is unknown but it is thought, by analogy with the Perth Basin, to represent Triassic to Lower Cretaceous sediments of lacustrine or marginal marine facies. It is anticipated that parts of the plateau may have been emergent for at least part of the time.

The structural trends in the pre-unconformity sediments lie between NNW-SSE and NW-SE (as in the offshore Perth Basin). Anticlinal areas that correspond to high basement picks may, however, be due to local intrusions (e.g. N 321 sp 4900, Encl. 16). Signs of intra-basement unconformities are rare, but true basement may be present, for instance, at 4400 m depth on N 323, sp 3650 (Encl. 16). Basinal areas may correspond to grabens, as in the Perth Basin.

To the north of the Plateau the pre-Neocomian basement gradually assumes a hilly volcanic aspect with occasional reflections subparallel to the sea floor (N 323, sp 7000-7500, Encl. 16) and it is difficult to define the point at which the character changes. To the south of the plateau, however, the volcanic basement gives rise to a very rugged topography and seems to terminate against a scarp at the southern boundary. GC.264, drilled near the edge of this scarp bottomed in volcanoclastics of Neocomian (?) age.

The oldest recorded post-unconformity sediments are of Albian age (GC.258). They onlap onto the pre-existing relief and are