

faulting, like Yolla-1 or areas without extensive volcanics like the Pelican area.

In the platform areas within the central basin, the Late Cretaceous and lower Paleocene section enter the oil window later than the grabens of the central basin. Migration is probably limited due to the generally horizontal nature of the platforms.

It is questionable that in areas where the oil window progressed above the suspected Paleocene volcanic seal into the M. diversus that the M. diversus could have provided significant quantity of source section for significant accumulations. Although containing rich source rocks the M. diversus is often 80 to 90 percent sand and siltstone, the more extensive coaly section being found in P. asperopolus.

A comparison of the maturation history of the Yolla and Tilana areas indicates that the Yolla structure developed earlier than the Tilana structure, forming as early as L. balmei deposition. Yolla's juxtaposition to a graben-defining fault puts it in a position to receive the early migration from the Late Cretaceous and Paleocene source sections with enhanced migration above the volcanics. The M. diversus section, mature southwest of the Yolla structure, could have contributed source for the shallow pay. The deep pay in the Yolla-1 well is found just below the shallowest Paleocene volcanics.

The older Paleocene structures are more likely to be productive than the younger Miocene structures within the central Bass Basin. The greater volume of source rocks are probably pre-Paleocene in that the sand section volume percent appears to decrease in the older sections. These source rocks are in and out of oil window before the younger structural development and are in the gas expulsion stage during the development of late structural entrapment.

The presence of hydrocarbons in Pelican Field also fits this model of basin maturation. The Pelican half-graben appears to be an area of minimal volcanic seals in that none of the Pelican wells encountered significant volcanic sections. In addition, the Pelican structure appears to have developed during M. diversus. The hydrocarbon recoveries are primarily gas/condensate suggesting they may be products of source sections within the gas expulsion stage and are found above the equivalent Paleocene volcanic seal stratigraphy. Entrapment occurred late in the deep source section expulsion history and vertical migration was not impeded by volcanic seals. The limited volume of hydrocarbons within Pelican Field may be related to its small source basin, source rocks not too far to the south would begin to respond to migration paths away from the Pelican structure to the southwest.

The existence of hydrocarbons in the recent age structure at the Cormorant-1 well does not conform to the model of basin maturation that suggests older structures are necessary for significant hydrocarbon entrapment. However, it appears that the Cormorant hydrocarbons, being biodegraded and presently at depths too deep for the organism activity necessary for biodegradation, were probably trapped at an earlier age,