



Study of Gas Generation and Accumulation in Cenozoic Strata, Sri Lanka Eastern Offshore

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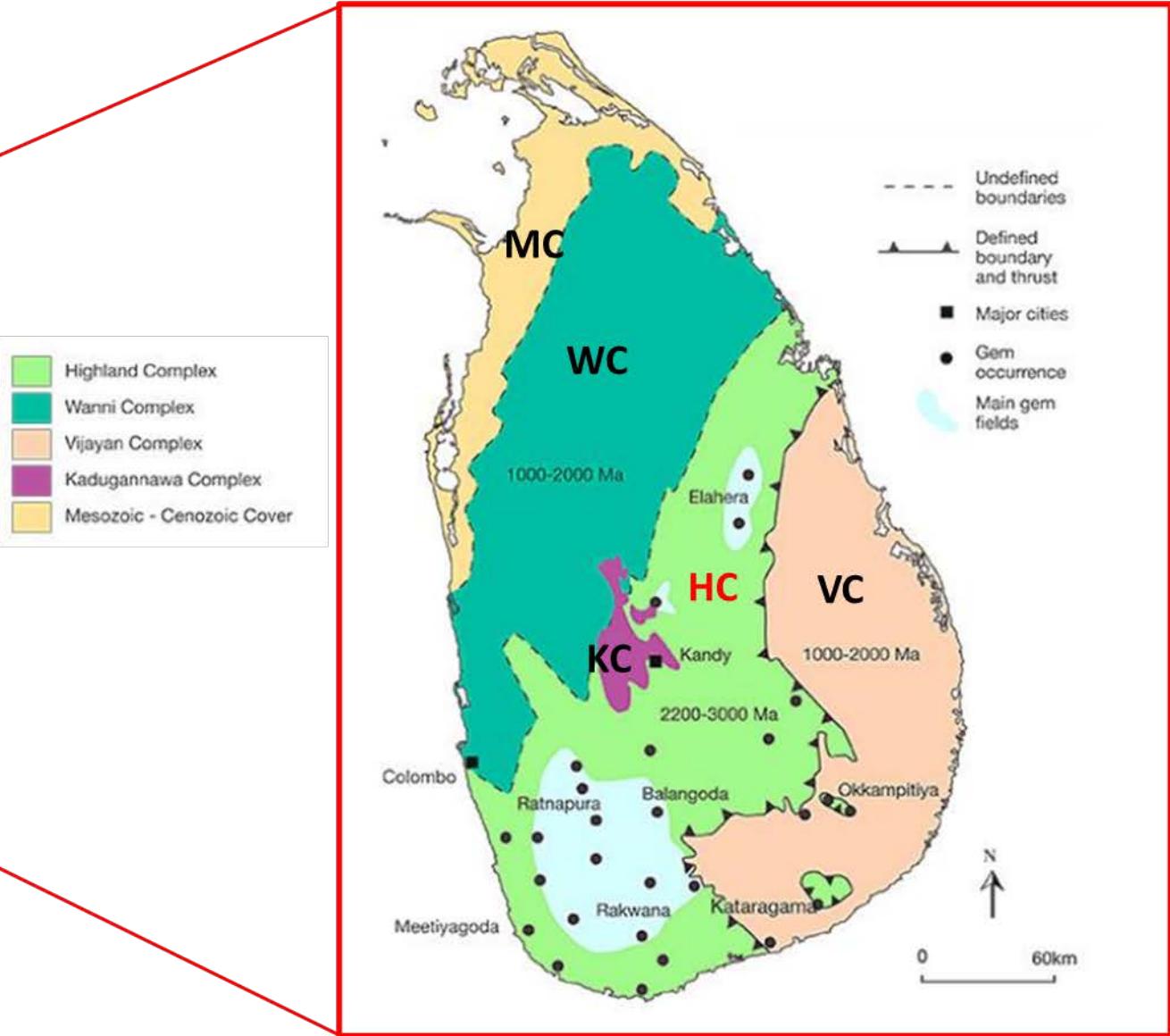
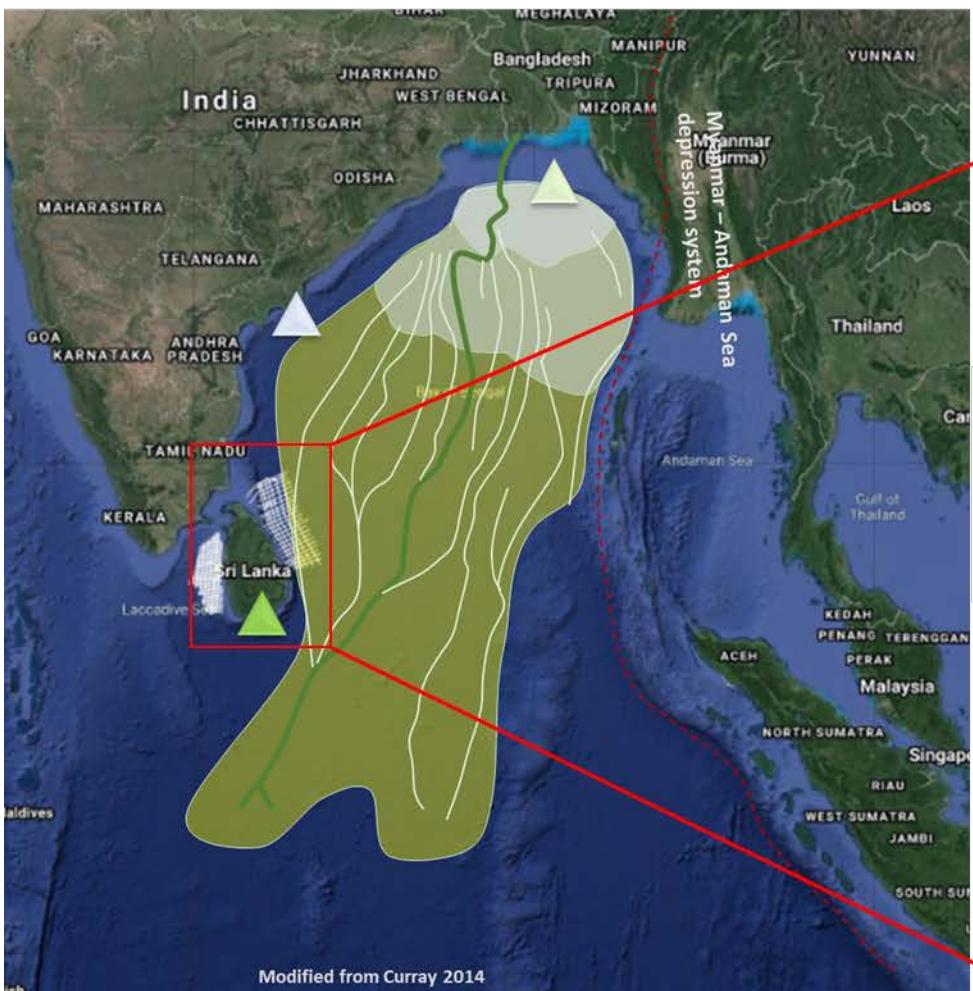


Agenda

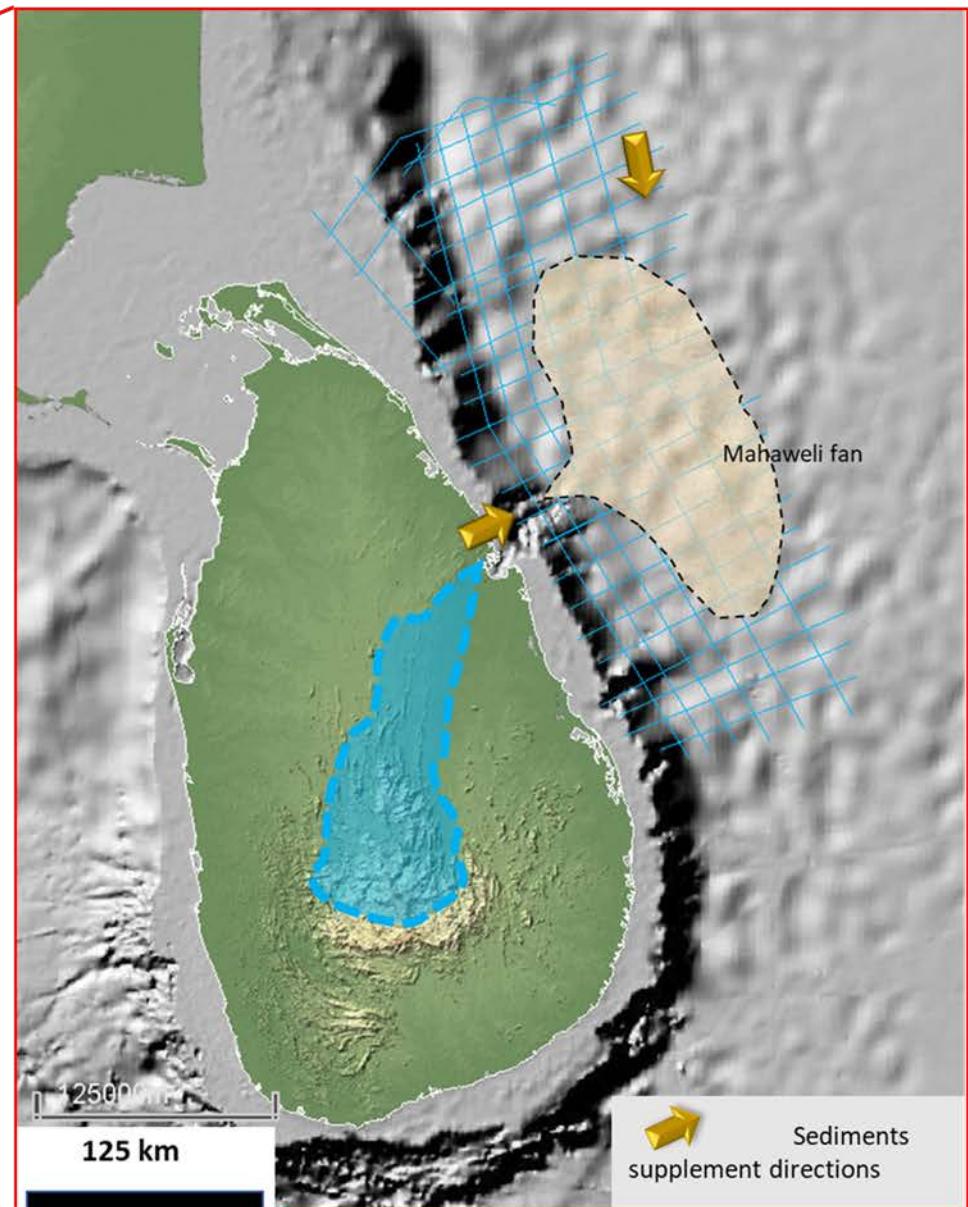
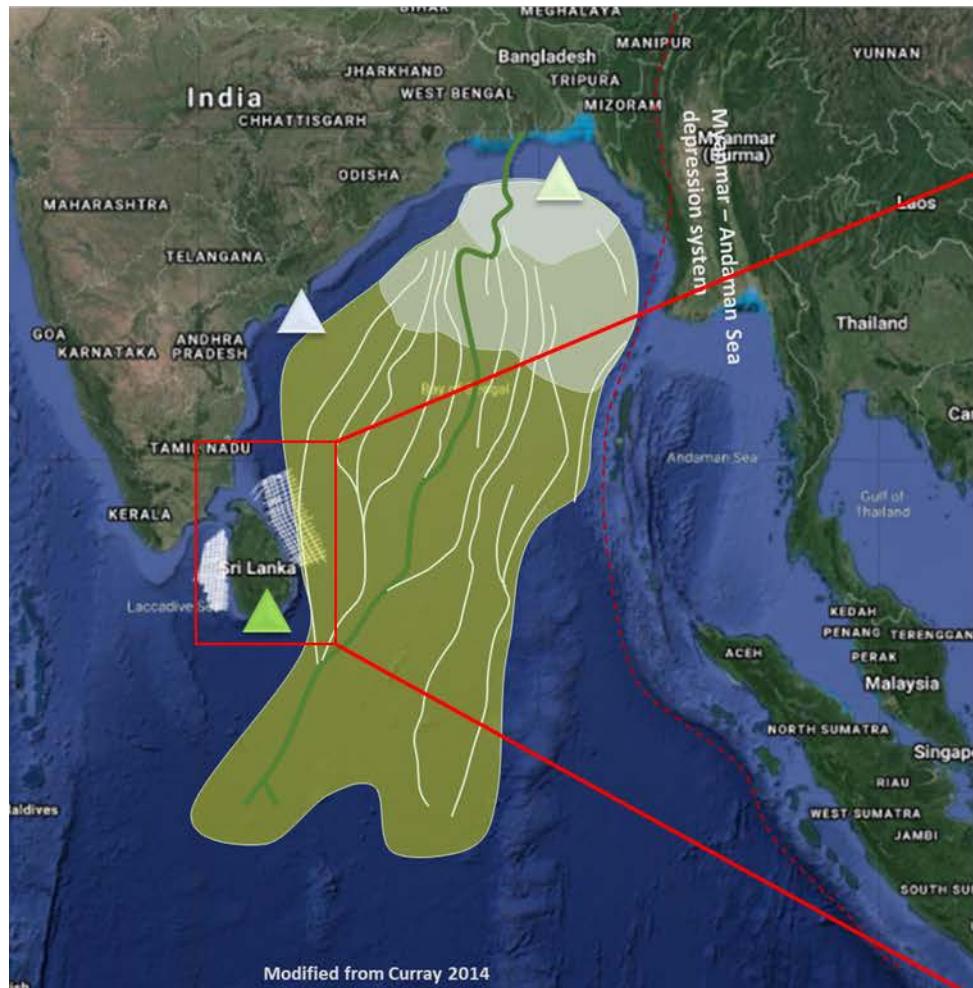
- Regional Overview
- Observation and Interpretation
- Petroleum System Modeling (PSM)
- Results – Test 01 & 02
- Summary



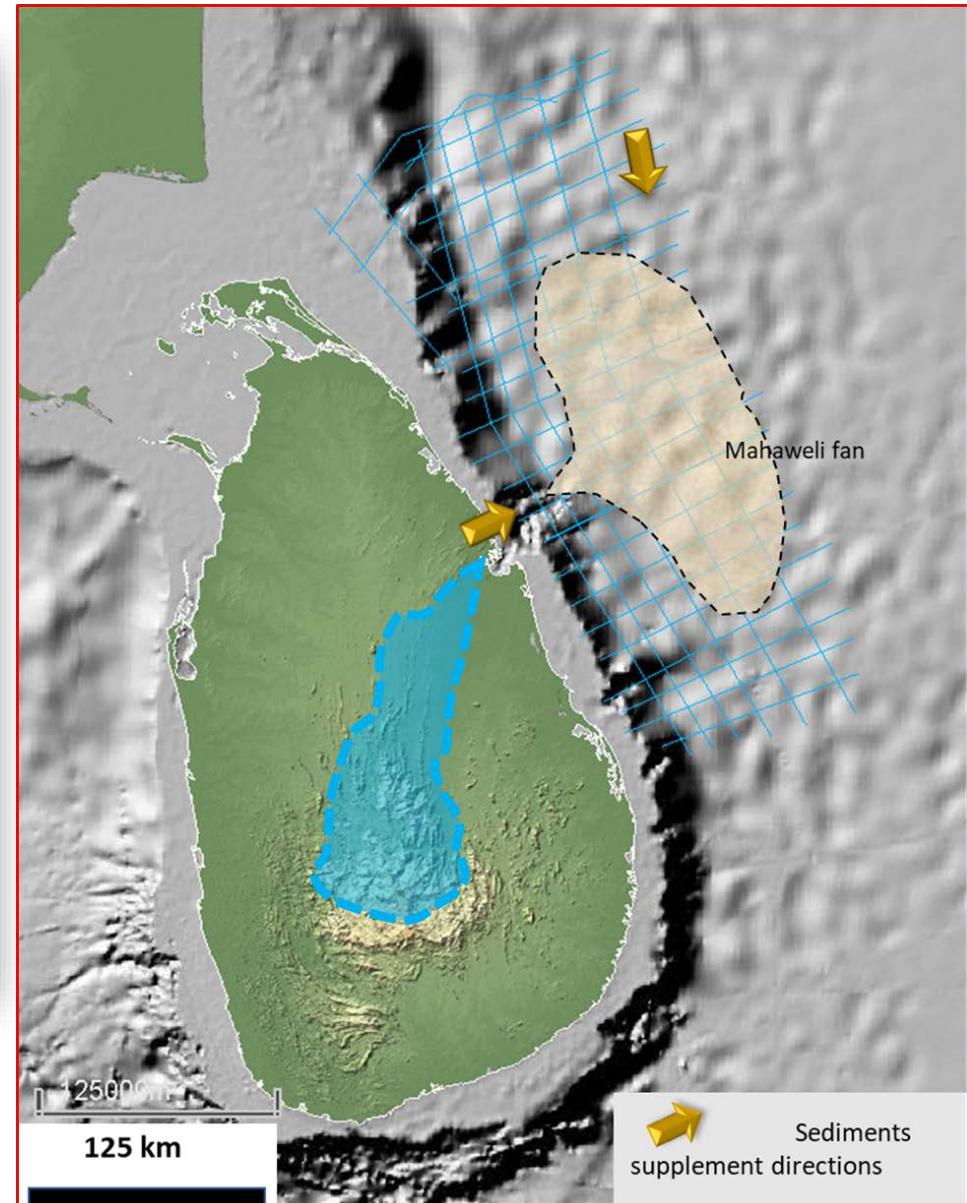
Regional Overview – Sri Lanka surface geology



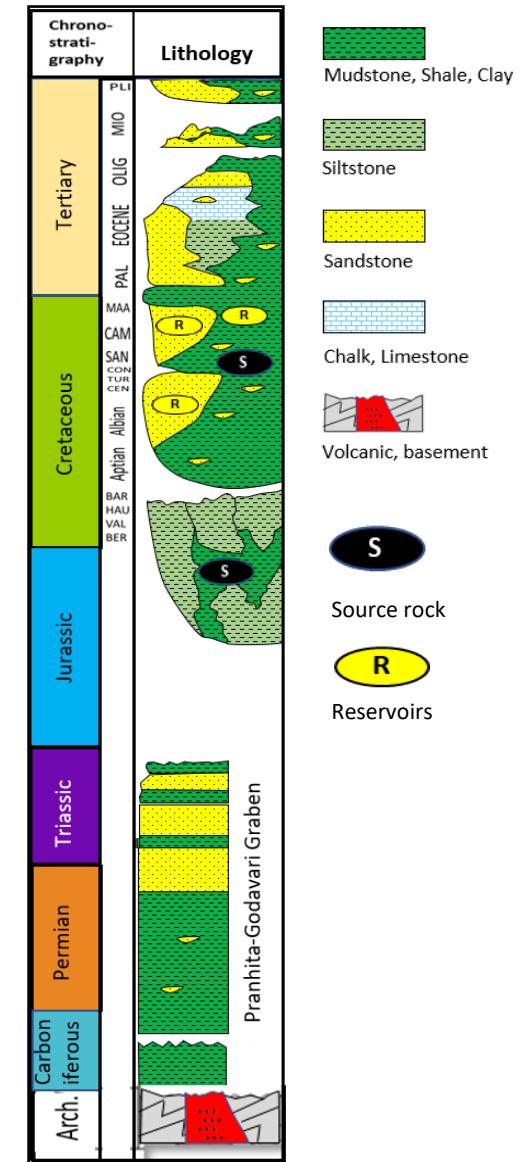
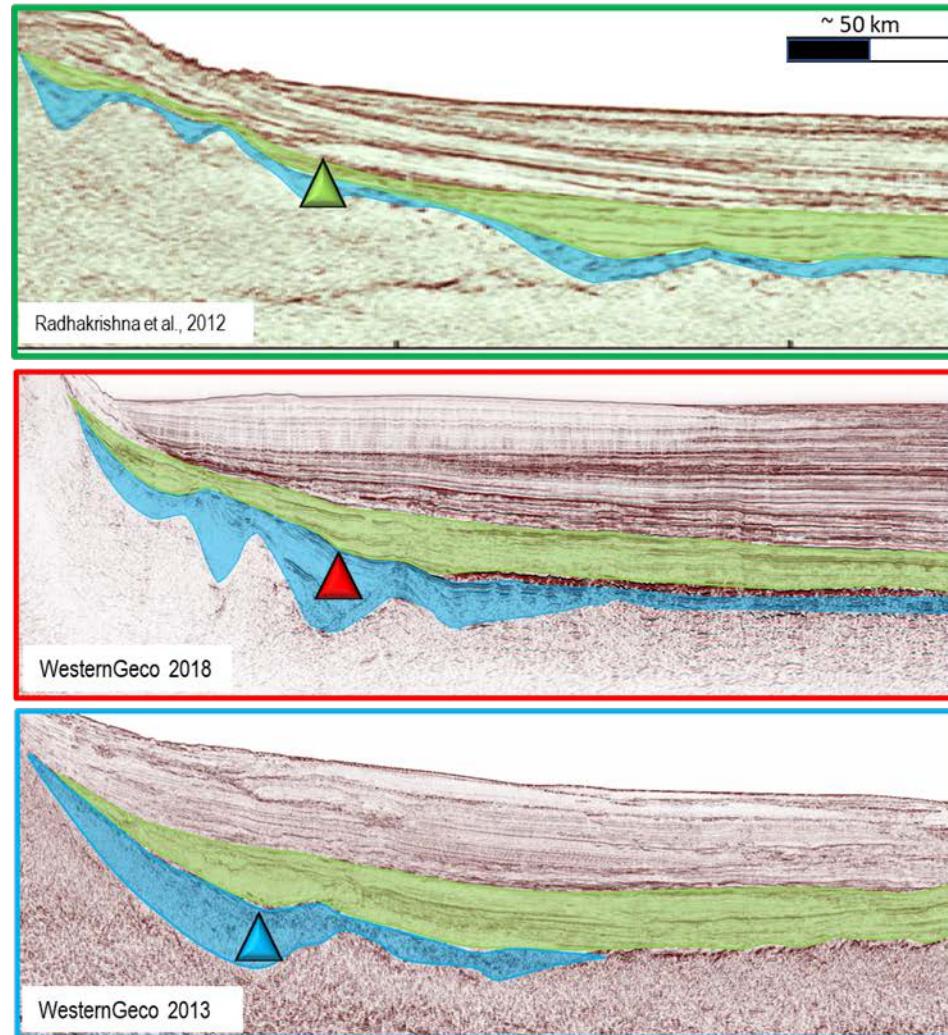
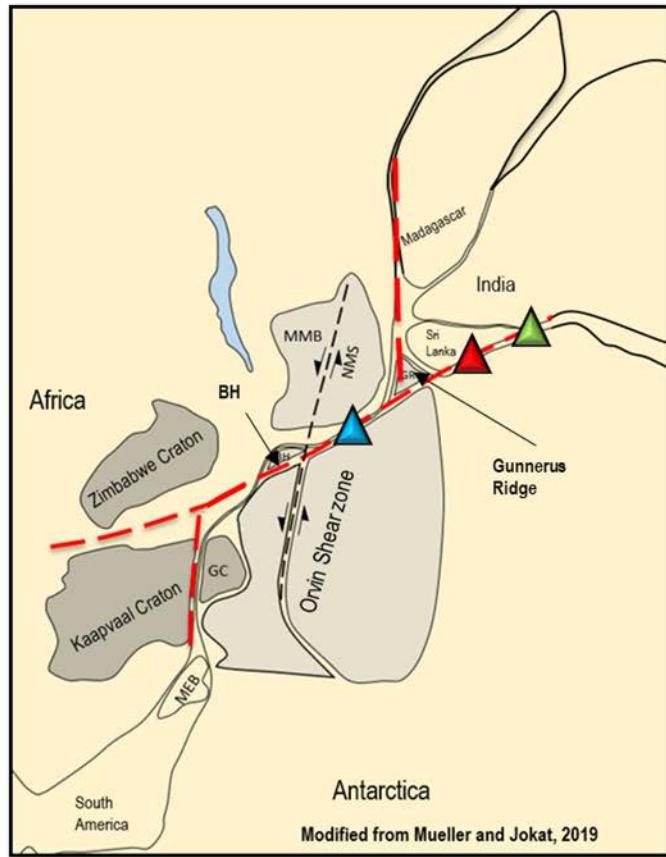
Regional Overview – Sediment supply & Mahaweli fan



Regional Overview – Sediment supply & Mahaweli fan



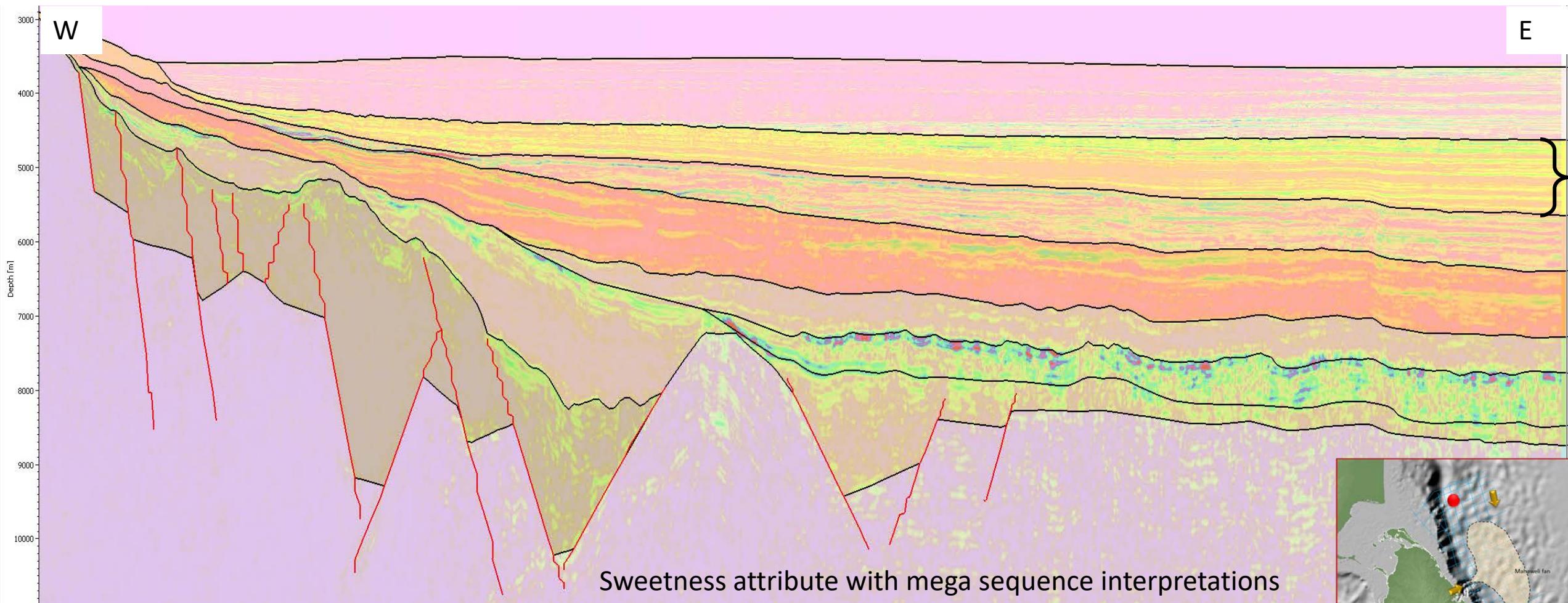
Regional Overview – Plate reconstruction/observations



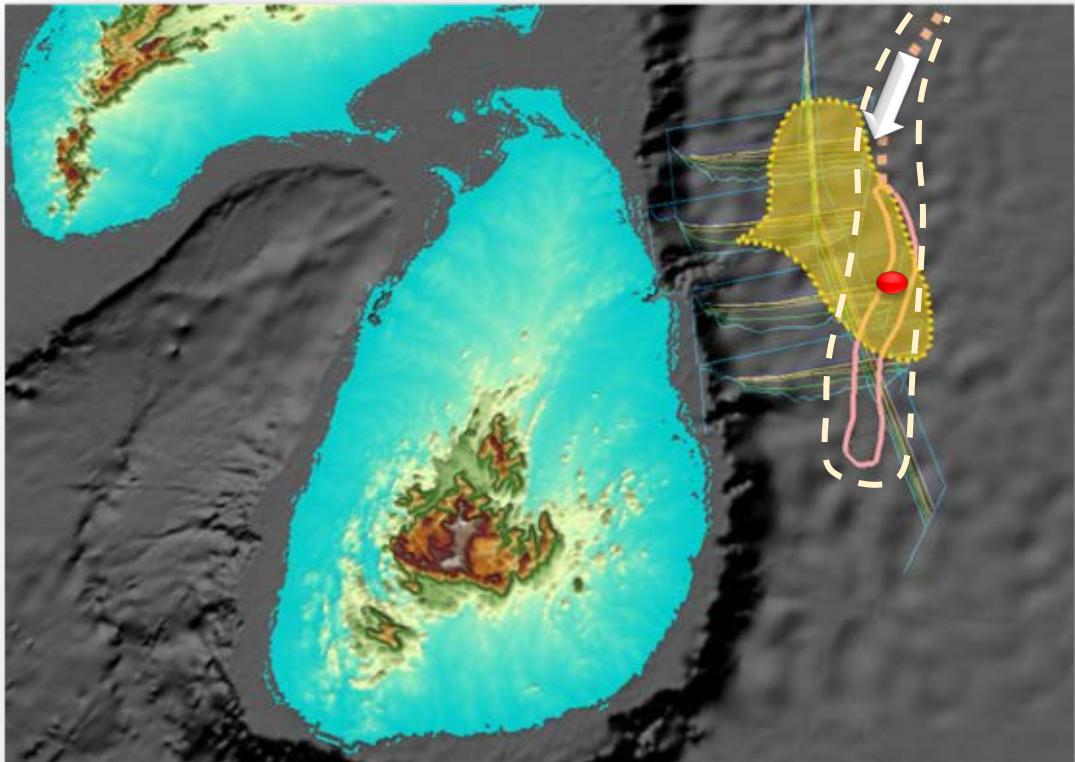
Modified from: IHS; Radhakrishna et al., 2012; Mahan Jane, 2014; Reeves, 2018



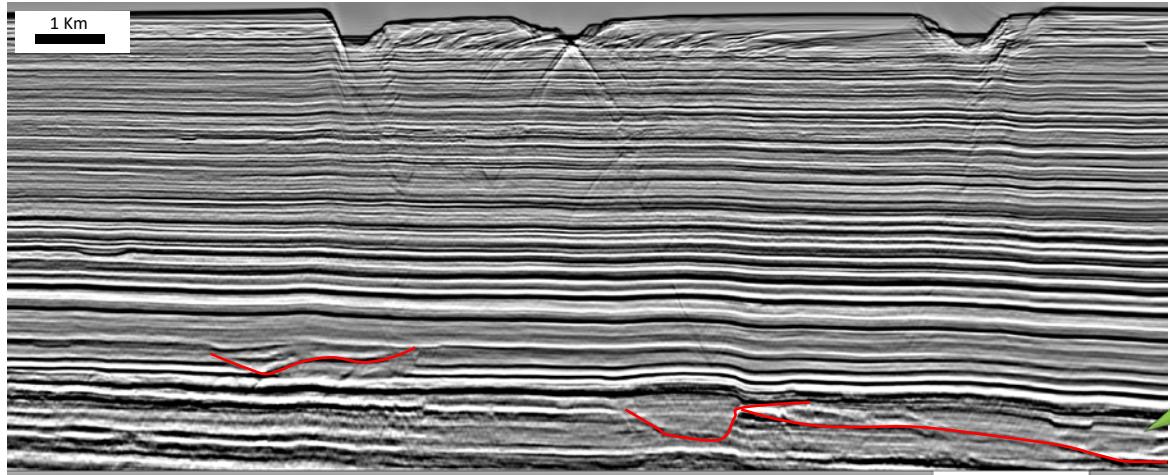
Observations & Interpretation – Northern E. Lanka



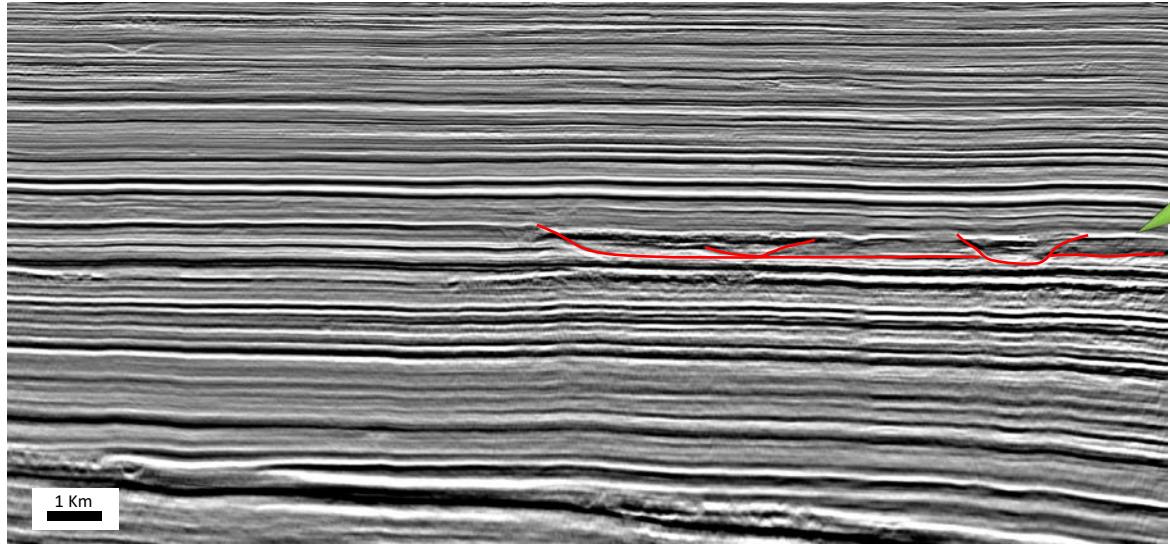
Observations - E. Lanka



Marine canyons Present day seabed

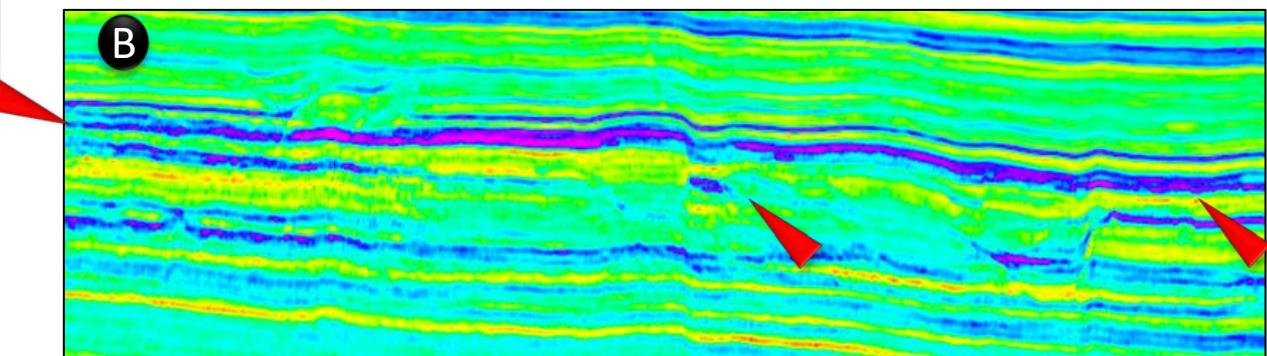
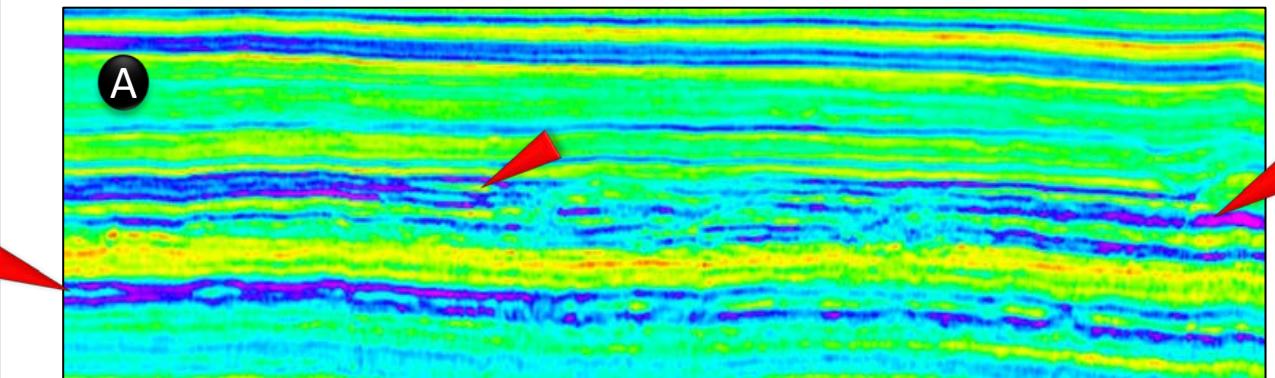
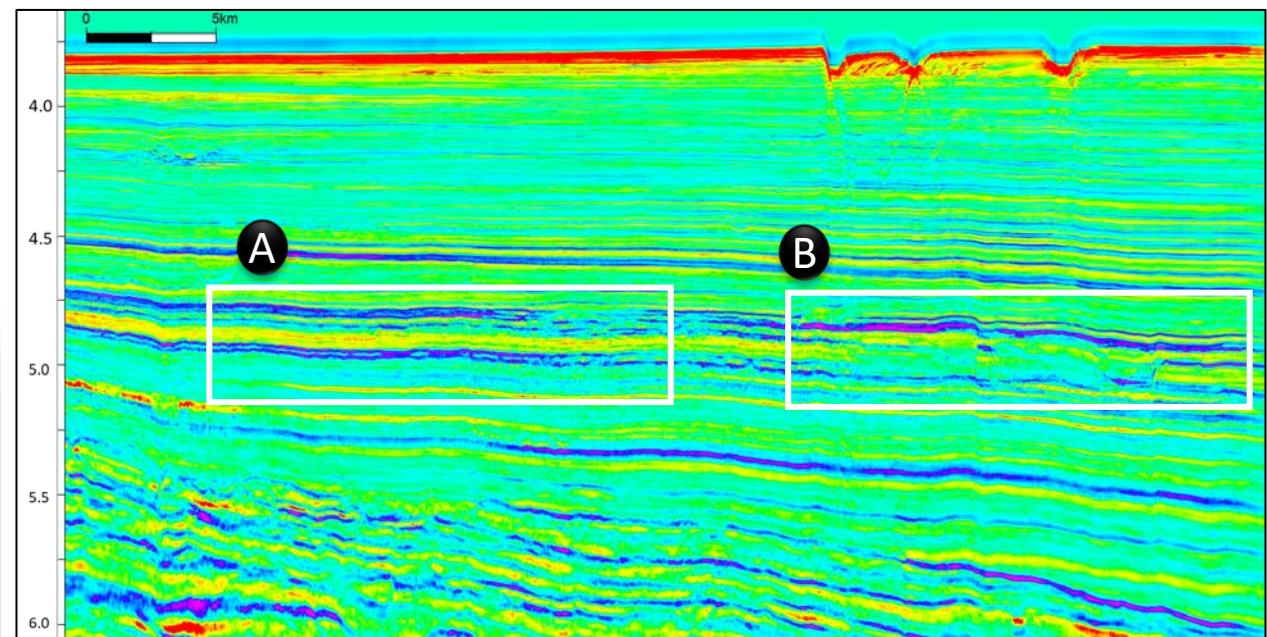
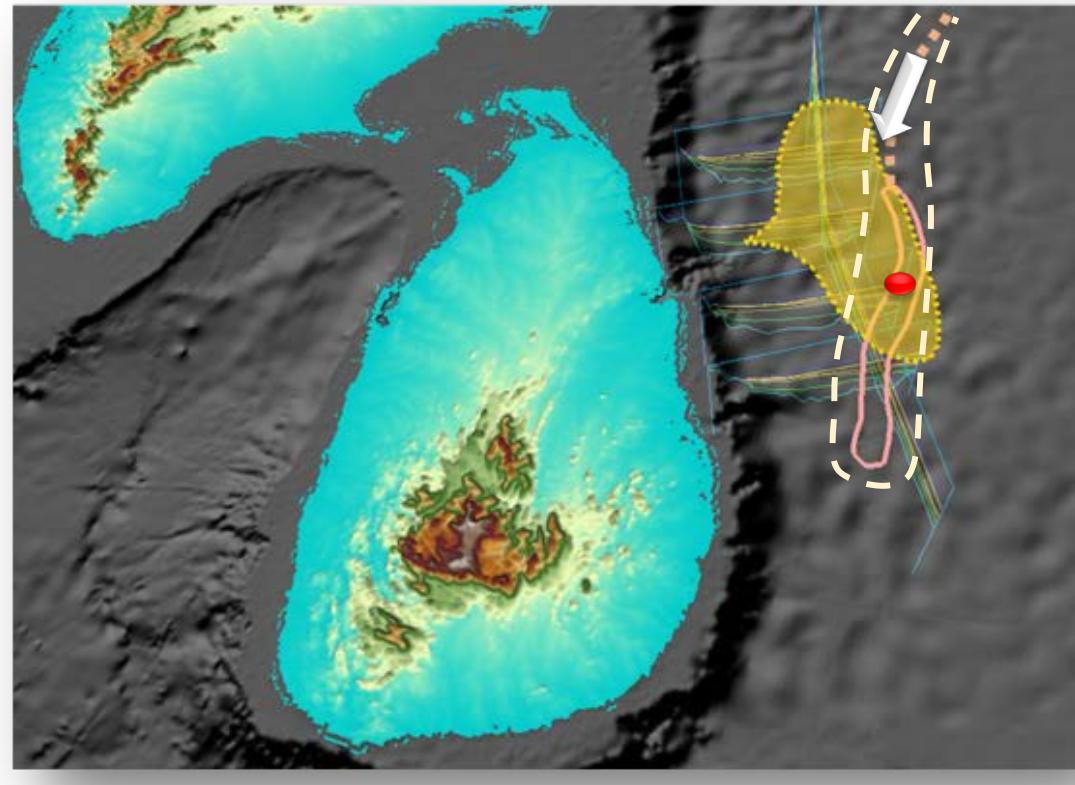


W Marine canyons paleo-seabed

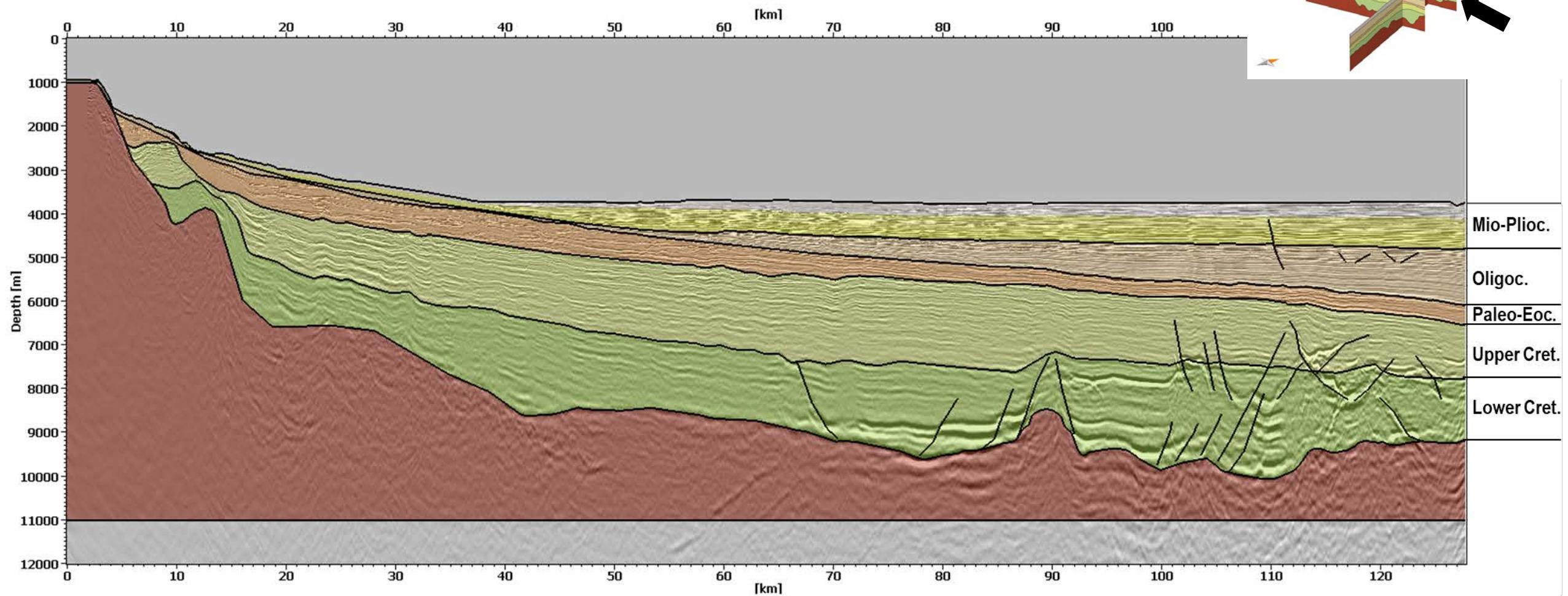
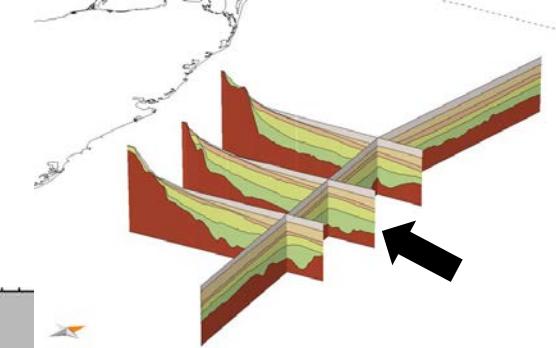


Source are from Bay of Bengal

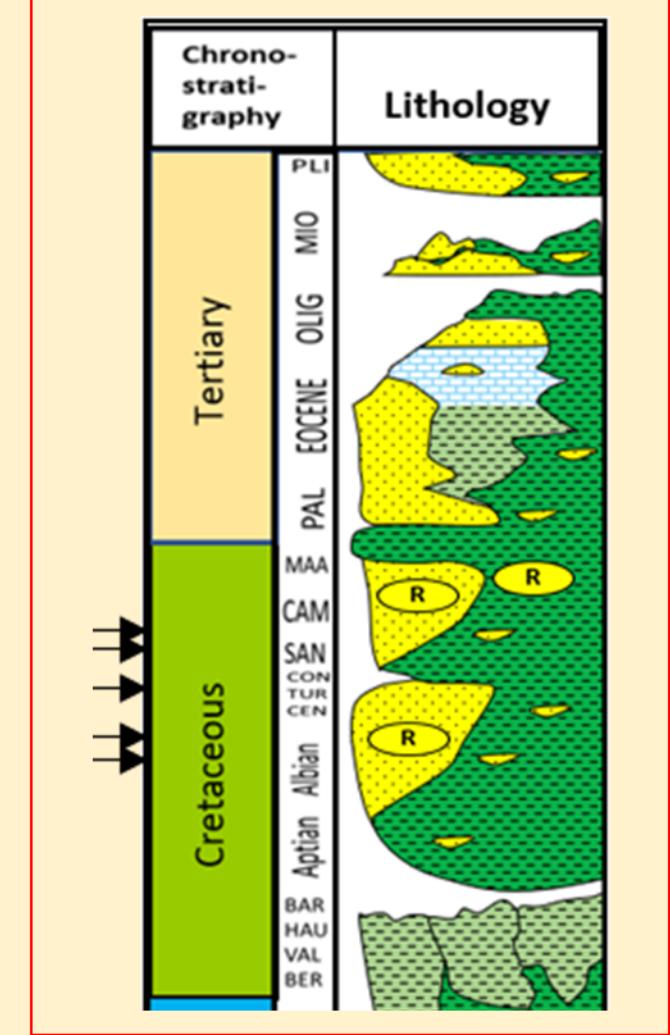
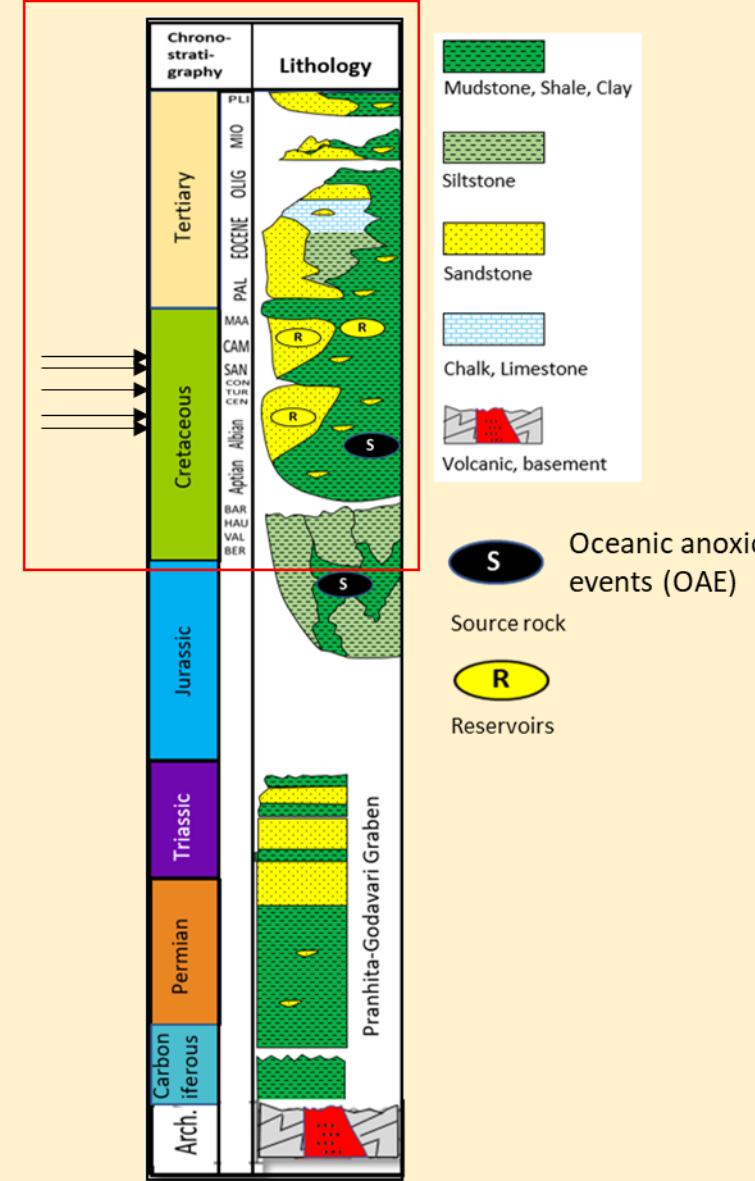
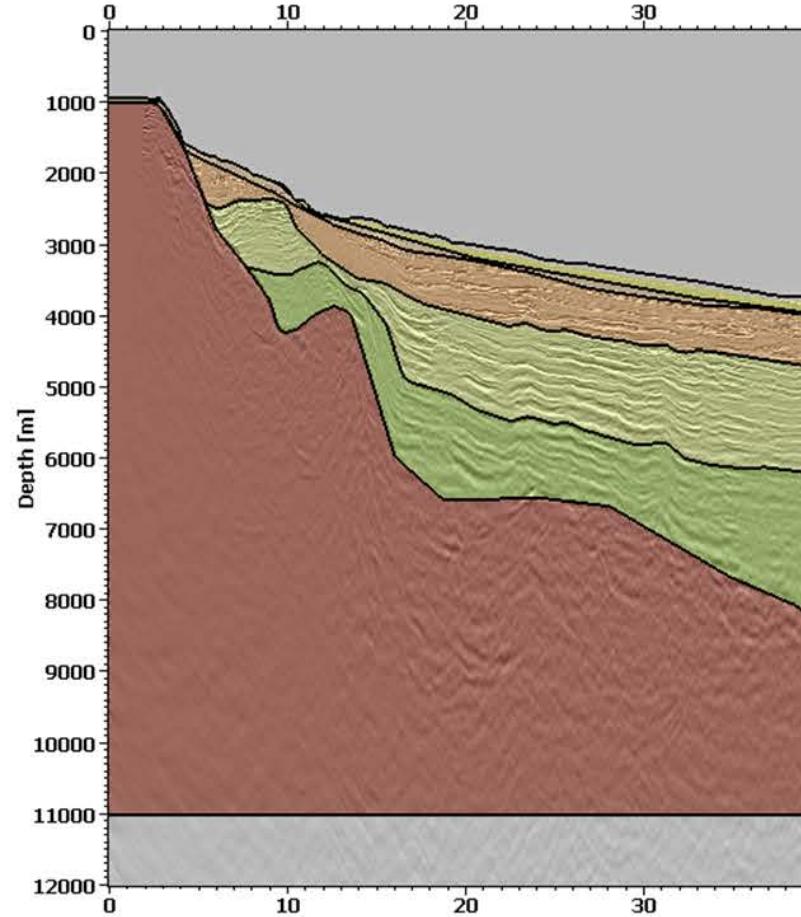
Observations – E. Lanka



Interpretations – E. Lanka

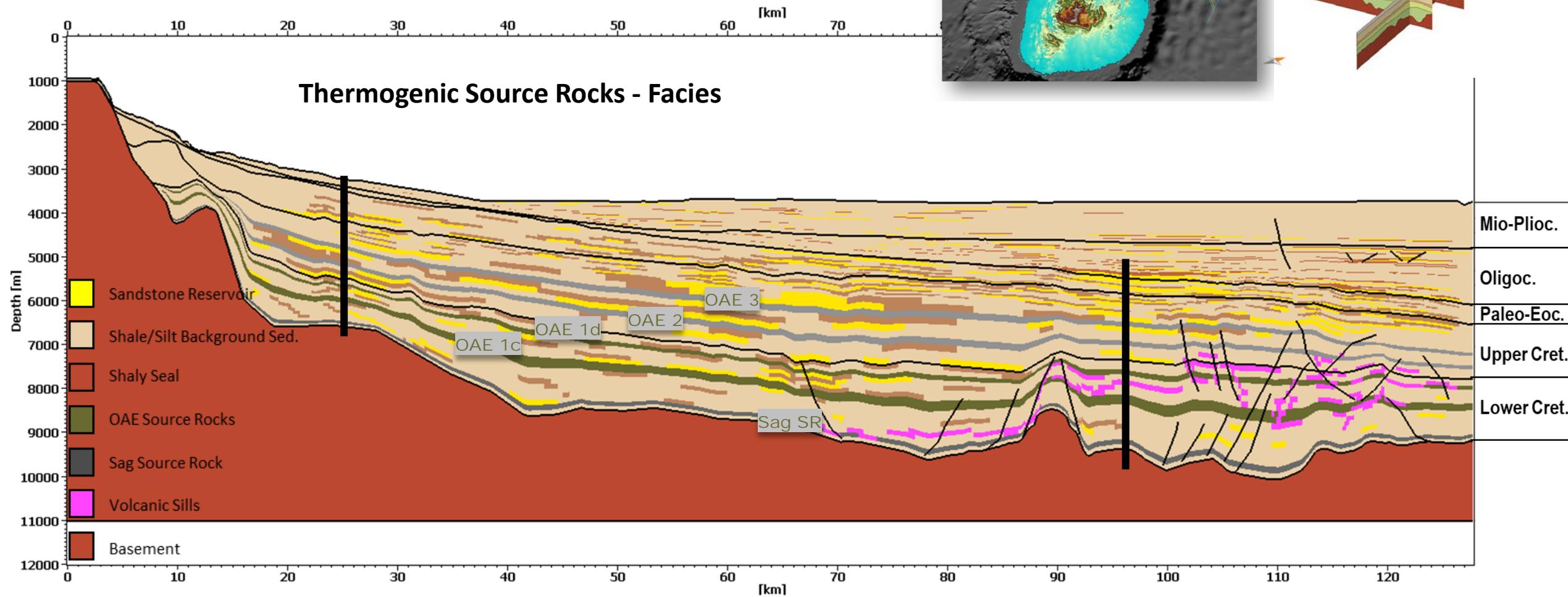
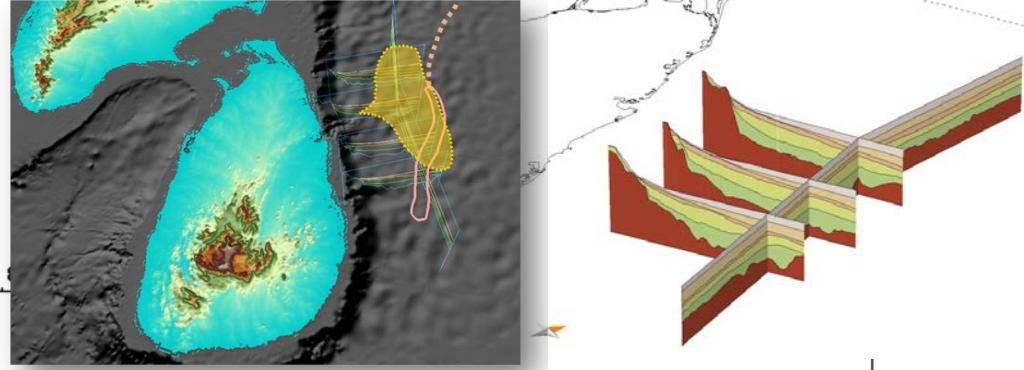


Interpretations –



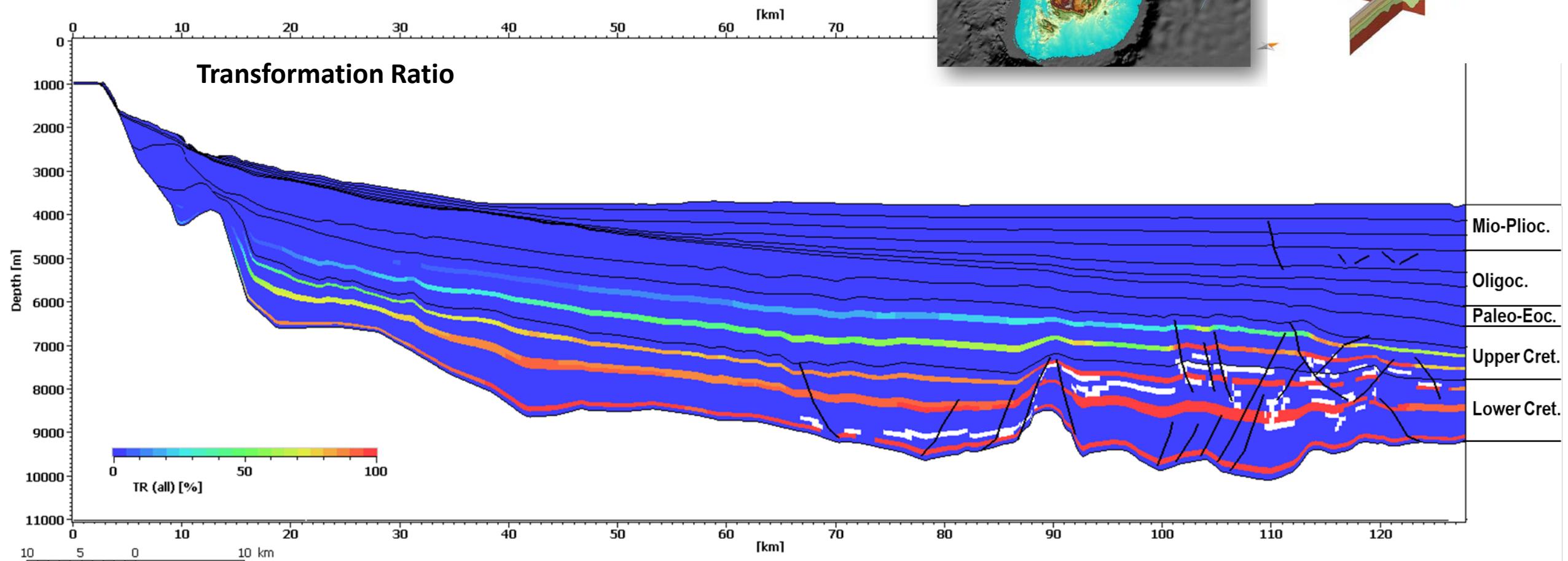
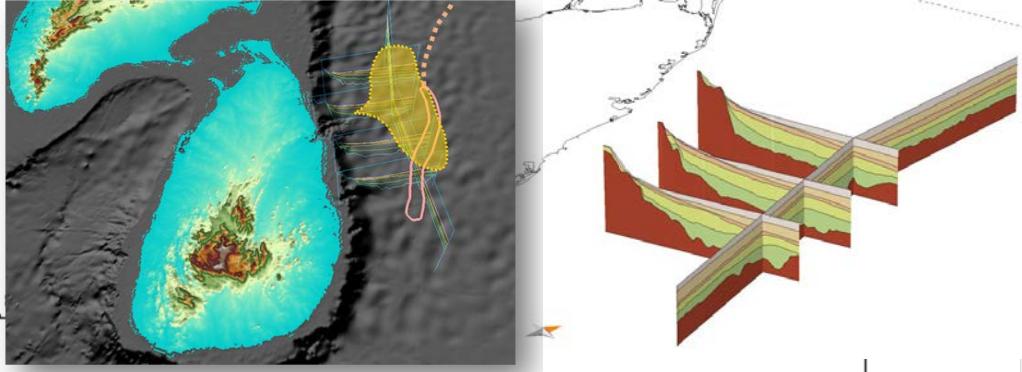
Zoom in: OAE source rocks

Petroleum system modeling (PSM)

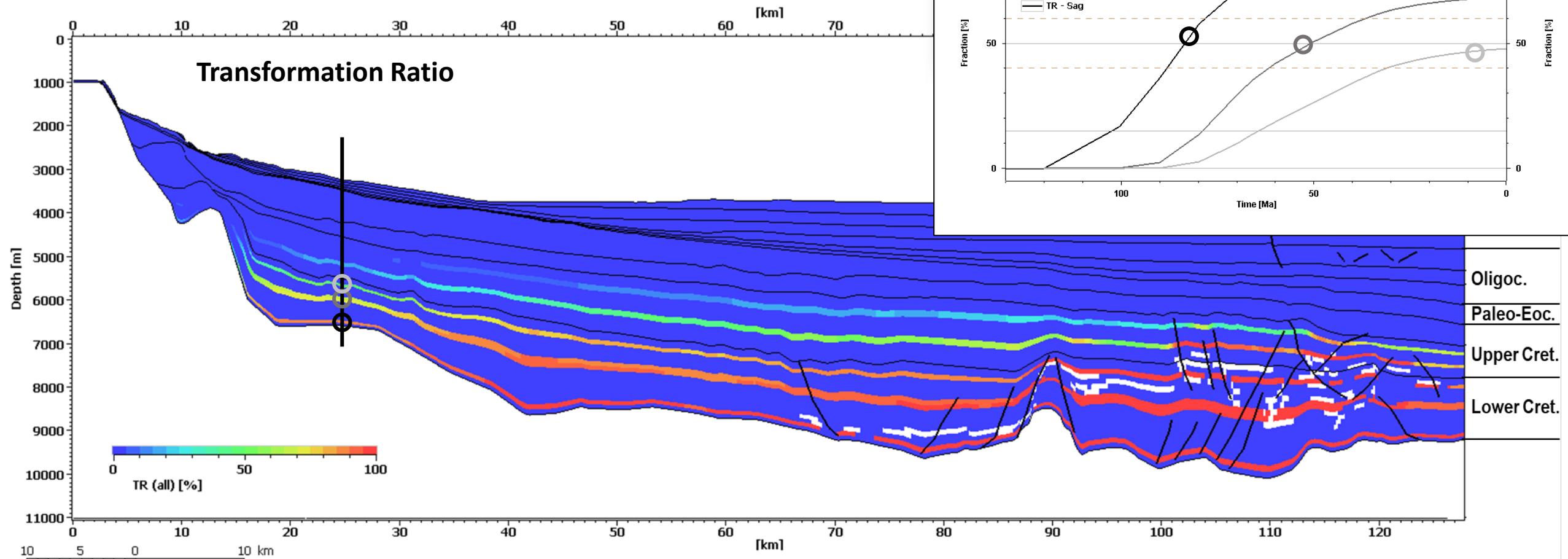


OAE Source Rocks – open marine, Type II – $\text{TOC}_o=2 \text{ wt\%}$, $\text{HI}_o=500 \text{ mgHC/gTOC}$
Sag Source Rock – restricted marine, Type II – $\text{TOC}_o=2 \text{ wt\%}$, $\text{HI}_o=500 \text{ mgHC/gTOC}$

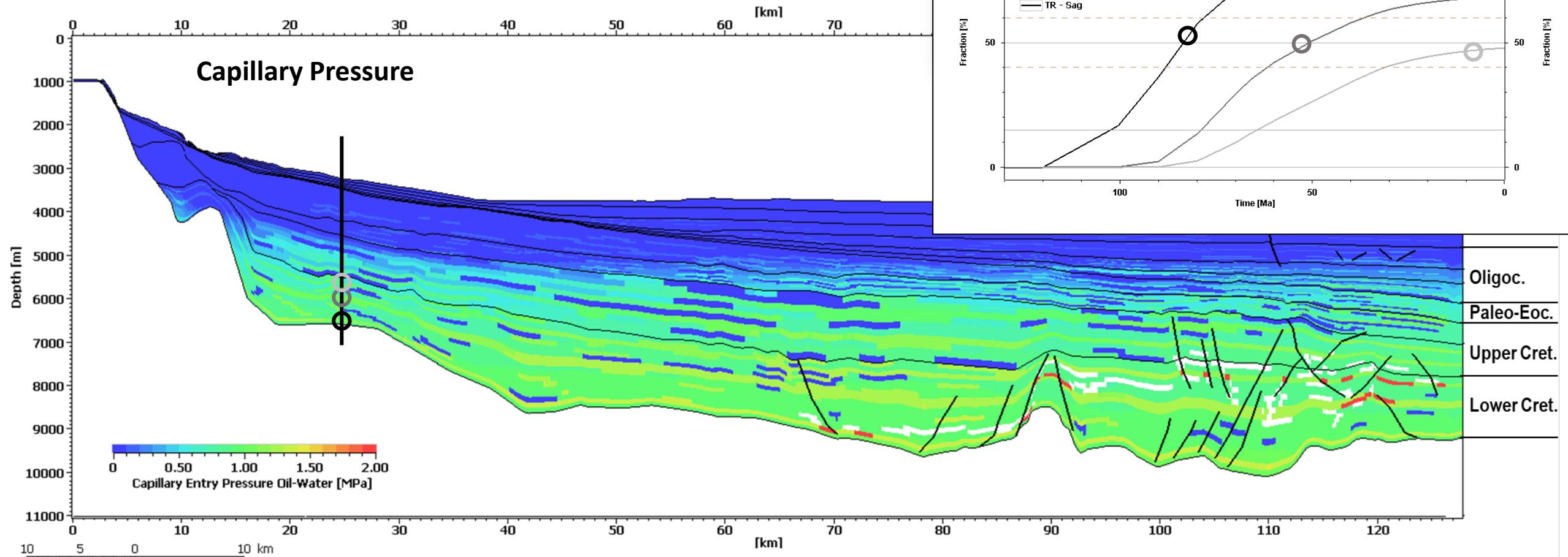
PSM – test 01: volcanic intrusion



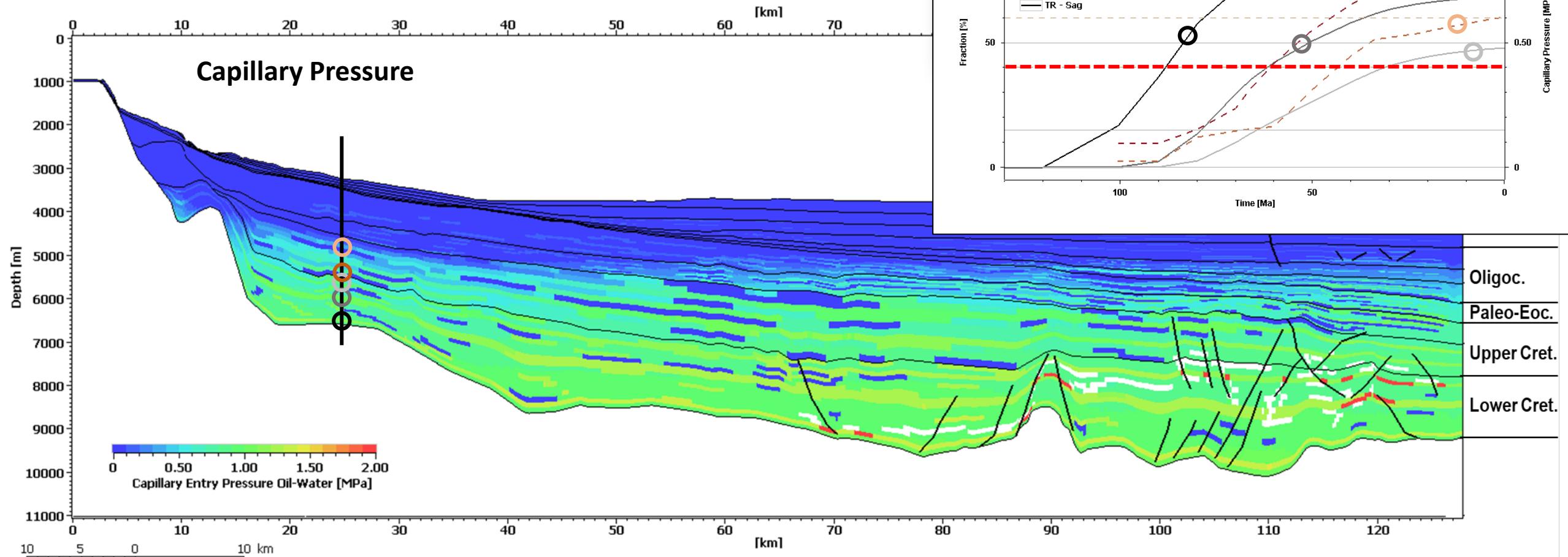
PSM – test 01: volcanic intrusion



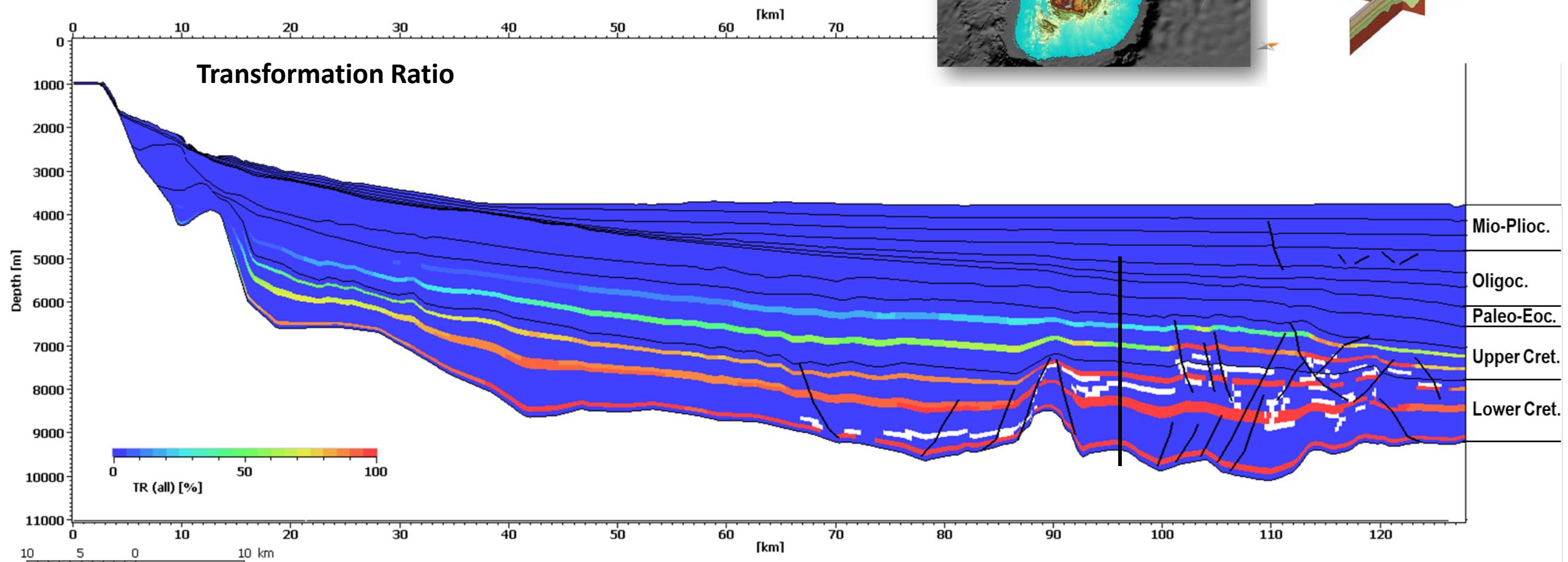
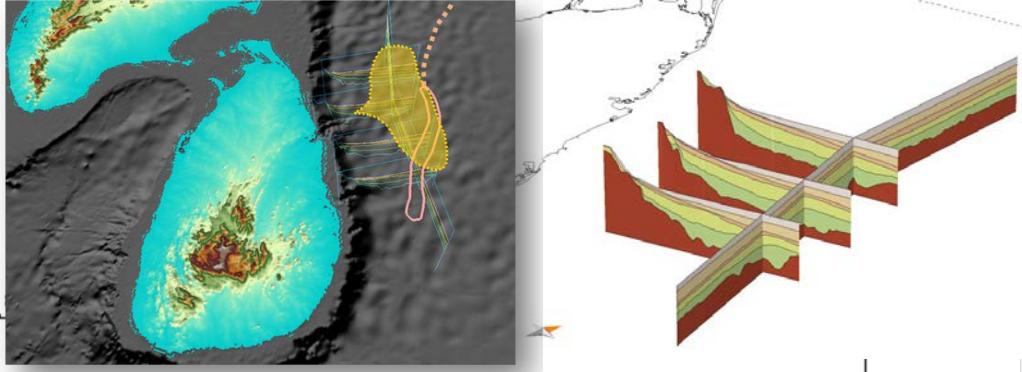
PSM – test 01: volcanic intrusion



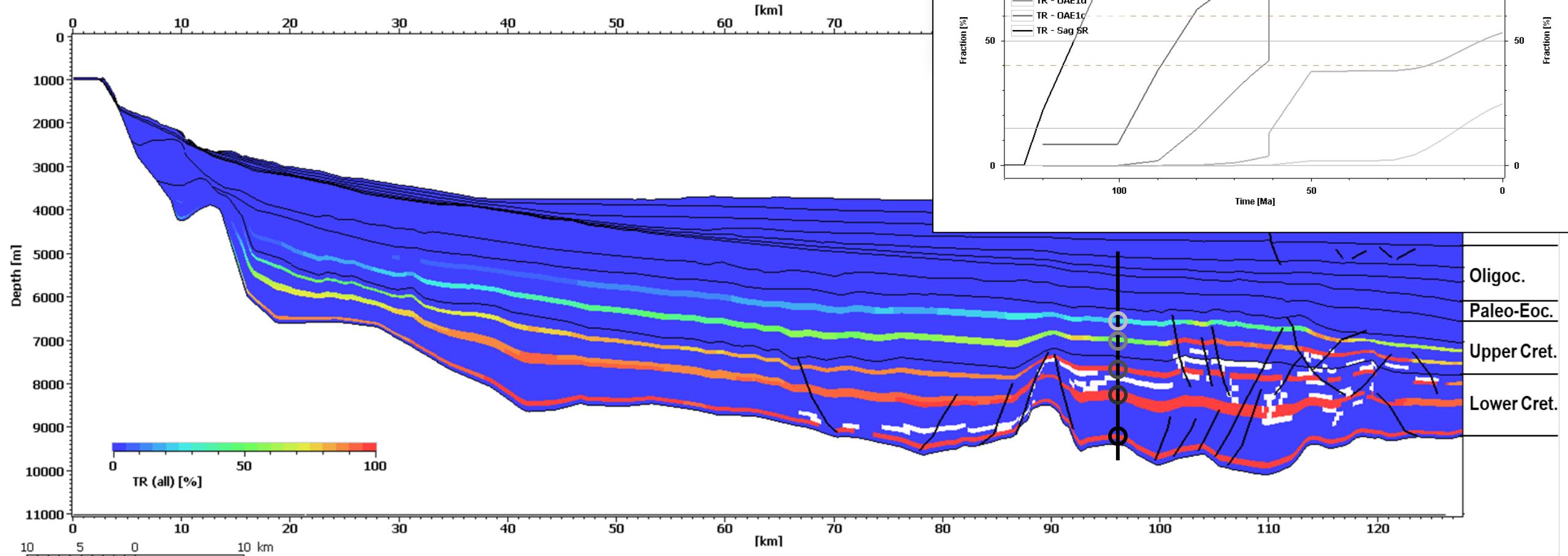
PSM – test 01: volcanic intrusion



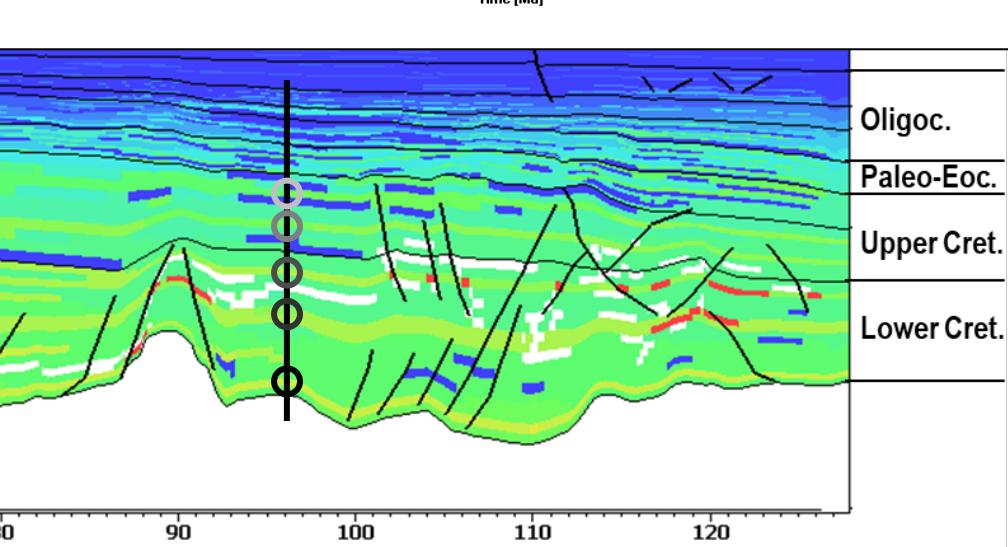
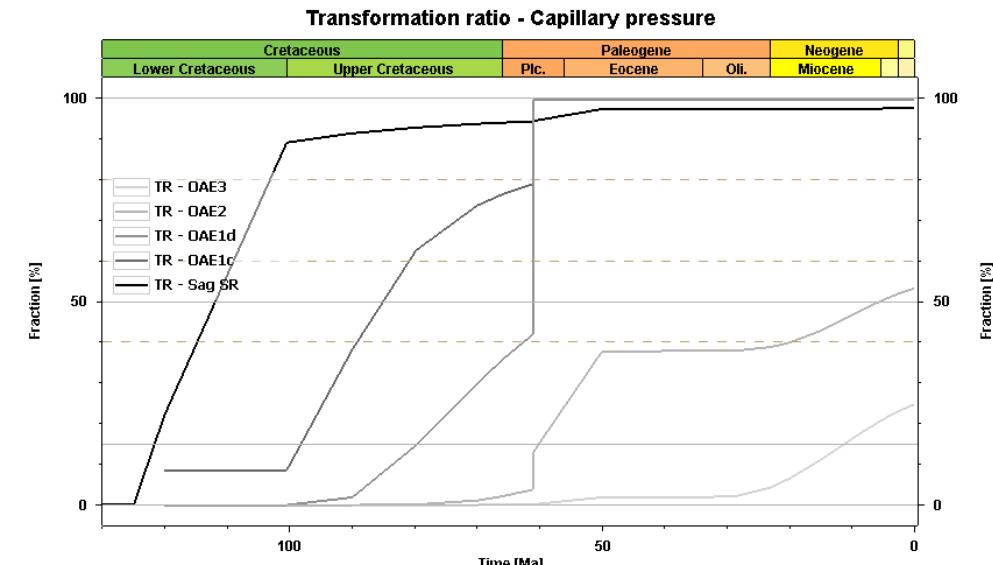
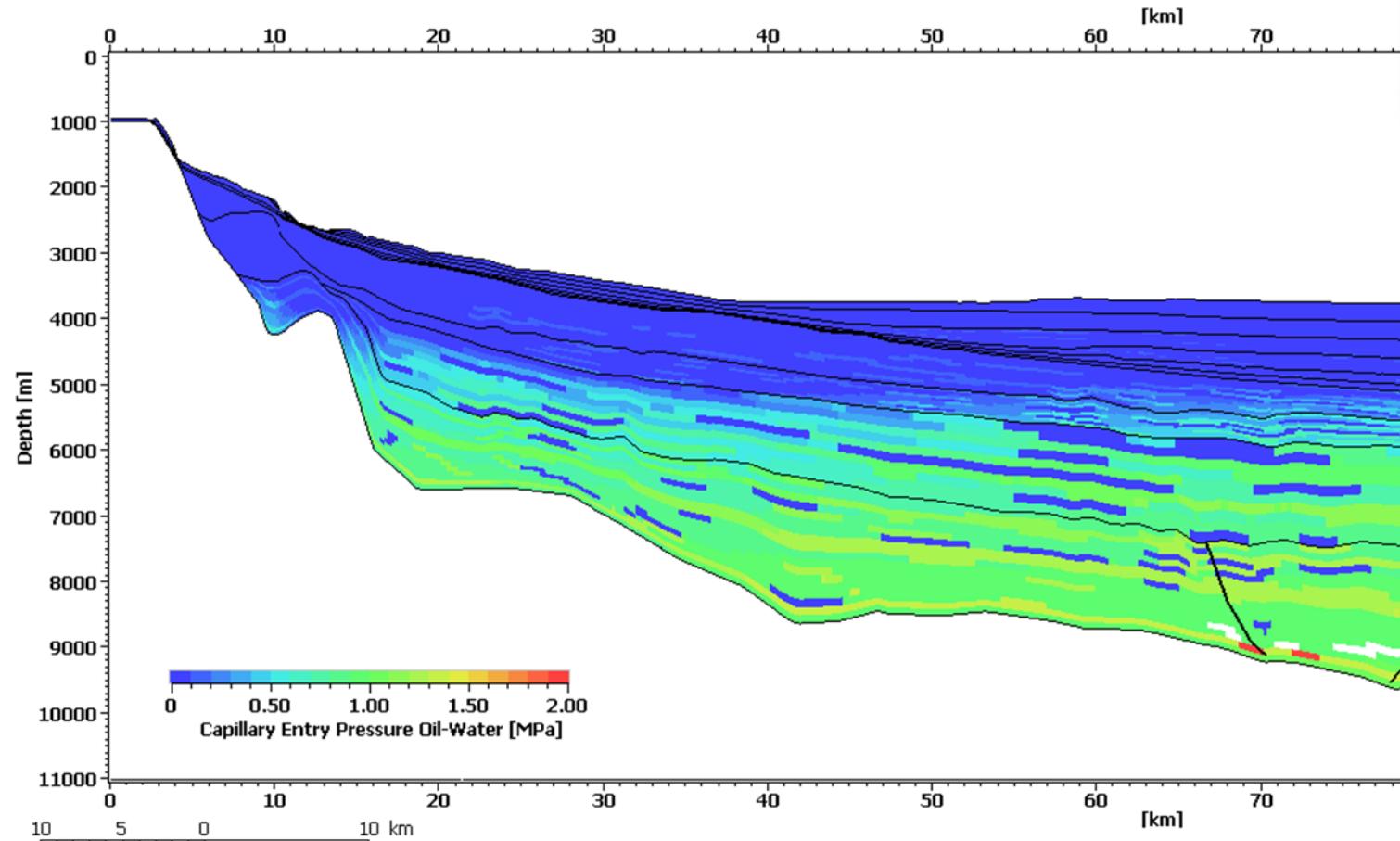
PSM – test 01: volcanic intrusion



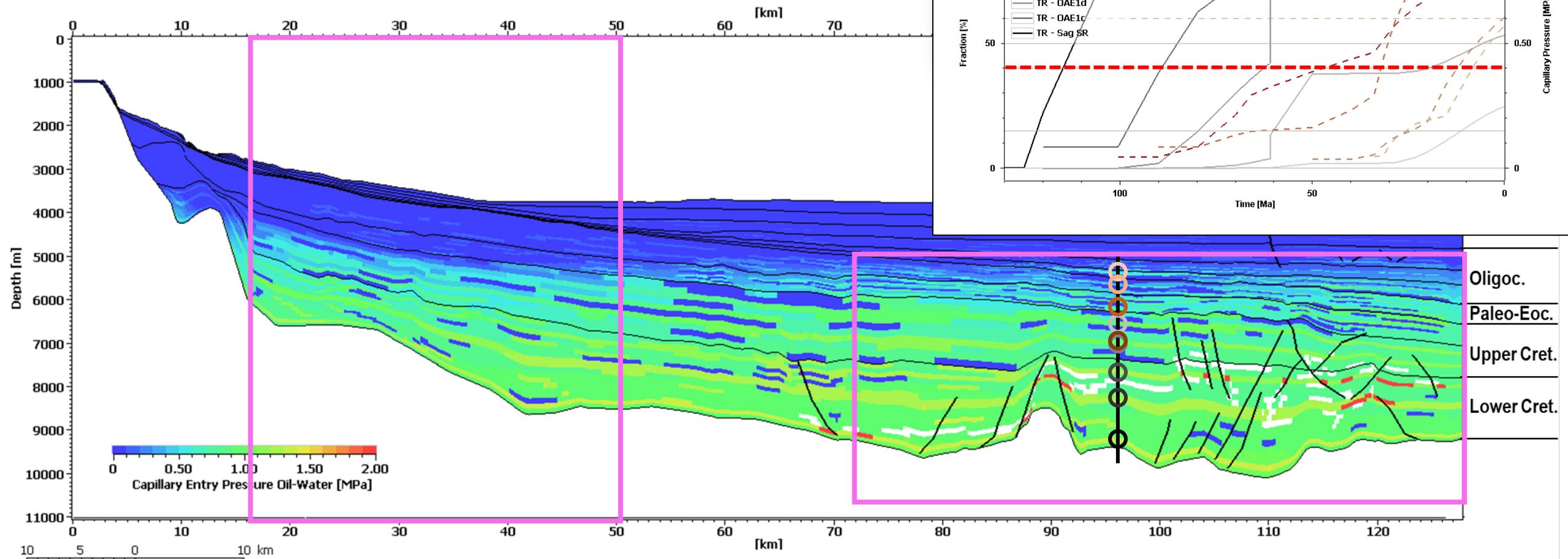
PSM – test 01: volcanic intrusion



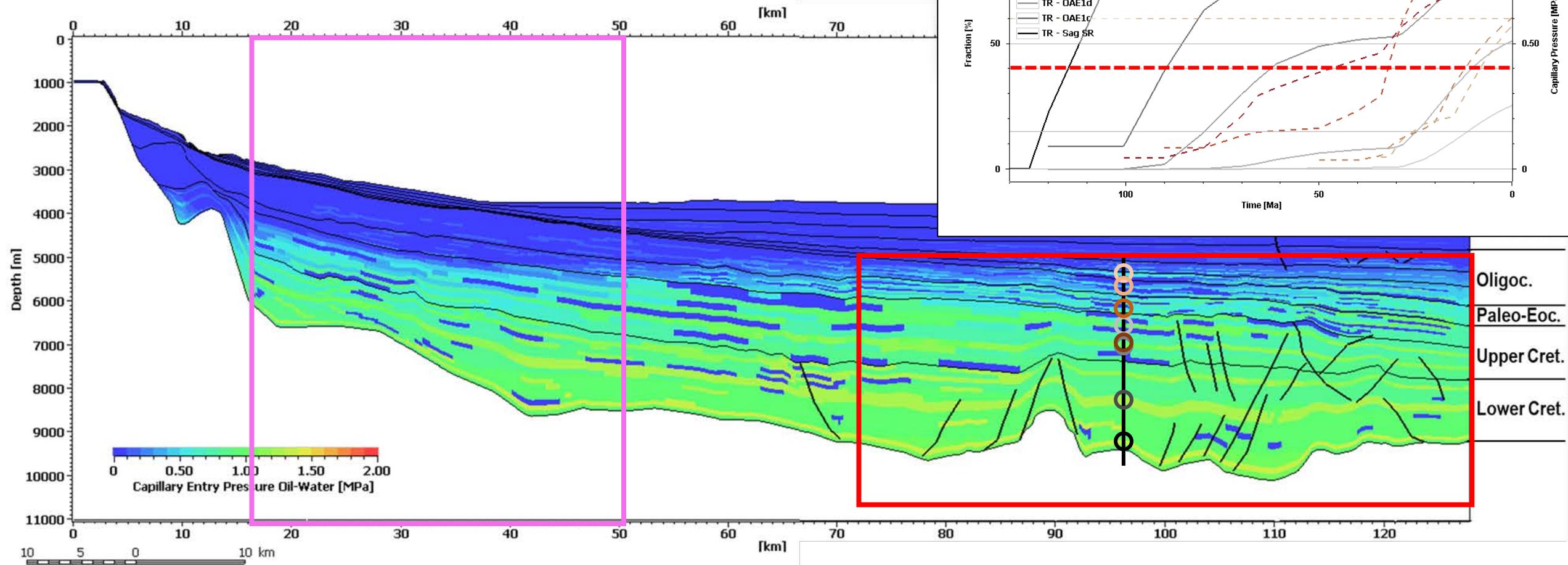
PSM – test 01: volcanic intrusion



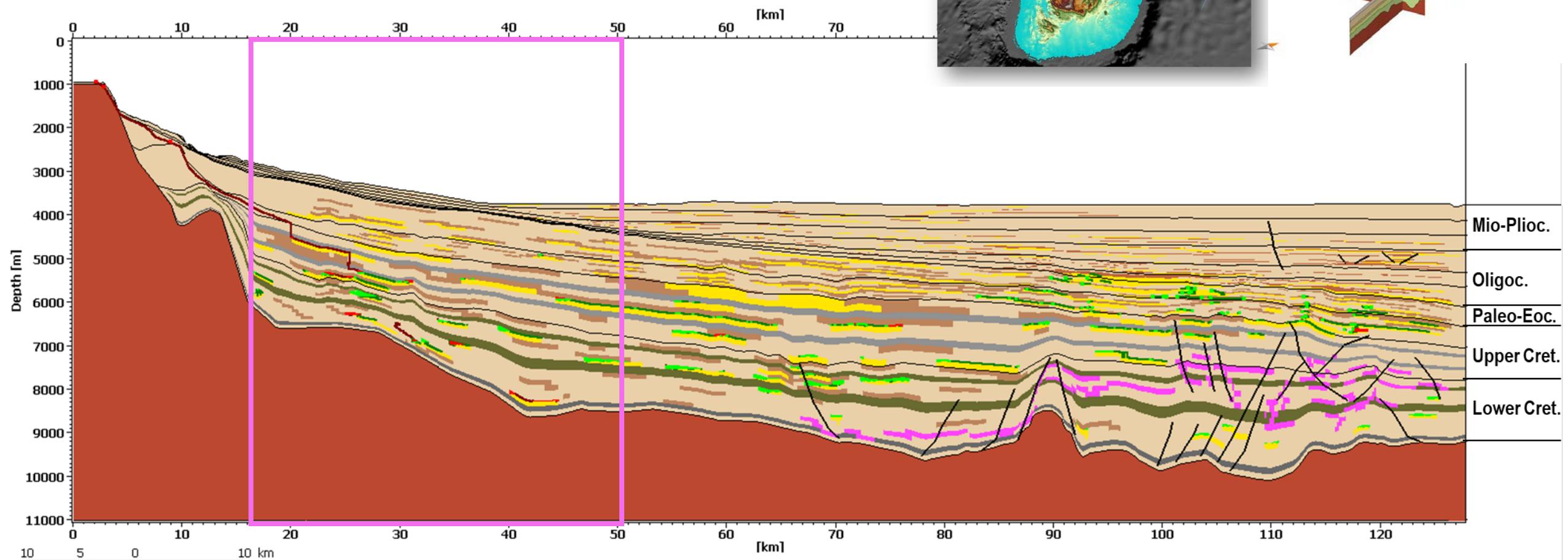
PSM – test 01



PSM – test 02

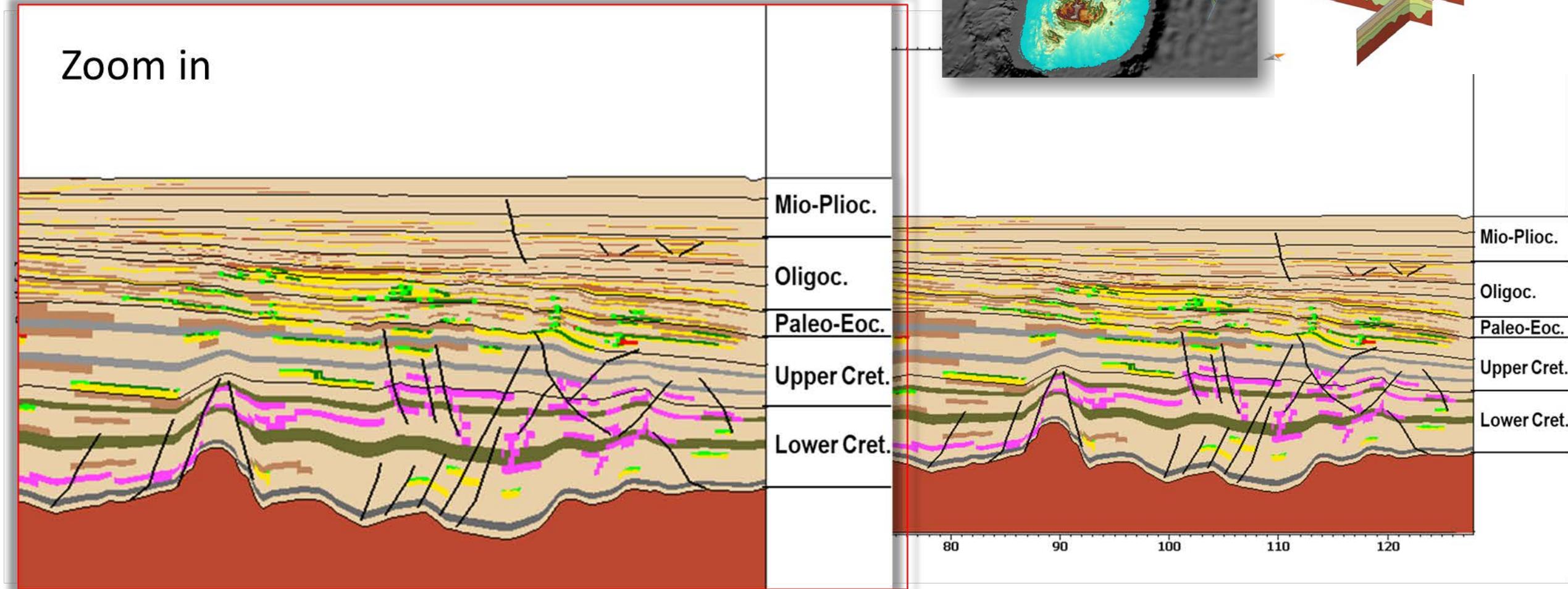


PSM – Accumulation



PSM – Accumulation

Zoom in

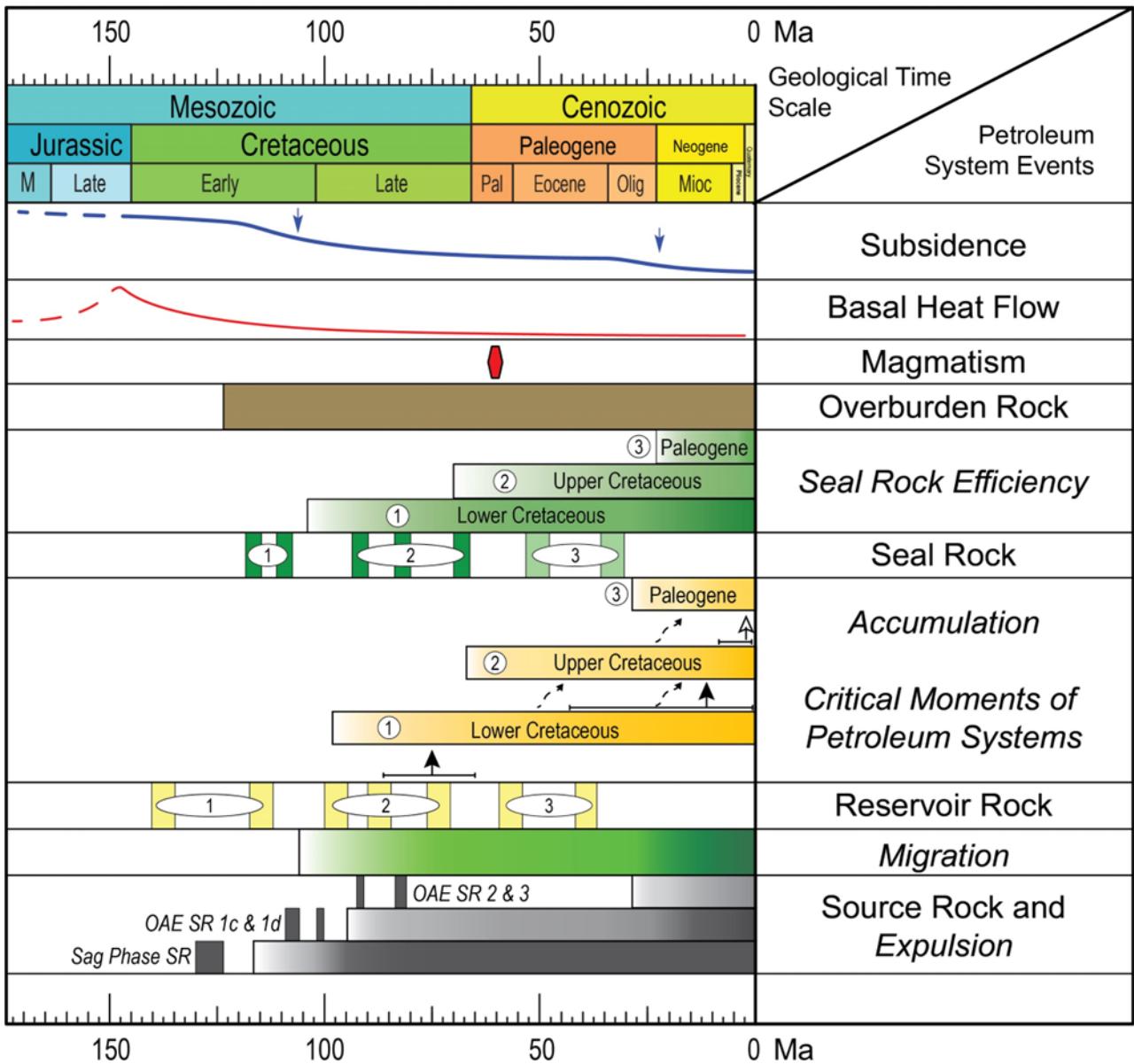


Summary

- Offshore East Lanka Basin:
A must to be tested basin
- Thermogenic occurrence in this study
- Subsidence controls timing of hydrocarbon expulsion and sealing efficiency
- Late pulse of Oligocene to recent burial favorable for Late Cretaceous and Paleogene plays



Ultra-deepwater – Mahaweli and Lower Bengal Fan systems



Thank you !

Questions ?

