



# Origin and evolution of the Alpar Canyon System, HUNGARY

GY. JUHÁSZ\* , GY. POGÁCSÁS\*\* , I. MAGYAR \*

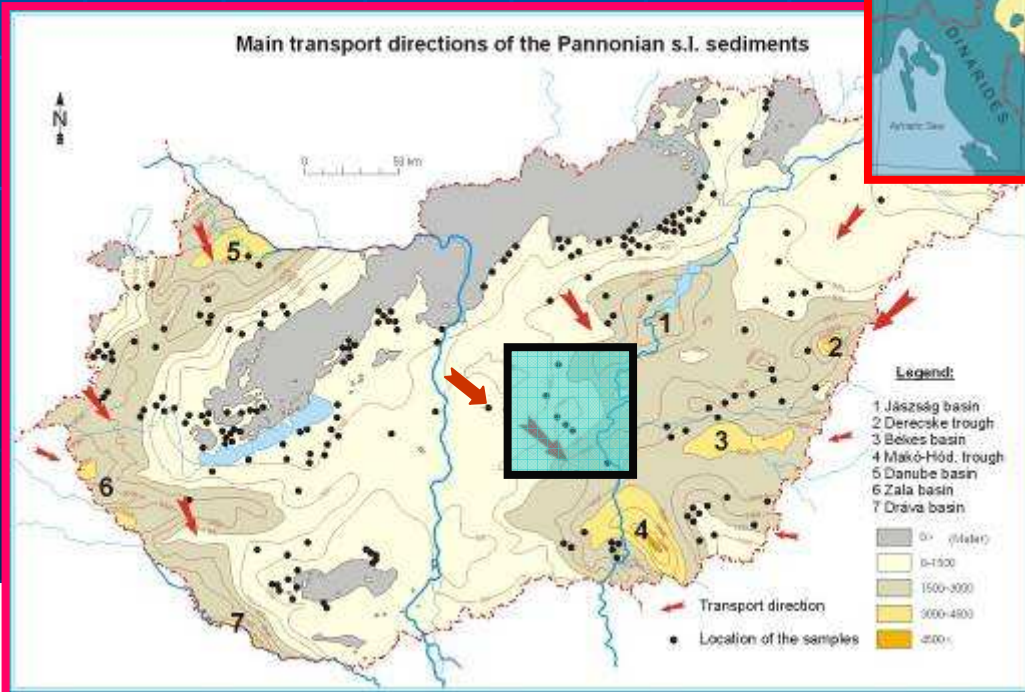
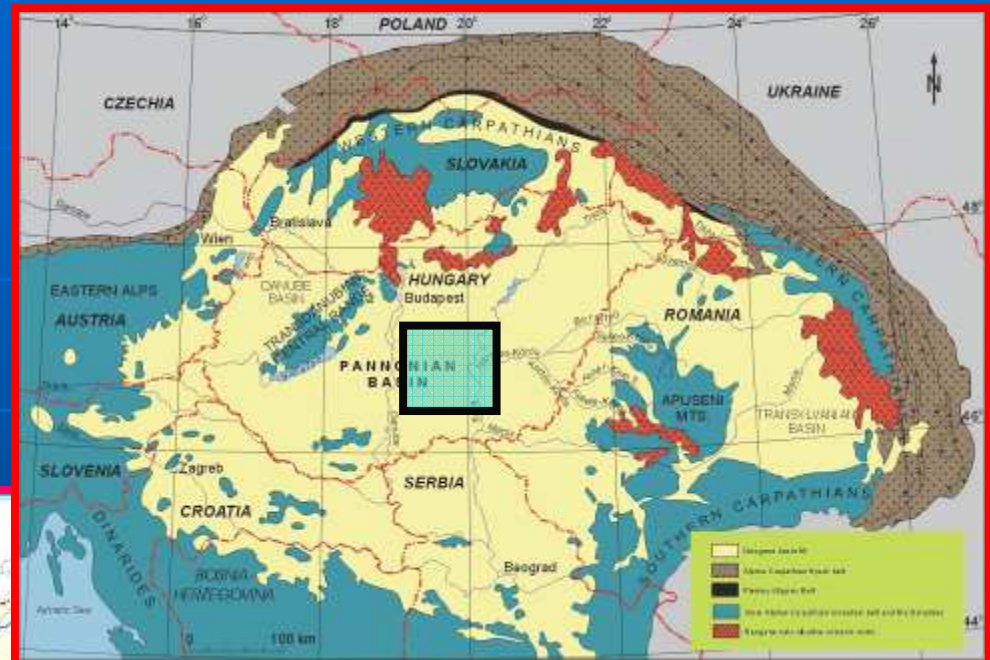
\**MOL, Budapest, Hungary*

\*\**ELTE, Budapest, Hungary*

# Location of the study area

## Carpathian Arc

## Hungary

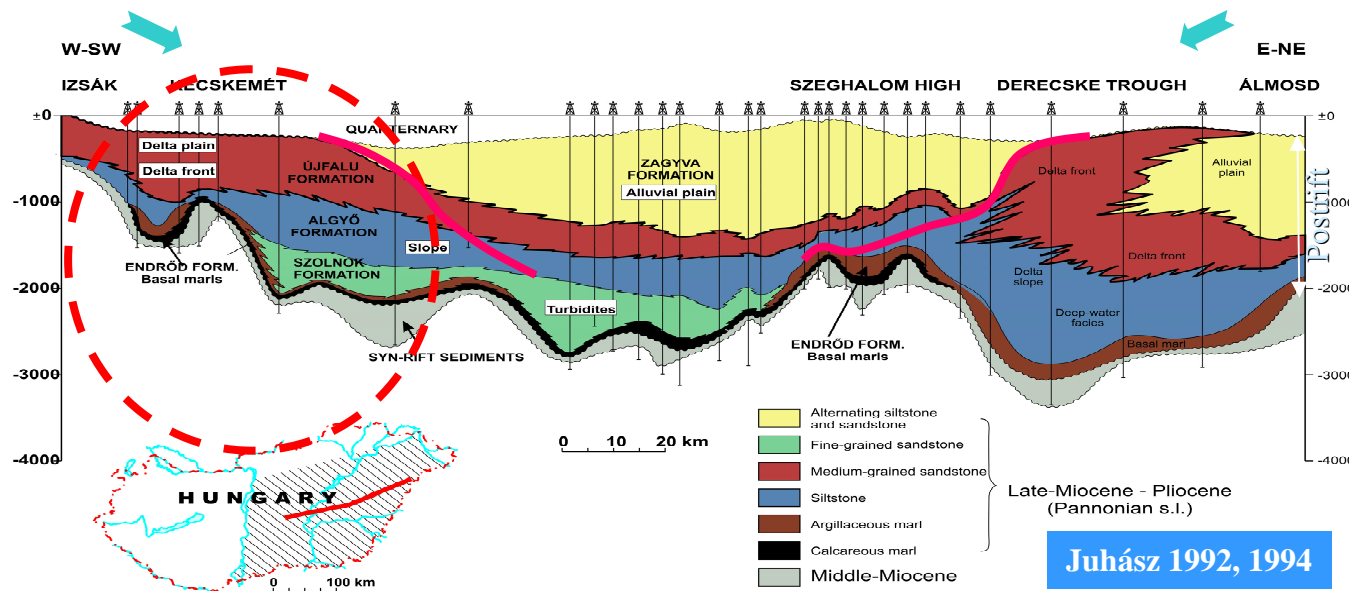


Structural contour map of the post-rift Late-Neogene (Pannonian s.l.) formations

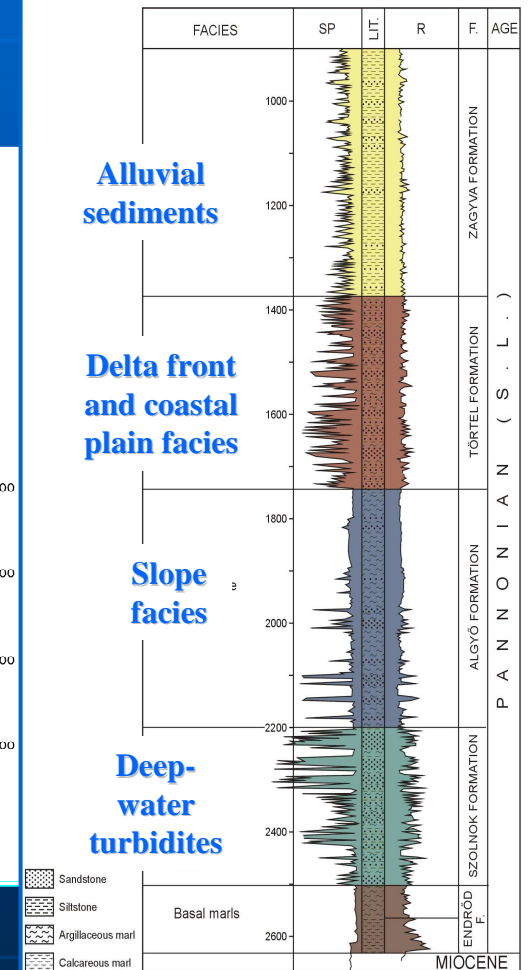
# Basin-scale profiles I.

Most spectacular surface: SB Pa-4 6.8 Ma

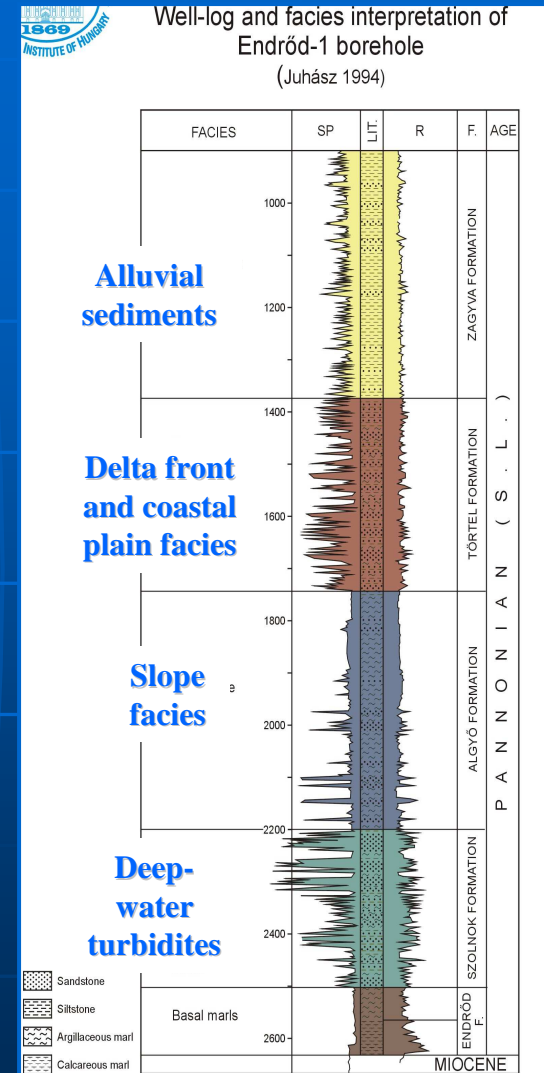
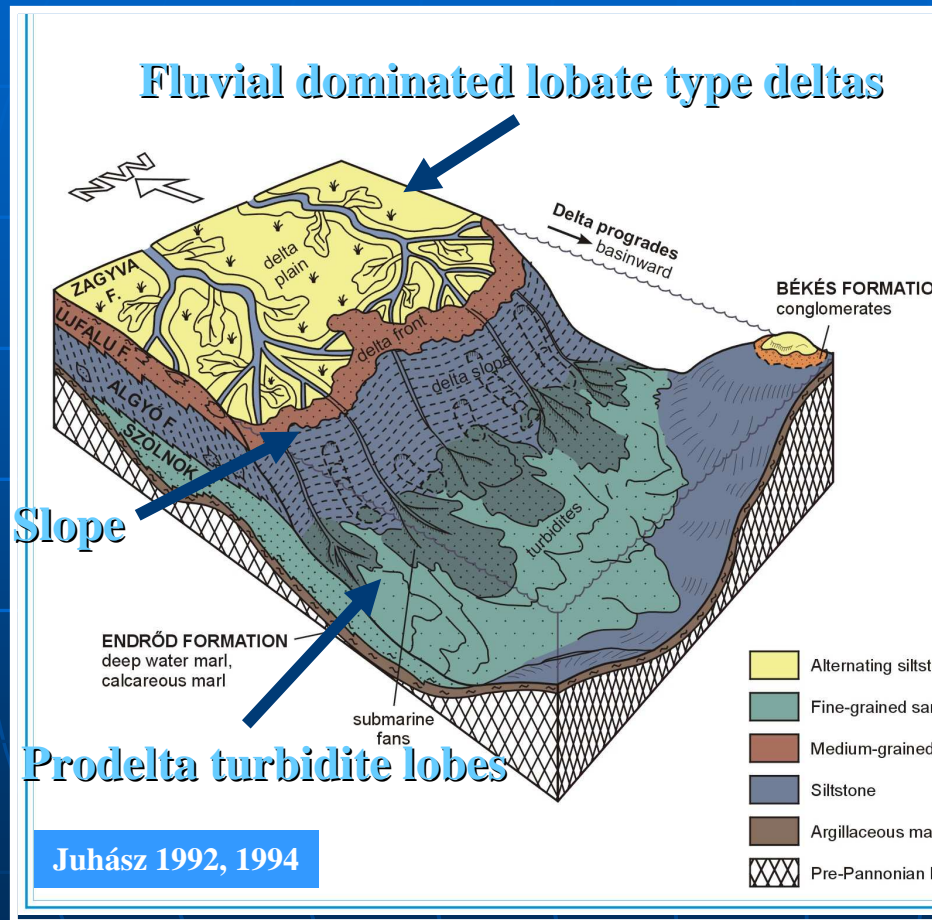
Basin scale facies architecture of the Late-Neogene sediment fill across the Hungarian Plain in W-SW — E-NE direction  
(modified after Juhász 1992)



Well-log and facies interpretation of Endrőd-1 borehole  
(Juhász 1994)



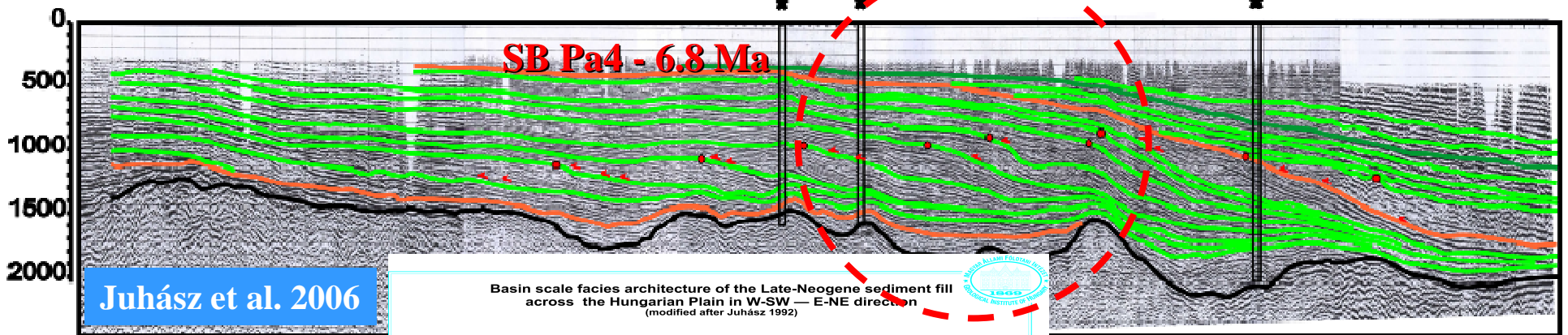
# Depositional model





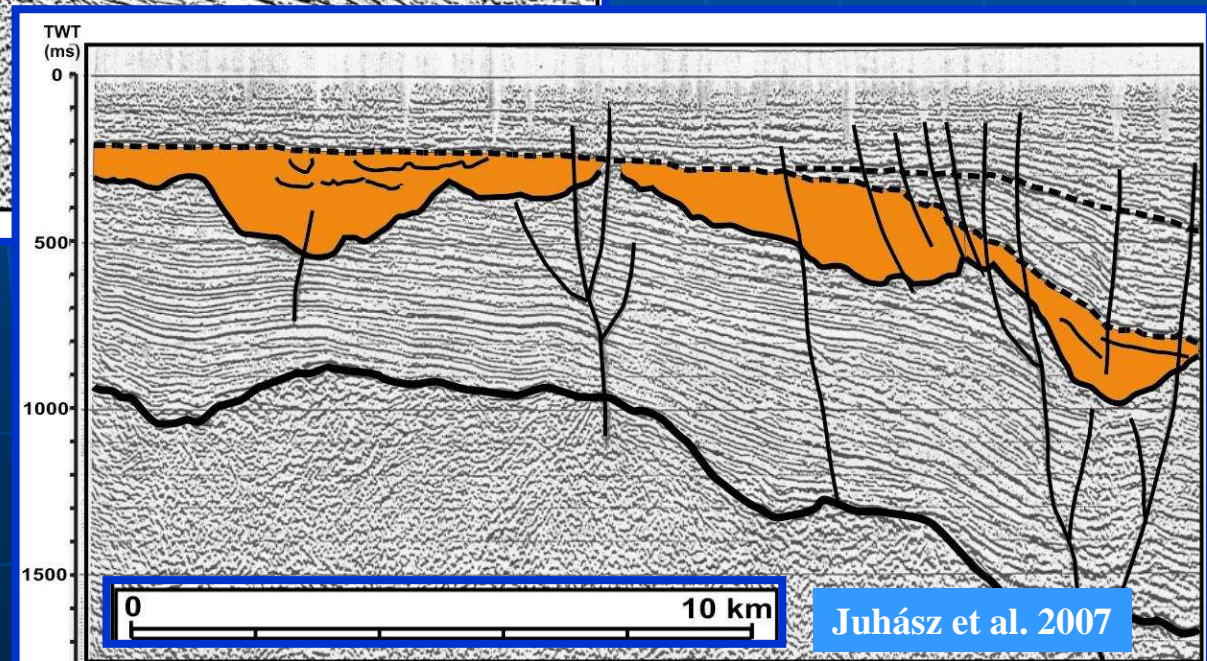
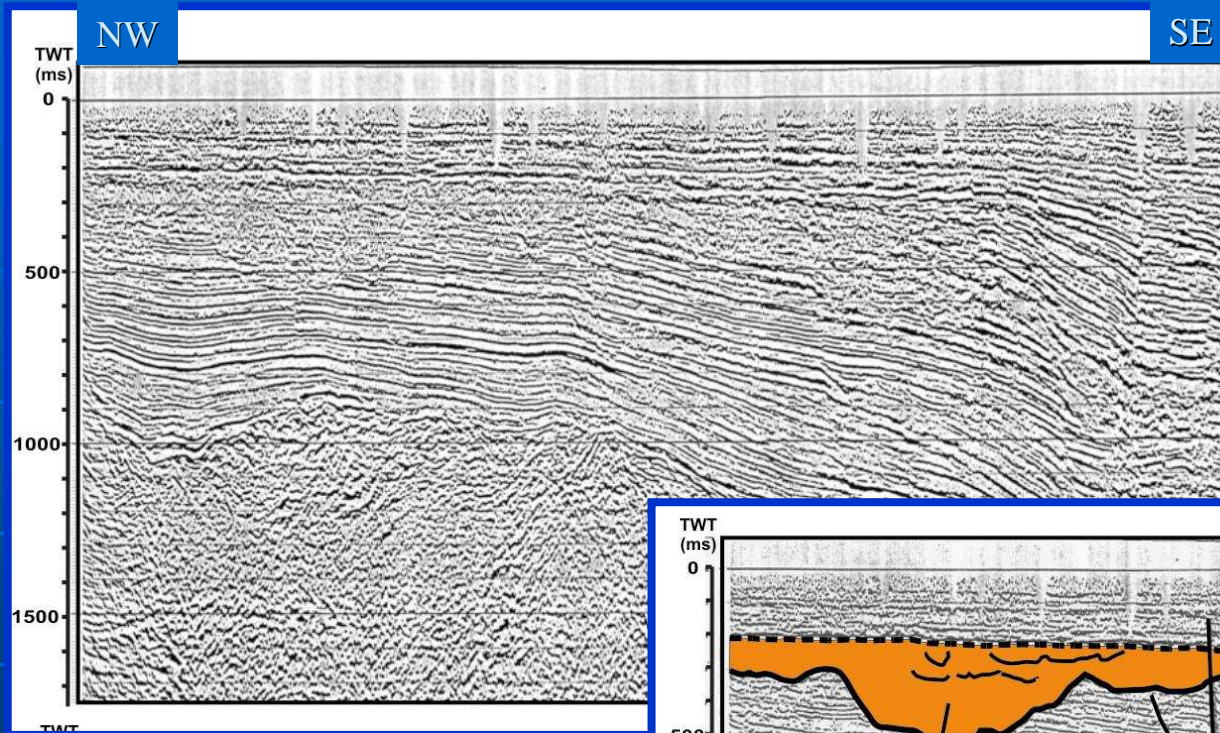
## Sequence stratigraphic interpretation

SE





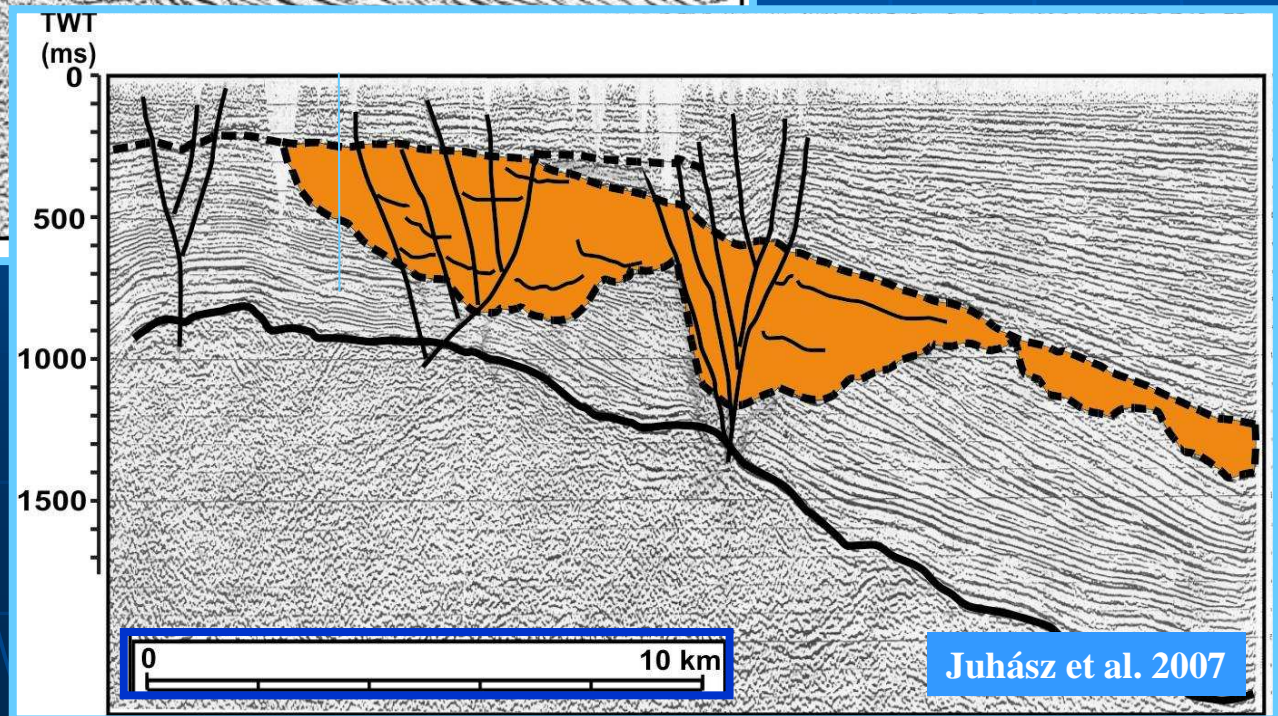
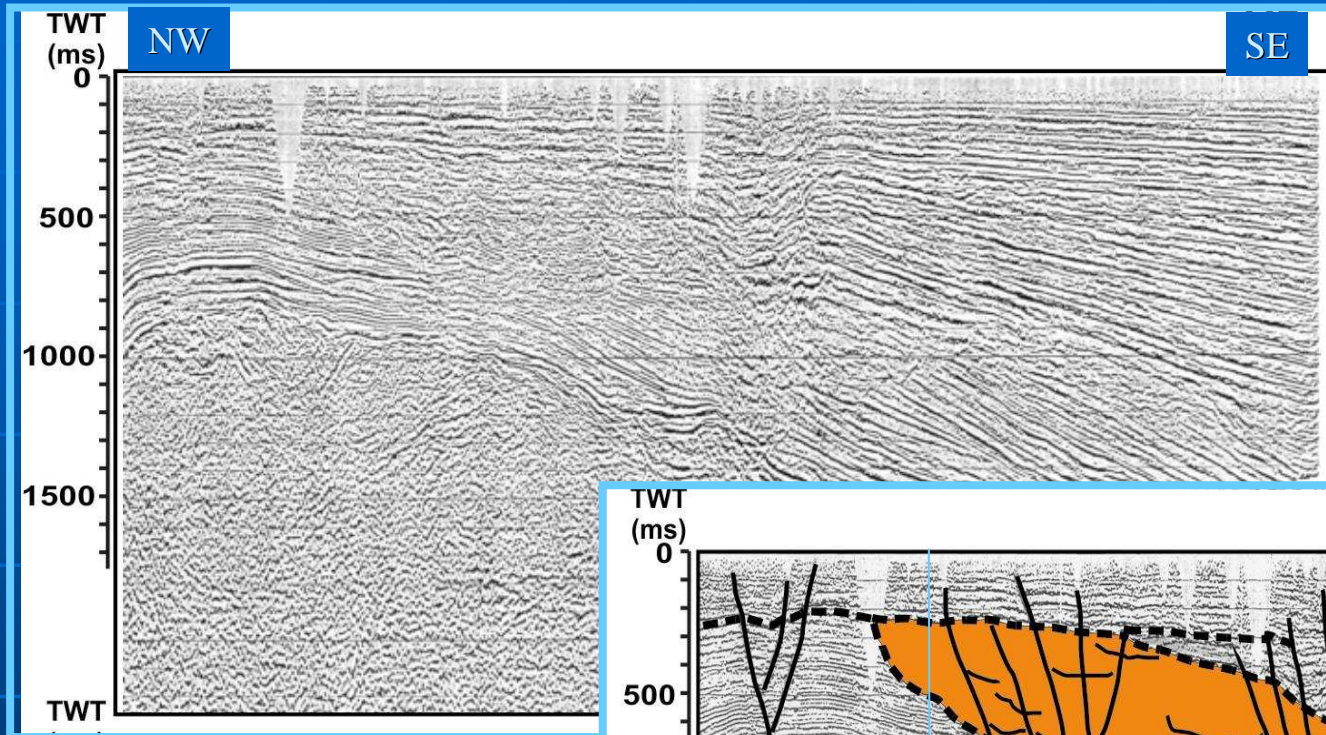
# Incised canyons in the Hungarian Plain, connected to the 6.8 Ma SB Pa-4





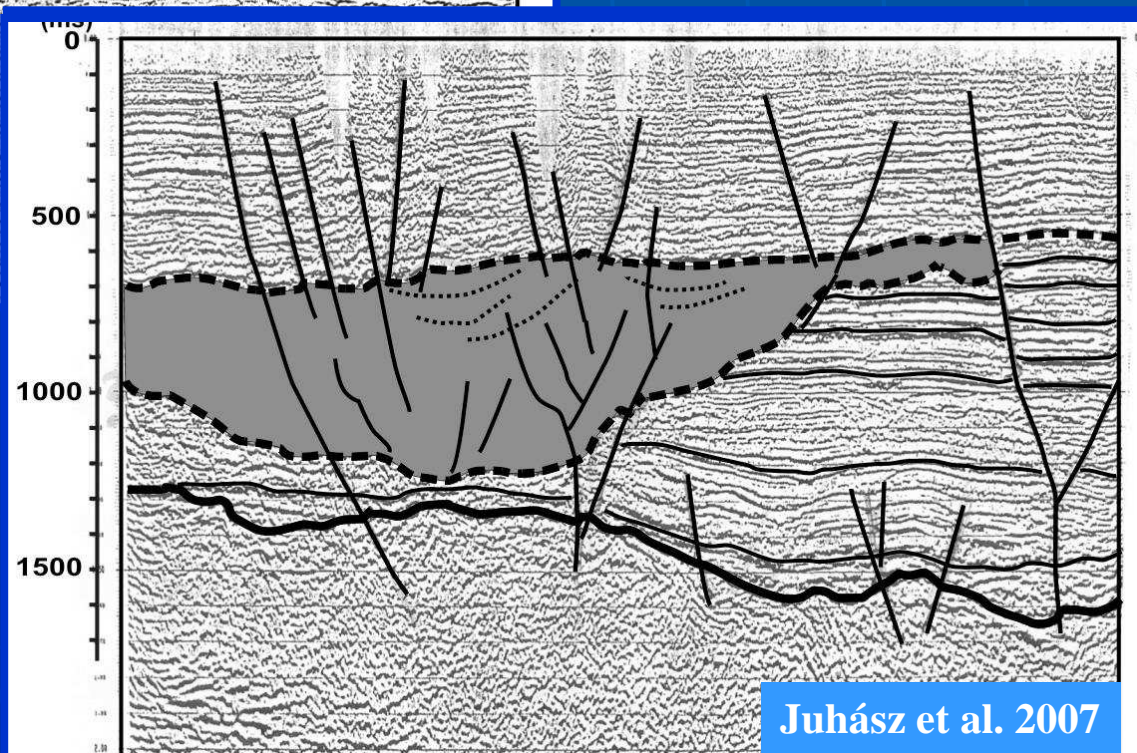
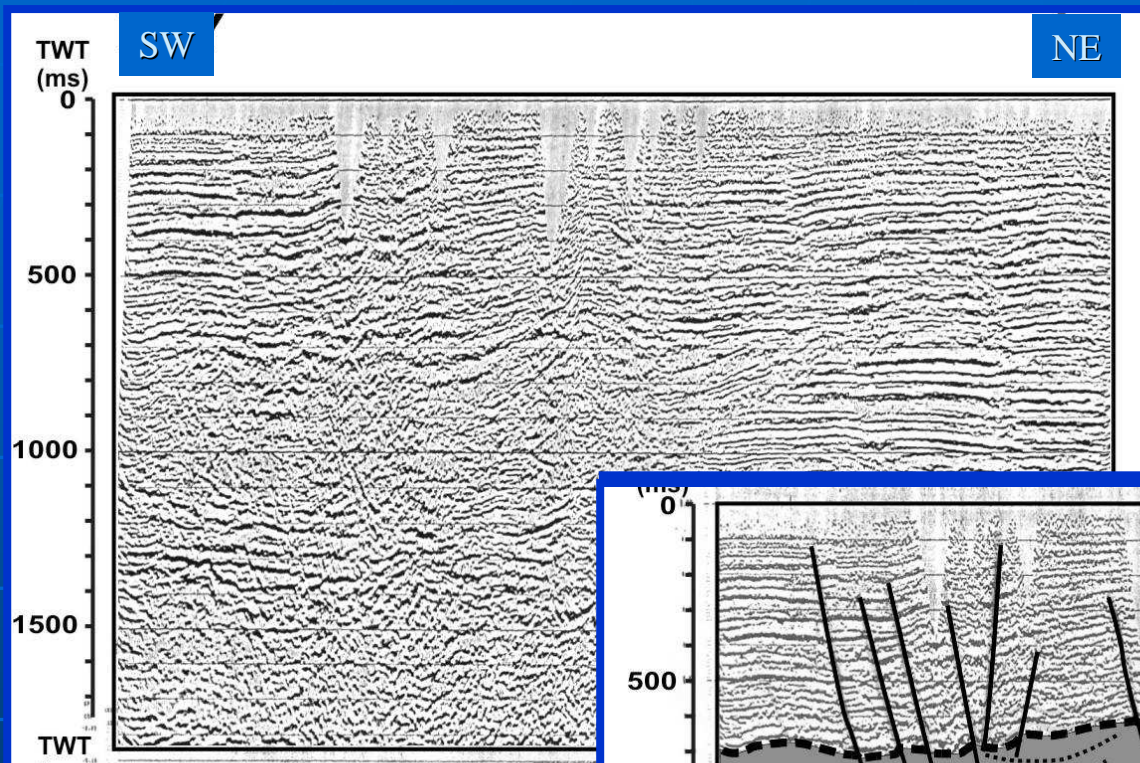
# Incised canyons in the Hungarian Plain

## (2)





# Major trunk valley

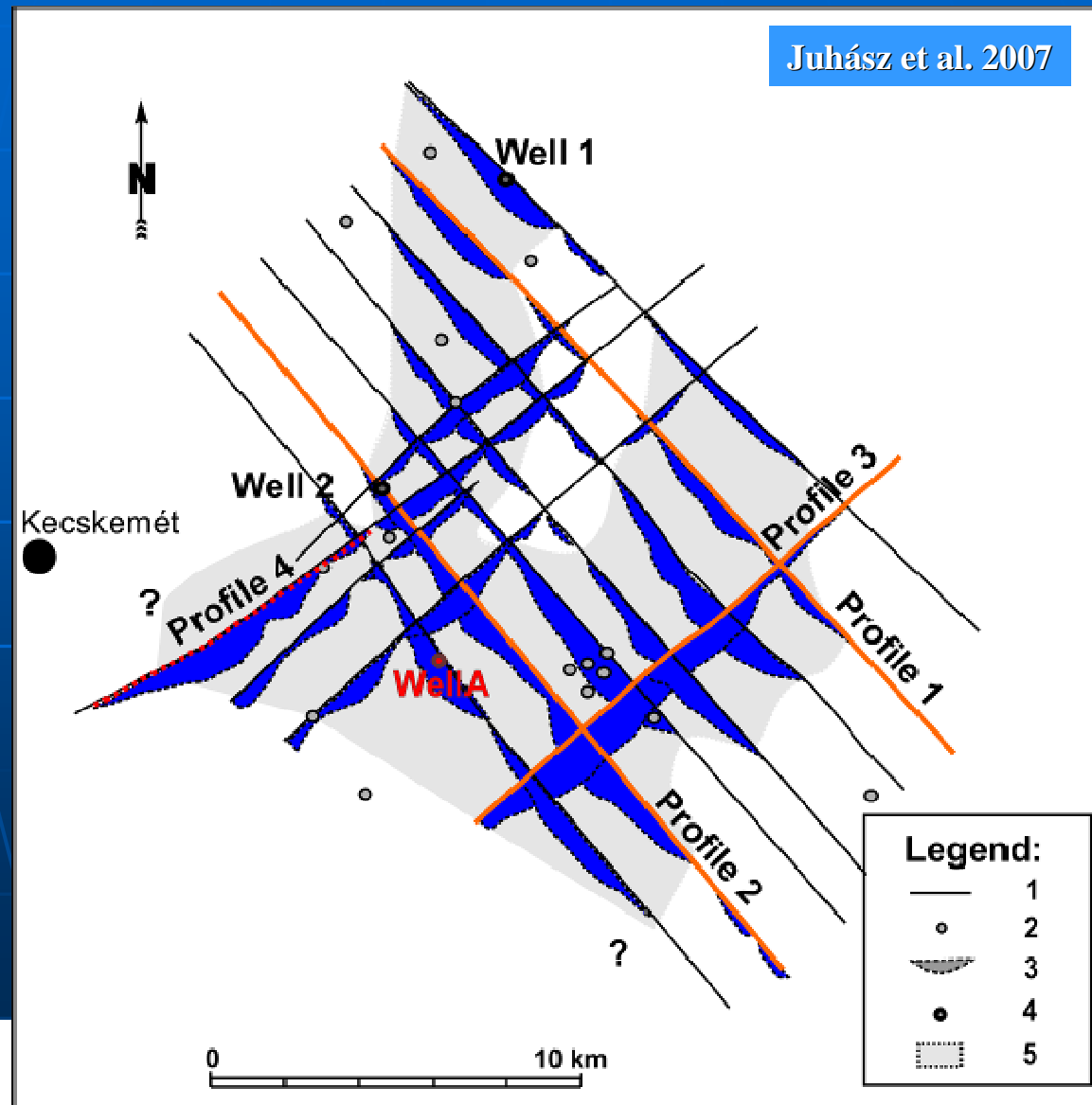


↕ Late-Neogene (Pannonian s.l.)  
post-rift sediments

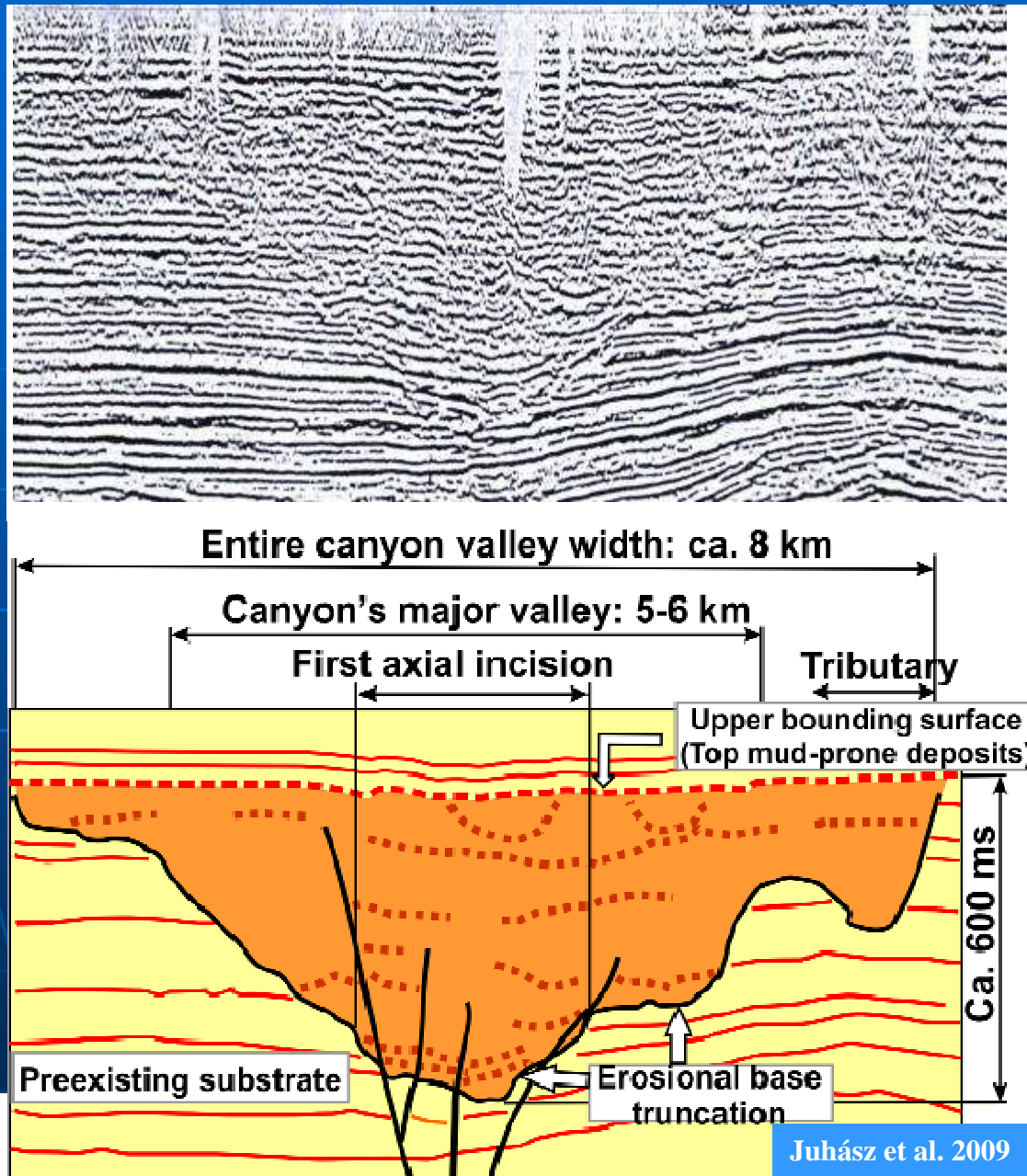
Juhász et al. 2007



# Areal distribution of the valleys in the study area

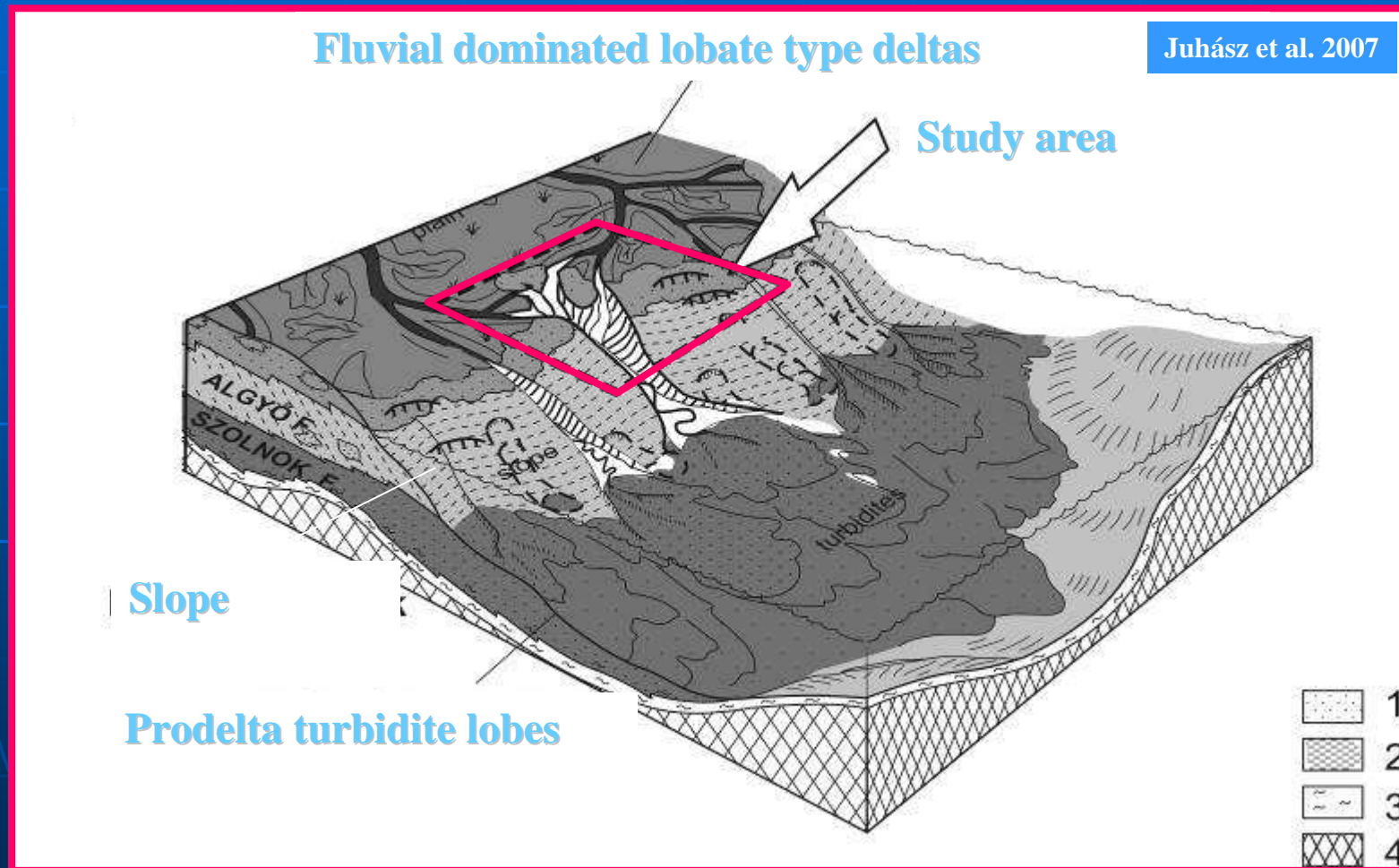


# Average dimensions of the canyons



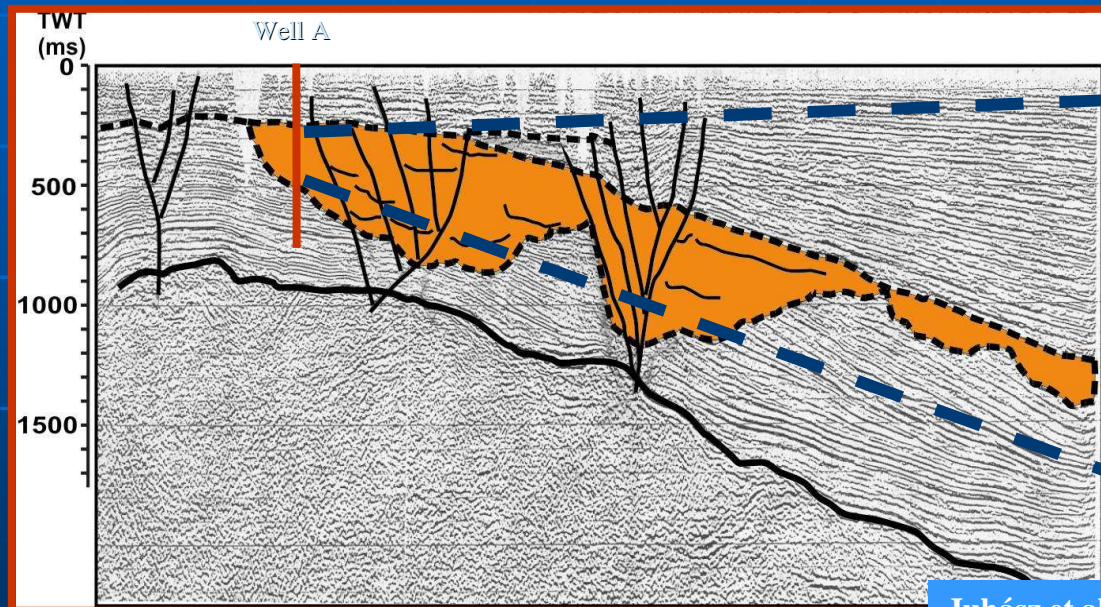


# The possible position of the study area in a theoretical depositional model.



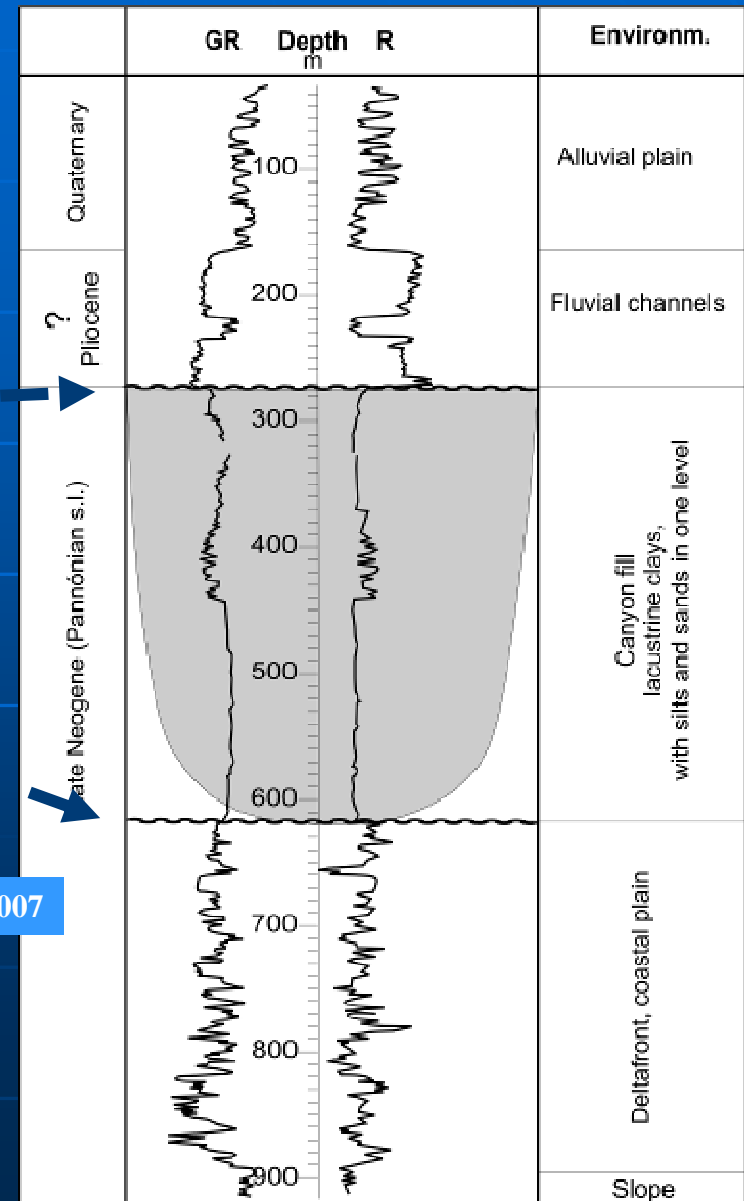
# Infill of the canyons

The infill in the upper part reflects lacustrine sediments. In the lower parts reworked sands could also be found, but its nature and areal distribution has not been known yet.



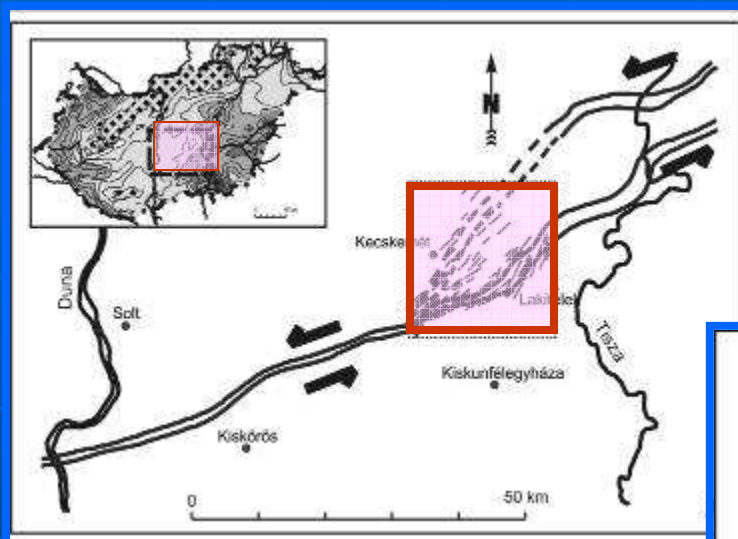
Juhász et al. 2007

Well A





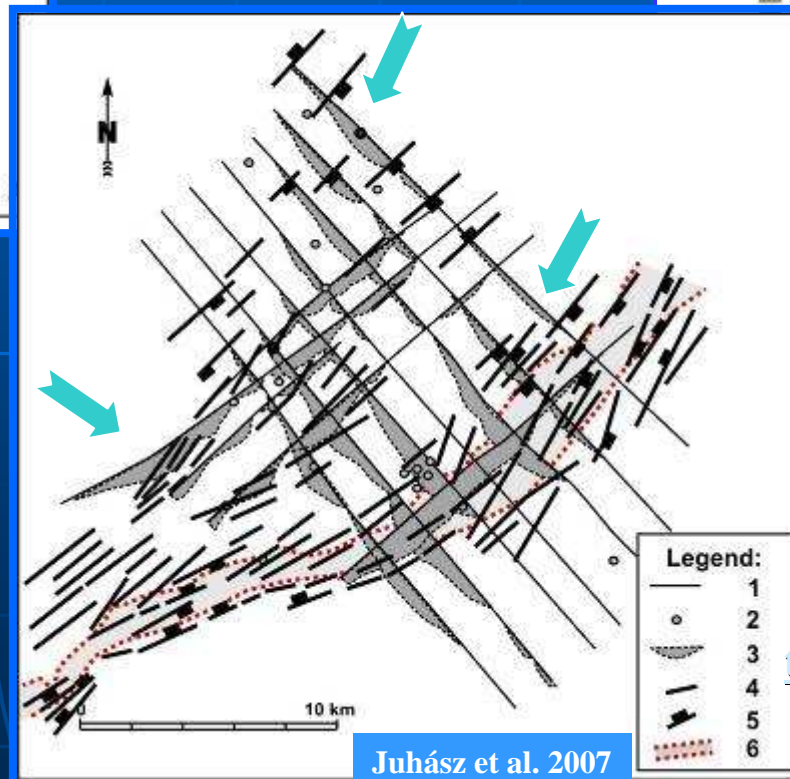
# Tectonic background and interpretation of the region



A/ Structural map along a main strike-slip fault zone of the Danube–Tisza interfluvium, at a duplex feature.



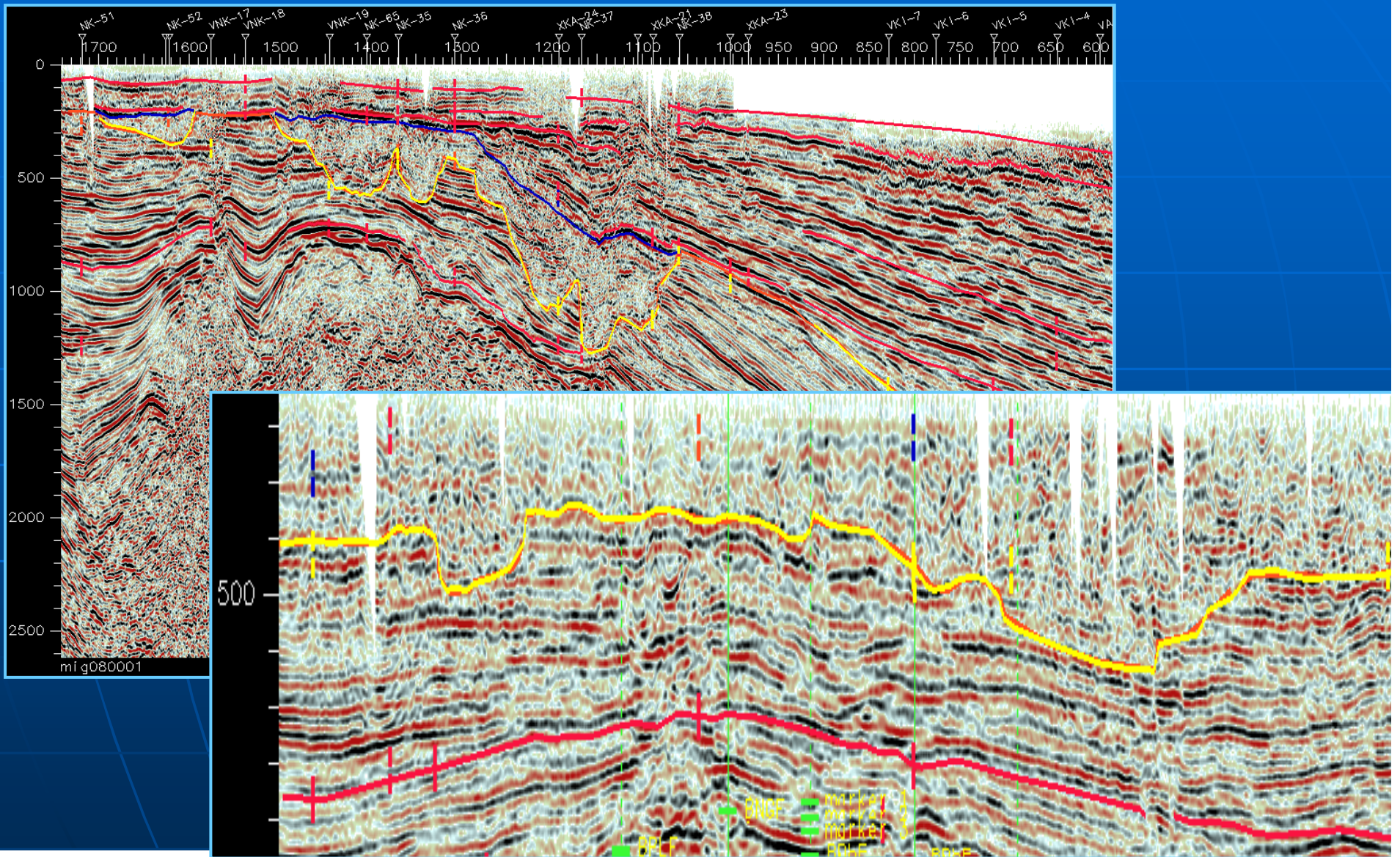
The position of the shoreline at 6.8 Ma



B/ Fense diagram of the canyon system with the tectonic map.



## State-of-the-art research





# Origin and evolution of the Alpar Canyon System:

## Conclusions

- The canyon system is connected to SB Pa-4 (appr. 6.8 Ma after Vakarcs 1997) and can be found at a large releasing bend and/or extensional duplex of the Paks-Szolnok strike-slip system, which was active as sinistral during the Late Miocene.
- The formation of the extremely deep canyons was presumably generated by the close interaction of several factors like:
  - relative lake-level fall,
  - the reactivation and bending/duplexing of a strike-slip system right in the same area, and in the same time,
  - the sudden change of the sediment supply carried along by overfed rivers.
- The canyon area served as major feeder channels for the turbidites towards the Makó-trough during and after its formation and existence.
- The infill in the upper part reflects lacustrine sediments. In the lower parts reworked sands could also be found, but its nature and areal distribution has not been known yet.

*Thank you very much  
for your attention!*

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