High-Resolution Sequence Stratigraphy – an Outcrop Case Study: Panther Tongue Sandstone, Utah


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1. Back-ground of Falling Stage Systems Tract

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Forced Regression in Shoreface

- Products of subaerial erosion redistributed on the shoreline
- Ravinement surfaces
- Sea level drop
- Unconformity of the foreshore on the shoreface deposits
- Products of submarine erosion redistributed towards the open sea

- Coastal plain
- Coastal plain
- Beach
- Beach
- Breaker zone – ridge & runnel / rip channels
- Shoreface – Swaley cross-stratification
- Lower shoreface – inner shelf transition – Hummocky cross-stratification
- Mid-shelf – bioturbated sandy siltstone
- Outer shelf – bioturbated mudstone

- Relatively thin, erosive-based shoreface sandbody
- Mudstone intracies
- Gutter casts
Cretaceous Western Interior Seaway

Diagram showing geological formations and stratigraphy in the Western Interior Seaway region, including uplift and erosion, and various sedimentary deposits such as coarse, nonmarine clastics, alluvial fan and other piedmont deposits, nonmarine, coal-bearing sands, silts, and clays, marine and brackish water sandstones, marine shales, and marine limestone and chalk.
Stratigraphy
Location Map & Cross Section
LAG DEPOSITS

Simple Lag

Dispersed Lag

Oxidized Lag

Local Lag
Lag Deposits in Spring Canyon Section
Lag Deposits in Huntington Creek Section
Lag Deposits in Cottonwood Creek Section
Distribution of Lag Deposits

- Local Lag + Simple Lag
- No Lag or Dispersed Lag
- Simple Lag
- Simple Lag + Oxidized Lag

Diagram features:
- Highstand Systems Tract
- Unconformity 2+3
- Early Lowstand Systems Tract
- SB 1, SB 2, SB 3
- Master Sequence Boundary
- Stepwise Relative Sea-Level Fall
- TSE
Thank you

Slot Canyon, Arizona

Eolian Sandstone