

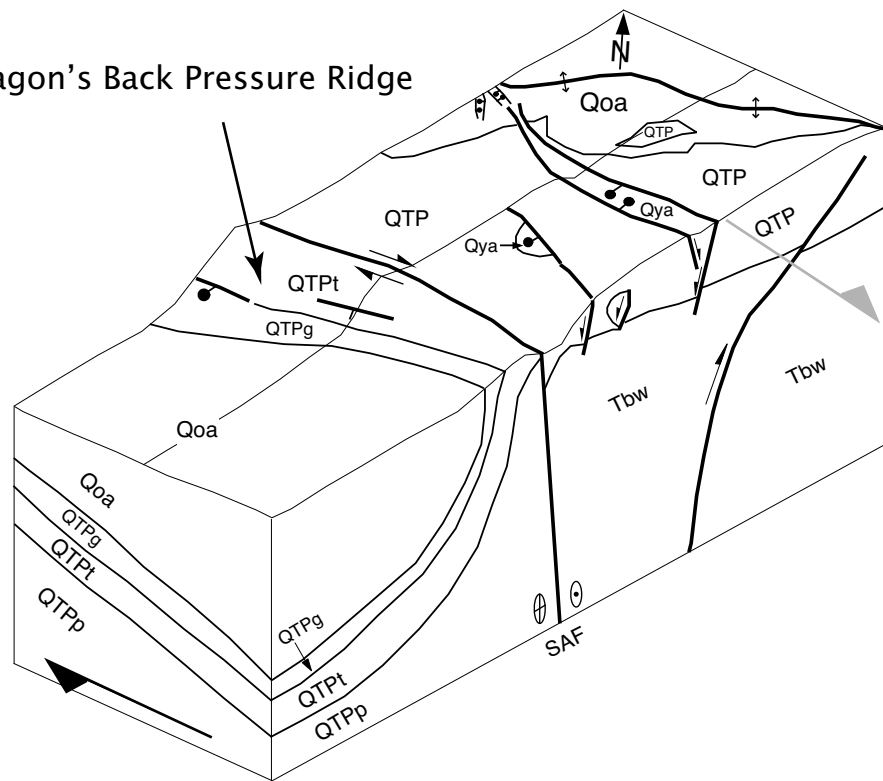
## Supplementary Material:

Supplemental Figure 1: Isometric block diagrams of structural knuckle that results in the uplift of the DBPR. Area SE of uplift zone shown in left panel, area of uplift zone shown in right panel. The shallow offset of the SAF towards the southwest causes a three-dimensional discontinuity in the SAF, which causes deformation as material is moved into and through this zone.

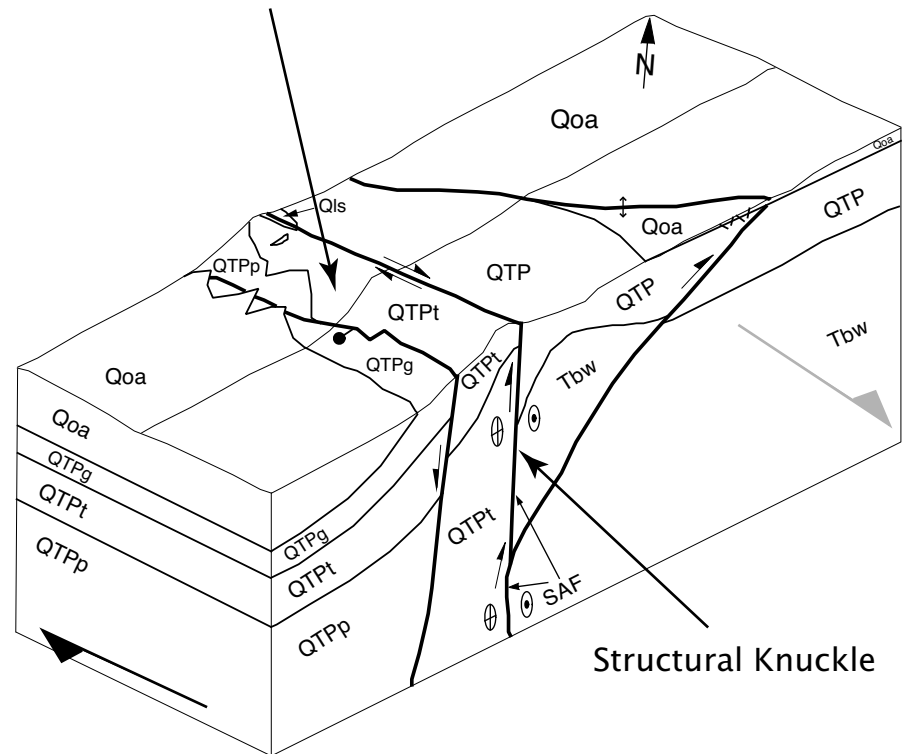
Supplemental Figure 2: Photographs of Gully A (referenced to (1) in Figure 2E), B (referenced to (2) in Figure 2E), and C (referenced to (3) in Figure 2E). Top panel of photographs show view towards drainage divide, while bottom row shows downstream view. A truck in the downstream view of Gully A provides a scale for the photograph. Channels are steep within the uplift zone (Gully A), and as uplift ceases, channels rapidly downcut and increase channel concavity (Gully B) and undermine hillslopes, leading to pervasive mass failure. Far from the uplift zone (Gully C), slopes and relief within the basins once again become subtle.

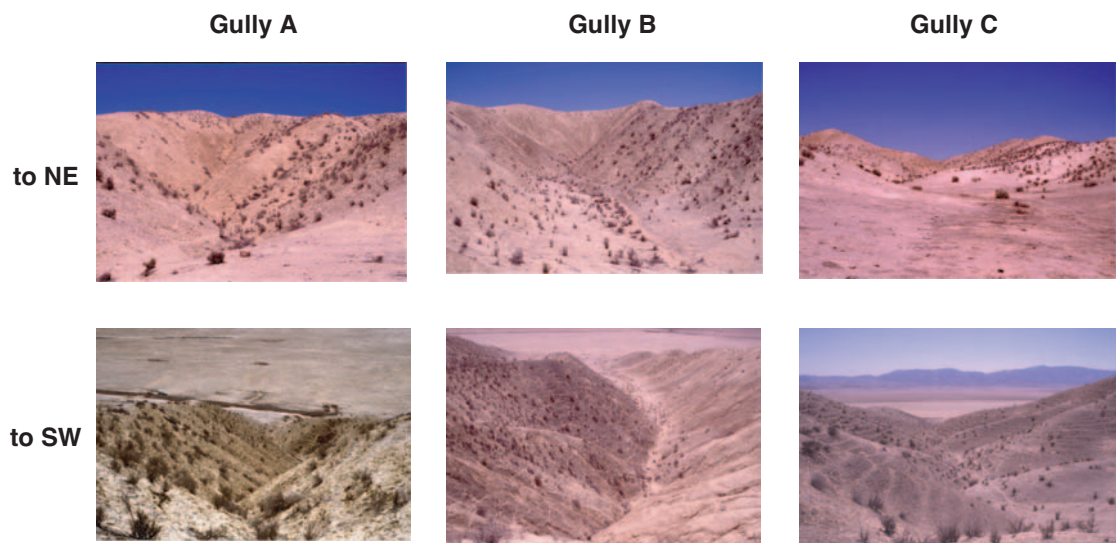
Supplemental Figure 3: Area / slope relationships demonstrating changes in concavity of the channels through the uplift zone, as well as LiDAR data quality. X-axis of each plot shows upstream area (m), while y-axis shows downstream slope (bottom three panels). The location of each of the basin sets shown in the area-slope plots is shown in the concavity plot duplicated from Figure 3. Solid line in each area / slope plot shows high concavity of channels within and directly in the wake of the uplift zone for reference.

## Dragon's Back Pressure Ridge

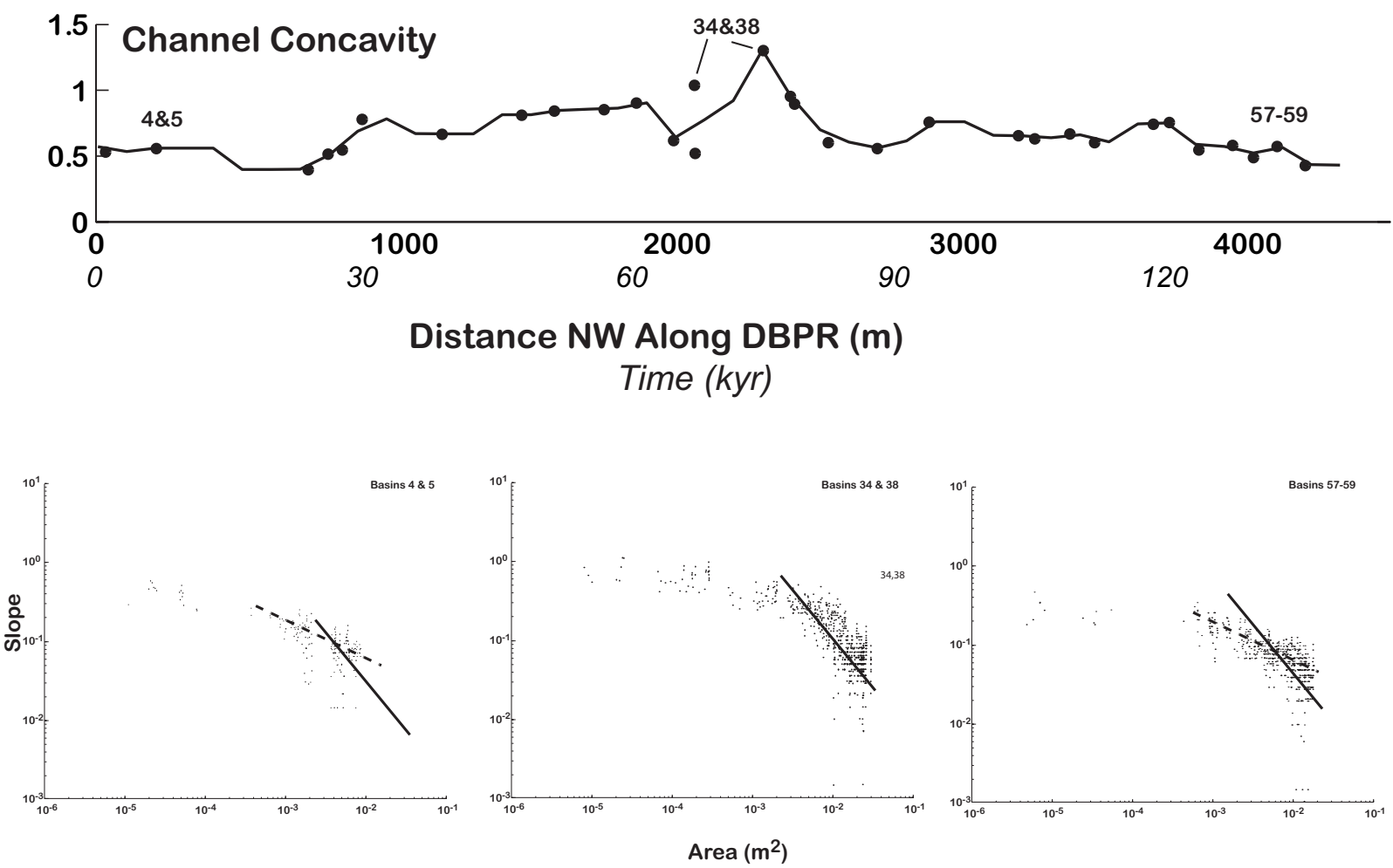


## Dragon's Back Pressure Ridge





Supplementary Figure 2



Supplemental Figure 3