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**CARBONATE INTERBEDS AS A KEY TO THE DEPOSITIONAL ENVIRONMENTS IN A MUD-DOMINATED SETTING OF THE DUNDERBERG SHALE, NOPAH FORMATION (UPPER CAMBRIAN), SOUTHERN GREAT BASIN**

Interbedded siliciclastic shales and carbonates are typically interpreted as deepening and shallowing events. However, carbonate interbeds in the Dunderberg Shale of the southern Great Basin suggest that the shales represent an influx of siliciclastic materials from offshore and not a significant deepening event. These carbonates illustrate a southeast-northwest progression from stromatolitic, thrombolitic, pelmetazoan, to pelmetazoan-trilobite dominated lithologies within the Dunderberg Shale. This is a similar pattern observed in the overlying Halfpint Member of the Nopah Formation. The persistence of carbonate types through the Dunderberg Shale into the overlying member suggests environmental consistency in the region. In turn, this suggests that the shales represent an influx of siliciclastic material and not the general flooding of the inner shelf. During the beginning of the early *Elvina* Biochron, an offshore carbonate bank terminated the shoreward influx of siliciclastic material forming the carbonate dominated environments represented in the Halfpint Member.

The absence of body and trace fossils from the shale units of the Dunderberg Shale has always been a quandary, especially given the abundance of fossils in other Cambrian shales. If the shale were deposited in relatively shallow water, as suggested above, then the muds would have been constantly disturbed by wave activity, making them too soupy to allow substrate colonization by macro-organisms.