The Eco-Regions and Geomorphologic Setting of the Ruby Pipeline Project in Nevada’s Northern Tier

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The Northern Tier of Nevada is a dynamic landscape that in places reveals evidence of changing geomorphic conditions that influenced the formation of the regional archaeological record. Post-construction data recovery to mitigate impacts associated with construction of the Ruby Pipeline Project included the collection of geomorphic data from 25 stratigraphic profiles at 15 study localities in 11 hydrologic basins. These localities were chosen after field reconnaissance of more than 30 individual drainages spread across all the hydrologic basins intersected by the pipeline corridor.

A Northern Tier landform typology (below) recognizes five primary geomorphic settings: Volcanic Plateau, Midland Drainage, Lowland Basin, Basin Margin, and Uplands. In turn, each setting is further divided into a series of landforms. The settings, along with the landforms within each setting, allow archaeologists to evaluate and understand the geomorphic processes that might most affect the distribution, integrity, and preservation of archaeological components at specific sites. Landform characterization also provided insight to the suite of resources that might have been locally available during the time of site use as presented elsewhere in this poster session.

Profile descriptions include sediment texture and depositional structure. Descriptions include a brief interpretation of the local dominant process, considering floodplain, slope, and eolian activity that resulted in the stratum. Where possible, radiocarbon dating of wood charcoal (non-cultural), tephra correlation, and soil development or paleosol (i.e., buried soil preservation) provide temporal control. Nearby archaeological components also provide local temporal information, when available.

Each stratum is then given a "Package Index" based on temporal information, degree of soil development, and interpretation of depositional structure; this relative index provides a preliminary measure of how much time is evident in the stratum. On the other hand, there is potential for significant time gaps in each profile, typically at the contacts between strata. A "Gap Index" hints at the amount of time missing from the profile at a stratum’s upper contact.

A schematic model (below) represents geomorphic conditions at each locality across the Northern Tier. While the duration of geomorphic events (e.g., episodes of aggradation or soil development) may be poorly resolved—such interpretations of regional patterns are possible. At a minimum, the potential of the regional record to continue to augment our understanding of the impact of regional landscape change is clear.

There remains great potential in the data stored in the Northern Tier’s vast network of drainages. Additional scrutiny of this record, augmented by continued reconnaissance of the many other drainage systems in uplands and plovlaid lakes, will help clarify temporal and spatial relationships between local environmental conditions and their relationship to the regional archaeological record. Of particular significance are the implications of aggrading floodplains and the potential for a deeply buried archaeological record.