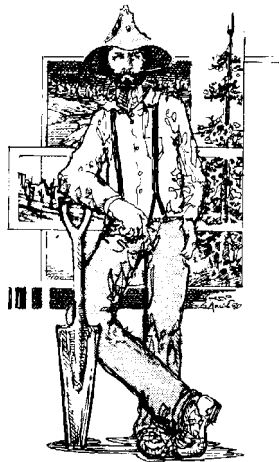


**CLASSIFICATION AND ASSESSMENT
UPLAND AND RIVERINE/RIPARIAN HABITATS
BRUNEAU RIVER BASIN
NEVADA**

Prepared for:

NATIONAL ELK FOUNDATION

**USDA FOREST SERVICE
MOUNTAIN CITY RANGER DISTRICT
AND
BUREAU OF LAND MANAGEMENT
ELKO DISTRICT**



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EXECUTIVE SUMMARY

A hierarchical classification was applied to the Bruneau River basin above (and including) McDonald Creek. Both upland and riverine/riparian habitat (RRH) were mapped for Forest Service lands in the northern part of the basin. Only RRH was mapped for BLM lands in the southern part of the basin. The basin is 268,144 acres and contains about 1,218 miles of stream, of which 235 miles is perennial.

The classification consists of seven hierarchical levels:

Ecoregion
 Geologic District
 Landtype Association
 Landtype
 Valley-bottom Type/State
 Landform
 Vegetation Type

Ecoregions (Omernik 1987) are based on factors that cause regional variation in ecosystems or on factors that integrate the causes of regional factors. The study area is in the Northern Basin and Range Ecoregion. The northern part of the study area is transitional to the Snake River Basin/High Desert Ecoregion.

Geologic districts are areas of distinctive rock types or parent materials that are generally associated with major structural features. Five geologic districts were identified, ranging from soft volcanic tuff to hard metamorphic rock.

Landtype associations are areas with distinctive geomorphic character. Names of landtype associations are terms descriptive of the surface morphology prefaced by the geologic district (e.g. Rhyolite Hills). The nine landtype associations identified include glacial, fluvial and alluvial landscapes.

Landtype associations can be further divided into landtypes based on form, slope and position in the landscape. Landtypes in upland areas were described. Only the valley-bottom landtype, where RRH occurs, was delineated. The valley-bottom landtype is 16,135 acres or 6 percent of the basin.

The valley-bottom landtype within a landtype association was further stratified as valley-bottom types (VBTs). VBTs were distinguished by the mechanism or relative effectiveness of geomorphic processes in shaping the valley-bottom. For example, the valley-bottom in the Rhyolite Hills landtype association was divided into: 1) Fluvial Basin VBT; 2) V-erosional Canyon VBT; and 3) V-depositional Canyon VBT. Twenty six VBTs were identified in the project area. States (i.e. condition classes) were identified in each VBT.

States were identified based on channel morphology and ranged from natural to severely degraded. Key attributes for identifying states included: 1) channel elevation relative to that of valley-bottom landforms (i.e. graded versus not graded); 3) bank stability and canopy cover; 4) extent of streambars; 5) impoundment; 6) management factors (irrigation and channelization). Distinctive assemblages of riparian classes were correlated with VBT/State.

Landforms were mapped in the valley-bottom of target streams. Landforms included: channel, levee, floodplain, terrace, alluvial fan and basin. Soils were correlated with landform and VBT/State. Maps of valley-bottom landforms were prepared from 1:6,000 and 1:3,000 scale aerial photos.

Upland vegetation types were mapped from magnified 1:24,000 scale aerial photos. Thirty nine upland vegetation types and miscellaneous features were identified. A detailed map of upland vegetation types was prepared. The smallest delineations were less than 1 acre. Both the potential natural community (PNC) and the existing vegetation type were identified for upland communities.

Riparian vegetation types were mapped for target streams, including the Bruneau River and 19 of its tributaries. About 6,568 acres was mapped from magnified 1:6,000 and 1:3,000 scale aerial photos. Forty one riparian vegetation types and miscellaneous features were identified. Very detailed maps of riparian vegetation types were prepared.

The condition of target streams was assessed using a condition rating calculated from the distribution of states. Condition ratings ranged from 25 (worst) to 100 (best). Classes for condition ratings were:

< 50	Very Poor
50 - 60	Poor
61 - 80	Fair
81 - 90	Good
91 - 100	Excellent

The condition rating for all RRH mapped on Forest Service lands (76) indicates that the overall condition was fair. The class for specific tributaries varied from very poor to excellent. The condition rating for BLM lands (77) also indicates that the overall condition was fair. The class for specific tributaries varied from poor to fair.

A major fire burned a large portion of the project area in 1992, immediately following completion of field investigations. While the PNCs for upland habitats are not expected to be significantly different, the existing upland vegetation types have changed. Shrub fractions of burned upland communities are expected to be absent. The effect of the fire on herbaceous vegetation was not evaluated.

The fire also directly impacted RRH in part of the project area. Riparian shrubs were burned. The effect on herbaceous riparian vegetation was not evaluated. It is likely that the fire significantly affected states. Large fan deposits were observed at the mouths of streams draining the Granite Hills landtype association. It is likely that the fire significantly affected the states of some VBTs.