

**INVENTORY AND ASSESSMENT
OF
RIVERINE/RIPARIAN HABITATS
MAGGIE CREEK BASIN
NEVADA**

Prepared for:

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JUNE, 1995

EXECUTIVE SUMMARY

A hierarchical classification was applied to riverine/riparian habitat in Maggie Creek basin. The survey area is 396 square miles (253,736 acres) and contains about 847 miles of stream, of which 233.3 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.

Geologic districts are areas of distinctive rock types or parent materials that are generally associated with major structural features. Two geologic districts were identified: 1) Metasedimentary; and 2) Volcanic/Tuff.

Landtype associations are areas with distinctive geomorphic character. Landtype associations generally corresponded with geologic districts. Four landtype associations were identified: 1) Metasedimentary Mountains; 2) Tuff Mountains; 3) Tuff Hills; and 4) Tuff Basins. These landtype associations encompass fluvial and alluvial landscapes.

Landtype associations can be further divided into landtypes based on form, slope and position in the landscape. Only the valley-bottom landtype, where riverine/riparian habitat (RRH) occurs, was delineated. The valley-bottom landtype is 39,562 acres or 16 percent of Maggie Creek 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 Metasedimentary Mountain landtype association was divided into: 1) Fluvial Basin VBT; 2) V-erosional Canyon VBT; and 3) V-depositional Canyon VBT. Twelve VBTs were identified in the project area.

Target streams included: 1) Coyote Creek; 2) Jack Creek; and 3) Beaver Creek. The total length of target streams was 68 miles or 29 percent of perennial streams in the basin. Target streams made up about 4,997 acres or 2 percent of Maggie Creek basin.

VBTs for target streams were further divided into states (i.e. condition classes). States were identified based on channel morphology and ranged from natural to severely disturbed. 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 tend to correlate with landform and VBT/State. Maps of valley-bottom landforms were prepared from 1:24,000 scale aerial photos viewed at about 1:3,000 scale.

Riparian vegetation types were mapped for target streams. About 4,997 acres of RRH was mapped from the 1:24,000 scale aerial photos viewed at about 1:3,000 scale. Sixteen riparian vegetation types and miscellaneous features were identified. Detailed maps of riparian vegetation types were prepared.

States of RRH were identified based on channel morphology. Changes in channel morphology (e.g. graded versus incised) result in changes in hydrologic attributes (e.g. depth to alluvial water) and potential riparian vegetation types. States were identified relative to a progression ranging from natural - typified by a graded, "fit" channel with stable, vegetated streambanks - to blown-out - typified by a non-graded, over-fit channel with unstable, unvegetated streambanks.

The condition of target streams was assessed using a riparian condition rating calculated from the distribution of states for areas of the valley-bottom and a stream condition rating calculated from the lengths of the stream. Condition ratings range 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 average riparian condition rating for all target streams (53) indicates that the overall riparian condition was poor. The class for specific tributaries was poor. The average stream condition rating for all target streams (65) indicates that the overall stream condition was fair. The class for specific tributaries ranged from poor to fair.