

# Mojave Lowland Riparian



Lowland riparian habitat along Lake Mohave, Clark County. Photo by Elisabeth Ammon.

## Key Bird-Habitat Attributes

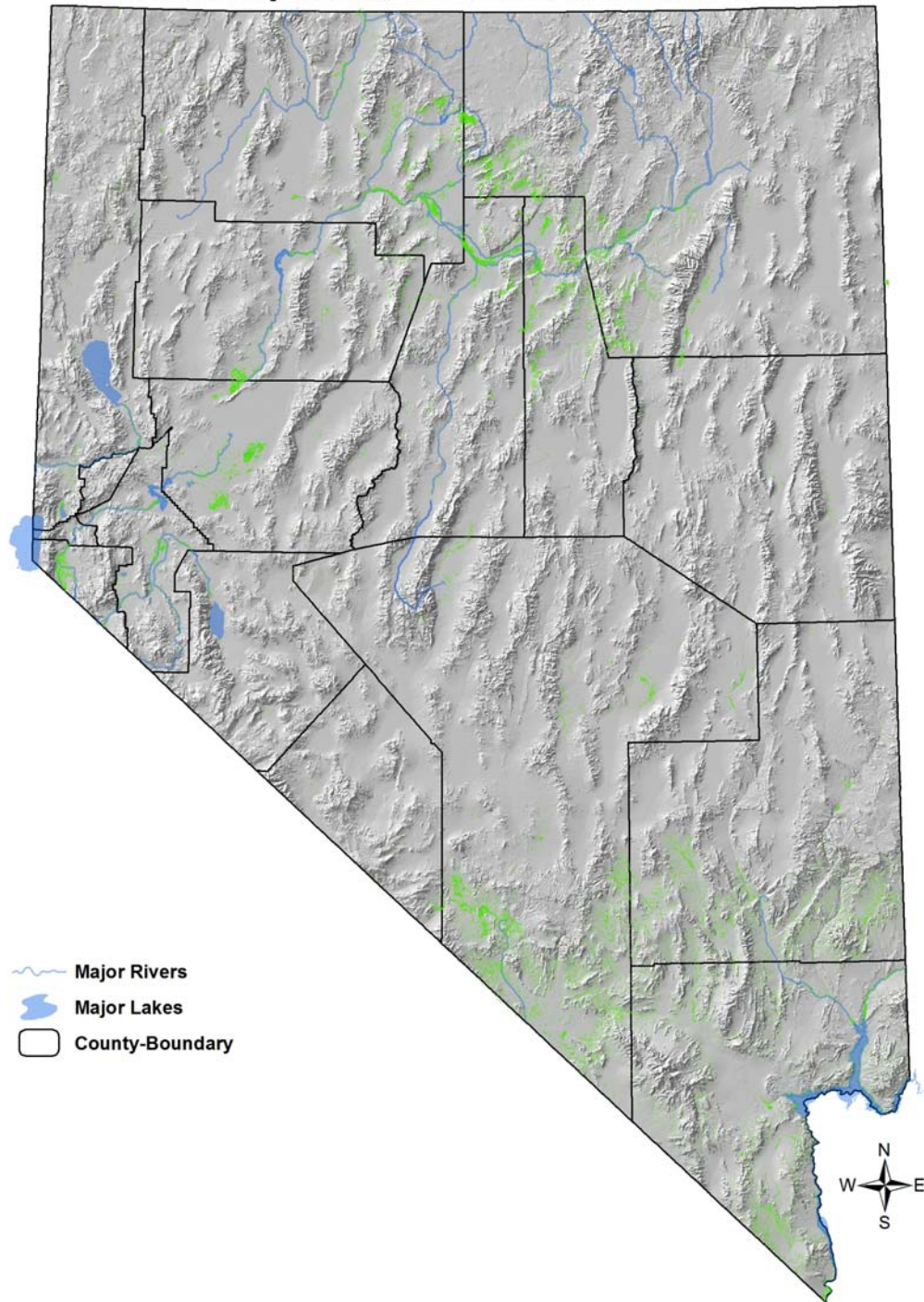
Stand Structure	Multi-aged tree stands with riparian shrub understory, interspersed with groves of dense riparian shrubs (willows and others) and floodplain wetlands
Ideal Scale for Conservation Action	50 ha (110 acres) or more
Plant Species Composition	Mixed stands of cottonwood and tree willow with multiple species of shrubs as understory, with emphasis on willows; tree willows especially productive for birds; saturated soils or patchy wetlands particularly valuable
Snags	Old-growth riparian trees, including snags and large dead branches add nesting opportunities for several priority species
Salt Cedar	Removal of salt cedar should be followed by immediate revegetation, to the extent possible; tamarisk beetle invasion should be closely monitored and loss of large stands mitigated to the extent possible with revegetation
Presence of Cliffs > 30 m (100 ft) Tall	Presence of tall cliffs increases value to birds

## Conservation Profile

Estimated Cover in Nevada	All lowland riparian in Nevada: <i>draft</i> 245,300 ha (606,300 ac) 0.9% of state
Landownership Breakdown	<i>in analysis – misclassifications on maps</i>
Priority Bird Species	American White Pelican Least Bittern Snowy Egret Bald Eagle (Prairie Falcon) (Golden Eagle) Peregrine Falcon Clapper Rail Gambel's Quail Yellow-billed Cuckoo White-throated Swift Willow Flycatcher Bell's Vireo Lucy's Warbler Abert's Towhee
Indicator Species	Yellow Warbler (breeding) Wilson's Warbler (migration)
Past Impacts	Surface Water Divisions/Impoundments Channelization Habitat Conversion Livestock
Most Important Current Threats	Surface Water Divisions/Impoundments Livestock Biocontrol (tamarisk beetle) Invasive Plants Climate Change
Habitat Recovery Time	25 years
Regions of Greatest Conservation Interest	Virgin and Muddy rivers, Lake Mojave and Big Bend area, Meadow Valley Wash, Pahrnagat Valley, Ash Meadows NWR, and multiple other spring systems
Important Bird Areas	Ash Meadows NWR, Virgin River, Moapa Valley, Pahrnagat Valley, Lower Muddy River, Meadow Valley Wash

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## Lowland Riparian, Wetland, and Wet Meadow



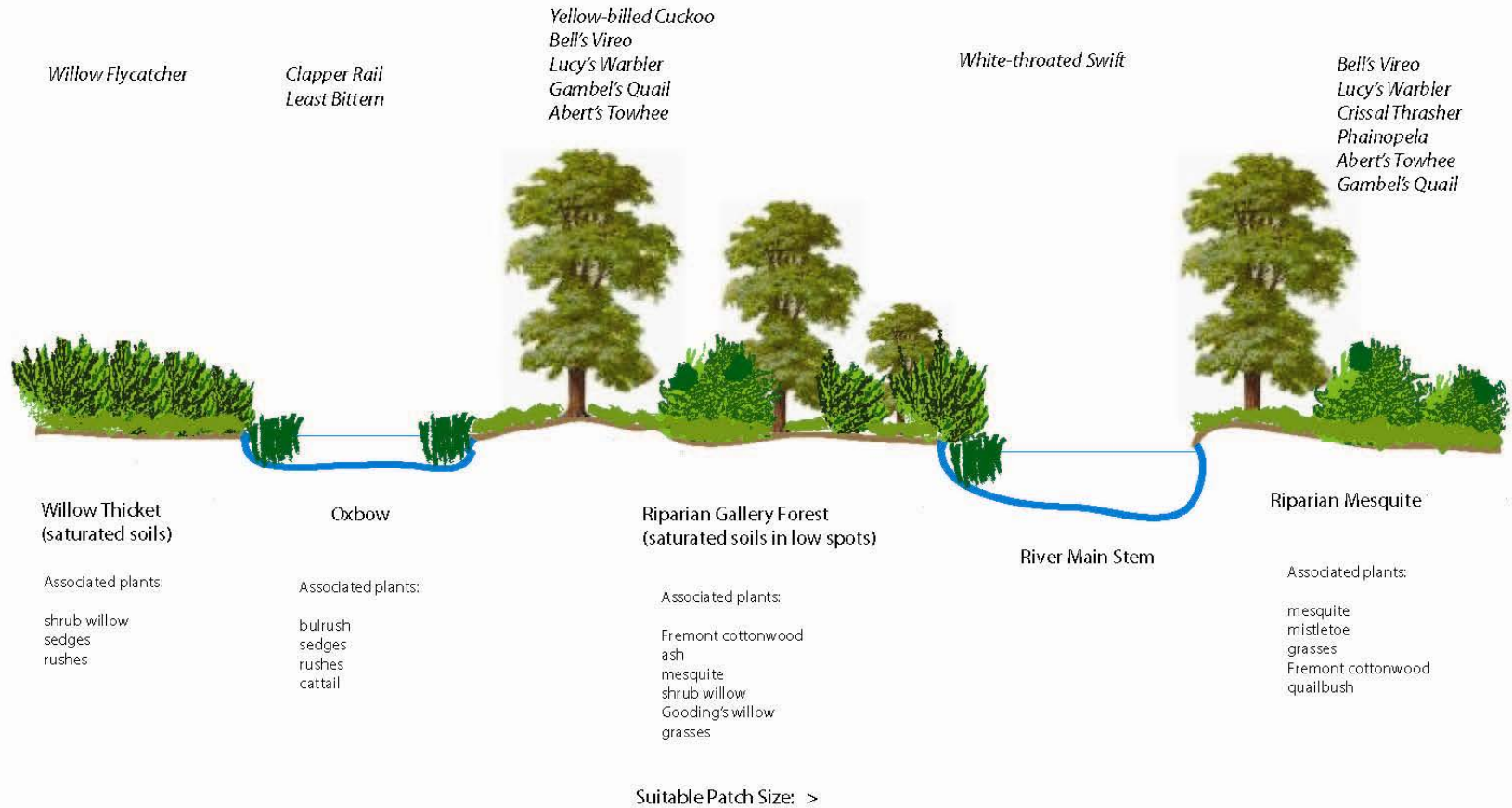
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Lowland riparian areas have historically likely supported among the largest proportions of bird species richness in Nevada, even though they only cover less than one percent of the Nevada landscape. Dominant woodland species include Fremont cottonwood (*Populus fremontii*) and various species of willows (*Salix* spp.). Other riparian shrubs, trees and a large variety of herbaceous plants are also found in intact systems, and their presence is likely important for maintaining the bird community. Mojave lowland riparian habitats are required by some of the species of greatest conservation concern in Nevada, namely the Southwestern Willow Flycatcher and Yellow-billed Cuckoo. Much has been published on both of these species and their habitat requirements, and as a general rule of thumb, a riparian area managed to benefit these two species will likely benefit the other priority species associated with Mojave lowland riparian. One of the most well-known threats to lowland riparian birds of the southwest is the invasion of salt cedar (tamarisk), which followed major landscape perturbations such as channelization, impoundments, and surface water diversion in the Lower Colorado River and its tributaries. Much of the conservation literature for the southwest from the 1980-90s focused on salt cedar eradication, as salt cedar is generally recognized as inferior in habitat value to native riparian woodlands. However, several priority species, including Southwestern Willow Flycatcher, Bell's Vireo, Lucy's Warbler and others, have since colonized salt cedar habitat for nesting, and today, often rely over large reaches of river on this habitat type. Therefore, revegetation with native riparian woodlands is a key strategy for areas that can sustain these plant species, and major mitigation efforts, such as the Lower Colorado River Multi-Species Conservation Program and the Clark County Multi-Species Habitat Conservation Plan are important to sustaining our priority species.

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Not To Scale



Possible Indicator Species: Yellow Warbler, Wilson's Warbler, Orange-crowned Warbler

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## Conservation Goals, Objectives, and Actions

### Habitat Strategies

1. Manage at landscape scale (> 50 ha or 110 acres, but smaller patches are also valuable if intact) with the goal of maintaining mosaic of open, mixed-age tree canopy, riparian shrub thickets, flowering shrubs and forbs, and interspersed floodplain wetlands. High species richness in plants and presence of willows are particularly suitable for birds. Patch sizes within the mosaic may be small (1/4 - 1 acre), while the overall riparian woodland corridor should be contiguous.
2. Old-growth trees are important to several priority species, but the overall value of a patch is likely most improved by adding a native riparian shrub and wetland component.
3. Revegetation and stream restoration should be pursued aggressively in areas where opportunities exist and in areas where salt cedar is controlled.
4. Riparian areas near urban or rural settlements in particular attract feral cats and other predators. Strategic plantings of particularly impenetrable shrubs (e.g., wild rose) are useful for discouraging opportunistic predators and cowbirds.
5. Removal of invasive plants, such as salt cedar, should be followed by active restoration of native riparian vegetation in the removal sites, as these weedy species often take advantage of disturbed soils and become more easily re-established in the absence of competition.

### Public Outreach

1. Promote public appreciation of intact lowland riparian areas with carefully planned recreational opportunities that raise public profile without impacting vegetation.

### Research, Planning, and Monitoring

1. Conservation planning that allows for opportunistic habitat restoration in places that become available may be key to mitigating for past impacts to the habitat. Even small patches of intact Mojave riparian habitat are enormously useful to nesting and migrating landbirds.
2. Monitoring of riparian resources throughout the region, and especially effectiveness monitoring of restoration activities is a high priority, as mitigation and restoration is a costly remedy for losses.