

Important Bird Areas *of* Nevada

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Lahontan Audubon Society
Reno, Nevada

Important Bird Areas of Nevada
by Donald E. McIvor

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The unlikely congregation of birds depicted on the cover are all species of concern in Nevada. These birds and many others face an uncertain future due to degradation, fragmentation, and outright loss of the sagebrush-steppe. Each bird—Ferruginous Hawk, Prairie Falcon, Greater Sage-Grouse, Sage Thrasher, Sage Sparrow, and Burrowing Owl—is staring into the eyes of the viewer as a challenge to do all that we can to preserve remaining essential habitat to ensure their survival.

Back cover photograph Carson Lake (Lahontan Valley IBA) and Stillwater Range. All photographs in the book are © D. E. McIvor/Hinterlands unless otherwise credited.

Frontispiece: Nevada's Important Bird Areas.

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conservation planning for some of our sensitive lands that include IBAs. We have also developed avitourism opportunities across the state, particularly in rural Nevada.

Context: The Nevada Landscape

The Great Basin ecoregion covers most of the state of Nevada, although the Mojave, Sierra Nevada, and Columbia Plateau ecoregions are also represented within the borders. To any traveler crossing Nevada along US 50 or I-80, the state is stark and the aridity unsettling. What these two transects tend to cloak is that there is actually a reasonable amount of variation in the precipitation pattern across the state. Precipitation in Nevada varies somewhat with latitude, but primarily by altitude. The higher mountains tend to receive and retain more of a snow pack that in some locations supports perennial streams and riparian areas and even reaches valley floors to sustain wetlands and open waters. The Sierra Nevada barely intrude into the western edge of the state, but they average about 60 - 80 inches of precipitation each year. This falls mostly as snow, and some of this moisture eventually reaches Important Bird Areas (IBAs) such as Pyramid Lake, Lahontan Valley Wetlands, and (ostensibly) Walker Lake as runoff. The Sierra Nevada also create a tremendous rain shadow, and it isn't until one reaches the eastern side of the state that the effects of this shadow start to moderate. Ranges like the Ruby and Jarbidge Mountains generally capture a respectable amount of snow, and the northeastern part of the state is usually greener to the eye of the traveler than most other parts of the state. In general, most of the state receives less than 10 inches of rain annually, with some higher elevations receiving 20 - 40 inches.

Nevada is the most mountainous state in the U.S. Though they are moving slowly enough to allow an accurate count, the exact number of ranges has avoided consensus. Wuerthner (1992) reported 160 named major ranges, with numerous lesser hills and high points, many unnamed, all of which totaled up to 314 ranges (McLane 1978). All of this variation in elevation means that it is possible to travel from the lowest point on the Colorado River (479 feet) to the highest point on Boundary Peak (13,140 feet) and pass from the Mojave Desert through numerous life zones ending in Alpine terrain.

Given this variation in precipitation and altitude, the variety of habitats comes as no surprise to the visitor who leaves any of the asphalt arteries traversing the state. The wide assortment of habitats supports a diverse bird community. Add in the fact that Nevada lies in the Pacific Flyway and the record of over 473 species in the state may come as no surprise.

As the driest state in the nation, Nevada's unique landscape presents unusual challenges to the IBA model. Consider the basis of the IBA Program as formulated by BirdLife International, whereby IBAs may be selected on the basis of unusually large congregations of target species. With few exceptions, the resources Nevada offers to birds are available in a widely dispersed, low density pattern, and the distribution of birds reflects the distribution of these resources. That does not mean that Nevada is not important to birds—the state has

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significant responsibility for a suite of sagebrush and piñon-juniper dependent species such as Greater Sage-Grouse, Pinyon Jay, Brewer's Sparrow, Sage Thrasher, and Sage Sparrow. Nevada also has a few sites that concentrate birds in significant numbers, and one of these sites, Lahontan Valley, is part of the Western Hemispheric Shorebird Reserve Network (Manomet Center for Conservation Science 2004). But more often than not defining Important Bird Areas for Nevada's species of concern requires identifying large landscapes with good quality habitat, even if the overall densities of birds within the IBA do not match the hundreds of thousands of shorebirds that congregate at places like Utah's Great Salt Lake.

Definition of a Nevada IBA

IBA programs at both the national and state level are assisted by Technical Advisory Committees (TACs). In the case of state level TACs, regional experts are assembled to provide insight and guidance for the programs. One of the first tasks assigned to the Nevada IBA TAC was to devise the criteria that would make the IBA Program relevant to the Nevada landscape. To develop these criteria the TAC consulted two primary sources of information. As is the practice, the criteria established by BirdLife International were adopted but the global thresholds modified to permit the identification of state level IBAs. This generally meant lowering threshold numbers, for example as described above using the case of raptors. A rule of thumb used by at least some IBA Programs is that the goal is to capture the top 10 percent of the sites available to birds in the state. With this general guideline in mind and using the TAC's knowledge of bird populations in Nevada, we identified threshold numbers that we believed would define the top 10 percent of the state's landscapes for birds. Adapting BirdLife International's IBA criteria also meant bringing Nevada's specific habitats into the mix. For example, both aspen forests and alpine habitats are limited in extent in Nevada, making their importance to maintaining certain bird species disproportionate to their geographic extent.

As the Nevada IBA Program began, 36 other states already had programs under way. The committee also examined the criteria adopted by those states and considered their merit in Nevada. It was largely through evaluation of state level criteria that the Nevada IBA Program adopted two supplemental criteria: NV-4, sites supporting long-term avian research efforts; and NV-5, sites providing important, bird-specific educational opportunities. While some of the reviewed states had adopted these as stand-alone criteria, they were controversial as they encouraged a drift away from the original core goals of the international IBA program. The Nevada IBA TAC felt that these elements could be important and would consider these contributing elements to a site nomination which otherwise met one or more of the more rigorous bird abundance or habitat quality based criteria. The TAC also recognized that only one site in Nevada—the Goshute Mountains—had supported any activity that could be considered long-term research. HawkWatch International has been counting migrating raptors moving along the spine of the Goshutes for more than 20 years.



Least Bittern

One of the first challenges the Nevada IBA TAC faced was to determine which species of birds would form the basis of **Criterion NV-1** (sites important to species of concern in Nevada) and the program's focus. Many states maintain a list of species of concern that includes birds, but Nevada was not among those states. However, the *Nevada Partners in Flight Bird Conservation Plan* (Neel 1999) had been recently published when the TAC was evaluating in 2001 how to identify a suitable suite of birds. The bird conservation plan is based on a list of 51 species compiled after an exhaustive review process. To derive this list of species, the Nevada Partners in Flight Working Group evaluated each of the variables listed below for each candidate to the list (Neel 1999, pp. 18-19):

- **Colorado Bird Observatory Total Score.** A numeric index formulated by the observatory using ranking factors similar to those used by numerous state Natural Heritage programs.
- **Endangered Species Act.** Species which are listed or proposed for listing as federally Threatened or Endangered.
- **Habitat Threat.** Demonstrable evidence of historic, ongoing, or future threats to the nesting, migratory, or wintering habitat.
- **Importance of Area.** Based on an examination of the distribution of this species, Nevada provides a large percentage of the total nesting habitat, and therefore a high degree of stewardship responsibility for the well-being of the species.

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- **Low Numbers or Isolated Population.** Geographical isolation of Nevada's nesting population and/or a low nesting population in the state.
- **Population Decline.** The species has demonstrated an alarming downward population trend in the state.
- **Uniquely Representative of a Habitat Type.** Species selected because they epitomized an otherwise poorly represented habitat type, or for their ability to respond positively to habitat improvements.
- **Umbrella Species.** Management for a species in this category would address the needs of a larger community of species.
- **Unknown.** The ecological needs, population densities, or distributions of species in this category are intractable, and by their nature raise a red flag for conservation concerns.

The Nevada IBA TAC chose to add the list of federally Endangered or Threatened species of birds to this list of Nevada Partners in Flight (PIF) species. In large part this was a perfunctory gesture, as Western Yellow-billed Cuckoo and Southwestern Willow Flycatcher already occupied the Nevada PIF list. Other species attributed to Nevada from the Threatened and Endangered species list constituted accidental occurrences and would not alone form the basis for an IBA.

Criterion NV-2, "a site harboring an assemblage of species restricted to a unique or threatened natural community," was also a carry over criterion from BirdLife International that received some tailoring for Nevada. As previously mentioned, Nevada's environment is a uniquely challenging place to work, and what constitutes a unique or threatened natural community here is context specific. A particular type of habitat could be abundant and in good condition in other states, but for the purpose of sustaining our own bird populations some of these same communities warranted examination. To warrant recognition under this criterion, a site had to have both high quality habitat (that alone making it unique) *and* the appropriate bird community in residence. Shear numbers of birds were not necessarily required, merely a largely intact and representative community.

Two habitat types recognized as either unique or threatened in Nevada are the alpine zone and wetlands. Alpine habitat is restricted to the tops of the highest peaks in the state where elevation promotes a weather pattern more similar to areas thousands of miles to the north. However, with only a couple of minor exceptions, these areas do not have the attendant bird community one typically associates with the alpine community. Explanations remain unresearched, but one hypothesis is that these islands of habitat are too small and widely separated to sustain populations of these birds.

Another habitat type of great interest in Nevada is wetlands. An estimate based on the National Wetlands Inventory indicates about 1.5 percent of Nevada's present surface area is vegetated wetlands or open water (E. Skudlarek, Nevada Natural Heritage Program, pers. comm. 2004). This represents about half of Nevada's historic wetlands, as another estimate suggests about 52 percent of the state's wetlands have been lost since settlement (Dahl and Johnson 1991). What

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makes these statistics so vital is that although extremely small in total area, riparian communities in this region are critical centers of biodiversity (Mac 1988). More than 75 percent of the species in the region are strongly associated with riparian vegetation (U.S. General Accounting Office 1993), including 80 percent of the birds (Dobkin 1998). Every drop of water in Nevada is precious to something.

Criterion NV-3 focuses on sites where significant congregations of birds occur. This, too, is a criterion easily recognized from BirdLife International's IBA approach. However, thresholds in this criterion have been lowered from global levels to be relevant at the state level. The criterion covers the species typically recognized as congregatory—waterfowl, shorebirds, gulls and terns, wading birds, and raptors (in migration). It also covers song birds in migration, which are not typically thought of as congregatory but may occur in significant concentrations where migration bottlenecks occur. This category also recognizes that birds may occur in unusually high numbers and that such areas may be identified on the basis of comparison to other known populations across the state. The detailed criteria adopted for Nevada are included in this volume as Appendix II.

While the Nevada IBA Program concerned itself with scaling criteria and identifying thresholds that would be relevant for the western Great Basin and northern Mojave Desert, the national and global IBA efforts honed criteria for larger geographic scales. The National Technical Committee took as one of its first tasks the identification of which birds and how many of these birds would be required to identify a globally- or continentally-significant aggregation of birds. The species relevant to Nevada's IBAs, and the thresholds identified, are listed in Appendix III.

Evaluating IBAs to determine whether they meet state, continental, or global thresholds is the duty of two separate entities. At the state level, the Nevada Technical Advisory Committee determines whether state thresholds are met. Higher level designations are determined by a National Technical Committee. This body is faced with a daunting task, given the thousands of IBAs they must review. At the time this book is being prepared, a higher level review has not been performed for any of the Nevada IBAs. It is worth noting that the threshold numbers provided by the National Technical Committee have not been used in Nevada to fuel the search for IBAs. There is excellent overlap in the species listed in the National Technical Committee's table and the list of species identified by the Nevada IBA TAC; it is really the global and continental threshold numbers that constitute new information. This information was received as this manuscript was in preparation, so one of the future tasks of the Nevada IBA Program may be to take another pass at identifying critical landscapes and nominating new IBAs based on their potential to hold critical populations of these species.

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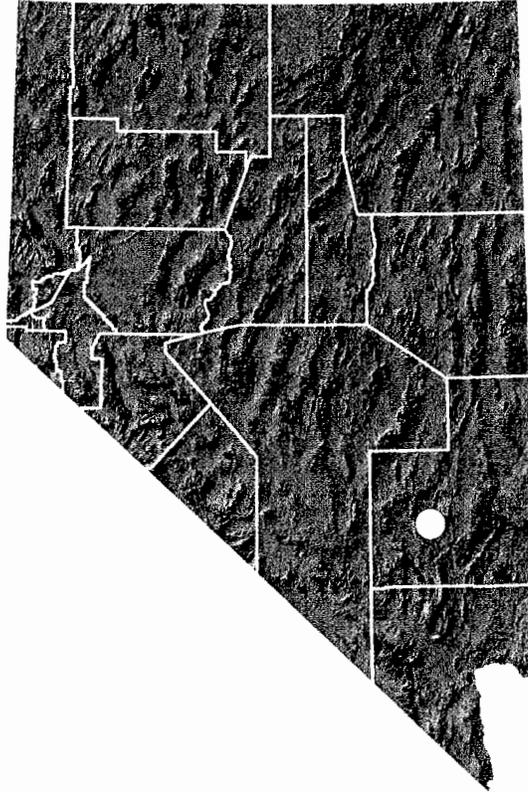
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Pahrnagat Valley Complex

Area: 3,474 ha

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Description

The Pahrnagat Valley Complex encompasses two important features in Pahrnagat Valley, the Pahrnagat Valley NWR on the south end of the complex and the Key Pittman Wildlife Management Area (WMA) at the north. These two publicly owned land parcels are separated by several private ranches. Private lands contribute to the integrity of the site and landowner cooperation and bird-friendly management practices on these parcels are long-term goals of the IBA Program and its partners.

Pahrnagat NWR is an oasis in southern Nevada. The

refuge encompasses a 10-mile stretch of Pahrnagat Valley and associated desert uplands. The White River, an ancient perennial stream which was a tributary of the Colorado River, flowed through the Pahrnagat Valley from the north. It established a well-defined but relatively narrow flood plain. The river bed is dry for many miles upstream and downstream from Pahrnagat Valley, but there is water in the valley that comes from large, thermal springs along the flood plain. This spring water is impounded in the refuge's Upper Lake and North Marsh and is released to create conditions that enhance the growth of wildlife food plants and supplement lakes, marshes, and grasslands south of the refuge headquarters.

Key Pittman WMA includes two small lakes near the town of Hiko. The town and the lakes are located in a broad valley with mountain ranges on both sides. In the bottom of the valley, farm fields attract a variety of waterfowl, shorebirds, cranes, hawks, and other birds.

Nesbitt Lake, the northern-most of the two lakes, is a broad, moderately deep lake with open water year-round. Frenchy Lake, the southern lake, is broad and very shallow, with open water only during some years. When it is wet, an extensive marsh surrounds almost the entire lake. (Boone 2004)

Land uses within the Pahranaagat Valley Complex include agriculture, tourism and recreation, conservation, low density development, and hunting.

Birds

Pahranaagat NWR hosts thousands of migratory birds each year, and more than 230 different species of birds have been recorded at the refuge. Bird abundance and diversity is highest during spring and fall migrations when large numbers of songbirds, waterfowl, shorebirds, and raptors converge. Common ducks are Northern Pintail, Cinnamon Teal, Mallard, and Redhead. Great Blue Herons are found near lakes while Black-necked Stilts and American Avocets feed in shallow water. Greater Sandhill Cranes can be seen February-March and again October-November as they migrate between nesting and wintering areas. Red-tailed Hawks, Northern Harriers, Cooper's Hawks, and American Kestrels are most abundant during winter months and both Bald Eagles and Golden Eagles are winter visitors. Cottonwood-willow habitat provides nesting habitat for warblers, orioles, flycatchers, and finches. The open fields attract shrikes, meadowlarks, blackbirds, and mourning doves. The uplands are home to Gambel's Quail, Greater Roadrunners, and various species of sparrows. (U.S. Fish and Wildlife Service 2004c)

The lakes at Key Pittman WMA provide habitat for waterfowl, wading birds, shorebirds, pelicans, cranes, and hawks. During migration, swallows, nighthawks, flycatchers, and warblers use the area as a stopover. During summer, the WMA provides nesting sites for Southwestern Willow Flycatchers and Yellow-billed Cuckoos. (Boone 2004) Other key species in this IBA include Bald Eagle, Blue Grosbeak, Clapper Rail, and Yellow Warbler.

Key species used to identify the Pahranaagat Valley Complex IBA and the criteria met by the site. Criteria codes are discussed in Appendix II.

Species	Year	Season	Min	Max	Units	Confirmed
Northern Pintail	1997	migration	--	18,000	individuals	NV3g, NV3a
Canvasback	1997	migration	--	5,000	individuals	NV3g, NV3a
Sandhill Crane	1998	migration	--	400	individuals	NV1, NV3g
Willow Flycatcher	2001	breeding	--	54	adults	NV1, NV3g

Conservation Issues

The presence of water makes conditions ripe for invasive plant species. Tamarisk, Russian olive, and annual grasses are but a few of the threats that land managers battle. Pahranaagat Valley is also threatened by over-exploitation of groundwater resources to satisfy Las Vegas' needs.

Visiting the Site

Primary places for viewing wildlife are at the lakes described in the text above. Spring and fall migration are the best viewing times, though a winter visit can also yield some interesting finds. Rarities occasionally show up here and reward the attentive birdwatcher.

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