

Least Bittern

Ixobrychus exilis

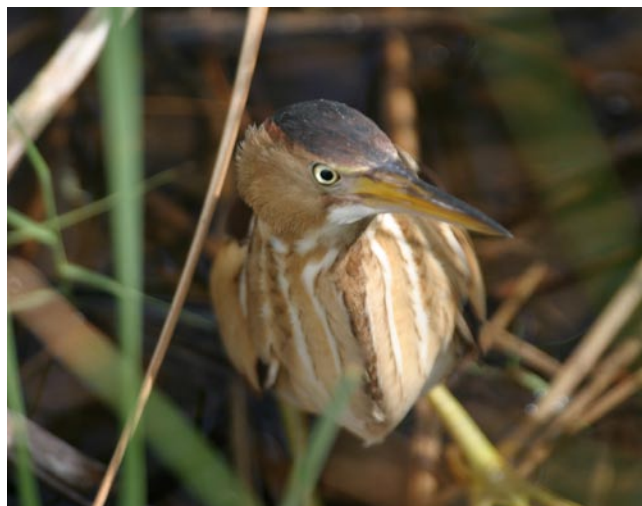


Photo by Martin Meyers

Habitat Use Profile

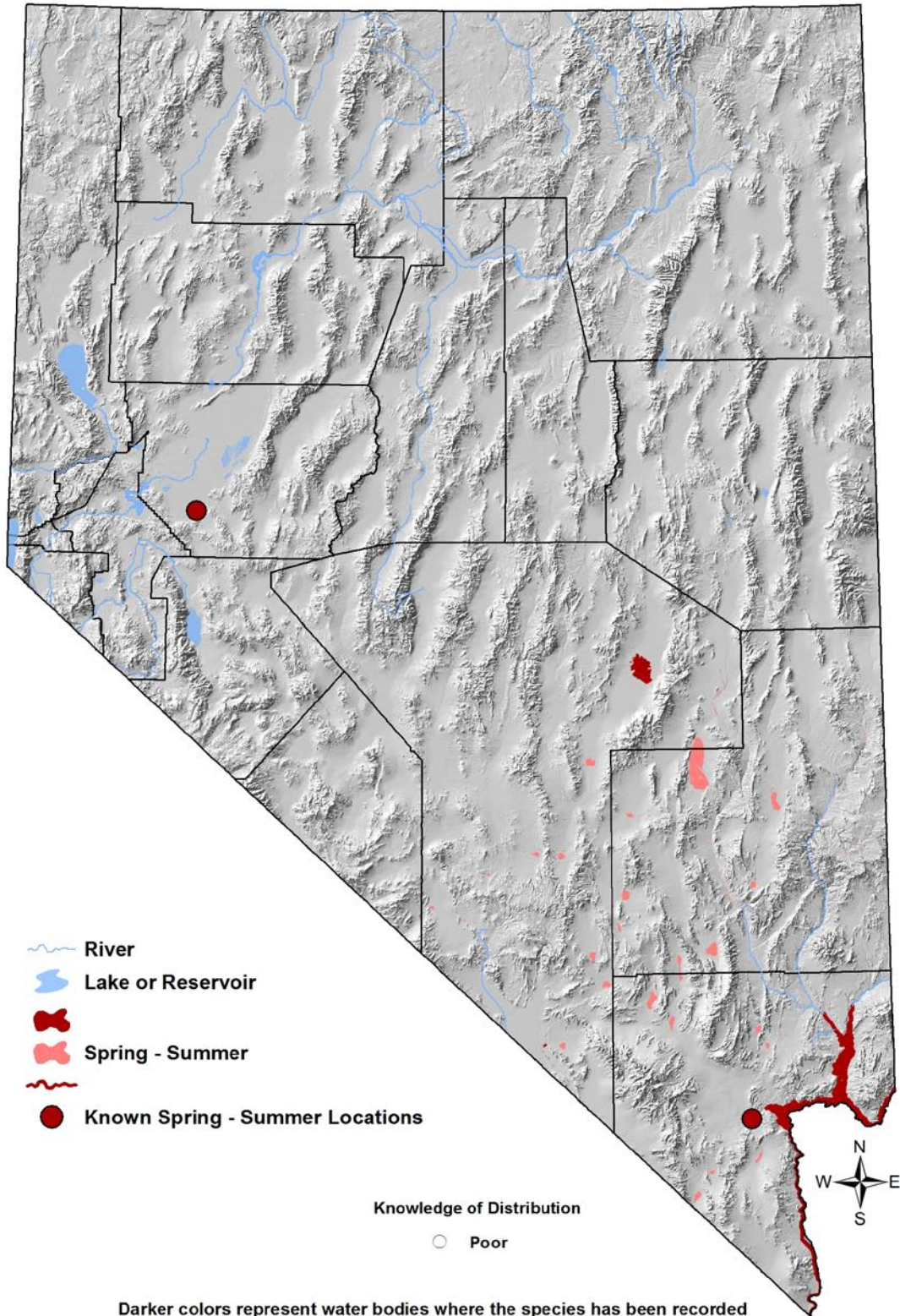
Habitats Used in Nevada	
Marsh (Mojave Lowland Riparian)	
Key Habitat Parameters ◦	
Plant Composition	Cattail, bulrush, sedges
Plant Density	Dense emergent vegetation ⁷
Mosaic	Shallow marsh with moderate to high stem density of emergent vegetation, interspersed with open water and woody vegetation; approximately equal proportion of open water and emergent vegetation ⁷
Water Depth	At nest, 8 – 96 cm [3 – 37 in]; for foraging, < 60 cm [23 in] ⁷
Hydrology	Minimal daily fluctuation in stage probably preferred ^{EO}
Response to Vegetation Removal	Negative ^{EO}
Area Requirements ◦	
Minimum Patch Size	2 – 6 ha [5 – 15 ha] ¹⁰
Recommended Patch Size	> 10 ha [25 ac] ⁹
Home Range / Territory Size	Unknown; home range at least 2 ha [5 ac] in other regions ¹

Conservation Profile

Priority Status	
Conservation Priority Species	
Species Concerns	
Habitat threats Restricted habitat Possible declines Small population size	
Other Rankings	
Continental PIF	None
Audubon Watchlist	None
NV Natural Heritage	S2b
USFWS	Migratory Bird
BLM	None
USFS	None
NDOW	Conservation Priority
IW Waterbird Plan	Moderate Concern
Other	Covered by Lower Colorado River MSCP ⁶
Trends	
Historical ◦	Unknown, but declines probable ⁷
Recent ◦	Unknown, possible declines ⁷
Population Size Estimates	
Nevada ◦	Unknown
Global ◦	Unknown
Percent of Global	Unknown
Population Objective	
Maintain / Increase ^{EO}	
Monitoring Coverage	
Source	Secretive-marshbird surveys by BOR, SNWA, and others
Coverage in NV	Unknown
Key Conservation Areas	
Protection	Muddy and Virgin Rivers, Ash Meadows NWR, Henderson Bird Viewing Preserve, Las Vegas Wash, Pahranaagat NWR, Lahontan Valley
Restoration	Degraded Mojave region marshes
Natural History Profile	
Seasonal Presence in Nevada	
Spring – Summer Possibly Year-round and Migration	
Known Breeding Dates in Nevada	
May – August, possibly earlier ⁷	
Nest and Nesting Habits	
Nest Placement	Platform in emergent or adjacent woody cover 15 – 76 cm [6 – 30 in] above water; less than 10 m [33 ft] from open water ⁷
Site Fidelity	Unknown
Food Habits	
Basic	Ambush predator and prober
Primary Diet	Small fish, aquatic invertebrates ⁷
Secondary Diet	Crustaceans, small mammals, plant material, eggs ⁷

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Darker colors represent water bodies where the species has been recorded within the past 12 years. Lighter colors represent water bodies where the species could potentially occur. Smaller water bodies may be difficult to visualize on the map.

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Overview

Secretive marshbirds like the Least Bittern are generally not detected by multi-species survey and inventory protocols. For this reason, we are only now beginning to understand the distribution of Least Bitterns in Nevada. The Nevada Breeding Bird Atlas project⁴ confirmed earlier evidence of breeding in Lahontan Valley (at Carson Lake, with the earlier reports also including Stillwater NWR), and found evidence of likely breeding at Overton WMA and Pahrnatagat NWR. Other areas with confirmed breeding include wetlands along the Virgin and Muddy Rivers, the Henderson Bird Viewing Preserve, and the Las Vegas Wash restoration area, where Least Bitterns have been regular breeders since at least 2006^{2, 8, 10} (D. VanDooremolen, *pers. comm.*). Although Least Bitterns are likely breeders at Pahrnatagat NWR (based on atlas observations and old records), no recent breeding confirmation has been obtained (C. Tomlinson, *pers. comm.*). Ruby Valley also has old breeding records, but no recent confirmations. These findings suggest a very spotty breeding distribution, but as with other secretive marshbirds, it is likely that there are breeding locations in the state that are yet to be identified. The Least Bittern is also known or suspected to use Nevada during migration and winter,⁵ but there are no data available that pinpoint key locations during the non-breeding seasons.

It has been suggested that Least Bitterns have fairly narrow habitat requirements, and further study is needed to quantify key habitat parameters, so that resource managers can adjust conservation strategies to be maximally effective. Now that a survey protocol has been developed specifically for secretive marshbirds,³ it is also a high priority to implement this protocol in areas where Least Bitterns could potentially occur. SNWA and BOR are already beginning to perform these surveys, and it would be beneficial if they were implemented in wider areas of the state and into the migration and winter seasons in southern Nevada.

Abundance and Occupancy by Habitat

- ~ 1 bird / ha [0.4 / ac] in suitable marshes along the Lower Colorado River⁷

Nevada-Specific Studies and Analyses

No information

Main Threats and Challenges

Habitat Threats

- Loss or degradation of marshes due to water diversions, declines in water quality, or development

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- Water fluctuations during breeding season⁷
- Possible effects of selenium accumulation^{EO}

Research, Planning, and Monitoring Challenges

- Least Bitterns require specific survey methods³ because of their secretive habits
- Distribution and seasonal use patterns in Nevada are incompletely known
- Specific habitat parameters remain to be quantified

Conservation Strategies

Habitat Strategies

- The Marsh (p. Hab-9-1) habitat conservation strategy benefits this species
- Protect water inflows and water quality for known or likely breeding, migration, and wintering marshes
- Maintain consistent water stage in known breeding sites during nesting season (estimated to be 1 May – 15 July)
- Discourage development and disturbances in or near known breeding locations
- Conduct marsh restoration projects where feasible within the Least Bittern's known or likely range

Research, Planning, and Monitoring Strategies

- Inventory known and likely breeding, migration, and wintering sites using the secretive marshbird survey protocol developed by Conway³
- Conduct studies to better determine specific preferred habitat parameters
- Investigate possible impacts of accumulated selenium
- Monitor water quality in occupied sites

Public Outreach Strategies

- None identified

References: ¹Bogner and Baldassare (2002); ²Braden et al. (2009); ³Conway (2009); ⁴Floyd et al. (2007); ⁵Ivey and Herziger (2006); ⁶LCRMSCP (2004); ⁷Poole et al. (2009); ⁸Rathbun and Braden (2003); ⁹Shuford and Gardali (2008); ¹⁰Southern Nevada Water Authority, unpublished Las Vegas Wash survey data (2010); ^{EO} Expert opinion