White-faced Ibis
*Plegadis chihi*

**Habitat Use Profile**

<table>
<thead>
<tr>
<th>Habitats Used in Nevada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marsh&lt;br&gt;Wet Meadow&lt;br&gt;Agriculture</td>
</tr>
</tbody>
</table>

**Key Habitat Parameters**

<table>
<thead>
<tr>
<th>Plant Composition</th>
<th>Cattail, bulrush, sedges, pasture grasses, hay crops, willows, salt cedar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Density</td>
<td>Nesting: Dense emergent vegetation or flooded shrub thickets. Foraging: Moderately dense, flooded wet meadow or agricultural vegetation</td>
</tr>
<tr>
<td>Mosaic</td>
<td>Shallow marsh with emergent vegetation, &lt; 6 km [3.7 mi] from flooded agricultural fields or wet meadows; population requires both core and peripheral breeding sites distributed over a large area</td>
</tr>
<tr>
<td>Water Depth</td>
<td>&lt; 30 cm [12 in] for foraging</td>
</tr>
<tr>
<td>Hydrology</td>
<td>Requires flooded conditions in foraging areas</td>
</tr>
<tr>
<td>Response to Vegetation Removal</td>
<td>Negative in nesting site</td>
</tr>
</tbody>
</table>

**Area Requirements**

<table>
<thead>
<tr>
<th>Minimum Patch Size</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended Patch Size</td>
<td>&gt; 1,200 ha [2,960 ac]</td>
</tr>
<tr>
<td>Home Range / Territory Size</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

**Conservation Profile**

### Priority Status
- Conservation Priority Species

### Species Concerns
- Unknown population trend
- Habitat threats
- Possible high stewardship responsibility

### Other Rankings
- Continental PIF: None
- Audubon Watchlist: None
- NV Natural Heritage: S3B
- USFWS: Migratory Bird
- BLM: None
- USFS: None
- NDOW: Conservation Priority
- IW Waterbird Plan: Moderate Concern

### Trends
- Historical: Significant declines
- Recent: Unknown, but possibly declining

### Population Size Estimates
- Nevada: ~ 5,000 – 6,000 with high annual variability
- Global: > 100,000

### Population Objective
- Increase by 20%

### Monitoring Coverage
- Source: Nevada Colonial Waterbird Inventory, NDOW aerial surveys and Lahontan Valley counts, NWR and WMA counts, Aquatic Bird Count
- Coverage in NV: Good

### Key Conservation Areas
- Protection: Lahontan and Ruby Valleys, Humboldt River system
- Restoration: Degraded marshes and wet meadows

**Natural History Profile**

### Seasonal Presence in Nevada
- Spring – Summer

### Known Breeding Dates in Nevada
- May – July

### Nest and Nesting Habits
- Nest Placement: 20 – 50 cm [8 – 20 in] above water in tall emergent vegetation or flooded shrubs
- Site Fidelity: High for colony site
- Other: Highly colonial nester

### Food Habits
- Basic: Prober
- Primary Diet: Benthic, aquatic, and soil invertebrates
- Secondary Diet: Small vertebrates

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*Confidence in Available Data: ● High ○ Moderate ◇ Low*
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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.
Overview

Determining the population trend and conservation status of the White-Faced Ibis in Nevada is surprisingly difficult considering that it is a fairly common and easily detected species. White-faced Ibises have suffered significant historical declines due to habitat loss and pesticides, but staged a strong recovery beginning in the 1980s. Until recently, it appeared that ibis numbers had stabilized in Nevada (subject to normal precipitation-driven fluctuations), but more recent data suggest the possibility of a renewed declining trend. Evidence comes primarily from Lahontan Valley, the White-faced Ibis’s breeding stronghold in the state. The current ten-year average count for Lahontan Valley is 4,200 birds, substantially lower than the three-year average reported in 1999 (12,200), the five-year average reported in 2000 (11,300; L. Neel pers. comm.), and far below the peaks reported in the 1980s and early 1990s. If the species is indeed declining in Nevada, this would contrast with the regionally-reported trend towards increases or stability over the past few decades.

Determining whether recent counts indicate a real population decline, or represent an extended, precipitation-driven fluctuation, is a high priority. The ongoing Nevada Colonial Waterbird Inventory project being conducted by GBBO and NDOW as part of a regional USFWS colonial waterbird inventory initiative should help in this regard. However, White-faced Ibises are nomadic during their seasonal tenure in Nevada, and they are known to shift colony sites flexibly based on local conditions, which can complicate monitoring efforts and add an additional element of uncertainty to population and trend estimates.

Abundance and Occupancy by Habitat

The current population estimate is based on a 10-year average of Lahontan Valley counts, plus an estimated 800 birds in Ruby Valley and elsewhere in Nevada. Densities of 75 – 150 nests / ha [30 – 60 / ac] have been recorded at Carson Lake and Lahontan Valley.

Nevada-Specific Studies and Analyses

Earnst et al. conducted a detailed analysis of White-faced Ibis monitoring and inventory data from the Great Basin for the 1985 – 1997 time period. Data from different states, including Nevada, were broken out separately in their presentation. During the period analyzed, ibis numbers nearly tripled, a phenomenon that appeared to be partly, though not completely, explained by annual precipitation patterns. The authors discussed the nomadic habits of the White-faced Ibis as an adaptive strategy to cope with shifting resource availability, and introduced the concepts of core and peripheral breeding areas, both of which are needed for long-term population health and persistence.
# White-faced Ibis

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## Main Threats and Challenges

### Habitat and Other Threats

- Loss or degradation of marsh and wet meadow habitat due to water diversions, declines in water quality, or development
- Water level fluctuations during nesting may cause nest failure\(^6\)
- Changes in traditional flood irrigation practices in or near critical nesting areas, which reduces foraging opportunities
- Human disturbance at colony sites can cause nest abandonment\(^3\)
- White-faced Ibises are susceptible to avian botulism\(^3,5\)

### Research, Planning, and Monitoring Challenges

- Current population trends in Nevada are not known
- White-faced Ibises are challenging to monitor because of high annual variability and frequent nomadic movements within and among years
- Patch size requirements need further study

## Conservation Strategies

### Habitat Strategies

- Marsh (p. Hab-9-1), Wet Meadow (p. Hab-20-1), and Agriculture (p. Hab-1-1) habitat conservation strategies benefit this species; also, Ivey et al.\(^7\) provide additional conservation strategies for Great Basin populations
- Protect marshes near wet meadows and flood-irrigated agricultural fields from water diversions and development
- Maintain water levels in breeding sites during the nesting period (1 May – 15 July)
- Protect colony sites from human disturbance

### Research, Planning, and Monitoring Strategies

- Explore existing data, collect additional data, and conduct studies to determine population status of White-faced Ibises in Nevada
- Continue the Nevada Colonial Waterbird Inventory, Aquatic Bird Count, or other similar efforts to better document breeding distribution, numbers, and Nevada trends
- Investigate patch size requirements
- Assess whether both core breeding sites and a network of peripheral sites\(^1\) are healthy and adequately protected

### Public Outreach Strategies

- Encourage traditional practices in agricultural areas within known range, including flood irrigation

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**References:**\(^1\) Earnst et al. (1998); \(^2\) GBBO unpublished Atlas data; \(^3\) Ivey and Herzinger (2006); \(^4\) Kushlan et al. (2002); \(^5\) Nevada Wildlife Action Plan Team (2006); \(^6\) Ryder and Manry (1994); \(^7\) Ivey et al. (2004); \(^{EO}\) Expert opinion