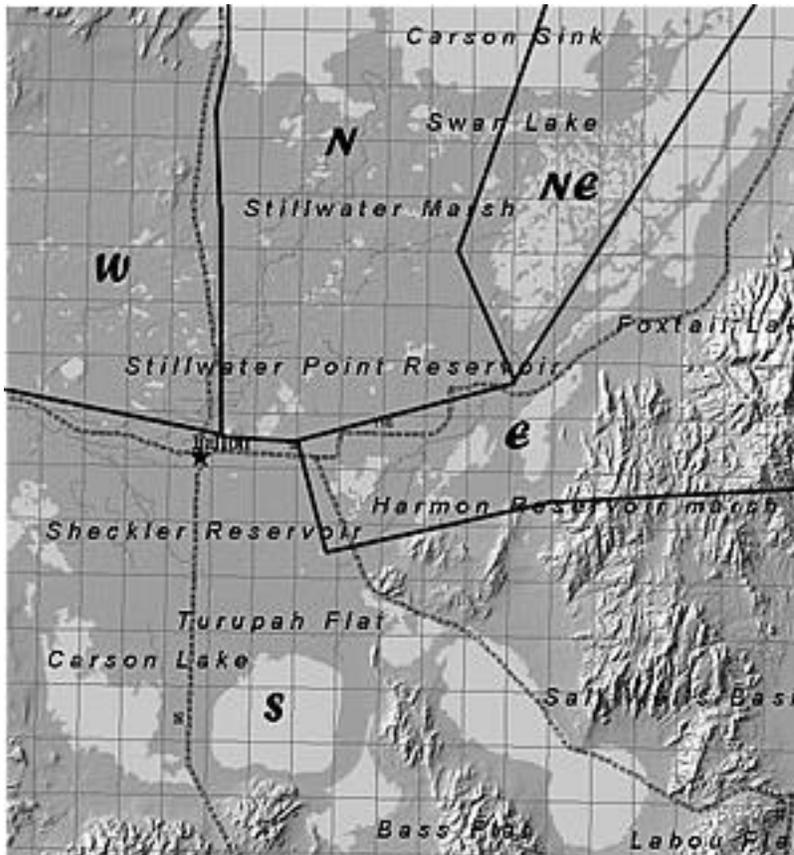


4. Lahontan Valley



Boundaries and Ownership

Lahontan Valley is generally considered to include all terminal marshes, wetlands and impoundments associated with the lower Carson River below Lahontan Reservoir. Lahontan Valley wetlands extend from approximately T21N, R30-32E south-southeast through T17N, R28 -31E, including the wetland complexes of Stillwater NWR, wetlands around the town of Fallon, and Carson Lake WMA and surrounding wetlands. Most wetlands through Lahontan Valley are dispersed and many are ephemeral. For the purpose of this document, we categorize the area into five sections: (1) **NE**: Stillwater Marsh, (2) **E**: Refuge impoundments (Stillwater Point Reservoir and surrounding areas), (3) **S**: Carson Lake WMA and surrounding sites, (4) **W**: Soda Lake and surrounding area, and (5) **N**: wetlands and springs of the lower Carson River. Within these sections, specific “designated” sites may be surveyed in isolation, for instance Soda Lake or Carson Lake, both popular birding destinations. Sheckler Reservoir, Harmon Reservoir, and Mahala and Massie Sloughs may also need to be included as specific sites, but the author knows too little about them to judge their importance to birds.

Stillwater NWR is under USFWS administration, and Carson Lake WMA is managed by NDOW. BLM lands surrounding Stillwater NWR also have dispersed wetlands and

Fallon Indian Reservation has a significant wetland complex. Soda Lake is in public ownership (?). Most small, dispersed wetlands are on BLM land or within the NWR and WMA boundaries, but several are located on private lands.

Focal Species

Most species listed for BMR 93. Significant breeding site for several shorebirds, including Snowy Plover, American Avocet, Black-necked Stilt and White-faced Ibis. One of the most significant migration stop-over sites of the state for waterfowl, waterbirds, and shorebirds. Important wintering site for waterbirds, waterfowl, some shorebirds, and tundra landbirds.

Type I Habitat

Carson Lake WMA, Stillwater NWR, Fallon Indian Reservation, and some areas outside these have permanent or seasonal wetlands of great significance to birds. Water delivery to most of these wetlands is subject to substantial year-to-year change, so the distribution of Type I habitat may greatly vary among years and seasons. The exact delineation of Type I habitat needs to be determined, by season, in a pilot study, unless the NWR and WMA already have assessments of bird use on their lands and surrounding areas. At Soda Lake, all open water is Type I habitat, as is probably the case for many smaller wetlands outside the NWR and WMA boundaries.

Type II Habitat

The distribution of Type II habitat varies, along with that of Type I habitat, from year to year and among seasons, and is primarily a function of water availability. Its distribution may also need to be determined in a pilot study.

Access and Visibility

The site is about 1 1/2 hours from Reno or Carson City, and about 15-25 min from Fallon. Access to NWR and WMA wetlands is good. Agreements with land management agencies need to be developed prior to conducting new surveys, and new surveys should be integrated with ongoing surveys. A permit from the Tribe is needed to access Reservation wetlands. Only a portion of the Stillwater and Carson Lake wetlands can be surveyed on foot or from roads. Entry of wetlands on foot is extremely treacherous in some areas and never recommended. Visibility is a problem in many wetlands during the growing season due to emergent vegetation. Accurate counts in complex wetlands may only be possible by aircraft or boat.

Past and Current Surveys

NDOW and USFWS have done extensive surveys on shorebirds and wintering waterfowl on their lands from 1989-1999. Most of these were surveys of migrating and wintering populations. Also, a significant effort by these agencies has gone into monitoring White-faced Ibis. New survey efforts need to be closely coordinated with these two agencies. A Christmas Bird Count has also been conducted in this site for over 5 years (contact: Larry Neel of NDOW). As part of an annual birding festival in May, Spring Wings, the site also gets significant attention from birders, and species lists from at least four festivals are available (contact: Jim Lytle of Lahontan Audubon Society). This site generally draws a

lot of visits from birders throughout the year, but mostly during migration and winter. Their sightings, if reported on the Nevada bird listserv, are archived online.

Potential Survey Methods

description Aerial, boat, and shoreline counts are all feasible (given permission from agencies, Tribe, and landowners). This site needs to be further subdivided than what is indicated on the map above. It is also a site that needs to be subsampled, because complete counts will not be possible due to its complexity. Most work on the ground will be restricted to berms or natural uplands, but access on these is good due to maintenance roads (4x4 recommended). Some wetlands are very shallow, so boat surveys need to be planned with the help of land managers, and may involve the use of canoes. The site is characterized by complex wetlands, changing habitat distribution due to changing water availability, and difficult on-the-ground access to remote sections. Therefore, aerial surveys may continue to play a significant role in monitoring this site. A combination of complete counts in permanent, distinct wetlands and subsampling of surrounding wetlands, perhaps through a transect method, are a possible approach for ground-based and boat surveys. Lahontan Valley is among the most complex, large wetland sites in the state and it is among the most important sites for aquatic bird monitoring. Any type of survey, except aerial surveys, would involve a multi-day effort unless a very large survey crew is available. For comprehensive monitoring, it may therefore be useful to subdivide it into sections that are surveyed in logistically separate efforts.

selection bias Due to the site's complexity, selection bias could be a significant issue. Planning with the local agencies is necessary to determine which portions of the site are inaccessible using ground-based methods. Because much of the land is in public ownership, it should be possible to secure permission to access to most areas. Private and Tribal lands require formal permission, and if not given, this may also cause selection bias.

measurement error and bias

The distribution of available habitat may be a source of measurement error, unless surveys are carefully designed around this issue. Significant emergent vegetation in many areas introduces error by affecting detectability of some species in all seasons. Due to the site's complexity, aerial surveys may involve very low altitude flights that cause flushing of birds. The site is also characterized by very high abundances and species richness during migration, so observer skills may play a major role in both error and bias. Variable water availability may also cause a problem with error and/or bias, although the trend in water availability has not been directional in the recent past (i.e., no gradual long-term decline or increase in water delivery). One difficulty that needs to be addressed in the survey design is that water is actively managed in most of Lahontan Valley and that water delivery for a large portion of wetlands often depends on annual water availability. Therefore, high annual and seasonal variability may cause a site to be Type I habitat one year, or one season, but not necessarily all years or seasons.

Pilot Studies Needed

Depending on how much information is available from the local land management agencies, pilot studies may or may not be needed to develop a comprehensive monitoring plan for Lahontan Valley. Extensive monitoring has been done by Stillwater NWR and NDOW, and information from these efforts may be sufficient for expanding surveys. Whether or not additional pilot studies are needed should be determined in coordination with these agencies. Pilot studies may address the following issues: (1) distribution of Type I and Type II habitats, by season, throughout the valley; (2) survey cost and effort needed to do comprehensive monitoring; and (3) effect of water delivery on local bird abundances.

Contacts with Local Knowledge: Bill Henry (Stillwater NWR), Larry Neel (NDOW).