Colonial Waterbirds in Sacramento County, 1987 to 2020

Attempting to present a picture of the distribution of colonial nesting birds in the standard BBA format creates some frustrating challenges. The nature of these complications may vary based on the primary methodology employed. For example, in our case, we used data from observers assigned specific blocks to cover in Atlas 1, versus compiling large numbers of eBird observations made by a host of observers in Atlas 2. However, these complications are inherent to these colonial nesting species and create problems regardless of how data are collected. These challenges include:

1. The questionable applicability of many breeding codes, particularly those indicative of "possible" or "probable" breeding, for colonial breeders: For herons and egrets, for example, courtship and territorial behavior, considered "probable" evidence of breeding, typically occur only in the immediate vicinity of the nest, which by its presence alone is evidence of "confirmed" breeding. For this reason, "possible" and "probable" codes are generally disregarded except in certain cases, e.g., birds visiting a known colony but not definitely confirmed at a specific nest because of screening vegetation or some other visibility problem.

2. Lack of easy access to colonies: Examples include colonies on Delta islands accessible only by boat and colonies on private land or restricted-access areas of wildlife refuges, nature preserves, etc. A number of heronries went undetected in the eBird reports compiled for Atlas 2 for this reason.

3. Frequent abandonment of colonies, sometimes followed by the establishment of new colonies elsewhere, is not easily depicted in the standard atlas block-map format. The general idea of an atlas map is to provide a "snapshot," in a brief time period of 5–6 years, of a bird's distribution in a given area. But if colonies of the species in question are frequently disappearing and then reappearing elsewhere, the image of the breeding range captured may be misleading. In Atlas 1, for example, Snowy Egret is shown occupying two blocks, but annual numbers of actual or suspected breeders varied considerably at both sites, and birds abandoned use of both sites at different times during the atlas period. By the end of Atlas 1, no Snowy Egrets were known to be breeding in the county.

4. Shifting distribution of nest sites at a particular colony over time: The most striking example of this in Sacramento County occured at the Horseshoe Lake heronry on the Cosumnes River Preserve. Fairly substantial, but fluctuating, numbers of Great Blue Herons and Great Egrets probably nested in large trees around this lake every year since Atlas 1, joined by lesser numbers of other ardeids (Black-crowned Night Heron, Snowy and Cattle egrets) and Double-crested Cormorants in recent years. But the birds have not nested in the same trees every year, occasionally moving from trees in one arm of the lake to the other side, and then eventually back again. In this case, a problem arises in that a boundary line between two atlas blocks neatly bisects the lake between the arms! The colony just happened to shift arms during Atlas 1, so the map shows the same colony in two different blocks.

Despite these concerns, it is possible to find some patterns, and possible trends, in the status of colonial nesting waterbirds in Sacramento County between atlas periods. Aside from the actual atlas data, additional insights are provided by the results of a statewide survey conducted in 2011 by Shuford et al. (2020a, 2020b), and ongoing monitoring of heronries on various managed wetlands in the county (see the acknowledgments at the start of this volume).

Three distinct regions of the county host the majority of heronries, but slightly different subsets of the six species are considered here:

1. Areas of suburban expansion north and south of the Sacramento urban area: Much of the growth of these suburbs, particularly in the Natomas area and the Laguna/Elk Grove corridor, began about the time of Atlas 1 and expanded dramatically thereafter in the 1990s. No heronries were found in suburban sites in the county during Atlas 1, but by the time of the 2011 survey, five such sites were known, harboring breeding Black-crowned Night-Herons (five sites), Snowy Egrets (four sites), and Cattle Egrets (three sites). By the time of Atlas 2, all of these sites had been abandoned as a result of human alteration or destruction of the nesting substrate (ornamental trees), but 5–7 new colonies had become established in the same general areas in similar suburban residential neighborhoods. Some of these colonies came and went during Atlas 2. In short, the year-to-year status of these colonies is erratic and unstable. Invariably these colonies contain some subset of these same three species; only once was a Great Egret reported from such a site. See the Cattle Egret account in Chapter Four for additional information about these sites.

2. The American River Corridor, primarily the American River Parkway but also including state properties upstream from there to Folsom Dam: These sites, typically in stands of tall trees, are used by Great Blue Herons and Great Egrets (with Black-crowned Night-Herons considered possible at one site during Atlas 2). Double-crested Cormorants have also been found breeding at two of these sites. Five sites were reported in Atlas 1, four sites in the 2011 survey, and five sites in Atlas 2. Three of these areas, William B. Pond Recreation Area/Arden Bar vicinity, Mississippi Bar, and a site bordering Folsom Prison, have been active continuously since the Atlas 1 period.

3. A string of wetland habitats, including creeks, sloughs, and lakes, extending south from the Bufferlands, through Stone Lakes National Wildlife Refuge to Delta Meadows River Park, and along the lower Cosumnes River drainage in the Cosumnes River Preserve: These are typically in stands of riparian forest trees or in large trees surrounding lakes. All are occupied by Great Blue Herons, most by Great Egrets, and a number by other ardeids and Double-crested Cormorants. The histories of these sites are relatively well known because they have been monitored by the various agencies and organizations involved in their protection and management. Many of these properties were only in the initial stages of development at the time of Atlas 1, and only four areas were identified then: Horseshoe Lake, the Bufferlands, North Stone Lake, and the Pellandini Ranch (the latter site since abandoned). Four additional sites were identified during Atlas 2, of which three were still active at the end of the atlas period.

Most sites hosting large numbers of birds and higher species diversity (four or more species breeding regularly) are on or near protected wetlands. Only one site found in Atlas 2, with four species regularly breeding, is on private property. These sites tend to be relatively stable over time as well (e.g., Horseshoe Lake, Bufferlands), even if the exact trees used may shift somewhat. In some protected areas, large sites have declined or disappeared over time, but new sites have emerged nearby. For example, the once large, species-diverse North Stone Lake heronry had declined to only a handful of nesting Great Blue Herons and Double-crested Cormorants by the end of the Atlas 2 period, but another colony on the Stone Lakes National Wildlife Refuge (Sun River) emerged in the mid-2000s as a major site (for Great Blue Heron, Great Egret, and Double-crested Cormorants, though numbers have fluctuated somewhat). Similarly, the large Pellandini Ranch colony, active during Atlas 1 and the 2011 survey, was abandoned, but other heronries appeared, and in some cases disappeared, on Cosumnes River Preserve during Atlas 2.

In summary, while the overall trends for the species considered here in Sacramento County appear to be stable or increasing, their distributions and population levels are erratic and unstable to varying degrees for a variety of reasons, including human disturbance of breeding sites, landscape changes, predation, seasonal variations in water levels, climate change, and population interchange with other regions. These present major challenges for efforts to protect and manage these colonial waterbirds in the future.

Great Egrets at nest by Phil Robertson