

BALD EAGLE NESTING TRENDS, MANAGEMENT AND PUBLIC EDUCATION IN THE EAST BAY REGIONAL PARK DISTRICT

Abstract

The bald eagle (*Haliaeetus leucocephalus*) is an Endangered Species Act success story. Illegal shooting, habitat loss, and the pesticide DDT once threatened our national icon with extinction. Fortunately, the bald eagle population has recovered due to numerous management efforts, and members of the public can now view these birds in their natural habitats while learning about conservation. Specifically, within East Bay Regional Parks, established bald eagle nests have been protected at Lake Chabot, Lake Del Valle, and Ardenwood Historic Farm. Since 2012, sites have been monitored by staff and trained volunteers, and interpretive programs have offered public education about bald eagles and their conservation. Analysis of the data collected between 2012 and 2022 provides an overview of their nesting trends and impact of human disturbance. The long-term breeding success of the bald eagles, occurring within the urban-interfacing East Bay Regional Park District, has averaged 1.27 fledglings per nesting pair.

Introduction

In recent years, the bald eagle population in the Pacific Northwest, California in particular, has increased (Millsap, Bjerre, Otto, Zimmerman, & Zimpfer; Fish and Wildlife Service 2016). Currently, nesting bald eagle pairs are found in 41 out of 58 counties within California, compared to only eight counties in 1977 (CA Department of Fish and Wildlife, 2016). Proper management of active bald eagle nesting sites located near human activity will help to support their growing numbers, provide data as to how disturbances can influence bald eagle activity, and offer positive narratives to share within conservation education programs.

Study Areas

Lake Chabot is located north of Castro Valley and east of Oakland in Alameda County (37.7283, -122.1135). Since 2012, the nest site has been in use each consecutive year by the same pair of bald eagles. The landscape surrounding the lake is covered by eucalyptus, with various types of grasses and shrubs. Lake Chabot is considered a near urban environment due to its proximity to residential communities.

Lake Del Valle, which is 10 miles south of Livermore in Alameda County (37.5976, -122.1135) has had a nesting pair of bald eagles since 1991. Lake Del Valle is situated within a valley in a rural area. The Arroyo del Valle tributary extends from the lake towards the nest site, with the surrounding area covered mostly by oaks, pines, and various types of grasses and shrubs. The Del Valle bald eagle nest is located approximately ¾ of a mile southeast of the reservoir, which is farther away from any possible human disturbances as opposed to the Chabot nest, which is closer to the main body of water. Nevertheless, due to the highly popular nature of Lake Del Valle, bald eagle interpretive programs have drawn hundreds of participants at this site.

Ardenwood Historic Farm is located at the Newark border of Fremont in Alameda County (37.556448, -122.050804). This 205-acre agricultural park, ringed by urban and suburban development, has had a young pair of nesting bald eagles since 2020. The nest site is within a 40-acre historic eucalyptus grove and is near a residential street outside the park on one side and a seasonally operated narrow-gauge railroad within the park on the other. The 100,000+ annual park visitors and the dense population surrounding the park provide both opportunity for education and heightened potential for disturbance at the Ardenwood nest site.

Methods

All locations were monitored using the same protocols to observe bald eagle (Figure 1) activity. Surveys were conducted using binoculars and variable powered spotting scopes. Monitoring sessions lasted 1-1.5 hours (between 0700 and 1700) and typically involved one to two observers. Disturbances were recorded according to the following responses from the bald eagles: Body/head position changes, temporary agitation or vocalization, and flushing (Buehler et al. 1991, McGarigal et al. 1991, Brown and Stevens 1997).

Results

Bald eagle nesting trends at Lake Chabot, Lake Del Valle and Ardenwood Historic Farms can be found in Tables 1, 2, and 3.

Discussion

The recovery of the bald eagle population has provided the opportunity for more nests to be established closer to human activity. One study conducted within California's Plumas County showed promising results for nesting bald eagle pairs near the Lake Almanor region. Despite the level of human activity in the area, it was found that there was no detrimental impact on the bald eagle pairs with an overall population increase of 67 percent between the years of 1988 and 2006 (Airola, 2007). Comparably, the nesting pairs of bald eagles at Chabot, Del Valle, and Ardenwood have experienced similar success rates. The data seems to indicate that eagles are adapting to and thriving in near urban environments. This trend of gradually increasing numbers of nesting pairs throughout the state of California is a welcomed sight and a tribute to the Endangered Species Act. It offers more opportunity for public viewing and education; however, it also increases the likelihood of human disturbance. The Ardenwood nest site provides a case study for how a cooperative approach to eagle monitoring and management can benefit both the public and wildlife.

Ardenwood Historic Farm Case Study

During the 2020 nesting season, a young pair of bald eagles successfully reared a chick at Ardenwood Historic Farm. At the time, the park was closed to the public due to the COVID-19 pandemic and the train ride, which runs within 100 yards of the nest, was not in operation. Over the next two years, several disturbances, both potential and realized, were identified, and subsequently monitored. These included: visitor and vehicle traffic within 100 yards of the nest, drone use, and, perhaps most significantly, the impending expansion and reoperation of the train.

Through cooperation between East Bay Regional Park District Stewardship, Operations, and Interpretive Services staff, the Society for the Preservation of Carter Railroad Resources, and park visitors and neighbors, the following avoidance measures were successfully implemented at Ardenwood:

- Buy-in of staff, public, and partners for conservation measures through education, outreach, and information-sharing
- Trail closure along the railroad tracks to all public activity within 200 yards of the bald eagle nest
- Sign installation on the park fence bordering residential neighborhoods, including: "Area Closed to Protect Nesting bald eagles" and "No Drone Flying"
- District Public Safety helicopter unit was informed of the 0.5 mile-radius (2,640 feet), direct-line-of-sight helicopter-exclusion zone around any active bald eagle nest
- All equipment activity was limited in the immediate area during nesting season
- Train activity/movement was limited within 300 yards of the nest and a NO whistle blowing policy was implemented

Avoidance measures have not only protected Ardenwood's nesting eagles but have also heighten the public's awareness of the eagles, their conservation story, and the impacts of humans on our wildlife neighbors. With over 100,000 visitors annually, Ardenwood provides ample opportunity for public education. Public education has also proven effective in raising awareness around bald eagle conservation at the Del Valle nesting site, as described in the next case study.

Lake Del Valle Case Study

With a large, 5-mile-long lake and over 24,000 acres of connected, undeveloped parklands, the bald eagle has an ideal habitat at Del Valle. Due to the recreational opportunities on the lake as well as a 150-site family campground, Del Valle is one of the most highly visited parks in our system. Despite this, the bald eagles have been able to nest successfully for many years. Since about 2013, the nest has been on private ranch land that is visible from the campground.

Naturalist staff lead public education programs to view the nest using spotting scopes and binoculars (Figure 2). Over the years, programs are offered from May to July and have been attended by about 500 people. Interpretive staff also conduct informal talks and eagle viewing in the campground. During these programs and informal talks, interpretive staff can discuss the resilience of the bald eagle and emphasize the importance of human intervention in conservation. These messages have a positive impact on our audience since they walk away with a sense of hope for the future of other threatened species.

Furthermore, beginning in 2019, the bald eagle has been used as a symbol for Del Valle – a park logo was created and is placed on buttons, stickers, flyers, etc. In 2021, a brand-new visitor center was built at the park with an exhibit on bald eagles telling their story of resilience and showing a quarter of a model life-sized nest with model fledglings and an adult flying above.

In speaking with visitors, we know they come to the park and campground year after year to view the eagles at Del Valle. There are also people who never knew bald eagles were here. Nevertheless, each interaction we have gives us a chance to share the importance of wildlife management and conservation.



Above — Wildlife volunteer's "Raptor Researcher" patch is earned by helping to monitor, protect, and educate about raptors.

YEAR	NEST CONSTRUCTION	INCUBATION	HATCHED	FLEDGED
2012	2/23	3/7	4/21	7/5 (1)
2013	2/14	3/10	4/22	6/24 (1)
2014	2/10	3/12	4/24	6/27 (2)
2015	12/17	2/18	Nest Failed	(0)
2016	2/10	3/23	4/23	7/29 (1)
2017	2/15	3/20	4/20	6/28 (2)
2018	2/6	3/22	4/17	6/26 (1)
2019	2/12	3/21	4/20	7/1 (1)
2020	2/12	3/12	4/20	6/25 (2)
2021	2/26	3/8	4/9	6/24 (2)
2022	2/26	3/30	4/13	6/22 (2)
TOTAL				15

Table 1 — The Lake Chabot nest has a 1.36 fledgling per bald eagle pair ratio (2012-2022).

YEAR	NEST CONSTRUCTION	INCUBATION	HATCHED	FLEDGED
2015	1/30	2/21	4/15	7/6 (1)
2016	2/4	2/23	5/21	7/16 (2)
2017	1/23	2/22	4/19	7/27 (2)
2018	1/24	2/26	4/19	6/25 (1)
2019	1/28	2/26	Nest Failed	(0)
2020	2/18	3/3	4/14	6/18 (1)
2021	2/24	3/4	4/9	6/29 (2)
2022	2/24	3/9	4/7	6/11 (2)
TOTAL				11

Table 2 — The Lake Del Valle nest has a 1.37 fledgling per bald eagle pair ratio (2015-2022).

YEAR	NEST CONSTRUCTION	INCUBATION	HATCHED	FLEDGED
2020	1/30	2/21	4/15	7/6 (1)
2021	2/4	2/23	4/7	(0)
2022	1/23	2/22	Nest Failed	(0)
TOTAL				1

Table 3 — The Ardenwood Historic Farm nest has a .33 fledgling per bald eagle pair ratio (2020-2022).



Figure 2 — Naturalist lead public education programs to view bald eagles.

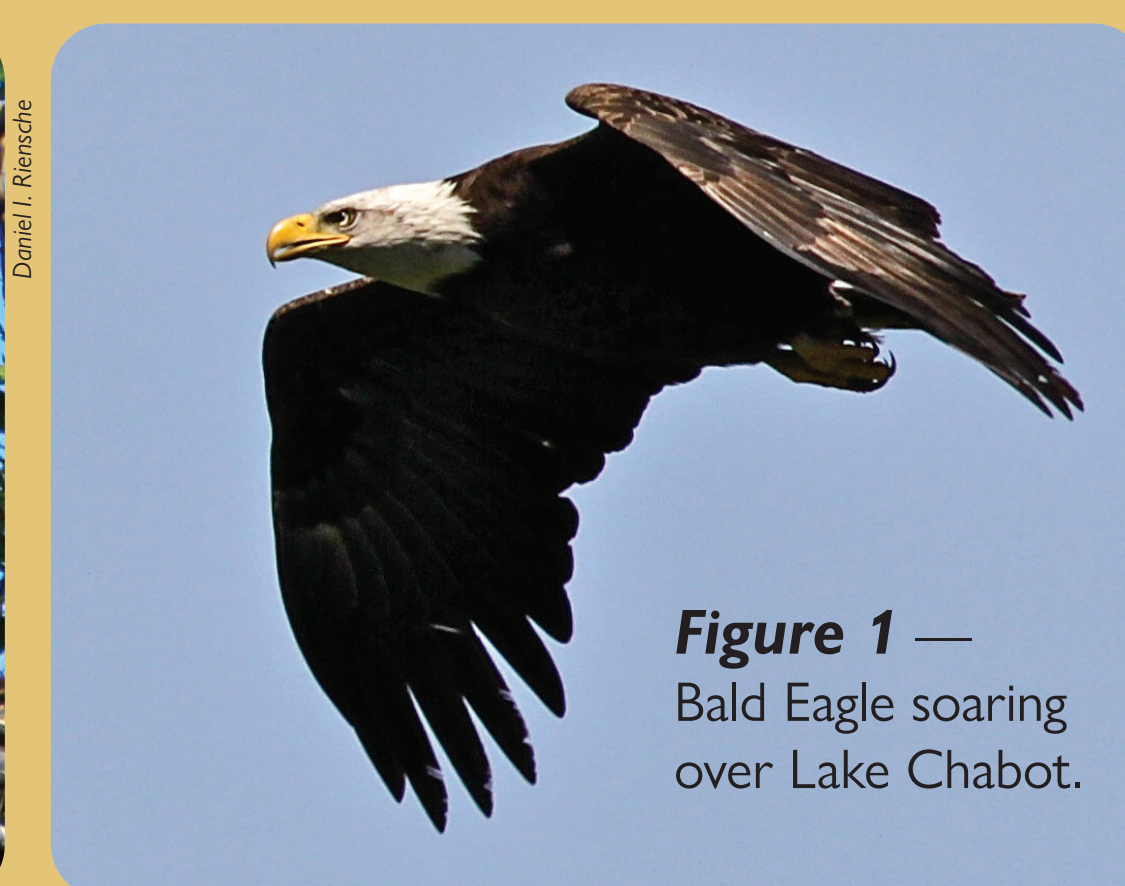


Figure 1 — Bald Eagle soaring over Lake Chabot.

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