

First Nesting Records and Increased Winter Abundance of the Hooded Merganser in Sacramento County

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We report the first Hooded Merganser (*Lophodytes cucullatus*) nesting record for Sacramento County, and several subsequent nesting records. We also report on the changing wintering status of Hooded Mergansers in the county, discuss the possible relationship between wintering status and breeding occurrence, and discuss habitat factors that may explain these changes.

Prior to 1964, when a nest was detected in Lassen County, Hooded Mergansers were not known to nest in California; yet, by 1997 there were multiple breeding records in 20 counties, including six Central Valley counties (Pandolfino et al. 2006). Breeding records have continued to increase and have now occurred in at least 21 of the 58 counties in the state, and the number of wintering birds has grown dramatically during the same period (Pandolfino, et al. 2006, Christmas Bird Count (CBC) data [birds.audubon.org/data-research]). If these trends continue as expected, Hooded Mergansers will become a regular year-round member of the avifauna in Sacramento County and much of the Central Valley.

FIRST SACRAMENTO COUNTY BREEDING RECORD IN 2011

Beginning in 2005, Trochet has surveyed for birds at ten widely distributed sites on the Cosumnes River Preserve (CRP) in southern Sacramento County as part of a wider riparian biological monitoring project conducted in the southern Sacramento Valley by the University of California Davis Museum of Fish and Wildlife Biology. One of these sites is Valensin Forest, a woodland block west of California State Route (SR) 99, visible beyond the railroad tracks between the Dillard Road and Arno Road exits. To the southeast and adjacent to this forest is a large marsh ("Snake Marsh," named for its importance to the federally threatened giant garter snake (*Thamnophis gigas*)), covering more than 32 hectares (80 acres), which

supports patches of open water during winters and springs with average or above average rainfall. Within the southeastern portion of the forest, beavers (*Castor canadensis*) have enlarged a pond with a maximum wet season area of up to 2.5 hectares (6 ac) by damming the outflow to the adjacent marsh, killing many large valley oaks (*Quercus lobata*) in the immediate vicinity. A few Wood Duck (*Aix sponsa*) nest boxes had been put up in and around the pond, but were not monitored prior to 2011. Many of the standing dead oaks had suitable nesting cavities as well.

On 6 May 2011, Trochet noted a male and two female Hooded Mergansers swimming together on the interior pond and, thinking it late in the season for this species, he alerted the preserve staff and volunteers to the possibility of breeding. Dunn and Sage searched the five nest boxes they could find around the pond, but the boxes were unused that season. No visit was made in June, but on 10 July, Trochet found a Hooded Merganser hen attending five two-thirds to three-quarters grown ducklings on the pond at Snake Marsh. No drake was seen then. By this date, the woodland interior pond was nearly dry. This was the first Hooded Merganser breeding record for CRP, and apparently the first for Sacramento County.

INCUBATING FEMALE AT COSUMNES RIVER PRESERVE IN 2012

Since May 2003, Sage and Dunn have maintained and monitored 72 Wood Duck nest boxes in riparian habitat at CRP along Moyer Slough (also called Deadman Slough) in southern Sacramento County. They examined each box every two weeks from March through June and noted any activity. In addition to Wood Ducks, many other species such as Barn Owls (*Tyto alba*), Northern Flickers (*Colaptes auratus*), House Wrens (*Troglodytes aedon*), European Starlings (*Sturnus vulgaris*), Virginia opossums (*Didelphis virginiana*), and introduced eastern fox squirrels (*Sciurus niger*) occasionally use these nest boxes.

On 22 April 2012, while monitoring the western section of the project, Dunn and Sage discovered a female Hooded Merganser incubating eggs in one of the boxes. Normally they would have captured and banded the hen and examined and counted the eggs, but as this was a significant discovery, they left the hen undisturbed. They took a documentary photograph of the incubating hen (Figure 1) and closed the box.

When they re-checked the occupied box on 17 May, the Hooded Merganser hen was still incubating. On 1 June, they examined the box again, and noted that all 12 eggs present had hatched. Three of the hatched eggs were Wood Duck eggs. Wood Ducks are known to engage in nest parasitism—primarily by laying eggs in the nests of other Wood Ducks (Hepp and Bellrose 1995). In this case it appeared a Wood Duck laid eggs among the Hooded Merganser clutch that successfully hatched.



Figure 1. Hooded Merganser female on nest in nest box. 17 May 2012. Cosumnes River Preserve, Sacramento County, California. Photo © Nancy Sage.

HOODED MERGANSER EGGS ON THE AMERICAN RIVER PARKWAY IN 2012

In April 2000, Langham installed six Wood Duck nest boxes in trees along the American River Parkway near the Gristmill access. The following year, all six boxes fledged Wood Ducks. Currently there are 16 boxes suitable for Wood Ducks, including three large boxes installed to attract Common Mergansers (*Mergus merganser*), which first nested in one of these boxes in 2007.

On 10 May 2012, Langham and a school group led by Natalie Fenner checked the nest boxes. One contained 19 Wood Duck membranes, indicating they had successfully hatched, plus 12 unhatched Wood Duck eggs and four

unhatched Hooded Merganser eggs. The abandoned eggs were broken open so the students could see the contents. No photos of the Hooded Merganser eggs are available, but they were larger than the Wood Duck eggs, though not as large as Common Mergansers eggs. The shells of the four eggs were thicker and tougher to break open than Wood Duck eggs. Hooded Merganser eggs are typically larger than Wood Duck eggs and the shells are significantly thicker than those of other ducks of similar size (Dugger et al. 2009). Brood parasitism by Hooded Mergansers on Wood Ducks as well as on other Hooded Mergansers has been commonly reported, so the four eggs likely illustrate this behavior (Dugger et al. 2009).

Langham has regularly monitored birds within a 2.4 km (1.5 mi) stretch of river near the Gristmill access since July 1993. He did not observe a Hooded Merganser there until 16 November 2005, with the next observation not coming until January 2008. Since then, he has had many observations, though typically of one to two individuals. Ironically, he had no sightings in 2012, the year that Hooded Merganser eggs were discovered in one nest box. He observed a pair of Hooded Mergansers at William B. Pond Recreation Area in January 2013, upstream of Gristmill, and Jim Pompy told him that he has seen a pair several times in the secluded area of Mayhew Drain, downstream of Gristmill. Pompy installed three Wood Duck nest boxes in that general area, February 2011, and two more in 2012 so the Hooded Mergansers now have even more options.

COSUMNES PRESERVE IN 2013

On 22 April 2013, Linda Pittman (pers. comm.) and Karen Zumwalt discovered a female Hooded Merganser in a nest box sitting on 12 eggs at Horseshoe Lake at CRP, east of SR 99, and northeast of Valensin Forest. Nine or ten of these eggs hatched before a 17 May box visit (Linda Pittman, pers. comm.). On 21 May, Andy Engilis (pers. comm.) found a female with six chicks in Snake Marsh, and on 16 June Trochet saw a female with three fully grown young there, indicating that some young reached adult size (The female was only distinguishable from the young by her fuller crest.) There is a water connection under SR 99 between Snake Marsh and Horseshoe Lake, but the sites are approximately 2 km (1.25 mi) apart, so they probably represent two different nesting efforts. These observations indicate that Hooded Mergansers have nested at CRP for at least three consecutive years.

ADDITIONAL NESTING RECORDS IN THE CENTRAL VALLEY

Although Pandolfino et al. (2006) documented 119 nesting attempts between 1964 and 2004, Hooded Mergansers are still not widely recognized as a regular breeding species in California. For example, the range map in the Birds of North America account, updated in 2009 and citing the observations of Pandolfino et al. (2006), does not indicate the species as nesting in the

state (Dugger et al. 2009); yet, since 2004, the number of known nesting records has continued to grow, and it is impossible to know how many nests escape detection.

Through 2004, Hooded Mergansers had been documented nesting in the Central Valley in Butte, Colusa, Placer, Stanislaus, Sutter, and Yolo counties (Pandolfino et al. 2006). Now Sacramento County can be added to that list. Records from the California Waterfowl Association (CWA) show annual or near annual breeding continuing at sites in Placer County northeast of Lincoln, Stanislaus County near Grayson, and in Butte, Colusa, and Sutter counties within the Butte Sink. CWA documented 11 nests from one Sutter County site in 2009 and, in 2013, an impressive 37 Hooded Merganser nests at Wild Goose Duck Club in Butte County (Caroline Brady and Nicole Chavez, pers. comm.)



Hooded Merganser nest in nest box. 22 April 2013. Sacramento County, California. *Photo © Linda Pittman.*

INCREASED WINTER NUMBERS

Pandolfino et al. (2006) showed a steady increase in records on CBCs from California between 1982 and 2003 after numbers had remained low from 1960 to 1981. The increase in numbers on CBCs that include large portions of Sacramento County has been more recent, with sharp increases in the past decade (Figures 2a). Before 1980, the Sacramento CBC, which began in 1949 (Count Year [CY] 50), recorded Hooded Mergansers on only two

counts: CY 58 (nine individuals) and CY 66 (two individuals). The Folsom CBC, which began in 1978 (CY 79), did not record Hooded Mergansers until CY 82, although by CY 88 Hooded Mergansers occurred annually. Annual occurrence, in very low numbers, did not begin until CY 104 on the Sacramento CBC (Figure 2a) and until CY 100 on the Rio Cosumnes count (Figure 2b).

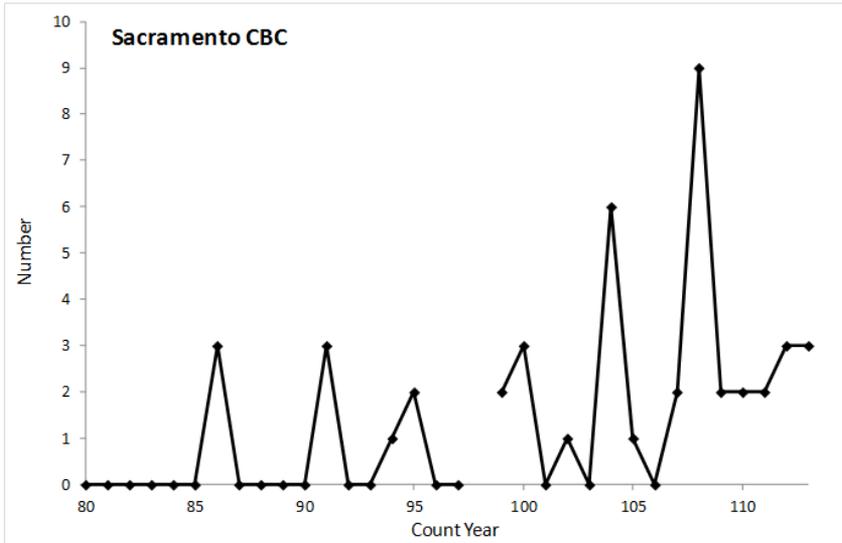


Figure 2a. Numbers of Hooded Mergansers recorded since 1980 (i.e. CY 80) on the Sacramento Christmas Bird Count.

Folsom CBC data (Figure 2c) show an increase more in line with statewide trends than the Sacramento and Rio Cosumnes CBCs, which show increases only in the past decade. The Folsom CBC covers low foothills, starting at approximately 40 m (130 ft) elevation and topping out (in El Dorado County) at over 488 m (1,600 ft). In contrast, the Sacramento and Rio Cosumnes CBC circles cover areas in and adjacent to the low floodplain, with elevations from sea level to a high of less than 21 m (70 ft). For unknown reasons, Hooded Mergansers occurred regularly in the low foothills of Sacramento County and adjacent El Dorado County at least 12 years before increasing at lower elevations.

Sharp increases in occurrence are also evident at a finer scale. At the Sacramento Regional County Sanitation District Bufferlands between south Sacramento and Elk Grove, where consistent bird records have been kept since the early 1990s, the first Hooded Mergansers were not recorded until 5 February 1996 (Steve Scott, pers. comm.). The second detection was not until 17 March 2003, but since the winter of 2005-06 they have occurred annually in fall and winter. Up to 17 were recorded on a single day by January 2011,

with similar single-day highs of 15 and 16 the following two winters (Bufferlands waterfowl survey data). This pattern is similar to that noted previously by Langham on the American River Parkway.

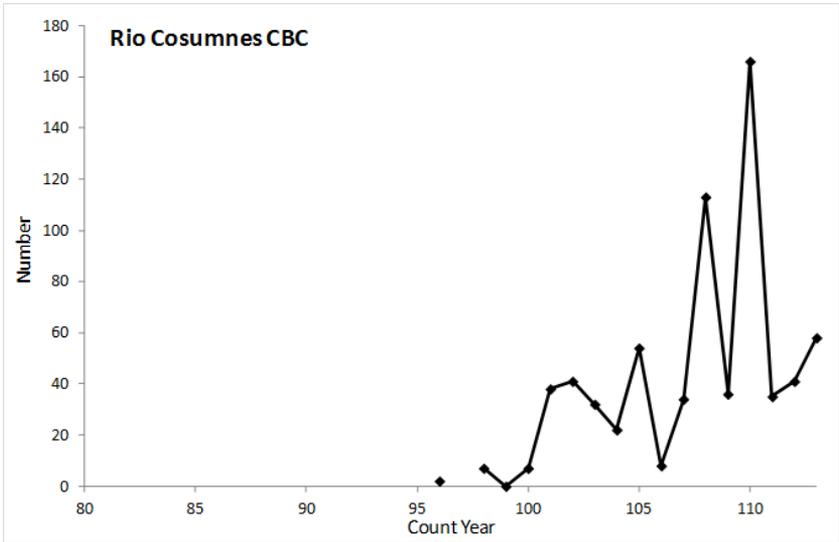


Figure 2b. Numbers of Hooded Mergansers recorded since 1980 (i.e. CY 80) on the Rio Cosumnes Christmas Bird Count.

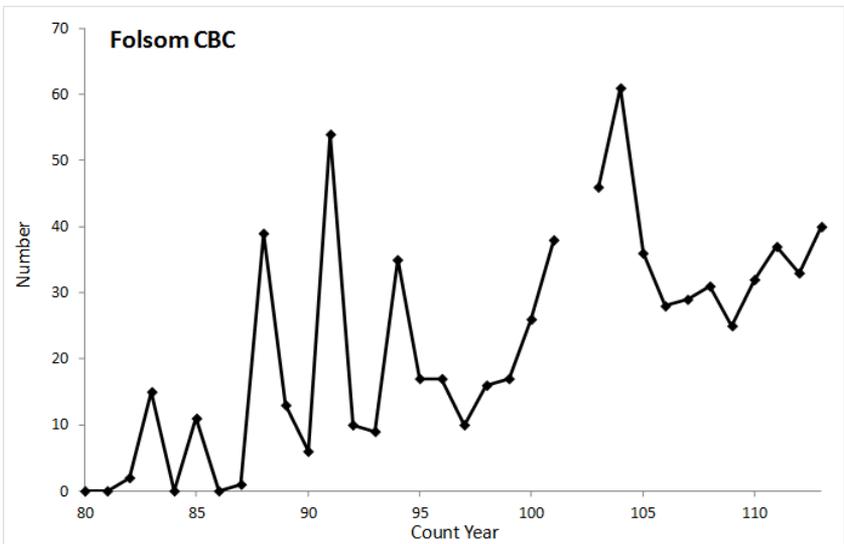


Figure 2c. Numbers of Hooded Mergansers recorded since 1980 (i.e. CY 80) on the Folsom Christmas Bird Count.

The rich data set from CRP bird surveys has not been fully analyzed, but just focusing on four monthly surveys (Lost Slough, Orr Forest, Tall Forest, and Willow Slough/River Walk), only 27 individuals are shown in the CRP database from 1990-2012. Of those, only three were recorded before 2000.

DISCUSSION

The reasons for the breeding range expansion of Hooded Mergansers into California and the Central Valley cannot be determined with certainty, but several factors may have contributed to its occurrence: increasing range-wide populations, recent increases in riparian and wetland habitats, and provision of artificial nest sites. These factors are discussed individually below.

Hooded Merganser populations appear to be stable or increasing throughout the species' range (Dugger et al. 2009). Increased numbers wintering in the state probably have encouraged wintering birds to nest in suitable areas of the Central Valley. Although Hooded Mergansers have shown high nest site fidelity (90% return rate to the previous year's nesting area and often to the same nest cavity), they also show the ability to vary their nesting and wintering locations in response to available habitat and nest sites (Dugger et al. 2009).

Recent restoration of riparian and wetland habitat also may have contributed to Hooded Merganser colonization of Sacramento County and adjacent areas. The Central Valley suffered more than a century of devastating losses of wetlands and riparian habitat to agriculture, flood control, and water conveyance (Garone 2011). These losses and steep declines in waterfowl numbers in the 1980s added urgency to large-scale wetland and riparian habitat restoration efforts, including the Central Valley Habitat Joint Venture established in 1988. Over the past 25 years, billions of dollars have been spent to mitigate some of the impacts of the Central Valley Project (the system of reservoirs, canals, and pumps that drained and altered much of the Central Valley). These and other efforts, driven by an increasing awareness of the value and function of wetlands, have led to improved and newly-created wildlife refuges, including those in the Butte Sink and along the Sacramento and San Joaquin Rivers; flooding rather than burning rice field residue, which has effectively more than doubled seasonal wetland habitat for waterfowl; and increasing protection and restoration of riparian forests (Garone 2011). One measurable result of this work has been a sharp increase in waterfowl numbers.

The CRP, Bufferlands, and Stone Lakes National Wildlife Refuge are examples of major restoration and habitat preservation projects in Sacramento County. The history of CRP perfectly illustrates the increasing value afforded to wetlands and riparian forest in the Central Valley and the timeline of many other conservation efforts in the region. It started in 1984

with the Nature Conservancy's purchase of a conservation easement on 34 hectares (85 acres) of valley oak riparian forest along the Cosumnes River. It has evolved into a multi-partner effort, including Ducks Unlimited and local, state, and federal agencies, that has preserved and restored nearly 18,600 hectares (46,000 acres). These lands include seasonal wetlands managed for waterfowl and other waterbirds; rice production beneficial to waterfowl, shorebirds, and Sandhill Cranes (*Grus canadensis*); restored floodplain, riparian forest, and grassland; conservation easements to preserve wildlife-friendly agriculture and open space; and vernal pool and rangeland preservation (cosumnes.org, Garone 2011). The increase in suitable wintering and breeding habitat for Hooded Mergansers is just one apparent specific consequence of these efforts.

Increased availability of artificial nest sites, in addition to creation of natural nesting habitat in restored riparian forest, also may have contributed to the colonization and increase in Hooded Mergansers. Since 1991, CWA's Wood Duck Program has installed and monitored thousands of nest boxes with a network of over 400 volunteers throughout the state (www.calwaterfowl.org/woodduck-program), including many in Sacramento County and adjacent areas. Although these boxes are intended primarily for Wood Ducks, they provide Hooded Mergansers with many additional nest cavity choices.

While the family groups seen near the Valensin Forest may have resulted from natural cavities, nearly all confirmed nest sites in Sacramento County and elsewhere in the Central Valley have been in nest boxes. Nest boxes, however, are easier for humans to detect and monitor than natural cavities, so it is unknown if or how many Hooded Mergansers are using natural cavities in the region. Therefore, the importance of increased availability of nest boxes in encouraging Hooded Mergansers to nest in the region remains somewhat uncertain, although their widespread use suggests that nest boxes may be of great importance to expanding Hooded Merganser breeding in the Central Valley.

As documented here, Hooded Mergansers are now breeding in multiple areas of Sacramento County and their numbers have greatly increased in fall and winter. It appears that they will become firmly established as a year-round presence in the county and much of the Central Valley where suitable habitat remains or has been restored.

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Hooded Merganser, 21 May 2013. Cosumnes River Preserve, Sacramento County, California. Photo © Andy Engilis.