

2026 California Waterfowl Breeding Population Survey Report¹

In memory of Orlando Rocha



By

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Summary

The annual California Department of Fish and Wildlife Waterfowl Breeding Population Survey has been conducted since 1948. The survey methodology was redesigned and updated in 1991 and has been conducted in its current form since 1992. The purpose of the survey is to estimate waterfowl populations in major concentration areas of the state to inform conservation and management. Data from the survey were incorporated into the U.S. Fish and Wildlife Service Adaptive Harvest Management framework for Western mallards beginning in 2008 and continues to be an integral part of duck harvest management in the Pacific Flyway.

In 2026, the survey was conducted from April 20 – 28 in the Central Valley and May 6 – 7 in northeastern California. The total breeding population of ducks in the survey area decreased 10% from 2025 and are 18% below the long-term average. Mallards (*Anas platyrhynchos*) indicated a negligible decline, from 270,271 in 2025 to 267,101 and are 16% below the long-term average. Gadwalls (*Mareca strepera*) decreased 44% from 2025 and are 28% below the long-term average. Cinnamon teal (*Spatula cyanoptera*) increased 8% from 2025 and are 5% below the long-term average. Canada geese (*Branta canadensis*) in northeastern California decreased 18% compared to 2025 and are 14% above the long-term average.

As of July, California received below average accumulated precipitation; northeastern California and southern California were the driest, with the Sacramento Valley closest to the long-term average. Despite this, statewide water storage levels of major reservoirs are at or above historical average for all but Millerton and Pine Flat reservoirs, which are 89% and 76% of their historical averages, respectively. Federal and State management areas serviced by the Central Valley Project received 100% of their baseline water supplies in spring of 2026, but there is a planned reduction in supplemental water for wetland management through the fall. Water allocation to the Klamath Basin National Wildlife Refuge Complex in northeastern California is currently unknown, however water deliveries are expected to remain limited. Other areas in northeastern California are unlikely to have adequate water supply for wetland management due to below average snow-water content in the region.

In addition, population estimates for survey years 2022 – 2025 were recalculated with an updated detection bias correction factor that incorporated additional years of data. The updated correction factor resulted in slight shifts for most species (-1 to 2%) in the values reported in 2025. For additional information on detection bias correction, see the methods below.

¹ Data are preliminary.

Methods

The procedures used in conducting the California Department of Fish and Wildlife (CDFW) Waterfowl Breeding Population Survey (hereafter California Survey) generally follow those set forth in the U.S. Fish and Wildlife Service (USFWS) Standard Operating Procedures Manual (SOP) for the Waterfowl Breeding Population and Habitat Conditions Survey (hereafter May Survey, USFWS and Canadian Wildlife Service 1987). Survey design and SOPs for the California Survey are as follows:

Strata — The original survey included 11 strata which were: Sacramento Valley, Sacramento – San Joaquin Delta, San Joaquin Grasslands, San Joaquin Desert, Suisun Marsh, Napa and Santa Rosa Valleys, Salinas Valley, Owens Valley, Northeastern California, East Valley (i.e., Central Valley) and West Valley (i.e., Central Valley; Zezulak et al. 1991). Salinas and Owens Valleys were discontinued after 1994; therefore, population estimates in this report only include data from the nine strata currently surveyed (Fig. 1).

Survey Timing — In the Central Valley and Suisun Marsh, about half of all duck nests are initiated by the last week of April. A range of 48–54 days existed between 10% and 90% of nest initiation in the Suisun Marsh during five years of study (McLandress et al. 1996). In northeastern California, nest initiations are later due to the increase in latitude, higher elevations, and correspondingly cooler temperatures. About 50% of mallard nests in northeastern California are initiated by mid-May (Zezulak et al. 1991). Based upon these regional nesting chronologies, surveys are conducted during the latter half of April in the Central Valley and by mid-May in northeastern California.

Survey flights are scheduled to begin no later than two hours after sunrise to ensure adequate lighting and avoid detection problems. Surveys are completed no later than 1400 hours, which facilitates use of Sacramento Executive Airport as a daily stopping point (except in northeastern California).

Survey Sample — The California Survey consists of nine strata (Fig. 1; see Zezulak et al. 1991). A stratum is a defined geographic unit encompassing areas of similar waterfowl densities and is generally of a single or unique complex of habitat type(s). Most strata are continuous spatial units except the Northeastern stratum, where mountainous terrain separates each wetland complex (Fig. 1).

A transect is the sampling unit of the California Survey, which can have multiple segments, be continuous and / or disjunct. Segments are a subunit of a transect, most of which total 18 statute miles (29 km), except in the Suisun Marsh, Napa-Santa Rosa and Northeastern strata. Segments in these areas are disjunct as they are designed to fit within the geographic features of the valleys (i.e., Napa-Santa Rosa and Northeastern) or to provide a representative sample of areas surveyed before the 1991 redesign (i.e., Suisun Marsh and Northeastern).

Survey Flight Path — Transects within the Central Valley are oriented 45° from true north. Most waterways in the Central Valley are oriented north-south or east-west, and the prescribed orientation is intended to minimize biases associated with transects that might run parallel or perpendicular to waterways. Latitude and longitude coordinates define each segment's beginning and ending points.

Transect Placement — A randomly selected starting point for generating transects within the Central Valley was established just south of Red Bluff. Segments through most of the Central Valley are located at parallel 14 mi (22.5 km) intervals, except in the San Joaquin Desert where segments are spaced 28 mi (45 km) apart due to low waterfowl densities. East and West Valley starting points were randomly selected and transects were placed between the border of the intensive agricultural areas of the Central Valley and the 500 ft (152 m) elevation line.

Fixed-wing Flight Procedure — The California Survey requires one CDFW pilot and two CDFW observer-biologists. The pilot's responsibility is navigation, including waypoint delineation of segment beginning and ending points. The pilot maintains an air speed of 90–110 mph (145–180 km/hr.) and an altitude of 150 ft (45 m) above ground level. Each observer counts all ducks, geese, mute swans, American coots (*Fulica americana*) and sandhill cranes (*Antigone canadensis*) within 660 ft (200 m) on each side of the aircraft, creating a total sample width of 1/4 mi (400 m). Observations are recorded using a voice recorder.

Visibility Bias Correction — Several factors (e.g., flight speed, vegetation) preclude ground coverage of most segments. Therefore, the California Survey uses the double-sampling procedure (Koneff et al. 2008), similar to the USFWS SOP. This method incorporates a “complete count” of select segments to correct for detection bias, referred to as a visibility correction factor (VCF). A helicopter is used to obtain the VCF in California. The VCF is conducted in all strata except the Napa-Santa Rosa stratum. Segments were selected based on the relative abundance of waterfowl, representative habitats, and proximity to airports.

Helicopter Flight Procedure — The VCF crew consists of two CDFW observer-biologists and a CDFW helicopter pilot. The helicopter is flown at 40–45 mph (65–70 km/hr.) and an altitude of 100 ft (30 m) along segments. The helicopter crew records waterfowl in the same manner as fixed-wing observers.

Data Analysis — Both fixed-wing and VCF crews use hand-held voice recorders to document waterfowl observations. Crews then manually transcribe observations from sound files (.mp3) to a CSV file and edited based on criteria in Appendix I. Once data are finalized, population estimates are generated using a customized program in R (G. Zimmerman USFWS 2015; R-Core Team 2026, R Studio Team 2026).

A “total indicated birds” (TIB) is calculated for each species on survey segments from both fixed-wing and helicopter data using criteria from previous research (Zezulak et al. 1991, Appendix I). The VCF is calculated for each species based on the ratio of TIB from the fixed-wing crew divided by the TIB from the helicopter crew on replicated segments. The current year VCF is compared to long-term (LTA) VCF estimates at various pooling levels (e.g., 2 years, 5 years, 10 years, etc.), as well as the LTA from the USFWS May Survey. The current year VCF is used if specific criteria are met (Appendix II). The LTA (CDFW or USFWS) is used for uncommon species (e.g., redhead, *Aythya americana*). A density is derived by dividing the TIB by the segment area (mi²). A mean density is calculated for each species within each stratum by averaging the densities of each transect. The stratum area for expansion is calculated by subtracting the transect area surveyed (i.e., segment area) from the stratum area. The mean density for each species is multiplied by the VCF then by the expansion

factor to derive a population estimate for each stratum.

Results

The 2026 California Survey was flown from 20 – 28 April in the Central Valley and 6 – 7 May in northeastern California. Transect-segment 7-20 in northeastern California was not flown due to high winds. The survey was 100% complete in the Central Valley and 95% complete in northeastern California for a total survey effort of 99%.

Total breeding ducks in the survey area decreased 10% from 2025 ($435,937 \pm 42,688$) and 18% below LTA (Table 1). The most abundant duck species were mallards ($267,101 \pm 34,278$), gadwall ($61,658 \pm 17,299$), cinnamon teal ($39,745 \pm 12,979$), and northern shoveler ($30,335 \pm 9,582$). These species comprised 91% of ducks observed. Mallards declined slightly (1%) from 2025 and are 16% below LTA. Gadwalls are 44% below 2025 and 28% below LTA. Cinnamon teal increased 8% from 2025 and are 5% below LTA. Northern shovelers were 16% below 2025 and are 11% below LTA.

Other, less numerous, duck species present in the survey include American green-winged teal (*Anas carolinensis*), American wigeon (*Anas americana*), northern pintail (*Anas acuta*), wood duck (*Aix sponsa*), canvasback (*Aythya valisineria*), redhead, bufflehead (*Bucephala albeola*), lesser scaup (*Aythya affinis*), ring-necked duck (*Aythya collaris*), and ruddy duck (*Oxyura jamaicensis*). These species comprised 9% of total ducks (Table 1).

Other species observed during the survey included: American coots, Canada geese, sandhill cranes and mute swans (*Cygnus olor*; Table 1). Statewide estimates for American coots decreased 19% from 2025 ($177,986 \pm 62,806$) and are 26% below LTA (Table 1). Canada geese are counted in all strata (Appendix IV); however, the Northeastern stratum is used to monitor the traditional breeding population within California. Canada geese in the Northeastern stratum decreased 18% from 2025 ($50,611 \pm 15,847$) and are 14% above LTA. Sandhill cranes also nest in the Northeastern stratum and are up 17% from 2025 ($5,831 \pm 4,559$) and 148% above LTA. In 2007, CDFW began monitoring feral mute swans. Mute swan estimates decreased 53% from 2025 ($7,393 \pm 3,079$) and 278% above their 17-year average.

January through April precipitation was below average across all strata (average z score = -0.47) (Table 2; NOAA 2026, Western Regional Climate Center 2026). Apart from the San Joaquin Desert and Northeastern strata (16% and 38 below LTA, respectively), all other strata experienced above average precipitation in April. Overall rainfall (z score = -0.86) and snow-water content (z score = -1.67) in the Northeastern stratum were below average across the entire survey area; however, most reservoir levels are at or above historical average (Table 2, Table 3; NOAA 2026, Natural Resource Conservation Service 2026, Western Regional Climate Center 2026, California Department of Water Resources 2026).

Discussion

Despite reduced spring precipitation (4% – 47% below LTA; Table 2) and snow-water content (47% – 82% below LTA; Table 3) statewide, breeding habitat conditions were average to good. This was largely due to carryover water from the 2025 water year, full delivery of CVPIA water for wetland management and rice planting, and persistent efforts to improve breeding habitat throughout the state, ensuring summer wetlands were available to breeding ducks. While breeding mallard estimates were largely unchanged

from 2025, production outlook is good.

Unlike the complex water storage and conveyance systems of the Central Valley, northeastern California wetland habitat is reliant on annual precipitation; mainly snowfall and the timing and duration of snowmelt to feed wetland habitats. Tule Lake and Lower Klamath National Wildlife refuges (TLNWR and LKNWR) received enough water to fill both Sump 1A and 1B wetland units on TLNWR and multiple units on LKNWR, creating ideal conditions for production. Unfortunately, these conditions were short lived and started to decline after the nesting season began. Wetland levels have dropped at TLNWR with increasing demand on water supply and numerous wetlands at LKNWR were drawn down to improve water quality for listed fish species and agricultural irrigation. Very limited water deliveries have increased the threat of toxic algal blooms and avian disease (J. Vradenburg, USFWS, personal communication).

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Figure 1. California Breeding Waterfowl Population Survey map.

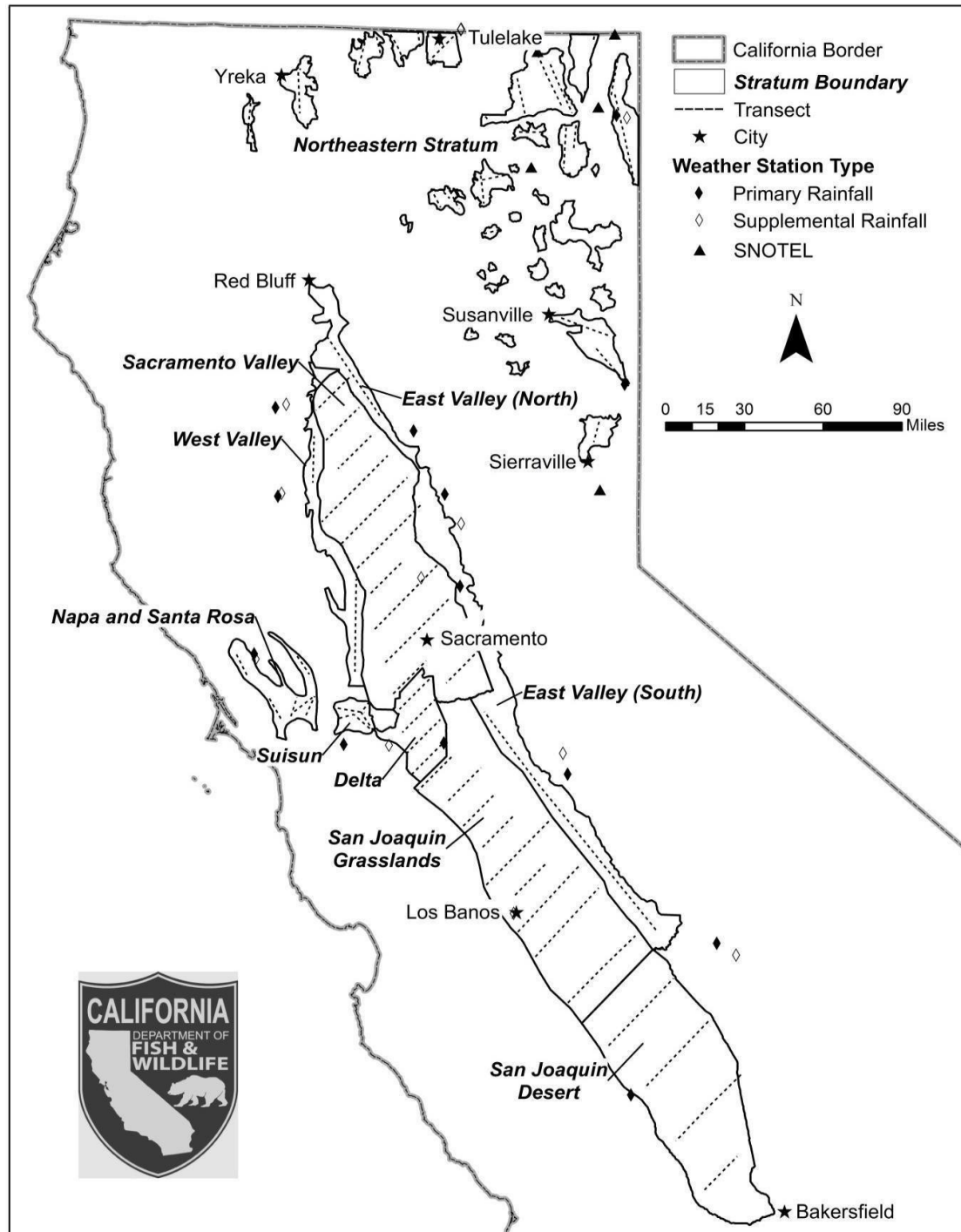


Table 1. California Breeding Waterfowl Population Survey estimates and standard errors.

	2026	SE	CV	2025	SE	LTA¹	% Δ 2025	% Δ LTA
Mallard	267,101	34,278	0.13	270,271	38,731	317,819	-1%	-16%
Gadwall	61,658	17,299	0.28	110,718	27,434	86,058	-44%	-28%
American Wigeon	1,363	718	0.53	4,034	1,773	4,343	-66%	-69%
Green-winged Teal	5,217	2,681	0.51	699	695	4,237	646%	23%
Cinnamon Teal	39,745	12,979	0.33	36,845	8,715	41,931	8%	-5%
Northern Shoveler	30,335	9,582	0.32	36,062	9,465	34,154	-16%	-11%
Northern Pintail	4,938	1,570	0.32	7,272	2,825	7,312	-32%	-32%
Wood Duck	5,568	4,163	0.75	2,055	964	7,933	171%	-30%
Redhead	1,330	1,003	0.75	3,325	2,431	4,153	-60%	-68%
Canvasback	3,309	2,405	0.73	431	452	1,090	668%	204%
Lesser Scaup	-	-	-	375	394	4,265	-	-
Ring-necked Duck	446	338	0.76	326	185	926	37%	-52%
Goldeneye	427	298	0.70	-	-	273	-	57%
Bufflehead	6,341	2,942	0.46	8,680	2,894	3,440	-27%	84%
Ruddy Duck	7,779	6,670	0.86	1,267	1,089	13,949	514%	-44%
Common Merganser	378	389	1.03	-	-	471	-	-20%
TOTAL DUCKS	435,937	42,688	0.10	482,358	49,464	531,886	-10%	-18%
Canada Geese ²	50,611	15,847	0.31	61,710	17,462	44,425	-18%	14%
American Coot	177,986	62,806	0.35	220,478	80,293	241,903	-19%	-26%
Sandhill Crane ²	5,831	4,559	0.78	4,998	2,801	2,351	17%	148%
Mute Swan ³	7,393	3,079	0.42	15,713	8,941	1,956	-53%	278%

¹Long-term average (LTA); 1992 – 2025 for ducks and coots.

²Northeastern stratum estimates only, LTA for Canada geese = 1993 – 2025, LTA for Sandhill cranes = 2003 – 2025

³Mute swan LTA = 2003 – 2025.

Table 2. Precipitation (inches)¹ across California Breeding Waterfowl Population Survey strata, 2026. A sum of precipitation was calculated using numerous weather stations for strata with large area, see Appendix III.

Strata ²	Year	Jan	Feb	Mar	Apr	May ⁴	Spring Total	Z-Score
Sacramento Valley	2026	23.70	31.27	1.73	25.13	---	81.83	-0.21
(Strata 1)	LTA	29.82	28.08	21.60	11.16		90.66	
Sac/San Joaquin Delta	2026	3.89	6.30	0.34	6.26	---	16.79	-0.78
(Strata 2)	LTA	9.17	8.54	6.11	3.39		27.21	
San Joaquin Desert	2026	2.08	4.38	0.01	1.95	---	8.42	-0.94
(Strata 3)	LTA	5.06	4.16	4.37	2.31		15.90	
San Joaquin Grasslands	2026	6.46	10.52	0.38	7.42	---	24.78	-0.41
(Strata 4)	LTA	10.77	9.37	7.29	3.92		31.35	
Suisun	2026	4.55	5.00	0.09	6.11	---	15.75	-0.54
(Strata 5)	LTA	6.89	7.01	5.09	2.46		21.46	
Napa/Santa Rosa	2026	2.88	4.06	0.55	4.27	---	11.76	-0.33
(Strata 6)	LTA	4.62	4.69	3.65	1.60		14.56	
East Valley (North) ³	2026	13.26	15.28	1.54	14.43	---	44.51	-0.33
(Strata 10)	LTA	16.84	16.11	12.44	7.15		52.55	
East Valley (South)	2026	5.00	8.33	0.17	4.72	---	18.22	-0.25
(Strata 10)	LTA	6.51	5.60	5.94	3.19		21.24	
West Valley	2026	10.92	17.17	0.60	11.51	---	40.20	-0.09
(Strata 11)	LTA	14.04	13.29	10.32	4.44		42.08	
Northeastern	2026	2.17	5.17	1.04	3.48	5.36	17.22	-0.86
(Strata 9)	LTA	7.76	6.25	6.21	5.64	6.30	32.16	

¹Data acquired from NOAA NCDC online database or RAWS station online data, LTA 1990 – 2025.

²For Stratum with large area a sum of precipitation was calculated using numerous weather stations, see appendix III for details.

³East Valley was separated into north and south to reflect precipitation more accurately.

⁴May precipitation data not included in Central Valley areas because the survey is conducted in April.

Table 3. Snow-water content (inches)¹ across the Northeastern survey stratum, 2026.

Location	Nov	Dec	Jan	Feb	Mar	Apr	Season Average	April Z- Score	% of April Average
Adin Mountain	0.0	0.3	1.4	3.3	3.6	0.1	1.5	-1.24	-99%
Adin Mountain LTA ²	0.7	3.2	6.4	9.2	11.4	8.9	6.8		
Cedar Pass	2.0	0.8	0.8	2.0	4.7	0.0	1.7	-1.94	-100%
Cedar Pass LTA	1.2	4.2	8.1	11.6	15.2	15.3	9.5		
Dismal Swamp	1.2	0.2	5.7	7.0	11.6	4.6	5.1	-2.00	-84%
Dismal Swamp LTA	1.7	6.8	13.4	19.4	25.5	27.8	15.8		
Independence Lake	0.0	1.8	13.0	16.7	23.4	17.6	12.1	-1.51	-60%
Independence Lake LTA	2.3	8.9	18.1	26.9	36.7	42.7	22.9		

¹Data from NRCS snow telemetry stations, see Figure 1 for locations and Appendix III for additional information.

²LTA 1990 – 2025.

Appendix I. Guidelines for California Breeding Waterfowl Survey Data

Definitions

Total Indicated Birds:	Drakes, Pairs and Groups combined.
Lone Drake:	Single isolated drake without a visible associated hen.
Flocked Drakes:	Four or fewer drakes in close association.
Pair:	Male and female in close association.
Group:	Five or more of mixed-sex grouping of the same species in close association that cannot be separated into singles and pairs.

Total Indicated Birds = Lone drakes x 1, Pairs x 2, Groups x 1 (AOU_Num)

- Redhead (1460): exclude groups greater than 8
- Ring-necked Duck (1500)
- Lesser Scaup (1490): do not count in Napa and Suisun Strata
- Ruddy Duck (1670)
- Canada Goose (1720): count all broods separately
- American Coot (2210)
- Sandhill Crane (2060)
- Mute Swan (1782)

Total Indicated Birds = Lone drakes x 2, Pairs x 2, Flocked Drakes x 2, Groups x 1

- Common Merganser (1290)
- Mallard (1320)
- Gadwall (1350)
- American Wigeon (1370): exclude groups
- American Green-winged Teal (1390): exclude groups greater than 8
- Cinnamon Teal (1410)
- Northern Shoveler (1420): exclude groups
- Northern Pintail (1430)
- Wood Duck (1440)
- Canvasback (1470): exclude groups
- Common Goldeneye (1510)
- Bufflehead (1530)
- Blue-winged Teal (1400)

Appendix II. Guidelines for Determining Annual Visibility Correction Factor (VCF).

California VCFs are to be used for most species. The preference is for the current year VCF to reflect habitat or general conditions, especially for mallards. Sample size and Coefficient of Variation (CV) rule: at least 40 observations for the helicopter and fixed wing crews with a CV of 20% or less. If VCF is 1.0 or less do not use. If current year does not meet criteria, use previous year until criteria are met. Pooling can be used if criteria cannot be met, and single year estimate is deemed not reasonable (VCF of 1.5 or less for mallards). In the case of scaup, ring-neck duck, mergansers, and goldeneye (species with few detections/low abundances in California) use USFWS VCF.

Appendix III. Weather station metadata.

Station Name	Station ID	Stratum	Type	Latitude	Longitude	Notes
Dismal Swamp	SNOTEL: 446	Northeastern	Snow	41.9900	-120.1800	Main Station
Independence Lake	SNOTEL: 541	Northeastern	Snow	39.4300	-120.2800	Main Station
Adin Mountain	SNOTEL: 301	Northeastern	Snow	41.2400	-120.7900	Main Station
Cedar Pass	SNOTEL: 391	Northeastern	Snow	41.5800	-120.3000	Main Station

Appendix IV. Population estimates of mallards, gadwall, cinnamon teal and Canada geese by stratum, 1992 – 2026. SV = Sacramento Valley, DE = Sacramento–San Joaquin Delta, SJD = San Joaquin Desert, SJG = San Joaquin Grasslands, SM = Suisun Marsh, NSR = Napa-Santa Rosa, NE = Northeastern, EV = East Valley, WV = West Valley (see Fig. 1). LTA = long-term average.

Mallards

Year	SV	DE	SJD	SJG	SM	NSR	NE	EV	WV	TOTAL
1992	163,030	12,453	5,075	79,859	29,713	8,969	44,634	23,687	8,423	375,844
1993	129,527	8,602	25,643	63,203	21,847	9,731	69,231	28,901	2,323	359,008
1994	114,249	10,143	17,097	52,107	18,104	10,160	66,166	17,483	6,183	311,692
1995	111,410	10,184	24,056	71,188	22,705	14,731	80,861	23,969	9,422	368,526
1996	205,040	18,519	12,033	105,438	26,523	20,231	92,032	43,230	12,511	535,558
1997	186,048	8,089	25,207	114,370	23,054	11,496	79,169	51,927	15,585	514,945
1998	148,754	6,741	17,917	54,344	18,349	11,582	67,978	21,957	12,906	360,528
1999	259,325	5,832	16,693	70,724	22,127	14,174	144,884	17,748	8,556	560,063
2000	147,384	11,263	23,327	39,461	8,882	10,278	83,373	17,249	6,341	347,559
2001	122,509	12,141	6,093	33,014	10,881	10,148	96,756	7,413	3,249	302,204
2002	116,758	7,816	8,728	29,121	10,066	13,672	64,754	8,229	6,151	265,295
2003	106,957	12,176	16,362	58,323	16,669	11,974	87,611	19,714	7,270	337,056
2004	97,422	6,303	14,421	28,513	14,092	10,881	70,321	14,474	5,998	262,424
2005	100,143	9,459	11,345	42,739	10,883	18,342	98,220	22,057	4,681	317,869
2006	120,808	8,196	10,679	53,264	12,077	21,486	128,612	37,242	7,073	399,436
2007	104,601	8,319	20,904	47,590	15,691	32,915	131,267	20,061	6,976	388,324
2008	92,539	6,465	17,165	51,548	10,330	15,516	85,824	13,689	4,054	297,129
2009	105,141	4,943	15,818	39,981	9,094	12,265	95,913	14,651	4,153	301,960
2010	102,139	3,948	14,371	56,255	14,531	16,137	128,600	16,586	15,325	367,891
2011	100,972	7,293	17,693	38,956	21,501	18,057	87,095	17,697	5,450	314,715
2012	85,641	10,136	33,456	57,816	14,486	11,058	138,315	22,645	8,369	381,922
2013	80,903	5,929	18,323	33,418	11,580	13,436	120,132	12,325	2,590	298,636
2014	67,914	3,826	8,445	44,586	8,901	6,156	90,820	5,850	2,168	238,666
2015	55,086	9,452	6,568	24,349	9,704	7,541	54,182	1,998	4,986	173,865
2016	69,389	9,240	7,015	33,952	13,668	8790	99,520	16,122	6,079	263,774
2017	31,134	6,151	14,913	21,386	9,921	10918	86,637	13,143	4,188	198,392
2018	56,915	4,850	12,520	36,929	14,150	17363	109,991	17,749	2,393	272,859
2019	49,307	6,085	7,893	31,049	13,625	15217	97,628	14,447	4,580	239,831
2022	30,899	6,492	6,856	17,302	8,580	8,127	79,087	10,568	2,345	170,256
2023	45,119	9,175	10,663	34,847	10,204	9,814	67,393	9,991	3,182	200,389
2024	26,695	6,970	9,353	16,169	10,630	8,728	84,097	9,815	868	173,326
2025	42,447	5,320	6,385	23,717	13,132	15,877	147,171	12,053	4,168	270,271
2026	57,922	7,023	9,168	24,767	13,654	11,998	122,737	17,212	2,619	267,101
LTA	102,381	8,203	14,469	47,047	14,866	13,305	93,071	18,271	6,205	317,819
% Δ 2025	36%	32%	44%	4%	4%	-24%	-17%	43%	-37%	-1%
% Δ LTA	-43%	-14%	-36%	-47%	-8%	-10%	31%	-6%	-57%	-16%

Appendix IV. Continued...

Gadwall

Year	SV	DE	SJD	SJG	SM	NSR	NE	EV	WV	TOTAL
1992	2,332	0	2,416	12,701	4,098	2,853	9,873	0	0	34,274
1993	3,654	0	4,544	9,187	4,620	2,484	41,850	461	0	66,800
1994	2,084	0	2,776	10,852	5,370	2,368	29,909	338	0	53,696
1995	2,927	175	2,729	9,566	9,178	5,461	64,133	0	252	94,421
1996	3,214	0	2,725	20,205	10,462	6,615	45,434	1,326	0	89,982
1997	8,147	405	7,387	13,230	11,024	15,474	36,903	1,926	0	94,496
1998	8,826	0	5,065	11,096	9,045	2,908	41,167	385	585	79,078
1999	20,160	184	2,870	11,995	5,894	6,403	40,389	4,539	0	92,434
2000	5,369	848	8,247	19,255	7,363	8,116	54,162	358	272	103,989
2001	3,731	0	580	8,208	4,056	7,419	44,568	0	0	68,560
2002	4,506	215	3,026	6,118	4,952	4,742	34,814	818	155	59,345
2003	8,572	495	2,579	11,471	5,986	6,767	40,362	1,568	238	78,037
2004	3,819	134	2,933	12,993	6,797	5,361	42,716	1,020	0	75,773
2005	11,455	0	3,561	12,600	9,273	14,309	128,158	0	0	179,356
2006	12,910	376	5,873	14,647	7,953	5,973	74,324	0	271	122,326
2007	6,216	463	6,159	8,547	5,445	9,152	101,041	661	0	137,686
2008	10,601	250	3,382	6,225	4,317	3,841	39,751	633	0	69,000
2009	13,950	120	2,995	8,580	6,852	11,299	63,200	2,505	0	109,502
2010	5,861	452	2,829	9,015	5,780	3,460	55,128	0	238	82,763
2011	6,042	206	8,693	11,176	7,450	9,981	73,263	1,371	298	118,479
2012	6,116	322	2,684	4,070	5,442	5,393	27,500	408	0	51,936
2013	4,259	741	4,303	3,123	4,679	3,474	52,874	805	153	74,410
2014	15,113	0	8,688	9,890	5,516	3,167	50,650	235	0	93,259
2015	14,492	123	1,545	4,425	3,103	2,407	30,721	939	535	58,290
2016	9,432	495	3,849	3,379	4,647	5,613	30,316	470	179	58,380
2017	777	116	5,768	5,600	5,308	4,206	49,603	220	167	71,765
2018	10,778	0	3,160	5,691	6,100	8,450	68,244	214	0	102,637
2019	9,822	125	3,104	6,814	4,914	6,287	79,781	474	0	111,321
2022	8,303	803	833	4,502	4,049	3,781	53,069	0	0	75,341
2023	12,155	1,208	13,374	13,831	4,123	2,285	39,548	510	0	87,034
2024	1,684	574	4,020	3,016	2,762	2,895	33,812	0	0	48,763
2025	8,515	149	465	3,455	5,546	2,969	88,484	1,132	0	110,718
2026	5,224	779	970	1,965	6,760	2,829	42,341	789	0	61,658
LTA	7,682	281	4,161	9,233	6,003	5,810	52,055	729	104	86,058
% Δ 2025	-39%	422%	109%	-43%	22%	-5%	-52%	-30%	-	-44%
% Δ LTA	-32%	178%	-77%	-79%	13%	-51%	-19%	8%	-100%	-28%

Appendix IV. Continued...

Cinnamon Teal

Year	SV	DE	SJD	SJG	SM	NSR	NE	EV	WV	TOTAL
1992	3,226	385	3,611	19,469	2,149	395	28,505	2,928	0	60,668
1993	3,332	0	4,972	10,890	2,497	1,223	30,591	2,268	0	55,773
1994	4,846	321	4,017	16,585	1,793	329	22,388	1,222	0	51,503
1995	4,575	195	5,486	14,380	3,402	1,000	18,117	3,893	282	51,330
1996	22,944	1,666	4,466	15,300	3,987	4,883	27,305	5,885	2,407	88,842
1997	5,381	917	10,872	14,012	1,280	470	13,649	1,308	0	47,889
1998	3,843	229	2,151	11,113	533	235	15,979	1,744	0	35,828
1999	9,450	410	4,487	12,096	1,335	841	10,716	390	0	39,725
2000	2,979	0	3,472	2,340	930	456	14,512	0	0	24,689
2001	4,019	266	1,666	5,053	496	273	13,926	507	385	26,592
2002	1,789	0	2,086	3,936	807	547	4,843	0	0	14,008
2003	4,353	0	2,436	6,019	1,329	799	13,459	988	0	29,382
2004	3,485	0	1,857	7,511	2,764	305	18,975	565	0	35,461
2005	6,056	0	4,274	7,613	1,363	1,602	14,106	2,971	0	37,984
2006	10,318	362	2,264	11,445	2,021	743	26,285	4,131	0	57,570
2007	2,039	243	2,282	2,563	1,358	749	28,965	1,851	0	40,050
2008	7,054	0	1,462	9,853	1,849	719	21,724	445	0	43,105
2009	7,483	235	1,469	7,922	328	241	32,748	447	0	50,872
2010	2,856	170	5,860	11,849	872	175	22,884	3,564	246	48,478
2011	11,347	271	10,158	10,841	1,260	1,944	26,339	1,545	0	63,704
2012	5,125	278	869	2,343	2,198	855	14,932	0	0	26,600
2013	4,594	548	857	1,732	1,020	281	13,528	0	0	22,560
2014	2,871	734	0	5,157	1,366	502	19,774	465	0	30,870
2015	13,127	0	0	1,547	1,594	1,506	10,407	0	354	28,534
2016	2,465	245	2,288	1,545	1,684	1,730	18,868	1,396	0	30,221
2017	410	245	1,523	3,087	897	0	26,883	930	0	33,975
2018	4,102	0	3,047	4,630	3,140	1,871	60,779	930	0	78,498
2019	3,013	674	2,098	3,306	2,059	680	37,731	853	0	50,415
2022	1,300	194	0	3,261	2,044	2,445	13,739	0	0	22,983
2023	1,835	365	2,840	9,589	920	887	14,524	347	0	31,306
2024	355	212	19,117	890	1,650	1,068	22,254	0	0	45,546
2025	3,389	449	699	2,361	1,647	2,061	24,319	1,920	0	36,845
2026	2,029	0	538	5,270	2,456	1,046	28,077	328	0	39,745
LTA	5,124	300	3,521	7,507	1,643	994	21,367	1,359	115	41,931
% Δ 2025	-40%	-100%	-23%	123%	49%	-49%	15%	-83%	-	8%
% Δ LTA	-60%	-100%	-85%	-30%	50%	5%	31%	-76%	-100%	-5%

Appendix IV. Continued...

Canada Geese

Year	SV	DE	SJD	SJG	SM	NSR	NE	EV	WV	TOTAL
1993	590	0	0	0	98	72	50,405	134	0	51,299
1994	354	0	0	0	0	0	59,291	468	0	60,113
1995	708	0	0	0	0	72	53,060	0	0	53,840
1996	236	0	0	0	0	72	45,298	0	0	45,606
1997	1,651	457	0	74	147	216	32,735	134	51	35,466
1998	884	141	0	0	33	216	68,929	936	559	71,699
1999	649	0	0	3,261	229	974	96,673	268	508	102,562
2000	1,592	35	0	0	180	902	47,903	134	0	50,745
2001	1,474	739	0	741	131	1,804	52,754	0	1,067	58,709
2002	825	317	0	371	0	1,118	47,136	1,338	203	51,308
2003	1,297	106	0	519	115	1,154	32,495	1,806	203	37,695
2004	354	176	0	296	65	2,706	27,424	401	0	31,422
2005	1,484	169	0	711	0	3,113	36,230	561	1,035	43,302
2006	0	0	0	0	20	130	19,792	0	244	20,185
2007	356	567	0	0	0	291	31,629	337	154	33,333
2008	189	150	0	238	0	0	9,874	0	0	10,451
2009	4,338	0	0	0	0	0	31,989	703	0	37,030
2010	860	0	0	541	0	865	13,999	1,394	1,324	18,983
2011	4,670	330	0	618	512	2,068	36,248	4,253	794	49,493
2012	3,855	0	0	308	459	2,209	41,926	4,651	1,951	55,359
2013	3,327	551	0	929	342	1,998	68,248	4,473	956	80,823
2014	3,049	296	0	2,496	197	1,692	31,209	3,378	183	42,499
2015	2,623	254	0	267	79	2,169	44,322	1,609	794	52,117
2016	8,377	423	264	2,226	175	2,477	44,323	3,619	796	62,679
2017	7,211	313	0	1,233	287	2,603	55,224	3,268	2,091	72,230
2018	4,064	587	243	1,151	556	1,554	54,851	3,491	1,582	68,079
2019	7,943	1,377	0	2,384	501	5,106	48,588	3,615	1,463	70,977
2022	4,072	1,194	0	3,894	340	997	46,079	5,473	1,785	63,833
2023	4,332	790	0	2,943	99	916	52,575	3,749	1,971	67,375
2024	14,538	1,098	360	4,11	371	816	34,242	6,698	2,924	65,059
2025	8,965	221	343	695	303	2,697	61,710	6,388	80	81,403
2026	9,031	437	0	8,978	378	1,762	50,611	3,687	561	75,444
LTA	3,060	332	39	965	169	1,323	44,425	2,041	733	53,086
% Δ 2025	1%	98%	-100%	1191%	25%	-35%	-18%	-42%	604%	-7%
% Δ LTA	195%	32%	-100%	831%	124%	33%	14%	81%	-23%	42%