

UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

**TO:** Observers and Cooperators

**FROM:** U.S. Fish and Wildlife Service

**SUBJECT:** Winter Waterfowl Survey, Pacific Flyway, January 2-6, 2007

We are again requesting your cooperation in conducting the annual Winter Waterfowl Survey. It is scheduled to be on or about Monday, January 5; however, circumstances may warrant starting the survey the week before. Regardless, the survey should be completed as soon as possible.

The object of this survey is to determine the distribution and relative numbers of waterfowl wintering on the continent. Your role consists of: (1) appraising the waterfowl populations on the specific areas assigned to you; (2) recording your data onto this form; and (3) returning the completed form promptly to the sender. The area we wish you to cover is identified below.

Enter your name and address at the bottom of this form. Record only the number of each species actually observed during the survey. Where identification is uncertain, list under "unidentified." There may be some species that are not listed on this form; please include them under "miscellaneous" but specify the species.

STATE: <u>California</u>	COUNTY: <u>See Attached</u>	DATE(S): <u>January 1-19, 2007</u>			
AREAS COVERED: <u>See Attached</u>					
Mallard	385,785	Eiders	_____	Cackling	0
Blk/Mot'ld/Mex.	_____	Scoters	33,114	Dusky	0
Gadwall	168,242	Oldsquaw	_____	Aleutian	2,675
Wigeon	525,374	Harlequin	_____	"Canada" - undif.	20,421
G-w Teal	502,402	Subt. Seaducks	33,114	Subt. Canada	43,552
B-w/Cinn Teal	3,547	Mergansers	3,754	Brant	7,387
Shoveler	622,904	Unidentified	16,569	TOT. GEESE	1,088,460
Pintail	1,573,561	Miscellaneous	_____		
Wood Duck	890	TOT. DUCKS	4,128,806	Tundra Swan	90,136
Whistling Duck	_____	L. Snow	7,150	Trumpeter Sw.	0
Subt. Dabblers	3,782,705	Blue-phase Snow	100	Mute Swan	1
		Ross'	100	Unident. Swan	0
Redhead	3,991	Snow/Ross' undif.	641,603	TOT. SWANS	90,137
Canvasback	45,344	Subt. "White" G.	648,953		
Scaup	62,386			TOTAL	
Ring-necked D.	81,380	White-fronted G.	388,568	WATERFOWL	5,307,403
Goldeneye	3,510				
Bufflehead	22,314	Western	20,456	COOTS	586,937
Ruddy Duck	73,739	Lesser/Taverner	0	SANDHILL CR.	12,740
Subt. Divers	292,664				

## PARTICIPATION/EFFORT:

	No.	Aircraft		
		No.	Hours	Miles
State	18	6	49.5	3730
Federal	13	5	49.2	3880
Others	0			
TOTAL	31	11	98.7	7610

Vehicles	
No.	Miles

Boat	
No.	Miles
0	0

## 2007 Midwinter Survey Coverage Overview

<u>Subunit/ Strata</u>	<u>Name</u>	<u>Date</u>	<u>Observers</u>	<u>Coverage</u>
<b><u>14-1</u></b>				
A-24	Northwest (Humboldt Bay)	1/12/07	J. Dayton D. Lancaster	Completed
<b><u>14-2</u></b>				
A-25	Modoc-Siskiyou	1/2/07	J. Hainline	Completed
<b><u>14-3</u></b>				
A-01	Sacramento NWR	1/5/07	M. Wolder E. Huggins	Completed
A-02	Gray Lodge WA	1/2/07	M. Wolder E. Huggins	Completed
A-03	Colusa NWR	1/3/07	M. Weaver D. Zezulak	Completed
A-04	Sutter NWR	1/3/07	M. Weaver D. Zezulak	Completed
A-08	Delevan NWR	1/5/07	M. Wolder E. Huggins	Completed
A-09	Butte Sink NWR	1/2/07	M. Wolder E. Huggins	Completed
A-10	West Sacramento Valley	1/2,5,8/07	M. Wolder E. Huggins M. Weaver D. Zezulak S. Oldenburger	Completed
A-11	East Sacramento Valley	1/1-2,5,8/07	M. Wolder E. Huggins M. Weaver D. Zezulak S. Oldenburger	Completed
A-12	Yolo Bypass	1/5,9/07	M. Weaver D. Zezulak	Completed

<u>Subunit/ Strata</u>	<u>Name</u>	<u>Date</u>	<u>Observers</u>	<u>Coverage</u>
<b><u>14-4</u></b>				
A-27	Marin-Sonoma	1/9/07	J. Bradley G. Mcchesney	Completed
A-05	Grizzly Island WA	1/10/07	S. Oldenburger D. Zezulak	Completed
A-13	Suisun Marsh	1/10/07	S. Oldenburger D. Zezulak	50% Completed <sup>1</sup>
A-14	Delta	1/9/07	M. Weaver D. Zezulak	Completed
A-15	San Francisco Bay	1/9-10/07	J. Buffa D. Kodama G. Downard	Completed
<b><u>14-5</u></b>				
A-06	Los Banos WA	1/3/07	G. Gerstenberg S. Oldenburger	Completed
A-07	Merced NWR	1/3/07	G. Gerstenberg S. Oldenburger	Completed
A-16	San Luis NWR	1/3/07	G. Gerstenberg S. Oldenburger	Completed
A-17	West Grasslands	1/3/07	G. Gerstenberg S. Oldenburger	Completed
A-18	East Grasslands	1/3/07	G. Gerstenberg S. Oldenburger	Completed
A-19	Mendota WA	1/3/07	G. Gerstenberg S. Oldenburger	Completed
A-22	Southern San Joaquin	1/2/07	D. Hardt P. Williams	Completed
A-23	Sierra Foothills	1/9/07	G. Gerstenberg H. King	Completed

<b><u>Subunit/ Strata</u></b>	<b><u>Name</u></b>	<b><u>Date</u></b>	<b><u>Observers</u></b>	<b><u>Coverage</u></b>
<b><u>14-6</u></b>				
A-28	Southcoast	1/18-19/07	D. Brubaker JAM	Completed
<b><u>14-7</u></b>				
A-20	Imperial	1/9/07	S. Quayle S. Gibson	Completed
A-21	Colorado River	1/18/07	R. Botta T. Dillingham	Completed
A-26	Southland	1/11/07	R. Botta T. Dillingham	Completed

<sup>1</sup> Susuin Bay not covered.

UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

2007 WINTER WATERFOWL SURVEY REPORT

DISTRICT COVERED: California

DATE OF SURVEY: January 1-19, 2007

WATERFOWL POPULATION AND HABITAT CONDITIONS DURING THE 3 MONTHS  
PRIOR TO THE SURVEY:

**SEE ATTACHED.**

PHYSICAL FACTORS RELATED TO SURVEY (favorable or unfavorable):

Weather:

Water:

**SEE ATTACHED.**

Food:

Operational:

PERCENTAGE OF IMPORTANT WATERFOWL HABITAT COVERED: 95 %

UNUSUAL CONCENTRATIONS OF WATERFOWL: **SEE ATTACHED.**

COMMENTS: **SEE ATTACHED.**

Submitted by: \_\_\_\_\_  
Date: \_\_\_\_\_

## POPULATIONS AND HABITAT

- Northwest** Rainfall totals slightly below normal (~94% of normal precipitation at the time of the survey).
- Northeast** Klamath Basin experienced moderate numbers of waterfowl during the fall of 2006 peaking at nearly 1.3M. Good though not remarkable numbers of white-fronted geese, snow and Ross' geese, as well as mallards and pintails were noted. Habitat conditions were good due to timely flooding of wetlands. October, November, and especially December had above average precipitation in the form of rain and snow. Food resources were in abundant supply due to increased flooded habitats. Wetlands remained open through much of December, but were 99% iced over by late December through this survey period. Mid winter survey showed lower than normal numbers of waterfowl on Lower Klamath Refuge, although the nearly 148K seen there accounted for over 3/4 of the ducks, geese and swans seen in the entire Klamath Basin area.
- Sacramento Valley** Fall ground surveys on federal Refuges indicated increased duck numbers compared to the previous several years, with peak counts in early December of about 2.1 million birds. No data available for state wildlife areas or significant bird use areas on private lands. Seasonal wetlands flooded in the fall on public and private lands were in excellent condition due to a cool wet spring. However, the same spring conditions also resulted in ricefields generally planted, harvested, and post-harvest flooded later than average. There were also less acres planted and lower yields compared to the previous year. There was a reduced amount of post-harvest flooded ricefields, possibly up to 20% less (>50% less in some local areas) than the previous year. There was below average precipitation (60% of long-term average) through the time of this survey. As a result, there was no uncontrolled flooding, no naturally flooded/puddled agricultural fields, no flooded vernal pools, and little green-up. This further resulted in waterfowl concentrations persisting on refuges, wildlife areas, and some undisturbed private lands longer than "normal."
- San Francisco Bay** In A-15/A-27, Precipitation was about 50% of normal for the season at time of survey. There was no significant rainfall the month prior to the survey. This did not affect the amount of available water in areas covered by this survey since most areas are tidal. It did mean however, that few additional water sources were available outside of surveyed areas for waterfowl to disperse to. In A-15, management changes to former Cargill salt ponds (A1-A8 in 2004 and A9-A17 in 2005) have resulted in lower salinity in these ponds and corresponding higher concentrations of dabbling ducks. Salinity may be higher in Ponds A12, A13, and A15 due to management changes. Ponds A19, A20, and A21 were restored to tidal action in 2006. However, since this year's survey occurred during low

tide, these ponds had few ducks. In Delta area, waterfowl populations were average to below average. Habitat conditions were average to less than average, with northern private duck club areas in the Suisun Marsh in poorer condition due to late drainage after winter/spring flooding in 2006.

**San Joaquin Valley** In grasslands, waterfowl populations mostly unknown due to lack of surveys. Moist soil habitat conditions were excellent, with most wetland units flooded. The east grasslands (A-18) has been dry with no greenup. Unknown in A-23. In A-22, a mild early winter and only a few tenths of an inch of rain. High numbers of waterfowl on Kern and Pixley Refuges. Some duck clubs were flooded later in the season than usual.

**Southcoast** Very little to no precipitation south of Long Beach. North of Long Beach received greater amounts of precipitation. Record cold temperatures during the latter portion of December up to mid-January were experienced in the San Diego County area. These conditions were not experienced in the northern portions of the survey area.

**Southeast** In A-20, habitat conditions were much improved this season with new ponds coming into production. The waterfowl population had decreased from a month ago. In A-21, unchanged. River level not significantly different than previous three months. Natural habitat within and adjacent to river banks favorable. Significant amount of public and private irrigated lands (farming, state recreation area, and federal refuges) providing good to excellent conditions. In A-26, relatively unchanged. Reservoirs at 75-95 capacities, natural habitat surrounding reservoirs poor (dry) due to extremely low rainfall amounts preceding the survey. Irrigated lands (farming, SJ wildlife area, and private clubs) with good to excellent conditions. Pre-survey population levels appeared to be slightly higher at several reservoirs and largely unchanged at remainder.

### PHYSICAL FACTORS

**Northwest** Weather - Favorable-approximately 30 degrees (F), clear skies with light wind, excellent visibility.

Water - Favorable-smooth water but high glare w/ sun; most seasonal wetlands flooded. Humboldt Bay surveyed at low tide.

Food - Favorable

Operational - Favorable

- Northeast** Weather - Clear, cool (30 degrees F), calm
- Water - Most wetlands were 99% iced over.
- Food - Ice cover eliminated availability of most aquatic foods. Standing and waste cereal grains not snow covered and easily available to waterfowl.
- Operational - No operational concerns, easy survey.
- Sacramento** Weather - Generally favorable. Winds light to gusty. Good visibility.
- Water - Favorable for survey conditions, as there was no uncontrolled flooding and relatively less post-harvest flooded agricultural lands (compared to recent years).
- Food - Favorable; managed wetlands continue to provide excellent habitat; post-harvest rice stubble management techniques continue to change waste rice availability. Very little green-up in upland areas. No additional habitat available from uncontrolled flooding or vernal pools.
- Operational - Not ideal, but most of the important areas in the northern Valley were completed within a five-day period during the target week; continued good coordination with CDFG crews. Due to personnel and variable weather conditions, some survey segments were delayed into the next week. Observers were changed between survey days for some of the southern segments.
- San Francisco** Weather - In A-15, Jan 9: So Bay Salt Ponds; South & Central Open Bay: Favorable. Clear, sunny, calm, excellent visibility. Jan 10: No Bay Salt Ponds, North Bay Open Bay, Central Bay & No Bay Shoreline Transects: Unfavorable. Glare made observation conditions difficult for the observer on the south side of the plane. 25 knot winds compounded these problems. In A-13, favorable. Fair to good light conditions, 50 degrees, clear, variable winds. In A-27, favorable. Visibility good in all areas. Calm, no wind waves. Medium glare on some transects going south.
- Water - In A-15, Jan 9: Favorable. Calm wind and water made ducks very visible. Tide was low for much survey, but duck still visible on shoreline because lighting was favorable. Jan 10: Unfavorable. High winds created wind waves which made visibility difficult, especially combined with glare. The combination of low tide conditions, exposed mud flats, and flat light/glare further compounded visibility problems. In A-13, average to less than

average. In A-27, favorable. Surveys were done during moderate tide levels.

Food - A-15/A-27 -No information. A-13 – favorable, but northern duck clubs probably had less than average availability due to flooding from previous winter.

Operational - In A-15, In the Central Bay Open Bay, Transects B1 and B2 were not surveyed; and B5 and B7 were cut short (by 1.0 miles and 0.7 miles, respectively) due to air traffic at SFO. In A-27, this was one observer's first mid-winter waterfowl count. He was familiar with the area from riding along as a trainee in a previous survey. The other observer had counted this area twice before. This could account for the low number of canvasback and pintail, as these are hard to detect unless you know where to look. In A-05, A-13, and A-14, surveys were delayed into week after the targeted schedule due to personnel and variable weather conditions. Observers were not consistent with previous years.

**San Joaquin** Weather - In grasslands, fog on eastern part of Mendota (A-19). Haze with visibility right around 3 miles made observation toward the sun difficult. Hazy in A-23. In southern SJV, some fog that cleared early. A high overcast all day, but good visibility for the survey.

Water - In northern SJV, grassland (A-18) dry with less than 40% of managed wetlands flooded. In A-23, very dry conditions with no vernal pools. In southern SJV, We had a very dry fall, which meant there was no water stored in the South Wilbur or Hacienda Flood Basins. Late rains and high runoff last spring contributed a vast expanse of water in the Kern Fan where the Kern Water Bank and the City of Bakersfield store water. Almost no pre-irrigation with the exception flooding on a (unspecified) number of acres owned by Boswell immediately south of Buena Vista Lake Recreation Area.

Food - Almost no green up had occurred. In A-22, abundant on Kern Refuge, but otherwise normal in the rest of the southern San Joaquin Valley.

Operational - In Grasslands, Holman King was not available. Shaun Oldenburger was the 2<sup>nd</sup> observer and this was the first time surveying the San Joaquin Valley. In A-22, favorable.

- Southcoast** Weather - Clear with unlimited visibility.
- Water - Smooth and clear.
- Food - Unknown abundance or availability.
- Operational - No problems.
- Southeast** Weather - A-20 – Favorable. A-21 - Generally favorable – mid 60 degree F, light winds through most of survey with strong, gusty (25-35 mph) winds along last two survey units. Patchy high clouds, good visibility with some glare. A-26 – Generally favorable – upper 40 degree F, moderate winds at survey levels, high clouds, good visibility with some glare.
- Water - A-20 – Generally favorable. In A-21, mostly favorable – moderate river flow with good water clarity. Moderate to strong chop and white caps along last two survey units. Waterfowl generally tucked into bank vegetation, docks, and rip-rap where winds and chop were strong. In A-26, favorable – most reservoirs near capacity (lowest Henshaw & Parris at 75-80%). Water slightly choppy at northern most reservoirs with small white caps.
- Food - A-20 – Favorable. In A-21, favorable at managed wetlands and generally good on natural habitats adjacent to both sides of the river. In A-26, favorable at managed wetlands and generally poor on natural habitats due to very limited pre-survey rainfall.
- Operational - A-20 – Favorable. In A-21/26, difficulty completing surveys in allotted time due to constantly alternating strong low pressure and high pressure systems. Strong Santa Ana winds most difficult but extended period of high desert winds especially along Colorado River delayed completion of overall survey.

### UNUSUAL CONCENTRATIONS

- Northwest** None
- Northeast** Fair concentrations of mallards, pintails, and wigeons were seen on Lower Klamath NWR. Good numbers of western Canada geese were also noted.
- Sacramento** Less use on post-harvest flooded ricefields in some areas of northern Valley, presumably due to their lower quantity and possibly greater disturbance. Roosevelt Ranch near Zamora had large concentration of NOPI, AMWI, and AGWT for the area.

- San Francisco** In A-15, concentrations of shovelers, pintail, American wigeon, and canvasback in South Bay Salt Ponds were the highest observed in the past ten years. We attribute this to decreased salinities due to management of these former salt ponds to reintroduce bay waters. Scaup and bufflehead numbers were very low both in the salt ponds and open bay portions of the survey compared to the last 13 years of data. This year's survey produced the highest total count of waterfowl since 2001. In A-27, Brant numbers were typical as in previous years. Most species were either found at average or low numbers. No high concentrations were found, and high concentrations of scaup usually present in Tomales Bay were not there. Bufflehead were the one exception – numbers were on the higher side of average. In A-14, A-13, and A-05, none reported.
- San Joaquin** None reported in Grasslands or A-23. In A-22, none, but high densities of ducks on both refuges, Kern and Pixley. Kern Fan had been flooded since the spring and had relatively few ducks.
- Southcoast** None reported.
- Southeast** A-20 – nothing reported. A-21/A-26 – none observed.

#### **GENERAL COMMENTS**

- Northwest** Humboldt Bay surveyed at low tide; would expect greater duck numbers at high tide. The sequence of the survey route was different than in previous years. Fewer flooded fields than 2006.
- Northeast** None reported.
- Sacramento** Vina Plains was not surveyed due to dry conditions and time constraints. Survey time was shorter this year due to less flooded agricultural fields; more areas could be flown "point-to-point" rather than with standard transects.
- San Francisco** A-15 – None reported. In A-27, Scaup and scoter numbers were unusually low – only about 1/3 the amount usually counted. Observer bias probably does not explain these low numbers (as it did perhaps in the case of puddle ducks). These species are usually present in very large rafts that are easily seen and counted, and the new observer was alerted on where to look for them. Suisun Bay was not surveyed and could have accounted for significant scaup numbers (27K-34K in recent years). None reported from A-05, A-13, and A-14.

**San Joaquin**

In A-22, Creighton Ranch, had only a few areas flooded. No ducks were seen there on 12/15/06 aerial survey, and it was not included on the 1/2/07 survey to allow more time for surveying other areas. None reported in Grasslands or A-23.

**Southcoast**

None reported.

**Southeast**

In A-20, the numbers of waterfowl were very sparse this survey as compared to others. There were a great many unidentified ducks as one of the observers had never done an aerial count before. In A-21, those Colorado River units containing lands (National Refuges) administered by the U.S. Fish and Wildlife Service were again not surveyed to avoid possibility of double-counting. In A-26, none reported.

Zone Summary -- 2007 Winter Waterfowl Survey				State: CA		Page 1 of 6 pages	
Strata	14-1	14-2	14-3	14-3	14-3	14-3	14-3
Survey Unit/Area:	A-24	A-25	A-01	A-02	A-03	A-04	A-08
Observers:	J. Dayton	J. Hainline	M. Wolder	M. Wolder	M. Weaver	M. Weaver	M. Wolder
	D. Lancaster		E. Huggins	E. Huggins	D. Zezulak	D. Zezulak	E. Huggins
Date:	12-Jan-07	1-2-Jan-07	5-Jan-07	2-Jan-07	3-Jan-07	3-Jan-07	5-Jan-07
Mallard	2391	48400	27657	12843	6237	11437	26706
Blk/Mot'ld/Mex.	0	0	0	0	0	0	0
Gadwall	514	0	11410	10508	380	2727	15556
Wigeon	4901	35100	19914	77165	3505	7175	24057
G-w Teal	3325	9000	23450	11827	1460	4454	19194
B-w/Cinn Teal	0	0	0	0	0	12	5
Shoveler	1201	200	24025	16109	3370	9305	37889
Pintail	451	46000	73612	51440	23195	45625	53524
Wood Duck	40	0	10	102	0	0	0
Whistling Duck	0	0	0	0	0	0	0
<b>Subt. Dabblers</b>	<b>12823</b>	<b>138700</b>	<b>180078</b>	<b>179994</b>	<b>38147</b>	<b>80735</b>	<b>176931</b>
Redhead	0	0	10	10	0	0	0
Canvasback	882	0	0	0	0	0	2
Scaup	6490	0	0	1020	0	0	0
Ring-necked D.	113	0	225	4360	0	0	1200
Goldeneye	0	170	0	0	0	0	0
Bufflehead	6109	870	95	0	2	0	64
Ruddy Duck	368	0	970	0	60	0	581
<b>Subt. Divers</b>	<b>13962</b>	<b>1040</b>	<b>1300</b>	<b>5390</b>	<b>62</b>	<b>0</b>	<b>1847</b>
Eiders	0	0	0	0	0	0	0
Scoters	5271	0	0	0	0	0	0
Oldsquaw	0	0	0	0	0	0	0
Harlequin	0	0	0	0	0	0	0
<b>Subt. Seaducks</b>	<b>5271</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Mergansers	45	1420	0	0	0	0	0
Unidentified	1888	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0	0
<b>TOT. DUCKS</b>	<b>33989</b>	<b>141160</b>	<b>181378</b>	<b>185384</b>	<b>38209</b>	<b>80735</b>	<b>178778</b>
L. Snow	0	0	0	0	0	0	0
Blue-phase Snow	0	0	0	0	0	0	0
Ross'	0	0	0	0	0	0	0
Snow/Ross' undif.	2	0	48121	11500	23711	88500	30300
<b>Subt. "White" G.</b>	<b>2</b>	<b>0</b>	<b>48121</b>	<b>11500</b>	<b>23711</b>	<b>88500</b>	<b>30300</b>
White-fronted G.	0	6350	21710	5550	9110	45740	9448
Western	463	7090	255	0	0	0	60
Lesser/Taverner	0	0	0	0	0	0	0
Cackling	0	0	0	0	0	0	0
Dusky	0	0	0	0	0	0	0
Aleutian	1570	0	0	0	0	0	0
"Canada" undif.	0	0	0	0	0	0	1000
<b>Subt. Canada</b>	<b>2033</b>	<b>7090</b>	<b>255</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1060</b>
Brant	2316	0	0	0	0	0	0
<b>TOT. GEESE</b>	<b>4351</b>	<b>13440</b>	<b>70086</b>	<b>17050</b>	<b>32821</b>	<b>134240</b>	<b>40808</b>
Tundra Swan	274	1923	0	200	0	800	2
Trumpeter Sw.	0	0	0	0	0	0	0
Mute Swan	0	0	0	0	0	0	0
Unident. Swan	0	0	0	0	0	0	0
<b>TOT. SWANS</b>	<b>274</b>	<b>1923</b>	<b>0</b>	<b>200</b>	<b>0</b>	<b>800</b>	<b>2</b>
<b>GRAND TOTAL</b>	<b>38614</b>	<b>156523</b>	<b>251464</b>	<b>202634</b>	<b>71030</b>	<b>215775</b>	<b>219588</b>
<b>COOTS</b>	4391	1600	15907	10094	2325	1670	9920
<b>SANDHILL CR.</b>	0	0	0	85	0	0	0

Zone Summary -- 2007 Winter Waterfowl Survey				State: CA	Page 2 of 6 pages	
Strata	14-3	14-3	14-3	14-3	14-3	
Survey Unit/Area:	A-09	A-10	A-11	A-12	TOTAL	
Observers:	M. Wolder	M.Wolder, E.Huggins, M.Weaver	M.Wolder, E.Huggins, M.Weaver	M. Weaver		
	E. Huggins	D.Zezulak, S. Oldenburger	D.Zezulak, S. Oldenburger	D. Zezulak		
Date:	2-Jan-07	2,5,8-Jan-07	1-2,5,8-Jan-07	5,9-Jan-07		
Mallard	4000	38170	108050	44343	279443	
Blk/Mot'ld/Mex.	0	0	0	0	0	
Gadwall	20000	11985	32869	8010	113445	
Wigeon	100000	31980	145685	16747	426228	
G-w Teal	40000	45070	62100	30190	237745	
B-w/Cinn Teal	0	110	288	80	495	
Shoveler	10000	39409	115803	21962	277872	
Pintail	226000	201120	519094	197567	1391177	
Wood Duck	0	0	689	10	811	
Whistling Duck	0	0	0	0	0	
<b>Subt. Dabblers</b>	<b>400000</b>	<b>367844</b>	<b>984578</b>	<b>318909</b>	<b>2727216</b>	
Redhead	0	0	225	0	245	
Canvasback	0	905	5151	428	6486	
Scaup	0	4000	1437	2	6459	
Ring-necked D.	5000	10290	15822	0	36897	
Goldeneye	0	0	50	1830	1880	
Bufflehead	0	393	698	2	1254	
Ruddy Duck	0	130	5393	1537	8671	
<b>Subt. Divers</b>	<b>5000</b>	<b>15718</b>	<b>28776</b>	<b>3799</b>	<b>61892</b>	
Eiders	0	0	0	0	0	
Scoters	0	0	0	0	0	
Oldsquaw	0	0	0	0	0	
Harlequin	0	0	0	0	0	
<b>Subt. Seaducks</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Mergansers	0	202	20	0	222	
Unidentified	0	0	0	0	0	
Miscellaneous	0	0	0	0	0	
<b>TOT. DUCKS</b>	<b>405000</b>	<b>383764</b>	<b>1013374</b>	<b>322708</b>	<b>2789330</b>	
L. Snow	0	0	0	0	0	
Blue-phase Snow	0	0	0	0	0	
Ross'	0	0	0	0	0	
Snow/Ross' undif.	6000	42157	277916	23100	551305	
<b>Subt. "White" G.</b>	<b>6000</b>	<b>42157</b>	<b>277916</b>	<b>23100</b>	<b>551305</b>	
White-fronted G.	5000	23864	200019	10795	331236	
Western	0	702	3115	735	4867	
Lesser/Taverner	0	0	0	0	0	
Cackling	0	0	0	0	0	
Dusky	0	0	0	0	0	
Aleutian	0	0	0	0	0	
"Canada" undif.	0	1100	1000	0	3100	
<b>Subt. Canada</b>	<b>0</b>	<b>1802</b>	<b>4115</b>	<b>735</b>	<b>7967</b>	
Brant	0	0	0	0	0	
<b>TOT. GEESE</b>	<b>11000</b>	<b>67823</b>	<b>482050</b>	<b>34630</b>	<b>890508</b>	
Tundra Swan	0	12981	56243	335	70561	
Trumpeter Sw.	0	0	0	0	0	
Mute Swan	0	0	0	0	0	
Unident. Swan	0	0	0	0	0	
<b>TOT. SWANS</b>	<b>0</b>	<b>12981</b>	<b>56243</b>	<b>335</b>	<b>70561</b>	
<b>GRAND TOTAL</b>	<b>416000</b>	<b>464568</b>	<b>1551667</b>	<b>357673</b>	<b>3750399</b>	
<b>COOTS</b>	5000	31200	153524	18033	247673	
<b>SANDHILL CR.</b>	0	994	5398	0	6477	

Zone Summary -- 2007 Winter Waterfowl Survey				State: CA	Page 3 of 6 pages	
Strata	14-4	14-4	14-4	14-4	14-4	14-4
Survey Unit/Area:	A-27	A-05	A-13	A-14	A-15	TOTAL
Observers:	G.Mcchesney J.Bradley	S. Oldenburger D. Zezulak	S. Oldenburger D. Zezulak	M. Weaver D. Zezulak	J. Buffa, D. Kodama G. Downard	
Date:	9-Jan-07	10-Jan-07	10-Jan-07	9-Jan-07	9-10-Jan-07	
Mallard	678	890	4824	15964	2494	24850
Blk/Mot'ld/Mex.	0	0	0	0	0	0
Gadwall	27	577	1434	232	4729	6999
Wigeon	2590	991	6949	564	26911	38005
G-w Teal	46	3560	8713	1150	129	13598
B-w/Cinn Teal	0	5	250	179	42	476
Shoveler	191	910	12522	2930	50203	66756
Pintail	265	3160	17622	55707	14105	90859
Wood Duck	0	0	0	20	0	20
Whistling Duck	0	0	0	0	0	0
<b>Subt. Dabblers</b>	<b>3797</b>	<b>10093</b>	<b>52314</b>	<b>76746</b>	<b>98613</b>	<b>241563</b>
Redhead	0	15	152	0	1239	1406
Canvasback	2	75	1105	3825	12863	17870
Scaup	3620	125	1700	25	37059	42529
Ring-necked D.	0	87	235	5	0	327
Goldeneye	7	0	314	140	373	834
Bufflehead	5520	90	339	29	2873	8851
Ruddy Duck	20	400	2488	239	14622	17769
<b>Subt. Divers</b>	<b>9169</b>	<b>792</b>	<b>6333</b>	<b>4263</b>	<b>69029</b>	<b>89586</b>
Eiders	0	0	0	0	0	0
Scoters	880	0	0	0	22443	23323
Oldsquaw	0	0	0	0	0	0
Harlequin	0	0	0	0	0	0
<b>Subt. Seaducks</b>	<b>880</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22443</b>	<b>23323</b>
Mergansers	1	0	0	28	2	31
Unidentified	911	0	0	0	3335	4246
Miscellaneous	0	0	0	0	0	0
<b>TOT. DUCKS</b>	<b>14758</b>	<b>10885</b>	<b>58647</b>	<b>81037</b>	<b>193422</b>	<b>358749</b>
L. Snow	0	0	0	0	0	0
Blue-phase Snow	0	0	0	0	0	0
Ross'	0	0	0	0	0	0
Snow/Ross' undif.	0	0	0	51855	0	51855
<b>Subt. "White" G.</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>51855</b>	<b>0</b>	<b>51855</b>
White-fronted G.	0	300	325	46389	0	47014
Western	0	52	952	1247	0	2251
Lesser/Taverner	0	0	0	0	0	0
Cackling	0	0	0	0	0	0
Dusky	0	0	0	0	0	0
Aleutian	0	0	0	0	0	0
"Canada" undif.	61	0	0	15640	821	16522
<b>Subt. Canada</b>	<b>61</b>	<b>52</b>	<b>952</b>	<b>16887</b>	<b>821</b>	<b>18773</b>
Brant	1583	0	0	0	0	1583
<b>TOT. GEESE</b>	<b>1644</b>	<b>352</b>	<b>1277</b>	<b>115131</b>	<b>821</b>	<b>119225</b>
Tundra Swan	0	0	180	17054	0	17234
Trumpeter Sw.	0	0	0	0	0	0
Mute Swan	0	0	1	0	0	1
Unident. Swan	0	0	0	0	0	0
<b>TOT. SWANS</b>	<b>0</b>	<b>0</b>	<b>181</b>	<b>17054</b>	<b>0</b>	<b>17235</b>
<b>GRAND TOTAL</b>	<b>16402</b>	<b>11237</b>	<b>60105</b>	<b>213222</b>	<b>194243</b>	<b>495209</b>
<b>COOTS</b>	<b>590</b>	<b>6905</b>	<b>29367</b>	<b>55924</b>	<b>22024</b>	<b>114810</b>
<b>SANDHILL CR.</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3552</b>	<b>0</b>	<b>3552</b>

Zone Summary -- 2007 Winter Waterfowl Survey				State: CA	Page 4 of 6 pages		
Strata	14-5	14-5	14-5	14-5	14-5	14-5	14-5
Survey Unit/Area:	A-06	A-07	A-16	A-17	A-18	A-19	A-23
Observers:	G.Gerstenberg	G.Gerstenberg	G.Gerstenberg	G.Gerstenberg	G.Gerstenberg	G.Gerstenberg	G.Gerstenberg
	S.Oldenburger	S.Oldenburger	S.Oldenburger	S.Oldenburger	S.Oldenburger	S.Oldenburger	H. King
Date:	3-Jan-07	3-Jan-07	3-Jan-07	3-Jan-07	3-Jan-07	3-Jan-07	9-Jan-07
Mallard	330	1970	8805	5248	3432	1634	800
Bik/Mot'ld/Mex.	0	0	0	0	0	0	0
Gadwall	1750	1475	1645	31871	157	1097	720
Wigeon	450	135	1210	9130	200	1278	635
G-w Teal	6040	1860	113745	76460	5425	17465	70
B-w/Cinn Teal	15	0	50	135	5	0	0
Shoveler	1970	10150	5920	197618	2210	1658	100
Pintail	200	2030	4750	5432	1200	2586	10
Wood Duck	0	0	0	5	0	5	0
Whistling Duck	0	0	0	0	0	0	0
<b>Subt. Dabblers</b>	<b>10755</b>	<b>17620</b>	<b>136125</b>	<b>325899</b>	<b>12629</b>	<b>25723</b>	<b>2335</b>
Redhead	5	20	0	644	0	0	0
Canvasback	3215	20	40	12257	5	1340	0
Scaup	10	0	0	2818	0	0	15
Ring-necked D.	5620	417	1450	26070	445	9730	140
Goldeneye	0	0	0	31	0	0	5
Bufflehead	0	0	0	1138	0	20	455
Ruddy Duck	50	100	15	30763	500	1377	1140
<b>Subt. Divers</b>	<b>8900</b>	<b>557</b>	<b>1505</b>	<b>73721</b>	<b>950</b>	<b>12467</b>	<b>1755</b>
Eiders	0	0	0	0	0	0	0
Scoters	0	0	0	0	0	0	0
Oldsquaw	0	0	0	0	0	0	0
Harlequin	0	0	0	0	0	0	0
<b>Subt. Seaducks</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Mergansers	0	0	0	15	5	10	275
Unidentified	0	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0	0
<b>TOT. DUCKS</b>	<b>19655</b>	<b>18177</b>	<b>137630</b>	<b>399635</b>	<b>13584</b>	<b>38200</b>	<b>4365</b>
L. Snow	0	0	0	0	0	0	0
Blue-phase Snow	0	0	0	0	0	0	0
Ross'	0	0	0	0	0	0	0
Snow/Ross' undif.	1700	26200	0	110	10400	0	10
<b>Subt. "White" G.</b>	<b>1700</b>	<b>26200</b>	<b>0</b>	<b>110</b>	<b>10400</b>	<b>0</b>	<b>10</b>
White-fronted G.	100	528	595	675	2070	0	0
Western	0	0	0	260	0	0	5505
Lesser/Taverner	0	0	0	0	0	0	0
Cackling	0	0	0	0	0	0	0
Dusky	0	0	0	0	0	0	0
Aleutian	0	0	0	1105	0	0	0
"Canada" undif.	0	0	0	0	0	0	0
<b>Subt. Canada</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1365</b>	<b>0</b>	<b>0</b>	<b>5505</b>
Brant	0	0	0	0	0	0	0
<b>TOT. GEESE</b>	<b>1800</b>	<b>26728</b>	<b>595</b>	<b>2150</b>	<b>12470</b>	<b>0</b>	<b>5515</b>
Tundra Swan	0	0	59	74	0	0	6
Trumpeter Sw.	0	0	0	0	0	0	0
Mute Swan	0	0	0	0	0	0	0
Unident. Swan	0	0	0	0	0	0	0
<b>TOT. SWANS</b>	<b>0</b>	<b>0</b>	<b>59</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>6</b>
<b>GRAND TOTAL</b>	<b>21455</b>	<b>44905</b>	<b>138284</b>	<b>401859</b>	<b>26054</b>	<b>38200</b>	<b>9886</b>
<b>COOTS</b>	<b>2050</b>	<b>1730</b>	<b>2550</b>	<b>150694</b>	<b>3525</b>	<b>16520</b>	<b>20250</b>
<b>SANDHILL CR.</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>1526</b>	<b>670</b>	<b>0</b>	<b>0</b>

Zone Summary -- 2007 Winter Waterfowl Survey		State: CA	Page 5 of 6 pages
Strata	14-5	14-5	14-6
Survey Unit/Area:	A-22	TOTAL	A-28
Observers:	D. Hardt		D.Brubaker
	P. Williams		J.A.M.
Date:	2-Jan-07		18-19-JAN-07
Mallard	6667	28886	717
Blk/Mot'ld/Mex.	0	0	0
Gadwall	7446	46161	557
Wigeon	3984	17022	1560
G-w Teal	15318	236383	290
B-w/Cinn Teal	2358	2563	13
Shoveler	44631	264257	2530
Pintail	26628	42836	275
Wood Duck	0	10	4
Whistling Duck	0	0	0
Subt. Dabblers	107032	638118	5946
Redhead	1020	1689	577
Canvasback	3152	20029	39
Scaup	70	2913	3517
Ring-necked D.	95	43967	19
Goldeneye	0	36	31
Bufflehead	1032	2645	1673
Ruddy Duck	9758	43703	1926
Subt. Divers	15127	114982	7782
Eiders	0	0	0
Scoters	0	0	4520
Oldsquaw	0	0	0
Harlequin	0	0	0
Subt. Seaducks	0	0	4520
Mergansers	937	1242	44
Unidentified	270	270	164
Miscellaneous	0	0	0
TOT. DUCKS	123366	754612	18456
L. Snow	0	0	0
Blue-phase Snow	0	0	0
Ross'	0	0	0
Snow/Ross' undif.	5	38425	16
Subt. "White" G.	5	38425	16
White-fronted G.	0	3968	0
Western	0	5765	0
Lesser/Taverner	0	0	0
Cackling	0	0	0
Dusky	0	0	0
Aleutian	0	1105	0
"Canada" undif.	619	619	61
Subt. Canada	619	7489	61
Brant	0	0	3488
TOT. GEESE	624	49882	3565
Tundra Swan	5	144	0
Trumpeter Sw.	0	0	0
Mute Swan	0	0	0
Unident. Swan	0	0	0
TOT. SWANS	5	144	0
GRAND TOTAL	123995	804638	22021
COOTS	13325	210644	0
SANDHILL CR.	460	2691	0

Zone Summary -- 2007 Winter Waterfowl Survey				State: CA	Page 6 of 6 pages	
Strata	14-7	14-7	14-7		14-7	14-0
Survey Unit/Area:	A-20	A-21	A-26		TOTAL	CA TOTAL
Observers:	S. Quayle	R. Botta	R. Botta			
	S. Gibson	T. Dillingham	T. Dillingham			
Date:	9-Jan-07	18-Jan-07	11-Jan-07			
Mallard	100	460	538		1098	385785
Blk/Mot'ld/Mex.	0	0	0		0	0
Gadwall	200	59	307		566	168242
Wigeon	700	646	1212		2558	525374
G-w Teal	570	205	1286		2061	502402
B-w/Cinn Teal	0	0	0		0	3547
Shoveler	4747	67	5274		10088	622904
Pintail	924	51	988		1963	1573561
Wood Duck	0	5	0		5	890
Whistling Duck	0	0	0		0	0
<b>Subt. Dabblers</b>	<b>7241</b>	<b>1493</b>	<b>9605</b>		<b>18339</b>	<b>3782705</b>
Redhead	0	57	17		74	3991
Canvasback	0	5	33		38	45344
Scaup	0	381	97		478	62386
Ring-necked D.	0	57	0		57	81380
Goldeneye	0	559	0		559	3510
Bufflehead	0	905	7		912	22314
Ruddy Duck	1150	19	133		1302	73739
<b>Subt. Divers</b>	<b>1150</b>	<b>1983</b>	<b>287</b>		<b>3420</b>	<b>292664</b>
Eiders	0	0	0		0	0
Scoters	0	0	0		0	33114
Oldsquaw	0	0	0		0	0
Harlequin	0	0	0		0	0
<b>Subt. Seaducks</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>33114</b>
Mergansers	0	512	238		750	3754
Unidentified	9658	138	205		10001	16569
Miscellaneous	0	0	0		0	0
<b>TOT. DUCKS</b>	<b>18049</b>	<b>4126</b>	<b>10335</b>		<b>32510</b>	<b>4128806</b>
L. Snow	7150	0	0		7150	7150
Blue-phase Snow	100	0	0		100	100
Ross'	100	0	0		100	100
Snow/Ross' undif.	0	0	0		0	641603
<b>Subt. "White" G.</b>	<b>7350</b>	<b>0</b>	<b>0</b>		<b>7350</b>	<b>648953</b>
White-fronted G.	0	0	0		0	388568
Western	20	0	0		20	20456
Lesser/Taverner	0	0	0		0	0
Cackling	0	0	0		0	0
Dusky	0	0	0		0	0
Aleutian	0	0	0		0	2675
"Canada" undif.	0	47	72		119	20421
<b>Subt. Canada</b>	<b>20</b>	<b>47</b>	<b>72</b>		<b>139</b>	<b>43552</b>
Brant	0	0	0		0	7387
<b>TOT. GEESE</b>	<b>7370</b>	<b>47</b>	<b>72</b>		<b>7489</b>	<b>1088460</b>
Tundra Swan	0	0	0		0	90136
Trumpeter Sw.	0	0	0		0	0
Mute Swan	0	0	0		0	1
Unident. Swan	0	0	0		0	0
<b>TOT. SWANS</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>90137</b>
<b>GRAND TOTAL</b>	<b>25419</b>	<b>4173</b>	<b>10407</b>		<b>39999</b>	<b>5307403</b>
<b>COOTS</b>	650	5228	1941		7819	586937
<b>SANDHILL CR.</b>	20	0	0		20	12740