

California Coastal Commission  
Snowy Plover population outcomes at Surf Beach

Statistical outcome of closure of Surf Beach and Plover population increases.  
Source November 15,. 2016 Monitoring report [Full copy provided for the record]

Attachment #1: Page 131 shows the one year when unseasonably warmer temperatures allowed the Plover population to reach the recovery objective.

Attachment #2: Page 114 and 115 shows [Mean] egg clutch hatch success and fledging success rates in the closed and open areas of Surf Beach.

**There was no substantial statistical difference in the open and closed areas.**

Attachment #3: Shows that in year 2016 no nest on Surf Beach north or south were destroyed by humans while 25% were destroyed by Coyotes and 5.5% by Ravens.

John H. Linn

Table 2. Summary of breeding window surveys from 1994 to 2016.

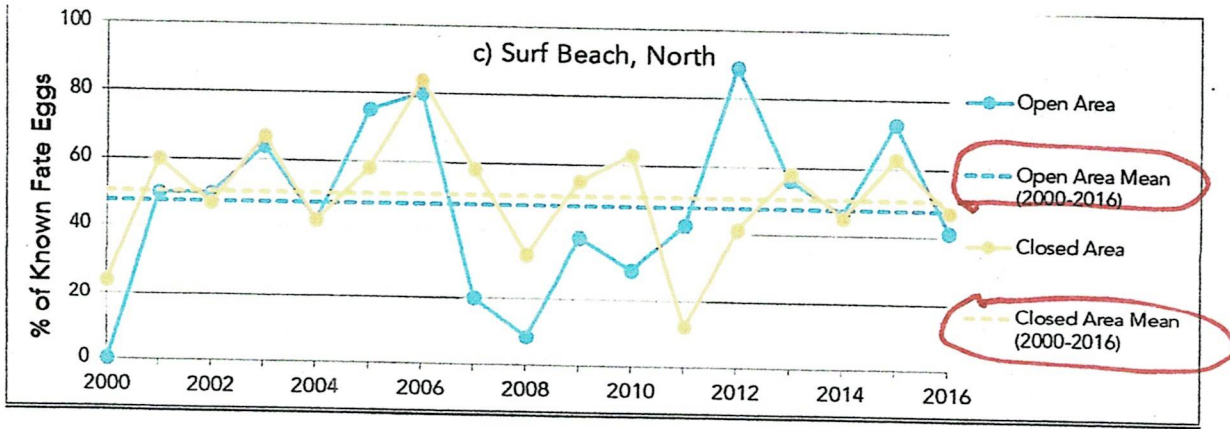
Year	Early to Mid May	Mid to Late May	Early to Mid June	Mid to Late June	Mean	% Change over Prior Year	% Change in 2016
1994	237	--	199	217	218	n/a	2%
1995	213	234	193	202	211	-3%	6%
1996	230	229	234	244	234	11%	-5%
1997	258	196	256	245	239	2%	-7%
1998	103	130	132	163	132	-45%	69%
1999	91	64	67	89	78	-41%	186%
2000	98	106	107	109	105	35%	112%
2001	115	100	123	150	122	16%	83%
2002	222	213	174	195	201	65%	11%
2003	344	256	295	232	282	40%	-21%
2004	363	420	466	431	420	49%	-47%
2005	277	259	284	280	275	-35%	-19%
2006	289	245	261	279	269	-2%	-17%
2007	153	165	192	172	171	-36%	30%
2008	230	207	199	193	207	21%	8%
2009	158	162	187	183	173	-17%	29%
2010	178	167	176	175	174	1%	28%
2011	215	230	223	196	216	24%	3%
2012	206	170	196	248	205	-5%	9%
2013	214	204	208	232	220	2%	1%
2014	202	195	190	205	198	-3%	13%
2015	240	309	248	277	269	22%	-17%
2016	160	192	251	289	223	13%	

# 1

THE  
WARM  
YEAR

# EGG CLUTCH HATCH SUCCESS

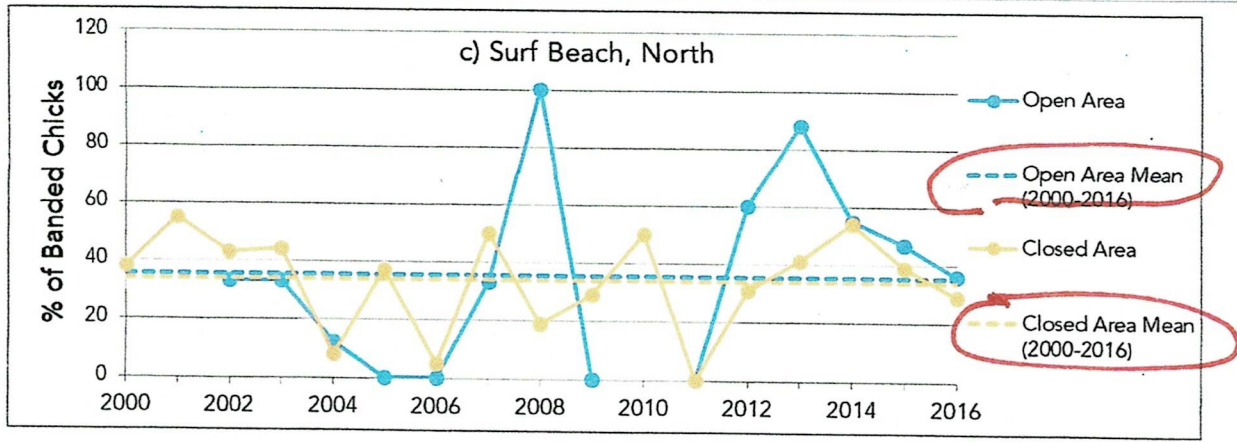
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**Figure 24.** Trends in annual clutch hatch success at open and closed areas of Minuteman, Wall, and Surf beaches. Missing data points indicate years where no nests were initiated within that particular beach sector.

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# FLEDGING SUCCESS



**Figure 25.** Trends in annual fledging success within open and closed areas of Minuteman, Wall, and Surf Beaches. Missing values indicate years when no nesting occurred or fledging success was not determined for that particular beach sector.

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Table 2. Summary of population and breeding metrics for the Western snowy plover population on VAFB per beach section and recovery site (highlighted in blue), 2016. Population estimates are based on maximum number of adults observed during all transect surveys. Reproductive success (fledglings per adult male) was calculated using maximum number of males observed during the four window surveys in order to keep consistent with historic calculations.

SURF NORTH & SOUTH

		MIN	SHN/ SHS	SAN	PNO	PCO	CA- 84	WAL	SNO	SSO	CA- 85
Population	Maximum Adults Observed	4	25	76	8	3	110	59	75	61	179
	Number of Nests Initiated	2	30	105	7	7	151	88	89	57	234
Nests	Hatched	1	7	52	1	6	67	38	41	26	105
	Abandoned Before Hatch	0	1	5	1	0	7	4	7	5	16
	Incubated Past Hatch Date	0	0	2	0	1	3	0	0	0	0
	Depredated	1	16	41	4	0	62	34	22	6	62
	Destroyed by Wind	0	1	4	0	0	5	6	4	2	12
	Destroyed by Tide	0	5	1	1	0	7	4	14	15	33
	Destroyed by Human(s)	0	0	0	0	0	0	0	0	0	0
	Failed Unknown	0	0	0	0	0	0	1	0	1	2
	Suspected Adult Mortality	0	0	0	0	0	0	1	1	2	4
Unknown Fate	0	0	0	0	0	0	0	0	0	0	
Eggs & Chicks	Total Known Fate Eggs	6	72	277	18	19	392	224	231	140	595
	Total Chicks Hatched	3	18	144	1	17	183	103	110	69	282
	Hatching Success	50%	25%	52%	6%	89%	47%	46%	48%	49%	47%
	Clutch Success	50%	23%	50%	14%	86%	44%	43%	46%	46%	45%
	Known Fate Clutches	2	30	105	7	7	151	88	89	57	234
Fledglings	Total Banded Chicks	0	12	86	1	12	111	52	79	34	165
	Banding Rate	0%	67%	60%	100%	71%	61%	50%	72%	49%	59%
	Total Banded Fledglings Observed	0	4	31	0	4	39	25	24	20	69
	Fledging Success	0%	33%	36%	0%	33%	35%	48%	30%	59%	42%
	Estimated # of Fledglings	0	6	52	0	6	64	50	33	41	118
	Fledges per male	-	-	-	-	-	1.2	-	-	-	1.2

- ① Coyotes were identified as taking 25% of Nests
- ② Ravens were identified as taking 5.5% of Nests
- ③ Coyotes took a smaller percentage on beaches open to humans???