

# Appendix F: Caspian Tern Regional Population Nesting Site Locations and Colony Sizes

TABLE F.1 Current and Historic Caspian Tern Nesting Locations in the Pacific Coast Region

Site Location	Current <sup>a</sup>	Historic <sup>b</sup>
<b>WASHINGTON</b>		
Dungeness Spit NWR, Clallam County	x	
Padilla Bay, Skagit County		x
Commencement Bay, Pierce County	x <sup>c</sup>	
Grays Harbor, Grays Harbor County		x
Willapa Bay, Pacific County		x
Miller Rocks, Klickitat County		x
Crescent Island, Walla Walla County	x	
Banks Lake, Grant County	x	
Potholes Reservoir, Grant County	x	
Sprague Lake, Adams County	x	
<b>OREGON</b>		
East Sand Island, Clatsop County	x	
Rice Island, Clatsop County	x <sup>d</sup>	
Miller Sands Spit, Clatsop County		x <sup>d</sup>
Threemile Canyon Island, Morrow County	x <sup>e</sup>	
Malheur Lake, Harney County	x	
Crump Lake, Lake County	x	
Summer Lake, Lake County	x	
<b>CALIFORNIA</b>		
Humboldt Bay, Humboldt County	x	
Knights Island, Solano County	x	
Brooks Island, Contra Costa County	x	
Agua Vista, San Francisco County	x	
Hayward Regional Shoreline, Alameda County	x	
Bair Island, San Mateo County	x	
Ravenswood, San Mateo County	x	
Proposed Alameda NWR, Alameda County	x <sup>f</sup>	
Baumberg Tract, Alameda County	x	
Ponds M4/M5, Alameda County		x
Ponds N1-N9, Alameda County		x
Alviso (Pond A7), Santa Clara County	x	
Elkhorn Slough, Monterey County	x	
Salinas River NWR, Monterey County	x	
Bolsa Chica Ecological Reserve, Orange County	x	
Pier 400, Terminal Island, Los Angeles County	x	
South San Diego Bay NWR, San Diego County	x	
Meiss Lake, Butte Valley WA, Siskiyou County	x	
Clear Lake NWR, Modoc County	x	
Goose Lake, Modoc County	x	
Big Sage Reservoir, Modoc County	x	
Honey Lake WA, Lassen County	x	
Mono Lake, Mono County	x	
Lemoore NAS sewer ponds, Kings County	x	
Westlake Farms North Evaporation Ponds, Kings County	x	
Westlake Farms South Evaporation Basin, Kings County	x	
Tulare lakebed, Kings County	x	
South Wilbur Flood Area, Kings County	x	
Tulare Lake Drainage District, North Evaporation Basin, Kings County	x	
Tulare Lake Drainage District, South Evaporation Basin, Kings and Kern County	x	
Lake Elsinore, Riverside County	x	
Salton Sea, Imperial County	x	

# Appendix F: Caspian Tern Regional Population Nesting Site Locations and Colony Sizes Continued

TABLE F.1 Current and Historic Caspian Tern Nesting Locations in the Pacific Coast Region (continued)

Site Location	Current <sup>a</sup>	Historic <sup>b</sup>
<b>MEXICO</b>		
Cerro Prieto, Mexicali Valley	x	
Isla Montague	x	
Isla Concha	x	
Isla Vaso 8	x	
<b>IDAHO</b>		
Mormon Reservoir, Camas County	x	
Magic Reservoir, Blaine County		x
Minidoka NWR, Cassia County	x	
American Falls Reservoir, Bingham County	x	
Blackfoot Reservoir, Caribou County	x	
Bear Lake NWR, Franklin County		x
<b>NEVADA</b>		
Stillwater Point Reservoir, Churchill County		x
Lahontan Reservoir, Lyon County		x
Carson Sink, Churchill County	x	
Anaho Island NWR, Washoe County	x	
<b>UTAH</b>		
Great Salt Lake, Tooele County		x
Bear River Migratory Bird Refuge, Box Elder County		x
Farmington Bay Waterfowl Management Area, Davis County		x
Utah Lake, Utah County		x
<b>MONTANA</b>		
Canyon Lake Ferry Reservoir, Lewis and Clark Counties	x	
Fort Peck Reservoir, Charles M. Russell NWR, Valley County	x	
<b>WYOMING</b>		
Molly Island, Yellowstone National Park	x	
Pathfinder Reservoir, Natrona and Carbon Counties		x
Soda Lake Islands, Natrona County	x	
Gray Reef Reservoir, Natrona County		x
Bamforth Lake, Albany County		x
Caldwell Lake, Albany County		x

<sup>a</sup> Active nesting occurred at these sites in the last 5 years. Nesting may or may not have occurred in 2003.

<sup>b</sup> Nesting activity has not occurred for the last 5 consecutive years.

<sup>c</sup> Colony last nested in 2002 but site is no longer available because of environmental clean-up.

<sup>d</sup> Terns could potentially nest at these locations, but active management actions are being implemented to prevent terns from nesting.

<sup>e</sup> Mink predation occurred at this site in 2001 and most likely will inhibit any future nesting activity .

<sup>f</sup> Nesting habitat was lost to heavy vegetation in 1999; restoration needs to occur before terns are able to nest again.

# Appendix F: Caspian Tern Regional Population Nesting Site Locations and Colony Sizes Continued

TABLE F.2 Caspian Tern Pacific Coast Regional Population, 1997 to 2003 and Average Colony Size<sup>a</sup>

Site Location	Number of Nesting Pairs							Average <sup>b</sup> Colony Size
	1997	1998	1999	2000	2001	2002	2003	
<b>WASHINGTON</b>								
Dungeness NWR							186 <sup>c</sup>	-
Padilla Bay	0	0	-	-	-	-	0	104 <sup>d</sup>
Commencement Bay	-	-	423	620 <sup>e</sup>	388	215 <sup>e</sup>	0	412
Grays Harbor	0	0	0	0	0	0	0	1675 <sup>f</sup>
Willapa Bay	0	0	0	0	0	0	0	820 <sup>g</sup>
Miller Rocks	-	-	-	-	15	0	0	-
Crescent Island	614 <sup>c</sup>	357 <sup>c</sup>	552 <sup>c</sup>	548	657	578	509	545
Banks Lake	-	-	-	10	23	-	21	18
Potholes Reservoir	259	-	-	150	~250	~250	205	223
Sprague Lake	-	-	~50	20	20	-	-	30
<b>OREGON</b>								
East Sand Island	0	0	547	8,513	8,896	9,933 <sup>h</sup>	8,352 <sup>h</sup>	7,248
Rice Island	7,151	8,691	8,328	588	0	0	0	6,190
Miller Sands Spit	0	17	0	0	0	0	0	-
Threemile Canyon Island	354 <sup>c</sup>	210 <sup>c</sup>	238 <sup>c</sup>	260	2	0	0	266 <sup>i</sup>
Malheur Lake	65	25	30	192 <sup>c</sup>	51 <sup>c</sup>	0	0	73
Crump Lake	-	-	-	155 <sup>c</sup>	-	0	49	102
Summer Lake	-	-	38	16	0	~5	5	16
<b>CALIFORNIA</b>								
Humboldt Bay	-	-	-	-	~17 <sup>c</sup>	~6 <sup>c</sup>	60 <sup>c</sup>	28
Knights Island	400	~200	-	121 <sup>c</sup>	43 <sup>c</sup>	153	203	187
Brooks Island	~500	582	Active	806 <sup>c</sup>	512 <sup>c</sup>	825	859	681
Agua Vista	-	-	-	-	-	86 <sup>c</sup>	43 <sup>c</sup>	65
Hayward Regional Shoreline	1	1	1	1	1	1	0	1
Ravenswood	0	4	0	1	1	1	0	1
Alameda	285	267	1	0	0	0	0	184
Baumberg Tract	0	33	26	79	116	80	35	62
Alviso (Pond A7)	104	30	122	118	155	73	50	93
Elkhorn Slough	0	0	~30	~80	~65	~50	~50	~55
Salinas River NWR	-	-	-	-	2	93 <sup>c</sup>	167	87
Bolsa Chica <sup>j</sup>	175	40	58	51	92	192	5	613
Pier 400, Terminal Island	25	146	250	336	160	151	170	177
South San Diego Bay NWR	320	198	261	380	350	379	311	314
Meiss Lake, Butte Valley WA	25 <sup>c</sup>	16	27	19	0	0	0	22
Clear Lake NWR	180 <sup>c</sup>	68 <sup>c</sup>	118	242 <sup>c</sup>	201	0	29	120
Goose Lake	143 <sup>c</sup>	-	310 <sup>c</sup>	4	~240	133	282	185
Big Sage Reservoir	62 <sup>c</sup>	-	0	48	0	0	0	55
Honey Lake WA	152	-	87	82	92	46	13	79
Mono Lake	0	0	0	8	6	11	8	8
Lemoore NAS sewer ponds	-	20 <sup>c</sup>	0	-	-	0	-	-
Westlake Farms, South Evaporation Basin	0	3	0	0	0	0	-	-
Tulare lakebed	0	20 <sup>c</sup>	0	0	0	0	-	-
South Wilbur Flood Area	0	70	27	0	0	0	-	49
Tulare Lake Drainage District, North Evaporation Basin	0	0	0	0	1	0	-	-
Tulare Lake Drainage District, South Evaporation Basin	0	40	0	0	0	0	-	-
Lake Elsinore	-	-	14	-	-	0	-	-
Salton Sea	1,200	800	211	207	327	29	88	409

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TABLE F.2 Caspian Tern Pacific Coast Regional Population, 1997 to 2003 and Average Colony Size<sup>a</sup>

Site Location	Number of Nesting Pairs							Average <sup>b</sup> Colony Size
	1997	1998	1999	2000	2001	2002	2003	
<b>MEXICO</b>								
Cerro Prieto	30	-	-	0	0	4	37	-
Isla Montague	-	-	-	-	-	83	-	-
Isla Concha	-	-	-	-	-	21	23	22
Isla Vaso 8	-	-	-	-	-	32	90	61
<b>IDAHO</b>								
Mormon Reservoir	-	-	-	-	~2	25	0	14
Minidoka NWR	-	-	-	1	0	4	0	1
American Falls Reservoir	-	-	-	-	-	5	0	-
Blackfoot Reservoir	-	-	-	-	0	50	40	45
<b>NEVADA</b>								
Carson Sink	0	-	685	0	0	0	0	-
Anaho Island NWR, Pyramid Lake	1	5	0	0	0	0	5	4
<b>MONTANA</b>								
Canyon Lake Ferry Reservoir	5	0	2	7	35	43	11	15
Fort Peck Reservoir, Charles M. Russell NWR	?	?	?	?	~25	~25	-	25
<b>WYOMING</b>								
Molly Island, Yellowstone Lake	4	5	4	0	3	5	-	4
Soda Lake islands	0	0	0	7	12	19	-	13
<b>PACIFIC REGION TOTALS<sup>k</sup></b>	<b>12,115</b>	<b>11,848</b>	<b>12,440</b>	<b>13,669</b>	<b>12,760</b>	<b>13,606</b>	<b>11,906</b>	<b>-</b>

<sup>a</sup> Data from Shuford and Craig 2002 with additional data for 2002 and 2003 from USFWS and D. Shuford. To enable estimation of the total numbers of breeding pairs in the entire region, we adjusted some raw counts or estimates. When a range was given for numbers of nests or pairs we report the mid-point (e.g., 800-850 pairs reported as 825 pairs) and for breeding adults we use the mid-point as the basis for estimating numbers of pairs. Counts or estimates of breeding adults were multiplied by 0.62 to approximately estimate numbers of breeding pairs based on the average ratio of nests to adults at sites on the California coast (0.625, Carter et al. 1992, p. I-45) and the California interior (0.61, D. Shuford unpubl. data). Dashes (-) indicate that no survey was conducted or no data available, zeroes (0) that a survey was conducted but no evidence of nesting observed, and question marks (?) that nesting strongly suspected but no solid data available.

<sup>b</sup> Average colony size was based on years with nest counts only.

<sup>c</sup> Counts of adults were converted to an estimate of breeding pairs by multiplying raw adults by the 0.62 correction factor described above.

<sup>d</sup> Average colony size for Padilla Bay was calculated based on data collected in 1991 and 1995 (M. Davison pers. comm)

<sup>e</sup> Counts of adults were converted to an estimate of breeding pairs by multiplying raw adults by the 0.62 correction factor described above. Terns at Commencement Bay in 2002 were nesting on the rooftop of a Port of Tacoma building (# 407); the count of adults on which the estimate of pairs was made was taken late in the nesting season (9 July).

<sup>f</sup> Average colony size calculated from data in Shuford and Craig (2002). Range = 9 - 3950 breeding pairs

<sup>g</sup> Average colony size calculated from data in Shuford and Craig (2002). Range = 175 - 1500 breeding pairs

<sup>h</sup> Data from Collis et al. 2003a and 2003b

<sup>i</sup> Average colony size does not include 2001 nest count because the colony was affected by a predator that year.

<sup>j</sup> All counts from Bolsa Chica are of total nest attempts (on the basis of marked nests), which likely overestimates nesting pairs because of pairs that re-nest after initial failures.

<sup>k</sup> Totals are likely underestimates because of a lack of surveys at some sites in particular years or during the whole time period (e.g., most sites in Mexico).