

**2009 Annual Report: California Clapper Rail (*Rallus longirostris obsoletus*)
TE-807078-10**

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Introduction

The California Clapper Rail (*Rallus longirostris obsoletus*) is one of the most endangered species in California. The species is dependent on tidal wetlands, which have decreased over 75% from the historical extent in San Francisco Bay. A complete survey of its population and distribution within the San Francisco Bay Estuary was begun in 2005.

In 2009, PRBO Conservation Science (PRBO) completed the fifth year of field work designed to provide an Estuary-wide abundance estimate and examine the temporal and spatial patterns in California Clapper Rail populations. Field work was performed in collaboration with partners conducting call-count surveys at complementary wetlands (Avocet Research Associates [ARA], California Department of Fish and Game, California Coastal Conservancy's Invasive *Spartina* Project [ISP], and U.S. Fish and Wildlife Service).

This report details PRBO's California Clapper Rail surveys in 2009 under U.S. Fish and Wildlife service permit TE-807078-10. A more detailed report synthesizing 2009 and 2010 survey results from PRBO and its partners is forthcoming.

Methods

Call-count surveys were initiated January 15 and continued until May 6. All sites (Table 1) were surveyed 3 times by experienced permitted biologists using a point transect method, with 10 minutes per listening station. Listening stations primarily were located at marsh edges, levees bordering and within marshes, boardwalks, boat-accessible channels within the marsh, and in the case of 6 marshes in the North Bay, foot access within the marsh. Stations were placed 200-400 meters apart. Locations of surveyed marshes are presented in Figures 1 and 2.

PRBO surveyed 58 sites in San Francisco Bay and San Pablo Bay in 2009. All Clapper Rails, as well as other rail species (i.e., California Black Rail [*Laterallus jamaicensis coturniculus*], Virginia Rail [*Rallus limicola*], and Sora [*Porzana carolina*]), detected from a listening station were recorded along with the time, direction and distance from the listening station. The actual number of rails detected was recorded, or if the detection was not heard clearly because of confounding circumstances (e.g., distance from observer or environmental conditions) a range of number of rails (e.g., 1 to 2, 2 to 4) was recorded. If no Clapper Rails were detected within 200 meters of a listening station after 2 passive surveys, playback (up to 1 minute) of Clapper Rail vocalizations was used in an attempt to stimulate a response on a third survey. Playback surveys consisted of 5 minutes of passive listening (with no Clapper Rails detected), then 1 minute of playback followed by 4 minutes of passive

listening. Clapper Rails detected during transit between listening stations as well as before or after the 10-minute listening period were also recorded.

In order to allow comparability with previous survey work, we summarized our 2009 data by aggregating the most productive surveys at each area and taking the mean based on the minimum and maximum number of Clapper Rails detected for each survey site.

Results and Discussion

PRBO detected 500 (range: 428 to 571) Clapper Rails at the 58 survey sites in 2009 (Table 1). PRBO and its collaborators surveyed 44 sites using similar methodology in 2008 and 2009. Surveys in 2009 detected 442 (range: 376 to 509) Clapper Rails at these 44 sites, and surveys in 2008 detected 355 (range: 321 to 388) Clapper Rails. This represents a 25% increase in detections at the 44 sites in San Francisco and San Pablo Bays between 2008 and 2009.

PRBO surveyed 10 sites in South San Francisco Bay (south of the Bay Bridge) from Bair Island to Charleston Slough in Palo Alto. The mean number of detections at 9 sites surveyed in both 2008 and 2009 increased from 77 (range: 66 to 87) in 2008 to 98 (range: 87 to 109) in 2009, a 27% increase between years. Clapper Rail detections in the Palo Alto complex increased 54% between years.

In Central San Francisco Bay (Bay Bridge to Pt. San Pedro/Pt. San Pablo), we surveyed 9 sites in 2009 where comparable data were collected in 2008. Detections increased 74%, from 53 (range: 48 to 58) Clapper Rails detected in 2008 to 92 (range: 70 to 111) in 2009. Detections at comparable sites in the Corte Madera complex increased 109% between years. A partially depredated nest was unintentionally discovered on March 10, 2009 in Heerdt Marsh (37.9396°N, 122.5084°W). Of the 5 eggs in the nest, 2 were observed to have 0.75" to 1" diameter holes in them. Clapper Rails were detected for the first time at the San Rafael Canal mouth, north of Pickleweed Park.

Detections of Clapper Rails at 26 sites in San Pablo Bay (Pt. San Pedro/Pt. San Pablo to Carquinez Bridge) increased 16%, from 225 (range: 207 to 243) in 2008 to 260 (range 219 to 299) in 2009. The Gallinas Creek complex holds the largest known Clapper Rail population in San Pablo Bay, and detections increased from 113 to 136 (+20%).

The results of surveys conducted by PRBO in 2009 show general increase in numbers of California Clapper Rails in San Pablo Bay and Central San Francisco Bay. However, surveys conducted by our partners in various marshes in the other parts of San Pablo Bay and South San Francisco Bay may show different trends. The significant decrease in numbers of detections during the 2008 surveys may be a part of a longer-term trend toward a high degree of interannual fluctuations. Demographic progression resulting from nesting success in previous years, influences of predators, and various environmental factors may be causing population fluctuations. Additional studies on the breeding biology of Clapper Rails, predators of Clapper Rail, and possible contaminants that may be affecting Clapper Rails directly or indirectly through their food web are warranted.

Acknowledgements

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Table 1. Survey results of 2009 and 2008 Clapper Rail surveys.

Complex	Map #	Site Name	2009 site min	2009 site mean	2009 site max*	2009 surveyor	2008 site min	2008 site mean	2008 site max*	2008 surveyor
San Pablo Bay Gallinas Creek	6	China Camp	10	12	13	PRBO	13	15	16	PRBO
	19	Mitchell Fragment	11	13	15	ARA	6	6	6	PRBO
	85	Gallinas Creek- upper reach	5	6	6	ARA	3	3	3	PRBO
	86	Gallinas Creek south	17	21	24	PRBO	6	7	7	PRBO
	109	Gallinas Creek- middle reach	9	12	15	PRBO	3	4	5	ARA
	69	Santa Venetia	3	4	5	PRBO	7	8	9	PRBO
	20	McInnis Marsh	44	50	55	PRBO	28	32	35	PRBO
	21	Hamilton South	18	20	22	PRBO	39	39	39	PRBO
Petaluma Marsh	59	Petaluma Marsh SW	0	0	0	PRBO	n/a	n/a	n/a	
	73	San Antonio Ck.	2	2	2	PRBO	n/a	n/a	n/a	
	73	Woloki Slough	3	4	5	PRBO	n/a	n/a	n/a	
lower Petaluma River	76	Bahia Channel	4	4	4	PRBO	12	13	13	PRBO
	71	Black John Slough north	6	7	8	PRBO	n/a	n/a	n/a	
	129, 87, 37	Green Point area marshes	21	27	32	PRBO	19	23	27	PRBO
	50	Carl's Marsh	5	7	9	PRBO	2	2	2	PRBO
	89	Petaluma River east	2	2	2	PRBO	0	0	0	PRBO
Petaluma River mouth	4	Day Island Wildlife Area	2	2	2	PRBO	2	2	2	PRBO
	110	Novato Creek mouth	10	11	11	PRBO	6	6	6	PRBO
Sonoma Baylands	27	Sonoma Baylands/Petaluma R. mouth	7	8	8	PRBO	3	4	4	PRBO
	66	Sonoma Baylands restoration	2	2	2	PRBO	5	6	7	PRBO
	36	Sonoma Marina	2	2	2	PRBO	1	1	1	PRBO
upper Napa River	47	Bull Island	1	1	1	ARA	0	0	0	PRBO
	173	Fagan Slough	1	2	2	ARA	0	0	0	PRBO
	94	Hudeman Slough	4	4	4	PRBO	n/a	n/a	n/a	
	48	Coon Island	1	2	2	PRBO	7	7	7	PRBO
lower Napa River	97	White Slough Marsh	1	2	2	ARA	1	2	2	PRBO
Richmond-Pinole	26	San Pablo Creek	7	8	9	PRBO	20	21	22	PRBO
	108	Rheem Creek area	10	10	10	PRBO	1	2	2	ISP
	72	Whittell Marsh	0	0	0	PRBO	n/a	n/a	n/a	
	25	Parchester Marsh	0	0	0	PRBO	n/a	n/a	n/a	
	159	Wildcat Marsh/Castro Creek	26	21	36	ARA	23	26	28	PRBO

* - ARA and ISP method of collecting detection maximums differs from PRBO method

Table 1 continued. Survey results of 2009 and 2008 Clapper Rail surveys.

Complex	Map #	Site Name	2009 site min	2009 site mean	2009 site max*	2009 surveyor	2008 site min	2008 site mean	2008 site max*	2008 surveyor
Central San Francisco Bay										
Richardson Bay	32	Bothin Marsh/Tam High Fragment	7	8	8	PRBO	8	9	9	PRBO
Corte Madera	157	Upper Corte Madera Creek	3	3	3	PRBO	2	3	4	ISP
	158	Creekside Park	11	17	22	PRBO	8	9	9	ISP
	184	Piper Park	8	9	9	PRBO	n/a	n/a	n/a	n/a
	155	Lower Corte Madera Creek	2	2	2	PRBO	2	2	2	ISP
	185	Corte Madera Creek Mouth	3	4	4	PRBO	1	2	2	ISP
	78	Heerdts Marsh	32	42	52	PRBO	15	17	18	PRBO
	81	Muzzi Marsh	29	31	33	ARA	8**	9**	10**	ISP
	62	Marta's Marsh	3	3	3	ARA	n/a	n/a	n/a	
	44	San Clemente Creek	2	2	2	ARA	n/a	n/a	n/a	
	San Rafael	126	Pickleweed Park	4	6	8	PRBO	8	9	10
299		San Rafael Canal mouth	1	2	2	PRBO	n/a	n/a	n/a	
304		Beach Fragment	0	0	0	PRBO	n/a	n/a	n/a	
Richmond Harbor	295	Meeker Slough	2	2	2	ARA	0	0	0	PRBO
Emeryville	176	Emeryville Crescent west	6	8	10	PRBO	4	4	4	ISP
South San Francisco Bay										
Bair-Greco	239	Middle Bair Southeast	2	2	2	PRBO	5	8	10	ISP
	294	Middle Bair East	10	11	11	PRBO	10	10	10	PRBO
	237	Corkscrew Slough	6	6	6	ARA	n/a	n/a	n/a	
	236	Outer Bair Is.	6	6	6	PRBO	6	7	8	PRBO
	249	Faber Tract	38	46	53	PRBO	16	16	16	PRBO
Palo Alto	248	Laumeister Tract	10	12	13	PRBO	15	21	26	PRBO
	251	Palo Alto Baylands	8	8	8	PRBO	7	7	7	PRBO
	247	San Francisquito Ck.	0	0	0	PRBO	0	0	0	PRBO
	250	Palo Alto Harbor/Hooks Island	12	14	15	PRBO	6	8	9	ISP
	257	Charleston Slough	1	1	1	PRBO	1	1	1	ISP

* - ARA and ISP method of collecting detection maximums differs from PRBO method

** - only northern portion of site surveyed

Figure 1. 2009 San Pablo and Central San Francisco Bay Clapper Rail survey locations.

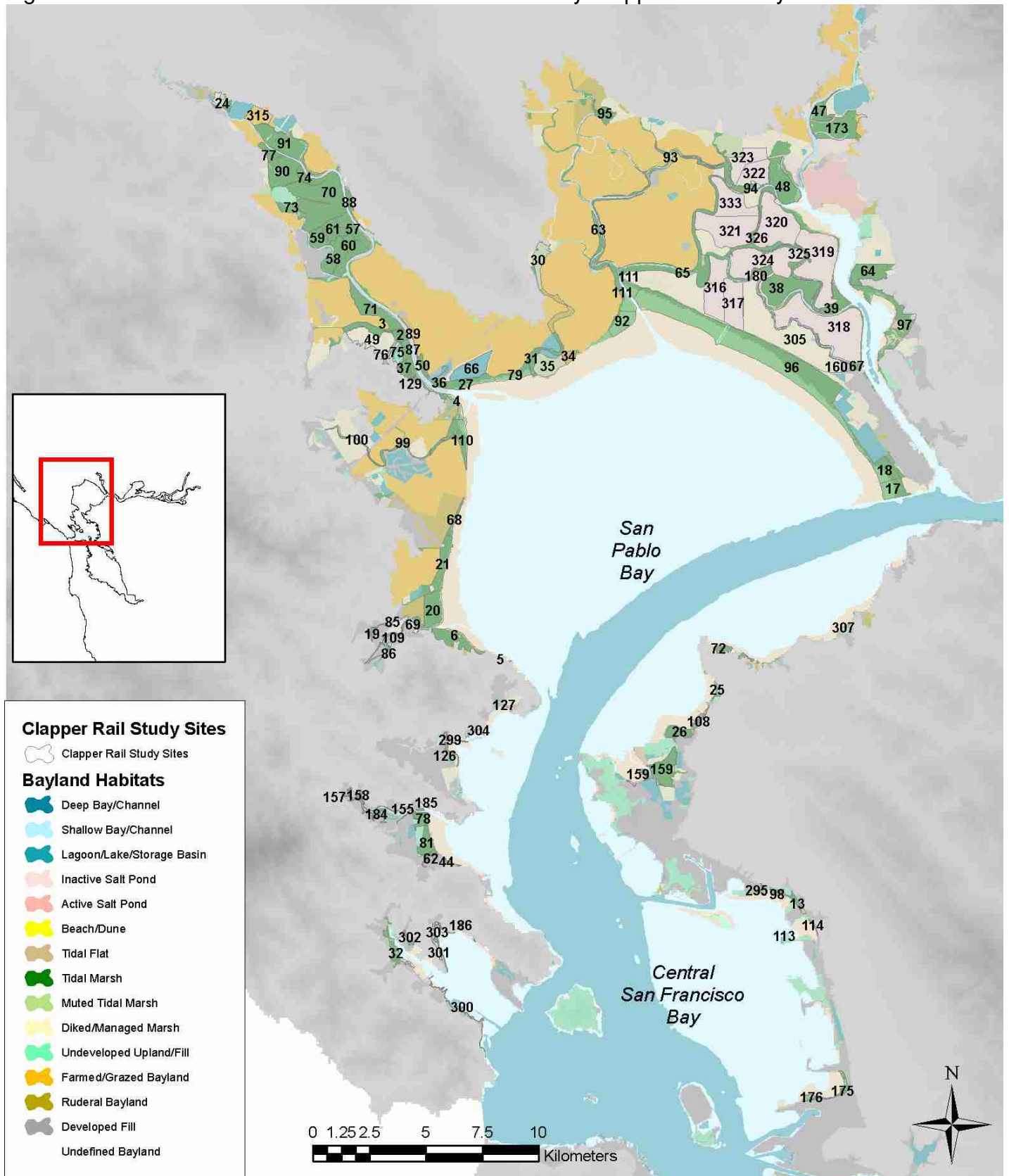


Figure 2. 2009 South San Francisco Bay Clapper Rail survey locations.

