4. Results

4.4 WESTERN SOUTH BAY CLAPPER RAIL REGION.

The Western South Bay Clapper Rail Region begins just south of the Bair and Greco refuge complex and continues through the south bay complex of salt ponds and tidal marshes to Alviso Slough. The region is not well surveyed for clapper rail by the ISP because of the relatively small infestation of *Spartina* compared to net tidal acres. In 2008, we conducted clapper rail surveys at two sites in the region: Ravenswood Open Space Preserve (02j) and Cooley Landing (16).

Table 6. Summary results from clapper rail surveys in the Western South Bay Clapper Rail Region.

<table>
<thead>
<tr>
<th>Site Name and ID</th>
<th>Site Area (Acres)</th>
<th>Survey Area (Acres)</th>
<th>Maximum Number of Rails Detected</th>
<th>Low Density (birds/acre)</th>
<th>High Density (birds/acre)</th>
<th>Population Estimate¹</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Western South Bay</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ravenswood Open Space (02j)</td>
<td>21.6</td>
<td>19.9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cooley Landing Salt Pond (16a)</td>
<td>173.7</td>
<td>114.6</td>
<td>2 - 4</td>
<td>0.017</td>
<td>0.035</td>
<td>2 - 4</td>
</tr>
</tbody>
</table>

¹ Where survey areas are less than 85% of the site area, population estimates are extrapolated from the number of clapper rails detected. A detection limitation of 200 meters and a consistent clapper rail density across each entire site are assumed.
Figure 79. Map of clapper rail survey region and site boundaries in the Western South Bay Clapper Rail Region.
Ravenswood Open Space Preserve (02j)

Estimated 0 clapper rails

Ravenswood Open Space Preserve is a strip marsh along an outboard levee just south of the Dumbarton Bridge. The site is about one kilometer long and ranges from 50 to 100 meters wide. The marsh has a moderately complex biotic structure, comprised of both native tidal marsh vegetation and hybrid d *Spartina*. A large salt pond slated for restoration lies inside the levee adjacent to the marsh. The bay trail tops the levee, running parallel to the site. Small, natural channels cut into the site perpendicular to the levee.

Ravenswood Open Space Preserve was surveyed for the first time by ISP in 2008. The site was surveyed using Protocol A for a total of three rounds. Surveys were conducted on February 18, 2008 by Jude Stalker and on March 7 and April 5, 2008 by Jen McBroom. Prerecorded vocalizations were played during the final survey but no clapper rails were detected.

Other bird species recorded at the site during 2008 included: Canada goose, black phoebe, American crow, song sparrow, northern shoveler, mallard, and black-necked stilt.
Figure 81. Map of clapper rail survey results at Ravenswood Open Space (02j).
Cooley Landing Salt Pond (16)

Estimated 2-4 clapper rails

Cooley Landing Salt Pond is a restoration marsh immediately south of Ravenswood Open Space (02j) and north of Laumeister Marsh (15b, surveyed by PRBO). A levee encompasses the former salt pond. The bayward levee was breached in 2000 to allow tidal action and have facilitated the restoration of the site to tidal marsh. The area interior to the levees is predominately mudflat, with discrete clones of invasive Spartina hybrids and native Sarcocornia pacifica. The marsh to the exterior of the levees is older and not part of the former salt pond. It is fully vegetated and dominated by a native salt marsh plant community. PG&E power towers bisect the site, providing perches for avian predators. Terrestrial predators can easily access the marsh from both the levee and the PG&E boardwalk running below the power lines. In addition to predation threats, Cooley Landing may experience pollution threats from adjacent industrial complexes; during the first round Jeff Lewis observed a strong chemical odor akin to cough syrup.

The site was surveyed using Protocol A for a total of three rounds. Surveys were conducted on February 7, February 21, and April 5, 2008 by Jeff Lewis. No clapper rails were detected at Cooley Landing during the first round, however several predators were noted at the site (northern harrier, red-tailed hawk, and feral cat). During the second round, J. Lewis detected two to four clapper rails at the site: one to two rails were detected in the older marsh exterior to the levee, while the other pair was detected within the levees of the restoring salt pond. During the third round, J. Lewis played prerecorded vocalizations at seven of eight survey stations, however no clapper rails were detected during the final round. The high count for Cooley Landing in 2008 was two to four clapper rails. Because this site is heterogeneous, we can not easily extrapolate our survey data to the entire marsh area. However, this site was surveyed in 2007 by ISP using the same survey stations, making comparison between years simple. During the 2007 breeding season surveys, ISP detected two to four clapper rails at Cooley Landing, showing no change at the site between the two years (McBroom, 2007).

Other species of birds observed at the site included: American avocet, Canada goose, northern harrier, rock pigeon, song sparrow, California gull, common raven, mallard, snowy egret, salt marsh common yellowthroat, dark-eyed junco, loggerhead shrike, golden-crowned sparrow, double-crested cormorant, red-tailed hawk, northern shoveler, western meadowlark, white-crowned sparrow, marsh wren, American crow, willet, surf scoter, American kestrel, black phoebe, northern mockingbird, red-winged blackbird, barn swallow, and killdeer.
Figure 82. Cooley Landing Salt Pond
Figure 83. Map of clapper rail survey results at Cooley Landing (16a).
4.5 DON EDWARDS REFUGE CLAPPER RAIL REGION

The Don Edwards Refuge region extends beyond the refuge headquarters, from the Dumbarton Bridge to Alviso Slough on the eastern side of the bay. In 2008, we conducted clapper rail surveys at two sites in the region: Dumbarton/Audubon Marsh (05b) and Newark Slough (05c).

Table 7. Summary results from clapper rail surveys in Don Edwards Refuge Clapper Rail Region.

<table>
<thead>
<tr>
<th>Site Name and ID</th>
<th>Site Area (Acres)</th>
<th>Survey Area (Acres)</th>
<th>Maximum Number of Rails Detected</th>
<th>Low Density (birds/acre)</th>
<th>High Density (birds/acre)</th>
<th>Population Estimate¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don Edwards NWR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dumbarton / Audubon (05b)</td>
<td>518.4</td>
<td>194.1</td>
<td>8 - 16</td>
<td>0.041</td>
<td>0.082</td>
<td>21 – 43</td>
</tr>
<tr>
<td>Newark Slough (05c)</td>
<td>185.4</td>
<td>47.3</td>
<td>2 - 4</td>
<td>0.042</td>
<td>0.084</td>
<td>8 – 16</td>
</tr>
</tbody>
</table>

¹ Where survey areas are less than 85% of the site area, population estimates are extrapolated from the number of clapper rails detected. A detection limitation of 200 meters and a consistent clapper rail density across each entire site are assumed.
Figure 84. Map of clapper rail survey region and site boundaries in the Don Edwards Refuge Clapper Rail Region.
Dumbarton and Audubon Marsh (05b)

Estimated 21-43 clapper rails (8-16 detected)

Dumbarton and Audubon are two large parcels of native tidal marsh, separated by an old railway. These old marshlands are protected and preserved by the Don Edwards National Wildlife Refuge (NWR). Both Dumbarton and Audubon are highly channelized marshes, with deep natural sloughs meandering through the site. *Sarcocornia pacifica* dominates the vegetative community. Native *Spartina foliosa* provides sparse cover in the marsh plain and hybrid *Spartina* grows in scattered clumps throughout the site. PG&E power lines bisect the marsh and red-tailed hawks have been observed nesting in the towers at Dumbarton (personal observation, 2007). Additionally, the levees, boardwalks, and railway that traverse the marsh provide habitat and access for red fox.

Dumbarton and Audubon were surveyed by PRBO Conservation Science in 2005, 2006, and 2007. We used PRBO’s stations, which are spaced at 400 meter intervals, to survey the site in 2008 for three rounds of Protocol A surveys. During the first round on January 21, 2008, Jude Stalker detected eight to sixteen clapper rails, the highest count of all three rounds. On March 10, Ode Bernstein detected four to eight clapper rails and two Virginia rails. Because of timing constraints and the long distance between survey stations, he was only able to survey five of the seven stations during the second round. Ode Bernstein was also the surveyor during the final round on April 7, 2008. He surveyed six of the seven stations and played the clapper rail call loop at one of those six stations. Ode detected only one to two clapper rails during the final round. The highest count in 2008 (8 – 16 clapper rails) is notably reduced from previous years: in 2007, PRBO detected 27 – 34 clapper rails; in 2006, 20 – 30 clapper rails; and in 2005, 11-30 clapper rails (Len Liu, PRBO, pers. comm.).

We surveyed only a portion of the site from our survey stations. Since some survey stations were missed on the second and third round, our survey area varied by round. During the first round, J. Stalker surveyed 37% of the site; during the second round, O. Bernstein surveyed 28% of the site; and on the final round, O. Bernstein surveyed 33% of the site. Based on the survey count and area for the first round, we estimated there were about 21 to 43 clapper rails at Dumbarton. This is our best assessment of clapper rails at the site in 2008, since both the second and third rounds generated low estimates: 14 – 28 clapper rails for the second round and 3 – 6 clapper rails for the third.

Other birds observed at Dumbarton and Audubon in 2008 included: song sparrow, unknown gull, great egret, American goldfinch, snowy egret, red-tailed hawk, northern harrier, northern shoveler, white-tailed kite, salt marsh common yellowthroat, common raven, Canada goose, green-winged teal, American widgeon, mallard, and unknown scaup.
Figure 85. Dumbarton and Audubon Marsh
4. Results

Figure 86. Map of clapper rail survey results at Dumbarton Marsh (05b).
Newark Slough (05c)

Estimated 8-16 clapper rails (2-4 detected)

Newark Slough is a natural channel with wide, vegetated banks forming a large area of tidal marsh habitat within the Don Edwards NWR. Levees and roads bound the slough on either side, providing easy access for red fox and other predators. A levee marking the boundary between the slough and adjacent salt pond is undergoing maintenance; large mounds of wet mud are drying on the levee top. Because of this process, we dropped one of the eight survey stations along this levee. Newark Slough supports a complex vegetative community: *Sarcocornia pacifica* and *Grindelia stricta* dominate; both native and hybrid *Spartina* line the channels; and *Frankenia salina* and *Distichlis spicata* provide dense cover in the understory.

The site was surveyed using Protocol A for a total of three rounds. The first round of surveys was conducted on January 17 by Jen McBroom, who detected one to two clapper rails at the site. During the second round on March 10, Allison Nelson did not detect any rails at Newark Slough. Prerecorded vocalizations were played at five of seven stations during the final round on April 8, 2008. Jen McBroom detected two to four clapper rails, the highest count of all three surveys. The 2008 high count at Newark Slough (2-4) is the lowest it has been since 2005, when Hildie Spautz detected two to four rails at the site (2005). In 2006, H. Spautz detected five to ten rails (2006a) and in 2007 she detected five to eight rails (2007). In 2008, we surveyed 26% of the site, or 47.3 acres (Table 1). Assuming the rail density was similar for the site, we estimate the breeding population was 8 to 16 rails in 2008.

Other bird species observed at Newark Slough in 2008 included: northern shoveler, northern harrier, willet, snowy egret, Canada goose, song sparrow, marsh wren, American kestrel, American goldfinch, American avocet, savannah sparrow, western grebe, red-tailed hawk, unidentified gull, mallard, American widgeon, white-tailed kite, and American coot.

Figure 87. Newark Slough
Figure 88. Map of clapper rail survey results at Newark Slough (05c).
4.6 HAYWARD CLAPPER RAIL REGION

The Hayward Clapper Rail Region begins just south of the Oakland Airport in San Leandro and runs the length of bay shore to the Hayward-San Mateo Bridge. The region includes both the Robert’s Landing marsh complex in San Lorenzo and the Hayward Regional Shoreline in Hayward, as well as Oyster Bay Regional Shoreline in San Leandro. We surveyed 17 sites within the Hayward Region: Oro Loma East, Oro Loma West, Oyster Bay Regional Shoreline, Dog Bone Marsh, Citation Marsh, East Marsh, North Marsh, Bunker Marsh, San Lorenzo Creek and Mouth, Bockmann Channel, Sulfer Creek, Hayward Landing, Johnson’s Landing, Cogswell Marsh Section A, B, and C, and HARD Marsh. All sites within this region were surveyed using Protocol A.

Table 8. Summary results from clapper rail surveys in the Hayward Clapper Rail Region.

<table>
<thead>
<tr>
<th>Site Name and ID</th>
<th>Site Area (Acres)</th>
<th>Survey Area (Acres)</th>
<th>Maximum Number of Rails Detected</th>
<th>Low Density (birds/acre)</th>
<th>High Density (birds/acre)</th>
<th>Population Estimate¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hayward</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oro Loma East (07a)</td>
<td>197.0</td>
<td>127.9</td>
<td>2 - 4</td>
<td>0.016</td>
<td>0.031</td>
<td>3 – 6</td>
</tr>
<tr>
<td>Oro Loma West (07b)</td>
<td>130.8</td>
<td>106.2</td>
<td>4 - 6</td>
<td>0.038</td>
<td>0.056</td>
<td>5 – 7</td>
</tr>
<tr>
<td>Oyster Bay (20a)</td>
<td>18.0</td>
<td>14.1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dogbone Marsh (20c)</td>
<td>7.0</td>
<td>6.6</td>
<td>2</td>
<td>0.301</td>
<td>0.301</td>
<td>2</td>
</tr>
<tr>
<td>Citation Marsh (20d)</td>
<td>110.0</td>
<td>68.1</td>
<td>6 - 16</td>
<td>0.088</td>
<td>0.235</td>
<td>10 – 26</td>
</tr>
<tr>
<td>East Marsh (20e)</td>
<td>36.5</td>
<td>11.1</td>
<td>3 - 4</td>
<td>0.270</td>
<td>0.360</td>
<td>3 – 4</td>
</tr>
<tr>
<td>North Marsh (20f)</td>
<td>88.3</td>
<td>82.6</td>
<td>11 - 16</td>
<td>0.133</td>
<td>0.194</td>
<td>11 – 16</td>
</tr>
<tr>
<td>Bunker Marsh (20g)</td>
<td>33.1</td>
<td>31.5</td>
<td>4 - 8</td>
<td>0.127</td>
<td>0.254</td>
<td>4 – 8</td>
</tr>
<tr>
<td>San Lorenzo Creek (20h)</td>
<td>31.4</td>
<td>30.3</td>
<td>1 - 2</td>
<td>0.033</td>
<td>0.066</td>
<td>1 – 2</td>
</tr>
<tr>
<td>Bockmann Channel (20i)</td>
<td>2.5</td>
<td>2.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sulphur Creek (20j)</td>
<td>8.3</td>
<td>8.3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hayward Landing (20k)</td>
<td>11.6</td>
<td>11.6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Johnson's Landing (20l)</td>
<td>10.2</td>
<td>9.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cogswell Marsh, A (20m)</td>
<td>35.9</td>
<td>35.8</td>
<td>6 - 10</td>
<td>0.168</td>
<td>0.280</td>
<td>6 – 10</td>
</tr>
<tr>
<td>Cogswell Marsh, B (20n)</td>
<td>100.9</td>
<td>92.8</td>
<td>25 - 32</td>
<td>0.269</td>
<td>0.345</td>
<td>25 – 32</td>
</tr>
<tr>
<td>Cogswell Marsh, C (20o)</td>
<td>52.4</td>
<td>51.7</td>
<td>6 - 10</td>
<td>0.116</td>
<td>0.193</td>
<td>6 – 10</td>
</tr>
<tr>
<td>HARD Marsh (20s)</td>
<td>66.2</td>
<td>53.1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

¹ Where survey areas are less than 85% of the site area, population estimates are extrapolated from the number of clapper rails detected. A detection limitation of 200 meters and a consistent clapper rail density across each entire site are assumed.
Figure 89. Map of clapper rail survey region and site boundaries in the Hayward Clapper Rail Region.
Oro Loma East (07a)
Estimated 3-6 clapper rails (2-4 detected)

The marshes at Oro Loma are part of East Bay Regional Park’s Hayward Regional Shoreline. Both Oro Loma East and West are recent restoration sites, created in 1997. Much of the site is still dominated by mudflats, as tidal marsh plants continue to colonize the site. Native *Sarcocornia pacifica* meadows and invasive *Spartina* clones dot the site. Rows of *Grindelia stricta* line abandoned internal levees. Oro Loma East receives tidal input from Sulfer Creek through a breach in the southern levee. Power towers and lines run through the marsh, providing vertical structure for predatory birds. A feral cat was observed during the third round, evidence of predation pressures from terrestrial mammals.

Oro Loma East was surveyed using Protocol A for a total of three rounds. The first round was conducted on February 8, 2008 by Len Liu and Jude Stalker. No clapper rails were detected in Oro Loma East. The second round was conducted on March 4, 2008 by Ode Bernstein and Jeff Lewis. O. Bernstein did not survey three of eight stations, and thus survey area was smaller for this round. No clapper rails were detected at the site, however Jeff Lewis saw one Virginia rail near survey station ORLO15. The final round was conducted on March 18, 2008 by Jeff Lewis and Jude Stalker. Two to four clapper rails were detected during the final round, the highest count at the site in 2008. We surveyed about 65% of the entire site acreage. Assuming that clapper rail density is similar across the entire site, our final population estimate was three to six clapper rails at Oro Loma East in 2008. There were markedly more rails detected in Oro Loma East during 2007, when our high count was 15 to 28 clapper rails at the site (McBroom 2007). In 2005 and 2006, Oro Loma East was opportunistically surveyed from neighboring survey stations at Oro Loma West, so data are not easily comparable.

Other birds observed at the site in 2008 included: greater yellowlegs, American avocet, least sandpiper, marsh wren, American widgeon, American green-winged teal, Canada goose, willet, northern shoveler, red-winged blackbird, long-billed curlew, song sparrow, marbled godwit, long-billed dowitcher, mallard, *peregrine falcon*, killdeer, great egret, *northern harrier*, western meadowlark, great blue heron, American coot, western gull, white-crowned sparrow, glaucous-winged gull, American crow, *white-tailed kite*, *American kestrel*, and Anna’s hummingbird.
Figure 92. Map of clapper rail survey results at Oro Loma East (07a).
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Oro Loma West (07b)

*Estimated 5-7 clapper rails (3-6 detected)*

Oro Loma West is a newer restoration site at the East Bay Regional Park’s Hayward Regional Shoreline. The site receives tidal input through a breach in the bay-side levee. Once heavily invaded by hybrid *Spartina*, Oro Loma West is now mostly open mudflat due to successful treatment efforts. Young colonies of *Sarcocornia pacifica* pepper the mudflat, while higher elevation hummocks provide habitat for *Frankenia salina* and *Grindelia stricta*. PG&E towers divide Oro Loma East from West and provide perches for raptors. Levees surround the site, giving terrestrial predators access to the marsh.

Oro Loma West was surveyed using Protocol A for a total of three rounds. The first round was conducted on February 8, 2008 by Allison Nelson and Jude Stalker. No clapper rails were detected on this date, however, J. Stalker returned to survey neighboring Sulfer Creek on February 17, 2008 and detected one to two clapper rails in Oro Loma West. The second round was conducted on March 4, 2008 by Ode Bernstein and Jen McBroom, however no clapper rails were detected. The final round was conducted on March 18, 2008 by Ode Bernstein and Jude Stalker. Three to six clapper rails were detected during the final round, the highest count at the site in 2008. We surveyed 81% of the overall site area. Assuming similar density across the site, we estimate there are five to seven clapper rails at Oro Loma West during the 2008 breeding season.

The 2008 survey results at Oro Loma West are identical to our survey results from 2007, when we detected three to six rails at the site from the same survey stations (McBroom 2007); and similar to the high count in 2005, when East Bay Regional Park District biologists detected five to eight clapper rails (Bobzien, EBRPD, pers. comm.). During 2006 there was a marked peak in clapper rail survey counts, when ISP detected 12 to 24 rails in Oro Loma West (Spautz 2006a).

Other birds detected at Oro Loma West included: surf scoter, marsh wren, red-winged blackbird, great egret, willet, Canada goose, unknown scaup, black-necked stilt, song sparrow, mallard, northern harrier, canvasback, American avocet, marbled godwit, long-billed curlew, unknown yellowlegs, American wigeon, black-bellied plover, northern shoveler, snowy egret, unknown gull, ruddy duck, northern pintail, long-billed curlew, mourning dove, unknown grebe, bufflehead, dunlin, long-billed dowitcher, ruddy turnstone, ruddy duck, American crow, unknown dowitcher, Common raven, whimbrel, Clark’s grebe, and salt marsh common yellowthroat.
Figure 93. Oro Loma West
4. Results

Figure 94. Map of clapper rail survey results at Oro Loma West (07b).
Oyster Bay Regional Shoreline (20a)

Estimated 0 clapper rails

The marshes at Oyster Bay Regional Shoreline bound an old landfill to the south of the Oakland International Airport in San Leandro. There are two separate and ecologically distinct areas at the site: an inlet of mostly mudflat to the north and a fully vegetated channel to the south. The northern portion once had a dense population of hybrid *Spartina*. Successful control efforts, however, have significantly altered the structure of the habitat exposing large areas of mudflat where invasive cordgrass has been removed. The southern portion of the site is a narrow channel with a wide, densely vegetated upland edge. Both areas have a high ratio of upland edge to water edge, providing easy access for terrestrial predators such as skunks and feral cats.

The site was surveyed using Protocol A for a total of three rounds. Surveys were conducted on February 16 by Jeff Lewis, on March 19 by Ode Bernstein, and on April 10, 2008 by Jen McBroom. Prerecorded vocalizations were played at all six survey stations during the final round. No clapper rails were detected at the site during any round. This is not unexpected, since no rails had been detected at the site previous to 2007. However, last year, H. Spautz detected three to four rails at the site. She suspected that rails periodically colonize the site, but that poor habitat quality may result in high reproductive failure and depredation of adults, and thus high localized extinction rates (Spautz, 2007).

Other bird species detected at the site included: Anna’s hummingbird, morning dove, black phoebe, white-crowned sparrow, European starling, song sparrow, California gull, American crow, American avocet, black-necked stilt, white-tailed kite, red-tailed hawk, mallard, American widgeon, western gull, peregrine falcon, golden-crowned sparrow, Canada goose, snowy egret, canvasback, American coot, great egret, willet, salt marsh common yellowthroat, red-winged blackbird, marbled godwit, whimbrel, unknown dowitcher, greater scaup, ruddy duck, California towhee, bushtit, American goldfinch, house finch, yellow-rumped warbler, double-crested cormorant, dark-eyed junco, scrub jay, and brown-headed cowbird.
Figure 96. Map of clapper rail survey results at Oyster Bay Regional Shoreline (20a).
Dog Bone Marsh (20c)

*Estimated 2 clapper rails*

Dog Bone Marsh is located at the northern end of the Roberts Landing Complex adjacent to the Monarch Bay Golf Club. The site is surrounded on all sides by levees, providing access for mammalian predators as well as pedestrians. A tide gate in the southern basin allows muted tidal action. Much of the site is dominated by *Spartina* hybrids, although successful treatment has greatly reduced the infestation. Although the site does not appear to be high quality habitat, it is immediately adjacent to a large marsh complex, providing a source population for this small site.

Dog Bone Marsh was surveyed using Protocol A for a total of three rounds. Surveys were conducted on February 6 by Len Liu, on March 11 by Jude Stalker, and on April 9, 2008 by Jeff Lewis. No clapper rails were detected during the first two rounds at the site. During the final round, J. Lewis saw a pair of clapper rails foraging at the south end of the site. Additionally, he detected a sora near the first station. He played the call loop at two of the three survey stations. The final season count and population estimate at Dog Bone Marsh was two clapper rails and one sora. This is identical to the previous year, when Hildie Spautz detected two clapper rails at the site (2007).

Other bird species detected at both Dog Bone Marsh and North Marsh collectively included: song sparrow, marsh wren, red-tailed hawk, Canada goose, long-billed curlew, willet, marbled godwit, long-billed dowitcher, black-bellied plover, northern shoveler, red-winged blackbird, bufflehead, surf scoter, American widgeon, American avocet, northern pintail, western gull, least sandpiper, white-crowned sparrow, dunlin, American crow, black turnstone, snowy egret, ruddy turnstone, greater scaup, American coot, greater yellowlegs, golden-crowned sparrow, savannah sparrow, mallard, house finch, northern harrier, Clark’s grebe, ruddy duck, pied-billed grebe, western meadowlark, Say’s phoebe, great egret, salt marsh common yellowthroat, common goldeneye, white-tailed kite, canvasback, black-necked stilt, black-bellied plover, Caspian tern, western sandpiper, and double-crested cormorant.
4. Results

Figure 97. Dog Bone Marsh

Figure 98. Dog Bone Marsh
Figure 99. Map of clapper rail survey results at Dog Bone Marsh (05b).
4. Results

Citation Marsh (20d)

Estimated 10-26 clapper rails (6-16 detected)

Citation Marsh is at the northern end of Roberts Landing. In 1999 the site was restored as mitigation for the adjacent Citation housing complex. Two tide gates govern muted tidal action at the site. The marsh is entirely encircled by upland, delimited to the east by railroad tracks and to the west by levees. PG&E power lines run through the western portion of the site, providing perches for raptors. The site supports a diverse vegetative community, including: Sarcocornia pacifica, Grindelia stricta, Frankenia salina, and a modest Spartina invasion. Citation Marsh has many constructed channels and scattered ponds throughout the site.

The site was surveyed using Protocol A for a total of three rounds. The first round of surveys was conducted on February 2, 2008 by Allison Nelson who detected six to sixteen clapper rails at the site, the highest count of all three rounds. The second round was conducted on March 11, 2008 by Ode Bernstein who detected six clapper rails at Citation. During the final round on April 9, Jen McBroom played the clapper rail call loop at two of seven stations and detected six to ten clapper rails. We surveyed 62% of the total marsh area (Table 1). Assuming rail density was similar for the entire 110 acres, we estimate the population was 10 to 26 clapper rails.

The number of clapper rails detected in 2008 (6 to 16 rails) is greater than in years past: in 2005, Hildie Spautz detected five to ten rails at the site (Spautz, 2005); in 2006, H. Spautz detected four to six rails at the site (Spautz, 2006a); and in 2007, Jen McBroom detected nine to twelve rails at the site (McBroom, 2007).

Other bird species observed at the site included: marsh wren, long-billed curlew, black-necked stilt, unidentified scaup, willet, white-crowned sparrow, sora, song sparrow, red-winged blackbird, snowy egret, greater yellowlegs, unidentified hawk, bufflehead, Canada goose, American avocet, bushtit, northern shoveler, great egret, long-billed dowitcher, black phoebe, marbled godwit, canvasback, surf scoter, green-winged teal, northern harrier, whimbrel, unidentified gull, Common raven, pied-billed grebe, salt marsh common yellowthroat, mallard, black-bellied plover, Anna’s hummingbird, savannah sparrow, house finch, and barn swallow.
Figure 100. Citation Marsh
Figure 101. Map of clapper rail survey results at Citation Marsh (20d).
East Marsh (20e)

Estimated 3-4 clapper rails

East Marsh is part of the Robert’s Landing complex in San Lorenzo. The site is surrounded by levees on all sides. East Marsh has muted tides, which enter through a narrow breach in the southern levee and connect the site hydrologically to San Lorenzo Creek. The site is dominated by a vast meadow of *Sarcocornia pacifica*. Hybrid *Spartina* is established in ponded areas throughout the site. Portions of the marsh appear higher in elevation and support upland weeds. PG&E power towers bisect the marsh.

East Marsh is surveyed from stations established at neighboring sites, as it was in both 2006 and 2007. We conducted three rounds of Protocol A surveys. Surveys were conducted on February 6, 2008 by Jeff Lewis; on March 11, 2008 by Jen McBroom; and on April 9, 2008 by Allison Nelson. No birds were detected during the first two rounds. Allison Nelson detected three to four clapper rails during the final round from stations at San Lorenzo Creek. This is the highest count at the site since the ISP began surveying East Marsh in 2005. During the past three years of surveys, only one to two rails were ever detected in East Marsh. The rails detected during 2008 called from the channelized portion of the site nearest the culvert in the southern levee. The site is not homogeneous and it is unlikely that the density of rails is the same throughout the site. Thus our final population estimate is equal to our highest round count of three to four clapper rails.

No other birds were recorded at this site in 2008.

Figure 102. East Marsh
North Marsh (20f)

*Estimated 11-16 clapper rails*

North Marsh was also restored to tidal action in 1995 as a part of the Roberts Landing Shoreline Marshlands Enhancement. Tides enter the site through a single tide gate in the outboard levee. *Spartina* hybrid clones were among the earliest colonizers at the site. With successful recent control efforts, the hybrid *Spartina* infestation has been greatly reduced and much of the site has reverted to open mudflats with large patches of *Sarcocornia pacifica*.

The site was surveyed using Protocol A for a total of three rounds. The first round of surveys was conducted on February 6 by Len Liu, who detected 11 to 16 clapper rails at the site, the highest of all three surveys. During the second round on March 11, Jeff Lewis detected eight to twelve clapper rails at North Marsh. During the final round on April 9, 2008, prerecorded vocalizations were played at two of six stations and J. Lewis detected five to ten clapper rails and one sora. The high count in 2008 was 11 to 16 clapper rails and is also our population estimate for the entire site, similar to our estimate in 2005 of 7 to 12 rails. We had fewer detections in 2008 than in 2007, when we detected 16 to 24 clapper rails at the site (Spautz 2007); and in 2006, when we detected 15 to 25 clapper rails (Spautz 2006a).

Other bird species detected in 2008 at both North Marsh and Dog Bone Marsh collectively included: song sparrow, marsh wren, **red-tailed hawk**, Canada goose, long-billed curlew, willet, marbled godwit, long-billed dowitcher, black-bellied plover, northern shoveler, red-winged blackbird, bufflehead, surf scoter, American widgeon, American avocet, northern pintail, **western gull**, least sandpiper, white-crowned sparrow, dunlin, American crow, black turnstone, snowy egret, ruddy turnstone, greater scaup, American coot, greater yellowlegs, golden-crowned sparrow, savannah sparrow, mallard, house finch, northern harrier, Clark’s grebe, ruddy duck, pied-billed grebe, western meadowlark, Say’s phoebe, great egret, salt marsh common yellowthroat, common goldeneye, **white-tailed kite**, canvasback, black-necked stilt, black-bellied plover, Caspian tern, western sandpiper, and double-crested cormorant.
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Figure 104. Map of clapper rail survey results at North Marsh (20f).
### Bunker Marsh (20g)

*Estimated 4-8 clapper rails*

Bunker Marsh is another parcel in the Roberts Landing Marsh Complex and part of the Roberts Landing Shoreline Marshlands Enhancement. Like the rest of the sites in the complex, Bunker Marsh was restored to tidal action in 1995. The tides enter and exit the site through a breech in the southern levee which connects hydrologically to San Lorenzo Creek. The site was heavily invaded by *Spartina* hybrids, but successful treatment efforts have reduced the infestation. Bunker Marsh supports a diverse community of native vegetation in addition to invasive *Spartina*, including *Grindelia stricta*, *Sarcocornia pacifica*, *Jaumea carnosa*, and *Distichlis spicata*. Power lines and towers slice through the northeastern tip of the site. Two years of heavy January storms have weakened the outboard levee near survey station “BUNK02.” Continued erosion will likely breach the levee soon. Upland edge habitat is abundant and several mammal tracks were observed in the mud, including: cats, skunks, raccoons, rats, dogs, and humans.

Bunker Marsh was surveyed using Protocol A for a total of three rounds. The first round was conducted on February 6, 2008 by Jen McBroom who detected two to four clapper rails and one sora at the site. The second round was conducted by Jeff Lewis on March 11, 2008. He detected four to eight clapper rails at Bunker, the highest count of all three rounds. The final round was conducted by Ode Bernstein on April 9, 2008 who did not detect any clapper rails, but did detect one Virginia rail. Our final population estimate is four to eight clapper rails, based on the high count on March 11, 2008. This number is slightly higher than last year, when we detected six clapper rails at Bunker Marsh (McBroom, 2007).

Other bird species observed at the marsh in 2008 included: marsh wren, song sparrow, savannah sparrow, white-crowned sparrow, sora, long-billed curlew, salt marsh common yellowthroat, Canada goose, western grebe, yellowlegs, red-winged blackbird, willet, American coot, American crow, Anna’s hummingbird, unidentified scaup, mallard, canvasback, western gull, marbled godwit, snowy egret, American avocet, northern shoveler, northern harrier, double-crested cormorant, glaucous-winged gull, American widgeon, and white-tailed kite.
Figure 105. Bunker Marsh
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Figure 106. Map of clapper rail survey results at Bunker Marsh (20g).
San Lorenzo Creek (20h)

Estimated 1-2 clapper rails

San Lorenzo Creek is part of the Hayward Regional Shoreline lies to the south of the restored marshes in the Robert’s Landing Marsh Complex and lies of Robert’s Landing. The marsh is open to the bay and fully tidal. The creek mouth was highly invaded by Spartina hybrids, however extremely successful treatment efforts at the site have restored the channel mouth to mudflats and many shorebirds were observed foraging in the hybrid Spartina stubble during the 2008 survey season. Upstream, the vegetation narrows along the restricted creek bank. The thin marsh lining the channel is dominated by Sarcocornia pacifica, with hybrid Spartina growing along the lower edge. We observed several dead birds at this site while walking between survey stations: an intact scaup, a double-crested cormorant, a snowy egret, and an unidentified gull.

The marsh and creek were surveyed using Protocol A for three rounds. Surveys were conducted on February 6, 2008 by Jeff Lewis; on March 14, 2008 by Jen McBroom; and on April 9, 2008 by Allison Nelson. No clapper rails were detected during the first two rounds. A. Nelson played Prerecorded vocalizations at five of six survey stations during the final round. One to two clapper rails were detected on the north bank of the channel mouth. Our final population estimate at San Lorenzo Creek is one to two clapper rails during the 2008 breeding season. We had markedly fewer detections in 2008 than in past years. During 2007, we detected 11 to 16 clapper rails (McBroom 2007), during 2006 we detected six to ten clapper rails (Spautz 2006a), and during 2005 we detected five to ten clapper rails (Spautz 2005). The drop in detections is expected as the marsh is restored from invasive Spartina meadow back to bay mudflats.

Other bird species detected at San Lorenzo Creek in 2008 included: American coot, mallard, red-breasted merganser, European starling, rock pigeon, American crow, snowy egret, California gull, unidentified scaup, black-necked stilt, American avocet, northern shoveler, Canada goose, white-crowned sparrow, double-crested cormorant, marsh wren, willet, ruddy duck, marbled godwit, long-billed curlew, song sparrow, American widgeon, unidentified dowitcher, Anna’s hummingbird, black phoebe, red-winged blackbird, savannah sparrow, northern mockingbird, house finch, western meadowlark, canvasback, northern harrier, mourning dove, western grebe, domestic duck, Caspian tern, great egret, unidentified hawk, American goldfinch, barn swallow, and red-tailed hawk.
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Figure 107. San Lorenzo Creek
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Figure 108. Map of clapper rail survey results at San Lorenzo Creek (20h).
Bockmann Channel (20i)

Estimated 0 clapper rails

Bockmann Channel (Figure 102) is continuous with San Lorenzo Creek to the north and Oro Loma Restoration Marsh to the south. The short, narrow channel is bounded by the Oro Loma Sanitary District’s waste water treatment plant on either side. A thin strip of marsh less than ten meters wide lines each side of the channel. Successful treatment efforts have greatly reduced the *Spartina* that had been filling the channel. Little suitable habitat remains at this site, and we recommend that Bockmann Channel be surveyed using Protocol F in future years.

The site was surveyed using Protocol A for a total of three rounds. Surveys were conducted on February 6, 2008 by Jeff Lewis; on March 11, 2008 by Jen McBroom; and April 9, 2008 by Allison Nelson. Prerecorded vocalizations were played at all survey stations during the final round but no clapper rails were detected. Clapper rails were absent from Bockmann Channel in 2008, as they have been during the past three seasons. No other bird species were recorded at the site.
Figure 110. Map of clapper rail survey results at Bockmann Channel (20i).
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**Sulfer Creek (20j)**

*Estimated 0 clapper rails*

Sulfer Creek abuts the Oro Loma Marsh Complex and provides tidal exchange to Oro Loma East. The site is a long narrow channel bounded by levees on either side. A thin strip of marsh habitat no more than ten meters wide lines either bank. *Spartina* treatment has proven successful at Sulfer Creek. Native *Sarcocornia pacifica* dominates the relatively simple plant community.

We conducted only two rounds of Protocol A surveys at Sulfer Creek. The site is generally surveyed simultaneously with Oro Loma, however during the first round at Oro Loma, the GPS unit failed to collect satellites and Sulfer Creek was skipped. Jude Stalker returned to Sulfer Creek to survey the three stations one week later on February 17, 2008, but did not detect any rails in the creek. During the second round at Oro Loma on March 4, 2008, Ode Bernstein also skipped the three stations at Sulfer Creek. Thus the second round at Sulfer Creek was conducted during the final round at Oro Loma on March 18, 2008 by Ode Bernstein, who played prerecorded vocalizations at all stations but did not detect any rails at the site. Four stations at Oro Loma West adjoin Sulfer Creek, so the site was opportunistically surveyed for a full three rounds from these adjacent survey stations. No clapper rails were detected in Sulfer Creek during 2008. This is expected, as clapper rail presence has not been documented at the site during the past three years of surveys.

Other bird species detected at the site included: red-winged blackbird, Canada geese, snowy egret, and mallard.

![Figure 111. Sulfer Creek](image-url)
Figure 112. Map of clapper rail survey results at Sulpher Creek (20j).
Hayward Landing (20k)

Estimated 0 clapper rails

Hayward Landing is located between two landfills: the one to the north is currently active and the one to the south is inoperative and currently part of the Hayward Regional Shoreline park system. The Landing is a narrow channel with thin bands of vegetation. Although the site was once dominated by hybrid Spartina, high efficacy herbicide treatment has reduced evidence of the invasion to patchy stands of dead cordgrass. At the mouth of the channel is a plain of short-statured Sarcocornia pacifica. Habitat quality is marginal at Hayward Landing.

The site was surveyed using Protocol A for a total of three rounds. Surveys were conducted on February 8, February 27, and April 10, 2008 by Jeff Lewis. Prerecorded vocalizations were played during the final survey but no clapper rails were detected. Clapper rails were absent from Hayward Landing in 2008. The last time that clapper rails were detected at the site was in 2006, when one male responded to playback during the final round (Spautz 2006a).

Other birds observed at the site included: song sparrow, mallard, American coot, marsh wren, unknown dowitcher, American avocet, snowy egret, willet, Canada goose, glaucous-winged gull, unknown scaup, white-crowned sparrow, western gull, great egret, common goldeneye, surf scoter, whimbrel, black phoebe, California gull, red-winged blackbird, Anna’s hummingbird, northern harrier, long-billed curlew, willet, western grebe, western meadowlark, white-tailed kite, black-necked stilt, and marbled godwit.

Figure 113. Hayward Landing
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Johnson’s Landing (20I)

Estimated 0 clapper rails

Johnson’s Landing is located is at the southern end of the Cogswell Marsh complex. The site is divided into two distinct areas: a fully tidal marsh fragment on the bay side and a managed tidal channel and ponds inland. The area on the bay edge is sparkly vegetated by *Sarcocornia pacifica* and few hybrid *Spartina* clones. Feral cats, red fox, and raptors all have easy access to the marsh-land.

The site was surveyed using Protocol A for three rounds. Surveys were conducted on February 15 and March 7, 2008 by Ode Bernstein. The third round was conducted on April 4, 2008 by Jeff Lewis. Prerecorded vocalizations were played at all three stations during the final round, however no clapper rails were detected at the site. Clapper rails have never been detected at this site during any of the past three years of surveys conducted by the ISP.

Other bird species detected at the site included: snowy egret, American avocet, willet, northern harrier, song sparrow, greater scaup, Canada goose, marsh wren, pied-billed grebe, double-crested cormorant, willet, northern shoveler, long-billed curlew, marbled godwit, western grebe, white-crowned sparrow, and California gull.

Figure 114. Johnson's Landing
Figure 115. Map of clapper rail survey results at Johnson’s Landing (201)
Cogswell Marsh Section A (20m)

Estimated 6-10 clapper rails

Cogswell is a mosaic of restored marshlands, opened to tidal action in 1980. The site is divided into three sections: Cogswell A in the north (presented here); Cogswell B to the east; Cogswell C in the southwest. All three sections of Cogswell were surveyed concurrently by three clapper rail biologists listening from external levees surrounding the site. Section A is the smallest of the marsh parcels and is dominated by *Sarcocornia pacifica*. Successful *Spartina* control has significantly reduced the hybrid cordgrass population. In 2007, the ISP planted *Grindelia stricta* starts in this section of the Cogswell complex, which have yet to establish into healthy adult plants.

The site was surveyed using Protocol A for a total of three rounds. Surveys were conducted on February 15, March 7, and April 4, 2008. Jude Stalker detected one to two clapper rails during the first round and two clapper rails during the second round. Allison Nelson played prerecorded vocalizations at two of seven stations and detected six to ten clapper rails on the final round, the highest count of all three rounds. The final population estimate is six to then clapper rails at Cogswell A in 2008. This count is slightly lower than clapper rails detected in past years at Cogswell A: the ISP detected 13 to 18 clapper rails in 2007 (Spautz 2007); and 25 to 26 clapper rails in 2006 (Spautz 2006a).

Other bird species detected at the site included: northern harrier, mallard, gadwall, unidentified gull, Canada goose, willet, long-billed curlew, red-winged blackbird, marsh wren, western meadowlark, Caspian tern, song sparrow, snowy egret, and merlin.

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Figure 116. Cogswell Marsh, Section A
Figure 117. Map of clapper rail survey results at Cogswell Marsh Section A (20m).
Cogswell Marsh Section B (20n)

Estimated 25-32 clapper rails

Cogswell is a mosaic of restored marshlands, opened to tidal action in 1980. The site is divided into three sections: Cogswell A in the north; Cogswell B to the east (presented here); Cogswell C in the southwest. All three sections of Cogswell were surveyed concurrently by three clapper rail biologists listening from external levees surrounding the site.

Cogswell B is the largest of the three sections and has the highest level of *Spartina* invasion. Although the southern section of the marsh has been treated for *Spartina* control for the past three, a large portion of the site remains untreated. *Spartina* dominates the untreated portion of the marsh, with *Sarcocornia pacifica* competing for light in the understory below. The complex biotic structure provides cover high above the mean tide level.

The site was surveyed using Protocol A for a total of three rounds. Surveys were conducted on February 15, March 7, and April 4, 2008. During the first round J. McBroom detected 25 to 32 clapper rails, the highest of three rounds. Allison Nelson detected 15 to 24 clapper rails during the second round and Jen McBroom detected 20 to 30 rails on the final round. No Prerecorded vocalizations were played at the site. The final count for 2008 (25 – 32 clapper rails) is slightly less than in past years: the ISP detected 38 to 48 clapper rails in 2007 (McBroom 2007) and 28 to 38 clapper rails in 2006 (Spautz 2006a).

Other bird species observed at the site included: marsh wren, red-winged blackbird, Canada goose, song sparrow, white-tailed kite, northern harrier, unidentified gull, western meadowlark, salt marsh common yellowthroat, peregrine falcon, house finch, unidentified swallow, savannah sparrow, American avocet, black-necked stilt, and northern shoveler.
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Figure 119. Map of clapper rail survey results at Cogswell Section B (20n).
Cogswell Marsh Section C (20o)

Estimated 6-10 clapper rails

Cogswell is a mosaic of restored marshlands, opened to tidal action in 1980. The site is divided into three sections: Cogswell A in the north; Cogswell B to the east; Cogswell C (presented here) in the southwest. All three sections of Cogswell were surveyed concurrently by three clapper rail biologists listening from external levees surrounding the site. Cogswell C is dominated by an open *Sarcocornia pacifica* plain, with hybrid *Spartina* invading the channels and bay edge at the site. An elevated island in the marsh supports upland weeds, such as wild raddish. Like the other portions of Cogswell, the site is entirely surrounded by levees providing easy access for terrestrial predators.

The site was surveyed using Protocol A for a total of three rounds. Surveys were conducted on February 15, March 7, and April 4, 2008. Len Liu detected four to six clapper rails during the first round. During the second round Jeff Lewis detected one to two clapper rails. During the final round Ode Bernstein detected six to ten clapper rails, the highest count of three rounds. In past years the ISP has detected a greater number of clapper rails at Cogswell Section C: in 2007, we detected 15 to 22 clapper rails (McBroom 2007); and in 2006, we detected 13 to 20 clapper rails (Spautz 2006a).

Other bird species detected at the site included: northern shoveler, long-billed curlew, song sparrow, northern harrier, mallard, dunlin, least sandpiper, double-crested cormorant, American widgeon, Canada goose, greater scaup, black-bellied plover, house finch, northern pintail, western grebe, Clark’s grebe, snowy egret, northern harrier, marsh wren, white-tailed kite, canvasback, western gull, willet, California gull, American avocet, western meadowlark, white-crowned sparrow, red-winged blackbird, and salt marsh common yellowthroat.

Figure 120. Cogswell Marsh, Section C
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Figure 121. Map of clapper rail survey results at Cogswell Marsh, Section C (20o).
HARD Marsh (20s)

Estimated 0 clapper rails

The Hayward Area Recreation District (HARD) Marsh was recently restored to tidal action in 1990. The site is largely an open mudflat, providing little biotic structure for cover and nesting. The site, still being colonized by tidal marsh vegetation, is dominated by disjunct patches of *Sarcocornia pacifica* and hybrid *Spartina*. Constructed channels and abandoned levees texture the marsh plain. Levees surround the site on all sides, providing easy access for terrestrial predators, such as red fox and feral cats. This is the first year that ISP has surveyed the site for California clapper rails. Based upon the marginal habitat at the site, Ode Bernstein recommends that HARD Marsh be surveyed using Protocol C in future years.

The site was surveyed using Protocol A for three rounds. Surveys were conducted on February 15 and March 7, 2008 by Ode Bernstein. The third round was conducted on April 4, 2008 by Jeff Lewis. Prerecorded vocalizations were played at all five stations during the final round, however no clapper rails were detected at the site.

Other birds detected at the site included: American avocet, willet, greater scaup, Canada goose, marsh wren, pied-billed grebe, double-crested cormorant, northern shoveler, long-billed curlew, marbled godwit, western grebe, white-crowned sparrow, *peregrine* falcon, northern harrier, California gull, mallard, least sandpiper, western meadowlark, song sparrow, and snowy egret.

Figure 122. Western tip of HARD Marsh, showing most vegetated portion of site.
Figure 123. Map of clapper rail survey results at HARD Marsh (20s).