



California Black Rail (*Laterallus jamaicensis coturniculus*) Response to Marsh Restoration at Point Pinole Regional Park.

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Abstract

The California Black Rail (*Laterallus jamaicensis coturniculus*) is the smallest rail in North America and is largely a resident of fresh, brackish and saltwater wetlands. Due to habitat degradation and destruction, it is listed as a threatened species in California. Protecting and managing their breeding habitat, and restoring adjacent suitable marsh sites are strategies to help them recover. Restoration efforts by staff and volunteers of the East Bay Regional Park District at the Giant Marsh in Richmond, California are improving the conditions for this native species. Analysis of systematically obtained call count data collected during the breeding seasons of 2013 through 2020 is showing a positive trend of increasing California Black Rails, as compared to the first baseline information collected in 1977 at this location. Field research is also showing that the rail population is now four times higher at this site and that they are typically confined to high marsh habitat at the upper limits of tidal flooding. Analyzing these trends occurring within the Giant Marsh at Point Pinole Regional Shoreline is providing important information that will aid recovery efforts designed to preserve and manage breeding habitat for this threatened species.

Introduction

The California Black Rail (*Laterallus jamaicensis coturniculus*) is listed as a threatened species (CDFG 1989), due to the loss, destruction and degradation of their fresh, brackish and saltwater wetland habitats (Wilbur, 1974). This tiny, rarely seen rail, is about the size of a sparrow, and was historically known to be a yearlong inhabitant of suitable habitat in the San Francisco Bay area, and in the delta regions of the Sacramento and San Joaquin Rivers (CDFG, 2000). Based on the work of Evans et al. (1991), much of their breeding population is in the San Pablo Bay. It is estimated that 3,300 birds remain in northern San Francisco Bay (Ehrlich et al. 1991). However, south of the above-mentioned locations, Manolis (1978) reported detecting only one California Black Rail during systematic breeding season surveys at Point Pinole Regional Shoreline.

Proper management and conservation of this species in the San Francisco Bay depends on protecting its remaining breeding marshes and restoring adjacent sites. The East Bay Regional Park District has been restoring the Giant Marsh at Point Pinole Regional Shoreline for the California Black Rail. As Morrison (2002) points out, restoration efforts aimed at improving the conditions for native species should be judged by how successful wildlife species respond to such attempts. This site-specific information on the California Black Rail response to marsh improvements along the eastern shore of the San Francisco Bay may assist recovery efforts designed to preserve and manage habitat for this threatened species.

Study Areas

Point Pinole Regional Shoreline contains approximately 1,700 acres of tidal marsh on the northwestern edge of Richmond, California. The park provides habitat for six special status wildlife species. Since 2004, the East Bay Regional Park District has worked cooperatively with more than 5,150 volunteers (Figure 1) who have contributed 15,520 hours to remove over 450 cubic yards of non-native plants and in excess of 300 tons of channel-clogging debris at the Giant Marsh (37.99414N, Lat., 122.36017W Long.) to improve tidal cycling, reduce mosquito problems and to enhance marsh habitat conditions for listed wildlife species.

Methods

Call count surveys have been conducted from 2013 through 2020 using site-specific protocols for monitoring marsh birds: San Francisco Estuary Marsh Bird Survey Protocol (Version 2013.1), which is based on the North American Marsh Bird Monitoring Protocols by Conway (2011), the Don Edwards San Francisco Bay and San Pablo Bay National Wildlife Refuges (Wood et al. 2017), which are all compatible with the Standardized North American Marsh Bird Monitoring Protocol (Conway and Seamans 2016), requiring 10 minutes of listening per station [5-minute passive period prior to broadcasting calls (BLRA, CLRA, SORA, VIRA, AMBI) during the next 5-minute period]. Typically, one and sometimes two protocol level surveys are tossed out due to weather or some other adverse condition (i.e. noise levels) that makes rail detections impractical. 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 the number of rails (e.g., 1 to 2) may have been recorded.

Results

The summary results for California Black Rails detection can be found in Table 1. All California Black Rails detected locations are mapped by year in Figure 2.

Year	Number of visits with rail detections	Number of BLRA Detected	Percent BLRA Occurrence
2013	4	5	35%
2014	4*	3	45%
2015	4	4	25%
2016	3*	2	20%
2017	3	5	40%
2018	3	5	20%
2019	5	6	30%
2020	4	8	35%
Total	30	38	N/A
Average	3.75	4.75	31%

Table 1. Summary Results for California Black Rail (BLRA) Surveys at Giant Marsh, Point Pinole Regional Park, Richmond, California. (*other rail species)

Discussion

The restoration efforts to remove non-native plants and channel-clogging debris at the Giant Marsh located at Point Pinole Regional Park in Richmond is demonstrating that with time the desired species will respond positively to habitat improvements. The call count data indicates that the California Black Rail population is, significantly, four times higher now, than when Manolis (1978) provided the first baseline information on the area. Like Manolis's (1978) findings, the California Black Rails at this location seem restricted to high marsh habitat at the upper limits of tidal flooding. At Point Pinole this upper limit is usually along the pickleweed and marsh grindelia covered channel berms (Figure 2). Under stable habitat conditions with significant tidal marsh cover, above the extreme high tides, it is reported the adult Black Rail (*Laterallus jamaicensis*) survival is higher despite predation by herons and other avian predators which can be the primary source of mortality for this species (Eddleman et al., 1994).



Figure 1. Wildlife Volunteers also known as "Black Rail Habitat Helpers" are pulling weeds to improve the Giant Marsh located at Point Pinole Regional Park, Richmond, California.

With the tidal brackish marshes of Suisun Bay being populated with relatively high densities of California Black Rails (Evens and Nur 2002; Spautz et al. 2005), it is hopeful that dispersing juvenile rails may take up residency in the newly restored Dotson Family Marsh at the southern end of Point Pinole Regional Shoreline. This trend of gradually increasing numbers of breeding California Black Rails at the Giant Marsh is a welcome sight and a tribute to the collaborative efforts of countless resource-minded individuals.

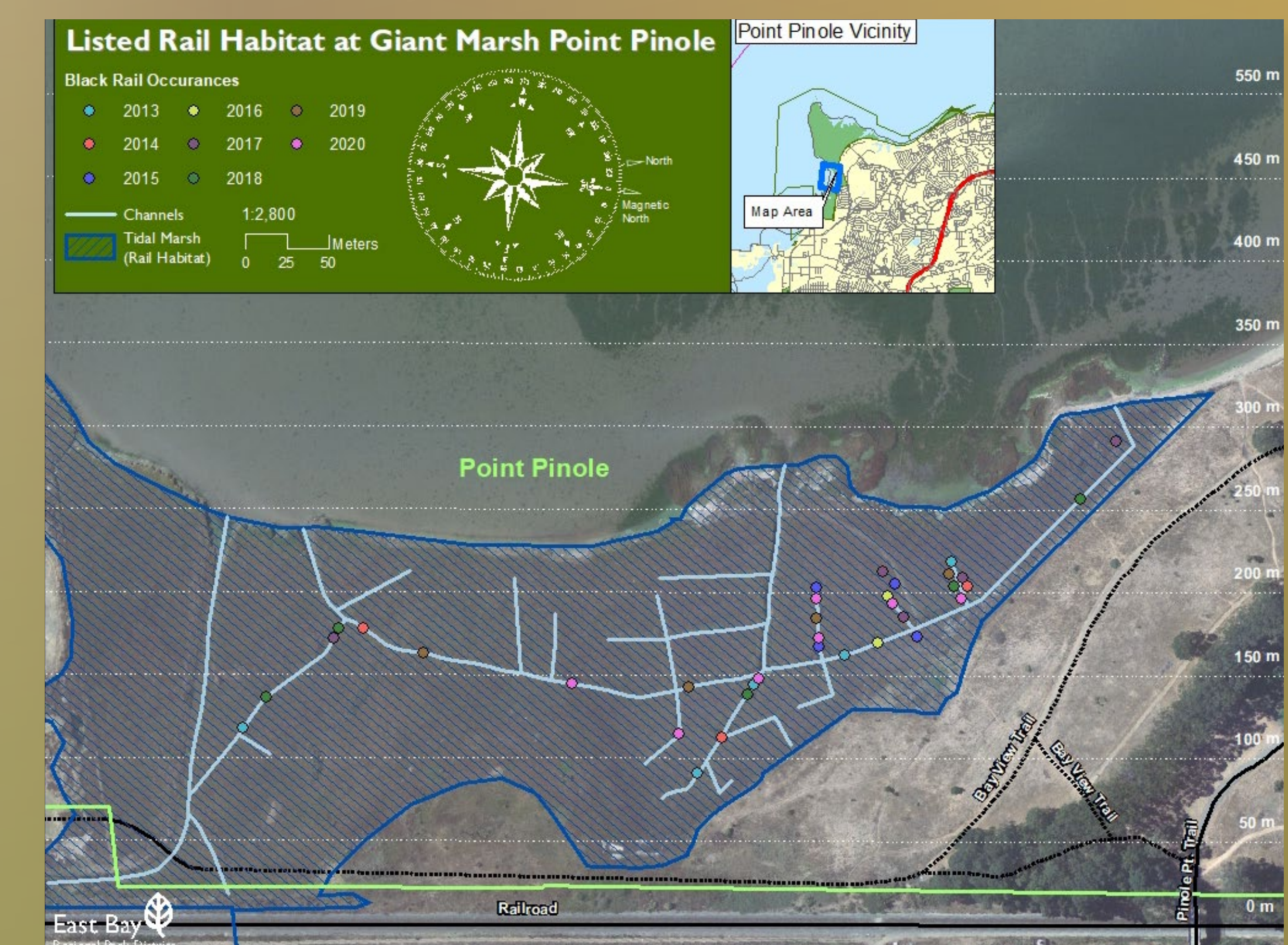


Figure 2. All California Black Rails (BLRA) detections mapped by year at the Giant Marsh, Point Pinole Regional Park, Richmond California.

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