2007 Wister Marsh Bird Survey Summary

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Introduction

The Wister Unit (Wister) of the Imperial Wildlife Area (IWA) consists of 5,243 acres of upland and managed marsh habitat owned and managed by California Department of Fish and Game. It is located in the southeast end of the Salton Sea in northwestern Imperial County. Situated between 200 and 230 feet below sea level in the Colorado Desert, Wister receives an average rainfall of less than three inches per year and has temperature ranges from below freezing in mid-winter months to more than 120 degrees in the summer. Established in 1954 for the development of waterfowl habitat, to alleviate crop depredations and provide public shooting opportunities, Wister today supports a variety of waterfowl and other wetland species including the Federally Endangered Yuma clapper rail (*Rallus longirostris yumaensis*) which is fully protected under California Department of Fish and Game Code and listed as threatened under the California Endangered Species Act. The development consists of a series of reservoirs and shallow field/pond areas separated by levee and canal systems. Wister also provides multiple public recreation opportunities including; hunting, fishing, camping, sightseeing, bird watching, and nature studies.

Roughly 4000 acres of Wister are managed marsh wetland habitat. This habitat is divided into cells ranging from a few acres to hundreds of acres. They are enclosed by earthen berm levees with O & M roads on top of them and check dam inlets and outlets that control water levels within the cells. There is a total of 36 miles of roads, 189 miles of levees, and 27 miles of canals that facilitate the necessary water delivery for management of the cells. Most of the cells are drained seasonally and tilled to create open water habitat for over wintering waterfowl. Approximately 1/5 of the habitat remains flooded year round to maintain nesting habitat and a constant crayfish food supply for the Yuma clapper rail. Management of these units entails a 3-5 year cycle of maintenance rather than the one year cycle that is used for waterfowl habitat. Careful maintenance with regard to timing (avoiding breeding season), location and technique, such as limited tilling to retain crayfish

resource, and emphasis on quick recovery of habitats following maintenance procedures are included in this maintenance cycle. The result is mature cattail stands with some open water.

Salt Cedar (*Tamarisk spp*.) grows around the edges of the managed marsh cells, in the water delivery structures, and within the cells when water levels are low. Salt cedar management requires excavating and burning trees as they grow and clog delivery canals and drains or choke out marsh habitat. Yuma clapper rails are known to forage in the water delivery facilities and/or use them as corridors to move between marsh cells.

Methods

The 2007 marsh bird surveys of Wister were conducted by California Department of Fish and Game (DFG) Associate Wildlife Biologist Steve Gibson (myself). This is the second consecutive year I have performed the Standardized North American Marsh Bird Protocol (SNAMBP) at Wister. This year the survey was conducted in the morning and the evening for the first time. This new schedule will replace the morning only schedule that has been conducted annually since 1990. The morning/evening schedule will increase the potential for completing three independent replicate surveys within the survey time period. This year, weather (rain events) disrupted the survey schedule and forced me to omit the third replicate.

Multiple observers were only available for the second survey replicate. Peggy Bartels from the USFWS Carlsbad office assisted me for several days. The same points sampled in previous years at the Wister Unit were used to conduct this survey. The points are set at 200 M intervals as per the Yuma Clapper Rail Survey Protocol (January, 2000). The SNAMBP suggests new stations be placed at 400 M intervals and no change to previously established sites. No new stations were added.

In 2006 Dos Palmas Area of Critical Environmental Concern (ACEC) was surveyed for the first time. Dos Palmas is a nature preserve established through a partnership with the Nature Conservancy and the BLM for the protection of wetlands, wildlife, desert plant communities and cultural resources. It is located northeast of the Salton Sea in Riverside County, California, and includes the lower part of a basin (the Dos Palmas basin/ecosystem) which drains the western flank of the Orocopia, Chuckwalla, and Chocolate mountains. The ACEC encompasses 14,880 acres. No marsh birds were detected during the 2006 surveys. Consequently, no surveys were completed at Dos Palmas in 2007. As the marsh habitat matures to provide more extensive suitable Yuma clapper rail habitat, follow up surveys will be completed.

If a section of managed marsh was not completed before the heat, wind, or end time of the survey protocol became a noticeable influence, the section was

revisited and surveyed entirely the following day. The first survey started on March 15 and ended on March 29. The second survey began May 1 and ended May 10.

The call stations were located using Geographical Positioning System (GPS) points with the Garmin GPS 12XL (Datum NAD 83 UTM). This is the same unit that has been used for several years.

The broadcast system used for the survey was the factory stereo in a 2006 Ford F250 truck. An MP3 recording of the CD provided by USFWS was made and broadcast from an iPOD™ through the truck stereo. The volume was kept at the same level for each station. The layout of the managed marsh and the uniform construction of the berms made it easy to broadcast from the same height and distance from the edge of the marsh for all stations. By opening the truck door nearest the section of marsh being surveyed, a high quality broadcast was performed. The observations were made from the edge of the truck nearest the marsh. I estimated I could effectively hear for 200 meters from the call broadcast point. Only the calls from within the marsh cell surveyed were recorded. This resulted in a survey area for each point as a half circle with a radius of 200M. With a total of 81 call stations the total area surveyed was approximately 5,086,800 M^2 or 1,256 acres. The area outside the marsh cell I was surveying, but within 200 meter radius from each call point was mostly dirt road (berm) or drain. Birds calling from the road side in a distant marsh cell could often be heard but were not recorded until that particular cell was surveyed. Also some call stations were positioned at the corner of a cell, which would only cover one quarter of the area of a circle with a 200 M radius. Time spent traveling from station to station was minimized with the use of the vehicle and set up time for broadcast was completed while in route to the next site.

At the time of the survey (March 15 – May 10) an estimated 1, 275 acres were managed for Yuma clapper rail habitat. The target range of area of habitat managed for Yuma clapper rails at IWA is between 744 and 1469 acres. Approximately 85% of the total available habitat at IWA was suitable for Yuma clapper rails throughout their 2007 breeding season. Figure 1 shows all call stations located at Wister overlaid on an orthophoto map created with 2007 imagery. Call stations that were called this year are colored green and call stations that were not called are colored red. Figure 2 shows the call stations surveyed this year on the same orthophoto map with a 200 M radius circle overlaid on them to indicate affective broadcast area for a visual aspect of broadcast coverage in the marsh cells with suitable habitat.

Call station numbers A10 A11 A12 A13 A14 A15 A16 A17 A18 A28 A29 A30 A30A A31 A32 A33 A34 A35 A36 A37 A38 A43 A44 A45 A47 A48 A49A A53 A54 A55 A6 A7 A8 A8A A9 B1 B10A B10C B16 B17 B19 B19A B19B B19C B20A B23 B23A B24 B25 B26 B27 B28 B29B B29D B30 B32 B35 B36 B37 B4 B47 B5 B5A B6 B8 B9 C2 C4 A21A A26A B10B B11 B12 B12A B13 B13A B14

B14A B16B B20 B33A B38A B45 B51 B54 B6A were not surveyed due to the lack of suitable rail habitat. Some of the call stations are in long term non-habitat areas while others are being rotated in and out as necessary due to current habitat suitability. Due to the changing conditions of water flow and habitat types related to the management practices at the IWA, no call stations were deleted. Call stations not surveyed this year may become call sites in the future and will remain part of the IWA database. New call stations were added where rail habitat had become available due to water flow changes. These call stations will cover existing habitat as well as areas designated for rails in future years.

Results

Table 1 compares the peak number of Yuma clapper rails for the 2007 marsh bird survey to the past 16 years of survey data. The peak number (highest number of detections per complete survey) of Yuma clapper rails detected at IWA (398) occurred during the first of two surveys. This is a 22% increase from last year.

Table 2 shows comparative results for each species between each replicate survey. The Yuma clapper rail had the highest mean number of detections per station during both the passive and broadcast portions of the first survey. The call broadcasting portions of the first survey recorded19% more responses than the passive. The call broadcast portions of the second survey detected 18% more responses than the passive. A total of 71 stations were surveyed during the first replicate and 73 during the second. 71 of these stations had detections of Yuma clapper rails in the first replicate survey compared to 69 in the second.

Discussion

The difference in peak number of detections this year may be a result of using both morning and evening sessions, the habitat available, and/or many other environmental factors. The morning and evening survey timeline was not effective in allowing for a third replicate this season because heavy downpours of rain during thundershowers saturated the soils at Wister and limited access by vehicle and foot. Significant damage to berms in the marsh cells can occur when the area is wet. This timeline did allow for two successful replicates which is consistent with historical surveys for Yuma clapper rails at Wister.

There was very little change in available habitat between the 06’ and 07’ marsh bird surveys at Wister. Clearing of tamarisk and tulles from drains on the wildlife area were the only known habitat management activities to effect overall habitat availability. The same survey points were surveyed both years, and the same surveyor (myself) performed them.

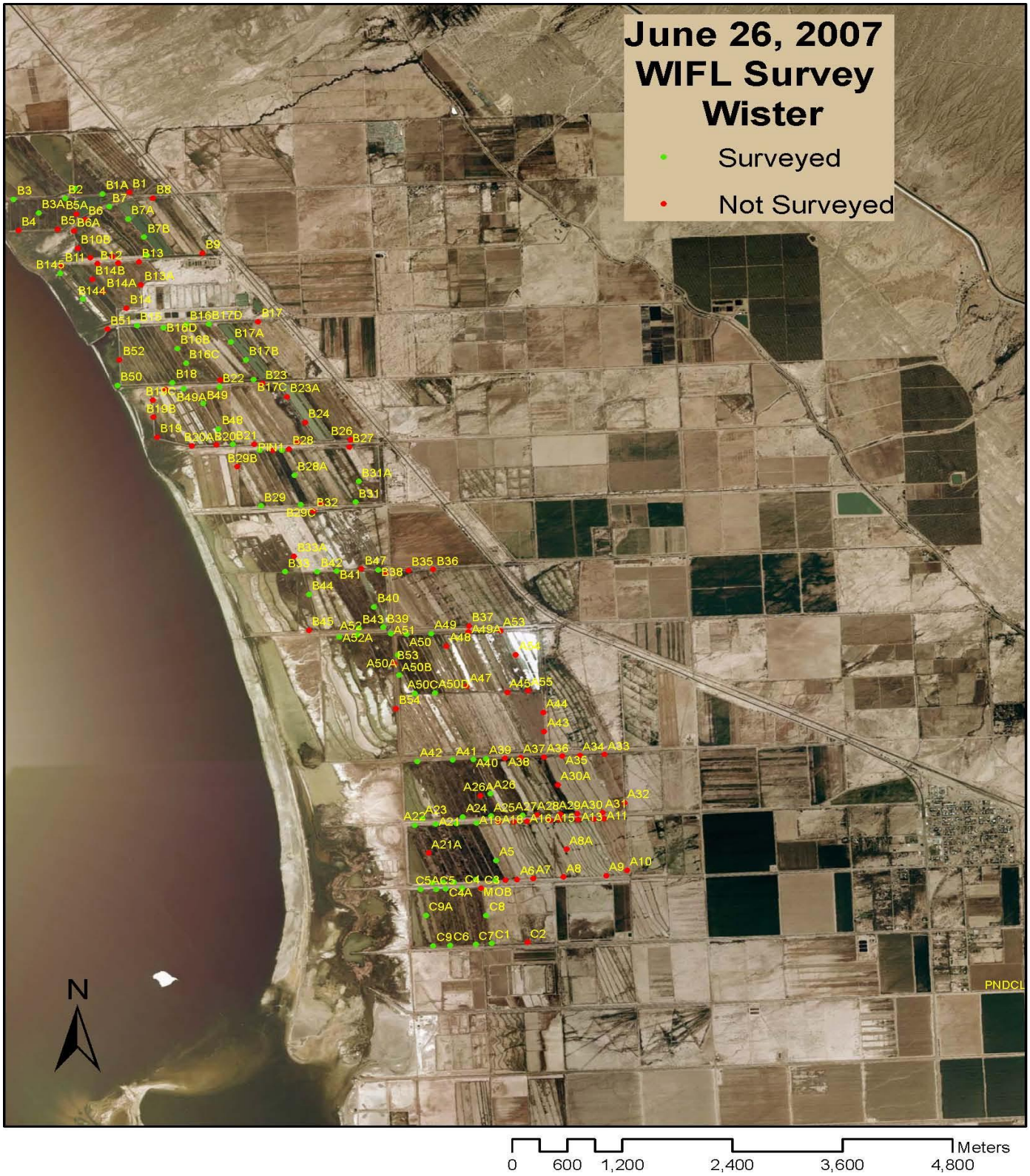
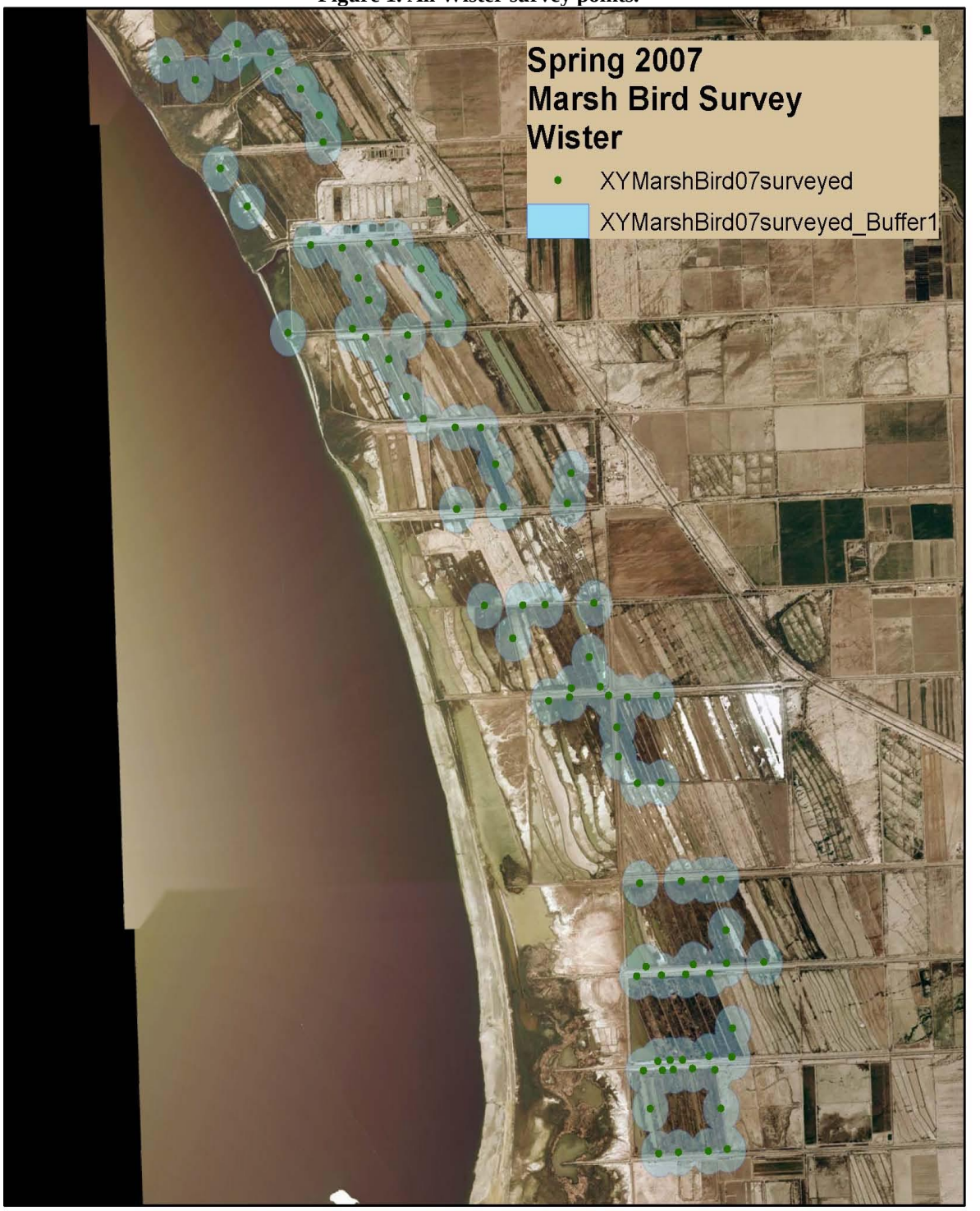

June 26, 2007
WIFL Survey
Wister
Surveyed
Not Surveyed
N
PNDCL
Meters
0
600
1,200
2,400
3,600
4,800

Figure 1. All Wister survey points.



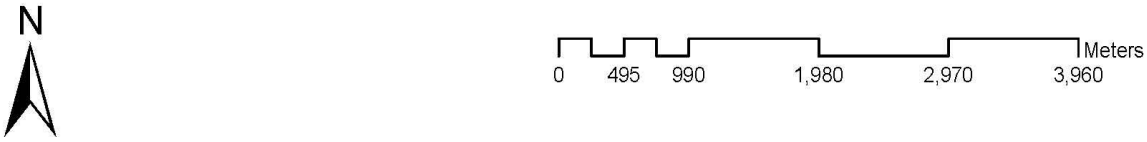


Figure 2. Area Surveyed for Yuma clapper rails during 2007 breeding season with 200 M call area radius.

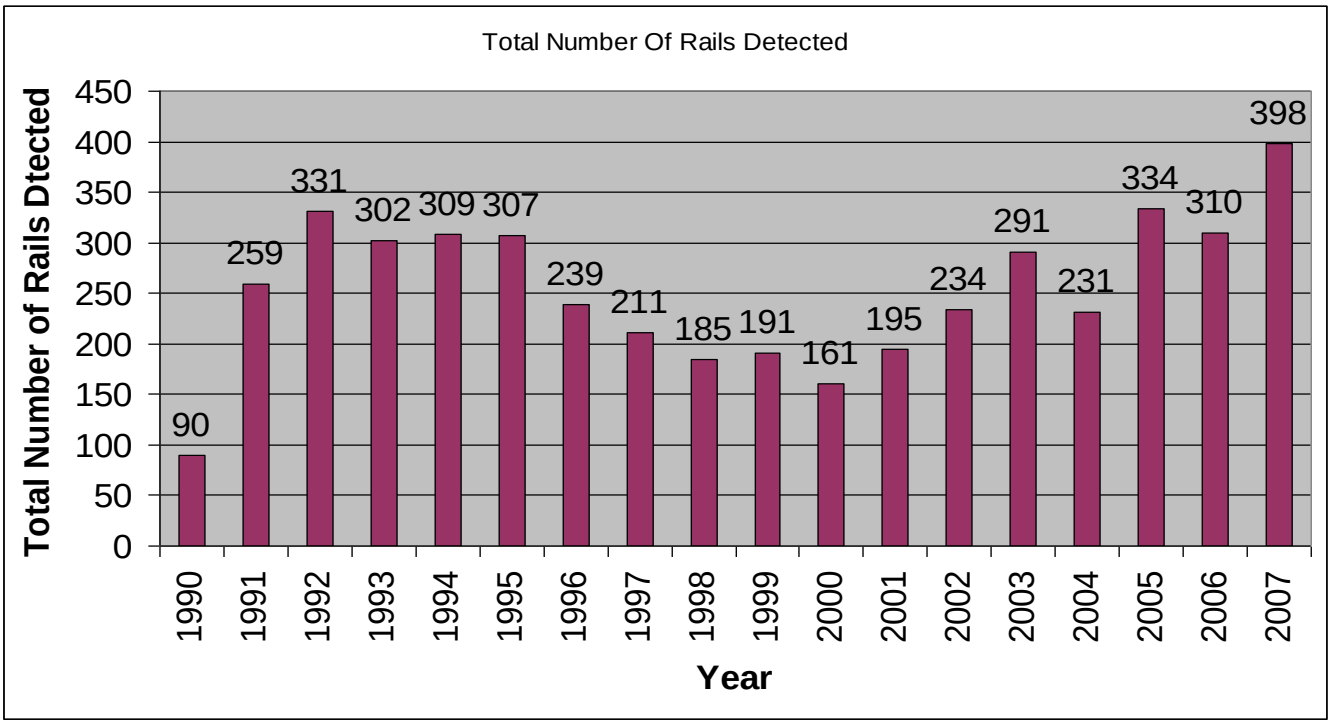


Figure 3. Annual Yuma clapper rail peak number of detections at the Imperial Wildlife Area.

species		passive	broadcast	Total # stations w/ detections	Mean # birds/station Passive	Mean # birds/station Broadcast
AMBI	**survey 1**	24	21	22	0.34	0.30
	survey 2	16	16	20	0.22	0.22
CLRA	**survey 1**	293	359	71	4.13	5.06
	survey 2	183	222	69	2.58	3.13
COMO	**survey 1**	No data				
	survey 2	No data				
LEBI	**survey 1**	16	15	18	0.23	0.21
	survey 2	9	16	16	0.12	0.22
PBGR	**survey 1**	5	9	8	0.07	0.13
	survey 2	3	2	3	0.04	0.03
SORA	**survey 1**	3	4	2	0.04	0.05
	survey 2	0	0	0	0	0
VIRA	**survey 1**	6	22	16	0.08	0.31
	survey 2	4	4	6	0.05	0.05

Table 2. Mean number of detection per station for each species during passive and broadcast portions of 2007 survey.