

# 2009 Wister Marsh Bird Survey Summary

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August 17, 2009

## Introduction

The Imperial Wildlife Area Wister Unit (Wister) is situated at the southeastern end of the Salton Sea in the northwest corner of Imperial County. The unit was established in 1954 to provide waterfowl habitat while reducing private crop destruction and allowing public opportunities for upland game bird and waterfowl hunting. It comprises over 5,200 acres of upland and marsh habitat which is owned and managed by California's Department of Fish & Game (the Department). Wister is divided into a series of shallow ponds, planted fields, water reservoirs, and canals separated by levees. Elevation of the unit is 200-230 feet below sea level in the Colorado Desert with an average rainfall less than 3 inches per year. Temperature extremes range from freezing in the winter months to over 120 degrees in the summer. Along with seasonal hunting opportunities for dove, quail, ducks, and geese, Wister also provides public opportunities for camping, fishing, sight-seeing, bird watching, and nature study. Wister provides habitat for over 400 different species of birds and wildlife on the unit. An important goal of habitat management is to provide permanent Yuma Clapper Rail (*Rallus longiorstris yumaensis*) habitat. This species is protected under the California Fish and Game Code section 3511(b) and is listed as an endangered species by the State as well as Federally.

Approximately 4,000 acres of Wister is managed marsh/wetland habitat, divided into cells of 20 to 100+ acres. Fields, ponds, and reservoirs are surrounded by earthen levees, with concrete water gates to control water to these cells as needed. There are 27 miles of ditches and canals that are used to provide and distribute water throughout the unit. Most of the fields and ponds are drained and disked annually except for designated rail habitat. Salt Cedar (*Tamarisk spp.*) is an invasive species which if left unmanaged will quickly choke out marsh habitat, and clog delivery ditches and outlets to pond cells. Management of this species requires annual burning and excavation along levees and borders. This practice may temporarily adversely affect rail habitat in order to ultimately improve it.

Wister currently has approximately 700 acres designated as rail habitat. Watering of designated habitat throughout the year provides vegetation for nesting and continuous aquatic-based foraging opportunities. A 3 - 5 year cycle of maintenance is practiced, restoring and repairing levees as needed and burning or disking sections which have become overgrown and unproductive. Maintenance activities are timed to avoid nesting season and are completed as quickly as possible. Many additional acres of wetland/marsh not specifically designated as rail habitat are used by Yuma Clapper Rails throughout the year. During periods of maintenance some rails are displaced but they will use the ditches and system of canals to move to other available sites, until the disturbed habitat is ready for reoccupation.

In 2009, Wister participated in a 2 month radio telemetry study of Yuma Clapper Rails headed by Annie Schultz of the USGS. Five Yuma clapper rails were radio tagged in the same plot in cell W11A and were monitored from mid-March through July 31.

## **Methods**

This is the first year I have performed the Standardized North American Marsh Bird Protocol (SNAMBP) survey at Wister. This survey was conducted by Wildlife Biologist Steve Gibson for the past three years and I have attempted to duplicate his methods to insure consistency of effort. Last year Steve performed morning and evening surveys, but due to weather conditions (heat and wind) only morning surveys were conducted this year. In 2009 the survey period was short and began late since training for this assignment was not available until April 1, 2009. I was able to conduct three survey replicates between April 17 and May 31. The first survey was completed on April 24, the second on May 11, and the third on May 28.

To prepare for the 2009 survey, I took the Marsh Bird training in Yuma, April 1 - 3. Training was conducted by Prof. Courtney Conway of the Cooperative Fish and Wildlife Research Unit at the University of Arizona. I spent an additional two weeks collecting and reviewing data from the prior years' surveys and listening to the CD of marsh bird calls issued at the Yuma training course. Once confident that I could recognize the targeted bird calls I began the surveys and recorded data on the following species: Yuma Clapper Rail; Common Moorhen; American Bittern; Least Bittern; Virginia Rail; Black Rail; Pied-billed Grebe; and Sora. American Coots are present in large numbers but were not recorded in the 2009 survey as they were not a target species for this project.

The call stations used were established in 2001 at 200 M intervals on the perimeters of habitat cells. Although the SNAMPB suggests that stations be located at 400 M, I kept this interval consistent with previous years' surveys. Sixty-six call stations were use for 2009. This included 2 sites on Alcott Road to document Yuma Clapper Rail use of strips of habitat along the Salton Sea that is not designated as rail habitat. The number of call stations increased from 58 to 66 this year to cover as much potential habitat as possible, including areas not specifically designated as rail habitat.

The call station points were located using a Garmin GPS 12XL (Datum NAD 83 UTM) as in past years. The broadcast system used for the first two surveys was an Accurian portable CD player with attachable dual mini speakers from Radio Shack. For the final survey, a "boom box" type portable Sony CD player was used. Volume levels were the same at each call point throughout each survey. I used the 9 minute CD provided by Prof. Courtney Conway to broadcast. Levees and berms surrounding the cells made it easy to broadcast from an elevated position throughout Wister. The equipment was set up outside and on top of the vehicle. Observations were made outside the vehicle and next to the marsh area being surveyed. Although the broadcast distance was only about 100 meters, responses were heard up to approximately 120-150 meters. With the call stations remaining 200 meters apart, the limited broadcast distance of 100 meters did not seem to be a problem. Only birds calling from the target marsh cell were recorded at each point, however if there were responses from adjacent water service ditches these were also recorded but "ditch" location was noted on the data sheet. Any responses from cells outside the target area were not recorded until those individual cells were surveyed. Travel time between call sites was reduced by driving rather than conducting the survey on foot. Set up time for broadcasting at each site was minimal. No call sites were deleted or added this year. Some call sites were not used due to changing habitat conditions or around cells where clearly there was no marsh bird activity.

At the time of the survey approximately 680 acres were designated Yuma Clapper Rail habitat. Although this is lower then the established 1,275 acres available in 2007, it is more then the 527 estimated acres for 2008. As noted in this and prior reports, major renovation and rehabilitation has been ongoing since 2007 and will continue through 2011. All of the 680 acres were available for Yuma Clapper Rail occupancy throughout the 2009 breeding season. Even though major redevelopment work was

conducted adjacent to designated habitat, rails were still nesting in designated areas and appeared to be minimally affected.

## Results

The highest number of Yuma Clapper Rails detected was 191 during the 2<sup>nd</sup> survey. This is a 15% decrease from 226 rails detected in 2008. The 2006 protocol calls for the Marsh Bird Survey to include California Black Rail, Virginia Rail, and Least Bittern. The results for these species as well as Yuma Clapper Rails are in Table 1.

The total number of call stations for the first survey conducted between April 17 and April 24 was 64. The next two surveys conducted between May 5 – May 11 and May 21 – May 28 used a total of 66 call stations and an estimated total of 1050 acres were covered. This included an estimated 200 acres of non-managed marsh habitat located along the Salton Sea, owned by the Imperial Irrigation District with portions leased by the Department but outside of the Wister Unit proper.

I noticed that the relative number of responses during passive and broadcast (active) periods changed over time. As nesting season progressed, passive responses decreased but responses to broadcasting increased. Table 1 shows the results of the three surveys for all four species and includes comparative information for (1) total birds detected; (2) passive/broadcast responses; and (3) mean number of birds per station. Although data was recorded for Pied-billed Grebes, American Bitterns, Common Moorhens, and Soras, it is not a part of this report. The Yuma Clapper Rail had a higher number of both passive and broadcast responses than the other species. The first survey in 2008 showed 3.0 and 3.7 mean number of clapper rail passive/broadcast responses per station but was conducted between March 17 and March 20. My first survey was not conducted until April 17 and showed 1.7 and 1.8 passive/broadcast rail responses per station. Due to the difference in timing of both surveys we cannot compare these results. We can compare the 2<sup>nd</sup> survey of 2008 (conducted May 13 – May 16) with the 3<sup>rd</sup> survey of 2009 (conducted May 21 – May 28) as the timing of the surveys was much closer and reflects similar behavior during nesting. In 2008 results showed 1.6 and 2.3 passive/broadcast Clapper Rail responses per station and 2009 results showed 1.0 and 2.3 passive/broadcast responses per station. Overall results for the three surveys in 2009 are as follows:

**Survey 1**      Passive = 111 responses      Broadcast = 119 responses = 7% difference  
**Survey 2**      Passive = 128 responses      Broadcast = 165 responses = 22% difference  
**Survey 3**      Passive = 66 responses      Broadcast = 152 responses = 57% difference

It appears that as breeding/nesting season moves on and rails settle on mates there is less need for random calling and the rails may need to be encouraged to vocalize. For the purpose of surveys and study, it may be that “broadcasting” is the best way to detect rails who may otherwise prefer to not announce their location especially if nesting at the time.

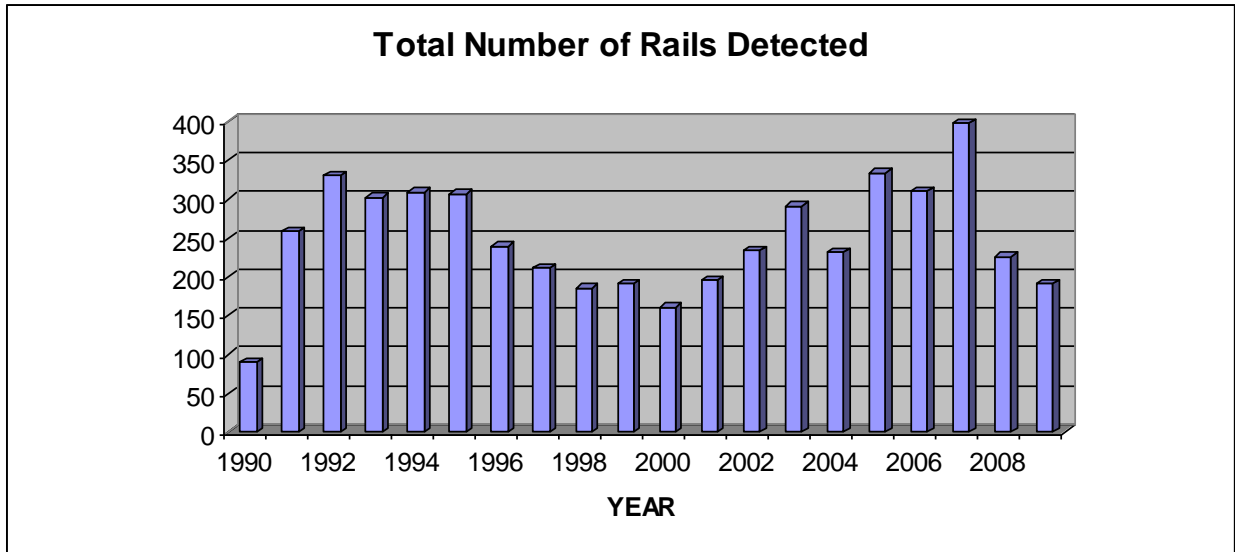
SPECIES	SURVEY	TOTAL		MEAN # BIRDS/STATION		TOTAL BIRDS
		PASSIVE	BROADCAST	PASSIVE	BROADCAST	
<b>CLRA</b>	1	111	119	1.7	1.8	136
	2	128	165	1.9	2.5	191
	3	66	152	1	2.3	175
<b>LEBI</b>	1	7	5	0.1	0.1	8
	2	2	3	NA	NA	3
	3	3	7	NA	0.1	9
<b>VIRA</b>	1	2	3	NA	NA	4
	2	0	3	NA	NA	3
	3	0	0	NA	NA	0
<b>BLRA</b>	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	1	NA	NA	1

**Table 1. Mean number of detections per station for each species during passive and broadcast portions of 2009 survey.**

## Discussion

Chart 1 (below) shows the history of peak rail counts since 1990. In 2009 the highest number of Yuma Clapper Rails detected was 191 compared to 226 in 2008. I believe my count is accurate, although possibly conservative due to my lack of experience. Under normal and stable conditions this would indicate a decrease of 15% of the Yuma Clapper Rail population at Wister but after reviewing Chart 1 this may not indicate a declining trend. It is interesting to note that two cycles seem to have taken place over the past 19 years with a slight increase in average numbers. If the Yuma Clapper Rail population

trend continues to follow the cycle shown from 1990 through 1999, the population should be stabilizing and we should see a trend increase by 2011 if not sooner.



**Chart 1. Annual Yuma Clapper Rail peak number of detections at Imperial Wildlife Area – Wister Unit**

Since 2007 major reconstruction and rehabilitation work has been ongoing in the southern plots on Wister. Work on the T14 and U14 plots was completed in 2008 and work on the Y16 plots was completed this year. Work will commence in 2010 on the south end cells of W12A, U12, and on the north end cells of 312C, 514, and 515 B/C. The only designated Yuma Clapper Rail habitat that will be dramatically affected will be in cells 514 and the eastern end of cell 312C. There is non-designated habitat surrounding these cells and it is anticipated that Clapper Rails will move temporarily into these areas until vegetation and food sources are restored in the reconstructed plots. By the end of 2011 when the reconstruction work is completed, California Waterfowl Association (CWA) and Ducks Unlimited (DU) will have invested over \$1.5 million for rehabilitation at Wister.

Radio telemetry tracking of five Yuma Clapper Rails for the USGS was conducted by me from mid-May through July 31, 2009. This study, although brief, provides some information on behavior and movement through the unit after nesting season. The data indicates that (1) mated pairs do not stay together long after nesting; (2) Yuma Clapper Rails are using the water delivery ditches and non-designated areas for foraging; (3) rails are not residing long term in designated habitat; and (4) rails tend to move back and forth between managed and unmanaged areas up to a 1+ mile radius. Currently, the radio tagged rails are spending more time in non-designated habitat.

Yuma Clapper Rail detections have declined by half since 2007 but there are too many non-quantified variables to identify specific reasons why or to raise an alarm at this time. The variables that should be considered include (1) the inexperience of the observer; (2) the late start of this year's survey; (3) normal population fluctuations based on food source availability; (4) the drying of cells awaiting major reconstruction and rehabilitation work throughout the unit; and (5) inability to survey non-managed areas along the western edge of Wister (bordering the Salton Sea) where rails may have relocated.

It may be that current construction activities and some loss of designated habitat have resulted in lower numbers of rails being detected. However, I do not believe that the overall population number is declining. The behavioral data from radio tracking indicates that the rails may be temporarily relocating in other suitable sites at Wister. As restored habitat conditions improve over time, we will expect to see detection numbers increase in the next two to three years.