

**Exploration for California Black Rails at Clover Valley,  
Rocklin, California**

Prepared for David Garst

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## Exploration for California Black Rails at Clover Valley, Rocklin, California

*Summary:* On June 9, 2006 I was retained by David Garst, an owner of undeveloped property in Clover Valley, Rocklin, California, to search for California Black Rails on the property and assess the habitat. I visited the property on June 9, 17, and 30, 2006, assessing five prospective sites that I had identified with the assistance of Mr. Garst. On June 9 I detected a Black Rail in the large central wetland in the main drainage of the property. I visited the other four sites on three separate visits and did not detect Black Rails at any of them. Previous unpublished research indicates there is a 97% probability these unoccupied sites are indeed unoccupied at this time. The large wetland of the central drainage ("Central Wetland"), a wetland maintained by a leak on the Placer County Water Agency ditch ("Ditch Leak 2"), and a wetland at the base of a hill downslope of this ditch and probably maintained by a spring supplemented by ditch water ("Road Wetland 2") would be appropriate habitat for current or future colonization by California Black Rails. I was not retained to do a thorough survey to assess the entire central drainage; my activities should be characterized as a presence/absence survey for Black Rails on the property.

### Introduction

The California Black Rail (*Laterallus jamaicensis*) is a rare, secretive bird, the smallest rail in North America and has a highly disjunct distribution in the U.S., inhabiting saltwater, brackish and freshwater marshes of New England, the Mid-Atlantic states, Florida, Arizona and California. The western subspecies (*L. j. coturniculus*) is listed as threatened by the California Department of Fish and Game and is a fully protected species. Threats to the species include habitat loss and degradation due to water and flood-control projects, land-use changes, agriculture, and livestock grazing (Eddleman et al. 1994). Black Rails have been known to occur in coastal wetlands of the San Francisco Bay area and further to the north along the coast since the early 1900's until the present, but it was not until 1994 that a previously unknown population was discovered in the foothills of the Sierra Nevada Mountains near Marysville (Aigner et al. 1995). Subsequent surveys conducted in the Sierra foothills from 1996 to the present have recorded Black Rails at over 90 sites in a network of hundreds of freshwater wetlands in Butte, Yuba and Nevada counties (Tecklin, 1999; Richmond et al, 2006). Since they have also been found at various locations in the Sacramento-San Joaquin delta and inland in Sacramento County, as well as at locations just north of the Placer County boundary to the north, (Manolis, 1978; Tecklin, 1999, and unpublished data; Trochet, pers. Comm.), it has been suspected they would be found in Placer County. This was only found to be so in 2003 and 2005 (Jones and Stokes, 2003; ; Appendix A; Sterling, pers comm.; Garrison, pers. comm.), although there are apparently earlier Christmas Bird Count records of their existence in Placer County (Jones and Stokes, 2003), as well as unverified occurrences in the vicinity of Clover Valley.

California Black Rail habitat consists of dense emergent vegetation on a wet to shallow water or muddy substrate. Habitat characteristics of the Sierra foothills population are similar to those reported for other inland Black Rail populations along the Lower Colorado River, where vegetation composition, density, and water level are important determinants of suitable habitat (Flores and Eddleman 1995). In contrast to the wetlands in Arizona where bulrush (*Scirpus sp.*) was frequently the dominant wetland plant, most of the Sierra foothills sites have a dominant cover of some combination of rushes (*Juncus sp.*) and cattails (*Typha sp.*) (Tecklin, 1999; Richmond et al, 2006).

In the Sierra foothills, Black Rails occupy small, mainly perennial, shallow (<3cm deep), freshwater wetlands. Rail sites are found on a mixture of public and private lands, most between 200-700 m in elevation in densely vegetated wetlands. Water sources include natural springs and streams in addition to water storage ponds and leaks from irrigation canals dating from the Gold Rush era to the present. Sites are surrounded by a variety of land cover types including dry annual grassland, partially wooded grassland, oak or pine woodland, riparian forest, agriculture, and urban development. Rails are present at some wetland sites throughout the year, indicating that at least a portion of the population in the foothills is non-migratory. In addition, rails were found to rapidly colonize recently created suitable habitat (in some cases within one year), indicating a high level of local dispersal ability (Tecklin, 1999; Tecklin, unpublished data).

Detailed information concerning Black Rails in the Sierra foothills is scanty, including how long they have occupied the area, the extent of their distribution, population trends, relationships between habitat quality and population dynamics, and dispersal distances. It is unknown if there is interchange between the foothills population and populations along the northern California coast. Black Rails in the Sierra foothills provide an excellent model system for the study of metapopulation dynamics. Since 2002 I have collaborated with Dr. Steven R. Beissinger and his students at the University of California Berkeley in annual surveys determining presence or absence of the rails at occupied and potential habitats, measuring habitat characteristics, and computing rates of local extinction and colonization of these habitat patches. My judgements below are based on the published reports cited and the as yet unpublished experiences of this recent research.

### **Black Rail Survey at Five Locations of the Clover Valley Property**

**Description of Surveyed Wetlands:** The five wetlands surveyed consisted of a large densely vegetated area along the central drainage, two wetlands adjacent to the main road of the property and to a side road leading upslope to a Placer County Water Agency (PCWA) ditch, and two wetlands along this ditch, as shown on Figure 1. The map of Figure 1 is taken from Microsoft's Terraserver website, as noted at top and bottom of the map. Note that the map is dated July 28, 1999 and shows some physical features I do not believe currently exist. This map is only intended to schematically and approximately

locate and clarify the location of the sites surveyed and the location of the Black Rail detection. The UTM coordinates given below are in Zone 10, NAD83.

*Central Wetland:* This central wetland is about 700-800 m long by about 100 m at the widest, elliptically shaped, located between the main property road and the flowing stream with its impenetrable blackberry and willow riparian cover. The following UTM locates approximately a point on the southeast edge of the wetland: 654064 Easting, 4299552 Northing. Vegetation of the large central wetland was mainly cattails (*Typha sp.*) 1-3 m tall, densely spaced, but there were patches of bulrushes (*Scirpus sp.*), and interspersed rushes (*Juncus sp.*), sedges (*Eleocharis sp.*), grasses (esp. cutgrass, *Leersia oryzoides*) and various forbes, especially smartweed (*Polygonum sp.*) in tall dense groupings, and arrowhead (*Sagittaria sp.*) in vigorous condition. All of the vegetation appeared robust and in a non-drying out condition. There was, however, no water currently running into or flowing through the wetland that I observed. The substrate varied from a completely saturated, spongy mud in spots to a firm damp mud. Water appears to have been diverted by beaver activity on the flowing stream into the wetland; I observed only one spot where current beaver activity was flooding a small pocket of wetland somewhat unconnected to the main large central wetland. Active beaver workings at the north end has braided the flow channel, spreading water out over a larger area than the main channel of the stream. I did not explore the entire central wetland, but I observed that the flowing stream had cut deeply below the level of the wetland to the south, and that at least two ditches were cut into the central wetland, possibly meant to deliver irrigation at some time in the past, but mainly now serving to assist in drying it out. In general, on the dates surveyed this wetland appeared to have quite recently experienced a period of shallow inundation, the cessation of which is just now starting to take the wetland to a drier status. Compared to other Black Rail occupied wetlands in the foothills that I have observed, I would class this wetland as an excellent prospect for detecting a Black Rail. It has been common experience to find Black Rails in wetlands in the condition observed.

*Road Wetland 1:* This wet area is located intersecting the property's main road, somewhat south of the private land and residence that intersects this road on its east edge, at the following UTM: 654048 Easting, 4298994 Northing. Source of the wetland is obscure, possibly natural seepage augmented by irrigation water. It was in a very dry condition, mainly firm, dry mud substrate, with only small areas of spongy, more saturated mud. The bounds of the wetland are not distinct; it is less than about 0.5 ha. Vegetation indicates it is transitional to non-wetland, blackberry dominated, with some typical wetland grasses and a few sedges and wetland mints. I would have classed this as marginal Black Rail habitat, mainly of interest because of its proximity to the large central wetland.

*Road Wetland 2:* A side road leads off to the east, shortly after entrance at the main southern gate of the property, ascending the steep slope toward the PCWA ditch. A central locating UTM for the wetland intersecting and crossing this road is: 653898 Easting 4298536 Northing. Water flows from the base of the slope across the road in two places. The entire wetland area is about less than 0.25 ha. It is likely the water source is a spring and almost certainly somehow connected to the ditch flowing on

the hill above, although the connection is not apparent. When visited on June 30, 2006 the volume of flowing water appeared to have increased substantially from earlier visits despite the intervening dry period. Water flows in a thin sheet over much of the area, channelizing at the lower end and flowing toward the property's southern boundary. The vegetation is sparse to dense in the deeper, wettest parts; there is a small amount of cattails, but mainly dense, mixed sedges, grasses, and forbs. While small in area, this site would be potential Black Rail habitat given its favorable, apparently perennial wetness and proximity to possible source population of rails.

*Ditch Leak 1:* Located along the PCWA ditch at UTM: 653845Easting 4298203Northing. Much less than 0.25 ha, but evidently much reduced from a larger area in the past as evidenced by several downslope dead Blue Oak trees, which seem to mark the extent of a large downslope saturated area that once was here. The current wetland is declining, as seen by the encroaching dryland annual grasses and blackberries. The vegetation is both too sparse and too transitional to a drier condition to be characterized as promising Black Rail habitat.

*Ditch Leak 2:* Proceeding north from Ditch Leak 1, one passes two very tiny, insignificant ditch leaks. Within about 200-300 m at UTM 653984Easting 4298501Northing there is a substantial ditch leak, creating a wetland area about 0.5 ha, with excellent shallow flow over the whole area. This active leak is expanding the wetland area into the dry annual grasses. A portion of this wetland has a patch of dense cattails, the rest is sparse to dense sedge, grass, forb cover. The size, vegetation density, apparent perennial character, and proximity to the central large wetland nominate it as excellent potential Black Rail habitat.

**Survey Methods:** Attempts to detect Black Rails employed the standard protocol followed for the last five years for the extensive surveys referred to above. Taped recorded calls of foothill Black Rails were broadcast from a stationary point at the edge or within the wetland at a volume of about 80 dBa, measured at one meter, through a small, hand-held speaker. Broadcast sequence consisted of a one to two minute listening period, followed by thirty seconds of the "kee-kee-krr", thirty seconds of silence, thirty seconds of "kee-kee-krr" call followed by thirty seconds of silence, then thirty seconds of the "grr", thirty seconds of silence, thirty seconds of "grr", followed by two minutes of silent listening. For larger wetlands, broadcast spots are usually spaced 50 m apart. Four of the wetlands surveyed could be adequately surveyed from one or two points. For the large central wetland along the main drainage, tape playback was first done at the southern end, then middle, and then northern end, intending to survey in-between these points if no responses were detected. Surveys were conducted during the standard time intervals; one half hour before until three hours after civil sunrise, and three hours before and one half hour after civil sunset. Surveys were done on June 9, 2006 during the evening interval, and on June 17 and 30 during the morning interval. Three site visits were necessary to acquire a high degree of certainty of the absence of rails when there were no responses to indicate presence (Richmond, et al., 2006). The large central wetland was surveyed one time (plus two informal detection attempts in non-protocol time); all the others were surveyed three times. Time of each playback was recorded, as was the GPS location of the playback spot, and the responses heard.

**Results of Survey:** One California Black Rail was detected at the north end of the large central wetland. After three attempts to detect rails at the four other wetland locations, at survey intervals spaced one to two weeks apart, no Black Rails were detected at any of these other wetlands.

The Black Rail in the central wetland was detected during playback initiated on June 9, 2006, at 1731, at UTM location 654096Easting 4299826Northing, as drafted approximately on Figure 1. The bird responded from about 40 m north of this spot; with additional playback, the bird moved to within a meter or so of the playback location, and vocalized throughout this area. Vocalizations were "Kee-kee-krr", "grr", and "churts". All of the responses were given at very close range, as well as while the bird moved about. It is probable that the "Kee-kee-krr" is a male, territorial advertisement, the "grr" a disturbance call, and function of the "churt" is unknown but it is an extremely commonly heard vocalization that may be a contact call (Eddleman et al, 1994; Tecklin, 1999). The responding Black Rail approached the playback spot from a distance, quickly, and seemingly aggressively toward my intrusion. I would tentatively conclude the responding bird was a male defending territory. On June 17, 2006, and again on June 30, 2006, I did extensive playback at this location during non-protocol time to try to again detect a Black Rail. On both occasions there were no Black Rail responses.

**Discussion of Results and Conclusions:** It is very unlikely that California Black Rails currently occupy any site on this property except for the large central wetland where an unambiguous response was obtained on June 9, 2006. Concluding that Black Rails are absent and will continue to be absent because of non-response from suitable habitat is problematic. Repeated attempts to detect the birds diminishes the uncertainty of presence within a given window of time, but the continued existence of the suitable habitat, especially where rails have previously been detected, is a continuous possibility of a future colonization. The most thorough study of California Black Rails in the Sierra foothills, with repeated surveys conducted annually in 2002-2005 concludes the following as concerns the wide-spread distribution and management for the rails; point 5 is particularly relevant here (Richmond et al, 2006):

*This study provides several important conclusions that are relevant to the management of California Black Rails and other aquatic wetland birds:*

- 1. The State-threatened California Black Rail occurred at over 90 wetland sites in Butte, Yuba and Nevada counties in 2005;*
- 2. Over one half of the freshwater emergent wetlands in the Sierra Nevada foothills examined in this study have human-mediated water inputs as a source. Many of these wetlands are on private land;*
- 3. Wetland area and proximity to other wetlands are positively associated with Black Rail occupancy;*
- 4. Wetland habitat quality may be just as critical as wetland area and connectivity in maintaining the California Black Rail metapopulation. Black Rails occur in wetlands that have some mixture of flowing or standing water and saturated mud. Black Rails are positively associated*

*with wetlands fed by springs and/or irrigation ditch leaks and are negatively associated with wetlands fed by ponds and creeks;*

5. *Black Rails in the Sierra foothills can go locally extinct from a wetland patch, may later re-colonize it in subsequent years, and may also colonize new patches. Thus, an empty patch is not necessarily "unsuitable" habitat.*

Given the above circumstances, there are two situations on the Clover Valley property that require differing consideration. While one would expect to detect Black Rails in the future at *Road Wetland 2* and *Ditch Leak 2*, and they are worthy of conservation or enhancement, they do not qualify for the legal protections that Black Rail presence might give them. They may, however, need to be considered under other jurisdictions since they are currently functioning and expanding wetlands. This should be determined by consultation with the appropriate regulatory agencies.

The central wetland is currently occupied Black Rail habitat. Failure to detect its presence on two occasions subsequent to the initial detection may only indicate its temporary absence from the specific location of its initial detection. The wetland is large enough, and it has sufficiently appropriate habitat characteristics even though it appears to be in a drying trend, for the detected Black Rail individual or some other one to be able to continue to exist somewhere in this extensive wetland. ~~The California Department of Fish and Game will be notified of its existence (see attached Natural Diversity Database form) and must be consulted for an appropriate solution since the wetland is in conflict with development plans. Landowner Garst has represented that incursion across the wetland near the location of Black Rail detection is planned; a road is planned to bridge the wetland near this point.~~ This could be viewed as an opportunity to enhance the wetland, if the following recommendations are followed: 1. The wetland should be clearly delineated during the construction phase of this development, and no destructive entry allowed.; 2. Roadways and other drains that might put large quantities of water and noxious runoff into the wetland or cause destructive siltation should be routed to prevent this from happening.; 3. The planned bridging could be constructed with a simple berm to collect and spread out water that enters at the north end of the wetland, with a portion of the creek flow routed into the wetland. (This has been discussed with landowner Garst, who is receptive to the concept.) ~~Details of execution would, of course, require the attention of the project planners, in consultation with the California Department of Fish and Game, in order to achieve the specific goal of creating a wetland with characteristics appropriate for the continued existence of the Black Rail.~~

~~Encroachment by residential development will probably have a deleterious effect on the central wetland.~~ We have, however, observed Black Rails existing continuously over many years in close proximity to the human disturbances associated with residences, household pets, livestock, intense traffic disturbance, and the like. Wetland islands located where such disturbances are to occur should not be written off as habitat of no future potential; to the contrary, they are worthy of protection and maintenance.



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### Personal Communications

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