



BALD HILLS PRAIRIES RAPTOR SURVEY IN REDWOOD NATIONAL PARK 2012 ANNUAL REPORT March 2013

Introduction

Raptor surveys throughout the Bald Hills in Redwood National Park (“the park”) began in December of 1998. Originally, the surveys were ancillary to a study designed to determine effects of prescribed fire on small mammal and reptile populations in coastal prairie grasslands in the park. Though the small mammal/reptile study was discontinued after the 2001 field season, raptor surveys continued in each year through the present and results have been reported annually.

Methods

The raptor survey uses 32 survey stations located from the park’s western-most prairie, Gans Prairie, to Coyote Creek/Eastside Prairies at the southeastern boundary of the park. At each station all raptors, ravens, and crows (along with mammalian predators including coyote, gray fox, and bobcat) are recorded. Observations are hand-plotted in the field on aerial photos, and information about each raptor is documented. An “observation” is defined as one bird, or multiple birds of the same species seen together. Information collected includes:

- species,
- sex (if it can be determined),
- activity (perched, flying, hovering, feeding),
- substrate used (tree, ground or rock, post or fence, brush, and low, medium, or high flight level).

At each station, the observer spends a minimum of 2 minutes observing the surrounding landscape with binoculars looking for flying and perched raptors. Every attempt is made to avoid double-counting raptors in flight by noting flight direction. Incidental raptor observations, e.g., raptors seen enroute between stations, also are noted on the field form and mapped. The goal is to conduct one survey per month during the year. The initial starting point for the survey is alternated between months, between the lower elevation Gans Prairie and upper elevation Coyote Creek/Eastside Prairies.

Hand-plotted observation locations are digitally plotted and assigned X-Y UTM coordinates. Data are entered into an Access database.

Results and Discussion

Ten surveys were conducted in 2012; no surveys took place in April and December. The total number of raptor observations in 2012 was 107, consisting of 178 individuals, with common ravens constituting the vast majority of >1 bird in a single observation. The number of observations was comparable to last year's number (110) and was again higher than the high number of observations in 2008 (91) for the 4-year period between 2006-2009. The number of individuals counted increased by 21; just above the number recorded in 2010 (170).

The highest numbers of raptor observations in 2012 were in Coyote Creek Prairie (24). This is similar to the numbers recorded in 2010 and 2011, however, Childs Hill, which also has had roughly 24 observations in the previous 2 years fell short at 12. Observations in 2012 were more evenly distributed throughout the prairies when compared with previous years. In the lower group of prairies (Gans, Elk Camp, and Dolason) there were 21 observations (20%), and in the middle (Airstrip, Counts Hill, Maneze, Childs Hill, and Williams Ridge), and upper (Copper Creek, Wooden Gate/Coyote Creek, Schoolhouse and Eastside) groups there were 43 (40%) observations in each. Thus, the lower prairies accounted for a higher proportion of observations when compared to previous years. Differences in numbers of observations between the lower prairies, versus the middle and upper prairies, likely equate to the differences in area among the prairies; with area progressively increasing eastward. There was one observation in Gans, the smallest, and lowest elevation prairie, in 2012.

Common raven numbers were the highest of all species detected in 2012, at 105, the third highest number recorded since surveys began. Ravens were followed by red-tailed hawks and American kestrels (see table below). These 3 species have consistently been the most numerous of the survey. Northern harriers were again the 4th most commonly observed species. Species not detected in 2012, compared to 2011 were merlin, white-tailed kite, American crow, and peregrine falcon. No mammals were observed in the prairies in 2012.

Numbers of individuals of all species recorded in 2012, compared with those from 2010, 2011, and the previous 4-year and 3-year periods are listed in the table below (from Sakai et al., 2000a, 2000b, and 2001; Sakai 2002, 2003, 2004, 2005; Schmidt 2010; NPS 2011 and 2012). It is probable that some of the records represent the same individual observed in different surveys, due to the territoriality of most hawks, however, except in rare cases there is no way of determining if the birds are the same or different individuals.

Species	No. of Individuals Observed in 2012	No. of Individuals Observed in 2011	No. of Individuals Observed in 2010	No. of Individuals Observed, 2006-2009	No. of Individuals Observed, 2002-2005	No. of Individuals Observed, 1999-2001
Red-tailed Hawk	36	46	68	135	168	165
Common Raven	105	77	61	98	300	77
American Kestrel	14	20	15	33	118	95
Northern Harrier	10	3	16	18	20	41
Rough-legged Hawk	0	0	4*	6*	6	7
Red-shouldered Hawk	0	0	0	3	3	1
Cooper's Hawk	1	0	0	3	0	0
Sharp-shinned Hawk	3	0	1	2	0	0
Bald Eagle	1	1	0	2	8	2
Golden Eagle	0	0	2	2	0	0
White-tailed Kite	0	1	0	2	28	17
Merlin	2	1	1	2	2	0
Peregrine Falcon	0	1	0	1	0	0
American Crow	0	1	0	1	0	0
Unknown Falcon	1	0	1	0	0	0
Unknown Buteo	1	0	0	0	0	0
Unknown Accipiter	1	0	0	0	0	0
Unknown "Hawk"	3	5	0	0	0	0
Osprey	0	0	0	0	1	0
Coyote	0	2	0	1	3	5
Bobcat	0	0	0	0	3	3

* The late 2009 and early 2010 observations were likely the same bird, based on its location and plumage characteristics.

Numbers of individuals of various species, including common species such as red-tailed hawk and American kestrel, may fluctuate widely among years. However, the numbers of four focal species (red-tailed hawk, American kestrel, white-tailed kite, and northern harrier) observed annually since 1999 indicate the possibility that raptor numbers in the Bald Hills may be on a downward trend (Fig. 1).

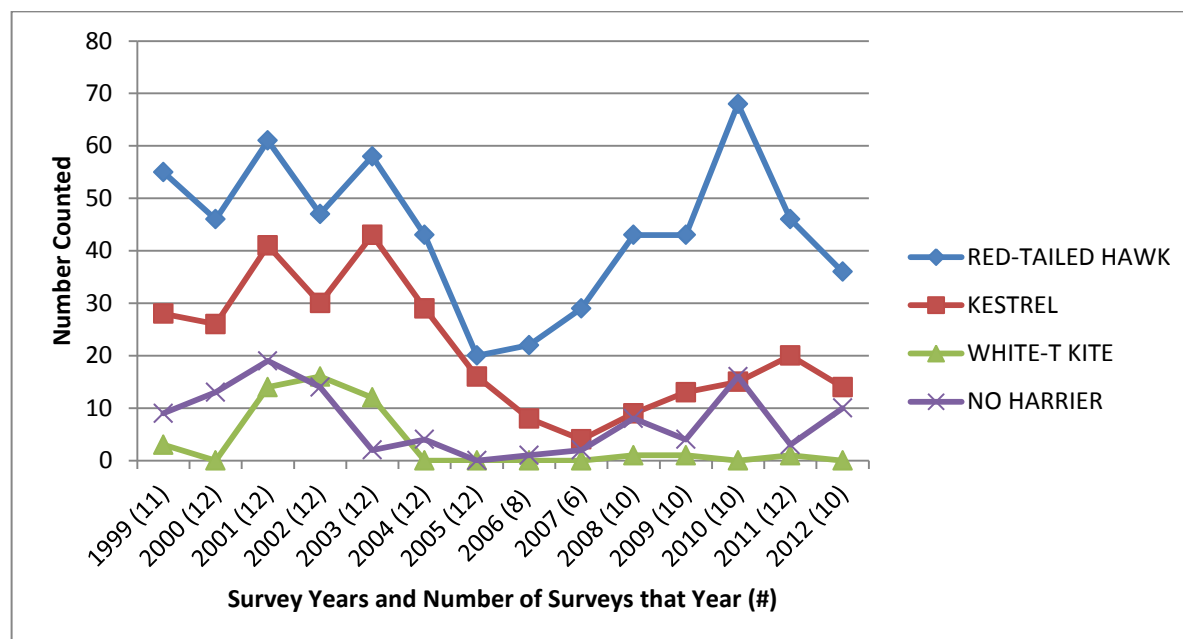


Figure 1. Numbers of individuals of four focal species counted from 1999 through 2012 in the Bald Hills; numbers of surveys in each year in parentheses.

Common raven numbers have also fluctuated dramatically over the years, and have increased in the past 3 years of surveys. There may be a relationship between the amount of prairie burning and numbers of ravens counted in the Bald Hills (see Figure 2) . Ravens are attracted to burned areas due to the highly available food resources exposed in burned prairies.

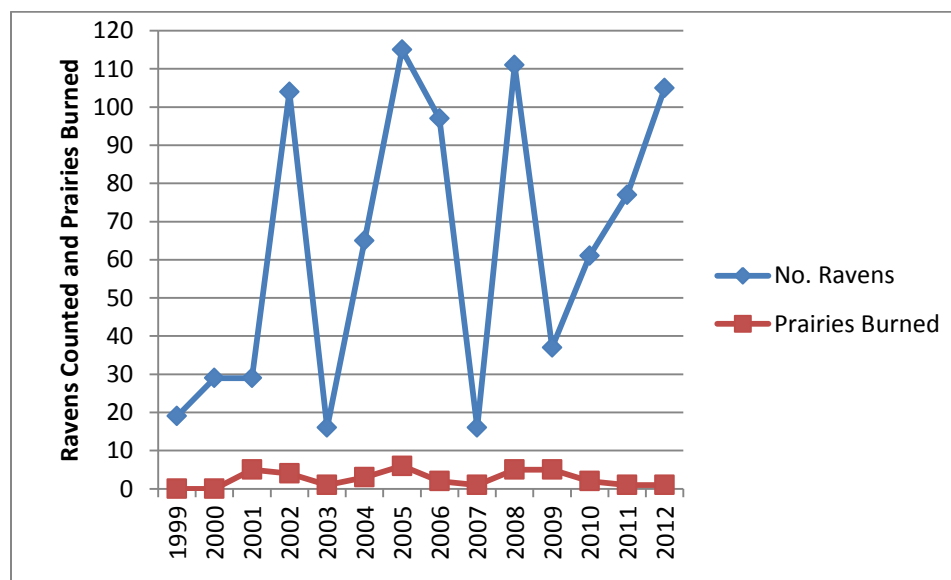


Figure 2. Common raven numbers in relation to the number of prairies burned each year in the Bald Hills.

References:

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