

## Just In! 5-Year Survey Results at 3 Sisters Reserve

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On Saturday, Sept. 21, 2013, nine people hiked the Three Sisters Reserve in the Palos Verdes Nature Preserve to conduct a bird survey. This survey was a bit different from the 125 preceding surveys that they had conducted at the reserve. It was the final survey of an effort that began in July 2008 (see Figure 1).

Regular readers of *Hummin'* may recall the articles about this survey over the past few years. The survey was a collaboration of PV/South Bay Audubon and the Palos Verdes Peninsula Land Conservancy (PVPLC). While our primary goal was to document the changes in the bird community at a 21-acre restoration site, other goals were included. Through the collaboration to conduct five years of bird surveys, PVPLC would benefit by having a source of experienced birders. Audubon could use the effort to introduce the wonders of birding to new people.

Through the years, I marveled at the dedication of the Audubon birders. From the very start until the final survey, participants were enthusiastic and knowledgeable. We surveyed when it was hot and when it was cold. Sometimes it could be foggy and other times drizzly. Rain could mess up the schedule, but still the Audubon birders showed up for the rescheduled dates. We even had a survey on December 31 one year!

We can unequivocally state that Audubon's goal of engaging new people to birding was a success. Your current vice president, David Quadhamer, is a prime example. His first bird survey was on a very drizzly day in June 2009. Everyone got soaked and none seemed to be more soaked than David. I was con-



Those who participated on the final day of the survey include, from left (back), Evi Meyer, Bill Cullen, Jess Morton, David Quadhamer, Lowell Wedemeyer; and (front) Mai Lee, Bonnie Cohn, Linda Wedemeyer and Ann Dalkey.

cerned that he would never return. But that was not the case. You know the rest of the story!

During the five years, many of us greatly enhanced our birding skills. Whether it was Jess Morton's gentle tutoring or Bill Cullen's sharp ear, we learned much about our local birds. You are familiar with Evi Meyer's beautiful photographs, skills that were enhanced during the surveys. The bug hit Lowell and Linda Wedemeyer, so they now carry cameras to capture images of birds they learned about during the survey.

Students participated in the surveys to conduct their high school research projects. Both Christine Chen and Stephanie Yong investigated California gnatcatchers at the restoration site and at other locations. They both participated in Palos Verdes Science Fairs and Southern California Academy of Sciences' Junior Academy program. Christine also received recognition from the U.S. Fish and Wildlife Service for her work. Wow!

About now, you may be wondering about the birds.

When we began the survey, I anticipated that we would see an initial decrease in the abundance of birds at the coastal sage scrub restoration site and

then would see an increase as the plants matured. We were in a good position to capture changes because the survey began prior to any restoration work. In July 2008, the area was dominated by non-native black mustard and fennel. Only a few California bush sunflower plants had successfully penetrated the area. While birds visited the area, it did not include the full complement of bird community including the federally listed threatened California gnatcatcher and California State Special Status cactus wrens.

The restoration activities commenced in February 2009 when goats were brought to the site to clear out the black mustard, fennel, and reduce the non-native annual grasses. PVPLC field crews removed over 500 exotic acacia shrubs and aggressively attacked sprouting mustard, fennel and grasses over the next four years. By 2010, the area was quite devoid of shrubs, and even the nearby cactus stand had been damaged by the goats. Native plants were installed during winter 2010, but they were very small and could barely be seen amongst the continuously growing grasses. More plants were installed in 2011 to double the number of natives.

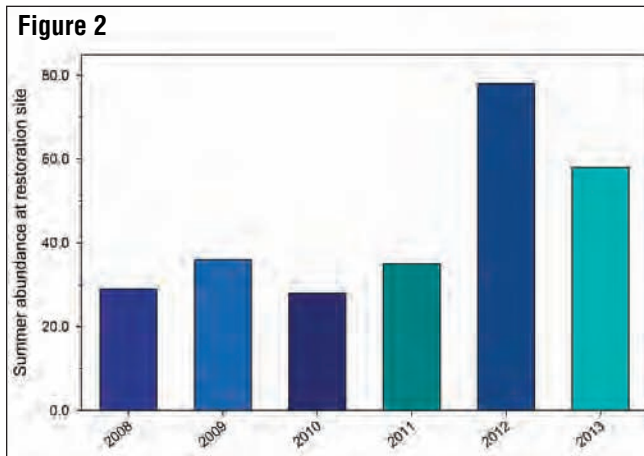
Indeed, the fewest number of birds were observed at the coastal sage scrub restoration site in 2010. Figure 2 shows the bird counts from the summer (July – September). During the first four years, the bird abundance (total number of birds observed) was about the same, all consistently below 40. Then, in 2012, the numbers increased substantially.

What had happened? Simply put, the plants grew enough to provide useful habitat for more birds than before the restoration began. We observed the federally listed threatened California gnat-

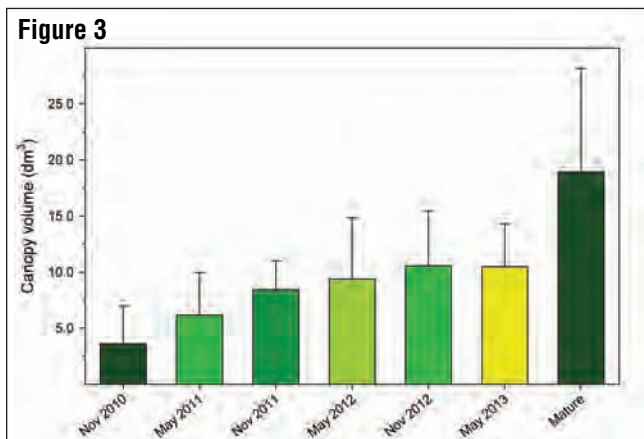
catcher at the site in 2012, including a pair with their youngsters foraging in the shrubs. The cactus patch recovered from the goat trampling and once again was utilized by cactus wrens. Flycatchers, towhees and wrens began using larger sections of the new habitat where previously they occupied only the larger shrubs bounding the former mustard and fennel “forest.”

To objectively evaluate the plant growth, our two students Christine and Stephanie, measured the canopy size of California sagebrush. Starting in November 2010, they measured the plants each November and May. Figure 3 shows the steady increase in canopy size through November 2012. The plants did not increase in size in May 2013, following a winter with poor rainfall and no supplemental irrigation. When compared to mature specimens measured at Vicente Bluffs, it is apparent the new California sagebrush plants had yet to attain full size.

There is a lot more that I could say about our data. I will be giving a detailed talk about the results at the April Audubon meeting. I look forward to the presentation and hope to see you there.



**Figure 2**  
Total bird abundance at the coastal sage scrub restoration site during the summer, July to September.



**Figure 3**  
California sagebrush growth over time: Measurements were taken at 10 specimens and calculated as the average volume in cubic decimeters (dm<sup>3</sup>).

**Figure 1: Survey Results**

Species	2008-09	2009-10	2010-11	2011-12	2012-13
Allen's hummingbird	14	22	16	10	11
American crow	30	42	24	68	17
American goldfinch		2	2		
American kestrel	1	2	3	5	3
Anna's hummingbird	60	75	79	72	69
Ash-throated flycatcher			1		
Barn swallow	14	7	6		14
Bewick's wren	27	30	18	13	34
Black phoebe	5	22	21	15	14
Black-headed grosbeak		2			
Blue grosbeak	1				
Blue-gray gnatcatcher	5		2	4	
Bushtit	74	31	43	73	74
Cactus wren	28	30	13	30	11
California gnatcatcher	18	24	9	12	29
California towhee	94	144	156	155	181
Cassin's kingbird	4	6	3	5	4
Cliff swallow	21	14	15	7	18
Common raven	35	44	16	39	14
Common yellowthroat		1	1		1
Cooper's hawk	6		7	4	5
European starling			1		9
Golden-crowned sparrow		2			
Hermit thrush	1	4	5	11	37
Hooded oriole					1
House finch	311	273	409	471	291
House sparrow			1		
House wren	8	3	16	15	7
Lazuli bunting		6			
Lesser goldfinch	47	104	145	221	126
Loggerhead shrike				1	
Mourning dove	32	24	18	52	33
Northern flicker		6	1	1	25
Northern harrier	1				
Northern mockingbird	15	18	18	16	12
N. rough-winged swallow	6	5		10	2
Northern shrike				1	
Olive-sided flycatcher			1		
Orange-crowned warbler			2	1	1
Pacific-slope flycatcher		2			
Red-tailed hawk	3	7	8	7	11
Rock dove		2		2	
Rock wren			1		
Ruby-crowned kinglet			5		
Rufous-crowned sparrow	5	9	7	15	2
Say's phoebe	14	13	11	21	15
Scott's oriole			1		
Sharp-shinned hawk	1		2	1	3
Song sparrow	2		3		
Spotted towhee	88	97	121	96	104
Vaux's swift		2			
Western gull		2	1		
Western kingbird		1	1	2	
Western meadowlark		9	67	105	20
Western scrub-jay	23	37	25	20	30
White-crowned sparrow	45	64	78	65	83
White-throated sparrow			1		4
White-throated swift	22	21	2	25	35
Wilson's warbler	1	1			
Yellow warbler	4	1			
Yellow-rumped warbler			24	29	34
<b>No. of Species Observed</b>	<b>37</b>	<b>42</b>	<b>47</b>	<b>38</b>	<b>38</b>
<b>Total No. Identified Birds</b>	<b>1089</b>	<b>1231</b>	<b>1457</b>	<b>1700</b>	<b>1384</b>
<b>Total No. Observed</b>	<b>1169</b>	<b>1326</b>	<b>1532</b>	<b>1784</b>	<b>1458</b>