Bird Inventory and Monitoring in the Laguna de Santa Rosa

Winter & Spring 2004-05, 2007-09

Lisa Hug & Christina Sloop

Laguna de Santa Rosa Foundation, Santa Rosa, CA, christina@lagunafoundation.org, www.lagunafoundation.org

Abstract

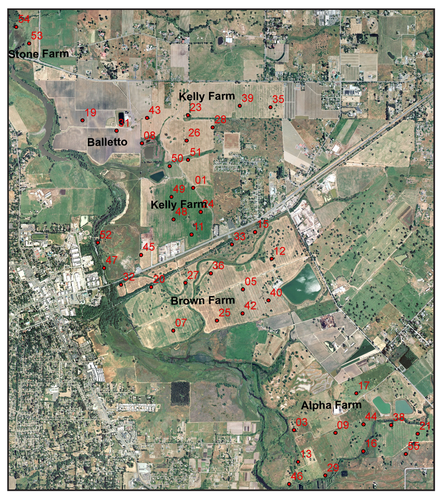
Proposed hiking trails throughout protected lands along the Laguna de Santa Rosa waterway will create desired public access throughout the scenic Laguna floodplain area. As construction and use of future trails may affect potentially sensitive wildlife habitats (e.g. wildlife corridors and important bird breeding areas) it is imperative to assess potential trail impacts on the plants and animals of the Laguna.

This study measured natural fluctuations in bird populations to establish baseline, pre-trail conditions before trail construction begins. Potential impacts to birds during and after trail construction can then be compared to a meaningful set of baseline data spanning several years.

Point Reyes Bird Observatory (PRBO) (Fehring and Gardali 2005) conducted the first two seasons of this study. The Laguna Foundation continued the surveys for a following five seasons. We calculated the abundance, diversity, and richness of birds in the Laguna, documented by the time of year present, distribution, taxonomic guild, and habitat type used. We propose recommendations for future study during and after trail construction.

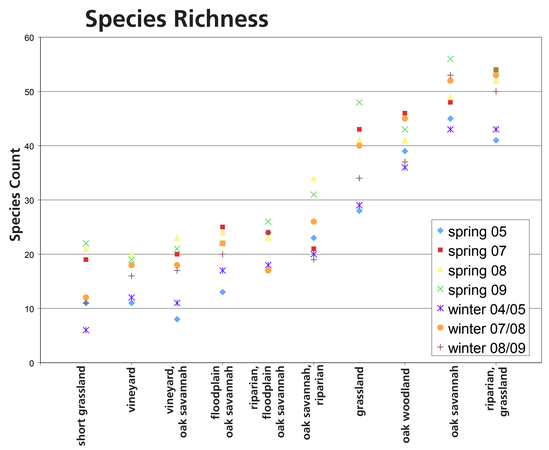
Methods

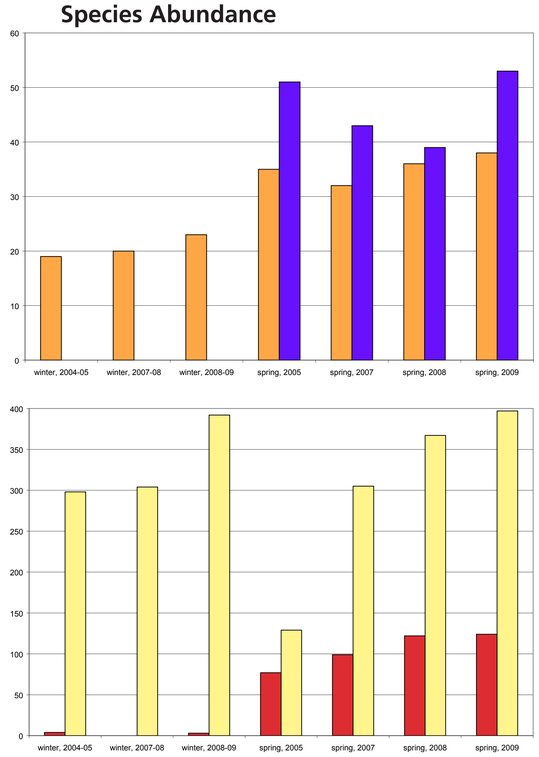
44 randomly established point count survey stations were visited three times each season (Winter or Spring) by Lisa Hug. All birds seen or heard at each point during a 5 minute interval were recorded. Survey stations corresponded with the area where public trails are planned.



Results

- **Species Richness** - or the total number of species observed at each location, varied strongly by habitat type with more species found in wooded areas (30-50) than grassland areas (5-29).
- We encountered 27 species of special regulatory or management status and eight possible pest species.
- **Abundance** of several native species (e.g. Marsh Wren, Common Yellowthroat) may be stable or increasing, while others may be decline (e.g. Savannah Sparrow).





Abundance of Indicator and Pest Species

		Winter			Spring		
		2004-05	2007-08	2008-09	2005	2007	2008	2009
Special Conservation Status and Indicator Species	American White Pelican	0	11	1	0	0	11	9
	California Quail	7	18	1	45	14	16	19
	California Towhee	25	26	26	40	54	58	76
	Common Yellowthroat	0	0	0	51	43	39	53
	Double-crested Cormorant	0	9	15	3	47	31	82
	Grasshopper Sparrow	0	0	0	0	4	0	1
	Great Blue Heron	0	1	4	3	4	3	17
	Great Egret	5	15	8	16	26	13	20
	Loggerhead Shrike	1	1	0	0	0	0	0
	Long-billed Curlew	0	3	0	0	0	1	0
	Marsh Wren	19	20	23	35	32	36	38
	Northern Harrier	1	10	4	0	0	2	0
	Nuttall's Woodpecker	24	33	38	20	24	20	34
	Oak Titmouse	24	26	23	21	21	23	23
	Savannah Sparrow	127	116	43	34	4	11	19
	Short-eared Owl	0	2	0	0	0	0	0
	Song Sparrow	333	280	293	466	502	461	448
	Swainson's Thrush	0	0	0	1	1	2	3
	Tree Swallow	21	20	41	142	98	91	97
	Vaux's Swift	0	0	0	0	0	6	4
	Virginia Rail	1	0	0	0	0	0	2
	Western Bluebird	81	20	57	13	10	11	20
	Western Meadowlark	98	45	225	6	11	7	17
	Western Scrub-Jay	18	23	24	15	11	17	24
	White-breasted Nuthatch	0	5	18	8	8	13	19
	White-tailed Kite	6	26	8	4	7	26	10
	Yellow Warbler	0	0	0	0	2	0	5
Pest Species	Cattle Egret	0	34	14	0	10	12	41
	Ring-necked Pheasant	7	0	0	8	29	22	12
	Wild Turkey	0	81	24	3	3	13	21
	Rock Pigeon	0	7	4	0	24	11	33
	Eurasian Collared Dove	0	0	1	0	1	0	10
	European Starling	298	304	392	129	305	367	397
	Brown-headed Cowbird	4	0	3	77	99	122	124
	House Sparrow	0	4	9	0	2	23	22

Conclusions

- Grassland habitat may not support a wide variety of species, but grasslands provide important habitat for some birds. While riparian restoration plantings of trees provide habitat for many species, planting shrub species (e.g. *Salix laevigata*) increases understory complexity and improves bird habitat.
- Two absent species - the Acorn Woodpecker and Bewick's Wren demonstrate the importance of inventory monitoring to identify birds that may be struggling in the Laguna.
- The continued rise in Brown-headed Cowbirds and European Starlings may pose a risk to native bird populations via nest parasitism.
- Multi-year surveys such as this one, capture annual fluctuations and continue to identify new species in the Laguna demonstrating the importance of long term data collection to evaluate ecosystems.
- Once trails are constructed, this survey will provide invaluable baseline data (collected using a standardized protocol) that should be continued to evaluate the true impact of trail construction and use on bird populations in the Laguna.

Acknowledgements

Thanks to: J. Baletto, G. Ballard, H. Brown, B. Burridge, D. Cadman, T. Gardali, M. Parmeter, B. Payne, the City of Santa Rosa, PRBO Conservation Science, and the California Avian Data Center. This project was funded by the Madrone Audubon Chapter and the Sonoma County Agriculture & Open Space District.