



Landbird Monitoring 2012 Annual Report

Channel Islands National Park (Revised)

Natural Resource Data Series NPS/MEDN/NRDS—2014/666



ON THE COVER

Song Sparrow (*Melospiza melodia*) on San Miguel Island. Photo by Brad Sillasen with permission.

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The Natural Resource Data Series is intended for the timely release of basic data sets and data summaries. Care has been taken to assure accuracy of raw data values, but a thorough analysis and interpretation of the data has not been completed. Consequently, the initial analyses of data in this report are provisional and subject to change.

All manuscripts in the series receive the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner. Data in this report were collected and analyzed using methods based on established, peer-reviewed protocols and were analyzed and interpreted within the guidelines of the protocols.

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Summary of Landbird Monitoring in 2012

Spring monitoring of resident, breeding landbirds according to the protocol (Coonan et al. 2011) was conducted between February 29, 2012 and May 22, 2012 on four islands within Channel Islands National Park. No fall surveys were conducted.

Tour dates are summarized in Table 1. The number of line transects surveyed per island was 3 on Santa Barbara Island, 1 on east Anacapa Island, and 5 on San Miguel Island; the remaining monitoring was done using ten-minute point counts. The total number of individuals of each species detected on all four islands combined for spring 2012 is summarized in Table 2.

This monitoring was conducted in collaboration with the Mediterranean Coast Network of the NPS Inventory and Monitoring Program. In Fall 2011, the landbird monitoring database and protocol were updated, and some of the new data analysis and graphing routines are used for this report. This report is to serve as a brief summary of findings; a comprehensive synthesis and full analysis of this data will be presented in a separate, later report.

For spring point count surveys, indices of abundance and the occurrence of each species on each island is summarized for Anacapa Island (Table 3), Santa Barbara Island (Table 4), San Miguel Island (Table 5), and Santa Rosa Island (Table 6).

Table 1. Start and end dates of landbird monitoring survey tours on each island in spring 2012, with the number of line transects or 10-minute point counts listed for each tour.

Island	Start Date	End Date	Tour Code	# Transects	# Point Counts
Anacapa	03/15/2012	03/16/2012	B	1	8
Santa Barbara	02/29/2012	03/08/2012	A	3	32
San Miguel	04/17/2012	04/24/2012	G	0	5
San Miguel	04/24/2012	05/01/2012	H	5	4
San Miguel	04/03/2012	04/10/2012	D	0	28
Santa Rosa	03/27/2012	04/03/2012	C	0	8
Santa Rosa	04/10/2012	04/17/2012	E	0	37
Santa Rosa	04/17/2012	04/24/2012	F	0	36
Santa Rosa	05/01/2012	05/08/2012	I	0	7
Santa Rosa	05/15/2012	05/22/2012	K	0	39
Santa Rosa	05/08/2012	05/15/2012	J	0	14

Table 2. Number of individuals of each species detected during bird surveys on all islands in spring 2012. Data include detections on both line transects and point counts, and do not include birds observed before or after the counts.

Common Name	Scientific Name	Species Code	# Detected
Acorn Woodpecker	<i>Melanerpes formicivorus</i>	ACWO	2
Allen's Hummingbird	<i>Selasphorus sasin</i>	ALHU	110
American Kestrel	<i>Falco sparverius</i>	AMKE	4
Anna's Hummingbird	<i>Calypte anna</i>	ANHU	21
Barn Swallow	<i>Hirundo rustica</i>	BARS	35
Bewick's Wren	<i>Thryomanes bewickii</i>	BEWR	289
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	BHGR	1
Black Phoebe	<i>Sayornis nigricans</i>	BLPH	5
Bushtit	<i>Psaltiriparus minimus</i>	BUSH	20
California Quail	<i>Callipepla californica</i>	CAQU	25
Chipping Sparrow	<i>Spizella passerina</i>	CHSP	110
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	CLSW	2
Common Raven	<i>Corvus corax</i>	CORA	193
Common Yellowthroat	<i>Geothlypis trichas</i>	COYE	1
European Starling	<i>Sturnus vulgaris</i>	EUST	6
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	GCSP	5
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	GRSP	12
Hermit Thrush	<i>Catharus guttatus</i>	HETH	1
Horned Lark	<i>Eremophila alpestris</i>	HOLA	251
House Finch	<i>Carpodacus mexicanus</i>	HOFI	186
House Wren	<i>Troglodytes aedon</i>	HOWR	2
Hutton's Vireo	<i>Vireo huttoni</i>	HUVI	5
Lark Bunting	<i>Calamospiza melanocorys</i>	LABU	1
Lesser Goldfinch	<i>Carduelis psaltria</i>	LEGO	107
Loggerhead Shrike	<i>Lanius ludovicianus</i>	LOSH	8
Mallard	<i>Anas platyrhynchos</i>	MALL	5
Mourning Dove	<i>Zenaida macroura</i>	MODO	4
Nashville Warbler	<i>Vermivora ruficapilla</i>	NAWA	1
No birds observed		NONE	5
Northern Harrier	<i>Circus cyaneus</i>	NOHA	8
Northern Mockingbird	<i>Mimus polyglottos</i>	NOMO	13
Orange-crowned Warbler	<i>Vermivora celata</i>	OCWA	318
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	PSFL	108
Peregrine Falcon	<i>Falco peregrinus</i>	PEFA	3
Red-tailed Hawk	<i>Buteo jamaicensis</i>	RTHA	13
Red Crossbill	<i>Loxia curvirostra</i>	RECR	2
Rock Wren	<i>Salpinctes obsoletus</i>	ROWR	6
Savannah Sparrow	<i>Passerculus sandwichensis</i>	SAVS	2
Say's Phoebe	<i>Sayornis saya</i>	SAPH	4
Song Sparrow	<i>Melospiza melodia</i>	SOSP	654
Spotted Towhee	<i>Pipilo maculatus</i>	SPTO	356
Vaux's Swift	<i>Chaetura vauxi</i>	VASW	1

Common Name	Scientific Name	Species Code	# Detected
Western Kingbird	<i>Tyrannus verticalis</i>	WEKI	2
Western Meadowlark	<i>Sturnella neglecta</i>	WEME	561
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	WCSP	130
Wilson's Warbler	<i>Wilsonia pusilla</i>	WIWA	2
Yellow-rumped Warbler	<i>Dendroica coronata</i>	YRWA	69

Table 3. Summary statistics for point count surveys on Anacapa Island in 2012. The total number of individuals of each species detected during 8 point counts is shown, along with the mean and standard error for the 8 stations counted, the number of stations on which the species was detected, and the percent of stations on which the species was detected.

Species	Common Name	#Detected	Mean per Stn	S.E.	# Stns	% Stns
BEWR	Bewick's Wren	4	0.50	0.30	3	37.5
OCWA	Orange-crowned Warbler	3	0.38	0.32	2	25.0
SOSP	Song Sparrow	2	0.25	0.19	2	25.0

Table 4. Summary statistics for point count surveys on Santa Barbara Island in 2012. The total number of individuals of each species detected during 32 point counts is shown, along with the mean and standard error for the 32 stations counted, the number of stations on which the species was detected, and the percent of stations on which the species was detected.

Species	Common Name	#Detected	Mean per Stn	S.E.	# Stns	% Stns
AMKE	American Kestrel	1	0.03	0.03	1	3.1
HOLA	Horned Lark	57	1.78	0.51	18	56.2
NOHA	Northern Harrier	1	0.03	0.03	1	3.1
OCWA	Orange-crowned Warbler	17	0.53	0.26	5	15.6
WEME	Western Meadowlark	38	1.19	0.26	16	50.0
WCSP	White-crowned Sparrow	18	0.56	0.31	5	15.6

Table 5. Summary statistics for point count surveys on San Miguel Island in 2012. The total number of individuals of each species detected during 37 point counts is shown, along with the mean and standard error for the 37 stations counted, the number of stations on which the species was detected, and the percent of stations on which the species was detected.

Species	Common Name	#Detected	Mean per Stn	S.E.	# Stns	% Stns
ALHU	Allen's Hummingbird	9	0.24	0.12	5	13.5
ANHU	Anna's Hummingbird	5	0.14	0.07	4	10.8
BARS	Barn Swallow	1	0.03	0.03	1	2.7
BEWR	Bewick's Wren	55	1.49	0.25	23	62.2
BUSH	Bushtit	13	0.35	0.20	4	10.8
CHSP	Chipping Sparrow	1	0.03	0.03	1	2.7
CLSW	Cliff Swallow	2	0.05	0.05	1	2.7
CORA	Common Raven	49	1.32	0.33	19	51.4
COYE	Common Yellowthroat	1	0.03	0.03	1	2.7
HOLA	Horned Lark	38	1.03	0.30	14	37.8
HOFI	House Finch	20	0.54	0.20	10	27.0
LEGO	Lesser Goldfinch	5	0.14	0.07	4	10.8
LOSH	Loggerhead Shrike	2	0.05	0.04	2	5.4
OCWA	Orange-crowned Warbler	15	0.41	0.17	8	21.6
PSFL	Pacific-slope Flycatcher	1	0.03	0.03	1	2.7
PEFA	Peregrine Falcon	2	0.05	0.05	1	2.7
RTHA	Red-tailed Hawk	1	0.03	0.03	1	2.7
ROWR	Rock Wren	5	0.14	0.07	4	10.8
SOSP	Song Sparrow	124	3.35	0.32	34	91.9
SPTO	Spotted Towhee	5	0.14	0.08	3	8.1
WEKI	Western Kingbird	1	0.03	0.03	1	2.7
WEME	Western Meadowlark	88	2.38	0.30	28	75.7
WCSP	White-crowned Sparrow	22	0.59	0.20	11	29.7
YRWA	Yellow-rumped Warbler	68	1.84	0.26	26	70.3

Table 6. Summary statistics for spring point count surveys on Santa Rosa Island in 2012. The total number of individuals of each species detected during 141 point counts is shown, along with the mean and standard error for the 141 stations counted, the number of stations on which the species was detected, and the percent of stations on which the species was detected.

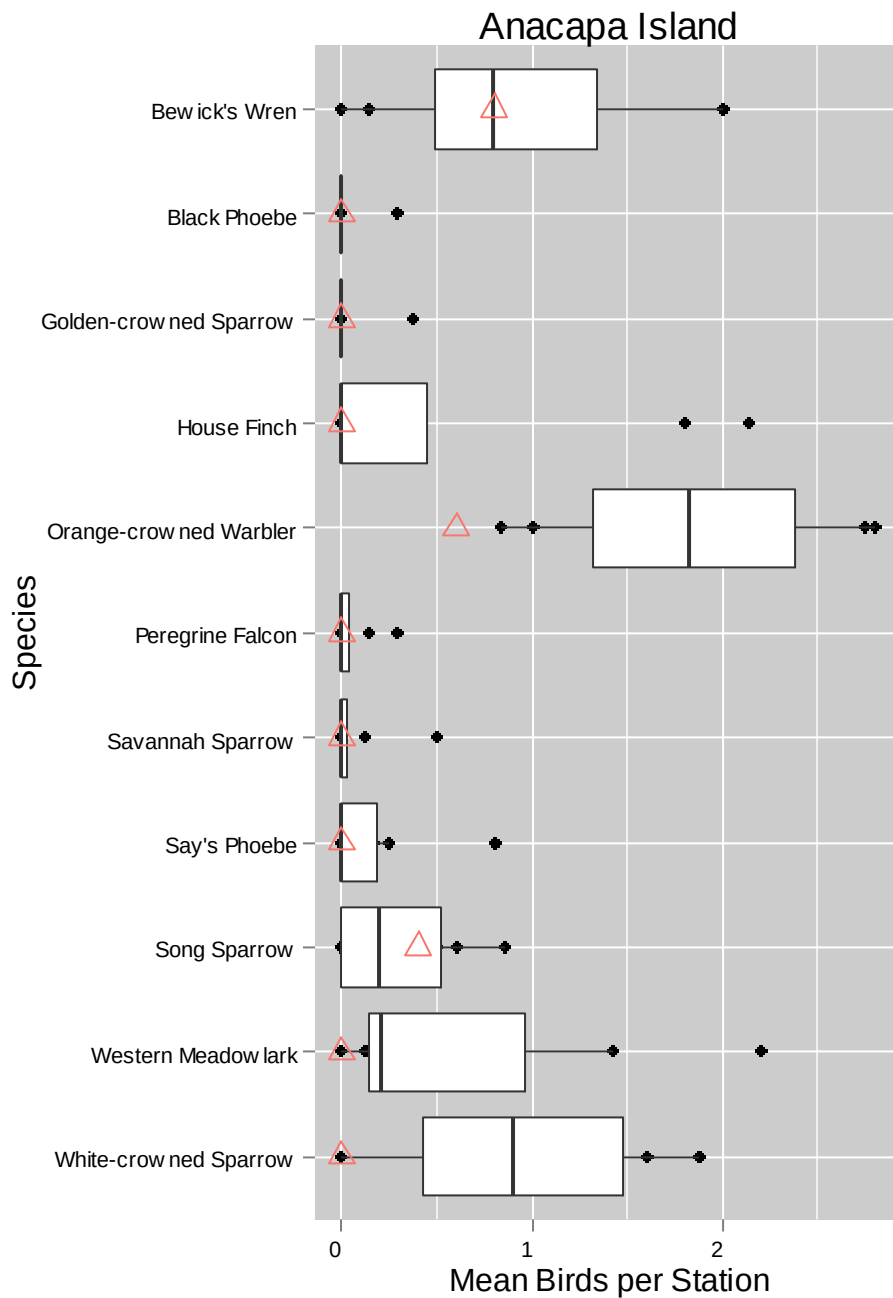
Species	Common Name	#Detected	Mean per Stn	S.E.	# Stns	% Stns
ACWO	Acorn Woodpecker	2	0.01	0.01	1	0.7
ALHU	Allen's Hummingbird	70	0.50	0.06	54	38.3
ANHU	Anna's Hummingbird	7	0.05	0.02	6	4.3
BARS	Barn Swallow	22	0.16	0.07	11	7.8
BEWR	Bewick's Wren	222	1.57	0.13	106	75.2
BLPH	Black Phoebe	4	0.03	0.01	4	2.8
BUSH	Bushtit	7	0.05	0.03	3	2.1
CAQU	California Quail	25	0.18	0.06	11	7.8
CHSP	Chipping Sparrow	109	0.77	0.09	67	47.5
CORA	Common Raven	57	0.40	0.09	33	23.4
EUST	European Starling	6	0.04	0.04	1	0.7
GCSP	Golden-crowned Sparrow	4	0.03	0.03	1	0.7
GRSP	Grasshopper Sparrow	10	0.07	0.03	6	4.3
HETH	Hermit Thrush	1	0.01	0.01	1	0.7
HOLA	Horned Lark	51	0.36	0.09	27	19.1
HOFI	House Finch	137	0.97	0.12	66	46.8
HUVI	Hutton's Vireo	5	0.04	0.02	4	2.8
LEGO	Lesser Goldfinch	102	0.72	0.11	51	36.2
LOSH	Loggerhead Shrike	6	0.04	0.02	5	3.5
MALL	Mallard	5	0.04	0.02	3	2.1
MODO	Mourning Dove	3	0.02	0.01	3	2.1
NAWA	Nashville Warbler	1	0.01	0.01	1	0.7
NOHA	Northern Harrier	3	0.02	0.02	2	1.4
NOMO	Northern Mockingbird	13	0.09	0.03	10	7.1
OCWA	Orange-crowned Warbler	162	1.15	0.10	80	56.7
PSFL	Pacific-slope Flycatcher	105	0.74	0.08	67	47.5
RTHA	Red-tailed Hawk	7	0.05	0.02	6	4.3
RECR	Red Crossbill	2	0.01	0.01	1	0.7
ROWR	Rock Wren	1	0.01	0.01	1	0.7
SOSP	Song Sparrow	275	1.95	0.16	100	70.9
SPTO	Spotted Towhee	351	2.49	0.14	128	90.8
WEKI	Western Kingbird	1	0.01	0.01	1	0.7
WEME	Western Meadowlark	317	2.25	0.15	121	85.8
WCSP	White-crowned Sparrow	17	0.12	0.11	2	1.4

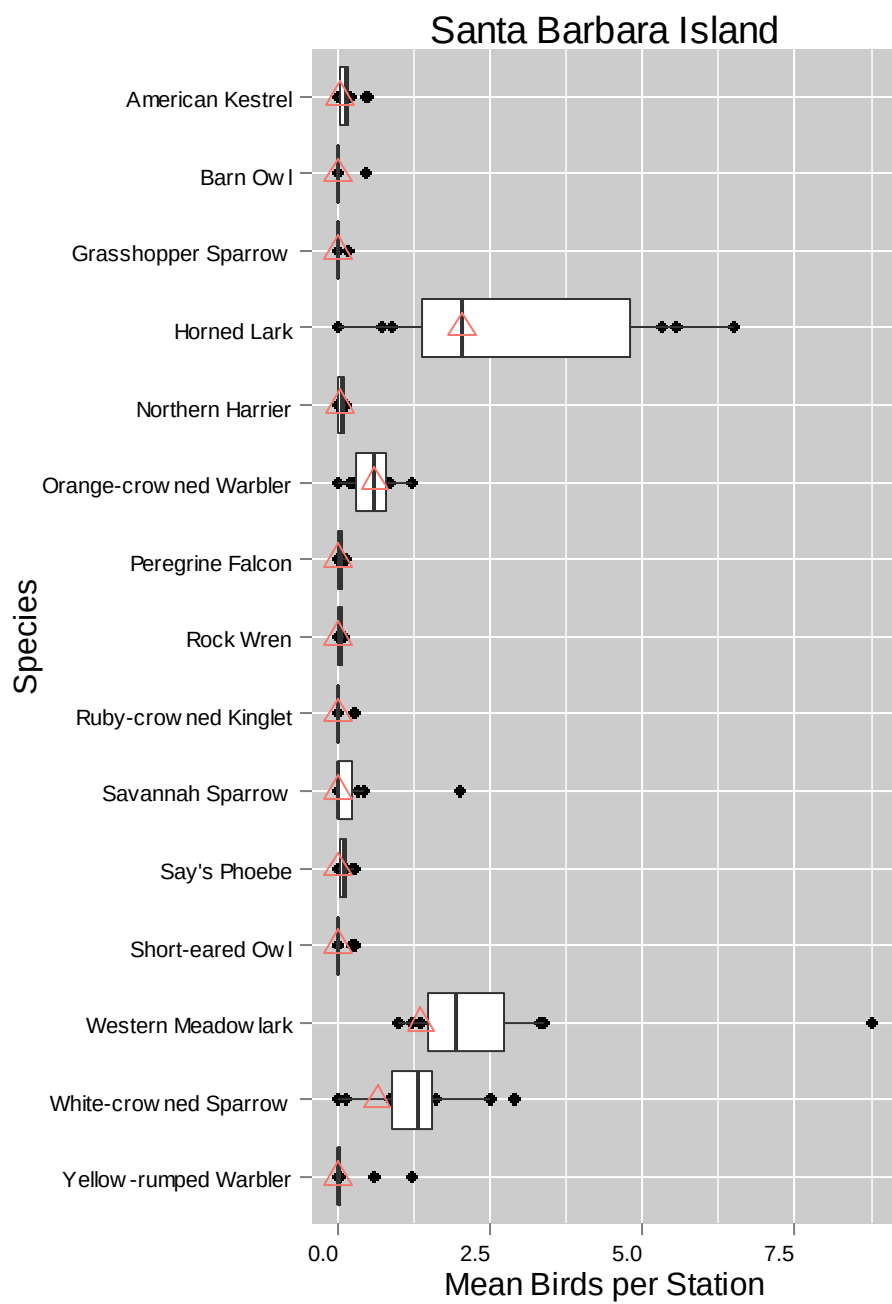
The mean birds per station detected during spring 2012 surveys on each island is summarized below in Figure 1 for Anacapa and Santa Barbara, San Miguel and Santa Rosa islands. The mean birds per station for each species in spring 2012, shown by the triangle, is put in context by comparing it to mean values for all point counts on each island conducted since 1993. During this overall time period, stations were sampled for 15 years on Anacapa Island, 18 years on Santa Barbara Island, 20 years on San Miguel Island and 15 years for Santa Rosa Island.

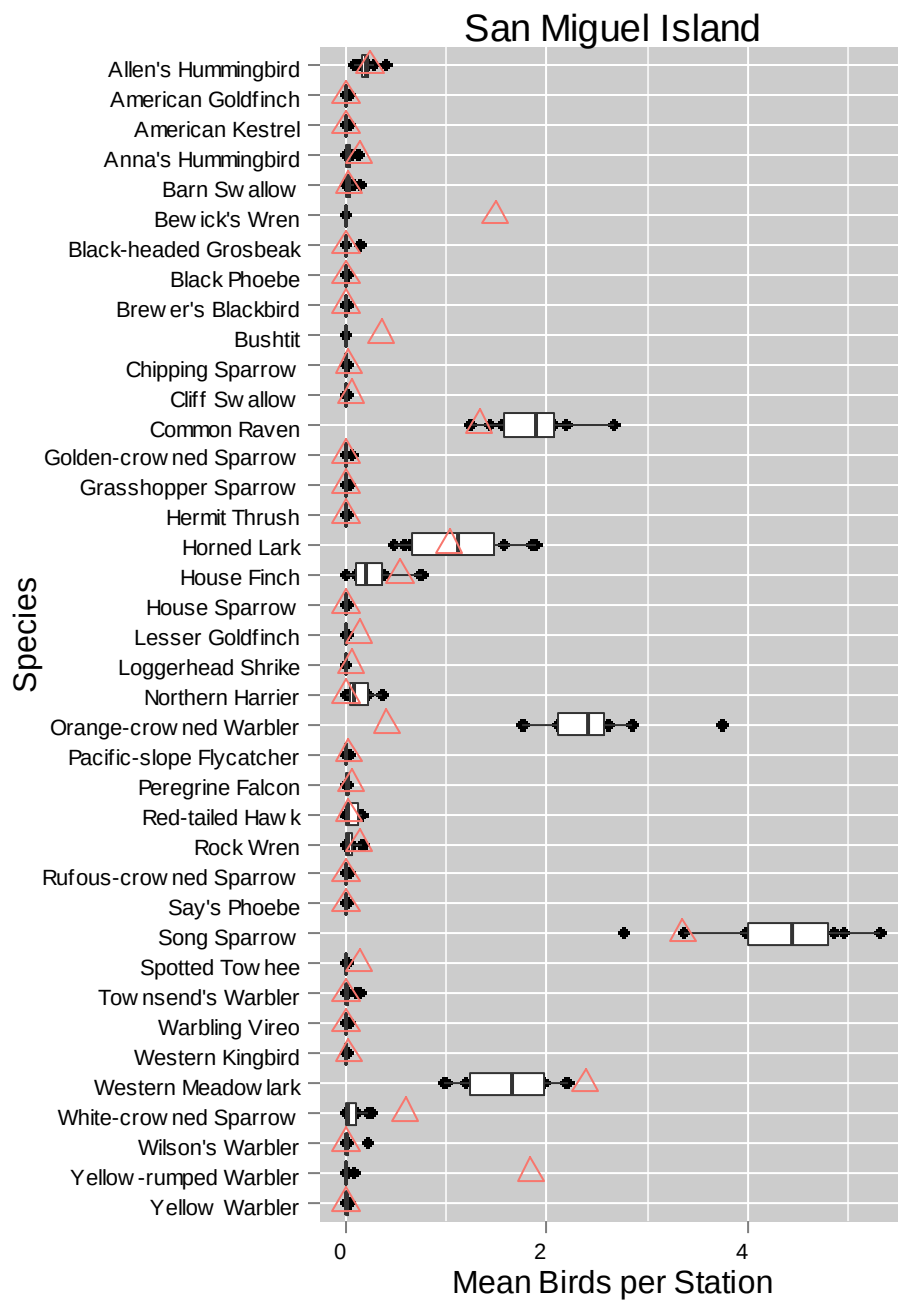
For example, on Anacapa Island during point counts, only 3 species of landbirds were observed. Birds per station for Orange-crowned Warbler was lower than in past years while numbers for Song Sparrow were higher than in past years. On Santa Barbara Island, few Western Meadowlarks and White-crowned Sparrows were recorded. On San Miguel Island, fewer Common Ravens, and far fewer Orange-crowned Warblers and Song Sparrows were observed along with the highest recorded number of birds for Western Meadowlark (although these numbers were not adjusted to account for differences in detectability). On Santa Rosa Island, fewer House Finches were observed and greater numbers of Horned Larks, Spotted Towhees, and Western Meadowlarks were recorded. For both San Miguel Island and Santa Rosa Island, large numbers of Bewick's Wrens were observed.

The species richness graphics in Figure 2 summarize patterns of species occurrences on each island from 1993 to 2012. This figure includes data from both line transects and point counts, but does not include incidental observations of species done outside of the formal line transect or 10-minute point counts (e.g., species observed while en route between counting stations are not included). These graphs can be used to answer the questions, "are any new species starting to show up on the island, or are we no longer seeing any species that used to be here"? On Anacapa Island, Red Tailed Hawks have not been detected during counts since 1996, European Starlings were last detected in 1998, and American Kestrels were last detected in 2001. On Santa Barbara Island, European Starlings were last detected in 1997, and Merlins have not been detected during counts since 1998. On San Miguel Island, Wilson Warblers first started showing up in 2006, and Townsend's Warblers began being detected on counts in 2007. On Santa Rosa, European Starlings were last detected on counts in 1998.

Figure 1. Mean birds per station for species detected on Anacapa, Santa Barbara, San Miguel, and Santa Rosa islands in 2012, compared to means for previous years (1993-2011). The triangle shows the mean value for 2012. Boxplots for each species summarize data for past years: the line through the middle of the box is the median, the leftmost side of the box is the 25% quartile, the rightmost side is the 75% quartile, with outliers outside of the box.







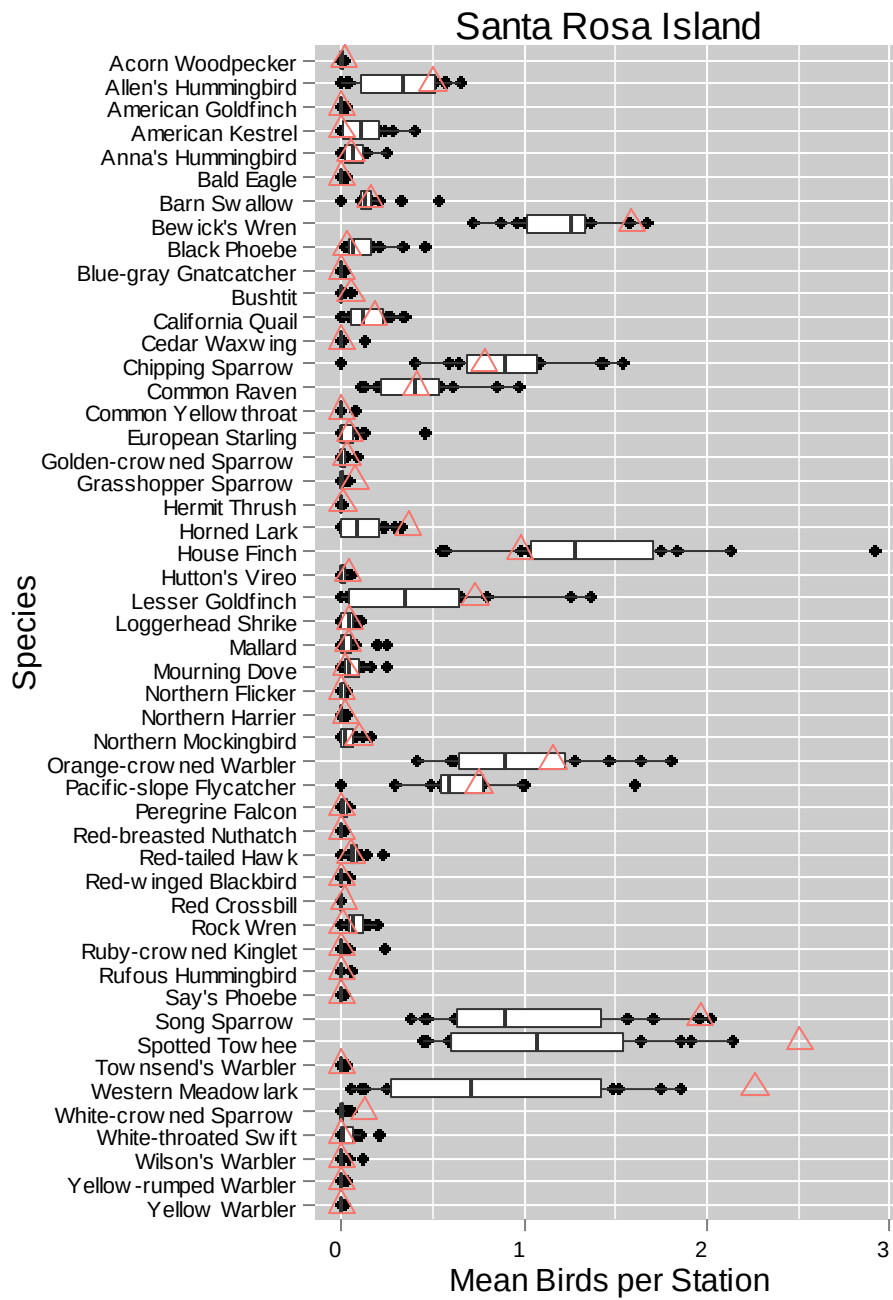
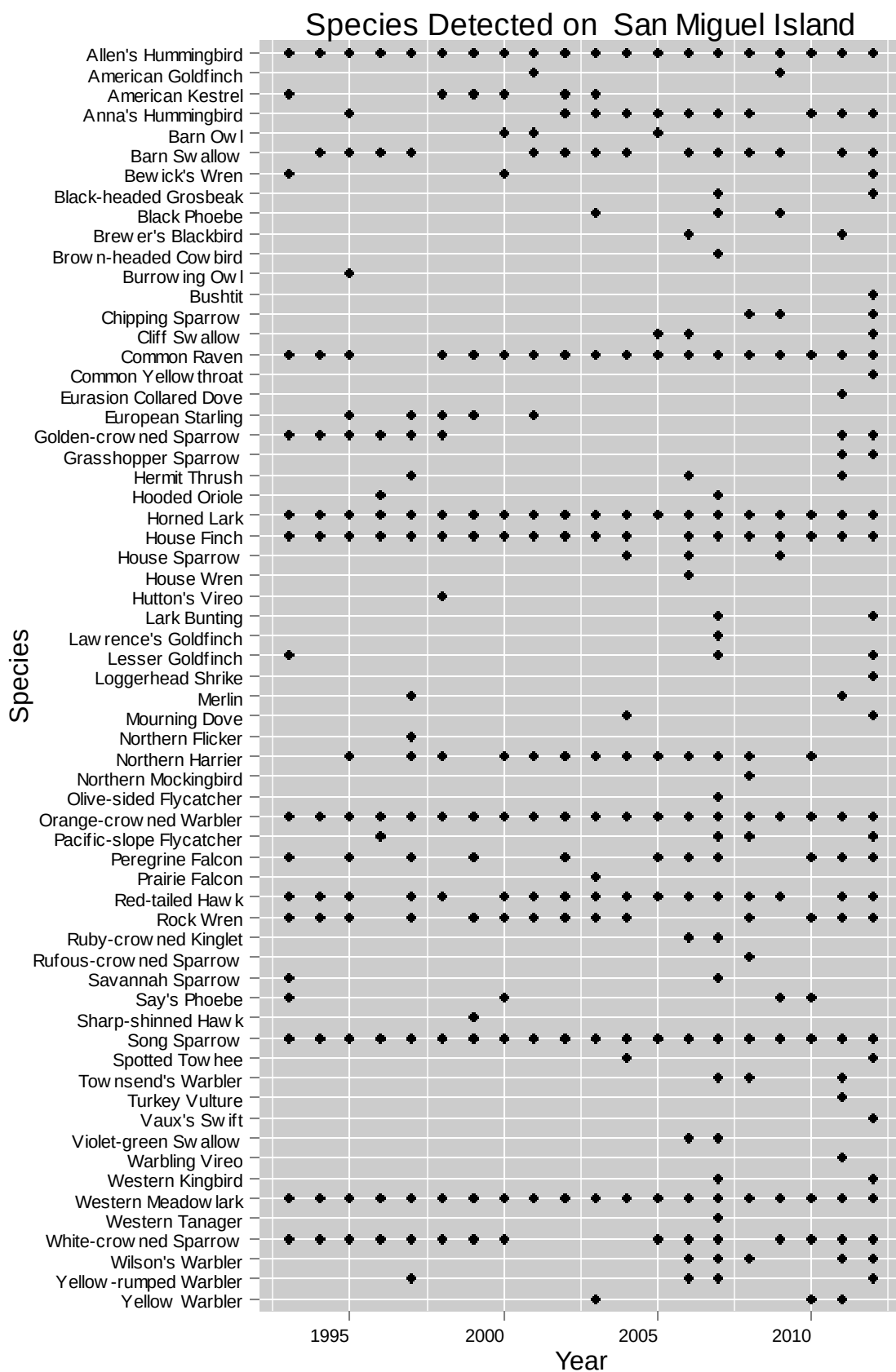
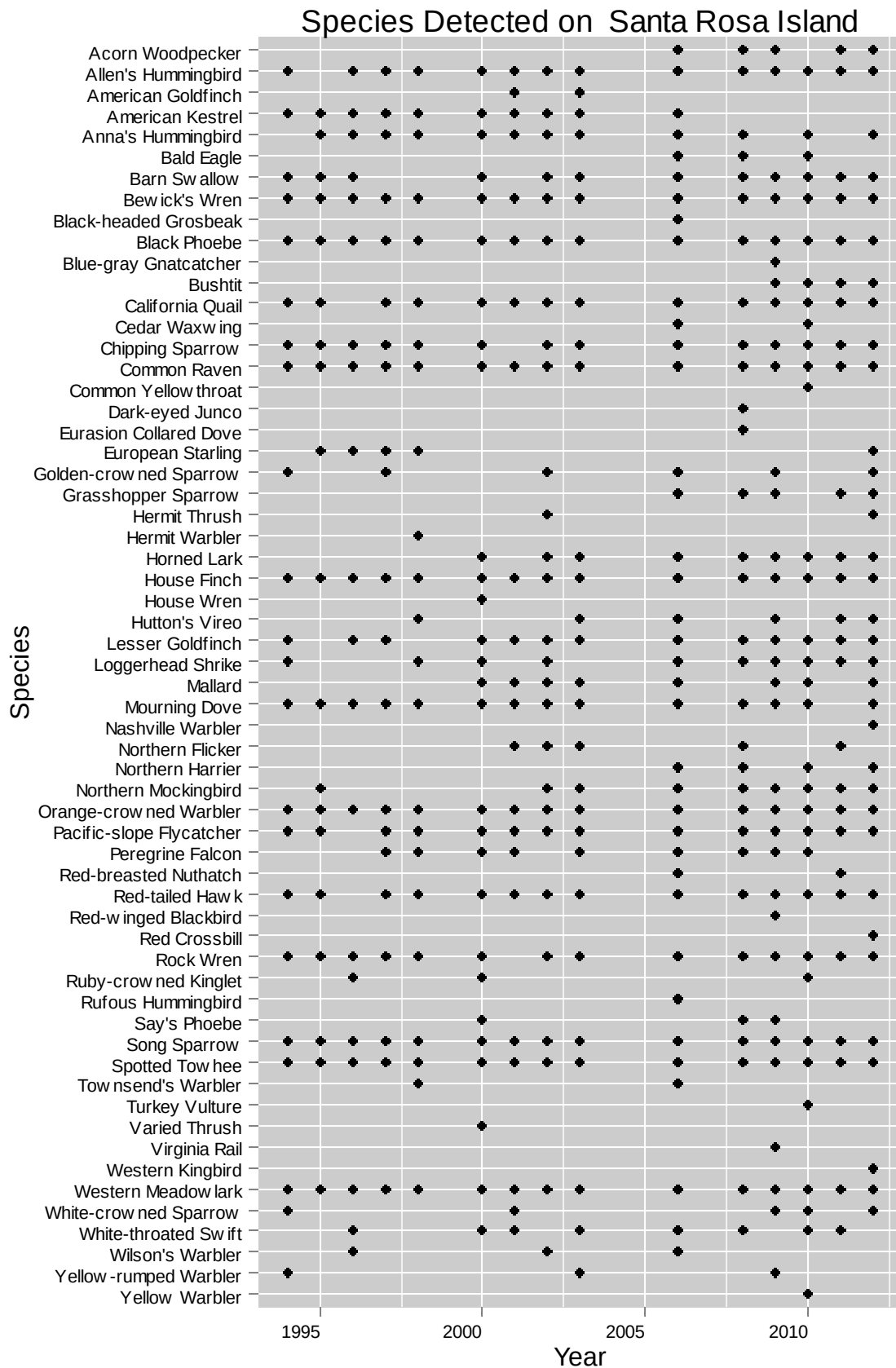


Figure 2. Patterns of species occurrences by island between 1993-2012. A dot for a particular species and year indicates that the species was detected on either a line transect or point count during that year. For example, note that Yellow-rumped Warblers and European Starlings have not been detected on Anacapa Island since the 1990s.









Literature Cited

Coonan, T. J., L. C. Dye, and S. G. Fancy. 2011. Landbird monitoring protocol for Channel Islands National Park – Version 2.0. Natural Resource Report NPS/MEDN/NRR—2011/480. National Park Service, Fort Collins, Colorado.