



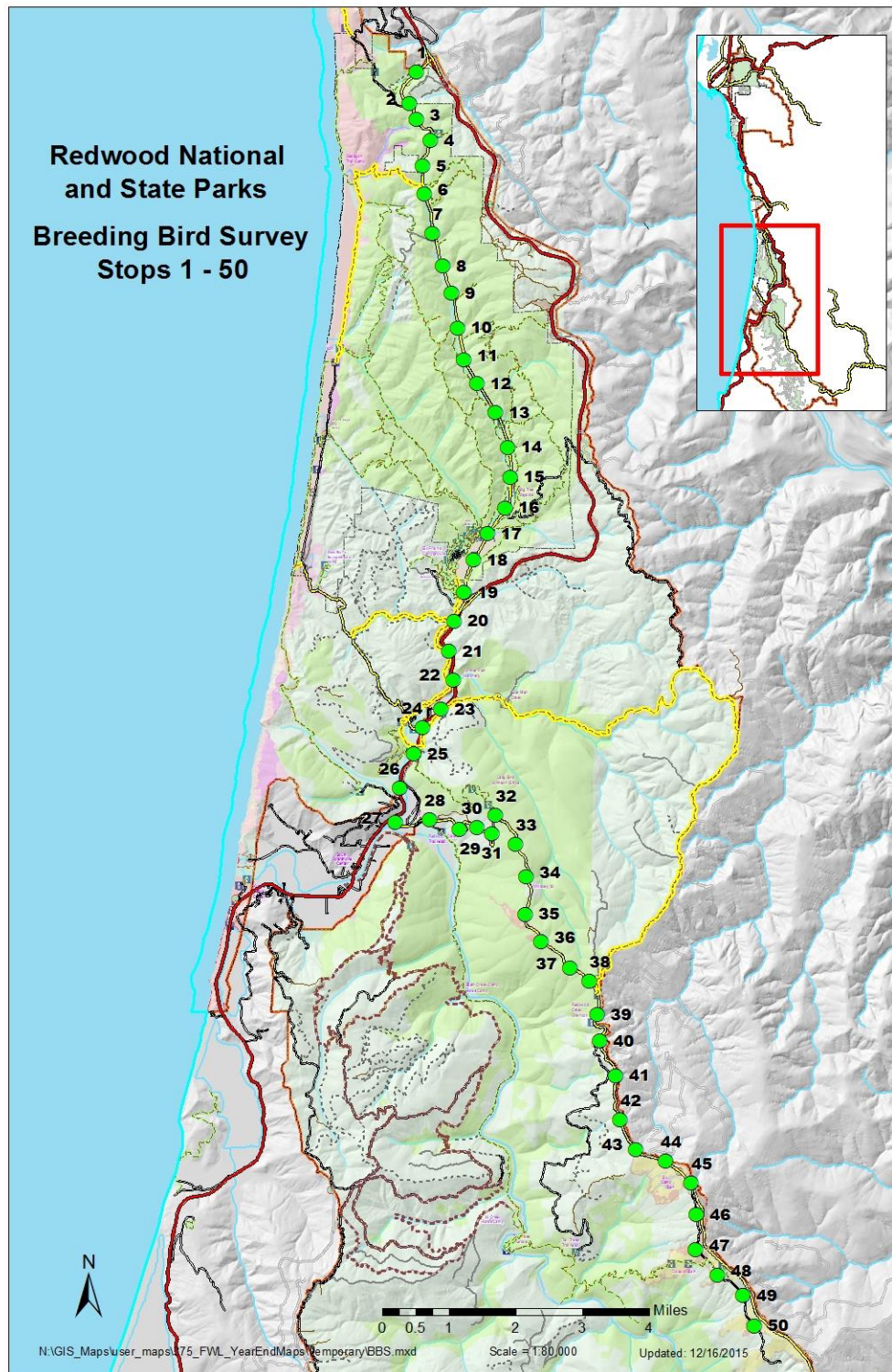
Photo: Killdeer nest, Redwood National and State Parks

REDWOOD NATIONAL AND STATE PARKS 2015 BREEDING BIRD SURVEY

The 2015 Breeding Bird Survey (BBS) in Redwood National and State Parks (RNSP) was conducted on 02 June. Heather Brown ran the route for the third year with Joanna Di Tommaso as data recorder. In 2011, a slide on Coastal Drive restricted access to a large portion of the original survey route, and permanently closed the road to automotive traffic. Therefore, a new route was created in 2012 using as many of the original survey points (“stops”) as possible. Twenty five stops from the original route were incorporated into a new route and 25 new stops were added to meet the BBS 50-stop protocol. This new route switched direction heading from north to south along the Newton B. Drury Parkway, and continued south along Highway 101, then turned east up Bald Hills Road. Unfortunately, after this route was run for the first time in 2012, it was learned that the last 5 stops on the route slightly overlapped another existing BBS route on Bald Hills Road. The route was revised in 2013 using the first 45 of the 2012 stops, but instead of staying on Bald Hills Road to the end of the route, the conflicting stops were moved onto the park’s segment of the K & K Road.

After this revised route was run in 2013 it was learned that these last 5 stops were still at odds with the other established BBS route. Because the K & K Road runs parallel and in close proximity with Bald Hills Road the stops do not meet the 0.5 mile spacing requirement. Due to the trouble of creating a route that does not conflict with an established BBS route, does not leave the park, or compromise the observer’s safety, it was decided in 2014 to continue the route as it exists currently but to discontinue sending the data gathered to the BBS/USGS. However, we continue to survey our route following established BBS protocol.

The route runs through a variety of habitats starting with forest dominated by red alder (*Alnus rubra*) with Sitka spruce (*Picea sitchensis*) as a secondary component (stops 1 and 2). It then moves deep into old growth coast redwood (*Sequoia sempervirens*) for stops 3-16, a distance of 6.3 miles, in Prairie Creek Redwoods State Park. The route then enters a prairie (Elk Prairie) surrounded by old growth redwood for stops 17 and 18. There is one more stop in the old growth before the route leaves the Newton B. Drury Parkway and enters the Highway 101 corridor where the habitat becomes a mixture of riparian habitat and second growth redwood/Douglas fir (*Pseudotsuga menziesii*) forest for 2.8 miles (stops 20-26). Stops 24 and 25 include a large, wet meadow complex as well (Davison/Elk Meadow). Stop 27 is at the junction of Bald Hills Road and Highway 101, near the mouth of Prairie Creek and is surrounded by riparian habitat including black cottonwoods (*Populus trichocarpa*), the only stop with this species present. Stops 28-30 are in previously logged second growth redwood/Douglas fir habitat with a few scattered residual old growth redwood trees. For the next 3.1 miles (stops 32-38) the route travels through old growth redwood/Douglas fir forest. Stop 36 is in a small prairie, known as Gans Prairie. Stops 40-43 again enter second growth redwood/Douglas fir forest, dominated at this point by Douglas fir present primarily due to reseeded efforts by private logging companies prior to the creation of Redwood National Park. Stop 44 is situated along Elk Camp Prairie, the largest prairie the route runs through. The route then travels down the K & K Road starting with stop 45 located at the junction of Bald Hills Road and the K & K Road, through young Douglas fir forest (encroached prairie) to stop 47. Stop 47 has a mix of encroaching forest and prairie (the prairie is located below the road). Stop 48 is dominated by prairie with a small oak (*Quercus sp.*) woodland component on both sides of the road while stop 49 is located in second growth Douglas fir/tanoak (*Notholithocarpus densiflorus*) forest. The route ends with stop 50 which is located within prairie and oak woodlands with a small section of Douglas fir forest (encroached prairie) on the edge of the prairie below the road (see map below).



Map showing the 50 numbered stops along the Redwood National and State Parks Breeding Bird Survey Route.

Numbers of species detected and numbers of individuals within species detected were compared each year from 1995, when the route was established, through 2010. As a result of changes to the route in recent years, it was not possible to continue to compare the route results from the 2012-2015 with the previous years' data set. Now that the route has been finalized, it will again be possible to compare data among years, although it is likely to be several years before any change that may occur in abundance or diversity, is apparent. It is unfortunate to discontinue the previous data set from the original route however the new route provides the opportunity to survey in different habitat types and collect information on bird species using those habitats over the long term. Count data for this year are included in Table 1. Count data for last year are included in Table 2. Table 3 contains 2015, 2014 and 2013 count data as well as taxonomic names.

The most frequently detected species on this route in 2015 was the Pacific-slope Flycatcher with a total of 73 individuals counted; it was also detected at the most stops. Pacific Wren, the most frequently detected species in 2014 and 2013, was the second most detected species in 2015 with a total of 57 individuals. Chestnut-backed Chickadee was the third most detected species with a total of 47 individuals, up from 37 last year. The Varied Thrush fell from the second most detected species in 2014 to the fourth, with a total of 39 individuals. Following close behind the Varied Thrush with 38 individuals was the Marbled Murrelet. The other high-number species were Wilson's Warbler with 35 individuals counted, the Hermit/Black-throated Gray Warbler Song Complex (code HBWA) with 29, Song Sparrow and Golden-crowned Kinglet both with 27, Swainson's Thrush with 24, and Steller's Jay with 22. These top species are likely to be good indicators of environmental conditions within, and outside of, our parks, representing both neotropical migrants and year-round residents.

While most individual species numbers remained fairly consistent among years, three species dropped noticeably from previous years. Swainson's Thrush had only 24 individuals counted. This is down by approximately half from 2013 and 2014 which had 52 and 51 individuals, respectively. It's hoped that this is not an indication of a downward trend, but only an anomaly for this year. It will be interesting to see how this situation evolves next year. Varied Thrush and Vaux's Swift numbers were also down. Varied Thrush is one species with consistently high numbers of individuals throughout the years that the BBS route has been run. In 2013, the number of individuals was 67 and in 2014 there were 55. This year's total for the Varied Thrush was 39. Vaux's Swift individual numbers for 2013 were 22, 13 for 2014, and only 6 for this year. This shows a steady decline by nearly half in each of those years. The Vaux's Swift is a California Species of Special Concern according to the California Department of Fish and Wildlife (<https://www.dfg.ca.gov/wildlife/nongame/ssc/birds.html>). Surveys in future years may indicate if this is a potential trend.

Four new species were detected this year. They were Lesser Goldfinch, Northern Parula, Rufous Hummingbird, and White-breasted Nuthatch.

Lesser Goldfinches are a common species of pastures, prairies, and orchards to name a few of its preferred habitats. Found in oak woodland and prairie habitats in the park, this bird is common here in summer, especially in the Bald Hills.

The Northern Parula is a species that is not common to Humboldt County and has only been recorded nesting once (Hunter et al. 2005). However, this species has become more common in Humboldt County in recent years based on observations sent in to the local online birding forum known as “North-western California (Humboldt, Del Norte, and Trinity Counties) birdwatching and information exchange” as well as the local phone-in system for reporting interesting and unusual birds- commonly called “The Bird Box”. In 2014 and 2015 a single singing male was detected by several biologists (other than park staff) and reported to the online birdwatching forum noted above in the same location (stop 27) where it was recorded by our survey. This male continued to sing on territory the rest of the summer and a (presumed) female was later seen on June, 24th at this spot and reported to the online birdwatching forum by biologist Tristan McKee. It will be interesting to see if breeding occurs in this location next year.

Rufous Hummingbirds are common migrants in spring and the males can make their return journey after breeding as early as late May (Hunter et al. 2005). It is thought that this sighting of a male in early June represents a migrant and was not breeding in the area.

White-breasted Nuthatches are associated with oak woodlands, especially woodlands that support older, large-limbed mature oaks. The oaks along the K&K Road portion of the route are mixed with conifers and other hardwoods and are therefore atypical of the habitat preferences of this species. Most observations from within RNSP are from the oak woodlands found further up Bald Hills Road, mainly in the Coyote Creek area. The detection was of a pair feeding young in a small snag surrounded by small Douglas firs and tanoaks.

As well as the four new species recorded, two codes for recording birds not identified to species were added using the alpha codes created by Pyle and DeSante of The Institute for Bird Populations (IBP). The IBP codes are based on current American Ornithologists Union (AOU) taxonomy and nomenclature.

USHU is the code used for unidentified *Selasphorus* hummingbirds and increases the level of accuracy of the data. In the past only unidentified hummingbird (UNHU) was used when we surveyed under the direction of the BBS/USGS. This code enabled the observer to identify 12 hummingbirds at 9 stops with a greater degree of precision than when using the UNHU code by itself.

UNWO is the code used for unidentified woodpeckers. This code is used most frequently when the calls of the Hairy or Downy Woodpecker are heard. These two species call notes can be difficult to distinguish.

As well as the two new codes, another code has been in use for several years by RNSP biologists and staff while gathering other general bird information. HBWA is the code created by RNSP staff to address auditory difficulties with distinguishing Hermit Warblers from Black-throated Gray Warblers. The Hermit Warbler is known to sing the song of the Black-throated Gray Warbler and vice versa. This makes identification by ear difficult, and can be confusing, leaving the observer to rely mainly on habitat for species identification unless the individual is seen. Hermit Warblers tend to be found in conifer-dominated forests. The Black-throated Gray Warbler is associated with oaks, including tanoaks and, especially, live oaks (Hunter et al. 2005). Since the route goes through conifer and oak forests as well as a mix of these two types of habitats it is difficult to be certain of the species heard. This code is included in Table 1 and Table 3.

In 2013, 37 Hermit Warblers and 1 Black-throated Gray Warbler were detected along the current route. However, it is uncertain which species these 37 individuals actually represent. In 2014, we recorded a total of 27 HBWA and 6 Hermit Warblers. This year we recorded 29 HBWA and 8 Hermit Warblers. The Hermit Warblers were located in mainly old growth redwood habitat, with some oaks present. No Black-throated Gray Warblers were confirmed this year or last year.

In 2015, a total of 608 individuals were recorded with a total of 57 species detected. Numbers of individuals were down from 2014, but the number of species was the highest ever recorded. In 2014, a total of 681 individuals were recorded with a total of 51 species detected. In 2013, there were 620 individuals and 47 species recorded not including 1 HBWA. In 2012 there were 550 individuals and 46 species recorded. Prior to 2012, the highest numbers were from 2010 with a total of 528 individuals and 45 species recorded. This change in numbers could be a reflection of the changes in the survey route, a change in observers (Sauer 1994), a change in the habitats the route traverses through, or a combination of these elements. While the total number of individuals for this year decreased the number of species increased to a new high of 57. The number of individuals and species include the unidentified hummingbirds and woodpeckers as well as the HBWAs.

Table 1. Species and numbers of individuals detected during the 2015 breeding bird survey in Redwood National and State Parks

<i>Species</i>	<i>Number</i>	<i>Species</i>	<i>Number</i>	<i>Species</i>	<i>Number</i>
Acorn Woodpecker	1	Hermit Thrush	3	Song Sparrow	27
American Crow	2	Hermit Warbler	8	Sooty Grouse	1
American Goldfinch	5	Hutton's Vireo	11	Steller's Jay	22
American Robin	12	Lazuli Bunting	4	Swainson's Thrush	24
Band-tailed Pigeon	13	Lesser Goldfinch	2	Turkey Vulture	1
Barn Swallow	5	MacGillivray's Warbler	1	Unidentified Hummingbird	2
Black Phoebe	2	Marbled Murrelet	38	Unidentified Selasphorus Hummingbird	12
Brown Creeper	8	Marsh Wren	3	Unidentified Woodpecker	2
Brown-headed Cowbird	1	Northern Flicker	1	Varied Thrush	39
California Quail	8	Northern Parula	1	Vaux's Swift	6
Cassin's Vireo	2	Orange-crowned Warbler	1	Violet-green Swallow	4
Cedar Waxwing	1	Oregon Junco	7	Warbling Vireo	1
Chestnut-backed Chickadee	47	Pacific Wren	57	Western Tanager	4
Cliff Swallow	1	Pacific-slope Flycatcher	73	Western Wood-Pewee	7
Common Raven	4	Pileated Woodpecker	3	White-breasted Nuthatch	2
Common Yellowthroat	2	Purple Finch	2	White-crowned Sparrow	15
Golden-crowned Kinglet	27	Red Crossbill	5	Wilson's Warbler	35
Hairy Woodpecker	3	Red-breasted Nuthatch	7	Wrentit	2
Hermit or Black-throated Gray Warbler	29	Rufous Hummingbird	1	Yellow-breasted Chat	1

Table 2. Species and numbers of individuals detected during the 2014 breeding bird survey in Redwood National and State Parks

<i>Species</i>	<i>Number</i>	<i>Species</i>	<i>Number</i>	<i>Species</i>	<i>Number</i>
Acorn Woodpecker	1	Golden-crowned Kinglet	25	Red Crossbill	10
Allen's Hummingbird	5	Gray Jay	8	Red-breasted Nuthatch	8
American Goldfinch	4	Hairy Woodpecker	1	Song Sparrow	27
American Robin	18	Hermit Thrush	5	Sooty Grouse	1
Band-tailed Pigeon	20	Hermit Warbler	6	Steller's Jay	33
Barn Swallow	8	Hutton's Vireo	6	Swainson's Thrush	51
Black Phoebe	1	Lazuli Bunting	12	Tree Swallow	3
Black-headed Grosbeak	4	MacGillivray's Warbler	1	Turkey Vulture	3
Brown Creeper	8	Marbled Murrelet	41	Unidentified HEWA/BTYW (HBWA)	28
Brown-headed Cowbird	1	Marsh Wren	4	Unidentified Hummingbird	2
California Quail	1	Northern Rough-winged Swallow	2	Varied Thrush	55
Cassin's Vireo	3	Orange-crowned Warbler	1	Vaux's Swift	13
Cedar Waxwing	1	Oregon Junco	8	Violet-green Swallow	7
Chestnut-backed Chickadee	37	Pacific Wren	66	Warbling Vireo	6
Common Raven	8	Pacific-slope Flycatcher	54	Western Tanager	5
Common Yellowthroat	4	Pileated Woodpecker	2	Wilson's Warbler	45
Eurasian Collared Dove	1	Purple Finch	3		

Table 3. Species and numbers of individuals detected during the 2013 and 2014 breeding bird surveys in Redwood National and State Parks.

<i>Species</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Acorn Woodpecker (<i>Melanerpes formicivorus</i>)	0	1	1
Allen's Hummingbird (<i>Selasphorus sasin</i>)	0	5	
American Crow (<i>Corvus brachyrhynchos</i>)	0	0	2
American Dipper (<i>Cinclus mexicanus</i>)	1	0	0
American Goldfinch (<i>Spinus tristis</i>)	0	4	5
American Robin (<i>Turdus migratorius</i>)	5	18	12
Band-tailed Pigeon (<i>Patagioenas fasciata</i>)	8	20	13
Barn Swallow (<i>Riparia riparia</i>)	3	8	0
Black Phoebe (<i>Sayornis nigricans</i>)	1	1	2
Black-headed Grosbeak (<i>Pheucticus melanocephalus</i>)	6	4	0
Black-throated Gray Warbler (<i>Setophaga nigrescens</i>)	1	0	0
Brown Creeper (<i>Certhia Americana</i>)	4	8	8
Brown-headed Cowbird (<i>Molothrus ater</i>)	0	1	1
California Quail (<i>Callipepla californica</i>)	0	1	8
Cassin's Vireo (<i>Vireo cassinii</i>)	1	3	2
Cedar Waxwing (<i>Bombycilla cedrorum</i>)	0	1	1
Chestnut-backed Chickadee (<i>Poecile rufescens</i>)	28	37	47
Chipping Sparrow (<i>Spizella passerine</i>)	1	0	0
Cliff Swallow (<i>Petrochelidon pyrrhonota</i>)	4	0	1
Common Nighthawk (<i>Chordeiles minor</i>)	1	0	0
Common Raven (<i>Corvus corax</i>)	0	8	4
Common Yellowthroat (<i>Geothlypis trichas</i>)	3	4	2
Eurasian Collared Dove (<i>Streptopelia decaocto</i>)	0	1	0
Golden-crowned Kinglet (<i>Regulus satrapa</i>)	26	25	27
Gray Jay (<i>Perisoreus canadensis</i>)	0	8	0
Hairy Woodpecker (<i>Picoides villosus</i>)	5	1	3
HBWA (unidentified HEWA/BTYW) (<i>Setophaga sp</i>)	1	28	29
Hermit Thrush (<i>Catharus guttatus</i>)	8	5	3
Hermit Warbler (<i>Setophaga occidentalis</i>)	37	6	8
Hummingbird species (unidentified) (<i>Trochilidae sp</i>)	7	2	2
Hutton's Vireo (<i>Vireo huttoni</i>)	12	6	11
Lazuli Bunting (<i>Passerina amoena</i>)	10	12	4
Lesser Goldfinch (<i>Spinus psaltria</i>)	0	0	2
MacGillivray's Warbler (<i>Geothlypis tolmiei</i>)	0	1	1
Marbled Murrelet (<i>Brachyramphus marmoratus</i>)	19	41	38
Marsh Wren (<i>Cistothorus palustris</i>)	4	4	3
Northern Parula (<i>Setophaga americana</i>)	0	0	1
Northern Rough-winged Swallow (<i>Stelgidopteryx serripennis</i>)	0	2	0

Species	2013	2014	2015
Orange-crowned Warbler (<i>Oreothlypis celata</i>)	2	1	1
Oregon Junco (<i>Junco hyemalis oregonus</i>)	2	8	7
Pacific Wren (<i>Troglodytes pacificus</i>)	76	66	57
Pacific-slope Flycatcher (<i>Troglodytes pacificus</i>)	51	54	73
Pileated Woodpecker (<i>Dryocopus pileatus</i>)	3	2	3
Purple Finch (<i>Haemorhous purpureus</i>)	0	3	2
Red Crossbill (<i>Loxia curvirostra</i>)	24	10	5
Red-breasted Nuthatch (<i>Sitta canadensis</i>)	2	8	7
Red-breasted Sapsucker (<i>Sphyrapicus ruber</i>)	1	0	0
Red-shafted Flicker (<i>Colaptes auratus cafer</i>)	2	0	1
Red-winged Blackbird (<i>Agelaius phoeniceus</i>)	1	0	0
Rufus Hummingbird (<i>Selasphorus rufus</i>)	0	0	1
Selasphorus Hummingbird (unidentified) (<i>Selasphorus sp</i>)	n/a	n/a	12
Song Sparrow (<i>Melospiza melodia</i>)	14	27	27
Sooty Grouse (<i>Dendragapus fuliginosus</i>)	0	1	1
Steller's Jay (<i>Cyanocitta stelleri</i>)	27	33	22
Swainson's Thrush (<i>Catharus ustulatus</i>)	52	51	24
Tree Swallow (<i>Tachycineta bicolor</i>)	0	3	0
Turkey Vulture (<i>Cathartes aura</i>)	2	3	1
Varied Thrush (<i>Ixoreus naevius</i>)	67	55	39
Vaux's Swift (<i>Chaetura vauxi</i>)	22	13	6
Violet-green Swallow (<i>Tachycineta thalassina</i>)	4	7	4
Warbling Vireo (<i>Vireo gilvus</i>)	8	6	1
Western Tanager (<i>Piranga ludoviciana</i>)	1	5	4
Western Wood-Pewee (<i>Contopus sordidulus</i>)	1	0	7
White-breasted Nuthatch (<i>Sitta carolinensis</i>)	0	0	2
White-crowned Sparrow (<i>Zonotrichia leucophrys</i>)	7	0	15
Wilson's Warbler (<i>Cardellina pusilla</i>)	43	45	35
Wrentit (<i>Chamaea fasciata</i>)	3	0	2
Woodpecker species (unidentified) (<i>Picadae sp</i>)	n/a	n/a	2
Yellow-breasted Chat (<i>Icteria virens</i>)	0	0	1
TOTAL SPECIES	48	51	57
TOTAL INDIVIDUALS	620	681	608

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References:

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Sauer, J.R., B.G. Peterjohn, and W.A. Link. 1994. Observer differences in the North American breeding bird survey. *The Auk*, 111 (1):50-62.