

**BREEDING BIRD CENSUS: 1992**

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. sp./p.	Hrs obs.	Yrs study
<b>Broadleaf Forests</b>							
1. Northern Oak Woodland	CA	J.D. Petersen	16.0	103	23	11.7	3
2. Riparian Woodland	CA	K.L. Weaver	11.7	578	33	19.6	4
3. Western Sycamore Woodland with Scattered Oaks	CA	D. Riensche	15.9	277	33	65.5	3
4. Willow Riparian Woodland and Edge	CA	D. Rienschke	8.1	232	16	26.5	1
5. Mixed Hardwood Poleumtumber	CT	A. Magee	8.5	454	42	11.3	26
6. Oak-Hardwood Forest	CT	M. Dudek	15.8	159	21	23.8	5
7. Second-growth Hardwood Forest	CT	A. Magee	10.1	463	50	13.0	26
8. Central Hardwood Forest with Scattered Pine	DC	M.E. D'Imperio	26.3	100	24	31.4	44
9. Mixed Upland Broadleaf Forest	DC	S.A. Briggs	14.2	793	41	102.8	34
10. White Alder-Black Locust-Hackberry Riparian	ID	C.B. Goble	5.3	272	20	31.4	2
11. Upland Tuliptree-Maple-Oak Forest	MD	G.E. Einem	11.9	474	32	63.5	12
12. Mixed Upland Hardwood Forest I	MI	B.E. Stout	20.9	182	19	16.0	1
13. Mixed Upland Hardwood Forest II	MI	G.J. Fischer	20.9	144	14	12.8	1
14. Mixed Upland Hardwood Forest III	MI	B.E. Stout	20.9	197	20	17.0	1
15. Mixed Upland Hardwood Forest IV	MI	G.J. Fischer	20.9	131	13	13.2	1
16. Old-growth Woods and Swamp Forest	MI	L.R. Knapp	28.3	339	44	29.5	4
17. Basswood-Black Ash Forest with Dead Timber	MN	L. Schulte	11.5	461	30	32.8	6
18. Mature Aspen Forest with Young Maple Understory	MN	G. Nyberg	10.0	372	23	24.7	3
19. Upland Second-growth Oak-Hickory Forest	MS	H. Moore	10.0	648	38	25.0	4
20. Floodplain Forest	NC	H. Mueller	12.6	379	36	22.2	16
21. Mixed Deciduous Forest	NC	H. Mueller	12.6	278	26	21.0	17
22. Mature Beech-Maple Forest on Lake Ontario Shore	NY	G.R. Maxwell	16.2	235	25	10.0	2

## BREEDING BIRD CENSUS: 1992 (Continued)

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. spp.	Hrs obs.	Yrs study
23. Mature Urban Deciduous Forest I	NY	D.S. Künstler	10.1	246	17	23.9	6
24. Mature Urban Deciduous Forest II	NY	C.A. Jashowitz	10.0	300	26	39.0	2
25. Urban Deciduous Wetland with Stream	NY	C. Dowd	10.0	152	17	17.7	2
26. Young White Ash-Red Maple Forest on Lake Shore	NY	G.R. Maxwell	16.2	168	27	10.0	7
27. Mature Broadleaf Forest	OH	C.W. Saunders	16.0	231	25	26.2	2
28. Riparian Deciduous Forest	OH	E.J. Tramer	18.0	312	36	24.9	4
29. Dry Cottonwood Sand Dune	ON	R.C. Goodyear	10.0	90	10	42.3	4
30. Red Ash-Red Oak Savannah	ON	J.K. Wojnowski	10.3	346	23	38.3	2
31. Red Oak-Ironwood Savannah	ON	J.K. Wojnowski	12.0	508	25	52.0	3
32. Oak-Maple Ridge-top Forest	PA	C.B. Viverette	19.3	83	17	25.8	11
33. Oak-Maple Slope Forest	PA	C.B. Viverette	16.9	110	22	32.1	11
34. Suburban Deciduous Woodlot	PA	D. Robertson	10.0	424	25	20.8	2
35. Upland Oak-Red Maple Forest	RI	W.R. Eddleman	10.1	337	24	18.7	3
36. Bottomland Hardwood Forest	SC	J. Plissner	12.2	248	25	31.3	1
37. Hardwood Swamp Forest	SC	M. Dawson	8.1	664	21	19.3	5
38. Upland Hardwood Forest	SC	J. Plissner	12.2	236	26	25.3	1
39. Mature Maple-Beech-Birch Forest	TN	L.J. Mitchell	10.2	345	21	33.7	1
40. Mesophytic Forest I	VA	M.G. Smith	6.1	400	19	12.8	6
41. Mesophytic Forest II	VA	M.G. Smith	6.1	407	17	12.4	7
42. Oak-Maple Forest	VA	J.R. Davis	10.0	124	15	21.8	1
<b>Needleleaf Forests</b>							
43. Old-growth Mixed Coniferous-Red Fir Forest Transition	CA	J.G. Turner	42.3	209	26	125.6	8
44. Old-growth Subalpine Spruce-Fir Forest	CO	D. Hallock	15.0	133	18	15.5	3
45. Ponderosa Pine Forest	CO	L. Hering	8.1	175	18	22.4	27
46. Cedar Forest	ID	S. Weller	12.3	106	21	22.7	1
47. Old-growth Forest	ID	S. Jacobson	11.3	76	14	25.5	1

## BREEDING BIRD CENSUS: 1992 (Continued)

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. spp.	Hrs. obs.	Yrs study
48. Riparian Forest	ID	S. Weller	10.3	225	27	20.8	2
49. Heavily Thinned White Spruce Plantation	ME	J.K. Markowsky	4.1	420	26	34.5	8
50. Mature Red Spruce Forest	ME	T.P. Skaling	16.0	168	25	23.8	4
51. Jack Pine Forest	MI	G.A. Schroll, Jr.	16.0	95	12	16.6	8
52. Upland Christmas Tree Farm	NY	E.W. Brooks	10.7	243	21	20.8	10
53. Upland Scotch Pine Plantation	NY	E.W. Brooks	9.3	206	24	10.3	24
54. Tamarack Slough	ON	D.L. Goodyear	8.8	459	33	61.9	5
55. Mature White Pine Forest	RI	W.R. Eddleman	10.1	337	22	20.6	3
56. Loblolly Pine Plantation	SC	D. Droege	12.2	144	19	22.4	1
57. Longleaf Pine Forest	SC	D. Droege	12.2	193	26	22.1	1
58. High Altitude Red Spruce Forest	TN	G.R. Mayfield III	9.9	162	13	33.9	1
59. Pinyon-Juniper Woodland	UT	G.N. Salamacha	31.3	31	14	28.5	10
<b>Broadleaf/Needleleaf Forests</b>							
60. Grazed Oak-Pine Woodland	CA	J.G. Turner	29.7	162	24	122.6	8
61. Ungrazed Oak-Pine Woodland	CA	J.G. Turner	29.7	151	29	127.0	8
62. Ponderosa Pine-Scrub Oak Forest	CO	J.W. Obringer	12.0	290	18	12.3	12
63. Climax Hemlock-White Pine Forest with Transition Hardwoods	CT	A. Magee	10.5	406	43	14.3	26
64. Mature Broadleaf-Coniferous Forested Wetland	CT	T. Harrington	21.5	313	40	29.5	2
65. Oak-Hemlock Forest	CT	R.A. Askins	23.1	190	37	25.4	22
66. Upland Oak and Hemlock Forest	CT	R. Braunfield	10.5	442	21	12.7	4
67. Young Mixed Hardwood-Conifer Stand	CT	A. Magee	8.5	522	49	13.0	15
68. Tamarack Bog and Hardwood	MI	J. Mullins	8.5	99	15	8.0	17
69. Mature Red Pine Forest with Deciduous Understory	MN	M. Coller	10.0	420	17	38.0	3
70. Young Aspen Forest with Scattered Mature Pines	MN	P.L. Coy	10.0	524	26	29.8	3

## BREEDING BIRD CENSUS: 1992 (Continued)

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. sp./ obs.	Hrs obs.	Yrs study
71. Upland Mixed Pine-Spruce-Hardwood Plantation	NY	E.W. Brooks	16.6	195	30	16.3	19
72. Hardwood Forest with Scattered Pine	PA	G.W. Grove	19.2	209	31	12.8	2
73. Mixed Oak-Pine Forest I	PA	D.A. Gross	6.0	373	33	27.8	13
74. Mixed Oak-Pine Forest II	PA	D.A. Gross	11.1	310	37	32.5	13
75. Mature Upland Oak-Beech-White Pine Forest	RI	W.R. Eddleman	10.2	324	25	21.9	2
76. Tupelo-Cypress Swamp	SC	J. Plissner	11.0	245	24	29.9	1
77. Mature Deciduous-Coniferous Forest with Stream	TN	S.J. Stedman	10.2	155	44	18.6	2
78. Hemlock-White Pine-Mixed Hardwood Forest	VA	K.R. Hinkle	6.1	210	12	9.3	7
<b>Mixed Habitats</b>							
79. Suburban Cemetery	AL	T.A. Imhof	15.0	197	21	20.0	13
80. Mature Upper Mixed-coniferous Forest-Montane Chaparral	CA	J.G. Turner	42.3	261	43	130.8	8
81. Mountain Meadow and Open Coniferous Forest	CO	Stiles-Wainwright	13.0	186	25	25.5	11
82. Mixed Habitat	CT	M. Dudek	15.0	668	48	31.0	6
83. Transition Forest and Thicket	CT	R.A. Askins	6.5	172	29	8.6	22
84. Bulrush and Cattail Marsh in Conifer Forest	MT	M.M. Bishop	40.5	264	53	24.0	18
85. Deciduous Forest with Pond & Brook	NJ	J. Brotherton	16.2	79	19	9.0	29
86. Pitch Pine-Slabrock	NY	R.A. Larsen	15.8	210	26	25.5	1
87. Suburban Bird Sanctuary	NY	M.E. Richard	10.8	217	25	13.1	10
88. Disturbed Oak-Hickory, Pine Stand, Edge, and Pond	OH	A.H. Claugus	14.2	177	31	21.5	48
89. Field, Ridge, and Shrubby Trees	ON	M.F.G. Clark	6.6	830	24	16.4	4
90. Shrubby Trees, Ridge, and Woods	ON	M.F.G. Clark	7.3	315	18	13.7	3

## BREEDING BIRD CENSUS: 1992 (Continued)

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. sp. sp.	Hrs. obs.	Yrs study
91. Scattered Mixed Coniferous Forest in Subalpine Meadows & Spruce Bogs	OR	R.A. Hudson	32.4	36	9	13.6	20
92. Mixed Lowland Forest and Meadow with Stream	PA	D.B. Snyder	8.1	398	44	12.5	5
<b>Non-forested Wetlands</b>							
93. Coastal Freshwater Marsh	CA	J.P. Kelly	10.5	1366	22	8.8	5
94. Coastal Riparian Marsh	CA	J.G. Evans	17.5	475	44	23.7	3
95. Desert Riparian-Freshwater Marsh	CA	E.A. Cardiff	15.4	199	26	24.8	16
96. Shrubby Swamp and Sedge Hummocks	CT	A. Magee	8.1	746	34	11.8	26
97. Intertidal Salt Marsh	NY	C.D. Aquila	40.9	53	13	56.5	1
<b>Shrublands</b>							
98. Coastal Scrub	CA	R. Ballard	8.1	333	20	225.5	18
99. Coastal Sage Scrub	CA	R. James	14.5	207	19	18.1	1
100. Diegan Coastal Sage Scrub I	CA	J.C. Lovio	43.5	77	16	91.8	1
101. Disturbed Coastal Scrub A	CA	M.C. Chu	4.7	179	19	159.0	18
102. Disturbed Coastal Scrub B	CA	J. Seavey	8.1	230	18	288.5	19
103. Mojave Yucca-Staghorn Cholla Desert Scrub	CA	L. LaPré	20.0	18	10	18.6	3
104. Mojave Yucca-Staghorn Cholla Desert Scrub II	CA	L. LaPré	20.0	25	12	19.6	1
105. Big Sagebrush Enclosure	ID	J. Doremus	25.0	62	3	29.7	1
106. Winterfat Enclosure	ID	J. Doremus	16.2	41	2	21.6	1
107. Pinyon-Juniper Scrub	UT	A.W. Nettell	20.0	45	7	21.2	2
<b>Tundra</b>							
108. Wet Coastal Plain Tundra I	AK	R.S. Suydam	33.0	56	8	39.3	7
109. Wet Coastal Plain Tundra II	AK	M.S. Wesselmann	36.0	49	9	33.2	7

## BREEDING BIRD CENSUS: 1992 (Continued)

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. spp.	Hrs obs.	Yrs study
<b>Grasslands</b>							
110. Coastal Prairie	CA	J.P. Kelly	31.0	34	11	7.3	5
111. Valley Grassland	CA	S. Burnham	67.6	25	4	10.5	1
112. Tallgrass Prairie I	IA	P.E. Lowther	16.0	51	15	5.2	9
113. Tallgrass Prairie II	IA	P.E. Lowther	65.7	72	17	8.8	9
114. Tallgrass Prairie III	IA	P.E. Lowther	44.8	85	23	9.0	9
115. Canyon Bluebunch Grassland	ID	C.B. Goble	7.5	69	7	24.3	1
116. Kentucky Bluegrass Prairie	ND	D.H. Johnson	4.8	42	7	3.8	21
117. Mixed Prairie I	ND	D.H. Johnson	10.0	68	13	7.3	21
118. Mixed Prairie II	ND	D.H. Johnson	6.1	52	10	4.6	21
119. Mixed Prairie III	ND	D.H. Johnson	6.1	56	8	4.9	21
120. Mixed Prairie IV	ND	D.H. Johnson	6.1	43	5	4.0	21
121. Mixed Prairie V	ND	D.H. Johnson	6.1	75	7	5.1	21
122. Tallgrass Prairie Remnant	OH	D. Minney	44.0	173	17	31.0	3
123. Sedge Meadow	WI	A. Carpenter	12.0	183	15	19.0	1
124. Wet Prairie	WI	B. Sedloff	15.0	79	9	9.7	1
<b>Successional Fields</b>							
125. Abandoned Upland Pasture	NY	V.M. Pitziak	8.0	773	29	26.1	9
126. Abandoned Pasture Scrubland	ON	J. Romanow	9.0	487	31	23.3	11
127. Dry-Mesic Rye Field	ON	M.E. Gartshore	12.3	280	7	19.4	1
128. Clear-cut-Longleaf Pine Regeneration	SC	D. Drage	25.0	235	30	24.1	1
129. Clear-cut and Douglas-fir Plantation I	WA	D.L. Base	10.0	174	15	11.8	1
130. Clear-cut and Douglas-fir Plantation II	WA	D.L. Base	10.0	182	15	11.5	1
131. Clear-cut & Douglas-fir Plantation with Wildlife Leave Tree Retention	WA	D.L. Base	10.0	250	23	12.9	1
<b>Cultivated</b>							
132. Conventional Dairy Farm	PA	R.C. Keller	23.1	165	36	17.3	2

## 1. NORTHERN OAK WOODLAND

### ARBOLAGA DE ROBLE NORTEÑO

JOHN D. PETERSEN

13935 Highway 12  
Glen Ellen, California 95442

**Location:** California; Sonoma Co.; Glen Ellen; Bouvierie Ranch; 38°22'N, 122°30'W; Glen Ellen Quadrangle, USGS. **Continuity:** Established 1990; 3 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):32 (1991). **Weather:** Mean start temp., 11.9°C (range 7–15°C). Seasonally mild with winter rainfall approaching normal after five years of drought. **Coverage:** 11.7 h; 10 visits (4 sunrise); 25 March; 2, 7, 16, 22, 29 April; 6, 14, 20, 28 May. **Census:** Dark-eyed Junco, 5.0 (13); Plain Titmouse, 4.0 (10); Warbling Vireo, 4.0; Anna's Hummingbird, 3.0 (8); Orange-crowned Warbler, 3.0; Western Wood-Pewee, 2.0; American Robin, 2.0; Solitary Vireo, 2.0; Black-throated Gray Warbler, 2.0; Lesser Goldfinch, 2.0; Acorn Woodpecker, 1.5; Mourning Dove, 1.0; Nuttall's Woodpecker, 1.0; Pacific-slope Flycatcher, 1.0; Ash-throated Flycatcher, 1.0; White-breasted Nuthatch, 1.0; Western Bluebird, 1.0; Hutton's Vireo, 1.0; Chipping Sparrow, 1.0; Lark Sparrow, 1.0; Scrub Jay, 0.5; Northern Mockingbird, 0.5; European Starling, 0.5. **Total:** 23 species; 41.0 territories (103/40 ha). **Visitors:** Cooper's Hawk, Red-shouldered Hawk, Red-tailed Hawk, Great Horned Owl, Northern Flicker, Western Kingbird, Tree Swallow, Violet-green Swallow, Steller's Jay, American Crow, House Finch. **Remarks:** Chipping Sparrow territories were down from 4.0 last year to 1.0 this year. Total number of territories were also down; maybe a result of five years of drought. **Acknowledgments:** This work was supported by Audubon Canyon Ranch, Stinson Beach, CA, as part of the monitoring of an oak regeneration project.

## 2. RIPARIAN WOODLAND

### BOSQUE RIVEREÑO

KENNETH L. WEAVER

1113 Senwood Way  
Fallbrook, California 92028

**Location:** California; San Diego Co.; Fallbrook; 33°25'N, 117°14'W; Temecula Quadrangle, USGS. **Continuity:** Established 1989; 4 yr. **Size:** 11.7 ha. **Description of Plot:** See *Am. Birds* 38:105 (1984) and *J. Field Ornithol.* 63 (Suppl.):35 (1992). Heavy winter rains have resulted in the river banks being scoured of low vegetation and the loss of a small number of large trees. **Weather:** Mean start temp., 16.3°C (range 12–24°C). Temperatures were near normal for the study period. Rainfall was below average following above-average winter rains. **Coverage:** 19.6 h; 10 visits (8 sunrise, 2 sunset); 18, 19, 25 April; 2, 16, 23 May; 7, 13, 19 June; 5 July. **Census:** Yellow Warbler, 20.0 (68; 2FL); Song Sparrow, 15.0 (51; 2FL); Lesser Goldfinch, 14.0 (48; 1FL); Yellow-breasted Chat, 12.0 (41; 2FL); Mourning Dove, 11.0 (38); Common Yellowthroat, 11.0 (3FL); House Wren, 10.0 (34); Rufous-sided Towhee, 9.0 (31); Bushtit, 8.5 (29; 2N); Western Wood-Pewee, 6.0 (21); Orange-crowned Warbler, 6.0; Black-headed Grosbeak, 6.0; Black-chinned Hummingbird, 5.0 (17; 4N); Pacific-slope Flycatcher, 5.0; Wrentit, 5.0; House Finch, 4.0 (14); Common Ground-Dove, 3.0 (10); Nuttall's Woodpecker, 3.0; Downy Woodpecker, 3.0; Warbling Vireo, 3.0; Northern Flicker, 2.0; Ash-throated Flycatcher, 2.0 (2FL); Northern Rough-winged Swallow, 2.0; Plain Titmouse, 1.5; Black Phoebe, 1.0; Brown-headed Cowbird, 1.0; Mallard, +; Red-tailed Hawk, + (1N); California Quail, +; Belted Kingfisher, +; Acorn Woodpecker, +; Cliff Swallow, +; Scrub Jay, +. **Total:** 33 species; 169.0 territories (578/40

ha). **Visitors:** Great Blue Heron, Green-backed Heron, Cooper's Hawk, Red-shouldered Hawk, American Kestrel, Anna's Hummingbird, White-breasted Nuthatch, Bewick's Wren, California Thrasher, Phainopepla, Hutton's Vireo, California Towhee. **Remarks:** For the second year in a row, winter flooding washed out much of the ground cover and shrubs near the river. That is the most likely cause of the lowest breeding bird totals in the four years of this census. Neotropical migrants dropped 21% from 71 territories last year to 56 this year. Eight of the 11 migratory species recorded in 1991 showed decreases, including Swainson's Thrush which was absent for the first time. Song Sparrow, a permanent resident, had the largest population loss, down seven territories. **Correction:** Although it is present on the plot well into the breeding season, there is no evidence that the Band-tailed Pigeon, previously listed as a breeding bird, actually nests in the area. Common Ground-Doves have actually given the territorial vocalizations ascribed to the pigeon. Common Ground-Dove is also an unexpected species in lowland riparian woods in southern California. **Acknowledgments:** This study is supported by the Palomar Audubon Society.

### 3. WESTERN Sycamore Woodland With Scattered Oaks

ARBOLADA DE HIGUERA DE SICOMORO CON ROBLES DISPERSOS

DAVE RIENSCH\* & HOWARD L. COGSWELL

\*East Bay Regional Park District  
Coyote Hills Regional Park  
8000 Patterson Ranch Road  
Fremont, California 94536

**Location:** California; Alameda Co.; Livermore; Sycamore Grove Park (Nature Area); 37°38'N, 121°46'W; Livermore Quadrangle, USGS. **Continuity:** Established 1990; 3 yr. **Size:** 15.9 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):33-34 (1991). **Weather:** Mean start temp., 10.0°C (range 3-19°C). This is the sixth year of drought in the state. Temperature and cloud conditions were normal for the season. Locally, rainfall was near normal. **Coverage:** 65.5 h; 13 visits (13 sunrise); 9, 13, 19 March; 6, 14, 18, 23, 28, 30 April; 8, 15, 25 May; 4 June. Maximum number of observers/visit, 15. **Census:** European Starling, 44.0 (111; 44N,3FL); Plain Titmouse, 5.0 (13; 3FL); Mourning Dove, 4.5 (11); Bushtit, 4.5 (2N,5FL); Acorn Woodpecker, 3.5 (9); Bewick's Wren, 3.5 (3FL); Lesser Goldfinch, 3.5 (1N,2FL); Mallard, 3.0 (8; 3N,7FL); Anna's Hummingbird, 3.0; Nuttall's Woodpecker, 3.0 (2N); Scrub Jay, 3.0 (2FL); White-breasted Nuthatch, 3.0 (2N,2FL); Tree Swallow, 2.5 (2N); Ash-throated Flycatcher, 2.0; Western Bluebird, 2.0 (1N); Rufous-sided Towhee, 2.0; Brown-headed Cowbird, 2.0; House Finch, 2.0; Dark-eyed Junco, 1.5 (2FL); Turkey Vulture, 1.0 (1N); Red-shouldered Hawk, 1.0 (1N,2FL); American Kestrel, 1.0 (1N); Wild Turkey, 1.0 (1N); California Quail, 1.0; Downy Woodpecker, 1.0; Western Wood-Pewee, 1.0; Black Phoebe, 1.0; Yellow-billed Magpie, 1.0 (1N); Chestnut-backed Chickadee, 1.0 (2FL); Wilson's Warbler, 1.0; California Towhee, 1.0 (1FL); Northern Mockingbird, 0.5; Loggerhead Shrike, + (1N,2FL). **Total:** 33 species; 110.0 territories (277/40 ha). **Visitors:** Green-backed Heron, Wood Duck, Killdeer, Barn Owl, Belted Kingfisher, House Wren, American Robin, California Thrasher, Warbling Vireo, Orange-crowned Warbler, Black-headed Grosbeak, Red-winged Blackbird, Brewer's Blackbird, Northern Oriole, American Goldfinch. **Remarks:** The sixth year of drought, human interference with stream flow, and a bacterial infection may be causing the decline of Western Sycamores on the plot. The number of European Starling nests has increased by 23% as compared to last year. This increase may be related to any or all of the following conditions: an increasing number of dead limbs and natural cavities, the increased observed competition between starlings and native cavity nesters (Acorn, Nuttall's, and Downy Woodpeckers, Ash-throated Flycatchers and Western Bluebirds), and the possibility of second nesting attempts by starlings after mid-May. The decline in the California Quail population by 80% might be the result of increased predation by the introduced Eastern Red Fox. The Bewick's Wren population has continued to decline to only 33% of what it was two years ago. **Acknowledgments:** The Livermore Area Recreation and Park District staff who kindly arranged for access to the park.

## 4. WILLOW RIPARIAN WOODLAND AND EDGE

### ARBOLADO DE SAUCE RIVERENO Y BORDE

DAVE RIENSCHÉ

*East Bay Regional Park District  
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8000 Patterson Ranch Road  
Fremont, California 94536*

**Site Number:** CA9292061. **Location:** California; Alameda Co.; Fremont; Coyote Hills Regional Park; 37°34'N, 122°5'W; Newark Quadrangle, USGS. **Continuity:** New. **Size:** 8.1 ha. **Description of Plot:** A triangular plot (shortest side 336 m, longest 625 m) with a closed canopy. The willow riparian woodland makes up 82% of the plot, permanent and seasonal wetland makes up 13%, and herb and grassland mix make up the remaining 5%. Up to 50% of the surface is covered by standing water during the breeding season. A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727–736) yielded the following results: Trees, 7.6 cm diameter and over, based on 10 randomly located 0.04-ha circular samples, 226 trunks/ha (most trees have multiple trunks originating from a common base); total basal area 33.2 m<sup>2</sup>/ha. The total number of trees (trunks/ha), relative density (%), and relative dominance (%) are as follows: Red Willow, 221, 97, 90; Western Sycamore, 2.02, 1, 9; Box Elder, 2.83, 1, 1. Trees by diameter size class [figures after each are trunks/ha, relative density (%), basal area in m<sup>2</sup>/ha, and relative basal area]: A (7.6–15.2 cm) 199, 88, 19.9, 60; B (15.2–22.9 cm) 20.6, 9, 6.19, 18; C (22.9–38.1 cm) 4.85, 2, 3.68, 11; D (38.1–53.3 cm) 1.21, 0.5, 2.18, 6; E (53.3–68.6 cm) 0.4, 0.2, 1.25, 3. Shrub stems/ha, 32 (based on a count of all stems within 10 circular plots). Shrub species in order of decreasing abundance (with number of stems/ha): Poison Oak 21, California Blackberry 9.2, and Coyote Bush 1. Ground cover, 73.5%, dominated by Willow Herb, Alkali Bulrush, Birdfoot Lotus, and Rabbitfoot Grass. Mean height of herbaceous cover, 38 cm. Canopy cover, 80%; average canopy height, 5.4 m (range 4–16 m). **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat < 25 ha in size. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 1 m, maximum 2 m. **Weather:** Mean start temp., 11.7°C (range 9–14°C). This is the sixth year of drought in central California, with only 80% of normal rainfall. **Coverage:** 26.5 h; 12 visits (12 sunrise); 28 February; 8, 11, 20, 26 March; 7, 13, 24 April; 5, 11, 19, 27 May. **Census:** Song Sparrow, 12.5 (62; 1N,2FL); Bushtit, 5.5 (27; 3N,7FL); Bewick's Wren, 4.0 (20); Brown-headed Cowbird, 4.0; California Towhee, 3.5 (17); Wilson's Warbler, 3.0 (15); Chestnut-backed Chickadee, 2.0 (1N,3FL); Marsh Wren, 2.0; Common Yellowthroat, 2.0 (1N,2FL); Rufous-sided Towhee, 2.0; Mourning Dove, 1.5; Scrub Jay, 1.5; Anna's Hummingbird, 1.0 (1N); Downy Woodpecker, 1.0 (1N); Tree Swallow, 1.0; Black-shouldered Kite, 0.5. **Total:** 16 species; 47.0 territories (232/40 ha). **Visitors:** Pied-billed Grebe, Mallard, Northern Harrier, American Kestrel, Nuttall's Woodpecker, Pacific-slope Flycatcher, Black Phoebe, Violet-green Swallow, Northern Mockingbird, European Starling, Red-winged Blackbird. **Remarks:** This type of riparian habitat has been drastically reduced along the E shoreline of the San Francisco Bay to approximately 5% of its historical levels. This is the largest piece of this unique habitat left for bird related studies. **Other Observer:** Ira Bletz. **Acknowledgments:** Dr. Howard Cogswell for providing generous advice and encouragement during the study, and the East Bay Regional Park District who kindly provided the time to work on the project.

## 5. MIXED HARDWOOD POLETIMBER

### BOSQUE MIXTO MADERERO

ANDREW MAGEE

*White Memorial Conservation Center  
Litchfield, Connecticut 06759*

**Site Number:** CT1265009. **Location:** Connecticut; Litchfield Co.; Litchfield; White Memorial Foundation-Wheeler Hill; 41°42'N, 73°13'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 26 yr. **Size:** 8.5 ha. **Description of Plot:** *Aud. Field Notes* 19: 609-610 (1965). This plot was abandoned as pasture in the early 1960s and consists of three distinctly different vegetation areas: a transition forest thicket, a young second-growth forest, and an open area that was decimated by a tornado in the summer of 1990. A quantitative vegetation survey based on 7 0.04 ha circular samples yielded the following results: Trees, 3.0 cm diameter and over, [figures after each are number of trees and average dbh in cm] Red Maple, 147, 11.1; White Ash, 122, 8.5; Sugar Maple, 56, 8.6; Red Oak, 18, 6.6; apple sp., 15, 6.4; hawthorn sp., 5, 4.9; Gray Birch, 3, 7.3; Black Cherry, 3, 15.5; Shagbark Hickory, 2, 6.9; hickory sp., 2, 5.0; White Oak, 1, 4.2. Shrub stems/ha, 8804, dominated by Bittersweet, barberry, Northern Arrowwood, Poison Ivy, Multiflora Rose. Ground cover, 14%, dominated by goldenrod and grass. Canopy cover, 74%; average canopy height 12.8 m (range 10-18 m). **Weather:** Mean start temp., 20.7°C (range 15-27°C). The average minimum and maximum temperatures at our weather station in both May (6°C, 21°C) and June (10°C, 24°C) were below our 8-yr averages and well below last year's exceptionally high figures. Precipitation in May (5.2 cm) was below average, but in June (19.1 cm) it was above average. **Coverage:** 11.3 h; 7 visits (1 sunrise, 4 sunset); 19, 20 May; 3, 9, 10, 15, 17 June. **Census:** Ovenbird, 10.0 (47); Red-eyed Vireo, 9.0 (42); Veery, 8.0 (38); Rufous-sided Towhee, 8.0; Wood Thrush, 7.0 (33); Chestnut-sided Warbler, 5.5 (26); Black-capped Chickadee, 5.0 (24); Gray Catbird, 5.0; American Redstart, 4.5 (21); Black-and-white Warbler, 4.0 (19); Blue Jay, 2.5; Common Yellowthroat, 2.5; Scarlet Tanager, 2.5; Northern Cardinal, 2.5; Cedar Waxwing, 2.0; Blue-winged Warbler, 2.0; American Goldfinch, 2.0; Northern Flicker, 1.5; American Crow, 1.5; American Robin, 1.5; Broad-winged Hawk, 1.0; Eastern Wood-Pewee, 1.0; Eastern Phoebe, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; Rose-breasted Grosbeak, 1.0; Song Sparrow, 1.0; Common Grackle, 1.0; Brown-headed Cowbird, 1.0; Magnolia Warbler, 0.5; Purple Finch, 0.5; Sharp-shinned Hawk, +; Cooper's Hawk, +; Northern Goshawk, +; Mourning Dove, +; Great Horned Owl, +; Barred Owl, +; Fish Crow, +; Solitary Vireo, +; Black-throated Blue Warbler, +; Canada Warbler, +; Northern Oriole, +. **Total:** 42 species; 96.5 territories (454/40 ha). **Remarks:** The number of species recorded was a new high for the 26-yr history of this census, and the number of territorial males increased from a low of 75.0 last year. Most of the increase was in forest interior species reflecting the continuing change of this plot from an abandoned hillside pasture to a second-growth deciduous forest. Ovenbird reached a new high and Veery tied its previous high. An edge species, the Chestnut-sided Warbler, also increased from 1.5 to 5.5 territories. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

## 6. OAK-HARDWOOD FOREST

### BOSQUE DE ROBLE

MIKE DUDEK

*Miles Wildlife Sanctuary  
95 West Cornwall Road  
Sharon, Connecticut 06069*

**Site Number:** CT2787001. **Location:** Connecticut; Litchfield Co.; Sharon; Miles Wildlife Sanctuary; 41°53'N, 73°24'W; Sharon Quadrangle, USGS. **Continuity:** Established 1986; 5 yr. **Size:** 15.8 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):26 (1989).

**Weather:** Mean start temp., 13.5°C (range 7–26°C). **Coverage:** 23.8 h; 12 visits (9 sunrise, 3 sunset); 2, 3, 5, 9, 11, 15, 17, 21, 23, 26 June; 1, 3 July. **Census:** Ovenbird, 10.0 (25); Red-eyed Vireo, 7.0 (18); Yellow-bellied Sapsucker, 6.5 (17); Wood Thrush, 6.5; Scarlet Tanager, 5.0 (13); Eastern Wood-Pewee, 4.0 (10); Hermit Thrush, 3.0 (8); Black-and-white Warbler, 2.5; Rose-breasted Grosbeak, 2.5; Blue Jay, 2.0; White-breasted Nuthatch, 2.0; Veery, 2.0; Black-throated Blue Warbler, 2.0; Tufted Titmouse, 1.5; Downy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Black-capped Chickadee, 1.0; American Robin, 1.0; Rufous-sided Towhee, 1.0; Yellow-throated Vireo, 0.5; American Redstart, 0.5. **Total:** 21 species; 62.5 territories (159/40 ha). **Visitors:** Red-tailed Hawk, Ruffed Grouse, Black-billed Cuckoo, Ruby-throated Hummingbird, Red-bellied Woodpecker, Northern Flicker, American Crow, Chestnut-sided Warbler, Common Yellowthroat, Northern Oriole. **Other Observer:** Heidi L. Michaels. **Acknowledgments:** Miles Wildlife Sanctuary.

## 7. SECOND-GROWTH HARDWOOD FOREST

### BOSQUE SECUNDARIO DE MADERAS DURAS

ANDREW MAGEE

White Memorial Conservation Center  
Litchfield, Connecticut 06759

**Site Number:** CT2765006. **Location:** Connecticut; Litchfield Co.; Morris; White Memorial Foundation; 41°42'N, 73°12'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 26 yr. **Size:** 10.1 ha. **Description of Plot:** *Aud. Field Notes* 19:590–591 (1965). This relatively open young forested area appeared to contain vegetation typical of a lower slope site type. No conifers were recorded in the tree stratum, and very few were seen throughout the tract. A quantitative vegetation survey based on 5 0.04 ha circular samples yielded the following results: Trees, 3.0 cm diameter and over, [figures after each are number of trees and average dbh in cm] White Ash, 45, 21.6; Sugar Maple, 38, 12.5; Shagbark Hickory, 18, 17.0; Yellow Birch, 15, 8.5; American Hornbeam, 6, 4.6; Red Oak, 5, 20.1; hickory sp., 4, 5.5; Black Cherry, 2, 10.4; Striped Maple, 2, 8.4. Shrub stems/ha, 5200, dominated by American Hazel, Spicebush, Highbush Blueberry, Maple-leaved Viburnum, and Poison Ivy. Ground cover, 39%, Cinnamon Fern, Christmas Fern, New York Fern, Wild Sarsaparilla, and Jewelweed. Canopy cover, 77%; average canopy height 23.5 m (range 20–26 m). **Weather:** Mean start temp., 19.9°C (range 14–24°C). The average minimum and maximum temperatures at our weather station in both May (6°C, 21°C) and June (10°C, 24°C) were below our 8-yr averages and well below last year's exceptionally high figures. Precipitation in May (5.2 cm) was below average, but in June (19.1 cm) it was above average. **Coverage:** 13.0 h; 7 visits (1 sunrise, 2 sunset); 19, 20, 27 May; 3, 9, 17 June. **Census:** Red-eyed Vireo, 17.0 (67); Ovenbird, 16.0 (63); Veery, 10.0 (40); Wood Thrush, 10.0; Scarlet Tanager, 5.0 (20); Black-capped Chickadee, 4.5 (18); Eastern Wood-Pewee, 4.0 (16); Blue-gray Gnatcatcher, 4.0; American Robin, 4.0; American Redstart, 4.0; Blue Jay, 3.0 (12); Tufted Titmouse, 3.0; Chestnut-sided Warbler, 2.5; Downy Woodpecker, 2.0; Hairy Woodpecker, 2.0; White-breasted Nuthatch, 2.0; Blue-winged Warbler, 2.0; American Crow, 1.5; Gray Catbird, 1.5; Yellow-throated Vireo, 1.5; Common Yellowthroat, 1.5; Wood Duck, 1.0; Ruffed Grouse, 1.0; Ruby-throated Hummingbird, 1.0; Black-and-white Warbler, 1.0; Louisiana Waterthrush, 1.0; Northern Cardinal, 1.0; Rose-breasted Grosbeak, 1.0; Rufous-sided Towhee, 1.0; Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Sharp-shinned Hawk, 0.5; Cooper's Hawk, 0.5; Broad-winged Hawk, 0.5; Red-tailed Hawk, 0.5; Great Horned Owl, 0.5; Red-bellied Woodpecker, 0.5; Eastern Phoebe, 0.5; Great Crested Flycatcher, 0.5; Red-breasted Nuthatch, 0.5; Hermit Thrush, 0.5; Solitary Vireo, 0.5; Northern Oriole, 0.5; Northern Goshawk, +; Wild Turkey, +; Barred Owl, +; Pileated Woodpecker, +; Magnolia Warbler, +; Yellow-rumped Warbler, +; Purple Finch, +. **Total:** 50 species; 117.0 territories (463/40 ha). **Remarks:** The number of species recorded was a new high for the 26-yr history of this census, and the number of territorial males was close to the high of 117.5 in 1985. Most of the common species showed an increase over last year. Wood Thrush reached a new high, well above the average for this species,

but Black-and-white Warbler continued its recent decline (5.0 to 2.0 to 1.0 territories). Red-bellied Woodpecker, near the northern limit of its range, was a new species for this census. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

## 8. CENTRAL HARDWOOD FOREST WITH SCATTERED PINE

### BOSQUE CENTRAL DE MADERAS DURAS CON PINOS DISPERSOS

MARY E. D'IMPERIO

4000 Cathedral Avenue NW, #106B  
Washington, DC 20016-5249

**Location:** District of Columbia; Washington; Rock Creek Park; 38°57'N, 77°3'W; Washington West Quadrangle, USGS. **Continuity:** Established 1948; 44 yr. **Size:** 26.3 ha. **Description of Plot:** See *Aud. Field Notes* 2:153-154 (1948). **Weather:** Mean start temp., 14.9°C (range 7-24°C). Some fog or mist on four visits. **Coverage:** 31.4 h; 21 visits (20 sunrise, 1 sunset); 29 March; 5, 8, 19, 20 April; 3, 10, 13, 17, 23, 24 May; 7, 10, 14, 17, 21, 26, 29 June; 2, 5, 11 July. **Census:** Red-eyed Vireo, 10.0 (15); Red-bellied Woodpecker, 5.0 (8); Tufted Titmouse, 4.5 (7); Carolina Wren, 4.0 (6); Wood Thrush, 4.0; Ovenbird, 4.0; Eastern Wood-Pewee, 3.5 (5); Acadian Flycatcher, 3.5; White-breasted Nuthatch, 3.5; Veery, 3.0 (5); Scarlet Tanager, 3.0; Northern Cardinal, 2.5; Downy Woodpecker, 2.0; Northern Flicker, 2.0; Carolina Chickadee, 2.0; Great Crested Flycatcher, 1.5; Brown-headed Cowbird, 1.5; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Eastern Phoebe, 1.0; American Crow, 1.0; Hooded Warbler, 1.0; Rufous-sided Towhee, 1.0; Mourning Dove, 0.5. **Total:** 24 species; 66.0 territories (100/40 ha). **Visitors:** Broad-winged Hawk, Yellow-billed Cuckoo, Blue Jay, American Robin, Gray Catbird, Yellow-throated Vireo, Northern Parula, Common Yellowthroat. **Remarks:** Breeding populations seem essentially unchanged from last year, except for sizeable increases in Red-eyed Vireo and Brown-headed Cowbird. **Other Observer:** Bob Ford.

## 9. MIXED UPLAND BROADLEAF FOREST

### BOSQUE MIXTO DE HOJA ANCHA DE ALTURAS

SHIRLEY A. BRIGGS

7605 Honeywell Lane  
Bethesda, Maryland 20814

**Site Number:** DC1060009. **Location:** District of Columbia; Washington; Glover-Archbold Park; 38°55'N, 77°5'W; Washington West Quadrangle, USGS. **Continuity:** Established 1959; 34 yr. **Size:** 14.2 ha. **Description of Plot:** See *Aud. Field Notes* 14:502-503 (1960). **Weather:** Mean start temp., 19.4°C (range 5-29°C). The wind was at Beaufort scale 4 during 5 visits. Total precipitation for April through June was 21.1 cm (3.3 cm below average). Temperature was below average, following the second mild winter in succession. Source: NOAA data from National Airport. **Coverage:** 102.8 h; 29 visits (29 sunrise); 4, 6, 9, 13, 17, 20, 23 April; 3, 12, 19, 20, 24, 28, 29 May; 10, 12, 13, 14, 16, 17, 20, 22, 23, 26, 27, 28, 29 June. **Census:** Carolina Wren, 34.0 (96); Northern Cardinal, 28.0 (79); Gray Catbird, 27.0 (76); Carolina Chickadee, 20.0 (56); Tufted Titmouse, 17.0 (48); Red-bellied Woodpecker, 16.0 (45; 1N); Red-eyed Vireo, 15.0 (42); Veery, 14.0 (39); Rufous-sided Towhee, 13.0 (37; 1FL); Acadian Flycatcher, 10.0 (28); Northern Flicker, 8.0 (23); Downy Woodpecker, 7.0 (20); Wood Thrush, 7.0; White-breasted Nuthatch, 6.0 (17); Blue-gray Gnatcatcher, 6.0; American Robin, 6.0 (2FL); American Crow, 4.5 (13); Hairy Woodpecker, 4.0 (11); Blue Jay, 3.5 (10); Eastern Wood-Pewee, 3.0 (8); American Redstart, 3.0; Common Yellowthroat, 3.0; Brown-headed Cowbird, 3.0 (1FL); Great Crested Flycatcher, 2.5; Wood Duck, 2.0 (2N); Mourning Dove, 2.0; European Starling, 2.0 (6FL); Common Grackle, 2.0; House Finch, 2.0; House Sparrow, 2.0; Mallard, 1.0; Chimney Swift, 1.0; Ruby-

throated Hummingbird, 1.0; Pileated Woodpecker, 1.0; House Wren, 1.0; Ovenbird, 1.0; Scarlet Tanager, 1.0; Song Sparrow, 1.0; American Goldfinch, 1.0; Eastern Screech-Owl, +; Northern Mockingbird, +. **Total:** 41 species; 281.5 territories (793/40 ha). **Visitors:** Green-backed Heron, Black-crowned Night-Heron, Turkey Vulture, Red-shouldered Hawk, Eastern Phoebe, Fish Crow, Brown Thrasher, Northern Parula, Chipping Sparrow, Northern Oriole. **Remarks:** This is our highest number of territories, over the high of 243 in 1991. Carolina Wrens reached their highest number, up from 26 territories last year; they were as low as 3 during the 1960s. Recent mild winters are probably responsible. Acadian Flycatchers are up to their level of the 1960s, before they almost disappeared in the drop of neotropical migrants in the late 1960s and early 1970s. Redstarts are also recovering some, at 3 territories, but there were 15 before the crash. Other species have not recovered noticeably, apparently being dependent on other conditions in their wintering areas. Small increases in a number of species account for the overall total. Veery numbers are higher than Wood Thrush for the second year, after being about equal in the late 1980s. **Other Observers:** Mary D'Imperio and Ann Feather.

## 10. WHITE ALDER-BLACK LOCUST-HACKBERRY RIPARIAN BOSQUE RIVEREÑO DE ALISO BLANCO-ACACIA NEGRA-“HACKBERRY”

C.B. GOBLE

728 Homestead  
Moscow, Idaho 83843

**Site Number:** ID6591059. **Location:** Idaho; Idaho Co.; Lucile; China Creek; 45°33'N, 116°18'W; Lucile Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 5.3 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):39–40 (1992). **Weather:** Mean start temp., 12.9°C (range 6–19°C). Lower than average precipitation. The impact of grazing cattle was greater due to drought conditions (less vegetation to begin with). **Coverage:** 31.4 h; 13 visits (13 sunrise); 13, 14, 15, 22 May; 8, 10, 12, 13, 15, 17, 20, 22, 24 June. **Census:** Lazuli Bunting, 5.0 (38; 4N,5FL); Yellow Warbler, 4.0 (30; 4N); Western Wood-Pewee, 3.0 (23; 2N); American Robin, 3.0; Black-capped Chickadee, 2.0 (2N,5FL); Warbling Vireo, 2.0; Red-eyed Vireo, 2.0; Yellow-breasted Chat, 2.0 (1N); Northern Oriole, 2.0 (1N); Mourning Dove, 1.0 (1N,2FL); Great Horned Owl, 1.0; Black-chinned Hummingbird, 1.0; Belted Kingfisher, 1.0; Cedar Waxwing, 1.0; European Starling, 1.0 (1N); Western Tanager, 1.0; Chipping Sparrow, 1.0; Song Sparrow, 1.0; Cassin's Finch, 1.0; American Goldfinch, 1.0. **Total:** 20 species; 36.0 territories (272/40 ha). **Visitors:** Lewis' Woodpecker, Willow Flycatcher, Eastern Kingbird, House Wren, Ruby-crowned Kinglet, Black-headed Grosbeak, Rufous-sided Towhee, House Finch.

## 11. UPLAND TULIPTREE-MAPLE-OAK FOREST

BOSQUE DE ALAMO-ARCE-ROBLE DE ALTURAS

GERALD E. EINEM

11442 High Hay Drive  
Columbia, Maryland 21044

**Site Number:** MD1071036. **Location:** Maryland; Howard Co.; Columbia; Middle Patuxent Environmental Area; 39°12'N, 76°54'W; Clarksville Quadrangle, USGS. **Continuity:** Established 1971; 12 yr. **Size:** 11.9 ha. **Description of Plot:** See *Am. Birds* 25:971 (1971). An old-growth mostly deciduous forest within the primarily forested 383-ha Middle Patuxent Environmental Area. The forest canopy is mainly closed; shrub and ground cover is moderately thick. A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727–736) yielded the following results: Trees, 8 cm diameter and over, based on 6 0.04-ha circular samples, 59/ha. Species comprising 98% of the total number of trees [figures after each are trees/ha, relative density

(%), relative dominance (%), and frequency (%): Tuliptree, 146, 41, 78, 100; Flowering Dogwood, 91.9, 26, 2.7, 83; Red Maple, 16.7, 5, 2.7, 33; Northern Red Oak, 16.7, 5, 3.6, 6.6; Mockernut Hickory, 16.7, 5, 1.6, 50; Black Cherry, 12.5, 4, 6.3, 17; Black Gum, 12.5, 4, 0.6, 50; Black Locust, 8.4, 2, 1.3, 17; White Ash, 8.4, 2, 1.1, 33; Shagbark Hickory, 8.4, 2, 1.1, 17; American Hornbeam, 8.4, 2, 0.2, 17. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m<sup>2</sup>/ha, and relative dominance (%): A (8–15 cm) 146, 41, 0.33, 4.3; B (15–23 cm) 54, 15, 0.36, 4.7; C (23–38 cm) 58.5, 16.5, 1.04, 13.6; D (38–53 cm) 50, 14, 2, 26.3; E (53–69 cm) 37.6, 10.6, 2.6, 34; F (69–84 cm) 4.2, 1.2, 0.46, 6; G (84–102 cm) 0; H (> 108 cm) 4, 1, 0.86, 11.2. Shrub stems/ha, 16,771, dominated by Spicebush, Highbush Blueberry, Multiflora Rose, Japanese Honeysuckle and small American Hornbeam. Ground cover, 65%, dominated by Christmas Fern, Shining Club-moss, Japanese Honeysuckle, viburnum seedlings, Wild Ginger, wild yam, and Jack-in-the-Pulpit. Canopy cover, 98%; average canopy height, 30 m (range 20–33 m). Two ephemeral streams in deep ravines are within the plot, one in the SE and the other in the NW. These are usually dry by mid-June. **Edge:** The plot is bordered on the N by hickory-oak-ash Middle Patuxent River floodplain forest; on the E and S by a continuation of the tuliptree-maple-oak forest; on the SW by a Virginia Pine woods in transition to mixed hardwoods; and on the W by the forest edge and beyond this an old-field early successional forest heavily invaded by Japanese Honeysuckle. **Topography and Elevation:** A gradual relief hilltop which slopes to the NE (5% grade) and sharply to the E (> 29% grade). Most of the plot slopes N (14% grade). Minimum elevation 93 m, maximum 124 m. **Weather:** Mean start temp., 17.0°C (range 10–25°C). Temperature and precipitation departures, respectively, from the 30-yr means for: April, -2.2°C, -4.0 cm; May, -2.9°C, -1.3 cm; June, -2.3°C, -4.7 cm; July, +0.7°C, +3.0 cm. Source: Baltimore-Washington International Airport. **Coverage:** 63.5 h; 23 visits (17 sunrise, 5 sunset); 25, 26 April; 2, 3, 9, 10, 16, 23, 25, 30 May; 6, 13, 18, 20, 22, 24, 25, 26, 28, 29, 30 June; 3, 6 July. **Census:** Wood Thrush, 20.5 (69); Red-eyed Vireo, 18.0 (61; 1N); Northern Cardinal, 14.0 (47); Hooded Warbler, 11.0 (37); Red-bellied Woodpecker, 10.0 (34); Scarlet Tanager, 10.0; Ovenbird, 7.5 (25); Acadian Flycatcher, 7.0 (24); Downy Woodpecker, 6.0 (20); Tufted Titmouse, 4.5 (15); Kentucky Warbler, 4.0 (13); Eastern Wood-Pewee, 3.0 (10); Carolina Chickadee, 3.0; White-breasted Nuthatch, 3.0; Carolina Wren, 3.0; Veery, 3.0; Brown-headed Cowbird, 3.0; Blue-gray Gnatcatcher, 2.5; Rufous-sided Towhee, 2.5; Blue Jay, 1.0; Gray Catbird, 1.0; Yellow-throated Vireo, 1.0; American Redstart, 1.0; Worm-eating Warbler, 1.0; Northern Flicker, 0.5; Mourning Dove, +; Pileated Woodpecker, +; American Crow, +; White-eyed Vireo, +; Northern Parula, +; Common Yellowthroat, +; Indigo Bunting, +. **Total:** 32 species; 141.0 territories (474/40 ha). **Visitors:** Red-shouldered Hawk, Great Horned Owl, Barred Owl, Yellow-billed Cuckoo, Black-and-white Warbler. **Remarks:** There has been a notable increase in the number of Red-bellied Woodpeckers from one or two territories in 1971–1975 to a high of 10 this year. Brown-headed Cowbirds were more abundant than during previous censuses. The plot was not sprayed for Gypsy Moth control. The new vegetative survey shows that there has been a shift in dominance toward the Tuliptree since 1971. The density increased from 31% to 41% and the dominance increased from 35% to 78%. There has been a significant decrease in dominance among White Oak, Red Oak, Black Locust, and Red Maple. Since 1971, the number of trees in the smaller diameter size classes A–C decreased markedly while trees in size classes D and E increased 146% and 308% respectively. **Acknowledgments:** I would like to thank Phil Norman and Bob Solem for the updated description of the plot and Charlie Fuller for his assistance with the bird census.

## 12. MIXED UPLAND HARDWOOD FOREST I BOSQUE MIXTO DE MADERAS DURAS DE ALTURAS I

BONNIE E. STOUT & GREGORY J. FISCHER

*Whitefish Point Bird Observatory*

H.C. 48, Box 115

Paradise, Michigan 49768

**Site Number:** MI2892103. **Location:** Michigan; Chippewa Co.; Strong's Corner; Big Dave Tract, Hiawatha National Forest; 46°27'N, 84°57'W; McNearney Lake Quadrangle, USGS.

**Continuity:** New. **Size:** 20.9 ha. **Description of Plot:** A square plot (457 × 457 m) with a closed canopy dominated by Sugar Maple and American Beech, estimated to be between 61 and 100 years of age. Mean canopy height, 20 m (range 10–30 m). The understory is dominated by Sugar Maple, American Beech, and Hop-Hornbeam. The ground cover is dominated by leaf litter, wood-fern, and Sugar Maple. A fairly dry stand, with only two to three shallow (< 0.1 m) ephemeral pools and one stream during the breeding season. **Edge:** Up to 90% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 500 ha in size. **Topography and Elevation:** The plot has an uneven slope facing W at < 5% grade. Minimum elevation 227 m, maximum 247 m. **Weather:** Mean start temp., 11.0°C (range 7–16°C). Temperatures were below normal and precipitation was above normal throughout the study period. **Coverage:** 16.0 h; 8 visits (8 sunrise); 17, 19, 21, 23, 29 June; 1, 10, 11 July. **Census:** Red-eyed Vireo, 23.0 (44); Ovenbird, 21.5 (41; 2N); Least Flycatcher, 15.0 (29); Black-throated Green Warbler, 13.0 (25); Eastern Wood-Pewee, 3.5 (7); Brown Creeper, 3.0 (6; 1N); Veery, 3.0; Yellow-bellied Sapsucker, 2.5; Black-throated Blue Warbler, 2.0; Swainson's Thrush, 1.5; Scarlet Tanager, 1.5; Downy Woodpecker, 1.0; Hermit Thrush, 1.0; American Redstart, 1.0 (1FL); Rose-breasted Grosbeak, 1.0; Blue Jay, 0.5; White-breasted Nuthatch, 0.5; Wood Thrush, 0.5; Pileated Woodpecker, +. **Total:** 19 species; 95.0 territories (182/40 ha). **Remarks:** This plot was also used as a mist-netting site for the Monitoring Avian Productivity and Survivorship (MAPS) project. **Acknowledgments:** Thanks to James Bean, Mary Derr, and Tom Kurtz for their assistance in the establishment of this plot.

### 13. MIXED UPLAND HARDWOOD FOREST II BOSQUE MIXTO DE MADERAS DURAS DE ALTURAS II

GREGORY J. FISCHER

*Whitefish Point Bird Observatory*

*H.C. 48, Box 115*

*Paradise, Michigan 49768*

**Site Number:** MI2892104. **Location:** Michigan; Chippewa Co.; Strong's Corner; McNearney Lake Plot, Hiawatha National Forest; 46°26'N, 84°57'W; McNearney Lake Quadrangle, USGS. **Continuity:** New. **Size:** 20.9 ha. **Description of Plot:** A square plot (457 × 457 m) with a closed canopy dominated by Sugar Maple and American Beech, estimated to be between 61 and 100 years of age. Mean canopy height, 15 m (range 10–20 m). The nearly continuous understory is dominated by Sugar Maple, American Beech, and Balsam Fir. The ground cover is dominated by leaf litter, Sugar Maple, wood-fern, and American Beech. No streams or ponds are present on the plot. **Edge:** The plot is bordered on all sides by similar habitat, and is located within a tract of similar habitat > 500 ha in size. **Topography and Elevation:** The plot is nearly level, with a N-facing slope of < 5%. Minimum elevation 259 m, maximum 274 m. **Weather:** Mean start temp., 9.8°C (range 2–21°C). Rainfall was high during the study period, with rain on two visits. Fog occurred on one visit, and one visit was very cold. **Coverage:** 12.8 h; 8 visits (8 sunrise); 12, 24, 28 June; 1, 13, 21, 24, 31 July. **Census:** Ovenbird, 21.0 (40); Red-eyed Vireo, 18.0 (34; 5FL); Black-throated Green Warbler, 10.0 (19); Eastern Wood-Pewee, 4.0 (8); Least Flycatcher, 4.0; Hermit Thrush, 4.0; Veery, 3.0 (6; 1N); Swainson's Thrush, 2.0; Black-throated Blue Warbler, 2.0; Scarlet Tanager, 2.0; Rose-breasted Grosbeak, 2.0 (1N); Yellow-bellied Sapsucker, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0 (1N). **Total:** 14 species; 75.0 territories (144/40 ha). **Visitors:** Red-tailed Hawk, Common Raven, Black-capped Chickadee, White-breasted Nuthatch, Brown Creeper, Cedar Waxwing, American Goldfinch, Evening Grosbeak. **Remarks:** This plot was also used as a mist-netting site for the Monitoring Avian Productivity and Survivorship (MAPS) project. **Acknowledgments:** Thanks to Bonnie Stout and Sue Stein for their assistance in the establishment of this plot.

## 14. MIXED UPLAND HARDWOOD FOREST III

### BOSQUE MIXTO DE MADERAS DURAS DE ALTURAS III

BONNIE E. STOUT & GREGORY J. FISCHER

*Whitefish Point Bird Observatory*

H.C. 48, Box 115

Paradise, Michigan 49768

**Site Number:** MI2892105. **Location:** Michigan; Chippewa Co.; Raco; Pendills Lake, Hiawatha National Forest; 46°26'N, 84°47'W; Pendills Lake Quadrangle, USGS. **Continuity:** New. **Size:** 20.9 ha. **Description of Plot:** A very diverse, square plot (457 × 457 m) with an open canopy dominated by Sugar Maple, Yellow Birch, and American Beech. Some Eastern Hemlock, Red Oak, and aspen are also present. Stand age is estimated to be between 61 and 100 years of age. Mean canopy height, 12.5 m (range 10–15 m). The understory is dominated by Striped Maple, Sugar Maple, Yellow Birch, and Balsam Fir with some Mountain Maple, honeysuckle, and Red Maple present. The ground cover is dominated by leaf litter, Spinulose Wood-Fern, club-moss, raspberry, and seedlings of the above trees. Two to three ephemeral streams and ten ephemeral ponds (max. diameter, 20 m; max. depth 0.1 m) are present on the plot during the breeding season. **Edge:** Over 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 200 ha in size. **Topography and Elevation:** The plot is nearly level, with an E-facing slope of < 5%. Minimum elevation 198 m, maximum 229 m. **Weather:** Mean start temp., 9.7°C (range 4–19°C). Temperatures were below normal and rainfall was above normal for the study period. There was rain on one visit, fog on one visit, and very cold temperatures on one visit. The birds were quieter on those days. **Coverage:** 17.0 h; 9 visits (9 sunrise); 8, 11, 12, 20, 30 June; 2, 4, 9, 13 July. **Census:** Ovenbird, 33.0 (63; 1N); Red-eyed Vireo, 20.5 (39; 1N); Black-throated Green Warbler, 13.0 (25); Least Flycatcher, 8.5 (16); Black-throated Blue Warbler, 6.0 (11); Veery, 5.0 (10; 1N); Hermit Thrush, 4.0 (8); Yellow-bellied Sapsucker, 2.0; Brown Creeper, 2.0; Downy Woodpecker, 1.5; Ruby-throated Hummingbird, 1.0; Hairy Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; Black-capped Chickadee, 1.0 (1FL); American Redstart, 1.0; Mourning Warbler, 1.0; Scarlet Tanager, 1.0; Swainson's Thrush, 0.5; Pileated Woodpecker, +; Rose-breasted Grosbeak, +. **Total:** 20 species; 103.0 territories (197/40 ha). **Visitors:** Broad-winged Hawk, Great Crested Flycatcher, Red-breasted Nuthatch, Nashville Warbler, Yellow-rumped Warbler, Black-and-white Warbler, Canada Warbler. **Remarks:** This plot was also used as a mist-netting site for the Monitoring Avian Productivity and Survivorship (MAPS) project. **Acknowledgments:** Thanks to James Bean, Mary Derr, and Susan Stein for their assistance in the establishment of this plot.

## 15. MIXED UPLAND HARDWOOD FOREST IV

### BOSQUE MIXTO DE MADERAS DURAS DE ALTURAS IV

GREGORY J. FISCHER

*Whitefish Point Bird Observatory*

H.C. 48, Box 115

Paradise, Michigan 49768

**Site Number:** MI2892106. **Location:** Michigan; Chippewa Co.; Strong's Corner; Piatt Lake Plot, Hiawatha National Forest; 46°25'N, 84°58'W; McNearney Lake Quadrangle, USGS. **Continuity:** New. **Size:** 20.9 ha. **Description of Plot:** A square plot (457 × 457 m) with a closed canopy dominated by Sugar Maple, American Beech, and Yellow Birch, estimated to be between 61 and 100 years of age. Mean canopy height, 12 m (range 10–14 m). The understory is dominated by Sugar Maple, American Beech, and Choke-Cherry. The ground cover is dominated by Sugar Maple, leaf litter, American Beech, and wood-fern. There are a few open areas within the plot that are dominated by young Sugar Maple, Choke-Cherry, and raspberry. No streams or ponds are present on the plot. **Edge:** Over 75% of the plot's

perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat > 500 ha in size. **Topography and Elevation:** The plot has an uneven slope facing W at 6–10% grade. Minimum elevation 256 m, maximum 290 m. **Weather:** Mean start temp., 11.0°C (range 2–16°C). Rainfall was high during the study period. One visit had fog and three were overcast or rainy. **Coverage:** 13.2 h; 8 visits (8 sunrise); 11, 23, 29 June; 2, 7, 15, 22, 28 July. **Census:** Ovenbird, 26.0 (50; 1N); Red-eyed Vireo, 17.5 (33); Black-throated Green Warbler, 11.0 (21); Least Flycatcher, 2.0; Hermit Thrush, 2.0; Scarlet Tanager, 2.0; Rose-breasted Grosbeak, 2.0; Hairy Woodpecker, 1.0; Brown Creeper, 1.0; Veery, 1.0; Swainson's Thrush, 1.0; Black-throated Blue Warbler, 1.0; American Redstart, 1.0. **Total:** 13 species; 68.5 territories (131/40 ha). **Visitors:** Red-tailed Hawk, Pileated Woodpecker, Eastern Wood-Pewee, Common Raven, Black-capped Chickadee, White-breasted Nuthatch, Cedar Waxwing, Blackburnian Warbler, Black-and-white Warbler. **Remarks:** This plot was also used as a mist-netting site for the Monitoring Avian Productivity and Survivorship (MAPS) project. **Acknowledgments:** Thanks to Bonnie Stout and Sue Stein for their assistance in the establishment of this plot.

## 16. OLD-GROWTH WOODS AND SWAMP FOREST

### BOSQUES VIEJOS Y BOSQUES PANTANOSOS

LEAH R. KNAPP, DVM

815 Jones Street

Marshall, Michigan 49068

**Location:** Michigan; Calhoun Co.; Fredonia Township; Jenney Woods Preserve; 42°14'N, 85°3'W. **Continuity:** Established 1989; 4 yr. **Size:** 28.3 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):36 (1990) and *J. Field Ornithol.* 63 (Suppl.):45 (1992). **Weather:** Mean start temp., 21.9°C (range 16–28°C). During May and June, precipitation was lower than normal and temperatures were near or below normal. **Coverage:** 29.5 h; 8 visits (2 sunrise, 1 sunset); 8, 12, 19, 28 May; 2, 9, 16, 23 June. Maximum number of observers/visit, 3. **Census:** Song Sparrow, 25.0 (35; 1N); Common Yellowthroat, 14.0 (20); Veery, 13.0 (18); Northern Cardinal, 13.0 (2FL); Eastern Wood-Pewee, 11.0 (16); Tufted Titmouse, 11.0 (1N,3FL); Blue Jay, 10.0 (14; 6FL); Gray Catbird, 10.0; Yellow Warbler, 9.0 (13; 1N); Great Crested Flycatcher, 8.0 (11; 1N); Wood Thrush, 8.0; Red-eyed Vireo, 8.0; Rose-breasted Grosbeak, 8.0; Indigo Bunting, 8.0; American Goldfinch, 7.0 (10); American Robin, 6.0 (8; 1N,2FL); Scarlet Tanager, 6.0; Brown-headed Cowbird, 6.0; Black-capped Chickadee, 5.0 (7); Blue-gray Gnatcatcher, 5.0; Cedar Waxwing, 5.0; Blue-winged Warbler, 5.0; Ovenbird, 5.0; Downy Woodpecker, 3.0 (4; 1N); Acadian Flycatcher, 3.0; American Crow, 3.0; Common Grackle, 3.0 (2FL); Ring-necked Pheasant, 2.0; Red-bellied Woodpecker, 2.0; Hairy Woodpecker, 2.0 (1N,2FL); White-breasted Nuthatch, 2.0; Northern Oriole, 2.0; Turkey Vulture, 1.0; Cooper's Hawk, 1.0; Red-tailed Hawk, 1.0; Ruffed Grouse, 1.0; Eastern Screech-Owl, 1.0; Great Horned Owl, 1.0; Northern Flicker, 1.0; Willow Flycatcher, 1.0; House Wren, 1.0; Yellow-throated Vireo, 1.0; Black-and-white Warbler, 1.0; Red-winged Blackbird, 1.0. **Total:** 44 species; 240.0 territories (339/40 ha). **Visitor:** Mourning Dove. **Remarks:** The plot is remarkably undisturbed. I am one of the few visitors to the preserve during the breeding season.

## 17. BASSWOOD-BLACK ASH FOREST WITH DEAD TIMBER

### BOSQUE DE TILO AMERICANO-FRESNO NEGRO CON ÁRBOLES MUERTOS

LISA SCHULTE, MELINDA PLANTZ & LAURA PETERSON

University of Minnesota Forestry and Biological Station  
Lake Itasca, Minnesota 56460

**Site Number:** MN2090022. **Location:** Minnesota; Clearwater Co.; Lake Itasca; Itasca State Park, Bear Paw Point; 47°13'N, 95°12'W; Lake Itasca Quadrangle, USGS. **Conti-**

**nunity:** Established 1979; 6 yr. **Size:** 11.5 ha. **Description of Plot:** See *Am. Birds* 34:51–52 (1980) and *J. Field Ornithol.* 62 (Suppl.):40–41 (1991). A rectangular plot (250 × 550 m) with an open canopy dominated by American Basswood, Black Ash and White Spruce. A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727–736) yielded the following results: Trees, 7.6 cm diameter and over, based on 10 0.04-ha circular samples, 849/ha; total basal area 23.4 m<sup>2</sup>/ha. Species comprising total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%)]: American Basswood, 185, 22, 19, 80; dead timber, 183, 22, 37, 100; Black Ash, 163, 19, 17, 90; White Birch, 9.5, 11, 7, 50; White Spruce, 90, 11, 7, 70; Balsam Fir, 65, 7.7, 5.4, 50; American Elm, 40, 5, 2.4, 70; Hop-Hornbeam, 18, 2, 0.69, 10; willow, 5, 0.59, 0.2, 10; White Pine, 2.5, 0.30, 4.8, 10; oak, 2.5, 0.3, 0.10, 10. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m<sup>2</sup>/ha, and relative dominance (%)]: A (7.6–15.2 cm) 563, 66, 5.2, 22; B (15.2–22.9 cm) 138, 16, 3.8, 16; C (22.9–30.5 cm) 78, 9, 4.3, 18; D (30.5–38.1 cm) 43, 5, 3.9, 17; E (38.1–53.3 cm) 20, 2.4, 3.3, 14; F (53.3–66.6 cm) 2.5, 0.3, 0.7, 3; G (66.6–83.8 cm) 5, 0.6, 2.3, 10. Shrub stems/ha, 963, dominated by Black Ash, American Basswood, and White Birch. Ground cover, 80%, dominated by Ostrich Fern, grasses, and Blue Cohosh. Canopy cover, 80%; mean canopy height, 15 m (range 12–18 m). There are two ponds on the plot with a maximum diameter of 5 m and a maximum depth of 0.5 m. Ephemeral pools are also present during the breeding season. **Edge:** Up to 50% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat < 25 ha in size. A cattail marsh borders to the SE and a lake to the W. **Topography and Elevation:** The plot has an E-facing slope of 6–10%. Minimum elevation 448 m, maximum 457 m. **Weather:** Mean start temp., 16.2°C (range 11–21°C). Cool and rainy. **Coverage:** 32.8 h; 8 visits (6 sunrise, 1 sunset); 24, 27, 28 June; 5, 6, 7, 11, 12, 18 July. Two visits were done over a two-day period. Maximum number of observers/visit, 4. **Census:** Red-eyed Vireo, 47.5 (165; 1N); Song Sparrow, 8.0 (28); Least Flycatcher, 7.0 (24); Black-throated Green Warbler, 6.5 (23); Great Crested Flycatcher, 6.0 (21); Chestnut-sided Warbler, 5.0 (17); Common Yellowthroat, 5.0; White-throated Sparrow, 5.0; Blackburnian Warbler, 4.0 (14); American Redstart, 4.0; Mourning Warbler, 4.0; Eastern Wood-Pewee, 3.0 (10); Northern Parula, 3.0; Black-and-white Warbler, 2.5; Downy Woodpecker, 2.0; Eastern Kingbird, 2.0; Black-capped Chickadee, 2.0; Yellow-rumped Warbler, 2.0; Ovenbird, 2.0; Hairy Woodpecker, 1.5; Chipping Sparrow, 1.5; Yellow-bellied Sapsucker, 1.0 (1N,3FL); Pileated Woodpecker, 1.0; Brown Creeper, 1.0 (1N); Veery, 1.0; Nashville Warbler, 1.0; Yellow Warbler, 1.0; Pine Warbler, 1.0; Canada Warbler, 1.0; Northern Oriole, 1.0. **Total:** 30 species; 132.5 territories (461/40 ha). **Visitors:** Red-headed Woodpecker, Northern Flicker, Eastern Phoebe, American Crow, Red-breasted Nuthatch, White-breasted Nuthatch, Cedar Waxwing, European Starling, Scarlet Tanager, Rose-breasted Grosbeak, Indigo Bunting, Red-winged Blackbird, Common Grackle, Brown-headed Cowbird. **Remarks:** White-breasted Nuthatches were seen and heard frequently and may have nested earlier in the season. Young American Crows were seen and heard, but there was no evidence of territorial behavior. **Other Observers:** David Blockstein and Bethany Woodworth. **Acknowledgments:** University of Minnesota Forestry and Biological Station and Itasca State Park.

## 18. MATURE ASPEN FOREST WITH YOUNG MAPLE UNDERSTORY

BOSQUE MADURO DE ALAMO CON JOVEN SOTOBOSQUE DE ARCE

GUS NYBERG, JAMES LIN & STUART WAGENIUS

University of Minnesota Forestry and Biological Station  
Lake Itasca, Minnesota 56460

**Site Number:** MN2090021. **Location:** Minnesota; Clearwater Co.; Lake Itasca; Itasca State Park, Ozawindib Woods; 47°10'N, 95°10'W; Lake Itasca Quadrangle, USGS. **Con-**

**tinuity:** Established 1990; 3 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):41–42 (1991). A rectangular plot (300 × 400 m) with a closed canopy dominated by White Pine, aspen, and Red Pine. A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727–736) yielded the following results: Trees, 7.6 cm diameter and over, based on 10 0.04-ha circular samples, 531/ha; total basal area 28.7 m<sup>2</sup>/ha. Species comprising 90% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%)]: dead, 101.3, 19.1, 13.0, 100; White Pine, 84.0, 15.8, 23.0, 60; aspen sp., 76.6, 14.4, 20.6, 70; maple sp., 69.2, 13.0, 12.8, 70; Red Oak, 51.9, 9.8, 9.2, 90; birch sp., 46.9, 8.8, 8.0, 70; Red Pine, 37.1, 7.0, 9.4, 50; Ironwood, 37.1, 7.0, 1.2, 20; Bur Oak, 27.2, 5.1, 2.8, 60. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m<sup>2</sup>/ha, and relative dominance (%)]: A (7.6–15.2 cm) 177.8, 33.6, 1.66, 5.8; B (15.2–22.9 cm) 145.7, 27.4, 4.07, 14.2; C (22.9–30.5 cm) 86.5, 16.2, 4.97, 17.3; D (30.5–38.1 cm) 76.6, 14.4, 7.13, 24.8; E (38.1–53.3 cm) 27.2, 5.1, 4.55, 15.9; F (53.3–68.6 cm) 9.9, 1.9, 2.85, 9.9; G (68.6–83.3 cm) 4.9, 0.9, 2.25, 7.9; H (> 83.8 cm) 2.5, 0.5, 1.27, 4.4. Shrub stems/ha, 3855, dominated by maple, Beaked Hazel, and Red Oak. Ground cover, 43%, dominated by Large-leaved Aster, Wild Sarsaparilla, and Large-flowered Bellwort. Canopy cover, 75%; mean canopy height, 17 m (range 9–30 m). There are two ponds on the plot with a maximum diameter of 100 m and a maximum depth of less than 1 m. Ephemeral pools are also present during the breeding season. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 26–50 ha in size. The S boundary is a mature pine forest and 130 m along the S end of the W boundary is a sphagnum bog. **Topography and Elevation:** The plot has an uneven S-facing slope of 6–10%. Minimum elevation 488 m, maximum 503 m. **Weather:** Mean start temp., 10.0°C (range 4–16°C). Cool and rainy, unseasonably wet. **Coverage:** 24.7 h; 8 visits (8 sunrise); 24, 26, 27, 28, 30 June; 4, 7, 11 July. Maximum number of observers/visit, 4. **Census:** Red-eyed Vireo, 24.0 (96); Ovenbird, 21.0 (84); Black-throated Green Warbler, 9.0 (36); Veery, 5.5 (22); Great Crested Flycatcher, 4.0 (16; 1FL); Pine Warbler, 4.0; Common Yellowthroat, 4.0; Yellow-bellied Sapsucker, 3.0 (12; 2N,3FL); Nashville Warbler, 3.0 (3FL); Eastern Wood-Pewee, 2.0 (1N); Chestnut-sided Warbler, 2.0; Canada Warbler, 2.0; Ruffed Grouse, 1.0 (5FL); Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Eastern Kingbird, 1.0; Blue Jay, 1.0; Black-capped Chickadee, 1.0; Scarlet Tanager, 1.0; Rose-breasted Grosbeak, 1.0; Song Sparrow, 1.0; Eastern Phoebe, 0.5; Broad-winged Hawk, + (1N,1FL). **Total:** 23 species; 93.0 territories (372/40 ha). **Visitors:** Downy Woodpecker, American Crow, Red-breasted Nuthatch, White-breasted Nuthatch, Brown Creeper, American Robin, American Redstart, Brown-headed Cowbird. **Other Observers:** David Blockstein and Bethany Woodworth. **Acknowledgments:** R. Ascenzi and the University of Minnesota Forestry and Biological Station, Itasca State Park.

## 19. UPLAND SECOND-GROWTH OAK–HICKORY FOREST

BOSQUE SECUNDARIO ROBLE–NOGAL DE ALTURAS

HAL MOORE

1 Lakeside Drive

Vicksburg, Mississippi 39180

**Location:** Mississippi; Warren Co.; Vicksburg; Lake Park Area; 32°14'N, 90°49'W; Big Black Quadrangle, USGS. **Continuity:** Established 1989; 4 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):8–9 (1990). **Weather:** Mean start temp., 17.1°C (range 10–22°C). Dry almost entire study period. Rainfall 33 cm below normal for Jan. through May. **Coverage:** 25.0 h; 12 visits (12 sunrise); 30 April; 1, 5, 7, 11, 13, 14, 16, 19, 20, 23, 27 May. **Census:** Acadian Flycatcher, 16.0 (64); Carolina Wren, 15.0 (60); Red-eyed Vireo, 14.0 (56); Red-bellied Woodpecker, 12.0 (48); Tufted Titmouse, 12.0; Northern Cardinal, 12.0; Hooded Warbler, 9.0 (36); Wood Thrush, 8.0 (32); Yellow-billed Cuckoo, 7.0 (28); White-eyed Vireo, 7.0; Summer Tanager, 5.0 (20); Carolina Chickadee, 4.0 (16); Great Crested Flycatcher, 3.0 (12); Blue-gray Gnatcatcher, 3.0; Yellow-throated

Vireo, 3.0; Prothonotary Warbler, 3.0; Swainson's Warbler, 3.0; Kentucky Warbler, 3.0; Northern Parula, 2.0; Brown-headed Cowbird, 2.0; Orchard Oriole, 2.0; Red-shouldered Hawk, 1.0; Broad-winged Hawk, 1.0; Barred Owl, 1.0; Ruby-throated Hummingbird, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; Blue Jay, 1.0; American Crow, 1.0; Fish Crow, 1.0; Brown Thrasher, 1.0; American Redstart, 1.0; Worm-eating Warbler, 1.0; Louisiana Waterthrush, 1.0; Yellow-breasted Chat, 1.0; Rufous-sided Towhee, 1.0. **Total:** 38 species; 162.0 territories (648/40 ha). **Remarks:** Ruby-throated Hummingbird, Hairy Woodpecker, Brown Thrasher, American Redstart, and Yellow-breasted Chat were each recorded on only one visit.

## 20. FLOODPLAIN FOREST

### BOSQUE INUNDABLE

HELMUT & NANCY MUELLER

*Department of Biology  
University of North Carolina  
Chapel Hill, North Carolina 27599-3280*

**Location:** North Carolina; Orange Co.; Chapel Hill; Big Oak Woods; 35°53'N, 79°0'W; Chapel Hill Quadrangle, USGS. **Continuity:** Established 1977; 16 yr. **Size:** 12.6 ha.

**Description of Plot:** See *Am. Birds* 32:63 (1978) and *J. Field Ornithol.* 63 (Suppl.):47 (1992). **Weather:** Start temps. (range 10–17°C). **Coverage:** 22.2 h; 11 visits (5 sunrise); 27, 28 April; 2, 10, 12, 14, 21, 23, 25 May; 2, 6 June. **Census:** Red-eyed Vireo, 26.0 (83); Acadian Flycatcher, 11.0 (35); Carolina Wren, 9.0 (29; FL); Blue-gray Gnatcatcher, 9.0 (FL); Carolina Chickadee, 7.0 (22; FL); Tufted Titmouse, 6.0 (19; FL); Kentucky Warbler, 6.0; Hooded Warbler, 6.0 (FL); Northern Cardinal, 4.5 (14; 1N); Downy Woodpecker, 4.0 (13; 2N, FL); Red-bellied Woodpecker, 3.5 (11); White-breasted Nuthatch, 3.5; Yellow-throated Vireo, 3.5; Scarlet Tanager, 3.0 (10); Ruby-throated Hummingbird, 2.5; Hairy Woodpecker, 2.5; Eastern Wood-Pewee, 2.0; Wood Thrush, 2.0; Indigo Bunting, 1.5; Yellow-billed Cuckoo, 1.0; Red-headed Woodpecker, 1.0; Northern Flicker, 1.0; Great Crested Flycatcher, 1.0; Northern Parula, 1.0; Ovenbird, 1.0; Common Yellowthroat, 1.0; Red-shouldered Hawk, +; Red-tailed Hawk, +; American Woodcock, +; Great Horned Owl, +; Barred Owl, + (1N); Pileated Woodpecker, +; Blue Jay, +; American Crow, +; Common Grackle, +; Brown-headed Cowbird, +. **Total:** 36 species; 119.5 territories (379/40 ha). **Visitors:** Wood Duck, Gray Catbird, American Redstart, Louisiana Waterthrush. **Remarks:** Red-tailed Hawks nested successfully 50 m E of the plot. **Other Observers:** T. Hass, J. Hole, W. Lancaster, J. Larke, R.H. Wiley.

## 21. MIXED DECIDUOUS FOREST

### BOSQUE MIXTO DECIDUO

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University of North Carolina  
Chapel Hill, North Carolina 27599-3280*

**Location:** North Carolina; Orange Co.; Chapel Hill; Botanical Garden Research Area; 35°54'N, 79°1'W; Chapel Hill Quadrangle, USGS. **Continuity:** Established 1976; 17 yr. **Size:** 12.6 ha. **Description of Plot:** See *Am. Birds* 31:41 (1977). **Weather:** Start temps. (range 10–18°C). **Coverage:** 21.0 h; 11 visits (8 sunrise); 27 April; 2, 10, 12, 14, 18, 21, 23, 25 May; 2, 6 June. **Census:** Red-eyed Vireo, 20.0 (63); Carolina Wren, 7.0 (22; FL); Blue-gray Gnatcatcher, 7.0; Carolina Chickadee, 6.0 (19; FL); Tufted Titmouse, 5.0 (16; FL); Wood Thrush, 5.0; Acadian Flycatcher, 4.5 (14); White-breasted Nuthatch, 4.0 (13; FL); Hooded Warbler, 4.0; Northern Cardinal, 4.0; Downy Woodpecker, 3.5 (11); Red-bellied Woodpecker, 3.0 (10); Hairy Woodpecker, 2.5; Pine Warbler, 2.5; Ovenbird, 2.5;

Yellow-billed Cuckoo, 2.0; Summer Tanager, 2.0; Scarlet Tanager, 2.0; Kentucky Warbler, 1.0; Red-shouldered Hawk, + (1N); Great Horned Owl, +; Barred Owl, +; Pileated Woodpecker, +; Blue Jay, +; American Crow, +; Brown-headed Cowbird, +. **Total:** 26 species; 87.5 territories (278/40 ha). **Visitors:** Great Crested Flycatcher, Eastern Wood-Pewee, Black-and-white Warbler. **Other Observers:** T. Hass, J. Hole, W. Lancaster, R.H. Wiley.

## 22. MATURE BEECH-MAPLE FOREST ON LAKE ONTARIO SHORE

BOSQUE DE HAYA-ARCE MADURO EN EL LAGO ONTARIO

GEORGE R. MAXWELL

*RD1, Box 179C*

*Red Creek, New York 13143*

**Site Number:** NY1689013. **Location:** New York; Cayuga Co.; Fair Haven; Cooper Bluff; 43°22'N, 76°40'W; Fair Haven Quadrangle, USGS. **Continuity:** Established 1989; 2 yr. **Size:** 16.2 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):40 (1990). **Weather:** Mean start temp., 17.0°C (range 12–25°C). **Coverage:** 10.0 h; 10 visits (2 sunrise, 4 sunset); 6, 9, 10, 12, 13, 17, 22, 24, 25 June. **Census:** American Redstart, 17.0 (42); Veery, 10.0 (25); Red-eyed Vireo, 10.0; Yellow Warbler, 8.0 (20); Wood Thrush, 6.0 (15); Common Yellowthroat, 6.0; House Wren, 5.0 (12); Eastern Wood-Pewee, 4.0 (10); Song Sparrow, 4.0; American Robin, 3.0 (7); Red-bellied Woodpecker, 2.0; Great Crested Flycatcher, 2.0; Gray Catbird, 2.0; Hooded Warbler, 2.0; Northern Cardinal, 2.0; Swamp Sparrow, 2.0; Red-winged Blackbird, 2.0; Eastern Kingbird, 1.0; Black-capped Chickadee, 1.0; Ovenbird, 1.0; Scarlet Tanager, 1.0; Indigo Bunting, 1.0; Bobolink, 1.0; Common Grackle, 1.0; Northern Oriole, 1.0. **Total:** 25 species; 95.0 territories (235/40 ha). **Visitors:** Downy Woodpecker, Willow Flycatcher, Eastern Phoebe, Blue Jay, Winter Wren, American Robin, European Starling, Yellow-throated Vireo, Rose-breasted Grosbeak, Chipping Sparrow. **Acknowledgments:** Thanks to Lori Tobler, M.D., for the use of the census area.

## 23. MATURE URBAN DECIDUOUS FOREST I

BOSQUE DECIDUO MADURO URBANO I

DAVID S. KÜNSTLER

*City of New York Dept. of Parks & Recreation*

*Van Cortlandt and Pelham Bay Parks Administrator's Office*

*1 Bronx River Parkway*

*Bronx, New York 10462*

**Site Number:** NY0989093. **Location:** New York; Bronx Co.; Hunter Island, Pelham Bay Park; 40°52'N, 73°47'W; Mount Vernon Quadrangle, USGS. **Continuity:** Established 1987; 6 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):38–39 (1990). **Weather:** Mean start temp., 17.1°C (range 13–24°C). April was 1.1°C below normal, May was 0.8°C below normal, and June was 0.6°C below normal. The average temperature for these months was 0.8°C below the mean. Precipitation in April was 5.1 cm below normal, in May it was 0.6 cm above normal, and in June it was 3.9 cm above normal. Average precipitation for these months was 0.5 cm below normal. Source: National Weather Service. **Coverage:** 23.9 h; 10 visits; 16 April; 4, 15, 22, 28, 29 May; 10, 23, 26 June; 8 July. **Census:** Common Yellowthroat, 12.5 (50); Rufous-sided Towhee, 10.0 (40); Gray Catbird, 9.0 (36; 1FL); European Starling, 8.0 (32; 3N); Tufted Titmouse, 4.5 (18; 1N); Carolina Wren, 3.5 (14; 1FL); Downy Woodpecker, 2.5 (1N); Red-bellied Woodpecker, 2.0; Great Crested Flycatcher, 2.0; Northern Cardinal, 2.0; American Robin, 1.5 (1FL); Northern Oriole, 1.5; White-breasted Nuthatch, 1.0; Brown-headed Cowbird, 1.0; American Crow, 0.5 (1N); Wood Thrush, 0.5; Great Horned Owl, + (1N, 2FL). **Total:** 17 species; 62.0

territories (246/40 ha). **Visitors:** Mourning Dove, Hairy Woodpecker, Eastern Kingbird, Blue Jay, Black-capped Chickadee, Brown Thrasher, Red-eyed Vireo, American Redstart, Rose-breasted Grosbeak, Song Sparrow, Swamp Sparrow, House Finch, American Goldfinch. **Remarks:** In addition to the nests and fledglings listed, there was also proof of nesting for Common Yellowthroat, Rufous-sided Towhee and Northern Oriole. A first year male of the latter species was seen carrying nest material. Rufous-sided Towhee was much more numerous than most other years of this census. For the first time since this census began in 1987, the Great Horned Owls did not raise three young. They raised two instead. Conspicuously absent were Ring-necked Pheasant, Northern Flicker, and Eastern Wood-Pewee. Some birds that "wander" in from edge habitats outside the plot were also absent, including Yellow Warbler and Red-winged Blackbird. The sudden appearance of several pairs of Carolina Wrens was surprising as only one pair had been present previously. This seems to be part of a regional boost in population this year, probably due to a mild winter.

**Acknowledgments:** Thanks to Robert Bealin and Linda P. Dockeray for their support.

## 24. MATURE URBAN DECIDUOUS FOREST II

### BOSQUE DECIDUO MADURO URBANO II

CARL A. JASLOWITZ

124 Gale Place  
Bronx, New York 10463

**Site Number:** NY0991069. **Location:** New York; Bronx Co.; New York City; Northwest Forest, Van Cortlandt Park; 40°54'N, 73°53'W; Yonkers Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.): 50 (1992). **Weather:** Mean start temp., 14.4°C (range 8–19°C). **Coverage:** 39.0 h; 12 visits (12 sunrise); 17, 21, 24, 28 May; 4, 12, 14, 18, 21, 23, 25, 29 June. **Census:** American Robin, 18.0 (72; 3N,3FL); Gray Catbird, 6.5 (26); Blue Jay, 5.0 (20; 1N,2FL); Tufted Titmouse, 5.0 (1N,1FL); Wood Thrush, 4.5 (18); Rufous-sided Towhee, 4.5; Northern Cardinal, 4.0 (16); Red-bellied Woodpecker, 3.5 (14; 1FL); European Starling, 3.0 (12; 2N); Brown-headed Cowbird, 3.0; Northern Flicker, 2.5 (1N); Downy Woodpecker, 2.0; Eastern Wood-Pewee, 2.0; Great Crested Flycatcher, 2.0; Ring-necked Pheasant, 1.5 (3FL); Black-capped Chickadee, 1.5; American Crow, 1.0; White-breasted Nuthatch, 1.0; Brown Thrasher, 1.0; Red-eyed Vireo, 1.0; Common Yellowthroat, 1.0; Rose-breasted Grosbeak, 1.0 (1N,2FL); Hairy Woodpecker, 0.5; Common Grackle, +; Northern Oriole, +; House Sparrow, +. **Total:** 26 species; 75.0 territories (300/40 ha). **Visitors:** Red-tailed Hawk, Mourning Dove, House Finch, American Goldfinch. **Acknowledgments:** Sincere thanks to David Künstler for providing the original map of the site, without which, precise and accurate gridding of the plot would have been impossible and to Linda Dockeray and Robert Bealin, as well as, David Künstler of the park's department administration office for their continued support.

## 25. URBAN DECIDUOUS WETLAND WITH STREAM

### ANEGADO DECIDUO URBANO CON ARROYO

CHRISTINA DOWD

Division of Fish and Wildlife  
NYS Department of Environmental Conservation  
47–40 21 Street  
Long Island City, New York 11101

**Site Number:** NY0992013. **Location:** New York; Richmond Co.; Staten Island; Latourette Park; 40°34'N, 74°8'W; Arthur Kill Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):51 (1992). Plot size increased by 3.0 ha in the SE, resulting in an L-shaped plot, 350 m on each leg. This

addition increased the topographic relief by including a 3.5 m rise in the SE corner. Upland woods increased to about 2.5 ha. A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727-736) yielded the following results: Trees, 7.6 cm diameter and over, based on 10 0.04-ha circular samples, 565/ha; total basal area 31.8 m<sup>2</sup>/ha. Species comprising 96% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%)]: Red Maple, 363, 64, 57, 100; standing dead, 48, 8, 7, 50; Red Oak, 23, 4, 8, 20; Tupelo, 23, 4, 1, 40; Slippery Elm, 20, 4, 3, 30; Tulip Tree, 15, 3, 6, 20; Swamp White Oak, 15, 3, 6, 60; Pin Oak, 13, 2, 4, 20; Black Cherry, 10, 2, 1, 20; Shagbark Hickory, 10, 2, 1, 10. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m<sup>2</sup>/ha, and relative dominance (%)]: A (7.6-15.2 cm) 155, 27, 1.5, 5; B (15.2-22.9 cm) 170, 30, 5, 15; C (22.9-38.1 cm) 175, 31, 13, 40; D (38.1-53.3 cm) 48, 8.5, 8, 24; E (53.3-68.6 cm) 15, 3, 4, 13; F (68.6-83.8 cm) 3, 0.5, 1, 3. Shrub stems/ha, 14,270, dominated by Spicebush (94% of stems counted). Ground cover, 94%, dominated by Skunk Cabbage, Jewelweed, and Canada Mayflower. Canopy cover, 99%. Vine coverage, 6% Greenbrier, by visual estimate at each sample. **Weather:** Mean start temp., 12.3°C (range 9-19°C). Conditions throughout the study period were generally clear, cool, and calm. **Coverage:** 17.7 h; 10 visits (10 sunrise); 12, 14, 19, 21, 26, 30 May; 2, 4, 10, 18 June. **Census:** Gray Catbird, 7.5 (30); Wood Thrush, 5.5 (22); Red-eyed Vireo, 5.0 (20); House Wren, 3.5 (14; 1N); Tufted Titmouse, 3.0 (12); Northern Cardinal, 2.5; Blue Jay, 1.5 (3FL); Black-capped Chickadee, 1.5; Downy Woodpecker, 1.0 (2FL); Northern Flicker, 1.0 (1N); Carolina Wren, 1.0 (2FL); Brown Thrasher, 1.0; Common Yellowthroat, 1.0; Scarlet Tanager, 1.0; Rufous-sided Towhee, 1.0; American Crow, 0.5; White-eyed Vireo, 0.5. **Total:** 17 species; 38.0 territories (152/40 ha). **Visitors:** Hairy Woodpecker, Eastern Wood-Pewee, Eastern Phoebe, Great Crested Flycatcher, American Robin, Common Grackle, Brown-headed Cowbird. **Remarks:** Carolina Wren was a new breeding species for the plot, nesting within the original 7 ha. Brown-headed Cowbird was a new visitor to the plot; a male and female were observed together on one visit. **Acknowledgments:** The census was conducted with the cooperation of the Office of the Greenbelt, New York City Dept. of Parks and Recreation.

## 26. YOUNG WHITE ASH-RED MAPLE FOREST ON LAKE SHORE

BOSQUE JOVEN DE FRESCO BLANCO-ARCE  
ROJO EN ORILLAS DE LAGOS

GEORGE R. MAXWELL

RD1, Box 179C  
Red Creek, New York 13143

**Site Number:** NY1686026. **Location:** New York; Wayne Co.; Fair Haven; Metzger Road; 43°20'N, 76°44'W; Oswego Quadrangle, USGS. **Continuity:** Established 1986; 7 yr. **Size:** 16.2 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):29 (1989). A dead-end road traverses the plot. The dominant forest tree is White Ash. A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727-736) yielded the following results: Trees, 7.6 cm diameter and over, based on 5 0.04-ha circular samples, 1,526/ha; total basal area 22.7 m<sup>2</sup>/ha. Total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%)]: White Ash, 1,250, 82, 63, 100; Red Maple, 109, 7, 14, 60; Hawthorn, 79, 5, 4, 60; Black Cherry, 89, 6, 19, 100. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m<sup>2</sup>/ha, and relative dominance (%)]: A (7.6-15.2 cm) 1,289, 85, 12, 53; B (15.2-22.9 cm) 188, 12, 5.2, 23; C (22.9-38.1 cm) 30, 2, 2.2, 10; D (38.1-53.3 cm) 20, 1, 3.3, 14. Shrub stems/ha, 17,438, dominated by White Ash and Red Maple seedlings, Arrowwood and Dogwood. Ground cover, 90%, dominated by Sensitive Fern, Goldenrod, and Poison Ivy. Canopy cover, 80%; average canopy height, 10.7 m (range 4.6-15.2 m). **Edge:** The plot is surrounded by field, similar woods, a cottage colony and

**Blind Sodus Bay.** **Weather:** Mean start temp., 14.6°C (range 10–22°C). **Coverage:** 10.0 h; 10 visits (3 sunrise, 3 sunset); 9, 10, 11, 12, 13, 14, 16, 19, 22, 24 June. **Census:** Yellow Warbler, 13.0 (32); American Robin, 7.0 (17); Gray Catbird, 6.0 (15); House Wren, 4.0 (10); Cedar Waxwing, 3.0 (7); Common Yellowthroat, 3.0; Northern Cardinal, 3.0; Song Sparrow, 3.0; Northern Oriole, 3.0; Black-capped Chickadee, 2.0; Wood Thrush, 2.0; Red-eyed Vireo, 2.0; American Redstart, 2.0; Red-winged Blackbird, 2.0; Mourning Dove, 1.0; Ruby-throated Hummingbird, 1.0; Eastern Wood-Pewee, 1.0; Willow Flycatcher, 1.0; Least Flycatcher, 1.0; Great Crested Flycatcher, 1.0; Tree Swallow, 1.0; Veery, 1.0; Warbling Vireo, 1.0; Ovenbird, 1.0; Rose-breasted Grosbeak, 1.0; Common Grackle, 1.0; House Finch, 1.0. **Total:** 27 species; 68.0 territories (168/40 ha). **Visitors:** Ruffed Grouse, Red-bellied Woodpecker, Downy Woodpecker, Purple Martin, Blue Jay, Tufted Titmouse, White-breasted Nuthatch, European Starling, Yellow-throated Vireo, Hooded Warbler, Scarlet Tanager, American Goldfinch, House Sparrow.

## 27. MATURE BROADLEAF FOREST

BOSQUE DE HOJA ANCHA MADURO

CHARLES W. SAUNDERS\* & DAVID STYER

\*5561 Carlsbad Court  
Fairfield, Ohio 45014

**Site Number:** OH1591043. **Location:** Ohio; Hamilton Co.; Harrison; Miami Whitewater Forest; 39°15'N, 84°46'W; Hooven Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):52 (1992). **Weather:** Mean start temp., 14.9°C (range 5–21°C). Much cooler than last year when mean start temp. was 21.6°C. **Coverage:** 26.2 h; 10 visits (10 sunrise); 23, 25, 31 May; 6, 13, 20, 27, 28 June; 11, 12 July. **Census:** Wood Thrush, 10.5 (26; 1FL); Red-eyed Vireo, 7.5 (19); Tufted Titmouse, 6.0 (15); Red-bellied Woodpecker, 5.5 (14; 1FL); Acadian Flycatcher, 5.5; Northern Cardinal, 5.5 (1FL); Hooded Warbler, 5.0 (13); Scarlet Tanager, 5.0; Brown-headed Cowbird, 5.0 (1FL); Blue Jay, 4.5 (11); White-breasted Nuthatch, 4.5; Hairy Woodpecker, 4.0 (10); Carolina Chickadee, 4.0; Downy Woodpecker, 3.5 (9); Eastern Wood-Pewee, 3.5; Northern Flicker, 2.0 (1N); Great Crested Flycatcher, 2.0; Rose-breasted Grosbeak, 2.0; Carolina Wren, 1.5; Yellow-billed Cuckoo, 1.0; Great Horned Owl, 1.0 (1N, 1FL); Pileated Woodpecker, 1.0 (1FL); Kentucky Warbler, 1.0; Summer Tanager, 1.0; Louisiana Waterthrush, 0.5 (1FL). **Total:** 25 species; 92.5 territories (231/40 ha). **Visitors:** Red-shouldered Hawk, Blue-gray Gnatcatcher, American Robin, Yellow-throated Vireo, Cerulean Warbler, Ovenbird, Indigo Bunting, Rufous-sided Towhee. **Other Observer:** Steve Bobonick. **Acknowledgments:** We thank John Klein of the Hamilton County Park District for his advice on site selection, and the Hamilton County Park District for the use of their land.

## 28. RIPARIAN DECIDUOUS FOREST

BOSQUE RIVEREÑO DECIDUO

ELLIOT J. TRAMER

Department of Biology  
The University of Toledo  
Toledo, Ohio 43606

**Site Number:** OH1689033. **Location:** Ohio; Lucas Co.; Waterville; Old Canal Lands; 41°28'N, 83°46'W; Grand Rapids Quadrangle, USGS. **Continuity:** Established 1989; 4 yr. **Size:** 18.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):43 (1990). **Weather:** Mean start temp., 17.6°C (range 6–26°C). Cooler than normal throughout the study period. Precipitation was normal in May, below normal in June, and above normal in July. Source: U.S. Weather Bureau, Toledo Express Airport. **Coverage:** 24.9 h; 9 visits (3 sunrise); 6,

23 May; 1, 7, 14, 28 June; 4, 11, 14 July. **Census:** American Robin, 18.0 (40); Gray Catbird, 13.0 (29); House Wren, 11.5 (26); Song Sparrow, 11.0 (24); Northern Cardinal, 8.0 (18); Common Grackle, 7.0 (16); Northern Oriole, 7.0; Warbling Vireo, 6.0 (13); Wood Thrush, 4.5 (10); Indigo Bunting, 4.0 (9); Blue Jay, 3.5 (8); Mourning Dove, 3.0 (7); Downy Woodpecker, 3.0; Tufted Titmouse, 3.0; White-breasted Nuthatch, 3.0; Red-eyed Vireo, 3.0; Rose-breasted Grosbeak, 3.0; Red-winged Blackbird, 3.0; Brown-headed Cowbird, 3.0; Northern Flicker, 2.0; Eastern Wood-Pewee, 2.0; Black-capped Chickadee, 2.0; Carolina Wren, 2.0; European Starling, 2.0; American Redstart, 2.0; American Goldfinch, 2.0; Wood Duck, 1.0; Ruby-throated Hummingbird, 1.0; Hairy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Tree Swallow, 1.0; Cedar Waxwing, 1.0; Yellow Warbler, 1.0; Common Yellowthroat, 1.0; Orchard Oriole, 1.0; Sharp-shinned Hawk, +. **Total:** 36 species; 140.5 territories (312/40 ha). **Visitors:** Black-billed Cuckoo, Yellow-billed Cuckoo, Great Horned Owl, Eastern Kingbird, American Crow, Blue-gray Gnatcatcher, Yellow-throated Vireo, Scarlet Tanager, House Finch. **Remarks:** The number of Eastern Wood-Pewee territories declined precipitously compared with the three previous years. Gray Catbird made the greatest population gain since 1991. Blue Jay and Indigo Bunting numbers, both down in 1991, recovered this year. Male and female Sharp-shinned Hawks were observed on the plot in May and early June, in circumstances suggesting a nearby nest. In particular, the male was seen carrying songbirds on three mornings. Sharp-shinned Hawks are very rare summer residents anywhere in Ohio.

## 29. DRY COTTONWOOD SAND DUNE

DUNA DE ALAMO SECO

REGAN C. GOODYEAR

*Long Point Bird Observatory*

*P.O. Box 160*

*Port Rowan, Ontario N0E 1M0*

**Location:** Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°32'N, 80°9'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** Established 1973; 4 yr. **Size:** 10.0 ha. **Description of Plot:** See *Am. Birds* 27:986–987 (1973) and *J. Field Ornithol.* 63 (Suppl.):54–55 (1992). Canopy cover measured in 1992 was 17% based on 10 vegetation profile readings above 2 m at each of 20 sampling points. A canopy cover estimate of 17% was made for 1991. The ground cover estimate based on readings below 1 m was 47%, compared with 43% in 1991. Vegetation profile estimates based on 10 line intersect readings at each of 20 sampling points were: < 0.5 m, 46%; 0.5–1 m, 5%; 1–2 m, < 1%; 2–5 m, 11.5%; > 5 m, 8%. The number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats was 300 compared with 1200 in 1991. The difference is accounted for by 600 fewer Riverbank Grape and no Eastern Cottonwood seedlings compared with 300 in 1991. Riverbank Grape, Common Juniper and Choke-Cherry were equally represented. All shrubs were < 0.5 m. Changes of 5% or more in the mean estimated cover for ground layer species from 1991 to 1992, based on 10, 1 × 1 m quadrats, include a 6% reduction in Switch Grass. **Weather:** Mean start temp., 14.2°C (range 8–22°C). **Coverage:** 42.3 h; 14 visits (12 sunrise, 2 sunset); 27 May; 1, 2, 4, 8, 11, 13, 16, 22, 23, 25, 27, 28 June. **Census:** Tree Swallow, 6.0 (24; 5N); Eastern Kingbird, 4.0 (16; 2N); Spotted Sandpiper, 3.0 (12, 1N); House Wren, 2.0 (2N); Field Sparrow, 2.0 (1N); Red-winged Blackbird, 2.0; Northern Oriole, 2.0; Chipping Sparrow, 1.5 (1N, 3FL); European Starling, + (3FL); Song Sparrow, + (3FL). **Total:** 10 species; 22.5 territories (90/40 ha). **Visitors:** Killdeer, Mourning Dove, Downy Woodpecker, Eastern Wood-Pewee, Great Crested Flycatcher, American Robin, Northern Mockingbird, Brown Thrasher, Common Grackle, American Goldfinch. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetational and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** David L. Goodyear and Jul K. Wojnowski. **Acknowledgments:** I thank Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 2 July 1992.

## 30. RED ASH-RED OAK SAVANNAH

### SAVANA DE FRESNO ROJO-ROBLE ROJO

JUL K. WOJNOWSKI & DAVID L. GOODYEAR

*Long Point Bird Observatory*

P.O. Box 160

Port Rowan, Ontario N0E 1M0

**Location:** Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°14'W; Little Creek Ridges, Quadrangle, DEMR. **Continuity:** Established 1991; 2 yr. **Size:** 10.3 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.): 55–56 (1992). Canopy cover measured in 1992 was 40% based on 10 vegetation profile readings above 2 m at each of 20 sampling points. In 1991 the canopy was estimated at 51%. The ground cover estimate, based on readings below 1 m, was 90% compared with 84% in 1991. Vegetation profile estimates based on 10 line intersect readings at each of 20 sampling points were: < 0.5 m, 86%; 0.5–1 m, 39%; 1–2 m, 2%; 2–5 m, 12%; > 5 m, 35%. The number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats was 35,900 compared with 30,300 in 1991. Size class distribution: < 0.5 m, 18,300; 0.5–1 m, 16,600; 1–2 m, 1000; > 2 m, 0 (compared with 15,100; 7200; 8000; 0 in 1991). Shrub species in order of total abundance: Sassafras 1200 stems < 0.5 m, 4800 stems 0.5–1 m, 600 stems 1–2 m, 0 stems > 2 m; Water-willow 2900, 11,300, 400, 0; Wild Red Raspberry 800, 500, 0, 0; ash 1200, 0, 0, 0; Black Cherry 900, 0, 0, 0; Red Maple 300, 0, 0, 0; Ironwood 200, 0, 0, 0. Changes from 1991 include an increase in the abundance of Wild Red Raspberry (from 100 to 1300 stems/ha), a 50% decrease in the abundance of Black Cherry (1800 to 900) and absence of Sweetbrier recorded in 1992. Changes of 5% or more in the mean estimated cover for ground layer species from 1991 to 1992, based on 10, 1 × 1 m quadrats, include a 23% reduction in Kentucky Bluegrass. The fewer green blades of this species present in 1992 is compensated for in the estimated percent cover of litter which increased from 20% in 1991 to 78% in 1992. **Weather:** Mean start temp., 14.5°C (range 10–18°C). Light rain during 31 May visit. **Coverage:** 38.3 h; 13 visits (10 sunrise, 2 sunset); 27, 31 May; 2, 4, 6, 8, 11, 13, 17, 23, 26, 27 June. **Census:** Red-winged Blackbird, 11.5 (45; 3N); House Wren, 10.0 (39; 1N); Song Sparrow, 7.5 (29); Tree Swallow, 6.0 (23; 5N); European Starling, 6.0 (14FL); Red-eyed Vireo, 5.5 (21); Yellow Warbler, 5.5; Eastern Wood-Pewee, 5.0 (19); Eastern Kingbird, 5.0; Common Grackle, 5.0 (2FL); Northern Oriole, 4.5 (17); Common Yellowthroat, 3.5 (14); Brown-headed Cowbird, 2.5; Northern Flicker, 2.0; Field Sparrow, 2.0 (2FL); Great Crested Flycatcher, 1.5; Wood Duck, 1.0 (1N); American Kestrel, 1.0; American Woodcock, 1.0 (2FL); Downy Woodpecker, 1.0 (2FL); Blue Jay, 1.0; Warbling Vireo, 1.0; Carolina Wren, +. **Total:** 23 species; 89.0 territories (346/40 ha). **Visitors:** Mallard, Mourning Dove, Great Horned Owl, Red-headed Woodpecker, Purple Martin, Black-capped Chickadee, Gray Catbird, Brown Thrasher, Cedar Waxwing, Rose-breasted Grosbeak, Indigo Bunting, American Goldfinch. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetational and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** Regan C. Goodyear and Paul N. Prior. **Acknowledgments:** We thank Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 3 July 1992.

## 31. RED OAK-IRONWOOD SAVANNAH

### SAVANA DE ROBLE ROJO-PALO DE HIERRO

JUL K. WOJNOWSKI

*Long Point Bird Observatory*

P.O. Box 160

Port Rowan, Ontario N0E 1M0

**Location:** Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point Company-Courtright Ridge; 42°34'N, 80°17'W; Big Rice Bay Quadrangle, DEMR. **Continuity:**

Established 1979; 3 yr. **Size:** 12.0 ha. **Description of Plot:** See *Am. Birds* 34:65 (1980) and *J. Field Ornithol.* 63 (Suppl.):56-57 (1992). Canopy cover measured in 1992 was 23% based on 10 vegetation profile readings above 2 m at each of 20 sampling points. The ground cover estimate based on readings below 1 m was 90% compared with 84% in 1991. Vegetation profile estimates based on 10 line intersect readings at each of 20 sampling points: < 0.5 m, 83%; 0.5-1 m, 47%; 1-2 m, 9%; 2-5 m, 8%; > 5 m, 21%. The number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats was 1100 compared with 1000 in 1991. Size class distribution: < 0.5 m, 700; 0.5-1 m, 300; 1-2 m, 100; > 2 m, 0 (compared with 800; 100; 100; 0 in 1991). Shrub species in order of total abundance: Riverbank Grape 400 stems/ha < 0.5 m, 200 stems/ha 0.5-1 m, 0 stems/ha 1-2 m, 0 stems/ha > 2 m; Black Cherry 200, 0, 0, 0; Buttonbush 0, 0, 100, 0; Sassafras 0, 100, 0, 0; Sweetbrier 100, 0, 0, 0. Changes from 1991 include an increase in the abundance of Riverbank Grape (from 200 to 600 stems/ha), a decrease in the number of Sassafras (300 to 100), loss of American Basswood (300 stems/ha in 1991) and Red Maple (100 stems/ha in 1991) and new records for Black Cherry and Sweetbrier. Changes of 5% or more in the mean estimated cover for ground layer species from 1991 to 1992, based on 10, 1 × 1 m quadrats, include a 17% reduction in Kentucky Bluegrass, 9% reduction in Rice Cut Grass, 7% reduction in the sedge *Carex pensylvanica*, and 6% increase in Canada Blue-joint. The reduction in living graminoids was compensated for in the estimated percent cover of litter which increased from 60% in 1991 to 74% in 1992. **Weather:** Mean start temp., 14.4°C (range 8-18°C). **Coverage:** 52.0 h; 14 visits (7 sunrise, 2 sunset); 28 May; 1, 2, 3, 5, 8, 12, 13, 16, 22, 25, 26, 27, 30 June. **Census:** Red-winged Blackbird, 24.0 (80; 3N); House Wren, 18.0 (60; 2N); Song Sparrow, 14.0 (47; 1N); Yellow Warbler, 11.5 (38; 2N); Eastern Wood-Pewee, 9.5 (32; 2N); Tree Swallow, 9.0 (30; 7N); Eastern Kingbird, 8.5 (28; 2N); Common Yellowthroat, 8.5 (1N); European Starling, 6.5 (22; 1N,2FL); Northern Oriole, 6.5 (1N,2FL); Least Flycatcher, 5.0 (17); Warbling Vireo, 5.0; Common Grackle, 5.0 (1N); Great Crested Flycatcher, 3.0 (10); Red-eyed Vireo, 3.0; American Redstart, 3.0; Mourning Dove, 2.0; Swamp Sparrow, 2.0; Brown-headed Cowbird, 2.0; American Goldfinch, 2.0; Red-tailed Hawk, 1.0 (1N); Downy Woodpecker, 1.0; Northern Flicker, 1.0; American Robin, 1.0; Great Horned Owl, 0.5. **Total:** 25 species; 152.5 territories (508/40 ha). **Visitors:** American Bittern, Great Blue Heron, Wood Duck, Mallard, American Woodcock, Yellow-billed Cuckoo, Red-headed Woodpecker, Red-bellied Woodpecker, Eastern Phoebe, Blue Jay, Black-capped Chickadee, White-breasted Nuthatch, Marsh Wren, Gray Catbird, Brown Thrasher, Cedar Waxwing, Prothonotary Warbler, Chipping Sparrow, Field Sparrow. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetational and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Acknowledgments:** I thank Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 7 July 1992.

## 32. OAK-MAPLE RIDGE-TOP FOREST BOSQUE DE ROBLE-ARCE DE TOPE DE COLINAS

CATHERINE B. VIVERETTE

*Hawk Mountain Sanctuary*

*Route 2, Box 191*

*Kempton, Pennsylvania 15529*

**Site Number:** PA1382312. **Location:** Pennsylvania; Berks Co.; Eckville; Owl's Head; 40°44'N, 75°50'W; New Ringgold Quadrangle, USGS. **Continuity:** Established 1982; 11 yr. **Size:** 19.3 ha. **Description of Plot:** See *Am. Birds* 37:55 (1983). **Weather:** Mean start temp., 13.4°C (range 2-22°C). **Coverage:** 25.8 h; 12 visits (11 sunrise); 28 April; 6, 22, 23, 29, 30 May; 8, 13, 24, 30 June; 9, 14 July. **Census:** Ovenbird, 11.5 (24); Common Yellowthroat, 3.5 (7); Scarlet Tanager, 3.0 (6); Indigo Bunting, 3.0; Blue Jay, 2.5; Rufous-sided Towhee, 2.5; Black-capped Chickadee, 2.0; Hermit Thrush, 2.0; Black-and-white Warbler, 2.0; Ruffed Grouse, 1.5; Great Crested Flycatcher, 1.0; American Crow, 1.0; Wood Thrush, 1.0; Red-eyed Vireo, 1.0; Rose-breasted Grosbeak, 1.0; Brown-headed Cow-

bird, 1.0; American Robin, 0.5. **Total:** 17 species; 40.0 territories (83/40 ha). **Visitors:** Downy Woodpecker, Hairy Woodpecker, Pileated Woodpecker, Eastern Wood-Pewee, Eastern Phoebe, Brown Creeper, Blue-gray Gnatcatcher, Eastern Bluebird, Cedar Waxwing. **Other Observers:** Rudy Keller, Mark Blauer, Jeanne Tinsman, Phil Campbell. **Acknowledgments:** Hawk Mountain Sanctuary contribution number 3.

### 33. OAK-MAPLE SLOPE FOREST

#### BOSQUE DE ROBLE-ARCE DE LADERAS

CATHERINE B. VIVERETTE

*Hawk Mountain Sanctuary*

*Route 2, Box 191*

*Kempton, Pennsylvania 19529*

**Site Number:** PA1382313. **Location:** Pennsylvania; Berks Co.; Eckville; River of Rocks; 40°45'N, 75°50'W; New Ringgold Quadrangle, USGS. **Continuity:** Established 1982; 11 yr. **Size:** 16.9 ha. **Description of Plot:** See *Am. Birds* 37:55 (1983). **Weather:** Mean start temp., 11.9°C (range 2–22°C). **Coverage:** 32.1 h; 13 visits (13 sunrise); 29 April; 13, 20, 23, 30 May; 2, 3, 10, 13, 17, 18, 23 June; 8 July. **Census:** Ovenbird, 8.5 (20); Red-eyed Vireo, 3.5 (8); Great Crested Flycatcher, 3.0 (7); Black-and-white Warbler, 3.0; Eastern Wood-Pewee, 2.5; Black-capped Chickadee, 2.5; Tufted Titmouse, 2.5; Wood Thrush, 2.5; Scarlet Tanager, 2.5; Brown-headed Cowbird, 2.5; Downy Woodpecker, 2.0; Rose-breasted Grosbeak, 2.0; Blue Jay, 1.5; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; White-breasted Nuthatch, 1.0; Carolina Wren, 1.0; Blue-gray Gnatcatcher, 1.0; American Redstart, 1.0; Worm-eating Warbler, 1.0; Northern Flicker, 0.5; Indigo Bunting, 0.5. **Total:** 22 species; 46.5 territories (110/40 ha). **Visitors:** Mourning Dove, Yellow-billed Cuckoo, Eastern Phoebe, American Crow, Gray Catbird, Northern Cardinal, American Goldfinch. **Other Observers:** Doug Wood, Rudy Keller, Jeanne Tinsman, Phil Campbell. **Acknowledgments:** Hawk Mountain Sanctuary contribution number 4.

### 34. SUBURBAN DECIDUOUS WOODLOT

#### RODAL DECIDUO SUBURBANO

DAVID ROBERTSON & ROBERT CAREY

*Pennypack Watershed Association*

*2955 Edge Hill Road*

*Huntingdon Valley, Pennsylvania 19006-5099*

**Site Number:** PA1091004. **Location:** Pennsylvania; Montgomery Co.; Bryn Athyn; Papermill Road Woods (South); 40°9'N, 75°3'W; Hatboro Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.): 62 (1992). **Weather:** Mean start temp., 14.5°C (range 13–19°C). **Coverage:** 20.8 h; 8 visits (8 sunrise); 19, 22, 28, 29 May; 2, 3, 10, 26 June. **Census:** Northern Cardinal, 10.0 (40); Wood Thrush, 8.0 (32); Gray Catbird, 8.0; Red-eyed Vireo, 8.0; Carolina Wren, 7.0 (28); Carolina Chickadee, 6.0 (24); Tufted Titmouse, 6.0 (1N); American Robin, 6.0 (1N); Rufous-sided Towhee, 5.0 (20); Blue Jay, 4.0 (16); White-breasted Nuthatch, 4.0; Veery, 4.0; Ovenbird, 4.0; Downy Woodpecker, 3.0 (12; 1N); Eastern Wood-Pewee, 3.0; Acadian Flycatcher, 3.0; Black-capped Chickadee, 3.0; Scarlet Tanager, 3.0; Red-bellied Woodpecker, 2.0; Warbling Vireo, 2.0; Common Yellowthroat, 2.0; Brown-headed Cowbird, 2.0; Northern Flicker, 1.0; Blue-winged Warbler, 1.0; American Redstart, 1.0. **Total:** 25 species; 106.0 territories (424/40 ha). **Other Observers:** Mary Robertson and Carrie Ferry.

## 35. UPLAND OAK-RED MAPLE FOREST

### BOSQUE DE ROBLE-ARCE ROJO DE ALTURAS

WILLIAM R. EDDLEMAN

*Department of Natural Resources Science  
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**Site Number:** RI1290087. **Location:** Rhode Island; Washington Co.; Peace Dale; Hazard Tract; 41°27'N, 71°29'W; Narragansett Pier Quadrangle, USGS. **Continuity:** Established 1990; 3 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):47-48 (1991). **Weather:** Mean start temp., 16.7°C (range 9-24°C). May mean temperature (13.1°C) was near normal (13.2°C). June mean temperature (17.9°C) was near normal (18.2°C). July mean temperature (20.1°C) was slightly cooler than normal (21.2°C). May precipitation (2.6 cm) was below normal (10.5 cm). June precipitation (9.4 cm) was above normal (7.4 cm). July precipitation (8.1 cm) was near normal (7.6 cm). Source: University of Rhode Island weather station, Kingston, RI. **Coverage:** 18.7 h; 10 visits (9 sunrise, 1 sunset); 29 May; 8, 16, 19, 22, 29 June; 7, 8, 11, 22 July. **Census:** Ovenbird, 11.5 (46; 2FL); Veery, 10.5 (42; 1FL); Rufous-sided Towhee, 8.0 (32; 2FL); Tufted Titmouse, 7.5 (30; 9FL); Gray Catbird, 6.0 (24; 1FL); Northern Cardinal, 5.0 (20); Great Crested Flycatcher, 4.5 (18); Downy Woodpecker, 4.0 (16; 2FL); Eastern Wood-Pewee, 4.0 (1FL); Wood Thrush, 3.5 (14); Black-capped Chickadee, 3.0 (12; 4FL); Black-and-white Warbler, 3.0; White-breasted Nuthatch, 2.5; Northern Flicker, 1.5; Brown Creeper, 1.5; Pine Warbler, 1.5; Scarlet Tanager, 1.5; Brown-headed Cowbird, 1.5; Blue Jay, 1.0; Carolina Wren, 1.0; Blue-winged Warbler, 1.0; Common Yellowthroat, 1.0; Great Horned Owl, 0.5; Rose-breasted Grosbeak, +. **Total:** 24 species; 85.0 territories (337/40 ha). **Visitors:** Hairy Woodpecker, American Crow, House Wren, American Robin, Red-eyed Vireo, American Redstart. **Remarks:** This plot was also used as a mist-netting site for the Monitoring Avian Productivity and Survivorship (MAPS) project. Contribution #2804 of the College of Resource Development, University of Rhode Island, with support from the Rhode Island Agricultural Experiment Station.

## 36. BOTTOMLAND HARDWOOD FOREST

### BOSQUE DE MADERAS DURAS INUNDABLE

JONATHAN PLISSNER\*, DALE DROGE\*, SIDNEY GAUTHREAUX, JR.\* &  
WILLIAM JARVIS

*\*Department of Biological Sciences  
Clemson University  
Clemson, South Carolina 29634-1903*

**Site Number:** SC0492036. **Location:** South Carolina; Aiken Co.; Jackson; Savannah River Site; 33°17'N, 81°47'W; Jackson Quadrangle, USGS. **Continuity:** New. **Size:** 12.2 ha. **Description of Plot:** A square plot (350 × 350 m) with a closed canopy dominated by Red Maple, Sweetgum, and Laurel Oak, estimated to be between 31 and 60 years of age. Mean canopy height, 20 m (range 15-25 m). The E three-quarters of the plot is dominated by a thick Cane understory. Other understory plants include Sweetgum, and Red Maple. Three small (< 20 m diameter) openings in the canopy are scattered in the N half of the plot and are dominated by a thick ground cover of grape vines. Other ground cover plants include Cat Brier, and Sphagnum. Approximately 50% of the plot was inundated during three visits, while < 2% was under water during the other six visits. The E 10-40 m of the plot is located above a 1.5 m embankment and contains vegetation more characteristic of drier hardwood forests. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 51-100 ha in size. The narrow strip of drier hardwoods on the E edge is bordered by mature and regenerative pine plantations.

**Topography and Elevation:** The plot is nearly level with a W-facing slope of < 5%. Minimum elevation 38 m, maximum 43 m. **Weather:** Mean start temp., 19.8°C (range 11–26°C). The mean high temperature for May was 27.5°C and the mean low was 16.1°C (range 9–36°C). The mean daily temperature was 21.8°C, 0.7°C below the normal daily average of 22.5°C. Precipitation in May was 8.0 cm, 5.4 cm below the average of 13.4 cm. Although the rain total was lower than normal, there were 15 days in May with at least some measurable precipitation. **Coverage:** 31.3 h; 9 visits (7 sunrise, 2 sunset); 7, 13, 20, 26, 28 May; 4, 9, 10, 14 June. **Census:** Red-eyed Vireo, 9.0 (30); Hooded Warbler, 7.0 (23); Carolina Wren, 6.0 (20); Acadian Flycatcher, 5.5 (18); American Redstart, 5.0 (16); Northern Parula, 4.5 (15); Northern Cardinal, 4.5; White-eyed Vireo, 4.0 (13; 1N); Wood Thrush, 3.5 (11; 1N); Carolina Chickadee, 3.0 (10); Tufted Titmouse, 3.0; Blue-gray Gnatcatcher, 3.0; Kentucky Warbler, 3.0; Black-and-white Warbler, 2.5 (1FL); Red-bellied Woodpecker, 2.0; Downy Woodpecker, 2.0; Great Crested Flycatcher, 1.5; Yellow-billed Cuckoo, 1.0; Pileated Woodpecker, 1.0; Yellow-throated Vireo, 1.0; Swainson's Warbler, 1.0; Summer Tanager, 1.0; Red-shouldered Hawk, 0.5; Pine Warbler, 0.5; Worm-eating Warbler, 0.5. **Total:** 25 species; 75.5 territories (248/40 ha). **Visitors:** Black Vulture, Barred Owl, Ruby-throated Hummingbird, Blue Jay. **Remarks:** The thick Cane understory required some clearing of paths before census work could be conducted. **Acknowledgments:** We thank the Department of Energy and the Savannah River Forest Station of the U.S. Forest Service for financial support and access to the area.

## 37. HARDWOOD SWAMP FOREST

BOSQUE DE MADERAS DURAS PANTANOSO

MICHAEL DAWSON & NORMAN BRUNSWIG

Francis Beidler Forest  
336 Sanctuary Road  
Harleyville, South Carolina 29448

**Location:** South Carolina; Dorchester & Berkeley Cos.; Harleyville; Francis Beidler Forest, Four Holes Swamp; 33°11'N, 80°19'W; Pringleton Quadrangle, USGS. **Continuity:** Established 1979; 5 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 34:50 (1980). Logged from 1962–1976. Closing canopy of unlogged Laurel Oak and White Ash, with a dense understory that also contains young Sweetgum, Black Willow, Red Maple, and Bald Cypress. Dwarf Palmetto covers about 25% of the plot. Approximately 33% of the plot was covered with standing water throughout the study period. **Edge:** Bordered on all sides by similar forest. **Topography and Elevation:** Plot is essentially level, but small changes in elevation (0.3–0.6 m) affect period of inundation. Elevation 16 m. **Weather:** Temperatures ranged from 7°C to 34°C, with a 2-month average of 22°C. There were no significant winds or rain. **Coverage:** 19.3 h; 9 visits; 1, 11, 15, 19, 20, 26 May; 3, 8 June. **Census:** Blue-gray Gnatcatcher, 34.0 (168); Red-eyed Vireo, 10.5 (52); Prothonotary Warbler, 9.0 (44); Tufted Titmouse, 8.0 (40); Carolina Wren, 8.0; White-eyed Vireo, 8.0; Northern Parula, 7.5 (37); Red-bellied Woodpecker, 7.0 (35); Acadian Flycatcher, 7.0; Downy Woodpecker, 6.0 (30); Northern Cardinal, 6.0; Great Crested Flycatcher, 5.0 (25); Carolina Chickadee, 4.0 (20); Hooded Warbler, 3.5 (17); Yellow-throated Warbler, 2.5; Yellow-billed Cuckoo, 2.0; Pileated Woodpecker, 2.0; Yellow-throated Vireo, 2.0; American Crow, 1.0; Common Grackle, 1.0; Red-shouldered Hawk, 0.5. **Total:** 21 species; 134.5 territories (664/40 ha). **Visitors:** Yellow-crowned Night-Heron, Barred Owl, Chimney Swift, Red-headed Woodpecker, Fish Crow, White-breasted Nuthatch, Black-throated Blue Warbler, Swainson's Warbler, Common Yellowthroat, Summer Tanager, Brown-headed Cowbird.

## 38. UPLAND HARDWOOD FOREST

### BOSQUE DE MADERAS DURAS DE ALTURAS

**JONATHAN PLISSNER\*, DALE DROGE\*, SIDNEY GAUTHREAUX, JR.\*  
& WILLIAM JARVIS**

*\*Department of Biological Sciences  
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**Site Number:** SC0492031. **Location:** South Carolina; Aiken Co.; New Ellenton; Savannah River Site; 33°19'N, 81°38'W; New Ellenton SW Quadrangle, USGS. **Continuity:** New. **Size:** 12.2 ha. **Description of Plot:** A square plot (350 × 350 m). A closed canopy dominated by Southern Red Oak, Mockernut Hickory, and White Oak, estimated to be between 61 and 100 years of age, covers 80% of the plot. Mean canopy height, 25 m (range 18–30 m). The understory is dominated by Flowering Dogwood, American Holly, and Sweetgum. The ground cover is dominated by grape, Cane, and Butterfly-Pea. A small spring runs the length of the plot, 100 m from the S edge. The more hydric soils along the streams support vegetation such as Cane, which is not found in other parts of the plot. **Edge:** Less than 25% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 26–50 ha in size. A large stream (4–8 m wide) borders the W and half of the N edges. The S border is 3–15 m in from the edge of a grass-forb-dominated power line corridor. **Topography and Elevation:** Most of the land slopes 20–40° toward the spring that runs through the plot. A similar slope is located along the W 50 m of the plot, facing the stream. Within 50 m of two-thirds of the N edge, the land drops 18–20 m along a wooded 45–60° slope. Minimum elevation 49 m, maximum 76 m. **Weather:** Mean start temp., 19.1°C (range 9–30°C). The mean high temperature for May was 27.5°C and the mean low was 16.1°C (range 9–36°C). The mean daily temperature was 21.8°C, 0.7°C below the normal daily average of 22.5°C. Precipitation in May was 8.0 cm, 5.4 cm below the average of 13.4 cm. Although the rain total was lower than normal, there were 15 days in May with at least some measurable precipitation. **Coverage:** 25.3 h; 8 visits (6 sunrise, 2 sunset); 5, 6, 12, 18 May; 3, 8, 10 June. **Census:** Northern Parula, 12.0 (39; 9FL); Red-eyed Vireo, 7.0 (23); Acadian Flycatcher, 5.5 (18); Carolina Wren, 5.0 (16); Wood Thrush, 5.0; Kentucky Warbler, 5.0 (1N, 1FL); Hooded Warbler, 5.0; Carolina Chickadee, 4.0 (13); Summer Tanager, 4.0; Northern Cardinal, 3.5 (11); Tufted Titmouse, 2.5 (3FL); Yellow-billed Cuckoo, 1.5; Blue-gray Gnatcatcher, 1.5; Yellow-throated Vireo, 1.5; Black-and-white Warbler, 1.5; Barred Owl, 1.0 (1FL); Red-bellied Woodpecker, 1.0; Downy Woodpecker, 1.0; White-eyed Vireo, 1.0; Yellow-throated Warbler, 1.0; American Redstart, 1.0; Pileated Woodpecker, 0.5; White-breasted Nuthatch, 0.5; Pine Warbler, 0.5; Great Crested Flycatcher, +; Prothonotary Warbler, +. **Total:** 26 species; 72.0 territories (236/40 ha). **Visitors:** Ruby-throated Hummingbird, Hairy Woodpecker, Worm-eating Warbler, Ovenbird, Louisiana Waterthrush. **Acknowledgments:** We thank the Department of Energy and the Savannah River Forest Station of the U.S. Forest Service for financial support and access to the area.

## 39. MATURE MAPLE-BEECH-BIRCH FOREST

BOSQUE DE ARCE-HAYA-ABEDUL MADURO

**LAURA J. MITCHELL\* & BARBARA H. STEDMAN**

*\*Cherokee National Forest  
P.O. Box 2010  
Cleveland, Tennessee 37320*

**Site Number:** TN2392102. **Location:** Tennessee; Monroe Co.; Whigg Ridge, Cherokee National Forest; 35°19'N, 84°2'W; Big Junction Quadrangle, USGS. **Continuity:** New. **Size:** 10.2 ha. **Description of Plot:** A rectangular plot of mature forest (305 × 335 m) with a closed canopy dominated by American Beech, Sugar Maple, Yellow Birch, and Eastern

Hemlock, estimated to be 61–100 years of age. Mean canopy height, 18 m (range 15–21 m). The understory is dominated by American Beech, Witch-hazel, Yellow Birch, and Eastern Hemlock. The ground cover is dominated by Hobblebush, American Beech (seedlings), and Wood Nettle. The plot contains a few continuously-flowing streams, a few intermittent streams, and some ephemeral pools. There are also numerous granitic outcroppings and boulders present. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat > 500 ha in size. Bordered to the S by a grassy bald (Whigg Meadow) and a 0.4-ha pond. A small part of the E edge is a one-lane, gravel road. **Topography and Elevation:** The plot lies on a NW-facing slope with a variable grade of approximately 40%. Minimum elevation 1396 m, maximum 1518 m. **Weather:** Mean start temp., 16.5°C (range 10–24°C). There was heavy rainfall during the early part of the nesting season. **Coverage:** 33.7 h; 13 visits (9 sunrise, 4 sunset); 2, 3, 20 May; 9, 10, 11, 15, 16, 17 June; 13, 14 July. **Census:** Dark-eyed Junco, 22.0 (86; 3N, 51FL); Ovenbird, 21.0 (82; 10FL); Veery, 20.5 (80; 1N, 3FL); Solitary Vireo, 13.0 (51); Chestnut-sided Warbler, 2.0 (1N); Black-throated Blue Warbler, 2.0; Red-eyed Vireo, 1.5 (2FL); Hairy Woodpecker, 1.0; Black-capped Chickadee, 1.0; Tufted Titmouse, 1.0 (1N, 4FL); Rufous-sided Towhee, 1.0; Broad-winged Hawk, 0.5 (1N); Ruffed Grouse, 0.5 (3FL); Northern Bobwhite, 0.5; Winter Wren, 0.5; Wild Turkey, + (1FL); Barred Owl, +; Pileated Woodpecker, +; Carolina Wren, + (4FL); Scarlet Tanager, +; Indigo Bunting, +. **Total:** 21 species; 88.0 territories (345/40 ha). **Visitors:** Ruby-throated Hummingbird, Downy Woodpecker, American Crow, Cedar Waxwing. **Remarks:** The heavy rainfall during the early part of the nesting season likely had a significant effect on nestling survival. Low fog, leaf drip, and running water in streams after heavy rains, may have had some impact on detectability of individuals. **Acknowledgments:** The authors acknowledge the logistical and financial support of the USDA-Forest Service, Cherokee National Forest.

## 40. MESOPHYTIC FOREST I BOSQUE MESOFÍTICO I

MICHAEL G. SMITH

Route 3, Box 301  
Elkton, Virginia 22827

**Site Number:** VA1083031. **Location:** Virginia; Green Co.; Elkton; Pocosin Cabin Plot; 38°24'N, 78°29'W; Fletcher Quadrangle, USGS. **Continuity:** Established 1987; 6 yr. **Size:** 6.1 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):32–33 (1989). **Weather:** Mean start temp., 13.4°C (range 9–23°C). Temperatures were below average and precipitation was above average for the study period. **Coverage:** 12.8 h; 11 visits (9 sunrise, 2 sunset); 24, 25, 26, 27, 28 May; 1, 2, 3, 6, 7, 11 June. **Census:** American Redstart, 14.5 (95); Red-eyed Vireo, 7.5 (49); Veery, 6.5 (43; 1N); Ovenbird, 5.5 (36); Hooded Warbler, 3.0 (20); Indigo Bunting, 3.0; Rufous-sided Towhee, 3.0; Eastern Wood-Pewee, 2.5; Acadian Flycatcher, 2.0; Solitary Vireo, 2.0; Black-throated Blue Warbler, 2.0; Cerulean Warbler, 2.0; Rose-breasted Grosbeak, 2.0; Wood Thrush, 1.5; Black-and-white Warbler, 1.0; Worm-eating Warbler, 1.0; Kentucky Warbler, 1.0; Scarlet Tanager, 1.0; Dark-eyed Junco, +. **Total:** 19 species; 61.0 territories (400/40 ha). **Visitors:** Yellow-billed Cuckoo, Downy Woodpecker, Hairy Woodpecker, Eastern Phoebe, Common Raven, Black-capped Chickadee, Tufted Titmouse, White-breasted Nuthatch, Blue-gray Gnatcatcher, Gray Catbird, Yellow-throated Vireo, Chestnut-sided Warbler, Blackburnian Warbler, Canada Warbler, Common Grackle, Brown-headed Cowbird, American Goldfinch. **Remarks:** The plot had minimal Gypsy Moth damage, despite not being sprayed this season. Compared with the 6-yr average, the following species have declined: Wood Thrush (~65%), Scarlet Tanager (~50%), Eastern Wood-Pewee (~25%), and Black-throated Blue Warbler (~25%). Compared with the 6-yr average, the following species have increased: Red-eyed Vireo (+170%), Ovenbird (+170%), and Indigo Bunting (+160%). The increase in Indigo Bunting may be a result of the oak die-off due to the Gypsy Moth defoliation of the past few years. **Acknowledgments:** Thanks to Elwood Fisher and others for plot layout and vegetation survey. Thanks also to the personnel of the Shenandoah National Park for their cooperation.

## 41. MESOPHYTIC FOREST II

### BOSQUE MESOFÍTICO II

MICHAEL G. SMITH

*Route 3, Box 301  
Elkton, Virginia 22827*

**Site Number:** VA1087013. **Location:** Virginia; Green Co.; Elkton; Pocosin Mission Plot; 38°24'N, 78°29'W; Fletcher Quadrangle, USGS. **Continuity:** Established 1983; 7 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 38:76–77 (1984). **Weather:** Mean start temp., 13.4°C (range 9–21°C). Temperatures were below average and precipitation was above average for the study period. **Coverage:** 12.4 h; 11 visits (9 sunrise, 2 sunset); 24, 25, 26, 27, 28 May; 1, 2, 3, 6, 7, 11 June. **Census:** American Redstart, 14.0 (92); Ovenbird, 11.0 (72); Veery, 7.0 (46); Red-eyed Vireo, 3.5 (23); Cerulean Warbler, 3.5; Eastern Wood-Pewee, 3.0 (20); Wood Thrush, 3.0; Rose-breasted Grosbeak, 3.0; Rufous-sided Towhee, 3.0; Scarlet Tanager, 2.0; Indigo Bunting, 2.0; Acadian Flycatcher, 1.5; Solitary Vireo, 1.5; White-breasted Nuthatch, 1.0; Yellow-throated Vireo, 1.0; Kentucky Warbler, 1.0; Hooded Warbler, 1.0. **Total:** 17 species; 62.0 territories (407/40 ha). **Visitors:** Ruby-throated Hummingbird, Downy Woodpecker, Pileated Woodpecker, Blue Jay, Common Raven, chickadee species, Tufted Titmouse, Carolina Wren, Blue-gray Gnatcatcher, Blackburnian Warbler, Black-and-white Warbler, Worm-eating Warbler, Canada Warbler, Brown-headed Cowbird, American Goldfinch. **Remarks:** The plot had minimal Gypsy Moth damage, despite not being sprayed this season. Compared with the 6-yr average, the following species have declined: Acadian Flycatcher (–40%), Hooded Warbler (–40%), Wood Thrush (–30%), Scarlet Tanager (–30%), Red-eyed Vireo (–25%), and Eastern Wood-Pewee (–20%). Compared with the 6-yr average, Ovenbird has increased (+140%). Eight Brown-headed Cowbirds (five males and three females) were seen courting on 3 June. Cowbird nest parasitism in the plot may be substantial. **Acknowledgments:** Thanks to Elwood Fisher and others for plot layout and vegetation survey. Thanks also to the personnel of the Shenandoah National Park for their cooperation.

## 42. OAK–MAPLE FOREST

### BOSQUE DE ROBLE-ARCE

J. RANDY DAVIS, JENSEN REITZ MONTAMBAULT, SUSAN A. TRZUSKOWSKI  
& FRANCES C. JAMES

*Mountain Lake Biological Station  
Route 1, Box 105-A  
Pembroke, Virginia 24136*

**Site Number:** VA1392010. **Location:** Virginia; Giles Co.; Pembroke; Mountain Lake Biological Station; 37°23'N, 80°33'W; Interior & Eggleston Quadrangles, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** A rectangular plot (200 × 500 m) with a closed canopy dominated by White Oak, Northern Red Oak, and Red Maple. A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970, *Aud. Field Notes* 24:727–736) yielded the following results: Trees, 7.6 cm diameter and over, based on 6 0.04-ha circular samples, 763/ha; total basal area 39.8 m<sup>2</sup>/ha. Species comprising 99% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m<sup>2</sup>/ha, relative dominance (%), and frequency (%)]: Red Maple, 242, 32, 6.6, 15, 100; White Oak, 158, 21, 14.4, 36, 100; Northern Red Oak, 138, 18, 11.4, 29, 100; Downy Serviceberry, 113, 14, 1.7, 4, 100; Sassafras, 8, 1, 0.2, 1, 17; Black Gum, 4, 0.5, 0.7, 1, 17; Chestnut Oak, 4, 0.5, 0.3, 1, 17; standing dead, 96, 13, 4.5, 11, 100. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m<sup>2</sup>/ha, and relative dominance (%)]: A (7.6–15.2 cm) 263, 34, 2.4, 6; B (15.2–22.9 cm) 175, 23, 4.9, 12; C (22.9–38.1 cm) 242, 32, 18, 45; D (38.1–53.3 cm) 79, 10, 13.3, 33; E (53.3–68.6 cm) 4, 1, 1.2, 3. Shrub stems/ha, 17,085, dominated by Downy Serviceberry, Mountain Holly, Striped

Maple, and American Chestnut (sprouts). Ground cover, 45%, dominated by Cinnamon Fern, Mountain Oat-Grass, and Blueberry. Canopy cover, 70%; average canopy height, 21 m (range 17–26 m). **Edge:** The plot is bordered on all sides by similar habitat, and it lies within a tract of similar habitat > 500 ha in size. **Topography and Elevation:** The plot is on the essentially level top of Salt Pond Mountain. Elevation 1168 m. **Weather:** Mean start temp., 12.3°C (range 9–13°C). It was wet, cool, and occasionally breezy during the study period. **Coverage:** 21.8 h; 9 visits (9 sunrise); 23, 26, 27, 29 June. **Census:** Red-eyed Vireo, 6.0 (24); Scarlet Tanager, 5.0 (20); Solitary Vireo, 4.5 (18; 1N); Eastern Wood-Pewee, 3.5 (14; 1N); White-breasted Nuthatch, 2.0; Dark-eyed Junco, 1.5; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Black-capped Chickadee, 1.0; Veery, 1.0; American Robin, 1.0 (1N); Cedar Waxwing, 1.0; Ovenbird, 1.0; Brown-headed Cowbird, 1.0; Rufous-sided Towhee, 0.5. **Total:** 15 species; 31.0 territories (124/40 ha). **Visitors:** Barred Owl, Pileated Woodpecker, Least Flycatcher, Common Raven, Tufted Titmouse, Indigo Bunting. **Remarks:** The Solitary Vireo nest contained one vireo egg and one Brown-headed Cowbird nestling. Eastern Chipmunks (*Tamias striatus*), Gray Squirrels (*Sciurus carolinensis*), and White-tailed Deer (*Odocoileus virginianus*) were seen frequently. **Acknowledgments:** We thank Henry Wilbur, Director of the Mountain Lake Biological Station, for the use of laboratory space and the station's leased land.

### 43. OLD-GROWTH MIXED CONIFEROUS–RED FIR FOREST TRANSITION

BOSQUE MADURO DE TRANSICIÓN MIXTO  
DE CONÍFEROS–PINABETE ROJO

JENNIFER G. TURNER, DOUGLAS A. DRYNAN &  
CHRISTOPHER M. HECKSCHER

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2081 East Sierra Avenue  
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**Location:** California; Fresno Co.; Wishon Village; Teakettle Experimental Forest; 36°57'N, 119°2'W; Patterson Mountain NE Quadrangle, USGS. **Continuity:** Established 1985; 8 yr. **Size:** 42.3 ha. **Description of Plot:** See 1985 BBC report. **Weather:** Mean start temp., 8.7°C (range 2–15°C). Conditions were generally fair with no census days lost to rain. **Coverage:** 125.6 h; 24 visits (24 sunrise); 18, 19, 21, 22, 27, 28 May; 1, 2, 4, 5, 9, 10, 12, 15, 17, 18 June. **Census:** Golden-crowned Kinglet, 35.0 (33; 3N); Fox Sparrow, 30.5 (29; 2N); Dark-eyed Junco, 23.5 (22; 14N); Red-breasted Nuthatch, 22.0 (21; 23N); Dusky Flycatcher, 16.5 (16; 15N); Hammond's Flycatcher, 14.0 (13; 8N); MacGillivray's Warbler, 13.0 (12); Mountain Chickadee, 12.5 (12; 17N); Hermit Warbler, 11.0 (10; 1N); Brown Creeper, 6.5 (6; 5N); Hermit Thrush, 6.0 (6; 1N); Western Tanager, 5.0 (5; 2N); White-headed Woodpecker, 4.0 (4; 7N); Mountain Quail, 3.5 (3); Yellow-rumped Warbler, 3.5 (1N); American Robin, 3.0 (3; 4N); Red-breasted Sapsucker, 2.0 (2N); Steller's Jay, 2.0; Townsend's Solitaire, 1.5 (1N); Hairy Woodpecker, 1.0 (1N); Northern Flicker, 1.0 (1N); Pileated Woodpecker, 1.0; Nashville Warbler, 1.0; Evening Grosbeak, 1.0 (1N); Northern Pygmy-Owl, 0.5; Common Raven, 0.5 (1N). **Total:** 26 species; 221.0 territories (209/40 ha). **Visitors:** Northern Goshawk, Red-tailed Hawk, Band-tailed Pigeon, Northern Saw-whet Owl, Vaux's Swift, Calliope Hummingbird, Olive-sided Flycatcher, Western Wood-Pewee, Solitary Vireo, Warbling Vireo, Black-headed Grosbeak, Green-tailed Towhee, Purple Finch, Cassin's Finch, Pine Siskin. **Remarks:** All boundary territories were computed as 0.5 territories. **Acknowledgments:** This effort is part of a study of bird monitoring techniques being conducted by Dr. Jared Verner, USDA Forest Service.

## 44. OLD-GROWTH SUBALPINE SPRUCE-FIR FOREST

### BOSQUE MADURO SUBALPINO ABETO-PINABETE

DAVE HALLOCK

2478 Eldora Road

Nederland, Colorado 80466

**Location:** Colorado; Boulder Co.; Eldora; Chittenden Old-growth Forest; 39°58'N, 105°38'W; East Portal Quadrangle, USGS. **Continuity:** Established 1987; 3 yr. **Size:** 15.0 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):43 (1989). **Weather:** Mean start temp., 9.5°C (range 3–13°C). The count period was cooler and more windy than normal. Source: monthly weather summary in local newspaper (*Nederland Mountain Ear*). **Coverage:** 15.5 h; 8 visits (6 sunrise); 18, 24 May; 7, 15, 28 June; 3, 12, 23 July. **Census:** Ruby-crowned Kinglet, 11.0 (29); Yellow-rumped Warbler, 8.0 (21); Dark-eyed Junco, 8.0 (2N); Mountain Chickadee, 4.5 (12; 1N); Hermit Thrush, 4.0 (11); American Robin, 4.0 (1N); Red-breasted Nuthatch, 2.0; Pine Grosbeak, 2.0; Brown Creeper, 1.0; Wilson's Warbler, 1.0; Lincoln's Sparrow, 1.0; White-crowned Sparrow, 1.0; Pine Siskin, 1.0; Three-toed Woodpecker, 0.5 (1N); Olive-sided Flycatcher, 0.5; Cassin's Finch, 0.5; Blue Grouse, +; Hairy Woodpecker, +. **Total:** 18 species; 50.0 territories (133/40 ha). **Visitors:** Broad-tailed Hummingbird, Northern Flicker, Cordilleran Flycatcher, Gray Jay, Clark's Nutcracker, Golden-crowned Kinglet, Mountain Bluebird, Brown-headed Cowbird, Red Crossbill. **Remarks:** There was an overall drop in numbers from the last census (1988) primarily due to fewer Ruby-crowned Kinglets and Hermit Thrushes. Cooler weather and increased wind may be the cause.

## 45. PONDEROSA PINE FOREST

### BOSQUE DE PINO PONDEROSA

LOUISE HERING

1055 Adams Circle, Apartment 225  
Boulder, Colorado 80303

**Location:** Colorado; Boulder Co.; Boulder; Enchanted Mesa; 39°50'N, 105°16'W; Boulder Quadrangle, USGS. **Continuity:** Established 1954; 27 yr. **Size:** 8.1 ha. **Description of Plot:** See *Aud. Field Notes* 8:372 (1954). The last major forest thinning, conducted in 1982, removed 43% of basal area. A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970, *Aud. Field Notes* 24:727–736) was done in July 1992 and yielded the following results: Trees, 10 cm dbh and over, based on 10 0.01-ha square samples, 410/ha living, 3/ha standing dead; total basal area 33.3 m<sup>2</sup>/ha living, 1 m<sup>2</sup>/ha standing dead. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%)]: Ponderosa Pine 410, 100, 100, 100. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m<sup>2</sup>/ha, and relative dominance (%)]: (10–14 cm) 80, 21, 0.8, 2; (15–19 cm) 50, 12, 1.0, 3; (20–24 cm) 30, 7, 1.1, 3; (25–29 cm) 60, 15, 3.3, 10; (30–34 cm) 30, 7, 2.4, 7; (35–39 cm) 30, 7, 3.2, 10; (40–44 cm) 60, 15, 8.2, 25; (45–49 cm) 50, 12, 8.6, 26; (50–54) 10, 2, 2.1, 6; (55–59 cm) 10, 2, 2.5, 8. Seedlings/ha, 20; saplings/ha, 50. Shrub stems/ha 8,940, dominated by Wax Currant and Three-leaf Sumac. Average shrub height, 0.5 m; area of shrubs, 272 m<sup>2</sup>/ha. Ground cover, 83%, dominated by grasses. Canopy cover, 51%; average canopy height, 13.9 m (range 10–18 m). **Weather:** Mean start temp., 13.5°C (range 4–20°C). May and June were slightly drier than normal. May was slightly warmer than normal. June was slightly cooler. Source: local newspaper weather log. There was light rain during one visit. **Coverage:** 22.4 h; 11 visits (9 sunrise); 11, 17, 24 April; 1, 7, 14, 21, 27 May; 4, 11, 25 June. **Census:** Pygmy Nuthatch, 8.0 (40; 8N); Chipping Sparrow, 5.0 (25; 1N); Western Wood-Pewee, 4.5 (22); American Robin, 3.0 (15; 2N); Hammond's Flycatcher, 2.0; Western Tanager, 2.0; Pine Siskin, 2.0; Rufous-sided Towhee, 1.5; Hairy Woodpecker, 1.0; Violet-green Swallow, 1.0; Black-billed Magpie,

1.0 (1N); Mountain Chickadee, 1.0; House Wren, 1.0; Solitary Vireo, 1.0; House Finch, 1.0; Mourning Dove, 0.5; Northern Flicker, +; White-breasted Nuthatch, +. **Total:** 18 species; 35.5 territories (175/40 ha). **Visitors:** Cooper's Hawk, Broad-tailed Hummingbird, Steller's Jay, Black-headed Grosbeak, Brown-headed Cowbird, Red Crossbill, Lesser Goldfinch. **Other Observer:** Dave Hallock.

## 46. CEDAR FOREST

### BOSQUE DE CEDRO

SUSAN WELLER

*Bureau of Land Management  
1808 North Third Street  
Coeur d'Alene, Idaho 83814*

**Site Number:** ID6492039. **Location:** Idaho; Bonner Co.; Sagle; Gamble Lake; 48°13'N, 116°23'W; Talache Quadrangle, USGS. **Continuity:** New. **Size:** 12.3 ha. **Description of Plot:** A square plot (350 × 350 m) with a canopy dominated by Western Red Cedar, Douglas-fir, and Grand Fir, estimated to be > 100 years of age. Mean canopy height, 25 m (range 15–30 m). The understory is dominated by Ocean-Spray, Snowberry, and Oregon Grape. The ground cover is dominated by Coolwort, Foamflower, Trail-plant, and Blackberry. The plot contains some ephemeral pools and one intermittent stream. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 51–100 ha in size. **Topography and Elevation:** The plot has an uneven slope facing W at 11–16% grade. Minimum elevation 659 m, maximum 695 m. **Weather:** Mean start temp., 17.5°C (range 12–25°C). **Coverage:** 22.7 h; 10 visits (5 sunrise, 5 sunset); 7, 8, 9, 10, 17, 18, 19 June. **Census:** Swainson's Thrush, 4.0 (13); Black-capped Chickadee, 2.0; Golden-crowned Kinglet, 2.0; American Robin, 2.0 (3FL); Solitary Vireo, 2.0; Red-eyed Vireo, 2.0; Orange-crowned Warbler, 2.0; Townsend's Warbler, 2.0; MacGillivray's Warbler, 2.0; Winter Wren, 1.5; Hairy Woodpecker, 1.0 (2FL); Pileated Woodpecker, 1.0 (2FL); Hammond's Flycatcher, 1.0; Cordilleran Flycatcher, 1.0; Tree Swallow, 1.0; Chestnut-backed Chickadee, 1.0; Red-breasted Nuthatch, 1.0; Brown Creeper, 1.0; Western Tanager, 1.0; Chipping Sparrow, 1.0 (3FL); Brown-headed Cowbird, 1.0. **Total:** 21 species; 32.5 territories (106/40 ha). **Visitors:** Cooper's Hawk, Common Nighthawk, Red-naped Sapsucker, Northern Flicker, Common Raven, White-breasted Nuthatch, Townsend's Solitaire, Nashville Warbler, Dark-eyed Junco. **Other Observer:** Lorraine Blumburg. **Acknowledgments:** Thanks to Scott Robinson for gridding the plot and for acting as correspondence liaison.

## 47. OLD-GROWTH FOREST

### BOSQUE DE EDAD AVANSADA

SANDRA JACOBSON & SUSAN WELLER

*Bureau of Land Management  
1808 North Third Street  
Coeur d'Alene, Idaho 83814*

**Site Number:** ID6492037. **Location:** Idaho; Boundary Co.; Bonner's Ferry; Farnham Forest; 48°50'N, 116°26'W; Farnham Peak Quadrangle, USGS. **Continuity:** New. **Size:** 11.3 ha. **Description of Plot:** A rectangular plot (150 × 750 m) with a closed canopy dominated by Western Red Cedar, Western Hemlock, and Douglas-fir, estimated to be > 100 years of age. Mean canopy height, 36 m (range 24–47 m). The understory is dominated by Box-leaf, White Spiraea, and Rocky Mountain Maple. The ground cover is dominated by Western Goldthread, Wild Sarsaparilla, and Queencup Beadlily. A few intermittent streams occur on the plot. **Edge:** Up to 50% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat no greater than 25 ha in size.

**Topography and Elevation:** The plot has an uneven slope facing E at > 16% grade. Minimum elevation 573 m, maximum 610 m. **Weather:** Mean start temp., 15.5°C (range 9–27°C). **Coverage:** 25.5 h; 9 visits (7 sunrise, 2 sunset); 1, 2, 3, 4, 16, 19, 20, 25 June. **Census:** Swainson's Thrush, 3.0; Townsend's Warbler, 3.0; Chestnut-backed Chickadee, 2.0; Brown Creeper, 2.0; Winter Wren, 2.0; Golden-crowned Kinglet, 2.0; Varied Thrush, 2.0; Pileated Woodpecker, 1.0; Solitary Vireo, 1.0; Yellow-rumped Warbler, 1.0; Black-headed Grosbeak, 1.0; Vaux's Swift, 0.5; Hammond's Flycatcher, 0.5; Nashville Warbler, 0.5. **Total:** 14 species; 21.5 territories (76/40 ha). **Visitors:** Cooper's Hawk, Mourning Dove, Great Horned Owl, Hairy Woodpecker, Northern Flicker, Gray Jay, Common Raven, White-breasted Nuthatch, Pygmy Nuthatch, Hermit Thrush, Red-eyed Vireo, Western Tanager, Lazuli Bunting, Dark-eyed Junco. **Other Observer:** Lewis Brown. **Acknowledgments:** Thanks to Bureau of Land Management biologist Scott Robinson for locating and gridding the plot, for acting as correspondence liaison, and for coordinating this cooperative effort between the U.S. Forest Service and Bureau of Land Management.

## 48. RIPARIAN FOREST

### BOSQUE RIVEREÑO

SUSAN WELLER

Bureau of Land Management  
1808 North Third Street  
Coeur d'Alene, Idaho 83814

**Site Number:** ID6491103. **Location:** Idaho; Shoshone Co.; Pinehurst; Pine Creek; 47°26'N, 116°17'W; Twin Crags Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 10.3 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):65–66 (1992). **Weather:** Mean start temp., 10.2°C (range 4–19°C). Drought conditions with standing water on plot down significantly from 1991. **Coverage:** 20.8 h; 10 visits (9 sunrise, 1 sunset); 6, 11, 18, 19, 27, 28, 29 May; 5, 16, 17 June. **Census:** Swainson's Thrush, 6.0 (23); Warbling Vireo, 4.0 (16); Townsend's Warbler, 4.0; MacGillivray's Warbler, 4.0; Hammond's Flycatcher, 3.0 (12); Golden-crowned Kinglet, 3.0 (5FL); Solitary Vireo, 3.0; Song Sparrow, 3.0; Ruffed Grouse, 2.0; Black-capped Chickadee, 2.0; Winter Wren, 2.0; Varied Thrush, 2.0; Orange-crowned Warbler, 2.0; Western Tanager, 2.0; Chipping Sparrow, 2.0; Brown-headed Cowbird, 2.0; Pine Siskin, 2.0 (5FL); Vaux's Swift, 1.0 (4FL); Willow Flycatcher, 1.0; Cordilleran Flycatcher, 1.0; Tree Swallow, 1.0 (4FL); Chestnut-backed Chickadee, 1.0; American Robin, 1.0 (4FL); Red-eyed Vireo, 1.0; Yellow Warbler, 1.0; Yellow-rumped Warbler, 1.0; Black-headed Grosbeak, 1.0. **Total:** 27 species; 58.0 territories (225/40 ha). **Visitors:** Great Blue Heron, Common Merganser, Belted Kingfisher, Northern Flicker, Steller's Jay, Common Raven, Boreal Chickadee, Brown Creeper, Wilson's Warbler, Dark-eyed Junco, Red Crossbill, Evening Grosbeak. **Remarks:** The appearance of Brown-headed Cowbird on this plot merits close monitoring. In 1991, cowbirds inhabited areas adjacent to, but not on, the plot itself. **Other Observers:** Greg Weller, Ray Chatfield, Lew Brown, Mert Lombard, LeAnn Eno. **Acknowledgments:** Thanks to Scott Robinson for his efforts in gridding the plot and for acting as correspondence liaison. Thanks to Bureau of Land Management biologist Lewis Brown, who in 1991, implemented the first BBC plots in Idaho. Thanks to the Bureau of Land Management for recognizing neotropical migratory bird species in their ecosystem management plan.

## 49. HEAVILY THINNED WHITE SPRUCE PLANTATION

### PLANTACIÓN ENTRESACADA DE ABETO BLANCO

JULIET K. MARKOWSKY

1 Edgewood Drive  
Orono, Maine 04473

**Site Number:** ME2785032. **Location:** Maine; Penobscot Co.; Old Town; University Forest, Block C-4; 44°57'N, 68°41'W; Orono Quadrangle, USGS. **Continuity:** Established 1985;

8 yr. **Size:** 4.1 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):44 (1989) and 61 (Suppl.):58 (1990). A dense understory of raspberry (1 m high) and Red Maple saplings (2 m high) has come up since thinning. **Weather:** Mean start temp., 11.8°C (range 7–17°C). May and June temperatures were at long-term averages. Precipitation in May was 36% of the long-term average but it was above average in June. Source: *The Guillemot*, newsletter of the Sorrento Scientific Society, Bar Harbor, ME. **Coverage:** 34.5 h; 14 visits (9 sunrise, 1 sunset); 9, 15, 20, 22, 29, 31 May; 3, 6, 11, 16, 19, 27, 29, 30 June. Maximum number of observers/visit, 10. **Census:** Solitary Vireo, 3.0; Northern Parula, 3.0; Magnolia Warbler, 3.0; White-throated Sparrow, 3.0; Black-capped Chickadee, 2.0; Golden-crowned Kinglet, 2.0; Red-eyed Vireo, 2.0; Nashville Warbler, 2.0; Yellow-rumped Warbler, 2.0; Black-throated Green Warbler, 2.0; Blackburnian Warbler, 2.0; Black-and-white Warbler, 2.0; American Redstart, 2.0; Purple Finch, 2.0; Eastern Wood-Pewee, 1.0; Red-breasted Nuthatch, 1.0; Winter Wren, 1.0; Veery, 1.0; American Robin, 1.0; Chestnut-sided Warbler, 1.0; Pine Warbler, 1.0; Bay-breasted Warbler, 1.0; Ovenbird, 1.0; Common Yellowthroat, 1.0; Canada Warbler, 1.0; Northern Goshawk, +. **Total:** 26 species; 43.0 territories (420/40 ha). **Visitors:** Ruffed Grouse, Yellow-bellied Sapsucker, Hairy Woodpecker, Pileated Woodpecker, Olive-sided Flycatcher, Blue Jay, Common Raven, Brown Creeper, Ruby-crowned Kinglet, Hermit Thrush, Wood Thrush, Gray Catbird, Cedar Waxwing, Tennessee Warbler, Cape May Warbler, Black-throated Blue Warbler, Brown-headed Cowbird, Pine Siskin, American Goldfinch, Evening Grosbeak. **Other Observers:** Norman Famous, students in WLM 260 (Field Ornithology) at the University of Maine.

## 50. MATURE RED SPRUCE FOREST

### BOSQUE DE ABETO ROJO MADURO

THOMAS P. SKALING

10 Cumberland Street  
Brunswick, Maine 04011

**Site Number:** ME2889052. **Location:** Maine; Somerset Co.; Upper Enchanted Township; Boise Cascade Tract; 45°25'N, 70°10'W; Enchanted Pond Quadrangle, USGS. **Continuity:** Established 1989; 4 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.): 57 (1990). **Weather:** Mean start temp., 11.0°C (range 0–18°C). Conditions during the six-week study period were cooler and much wetter than long-term averages. The average daily temperature was 14.5°C or 1.2°C below normal. Total precipitation was 24.7 cm or 11.2 cm and 80% above normal. Source: Northeast Regional Climate Center, Cornell University, and on-site instruments. **Coverage:** 23.8 h; 8 visits (8 sunrise); 27 May; 3, 10, 13, 20, 28 June; 7, 10 July. **Census:** Golden-crowned Kinglet, 7.0 (18); Red-breasted Nuthatch, 6.0 (15); Magnolia Warbler, 4.5 (11); Brown Creeper, 4.0 (10); Winter Wren, 4.0; Solitary Vireo, 4.0; Yellow-rumped Warbler, 4.0 (1N,3FL); Blackburnian Warbler, 4.0; Northern Parula, 3.5 (9); Black-capped Chickadee, 3.0 (8); Boreal Chickadee, 3.0; Hermit Thrush, 3.0; Dark-eyed Junco, 3.0; Yellow-bellied Sapsucker, 2.0 (1N,2FL); Bay-breasted Warbler, 2.0; Ruffed Grouse, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Yellow-bellied Flycatcher, 1.0; Blue Jay, 1.0; Swainson's Thrush, 1.0; Nashville Warbler, 1.0; Black-throated Blue Warbler, 1.0; Common Yellowthroat, 1.0; Canada Warbler, 1.0. **Total:** 25 species; 67.0 territories (168/40 ha). **Visitors:** Northern Saw-whet Owl, Belted Kingfisher, Gray Jay, Common Raven, American Robin, Cedar Waxwing, Rose-breasted Grosbeak, Purple Finch, Pine Siskin, Evening Grosbeak. **Acknowledgments:** I thank Boise Cascade for their continued assistance and interest in this project.

## 51. JACK PINE FOREST

### BOSQUE DE PINO DE JACK

GENE A. SCHROLL, JR.

*Whitefish Point Bird Observatory*

*H.C. 48, Box 115*

*Paradise, Michigan 49768*

**Site Number:** MI2885037. **Location:** Michigan; Chippewa Co.; Paradise; Whitefish Point; 46°45'N, 85°6'W; Vermilion SE & Sheldrake Quadrangles, USGS. **Continuity:** Established 1985; 8 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):45 (1989). **Weather:** Mean start temp., 6°C. One visit was windy (Beaufort 3 or 4). **Coverage:** 16.6 h; 8 visits (8 sunrise); 17 June–30 June. **Census:** Black-throated Green Warbler, 7.5 (19); Ovenbird, 7.5 (1N); Nashville Warbler, 5.5 (14); Yellow-rumped Warbler, 4.0 (10); Chipping Sparrow, 3.5 (9); Hermit Thrush, 2.5; Solitary Vireo, 2.0; Dark-eyed Junco, 1.5; Eastern Wood-Pewee, 1.0; Least Flycatcher, 1.0; Black-capped Chickadee, 1.0; Red-eyed Vireo, 1.0. **Total:** 12 species; 38.0 territories (95/40 ha). **Visitors:** Mourning Dove, Common Nighthawk, Northern Flicker, Blue Jay, Red-breasted Nuthatch, Brown Creeper, Golden-crowned Kinglet, American Robin, Purple Finch, Evening Grosbeak. **Remarks:** The Ovenbird nest had 4 eggs. Also observed from plot: Common Loon, Sandhill Crane, American Crow, Common Raven, Cedar Waxwing.

## 52. UPLAND CHRISTMAS TREE FARM

### FINCAS DE ÁRBOLES DE NAVIDAD DE ALTURAS

ELIZABETH W. BROOKS

*1435 Waterwells Road*

*Alfred Station, New York 14803*

**Site Number:** NY2483108. **Location:** New York; Allegany Co.; Andover; Kent Christmas Tree Farm; 42°10'N, 77°50'W; Andover Quadrangle, USGS. **Continuity:** Established 1983; 10 yr. **Size:** 10.7 ha. **Description of Plot:** See *Am. Birds* 38:91 (1984). **Weather:** Mean start temp., 19.4°C (range 15–27°C). The average daily temperatures in May (12.07°C), June (15.61°C), and July (17.22°C) were within the normal range. There were hard freezes on 11 and 16 May and a near freeze on 24 May. Precipitation totals for May (7.77 cm) and June (4.37 cm) were near their 57-yr averages, but July was one of the wettest Julys on record (20.90 cm). Source: Alfred Cooperative Weather Station. **Coverage:** 20.8 h; 11 visits (1 sunset); 15 April; 3, 9, 16, 25 June; 2, 10, 22, 30 July; 10, 26 August. **Census:** Chipping Sparrow, 16.0 (60; 16N,39FL); Song Sparrow, 15.0 (56; 5N,11FL); Field Sparrow, 6.0 (22; 1N,4FL); Cedar Waxwing, 5.0 (19; 6N,16FL); Purple Finch, 4.0 (15; 4N,5FL); Savannah Sparrow, 3.0 (11); American Woodcock, 2.0; American Robin, 2.0 (2N,3FL); Bobolink, 2.0; Red-winged Blackbird, 2.0; American Goldfinch, 2.0 (1N); Eastern Kingbird, 1.0; Yellow-rumped Warbler, 1.0 (1N,0FL); Prairie Warbler, 1.0; Clay-colored Sparrow, 1.0; Grasshopper Sparrow, 1.0; House Finch, 1.0 (1N,0FL); Gray Catbird, +; Brown Thrasher, +; Common Yellowthroat, +; Vesper Sparrow, +. **Total:** 21 species; 65.0 territories (243/40 ha). **Visitors:** Black-billed Cuckoo, Yellow Warbler. **Remarks:** Breeding success may have been adversely affected by the two hard freezes and one near freeze in May. Clay-colored Sparrow was new to the plot. Rufous-sided Towhee was missing for the first time since 1983. **Acknowledgments:** Appreciation to Tom and Kathy Kent for permission to use the study area and to Rick Walker for weather data.

### 53. UPLAND SCOTCH PINE PLANTATION

PLANTACIÓN EN ALTURA DE PINO ESCOCÉS

ELIZABETH W. BROOKS

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Alfred Station, New York 14803

**Site Number:** NY2470024. **Location:** New York; Allegany Co.; Alfred; Foster Plantation; 42°7'N, 77°45'W; Andover Quadrangle, USGS. **Continuity:** Established 1969; 24 yr. **Size:** 9.3 ha. **Description of Plot:** See *Aud. Field Notes* 23:743-744 (1969) and *Am. Birds* 38:38 (1984). **Weather:** Mean start temp., 17.9°C (range 13-23°C). See BBC #52. **Coverage:** 10.3 h; 9 visits (3 sunset); 6 April; 2, 8, 15, 23, 30 June; 7, 17, 28 July. **Census:** Chipping Sparrow, 5.0 (22; 1N,0FL); Magnolia Warbler, 4.0 (17); Common Yellowthroat, 4.0 (1N,0FL); Song Sparrow, 4.0; Yellow-rumped Warbler, 3.5 (15); American Robin, 3.0 (13; 1N,0FL); Indigo Bunting, 3.0; Blue Jay, 2.5; Golden-crowned Kinglet, 2.0; Cedar Waxwing, 2.0; Rufous-sided Towhee, 2.0; Dark-eyed Junco, 2.0; Purple Finch, 2.0; Ruffed Grouse, 1.0; American Woodcock, 1.0; Mourning Dove, 1.0 (1N,0FL); Alder Flycatcher, 1.0; Solitary Vireo, 1.0; Blue-winged Warbler, 1.0; Nashville Warbler, 1.0; Brown-headed Cowbird, 1.0; Black-capped Chickadee, 0.5; Gray Catbird, 0.5; Field Sparrow, +. **Total:** 24 species; 48.0 territories (206/40 ha). **Visitors:** Wild Turkey, Eastern Kingbird, Red-breasted Nuthatch, Chestnut-sided Warbler, Blackburnian Warbler, Ovenbird, Pine Siskin, American Goldfinch. **Remarks:** Changes in bird species and numbers continue to reflect the habitat change from managed Christmas tree farm (1969-1984) to mature Scotch Pine and Norway Spruce with intervals of briars and shrubby growth. The appearance of new species, Golden-crowned Kinglet and Solitary Vireo, along with increased numbers of Magnolia Warblers, Yellow-rumped Warblers, and Dark-eyed Juncos, reflect this habitat succession. **Acknowledgments:** Appreciation to Cynthia Clements and Phil Foster for permission to conduct the study on their land.

### 54. TAMARACK SLOUGH

PANTANO DE LARICE AMERICANO

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**Location:** Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°5'W; Gravelly Bay Quadrangle, DEMR. **Continuity:** Established 1973; 5 yr. **Size:** 8.8 ha. **Description of Plot:** See *Am. Birds* 28:1017-1018 (1974) and *J. Field Ornithol.* 63 (Suppl.):68-69 (1992). Canopy cover measured in 1992 was 27% based on 10 vegetation profile readings above 2 m at each of 20 sampling points. This is the same canopy cover estimate made in 1991. The ground cover estimate based on readings below 1 m was 89% compared with 83% in 1991. Vegetation profile estimates based on 10 line intersect readings at each of 20 sampling points were: < 0.5 m, 74%; 0.5-1 m, 55%; 1-2 m, 20%; 2-5 m, 21%; > 5 m, 11%. The number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats was 82,700 compared with 53,500 in 1991. Size class distribution: < 0.5 m, 35,600; 0.5-1 m, 44,800; 1-2 m, 1000; > 2 m, 1300 (compared with 28,400; 22,900; 2200; 0 in 1991). Shrub species in order of total abundance: Wild Red Raspberry 26,400 stems/ha < 0.5 m, 37,800 stems/ha 0.5-1 m, 1000 stems/ha 1-2 m, 0 stems/ha > 2m; Common Juniper 5300, 4400, 0, 0; Kalm's St. John's-wort 2000, 0, 0, 0; White Birch 100, 1000, 0, 700; Riverbank Grape 500, 900, 9, 200; Sweetbrier 400, 700, 0, 0; Virginia Creeper 500, 0, 0, 0; Tamarack 0, 0, 0, 400; Buttonbush 200, 0, 0, 0; White Pine 100, 0, 0, 0; Red Maple 100, 0, 0, 0. Changes from 1991 include 50% or more increase in the abundance of Wild Red Raspberry (from 40,600 to 65,200 stems/ha), Sweetbrier (200 to 1100), Kalm's St. John's-wort (700 to 2000) and White Birch (900 to 1800). There was a

decrease in abundance of Buttonbush from 800 to 200 stems/ha. Changes of 5% or more in the mean estimated cover for ground layer species from 1991 to 1992, based on 10, 1 × 1 m quadrats include a 5% reduction in Clearweed and a 6% increase in Wild Red Raspberry. **Weather:** Mean start temp., 13.2°C (range 8–18°C). **Coverage:** 61.9 h; 16 visits (12 sunrise, 2 sunset); 28, 31 May; 1, 2, 3, 5, 6, 12, 13, 16, 18, 22, 23, 25, 28, 30 June. **Census:** Red-winged Blackbird, 11.5 (52; 10N,4FL); Common Yellowthroat, 9.0 (41; 1N); House Wren, 8.5 (39; 2N); Song Sparrow, 8.5; Common Grackle, 6.0 (27; 1N,9FL); Yellow Warbler, 4.5 (20; 1N); Eastern Wood-Pewee, 4.0 (18; 1N); Field Sparrow, 3.5 (16; 1N); Mourning Dove, 3.0 (14; 1N,1FL); Great Crested Flycatcher, 3.0; Tree Swallow, 3.0 (1N,4FL); Black-capped Chickadee, 3.0 (2FL); Gray Catbird, 3.0 (2N,1FL); Brown Thrasher, 3.0; Chipping Sparrow, 3.0 (1N,3FL); Northern Oriole, 3.0 (1N,3FL); Eastern Kingbird, 2.5; Carolina Wren, 2.0; Northern Cardinal, 2.0 (1N,2FL); Rufous-sided Towhee, 2.0; Swamp Sparrow, 2.0 (1FL); Wood Duck, 1.0; Mallard, 1.0; Virginia Rail, 1.0; American Woodcock, 1.0 (1FL); Whip-poor-will, 1.0 (1N); Cedar Waxwing, 1.0 (1N); European Starling, 1.0 (1N,2FL); Indigo Bunting, 1.0; Brown-headed Cowbird, 1.0 (2N); American Goldfinch, 1.0; Northern Flicker, 0.5; Eastern Phoebe, 0.5. **Total:** 33 species; 101.0 territories (459/40 ha). **Visitors:** Great Blue Heron, Killdeer, Common Snipe, Black-billed Cuckoo, Yellow-billed Cuckoo, Great Horned Owl, Belted Kingfisher, Least Flycatcher, Purple Martin, Barn Swallow, Blue Jay, American Crow, Blue-gray Gnatcatcher, American Robin, Red-eyed Vireo. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetational and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** Regan C. Goodyear and Jul K. Wojnowski. **Acknowledgments:** I thank Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 8 and 11 July 1992.

## 55. MATURE WHITE PINE FOREST

### BOSQUE MADURO DE PINO BLANCO

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**Site Number:** RI1290086. **Location:** Rhode Island; Washington Co.; West Kingston; Marion Eppley Wildlife Sanctuary; 41°30'N, 71°35'W; Slocum Quadrangle, USGS. **Continuity:** Established 1990; 3 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.): 54–55 (1991). **Weather:** Mean start temp., 7.9°C (range 0–14°C). Light rain during one visit. May mean temperature (13.1°C) was near normal (13.2°C). June mean temperature (17.9°C) was near normal (18.2°C). May precipitation (2.6 cm) was below normal (10.5 cm). June precipitation (9.4 cm) was above normal (7.4 cm). Source: University of Rhode Island weather station, Kingston, RI. **Coverage:** 20.6 h; 12 visits (12 sunrise); 10, 17, 20, 21, 24, 28, 29 May; 3, 10, 13, 14, 16 June. **Census:** Ovenbird, 17.5 (69); Pine Warbler, 12.5 (50); Tufted Titmouse, 6.0 (24); Black-throated Green Warbler, 6.0; Gray Catbird, 5.0 (20); Black-capped Chickadee, 4.0 (16; 2N); Veery, 4.0; Common Yellowthroat, 4.0; Red-breasted Nuthatch, 3.0 (12); Hermit Thrush, 3.0; Rufous-sided Towhee, 3.0; Eastern Phoebe, 2.5; Great Crested Flycatcher, 2.5; American Robin, 2.5; Blue Jay, 2.0; Chipping Sparrow, 2.0; Brown-headed Cowbird, 1.5; Eastern Wood-Pewee, 1.0; White-breasted Nuthatch, 1.0; House Wren, 1.0; American Crow, 0.5; Common Grackle, 0.5. **Total:** 22 species; 85.0 territories (337/40 ha). **Visitors:** Downy Woodpecker, Northern Flicker, Brown Creeper. **Remarks:** A few large trees were blown over during Hurricane Bob in August 1991, but this did not change the overall character of the forest. Contribution #2806 of the College of Resource Development, University of Rhode Island, with support from the Rhode Island Agricultural Experiment Station. **Other Observers:** David M. and Nancy W. Clayton. **Acknowledgments:** Thanks to Patrick Dorcas and the Audubon Society of Rhode Island for permission to use the site and for continued support of the census program.

## 56. LOBLOLLY PINE PLANTATION

### PLANTACIÓN DE PINO LOBLOLLY

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**Site Number:** SC0492035. **Location:** South Carolina; Aiken Co.; Jackson; Savannah River Site; 33°15'N, 81°44'W; New Ellenton SW Quadrangle, USGS. **Continuity:** New. **Size:** 12.2 ha. **Description of Plot:** A square plot (350 × 350 m). Approximately 80% of the plot consists of an even-aged stand of Loblolly Pine planted about 40 years ago. Mean canopy height, 20 m (range 15–22 m). The understory of dense clumps of Laurel Oak and a few Loblolly Pines is so thick that there is no ground cover in these areas. A canopy dominated by Loblolly Pine, Laurel Oak, and Southern Red Oak covers the SE 20% of the plot. The understory in this corner is less dense and is dominated by isolated Laurel Oak, Loblolly Pine, and Southern Red Oak. Several large tree fall gaps occur within the plot where the ground cover is dominated by thick clumps of Wild Grape, Virginia Creeper, and Poison Ivy. A 1–2 m deep and 4–6 m wide ravine projects about 75 m into the SE corner of the plot. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 101–500 ha in size. Rarely used Forest Service roads make up the N and W boundaries. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 55 m, maximum 58 m. **Weather:** Mean start temp., 20.0°C (range 10–28°C). The mean high temperature for May was 27.5°C and the mean low was 16.1°C (range 9–36°C). The mean daily temperature was 21.8°C, 0.7°C below the normal daily average of 22.5°C. Precipitation in May was 8.0 cm, 5.4 cm below the average of 13.4 cm. Although the rain total was lower than normal, there were 15 days in May with at least some measurable precipitation. **Coverage:** 22.4 h; 8 visits (6 sunrise, 2 sunset); 7, 13, 20, 28 May; 4, 8, 9 June. **Census:** Pine Warbler, 12.0 (39); Northern Cardinal, 5.0 (16); Tufted Titmouse, 4.0 (13); Summer Tanager, 4.0; Great Crested Flycatcher, 3.0 (10); Red-eyed Vireo, 3.0; Red-bellied Woodpecker, 2.0; Carolina Chickadee, 2.0; Carolina Wren, 2.0; Yellow-billed Cuckoo, 1.5; Northern Parula, 1.5; Eastern Wood-Pewee, 1.0; Acadian Flycatcher, 1.0; Blue Jay, 1.0; Northern Flicker, 0.5; Pileated Woodpecker, 0.5; Red-headed Woodpecker, +; Hairy Woodpecker, +; Hooded Warbler, +. **Total:** 19 species; 44.0 territories (144/40 ha). **Visitors:** Mourning Dove, Brown-headed Nuthatch, Wood Thrush, Yellow-throated Vireo, Black-and-white Warbler, Rufous-sided Towhee. **Acknowledgments:** We thank the Department of Energy and the Savannah River Forest Station of the U.S. Forest Service for financial support and access to the area.

## 57. LONGLEAF PINE FOREST

### BOSQUE DE PINO DE HOJA-LARGA

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**Site Number:** SC0492034. **Location:** South Carolina; Aiken Co.; New Ellenton; Savannah River Site; 33°22'N, 81°34'W; New Ellenton SE Quadrangle, USGS. **Continuity:** New. **Size:** 12.2 ha. **Description of Plot:** A square plot (350 × 350 m). A canopy dominated by mature Longleaf Pine, estimated to be between 31 and 60 years of age, covers 80% of the plot. Mean canopy height, 22 m (range 15–25 m). Where there is no canopy the understory is dominated by Sassafras, Laurel Oak, and Common Persimmon, and the ground cover is

dominated by Poison Oak, Deer Berry, Camphor Weed, Little Bluestem, and *Aristida* grasses. The U.S. Forest Service uses a fire rotation schedule to manage the habitat. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 51–100 ha in size. On three sides the Longleaf Pine stands are less dense than on the plot. A lightly traveled Forest Service road runs along the N boundary. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 79 m, maximum 82 m. **Weather:** Mean start temp., 19.7°C (range 9–32°C). The mean high temperature for May was 27.5°C and the mean low was 16.1°C (range 9–36°C). The mean daily temperature was 21.8°C, 0.7°C below the normal daily average of 22.5°C. Precipitation in May was 8.0 cm, 5.4 cm below the average of 13.4 cm. Although the rain total was lower than normal, there were 15 days in May with at least some measurable precipitation. **Coverage:** 22.1 h; 8 visits (6 sunrise, 2 sunset); 5, 6, 12, 18 May; 3, 8, 10 June. **Census:** Pine Warbler, 10.0 (33; 6FL); Prairie Warbler, 9.5 (31); Bachman's Sparrow, 6.5 (21); Rufous-sided Towhee, 4.5 (15); Great Crested Flycatcher, 3.5 (11); Eastern Wood-Pewee, 3.0 (10); Chipping Sparrow, 3.0; Brown-headed Nuthatch, 2.5; Summer Tanager, 2.5; Carolina Wren, 2.0; Eastern Bluebird, 2.0; Carolina Chickadee, 1.5; Tufted Titmouse, 1.5; Hairy Woodpecker, 1.0; Red-cockaded Woodpecker, 1.0 (1N); Northern Flicker, 1.0 (1N); Blue Jay, 1.0; Blue Grosbeak, 1.0; Red-headed Woodpecker, 0.5; Red-bellied Woodpecker, 0.5; Yellow-throated Vireo, 0.5; Common Yellowthroat, 0.5; Common Nighthawk, +; Pileated Woodpecker, +; Blue-gray Gnatcatcher, +; Northern Cardinal, +. **Total:** 26 species; 59.0 territories (193/40 ha). **Visitors:** Mourning Dove, Yellow-billed Cuckoo, Downy Woodpecker, Fish Crow, Brown Thrasher, Ovenbird, Brown-headed Cowbird. **Acknowledgments:** We thank the Department of Energy and the Savannah River Forest Station of the U.S. Forest Service for financial support and access to the area.

## 58. HIGH ALTITUDE RED SPRUCE FOREST

BOSQUE DE ABETOS ROJOS DE ALTURAS

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**Site Number:** TN2392093. **Location:** Tennessee; Unicoi Co.; Unicoi; Unaka Mountain; 36°8'N, 82°18'W; Unicoi Quadrangle, USGS. **Continuity:** New. **Size:** 9.9 ha. **Description of Plot:** A square plot (315 × 315 m) with a closed canopy dominated by plantation Red Spruce but also containing some older second-growth forest. The age of the canopy is estimated to be between 31 and 60 years. Mean canopy height 20 m (range 10–35 m). Border areas include some northern hardwood forest dominated by Yellow Birch as well as some areas of "rhododendron garden." The understory is dominated by Rhododendron, Purple Rhododendron, and Mountain Laurel. Much of the ground within the spruce forest is bare, only covered by leaf litter. The patchy ground cover is dominated by true mosses, Reindeer Moss, and club-mosses. The plot contains ephemeral pools during the breeding season, and one ephemeral stream with maximum width 1.0 m and maximum depth 0.1 m. **Edge:** More than 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 101–500 ha in size. It is also closely bordered by some older second-growth Red Spruce. Other areas of similar forest exist on the mountain but are isolated by above described border areas. **Topography and Elevation:** The plot is located on a relatively flat mountain top but does slope off on its E and W corners slightly. Minimum elevation 1487 m, maximum 1535 m. **Weather:** Mean start temp., 11.1°C (range 6–18°C). Temperatures were below normal throughout the study period, and the first two weeks of June were very rainy. Weather on the mountain is vastly different than the surrounding low-lying areas. The site is often windy, which affects detectability of birds. **Coverage:** 33.9 h; 9 visits; 1, 12, 15, 18, 22, 23, 26 June; 2, 10 July. **Census:** Dark-eyed Junco, 12.0 (48; 3FL); Golden-crowned Kinglet, 10.0 (40); Rufous-sided Towhee, 7.5 (30); Veery, 2.5; Magnolia Warbler, 2.5; Blue Jay, 2.0 (2FL); Red-breasted Nuthatch, 2.0; Carolina Chickadee, 0.5; Solitary Vireo, 0.5; Canada Warbler, 0.5; Northern Saw-whet Owl, 0.5.

Owl, +; Ruby-throated Hummingbird, +; Cedar Waxwing, +. **Total:** 13 species; 40.0 territories (162/40 ha). **Visitors:** Ruffed Grouse, Winter Wren, American Robin, Gray Catbird, Chestnut-sided Warbler, Pine Siskin. **Remarks:** The lack of nests reported is primarily due to the density of the canopy and, thus, the inability to locate them. Ruffed Grouse, Winter Wren, Gray Catbird and Chestnut-sided Warbler nested within 300 m of the plot. **Other Observers:** Dr. George Mayfield, Jr., James Brooks, Rick Hollis, Arturo Kirkconnell. **Acknowledgments:** Dr. Fred Alsop—East Tennessee State University Biological Sciences; financial support of ETSU—Research Development Committee; logistical support of USDA—Forest Service, Cherokee National Forest—Scotty Myers & Laura Mitchell.

## 59. PINYON-JUNIPER WOODLAND

### BOSQUE DE PIÑÓN-JUNIPERO

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**Location:** Utah; Grand Co.; Moab; Devil's Garden; 38°48'N, 109°35'W; Arches National Park Quadrangle, USGS. **Continuity:** Established 1983; 10 yr. **Size:** 31.3 ha. **Description of Plot:** See *Am. Birds* 38:137–138 (1984). **Weather:** Mean start temp., 11.3°C (range 7–16°C). The mean temperature was 5.3°C warmer than last year, but normal for the time of year. On seven visits the winds increased from calm to a level that nearly prevented completion of the survey. **Coverage:** 28.5 h; 9 visits (8 sunrise); 1, 8, 15, 22, 29 April; 6, 13, 20, 27 May. Maximum number of observers/visit, 3. **Census:** House Finch, 6.0 (8); Gray Vireo, 3.0 (4); Black-throated Sparrow, 3.0; Mourning Dove, 2.0 (1N,3FL); Say's Phoebe, 2.0; Rock Wren, 2.0; Bewick's Wren, 2.0; Blue-gray Gnatcatcher, 2.0; Pinyon Jay, 1.0; Plain Titmouse, 1.0; Canyon Wren, +; Mountain Bluebird, +; Black-throated Gray Warbler, +; Cassin's Finch, +. **Total:** 14 species; 24.0 territories (31/40 ha). **Visitors:** Turkey Vulture, Red-tailed Hawk, American Kestrel, White-throated Swift, Black-chinned Hummingbird, Ash-throated Flycatcher, Western Kingbird, Violet-green Swallow, Scrub Jay, Common Raven, Townsend's Solitaire, Yellow-rumped Warbler, Chipping Sparrow, Western Meadowlark, Brown-headed Cowbird, Scott's Oriole. **Remarks:** There was a notable increase in the number of Black-throated Sparrows from 1991, and a decrease in the number of Black-throated Gray and Yellow-rumped Warblers. Mountain Bluebirds were observed for the second consecutive year. A Cassin's Finch pair was observed; the first since 1988. The three fledgling Mourning Doves were from one nest. A Common Raven nest outside the plot was active for the fifth consecutive year. A Red-tailed Hawk nested outside the plot in a different location than last year. **Other Observers:** Sonja Paspal, Kevin Holladay, Jim Webster, Sue Busby.

## 60. GRAZED OAK-PINE WOODLAND

### ARBOLEDA DE ROBLE-PINO PASTADO

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**Location:** California; Madera Co.; Coarsegold; San Joaquin Experimental Range; 37°6'N, 119°44'W; Millerton Lake West Quadrangle, USGS. **Continuity:** Established 1985; 8 yr. **Size:** 29.7 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):35–36 (1989). **Weather:** Mean start temp., 11.1°C (range 5–17°C). It was a generally mild, cool spring with no census days lost to rain. The streams, ponds, and wet meadows contained water during the

breeding season due to heavy rains in January and February. **Coverage:** 122.6 h; 24 visits (24 sunrise); 23, 24, 26, 27 March; 1, 2, 6, 7, 10, 13, 16, 17, 21, 22, 24, 27 April. **Census:** Plain Titmouse, 17.0 (23; 25N); Mourning Dove, 12.0 (16; 5N); House Wren, 11.0 (15; 10N); Lesser Goldfinch, 10.0 (13; 2N); Bushtit, 8.5 (11; 8N); House Finch, 8.5; Scrub Jay, 7.5 (10; 10N); Ash-throated Flycatcher, 7.0 (9; 6N); California Quail, 5.5 (7; 2N); Anna's Hummingbird, 4.5 (6); California Towhee, 4.5 (8N); Acorn Woodpecker, 4.0 (5; 8N); Bewick's Wren, 4.0 (2N); White-breasted Nuthatch, 3.5 (5; 5N); European Starling, 3.5 (5N); Western Bluebird, 2.5 (4N); Blue-gray Gnatcatcher, 1.5 (2N); Turkey Vulture, 1.0 (1N); American Kestrel, 1.0 (2N); Nuttall's Woodpecker, 1.0 (1N); Hutton's Vireo, 1.0; Greater Roadrunner, 0.5 (1N); Canyon Wren, 0.5 (1N); Rufous-crowned Sparrow, 0.5. **Total:** 24 species; 120.5 territories (162/40 ha). **Visitors:** Cooper's Hawk, Red-tailed Hawk, Great Horned Owl, Common Poorwill, Northern Flicker, Western Kingbird, Violet-green Swallow, Common Raven, American Robin, Phainopepla, Lark Sparrow, Brewer's Blackbird, Brown-headed Cowbird, Northern Oriole, Lawrence's Goldfinch. **Remarks:** This plot had 27 nest boxes, 16 of which were used this year. All boundary territories were computed as 0.5 territories. **Acknowledgments:** This effort is part of a study of bird monitoring techniques being conducted by Dr. Jared Verner, USDA Forest Service.

## 61. UNGRAZED OAK–PINE WOODLAND

### ARBOLEDA DE ROBLE–PINO NO PASTADO

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**Location:** California; Madera Co.; Coarsegold; San Joaquin Experimental Range; 37°5'N, 119°43'W; Millerton Lake West Quadrangle, USGS. **Continuity:** Established 1985; 8 yr. **Size:** 29.7 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):34–35 (1989). **Weather:** Mean start temp., 10.5°C (range 6–16°C). It was a generally mild, cool spring with no census days lost to rain. The streams, ponds, and wet meadows contained water during the breeding season due to heavy rains in January and February. **Coverage:** 127.0 h; 24 visits (24 sunrise); 23, 24, 26, 27 March; 1, 2, 6, 7, 10, 13, 16, 17, 21, 22, 24, 27 April. **Census:** Scrub Jay, 15.0 (20; 14N); Plain Titmouse, 11.5 (15; 15N); Lesser Goldfinch, 9.0 (12; 1N); Mourning Dove, 8.5 (11; 1N); House Wren, 8.5 (7N); House Finch, 8.5; Ash-throated Flycatcher, 5.5 (7; 2N); Bushtit, 5.5 (6N); California Towhee, 5.0 (7; 3N); Anna's Hummingbird, 4.5 (6; 2N); Acorn Woodpecker, 4.5 (7N); California Quail, 3.5 (5); Bewick's Wren, 3.5 (2N); Brown-headed Cowbird, 3.0 (4); Northern Oriole, 2.5 (2N); White-breasted Nuthatch, 1.5 (1N); Western Bluebird, 1.5 (2N); European Starling, 1.5; Lark Sparrow, 1.5; Red-winged Blackbird, 1.5; Red-tailed Hawk, 1.0 (1N); Western Kingbird, 1.0; Canyon Wren, 1.0 (1N); Killdeer, 0.5 (1N); Nuttall's Woodpecker, 0.5 (1N); Northern Flicker, 0.5 (1N); Black Phoebe, 0.5 (1N); Common Raven, 0.5 (1N); California Thrasher, 0.5 (1N). **Total:** 29 species; 112.0 territories (151/40 ha). **Visitors:** Great Blue Heron, Turkey Vulture, Cooper's Hawk, American Kestrel, Greater Roadrunner, Great Horned Owl, Northern Pygmy-Owl, Hairy Woodpecker, Violet-green Swallow, Blue-gray Gnatcatcher, American Robin, Phainopepla, Brewer's Blackbird, Lawrence's Goldfinch. **Remarks:** This plot had 30 nest boxes, 16 of which were used this year. All boundary territories were computed as 0.5 territories. **Acknowledgments:** This effort is part of a study of bird monitoring techniques being conducted by Dr. Jared Verner, USDA Forest Service.

## 62. PONDEROSA PINE-SCRUB OAK FOREST

### BOSQUE DE PINO PONDEROSA-MATORRAL DE ROBLE

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**Location:** Colorado; El Paso Co.; Colorado Springs; USAFA Breeding Bird Survey; 38°57'N, 104°50'W; Pikeview Quadrangle, USGS. **Continuity:** Established 1980; 12 yr. **Size:** 12.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):56-57 (1991) and 63 (Suppl.): 73 (1992). **Weather:** Mean start temp., 8.1°C (range 4-11°C). Overall, the year was wet and cool. Five measurable rainfall events occurred during the study period. **Coverage:** 12.3 h; 11 visits (11 sunrise); 19, 21, 29, 30 May; 2, 5, 7, 13, 15, 18, 20 June. Maximum number of observers/visit, 3. **Census:** Pine Siskin, 15.0; Chipping Sparrow, 13.0; Mourning Dove, 10.0; Western Wood-Pewee, 8.0; Brown-headed Cowbird, 7.0; Lesser Goldfinch, 7.0; House Finch, 5.0 (2N); Mountain Chickadee, 4.0; Solitary Vireo, 3.0; Rufous-sided Towhee, 3.0; Broad-tailed Hummingbird, 2.0; White-breasted Nuthatch, 2.0; Pygmy Nuthatch, 2.0 (1N); Western Bluebird, 2.0; Great Horned Owl, 1.0; Black-capped Chickadee, 1.0; American Robin, 1.0; crossbill species, 1.0. **Total:** 18 species; 87.0 territories (290/40 ha). **Visitors:** Sharp-shinned Hawk, Northern Goshawk, Common Nighthawk, Northern Flicker, Steller's Jay, American Crow, Warbling Vireo, Western Tanager, Brewer's Blackbird, Common Grackle. **Remarks:** Mammals observed included Mule Deer, White-tailed Deer, Albert's Squirrel and Chickaree (*Tamiasciurus douglasii*). Fewer nesting birds were observed, compared to last year. A possible explanation is that fewer observers were used on each visit. **Other Observers:** Douglas Schelhaas and Jeff Hays.

## 63. CLIMAX HEMLOCK-WHITE PINE FOREST WITH TRANSITION HARDWOODS

BOSQUE CLÍMAX DE PICEA-PINO BLANCO EN  
TRANSICIÓN A MADERAS DURAS

ANDREW MAGEE

White Memorial Conservation Center  
Litchfield, Connecticut 06759

**Site Number:** CT2765008. **Location:** Connecticut; Litchfield Co.; Litchfield; White Memorial Foundation-Catlin Woods; 41°43'N, 73°12'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 26 yr. **Size:** 10.5 ha. **Description of Plot:** See *Aud. Field Notes* 19:594-595 (1965). **Weather:** Mean start temp., 17.3°C (range 13-22°C). The average minimum and maximum temperatures at our weather station in both May (6°C, 21°C) and June (10°C, 24°C) were below our 8-yr averages and well below last year's exceptionally high figures. Precipitation in May (5.2 cm) was below average, but in June (19.1 cm) it was above average. **Coverage:** 14.3 h; 9 visits (2 sunrise, 2 sunset); 19, 20, 27 May; 3, 10, 16, 17 June. **Census:** Black-throated Green Warbler, 12.0 (46); Veery, 10.0 (38); Red-eyed Vireo, 9.0 (34); Blackburnian Warbler, 9.0; Ovenbird, 9.0; Wood Thrush, 8.0 (30); Black-capped Chickadee, 5.0 (19); Blue Jay, 4.0 (15); Red-breasted Nuthatch, 4.0; Scarlet Tanager, 4.0; Downy Woodpecker, 2.0; Hairy Woodpecker, 2.0; Eastern Wood-Pewee, 2.0; Great Crested Flycatcher, 2.0; American Crow, 2.0; White-breasted Nuthatch, 2.0; Solitary Vireo, 2.0; Yellow-rumped Warbler, 2.0; Pine Warbler, 2.0; Black-and-white Warbler, 2.0; Northern Cardinal, 1.5; Wood Duck, 1.0; Sharp-shinned Hawk, 1.0; Great Horned Owl, 1.0; Pileated Woodpecker, 1.0; Hermit Thrush, 1.0; Yellow-throated Vireo, 1.0; Song Sparrow, 1.0; Common Grackle, 1.0; Brown-headed Cowbird, 1.0; Purple Finch, 1.0; Broad-winged Hawk, 0.5; Barred Owl, 0.5; Cooper's Hawk, +; Northern Goshawk, +; Mourning Dove, +; Northern Flicker, +; Gray Catbird, +; Blue-winged Warbler, +; American Redstart, +; Common Yellowthroat, +; Canada Warbler, +; Swamp Sparrow, +. **Total:** 43 species; 106.5 territories (406/40 ha). **Remarks:** Most of the more common species in this plot were

more abundant than last year. The two species with the most dramatic increases were Black-throated Green Warbler (from 5.0 territorial males to 12.0 and this year the top species for the first time since the 1960s) and Blackburnian Warbler (from 3.0 to 9.0). With Eastern Hemlock trees succumbing to adelgid and scale insects in other parts of Connecticut, perhaps more of these conifer-nesting warblers are finding a refuge here. Wood Thrush also increased significantly to an above-average 8.0 territorial males. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

#### 64. MATURE BROADLEAF-CONIFEROUS FORESTED WETLAND

##### BOSQUE MADURO DE ARBOLES DE HOJA ANCHA-CONIFEROS

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**Site Number:** CT1291035. **Location:** Connecticut; Hartford Co.; Manchester; Oak Grove Nature Center; 41°46'N, 72°30'W; Manchester Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 21.5 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):74 (1992). Many of the birches and other trees around the pond were felled by a Beaver. Most of these trees were minor components of the habitat. More area is now covered by water. **Weather:** Mean start temp., 11.6°C (range 6–18°C). The overall temperature for the study period was very close to normal. May was about 0.6°C below normal and early June was about 0.6°C above normal. May precipitation (8.1 cm) was 94% of normal (8.6 cm). June precipitation (14.6 cm) was 176% of normal (8.3 cm). Most of June's precipitation (11.0 cm) came during the first 14 days (during the study period); one large storm occurred on 5 and 6 June, dropping 8.8 cm of rain. Source: Bradley Field weather service, Windsor Locks, CT. **Coverage:** 29.5 h; 10 visits (10 sunrise); 2, 7, 9, 15, 20, 23, 25 May; 3, 9, 14 June. **Census:** Black-capped Chickadee, 15.0 (28; 1N, 7FL); American Robin, 13.0 (24; 1N, 7FL); Tufted Titmouse, 12.5 (23; 1N, 9FL); Blue Jay, 11.0 (20; 3FL); Northern Cardinal, 10.0 (19; 5FL); European Starling, 9.0 (17; 8N, 4FL); Gray Catbird, 8.0 (15; 1N); Red-winged Blackbird, 8.0 (1N); Common Grackle, 8.0 (14FL); Northern Flicker, 5.0 (9; 3N); Mourning Dove, 4.0 (7); Veery, 4.0; Wood Thrush, 4.0 (1N); Brown-headed Cowbird, 4.0; House Finch, 4.0 (5FL); Red-bellied Woodpecker, 3.0 (6); Downy Woodpecker, 3.0 (1N); Blue-gray Gnatcatcher, 3.0; Ovenbird, 3.0 (1N); Common Yellowthroat, 3.0; Song Sparrow, 3.0; Northern Oriole, 3.0; American Goldfinch, 3.0; Eastern Phoebe, 2.5 (2N, 5FL); Eastern Wood-Pewee, 2.0; American Crow, 2.0 (2FL); White-breasted Nuthatch, 2.0 (1N); House Wren, 2.0; Red-eyed Vireo, 2.0; Blue-winged Warbler, 2.0; Rufous-sided Towhee, 1.5; Wood Duck, 1.0; Mallard, 1.0 (1N, 5FL); Belted Kingfisher, 1.0; Hairy Woodpecker, 1.0 (1N); Carolina Wren, 1.0; Solitary Vireo, 1.0; Louisiana Waterthrush, 1.0; Scarlet Tanager, 1.0; Chipping Sparrow, 1.0 (5FL). **Total:** 40 species; 168.5 territories (313/40 ha). **Visitors:** Chimney Swift, Least Flycatcher, Great Crested Flycatcher, Barn Swallow, Brown Creeper, Cedar Waxwing, Yellow-rumped Warbler, Black-and-white Warbler, American Redstart, Northern Waterthrush, Rose-breasted Grosbeak, House Sparrow. **Remarks:** In addition to the Beaver that moved onto the plot, there is now a family of Muskrats living there. Of the seven Mallards that hatched, five survived to fledging (i.e., first flight).

#### 65. OAK-HEMLOCK FOREST

##### BOSQUE DE ROBLE-PICEA

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**Site Number:** CT1253099. **Location:** Connecticut; New London Co.; New London; Bolleswood Natural Area, Connecticut College Arboretum; 41°22'N, 72°6'W; Uncasville Quad-

rangle, USGS. **Continuity:** Established 1953; 22 yr. **Size:** 23.1 ha. **Description of Plot:** See *Am. Birds* 37:73-74 (1983) and *Bull. Torrey Bot. Club* 110:184-194 (1983). Eastern Hemlocks have continued to die because of an infestation of Wooly Adelgid (*Adelges tsugae*), creating a much more open canopy along the ravine that runs through the center of the plot. **Weather:** Mean start temp., 14.0°C (range 7-24°C). Temperatures were considerably lower than normal. **Coverage:** 25.4 h; 20 visits (20 sunrise); 15, 25, 27, 29 May; 2, 4, 5, 10, 13, 14, 19, 20, 26 June; 3, 7 July. Each visit covered half of the plot, giving 10 complete coverages. **Census:** Red-eyed Vireo, 13.0 (23); Veery, 10.5 (18); Gray Catbird, 7.0 (12); Ovenbird, 7.0; Rufous-sided Towhee, 6.0 (10); Black-and-white Warbler, 4.5 (8); Brown-headed Cowbird, 4.5; Great Crested Flycatcher, 4.0 (7); Black-capped Chickadee, 4.0; Tufted Titmouse, 4.0; Carolina Wren, 4.0; Scarlet Tanager, 3.5 (6); Blue Jay, 3.0 (5); House Wren, 3.0; Chestnut-sided Warbler, 3.0; Black-throated Green Warbler, 3.0; Northern Cardinal, 3.0; Common Yellowthroat, 2.5; American Crow, 2.0; White-breasted Nuthatch, 2.0; Wood Thrush, 2.0; Northern Flicker, 1.5; Eastern Wood-Pewee, 1.5; White-eyed Vireo, 1.5; Hooded Warbler, 1.5; Red-bellied Woodpecker, 1.0; Downy Woodpecker, 1.0; Eastern Phoebe, 1.0; Blue-gray Gnatcatcher, 1.0; American Robin, 1.0; Prairie Warbler, 1.0; American Redstart, 1.0; Broad-winged Hawk, 0.5; Worm-eating Warbler, 0.5; Barred Owl, +; Blue-winged Warbler, +; Louisiana Waterthrush, +. **Total:** 37 species; 109.5 territories (190/40 ha). **Visitors:** Mourning Dove, Common Grackle, Northern Oriole. **Remarks:** Territorial Black-throated Green Warblers were found in the study area for the first time since 1964. This is ironic because their preferred habitat (hemlock forest) is declining due to the Wooly Adelgid. Perhaps the warblers are benefiting temporarily from the insect outbreak. Alternatively, the individuals in our plot may have left hemlock stands that have already died. **Acknowledgments:** Glenn Dreyer and his staff at the Connecticut College Arboretum facilitated our study.

## 66. UPLAND OAK AND HEMLOCK FOREST

BOSQUE ROBLE Y PICEA DE ALTURAS

ROBERT A. BRAUNFIELD

Box 84

Hadlyme, Connecticut 06439

**Site Number:** CT1289097. **Location:** Connecticut; Middlesex Co.; Salem; Strong Woodland, Burnham Brook Preserve; 41°27'N, 72°19'W; Hamburg Quadrangle, USGS. **Continuity:** Established 1989; 4 yr. **Size:** 10.5 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):49-50 (1990). **Weather:** Mean start temp., 11.2°C (range 7-16°C). Mean start temp. was much cooler than three previous censuses. Rainfall of 20 cm for May and June was close to the average of 22.6 cm for the three previous censuses. **Coverage:** 12.7 h; 8 visits (8 sunrise); 23, 29 May; 3, 10, 12, 16, 18, 19 June. **Census:** Red-eyed Vireo, 23.0 (88); Ovenbird, 18.0 (69); Eastern Wood-Pewee, 8.0 (30); Tufted Titmouse, 8.0; Black-and-white Warbler, 7.0 (27); Worm-eating Warbler, 7.0; Wood Thrush, 6.5 (25); Black-throated Green Warbler, 6.0 (23); Blue-gray Gnatcatcher, 5.0 (19); Veery, 5.0; Black-capped Chickadee, 4.0 (15); Yellow-throated Vireo, 4.0; Cerulean Warbler, 3.0 (11); Scarlet Tanager, 3.0; Eastern Phoebe, 2.0; Hermit Thrush, 2.0; Acadian Flycatcher, 1.0; Blue Jay, 1.0; American Crow, 1.0; American Redstart, 1.0; Northern Cardinal, 0.5. **Total:** 21 species; 116.0 territories (442/40 ha). **Visitors:** Red-bellied Woodpecker, Downy Woodpecker, Hairy Woodpecker, Great Crested Flycatcher, Chipping Sparrow, Common Grackle, Brown-headed Cowbird. **Acknowledgments:** Dr. Richard Goodwin, Dr. Robert Askins.

## 67. YOUNG MIXED HARDWOOD-CONIFER STAND

BOSQUE JOVEN-MIXTO DE MADERAS DURAS/RODAL DE CONÍFEROS

ANDREW MAGEE

White Memorial Conservation Center  
Litchfield, Connecticut 06759

**Site Number:** CT2778262. **Location:** Connecticut; Litchfield Co.; Morris; White Memorial Foundation; 41°42'N, 73°10'W; Litchfield Quadrangle, USGS. **Continuity:** Established

1978; 15 yr. **Size:** 8.5 ha. **Description of Plot:** See *Am. Birds* 33:72 (1979). **Weather:** Mean start temp., 19.4°C (range 13–23°C). The average minimum and maximum temperatures at our weather station in both May (6°C, 21°C) and June (10°C, 24°C) were below our 8-yr averages and well below last year's exceptionally high figures. Precipitation in May (5.2 cm) was below average, but in June (19.1 cm) it was above average. **Coverage:** 13.0 h; 7 visits (1 sunrise, 3 sunset); 19, 20, 27 May; 3, 9, 15, 16 June. **Census:** Red-eyed Vireo, 12.0 (56); Veery, 10.0 (47); American Redstart, 10.0; Wood Thrush, 9.0 (42); Gray Catbird, 5.0 (24); Scarlet Tanager, 5.0; Chestnut-sided Warbler, 4.0 (19); Common Yellowthroat, 4.0; Great Crested Flycatcher, 3.5 (16); Ovenbird, 3.5; Rose-breasted Grosbeak, 3.5; Blue Jay, 3.0 (14); Northern Flicker, 2.0; Eastern Wood-Pewee, 2.0; Black-capped Chickadee, 2.0; White-breasted Nuthatch, 2.0; American Robin, 2.0; Blue-winged Warbler, 2.0; Black-and-white Warbler, 2.0; American Goldfinch, 2.0; Ruby-throated Hummingbird, 1.5; Yellow-bellied Sapsucker, 1.5; Ruffed Grouse, 1.0; American Woodcock, 1.0; Barred Owl, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Eastern Phoebe, 1.0; Tufted Titmouse, 1.0; Cedar Waxwing, 1.0; Yellow Warbler, 1.0; Black-throated Blue Warbler, 1.0; Louisiana Waterthrush, 1.0; Canada Warbler, 1.0; Northern Cardinal, 1.0; Rufous-sided Towhee, 1.0; Brown-headed Cowbird, 1.0; Northern Oriole, 1.0; Cooper's Hawk, 0.5; American Crow, 0.5; Red-breasted Nuthatch, 0.5; Hermit Thrush, 0.5; Magnolia Warbler, 0.5; Yellow-rumped Warbler, 0.5; Blackburnian Warbler, 0.5; Wood Duck, +; Turkey Vulture, +; Northern Goshawk, +; Pileated Woodpecker, +. **Total:** 49 species; 111.0 territories (522/40 ha). **Remarks:** The number of species recorded was a new high for the 15-yr history of this census and the number of territorial males continues to be significantly higher than before the cutting of the plantation Red Pines in the winter of 1978–79. Most of the forest species that do not require conifers for nesting are more abundant than before the cutting, except Ovenbird (15.0 territorial males in 1978). Northern Goshawk is new for this census. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

## 68. TAMARACK BOG AND HARDWOOD

PANTANO DE TAMARAK-MADERAS DURAS

JAMES MULLINS

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Stevensville, Michigan 49127

**Location:** Michigan; Berrien Co.; Stevensville; Grand Mere State Park; 42°0'N, 86°33'W; Bridgman Quadrangle, USGS. **Continuity:** Established 1976; 17 yr. **Size:** 8.5 ha. **Description of Plot:** See *Am. Birds* 30:1049 (1976). **Weather:** Mean start temp., 14.3°C (range 13–16°C). **Coverage:** 8.0 h; 8 visits (8 sunrise); 30, 31 May; 6, 7, 13, 14, 20, 21 June. **Census:** Red-eyed Vireo, 3.0; Eastern Wood-Pewee, 2.0; Veery, 2.0; Wood Thrush, 2.0; Ovenbird, 2.0; Red-bellied Woodpecker, 1.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Great Crested Flycatcher, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; American Robin, 1.0; Black-throated Green Warbler, 1.0; Scarlet Tanager, 1.0; Northern Cardinal, 1.0. **Total:** 15 species; 21.0 territories (99/40 ha). **Visitors:** Red-headed Woodpecker, Blue Jay, American Redstart. **Remarks:** Canada Warbler was not heard on the plot this year, but two were heard off the plot.

## 69. MATURE RED PINE FOREST WITH DECIDUOUS UNDERSTORY

BOSQUE MADURO DE PINO ROJO CON SOTOBOSQUE DECIDUO

MATTHEW COLLER, PHILIP JOHNS & MARLYS REUVERS

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Lake Itasca, Minnesota 56460

**Site Number:** MN2090023. **Location:** Minnesota; Clearwater Co.; Lake Itasca; Itasca State Park, Wilderness Sanctuary; 47°13'N, 95°12'W; Lake Itasca Quadrangle, USGS.

**Continuity:** Established 1990; 3 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):64–65 (1991). A rectangular plot (250 × 400 m). The mature forest (>100 years old) consists of Red Pine and White Pine that form a 20–25 m canopy. Maple and Quaking Aspen dominate a fairly dense subcanopy up to 10 m. A 1-ha sedge meadow is on the E edge of the plot. As part of a state park and wilderness sanctuary, fire has been controlled for nearly a century. A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727–736) and F.C. James (1980. *Am. Birds* 34:22–23) yielded the following results: Trees, 7.6 cm diameter and over, based on 10 0.04-ha circular samples, 590/ha; total basal area 36.5 m<sup>2</sup>/ha. Species comprising 90% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%)]: dead, 112.5, 18.8, 18.6, 60; Red Pine, 100, 16.7, 37.3, 80; Sugar Maple, 95, 15.9, 7.7, 60; White Pine, 70, 11.7, 19.2, 70; Quaking Aspen, 65, 10.9, 10.1, 30; Red Oak, 37.5, 6.3, 2.1, 30. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m<sup>2</sup>/ha, and relative dominance (%)]: A (7.6–15.2 cm) 152.5, 25.5, 0.14, 0.4; B (15.2–22.9 cm) 157.5, 26.4, 4.25, 11.7; C (22.9–38.1 cm) 120, 20.1, 6.45, 17.8; D (38.1–53.3 cm) 60, 10.4, 5.4, 14.8; E (53.3–68.6 cm) 82.5, 13.8, 13.4, 36.3; F (> 68.6 cm) 25, 4.2, 7.8, 19.1. Shrub stems/ha, 6445, dominated by Sugar Maple, Beaked Hazel, and Red-berried Elder. Ground cover, 55%, dominated by Large-leaved Aster, Bracken Fern, and Early Meadow-Rue. Canopy cover, 77%; mean canopy height, 21 m. **Edge:** The plot is bordered on the W, N, and E by similar forest, and it lies within a tract of similar habitat > 500 ha in size. The S side is bordered by a 50-m buffer zone and a road. **Topography and Elevation:** The plot is nearly level with scattered inclines, especially near the sedge meadow. Elevation 449 m. **Weather:** Mean start temp., 13.4°C (range 7–24°C). Unusually rainy and cool. **Coverage:** 38.0 h; 8 visits (7 sunrise, 1 sunset); 23, 26, 29, 30 June; 3, 5, 7, 11 July. Maximum number of observers/visit, 4. **Census:** Ovenbird, 23.5 (94); Black-throated Green Warbler, 14.0 (56); Red-eyed Vireo, 13.0 (52); Pine Warbler, 11.0 (44); Chestnut-sided Warbler, 7.5 (30); Nashville Warbler, 6.5 (26); Eastern Wood-Pewee, 5.5 (22); Brown Creeper, 5.0 (20); Yellow-bellied Sapsucker, 3.5 (14; 2N); Hermit Thrush, 3.0 (12); Common Yellowthroat, 3.0; Canada Warbler, 3.0; Northern Parula, 2.5; Scarlet Tanager, 1.5; Ruffed Grouse, 1.0; Winter Wren, 1.0; American Robin, 0.5. **Total:** 17 species; 105.0 territories (420/40 ha). **Visitors:** Broad-winged Hawk, Hairy Woodpecker, Black-backed Woodpecker, Gray Jay, Blue Jay, Common Raven, Black-capped Chickadee, Red-breasted Nuthatch, White-breasted Nuthatch, Mourning Warbler, Purple Finch, Pine Siskin, Evening Grosbeak. **Remarks:** Common Yellowthroats were found near the sedge meadow. Nashville Warblers were recorded in the plot for the first time in the three years of censusing. Gray Jays, Black-capped Chickadees, and Red-breasted Nuthatches probably nested on the plot earlier in the season because they were observed in flocks. **Other Observers:** David Blockstein, Bethany Woodworth, Gloria Peterson, Donald Graves. **Acknowledgments:** University of Minnesota Forestry and Biological Station and Itasca State Park.

## 70. YOUNG ASPEN FOREST WITH SCATTERED MATURE PINES

BOSQUE JOVEN DE ÁLAMO CON ALGUNOS  
PINOS MADUROS DISPERSOS

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Lake Itasca, Minnesota 56460*

**Site Number:** MN2092110. **Location:** Minnesota; Clearwater Co.; Lake Itasca; Sewage Lagoon Woods, Itasca State Park; 47°13'N, 95°10'W; Lake Itasca Quadrangle, USGS. **Continuity:** Established 1990; 3 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):62–63 (1991) and 63 (Suppl.):79 (1992). A 0.25 ha block on the SE corner of the plot was excluded because the habitat was not representative of the rest of the plot. A

rectangular plot of upland habitat ( $200 \times 450$  m) with no standing or running water. Half of the plot is thickly forested with young aspen that have grown in since 1972 when the area was cleared and burned as part of a pine regeneration program. The other half has scattered Red and White Pines mixed with Bur Oak, Sugar Maple and mature aspen. A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727–736) yielded the following results: Trees, 7.6 cm diameter and over, based on 10 0.04-ha circular samples, 454/ha; total basal area 28.65 m<sup>2</sup>/ha. Species comprising 95% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%)]: Quaking Aspen, 145.7, 32.1, 4.7, 30; Bur Oak, 88.9, 19.6, 7.7, 90; Sugar Maple, 64.2, 14.1, 3.9, 60; White Birch, 46.9, 10.3, 3.4, 60; dead, 44.5, 9.8, 21.4, 70; Red Pine, 22.2, 4.9, 26.8, 50; White Pine, 19.8, 4.3, 30.9, 50. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m<sup>2</sup>/ha, and relative dominance (%)]: A (7.6–15.2 cm) 301.3, 66.3, 2.84, 9.9; B (15.2–22.9 cm) 61.8, 13.6, 1.73, 6.0; C (22.9–30.5 cm) 22.2, 4.9, 1.26, 4.4; D (30.5–38.1 cm) 7.4, 1.6, 0.69, 2.4; E (38.1–53.3 cm) 12.4, 2.7, 2.05, 7.2; F (53.3–68.6 cm) 17.3, 3.8, 4.96, 17.3; G (68.6–83.3 cm) 22.2, 4.9, 10.13, 35.3; H (> 83.8 cm) 9.9, 2.2, 4.99, 17.4. Shrub stems/ha, 25,330, dominated by Quaking Aspen, Bur Oak, and Sugar Maple. Ground cover, 78%, dominated by Bracken Fern, Large-leaved Aster, and Wild Sarsaparilla. Canopy cover, 72%; mean canopy height, 15 m (range 8–28 m). **Edge:** The plot is bordered on the W, N, and E by similar forest, and it lies within a tract of similar habitat < 25 ha in size. To the S, a sewage lagoon and small bog occupy low ground about 100 m E of the SE corner to about 25 m from the SW corner. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 457 m, maximum 466 m. **Weather:** Mean start temp., 11.3°C (range 4–20°C). It was colder and more rainy than normal. **Coverage:** 29.8 h; 8 visits (7 sunrise, 1 sunset); 23, 26, 30 June; 3, 5, 10, 12, 14 July. Maximum number of observers/visit, 4. **Census:** Chestnut-sided Warbler, 26.0 (104); Red-eyed Vireo, 24.5 (98; 1N); Ovenbird, 17.5 (70); American Redstart, 15.0 (60); Pine Warbler, 9.0 (36); Veery, 6.5 (26); Rose-breasted Grosbeak, 4.0 (16); Chipping Sparrow, 3.5 (14); Eastern Wood-Pewee, 3.0 (12); Least Flycatcher, 3.0 (1N); Mourning Warbler, 3.0; Golden-winged Warbler, 2.0; Black-throated Green Warbler, 2.0; Yellow-bellied Sapsucker, 1.5; Yellow-throated Vireo, 1.5; Indigo Bunting, 1.5; Ruffed Grouse, 1.0 (3FL); Downy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Northern Parula, 1.0; Scarlet Tanager, 1.0; Brown-headed Cowbird, 1.0 (1FL); Common Yellowthroat, 0.5; Gray Catbird, +; Yellow Warbler, +. **Total:** 26 species; 131.0 territories (524/40 ha). **Visitors:** Broad-winged Hawk, Common Snipe, Black-billed Cuckoo, Eastern Screech-Owl, Blue Jay, American Crow, Common Raven, Black-capped Chickadee, Red-breasted Nuthatch, White-breasted Nuthatch, American Robin, Nashville Warbler, Yellow-rumped Warbler, Blackburnian Warbler, Song Sparrow, Red-winged Blackbird, Pine Siskin, American Goldfinch, Evening Grosbeak. **Remarks:** Black-capped Chickadees, White-breasted Nuthatches and Red-breasted Nuthatches may have nested on the plot earlier in the year. Family groups of chickadees were seen several times. **Other Observers:** David Blockstein, Bethany Woodworth, David Dahl. **Acknowledgments:** University of Minnesota Forestry and Biological Station and Itasca State Park.

## 71. UPLAND MIXED PINE-SPRUCE-HARDWOOD PLANTATION

PLANTACIÓN MIXTA DE PINO-ABETO MADERAS DURAS DE ALTURAS

ELIZABETH W. BROOKS

1435 Waterwells Road  
Alfred Station, New York 14803

**Site Number:** NY2474107. **Location:** New York; Allegany Co.; Ward; Phillips Creek State Reforestation Tract; 42°8'N, 77°45'W; Andover Quadrangle, USGS. **Continuity:** Established 1974; 19 yr. **Size:** 16.6 ha. **Description of Plot:** See *Am. Birds* 28:699–700 (1974) and *J. Field Ornithol.* 63 (Suppl.):79–80 (1992). **Weather:** Mean start temp., 16.9°C (range

12–20°C). See BBC #52. **Coverage:** 16.3 h; 9 visits (1 sunrise, 1 sunset); 11 April; 16 May; 1, 7, 14, 22, 29 June; 7, 20 July. **Census:** Black-throated Green Warbler, 10.0 (24); Blackburnian Warbler, 10.0; Magnolia Warbler, 9.0 (22); Dark-eyed Junco, 9.0; Golden-crowned Kinglet, 8.0 (19); Black-capped Chickadee, 4.0 (10; 1N,8FL); Yellow-rumped Warbler, 3.0 (7); Ovenbird, 3.0; Common Yellowthroat, 3.0; Blue Jay, 2.0; Brown Creeper, 2.0; American Robin, 2.0; Solitary Vireo, 2.0; Indigo Bunting, 2.0; Chipping Sparrow, 2.0; American Crow, 1.0 (1N, 4FL); Red-breasted Nuthatch, 1.0; Winter Wren, 1.0; Veery, 1.0; Wood Thrush, 1.0; Cedar Waxwing, 1.0; Mourning Warbler, 1.0; Song Sparrow, 1.0; Purple Finch, 1.0; Chestnut-sided Warbler, 0.5; Rose-breasted Grosbeak, 0.5; Red-shouldered Hawk, +; Hairy Woodpecker, +; Hermit Thrush, +; Nashville Warbler, +. **Total:** 30 species; 81.0 territories (195/40 ha). **Visitors:** Green-backed Heron, Sharp-shinned Hawk, Louisiana Waterthrush. **Remarks:** Removal of Red Pines, damaged or downed in the March 1991 ice storm, continued just prior to the breeding season in a 4.9 ha section of the plot. The loss of Red Pine habitat may well have contributed to this year's downward trend in Black-throated Green Warbler.

## 72. HARDWOOD FOREST WITH SCATTERED PINE

BOSQUE DE MADERAS DURAS CON PINOS DISPERSOS

GREGORY W. GROVE

Route 1, Box 483  
Petersburg, Pennsylvania 16669

**Site Number:** PA1391026. **Location:** Pennsylvania; Huntingdon Co.; McAlevy's Fort; Stone Valley Recreation Area; 40°40'N, 77°55'W; Pine Grove Mills Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 19.2 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):84 (1992). **Weather:** Mean start temp., 9.8°C (range 3–16°C). **Coverage:** 12.8 h; 9 visits (9 sunrise); 18, 21, 26, 29 May; 2, 10, 16, 20 June; 5 July. **Census:** Ovenbird, 17.0 (35; 2FL); Red-eyed Vireo, 13.5 (28); Black-capped Chickadee, 9.0 (19); Common Yellowthroat, 8.0 (17); Scarlet Tanager, 5.5 (11); Great Crested Flycatcher, 4.0 (8); Indigo Bunting, 4.0; Brown-headed Cowbird, 4.0; Wood Thrush, 3.5 (7); Brown Creeper, 3.0 (6); Gray Catbird, 3.0; Rufous-sided Towhee, 3.0; Blue Jay, 2.0; Tufted Titmouse, 2.0; Carolina Wren, 2.0 (1FL); House Wren, 2.0; Blue-gray Gnatcatcher, 2.0; Broad-winged Hawk, 1.0; Yellow-billed Cuckoo, 1.0; Ruby-throated Hummingbird, 1.0; Downy Woodpecker, 1.0; Northern Flicker, 1.0; Eastern Wood-Pewee, 1.0; Red-breasted Nuthatch, 1.0; White-breasted Nuthatch, 1.0; American Robin, 1.0; Worm-eating Warbler, 1.0 (1FL); Northern Cardinal, 1.0; Chipping Sparrow, 1.0; Eastern Phoebe, 0.5; Pine Warbler, 0.5. **Total:** 31 species; 100.5 territories (209/40 ha). **Visitors:** Ruffed Grouse, Mourning Dove, Red-bellied Woodpecker, Pileated Woodpecker, Solitary Vireo, Golden-winged Warbler, Black-throated Green Warbler, Field Sparrow, Song Sparrow, American Goldfinch. **Remarks:** In only the second year of censusing this plot, perhaps the most noteworthy observation was the increase in Brown-headed Cowbird from 1.0 to 4.0.

## 73. MIXED OAK–PINE FOREST I

BOSQUE MIXTO DE ROBLE–PINO I

DOUGLAS A. GROSS

Susquehanna SES Environmental Laboratory  
R.R. 1, U.S. Route 11  
Berwick, Pennsylvania 18603

**Site Number:** PA1377204. **Location:** Pennsylvania; Luzerne Co.; Wapwallopen; Council Cup Forest; 41°4'N, 76°7'W; Sybertsville Quadrangle, USGS. **Continuity:** Established 1977; 13 yr. **Size:** 6.0 ha. **Description of Plot:** See *Am. Birds* 33:70 (1979). **Weather:** Mean start temp., 12.5°C (range 9–17°C). Although the nearest airport weather data do not support

this, it was cooler and wetter than normal in June and July. Rain ended the 8 May visit. **Coverage:** 27.8 h; 10 visits (10 sunrise); 24 April; 8, 14, 20 May; 2, 10, 16, 26 June; 8, 30 July. **Census:** Ovenbird, 6.5 (43; 1N,9FL); Red-eyed Vireo, 5.0 (33); Black-capped Chickadee, 4.5 (30; 1N,12FL); Scarlet Tanager, 4.0 (27; 2FL); Brown-headed Cowbird, 4.0; Rose-breasted Grosbeak, 3.5 (23); Eastern Wood-Pewee, 3.0 (20; 3N); Tufted Titmouse, 3.0; Cedar Waxwing, 3.0; Black-and-white Warbler, 2.5; Ruffed Grouse, 2.0 (1N,5FL); Downy Woodpecker, 2.0 (2FL); Brown Creeper, 2.0 (1N,2FL); Blue Jay, 1.5; Hairy Woodpecker, 1.0 (1FL); Northern Flicker, 1.0 (1N); Great Crested Flycatcher, 1.0; White-breasted Nuthatch, 1.0 (2FL); Wood Thrush, 1.0 (2FL); Solitary Vireo, 1.0; Northern Cardinal, 1.0; Northern Oriole, 1.0; American Crow, 0.5; Hermit Thrush, 0.5; American Robin, 0.5 (6FL); Pileated Woodpecker, +; Blue-gray Gnatcatcher, +; Black-throated Blue Warbler, + (1FL); Blackburnian Warbler, +; Worm-eating Warbler, +; Indigo Bunting, +; Rufous-sided Towhee, +; Chipping Sparrow, +. **Total:** 33 species; 56.0 territories (373/40 ha). **Visitors:** Mourning Dove, Ruby-throated Hummingbird, Eastern Phoebe, Eastern Kingbird, Common Grackle. **Remarks:** Local increase in species that prefer northern hardwoods/hemlocks was observed but not well represented in plot densities (Hermit Thrush, Black-throated Blue Warbler, and Solitary Vireo). One Eastern Wood-Pewee pair was double-brooded. Wood Thrush density was lowest ever (tied with 1988), but Rose-breasted Grosbeak had highest density ever. Black-throated Blue Warbler was new to the plot. **Acknowledgments:** Pennsylvania Power and Light Company provided support for this study. Sharon Harrall assisted with maps and data management.

## 74. MIXED OAK–PINE FOREST II

### BOSQUE MIXTO DE ROBLE–PINO II

DOUGLAS A. GROSS

*Susquehanna SES Environmental Laboratory*

*R.R. 1, U.S. Route 11*

*Berwick, Pennsylvania 18603*

**Site Number:** PA1377205. **Location:** Pennsylvania; Luzerne Co.; Beach Haven; TR419 Forest, Pennsylvania Power and Light Co.; 41°5'N, 76°9'W; Berwick Quadrangle, USGS. **Continuity:** Established 1977; 13 yr. **Size:** 11.1 ha. **Description of Plot:** See *Am. Birds* 33: 70 (1979). **Weather:** Mean start temp., 10.8°C (range 7–15°C). Although the nearest airport weather data do not support this, it was cooler and wetter than normal in June and July. Fog during one visit. **Coverage:** 32.5 h; 9 visits (9 sunrise); 27 April; 13, 19, 30 May; 4, 11, 22 June; 7, 28 July. **Census:** Red-eyed Vireo, 11.0 (40; 2FL); Scarlet Tanager, 7.5 (27; 2N,6FL); Wood Thrush, 7.0 (25; 3N,5FL); Eastern Wood-Pewee, 5.0 (18; Tufted Titmouse, 5.0 (2N,10FL); American Redstart, 5.0 (2FL); Hooded Warbler, 4.5 (16; 1N); Black-capped Chickadee, 4.0 (14; 10FL); Ovenbird, 4.0 (5FL); Cedar Waxwing, 3.0 (11; 2FL); Worm-eating Warbler, 3.0 (5FL); Rose-breasted Grosbeak, 3.0; Brown-headed Cowbird, 3.0; Northern Cardinal, 2.5; Blue Jay, 2.0; Blue-gray Gnatcatcher, 2.0; Indigo Bunting, 1.5 (2FL); Downy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Carolina Wren, 1.0 (5FL); House Wren, 1.0; Gray Catbird, 1.0; Solitary Vireo, 1.0; Yellow-throated Vireo, 1.0; Blackburnian Warbler, 1.0; Pine Warbler, 1.0; Black-and-white Warbler, 1.0; Chipping Sparrow, 1.0; Northern Oriole, 1.0 (2FL); Hairy Woodpecker, 0.5; American Crow, 0.5; Ruffed Grouse, + (4FL); White-breasted Nuthatch, +; Brown Creeper, +; American Robin, + (3FL); Chestnut-sided Warbler, +; Common Yellowthroat, +. **Total:** 37 species; 86.0 territories (310/40 ha). **Visitors:** Cooper's Hawk, Mourning Dove, Eastern Screech-Owl, Northern Flicker, Pileated Woodpecker, Eastern Kingbird, Yellow Warbler. **Remarks:** A Scarlet Tanager was sitting on a nest as late as 28 July; certainly a second brood. Tufted Titmice built nests late, one pair building on 4 June. Some Wood Thrush pairs were double-brooded. Solitary Vireo was new to the plot. Raccoons had a den in the plot. **Acknowledgments:** Pennsylvania Power and Light Company provided support for this study. Sharon Harrall assisted with maps and data management.

## 75. MATURE UPLAND OAK-BEECH-WHITE PINE FOREST

BOSQUE MADURO EN ALTURAS DE ROBLE-HAYA-PINO BLANCO

WILLIAM R. EDDLEMAN

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*210B Woodward Hall*

*University of Rhode Island*

*Kingston, Rhode Island 02881*

**Site Number:** RI1291062. **Location:** Rhode Island; Kent Co.; West Greenwich; Escoheag; 41°36'N, 71°46'W; Voluntown Quadrangle, USGS. **Continuity:** Established 1991; 2 yr.

**Size:** 10.2 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):84-85 (1992). **Weather:** Mean start temp., 12.4°C (range 7-17°C). June mean temperature (17.9°C) was near normal (18.2°C). July mean temperature (20.1°C) was slightly cooler than normal (21.2°C). June precipitation (9.4 cm) was above normal (7.4 cm). July precipitation (8.1 cm) was near normal (7.6 cm). Source: University of Rhode Island weather station, Kingston, RI. **Coverage:** 21.9 h; 8 visits (8 sunrise); 3, 9, 11, 16, 17, 20, 23 June; 1 July. **Census:** Ovenbird, 18.5 (73; 4N,3FL); Red-eyed Vireo, 13.5 (53); Eastern Wood-Pewee, 5.0 (20); Wood Thrush, 5.0 (2N,1FL); Veery, 4.5 (18); Tufted Titmouse, 4.0 (16); Scarlet Tanager, 4.0; Acadian Flycatcher, 3.5 (14; 2N); Black-and-white Warbler, 3.0 (12); White-breasted Nuthatch, 2.5; Black-capped Chickadee, 2.0; Hermit Thrush, 2.0; Black-throated Green Warbler, 2.0; Pine Warbler, 2.0; American Redstart, 2.0; Common Yellowthroat, 1.5; Red-bellied Woodpecker, 1.0; Hairy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; Blue-gray Gnatcatcher, 1.0; Yellow-throated Vireo, 1.0; Rufous-sided Towhee, 1.0; Pileated Woodpecker, 0.5; Broad-winged Hawk, +. **Total:** 25 species; 82.5 territories (324/40 ha). **Visitors:** Red-shouldered Hawk, Wild Turkey, Northern Flicker, Eastern Phoebe, American Crow, Brown Creeper, Winter Wren, American Robin, Rose-breasted Grosbeak, Brown-headed Cowbird. **Remarks:** Construction on a house began in late May about 50 m N of the NW corner of the plot. Contribution #2805 of the College of Resource Development, University of Rhode Island, with support from the Rhode Island Agricultural Experiment Station. **Other Observer:** Mary Jo Murray. **Acknowledgments:** Thanks to Thomas E. Armstrong of the Rhode Island Department of Environmental Management for permitting use of the site.

## 76. TUPELO-CYPRESS SWAMP

PANTANO DE CIPRÉS Y TUPELO

JONATHAN PLISSNER\*, DALE DROGE\*, SIDNEY GAUTHREAUX, JR.\*  
& WILLIAM JARVIS

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**Site Number:** SC0492033. **Location:** South Carolina; Barnwell Co.; Martin; Savannah River Site; 33°7'N, 81°39'W; Girard Quadrangle, USGS. **Continuity:** New. **Size:** 11.0 ha.

**Description of Plot:** A rectangular plot (200 × 550 m) with a closed canopy dominated by Water Tupelo and Bald Cypress, estimated to be between 61 and 100 years of age. Mean canopy height, 25 m (range 18-35 m). The limited understory is also dominated by Water Tupelo and Bald Cypress. Most of the patchily distributed ground cover consists of emergent vegetation such as Slender Arrowhead and beak rush. Other plants, such as Virginia-willow, Poison Ivy, and various briars, sprout along fallen logs. The plot is completely inundated throughout the year and is homogeneous in both vegetative composition and structure. No channels exist, but there is a constant ESE flow of water. Three small (< 25 m) "ponds" are present where the canopy is open, one of which contains vegetation (water lilies) not located elsewhere on the plot. Remnant cypress stumps measuring > 2 m in diameter are scattered throughout, but no living trees exceed 1.2 m dbh. **Edge:** Up to 75% of the plot's

perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat > 500 ha in size. The NNE border of the plot is located along the edge of the swamp and consists of a strip of upland hardwood forest 15–200 m wide. Managed pine woodlands and clear-cut areas are located beyond the hardwoods. The swamp extends 1–1.5 km beyond the SSW border of the plot to the Savannah River and continues both upstream (WNW) and downstream (ESE) for several km. **Topography and Elevation:** The plot is level. Minimum elevation 26 m, maximum 26 m. **Weather:** Mean start temp., 19.9°C (range 14–26°C). The mean high temperature for May was 27.5°C and the mean low was 16.1°C (range 9–36°C). The mean daily temperature was 21.8°C, 0.7°C below the normal daily average of 22.5°C. Precipitation in May was 8.0 cm, 5.4 cm below the average of 13.4 cm. Although the rain total was lower than normal, there were 15 days in May with at least some measurable precipitation. **Coverage:** 29.9 h; 8 visits (6 sunrise, 2 sunset); 14, 18, 19 May; 2, 4, 5, 9, 11 June. **Census:** Northern Parula, 14.0 (51; 5FL); Acadian Flycatcher, 11.0 (40; 1N); Prothonotary Warbler, 10.0 (36; 4N,4FL); White-breasted Nuthatch, 3.5 (13); Yellow-throated Warbler, 3.5; Carolina Chickadee, 3.0 (11); Carolina Wren, 2.5; Red-bellied Woodpecker, 2.0; Downy Woodpecker, 2.0; Great Crested Flycatcher, 2.0; Summer Tanager, 2.0; Wood Duck, 1.5; Yellow-billed Cuckoo, 1.5; Tufted Titmouse, 1.5; Blue-gray Gnatcatcher, 1.5; Red-eyed Vireo, 1.5; Barred Owl, 1.0; Pileated Woodpecker, 1.0; Brown-headed Cowbird, 1.0; Yellow-throated Vireo, 0.5; American Redstart, 0.5; Northern Cardinal, 0.5; Great Blue Heron, +; White-eyed Vireo, +. **Total:** 24 species; 67.5 territories (245/40 ha). **Visitors:** Chimney Swift, Ruby-throated Hummingbird, Hairy Woodpecker, Blue Jay, American Crow, Brown-headed Nuthatch. **Remarks:** The census was conducted primarily by canoe. **Acknowledgments:** We thank the Department of Energy and the Savannah River Forest Station of the U.S. Forest Service for financial support and access to the area.

## 77. MATURE DECIDUOUS-CONIFEROUS FOREST WITH STREAM

BOSQUE MADURO DECIDUO-Y-DE CONÍFEROS CON ARROYO

STEPHEN J. & BARBARA H. STEDMAN

2675 Lakeland Drive  
Cookeville, Tennessee 38501

**Site Number:** TN1491015. **Location:** Tennessee; Putnam Co.; Cookeville; City Lake Natural Area (Old Cookeville Filtration Plant); 36°8'N, 85°27'W; Cookeville East Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 10.2 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):17 (1991) and 63 (Suppl.):18–19 (1992). **Weather:** Mean start temp., 14.3°C (range 10–20°C). April and May were drier and cooler than average; June and July were wetter and cooler than average. **Coverage:** 18.6 h; 12 visits (12 sunrise); 22, 27 April; 4, 31 May; 1, 2, 5, 6, 7, 8 June; 8, 11 July. **Census:** Northern Cardinal, 5.0 (20; 2N,7FL); Red-winged Blackbird, 3.0 (12; 2FL); Tufted Titmouse, 2.5; Carolina Wren, 2.5; Blue Jay, 2.0 (1N,2FL); Carolina Chickadee, 2.0 (2FL); Downy Woodpecker, 1.5; Eastern Phoebe, 1.5; Wood Thrush, 1.5; American Robin, 1.5 (2N); Wood Duck, 1.0 (9FL); Rock Dove, 1.0 (1N); Mourning Dove, 1.0 (1N); Red-bellied Woodpecker, 1.0; Northern Flicker, 1.0 (1N,2FL); White-breasted Nuthatch, 1.0; European Starling, 1.0 (1N,4FL); Louisiana Waterthrush, 1.0; Kentucky Warbler, 1.0; Indigo Bunting, 1.0; Song Sparrow, 1.0 (2FL); Brown-headed Cowbird, 1.0; Belted Kingfisher, 0.5; Eastern Wood-Pewee, 0.5; American Crow, 0.5 (3FL); Yellow-throated Vireo, 0.5; Red-eyed Vireo, 0.5; Pine Warbler, 0.5 (3FL); Common Yellowthroat, 0.5; Rufous-sided Towhee, 0.5; Common Grackle, 0.5; Green-backed Heron, +; Broad-winged Hawk, + (1N); Hairy Woodpecker, +; Great Crested Flycatcher, +; Tree Swallow, +; Northern Rough-winged Swallow, +; Blue-gray Gnatcatcher, +; Gray Catbird, +; Brown Thrasher, +; White-eyed Vireo, +; Summer Tanager, +; Field Sparrow, + (2FL); Northern Oriole, +. **Total:** 44 species; 39.5 territories (155/40 ha). **Visitors:** Great Blue Heron, Red-shouldered Hawk, Black-billed Cuckoo, Yellow-billed Cuckoo, Chimney Swift, Pileated Woodpecker, Barn Swallow, Cedar Waxwing,

Yellow Warbler, Yellow-throated Warbler, Yellow-breasted Chat, Scarlet Tanager, American Goldfinch. **Remarks:** This plot, owned by the city of Cookeville, was renamed City Lake Natural Area and is being administered by Cookeville Leisure Services. Detectability of breeding birds was adversely affected by noise from heavy equipment used to grade the small parking lot and to prepare a 300-m-long logging road for paving on one-half of visits in late May and June. A fishing pier, built earlier in the year, has increased use of the area and caused greater human disturbance. The decrease in number of territories from last year is due in part to increased human activity as the site is "improved" by the city of Cookeville.

## 78. HEMLOCK-WHITE PINE-MIXED HARDWOOD FOREST

BOSQUE MIXTO DE MADERAS DURAS-PICEA-PINO BLANCO

KENNETH R. HINKLE

Route 2, Box 37

Bridgewater, Virginia 22812

**Location:** Virginia; Rockingham Co.; Rawley Springs; Kepart Run; 38°33'N, 79°4'W; Rawley Springs Quadrangle, USGS. **Continuity:** Established 1979; 7 yr. **Size:** 6.1 ha.

**Description of Plot:** See *Am. Birds* 34:58 (1980). **Weather:** Mean start temp., 12.7°C (range 8–19°C). Temperatures during most of the count period were cooler than normal. There were extended periods of wet weather from late May to early June. **Coverage:** 9.3 h; 8 visits (8 sunrise); 20, 23 May; 1, 8, 11, 13, 18, 27 June. **Census:** Acadian Flycatcher, 7.0 (46); Red-eyed Vireo, 6.5 (43); Black-throated Green Warbler, 3.0 (20); Ovenbird, 3.0; Wood Thrush, 2.5; Scarlet Tanager, 2.5; Northern Parula, 2.0; Worm-eating Warbler, 2.0; Louisiana Waterthrush, 1.5; Tufted Titmouse, 1.0; Yellow-throated Vireo, 1.0; White-breasted Nuthatch, +. **Total:** 12 species; 32.0 territories (210/40 ha). **Visitors:** Ruffed Grouse, Mourning Dove, Yellow-billed Cuckoo, Belted Kingfisher, Pileated Woodpecker, Blue Jay, Carolina Chickadee, Black-and-white Warbler, Rufous-sided Towhee, Brown-headed Cowbird. **Remarks:** Acadian Flycatcher, Red-eyed Vireo, Louisiana Waterthrush, and Scarlet Tanager seem to be showing downward trends. Ovenbird and Black-throated Green Warbler are showing some increases. Ovenbirds were more numerous in the general area of the transect than anytime beginning in 1987. The heavy rains in late May may have been a factor in some reduced numbers. The loud noise from high water definitely limited the hearing of calls during this period. **Other Observer:** Rod Bodkin. **Acknowledgments:** Thanks to Rod Bodkin for help in establishing plot and identification of birds.

## 79. SUBURBAN CEMETERY

CEMENTERIO SUBURBANO

THOMAS A. IMHOF

1036 Pike Road

Birmingham, Alabama 35218

**Location:** Alabama; Jefferson Co.; Birmingham; Oakland Cemetery; 33°29'N, 86°54'W; Bessemer Quadrangle, USGS. **Continuity:** Established 1978; 13 yr. **Size:** 15.0 ha. **Description of Plot:** See *Am. Birds* 34:18–19 (1980) and *J. Field Ornithol.* 63 (Suppl.):88–89 (1992).

Several mature oaks and elms were cut down and over 70 m of hedgerow were removed. **Weather:** Mean start temp., 17.2°C (range 9–23°C). Annual temperature was very close to average (+0.1°C as of 21 July), but two cold spells and several hot ones gave the impression of very little spring. As of 31 May, Birmingham had a rainfall deficiency of 29.0 cm, but by 21 July the deficiency was 22.1 cm. **Coverage:** 20.0 h; 20 visits (14 sunrise); 21, 28 March; 16, 17, 21, 30 April; 2, 5, 13, 18, 22, 27 May; 3, 9, 15, 20, 27, 30 June; 9, 20 July. **Census:** House Sparrow, 10.0 (27; 5N,20FL); American Robin, 8.0 (21; 6N,20FL); House Finch, 8.0 (1N,15FL); Blue Jay, 7.0 (19; 2N,10FL); Northern Mockingbird, 7.0 (4N,25FL); Northern Cardinal, 6.0 (16; 2N,8FL); European Starling, 4.0 (11; 4N,10FL);

Rufous-sided Towhee, 4.0 (4FL); Mourning Dove, 3.0 (8; 3N,5FL); Brown Thrasher, 3.0 (1N,3FL); Carolina Wren, 2.5 (1N,3FL); Brown-headed Cowbird, 2.0 (2FL); Red-bellied Woodpecker, 1.5 (2N,2FL); Great Crested Flycatcher, 1.5 (2FL); Downy Woodpecker, 1.0 (1FL); Northern Flicker, 1.0 (1N,2FL); American Crow, 1.0 (1N,1FL); Carolina Chickadee, 1.0 (1FL); Tufted Titmouse, 1.0 (1N,3FL); Gray Catbird, 1.0; Eastern Wood-Pewee, 0.5. **Total:** 21 species; 74.0 territories (197/40 ha). **Visitors:** Yellow-crowned Night-Heron, Killdeer, Rock Dove, Common Nighthawk, Chimney Swift, Red-headed Woodpecker, Purple Martin, Barn Swallow, White-eyed Vireo, Common Grackle. **Remarks:** In addition to the 20 complete visits, the observer checked the vicinity of his house (on the corner of the plot) each day for varying amounts of time. A Coyote was seen three times. Twice, a Rufous-sided Towhee was observed feeding a Brown-headed Cowbird fledgling.

## 80. MATURE UPPER MIXED-CONIFEROUS FOREST-MONTANE CHAPARRAL

BOSQUE MADURO MIXTO DE CONÍFEROS Y CHAPARRAL MONTANO

JENNIFER G. TURNER, DOUGLAS A. DRYNAN &  
CHRISTOPHER M. HECKSCHER

*Pacific Southwest Forest and Range Experiment Station  
2081 East Sierra Avenue  
Fresno, California 93710*

**Location:** California; Fresno Co.; Shaver Lake; 37°5'N, 119°14'W; Huntington Lake SW Quadrangle, USGS. **Continuity:** Established 1985; 8 yr. **Size:** 42.3 ha. **Description of Plot:** See 1985 BBC report. **Weather:** Mean start temp., 9.7°C (range 3–16°C). Conditions were generally fair with no census days lost to rain. **Coverage:** 130.8 h; 24 visits (24 sunrise); 18, 19, 21, 22, 27, 28 May; 1, 2, 4, 5, 9, 10, 12, 15, 17, 18 June. **Census:** Dark-eyed Junco, 33.0 (31; 33N); Golden-crowned Kinglet, 30.5 (29; 5N); Hermit Warbler, 27.5 (26; 1N); Hammond's Flycatcher, 21.0 (20; 14N); MacGillivray's Warbler, 15.5 (15); Dusky Flycatcher, 14.0 (13; 6N); Yellow-rumped Warbler, 14.0 (5N); Fox Sparrow, 14.0 (2N); Warbling Vireo, 13.5 (13; 7N); Red-breasted Nuthatch, 12.5 (12; 10N); Solitary Vireo, 12.5 (4N); Brown Creeper, 11.0 (10; 8N); Purple Finch, 9.0 (9; 1N); Mountain Chickadee, 7.0 (7; 7N); Hermit Thrush, 5.0 (5; 2N); Nashville Warbler, 5.0 (1N); Western Tanager, 3.5 (3; 3N); Steller's Jay, 3.0 (3); Rufous-sided Towhee, 2.5; Mountain Quail, 2.0 (1N); Townsend's Solitaire, 2.0 (1N); American Robin, 2.0 (2N); Red-breasted Sapsucker, 1.5 (2N); White-headed Woodpecker, 1.5 (2N); Pacific-slope Flycatcher, 1.5 (2N); Chipping Sparrow, 1.5 (1N); Common Poorwill, 1.0 (1N); Hairy Woodpecker, 1.0; Winter Wren, 1.0 (1N); Cooper's Hawk, 0.5 (1N); Band-tailed Pigeon, 0.5; Great Horned Owl, 0.5 (1N); Spotted Owl, 0.5 (1N); Northern Flicker, 0.5; Pileated Woodpecker, 0.5; Olive-sided Flycatcher, 0.5; Western Wood-Pewee, 0.5; Common Raven, 0.5; Wilson's Warbler, 0.5 (1N); Black-headed Grosbeak, 0.5; Lazuli Bunting, 0.5; Green-tailed Towhee, 0.5 (1N); Lincoln's Sparrow, 0.5. **Total:** 43 species; 276.0 territories (261/40 ha). **Visitors:** Northern Goshawk, Calliope Hummingbird, Pine Siskin, Evening Grosbeak. **Remarks:** All boundary territories were computed as 0.5 territories. **Acknowledgments:** This effort is part of a study of bird monitoring techniques being conducted by Dr. Jared Verner, USDA Forest Service.

## 81. MOUNTAIN MEADOW AND OPEN CONIFEROUS FOREST

PRADERAS MONTANAS Y BOSQUES ABIERTOS DE CONÍFEROS

HELEN J. STILES-WAINWRIGHT & ARTHUR WAINWRIGHT

*150 South 36th Street  
Boulder, Colorado 80303*

**Location:** Colorado; Boulder Co.; Boulder; Flagstaff-Kossler Lake Area; 39°58'N, 105°20'W; Eldorado Springs Quadrangle, USGS. **Continuity:** Established 1981; 11 yr. **Size:** 13.0 ha.

**Description of Plot:** See *Am. Birds* 36:90 (1982). Trees have grown larger with more Ponderosa Pines in the meadows. **Weather:** Mean start temp., 17.6°C (range 2–29°C). Generally cooler than normal. **Coverage:** 25.5 h; 13 visits (2 sunrise, 1 sunset); 22 February; 29 April; 24 May; 6, 7, 8, 21 June; 3, 4, 5, 18, 26 July; 9 August. Maximum number of observers/visit, 3. **Census:** House Wren, 5.0 (15; 5N); Mountain Bluebird, 5.0 (4N); American Robin, 5.0; Broad-tailed Hummingbird, 4.0 (12; 12FL); Tree Swallow, 3.0 (9; 3N); Pygmy Nuthatch, 3.0; Yellow-rumped Warbler, 3.0 (1N); Chipping Sparrow, 3.0 (1N, 8FL); Vesper Sparrow, 3.0; Pine Siskin, 3.0; Cordilleran Flycatcher, 2.0 (1N); Violet-green Swallow, 2.0 (1N); Mountain Chickadee, 2.0 (2N); White-breasted Nuthatch, 2.0 (1N); Western Bluebird, 2.0 (2N); Townsend's Solitaire, 2.0; Western Tanager, 2.0; Dark-eyed Junco, 2.0; Red Crossbill, 2.0; Mourning Dove, 1.0; Northern Flicker, 1.0; Barn Swallow, 1.0 (1N); Red-breasted Nuthatch, 1.0; Cassin's Finch, 1.0; Lesser Goldfinch, 0.5 (1N). **Total:** 25 species; 60.5 territories (186/40 ha). **Visitors:** Turkey Vulture, Great Horned Owl, Common Nighthawk, Downy Woodpecker, Steller's Jay, Common Raven, Hermit Thrush. **Remarks:** A neighbor, whose property almost joins the plot, has a large feeding station operating all year long. The amount of seed put out undoubtedly attracts more seedeaters. We notice fewer Steller's Jays, Dark-eyed Juncos, and Cassin's Finches on the plot. Blue Grouse and Common Highthawks have also been scarcer on the plot. More mountain homes are being built and we suspect the birds are moving into wilder areas to the west. Brown-headed Cowbirds have increased recently in some nearby areas. We did not hear or see any vireos from 1987 until 1991, when we found one Solitary Vireo territory. The total number of species is down, compared to the high of 32 in 1988. **Other Observers:** Mary Jane Schock and Ara Yager.

## 82. MIXED HABITAT

### HÁBITAT MIXTO

#### MIKE DUDEK

Miles Wildlife Sanctuary  
95 West Cornwall Road  
Sharon, Connecticut 06069

**Location:** Connecticut; Litchfield Co.; Sharon; Miles Wildlife Sanctuary; 41°53'N, 73°24'W; Sharon Quadrangle, USGS. **Continuity:** Established 1986; 6 yr. **Size:** 15.0 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):66–67 (1989). **Weather:** Mean start temp., 12.2°C (range 4–25°C). **Coverage:** 31.0 h; 12 visits (9 sunrise, 3 sunset); 27, 29 May; 4, 8, 10, 12, 16, 18, 22, 23, 25 June; 4 July. Maximum number of observers/visit, 3. **Census:** Gray Catbird, 23.0 (61); American Robin, 21.0 (56); House Finch, 19.0 (51); Yellow Warbler, 16.0 (43); Veery, 15.5 (41); Chestnut-sided Warbler, 13.0 (35); Common Yellowthroat, 12.0 (32); Red-winged Blackbird, 11.0 (29); Song Sparrow, 9.0 (24); American Redstart, 7.0 (19); Brown-headed Cowbird, 7.0; Northern Oriole, 6.0 (16); Wood Thrush, 5.5 (15); Eastern Phoebe, 5.0 (13); Tree Swallow, 5.0; Barn Swallow, 5.0; Red-eyed Vireo, 5.0; Yellow-bellied Sapsucker, 4.0 (11); Black-capped Chickadee, 4.0; Cedar Waxwing, 4.0; Rose-breasted Grosbeak, 4.0; Wood Duck, 3.0 (8); Mourning Dove, 3.0; Tufted Titmouse, 3.0; Blue-winged Warbler, 3.0; Black-and-white Warbler, 3.0; Swamp Sparrow, 3.0; Common Grackle, 3.0; Blue Jay, 2.5; Rufous-sided Towhee, 2.5; Ruffed Grouse, 2.0; Chimney Swift, 2.0; Least Flycatcher, 2.0; White-breasted Nuthatch, 2.0; Chipping Sparrow, 2.0; Purple Finch, 2.0; Ruby-throated Hummingbird, 1.0; Red-bellied Woodpecker, 1.0; Northern Flicker, 1.0; Pileated Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Eastern Bluebird, 1.0; European Starling, 1.0; Warbling Vireo, 1.0; Ovenbird, 1.0; Scarlet Tanager, 1.0; Northern Cardinal, 1.0; Eastern Wood-Pewee, 0.5. **Total:** 48 species; 250.5 territories (668/40 ha). **Visitors:** Great Blue Heron, Turkey Vulture, Red-tailed Hawk, Wild Turkey, Belted Kingfisher, Downy Woodpecker, Eastern Kingbird, American Crow, Yellow-throated Vireo. **Other Observer:** Heidi L. Michaels. **Acknowledgments:** Miles Wildlife Sanctuary.

## 83. TRANSITION FOREST AND THICKET TRANSICIÓN DE BOSQUE-MATORRAL

ROBERT A. ASKINS, WENDY R. DREYER & MARGARETT J. PHILBRICK

*Department of Zoology*

*Connecticut College*

*270 Mohegan Avenue*

*New London, Connecticut 06320*

**Location:** Connecticut; New London Co.; New London; Bolleswood Natural Area, Connecticut College Arboretum; 41°22'N, 72°6'W; Uncasville Quadrangle, USGS. **Continuity:** Established 1953; 22 yr. **Size:** 6.5 ha. **Description of Plot:** See *Am. Birds* 37:73–74 (1983).

**Weather:** Mean start temp., 14.3°C (range 8–24°C). Temperatures were considerably lower than normal. **Coverage:** 8.6 h; 10 visits (10 sunrise); 15, 27 May; 2, 5, 10, 13, 20, 26 June; 3, 7 July. **Census:** Gray Catbird, 3.5 (22); Carolina Wren, 3.0 (18); Red-eyed Vireo, 2.5; Blue-winged Warbler, 2.5; Blue Jay, 1.5; Chestnut-sided Warbler, 1.5; Rufous-sided Towhee, 1.5; Black-capped Chickadee, 1.0; Tufted Titmouse, 1.0; House Wren, 1.0; Veery, 1.0; Wood Thrush, 1.0; White-eyed Vireo, 1.0; Yellow Warbler, 1.0; Common Yellowthroat, 1.0; Northern Cardinal, 1.0; Northern Flicker, 0.5; Eastern Wood-Pewee, 0.5; Black-and-white Warbler, 0.5; Hooded Warbler, 0.5; Scarlet Tanager, 0.5; Brown-headed Cowbird, 0.5; Broad-winged Hawk, +; Downy Woodpecker, +; Great Crested Flycatcher, +; White-breasted Nuthatch, +; American Robin, +; Ovenbird, +; Song Sparrow, +. **Total:** 29 species; 28.0 territories (172/40 ha). **Visitors:** Mourning Dove, American Crow, Northern Oriole, American Goldfinch. **Remarks:** The plot continues to support a mix of forest and thicket bird species. Patches of relatively stable thicket remain in the young forest. **Acknowledgments:** Glenn Dreyer and his staff at the Connecticut College Arboretum facilitated our study.

## 84. BULRUSH AND CATTAIL MARSH IN CONIFER FOREST CIÉNAGAS DE ENEAS EN BOSQUE DE CONÍFERAS

MARCELLA M. BISHOP

*750 Rocky Point Road  
Polson, Montana 59860*

**Location:** Montana; Lake Co.; Polson; Safe Harbor Marsh; 47°35'N, 114°9'W; Wild Horse Island Quadrangle, USGS. **Continuity:** Established 1975; 18 yr. **Size:** 40.5 ha. **Description of Plot:** See *Am. Birds* 31:84–85 (1977). **Weather:** Mean start temp., 17.0°C (range 8–26°C). **Coverage:** 24.0 h; 8 visits (5 sunrise, 3 sunset); 14 April; 16, 30, 31 May; 6, 7, 12 June; 14 July. Maximum number of observers/visit, 8. **Census:** Yellow-headed Blackbird, 56.0 (55; 8N,12FL); Red-winged Blackbird, 23.0 (23; 3N,8FL); Marsh Wren, 13.0 (13; 2N); Mallard, 12.0 (12); Western Wood-Pewee, 12.0 (1N); Common Yellowthroat, 12.0; Song Sparrow, 10.0 (10; 2N,2FL); Willow Flycatcher, 9.0 (9; 1N); Canada Goose, 8.0 (8; 2N,4FL); Tree Swallow, 8.0 (2N); Pine Siskin, 8.0; Redhead, 6.0 (6); American Robin, 6.0 (3N,4FL); Black-capped Chickadee, 5.0 (5); Red-breasted Nuthatch, 5.0; Pied-billed Grebe, 4.0 (4; 7FL); Great Blue Heron, 4.0; Common Merganser, 4.0 (3FL); American Coot, 4.0; Mourning Dove, 4.0; Calliope Hummingbird, 4.0; Dark-eyed Junco, 4.0; Wood Duck, 3.0 (3; 1N,6FL); Hammond's Flycatcher, 3.0; Violet-green Swallow, 3.0; Yellow Warbler, 3.0; Osprey, 2.0 (2N,3FL); Ruffed Grouse, 2.0; Northern Flicker, 2.0 (1N); Swainson's Thrush, 2.0; Yellow-rumped Warbler, 2.0; MacGillivray's Warbler, 2.0; Chipping Sparrow, 2.0; Brown-headed Cowbird, 2.0; American Goldfinch, 2.0; American Wigeon, 1.0; Ring-necked Duck, 1.0; Great Horned Owl, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Common Raven, 1.0; Mountain Chickadee, 1.0; Pygmy Nuthatch, 1.0; Ruby-crowned Kinglet, 1.0; Cedar Waxwing, 1.0; Orange-crowned Warbler, 1.0; Nashville Warbler, 1.0; Western Tanager, 1.0; Black-headed Grosbeak, 1.0 (1N); Cassin's Finch, 1.0; Bald Eagle, +; Ring-billed Gull, +. **Total:** 53 species;

267.0 territories (264/40 ha). **Remarks:** There has been a noticeable reduction in warblers and vireos over the last several years. There also used to be many Ruby-crowned Kinglets, but this year there was only one territory. Flycatchers however, are recovering for the first time since the eruption of Mt. St. Helens in May 1980. I do not know if there is a correlation with the ash fall, or not, but there have been few flycatchers in the area since that spring. This is also true on Breeding Bird Survey routes that I do.

## 85. DECIDUOUS FOREST WITH POND AND BROOK

### BOSQUE DECIDUO CON CHARCA Y ARROYO

JOHN BROTHERTON

249 East Crescent Avenue  
Mahwah, New Jersey 07430

**Site Number:** NJ1064032. **Location:** New Jersey; Bergen Co.; Mahwah; Campgaw Mountain Reservation; 41°4'N, 74°11'W; Ramsey and Ramapo Quadrangles, USGS. **Continuity:** Established 1964; 29 yr. **Size:** 16.2 ha. **Description of Plot:** See *Aud. Field Notes* 19:623–624 (1965). **Weather:** Mean start temp., 9.8°C (range 6–16°C). **Coverage:** 9.0 h; 9 visits (9 sunrise); 19, 21, 26, 28 May; 2, 4, 9, 11, 15 June. Maximum number of observers/visit, 7. **Census:** Ovenbird, 4.0 (10); Gray Catbird, 3.0 (7); Red-eyed Vireo, 3.0; Black-capped Chickadee, 2.0; Veery, 2.0; Wood Thrush, 2.0; American Robin, 2.0; Scarlet Tanager, 2.0; Northern Cardinal, 2.0; Mourning Dove, 1.0; Great Crested Flycatcher, 1.0; Eastern Kingbird, 1.0; Blue Jay, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; Louisiana Waterthrush, 1.0; Red-winged Blackbird, 1.0; Common Grackle, 1.0; Northern Oriole, 1.0. **Total:** 19 species; 32.0 territories (79/40 ha). **Visitors:** Canada Goose, Wood Duck, Mallard, Yellow-billed Cuckoo, Red-bellied Woodpecker, Downy Woodpecker, Northern Flicker, Pileated Woodpecker, Eastern Wood-Pewee, American Crow, Black-and-white Warbler, American Redstart, Common Yellowthroat. **Other Observers:** J. Bristow, N. Bristow, S. Gall, A. Micich, K. Sjolander, J. White, J. Worrall.

## 86. PITCH PINE–SLABROCK

### AREA DE PINO RESINA

ROBERT A. LARSEN & BETSY CORNWALL

Mohonk Preserve, Inc.  
1000 Mountain Rest Road  
Mohonk Lake  
New Paltz, New York 12561-9434

**Site Number:** NY1392063. **Location:** New York; Ulster Co.; Gardiner; The Near Trapps; 41°44'N, 74°12'W; Gardiner Quadrangle, USGS. **Continuity:** New. **Size:** 15.8 ha. **Description of Plot:** A rectangular plot (305 × 488 m) on privately owned conservation land. The open canopy is dominated by Pitch Pine, Chestnut Oak, and Black Birch, estimated to be between 61 and 100 years of age. Mean canopy height, 5 m (range 3–10 m). The patchy understory is dominated by Mountain Laurel, Shadbush, and Scrub Oak. The patchy ground cover is dominated by Low Bush Blueberry, Wood Hairgrass, and lichens. The plot has a few ephemeral streams and pools during the breeding season. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 101–500 ha in size. **Topography and Elevation:** The plot lies on a NW-facing slope with a grade of > 16%. Minimum elevation 305 m, maximum 366 m. **Weather:** Mean start temp., 11.0°C (range 4–18°C). Average temperature was about normal for May and slightly below normal for June. Precipitation was 35% above normal in May and 67% above normal in June. Source: Mohonk Lake Cooperative Weather Station. **Coverage:** 25.5 h; 13 visits (13 sunrise); 1, 12, 15, 19, 22, 28 May; 2, 7, 9, 16, 19, 23, 26 June. Maximum number of observers/visit, 3. **Census:** Chipping Sparrow, 12.0 (30); Rufous-sided Towhee,

11.0 (28); Black-and-white Warbler, 7.0 (18); Prairie Warbler, 6.0 (15); Cedar Waxwing, 5.0 (13); American Robin, 4.0 (10; 2FL); Pine Warbler, 4.0; Wood Thrush, 3.0 (8); American Redstart, 3.0; Common Yellowthroat, 3.0; Dark-eyed Junco, 3.0; Mourning Dove, 2.0; Great Crested Flycatcher, 2.0; Blue Jay, 2.0; Black-capped Chickadee, 2.0; Hermit Thrush, 2.0; Indigo Bunting, 2.0; Brown-headed Cowbird, 2.0; Northern Flicker, 1.0; Eastern Phoebe, 1.0; Carolina Wren, 1.0; Gray Catbird, 1.0; Red-eyed Vireo, 1.0; Yellow-rumped Warbler, 1.0; Scarlet Tanager, 1.0; House Finch, 1.0. **Total:** 26 species; 83.0 territories (210/40 ha). **Visitors:** Turkey Vulture, Barn Swallow, American Crow, Common Raven, Tufted Titmouse, Brown Creeper, Ruby-crowned Kinglet, Blue-gray Gnatcatcher, Northern Mockingbird, Nashville Warbler, Black-throated Green Warbler, Blackburnian Warbler, Ovenbird, Hooded Warbler, Canada Warbler, American Goldfinch. **Other Observers:** Barbara Rubin, Paul Huth, Sybil Rosen. **Acknowledgments:** Thanks to the cooperation of the Mohonk Preserve.

## 87. SUBURBAN BIRD SANCTUARY

SANTUARIO DE AVES SUBURBANO

MARY E. RICHARD

Theodore Roosevelt Sanctuary  
134 Cove Road  
Oyster Bay, New York 11771

**Location:** New York; Nassau Co.; Oyster Bay; Theodore Roosevelt Memorial Bird Sanctuary; 40°52'N, 73°30'W; Hicksville Quadrangle, USGS. **Continuity:** Established 1983; 10 yr. **Size:** 10.8 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):91-92 (1992). **Weather:** No data provided. Windy during one visit. **Coverage:** 13.1 h; 8 visits (5 sunrise, 2 sunset); 8, 21, 26 May; 9, 10, 24, 29 June; 16 July. Maximum number of observers/visit, 3. **Census:** Gray Catbird, 7.5 (28); House Wren, 6.0 (22; 4N); Common Grackle, 6.0; American Robin, 5.0 (19); Northern Cardinal, 3.5 (13); House Sparrow, 3.5 (3N); Mourning Dove, 3.0 (11; 2N); Red-bellied Woodpecker, 3.0 (3N); Chipping Sparrow, 2.5 (1N); Blue Jay, 2.0; House Finch, 2.0; American Crow, 1.5 (1N); Black-capped Chickadee, 1.5; Tufted Titmouse, 1.5; Northern Oriole, 1.5 (2N); Eastern Wood-Pewee, 1.0; Carolina Wren, 1.0; Wood Thrush, 1.0; Cedar Waxwing, 1.0; European Starling, 1.0; Ovenbird, 1.0; Orchard Oriole, 1.0 (1N); Downy Woodpecker, 0.5; Northern Flicker, 0.5; White-breasted Nuthatch, 0.5. **Total:** 25 species; 58.5 territories (217/40 ha). **Visitors:** Fish Crow, White-eyed Vireo, Blue-winged Warbler, Yellow Warbler, American Redstart, Common Yellowthroat, Scarlet Tanager, Rufous-sided Towhee, Brown-headed Cowbird, Purple Finch, American Goldfinch. **Remarks:** Nests listed are those found incidentally. **Other Observers:** Regina Parry-Green, Kim Grossman, Jeffrey O'Handley, Susan Sauer.

## 88. DISTURBED OAK-HICKORY, PINE STAND, EDGE, AND POND

AREA DE ROBLE-NOGAL

A.H. CLAUGUS

228 South Lake Street  
Carey, Ohio 43316

**Site Number:** OH2237200. **Location:** Ohio; Licking Co.; Hickman; Camp Falling Rock; 40°11'N, 82°19'W; Newark Quadrangle, USGS. **Continuity:** Established 1937; 48 yr. **Size:** 14.2 ha. **Description of Plot:** See *Bird Lore* 39:379-380 (1937). In 1991 there were just over 600 trees one foot or more in diameter. **Weather:** Mean start temp., 16.8°C (range 14-21°C). Cloudy, cool, and rainy. There were no clear days at the camp. It rained during four visits and there was heavy ground fog during one visit. **Coverage:** 21.5 h; 8 visits (1 sunrise, 3 sunset); 20 June; 2, 25, 28 July; 20, 27 August; 4, 10 September. **Census:** Red-

eyed Vireo, 7.0 (20; 1N); Scarlet Tanager, 5.0 (14; 2FL); Acadian Flycatcher, 4.0 (11; 1N); Wood Thrush, 4.0 (1N); Eastern Wood-Pewee, 3.0 (8); American Robin, 3.0 (1N); Ruby-throated Hummingbird, 2.0; Red-bellied Woodpecker, 2.0; Downy Woodpecker, 2.0 (1FL); Eastern Phoebe, 2.0 (1N); Great Crested Flycatcher, 2.0; Tufted Titmouse, 2.0 (4FL); White-breasted Nuthatch, 2.0; Carolina Wren, 2.0 (1N); House Wren, 2.0 (1N); Ovenbird, 2.0; Kentucky Warbler, 2.0; Northern Cardinal, 2.0 (1N); Mourning Dove, 1.0; Eastern Screech-Owl, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Blue Jay, 1.0 (2FL); American Crow, 1.0 (2FL); Carolina Chickadee, 1.0; Blue-gray Gnatcatcher, 1.0; Gray Catbird, 1.0; Yellow-throated Vireo, 1.0; Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Northern Oriole, 1.0. **Total:** 31 species; 63.0 territories (177/40 ha). **Visitors:** Great Blue Heron, Green-backed Heron, Red-tailed Hawk, Great Horned Owl, Barred Owl, Chimney Swift, Barn Swallow, Warbling Vireo. **Remarks:** This year was the reverse of last season's unusually dry conditions. Excessive and continued rain saturated the soil and caused severe erosion on the slopes. The vegetation, especially the ground cover, was beaten down and no ground nest could have remained intact or fledged young without great stress. All nests were subject to rain damage, except hole-nesting species, one robin nest, one Carolina Wren nest, and one phoebe nest. Windfall and limb-fall were recorded. Mosquitoes were fantastically abundant, and possibly stressed the birds like they did the observers. The author almost quit the census because of the insects. The last two seasons provide additional evidence of the role of weather and related factors on breeding bird populations in a small area. If the stressful conditions can be demonstrated to have occurred over a large area, one might be able to arrive at some significant estimate of loss or gain in the populations. The last two seasons of stress to the breeding populations join past events such as: a late killing frost, webworm damage, a killing frost combined with webworm damage, a winter of heavy wet snow, a severe wind storm that stripped most of the leaves from Large-toothed Aspen and snapped the dead stems somewhere near their middles, and a "baby tornado" which downed about 0.8 ha of forest. **Other Observers:** Mr. and Mrs. Charles Howard, Sr.

## 89. FIELD, RIDGE, AND SHRUBBY TREES

CAMPOS, COLINAS Y ARBUSTOS

MICHAEL F.G. CLARK

27 Skyline Drive

Dundas, Ontario L9H 3S3

**Location:** Ontario; Municipality of Hamilton-Wentworth; Dundas; Dundas Valley Plot 1; 43°15'N, 79°54'W. **Continuity:** Established 1989; 4 yr. **Size:** 6.6 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):14 (1989). The plot is rectangular (163 × 454 m) minus a 0.8 ha wooded rectangle in the SE corner. The open canopy is dominated by Scarlet Hawthorn, Cockspur Hawthorn, and Sugar Maple. Mean canopy height 5.7 m (range 3.7–7.6 m). The understory is dominated by Staghorn Sumac, Roughleaf Dogwood, and brambles. The nearly continuous ground cover is dominated by grasses, goldenrod, and Sweet White Clover. **Edge:** More than 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat < 25 ha in size. **Topography and Elevation:** The plot has an uneven N-facing slope with some locations having a grade of > 16%. Minimum elevation 125 m, maximum 143 m. **Weather:** Mean start temp., 17.3°C (range 7–22°C). Average temperature for April through July was 12.7°C (1.6°C below normal). There was a severe cold snap in mid-May. Average rainfall over the same period was 10.1 cm (3.1 cm above normal). Source: Environment Canada. **Coverage:** 16.4 h; 8 visits (3 sunset); 20 April; 10, 23 May; 4, 13, 22, 27 June; 11 July. **Census:** Yellow Warbler, 37.0 (224; 2FL); Gray Catbird, 26.0 (158); Song Sparrow, 23.0 (139); Northern Cardinal, 7.0 (42); Field Sparrow, 7.0; American Goldfinch, 7.0; Blue-winged Warbler, 3.0 (18); Common Yellowthroat, 3.0; Brown-headed Cowbird, 3.0; Red-winged Blackbird, 2.5; Northern Flicker, 2.0; Willow Flycatcher, 2.0; American Robin, 2.0; Brown Thrasher, 2.0; Indigo Bunting, 1.5; Yellow-billed Cuckoo, 1.0; Eastern Kingbird, 1.0; Blue Jay, 1.0; American Crow, 1.0 (1FL); Black-capped Chickadee, 1.0 (1FL); Cedar Waxwing, 1.0; Chestnut-sided Warbler,

1.0; Common Grackle, 1.0; Northern Oriole, 1.0. **Total:** 24 species; 137.0 territories (830/40 ha). **Visitors:** Red-tailed Hawk, Mourning Dove, Northern Mockingbird, Rose-breasted Grosbeak, House Finch. **Remarks:** The total number of territories and number of species were the highest to date. The plot's three most numerous breeding species (Yellow Warbler, Gray Catbird, and Song Sparrow) accounted for 63% of all breeding territories, 1.2% over these species' average percentage for the previous three years. In contrast, the two flycatcher species, perhaps adversely affected by the cooler weather, were about two weeks late arriving on the plot and were down to a combined 3.0 breeding pairs (from 8.5 in 1989). American Crow and Chestnut-sided Warbler were new breeders on the plot.

## 90. SHRUBBY TREES, RIDGE, AND WOODS

### ARBUSTOS, COLINAS Y BOSQUES

MICHAEL F.G. CLARK

27 Skyline Drive  
Dundas, Ontario L9H 3S3

**Location:** Ontario; Municipality of Hamilton-Wentworth; Dundas; Dundas Valley Plot 2; 43°14'N, 80°0'W. **Continuity:** Established 1990; 3 yr. **Size:** 7.3 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):14–15 (1989). A rectangular plot (177 × 411 m) with a closed canopy dominated by hawthorns, White Oak, and Red Oak. Mean canopy height 9.3 m (range 4.9–13.7 m). The understory is dominated by brambles, Roughleaf Dogwood, and Carolina Rose. The patchy ground cover is dominated by grasses, goldenrod, and asters. Open area successional progress is perhaps evident in the increasing density of grass, and the development of bramble and dogwood patches into near-impassable thickets. **Edge:** Between 51% and 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 26–50 ha in size. **Topography and Elevation:** The plot includes both sides of a ridge and has a slope > 16%. Minimum elevation 125 m, maximum 149 m. **Weather:** Mean start temp., 20.3°C (range 11–26°C). Average temperature for April through July was 12.7°C (1.6°C below normal). There was a severe cold snap in mid-May. Average rainfall over the same period was 10.1 cm (3.1 cm above normal). Source: Environment Canada. **Coverage:** 13.7 h; 8 visits (4 sunset); 20, 27 April; 23 May; 1, 6, 13, 28 June; 11 July. **Census:** Yellow Warbler, 16.0 (88; 1FL); Gray Catbird, 10.0 (55); Northern Cardinal, 4.5 (25); Black-capped Chickadee, 3.0 (16); Song Sparrow, 3.0; American Goldfinch, 3.0; Blue-winged Warbler, 2.5; Field Sparrow, 2.5; American Robin, 2.0 (1N); Brown Thrasher, 2.0 (1FL); Northern Oriole, 2.0; Orchard Oriole, 1.5; Eastern Kingbird, 1.0; Blue Jay, 1.0; Cedar Waxwing, 1.0; Indigo Bunting, 1.0; Brown-headed Cowbird, 1.0; Red-winged Blackbird, 0.5. **Total:** 18 species; 57.5 territories (315/40 ha). **Visitors:** Turkey Vulture, Red-tailed Hawk, Ruffed Grouse, Mourning Dove, Downy Woodpecker, Northern Flicker, Eastern Wood-Pewee, Great Crested Flycatcher, American Crow, White-breasted Nuthatch, Common Yellowthroat, Rose-breasted Grosbeak. **Remarks:** Breeding pair totals have declined by 26, or 31%, from 1990. While maintaining a steady 50% of the total breeding pairs, the plot's three major species (Yellow Warbler, Gray Catbird, and Song Sparrow) are down 14.5 territories over three years. The recent increase in successional activity, as well as this spring's inclement weather, may account for the 3-yr decrease in Song Sparrow territories from 10.5 to 3, and a decline in breeding flycatchers from four species and 6.5 territories in 1991 to one territory in 1992. Brown Thrasher, Red-winged Blackbird, and Orchard Oriole were new breeders on the plot.

## 91. SCATTERED MIXED CONIFEROUS FOREST IN SUBALPINE MEADOWS AND SPRUCE BOGS

BOSQUE MESOFÍTICO DISPERSO EN PRADERAS SUBALPINAS Y ABETOS

ROBERT A. HUDSON

P.O. Box 81  
Bates, Oregon 97817

**Location:** Oregon; Grant Co.; Bates; Indian Rock, Malheur National Forest; 44°45'N, 118°45'W; Desolation Butte Quadrangle, USGS. **Continuity:** Established 1973; 20 yr. **Size:** 32.4 ha. **Description of Plot:** See *Am. Birds* 27:1002–1003 (1973). **Weather:** Mean start temp., 6.7°C (range 1–17°C). The total precipitation during the breeding season was 8.5 cm. **Coverage:** 13.6 h; 9 visits (9 sunrise); 17, 20, 22, 23, 26, 30 June; 6, 8, 11 July. **Census:** Chipping Sparrow, 6.0 (7); White-crowned Sparrow, 6.0; American Robin, 3.0 (4); Yellow-rumped Warbler, 3.0; Fox Sparrow, 3.0; Lincoln's Sparrow, 3.0; Lazuli Bunting, 2.0; Cassin's Finch, 2.0; Northern Flicker, 1.0. **Total:** 9 species; 29.0 territories (36/40 ha). **Visitors:** Spotted Sandpiper, Mountain Chickadee, Red-breasted Nuthatch, Mountain Bluebird. **Acknowledgments:** Malheur National Forest staff.

## 92. MIXED LOWLAND FOREST AND MEADOW WITH STREAM

BOSQUE BAJO MIXTO Y PRADERAS CON ARROYOS

DONALD B. SNYDER

Department of Biology and Health Services  
Edinboro University of Pennsylvania  
Edinboro, Pennsylvania 16444

**Location:** Pennsylvania; Erie Co.; Edinboro; Riparian Big Conneauttee Creek; 41°52'N, 80°8'W; Cambridge Springs Quadrangle, USGS. **Continuity:** Established 1981; 5 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 37:75 (1983). Another giant Black Willow has fallen, further segmenting the riparian canopy line. **Weather:** Mean start temp., 16.1°C (range 7–27°C). Temperatures and precipitation were near normal. **Coverage:** 12.5 h; 11 visits (3 sunrise, 1 sunset); 6, 22, 28, 30 May; 3, 8, 9, 10, 15, 29 June; 12 July. **Census:** Song Sparrow, 10.5 (52); American Robin, 10.0 (49; 4N,FL); Gray Catbird, 6.5 (32); European Starling, 6.0 (30; 3N,FL); House Wren, 3.5 (17; 1N,FL); Yellow Warbler, 3.5 (1N); Common Grackle, 3.0 (15; 1FL); Mourning Dove, 2.5 (1N,FL); Common Yellowthroat, 2.5 (1N); Northern Cardinal, 2.5; Red-winged Blackbird, 2.5 (3FL); Brown-headed Cowbird, 2.5; American Goldfinch, 2.5; Downy Woodpecker, 1.5; Blue Jay, 1.5; Black-capped Chickadee, 1.5 (4FL); Cedar Waxwing, 1.5; Rose-breasted Grosbeak, 1.5 (1FL); Black-billed Cuckoo, 1.0; Ruby-throated Hummingbird, 1.0; Northern Flicker, 1.0; Willow Flycatcher, 1.0; Carolina Wren, 1.0 (1N); Wood Thrush, 1.0; Red-eyed Vireo, 1.0; Indigo Bunting, 1.0; Chipping Sparrow, 1.0; House Finch, 1.0; House Sparrow, 1.0 (1N); Wood Duck, 0.5 (11FL); Mallard, 0.5; American Woodcock, 0.5; Eastern Screech-Owl, 0.5; Eastern Phoebe, 0.5; Barn Swallow, 0.5; White-breasted Nuthatch, 0.5; Northern Oriole, 0.5; Great Blue Heron, +; Green-backed Heron, +; American Kestrel, + (1FL); Killdeer, +; Chimney Swift, +; Belted Kingfisher, +; Northern Rough-winged Swallow, +. **Total:** 44 species; 80.5 territories (398/40 ha). **Visitors:** Spotted Sandpiper, Hairy Woodpecker, Pileated Woodpecker, Eastern Kingbird, Warbling Vireo, Scarlet Tanager, Field Sparrow, Purple Finch. **Remarks:** Eastern Wood-Pewee and Least Flycatcher were absent for the first time. Wood Duck and Eastern Screech-Owl were new breeders on the plot.

### 93. COASTAL FRESHWATER MARSH

#### PANTANO COSTANERO DE AGUA DULCE

JOHN P. KELLY

*Audubon Cypress Grove Preserve  
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**Location:** California; Marin Co.; Marshall; Livermore Marsh; 38°10'N, 122°53'W; Tomales Quadrangle, USGS. **Continuity:** Established 1988; 5 yr. **Size:** 10.5 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):64 (1989). More recent detailed quantitative habitat data are available from the author. **Weather:** Mean start temp., 12.1°C (range 6–15°C). This was the sixth consecutive year of below-average winter rainfall and drought, but wet-season rainfall (62.9 cm) was near the 38-yr average of 71.9 cm. Source: Audubon Canyon Ranch. **Coverage:** 8.8 h; 8 visits (3 sunrise); 9, 17, 20, 23, 29 April; 8, 22, 27 May. **Census:** Tricolored Blackbird, 250.0 (952); Red-winged Blackbird, 25.0 (95); Cliff Swallow, 23.0 (88); Song Sparrow, 16.0 (61); Marsh Wren, 14.0 (53); American Coot, 6.0 (23); Mourning Dove, 4.0 (15); Mallard, 3.0 (11); Pied-billed Grebe, 2.0; Ruddy Duck, 2.0; Allen's Hummingbird, 2.0; Common Yellowthroat, 2.0; Cinnamon Teal, 1.0; Virginia Rail, 1.0; Swainson's Thrush, 1.0; Wrentit, 1.0; Black-headed Grosbeak, 1.0; California Towhee, 1.0; Brown-headed Cowbird, 1.0; House Finch, 1.0; American Goldfinch, 1.0; Northern Harrier, 0.5. **Total:** 22 species; 358.5 territories (1366/40 ha). **Visitors:** Green-backed Heron, Black-crowned Night-Heron, Northern Shoveler, American Wigeon, Ring-necked Duck, Bufflehead, Anna's Hummingbird, Belted Kingfisher, Black Phoebe, Tree Swallow, Barn Swallow, Common Raven, Chestnut-backed Chickadee, Bushtit, Bewick's Wren, American Robin, European Starling, Orange-crowned Warbler, Yellow-rumped (Myrtle) Warbler, Golden-crowned Sparrow, White-crowned Sparrow, Northern Oriole, Pine Siskin. **Remarks:** The Allen's Hummingbird territories were all males. Tricolored Blackbirds arrived 26 May and most initial nesting attempts were completed by 23 June. One of the Common Yellowthroat territories failed. **Acknowledgments:** This project is supported by Chevron USA and Audubon Canyon Ranch, Stinson Beach, CA, as part of a larger restoration and management program. I thank Susan Kelly for help in summarizing the results.

### 94. COASTAL RIPARIAN MARSH

#### ANEGADO RIVEREÑO COSTANERO

JULES G. EVENS\* & RICHARD W. STALLCUP

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Point Reyes, California 94956

**Location:** California; Marin Co.; Point Reyes Station; Olema Marsh; 38°4'N, 122°49'W; Point Reyes Quadrangle, USGS. **Continuity:** Established 1990; 3 yr. **Size:** 17.5 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):75 (1991). The increase in coverage of the marsh by willows, reported in 1991, continues. **Weather:** Mean start temp., 14.4°C (range 11–19°C). Precipitation was near the annual mean (91 cm) for only the second time in six years. Rainfall was generally later in the season than normal with exceptionally late storms in early May and late June. Wind was unusually light during April and May. Source: Point Reyes National Seashore. **Coverage:** 23.7 h; 8 visits (6 sunrise); 16, 28 March; 15 April; 6, 8, 22, 30 May; 14 June. **Census:** Red-winged Blackbird, 40.0 (91); Marsh Wren, 35.0 (80); Song Sparrow, 34.0 (78); Virginia Rail, 11.0 (25); American Goldfinch, 10.5 (24); Wilson's Warbler, 8.5 (19); Common Yellowthroat, 8.0 (18); Warbling Vireo, 7.0 (16); Pacific-slope Flycatcher, 6.0 (14); Swainson's Thrush, 5.0 (11); Black-headed Grosbeak, 4.0 (9); Western Wood-Pewee, 3.0 (7); Chestnut-backed Chickadee, 3.0; Orange-crowned Warbler, 3.0; Bushtit, 2.5; California Quail, 2.0; Allen's Hummingbird, 2.0; Bewick's Wren, 2.0; Wrentit, 2.0; California Towhee, 2.0; Tree Swallow, 1.5; Scrub Jay,

1.5; Purple Finch, 1.5; Pied-billed Grebe, 1.0; Mallard, 1.0; Black Rail, 1.0; American Coot, 1.0; Anna's Hummingbird, 1.0; Acorn Woodpecker, 1.0; Nuttall's Woodpecker, 1.0; Downy Woodpecker, 1.0; Black Phoebe, 1.0; Violet-green Swallow, 1.0; Plain Titmouse, 1.0; European Starling, 1.0; Hairy Woodpecker, 0.5; Brown-headed Cowbird, 0.5; Red-shouldered Hawk, +; Ash-throated Flycatcher, +; Steller's Jay, +; Western Bluebird, +; American Robin, +; House Finch, +; Pine Siskin, +. **Total:** 44 species; 208.0 territories (475/40 ha). **Visitors:** Great Blue Heron, Great Egret, Green-backed Heron, Black-crowned Night-Heron, Sora, Mourning Dove, Northern Pygmy-Owl, Northern Flicker, Cliff Swallow, Barn Swallow, Hutton's Vireo, Northern Parula, Yellow Warbler, Savannah Sparrow, Brewer's Blackbird. **Remarks:** The downward trend in populations of marsh dependent species that we noted in 1991 was reversed in 1992. Most significantly, Marsh Wren territories rebounded more than threefold over their 1991 levels, returning to their 7-yr mean (35.2 territories). Population increases over the 7-yr mean were also detected for Song Sparrow (+51%), Red-winged Blackbird (+18%), and Virginia Rail (+16%). Common Yellowthroat returned to pre-drought numbers. Other riparian insectivores increased, most notably Pacific-slope Flycatcher, Warbling Vireo, and Wilson's Warbler. Substantial increases were recorded for American Goldfinch (5.0 territories in 1991 to 10.5 in 1992) and Black-headed Grosbeak (1.5 to 4.0). The increases in various passerine populations probably result from the increase in the broadleaf overstory (mostly willows). The late rains may have affected survivorship of fledglings, however no data are available. The reduced wind made detection of quiet species easier. A Cliff Swallow colony that used an old barn adjacent to the study plot was burned by the National Park Service in April 1992. **Other Observers:** Terry Nordbye and Chris Wood. **Acknowledgments:** John Kelly, Maurice Schwartz, and Audubon Canyon Ranch, Inc. for encouragement, consultation, and logistical support.

## 95. DESERT RIPARIAN-FRESHWATER MARSH

### DESIERTO RIVERENO-PANTANO

EUGENE A. CARDIFF

*San Bernardino County Museum  
2024 Orange Tree Lane  
Redlands, California 92374*

**Location:** California; San Bernardino Co.; Morongo Valley; Big Morongo Wildlife Reserve; 34°3'N, 116°35'W; Morongo Valley Quadrangle, USGS. **Continuity:** Established 1977; 16 yr. **Size:** 15.4 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):76 (1991). On 27 April, a fire burned about 6 ha of the plot and about 20 ha of the Big Morongo Reserve. Many of the large Fremont Cottonwoods and Red Willows probably will not recover, and extensive old Honey Mesquite thickets were devastated. The marsh was burned to the wet soil but the cattails and sedges quickly recovered. It will be many years before this old-growth riparian area recovers from the fire. **Weather:** Mean start temp., 13.4°C (range 4–20°C). **Coverage:** 24.8 h; 9 visits (9 sunrise); 15, 22, 29 April; 6, 13, 20, 27 May; 3, 10 June. Maximum number of observers/visit, 4. **Census:** House Wren, 10.0 (26; 2FL); Song Sparrow, 10.0 (1N,1FL); Rufous-sided Towhee, 7.0 (18); House Finch, 7.0; Lesser Goldfinch, 5.0 (13); Bushtit, 4.0 (10; 2N,2FL); Bewick's Wren, 4.0 (1FL); Common Yellowthroat, 4.0 (1FL); Virginia Rail, 3.0 (8; 1FL); European Starling, 3.0 (1FL); Nuttall's Woodpecker, 2.0 (1N); Yellow Warbler, 2.0; Yellow-breasted Chat, 2.0; Summer Tanager, 2.0; Brown-headed Cowbird, 2.0; Cooper's Hawk, 1.0 (1N,1FL); American Kestrel, 1.0; Spotted Dove, 1.0; Anna's Hummingbird, 1.0; Costa's Hummingbird, 1.0 (1N); California Thrasher, 1.0; Phainopepla, 1.0; Hooded Oriole, 1.0 (1N); Northern Oriole, 1.0 (1N); Brown-crested Flycatcher, 0.5; Ash-throated Flycatcher, +. **Total:** 26 species; 76.5 territories (199/40 ha). **Visitors:** Gambel's Quail, Black Phoebe, Vermilion Flycatcher, Scrub Jay, Plain Titmouse, Verdin, Northern Mockingbird, Black-headed Grosbeak, Blue Grosbeak, Lazuli Bunting, Indigo Bunting, California Towhee, Lawrence's Goldfinch. **Remarks:** The fire reduced the number of species from 34 to 26 and the number of breeding pairs from 123.5 to 76.5, compared to last year. Because of weather factors such as drought, severe

winter, spring freezes, and now the fire, breeding pairs have dropped from a high of 238.5 in 1986. Some of the species such as Summer Tanager, Brown-crested and Vermilion Flycatchers, and Yellow-breasted Chat may have problems surviving in the reduced available habitat which is also isolated from other riparian areas. It will be interesting to compare the burned and unburned parts of the plot in the future. **Other Observers:** Roy and Jessie Kniffen, Dori Myers, and Alice Ashbaugh. **Acknowledgments:** Special thanks to the San Bernardino Valley Audubon Society and the San Bernardino County Museum for supporting this study.

## 96. SHRUBBY SWAMP AND SEDGE HUMMOCKS

PANTANO ARBUSTIVO-MOGOTE

ANDREW MAGEE

*White Memorial Conservation Center  
Litchfield, Connecticut 06759*

**Location:** Connecticut; Litchfield Co.; Litchfield; White Memorial Foundation-Bantam River Inlet; 41°43'N, 73°13'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 26 yr. **Size:** 8.1 ha. **Description of Plot:** See *Aud. Field Notes* 19:625-627 (1965).

**Weather:** Mean start temp., 19.9°C (range 12-24°C). The average minimum and maximum temperatures at our weather station in both May (6°C, 21°C) and June (10°C, 24°C) were below our 8-yr averages and well below last year's exceptionally high figures. Precipitation in May (5.2 cm) was below average, but in June (19.1 cm) it was above average. **Coverage:** 11.8 h; 7 visits (5 sunset); 20, 27 May; 3, 9, 10, 15 June. **Census:** Swamp Sparrow, 42.0 (207); Red-winged Blackbird, 26.0 (128); Yellow Warbler, 22.0 (109); Common Yellowthroat, 16.0 (79); Gray Catbird, 8.0 (40); Song Sparrow, 8.0; Willow Flycatcher, 6.0 (30); Tree Swallow, 3.0 (15); Marsh Wren, 3.0; Cedar Waxwing, 3.0; American Goldfinch, 3.0; Wood Duck, 2.0; Mallard, 2.0; Eastern Kingbird, 2.0; Chestnut-sided Warbler, 1.0; Common Grackle, 1.0; Brown-headed Cowbird, 1.0; Great Crested Flycatcher, 0.5; Veery, 0.5; American Robin, 0.5; Warbling Vireo, 0.5; Great Blue Heron, +; Mute Swan, +; Canada Goose, +; American Black Duck × Mallard, +; Hooded Merganser, +; Cooper's Hawk, +; Broad-winged Hawk, +; Spotted Sandpiper, +; Least Flycatcher, +; American Crow, +; Fish Crow, +; Northern Cardinal, +; Northern Oriole, +. **Total:** 34 species; 151.0 territories (746/40 ha). **Remarks:** The number of species recorded equalled the previous high (34 in 1981) for the 26-yr history of this census. Cooper's Hawk and Least Flycatcher were new additions to the cumulative species list. The total number of territorial males and the densities of the common species have not changed much over the last few years. Virginia Rails continue to be absent from the plot, but not uncommon in nearby upstream marshes. They apparently have not declined in numbers but have simply moved. The water level in the marsh was medium-low at first but rose significantly after the heavy rains in the first week of June. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

## 97. INTERTIDAL SALT MARSH

ANEGADO SALOBRE INTERMAREAL

CHRISTOPHER D. AQUILA

*New York City Department of Parks  
Salt Marsh Restoration Group  
Greenbelt Administration  
200 Nevada Avenue  
Staten Island, New York 10306*

**Site Number:** NY0992024. **Location:** New York; Richmond Co.; Staten Island; Saw Mill Creek Marsh; 40°36'N, 74°11'W; Arthur Kill Quadrangle, USGS. **Continuity:** New. **Size:**

**40.9 ha. Description of Plot:** A triangular plot (shortest side 244 m, longest 793 m). The only canopy species is Tree of Heaven, which grows along a railroad bed. Mean canopy height, 3 m (range 1–7 m). The shrub layer is dominated by Marsh Elder, Shining Sumac, and blackberry. The nearly continuous ground cover is dominated by short Smooth Cord-Grass, Salt-meadow Grass, and Spike-Grass. A few creeks flow through the plot and there is one tidal pool with a maximum diameter of 46 m and a maximum depth of 0.6 m (at high tide). Up to 25% of the plot is covered by standing salt water during the breeding season. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 101–500 ha in size. Bordered on the E by a railroad bed with marsh continuing to the E. Bordered on the W by Prall's Creek. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 0 m, maximum 3 m (at the railroad bed). **Weather:** Mean start temp., 17.0°C (range 12–22°C). **Coverage:** 56.5 h; 11 visits (11 sunrise); 7, 19, 22, 29 May; 2, 4, 9, 11, 18, 27 June; 1 July. Maximum number of observers/visit, 4. **Census:** Marsh Wren, 13.0 (13; 2N,3FL); Swamp Sparrow, 12.0 (12; 1N,4FL); Seaside Sparrow, 6.0 (6; 1N,3FL); Song Sparrow, 5.0 (5); Sharp-tailed Sparrow, 4.0 (4; 1N,2FL); Mallard, 3.0 (3; 1N,11FL); Clapper Rail, 3.0 (7FL); Common Yellowthroat, 2.0; Red-winged Blackbird, 2.0 (2FL); Canada Goose, 1.0 (1N,4FL); Virginia Rail, 1.0; American Woodcock, 1.0; Herring Gull, 1.0 (1N). **Total:** 13 species; 54.0 territories (53/40 ha). **Visitors:** American Black Duck, Gadwall, Northern Harrier, Great Black-backed Gull, Barn Swallow, Fish Crow, Boat-tailed Grackle. **Remarks:** Seaside Sparrow and Sharp-tailed Sparrow had been considered lost as breeding species on Staten Island since the mid-1950's, yet both species nested in the marsh. This constituted the first documented nesting for each species on Staten Island in more than 30 years. Furthermore, the three pairs of Clapper Rails constituted only the second, third, and fourth nesting records for this species from Staten Island in 84 years. **Other Observers:** Carl Alderson, Howard Snyder, David Womer, Scotty Jenkins, Nancy Zaweda, Ed Johnson, Mike Feller. **Acknowledgments:** Thanks to Carl Alderson, Scotty Jenkins, and Howard Snyder for their tremendous help in the field; to Robbin Bergfors for producing an extraordinarily precise map; and to Ed Johnson for publicizing, yet not exploiting the natural treasures of Saw Mill Creek Marsh through his weekly nature column.

## 98. COASTAL SCRUB

### MATORRAL COSTANERO

ROBIN BALLARD, HEIDI PEDERSEN & DENISE HARDESTY

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Stinson Beach, California 94970*

**Location:** California; Marin Co.; Bolinas; Palomarin Field Station; 37°56'N, 122°45'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1971; 18 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 25:1003–1004 (1971). **Weather:** Mean temp., 16.5°C (range 3–29°C). The study period was preceded by a mild winter and a wet early spring, with the most rainfall since 1985. Early morning temperatures during the study period were warmer than usual, averaging 13.3°C (range 5–22°C). Total rainfall for the year (51.8 cm) was higher than the past two years, with 42% falling in February. Rain (7.2 cm) fell on 7% of the census mornings. **Coverage:** 225.5 h; 95 visits (31 sunrise, 1 sunset). **Census:** Wrentit, 15.5 (77; 20N,11FL); Song Sparrow, 8.5 (42; 19N,9FL); Allen's Hummingbird, 7.0 (35); Rufous-sided Towhee, 7.0 (2N,1FL); White-crowned Sparrow, 7.0 (7N,3FL); Orange-crowned Warbler, 5.0 (25); Bewick's Wren, 4.0 (20); California Quail, 2.0; Scrub Jay, 2.0; Bushtit, 2.0; Purple Finch, 2.0; Brown-headed Cowbird, 1.5; Northern Flicker, 1.0; California Towhee, 1.0; Rufous-crowned Sparrow, 1.0 (1N); Chestnut-backed Chickadee, 0.5; Wilson's Warbler, 0.5; Red-tailed Hawk, +; Mourning Dove, +; American Robin, +. **Total:** 20 species; 67.5 territories (333/40 ha). **Remarks:** The 1992 breeding bird density increased substantially and represents the highest recorded in 18 years. Fourteen species increased their densities from 1991. Allen's Hummingbird territories increased 17%, con-

tinuing their upward trend of the last five years. Bushtit territories doubled to their highest level in five years. The Wrentit density is the highest recorded since 1980 (25% increase since 1991). The densities of California Quail, Orange-crowned Warbler, and California Towhee each more than doubled to their highest numbers in 18 years. Chestnut-backed Chickadees were present on the plot for the first time since 1988. Brown-headed Cowbird numbers reached all-time highs this year as well, accounting for the increased number of parasitized nests (5) on the plot. Rufous-crowned Sparrows nested on the plot for the first time since 1984. Numbers of breeding pairs of Bewick's Wrens, Song Sparrows, and Rufous-sided Towhees also increased (14%, 31%, and 40%, respectively), and White-crowned Sparrow densities were the second highest since 1981. **Other Observers:** Grant Ballard and Geoff Geupel. **Acknowledgments:** This is Point Reyes Bird Observatory contribution No. 571.

## 99. COASTAL SAGE SCRUB MATORRAL COSTANERO DE SALVIA

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*2730 Loker Avenue West*

*Carlsbad, California 92008*

**Site Number:** CA9092066. **Location:** California; Orange Co.; El Toro Marine Corps Air Station; 33°41'N, 117°41'W; El Toro Quadrangle, USGS. **Continuity:** New. **Size:** 14.5 ha. **Description of Plot:** A rectangular plot (350 × 400 m) of nearly continuous scrub dominated by California Sagebrush, California Buckwheat, and Prickly Pear Cactus. Scattered Mexican Elderberry is the only plant over 5 m tall. The nearly continuous ground cover is dominated by brome grass, wild mustard, and wild oat. The plot has a few intermittent streams with maximum width 10 m and maximum depth < 1 m. **Edge:** Up to 50% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 101–500 ha in size. **Topography and Elevation:** The plot consists of low hills. Minimum elevation 213 m, maximum 226 m. **Weather:** Mean start temp., 13.9°C (range 10–16°C). There was no precipitation during the study period. **Coverage:** 18.1 h; 8 visits (6 sunrise); 8, 9, 16, 22, 23, 30 April; 7, 20 May. Maximum number of observers/visit, 4. **Census:** Rufous-sided Towhee, 13.0 (36); California Towhee, 13.0; Northern Mockingbird, 10.0 (28); Cactus Wren, 8.0 (22); California Gnatcatcher, 7.0 (19; 2N); California Quail, 4.0 (11); Anna's Hummingbird, 3.0 (8); Wrentit, 3.0; House Finch, 3.0; Brown-headed Cowbird, 2.0; Mourning Dove, 1.0; Lesser Nighthawk, 1.0 (1N); House Wren, 1.0; California Thrasher, 1.0; Wilson's Warbler, 1.0; Rufous-crowned Sparrow, 1.0; Lark Sparrow, 1.0; Grasshopper Sparrow, 1.0; Northern Oriole, 1.0. **Total:** 19 species; 75.0 territories (207/40 ha). **Visitors:** Nuttall's Woodpecker, Ash-throated Flycatcher, Scrub Jay, Bewick's Wren, Common Yellowthroat, Black-headed Grosbeak, Lazuli Bunting, Sage Sparrow, Song Sparrow, Western Meadowlark. **Remarks:** Bird density on the plot may have been influenced by the presence of some riparian vegetation and the "edge effect." Overall species diversity and density and the proportion of exotic avifauna will be interesting to follow on this plot as nearby lands are urbanized, further isolating the plot and the areas surrounding it. **Other Observers:** Tom Babyan, Torii Cooper, Andrea DeFord, Jeff Manning, Ray Vizgirdas. **Acknowledgments:** These data were gathered as part of a biological inventory funded by the U.S. Navy, Western Division Naval Facilities Engineering Command.

## 100. DIEGAN COASTAL SAGE SCRUB I MATORRAL DE SALVIA COSTANERO DE DIEGAN I

**JOHN C. LOVIO**

*Biology Department*

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*San Diego, California 92182*

**Site Number:** CA9092090. **Location:** California; San Diego Co.; San Diego; Sweetwater River Canyon; 32°43'N, 116°58'W; Jamul Mountain Quadrangle, USGS. **Continuity:** New.

**Size:** 43.5 ha. **Description of Plot:** A square plot (660 × 660 m) of endangered coastal sage scrub. The plot is dominated by Flat-topped Buckwheat, California Sagebrush, San Diego Sunflower, and Laurel Sumac. The ground cover is dominated by Black Mustard and grasses. There are a few ephemeral streams with a maximum width of 2 m and a maximum depth of 0.2 m. **Edge:** More than 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat > 500 ha in size. **Topography and Elevation:** The plot has an uneven SW-facing slope with a grade of > 16%. Minimum elevation 103 m, maximum 262 m. **Weather:** Mean start temp., 14.4°C (range 11–18°C). Temperatures were typical for spring and summer. However, late winter and early spring had above-average rainfall, resulting in profuse and prolonged greening of annual vegetation (annuals remained green through May). This was the second consecutive year to end a 5-yr period of regional drought. **Coverage:** 91.8 h; 7 visits (7 sunrise); 16 March; 3, 4, 16, 17, 30 April; 2, 12, 13, 26 May; 15 June. Four visits were done over a two-day period. **Census:** California Towhee, 14.0 (13; 1N); Wrentit, 11.5 (11); Rufous-crowned Sparrow, 7.5 (7); Sage Sparrow, 7.5 (3N); Bushtit, 7.0 (6; 5N); Rufous-sided Towhee, 7.0; California Gnatcatcher, 6.5 (6; 5N); Bewick's Wren, 4.5 (4; 1N); California Quail, 4.0 (4; 1N); Black-chinned Sparrow, 4.0; Anna's Hummingbird, 2.5; California Thrasher, 2.5; Lazuli Bunting, 2.5; Mourning Dove, 2.0 (1N); Great Horned Owl, 0.5 (1N); Song Sparrow, 0.5 (1N). **Total:** 16 species; 84.0 territories (77/40 ha). **Visitors:** Red-tailed Hawk, American Kestrel, Greater Roadrunner, Lesser Nighthawk, Costa's Hummingbird, Ash-throated Flycatcher, Cassin's Kingbird, Western Kingbird, Horned Lark, Common Raven, Phainopepla, Common Yellowthroat, Black-headed Grosbeak, Blue Grosbeak, Tricolored Blackbird, Hooded Oriole, Northern Oriole, House Finch, Lesser Goldfinch, American Goldfinch. **Remarks:** The late and heavy rainfall extended the life of annual growth until early summer for the second year in a row. Arthropod abundance was presumably high because many riparian birds from the Sweetwater River were seen foraging in the scrub during the general nestling period. Lush herbaceous growth and proximity to the river may have facilitated nesting of Song Sparrow, which is normally not associated with coastal sage scrub during the nesting season. Lazuli Bunting, apparently a facultative nester in sage scrub, experienced a marked decline in density from last year (unpublished). Data from 1992 for a second plot of similar habitat are available from the author. **Acknowledgments:** Thanks to Ann Kreager and Pete Beck for assistance in gridding the plot.

## 101. DISTURBED COASTAL SCRUB A

### MATORRAL PERTURBADO A

MIYOKO C. CHU, KAREN CARNEY & DENISE HARDESTY

Point Reyes Bird Observatory

4990 Shoreline Highway

Stinson Beach, California 94970

**Location:** California; Marin Co.; Bolinas; Palomarin Field Station; 37°55'N, 122°45'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1972; 18 yr. **Size:** 4.7 ha. **Description of Plot:** See *Am. Birds* 26:987–988 (1972). **Weather:** Mean start temp., 16.5°C (range 3–29°C). See BBC #98. **Coverage:** 159.0 h; 90 visits (32 sunrise, 2 sunset). Maximum number of observers/visit, 3. **Census:** Wrentit, 5.5 (47; 15N, 21FL); Song Sparrow, 3.5 (30; 15N, 11FL); White-crowned Sparrow, 2.5 (3N, 4FL); Rufous-sided Towhee, 2.0; California Quail, 1.5; Allen's Hummingbird, 1.5; Anna's Hummingbird, 1.0; Purple Finch, 1.0; Northern Flicker, 0.5; Scrub Jay, 0.5; Bushtit, 0.5; Bewick's Wren, 0.5; American Goldfinch, 0.5; Red-tailed Hawk, +; Mourning Dove, +; American Robin, +; Orange-crowned Warbler, +; Wilson's Warbler, +; California Towhee, +. **Total:** 19 species; 21.0 territories (179/40 ha). **Remarks:** The breeding bird density and diversity did not change from 1991, maintaining the lowest numbers of breeding pairs since 1982. The number of territories and species diversity has decreased or remained the same since 1985, coinciding with the onset of drought. The number of Wrentit pairs increased 37% to match the 18-yr high from 1988. Densities of California Quail, Allen's Hummingbird, Rufous-sided Towhee, and Scrub Jay all increased

slightly. Numbers of breeding Song Sparrows decreased substantially (42%) to their lowest levels since 1978. Decreases were also noted in the numbers of Bushtits, Bewick's Wrens, Anna's Hummingbirds, American Robins, and California Towhees. White-crowned Sparrow territories more than doubled to 1985 highs. **Other Observers:** Grant Ballard and Geoff Geupel. **Acknowledgments:** This is Point Reyes Bird Observatory contribution No. 569.

## 102. DISTURBED COASTAL SCRUB B MATORRAL PERTURBADO B

JENNIFER SEAVEY & DENISE HARDESTY

*Point Reyes Bird Observatory*

*4990 Shoreline Highway*

*Stinson Beach, California 94970*

**Location:** California; Marin Co.; Bolinas; Palomarin Field Station; 37°55'N, 122°46'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1971; 19 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 25:1002 (1971). The understory is now dominated by Douglas-fir, Coyote Bush, and blackberry. The ground cover is now dominated by grasses, plantain, and strawberry. **Weather:** Mean start temp., 16.5°C (range 3–29°C). See BBC #98. **Coverage:** 288.5 h; 98 visits (28 sunrise, 3 sunset). **Census:** Song Sparrow, 11.0 (54; 15N); Wrentit, 9.5 (47; 10N); White-crowned Sparrow, 5.0 (25; 9N); Rufous-sided Towhee, 3.5 (17; 2N); Allen's Hummingbird, 3.0 (15); California Quail, 2.5; Bewick's Wren, 2.5 (1N); American Goldfinch, 2.0 (2N); Northern Flicker, 1.5; Scrub Jay, 1.5; Anna's Hummingbird, 1.0; Western Bluebird, 1.0 (1N); Orange-crowned Warbler, 1.0; California Towhee, 1.0 (1N); Purple Finch, 0.5; Red-tailed Hawk, +; American Robin, +; Brown-headed Cowbird, +. **Total:** 18 species; 46.5 territories (230/40 ha). **Visitors:** Common Yellowthroat. **Remarks:** The breeding bird density increased 37% this year, to the second highest level in 18 years. Species recorded at their highest number of territories in 18 years were: Wrentit (12% increase), Orange-crowned Warbler (present for the first time in three years), California Towhee (first complete territory recorded), Northern Flicker (50% increase), and Scrub Jay (67% increase). Other species showing an increase in number of territories included: California Quail (increase of 2.5 territories), Allen's Hummingbird (500% increase to highest number since 1984), American Goldfinch (33% increase), Rufous-sided Towhee (17% increase), White-crowned Sparrow (43% increase to highest number in six years), Song Sparrow (29% increase), Western Bluebird and Purple Finch (both present for the first time in four and five years, respectively). Bushtit was the only species absent since last year. Decreases were also seen in the number of Bewick's Wren territories and Brown-headed Cowbirds. **Other Observers:** Grant Ballard and Geoff Geupel. **Acknowledgments:** This is Point Reyes Bird Observatory contribution No. 570.

## 103. MOJAVE YUCCA-STAGHORN CHOLLA DESERT SCRUB

MATORRAL DESÉRTICO DE "YUCCA DE MOJAVE Y  
STAGHORN CHOLLA"

LARRY LAPRÉ

*P.O. Box 5051*

*Riverside, California 92517*

**Location:** California; San Bernardino Co.; Goffs; South Lanfair Valley; 35°4'N, 115°10'W; Lanfair Valley Quadrangle, USGS. **Continuity:** Established 1977; 3 yr. Data for two additional years are available from the author. **Size:** 20.0 ha. **Description of Plot:** See *Am. Birds* 32:102 (1978). Two-thirds of the plot was mistakenly subject to commercial yucca harvesting in late 1978. A total of 2,200 yucca trunks were removed, or 26.5% of all yucca trunks present within the harvested area. The proportion of yucca clones with stems exceeding

1.2 m in height dropped from 47% to 19%, and 54% of the trunks greater than 1.2 m were removed within the harvested area. For the entire plot, 12% of all yucca trunks were removed, including 30% of all trunks greater than 1.2 m in height. Many of these were very tall (> 3 m) specimens which provided good nesting sites. **Weather:** Mean start temp., 9.9°C (range 5–13°C). Temperatures were normal for the study period. Winter and spring rainfall was above average. **Coverage:** 18.6 h; 8 visits (8 sunrise); 28, 29 March; 4 April; 15, 16, 18, 21, 22 May. **Census:** Black-throated Sparrow, 4.0 (8); Mourning Dove, 1.5; Ash-throated Flycatcher, 1.5 (3FL); Ladder-backed Woodpecker, 1.0; Cactus Wren, 0.5; Bendire's Thrasher, 0.5; Gambel's Quail, +; Greater Roadrunner, +; Crissal Thrasher, +; Brown-headed Cowbird, +. **Total:** 10 species; 9.0 territories (18/40 ha). **Visitors:** Costa's Hummingbird, Verdin, Black-tailed Gnatcatcher, Northern Mockingbird, Loggerhead Shrike, House Finch. **Remarks:** This post-harvesting census yielded 22% fewer territories than in 1977 and 50% less than in 1978. Compared to a control (unharvested) plot established at Watson Wash nearby, this plot had 28% fewer territories in 1992.

## 104. MOJAVE YUCCA-STAGHORN CHOLLA DESERT SCRUB II

### MATORRAL DESÉRTICO DE "YUCCA DE MOJAVE Y STAGHORN CHOLLA" II

LARRY LAPRÉ

P.O. Box 5051

Riverside, California 92517

**Site Number:** CA8392070. **Location:** California; San Bernardino Co.; Goffs; Watson Wash; 35°2'N, 115°15'W; Mid Hills Quadrangle, USGS. **Continuity:** New. Data for two additional years are available from the author. **Size:** 20.0 ha. **Description of Plot:** A rectangular plot (400 × 500 m). This plot was established for comparison with the Mojave Yucca-Staghorn Cholla Desert Scrub plot in S Lanfair Valley. A bajada habitat of yuccas and cacti, a diverse group of perennial shrubs, and numerous spring annual wildflowers. A long history of grazing by cattle and wild burros has affected the amount of cover and species composition. Five 100-pace toe-point transects were conducted to determine percent cover and species composition. The substratum was composed of 49% bare ground, 33% dead plant litter, 14% small rocks (< 5 cm), 0% large rocks (> 5 cm), and 4% shrub stems (basal hits). Plant composition was 19% Cooper Goldenbush, 14% Goldenhead, 9% California Buckwheat, 8% Big Galleta Grass, 6% Cheesebush, 5% Range Ratanay, 5% Cottonthorn, 5% Nevada Joint-fir, 5% Staghorn Cholla, and 4% Mohave Yucca. Other shrubs present in lesser amounts were Turpentinebush, Creosote Bush, Pencil Cholla, Burrobush, and Paperbag Bush. Total cover was 19% with relative cover of the dominants as follows: Staghorn Cholla 20%, Creosote Bush 15%, Cooper Goldenbush 13%, and Mojave Yucca 8%. Ten belt transects conducted in 1979 to determine yucca characteristics yielded an estimate of 148 yucca clones/ha, 752 yucca stems/ha, and 5.1 stems/clone, with 82% of the stems less than 1.2 m in height. **Edge:** More than 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat > 500 ha in size. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 1146 m, maximum 1159 m. **Weather:** Mean start temp., 10.4°C (range 7–13°C). Temperatures were normal for the study period. Winter and spring rainfall was above average. **Coverage:** 19.6 h; 8 visits (8 sunrise); 30 March; 5, 6, 20 April; 17, 19, 20, 23 May. **Census:** Black-throated Sparrow, 3.0 (6); Ash-throated Flycatcher, 2.0 (3FL); Mourning Dove, 1.5; Costa's Hummingbird, 1.0; Ladder-backed Woodpecker, 1.0 (1N); Cactus Wren, 1.0; Bendire's Thrasher, 1.0; Scott's Oriole, 1.0; Blue-gray Gnatcatcher, 0.5; Le Conte's Thrasher, 0.5; Gambel's Quail, +; Greater Roadrunner, +. **Total:** 12 species; 12.5 territories (25/40 ha). **Visitors:** Western Kingbird, Common Raven, Northern Mockingbird, Loggerhead Shrike, Brewer's Sparrow, House Finch.

## 105. BIG SAGEBRUSH EXCLOSURE

FORMACIÓN GRANDE DE ARTEMISA

JOHN DOREMUS

2810 Meadowbrook Drive  
Boise, Idaho 83705

**Site Number:** ID8992086. **Location:** Idaho; Ada Co.; Snake River Birds of Prey Area; 43°18'N, 116°24'W; Initial Point Quadrangle, USGS. **Continuity:** New. **Size:** 25.0 ha. **Description of Plot:** A square plot (500 × 500 m) of desert scrub dominated by Big Sagebrush and Spiny Hopsage with a patchy ground cover of Sandberg's Bluegrass, Cheatgrass, and cryptogamic crust. During the fall of 1980 the site was fenced to exclude cattle grazing from 64.8 ha of Big Sagebrush–Winterfat range land. This plot is in the SE corner of the exclosure. Canopy cover, density, and height measurements were taken during May 1981. The sagebrush was described as being neither an old nor a young stand. The sagebrush was aged in 1992 by counting growth rings of 29 plants. The average age was 31 years (range 11–71 years). The average height of the Big Sagebrush was 58.3 cm in 1981 and 70 cm in 1992 (n=84, range 0.15–125 cm). Canopy and ground cover percentages in 1981 and 1992, respectively, were: Big Sagebrush, 10.62, 33.10; grass, 38.57, 32.88; bare ground (1981 measurement may have included cryptogamic crust and litter), 72.00, 4.98; Winterfat, 10.35, 0; cryptogamic crust, 0, 52.64; litter, 0, 13.68; Spiny Hopsage, 0, 3.14; forbs, 9.88, 0. The SW corner of the exclosure was burned in 1983. About 0.5 ha of the burned area is included in the SW corner of this plot. **Edge:** More than 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat > 500 ha in size. Two sides of the plot are bordered by a four-strand barbed-wire fence with a two-track road alongside. **Topography and Elevation:** The plot faces S with a slope of < 5%. Minimum elevation 858 m, maximum 866 m. **Weather:** Mean start temp., 10.8°C (range 4–18°C). This is the seventh year of drought in SW Idaho. Precipitation was one-half of the 100-yr average for April, May and June, and temperatures were above average. Source: National Weather Service Swan Falls station. **Coverage:** 29.7 h; 9 visits (9 sunrise); 21, 27 April; 5, 11, 13 May; 1, 10, 18, 19 June. **Census:** Sage Sparrow, 20.0 (32); Western Meadowlark, 13.0 (21); Brewer's Sparrow, 6.0 (10). **Total:** 3 species; 39.0 territories (62/40 ha). **Visitors:** Northern Harrier, Common Nighthawk, Horned Lark, Loggerhead Shrike, Lark Sparrow, Savannah Sparrow, Brown-headed Cowbird. **Remarks:** Forb and grass production was well below average due to drought. I assume insect biomass has been reduced. Brown-headed Cowbirds were copulating on the plot, so it is probable that they parasitized the other breeding birds. A migration of Painted Lady butterflies took place during April and May. Tens of millions of these butterflies passed through the area. On 27 April, I counted 58 butterflies passing over a 100 m stretch in one minute. If these butterflies are palatable they may have provided a food source for the local birds. Townsend's Ground Squirrels and Black-tailed Jackrabbits were the most common mammals seen on the plot.

## 106. WINTERFAT EXCLOSURE

FORMACIÓN "WINTERFAT"

JOHN DOREMUS

2810 Meadowbrook Drive  
Boise, Idaho 83705

**Site Number:** ID8992087. **Location:** Idaho; Ada Co.; Snake River Birds of Prey Area; 43°12'N, 116°17'W; Wild Horse Butte Quadrangle, USGS. **Continuity:** New. **Size:** 16.2 ha. **Description of Plot:** A square plot (402 × 402 m) of desert scrub dominated by a patchy ground cover of cryptogamic crust, Winterfat, and Sandberg's Bluegrass. During the fall of 1980 the plot was fenced to exclude livestock grazing. Spiny Hopsage is scattered throughout the Winterfat stand, and Big Sagebrush is found in the low spots and drainages. Approximately 60 Big Sagebrush plants are found in a group near the SW corner of the

closure. Sandberg's Bluegrass is the dominant grass. There is a trace of Bottlebrush Squirreltail in the plot. Ground cover percentages in 1981 and 1992, respectively, were: Winterfat, 25.68, 29.35; Sandberg's Bluegrass, 12.98, 11.29; Spiny Hopsage, 0.22, 6.05; bare ground (1981 measurement may have included cryptogamic crust and litter), 59.42, 5.63; litter, 0, 8.78; cryptogamic crust, 0, 55.82. Shrub heights (cm) in 1981 and 1992, respectively, were: Winterfat, 24.3, 27.0; Spiny Hopsage, 53.0, 56.0. **Edge:** More than 75% of the plot's perimeter is bordered by the same habitat, and the plot is located in a Winterfat stand > 1000 ha in size. The Winterfat stand grades into a Winterfat-Shadscale mosaic to the S and into a Winterfat-Big Sagebrush mosaic to the N. The plot is fenced on all sides. A two-track road runs along the N side of the plot. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 913 m, maximum 920 m. **Weather:** Mean start temp., 8.7°C (range -1–16°C). This is the seventh year of drought in SW Idaho. Precipitation was one-half of the 100-yr average for April, May and June, and temperatures were above average. Source: National Weather Service Swan Falls station. **Coverage:** 21.6 h; 9 visits (9 sunrise); 6, 13, 15 April; 4, 14, 18 May; 8, 11, 17 June. **Census:** Horned Lark, 16.0 (40); Western Meadowlark, 0.5. **Total:** 2 species; 16.5 territories (41/40 ha). **Visitors:** Northern Harrier, Short-eared Owl, Vesper Sparrow, Sage Sparrow.

## 107. PINYON-JUNIPER SCRUB

### MATORRAL DE PIÑON-JUNIPERO

ANDREW W. NETTELL

*Canyonlands National Park*

125 West 200 South

Moab, Utah 84532

**Site Number:** UT8791101. **Location:** Utah; San Juan Co.; Moab; Island in the Sky Mesa; 38°21'N, 109°21'W; Monument Basin Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 20.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):102–103 (1992). **Weather:** Mean start temp., 14.3°C (range 9–18°C). **Coverage:** 21.2 h; 8 visits (8 sunrise); 21, 27 April; 3, 10, 17, 23, 31 May; 7 June. **Census:** Black-throated Gray Warbler, 10.0 (20); Pinyon Jay, 3.0 (6); Plain Titmouse, 3.0; Mourning Dove, 2.0; Lark Sparrow, 2.0; Ash-throated Flycatcher, 1.5; Black-throated Sparrow, 1.0. **Total:** 7 species; 22.5 territories (45/40 ha). **Visitors:** Common Nighthawk, Black-chinned Hummingbird, Olive-sided Flycatcher, Violet-green Swallow, Scrub Jay, Rock Wren, Blue-gray Gnatcatcher, Western Tanager, Chipping Sparrow, Brown-headed Cowbird. **Remarks:** A pair of Black-throated Sparrows was observed with nesting material and a pair of Violet-green Swallows exhibited mating behavior but no territory was established. Two Ash-throated Flycatchers showed mating behavior. Transients included: Barn Swallow, Red-breasted Nuthatch, Mountain Bluebird, Townsend's Solitaire, Hermit Thrush, Virginia's Warbler, Yellow-rumped Warbler, Dark-eyed Junco. **Other Observers:** Scott Wanek and Gail Lea.

## 108. WET COASTAL PLAIN TUNDRA I

### PLANICIE CON TUNDRA COSTANERA HUMEDA I

ROBERT S. SUYDAM & MIA S. WESSELMANN

*North Slope Borough*

*Department of Wildlife Management*

*Box 69*

*Barrow, Alaska 99723*

**Location:** Alaska; North Slope Borough; Barrow; 71°18'N, 156°42'W; Barrow Quadrangle, USGS. **Continuity:** Established 1975; 7 yr. **Size:** 33.0 ha. **Description of Plot:** See *Am. Birds* 29:1135–1136 (1975). **Weather:** Mean start temp., 3.2°C (range 1–9°C). Average June temperature 2.1°C (departure from normal +1.4°C). Average wind speed 23.2 km/

**h.** Bimodal wind direction NE and E. Snow melt-off largely complete by 8 June. Source: National Weather Service, Barrow, AK. **Coverage:** 39.3 h; 16 visits (24 h of daylight); 15, 16, 17, 18, 19, 23, 24, 25, 28, 29, 30 June; 1 July. **Census:** Lapland Longspur, 13.5 (16; 8N); Semipalmated Sandpiper, 10.5 (13; 14N); Red Phalarope, 7.0 (8; 7N); Western Sandpiper, 4.5 (5; 3N); Long-billed Dowitcher, 4.0 (5; 2N); Pectoral Sandpiper, 3.5 (4; 1N); Lesser Golden-Plover, 2.0 (1N); Dunlin, 1.5. **Total:** 8 species; 46.5 territories (56/40 ha). **Visitors:** Tundra Swan, Green-winged Teal, Mallard, Northern Pintail, King Eider, Oldsquaw, Ruddy Turnstone, Common Snipe, Red-necked Phalarope, Pomarine Jaeger, Parasitic Jaeger, Glaucous Gull, Snowy Owl, Common Raven, Hoary Redpoll. **Remarks:** Aspects of the breeding systems of Pectoral Sandpipers and Red Phalaropes make the interpretation of the densities of territorial males equivocal. Pectoral Sandpiper males are promiscuous, yet territorial. We report the number of territorial males. The number of incubating females has been considered a better estimate of breeding effort (see *Am. Birds* 29:1135–1136). We found only one Pectoral Sandpiper nest although we strongly suspect that there was at least one more. Red Phalarope males incubate and neither the male nor female show much territoriality. Again, the number of incubating birds is the best estimate of breeding effort. The reported density of Red Phalaropes is based on the number of nests located. The number of breeding Western Sandpipers and Long-billed Dowitchers was considerably greater than in any other census year (1975–80). The number of Dunlins was considerably lower and Steller's Eiders, Baird's Sandpipers, and Snow Buntings did not nest on the plot this year as they had often in 1975–80. Low lemming densities precluded Snowy Owls and Pomarine Jaegers from nesting. Predators present throughout the study period included: Pomarine and Parasitic Jaegers, Glaucous Gulls, Snowy Owls, and Arctic Foxes. **Other Observers:** Lisa Krajcik, Lori Quakenbush, Chris Savok. **Acknowledgments:** This project was funded by the North Slope Borough Department of Wildlife Management. Thanks to Brian McCaffery for relocating the plot and to Vincent Dollarhide for re-marking the plot.

## 109. WET COASTAL PLAIN TUNDRA II

PLANICIE CON TUNDRA COSTANERA HUMEDA II

MIA S. WESSELMANN & ROBERT S. SUYDAM

*North Slope Borough  
Department of Wildlife Management  
Box 69  
Barrow, Alaska 99723*

**Location:** Alaska; North Slope Borough; Barrow; 71°18'N, 156°43'W; Barrow Quadrangle, USGS. **Continuity:** Established 1975; 7 yr. **Size:** 36.0 ha. **Description of Plot:** See *Am. Birds* 29:1136 (1975). There is now a series of gravel roads and a housing tract on the S edge of the plot. **Weather:** Mean start temp., 3.3°C (range 1–9°C). Average June temperature 2.1°C (departure from normal +1.4°C). Average wind speed 23.2 km/h. Bimodal wind direction NE and E. Snow melt-off largely complete by 8 June. Source: National Weather Service, Barrow, AK. **Coverage:** 33.2 h; 12 visits (24 h of daylight); 16, 18, 19, 23, 24, 25, 26, 29, 30 June; 1 July. **Census:** Lapland Longspur, 9.5 (11; 5N); Semipalmated Sandpiper, 8.0 (9; 8N); Western Sandpiper, 7.0 (8; 6N); Long-billed Dowitcher, 6.0 (7; 5N); Dunlin, 5.5 (6; 2N); Pectoral Sandpiper, 3.5 (4; 5N); Lesser Golden-Plover, 3.0 (3; 3N); Red Phalarope, 2.0 (2N); Semipalmated Plover, + (1FL). **Total:** 9 species; 44.5 territories (49/40 ha). **Visitors:** Tundra Swan, Northern Pintail, Common Eider, King Eider, Oldsquaw, Buff-breasted Sandpiper, Common Snipe, Pomarine Jaeger, Parasitic Jaeger, Glaucous Gull, Snowy Owl, Common Raven, Snow Bunting. **Remarks:** Aspects of the breeding systems of Pectoral Sandpipers and Red Phalaropes make the interpretation of the densities of territorial males equivocal. Pectoral Sandpiper males are promiscuous, yet territorial. We report the number of territorial males. The number of incubating females has been considered a better estimate of breeding effort (see *Am. Birds* 29:1135–1136). Five incubating females were located and we strongly suspect there were one or two more. Red Phalarope

males incubate and neither the male nor female show much territoriality. Again, the number of incubating birds is the best estimate of breeding effort. The reported density of Red Phalaropes is based on the number of nests located, but we strongly suspect that there were at least two other nests. With four "territories", Red Phalaropes would have a density of 4/40 ha and the total for the plot would be 46.5 territories (52/40 ha). The number of breeding Semipalmated Sandpipers, Western Sandpipers, and Long-billed Dowitchers was considerably greater than in any other census year (1975-80). Semipalmated Plover was new to the plot. The number of Dunlins was lower than in any other census year (1975-80) and Northern Pintails, Steller's Eiders, Oldsquaws, Ruddy Turnstones, Baird's Sandpipers, and Snow Buntings did not nest on the plot this year as they had often in 1975-80. Low lemming densities precluded Snowy Owls and Pomarine Jaegers from nesting. Predators present throughout the study period included: Pomarine and Parasitic Jaegers, Glaucous Gulls, Snowy Owls, and Arctic Foxes. **Other Observers:** Rachael Foster, Lisa Krajcirik, David Norton, Chris Savok. **Acknowledgments:** This project was funded by the North Slope Borough Department of Wildlife Management. Thanks to Brian McCaffery for relocating the plot and to Vincent Dollarhide for re-marking the plot.

## 110. COASTAL PRAIRIE

PRADERA COSTANERA

JOHN P. KELLY

*Audubon Cypress Grove Preserve  
P.O. Box 808  
Marshall, California 94940*

**Location:** California; Marin Co.; Marshall; Cypress Grove Preserve; 38°10'N, 122°54'W; Tomales Quadrangle, USGS. **Continuity:** Established 1988; 5 yr. **Size:** 31.0 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):56-57 (1989). More recent detailed quantitative habitat data are available from the author. **Weather:** Mean start temp., 12.1°C (range 6-15°C). This was the sixth consecutive year of below-average winter rainfall and drought, but wet-season rainfall (62.9 cm) was near the 38-yr average of 71.9 cm. Source: Audubon Canyon Ranch. **Coverage:** 7.3 h; 8 visits (3 sunrise); 9, 17, 20, 23, 29 April; 8, 22, 27 May. **Census:** Song Sparrow, 14.0 (18); Black-shouldered Kite, 2.0; American Goldfinch, 2.0; Northern Harrier, 1.0; Anna's Hummingbird, 1.0; American Crow, 1.0; Common Yellowthroat, 1.0; Red-winged Blackbird, 1.0; Western Meadowlark, 1.0; Brewer's Blackbird, 1.0; House Finch, 1.0. **Total:** 11 species; 26.0 territories (34/40 ha). **Visitors:** Turkey Vulture, Red-tailed Hawk, Allen's Hummingbird, Northern Flicker, Tree Swallow, Cliff Swallow, Barn Swallow, Scrub Jay, Common Raven, Swainson's Thrush, California Towhee, Savannah Sparrow, Golden-crowned Sparrow, White-crowned Sparrow, Brown-headed Cowbird, Northern Oriole, Purple Finch, Pine Siskin. **Remarks:** The Anna's Hummingbird territory was a male territory. The California Vole (*Microtus californicus*) population remained extremely low. At least one of the two Black-shouldered Kite nests successfully fledged young. The Common Yellowthroat territory was initiated late in the season (22 May). **Acknowledgments:** This work is supported by Audubon Canyon Ranch, Stinson Beach, CA. I thank Susan Kelly for help in summarizing the results.

## 111. VALLEY GRASSLAND

YERBASAL DE VALLE

SCOT BURNHAM\* & MICHELLE MCCOLLOM

\**P.O. Box 11  
Santa Clara, Utah 84765*

**Site Number:** CA9292003. **Location:** California; San Luis Obispo Co.; San Luis Obispo; North Walters Ranch; 35°21'N, 120°45'W; San Luis Obispo Quadrangle, USGS. **Conti-**

**nuity:** New. **Size:** 67.6 ha. **Description of Plot:** A triangular plot with the longest side 1067 m and the shortest 160 m. Historically, the area was used for grazing and military training, so the soil in many areas was compacted and the surface water was unsuitable for human consumption. The plot was grazed prior to this census. One perennial stream (2 m wide) bisects the plot along a NE to SW line and is surrounded by bulrush. Water was also plentiful in a reservoir. There are four ephemeral streams, none of which contained water during the study period. Dominant plants are Common Wild Oat, Foxtail Barley, and grass. Other species include Lupine, California Poppy, Rip-gut Brome, mustard, and filaree. At the beginning of the study period the vegetation was healthy and growing rapidly, but by the end the grasses were all dead. There is one Coast Live Oak (65 cm dbh), located near the most northern stream in the plot. **Edge:** Greater than 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat > 500 ha in size. There is a sport-shooting club and range along the W border. **Topography and Elevation:** The plot faces NE. Minimum elevation 6 m, maximum 35 m. **Weather:** Mean start temp., 17.9°C (range 9–24°C). Annual rainfall at the time of the study was 56 cm. Conditions ranged from sunny and mild to foggy and windy. **Coverage:** 10.5 h; 8 visits (2 sunrise, 6 sunset); 5, 9, 11, 15, 17, 18, 19, 26 May. **Census:** Western Meadowlark, 28.0 (17); Horned Lark, 9.0 (5); Savannah Sparrow, 4.0 (2); Red-winged Blackbird, 2.0. **Total:** 4 species; 43.0 territories (25/40 ha). **Visitors:** Mallard, Turkey Vulture, Red-shouldered Hawk, American Kestrel, Mourning Dove, Lesser Nighthawk, Cliff Swallow, American Crow, Western Bluebird. **Acknowledgments:** We would like to thank Dr. Roger Gambs for all of his help, Dr. Michael Hall for his cooperation, and California Polytechnic State University, San Luis Obispo.

## 112. TALLGRASS PRAIRIE I

### PRADERA DE YERBAS ALTAS I

PETER E. LOWTHER

*Field Museum of Natural History  
Roosevelt Road at Lake Shore Drive  
Chicago, Illinois 60605*

**Location:** Iowa; Dickinson Co.; Milford; Iowa Lakeside Laboratory's "North 40"; 43°23'N, 95°11'W; Okoboji Quadrangle, USGS. **Continuity:** Established 1982; 9 yr. **Size:** 16.0 ha. **Description of Plot:** See *Am. Birds* 37:79 (1983). **Weather:** Mean start temp., 12.5°C (range 8–16°C). Temperatures through June were near normal (based on 20-yr mean), precipitation from March through May totalled 20.1 cm (vs normal total of 19.0 cm). Source: Iowa Lakeside Laboratory. **Coverage:** 5.2 h; 6 visits (1 sunrise); 6, 7, 8, 9, 10, 11 June. **Census:** Common Yellowthroat, 7.0 (18; 1N); Yellow Warbler, 4.0 (10); Willow Flycatcher, 1.0; Gray Catbird, 1.0; Brown Thrasher, 1.0; Dickcissel, 1.0; Grasshopper Sparrow, 1.0; Red-winged Blackbird, 1.0 (1N); Brown-headed Cowbird, 1.0; American Goldfinch, 1.0; Ring-necked Pheasant, 0.5; Black-billed Cuckoo, 0.5; Song Sparrow, 0.5; Indigo Bunting, +; Field Sparrow, +. **Total:** 15 species; 20.5 territories (51/40 ha). **Visitors:** Red-tailed Hawk, Great Horned Owl, Northern Flicker, Barn Swallow, Blue Jay, American Crow, Common Grackle, Northern Oriole. **Remarks:** A third of the W half of the plot was burned 20 June 1991. **Acknowledgments:** R.W. Cruden, M. and J. Wehrspann at Iowa Lakeside Laboratory for logistic support and permission to census the area.

## 113. TALLGRASS PRAIRIE II

### PRADERA DE YERBAS ALTAS II

PETER E. LOWTHER

*Field Museum of Natural History  
Roosevelt Road at Lake Shore Drive  
Chicago, Illinois 60605*

**Location:** Iowa; Dickinson Co.; Milford; Cayler Prairie; 43°24'N, 95°15'W; Okoboji Quadrangle, USGS. **Continuity:** Established 1982; 9 yr. **Size:** 65.7 ha. **Description of Plot:** See

*Am. Birds* 37:79 (1983). **Weather:** Mean start temp., 11.7°C (range 8–14°C). Temperatures through June were near normal (based on 20-yr mean), precipitation from March through May totalled 20.1 cm (vs normal total of 19.0 cm). Source: Iowa Lakeside Laboratory. **Coverage:** 8.8 h; 3 visits (3 sunrise); 7, 9, 11 June. **Census:** Red-winged Blackbird, 28.0 (17; 10N); Common Yellowthroat, 20.0 (12); Dickcissel, 15.0 (9; 1N); Grasshopper Sparrow, 12.0 (7); Bobolink, 12.0; Western Meadowlark, 7.0 (4); American Goldfinch, 6.0 (4); Brown-headed Cowbird, 5.0 (3); Mourning Dove, 2.0 (1N); Savannah Sparrow, 2.0 (1N); Song Sparrow, 2.0 (1N); Swamp Sparrow, 2.0; Blue-winged Teal, 1.0; Ring-necked Pheasant, 1.0 (1N, 1FL); Upland Sandpiper, 1.0; Eastern Kingbird, 1.0; American Robin, 1.0. **Total:** 17 species; 118.0 territories (72/40 ha). **Remarks:** Three cowbird eggs were found in one Red-winged Blackbird and one Dickcissel nest. Neil Bernstein and his students did a study of Red-winged Blackbirds at this site (29 May to 3 July) and found 35 nests before this census and 20 nests after. **Acknowledgments:** State Preserves Advisory Board, Iowa Dept. of Natural Resources for permission to conduct census. Neil Bernstein shared his observations.

## 114. TALLGRASS PRAIRIE III

### PRADERA DE YERBAS ALTAS III

PETER E. LOWTHER

*Field Museum of Natural History  
Roosevelt Road at Lake Shore Drive  
Chicago, Illinois 60605*

**Location:** Iowa; Dickinson Co.; Milford; Freda Haffner Kettlehole Preserve; 43°20'N, 95°13'W; Milford Quadrangle, USGS. **Continuity:** Established 1982; 9 yr. **Size:** 44.8 ha. **Description of Plot:** See *Am. Birds* 37:79 (1983). **Weather:** Mean start temp., 13.3°C (range 12–16°C). Temperatures through June were near normal (based on 20-yr mean), precipitation from March through May totalled 20.1 cm (vs normal total of 19.0 cm). Source: Iowa Lakeside Laboratory. **Coverage:** 9.0 h; 3 visits (3 sunrise); 6, 8, 10 June. **Census:** Red-winged Blackbird, 17.0 (15; 3N); Common Yellowthroat, 15.0 (13); Dickcissel, 8.0 (7); Grasshopper Sparrow, 7.0 (6); Bobolink, 7.0; Western Meadowlark, 7.0; Song Sparrow, 6.0 (5); American Goldfinch, 5.0 (4); Willow Flycatcher, 4.0 (4); Brown-headed Cowbird, 4.0; Yellow Warbler, 3.0 (3); Mourning Dove, 2.0; Mallard, 1.0; Blue-winged Teal, 1.0; Killdeer, 1.0; Eastern Kingbird, 1.0; Eastern Bluebird, 1.0; American Robin, 1.0; Gray Catbird, 1.0; Brown Thrasher, 1.0; Savannah Sparrow, 1.0; Yellow-headed Blackbird, 1.0; Chipping Sparrow, 0.5. **Total:** 23 species; 95.5 territories (85/40 ha). **Remarks:** Four cowbird eggs were found in three Red-winged Blackbird nests. Neil Bernstein and his students did a study of Red-winged Blackbirds at this site (29 May to 3 July) and found 14 nests before this census and 4 nests after. There were six male Yellow-headed Blackbirds present on 23 May, one male present during this census, and none present on 20 June. The N half of the plot had a scheduled management burn on 1 April 1992. Much of the remaining part of the plot was burned on 17 May when a neighboring brush fire spread. At the time of the census, the vegetation was about 5 cm high in the most recently burned area, about 30 cm high in the managed burn area, and about 50 cm high in the unburned areas. **Acknowledgments:** Iowa Field Office, The Nature Conservancy, for permission to conduct census. Neil Bernstein shared his observations.

## 115. CANYON BLUEBUNCH GRASSLAND

### YERBASAL DE CAÑON "BLUEBUNCH"

C. B. GOBLE

*728 Homestead  
Moscow, Idaho 83843*

**Site Number:** ID6592057. **Location:** Idaho; Idaho Co.; Lucile; China Creek Range; 45°32'N, 116°18'W; Lucile Quadrangle, USGS. **Continuity:** New. **Size:** 7.5 ha. **Description of Plot:**

A rectangular plot ( $235 \times 300$  m). The plot is dominated by Cheat Grass, Bluebunch Wheat Grass, and Red Three-awn. Shrubs include Netleaf Hackberry and Smooth Sumac. Black Hawthorn trees are also present. **Edge:** More than 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat > 500 ha in size. **Topography and Elevation:** The plot has an uneven slope facing E at > 16% grade. Minimum elevation 610 m, maximum 685 m. **Weather:** Mean start temp.,  $12.7^{\circ}\text{C}$  (range 6– $20^{\circ}\text{C}$ ). Lower than average precipitation. **Coverage:** 24.3 h; 10 visits (10 sunrise); 13, 14, 15, 22 May; 9, 11, 14, 16, 21, 23 June. **Census:** Chukar, 3.0 (18FL); Black-billed Magpie, 3.0 (14FL); Western Meadowlark, 3.0; Common Raven, 1.0; Rock Wren, 1.0; Lazuli Bunting, 1.0; Brewer's Sparrow, 1.0. **Total:** 7 species; 13.0 territories (69/40 ha). **Visitors:** Red-tailed Hawk, Common Nighthawk, Say's Phoebe.

## 116. KENTUCKY BLUEGRASS PRAIRIE

### PRADERA DE "YERBA-AZUL" DE KENTUCKY

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

*Northern Prairie Wildlife Research Center  
Route 1, Box 96C  
Jamestown, North Dakota 58401*

**Location:** North Dakota; Stutsman Co.; Woodworth;  $47^{\circ}8'\text{N}$ ,  $99^{\circ}14'\text{W}$ ; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 21 yr. **Size:** 4.8 ha. **Description of Plot:** See *Am. Birds* 26:972 (1972). **Weather:** No data provided. **Coverage:** 3.8 h; 10 visits (4 sunrise); 28 May; 2, 3, 4, 5, 6, 8 June. **Census:** Bobolink, 1.5; Brown-headed Cowbird, 1.5; Savannah Sparrow, 1.0; Eastern Kingbird, 0.5; Grasshopper Sparrow, 0.5; Red-winged Blackbird, +; Western Meadowlark, +. **Total:** 7 species; 5.0 territories (42/40 ha). **Visitors:** Gray Partridge, Ring-necked Pheasant, Willet, Marbled Godwit, Common Snipe, Western Kingbird, Tree Swallow, Cliff Swallow, Barn Swallow, Sedge Wren, Common Yellowthroat, Song Sparrow, Chestnut-collared Longspur, Common Grackle, American Goldfinch. **Other Observer:** Jeff Price.

## 117. MIXED PRAIRIE I

### PRADERA MIXTA I

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

*Northern Prairie Wildlife Research Center  
Route 1, Box 96C  
Jamestown, North Dakota 58401*

**Location:** North Dakota; Stutsman Co.; Woodworth;  $47^{\circ}8'\text{N}$ ,  $99^{\circ}15'\text{W}$ ; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 21 yr. **Size:** 10.0 ha. **Description of Plot:** See *Am. Birds* 26:972 (1972). **Weather:** No data provided. **Coverage:** 7.3 h; 9 visits (3 sunrise); 28 May; 2, 3, 4, 5, 6, 8 June. **Census:** Clay-colored Sparrow, 7.0 (28); Brown-headed Cowbird, 2.5; Eastern Kingbird, 2.0; Willow Flycatcher, 1.0; Yellow Warbler, 1.0; Bobolink, 1.0; Western Meadowlark, 1.0; American Goldfinch, 1.0; Gray Catbird, 0.5; Ring-necked Pheasant, +; Mourning Dove, +; Western Kingbird, +; Brown Thrasher, +. **Total:** 13 species; 17.0 territories (68/40 ha). **Visitors:** Mallard, Upland Sandpiper, Marbled Godwit, Barn Swallow, Grasshopper Sparrow, Red-winged Blackbird. **Other Observer:** Jeff Price.

## 118. MIXED PRAIRIE II

## PRADERA MIXTA II

DOUGLAS H. JOHNSON &amp; MICHAEL D. SCHWARTZ

*Northern Prairie Wildlife Research Center**Route 1, Box 96C**Jamestown, North Dakota 58401*

**Location:** North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°15'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 21 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 26:972-973 (1972). **Weather:** No data provided. **Coverage:** 4.6 h; 10 visits (2 sunrise); 28 May; 2, 3, 4, 5, 6, 8 June. **Census:** Clay-colored Sparrow, 2.5; Brown-headed Cowbird, 1.5; Grasshopper Sparrow, 1.0; Song Sparrow, 1.0; Eastern Kingbird, 0.5; Savannah Sparrow, 0.5; Bobolink, 0.5; Western Meadowlark, 0.5; Gray Partridge, +; Western Kingbird, +. **Total:** 10 species; 8.0 territories (52/40 ha). **Visitors:** Northern Harrier, Barn Swallow, Yellow Warbler, American Goldfinch. **Other Observer:** Jeff Price.

## 119. MIXED PRAIRIE III

## PRADERA MIXTA III

DOUGLAS H. JOHNSON &amp; MICHAEL D. SCHWARTZ

*Northern Prairie Wildlife Research Center**Route 1, Box 96C**Jamestown, North Dakota 58401*

**Location:** North Dakota; Stutsman Co.; Woodworth; 47°9'N, 99°14'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 21 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 26:973 (1972). **Weather:** No data provided. **Coverage:** 4.9 h; 10 visits (2 sunrise); 28 May; 2, 3, 4, 5, 6, 8 June. **Census:** Grasshopper Sparrow, 3.0 (20); Bobolink, 2.0; Clay-colored Sparrow, 1.5; Eastern Kingbird, 1.0; Brown-headed Cowbird, 1.0; Upland Sandpiper, +; Western Kingbird, +; Western Meadowlark, +. **Total:** 8 species; 8.5 territories (56/40 ha). **Visitors:** Northern Harrier, Marbled Godwit, Common Snipe, Common Nighthawk, Tree Swallow, Cliff Swallow, Barn Swallow, Vesper Sparrow, Savannah Sparrow, American Goldfinch. **Other Observer:** Jeff Price.

## 120. MIXED PRAIRIE IV

## PRADERA MIXTA IV

DOUGLAS H. JOHNSON &amp; MICHAEL D. SCHWARTZ

*Northern Prairie Wildlife Research Center**Route 1, Box 96C**Jamestown, North Dakota 58401*

**Location:** North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°15'W; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 21 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 26:973-974 (1972). **Weather:** No data provided. **Coverage:** 4.0 h; 9 visits (1 sunrise); 28 May; 2, 3, 4, 5, 6, 8 June. **Census:** Clay-colored Sparrow, 3.0; Grasshopper Sparrow, 2.0; Eastern Kingbird, 1.0; Brown-headed Cowbird, 0.5; Upland Sandpiper, + (1N). **Total:** 5 species; 6.5 territories (43/40 ha). **Visitors:** Swainson's Hawk, Sharp-tailed Grouse, Willet, Western Kingbird, Bank Swallow, Cliff Swallow, Barn Swallow, Yellow Warbler, Common Yellowthroat, Vesper Sparrow, Song Sparrow, Western Meadowlark, American Goldfinch. **Other Observer:** Jeff Price.

## 121. MIXED PRAIRIE V

### PRADERA MIXTA V

**DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ**

*Northern Prairie Wildlife Research Center*

*Route 1, Box 96C*

*Jamestown, North Dakota 58401*

**Location:** North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°14'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 21 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 26:974 (1972). **Weather:** No data provided. **Coverage:** 5.1 h; 10 visits (2 sunrise); 28 May; 2, 3, 4, 5, 6, 8 June. **Census:** Clay-colored Sparrow, 5.0 (33); Bobolink, 2.0; Eastern Kingbird, 1.5; Grasshopper Sparrow, 1.5; Brown-headed Cowbird, 1.5; Western Meadowlark, +; American Goldfinch, +. **Total:** 7 species; 11.5 territories (75/40 ha). **Visitors:** Gadwall, Ferruginous Hawk, Sharp-tailed Grouse, Upland Sandpiper, Cliff Swallow, Barn Swallow, Gray Catbird, Savannah Sparrow. **Other Observer:** Jeff Price.

## 122. TALLGRASS PRAIRIE REMNANT

### REMANENTE DE PRADERA CON YERBAS ALTAS

**DAVE MINNEY**

*The Nature Conservancy, Ohio*

*1504 West First Avenue*

*Columbus, Ohio 43212*

**Location:** Ohio; Greene Co.; Fairborn; Huffman Prairie; 39°48'N, 84°4'W; Fairborn Quadrangle, USGS. **Continuity:** Established 1990; 3 yr. **Size:** 44.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):85 (1991) and 63 (Suppl.):106–107 (1992). About 17 ha in the S portion of the plot was burned in early March. Approximatley 1.2 ha of the W swale, dominated by Poison Hemlock and Common Elder, was mowed in early June. **Weather:** Mean start temp., 18.1°C (range 12–24°C). Average temperature for March was 5°C (deviation from 47-yr mean was 0.0°C); April, 11°C (0.0°C); May, 14°C (−2.7°C); June, 18°C (−3.9°C); July, 23°C (−1.1°C). Average precipitation for March was 6.9 cm (deviation from 47-yr mean was −1.7 cm); April, 10.7 cm (+1.6 cm); May, 7.7 cm (−1.7 cm); June, 7.4 cm (−4.0 cm); July, 19.7 cm (+11.0 cm). Source: Wright-Patterson Air Force, Detach. 15, Weather Squadron. **Coverage:** 31.0 h; 8 visits (6 sunrise, 2 sunset); 16, 19 May; 11, 23 June; 15, 16, 24 July; 4 August. **Census:** Song Sparrow, 35.0 (32; 1N, 1FL); Red-winged Blackbird, 31.0 (28); Bobolink, 26.0 (24); Common Yellowthroat, 24.0 (22); American Goldfinch, 14.0 (13); Willow Flycatcher, 12.0 (11); Henslow's Sparrow, 12.0; Eastern Meadowlark, 9.0 (8; 1N); Grasshopper Sparrow, 8.5 (8); Brown-headed Cowbird, 6.0 (5; 1FL); Sedge Wren, 5.0 (5); American Robin, 3.0 (3; 1N); Indigo Bunting, 2.0; Savannah Sparrow, 2.0; Mallard, 1.0; Red-tailed Hawk, +; Horned Lark, +. **Total:** 17 species; 190.5 territories (173/40 ha). **Visitors:** Killdeer, Mourning Dove, Eastern Kingbird, Gray Catbird, Field Sparrow, Common Grackle. **Remarks:** This is the first year since the study began that Sedge Wrens established territories. A slight decrease in the number of territories (2–3 per species) of Song Sparrow, Common Yellowthroat, Red-winged Blackbird, and Eastern Meadowlark was noted in the burned area. With the exception of Common Yellowthroat, which showed a slight decline, all of the above species remained stable overall. Bobolink increased, on both the burned and unburned areas, from 19.5 territories last year to 26.0 this year. Henslow's Sparrow increased from 1.0 territory last year to 12.0 this year, all in the unburned area. **Acknowledgments:** Wright-Patterson Air Force Base and U.S. Department of Defense.

## 123. SEDGE MEADOW

PRADO DE JUNCO

ANITA CARPENTER\* & BETTIE HARRIMAN

\*304 Scott Avenue  
Oshkosh, Wisconsin 54935

**Site Number:** WI1692119. **Location:** Wisconsin; Winnebago Co.; Gromme Preserve; 43°55'N, 88°47'W; Rush Lake Quadrangle, USGS. **Continuity:** New. **Size:** 12.0 ha. **Description of Plot:** A rectangular plot (300 × 400 m). This wetland is classified as a sedge meadow-low prairie. The area is low and wet, with the water table at, or near, the surface throughout the year. Most of the area is covered with a mixture of grasses and sedges, especially the W section, beyond the first 200 m, corresponding to the wettest area. A total of 62 plant species were collected from the site during a 1980 study. The nearly continuous ground cover is dominated by Tussock Sedge, Slough Grass and Joe-Pye Weed. The understory is dominated by Red-osier Dogwood and willows, which are increasing in density. There is one stream that flows year round and one intermittent stream. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 51–100 ha in size. To the W are over 65 ha of similar habitat, but much of the surrounding land has been converted to sod farms, corn fields or pasture. **Topography and Elevation:** The plot is nearly level, with a slope of < 5%. Minimum elevation 252 m, maximum 253 m. **Weather:** Mean start temp., 11.9°C (range 4–21°C). **Coverage:** 19.0 h; 9 visits (7 sunrise, 1 sunset); 26 April; 6, 15, 25 May; 3, 10, 17, 24 June; 22 July. **Census:** Sedge Wren, 20.0 (67); Swamp Sparrow, 8.0 (27); Savannah Sparrow, 6.0 (20); Common Yellowthroat, 5.0 (17); Bobolink, 4.0 (13); Song Sparrow, 2.0; Red-winged Blackbird, 1.5; American Goldfinch, 1.5; Mallard, 1.0 (1N); Blue-winged Teal, 1.0; Common Snipe, 1.0; Willow Flycatcher, 1.0; Yellow Warbler, 1.0; Le Conte's Sparrow, 1.0; Brown-headed Cowbird, 1.0. **Total:** 15 species; 55.0 territories (183/40 ha). **Visitors:** Gadwall, Northern Harrier, Killdeer. **Remarks:** The early visits were done in April and May when standing water was found in 60–80% of the plot. The birds distributed themselves in response to water level and vegetation cover, for example, Sedge Wrens nested in wet areas, often with standing water.

## 124. WET PRAIRIE

PRADERA HUMEDA

BRUCE SEDLOFF

3101 104th Street  
Kenosha, Wisconsin 53142

**Site Number:** WI1692120. **Location:** Wisconsin; Kenosha Co.; Chiwaukee Prairie; 42°30'N, 87°49'W; Kenosha Quadrangle, USGS. **Continuity:** New. **Size:** 15.0 ha. **Description of Plot:** A rectangular plot (250 × 600 m). The plot is located in the last unbroken stretch of prairie of its kind in Wisconsin. It is characterized as a "beach ridge complex" with alternating low ridges and shallow swales left by the retreating lake and containing over 400 native plant species, including many which are rare. The plot contains a few intermittent streams and some ephemeral pools. The high water table fluctuates and includes upwellings of cold, calcium, magnesium, bicarbonate-rich ground water which creates a calcareous fen. Up to 25% of the plot is covered by standing water during the breeding season. In July, the nearly continuous ground cover is dominated by Northern Drop-seed (a grass), Blazing Star, and Mountain Mint with pockets of cattail. However, different plants dominate the plot at other times of the year. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 51–100 ha in size. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 180 m, maximum 183 m. **Weather:** Mean start temp., 12.1°C (range 4–21°C). The weather was dry during May and June, with 15 cm less precipitation than normal. **Coverage:** 9.7 h; 6

visits (5 sunrise); 26 April; 10, 25 May; 1, 7, 14 June. **Census:** Swamp Sparrow, 7.0 (19); Bobolink, 7.0; Red-winged Blackbird, 5.0 (13); Common Yellowthroat, 4.0 (11); Savannah Sparrow, 2.0; Eastern Meadowlark, 2.0; Ring-necked Pheasant, 1.0; Common Snipe, 1.0; Willow Flycatcher, 0.5. **Total:** 9 species; 29.5 territories (79/40 ha). **Visitors:** Mallard, Virginia Rail, Sora, Killdeer, Upland Sandpiper, Eastern Kingbird, Sedge Wren, Marsh Wren, Yellow Warbler, Song Sparrow, Brown-headed Cowbird, American Goldfinch. **Remarks:** The plot was accidentally burned in April 1992 by sparks from a passing train. The area has burned many times in the past.

## 125. ABANDONED UPLAND PASTURE

### PASTIZAL DE ALTURAS ABANDONADO

VIVIAN MILLS PITZRICK

*Amity Lake*

*Belmont, New York 14813*

**Location:** New York; Allegany Co.; Scio; Saunders Plot; 42°13'N, 77°59'W; Wellsville North Quadrangle, USGS. **Continuity:** Established 1984; 9 yr. **Size:** 8.0 ha. **Description of Plot:** See *Am. Birds* 39:112 (1985) and *J. Field Ornithol.* 63 (Suppl.):109–110 (1992).

**Weather:** Mean start temp., 9.7°C (range –4–18°C). Temperature and precipitation deviations, respectively, from long-term averages for April through 26 August, +2.1°C and +11.7 cm. Source: Wellsville Water and Light Plant. However, the National Weather Service reports this as the fourth coldest summer on record with some western New York harvests nearly a month later than normal. Source: *Olean Times Herald*, 7 Sept. 1992, p. A-2. Amity Lake was ice-bound until 7 April, a week late. The last week in May was cold and wet with frosts that killed insects. **Coverage:** 26.1 h; 18 visits (2 sunrise); 5, 19, 23, 26 April; 12, 20, 29 May; 3, 15, 22, 30 June; 6, 16, 24, 29 July; 5, 12, 19 August. First four visits were in the evening, for a few minutes only, to listen for American Woodcock.

**Census:** Song Sparrow, 20.0 (100; 4N,3FL); Field Sparrow, 19.0 (95; 8N,7FL); American Goldfinch, 15.5 (78; 5N,20FL); Alder Flycatcher, 13.0 (65); Yellow Warbler, 13.0 (1N); Common Yellowthroat, 9.0 (45); Chestnut-sided Warbler, 8.0 (40); Rufous-sided Towhee, 8.0; Cedar Waxwing, 7.0 (35; 7N,4FL); Blue-winged Warbler, 7.0; Indigo Bunting, 6.0 (30); American Woodcock, 5.0 (25); Gray Catbird, 3.0 (15); Tree Swallow, 2.0 (2N,3FL); Black-capped Chickadee, 2.0; American Robin, 2.0 (1N); Red-eyed Vireo, 2.0; Prairie Warbler, 2.0 (1N,4FL); Ruffed Grouse, 1.0 (7FL); Least Flycatcher, 1.0; Blue Jay, 1.0; House Wren, 1.0 (1N); Eastern Bluebird, 1.0 (3N); Brown Thrasher, 1.0; Nashville Warbler, 1.0; Northern Cardinal, 1.0; Rose-breasted Grosbeak, 1.0; Brown-headed Cowbird, 1.0 (1N); Purple Finch, 1.0. **Total:** 29 species; 154.5 territories (773/40 ha). **Visitors:** Mourning Dove, Black-billed Cuckoo, Downy Woodpecker, Northern Flicker, Eastern Wood-Pewee, Eastern Phoebe, Eastern Kingbird, Tufted Titmouse, White-breasted Nuthatch, Veery, Black-throated Green Warbler, Scarlet Tanager. **Remarks:** Numbers of American Woodcock (highest ever), Alder Flycatcher (highest ever), Cedar Waxwing, Red-eyed Vireo, Blue-winged Warbler, Yellow Warbler and American Goldfinch have increased, but House Wren and Gray Catbird have decreased. Chipping Sparrow was absent for the first time. The total number of species was near average, but total territories was 7% above the 8-yr norm. The primary predator was the American Crow, replacing the Raccoon. **Acknowledgments:** Thanks to Michael Pitzrick for help on evening visits plus one full daylight census, and to Victor and Gail Funk for permission to use the property.

## 126. ABANDONED PASTURE SCRUBLAND

### PASTIZAL-MALEZA ABANDONADO

JACK ROMANOW

*31 Crystal Beach Drive*

*Nepean, Ontario K2H 5M6*

**Location:** Ontario; Municipality of Ottawa-Carleton; Kanata; Innis Point; 45°21'N, 75°54'W; Ottawa Quadrangle, NTS. **Continuity:** Established 1982; 11 yr. **Size:** 9.0 ha. **Description**

**of Plot:** See *Am. Birds* 37:76–77 (1983). A strip of edge vegetation 4.6–6.1 m wide and up to 4.6 m high, along the S side of the plot, was cut back to ground level by the utility company during the previous winter to keep a power line clear. **Weather:** Mean start temp., 13.8°C (range 10–19°C). June precipitation was 5.8 cm (normal is 7.3 cm). July precipitation was 15.8 cm (normal is 8.6 cm). Mean temperature for June was 17.1°C (normal is 18.0°C). Mean temperature for 1–12 July was 17.5°C (normal is 20.6°C). June had 234 hours of sunshine (normal is 247 hours). July had 216 hours of sunshine (normal is 274 hours). **Source:** Ottawa International Airport. **Coverage:** 23.3 h; 8 visits (8 sunrise); 5, 13, 14, 17, 21, 27 June; 1, 5, 12 July. **Census:** Yellow Warbler, 14.5 (64); White-throated Sparrow, 12.5 (56); Black-and-white Warbler, 10.0 (44); Song Sparrow, 9.5 (42); American Robin, 9.0 (40; 2N,7FL); Black-capped Chickadee, 7.5 (33); Gray Catbird, 6.0 (27); Great Crested Flycatcher, 5.0 (22); Cedar Waxwing, 4.0 (18); Brown-headed Cowbird, 3.5 (16); Spotted Sandpiper, 2.5; Blue Jay, 2.5; Northern Oriole, 2.5; Eastern Kingbird, 2.0; Veery, 2.0; Ovenbird, 2.0; Rose-breasted Grosbeak, 2.0; Field Sparrow, 2.0; Downy Woodpecker, 1.5; Northern Flicker, 1.5; Red-eyed Vireo, 1.5; Ruffed Grouse, 1.0; Mourning Dove, 1.0; Black-billed Cuckoo, 1.0 (1N,2FL); Eastern Wood-Pewee, 1.0; American Redstart, 1.0; Common Yellowthroat, 1.0; American Woodcock, +; White-breasted Nuthatch, +; Brown Creeper, +; Scarlet Tanager, +. **Total:** 31 species; 109.5 territories (487/40 ha). **Visitors:** Sharp-shinned Hawk, Hairy Woodpecker, Pileated Woodpecker, American Crow, Red-breasted Nuthatch, House Wren, Wood Thrush, Brown Thrasher, Nashville Warbler, Indigo Bunting, Red-winged Blackbird, Common Grackle, American Goldfinch. **Remarks:** The cutting of vegetation along the S side clearly reduced the number of potential nest sites in that section of the plot. A remarkable (unexplained) influx of Black-and-white Warblers produced 10 territories compared to three in the last two years and a high of four in 1984 and 1985. **Other Observer:** Bill Murphy. **Acknowledgments:** Bill Murphy shared equally in the completion of this census.

## 127. DRY-MESIC RYE FIELD

CAMPO DE CENTENO MÉSICO-SECO

MARY E. GARTSHORE & DAVID AGRO

RR#1

Walsingham, Ontario N0E 1X0

**Site Number:** ON1692101. **Location:** Ontario; Municipality of Haldimand-Norfolk; Walsingham; Sand Prairie Restoration Project; 42°38'N, 80°34'W; Port Burwell Quadrangle, DEMR. **Continuity:** New. **Size:** 12.3 ha. **Description of Plot:** A square plot (350 × 350 m). The ground cover is nearly continuous and is dominated by Rye, Hairy Vetch, and Canada Fleabane. The cropland is now a successional field being restored to Black Oak savannah. **Edge:** Greater than 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 26–50 ha in size. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 200 m, maximum 210 m. **Weather:** Mean start temp., 21.3°C (range 10–26°C). This year had higher precipitation and cooler temperatures than the previous six years. **Coverage:** 19.4 h; 10 visits (3 sunrise, 1 sunset); 2, 9, 12, 25, 27, 30 June; 6, 12, 13, 17 July. **Census:** Savannah Sparrow, 36.0 (117; 2N,17FL); Grasshopper Sparrow, 24.0 (78; 3FL); Bobolink, 16.0 (52); Vesper Sparrow, 4.0 (13; 3FL); Song Sparrow, 3.0 (10; 1FL); Horned Lark, 2.0; Red-winged Blackbird, 1.0. **Total:** 7 species; 86.0 territories (280/40 ha). **Visitors:** Mallard, Killdeer, Common Yellowthroat, Brown-headed Cowbird. **Remarks:** The growing season was delayed by approximately two weeks so that the Rye matured two weeks late and the Hairy Vetch was more vigorous than usual. Numbers of singing male Grasshopper Sparrows increased during the breeding season (9 June–6 July) from approximately 12 to 24. Though Bobolinks were numerous, we were uncertain as to their commitment to breeding. As June became wetter, the birds tended to fill up the eastern, drier half of the plot. Horned Larks were not encountered during the study period, but were seen earlier in the season. **Other Observers:** Steven A. Wilcox and Kerrie Pauls. **Acknowledgments:** Long Point Bird Observatory.

## 128. CLEAR-CUT-LONGLEAF PINE REGENERATION

### REGENERACIÓN DE FORMACIÓN TALADA DE PINO DE HOJA-LARGA

DALE DROGE\*, JONATHAN PLISSNER\*, SIDNEY GAUTHREAUX, JR.\*  
 & WILLIAM JARVIS

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**Site Number:** SC0492032. **Location:** South Carolina; Barnwell Co.; Martin; Savannah River Site; 33°9'N, 81°32'W; Girard NE Quadrangle, USGS. **Continuity:** New. **Size:** 25.0 ha. **Description of Plot:** A rectangular plot (300 × 700 m). The plot was cleared in 1990 and Longleaf Pine seedlings were planted. There is no canopy except for a 0.5 ha area where a Hackberry and Southern Red Oak copse was left standing. A number of snags occur throughout the plot (2–3 per ha with several dense clumps). The limited understory is dominated by Black Cherry and Southern Red Oak. About 30% of the plot consists of a dense growth of blackberry. Little Bluestem and Switchgrass make up much of the rest of the relatively sparse ground cover. **Edge:** Less than 25% of the plot's perimeter is bordered by the same habitat, and more than 200 ha of similar habitat border on or are within a short distance of the plot. The NE and NW sections of the plot are bordered by Loblolly Pine forest. Isolated stands of mixed hardwoods border much of the N boundary. A Forest Service road runs along the S boundary and the roadside opposite the plot consists of a narrow band of dense young pines and cedars. A power line with steel towers runs along the W edge. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 85 m, maximum 92 m. **Weather:** Mean start temp., 21.1°C (range 17–27°C). The mean high temperature for May was 27.5°C and the mean low was 16.1°C (range 9–36°C). The mean daily temperature was 21.8°C, 0.7°C below the normal daily average of 22.5°C. Precipitation in May was 8.0 cm, 5.4 cm below the average of 13.4 cm. Although the rain total was lower than normal, there were 15 days in May with at least some measurable precipitation. **Coverage:** 24.1 h; 8 visits (6 sunrise, 2 sunset); 14, 18, 19, 27 May; 2, 5, 9, 11 June. **Census:** Indigo Bunting, 15.0 (24); Prairie Warbler, 14.5 (23); Northern Bobwhite, 12.5 (20; 5FL); Bachman's Sparrow, 12.0 (19); Orchard Oriole, 12.0 (1N); Blue Grosbeak, 10.5 (17; 1N); Rufous-sided Towhee, 10.0 (16); Mourning Dove, 8.0 (13); Yellow-breasted Chat, 6.5 (10); Carolina Wren, 6.0 (10); Northern Mockingbird, 4.5 (7; 1N); Eastern Bluebird, 4.0 (6); Northern Cardinal, 4.0; Eastern Kingbird, 3.0 (5); White-eyed Vireo, 3.0; Eastern Meadowlark, 3.0; Summer Tanager, 2.5; Common Ground-Dove, 2.0; Red-headed Woodpecker, 2.0; Northern Flicker, 2.0; Great Crested Flycatcher, 2.0; Chipping Sparrow, 2.0; Red-bellied Woodpecker, 1.5; Brown Thrasher, 1.5; Blue Jay, 1.0; Yellow-billed Cuckoo, 0.5; Tufted Titmouse, 0.5; Brown-headed Nuthatch, 0.5; Common Yellowthroat, 0.5; Downy Woodpecker, +. **Total:** 30 species; 147.0 territories (235/40 ha). **Visitor:** Brown-headed Cowbird. **Acknowledgments:** We thank the Department of Energy and the Savannah River Forest Station of the U.S. Forest Service for financial support and access to the area.

## 129. CLEAR-CUT AND DOUGLAS-FIR PLANTATION I

### FORMACIÓN DE TALA Y PLANTACIÓN DE PINABETE DE DOUGLAS I

DANA L. BASE

Washington Department of Wildlife  
 16018 Mill Creek Boulevard  
 Mill Creek, Washington 98012

**Site Number:** WA9392058. **Location:** Washington; Skagit Co.; Mount Vernon; Bryant-Cascade Unit, Washington Department of Natural Resources; 48°19'N, 122°11'W; McMurray Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** A "C" shaped plot (shortest side 100 m, longest 400 m) oriented along a logging road. The plot

lies within a 37.2 ha unit which was 100% clear-cut in 1988 for the WA Dept. of Natural Resources. The unit was revegetated in 1990 and 1991 with 2-yr-old Douglas-fir seedlings planted at a density of 692 per ha. Other plants common in the plot include Red Alder, Vine Maple, Red-Elderberry, Salmonberry, Sword-Fern, Fireweed, and various grasses. The plot contains one intermittent stream with maximum width 2 m and maximum depth < 0.5 m. **Edge:** Approximately 65% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 51–100 ha in size. Bordered on the S and E by an 11-yr-old Douglas-fir plantation. **Topography and Elevation:** The plot is located on a ridge which faces E and W with a grade of 11–16%. Minimum elevation 190 m, maximum 230 m. **Weather:** Mean start temp., 15.4°C (range 12–19°C). May was 1.7°C warmer and June was 1.1°C warmer than the 30-yr (1951–1980) norm for both average minimum and maximum daily temperatures. May precipitation was about half of the 30-yr average, but June was 3.1 cm above the 30-yr average. Source: NOAA—National Weather Service, Mount Vernon Station. **Coverage:** 11.8 h; 8 visits (4 sunrise, 1 sunset); 5, 12, 19, 24 May; 3, 9, 16, 23 June. **Census:** Song Sparrow, 10.0 (40); White-crowned Sparrow, 9.0 (36); Willow Flycatcher, 5.0 (20); Rufous-sided Towhee, 5.0 (2FL); Bewick's Wren, 3.0 (12); Common Yellowthroat, 3.0; American Goldfinch, 2.0; American Robin, 1.5 (1N); Tree Swallow, 1.0 (1N); Chestnut-backed Chickadee, 1.0 (1N); Swainson's Thrush, 1.0; MacGillivray's Warbler, 1.0; Brown-headed Cowbird, 1.0; Mourning Dove, +; Cedar Waxwing, +. **Total:** 15 species; 43.5 territories (174/40 ha). **Visitors:** Red-tailed Hawk, Common Nighthawk, Rufous Hummingbird, Downy Woodpecker, Northern Flicker, Barn Swallow, Steller's Jay, Black-capped Chickadee, Orange-crowned Warbler, Wilson's Warbler, Black-headed Grosbeak, Dark-eyed Junco, Purple Finch. **Remarks:** This plot, recently clear-cut in the conventional manner, is now a third-growth forest. The edge along the 11-yr-old plantation enhanced species richness within the plot for both breeding and visiting birds. For example, a Cedar Waxwing nest was found just outside the plot, in a 4.5 m high Douglas-fir sapling. The American Robin nest (abandoned prior to egg laying) was also found near this edge, but within the plot in a dense patch of Salmonberry. The Tree Swallow and Chestnut-backed Chickadee nest cavities were both located in high (approx. 2 m) stumps from the previous forest stand. **Other Observers:** David W. Brock and Earl Dorman. **Acknowledgments:** The Washington Department of Natural Resources made this study site available. I wish to thank Phil Fries, Walt Parker, George McFadden, and Ted Muller for logistical and other assistance. Thanks also to Ted Muller, David Mudd, and David Brock for reviewing the draft report. This project was funded by the Washington Department of Wildlife.

## 130. CLEAR-CUT AND DOUGLAS-FIR PLANTATION II

### FORMACIÓN DE TALA Y PLANTACIÓN DE PINABETE DE DOUGLAS II

DANA L. BASE

*Washington Department of Wildlife  
16018 Mill Creek Boulevard  
Mill Creek, Washington 98012*

**Site Number:** WA9392059. **Location:** Washington; Skagit Co.; Mount Vernon; Bryant-Cascade Unit, Washington Department of Natural Resources; 48°19'N, 122°11'W; McMurray Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** A "C" shaped plot (shortest side 100 m, longest 600 m) oriented along a logging road. The plot lies within a 37.2 ha unit which was 100% clear-cut in 1988 for the WA Dept. of Natural Resources. The unit was revegetated in 1990 and 1991 with 2-yr-old Douglas-fir seedlings planted at a density of 692 per ha. Other plants common in the plot include Red Alder, Vine Maple, Red-Elderberry, Salmonberry, Sword-Fern, Fireweed, and various grasses. The plot contains one intermittent stream with maximum width 2 m and maximum depth < 1.0 m. **Edge:** Approximately 90% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 51–100 ha in size. Bordered on the N by a 13-yr-old Douglas-fir plantation. **Topography and Elevation:** The plot has an uneven

slope with a grade of 6–10%. Minimum elevation 170 m, maximum 200 m. **Weather:** Mean start temp., 14.7°C (range 12–19°C). May was 1.7°C warmer and June was 1.1°C warmer than the 30-yr (1951–1980) norm for both average minimum and maximum daily temperatures. May precipitation was about half of the 30-yr average, but June was 3.1 cm above the 30-yr average. Source: NOAA-National Weather Service, Mount Vernon Station. **Coverage:** 11.5 h; 8 visits (4 sunrise, 1 sunset); 5, 12, 19, 24 May; 3, 14, 19, 25 June. **Census:** Song Sparrow, 9.0 (36); White-crowned Sparrow, 8.0 (32); Willow Flycatcher, 7.0 (28); Common Yellowthroat, 7.0; Rufous-sided Towhee, 4.0 (16; 1FL); American Goldfinch, 4.0; American Robin, 1.5; Northern Flicker, 1.0 (1N); Black-capped Chickadee, 1.0 (1N); Bewick's Wren, 1.0; Brown-headed Cowbird, 1.0; Tree Swallow, 0.5 (4FL); Swainson's Thrush, 0.5; Rufous Hummingbird, +; Black-headed Grosbeak, +. **Total:** 15 species; 45.5 territories (182/40 ha). **Visitors:** Common Nighthawk, Bushtit, Cedar Waxwing, Orange-crowned Warbler, Purple Finch. **Remarks:** This plot, recently clear-cut in the conventional manner, is now a third-growth forest. The Northern Flicker and Black-capped Chickadee nest cavities were both located in high (approx. 2 m) stumps from the previous forest stand. **Other Observers:** David W. Brock and Earl Dorman. **Acknowledgments:** The Washington Department of Natural Resources made this study site available. I wish to thank Phil Fries, Walt Parker, George McFadden, and Ted Muller for logistical and other assistance. Thanks also to Ted Muller, David Mudd, and David Brock for reviewing the draft report. This project was funded by the Washington Department of Wildlife.

### 131. CLEAR-CUT AND DOUGLAS-FIR PLANTATION WITH WILDLIFE LEAVE TREE RETENTION

FORMACIÓN DE TALA Y PLANTACIÓN DE PINABETE DE DOUGLAS CON  
RETENCIÓN DE ÁRBOLES PARA LA VIDA SILVESTRE

DANA L. BASE

*Washington Department of Wildlife  
16018 Mill Creek Boulevard  
Mill Creek, Washington 98012*

**Site Number:** WA9392060. **Location:** Washington; Skagit Co.; Mount Vernon; Bryant-Cascade Unit, Washington Department of Natural Resources; 48°19'N, 122°12'W; McMurray Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** A rectangular plot (100 × 1000 m) oriented along a logging road. The plot lies within a 38.5 ha unit which was logged in 1991 for the WA Dept. of Natural Resources (DNR). This is one of the first DNR timber harvests logged in such a way as to leave individual wildlife trees within an otherwise clear-cut timber harvest unit. In March 1992 there were 169 trees exceeding 3 m in height that were left intact from the previous forest stand. Species included: Western Hemlock (98 leave trees), Western Red Cedar (35), and Douglas-fir (7). Hardwoods included: Red Alder, willow, Black Cottonwood, White Birch, and Cascara Buckthorn for a total of 16 hardwood leave trees. Of all leave trees, only 50 exceeded 25.4 cm dbh which yielded a mean density of 5/ha on the plot. The unit was revegetated in 1991 and 1992 with 2-yr-old and 3-yr-old Douglas-fir seedlings planted at a density of 741 per ha. Other plants common in the plot include Vine Maple, Red-Elderberry, Salmonberry, Sword-Fern, Fireweed, and various grasses. **Edge:** Approximately 55% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat 26–50 ha in size. Bordered on the E by an 11-yr-old Douglas-fir plantation. **Topography and Elevation:** The plot is nearly level with a slope of < 5%. Minimum elevation 195 m, maximum 210 m. **Weather:** Mean start temp., 13.7°C (range 7–20°C). May was 1.7°C warmer and June was 1.1°C warmer than the 30-yr (1951–1980) norm for both average minimum and maximum daily temperatures. May precipitation was about half of the 30-yr average, but June was 3.1 cm above the 30-yr average. Source: NOAA-National Weather Service, Mount Vernon Station. **Coverage:** 12.9 h; 8 visits (4 sunrise, 1 sunset); 6, 15, 21, 29 May; 2, 9, 18, 24 June. **Census:** Song Sparrow, 13.5 (54; 5FL); White-crowned Sparrow, 9.0 (36); Rufous-sided Towhee, 8.0 (32; 2FL); American Goldfinch, 5.0 (20); Willow Flycatcher,

4.0 (16); Purple Finch, 4.0 (2FL); MacGillivray's Warbler, 3.0 (12); Black-headed Grosbeak, 3.0; American Robin, 2.5; Dark-eyed Junco, 2.5 (1FL); Bewick's Wren, 2.0; Wilson's Warbler, 1.5; Mourning Dove, 1.0; Steller's Jay, 1.0; Swainson's Thrush, 1.0; Brown-headed Cowbird, 1.0; Western Tanager, 0.5; Rufous Hummingbird, +; Northern Flicker, +; Tree Swallow, +; Cedar Waxwing, +; Orange-crowned Warbler, +; Common Yellowthroat, +. **Total:** 23 species; 62.5 territories (250/40 ha). **Visitors:** Band-tailed Pigeon, Common Nighthawk, Black Swift, Downy Woodpecker, Pacific-slope Flycatcher, Northern Rough-winged Swallow, Black-capped Chickadee, Golden-crowned Kinglet, European Starling, Black-throated Gray Warbler, Savannah Sparrow, Fox Sparrow. **Remarks:** This plot, recently clear-cut except for "wildlife leave trees", is now a third-growth forest. These leave trees greatly enhanced species richness within the plot for both breeding and visiting birds. The plot edge along the 11-yr-old plantation also enriched the birdlife. **Other Observer:** David W. Brock. **Acknowledgments:** The Washington Department of Natural Resources made this study site available. I wish to thank Phil Fries, Walt Parker, George McFadden, and Ted Muller for logistical and other assistance. Thanks also to Ted Muller, David Mudd, and David Brock for reviewing the draft report. This project was funded by the Washington Department of Wildlife.

## 132. CONVENTIONAL DAIRY FARM

### GANADERIAS CONVENCIONALES

RUDOLPH C. KELLER

R.D. 4, Box 235

Boyertown, Pennsylvania 19512

**Location:** Pennsylvania; Berks Co.; Kempton; Terry Kunkel's farm; 40°37'N, 75°53'W; Hamburg Quadrangle, USGS. **Continuity:** Established 1989; 2 yr. **Size:** 23.1 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):82-83 (1990). **Weather:** Mean start temp., 15.0°C (range 7-18°C). Last year's drought conditions were relieved by higher rainfall this spring and summer. **Coverage:** 17.3 h; 8 visits (8 sunrise); 24 May; 5, 14, 23, 28, June; 1, 3, 12 July. **Census:** European Starling, 8.0 (14; FL); Field Sparrow, 8.0 (FL); Song Sparrow, 8.0 (FL); House Sparrow, 7.0 (12); Gray Catbird, 6.0 (10; FL); Indigo Bunting, 6.0 (FL); Barn Swallow, 5.0 (9; FL); Rock Dove, 3.0 (5); American Robin, 3.0 (FL); Northern Cardinal, 3.0 (FL); Chipping Sparrow, 3.0; Vesper Sparrow, 3.0; Mourning Dove, 2.0; Eastern Phoebe, 2.0; Tufted Titmouse, 2.0; House Wren, 2.0 (FL); Northern Mockingbird, 2.0 (FL); Red-winged Blackbird, 2.0 (FL); Common Grackle, 2.0 (FL); Brown-headed Cowbird, 2.0; Ring-necked Pheasant, 1.5; Downy Woodpecker, 1.5 (FL); Carolina Wren, 1.5 (FL); Northern Oriole, 1.5 (FL); Killdeer, 1.0; Willow Flycatcher, 1.0; American Crow, 1.0 (FL); Eastern Bluebird, 1.0 (FL); Brown Thrasher, 1.0; White-eyed Vireo, 1.0; Common Yellowthroat, 1.0; Grasshopper Sparrow, 1.0; American Goldfinch, 1.0; Red-bellied Woodpecker, 0.5; Eastern Wood-Pewee, 0.5; Blue Jay, +. **Total:** 36 species; 95.0 territories (165/40 ha). **Visitors:** Wood Duck, Mallard, Cooper's Hawk, Red-tailed Hawk, Yellow-billed Cuckoo, Northern Flicker, Eastern Kingbird, Northern Rough-winged Swallow, Fish Crow, Black-capped Chickadee, White-breasted Nuthatch, Wood Thrush, Red-eyed Vireo, Yellow Warbler. **Remarks:** Most species were associated with hedgerows, farm buildings, lawns, and the pasture with scattered trees, though many of these birds foraged in cropland. Of the three species found only in cropland, Vesper and Grasshopper Sparrows preferred Alfalfa, though they also foraged in Corn and Soybeans, and Killdeer preferred Soybeans, the last crop to emerge and form a continuous ground cover. As in 1989, Alfalfa, Corn, Soybeans and small grains planted in strips across the contour are the components of the cropland area of the farm, though location and amount of each crop may vary from year to year. Data from 1990 and 1991 were not published, but are available. **Acknowledgments:** I would like to thank Terry Kunkel for permission to use his farm for this study.