

BREEDING BIRD CENSUS: 1994

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. spp.	Hrs Obs.	Yrs Study
Broadleaf Forests							
1. Northern Oak Woodland	CA	J.D. Petersen	16.0	88	29	13.9	5
2. Riparian Woodland	CA	K.L. Weaver	11.7	556	33	19.3	6
3. Western Sycamore Woodland with Scattered Oaks	CA	D. Riensche	15.9	283	42	54.0	5
4. Willow Riparian Woodland and Edge	CA	D. Riensche	8.1	259	19	41.9	3
5. Mixed Hardwood Poletimber	CT	A.F. Magee	8.5	416	39	11.5	28
6. Second-growth Hardwood Forest	CT	A.F. Magee	10.1	370	43	12.5	28
7. Central Hardwood Forest with Scattered Pine	DC	M.E. D'Imperio	26.3	100	24	32.3	46
8. Mixed Upland Broadleaf Forest	DC	S.A. Briggs	14.2	793	43	120.0	36
9. Mesic Hammock with Needle Palm Understory	FL	G. Sprandel	10.5	135	12	26.0	2
10. White Alder-Black Locust-Hackberry Riparian	ID	C. Bradford	5.3	226	19	14.8	4
11. Mature Deciduous Floodplain Forest	MD	D. Gauthey	7.6	347	25	43.3	43
12. Old-growth Woods and Swamp Forest	MI	L.R. Knapp	28.3	276	47	26.3	6
13. Bottomlands Hardwood Forest	MN	R. Swanson	12.2	379	30	35.8	2
14. Upland Second-growth Oak-Hickory Forest	MS	H. Moore	10.0	540	37	24.4	6
15. Floodplain Forest	NC	L. Isaacson	12.6	332	32	33.9	18
16. Mixed Deciduous Forest	NC	M.T. Vinson	12.6	222	22	26.4	19
17. Young White Ash-Red Maple Forest on Lake Shore	NY	G.R. Maxwell	16.2	193	34	10.0	9
18. Appalachian Oak Forest	OH	D. Minney	10.0	264	21	20.0	2
19. Mature Broadleaf Forest	OH	C.W. Saunders	16.0	228	25	24.7	4
20. Mixed Hardwood Swamp	OH	D. Hochadel	12.1	207	34	25.0	3
21. Riparian Deciduous Forest	OH	E.J. Tramer	18.0	330	37	19.9	6
22. Red Oak-Sugar Maple Forest	ON	G. Gibson	11.0	389	26	40.8	4
23. Red Oak-Sugar Maple Savannah	ON	G. Gibson	10.5	373	27	40.1	3

BREEDING BIRD CENSUS: 1994 (Continued)

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. spp.	Hrs Obs.	Yrs Study
24. Red Oak-White Birch Savannah	ON	P. Prior	10.0	456	28	50.2	4
25. White Oak Savannah	ON	M.F.G. Clark	10.4	356	26	19.3	2
26. Deciduous Old-growth Woods	PA	J.C. Haney	7.5	413	35	8.9	1
27. Mountaintop Second-growth Mixed Deciduous Forest	PA	C. Labarthe	10.0	202	18	27.8	1
28. Oak-Maple-Poplar Hollow	PA	L. Ingram	10.9	117	17	17.0	2
29. Oak-Maple Ridge-top Forest	PA	C.B. Viverette	19.3	95	21	23.1	13
30. Oak-Maple Slope Forest	PA	C.B. Viverette	16.9	114	18	25.3	13
31. Old-growth Beech-Maple Woodlot	PA	J.C. Haney	9.8	259	29	9.8	1
32. Old-growth Maple-Oak-Hickory Woodlot	PA	J.C. Haney	10.3	291	33	11.8	1
33. Regenerating Northern Hardwoods	PA	J.C. Haney	15.0	232	29	14.5	1
34. Suburban Deciduous Woodlot	PA	D. Robertson	10.0	230	20	22.1	4
35. Mature Mesic Oak Forest	RI	R.M. Landry	10.6	306	22	24.1	3
36. Red Oak Forest	RI	W.R. Eddleman	10.6	238	25	29.4	1
37. Upland Oak-Red Maple Forest	RI	W.R. Eddleman	10.1	360	22	19.6	5
38. Bottomland Hardwood Forest	SC	C. Irby	12.2	262	22	21.9	2
39. Hardwood Swamp Forest	SC	M.R. Dawson	8.1	649	21	17.4	6
40. Upland Hardwood Forest	SC	C. Irby	12.2	205	23	21.2	2
41. Mature Maple-Beech-Birch Forest	TN	L.J. Mitchell	10.2	394	11	19.2	3
42. Mesophytic Forest I	VA	M.G. Smith	6.1	390	17	12.0	8
43. Mesophytic Forest II	VA	M.G. Smith	6.1	393	17	11.3	9
Needleleaf Forests							
44. Mature Longleaf Pine Forest I	GA	L.D. Carlie	20.0	235	33	16.4	2
45. Mature Longleaf Pine Forest II	GA	L.D. Carlie	20.0	239	38	16.6	2
46. Cedar Forest	ID	S.D. Weller	12.3	130	28	17.6	3
47. Old-growth Forest	ID	S. Robinson	11.3	124	14	19.1	3
48. Riparian Forest	ID	S.D. Weller	10.3	194	25	14.5	4
49. Heavily Thinned White Spruce Plantation	ME	J.K. Markowsky	4.1	410	22	20.5	10

BREEDING BIRD CENSUS: 1994 (Continued)

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. spp.	Hrs Obs.	Yrs Study
50. Mature Red Spruce Forest	ME	T.P. Skaling	16.0	165	31	24.3	6
51. Jack Pine Forest	MI	P.S. Reaman	16.0	144	12	18.2	10
52. Upland Christmas Tree Farm	NY	E.W. Brooks	10.7	265	19	19.2	12
53. Upland Scotch Pine Plantation	NY	E.W. Brooks	9.3	181	21	12.1	26
54. Mature Hemlock Ravine	PA	C. Seymour	12.3	193	17	54.5	1
55. Old-growth Hemlock-White Pine Forest	PA	J.C. Haney	15.0	428	25	19.1	1
56. Old-growth White Pine-Hemlock Forest	PA	J.C. Haney	18.2	211	24	16.8	2
57. Mature White Pine Forest	RJ	W.R. Eddleman	10.1	281	23	18.8	5
58. Loblolly Pine Forest	SC	C. Irby	12.2	130	20	16.9	2
59. Longleaf-Loblolly Pine Forest	SC	P.A. Koehler	12.3	260	21	17.7	2
60. High Altitude Red Spruce Forest	TN	G.R. Mayfield, III	9.9	137	14	21.2	3
61. Pinyon-Jumper Woodland	UT	G.N. Salamacha	31.3	46	14	26.0	12
Broadleaf/Needleleaf Forests							
62. Ponderosa Pine-Scrub Oak Forest	CO	H.J. Finch	12.0	207	18	13.9	14
63. Climax Hemlock-White Pine Forest with Transition Hardwoods	CT	A.F. Magee	10.5	467	48	12.3	28
64. Mature Broadleaf-Coniferous Forested Wetland	CT	T. Harrington	21.5	140	28	17.5	4
65. Oak-Hemlock Forest	CT	R.A. Askins	23.1	160	33	24.4	23
66. Upland Oak and Hemlock Forest	CT	R.A. Braunfield	10.5	463	19	12.8	6
67. Young Mixed Hardwood-Conifer Stand	CT	A.F. Magee	8.5	428	46	12.0	17
68. Lowland Mixed Forest and Floodplain	MA	D.C. McLain	10.1	97	18	14.1	2
69. Upland Forest Interior	MA	D.C. McLain	10.1	224	24	13.8	2
70. Tamarack Bog and Hardwood	MI	J. Mullins	8.5	118	15	8.0	19
71. Aspen-Pine Wilderness	MN	R.D. Huffman	13.4	385	19	19.9	2
72. Upland Mixed Pine-Spruce-Hardwood Plantation	NY	E.W. Brooks	16.6	218	34	15.5	21
73. Red Oak-White Pine Savannah	ON	M.J. Drenth	11.0	296	18	38.9	2
74. Hardwood Forest with Scattered Pine	PA	D.J. Wentzel	19.2	208	27	15.7	4

BREEDING BIRD CENSUS: 1994 (Continued)

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. spp.	Hrs Obs.	Yrs Study
75. Mixed Hardwood-Hemlock-White Pine Forest	PA	G.W. Grove	27.0	194	26	17.5	1
76. Old-growth Beech-Hemlock Forest I	PA	J.C. Haney	12.0	573	27	19.6	2
77. Old-growth Beech-Hemlock Forest II	PA	J.C. Haney	12.0	465	27	18.7	2
78. Old-growth Beech-Hemlock Forest III	PA	J.C. Haney	12.0	372	26	20.1	1
79. Old-growth Beech-Hemlock Forest IV	PA	J.C. Haney	12.0	433	25	19.8	1
80. Old-growth Beech-Hemlock Forest V	PA	J.C. Haney	12.0	347	24	17.3	1
81. Old-growth Hemlock-Beech-White Pine Forest	PA	J.C. Haney	10.0	352	27	16.7	1
82. Old-growth Hemlock-Mixed Hardwood Forest I	PA	J.C. Haney	15.0	413	28	19.2	2
83. Old-growth Hemlock-Mixed Hardwood Forest II	PA	C.P. Schaadt	15.0	453	19	18.0	2
84. Remnant Old-growth Hemlock-Mixed Hardwood Forest	PA	C.P. Schaadt	15.0	403	24	18.7	2
85. Mature Upland Oak-Beech-White Pine Forest	RI	W.R. Eddleman	10.2	353	24	25.9	4
86. Selectively-cut Upland Oak-White Pine Forest	RI	B.T. Browne	10.3	355	29	19.9	1
87. Mature Deciduous-Coniferous Forest with Stream	TN	S.J. Stedman	10.2	227	42	17.7	4
88. Sloped Mixed Deciduous-Coniferous Forest	VT	F. Merrill	12.3	207	30	15.0	3
Mixed Habitats							
89. Suburban Cemetery	AL	T.A. Imhof	15.0	251	20	52.0	15
90. Transition Forest and Thicket	CT	R.A. Askins	6.5	182	26	7.8	23
91. Bulrush and Cattail Marsh in Conifer Forest	MT	M.M. Bishop	40.5	272	63	33.0	20
92. Deciduous Forest with Pond and Brook	NJ	J. Brotherton	16.2	89	20	10.0	31
93. Second-growth Broadleaf-Coniferous Forest with Wetland Areas	NY	T.H. Greg	11.0	236	32	18.6	1

BREEDING BIRD CENSUS: 1994 (Continued)

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. spp.	Hrs Obs.	Yrs Study
94. Suburban Bird Sanctuary	NY	M.E. Richard	10.8	354	25	13.3	12
95. Urban Coastal Park	NY	A. Magee	10.0	364	32	11.0	2
96. Urban Coastal Wildlife Refuge	NY	A. Magee	11.0	416	38	12.0	2
97. Disturbed Oak-Hickory, Pine Stand, Edge, and Pond	OH	A.H. Clausus	14.2	130	26	49.0	50
98. Field, Ridge, Shrubby Trees, and Woods	ON	M.F.G. Clark	5.8	766	21	12.5	1
99. Scattered Mixed Coniferous Forest in Subalpine Meadows and Spruce Bogs	OR	R.A. Hudson	32.4	33	9	11.9	22
Non-forested Wetlands							
100. Coastal Freshwater Marsh	CA	J.P. Kelly	10.5	373	24	9.8	7
101. Desert Riparian-Freshwater Marsh	CA	E.A. Cardiff	15.4	506	33	23.5	18
102. Shrubby Swamp and Sedge Hummocks	CT	A.F. Magee	8.1	790	23	10.8	28
103. Shrubby Marsh	KS	C. Cink	12.2	267	14	8.5	1
104. Wetland Sedge Meadow I	NE	G. Lingle	16.2	107	7	5.4	12
105. Wetland Sedge Meadow II	NE	G. Lingle	16.2	93	11	5.2	11
106. Intertidal Salt Marsh	NY	C.D. Aquila	40.9	31	12	29.0	3
107. Intertidal Salt Marsh II	NY	C.D. Aquila	57.3	30	22	26.4	2
Shrublands							
108. Coastal Scrub	CA	D. Cothran	8.1	264	14	328.8	20
109. Diegan Coastal Sage Scrub I	CA	J.C. Lovio	43.5	75	17	61.4	2
110. Disturbed Coastal Scrub A	CA	A.L. Holmes	4.7	272	20	144.0	20
111. Disturbed Coastal Scrub B	CA	J.G. Elliott	8.1	232	20	282.0	21
112. Mojave Yucca-Staghorn Cholla Desert Scrub	CA	L. LaPré	20.0	22	12	23.8	4
113. Mojave Yucca-Staghorn Cholla Desert Scrub II	CA	L. LaPré	20.0	28	15	22.8	3
114. Big Sagebrush Exclosure	ID	J. Doremus	25.0	52	5	26.8	3
115. Winterfat Exclosure	ID	J. Doremus	16.2	53	1	14.9	3

BREEDING BIRD CENSUS: 1994 (Continued)

Habitat	State/ Prov.	Compiler	Plot Size (ha)	Terr. per 40 ha	Num. spp.	Hrs Obs.	Yrs Study
Tundra							
116. Wet Coastal Plain Tundra I	AK	R. Suydam	33.0	52	8	58.2	9
117. Wet Coastal Plain Tundra II	AK	M. Wesselmann	36.0	53	10	51.8	9
118. Wet Coastal Plain Tundra III	AK	M. Johnson	36.0	62	7	61.1	5
119. Wet Coastal Plain Tundra IV	AK	S.A. MacLean	36.0	27	5	33.3	2
Grasslands							
120. Coastal Prairie	CA	J.P. Kelly	31.0	41	10	8.0	7
121. Canyon Bluebunch Grassland	ID	C. Bradford	7.5	67	7	14.3	3
122. Floodplain Tallgrass Prairie	KS	C. Cink	10.1	115	8	7.9	11
123. Kentucky Bluegrass Prairie	ND	D.H. Johnson	4.8	92	15	3.1	23
124. Mixed Prairie I	ND	D.H. Johnson	10.0	184	24	8.5	23
125. Mixed Prairie II	ND	D.H. Johnson	6.1	144	13	4.4	23
126. Mixed Prairie III	ND	D.H. Johnson	6.1	66	12	4.3	23
127. Mixed Prairie IV	ND	D.H. Johnson	6.1	144	17	3.2	23
128. Mixed Prairie V	ND	D.H. Johnson	6.1	62	12	3.9	23
129. Subirrigated Grassland	NE	G. Lingle	16.2	63	7	4.6	12
130. Subirrigated Native Hay	NE	G. Lingle	16.2	43	5	4.2	12
Successional Fields							
131. Floodplain Tallgrass Prairie-Shrub Succession	KS	C. Cink	49.0	80	24	11.0	1
132. Abandoned Pasture Overgrown with Oak Canopy and Armed Shrubs	MN	S. Wagenius	16.0	174	27	32.7	1
133. Abandoned Upland Pasture	NY	V.M. Pitzrick	8.0	720	24	21.3	11
134. Abandoned Upland Pasture II	NY	R. Larsen	30.0	261	42	32.8	1
135. Abandoned Pasture Scrubland	ON	B. Murphy	9.0	391	27	20.8	13
136. Dry-Mesic Rye Field	ON	M.E. Gartshore	12.3	130	6	13.3	2
137. Clear-cut-Longleaf Pine Regeneration	SC	C. Irby	25.0	164	23	30.8	3
138. Old Pasture Shrub with Hedgerows and Seasonal Wet Area	VT	F. Merrill	11.1	214	27	14.0	2
Cultivated							
139. Conventional Dairy Farm	PA	R.C. Keller	23.1	108	31	20.0	4

1. NORTHERN OAK WOODLAND

ARBOLADA DE ROBLE NORTEÑO

JOHN D. PETERSEN

13935 Highway 12, Glen Ellen CA 95442

Location: California; Sonoma Co.; Glen Ellen; Bouverie Ranch; 38°22'N, 122°30'W; Glen Ellen Quadrangle, USGS. **Continuity:** Established 1990; 5 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62(Suppl.):32 (1991). **Weather:** Mean start temp., 11.4°C (range 5–21°C). This was another drought year in N California, with rainfall averaging approximately 70% of normal. **Coverage:** 13.9 h; 10 visits (3 sunrise); 23, 31 Mar; 1, 7, 15, 21, 28 Apr; 4, 12, 20 May. **Census:** Warbling Vireo, 3.0; Orange-crowned Warbler, 3.0; Dark-eyed Junco, 3.0; Ash-throated Flycatcher, 2.0; Plain Titmouse, 2.0; Western Bluebird, 2.0; Mourning Dove, 1.0; Anna's Hummingbird, 1.0; Acorn Woodpecker, 1.0; Nuttall's Woodpecker, 1.0; Western Wood-Pewee, 1.0; Pacific-slope Flycatcher, 1.0; Violet-green Swallow, 1.0; Bushtit, 1.0; White-breasted Nuthatch, 1.0; House Wren, 1.0; American Robin, 1.0; Solitary Vireo, 1.0; Black-throated Gray Warbler, 1.0; Chipping Sparrow, 1.0; Northern Oriole, 1.0; House Finch, 1.0; Lesser Goldfinch, 1.0; Barn Swallow, 0.5; Scrub Jay, 0.5; Northern Mockingbird, 0.5; European Starling, 0.5; Hutton's Vireo, 0.5; California Towhee, 0.5. **Total:** 29 species; 35.0 territories (88/40 ha). **Visitors:** Red-shouldered Hawk, Red-tailed Hawk, Wild Turkey, Great Horned Owl, American Crow. **Remarks:** This is the highest number of confirmed breeders since the census began in 1989. **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 CA 92028

Location: California; San Diego Co.; Fallbrook; 33°25'N, 117°14'W; Temecula Quadrangle, USGS. **Continuity:** Established 1989; 6 yr. **Size:** 11.7 ha. **Description of Plot:** See *Am. Birds* 38:105 (1984), *J. Field Ornithol.* 63(Suppl.):35 (1992) and 65(Suppl.):44–45 (1994). Undergrowth increased greatly following the devastating floods of 1993. Sandbars which were nearly barren last spring had young willows nearly 2 m high by the end of this census. **Weather:** Mean start temp., 13.9°C (range 10–19°C). Temperatures were a little above average while precipitation was near normal. **Coverage:** 19.3 h; 10 visits (7 sunrise, 2 sunset); 22, 29 Apr; 1, 7, 20, 29 May; 4, 10, 25 Jun; 2 Jul. **Census:** Song Sparrow, 28.0 (96); Common Yellowthroat, 17.0 (58); Yellow Warbler, 16.0 (55); House Wren, 15.0 (51; 1N); Yellow-breasted Chat, 11.0 (38); Rufous-sided Towhee, 11.0 (2FL); Bushtit, 9.0 (31); Western Wood-Pewee, 7.0 (24); Black-headed Grosbeak, 6.0 (21); Nuttall's Woodpecker, 5.0 (17); Pacific-slope Flycatcher, 5.0 (2FL); Black-chinned Hummingbird, 4.0 (14); Phainopepla, 4.0 (1N,1FL); House Finch, 4.0 (2FL); Lesser Goldfinch, 4.0; Orange-crowned Warbler, 3.0 (10); California Quail, 2.0; Black Phoebe, 2.0; Plain Titmouse, 2.0; Ash-throated Flycatcher, 1.5; Killdeer, 1.0; Common Ground-Dove, 1.0; Downy Woodpecker, 1.0; Northern Flicker, 1.0; Warbling Vireo, 1.0; Brown-headed Cowbird, 1.0 (1FL); Great Blue Heron, +; Mallard, +; Red-shouldered Hawk, +; Northern Rough-winged Swallow, +; Cliff Swallow, +; Scrub Jay, +; Common Raven, + (1FL). **Total:** 33 species; 162.5 territories (556/40 ha). **Visitors:** Turkey Vulture, Cooper's Hawk, Red-tailed Hawk, American Kestrel, Anna's Hummingbird, Belted Kingfisher, Violet-green Swallow, Bewick's Wren, Wrentit, Hutton's Vireo, California Towhee, Northern Oriole, Lawrence's Goldfinch. **Remarks:** The number of territorial males was the lowest recorded in the six years of this census, down 15% from a high of 191 in 1989. The proportion of neotropical migrants was at its lowest point in the six years of the census (32% of territorial

males this year compared to 42% in 1990 and 1991). Following the floods of 1993, the number of "brush" birds such as yellowthroats and Song Sparrows continued to increase with the expanding shrub layer. With the removal of many canopy trees, though, birds such as the Downy Woodpecker, Warbling Vireo, and Swainson's Thrush have nearly or completely disappeared. Phainopepla nested for the first time. They had been recorded before only as visitors to the woodland edge on the W bank. **Other Observer:** Richard Barber. **Acknowledgments:** This census is supported by the Palomar Audubon Society.

3. WESTERN SYCAMORE WOODLAND WITH SCATTERED OAKS

ARBOLADA DE HIGUERA DE SICOMORO CON ROBLES DISPERSOS

DAVE RIENSCHÉ* & HOWARD L. COGSWELL

**East Bay Regional Park District, Coyote Hills Regional Park, 8000 Patterson Ranch Road, Fremont CA 94555*

Location: California; Alameda Co.; Livermore; Sycamore Grove Park (Nature Area); 37°38'N, 121°46'W; Livermore Quadrangle, USGS. **Continuity:** Established 1990; 5 yr. **Size:** 15.9 ha. **Description of Plot:** See *J. Field Ornithol.* 62(Suppl.):33-34 (1991). **Weather:** Mean start temp., 8.7°C (range 4-12°C). The Livermore area received 97% of its normal rainfall. May rainfall was eight times normal for the month. **Coverage:** 54.0 h; 12 visits (12 sunrise); 23, 30, 31 Mar; 4, 9, 14, 26 Apr; 3, 9, 18, 19, 30 May. Maximum number of observers/visit, 3. **Census:** European Starling, 29.0 (73; 29N); Bewick's Wren, 6.5 (16; 3N,5FL); Bushitit, 6.0 (15; 3N,12FL); Plain Titmouse, 5.0 (13; 3N,5FL); Lesser Goldfinch, 4.5 (11); Mourning Dove, 4.0 (10; 2N); Anna's Hummingbird, 4.0 (1N,1FL); California Quail, 3.5 (9; 1N,10FL); Nuttall's Woodpecker, 3.5 (3N,2FL); Acorn Woodpecker, 3.0 (8; 3N,3FL); White-breasted Nuthatch, 3.0 (3N,3FL); Rufous-sided Towhee, 3.0; Scrub Jay, 2.5 (2N,5FL); Wood Duck, 2.0; Mallard, 2.0; White-tailed Kite, 2.0 (2N); American Kestrel, 2.0 (2N,3FL); Tree Swallow, 2.0; Wilson's Warbler, 2.0; California Towhee, 2.0 (1N,2FL); Song Sparrow, 2.0; Brown-headed Cowbird, 2.0; Ash-throated Flycatcher, 1.5 (1N); Turkey Vulture, 1.0; Red-shouldered Hawk, 1.0 (1N,2FL); Wild Turkey, 1.0 (1N,8FL); Barn Owl, 1.0 (1N,3FL); Downy Woodpecker, 1.0 (1N); Northern Flicker, 1.0 (1N); Western Wood-Pewee, 1.0; Pacific-slope Flycatcher, 1.0; Black Phoebe, 1.0 (1N,1FL); House Wren, 1.0; American Robin, 1.0; Dark-eyed Junco, 1.0 (1N,2FL); Red-winged Blackbird, 1.0; House Finch, 1.0 (1N); Ring-necked Pheasant, 0.5; Western Bluebird, 0.5; Orange-crowned Warbler, 0.5; Northern Mockingbird, +; Warbling Vireo, +. **Total:** 42 species; 112.5 territories (283/40 ha). **Visitors:** Green Heron, Killdeer, Belted Kingfisher, Chestnut-backed Chickadee, Loggerhead Shrike, Black-headed Grosbeak, Northern Oriole. **Remarks:** The number of European Starling territories showed a 25% decline from previous years. This may be a result of a local agricultural pest management program. Many species continued to show increases in the numbers of territories and fledglings; possibly due to the above average precipitation in 1993 and the near normal precipitation in 1994. The following species increased over past years: Wood Duck, American Kestrel, California Quail, Acorn Woodpecker, Bewick's Wren, Wilson's Warbler, and Lesser Goldfinch. Three species were holding territories for the first time since the census began: Ring-necked Pheasant, Pacific-slope Flycatcher, and Song Sparrow. **Other Observer:** Mary Richards. **Acknowledgments:** The Livermore Area Recreation and Park District who kindly arranged access to the park. Wanda Spittler for typing the original report.

4. WILLOW RIPARIAN WOODLAND AND EDGE

ARBOLADO DE SAUCE RIVEREÑO Y BORDE

DAVE RIENSCHÉ, MARTY MORROW & PENNI SAVAGE

East Bay Regional Park District, Coyote Hills Regional Park, 8000 Patterson Ranch Road, Fremont CA 94555

Site Number: CA9292061. **Location:** California; Alameda Co.; Fremont; Coyote Hills Regional Park; 37°34'N, 122°5'W; Newark Quadrangle, USGS. **Continuity:** Established 1992; 3 yr. **Size:**

8.1 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):35 (1993) and 65(Suppl.):46 (1994). **Weather:** Mean start temp., 10.3°C (range 4–14°C). Rainfall was 800% of normal for the month of May with a total for the season of 38.7 cm (88% of normal). **Coverage:** 41.9 h; 16 visits (16 sunrise); 5, 13, 20, 31 Mar; 7, 8, 16, 25 Apr; 4, 8, 10, 14 May. Maximum number of observers/visit, 5. **Census:** Song Sparrow, 12.0 (59; 4N,5FL); Marsh Wren, 6.0 (30; 2N,4FL); Common Yellowthroat, 5.5 (27; 2N,1FL); Bushtit, 4.0 (20; 1N); Bewick's Wren, 4.0 (1FL); Wilson's Warbler, 3.5 (17); Mourning Dove, 2.0; European Starling, 2.0 (2N,4FL); Rufous-sided Towhee, 2.0; Brown-headed Cowbird, 2.0; Scrub Jay, 1.5 (1FL); California Towhee, 1.5; Pied-billed Grebe, 1.0; Mallard, 1.0; Virginia Rail, 1.0; American Coot, 1.0; Downy Woodpecker, 1.0 (1N,2FL); Chestnut-backed Chickadee, 1.0 (1N,2FL); White-tailed Kite, 0.5 (1N,3FL). **Total:** 19 species; 52.5 territories (259/40 ha). **Visitors:** Green Heron, Canada Goose, Gadwall, Northern Harrier, Cooper's Hawk, Ring-necked Pheasant, Common Moorhen, Anna's Hummingbird, Pacific-slope Flycatcher, Black Phoebe, Tree Swallow, Swainson's Thrush, American Robin, Northern Mockingbird, Orange-crowned Warbler, Yellow Warbler, Yellow-breasted Chat, Red-winged Blackbird, Western Meadowlark. **Remarks:** The above normal rainfall of 1993 provided a lush willow riparian woodland and seasonal wetland edge which may have provided better habitat conditions. Compared to last year there was an increase in the number of rail species territories (Virginia Rail and American Coot), a 50% increase in Marsh Wren territories, and a 60% increase in Common Yellowthroat territories. **Other Observers:** Cindy Aguilar, Maggie Clark, Penelope Cross, Douglas Mason, Mary Richards, Sandi Robison, Bill Scoggins, Carolyn Uyemura, Steve Wiley. **Acknowledgments:** The East Bay Regional Park District who kindly provided time to work on the project. Wanda Spitzer for typing the original report.

5. MIXED HARDWOOD POLETIMBER

BOSQUE MIXTO MADERERO

ANDREW F. MAGEE

White Memorial Conservation Center, Litchfield CT 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; 28 yr. **Size:** 8.5 ha. **Description of Plot:** See *Aud. Field Notes* 19:609–610 (1965) and *J. Field Ornithol.* 64(Suppl.):36 (1993). **Weather:** Mean start temp., 21.7°C (range 12–27°C). The average minimum and maximum temperatures recorded at our weather station in May (6°C, 21°C) were a little below our 10-yr averages, but in June (13°C, 27°C) they were above average. Precipitation in May (9.9 cm) was closer to our 10-yr average than last year's low, and in June (15.1 cm) it was above average. **Coverage:** 11.5 h; 6 visits (1 sunrise, 1 sunset); 15, 17, 30 May; 7, 28 Jun; 11 Jul. **Census:** Ovenbird, 12.0 (56); Wood Thrush, 7.0 (33); Red-eyed Vireo, 7.0; Common Yellowthroat, 6.0 (28); Rufous-sided Towhee, 6.0; Veery, 4.0 (19); Gray Catbird, 4.0; American Redstart, 4.0; Blue Jay, 3.0 (14); Black-capped Chickadee, 3.0; Chestnut-sided Warbler, 3.0; Black-and-white Warbler, 3.0; House Wren, 2.5; Tufted Titmouse, 2.0; American Robin, 2.0; American Goldfinch, 2.0; Broad-winged Hawk, 1.0; Ruffed Grouse, 1.0; Wild Turkey, 1.0; Mourning Dove, 1.0; Downy Woodpecker, 1.0; Northern Flicker, 1.0; Eastern Wood-Pewee, 1.0; Eastern Phoebe, 1.0; Great Crested Flycatcher, 1.0; American Crow, 1.0; Cedar Waxwing, 1.0; Blue-winged Warbler, 1.0; Northern Cardinal, 1.0; Rose-breasted Grosbeak, 1.0; Northern Oriole, 1.0; Red-bellied Woodpecker, 0.5; Hairy Woodpecker, 0.5; White-breasted Nuthatch, 0.5; Blue-gray Gnatcatcher, 0.5; Scarlet Tanager, 0.5; Song Sparrow, 0.5; Barred Owl, +; Pileated Woodpecker, +. **Total:** 39 species; 88.5 territories (416/40 ha). **Remarks:** The number of species observed was a little above average, but the number of individuals was a little below average. Most of the woodland species (e.g. Veery, Red-eyed Vireo, Wood Thrush, American Redstart, and Black-and-white Warbler), which have been increasing in numbers as hardwood trees take over this abandoned hillside pasture, dropped below their averages for the previous five years. The one exception was Ovenbird, which reached a new high of 12.0 territorial males. Other species (e.g. Gray Catbird and Blue-winged Warbler), which peaked in an earlier stage of habitat succession (1978–

85), continued their declines. Pileated Woodpecker was a new species for this plot. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

6. SECOND-GROWTH HARDWOOD FOREST

BOSQUE SECUNDARIO DE MADERAS DURAS

ANDREW F. MAGEE

White Memorial Conservation Center, Litchfield CT 06759

Site Number: CT2765006. **Location:** Connecticut; Litchfield Co.; Morris; White Memorial Foundation; 41°42'N, 73°12'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 28 yr. **Size:** 10.1 ha. **Description of Plot:** See *Aud. Field Notes* 19:590-591 (1965) and *J. Field Ornithol.* 64(Suppl.):37-38 (1993). **Weather:** Mean start temp., 20.8°C (range 9-29°C). See BBC #5 for summary. **Coverage:** 12.5 h; 9 visits (1 sunrise, 2 sunset); 15, 17, 21, 30, 31 May; 7, 16, 28 Jun; 10 Jul. **Census:** Veery, 11.0 (44); Ovenbird, 11.0; Red-eyed Vireo, 10.0 (40); American Redstart, 8.0 (32); Common Yellowthroat, 5.0 (20); American Robin, 4.0 (16); Eastern Wood-Pewee, 3.0 (12); Wood Thrush, 3.0; Chestnut-sided Warbler, 3.0; Scarlet Tanager, 3.0; Yellow-bellied Sapsucker, 2.0; Downy Woodpecker, 2.0; American Crow, 2.0; Black-capped Chickadee, 2.0; Tufted Titmouse, 2.0; Brown Creeper, 2.0; Gray Catbird, 2.0; Black-and-white Warbler, 2.0; Rufous-sided Towhee, 2.0; Yellow-throated Vireo, 1.5; Wood Duck, 1.0; Ruffed Grouse, 1.0; Wild Turkey, 1.0; Red-bellied Woodpecker, 1.0; Northern Flicker, 1.0; Eastern Phoebe, 1.0; Blue Jay, 1.0; White-breasted Nuthatch, 1.0; Blue-winged Warbler, 1.0; Song Sparrow, 1.0; Cooper's Hawk, 0.5; Barred Owl, 0.5; Hairy Woodpecker, 0.5; Magnolia Warbler, 0.5; Black-throated Blue Warbler, 0.5; Northern Oriole, 0.5; Turkey Vulture, +; Broad-winged Hawk, +; Red-tailed Hawk, +; Great Horned Owl, +; Pileated Woodpecker, +; Solitary Vireo, +; Blackburnian Warbler, +. **Total:** 43 species; 93.5 territories (370/40 ha). **Remarks:** The number of species observed dropped for the second consecutive year but remained above average. The number of territorial males also declined for the second consecutive year but remained close to the average. Of the three most abundant species, two (Red-eyed Vireo and Ovenbird) continued their slow declines of recent years, but Veery numbers remained relatively stable. Wood Thrush, which has been found in above average numbers in recent years, dropped from 8.5 territorial males last year to 3.0 this year. Black-throated Blue Warbler was a new species for this plot. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

7. CENTRAL HARDWOOD FOREST WITH SCATTERED PINE

BOSQUE CENTRAL DE MADERAS DURAS CON PINOS DISPERSOS

MARY E. D'IMPERIO

4000 Cathedral Ave. 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; 46 yr. **Size:** 26.3 ha. **Description of Plot:** See *Aud. Field Notes* 2:153-154 (1948). **Weather:** Mean start temp., 18.2°C (range 10-34°C). Rain during one visit. **Coverage:** 32.3 h; 22 visits (19 sunrise, 3 sunset); 1, 8, 10, 21, 24, 29 Apr; 3, 13, 15, 25, 30 May; 3, 4, 9, 11, 14, 19, 20, 25 Jun; 3, 9 Jul. **Census:** Red-eyed Vireo, 11.0 (17); Tufted Titmouse, 8.5 (13); Wood Thrush, 6.0 (9); Northern Flicker, 4.0 (6); Scarlet Tanager, 4.0; Acadian Flycatcher, 3.5 (5); Veery, 3.5; Red-bellied Woodpecker, 3.0 (5); Eastern Wood-Pewee, 3.0; White-breasted Nuthatch, 3.0; Ovenbird, 3.0; American Crow, 2.0; Northern Cardinal, 2.0; Rufous-sided Towhee, 2.0; American Robin, 1.5; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Carolina Chickadee, 1.0; Carolina Wren, 0.5; Hooded Warbler, 0.5; Mourning Dove, +; Eastern Phoebe, +. **Total:** 24 species; 66.0 territories (100/40 ha). **Visitors:** Yellow-billed Cuckoo, Blue Jay, Blue-gray Gnatcatcher, Gray Catbird, European Starling, Common Grackle, Brown-headed Cowbird, House Finch. **Remarks:** Carolina Wrens were almost absent, perhaps due

to the very cold winter; Tufted Titmice were also greatly reduced in number. Northern Flicker, Scarlet Tanager, and Acadian Flycatcher were somewhat higher in number. **Other Observers:** Bob Ford, Ann Feather.

8. MIXED UPLAND BROADLEAF FOREST

BOSQUE MIXTO DE HOJA ANCHA DE ALTURAS

SHIRLEY A. BRIGGS

7605 Honeywell Lane, Bethesda MD 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; 36 yr. **Size:** 14.2 ha. **Description of Plot:** See *Aud. Field Notes* 14:502-503 (1960). **Weather:** Mean start temp., 14.0°C (range 4-24°C). Mean temperatures: March, 12.5°C; April, 16.7°C; May, 17.2°C; June, 26.2°C (the hottest June on record); July, 27.7°C. March-May temperatures were near last year's figures. Total precipitation: March, 8.05 cm; April, 4.01 cm; May, 3.96 cm; June, 1.59 cm; July, 9.7 cm. This was 6.0 cm lower than last year for April-May and 5.5 cm higher than last year for June-July. Source: NOAA data from National Airport. **Coverage:** 120.0 h; 38 visits (38 sunrise); 30 Mar; 1, 4, 5, 8, 9, 14, 19, 20, 21, 23, 25, 27, 29 Apr; 2, 7, 9, 10, 11, 13, 19, 21, 24, 26, 29 May; 1, 6, 19, 24, 26, 28 Jun; 1, 3, 6 Jul. **Census:** Northern Cardinal, 30.0 (85); Gray Catbird, 29.0 (82); Tufted Titmouse, 21.0 (59); Carolina Chickadee, 18.0 (51); Veery, 17.0 (48); Red-bellied Woodpecker, 15.5 (44); Red-eyed Vireo, 15.5; Rufous-sided Towhee, 14.5 (41); Carolina Wren, 14.0 (39); Acadian Flycatcher, 10.0 (28); Northern Flicker, 9.0 (25); Downy Woodpecker, 7.0 (20); White-breasted Nuthatch, 7.0; Wood Thrush, 7.0; American Robin, 6.0 (17); Hairy Woodpecker, 5.0 (14); American Crow, 4.5 (13; 1N,9FL); Great Crested Flycatcher, 4.0 (11); Blue-gray Gnatcatcher, 4.0; American Redstart, 4.0; Ovenbird, 4.0; Blue Jay, 3.5 (10; 1N,4FL); European Starling, 3.0 (8); White-eyed Vireo, 3.0; Brown-headed Cowbird, 3.0; Common Yellowthroat, 2.5; Wood Duck, 2.0; Mourning Dove, 2.0; Ruby-throated Hummingbird, 2.0; Eastern Wood-Pewee, 2.0; Common Grackle, 2.0; House Finch, 2.0; House Sparrow, 1.5; Mallard, 1.0; Chimney Swift, 1.0; Pileated Woodpecker, 1.0 (1N); House Wren, 1.0; Louisiana Waterthrush, 1.0; Eastern Screech-Owl, 0.5 (1N); Eastern Phoebe, 0.5; Northern Mockingbird, 0.5; Song Sparrow, 0.5; Scarlet Tanager, +. **Total:** 43 species; 281.5 territories (793/40 ha). **Visitors:** Black-crowned Night-Heron, Sharp-shinned Hawk, Red-shouldered Hawk, Rock Dove, Fish Crow, Northern Oriole, American Goldfinch. **Remarks:** After a winter of record low temperatures and unusual icing, permanent residents might have been reduced from last year. Carolina Wrens had reached record high levels of 34.0 territories in 1992 and 1993. The drop to 14.0 territories this summer was expected. Other variations gave a slight edge to summer over permanent residents, but not out of normal range. The unusual heat in June seems to have bothered the observers more than the birds. Observations of white-tailed deer were higher than usual (20+ more records of tracks). A large raccoon and an adolescent fox were encountered, marking the normal wild woodland character of the area. **Other Observers:** Mary D'Imperio, Ann Feather.

9. MESIC HAMMOCK WITH NEEDLE PALM UNDERSTORY

MESIC HAMMOCK CON SOTOBOSQUE DE PALMAS

GARY SPRANDEL

*FL Game & Fresh Water Fish Comm., Bureau of Nongame Wildlife,
Route 7, Box 3055, Quincy FL 32351*

Site Number: FL0393023. **Location:** Florida; Gadsden Co.; Quincy; Joe Budd WMA-Zone G; 30°29'N, 84°32'W; Lake Talquin Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 10.5 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):49-50 (1994). **Weather:** Mean start temp., 17.8°C (range 9-26°C). From March-June there was a total of 74 cm of rain

compared to 35 cm last year. This meant there was standing water during all visits. Source: IFAS Experiment Station, Quincy. **Coverage:** 26.0 h; 14 visits (12 sunrise, 2 sunset); 16, 30 Mar; 6, 18, 27 Apr; 4, 7, 14, 22, 29 May; 5, 8, 19 Jun; 4 Jul. **Census:** Acadian Flycatcher, 5.5 (21); Red-eyed Vireo, 5.5; Carolina Wren, 4.5 (17); Red-bellied Woodpecker, 3.5 (13); Hooded Warbler, 3.5; Yellow-billed Cuckoo, 3.0 (11); Northern Cardinal, 3.0; White-eyed Vireo, 2.0; Northern Parula, 2.0; Pileated Woodpecker, 1.5; Kentucky Warbler, 1.5; Barred Owl, +. **Total:** 12 species; 35.5 territories (135/40 ha). **Visitors:** Wood Duck, Red-shouldered Hawk, Red-headed Woodpecker, Downy Woodpecker, Blue Jay, Carolina Chickadee. **Remarks:** The first Acadian Flycatcher and Hooded Warbler were heard on 6 April; the first Yellow-billed Cuckoo on 18 April. The Northern Parula and White-eyed Vireo territories were on the edge of the plot. The Red-eyed Vireo and Carolina Wren territories proved difficult to map.

10. WHITE ALDER–BLACK LOCUST–HACKBERRY RIPARIAN

BOSQUE RIVEREÑO DE ALISO BLANCO–ACACIA NEGRA–“HACKBERRY”

CAROL BRADFORD

1561 Bethany Road, Kendrick ID 83537-9705

Site Number: ID6591059. **Location:** Idaho; Idaho Co.; Lucille; China Creek; 45°33'N, 116°18'W; Lucille Quadrangle, USGS. **Continuity:** Established 1991; 4 yr. **Size:** 5.3 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):39–40 (1992). **Weather:** Mean start temp., 16.8°C (range 4–32°C). The census was done later in the season than previous years. It was extremely dry; creeks and rivers were lower than normal. **Coverage:** 14.8 h; 7 visits (3 sunrise, 3 sunset); 15, 16, 17, 18, 23, 24, 25 Jun. **Census:** Lazuli Bunting, 4.0 (30); Red-eyed Vireo, 3.0 (23); Yellow Warbler, 3.0 (1N); Western Wood-Pewee, 2.0; American Robin, 2.0 (4FL); Cedar Waxwing, 2.0; European Starling, 2.0; Mourning Dove, 1.0 (2FL); Black-billed Cuckoo, 1.0; Black-chinned Hummingbird, 1.0; Northern Flicker, 1.0 (3FL); Willow Flycatcher, 1.0; Black-capped Chickadee, 1.0; Warbling Vireo, 1.0; Yellow-breasted Chat, 1.0; Song Sparrow, 1.0 (1N); Brown-headed Cowbird, 1.0; Northern Oriole, 1.0 (1N); American Goldfinch, 1.0. **Total:** 19 species; 30.0 territories (226/40 ha). **Visitors:** Golden Eagle, Common Nighthawk, Vaux's Swift, Cliff Swallow, Black-billed Magpie. **Remarks:** The Black-billed Magpies were robbing nests.

11. MATURE DECIDUOUS FLOODPLAIN FOREST

BOSQUE DECIDUO MADURO INUNDABLE

DICK GAUTHEY

6603 Reynard Dr., Springfield VA 22152

Location: Maryland; Montgomery Co.; Glen Echo; Cabin John Island; 38°58'N, 77°8'W; Falls Church Quadrangle, USGS. **Continuity:** Established 1946; 43 yr. **Size:** 7.6 ha. **Description of Plot:** See *Aud. Field Notes* 1:212–213 (1947) and *J. Field Ornithol.* 65(Suppl.):50–51 (1994). **Weather:** Mean start temp., 14.1°C (range 7–24°C). **Coverage:** 43.3 h; 14 visits (7 sunrise); 14, 18, 21, 23, 24, 25, 27, 30 Apr; 9, 13, 15, 21, 24, 25 May. **Census:** Red-eyed Vireo, 7.0 (37); Carolina Chickadee, 6.0 (32; 1N); Tufted Titmouse, 6.0 (1N); Acadian Flycatcher, 5.0 (26); Carolina Wren, 5.0 (1FL); Northern Cardinal, 5.0; European Starling, 4.0 (21; 4N); Northern Parula, 4.0; Red-bellied Woodpecker, 3.0 (16; 2N); Yellow-throated Warbler, 3.0; Wood Duck, 2.0; Eastern Wood-Pewee, 2.0; Blue-gray Gnatcatcher, 2.0 (2N); Barred Owl, 1.0; Downy Woodpecker, 1.0 (1N); Pileated Woodpecker, 1.0; Great Crested Flycatcher, 1.0; American Crow, 1.0; White-breasted Nuthatch, 1.0 (1N); Brown Creeper, 1.0 (1N); American Robin, 1.0; Prothonotary Warbler, 1.0; Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Northern Oriole, 1.0. **Total:** 25 species; 66.0 territories (347/40 ha). **Visitors:** Canada Goose, Mourning Dove, Belted Kingfisher, Hairy Woodpecker, Northern Flicker, Common Grackle, House Finch, American Goldfinch. **Remarks:** High water prevented access prior to 14 April and during the first week in May. The American Robin territory was the first since 1951. Brown

Creepers nested (unsuccessfully) for the only time except for the period 1974–84. One Downy Woodpecker territory was the lowest number ever, but may have been due to a failure to detect others. Northern Oriole was recorded for the fourth time. Like most infrequent breeders, it used the Potomac River edge of the plot. **Other Observers:** Dick Homan, Letty Limbach.

12. OLD-GROWTH WOODS AND SWAMP FOREST

BOSQUES VIEJOS Y BOSQUES PANTANOSOS

LEAH R. KNAPP, DVM

815 Jones St., Marshall MI 49068

Location: Michigan; Calhoun Co.; Fredonia Township; Jenney Woods Preserve; 42°14'N, 85°3'W; **Continuity:** Established 1989; 6 yr. **Size:** 28.3 ha. **Description of Plot:** See *J. Field Ornithol.* 61(Suppl.):36 (1990) and 63(Suppl.):45 (1992). There has been a gradual change in the understory and ground cover plants. Ferns (sensitive, bracken, royal, and others), which once were relatively uncommon, were very abundant this year. Nettles were greatly decreased in number, replaced by spotted jewelweed and Jack-in-the-pulpit in the swampy areas. Mayapple patches were much more extensive plus there was more American currant. There was very little false Solomon's seal which was once abundant. **Weather:** Mean start temp., 19.9°C (range 16–27°C). All of May and the first week of June were essentially drought periods (only three minor rainstorms). After that, precipitation was normal. The previous winter was very severe with lots of snow and intense cold for long periods. **Coverage:** 26.3 h; 8 visits (3 sunrise, 2 sunset); 19, 26, 28 May; 2, 4, 10, 12, 18 Jun. **Census:** Song Sparrow, 24.0 (34); Common Yellowthroat, 12.0 (17); Northern Cardinal, 11.0 (16; 2N,4FL); Tufted Titmouse, 10.0 (14; 5FL); Yellow Warbler, 10.0; Gray Catbird, 9.0 (13); Eastern Wood-Pewee, 7.0 (10); Veery, 7.0; Red-eyed Vireo, 7.0 (1N); American Robin, 6.0 (8; 3FL); Rose-breasted Grosbeak, 6.0; American Goldfinch, 6.0; Cedar Waxwing, 5.0 (7); Brown-headed Cowbird, 5.0; Blue Jay, 4.0 (6); Black-capped Chickadee, 4.0 (2N,3FL); Red-winged Blackbird, 4.0; Wild Turkey, 3.0 (4); Great Crested Flycatcher, 3.0; Blue-gray Gnatcatcher, 3.0 (2N); Blue-winged Warbler, 3.0; Ovenbird, 3.0; Scarlet Tanager, 3.0; Indigo Bunting, 3.0 (1N); Common Grackle, 3.0 (1N,6FL); Turkey Vulture, 2.0; Ring-necked Pheasant, 2.0; Ruby-throated Hummingbird, 2.0 (1N); Red-bellied Woodpecker, 2.0 (2N,4FL); Downy Woodpecker, 2.0 (1N,3FL); Acadian Flycatcher, 2.0; Willow Flycatcher, 2.0; American Crow, 2.0 (1N,2FL); White-breasted Nuthatch, 2.0 (3FL); House Wren, 2.0; Wood Thrush, 2.0; Yellow-throated Vireo, 2.0; Red-tailed Hawk, 1.0; Northern Bobwhite, 1.0; Great Horned Owl, 1.0; Hairy Woodpecker, 1.0 (1N); Northern Flicker, 1.0; Eastern Kingbird, 1.0; Eastern Bluebird, 1.0; American Redstart, 1.0; Chipping Sparrow, 1.0; Northern Oriole, 1.0. **Total:** 47 species; 195.0 territories (276/40 ha). **Remarks:** The plot is relatively undisturbed, with very few human visitors, and I have never seen dogs or cats inside the preserve. The hayfield next to the W side of the preserve was mowed in mid-June; it must have disturbed some edge species. Because of the drought conditions, the ground (especially in swamp areas during May) was as dry as I would expect it to be in late June and early July. The groundwater-fed spring and stream were very low with low water volume. By mid-June, biting fly numbers were unusually high and mosquito numbers were abnormally low.

13. BOTTOMLANDS HARDWOOD FOREST

BOSQUE DE MADERAS DURAS INUNDABLE

RICHIE SWANSON

178 Latsch Island, Box 1265, Winona MN 55987

Site Number: MN1793105. **Location:** Minnesota; Winona Co.; Rollingstone Township; Crooked Slough Woods; 44°6'N, 91°44'W; Winona West Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 12.2 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):54–55 (1994).

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, 340/ha; total basal area 40 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m²/ha, relative dominance (%), and frequency (%): silver maple, 178, 52, 18.8, 47, 83; box elder, 63, 19, 5.1, 13, 83; standing dead, 43, 13, 3.6, 9, 100; eastern cottonwood, 20, 6, 9.0, 22, 50; green ash, 16, 5, 1.4, 3, 33; black willow, 12, 3, 2.4, 6, 33; hackberry, 8, 2, 0.1, 0.1, 33. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6-15.2 cm) 47, 14, 0.4, 1; B (15.2-22.9 cm) 75, 22, 2.1, 5; C (22.9-38.1 cm) 95, 28, 7.1, 17; D (38.1-53.3 cm) 71, 21, 11.9, 30; E (53.3-68.6 cm) 12, 3, 3.4, 8; F(68.6-83.8 cm) 16, 4, 7.2, 17; G(83.8-101.6 cm) 12, 3, 7.8, 19; H(> 101.6 cm) 12, 3, 0.7, 1. Shrub stems/ha, 2964, dominated by box elder. Ground cover, 100%, dominated by stinging nettle. Canopy cover, 80%; average canopy height, 27 m (range 19-36 m). **Topography and Elevation:** Minimum elevation 200 m, maximum 210 m. **Weather:** Mean start temp., 16.1°C (range 6-22°C). Mean temperatures (normal in parentheses): May, 15.7°C (15.2°C); June, 21.9°C (19.1°C); July, 21.3°C (23.0°C). Precipitation (normal in parentheses): May, 3.7 cm (8.3 cm); June, 6.9 cm (9.8 cm); July, 15.7 cm (9.5 cm). Mississippi River level on each visit day: 198.1 m, 198.1 m, 198.2 m, 198.2 m, 198.2 m, 198.2 m, 198.1 m. The normal mean river level is 198.1 m above sea level. Sources: U.S. Weather Station, La Crosse, WI and U.S. Army Corps of Engineers, Mississippi River Dam 5A, Fountain City, WI. **Coverage:** 35.8 h; 8 visits (8 sunrise); 27 May; 3, 13, 18, 26, 29 Jun; 1, 9 Jul. **Census:** Red-eyed Vireo, 9.0 (30); American Redstart, 9.0; Northern Oriole, 9.0; American Robin, 8.5 (28); Blue-gray Gnatcatcher, 8.0 (26); Brown-headed Cowbird, 8.0; Great Crested Flycatcher, 7.0 (23); House Wren, 6.0 (20); Song Sparrow, 6.0; Northern Cardinal, 4.5 (15); Eastern Wood-Pewee, 4.0 (13); Rose-breasted Grosbeak, 4.0; Yellow-bellied Sapsucker, 3.0 (10); Downy Woodpecker, 3.0; Blue Jay, 3.0; Brown Creeper, 3.0; Gray Catbird, 3.0; Wood Duck, 2.0; Red-bellied Woodpecker, 2.0; Black-capped Chickadee, 2.0; White-breasted Nuthatch, 2.0; Common Yellowthroat, 1.5; Mourning Dove, 1.0; Barred Owl, 1.0; Ruby-throated Hummingbird, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Cedar Waxwing, 1.0; Warbling Vireo, 1.0; Cerulean Warbler, 1.0. **Total:** 30 species; 115.5 territories (379/40 ha). **Visitors:** Great Horned Owl, Northern Flicker, American Crow, Brown Thrasher, Yellow-throated Vireo, Nashville Warbler, Magnolia Warbler, Indigo Bunting, Red-winged Blackbird, Common Grackle, American Goldfinch. **Remarks:** Three to four Cerulean Warblers nested 150 m N of the plot. Common Yellowthroats dropped from 5.5 territories in 1993 to 1.5 this year. One yellowthroat on W border in 1993 was absent this year. Perhaps yellowthroats used the plot more in 1993 because a cattail-willow marsh < 500 m N of the plot and local marshes in general underwent much greater flooding in 1993. **Acknowledgments:** Thanks to Bob Drieslein and Winona office of Upper Mississippi River National Fish and Wildlife Refuge for access and information.

14. UPLAND SECOND-GROWTH OAK-HICKORY FOREST

BOSQUE SECUNDARIO ROBLE-NOGAL DE ALTURAS

HAL MOORE

1 Lakeside Dr., Vicksburg MS 39180

Location: Mississippi; Warren Co.; Vicksburg; Lake Park Area; 32°14'N, 90°49'W; Big Black Quadrangle, USGS. **Continuity:** Established 1989; 6 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61(Suppl.):8-9 (1990). **Weather:** Mean start temp., 18.3°C (range 13-22°C). Temperatures were slightly warmer than last year. Most visits were on cloudy days with little or no wind. **Coverage:** 24.4 h; 12 visits (12 sunrise); 28, 29 Apr; 1, 4, 8, 11, 12, 15, 21, 26, 28 May; 3 Jun. **Census:** Red-eyed Vireo, 16.0 (64); Acadian Flycatcher, 14.0 (56); Northern Cardinal, 12.0 (48); White-eyed Vireo, 11.0 (44); Tufted Titmouse, 10.0 (40); Carolina Wren, 8.0 (32); Red-bellied Woodpecker, 7.0 (28); Hooded Warbler, 7.0; Summer Tanager, 5.0 (20); Yellow-billed Cuckoo, 4.0 (16); Carolina Chickadee, 4.0; Yellow-throated Vireo, 4.0; Kentucky Warbler, 4.0; Swainson's Warbler, 3.0 (12); Orchard Oriole, 3.0; Wood Thrush, 2.0; Red-

shouldered Hawk, 1.0; Broad-winged Hawk, 1.0; Wild Turkey, 1.0; Barred Owl, 1.0; Downy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; American Crow, 1.0; Fish Crow, 1.0; White-breasted Nuthatch, 1.0; Brown Thrasher, 1.0; Northern Parula, 1.0; American Redstart, 1.0; Prothonotary Warbler, 1.0; Worm-eating Warbler, 1.0; Louisiana Waterthrush, 1.0; Yellow-breasted Chat, 1.0; Rufous-sided Towhee, 1.0; Brown-headed Cowbird, 1.0. **Total:** 37 species; 135.0 territories (540/40 ha).

15. FLOODPLAIN FOREST

BOSQUE INUNDABLE

LYNNE ISAACSON, MARTHA T. VINSON & HELMUT MUELLER

Department of Biology, Univ. of North Carolina, Chapel Hill NC 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; 18 yr. **Size:** 12.6 ha. **Description of Plot:** See *Am. Birds* 32:63 (1978) and *J. Field Ornithol.* 63(Suppl.):47 (1992). **Weather:** All visits were done on mornings with seasonally normal temperatures, no rain, and very little or no wind. **Coverage:** 33.9 h; 13 visits (10 sunrise); 28 Apr; 2, 6, 11, 13, 18, 21, 25, 30 May; 2, 10, 12, 15 Jun. Maximum number of observers/visit, 3. **Census:** Red-eyed Vireo, 19.0 (60); Carolina Wren, 10.0 (32; FL); Acadian Flycatcher, 9.0 (29; 1N); Tufted Titmouse, 8.0 (25); Blue-gray Gnatcatcher, 8.0; Hooded Warbler, 8.0; Northern Cardinal, 7.0 (22); Carolina Chickadee, 5.0 (16); Wood Thrush, 4.5 (14); Red-bellied Woodpecker, 3.0 (10); Downy Woodpecker, 3.0 (1N); Kentucky Warbler, 3.0 (FL); Ovenbird, 2.5 (FL); Yellow-billed Cuckoo, 2.0; Red-headed Woodpecker, 2.0 (1N); White-breasted Nuthatch, 2.0; Scarlet Tanager, 2.0; Yellow-throated Vireo, 1.5; Hairy Woodpecker, 1.0; Great Crested Flycatcher, 1.0 (1N); Northern Parula, 1.0; Summer Tanager, 1.0; Indigo Bunting, 1.0; Wood Duck, +; Red-tailed Hawk, +; American Woodcock, +; Barred Owl, +; Pileated Woodpecker, + (1N); Eastern Wood-Pewee, +; Blue Jay, +; Common Grackle, +; Brown-headed Cowbird, +. **Total:** 32 species; 104.5 territories (332/40 ha). **Visitors:** Northern Bobwhite, Eastern Phoebe, Purple Martin, White-eyed Vireo, American Redstart, Common Yellowthroat, Rufous-sided Towhee, Chipping Sparrow, American Goldfinch. **Other Observers:** B. King, S. Kulp, W. Lancaster, R.H. Wiley.

16. MIXED DECIDUOUS FOREST

BOSQUE MIXTO DECIDUO

MARTHA T. VINSON, LYNNE ISAACSON & HELMUT MUELLER

Department of Biology, Univ. of North Carolina, Chapel Hill NC 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; 19 yr. **Size:** 12.6 ha. **Description of Plot:** See *Am. Birds* 31:41 (1977). **Weather:** All visits were done on mornings with seasonally normal temperatures, no rain, and very little or no wind. **Coverage:** 26.4 h; 11 visits (10 sunrise); 28 Apr; 2, 5, 13, 23, 25, 28 May; 2, 12, 13 Jun. Maximum number of observers/visit, 3. **Census:** Red-eyed Vireo, 10.0 (32); Tufted Titmouse, 7.0 (22; FL); Ovenbird, 7.0; Carolina Chickadee, 6.5 (21; FL); Blue-gray Gnatcatcher, 6.0 (19); Blue Jay, 4.0 (13); Carolina Wren, 4.0 (FL); Red-bellied Woodpecker, 3.5 (11); Hooded Warbler, 3.5; Wood Thrush, 3.0 (10); Yellow-billed Cuckoo, 2.5; Downy Woodpecker, 2.5; Pine Warbler, 2.5; Scarlet Tanager, 2.5; Hairy Woodpecker, 2.0; Summer Tanager, 2.0; Northern Parula, 1.0; Kentucky Warbler, 0.5; Red-shouldered Hawk, +; Red-tailed Hawk, +; Pileated Woodpecker, +; Brown-headed Cowbird, +. **Total:** 22 species; 70.0 territories (222/40 ha). **Visitors:** Red-headed Woodpecker, Northern Flicker, Eastern Wood-Pewee, Purple Martin, American Redstart, Louisiana Waterthrush, Red-winged Blackbird, American Goldfinch. **Other Observers:** B. King, W. Lancaster, J. Poston, R.H. Wiley.

17. YOUNG WHITE ASH-RED MAPLE FOREST ON LAKE SHORE

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

GEORGE R. MAXWELL

RD1, Box 179C, Red Creek NY 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; 9 yr. **Size:** 16.2 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):49-50 (1993). **Weather:** Mean start temp., 19.0°C (range 13-26°C). The mean start temp. was about 4°C higher than last year. **Coverage:** 10.0 h; 10 visits (8 sunrise, 2 sunset); 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 Jun. **Census:** American Robin, 7.0 (17); Yellow Warbler, 7.0; Black-capped Chickadee, 5.0 (12); Wood Thrush, 5.0; House Wren, 4.0 (10); Common Yellowthroat, 4.0; Northern Cardinal, 4.0; Song Sparrow, 4.0; Red-winged Blackbird, 4.0; Gray Catbird, 3.0 (7); American Redstart, 3.0; Red-eyed Vireo, 2.0; Rose-breasted Grosbeak, 2.0; Northern Oriole, 2.0; House Finch, 2.0; House Sparrow, 2.0; Mourning Dove, 1.0; Ruby-throated Hummingbird, 1.0; Northern Flicker, 1.0; Eastern Wood-Pewee, 1.0; Eastern Phoebe, 1.0; Great Crested Flycatcher, 1.0; Tree Swallow, 1.0; Veery, 1.0; Cedar Waxwing, 1.0; European Starling, 1.0; Yellow-throated Vireo, 1.0; Warbling Vireo, 1.0; Ovenbird, 1.0; Hooded Warbler, 1.0; Scarlet Tanager, 1.0; Rufous-sided Towhee, 1.0; Common Grackle, 1.0; American Goldfinch, 1.0. **Total:** 34 species; 78.0 territories (193/40 ha). **Visitor:** Purple Martin.

18. APPALACHIAN OAK FOREST

BOSQUE DE ROBLE DE LOS APALACHES

DAVE MINNEY

The Nature Conservancy, Ohio, 1504 West First Ave., Columbus OH 43212

Site Number: OH1593017. **Location:** Ohio; Adams Co.; Lynx; Rieveschl Plot; 38°42'N, 83°26'W; Concord Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):58-59 (1994). There appears to have been a significant reduction in canopy cover due to the extreme winter weather (heavy snowfall with eight consecutive days of low temperatures ranging from -21°C to -34°C during January and an ice storm in March). Virginia pine, a co-dominant canopy species, was most effected by mortality, treefall, and branch loss. Limb breakage also occurred in other canopy species. **Weather:** Mean start temp., 19.0°C (range 16-22°C). Mean temperature for May was 15°C (3°C below normal); precipitation was 6.7 cm (4.2 cm below average). Mean temperature for June was 24°C (2°C above normal); precipitation was 8.0 cm (3.6 cm below average). **Source:** OH Ag. Statistics Service, weekly summary for Ripley, OH. **Coverage:** 20.0 h; 8 visits (8 sunrise); 24 May; 8, 14, 20, 23, 28 Jun; 1, 8 Jul. **Census:** Ovenbird, 11.5 (46); Red-eyed Vireo, 9.5 (38); Eastern Wood-Pewee, 9.0 (36); Worm-eating Warbler, 6.5 (26); Hooded Warbler, 6.0 (24; IN); Wood Thrush, 4.5 (18); Brown-headed Cowbird, 3.0 (12); Summer Tanager, 2.5; Red-bellied Woodpecker, 2.0 (1N,3FL); White-breasted Nuthatch, 2.0; Scarlet Tanager, 2.0; Yellow-billed Cuckoo, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Acadian Flycatcher, 1.0; Blue Jay, 1.0; Carolina Chickadee, 1.0; Black-and-white Warbler, 1.0; Pileated Woodpecker, 0.5; Black-billed Cuckoo, +; Tufted Titmouse, +. **Total:** 21 species; 66.0 territories (264/40 ha). **Visitors:** Wild Turkey, Cedar Waxwing, Yellow-throated Vireo, Cerulean Warbler, American Redstart, Common Grackle. **Remarks:** The increased number of Hooded Warbler territories (3.0 in 1993 to 6.0 this year) may have been due in part to increased cover of greenbrier, a result of the reduced canopy. The absence of Carolina Wrens was probably due directly to the extreme winter weather. Carolina Wrens were much reduced throughout SE Ohio. **Acknowledgments:** The Cincinnati Museum of Natural History and the Ohio Chapter of The Nature Conservancy.

19. MATURE BROADLEAF FOREST

BOSQUE DE HOJA ANCHA MADURA

CHARLES W. SAUNDERS*, STEVE PELIKAN & DAVID STYER

*5561 Carlsbad Court, Fairfield OH 45014

Site Number: OHI591043. **Location:** Ohio; Hamilton Co.; Harrison; Miami Whitewater Forest; 39°15'N, 84°46'W; Hooven Quadrangle, USGS. **Continuity:** Established 1991; 4 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):52 (1992) and 65(Suppl.):59 (1994). **Weather:** Mean start temp., 16.4°C (range 6–23°C). **Coverage:** 24.7 h; 10 visits (10 sunrise); 28, 30 May; 4, 5, 11, 12, 18, 19, 25 Jun; 2 Jul. **Census:** Wood Thrush, 15.5 (39; 4FL); Red-eyed Vireo, 8.5 (21); Eastern Wood-Pewee, 6.0 (15); Acadian Flycatcher, 6.0; Tufted Titmouse, 5.5 (14; 4FL); White-breasted Nuthatch, 5.0 (13); Scarlet Tanager, 5.0; Rose-breasted Grosbeak, 5.0; Carolina Chickadee, 4.0 (10); Northern Cardinal, 4.0 (1N,4FL); Brown-headed Cowbird, 4.0 (8FL); American Robin, 3.5 (9; 1N,2FL); Blue Jay, 3.0; Hooded Warbler, 3.0 (8); Red-bellied Woodpecker, 2.5 (1N); Downy Woodpecker, 2.0; Great Crested Flycatcher, 1.5; Ovenbird, 1.5; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0 (1N,1FL); Carolina Wren, 1.0 (2FL); Yellow-throated Vireo, 1.0; Yellow-billed Cuckoo, 0.5; Northern Flicker, 0.5; Louisiana Waterthrush, 0.5. **Total:** 25 species; 91.0 territories (228/40 ha). **Visitors:** Great Horned Owl, Ruby-throated Hummingbird, Blue-gray Gnatcatcher, Gray Catbird, Summer Tanager, Indigo Bunting, Common Grackle. **Remarks:** We observed a decline in territorial males of our year-round resident birds, perhaps due to the unusually cold winter (see WBPS #9). We analyzed this decline statistically, limiting attention to those species with one or more territory in each of our three previous BBCs. We considered species year-round residents if they were also found on either of our two WBPSs. From this analysis, 9 of the 11 year-round residents showed a decline in territorial males from last year to this year, whereas only 3 of 10 non-resident species showed such a decline (significant at $p = 0.018$ by adjusted G test of association). The magnitude of the decline was substantial: Red-bellied Woodpeckers fell from 6.5 territories last year to 2.5 this year, total woodpeckers declined from 19.0 to 7.0, and total year-round residents declined from 49.0 to 29.0. Five Brown-headed Cowbird fledglings were raised by Wood Thrushes. **Other Observer:** Mark Bauer. **Acknowledgments:** We thank John Klein and the Hamilton County Park District for the use of the land.

20. MIXED HARDWOOD SWAMP

BOSQUE PANTANOSO MIXTO DE MADERAS DURAS

DAVID HOCHADEL

2150 Tibbets-Wick Road, Girard OH 44420-1227

Location: Ohio; Trumbull Co.; North Bloomfield; Mosquito Game Refuge; 41°26'N, 80°46'W; Bristolville Quadrangle, USGS. **Continuity:** Established 1989; 3 yr. **Size:** 12.1 ha. **Description of Plot:** See *J. Field Ornithol.* 61(Suppl.):78–79 (1990). **Weather:** Mean start temp., 12.5°C (range 10–15°C). Temperatures were near normal. Conditions were favorable during all visits. **Coverage:** 25.0 h; 8 visits (8 sunrise); 24, 25, 28 May; 3, 5, 7, 10, 26 Jun. **Census:** Prothonotary Warbler, 5.5 (18); Red-eyed Vireo, 4.0 (13); Yellow Warbler, 4.0; American Redstart, 4.0; Tufted Titmouse, 3.0 (10); Blue-gray Gnatcatcher, 3.0; Northern Cardinal, 3.0; Song Sparrow, 3.0; Cerulean Warbler, 2.5; Red-winged Blackbird, 2.5; Great Crested Flycatcher, 2.0; American Robin, 2.0; Northern Oriole, 2.0; Yellow-billed Cuckoo, 1.5; Eastern Wood-Pewee, 1.5; Yellow-throated Vireo, 1.5; Canada Goose, 1.0; Wood Duck, 1.0; Red-bellied Woodpecker, 1.0; Downy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Acadian Flycatcher, 1.0; Eastern Phoebe, 1.0; Tree Swallow, 1.0; Black-capped Chickadee, 1.0; White-breasted Nuthatch, 1.0; Brown Creeper, 1.0; Eastern Bluebird, 1.0; Gray Catbird, 1.0; European Starling, 1.0; Common Yellowthroat, 1.0; Rose-breasted Grosbeak, 1.0; Brown-headed Cowbird, 1.0; Least Flycatcher, 0.5. **Total:** 34 species; 62.5 territories (207/40 ha). **Visitors:** Double-crested Cormorant, Red-tailed Hawk, Mourning Dove, Ruby-throated Hummingbird, Hairy Woodpecker, Northern Flicker, Blue Jay, Veery, Cedar Waxwing, Warbling Vireo, Scarlet Tanager, Common Grackle, American Goldfinch. **Remarks:** House Wrens, which were abundant in previous censuses

(18/40 ha in 1991), were absent this year. The condition of the plot has not changed since it was established. **Acknowledgments:** Thanks to the Ohio Department of Natural Resources, Division of Wildlife, for permission to conduct the census.

21. RIPARIAN DECIDUOUS FOREST

BOSQUE RIVEREÑO DECIDUO

ELLIOT J. TRAMER

Dept. of Biology, The University of Toledo, Toledo OH 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; 6 yr. **Size:** 18.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61(Suppl.):43 (1990) and 65(Suppl.):59–60 (1994). A new landowner cleared saplings and shrubs from about 1.3 ha of floodplain forest during the preceding winter. However, spring flooding destroyed recreational items he placed there and now sprouts are reclaiming the floodplain. **Weather:** Mean start temp., 15.4°C (range 5–24°C). May was dry and relatively cool. June was also dry, with a severe heat wave at mid-month. July temperatures and rainfall were near average. No severe storms affected the census area. **Source:** U.S. Weather Bureau, Toledo Express Airport. **Coverage:** 19.9 h; 9 visits (6 sunrise); 8, 28 May; 4, 11, 27, Jun; 2, 6, 10, 16 Jul. **Census:** American Robin, 20.0 (44; 12N,FL); Gray Catbird, 11.0 (24); Song Sparrow, 11.0 (4FL); Common Grackle, 8.5 (19; 1N,FL); House Wren, 8.0 (18; 3N); Northern Oriole, 8.0 (5N,4FL); Northern Cardinal, 7.0 (16; 1N,2FL); Warbling Vireo, 6.0 (13); Eastern Wood-Pewee, 4.0 (9); Tufted Titmouse, 4.0 (4FL); Wood Thrush, 4.0; Red-eyed Vireo, 4.0 (1N); Indigo Bunting, 4.0; Red-winged Blackbird, 4.0; Brown-headed Cowbird, 4.0; Mourning Dove, 3.5 (8; 1N,2FL); Downy Woodpecker, 3.0 (7; 1FL); Blue Jay, 3.0 (1N); White-breasted Nuthatch, 3.0; Carolina Wren, 3.0 (1N,FL); American Redstart, 3.0; European Starling, 2.5 (1N,4FL); Northern Flicker, 2.0 (2N); Cedar Waxwing, 2.0; Yellow Warbler, 2.0; Rose-breasted Grosbeak, 2.0 (3FL); American Goldfinch, 2.0; Wood Duck, 1.0 (6FL); Ruby-throated Hummingbird, 1.0; Red-bellied Woodpecker, 1.0; Hairy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Tree Swallow, 1.0 (1N,FL); Black-capped Chickadee, 1.0 (1N,FL); Blue-gray Gnatcatcher, 1.0; Yellow-throated Vireo, 1.0; Orchard Oriole, 1.0. **Total:** 37 species; 148.5 territories (330/40 ha). **Visitors:** Yellow-billed Cuckoo, Great Horned Owl, American Crow, Common Yellowthroat, Chipping Sparrow, House Finch. **Remarks:** Northern Orioles increased from 5 to 8 pairs since last year. Otherwise, avifaunal changes were slight. Migrants continue to hold their own.

22. RED OAK–SUGAR MAPLE FOREST

BOSQUE DE ROBLE ROJO–ARCE DULCE

GRAEME GIBSON

Long Point Bird Observatory, P.O. Box 160, Port Rowan ON N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°34'N, 80°15'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** Established 1973; 4 yr. **Size:** 11.0 ha. **Description of Plot:** See *Am. Birds* 27:967 (1973) and *J. Field Ornithol.* 63(Suppl.):57–58 (1992). Canopy cover measured in 1992 was 44.5%, based on 10 vegetation profile readings above 2 m at each of 20 sampling points. The ground cover estimate was 77.5%, based on readings below 1 m. Vegetation profile estimates in 1992, based on 10 line intersect readings at each of 20 sampling points were: <0.5 m, 72.5%; 0.5–1 m, 23%; 1–2 m, 3%; 2–5 m, 45%, >5 m, 43.5%. The number of shrub stems/ha in 1994, based on counts in 10, 1x10 m quadrats was 64,900 compared with 8400 in 1991. Size class distribution: <0.5 m, 63,300; 0.5–1 m, 1300; 1–2 m, 300; >2 m, 0 (compared with 8300; 100; 0; 0 in 1991). Shrub species in order of total abundance: sugar maple 52,600 stems <0.5 m, 0 stems 0.5–1 m, 0 stems 1–2 m, 0 stems >2 m; wild red raspberry 3400, 300, 0, 0; red oak 2900, 0, 0, 0; red maple 2100, 0, 0, 0; common blackberry 500, 700, 100, 0; black cherry,

ironwood 400, 200, 0, 0; ash 500, 0, 0, 0; water-willow 3, 0, 2, 0; sassafras 100, 0, 0, 0; white pine 0, 100, 0, 0. Changes from 1991 include the following increases in the numbers of shrub stems/ha: sugar maple (from 6300 in 1991 to 52,600 in 1994); wild red raspberry (200 to 3700); red oak (0, 2900); and red maple (1000, 2100). Changes of 5% or more between 1991 and 1994 in the mean estimated cover for ground layer species, based on 10, 1x1 m quadrats, include a 16% reduction in the amount of Kentucky bluegrass and a 7% increase in the amount of milkweed. **Weather:** Mean start temp., 18.5°C (range 9–30°C). Mainly clear and warm with variable winds. **Coverage:** 40.8 h; 12 visits (8 sunrise); 29, 31 May; 1, 3, 7, 15, 17, 18, 19, 20, 21, 23 Jun. **Census:** Tree Swallow, 18.5 (67; 15N); House Wren, 14.0 (51); Eastern Wood-Pewee, 12.0 (44); Northern Oriole, 9.0 (33; 1N); Red-winged Blackbird, 7.0 (25); Red-eyed Vireo, 6.0 (22); Common Yellowthroat, 5.0 (18); Yellow Warbler, 4.5 (16); Song Sparrow, 4.5; European Starling, 3.5 (13; 3N); Great Crested Flycatcher, 3.0 (11); Eastern Kingbird, 3.0; Red-bellied Woodpecker, 2.0; Downy Woodpecker, 2.0 (2N); Warbling Vireo, 2.0; Indigo Bunting, 2.0; Brown-headed Cowbird, 2.0; Yellow-billed Cuckoo, 1.0; Northern Flicker, 1.0 (1N); Blue Jay, 1.0; Black-capped Chickadee, 1.0; Common Grackle, 1.0; Red-tailed Hawk, 0.5; Red-headed Woodpecker, 0.5 (1N); Blue-gray Gnatcatcher, 0.5; American Redstart, 0.5. **Total:** 26 species; 107.0 territories (389/40 ha). **Visitors:** Canada Goose, White-breasted Nuthatch, Eastern Bluebird, Veery, American Robin, Gray Catbird, Cedar Waxwing, Ovenbird, Northern Cardinal, Field Sparrow, Swamp Sparrow, 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 Observer:** Nancy Elliot. **Acknowledgments:** Thanks to Felix Jachmann for helping to stake the plot, and to Jon McCracken for proofing the data. I also thank Jane Bowles and Michael Bradstreet for measuring vegetation parameters.

23. RED OAK–SUGAR MAPLE SAVANNAH

SAVANA DE ROBLE ROJO–ARCE DULCE

GRAEME GIBSON

Long Point Bird Observatory, P.O. Box 160, Port Rowan ON N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°34'N, 80°15'W; Big Rice Bay Quadrangle, DEMR. **Continuity:** Established 1979; 3 yr. **Size:** 10.5 ha. **Description of Plot:** See *Am. Birds* 34:51 (1980) and *J. Field Ornithol.* 63(Suppl.):58–59 (1992). Canopy cover measured in 1992 was 39%, based on 10 vegetation profile readings above 2 m at each of 20 sampling points. The ground cover estimate was 93%, based on readings below 1 m. Vegetation profile estimates in 1992, based on 10 line intersect readings at each of 20 sampling points were: <0.5 m, 86%; 0.5–1 m, 52.5%; 1–2 m, 6.5%; 2–5 m, 11%, >5 m, 35.5%. The number of shrub stems/ha in 1994, based on counts in 10, 1x10 m quadrats was 62,900 compared with 14,400 in 1991. Size class distribution: <0.5 m, 29,600; 0.5–1 m, 28,700; 1–2 m, 4600; >2 m, 0 (compared with 4100; 6900; 3400; 0 in 1991). Shrub species in order of total abundance: wild red raspberry 6200 stems <0.5 m, 17,800 stems 0.5–1 m, 700 stems 1–2 m, 0 stems >2 m; water-willow 900, 9300, 3500, 0; red oak 13,100, 0, 0, 0; black cherry 5900, 0, 0, 0; ironwood 1400, 0, 0, 0; buttonbush 0, 1100, 100, 0; sugar maple 1200, 0, 0, 0; sweetbrier 300, 500, 300, 0; basswood 200, 0, 0, 0; red maple 200, 0, 0, 0; choke cherry 100, 0, 0, 0; ash 100, 0, 0, 0. Changes from 1991 include the following increases in the numbers of shrub stems/ha: wild red raspberry (from 800 in 1991 to 24,700 in 1994); red oak (100 to 13,100); black cherry (900, 5900); and sugar maple (400, 1200). Changes of 5% or more between 1991 and 1994 in the mean estimated cover for ground layer species, based on 10, 1x1 m quadrats, include a 6% reduction in the amount of milkweed and an 8% reduction in the amount of sedge. **Weather:** Mean start temp., 14.7°C (range 9–23°C). Mainly clear and warm with variable winds. **Coverage:** 40.1 h; 11 visits (9 sunrise); 28, 30 May; 1, 5, 7, 8, 16, 17, 18, 19, 20 Jun. **Census:** Eastern Wood-Pewee, 13.0 (50); Red-winged Blackbird, 12.5 (48; 1N); House Wren, 12.0 (46; 1N); Song Sparrow, 8.0 (30; 1N); Common Yellowthroat, 7.5 (29); Tree Swallow, 7.0 (27; 5N); Yellow Warbler, 6.0 (23); Northern Oriole, 6.0; Warbling Vireo, 3.0 (11); Great Crested Flycatcher, 2.0; Eastern

Kingbird, 2.0 (1N); European Starling, 2.0 (15FL); Common Grackle, 2.0; Brown-headed Cowbird, 2.0; American Robin, 1.5; Yellow-billed Cuckoo, 1.0; Red-headed Woodpecker, 1.0 (1N); Downy Woodpecker, 1.0 (1N); Northern Flicker, 1.0; Blue Jay, 1.0; Black-capped Chickadee, 1.0; White-breasted Nuthatch, 1.0; Cedar Waxwing, 1.0; Red-eyed Vireo, 1.0; American Redstart, 1.0; Northern Cardinal, 1.0; Great Horned Owl, 0.5. **Total:** 27 species; 98.0 territories (373/40 ha). **Visitors:** Canada Goose, Wood Duck, Red-tailed Hawk, Mourning Dove, Red-headed Woodpecker, American Crow, American Robin, Gray Catbird, Cedar Waxwing, Black-throated Green Warbler, Ovenbird, 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:** Michael Drenth, Nancy Elliot, Paul Prior. **Acknowledgments:** Thanks to Felix Jachmann for helping to stake the plot, and to Jon McCracken for proofing the data. I also thank Jane Bowles and Michael Bradstreet for measuring vegetation parameters.

24. RED OAK-WHITE BIRCH SAVANNAH

SAVANA DE ROBLE ROJO-ABEDUL BLANCO

PAUL PRIOR

Long Point Bird Observatory, P.O. Box 160, Port Rowan ON N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°10'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** Established 1978; 4 yr. **Size:** 10.0 ha. **Description of Plot:** See *Am. Birds* 33:75-76 (1979) and *J. Field Ornithol.* 63(Suppl.):59-60 (1992). Canopy cover measured in 1992 was 31%, based on 10 vegetation profile readings above 2 m at each of 20 sampling points. The ground cover estimate was 85%, based on readings below 1 m. Vegetation profile estimates in 1992, based on 10 line intersect readings at each of 20 sampling points were: <0.5 m, 75.5%; 0.5-1 m, 41.5%; 1-2 m, 6%; 2-5 m, 11%, >5 m, 28%. The number of shrub stems/ha in 1994, based on counts in 10, 1x10 m quadrats was 38,200 compared with 12,000 in 1991. Size class distribution: <0.5 m, 23,100; 0.5-1 m, 13,100; 1-2 m, 2000; >2 m, 0 (compared with 9100; 2300; 600; 0 in 1991). Shrub species in order of total abundance: wild red raspberry 12,900 stems <0.5 m, 8300 stems 0.5-1 m, 0 stems 1-2 m, 0 stems >2 m; sassafras 600, 1700, 2000, 0; water-willow 1600, 2500, 0, 0; red oak 3700, 0, 0, 0; white birch 2100, 300, 0, 0; summer grape 900, 200, 0, 0; riverbank grape 300, 100, 0, 0; red maple 400, 0, 0, 0; sweetbrier 400, 0, 0, 0; ironwood 200, 0, 0, 0. Changes from 1991 include increases in the numbers of stems of all species, including wild red raspberry (from 4200 in 1991 to 21,200 in 1994) and white birch (700, 2400), and larger individuals of some species. Red oak and ironwood were not recorded from the shrub plots in 1991. Changes of 5% or more between 1991 and 1994 in the mean estimated cover for ground layer species, based on 10, 1x1 m quadrats, include a 6% reduction in sedge, a 16% reduction in Canada bluegrass, a 10% reduction in Kentucky bluegrass, and a 10% increase in both marsh fern and bracken fern. **Weather:** Mean start temp., 12.2°C (range 9-15°C). There was light rain during the 13 June visit. **Coverage:** 50.2 h; 12 visits (9 sunrise); 31 May; 3, 4, 5, 9, 10, 12, 13, 14, 15, 17, 22 June. **Census:** Red-winged Blackbird, 16.5 (66; 2N); House Wren, 12.0 (48; 3N); Tree Swallow, 11.0 (44; 10N); Eastern Wood-Pewee, 10.0 (40; 3N); Yellow Warbler, 7.5 (30); Northern Oriole, 6.0 (24; 4N); Warbling Vireo, 5.5 (22); Common Yellowthroat, 4.5 (18); European Starling, 4.0 (16; 4N, 1FL); Red-eyed Vireo, 4.0 (1N); Mourning Dove, 3.0 (12; 1N, 3FL); American Robin, 3.0 (1N); Gray Catbird, 3.0; Song Sparrow, 3.0; Yellow-billed Cuckoo, 2.0; Whip-poor-will, 2.0 (1N); Downy Woodpecker, 2.0 (1N); Northern Flicker, 2.0 (2N); Great Crested Flycatcher, 2.0; Eastern Kingbird, 2.0 (2N); Common Grackle, 2.0 (2FL); Blue-gray Gnatcatcher, 1.5 (1N); Ruby-throated Hummingbird, 1.0; Blue Jay, 1.0; Black-capped Chickadee, 1.0; American Redstart, 1.0; Chipping Sparrow, 1.0; Red-bellied Woodpecker, 0.5. **Total:** 28 species; 114.0 territories (456/40 ha). **Visitors:** Canada Goose, Wood Duck, Mallard, Red-tailed Hawk, White-breasted Nuthatch, Veery, Brown Thrasher, Cedar Waxwing, Northern Cardinal, American Goldfinch. **Remarks:** The coverage includes 5.0 hours that were spent searching for nests. 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:** Michael Drenth, Graeme Gibson, Em Hofstede. **Acknowledgments:** Thanks to Michael Drenth, Nancy Elliot, and Sandy Smith for helping to stake the plot, and to Jon McCracken for proofing the data. I also thank Jane Bowles and Michael Bradstreet for measuring vegetation parameters.

25. WHITE OAK SAVANNAH

SAVANA DE ROBLE BLANCO

MICHAEL F.G. CLARK

27 Skyline Dr., Dundas ON L9H 3S3

Site Number: ON2893110. **Location:** Ontario; Municipality of Muskoka; Torrance; Southwood Shield Plateau; 44°56'N, 79°30'W. **Continuity:** Established 1993; 2 yr. **Size:** 10.4 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):60-61 (1994). **Weather:** Mean start temp., 23.5°C (range 18-30°C). Temperatures were normal overall. Rainfall for May through July was 12.3 cm (50% over the 30-yr norm); it averaged 80% over the norm in May and July. Source: Environment Canada. **Coverage:** 19.3 h; 11 visits (8 sunset); 21 May; 18 Jun; 3, 4, 5, 6, 7, 8, 18, 19, 24 Jul. **Census:** Yellow Warbler, 14.0 (54); Field Sparrow, 10.5 (40; 4FL); American Robin, 9.0 (35; 3FL); Common Yellowthroat, 7.5 (29); Song Sparrow, 7.0 (27); Chipping Sparrow, 6.0 (23; 3FL); House Wren, 5.0 (19); Rufous-sided Towhee, 4.0 (15); Whip-poor-will, 3.5 (13); Least Flycatcher, 2.5; Eastern Kingbird, 2.5; Hermit Thrush, 2.5; Gray Catbird, 2.0; Brown Thrasher, 2.0; Vesper Sparrow, 2.0; Yellow-bellied Sapsucker, 1.5 (2FL); Eastern Bluebird, 1.5; Cedar Waxwing, 1.5 (1FL); Warbling Vireo, 1.5 (2FL); Red-winged Blackbird, 1.5 (1FL); Northern Flicker, 1.0; Nashville Warbler, 1.0; Chestnut-sided Warbler, 1.0; Purple Finch, 1.0; Hairy Woodpecker, 0.5; Yellow-throated Vireo, 0.5. **Total:** 26 species; 92.5 territories (356/40 ha). **Visitors:** Northern Harrier, Common Nighthawk, Downy Woodpecker, Eastern Wood-Pewee, Great Crested Flycatcher, American Crow, Black-capped Chickadee, Veery, Solitary Vireo, Yellow-rumped Warbler, Black-and-white Warbler, Rose-breasted Grosbeak, Brown-headed Cowbird, American Goldfinch. **Remarks:** A considerable reduction in the number of flying insects this year may have resulted in the 18 less total territories than last year. The decreases in sparrows (down 10.0 territories) and flycatchers (down 5.5 territories) account for most of this decline. Thrush and warbler territory numbers remained stable. There was one less breeding species than last year. Whip-poor-will was the only additional breeding species noted on the night visits. Gray Catbirds, Least Flycatchers, and Veeries were possibly undercounted. The plot was patrolled by a Northern Harrier on five July visits. New breeders were: Whip-poor-will, Eastern Kingbird, Hermit Thrush, and Nashville Warbler.

26. DECIDUOUS OLD-GROWTH WOODS

BOSQUE MADURO DE DECIDUOS

J. CHRISTOPHER HANEY & JASON LYDIC

Wildlife Technology Program, School of Forest Resources,

The Pennsylvania State University, College Place, DuBois PA 15801-3199

Site Number: PA2494130. **Location:** Pennsylvania; Crawford Co.; Guys Mills; Erie II; 41°39'N, 79°58'W; Townville Quadrangle, USGS. **Continuity:** New. **Size:** 7.5 ha. **Description of Plot:** An irregular, roughly rectangular plot (shortest side 225 m, longest 475 m) with a closed canopy dominated by sugar maple, American beech, and white ash. The plot is located within the Jacob Guy Research Natural Area in Erie National Wildlife Refuge. 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 8 randomly-placed 0.04-ha circular samples, 375/ha; total basal area 38.5 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density

(%), basal area in m²/ha, relative dominance (%), and frequency (%): eastern hemlock, 28, 8, 2.0, 5, 38; butternut, 9, 3, 0.5, 1, 25; American hornbeam, 3, 1, 0.0, 0, 13; American beech, 59, 16, 7.5, 19, 50; slippery elm, 3, 1, 0.0, 0, 13; tuliptree, 3, 1, 0.5, 1, 13; black cherry, 25, 7, 0.7, 2, 50; hawthorn sp., 13, 3, 0.2, 0, 25; sugar maple, 150, 40, 18.8, 49, 100; red maple, 16, 4, 1.7, 4, 50; white ash, 44, 12, 4.6, 12, 50; standing dead, 22, 6, 1.8, 5, 25. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6–15.2 cm) 150, 40, 1.5, 4; B (15.2–22.9 cm) 63, 17, 1.8, 5; C (22.9–38.1 cm) 59, 16, 4.3, 11; D (38.1–53.3 cm) 69, 18, 11.3, 29; E (53.3–68.6 cm) 9, 3, 2.7, 7; F (68.6–83.8 cm) 16, 4, 7.1, 19; G (83.8–101.6 cm) 3, 1, 2.1, 5; H (> 101.6 cm) 6, 2, 7.6, 20. Shrub stems/ha, 1204, dominated by sugar maple (45%), American beech (19%), and lesser numbers of shagbark hickory, spicebush, witch-hazel, black cherry, choke cherry, red maple, and white ash (collectively 34%). Canopy cover, 99%; average canopy height, 20.1 m (range 16–22 m). There is one permanent stream and one intermittent stream with a maximum width of 0.8 m and a maximum depth of 0.4 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 > 150 ha in size. The tract is surrounded by open fields and roads (paved and gravel) in a highly fragmented landscape. **Topography and Elevation:** The plot has an E-facing slope of 6–10% grade. Minimum elevation 408 m, maximum 433 m. **Weather:** Mean start temp., 11.9°C (range 4–21°C). Temperature and precipitation were normal. A brief rain on 6 June may have influenced detectability. **Coverage:** 8.9 h; 8 visits (5 sunrise, 2 sunset); 25, 27 May; 1, 2, 3, 6, 7, 9 Jun. **Census:** Red-eyed Vireo, 6.0 (32); Dark-eyed Junco, 6.0 (3FL); American Redstart, 5.0 (27); Black-capped Chickadee, 4.0 (21); Wood Thrush, 4.0 (1N); Black-throated Green Warbler, 4.0; Rose-breasted Grosbeak, 4.0; Eastern Wood-Pewee, 3.0 (16); Acadian Flycatcher, 3.0; Solitary Vireo, 3.0; Scarlet Tanager, 3.0; Northern Cardinal, 3.0; Yellow-bellied Sapsucker, 2.0 (1N); Tufted Titmouse, 2.0; American Robin, 2.0; Black-burnian Warbler, 2.0; Ovenbird, 2.0 (2N); Hooded Warbler, 2.0; Brown-headed Cowbird, 2.0; Hairy Woodpecker, 1.5; Blue-gray Gnatcatcher, 1.5; Veery, 1.5; Ruffed Grouse, 1.0 (2FL); Wild Turkey, 1.0 (1N); Great Crested Flycatcher, 1.0; Blue Jay, 1.0; White-breasted Nuthatch, 1.0 (1N); Black-and-white Warbler, 1.0; Mourning Warbler, 1.0; Rufous-sided Towhee, 1.0; Northern Oriole, 1.0; Sharp-shinned Hawk, 0.5; Ruby-throated Hummingbird, 0.5; Downy Woodpecker, 0.5; Brown Creeper, 0.5. **Total:** 35 species; 77.5 territories (413/40 ha). **Visitors:** Black-billed Cuckoo, Barred Owl, Eastern Kingbird, American Crow, Swainson's Thrush, Cedar Waxwing, Black-throated Blue Warbler, Louisiana Waterthrush, Song Sparrow, American Goldfinch. **Remarks:** Mammals or mammal sign observed included: eastern chipmunk (*Tamias striatus*) and white-tailed deer (*Odocoileus virginianus*). **Acknowledgments:** Tom Mountain (Refuge Manager, Erie NWR), Diane Pence (Nongame Migratory Bird Coordinator, USFWS), and Larry Lentz, Jeffrey Sowl, and David Wright (Center for Rural Pennsylvania) assisted with logistics. Financial support was provided by a Challenge Grant from the Region 5 Migratory Bird Office, USFWS, The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

27. MOUNTAINTOP SECOND-GROWTH MIXED DECIDUOUS FOREST

BOSQUE SECUNDARIO EN PICO DE MONTAÑA DE DECIDUOS MIXTOS

CARROLL LABARTHE

PO Box 104, Rector PA 15677

Site Number: PA2494139. **Location:** Pennsylvania; Westmoreland Co.; Rector; Wolf Rocks Trail; 40°8'N, 79°15'W; Bakersville and Ligonier Quadrangles USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** A rectangular plot (200 x 500 m) with an open canopy dominated by red maple, shadbush, and sassafras, estimated to be between 31 and 60 years of age. There are isolated thickets of rhododendron and mountain laurel as well as a single hemlock. 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 randomly-placed 0.04-ha circular samples, 660/ha; total basal area 30.5 m²/ha. Species comprising 98% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m²/ha, relative dominance (%), and frequency (%): red maple, 200, 30, 13.5, 44, 100; standing dead, 220, 33, 5.9, 20, 100; black birch, 35, 5, 0.9, 3, 80; sassafras, 55, 8, 2.7, 9, 40; shadbush, 60, 9, 1.0, 3, 80; striped maple, 15, 2, 0.1, 1, 20; black gum, 20, 3, 0.3, 1, 60; tuliptree, 25, 4, 1.6, 5, 60; cucumbertree, 10, 2, 0.5, 2, 40; red oak, 20, 3, 3.9, 13, 40. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6–15.2 cm) 210, 32, 2.0, 6; B (15.2–22.9 cm) 220, 33, 6.1, 20; C (22.9–38.1 cm) 195, 30, 14.5, 48; D (38.1–53.3 cm) 25, 3, 4.2, 14; E (53.3–68.6 cm) 5, 1, 1.4, 5; F (68.6–83.8 cm) 5, 1, 2.3, 7. Shrub stems/ha, 1136, dominated by striped maple and mountain holly. Ground cover, 55%, dominated by greenbrier and *Dryopteris* ferns. Canopy cover, 70%; average canopy height, 15 m (range 9–20 m). **Edge:** The plot is bordered on all sides by similar habitat, and the plot lies within a tract of similar habitat > 500 ha in size. **Topography and Elevation:** The plot is on a nearly level mountaintop with a SW-facing slope of < 5% grade. Minimum elevation 823 m, maximum 829 m. **Weather:** Mean start temp., 19.3°C (range 18–21°C). June was warmer than normal with several days of record high temperatures (32°C and above). Rainfall was average. **Coverage:** 27.8 h; 10 visits (8 sunrise); 6, 7, 10, 15, 18, 21, 22, 23, 26, 30 Jun. **Census:** Veery, 6.0 (24); Red-eyed Vireo, 6.0; Ovenbird, 6.0; American Redstart, 4.0 (16); Common Yellowthroat, 4.0; Rose-breasted Grosbeak, 3.0 (12); Rufous-sided Towhee, 3.0; Dark-eyed Junco, 3.0; Black-throated Green Warbler, 2.5; American Robin, 2.0; Chestnut-sided Warbler, 2.0; Black-throated Blue Warbler, 2.0; Scarlet Tanager, 2.0; Hermit Thrush, 1.0; Cedar Waxwing, 1.0; Solitary Vireo, 1.0; Magnolia Warbler, 1.0; Indigo Bunting, 1.0. **Total:** 18 species; 50.5 territories (202/40 ha). **Visitors:** Downy Woodpecker, Hairy Woodpecker, Pileated Woodpecker, Black-capped Chickadee, White-breasted Nuthatch, Brown Creeper, Black-and-white Warbler, Brown-headed Cowbird. **Other Observers:** Bob Mulvihill, Bob Leberman, Dave Krueger, Joan Novagradac, Grant Milliron. **Acknowledgments:** Special thanks to Bob Mulvihill and Grant Milliron for help in setting up the plot.

28. OAK–MAPLE–POPLAR HOLLOW

BOSQUE DE ROBLE–ARCE–ALAMO HUECO

LINDA INGRAM

Nolde Forest Environmental Education Center, 2910 New Holland Road, Reading PA 19607

Site Number: PA1093123. **Location:** Pennsylvania; Berks Co.; Reading; Nolde Forest, Buck Hollow; 40°17'N, 75°57'W; Reading Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 10.9 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):61 (1994). **Weather:** Mean start temp., 12.8°C (range 3–20°C). There was some fog during the 26 May visit. Normal May temperatures: mean 16.7°C, minimum 10.6°C, maximum 22.8°C. **Coverage:** 17.0 h; 8 visits (6 sunrise, 2 sunset); 3, 8, 15, 20, 22, 26, 28, 29 May. **Census:** Wood Thrush, 7.0 (26; 2N); Ovenbird, 5.0 (18); Red-eyed Vireo, 4.0 (15); Tufted Titmouse, 3.5 (13); Veery, 2.5; Eastern Wood-Pewee, 2.0; Field Sparrow, 2.0 (1N); Northern Cardinal, 1.5; Red-bellied Woodpecker, 1.0; Blue Jay, 1.0; Scarlet Tanager, 1.0; Downy Woodpecker, 0.5; Northern Flicker, 0.5; American Crow, 0.5; Pileated Woodpecker, +; Black-capped Chickadee, +; American Robin, +. **Total:** 17 species; 32.0 territories (117/40 ha). **Visitors:** Hairy Woodpecker, White-breasted Nuthatch, Brown Creeper, Gray Catbird, Rufous-sided Towhee, Brown-headed Cowbird. **Remarks:** The Field Sparrow nest contained four eggs.

29. OAK–MAPLE RIDGE-TOP FOREST

BOSQUE DE ROBLE–ARCE DE TOPE DE COLINAS

CATHERINE B. VIVERETTE

Hawk Mountain Sanctuary, RR 2, Box 191, Kempton PA 19529

Site Number: PA1382312. **Location:** Pennsylvania; Berks Co.; Eckville; Owl's Head; 40°44'N, 75°50'W; New Ringgold Quadrangle, USGS. **Continuity:** Established 1982; 13 yr. **Size:** 19.3

ha. **Description of Plot:** See *Am. Birds* 37:55 (1983). **Weather:** Mean start temp., 11.0°C (range 7–21°C). **Coverage:** 23.1 h; 10 visits (10 sunrise); 2, 23, 27, 28 May; 2, 4, 12, 18, 26 Jun; 2 Jul. **Census:** Ovenbird, 13.0 (27); Common Yellowthroat, 4.0 (8); Great Crested Flycatcher, 3.0 (6); Rufous-sided Towhee, 3.0; Hermit Thrush, 2.5; Blue Jay, 2.0; Black-capped Chickadee, 2.0; Red-eyed Vireo, 2.0; Scarlet Tanager, 2.0; Hairy Woodpecker, 1.5; Black-and-white Warbler, 1.5; Indigo Bunting, 1.5; Ruffed Grouse, 1.0; Mourning Dove, 1.0; Downy Woodpecker, 1.0; Wood Thrush, 1.0; American Robin, 1.0; Rose-breasted Grosbeak, 1.0; Brown-headed Cowbird, 1.0; Pileated Woodpecker, 0.5; Eastern Wood-Pewee, 0.5. **Total:** 21 species; 46.0 territories (95/40 ha). **Visitors:** Wild Turkey, Northern Flicker, White-breasted Nuthatch, Cedar Waxwing, Chipping Sparrow. **Other Observers:** Kerry Grim, Rudy Keller, Steve Thorpe, Rick Wiltraut. **Acknowledgments:** Hawk Mountain Sanctuary contribution number 24.

30. OAK-MAPLE SLOPE FOREST

BOSQUE DE ROBLE-ARCE DE LADERAS

CATHERINE B. VIVERETTE

Hawk Mountain Sanctuary, RR 2, Box 191, Kempton PA 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; 13 yr. **Size:** 16.9 ha. **Description of Plot:** See *Am. Birds* 37:55 (1983). **Weather:** No data provided. **Coverage:** 25.3 h; 11 visits (10 sunrise, 1 sunset); 22, 25 Apr; 10, 15, 18, 28 May; 5, 19, 25 Jun; 3, 9 Jul. **Census:** Ovenbird, 10.5 (25); Red-eyed Vireo, 6.0 (14); Scarlet Tanager, 5.0 (12); Great Crested Flycatcher, 3.5 (8); Black-capped Chickadee, 3.0 (7); Black-and-white Warbler, 3.0; Downy Woodpecker, 2.5; Wood Thrush, 2.5; Eastern Wood-Pewee, 2.0; Blue Jay, 2.0; Brown-headed Cowbird, 2.0; Mourning Dove, 1.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Pileated Woodpecker, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; Indigo Bunting, +. **Total:** 18 species; 48.0 territories (114/40 ha). **Visitors:** Ruffed Grouse, Yellow-billed Cuckoo, Great Horned Owl, American Crow, Veery, Northern Cardinal. **Other Observers:** Phil Campbell, Kerry Grim, Rudy Keller, Steve Thorpe, Rick Wiltraut. **Acknowledgments:** Hawk Mountain Sanctuary contribution number 23.

31. OLD-GROWTH BEECH-MAPLE WOODLOT

RODAL DE HAYA MADURA Y ARCE

J. CHRISTOPHER HANEY & JASON LYDIC

*Wildlife Technology Program, School of Forest Resources,
The Pennsylvania State University, College Place, DuBois PA 15801-3199*

Site Number: PA2494131. **Location:** Pennsylvania; Crawford Co.; Conneaut Lake; Tryon-Weber Woods; 41°34'N, 80°20'W; Conneaut Lake Quadrangle, USGS. **Continuity:** New. **Size:** 9.8 ha. **Description of Plot:** An irregular plot (shortest side 170 m, longest 520 m) with a closed canopy dominated by sugar maple and American beech. 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 11 randomly-placed 0.04-ha circular samples, 356/ha; total basal area 32.1 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m²/ha, relative dominance (%), and frequency (%)]: shagbark hickory, 7, 2, 0.4, 1, 27; pignut hickory, 2, 1, 0.2, 1, 9; eastern hop-hornbeam, 5, 1, 0.0, 0, 27; American hornbeam, 5, 1, 0.0, 0, 18; American beech, 73, 20, 5.7, 18, 91; white oak, 9, 3, 1.5, 5, 18; northern red oak, 11, 3, 2.0, 6, 36; slippery elm, 2, 1, 0.4, 1, 9; tuliptree, 18, 5, 2.7, 8, 27; black cherry, 41, 11, 3.6, 11, 73; sugar maple, 116, 33, 7.0, 22, 100; red maple, 20, 6, 2.3, 7, 36; white ash, 5, 1, 0.1, 0, 9; standing dead, 41, 14, 6.3, 20, 64. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dom-

inance (%): A (7.6–15.2 cm) 123, 34, 1.3, 4; B (15.2–22.9 cm) 43, 12, 1.2, 4; C (22.9–38.1 cm) 91, 26, 6.6, 21; D (38.1–53.3 cm) 61, 17, 10.1, 31; E (53.3–68.6 cm) 24, 7, 6.6, 21; F (68.6–83.8 cm) 14, 4, 6.2, 19. Shrub stems/ha, 2167, dominated by sugar maple (43%), black cherry (24%), American beech (7%), shagbark hickory (6%), white ash (6%), and northern red oak, spicebush, tuliptree, multiflora rose, witch-hazel, poison ivy, red maple, flowering dogwood, maple-leaved viburnum (collectively 14%). Canopy cover, 90–93%; average canopy height, 20.7 m (range 16–26 m). Ravines with two mostly perennial streams run through the plot's center and S side. Maximum width of stream, 1.0 m and maximum depth, 0.3 m. **Edge:** Less than 25% of the plot's perimeter is bordered by the same habitat, but the plot lies within a tract of contiguous woods of mixed composition and age approximately 70 ha in size. The tract is surrounded by open fields and roads in a highly fragmented landscape. **Topography and Elevation:** The plot is nearly level with a W-facing slope of < 5% grade. Minimum elevation 383 m, maximum 389 m. **Weather:** Mean start temp., 13.3°C (range 5–27°C). Temperature and precipitation were normal. A thunderstorm on 26 May may have influenced detectability. **Coverage:** 9.8 h; 8 visits (6 sunrise, 2 sunset); 25, 26, 30, 31 May; 2, 4, 7, 10 Jun. **Census:** Wood Thrush, 7.0 (29; 1N); Red-eyed Vireo, 6.0 (24); Eastern Wood Pewee, 5.0 (20); American Redstart, 5.0; Hooded Warbler, 5.0; Northern Cardinal, 4.0 (16); Acadian Flycatcher, 3.0 (12); Scarlet Tanager, 3.0; Blue Jay, 2.0; Black-capped Chickadee, 2.0; White-breasted Nuthatch, 2.0; Black-throated Green Warbler, 2.0; Ovenbird, 2.0; Rose-breasted Grosbeak, 2.0; Veery, 1.5; American Woodcock, 1.0; Barred Owl, 1.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Pileated Woodpecker, 1.0; Great Crested Flycatcher, 1.0; American Crow, 1.0; Tufted Titmouse, 1.0; Louisiana Waterthrush, 1.0; Song Sparrow, 1.0; Yellow-billed Cuckoo, 0.5; Least Flycatcher, 0.5; American Robin, 0.5; Dark-eyed Junco, 0.5. **Total:** 29 species; 63.5 territories (259/40 ha). **Visitors:** Red-tailed Hawk, Wild Turkey, Ruby-throated Hummingbird, Solitary Vireo, Blue-winged Warbler, Black-and-white Warbler, Indigo Bunting, Rufous-sided Towhee, Brown-headed Cowbird. **Remarks:** Mammals or mammal sign observed included: eastern chipmunk (*Tamias striatus*), vole species, and porcupine (*Erethizon dorsatum*). **Acknowledgments:** Larry Lentz, Jeffrey Sowl, and David Wright (Center for Rural Pennsylvania) assisted with logistics. Financial support was provided by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

32. OLD-GROWTH MAPLE–OAK–HICKORY WOODLOT

RODAL DE ARCE MADURO, ROBLE Y NOGAL

J. CHRISTOPHER HANEY & JASON LYDIC

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Site Number: PA2494132. **Location:** Pennsylvania; Cambria Co.; Coalport; Prince Gallitzin; 40°39'N, 78°34'W; Coalport Quadrangle, USGS. **Continuity:** New. **Size:** 10.3 ha. **Description of Plot:** An irregular, roughly triangular plot (shortest side 350 m, longest 350 m) with a closed canopy dominated by sugar maple, red maple, northern red oak, and pignut hickory. The plot is located on State Game Land #108, S of Glendale Lake, Prince Gallitzin State Park. 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 9 randomly-placed 0.04-ha circular samples, 414/ha; total basal area 32.7 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m²/ha, relative dominance (%), and frequency (%): eastern hemlock, 78, 19, 1.6, 5, 44; shagbark hickory, 6, 1, 0.4, 1, 22; pignut hickory, 11, 3, 1.9, 6, 33; black birch, 3, 1, 0.0, 0, 11; American beech, 6, 1, 1.0, 3, 22; northern red oak, 14, 3, 2.7, 8, 33; slippery elm, 3, 1, 0.0, 0, 11; black cherry, 8, 2, 0.2, 1, 22; sugar maple, 192, 46, 10.4, 32, 100; red maple, 28, 7, 3.6, 11, 44; American basswood, 3, 1, 1.3, 4, 11; devil's walkingstick, 3, 1, 0.0, 0, 11; standing dead, 63, 15, 9.6, 28, 100. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6–15.2 cm) 161, 39, 1.7, 5; B (15.2–22.9 cm) 61, 15, 1.7, 5; C

(22.9–38.1 cm) 103, 25, 7.5, 23; D (38.1–53.3 cm) 50, 12, 8.2, 25; E (53.3–68.6 cm) 25, 6, 7.3, 22; F (68.6–83.8 cm) 14, 3, 6.3, 19. Shrub stems/ha, 3774, dominated by sugar maple (73%), shagbark hickory (8%), multiflora rose (8%), and American beech, northern red oak, black cherry, black birch, pignut hickory, American basswood, spicebush, Tartarian honeysuckle, and northern arrowwood (collectively 11%). Canopy cover, 97%; average canopy height, 25.0 m (range 21–29 m). A ravine with intermittent stream runs through the plot's E side. Maximum width of stream, 0.5 m and maximum depth, 0.2 m. **Edge:** Less than 25% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of contiguous woods approximately 30 ha in size. The tract is surrounded by open fields and a paved road, but is near areas of moderately heavy forest. **Topography and Elevation:** The plot has a SE-facing slope of < 5% grade. Minimum elevation 485 m, maximum 503 m. **Weather:** Mean start temp., 10.9°C (range 0–22°C). Temperature and precipitation were normal. Traffic noise from a nearby road on 29 May may have influenced detectability. **Coverage:** 11.8 h; 8 visits (6 sunrise, 2 sunset); 10, 11, 16, 21, 29, 30 May; 13, 14 Jun. **Census:** Red-eyed Vireo, 9.0 (35); American Redstart, 8.0 (31); Blue-gray Gnatcatcher, 7.0 (27); Solitary Vireo, 4.0 (16); Black-capped Chickadee, 3.0 (12); Wood Thrush, 3.0; Chestnut-sided Warbler, 3.0; Cerulean Warbler, 3.0; Scarlet Tanager, 3.0; Rose-breasted Grosbeak, 3.0; Brown-headed Cowbird, 3.0; Black-billed Cuckoo, 2.0; Eastern Wood-Pewee, 2.0; White-breasted Nuthatch, 2.0; Black-throated Green Warbler, 2.0; Indigo Bunting, 2.0; Pileated Woodpecker, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; American Crow, 1.0; Tufted Titmouse, 1.0; Gray Catbird, 1.0; Blackburnian Warbler, 1.0; Common Yellowthroat, 1.0; Rufous-sided Towhee, 1.0; Song Sparrow, 1.0; Northern Oriole, 1.0; American Goldfinch, 1.0; Northern Parula, 0.5; Northern Cardinal, 0.5. **Total:** 33 species; 75.0 territories (291/40 ha). **Visitors:** Red-tailed Hawk, Ruffed Grouse, Mourning Dove, Yellow-billed Cuckoo, Chimney Swift, Northern Flicker, Acadian Flycatcher, Least Flycatcher, Carolina Wren, American Robin, Yellow Warbler, Black-throated Blue Warbler, Ovenbird, Common Grackle. **Remarks:** Mammals or mammal sign observed included: black bear (*Ursus americanus*), eastern chipmunk (*Tamias striatus*), gray squirrel (*Sciurus carolinensis*), and white-tailed deer (*Odocoileus virginianus*). **Acknowledgments:** Larry Lentz, Jeffrey Sowl, and David Wright (Center for Rural Pennsylvania) assisted with logistics. Financial support was provided by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

33. REGENERATING NORTHERN HARDWOODS

BOSQUES NORTEÑO DE MADERAS DURAS REGENERADO

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Site Number: PA2494133. **Location:** Pennsylvania; Clearfield Co.; DuBois; Treasure Lake; 41°11'N, 78°43'W; Sabula Quadrangle, USGS. **Continuity:** New. **Size:** 15.0 ha. **Description of Plot:** A square plot (387 x 387 m) with a closed canopy dominated mostly by northern hardwoods regenerating from cutting. The stand is 31–60 years of age. 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 15 randomly-placed 0.04-ha circular samples, 697/ha; total basal area 31.3 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m²/ha, relative dominance (%), and frequency (%): black birch, 87, 12, 3.3, 11, 67; eastern hop-hornbeam, 2, 0, 0.0, 0, 7; American beech, 8, 1, 0.1, 0, 47; white oak, 12, 2, 0.8, 3, 33; chestnut oak, 65, 9, 4.6, 15, 67; northern red oak, 45, 6, 3.8, 12, 67; cucumbertree, 15, 2, 1.5, 5, 40; witch-hazel, 2, 0, 0.0, 0, 7; black cherry, 8, 1, 0.6, 2, 27; Allegheny serviceberry, 3, 0, 0.0, 0, 7; red maple, 338, 49, 14.1, 45, 100; black gum, 35, 5, 0.8, 3, 73; standing dead, 77, 11, 1.5, 6, 80. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative size dominance (%): A (7.6–

15.2 cm) 230, 33, 2.4, 8; B (15.2–22.9 cm) 207, 30, 5.9, 19; C (22.9–38.1 cm) 215, 31, 15.7, 50; D (38.1–53.3 cm) 45, 6, 7.4, 24. Shrub stems/ha, 3549, dominated by mountain laurel (51%), black birch (39%), American beech (3%), striped and red maples (3%), witch-hazel (2%), and black gum (1%). Ground cover dominated by ferns, grasses, true and club mosses, and various forbs. Canopy cover, 95%; average canopy height, 26.8 m (range 22–30 m). The plot contains one permanent and one intermittent stream with maximum width, 1.5 m and maximum depth, 0.7 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 51–100 ha in size. **Topography and Elevation:** The plot is nearly level with a S-facing slope of 6–10% grade. Minimum elevation 536 m, maximum 561 m. **Weather:** Mean start temp., 13.0°C (range 3–26°C). See BBC #56 for summary. **Coverage:** 14.5 h; 7 visits (5 sunrise, 2 sunset); 30 Apr; 10, 17, 25 May; 5, 23, 26 Jun. Maximum number of observers/visit, 4. **Census:** American Redstart, 13.0 (35); Chestnut-sided Warbler, 8.0 (21); Canada Warbler, 8.0; Rufous-sided Towhee, 8.0; Veery, 6.0 (16); Red-eyed Vireo, 5.0 (13); Black-throated Blue Warbler, 5.0; Ovenbird, 4.0 (11); Black-throated Green Warbler, 3.0 (8); Brown-headed Cowbird, 3.0; Least Flycatcher, 2.0; Solitary Vireo, 2.0; Black-and-white Warbler, 2.0; Hooded Warbler, 2.0; Eastern Wood-Pewee, 1.5; Blue-gray Gnatcatcher, 1.5; Hermit Thrush, 1.5; Scarlet Tanager, 1.5; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Blue Jay, 1.0; American Crow, 1.0; Black-capped Chickadee, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; Gray Catbird, 1.0; Common Yellowthroat, 1.0; Blackburnian Warbler, 0.5; Indigo Bunting, 0.5. **Total:** 29 species; 87.0 territories (232/40 ha). **Visitors:** Broad-winged Hawk, Red-bellied Woodpecker, Pileated Woodpecker, Acadian Flycatcher, Great Crested Flycatcher, Red-breasted Nuthatch, Brown Creeper, Wood Thrush, Rose-breasted Grosbeak, Dark-eyed Junco, Purple Finch. **Remarks:** A moderately severe infestation of elm spanworm occurred in and near the plot. Mammals or mammal sign observed included: black bear (*Ursus americanus*), gray fox (*Urocyon cinereoargenteus*), eastern chipmunk (*Tamias striatus*), gray squirrel (*Sciurus carolinensis*), flying squirrel (*Glaucomys* sp.), porcupine (*Erethizon dorsatum*), and white-tailed deer (*Odocoileus virginianus*). **Other Observers:** Becky Allison, John Cheek, Linda Hepfner, Ray Kaufmann, John Seachrist, Sue Wetzel. **Acknowledgments:** We thank Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania for assistance with logistics. Jason Lydic surveyed and gridded the plot. Becky Allison, John Cheek, Linda Hepfner, Ray Kaufmann, John Seachrist, and Sue Wetzel assisted with the vegetation analyses. This plot was used in a comparative study of old-growth and regenerating forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

34. SUBURBAN DECIDUOUS WOODLOT

RODAL DECIDUO SUBURBANO

DAVID ROBERTSON & THOMAS TAGUE

Pennypack Ecological Restoration Trust, 2955 Edge Hill Road, Huntingdon Valley PA 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; 4 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):62 (1992). **Weather:** Mean start temp., 19.5°C (range 10–23°C). **Coverage:** 22.1 h; 8 visits (8 sunrise); 23, 25, 30 May; 2, 8, 13, 20 Jun; 7 Jul. **Census:** Wood Thrush, 6.0 (24); Red-bellied Woodpecker, 5.0 (20; 1N); Eastern Wood-Pewee, 5.0; Carolina Wren, 5.0; Black-capped Chickadee, 4.5 (18); Rufous-sided Towhee, 4.0 (16); Blue Jay, 3.0 (12); Veery, 3.0; Gray Catbird, 3.0; Red-eyed Vireo, 3.0; Northern Cardinal, 3.0; Northern Flicker, 2.0 (1N); Tufted Titmouse, 2.0; White-breasted Nuthatch, 2.0; Common Yellowthroat, 2.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; American Robin, 1.0; Warbling Vireo, 1.0; Scarlet Tanager, 1.0. **Total:** 20 species; 57.5 territories (230/40 ha). **Visitors:** White-eyed Vireo, Yellow-throated Vireo, Brown-headed Cowbird, Northern Oriole, House Finch.

35. MATURE MESIC OAK FOREST

BOSQUE MESICO MADURO DE ROBLE

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Site Number: RI1291065. **Location:** Rhode Island; Kent Co.; Coventry Center; Parker Woodland; 41°44'N, 71°43'W; Coventry Center Quadrangle, USGS. **Continuity:** Established 1991; 3 yr. **Size:** 10.6 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):62–63 (1992). **Weather:** Mean start temp., 21.2°C (range 14–30°C). June mean temperature (20.0°C) was warmer than normal (18.3°C), as was July mean temperature (23.9°C; normal 21.4°C). Precipitation was below normal in both June (5.1 cm; normal 9.5 cm) and July (4.7 cm; normal 8.3 cm). Source: University of Rhode Island weather station, Kingston, RI. **Coverage:** 24.1 h; 10 visits (8 sunrise, 2 sunset); 2, 4, 5, 13, 21, 22, 30 Jun; 1, 2, 7 Jul. **Census:** Ovenbird, 12.5 (47; 1N); Wood Thrush, 10.0 (38; 3N); Tufted Titmouse, 6.5 (25); Veery, 6.5 (2FL); Scarlet Tanager, 5.5 (21); Eastern Wood-Pewee, 5.0 (19); Black-capped Chickadee, 4.0 (15); Red-eyed Vireo, 4.0; Black-and-white Warbler, 4.0; Worm-eating Warbler, 3.5 (13); Downy Woodpecker, 3.0 (11); White-breasted Nuthatch, 2.5; Ruffed Grouse, 2.0 (3FL); Northern Flicker, 2.0; American Robin, 2.0; Red-bellied Woodpecker, 1.5; Blue Jay, 1.5; American Redstart, 1.5; Rufous-sided Towhee, 1.5; Blue-winged Warbler, 1.0; Northern Oriole, 1.0; Brown-headed Cowbird, +. **Total:** 22 species; 81.0 territories (306/40 ha). **Visitors:** Mourning Dove, Eastern Phoebe, American Crow, Gray Catbird, Chestnut-sided Warbler, Common Yellowthroat. **Remarks:** The Ruffed Grouse count was the maximum number of simultaneously drumming males. **Other Observer:** Amy Costa. **Acknowledgments:** Thanks to David Rodrigues and the Audubon Society of Rhode Island for permission to use the site.

36. RED OAK FOREST

BOSQUE DE ROBLE ROJO

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Site Number: RI1294106. **Location:** Rhode Island; Providence Co.; Johnston; Steere Farm; 41°50'N, 71°33'W; North Scituate Quadrangle, USGS. **Continuity:** New. **Size:** 10.6 ha. **Description of Plot:** A rectangular plot (320 x 330 m). The closed canopy is dominated by red oak, with a relatively open understory and ground cover. Logging has occurred within the last 30 years, and few trees exceed 35 cm in diameter. Trees are relatively uniform in height and diameter, and competition has resulted in a high density of dead stems. A small depression lies in the S-center part of the plot, and water forms temporary ponds in winter. An old gravel quarry forms a small opening in the SE corner. Rock outcroppings occur frequently along the edges of hillsides on the W and E sides, and a major outcrop occurs in the center of the plot. Two main trails run through the W-center and center of the plot, and the W trail branches near the SW corner. The forest is the largest portion of a 60-ha farm, and is currently unmanaged. 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, 967/ha; total basal area 30.4 m²/ha. Species comprising 92% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): red oak, 445, 46, 63, 100; standing dead, 188, 19, 10, 100; white oak, 69, 7, 6, 80; black oak, 64, 6, 8, 70; red maple, 49, 5, 2, 70; scarlet oak, 42, 4, 5, 50; yellow birch, 30, 3, 2, 60. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6–15.2 cm) 143, 36, 3.6, 12; B (15.2–22.9 cm) 180, 46, 12.7, 42; C (22.9–38.1 cm) 66, 17, 11.9, 39; D (38.1–53.3 cm) 3, 1, 2.2, 7. Shrub stems/ha, 1939, dominated by maple-leaved viburnum, yellow birch, white oak, and hop-hornbeam. Ground cover, 44%, dominated by lowbush blueberry, sedge, and moss. Canopy

cover, 88.5%; average canopy height, 14 m (range 12–16 m). **Edge:** Similar habitat extends for > 100 m on the N, W, and S sides. On the E side, the forest becomes a red maple swamp after a 15 m drop in elevation. The swamp extends 90 m to a housing development. **Topography and Elevation:** The plot has an uneven E-facing slope of < 5% grade. Minimum elevation 117 m, maximum 145 m. **Weather:** Mean start temp., 16.3°C (range 4–26°C). See BBC #37 and BBC #57 for summary. **Coverage:** 29.4 h; 9 visits (8 sunrise, 1 sunset); 22, 28 May; 4, 8, 11, 19, 23, 30 Jun; 1 Jul. **Census:** Ovenbird, 9.5 (36); Tufted Titmouse, 6.5 (25); Wood Thrush, 6.0 (23; 2N,1FL); Eastern Wood-Pewee, 4.0 (15); Black-capped Chickadee, 4.0; Downy Woodpecker, 3.0 (11); American Robin, 3.0 (2N,1FL); Scarlet Tanager, 3.0; White-breasted Nuthatch, 2.5; Red-eyed Vireo, 2.5 (3FL); Rose-breasted Grosbeak, 2.5 (1N); Northern Flicker, 2.0 (1N); Blue Jay, 2.0 (1N); Hermit Thrush, 2.0; American Redstart, 2.0; Northern Oriole, 2.0 (1N); Great Crested Flycatcher, 1.5; Rufous-sided Towhee, 1.5; Hairy Woodpecker, 1.0; Veery, 1.0; Brown-headed Cowbird, 1.0; Common Yellowthroat, 0.5; Red-bellied Woodpecker, + (1FL); Gray Catbird, +; Black-and-white Warbler, +. **Total:** 25 species; 63.0 territories (238/40 ha). **Visitors:** Yellow-billed Cuckoo, Northern Cardinal. **Other Observers:** Sandra L. Bateman, Daniel Kowal. **Acknowledgments:** Thanks to George Steere for allowing me to use the site. *Present address: Dept. of Biology, Rhodes Hall 224, SE Missouri State Univ., Cape Girardeau MO 63701-4799

37. UPLAND OAK-RED MAPLE FOREST

BOSQUE DE ROBLE-ARCE ROJO DE ALTURAS

WILLIAM R. EDDLEMAN*

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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; 5 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 62(Suppl.):47–48 (1991). **Weather:** Mean start temp., 21.5°C (range 13–29°C). See BBC #57 for May and June weather. **July mean temperature (23.9°C) was above normal (21.4°C). July precipitation (4.7 cm) was below normal (8.3 cm).** Source: University of Rhode Island weather station, Kingston, RI. **Coverage:** 19.6 h; 11 visits (9 sunrise, 2 sunset); 29 May; 5, 17, 18, 20, 26 Jun; 2, 4, 8, 9, 10 Jul. **Census:** Veery, 13.5 (53; 2FL); Ovenbird, 12.0 (48; 5FL); Rufous-sided Towhee, 9.5 (38); Tufted Titmouse, 8.0 (32; 4FL); Gray Catbird, 7.0 (28); Great Crested Flycatcher, 5.5 (22); Eastern Wood-Pewee, 5.0 (20); Downy Woodpecker, 4.0 (16; 3FL); Black-and-white Warbler, 4.0; Northern Cardinal, 4.0; Black-capped Chickadee, 3.5 (14; 4FL); Wood Thrush, 3.5; Scarlet Tanager, 2.5; White-breasted Nuthatch, 2.0 (2FL); Pine Warbler, 1.5; Red-bellied Woodpecker, 1.0; Northern Flicker, 1.0; Blue Jay, 1.0 (1FL); Red-eyed Vireo, 1.0 (1FL); Common Yellowthroat, 1.0; Brown-headed Cowbird, 0.5 (1FL); Carolina Wren, +. **Total:** 22 species; 91.0 territories (360/40 ha). **Visitors:** Mourning Dove, Black-billed Cuckoo, Hairy Woodpecker, American Crow, Blue-gray Gnatcatcher, American Robin, White-eyed Vireo, Blue-winged Warbler, Rose-breasted Grosbeak, Northern Oriole. **Remarks:** This plot was used as a mist-netting site for the Monitoring Avian Productivity and Survivorship (MAPS) project. The cowbird fledgling was being fed by a Scarlet Tanager pair. **Other Observer:** Laurie Descoteaux *Present address: Dept. of Biology, Rhodes Hall 224, SE Missouri State Univ., Cape Girardeau MO 63701-4799

38. BOTTOMLAND HARDWOOD FOREST

BOSQUE DE MADERAS DURAS INUNDABLE

CHÉRIE IRBY*, SIDNEY GAUTHREAUX* & WILLIAM JARVIS

*Dept. of Biological Sciences, Clemson University, Clemson SC 29634-1903

Site Number: SC0492036. **Location:** South Carolina; Aiken Co.; Jackson; Savannah River Site; 33°17'N, 81°47'W; Jackson Quadrangle, USGS. **Continuity:** Established 1992; 2 yr. **Size:** 12.2

ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):55–56 (1993). **Weather:** Mean start temp., 20.8°C (range 13–32°C). The mean high temperature for May was 27.3°C (31-yr average is 28.6°C); mean low temperature was 16.2°C (31-yr average is 15.9°C). The range of temperatures for May was 10.0–33.3°C. The mean high temperature for June was 33.0°C (31-yr average is 32.0°C); mean low temperature was 22.9°C (31-yr average is 19.9°C). The range of temperatures for June was 21.1–36.7°C. May precipitation was 3.68 cm (normal is 16.3 cm). June precipitation was 12.9 cm (normal is 10.9 cm). Source: Westinghouse Savannah River Co., Savannah River Laboratory. **Coverage:** 21.9 h; 10 visits (8 sunrise, 2 sunset); 13, 17, 18, 22, 26 May; 1, 6, 9, 18, 20 Jun. **Census:** Hooded Warbler, 16.0 (52); Red-eyed Vireo, 11.5 (38); Acadian Flycatcher, 7.0 (23); White-eyed Vireo, 6.0 (20); American Redstart, 4.5 (15); Carolina Wren, 4.0 (13); Northern Parula, 4.0; Blue-gray Gnatcatcher, 3.5 (11); Wood Thrush, 3.0 (10); Kentucky Warbler, 2.5; Northern Cardinal, 2.5; Yellow-billed Cuckoo, 2.0; Red-bellied Woodpecker, 2.0; Great Crested Flycatcher, 2.0; Carolina Chickadee, 2.0; Tufted Titmouse, 2.0; Black-and-white Warbler, 2.0; Mourning Dove, 1.5; Downy Woodpecker, 1.5; Pileated Woodpecker, 0.5; Swainson's Warbler, +; Summer Tanager, +. **Total:** 22 species; 80.0 territories (262/40 ha). **Visitors:** Red-shouldered Hawk, Barn Owl, Eastern Wood-Pewee, Blue Jay, White-breasted Nuthatch, Yellow-throated Vireo, Indigo Bunting, Rufous-sided Towhee, 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.

39. HARDWOOD SWAMP FOREST

BOSQUE DE MADERAS DURAS PANTANOSO

MICHAEL R. DAWSON

Francis Beidler Forest, 336 Sanctuary Road, Harleyville SC 29448

Location: South Carolina; Dorchester Co.; Harleyville; Francis Beidler Forest Sanctuary, Four Holes Swamp; 33°11'N, 80°19'W; Pringleton Quadrangle, USGS. **Continuity:** Established 1979; 6 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 34:50 (1980) and *J. Field Ornithol.* 64(Suppl.):56 (1993). **Weather:** Mean start temp., 14.7°C (range 11–20°C). Temperatures were normal. Rainfall for April and May was 16.0 cm below normal for the 2-month period. **Coverage:** 17.4 h; 10 visits (10 sunrise); 29 Apr; 6, 11, 20, 23, 24, 27, 31 May; 1, 3 Jun. **Census:** Blue-gray Gnatcatcher, 38.0 (188); Carolina Wren, 9.0 (44); Prothonotary Warbler, 9.0; Northern Cardinal, 9.0; Tufted Titmouse, 8.5 (42); Red-eyed Vireo, 8.5; Red-bellied Woodpecker, 7.5 (37); Hooded Warbler, 7.0 (35); Acadian Flycatcher, 6.0 (30); Northern Parula, 6.0; Great Crested Flycatcher, 5.0 (25); White-eyed Vireo, 5.0; Downy Woodpecker, 3.0 (15); Carolina Chickadee, 2.0; Yellow-throated Vireo, 2.0; Yellow-billed Cuckoo, 1.0; Red-headed Woodpecker, 1.0; Pileated Woodpecker, 1.0; Yellow-throated Warbler, 1.0; Kentucky Warbler, 1.0; Summer Tanager, 1.0. **Total:** 21 species; 131.5 territories (649/40 ha). **Visitors:** Red-shouldered Hawk, Chimney Swift, Ruby-throated Hummingbird, American Crow, Black-throated Blue Warbler, Swainson's Warbler, Ovenbird, Brown-headed Cowbird. **Other Observer:** Norman Brunswig.

40. UPLAND HARDWOOD FOREST

BOSQUE DE MADERAS DURAS DE ALTURAS

CHÉRIE IRBY*, SIDNEY GAUTHREAUX* & WILLIAM JARVIS

**Dept. of Biological Sciences, Clemson University, Clemson SC 29634-1903*

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:** Established 1992; 2 yr. **Size:** 12.2 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):57 (1993). **Weather:** Mean start temp., 20.2°C (range 13–31°C). See BBC #38 for summary. **Coverage:** 21.2 h; 10 visits (8 sunrise, 2 sunset); 11, 16, 17, 19, 25, 31 May; 1, 7, 17, 19 Jun. **Census:**

Northern Parula, 10.5 (34); Acadian Flycatcher, 4.5 (15); Wood Thrush, 4.0 (13); Red-eyed Vireo, 4.0; Carolina Wren, 3.5 (11); Yellow-throated Vireo, 3.5; Yellow-throated Warbler, 3.5; Summer Tanager, 3.5; Blue-gray Gnatcatcher, 3.0 (10); Hooded Warbler, 3.0; Northern Cardinal, 2.5; Mourning Dove, 2.0; Yellow-billed Cuckoo, 2.0; Red-bellied Woodpecker, 2.0; Carolina Chickadee, 2.0; Tufted Titmouse, 2.0; Downy Woodpecker, 1.5; Black-and-white Warbler, 1.5; Kentucky Warbler, 1.5; Louisiana Waterthrush, 1.0; Barred Owl, 0.5; White-eyed Vireo, 0.5; Prothonotary Warbler, 0.5. **Total:** 23 species; 62.5 territories (205/40 ha). **Visitors:** Pileated Woodpecker, Eastern Wood-Pewee, Pine Warbler, American Redstart, Ovenbird, Blue Grosbeak, 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.

41. MATURE MAPLE-BEECH-BIRCH FOREST

BOSQUE MADURO DE ARCE-HAYA-ABEDUL

LAURA J. MITCHELL

Cherokee National Forest, P.O. Box 2010, Cleveland TN 37312

Site Number: TN2392102. **Location:** Tennessee; Monroe Co.; Whigg Ridge, Cherokee National Forest; 35°19'N, 84°2'W; Big Junction Quadrangle, USGS. **Continuity:** Established 1992; 3 yr. **Size:** 10.2 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):57-58 (1993). Some tree mortality possibly caused by the snowstorm of March 1993, resulted in two noticeable habitat changes: additional canopy gaps due to treefall and thicker understory (especially *Rubus* species). **Weather:** Mean start temp., 12.6°C (range 2-18°C). The season was characterized by a cool May followed by an unusually rainy June and July. Additional stream flow created some interference with aural detectability. Fog, light rain, and leaf drip are common at this altitude. **Coverage:** 19.2 h; 9 visits (6 sunrise, 3 sunset); 5, 17, 18 May; 6, 7, 13, 23, 24 Jun; 19 Jul. **Census:** Dark-eyed Junco, 28.0 (110; 11FL); Veery, 22.0 (86; 1FL); Ovenbird, 21.5 (84; 1FL); Solitary Vireo, 13.5 (53); Black-throated Blue Warbler, 5.5 (22; 2FL); Chestnut-sided Warbler, 4.5 (18); Red-eyed Vireo, 2.0; Blackburnian Warbler, 2.0; Barred Owl, 0.5; Red-breasted Nuthatch, 0.5; Winter Wren, 0.5. **Total:** 11 species; 100.5 territories (394/40 ha). **Visitors:** Broad-winged Hawk, Ruffed Grouse, Downy Woodpecker, Pileated Woodpecker, Carolina Chickadee, kinglet species, Canada Warbler, Rufous-sided Towhee. **Remarks:** The habitat changes may account for the increase in numbers of several warbler species, especially Chestnut-sided Warbler and possibly Black-throated Blue Warbler. Mammals observed in the plot this year include: black bear, coyote, European wild boar, red squirrel, and white-tailed deer. **Acknowledgments:** I wish to acknowledge the logistical and financial support of the USDA Forest Service, Cherokee National Forest.

42. MESOPHYTIC FOREST I

BOSQUE MESOFITICO I

MICHAEL G. SMITH

Route 3, Box 301, Elkton VA 22827

Site Number: VA1083031. **Location:** Virginia; Green Co.; Elkton; Pocosin Cabin Plot; 38°24'N, 78°29'W; Fletcher Quadrangle, USGS. **Continuity:** Established 1987; 8 yr. **Size:** 6.1 ha. **Description of Plot:** See *J. Field Ornithol.* 60(Suppl.):32-33 (1989). Some of the mature trees have died due to gypsy moth damage. Large trees were uprooted and branches were broken in part of the plot during last winter's ice storm. **Weather:** Mean start temp., 14.5°C (range 9-23°C). Temperature was above average and precipitation was below average during the study period. **Coverage:** 12.0 h; 11 visits (9 sunrise, 2 sunset); 26, 30, 31 May; 1, 2, 3, 6, 7, 10, 11, 14 Jun. **Census:** American Redstart, 13.5 (89); Ovenbird, 7.5 (49); Eastern Wood-Pewee, 6.5 (43); Red-eyed Vireo, 5.0 (33); Cerulean Warbler, 4.0 (26); Acadian Flycatcher, 3.0 (20); Veery, 3.0; Hooded Warbler, 3.0; Rufous-sided Towhee, 3.0; Downy Woodpecker,

2.0; Chestnut-sided Warbler, 2.0; Scarlet Tanager, 2.0; Wood Thrush, 1.5; Dark-eyed Junco, 1.5; Indigo Bunting, 1.0; Black-and-white Warbler, 0.5; Rose-breasted Grosbeak, 0.5. **Total:** 17 species; 59.5 territories (390/40 ha). **Visitors:** Yellow-billed Cuckoo, Hairy Woodpecker, Pileated Woodpecker, Great Crested Flycatcher, Common Raven, chickadee species, Tufted Titmouse, White-breasted Nuthatch, Blue-gray Gnatcatcher, American Robin, Solitary Vireo, Black-throated Blue Warbler, Worm-eating Warbler, Kentucky Warbler, Brown-headed Cowbird, American Goldfinch. **Remarks:** Species with number of territories down compared to the 8-yr average were: Veery -53% and Wood Thrush -58%. Species with number of territories up compared to the 8-yr average were: Ovenbird +172%, Eastern Wood-Pewee +74%, and Acadian Flycatcher +54%. **Acknowledgments:** Thanks to Elwood Fisher and others for the plot layout and vegetation survey. Thanks also to the personnel of the Shenandoah National Park for their cooperation in the study.

43. MESOPHYTIC FOREST II

BOSQUE MESOFITICO II

MICHAEL G. SMITH

Route 3, Box 301, Elkton VA 22827

Site Number: VA1087013. **Location:** Virginia; Green Co.; Elkton; Pocasin Mission Plot; 38°24'N, 78°29'W; Fletcher Quadrangle, USGS. **Continuity:** Established 1983; 9 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 38:76-77 (1984). Some of the mature trees have died due to gypsy moth damage over the past several years. **Weather:** Mean start temp., 14.8°C (range 10-22°C). Temperature was near average and precipitation was below average during the study period. **Coverage:** 11.3 h; 11 visits (9 sunrise, 2 sunset); 26, 30, 31 May; 1, 2, 3, 6, 7, 10, 11, 14 Jun. **Census:** American Redstart, 13.5 (89); Ovenbird, 10.5 (69); Cerulean Warbler, 7.0 (46); Red-eyed Vireo, 4.0 (26); Wood Thrush, 3.5 (23); Eastern Wood-Pewee, 3.0 (20); Acadian Flycatcher, 3.0; Veery, 3.0; Hooded Warbler, 3.0; Rufous-sided Towhee, 3.0; Scarlet Tanager, 2.5; Yellow-throated Vireo, 1.5; Rose-breasted Grosbeak, 1.5; White-breasted Nuthatch, 1.0; Downy Woodpecker, +; Hairy Woodpecker, +; Indigo Bunting, +. **Total:** 17 species; 60.0 territories (393/40 ha). **Visitors:** Great Crested Flycatcher, Common Raven, chickadee species, Tufted Titmouse, Blue-gray Gnatcatcher, Solitary Vireo, Black-and-white Warbler, Brown-headed Cowbird, Dark-eyed Junco, American Goldfinch. **Remarks:** Species with number of territories down compared to the 8-yr average were: Veery -49%. Species with number of territories up compared to the 8-yr average were: Cerulean Warbler +114%, Ovenbird +37%, and Acadian Flycatcher +26%. **Acknowledgments:** Thanks to Elwood Fisher and others for the plot layout and vegetation survey. Thanks also to the personnel of the Shenandoah National Park for their cooperation in the study.

44. MATURE LONGLEAF PINE FOREST I

BOSQUE DE PINO DE HOJA LARGA MADURO I

LAWRENCE D. CARLILE*

Tall Timbers Research Station, Route 1 Box 678, Tallahassee FL 32312-9712

Site Number: GA0493114. **Location:** Georgia; Thomas Co.; Thomasville; Wade Tract; 30°45'N, 84°0'W; Pine Park and Thomasville Quadrangles, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 20.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):15 (1994). **Weather:** Mean start temp., 19.1°C (range 13-24°C). Mean end temp., 22°C (range 16-26°C). **Coverage:** 16.4 h; 8 visits (8 sunrise); 26 Apr; 12, 20, 24, 31 May; 1, 2, 5 Jun. **Census:** Rufous-sided Towhee, 16.0 (32; 4FL); Common Yellowthroat, 11.0 (22); Red-headed Woodpecker, 8.0 (16); Northern Bobwhite, 7.0 (14); Mourning Dove, 6.0 (12); Great Crested Flycatcher, 5.0 (10); White-breasted Nuthatch, 4.5 (9); Bachman's Sparrow, 4.5 (2FL); Northern Flicker, 4.0 (8); Blue Jay, 4.0 (1N); Gray Catbird, 4.0 (1N); Yellow-breasted Chat, 4.0; Northern Cardinal, 4.0; Pine Warbler, 3.5 (7; 1FL); Blue Grosbeak, 3.5; Orchard Oriole, 3.5 (1N); Eastern

Wood-Pewee, 3.0 (6); Carolina Wren, 3.0 (1FL); Red-bellied Woodpecker, 2.5 (1FL); Brown-headed Nuthatch, 2.5; Eastern Meadowlark, 2.5; Eastern Kingbird, 2.0; Indigo Bunting, 2.0; Brown-headed Cowbird, 2.0; Red-cockaded Woodpecker, 1.5 (1N,3FL); Tufted Titmouse, 1.5; Wood Duck, 1.0 (1N); Eastern Bluebird, 1.0 (1N); Common Nighthawk, 0.5; Common Ground-Dove, +; Pileated Woodpecker, +; Northern Mockingbird, +; Summer Tanager, +. **Total:** 33 species; 117.5 territories (235/40 ha). **Visitors:** Yellow-billed Cuckoo, Downy Woodpecker, Purple Martin, American Crow, Fish Crow, Blue-gray Gnatcatcher, Yellow-throated Vireo, Red-winged Blackbird, Common Grackle. **Remarks:** All Gray Catbirds were associated with a titi stringer that bisects the plot. The Wood Duck nest was in an enlarged, inactive Red-cockaded Woodpecker cavity. A cluster of Red-cockaded Woodpecker cavity trees (including one nest tree) was located on the plot, and three other Red-cockaded Woodpecker clans regularly foraged on the plot. A prescribed burn was conducted after all visits had been completed. **Acknowledgments:** Thanks to the Wade family for permission to work on their property. *Present address: Fish & Wildlife Branch, AFZP-DEV-W, Fort Stewart GA 31314-4000

45. MATURE LONGLEAF PINE FOREST II

BOSQUE DE PINO DE HOJA LARGA MADURO II

LAWRENCE D. CARLILE*

Tall Timbers Research Station, Route 1 Box 678, Tallahassee FL 32312-9712

Site Number: GA0493113. **Location:** Georgia; Thomas Co.; Thomasville; Wade Tract; 30°45'N, 84°0'W; Pine Park and Thomasville Quadrangles, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 20.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):15-16 (1994). **Weather:** Mean start temp., 20.5°C (range 15-22°C). Mean end temp., 24°C (range 21-27°C). **Coverage:** 16.6 h; 8 visits (8 sunrise); 28 Apr; 9, 13, 23, 26 May; 4, 7, 18 Jun. **Census:** Bachman's Sparrow, 11.0 (22; 1N,8FL); Blue Grosbeak, 10.0 (20; 1N); Common Yellowthroat, 8.0 (16); Rufous-sided Towhee, 8.0 (2FL); Great Crested Flycatcher, 5.5 (11); Indigo Bunting, 4.5 (9); Mourning Dove, 4.0 (8; 4FL); Red-headed Woodpecker, 4.0; Blue Jay, 4.0 (1FL); Pine Warbler, 4.0; Northern Cardinal, 4.0; Brown-headed Cowbird, 4.0 (1FL); Northern Bobwhite, 3.0 (6); Red-bellied Woodpecker, 3.0; Northern Flicker, 3.0; Eastern Wood-Pewee, 3.0; Brown-headed Nuthatch, 3.0; Carolina Wren, 3.0 (2FL); Brown Thrasher, 3.0 (1FL); White-breasted Nuthatch, 2.5; Gray Catbird, 2.5; Orchard Oriole, 2.5; Wood Duck, 2.0 (1N); Tufted Titmouse, 2.0; Eastern Bluebird, 2.0; Loggerhead Shrike, 2.0; Yellow-breasted Chat, 2.0; Common Ground-Dove, 1.5; Summer Tanager, 1.5; Eastern Meadowlark, 1.5; Red-cockaded Woodpecker, 1.0 (1N); Eastern Kingbird, 1.0; Northern Mockingbird, 1.0; White-eyed Vireo, 1.0; Yellow-throated Vireo, 1.0; Common Nighthawk, 0.5; Great Horned Owl, +; Pileated Woodpecker, +. **Total:** 38 species; 119.5 territories (239/40 ha). **Visitors:** Cooper's Hawk, Downy Woodpecker, Purple Martin, American Crow, Fish Crow, Blue-gray Gnatcatcher, Northern Parula, Red-winged Blackbird, Common Grackle. **Remarks:** All Gray Catbirds and White-eyed Vireos were associated with a patch of titi located on the E edge of the plot. The Wood Duck nest was located in an enlarged, inactive Red-cockaded Woodpecker cavity. The Brown-headed Cowbird fledgling was being fed by a male Common Yellowthroat. **Acknowledgments:** Thanks to the Wade family for permission to work on their property. *Present address: Fish & Wildlife Branch, AFZP-DEV-W, Fort Stewart GA 31314-4000

46. CEDAR FOREST

BOSQUE DE CEDRO

SUSAN D. WELLER

27955 Canyon Road, Cataldo ID 83810

Site Number: ID6492039. **Location:** Idaho; Bonner Co.; Sagle; Gamble Lake; 48°13'N, 116°23'W; Talache Quadrangle, USGS. **Continuity:** Established 1992; 3 yr. **Size:** 12.3 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):62 (1993). **Weather:** Mean start temp.,

14.2°C (range 9–23°C). **Coverage:** 17.6 h; 10 visits (6 sunrise, 4 sunset); 20, 21, 25, 26, 27, 28 May; 3, 22, 23 Jun. **Census:** Swainson's Thrush, 3.0; Chipping Sparrow, 3.0; Hammond's Flycatcher, 2.0; Chestnut-backed Chickadee, 2.0; Red-breasted Nuthatch, 2.0; Golden-crowned Kinglet, 2.0; Townsend's Warbler, 2.0; Western Tanager, 2.0; Dark-eyed Junco, 2.0; Pine Siskin, 2.0; Winter Wren, 1.5; Cooper's Hawk, 1.0 (1N,1FL); Ruffed Grouse, 1.0; Red-naped Sapsucker, 1.0; Hairy Woodpecker, 1.0; Cordilleran Flycatcher, 1.0; Black-capped Chickadee, 1.0; Brown Creeper, 1.0; American Robin, 1.0; Varied Thrush, 1.0; Solitary Vireo, 1.0; Red-eyed Vireo, 1.0; Orange-crowned Warbler, 1.0; Yellow-rumped Warbler, 1.0; Brown-headed Cowbird, 1.0; Cassin's Finch, 1.0; Evening Grosbeak, 1.0; Dusky Flycatcher, 0.5. **Total:** 28 species; 40.0 territories (130/40 ha). **Visitors:** Rufous Hummingbird, Pileated Woodpecker, Common Raven, Black-headed Grosbeak, Red Crossbill. **Remarks:** The mild winter of 1993-94 may have allowed for a high survival rate for Golden-crowned Kinglets, resulting in high numbers during the 1994 breeding season. **Other Observer:** Lorraine Blumberg. **Acknowledgments:** This BBC was conducted under contract for the U.S.D.I. Bureau of Land Management. Scott Robinson was the BLM biologist responsible for this project.

47. OLD-GROWTH FOREST

BOSQUE DE EDAD AVANSADA

SCOTT ROBINSON

Bureau of Land Management, 1808 N. Third St., Coeur d'Alene ID 83814

Site Number: ID6492037. **Location:** Idaho; Boundary Co.; Bonner's Ferry; Farnham Forest; 48°50'N, 116°26'W; Farnham Peak Quadrangle, USGS. **Continuity:** Established 1992; 3 yr. **Size:** 11.3 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):62–63 (1993). **Weather:** Mean start temp., 12.7°C (range 7–19°C). There was nearly double the normal amount of rainfall in the area during June; measurable rain was recorded on 14 days. June was also quite chilly, with record low maximums recorded on two days. Source: climatologist C. Harris, Hayden Lake, ID. **Coverage:** 19.1 h; 12 visits (6 sunrise, 6 sunset); 23, 24, 31 May; 1, 7, 8, 13, 14, 20, 21, 27, 28 Jun. **Census:** Swainson's Thrush, 5.5 (19); Golden-crowned Kinglet, 5.0 (18); Red-breasted Nuthatch, 4.0 (14); Townsend's Warbler, 4.0; Chestnut-backed Chickadee, 3.0 (11); Red-naped Sapsucker, 2.0; Brown Creeper, 2.0; Winter Wren, 2.0; Western Tanager, 2.0; Black-headed Grosbeak, 2.0; Pileated Woodpecker, 1.0; Solitary Vireo, 1.0; Nashville Warbler, 1.0; MacGillivray's Warbler, 0.5. **Total:** 14 species; 35.0 territories (124/40 ha). **Visitors:** Ruffed Grouse, Hairy Woodpecker, Northern Flicker, Hammond's Flycatcher, Steller's Jay, Common Raven, Orange-crowned Warbler, Yellow-rumped Warbler, Dark-eyed Junco.

48. RIPARIAN FOREST

BOSQUE RIVEREÑO

SUSAN D. WELLER

27955 Canyon Road, Cataldo ID 83810

Site Number: ID6491103. **Location:** Idaho; Shoshone Co.; Pinehurst; Pine Creek; 47°26'N, 116°17'W; Twin Crags Quadrangle, USGS. **Continuity:** Established 1991; 4 yr. **Size:** 10.3 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):65–66 (1992). **Weather:** Mean start temp., 9.5°C (range 4–16°C). **Coverage:** 14.5 h; 10 visits (9 sunrise, 1 sunset); 13, 16, 18, 23, 25, 26 May; 1, 2, 6, 7 Jun. **Census:** Hammond's Flycatcher, 6.0 (23); Swainson's Thrush, 5.5 (21); Golden-crowned Kinglet, 3.0 (12); Townsend's Warbler, 3.0; MacGillivray's Warbler, 3.0; Yellow Warbler, 2.5; Cordilleran Flycatcher, 2.0; Winter Wren, 2.0; American Robin, 2.0; Solitary Vireo, 2.0; Warbling Vireo, 2.0; Yellow-rumped Warbler, 2.0; Song Sparrow, 2.0; Pine Siskin, 2.0; Ruffed Grouse, 1.0; Vaux's Swift, 1.0; Hairy Woodpecker, 1.0; Black-capped Chickadee, 1.0; Red-breasted Nuthatch, 1.0; Varied Thrush, 1.0; Orange-crowned Warbler, 1.0; Black-headed Grosbeak, 1.0; Chipping Sparrow, 1.0; Dark-eyed Junco, 1.0; Brown-headed Cowbird, 1.0. **Total:** 25 species; 50.0 territories (194/40 ha). **Visitors:** Great Blue Heron,

Western Screech-Owl, Rufous Hummingbird, Belted Kingfisher, Western Tanager, Northern Oriole, Red Crossbill. **Remarks:** General observations cannot account for the marked increase in numbers of both Hammond's Flycatcher and Pine Siskin. No breeding Western Tanagers were observed this year, but they were observed as visitors and on adjacent lands. **Other Observer:** Gregory R. Weller. **Acknowledgments:** This BBC was conducted under contract for the U.S.D.I. Bureau of Land Management. Scott Robinson was the BLM biologist responsible for this project.

49. HEAVILY THINNED WHITE SPRUCE PLANTATION

PLANTACION ENTRESACADA DE ABETO BLANCO

JULIET K. MARKOWSKY

1 Edgewood Dr., Orono ME 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; 10 yr. **Size:** 4.1 ha. **Description of Plot:** See *J. Field Ornithol.* 60(Suppl.):44 (1989), 61(Suppl.):58 (1990), and 65(Suppl.):70 (1994). **Weather:** Mean start temp., 11.5°C (range 4–22°C). May temperatures were at the 65-yr average; June temperatures were 2°C above the 65-yr average. Source: *The Guillemot*, newsletter of the Sorrento Scientific Society, Bar Harbor, ME. **Coverage:** 20.5 h; 10 visits (8 sunrise); 14, 20, 24, 27, 28 May; 3, 13, 19, 26 Jun; 3 Jul. Maximum number of observers/visit, 6. **Census:** Northern Parula, 5.0 (49); Blackburnian Warbler, 5.0; Black-throated Green Warbler, 4.0 (39); Black-capped Chickadee, 3.0 (29); Red-eyed Vireo, 3.0; Magnolia Warbler, 3.0; Red-breasted Nuthatch, 2.0; Solitary Vireo, 2.0; Black-and-white Warbler, 2.0; Ovenbird, 2.0; Yellow-bellied Sapsucker, 1.0; Eastern Wood-Pewee, 1.0; Great Crested Flycatcher, 1.0; Veery, 1.0; American Robin, 1.0; Nashville Warbler, 1.0; Yellow-rumped Warbler, 1.0; Pine Warbler, 1.0; Bay-breasted Warbler, 1.0; American Redstart, 1.0; Common Yellowthroat, 1.0; Hermit Thrush, +. **Total:** 22 species; 42.0 territories (410/40 ha). **Visitors:** Broad-winged Hawk, Hairy Woodpecker, Blue Jay, Common Raven, Winter Wren, Golden-crowned Kinglet, Scarlet Tanager, Brown-headed Cowbird, Purple Finch, American Goldfinch. **Remarks:** Golden-crowned Kinglet has declined since 1992 from a typical count of three breeding pairs to visitor status this year. **Other Observers:** Tim Jones and students in WLM260 (Field Ornithology) at the University of Maine.

50. MATURE RED SPRUCE FOREST

BOSQUE MADURO DE ABETOS ROJOS

THOMAS P. SKALING

10 Cumberland St., Brunswick ME 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; 6 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61(Suppl.):57 (1990). **Weather:** Mean start temp., 11.8°C (range -1–17°C). Except for the first visit which recorded a record low of -1°C and a trace of snow, the six-week study period was warmer and wetter than normal. The average daily temperature was 17.1°C or 1.8°C above normal. Total precipitation was 16.20 cm or 2.50 cm above the long-term average. Source: on-site instruments and the Northeast Regional Climate Center, Cornell University. **Coverage:** 24.3 h; 8 visits (8 sunrise); 28 May; 10, 19, 21, 24 Jun; 2, 4, 9 Jul. **Census:** Golden-crowned Kinglet, 5.0 (13); Magnolia Warbler, 5.0; Yellow-rumped Warbler, 4.5 (11); Red-breasted Nuthatch, 4.0 (10); Yellow-bellied Flycatcher, 3.5 (9); Yellow-bellied Sapsucker, 3.0 (8); Brown Creeper, 3.0; Swainson's Thrush, 3.0; Solitary Vireo, 3.0; Blackburnian Warbler, 3.0; Dark-eyed Junco, 3.0; Winter Wren, 2.5; Black-capped Chickadee, 2.0; Boreal Chickadee, 2.0; Hermit Thrush, 2.0; Northern Parula, 2.0; Bay-breasted Warbler, 2.0; Common Goldeneye, 1.0 (7FL); Sharp-shinned Hawk, 1.0; Broad-winged Hawk, 1.0 (1N); Belted Kingfisher, 1.0; Downy Woodpeck-

er, 1.0; Hairy Woodpecker, 1.0; Black-backed Woodpecker, 1.0 (1N); Northern Flicker, 1.0; Blue Jay, 1.0; Nashville Warbler, 1.0; Canada Warbler, 1.0; Purple Finch, 1.0; Evening Grosbeak, 1.0; Black-throated Green Warbler, 0.5. **Total:** 31 species; 66.0 territories (165/40 ha). **Visitors:** Great Horned Owl, Pileated Woodpecker, Ovenbird, White-winged Crossbill. **Acknowledgments:** I thank Boise Cascade for their continued assistance and interest in this project.

51. JACK PINE FOREST

BOSQUE DE PINO DE JACK

PETER S. REAMAN

Whitefish Point Bird Observatory, Whitefish Point Road Box 115, Paradise MI 49768

Site Number: MI2885037. **Location:** Michigan; Chippewa Co.; Paradise; Whitefish Point, Jack Pine Plot; 46°45'N, 85°6'W; Vermilion SE & Shelldrake Quadrangles, USGS. **Continuity:** Established 1985; 10 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 60(Suppl.):45 (1989). **Weather:** Mean start temp., 9.5°C (range 5–17°C). **Coverage:** 18.2 h; 8 visits (7 sunrise, 1 sunset); 15, 16, 17, 25, 27 Jun; 6, 9 Jul. **Census:** Black-throated Green Warbler, 11.5 (29); Chipping Sparrow, 10.0 (25); Nashville Warbler, 9.5 (24); Yellow-rumped Warbler, 8.5 (21); Ovenbird, 8.0 (20); Hermit Thrush, 3.0 (8); Pine Warbler, 3.0; Ruffed Grouse, 1.0 (1N,10FL); Ruby-throated Hummingbird, 1.0; Eastern Wood-Pewee, 1.0; Brown Creeper, 1.0; Solitary Vireo, +. **Total:** 12 species; 57.5 territories (144/40 ha). **Visitors:** Turkey Vulture, Gray Jay, Blue Jay, Black-capped Chickadee, Red-breasted Nuthatch, Cedar Waxwing, Dark-eyed Junco.

52. UPLAND CHRISTMAS TREE FARM

FINCAS DE ARBOLES DE NAVIDAD DE ALTURAS

ELIZABETH W. BROOKS

1435 Waterwells Road, Alfred Station NY 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; 12 yr. **Size:** 10.7 ha. **Description of Plot:** See *Am. Birds* 38:91 (1984). **Weather:** Mean start temp., 23.1°C (range 22–26°C). The average daily temperatures in May (10.3°C), June (17.9°C), and July (19.9°C) were all above normal; June was a full 2°C warmer than normal. Precipitation in May (8.7 cm) and July (5.2 cm) was near normal, but June precipitation (14.1 cm) was 4.6 cm above normal. Source: Alfred Cooperative Weather Station. **Coverage:** 19.2 h; 12 visits (2 sunset); 10 Apr; 31 May; 7, 14, 21, 28 Jun; 5, 12, 19, 26 Jul; 2, 19 Aug. **Census:** Chipping Sparrow, 18.0 (67; 17N,25FL); Song Sparrow, 15.0 (56; 1N); Cedar Waxwing, 11.0 (41; 12N,9FL); American Robin, 5.0 (19; 2N,8FL); Purple Finch, 4.0 (15; 5N); Field Sparrow, 3.0 (11); Savannah Sparrow, 3.0; Yellow-rumped Warbler, 2.5; Grasshopper Sparrow, 2.0; American Goldfinch, 2.0; Rufous-sided Towhee, 1.0; Henslow's Sparrow, 1.0; Bobolink, 1.0; Red-winged Blackbird, 1.0; House Finch, 1.0; Common Yellowthroat, 0.5; Horned Lark, +; Brown Thrasher, +; Vesper Sparrow, +. **Total:** 19 species; 71.0 territories (265/40 ha). **Visitors:** Northern Harrier, Killdeer, Alder Flycatcher, Eastern Kingbird, Blue Jay, Black-capped Chickadee, Indigo Bunting. **Remarks:** Instead of mowing the grass between the rows of trees as is usual, cattle were left fenced in the plantation to graze. Crows may have been attracted to the manure; nest predation by crows was unusually high. Chipping Sparrow, American Robin, and Cedar Waxwing were at record high numbers. American Woodcock was missing for the first time since 1984. **Acknowledgments:** Appreciation to Allister Klingensmith for nest-finding help on one visit, to Rick Walker for weather data, and to Tom and Kathy Kent for permission to conduct the study on their land.

53. UPLAND SCOTCH PINE PLANTATION

PLANTACION DE PINO ESCOCES EN ALTURAS

ELIZABETH W. BROOKS

1435 Waterwells Road, Alfred Station NY 14803

Site Number: NY2470024. **Location:** New York; Allegany Co.; Alfred; Foster Plantation; 42°07'N, 77°45'W; Andover Quadrangle, USGS. **Continuity:** Established 1969; 26 yr. **Size:** 9.3 ha. **Description of Plot:** See *Aud. Field Notes* 23:743–744 (1969) and *Am. Birds* 38:38 (1984). The habitat has changed from young Christmas trees to mature conifers and open areas of briars and shrubs over the 26 years of this study. **Weather:** Mean start temp., 19.8°C (range 16–25°C). See BBC #52 for summary. **Coverage:** 12.1 h; 10 visits (3 sunset); 8 Apr; 30 May; 6, 13, 20, 27 Jun; 4, 11, 18, 25 Jul. **Census:** Common Yellowthroat, 6.0 (26); Yellow-rumped Warbler, 5.0 (22); Chipping Sparrow, 5.0; Cedar Waxwing, 4.0 (17; 3N,4FL); Magnolia Warbler, 3.5 (15); Dark-eyed Junco, 3.0 (13); Indigo Bunting, 2.5; Black-capped Chickadee, 2.0; Song Sparrow, 2.0 (1N); Blue Jay, 1.5; American Robin, 1.5 (1N); Ruffed Grouse, 1.0; American Woodcock, 1.0; Nashville Warbler, 1.0; Rufous-sided Towhee, 1.0; Brown-headed Cowbird, 1.0; Purple Finch, 1.0; Mourning Dove, +; Alder Flycatcher, +; Ovenbird, +; Field Sparrow, +. **Total:** 21 species; 42.0 territories (181/40 ha). **Visitors:** Black-billed Cuckoo, American Crow, Red-breasted Nuthatch, Veery, Wood Thrush, Blue-winged Warbler, Chestnut-sided Warbler, Northern Cardinal, White-throated Sparrow, Common Grackle, House Finch. **Remarks:** Dark-eyed Junco set an all-time high number. The habitat changes are reflected by the continuing decline of sparrow numbers and the rise in counts for species such as Common Yellowthroat, Magnolia Warbler, and Yellow-rumped Warbler. **Acknowledgments:** Appreciation to Rick Walker for weather data and to Cynthia Clements and Phil Foster for permission to conduct the study on their land.

54. MATURE HEMLOCK RAVINE

HONDONADA DE PICEA MADURA

CLAIRE SEYMOUR

Pocono Environmental Education Center, R.D. 2, Box 1010, Dingmans Ferry PA 18328

Site Number: PA2494117. **Location:** Pennsylvania; Pike Co.; Dingmans Ferry; Pocono Environmental Education Center; 41°10'N, 74°54'W; Lake Maskenozha Quadrangle, USGS. **Continuity:** New. **Size:** 12.3 ha. **Description of Plot:** A rectangular plot (100 x 1006 m) with a closed canopy dominated by eastern hemlock (90%), eastern white pine (9%), and yellow birch (0.5%). The stand is 61–100 years of age with a mean canopy height of 18.2 m (range 9–37 m). The understory is dominated by witch-hazel and young hemlocks. The ground cover is dominated by intermediate wood-fern, lowbush blueberry, and pincushion moss. There are several permanent and intermittent streams with a maximum width of 3 m and a maximum depth of 0.6 m. **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. **Topography and Elevation:** The plot has a NE-facing slope of > 16% grade. Minimum elevation 122 m, maximum 183 m. **Weather:** Mean start temp., 12.9°C (range 6–16°C). Average low temperatures (long-term averages in parentheses): May, 9.2°C (10.6°C); June, 18.4°C (15.9°C). Average high temperatures: May, 21.6°C (22.5°C); June, 30.6°C (27.3°C). Average temperatures: May, 15.4°C (16.6°C); June, 24.5°C (21.6°C). Precipitation in May, 6.9 cm (3.9 cm below average); June, 4.6 cm (5.2 cm below average). Source: Harrisburg National Weather Service. **Coverage:** 54.5 h; 11 visits (8 sunrise, 3 sunset); 2, 9, 10, 15, 30 May; 5, 17, 19, 20, 21 Jun; 3 Jul. **Census:** Blackburnian Warbler, 12.5 (41; 3FL); Black-throated Green Warbler, 9.0 (29; 2FL); Ovenbird, 8.0 (26; 3N,3FL); Solitary Vireo, 6.5 (21; 3N,1FL); Wood Thrush, 3.5 (11; 2N,2FL); Hermit Thrush, 3.0 (10); Acadian Flycatcher, 2.0; Worm-eating Warbler, 2.0; Louisiana Waterthrush, 2.0 (1FL); Brown-headed Cowbird, 2.0; Blue Jay, 1.5; Black-capped Chickadee, 1.5; Black-and-white Warbler, 1.5 (1N,1FL); Scarlet Tanager, 1.5; Eastern Wood-Pewee, 1.0 (1FL); Eastern Phoebe, 1.0 (1FL); American Robin, 1.0. **Total:** 17 species; 59.5 territories (193/40 ha). **Visitors:** Broad-winged Hawk, Red-tailed Hawk, Great Horned Owl, Downy

Woodpecker, Hairy Woodpecker, Northern Flicker, Pileated Woodpecker, Great Crested Flycatcher, American Crow, Rose-breasted Grosbeak. **Remarks:** One cowbird egg was found in a Solitary Vireo nest. On the next visit, the nest appeared to be abandoned and only fragments of the cowbird egg remained. Warblers were seen mobbing Blue Jays during two visits. On two occasions a Red-tailed Hawk was heard calling in the vicinity of an old nest. A gray fox was seen sleeping on a rock outcrop midway through the plot. Sightings of robins and tanagers increased significantly during the last three visits. Three to five adults of both species were seen foraging in close proximity. **Other Observers:** Tom Leckey, Joe Lesko, Rance Harmon, Terry Master, Jim Wilson. **Acknowledgments:** Special thanks to John Theisen for help and advice in setting-up the plot, to Jeff Shreiner for helpful advice and information, and to Laurie Goodrich. Special thanks also to Tom Leckey and Joe Lesko who were invaluable recording partners.

55. OLD-GROWTH HEMLOCK-WHITE PINE FOREST

BOSQUE DE PICEA MADURA Y PINO BLANCO

J. CHRISTOPHER HANEY & CHARLES P. SCHAADT

*Wildlife Technology Program, School of Forest Resources,
The Pennsylvania State University, College Place, DuBois PA 15801-3199*

Site Number: PA2494134. **Location:** Pennsylvania; Forest Co.; Cooksburg; Henry Run; 41°20'N, 79°12'W; Cooksburg Quadrangle, USGS. **Continuity:** New. **Size:** 15.0 ha. **Description of Plot:** A square plot (387 x 387 m) with a closed canopy dominated by eastern hemlock, eastern white pine, and various oaks. 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 15 randomly-placed 0.04-ha circular samples, 422/ha; total basal area 49.2 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m²/ha, relative dominance (%), and frequency (%)]: eastern white pine, 18, 4, 7.6, 15, 20; eastern hemlock, 248, 59, 25.4, 52, 100; black birch, 3, 1, 0.2, 0, 13; yellow birch, 3, 1, 0.2, 0, 7; American beech, 43, 10, 3.7, 8, 53; white oak, 13, 3, 2.5, 5, 40; chestnut oak, 13, 3, 1.6, 3, 27; northern red oak, 5, 1, 1.4, 3, 27; sugar maple, 5, 1, 0.2, 0, 13; red maple, 22, 5, 2.0, 4, 27; standing dead, 70, 17, 6.4, 13, 100. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%)]: A (7.6-15.2 cm) 130, 31, 1.2, 3; B (15.2-22.9 cm) 80, 19, 2.3, 5; C (22.9-38.1 cm) 98, 23, 6.6, 13; D (38.1-53.3 cm) 63, 15, 10.1, 21; E (53.3-68.6 cm) 37, 9, 9.7, 20; F (68.6-83.8 cm) 27, 6, 12.2, 25; G (83.8-101.6 cm) 8, 2, 5.6, 11; H (> 101.6 cm) 2, 0, 1.4, 3. Shrub stems/ha, 173, dominated by eastern hemlock (62%), and great rhododendron (38%). Ground cover, < 5%, dominated by true mosses. Canopy cover, 97%; average canopy height, 33.8 m (range 23-41 m). **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 is nearly level with a SE-facing slope of < 5% grade. Minimum elevation 440 m, maximum 463 m. **Weather:** Mean start temp., 17.0°C (range 3-29°C). See BBC #56 for May and June summary. Temperature and precipitation departures, respectively, from the 30-yr means for July, daily high -0.6°C, daily low +0.6°C, -0.2 cm. Source: DuBois-Jefferson Co. Regional Airport. **Coverage:** 19.1 h; 8 visits (4 sunrise, 1 sunset); 19, 21 May; 1, 7, 9, 22, 29 Jun; 5 Jul. Maximum number of observers/visit, 4. **Census:** Blackburnian Warbler, 46.0 (123); Black-throated Green Warbler, 28.0 (75); Magnolia Warbler, 25.0 (67); Red-eyed Vireo, 15.0 (40); Solitary Vireo, 9.0 (24); Hermit Thrush, 5.0 (13); Dark-eyed Junco, 5.0 (3FL); Black-capped Chickadee, 4.0 (11; 1N); Brown Creeper, 4.0; Golden-crowned Kinglet, 2.0; Pine Warbler, 2.0; Scarlet Tanager, 2.0; Chipping Sparrow, 2.0; Purple Finch, 2.0; Winter Wren, 1.5; Barred Owl, 1.0 (3FL); Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Acadian Flycatcher, 1.0; Blue Jay, 1.0; Brown-headed Cowbird, 1.0; Mourning Dove, 0.5; Ruby-throated Hummingbird, 0.5; Eastern Wood-Pewee, 0.5; Red-breasted Nuthatch, 0.5. **Total:** 25 species; 160.5 territories (428/40 ha). **Visitors:** Common Merganser, Turkey Vulture, Cooper's Hawk, Red-shouldered Hawk, Yellow-bellied Sapsucker, Downy Woodpecker, Great Crested Flycatcher,

er, American Crow, Tufted Titmouse, White-breasted Nuthatch, Cedar Waxwing, Black-throated Blue Warbler, Yellow-throated Warbler, Black-and-white Warbler, Pine Siskin, American Goldfinch. **Remarks:** Light infestations of both gypsy moth and elm spanworm occurred in regional forests this season. Mammals or mammal sign observed included: eastern chipmunk (*Tamias striatus*), gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*), and white-tailed deer (*Odocoileus virginianus*). **Other Observers:** Becky Allison, John Cheek, Linda Hepfner, Ray Kaufmann, Terry Masters, John Seachrist, Jocelyn Smreker, Sue Wetzel. **Acknowledgments:** We thank Carl Schlentner at Cook Forest State Park and Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania for assistance with logistics and access. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

56. OLD-GROWTH WHITE PINE-HEMLOCK FOREST

BOSQUE DE EDAD AVANSADA DE PINO BLANCO-PICEA

J. CHRISTOPHER HANEY

*Wildlife Technology Program, School of Forest Resources,
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Site Number: PA2493081. **Location:** Pennsylvania; Clarion Co.; Cooksburg; Hillside Tract; 41°20'N, 79°13'W; Cooksburg Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 18.2 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):73-74 (1994). **Weather:** Mean start temp., 13.5°C (range 6-22°C). The weather was near normal except for the late melting of the exceptional winter snow cover. Temperature and precipitation departures, respectively, from the 30-yr means for: April, daily high +2.1°C, daily low +1.3°C, +3.8 cm; May, daily high -3.3°C, daily low -2.8°C, -1.9 cm; June, daily high +0.3°C, daily low +0.6°C, +6.9 cm. Source: DuBois-Jefferson Co. Regional Airport. **Coverage:** 16.8 h; 8 visits (3 sunrise, 1 sunset); 27 Apr; 19, 24, 27 May; 6, 7, 10, 17 Jun. Maximum number of observers/visit, 4. **Census:** Blackburnian Warbler, 22.0 (48); Black-throated Green Warbler, 16.0 (35); Dark-eyed Junco, 11.0 (24); Magnolia Warbler, 10.0 (22); Solitary Vireo, 6.0 (13); Red-eyed Vireo, 3.0 (7); Chipping Sparrow, 3.0; Mourning Dove, 2.0; Blue Jay, 2.0; Black-capped Chickadee, 2.0; Red-breasted Nuthatch, 2.0; Brown Creeper, 2.0 (1N); Winter Wren, 2.0; Golden-crowned Kinglet, 2.0; Hermit Thrush, 2.0; American Robin, 2.0; Scarlet Tanager, 1.5; Common Merganser, 1.0 (1N); Pileated Woodpecker, 1.0; Pine Warbler, 1.0; Purple Finch, 1.0; Sharp-shinned Hawk, 0.5; Hairy Woodpecker, 0.5; Wood Thrush, 0.5. **Total:** 24 species; 96.0 territories (211/40 ha). **Visitors:** Great Blue Heron, Broad-winged Hawk, Red-tailed Hawk, Northern Saw-whet Owl, Chimney Swift, Ruby-throated Hummingbird, Belted Kingfisher, Downy Woodpecker, Northern Flicker, Acadian Flycatcher, American Crow, White-breasted Nuthatch, Cedar Waxwing, Ovenbird, Louisiana Waterthrush, Rose-breasted Grosbeak, Pine Siskin, American Goldfinch. **Remarks:** Light infestations of both gypsy moth and elm spanworm occurred in regional forests this season, but this plot was little affected due to dominance by conifers. Slight increases in the numbers of Black-throated Green and Blackburnian Warbler territories occurred since last year. Mammals or mammal sign observed included: eastern chipmunk (*Tamias striatus*), gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*), and white-tailed deer (*Odocoileus virginianus*). **Other Observers:** Becky Allison, John Cheek, Linda Hepfner, Ray Kaufmann, John Seachrist, Sue Wetzel. **Acknowledgments:** We thank Carl Schlentner at Cook Forest State Park and Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania for assistance with logistics and access. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

57. MATURE WHITE PINE FOREST

BOSQUE MADURO DE PINO BLANCO

WILLIAM R. EDDLEMAN*

Dept. of Natural Resources Science, 210B Woodward Hall, Univ. of Rhode Island, Kingston RI 02881

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; 5 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 62(Suppl.):54-55 (1991). **Weather:** Mean start temp., 7.1°C (range 3-12°C). April mean temperature (9.4°C) was warmer than normal (8.0°C), May mean temperature (12.9°C) was near normal (13.4°C), and June mean temperature (20.0°C) was above normal (18.3°C). April precipitation (5.2 cm) was below normal (11.6 cm), as were May precipitation (7.7 cm; normal 11.0 cm) and June precipitation (5.1 cm; normal 9.5 cm). **Source:** University of Rhode Island weather station, Kingston, RI. **Coverage:** 18.8 h; 11 visits (11 sunrise); 30 Apr; 3, 7, 15, 25, 30 May; 4, 5, 9, 10, 11 Jun. **Census:** Ovenbird, 14.0 (55); Pine Warbler, 12.5 (50); Common Yellowthroat, 5.5 (22); Gray Catbird, 5.0 (20); Black-capped Chickadee, 4.5 (18); Veery, 4.0 (16); Rufous-sided Towhee, 4.0; Tufted Titmouse, 3.0 (12); Red-breasted Nuthatch, 2.0; Hermit Thrush, 2.0; Black-throated Green Warbler, 2.0; Great Crested Flycatcher, 1.5; Blue Jay, 1.5; Northern Cardinal, 1.5; Common Grackle, 1.5; Eastern Wood-Pewee, 1.0; White-breasted Nuthatch, 1.0; House Wren, 1.0; Scarlet Tanager, 1.0; Chipping Sparrow, 1.0; American Crow, 0.5; American Robin, 0.5; Brown-headed Cowbird, 0.5. **Total:** 23 species; 71.0 territories (281/40 ha). **Visitors:** Mallard, Mourning Dove, Downy Woodpecker, Northern Flicker, Eastern Phoebe, Northern Waterthrush. **Remarks:** Common Yellowthroat was associated with bog openings on the plot. **Other Observers:** David and Nancy Clayton. **Acknowledgments:** Thanks to David Rodrigues and the Audubon Society of Rhode Island for permission to use the site and for continued support of the census program. **Present address: Dept. of Biology, Rhodes Hall 224, SE Missouri State Univ., Cape Girardeau MO 63701-4799*

58. LOBLOLLY PINE FOREST

BOSQUE DE PINO LOBLOLLY

CHÉRIE IRBY*, SIDNEY GAUTHREAUX* & WILLIAM JARVIS

**Dept. of Biological Sciences, Clemson University, Clemson SC 29634-1903*

Site Number: SC0493100. **Location:** South Carolina; Barnwell Co.; Martin; Savannah River Site; 33°11'N, 81°34'W; Girard NE Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 12.2 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):75 (1994). **Weather:** Mean start temp., 21.5°C (range 11-31°C). See BBC #38 for summary. **Coverage:** 16.9 h; 10 visits (8 sunrise, 2 sunset); 12, 18, 21, 25, 27 May; 2, 8, 13, 15, 21 Jun. **Census:** Pine Warbler, 5.5 (18; 12FL); Northern Cardinal, 4.5 (15; 1FL); Great Crested Flycatcher, 3.5 (11); Brown-headed Nuthatch, 3.5; Carolina Wren, 3.5; Eastern Wood-Pewee, 2.5; Rufous-sided Towhee, 2.5 (1FL); Red-headed Woodpecker, 2.0; Summer Tanager, 2.0; Red-bellied Woodpecker, 1.5; Downy Woodpecker, 1.5; Tufted Titmouse, 1.5 (2FL); Mourning Dove, 1.0; Northern Flicker, 1.0 (1N); Indigo Bunting, 1.0; Yellow-billed Cuckoo, 0.5; Pileated Woodpecker, 0.5; Carolina Chickadee, 0.5; White-eyed Vireo, 0.5; Yellow-throated Vireo, 0.5. **Total:** 20 species; 39.5 territories (130/40 ha). **Visitors:** Wood Duck, Acadian Flycatcher, Blue Jay, Blue-gray Gnatcatcher, Red-eyed Vireo, Northern Parula, 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.

59. LONGLEAF-LOBLOLLY PINE FOREST

BOSQUE DE PINO LOBLOLLY-HOJA LARGA

PAUL A. KOEHLER

National Audubon Society, 4542 Silver Bluff Road, Jackson SC 29831

Site Number: SC0493133. **Location:** South Carolina; Aiken Co.; Jackson; Silver Bluff Plantation Sanctuary; 33°19'N, 81°51'W; Jackson Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 12.3 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):76-77 (1994). The SW corner of the plot (37-year-old longleaf pine stand, 12% of study area) was prescribed burned on 3 February 1994. The burn nearly eliminated all vegetation up to 2.5 m tall. The NE corner of the plot (42-year-old longleaf pine stand, 19% of study area) was prescribed burned on 3 January 1993 and experienced significant growth in the understory this year, especially sweetgum (60% coverage) and waxmyrtle (30% coverage). The average height of the two species was 2 m. The vegetation density and composition of the remainder of the plot was much the same as last year. It was much drier than last year; standing water covered < 5% of the study area at the beginning of the census. **Weather:** Mean start temp., 21.6°C (range 6-32°C). The total rainfall during the study period was 4.75 cm below normal. The mean temperature for May was 1.28°C below normal. Sources: National Weather Service, Augusta, GA and Silver Bluff Plantation Sanctuary rain gauge. **Coverage:** 17.7 h; 10 visits (5 sunrise, 5 sunset); 7, 10, 13, 18, 21, 25, 28, 29, 31 May; 1 Jun. **Census:** Rufous-sided Towhee, 12.0 (39); Common Yellowthroat, 7.0 (23); Pine Warbler, 6.0 (20); Yellow-breasted Chat, 6.0; Indigo Bunting, 6.0; Eastern Wood-Pewee, 5.0 (16); Great Crested Flycatcher, 5.0; Summer Tanager, 5.0; Carolina Wren, 4.0 (13); Kentucky Warbler, 4.0; Northern Cardinal, 4.0; Red-bellied Woodpecker, 3.0 (10); Red-headed Woodpecker, 2.0; Downy Woodpecker, 2.0; Carolina Chickadee, 2.0; White-eyed Vireo, 2.0; Mourning Dove, 1.0; Pileated Woodpecker, 1.0; Blue Jay, 1.0; Tufted Titmouse, 1.0; Blue-gray Gnatcatcher, 1.0. **Total:** 21 species; 80.0 territories (260/40 ha). **Visitors:** Wood Duck, Northern Bobwhite, Yellow-billed Cuckoo, Chuck-will's-widow, Ruby-throated Hummingbird, American Crow, Fish Crow, Brown-headed Nuthatch, Wood Thrush, Yellow-throated Vireo, American Redstart.

60. HIGH ALTITUDE RED SPRUCE FOREST

BOSQUE DE ABETOS ROJOS DE ALTURAS

GEORGE R. MAYFIELD, III

4388 Bluff City Hwy., Bluff City TN 37618

Site Number: TN2392093. **Location:** Tennessee; Unicoi Co.; Unicoi; Unaka Mountain; 36°8'N, 82°18'W; Unicoi Quadrangle, USGS. **Continuity:** Established 1992; 3 yr. **Size:** 9.9 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):69-70 (1993). **Weather:** Mean start temp., 14.6°C (range 2-19°C). **Coverage:** 21.2 h; 8 visits (8 sunrise); 19, 31 May; 11, 16, 20, 24, 26, 28 Jun. **Census:** Golden-crowned Kinglet, 11.0 (44); Dark-eyed Junco, 8.0 (32); Veery, 7.5 (30); Magnolia Warbler, 3.0 (12); Rufous-sided Towhee, 1.5; Red-breasted Nuthatch, 1.0; American Robin, 1.0; Black-throated Blue Warbler, 1.0; Ruffed Grouse, +; Blue Jay, +; Winter Wren, +; Gray Catbird, +; Solitary Vireo, +; Chestnut-sided Warbler, +. **Total:** 14 species; 34.0 territories (137/40 ha). **Visitors:** Carolina Chickadee, Cedar Waxwing, Canada Warbler, Rose-breasted Grosbeak, Red Crossbill, Pine Siskin. **Remarks:** Pine Siskins were present after absence in 1993. Red Crossbills were much more abundant than in 1993 and were seen on the plot with some regularity. A Ruffed Grouse nest was found in the same habitat within 15 m of the plot; six hatched eggs and one unhatched egg were found after hatching. Northern Saw-whet Owl occurred regularly within a few hundred meters of the plot. **Acknowledgments:** Financial support of USDA-Forest Service, Cherokee National Forest.

61. PINYON-JUNIPER WOODLAND**BOSQUE DE PIÑON-JUNIPERO**

GARY N. SALAMACHA

Arches National Park, P.O. Box 907, Moab UT 84532

Location: Utah; Grand Co.; Moab; Devil's Garden; 38°48'N, 109°35'W; Arches National Park Quadrangle, USGS. **Continuity:** Established 1983; 12 yr. **Size:** 31.3 ha. **Description of Plot:** See *Am. Birds* 38:137-138 (1984). **Weather:** Mean start temp., 10.2°C (range 3.5-17°C). The mean start temp. was 0.2°C warmer than last year, but normal for the time of year. This was an unusually windy spring, but on most visit days the winds increased later in the day. Three visits were not completed due to windy conditions, but only two or three grid lines were not walked. On 28 April it was cold (3.5°C) and foggy which is very unusual for the high desert. **Coverage:** 26.0 h; 10 visits (10 sunrise); 6, 13, 20, 28 Apr; 4, 11, 18, 25 May; 1, 8 Jun. **Census:** Black-throated Gray Warbler, 7.0 (9); House Finch, 7.0; Black-throated Sparrow, 5.0 (6); Say's Phoebe, 4.0 (5); Gray Vireo, 4.0; Plain Titmouse, 2.0; Blue-gray Gnatcatcher, 2.0; Mountain Bluebird, 2.0; Ash-throated Flycatcher, 1.0; Rock Wren, 1.0; Canyon Wren, 1.0; Mourning Dove, +; White-throated Swift, +; Bewick's Wren, +. **Total:** 14 species; 36.0 territories (46/40 ha). **Visitors:** Turkey Vulture, Red-tailed Hawk, Black-chinned Hummingbird, Northern Flicker, Olive-sided Flycatcher, Cordilleran Flycatcher, Violet-green Swallow, Scrub Jay, Common Raven, Bushtit, Western Meadowlark, Brown-headed Cowbird, Scott's Oriole. **Remarks:** An excellent year for most species observed on the plot. The numbers of Bewick's Wrens (2.0 territories in 1993 to + territories in 1994), Rock Wrens (4.0 to 1.0), and Blue-gray Gnatcatchers (4.0 to 2.0) decreased from last year, but Black-throated Gray Warblers (2.0 to 7.0), Say's Phoebes (1.0 to 4.0), Mountain Bluebirds (+ to 2.0), Gray Vireos (3.0 to 4.0), and Black-throated Sparrows (4.0 to 5.0) increased from last year. Brown-headed Cowbirds were observed on four occasions but in small numbers (1-3 birds) and mostly flying over the plot. A Common Raven nest outside the plot was active for the seventh consecutive year. A Red-tailed Hawk was observed on three occasions but the nest was never found. Northern Flicker, Olive-sided Flycatcher, and Cordilleran Flycatcher were new species observed on the plot during the census. **Other Observer:** Karen McKinlay-Jones.

62. PONDEROSA PINE-SCRUB OAK FOREST**BOSQUE DE PINO PONDEROSA-MATORRAL DE ROBLE**

HERBERT J. FINCH & JAMES W. WEISSMANN

HQ USAFA/DFB, US Air Force Academy CO 80840

Location: Colorado; El Paso Co.; Colorado Springs; USAFA Breeding Bird Survey; 38°57'N, 104°50'W; Pikeview Quadrangle, USGS. **Continuity:** Established 1980; 14 yr. **Size:** 12.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62(Suppl.):56-57 (1991) and 63(Suppl.):73 (1992). **Weather:** Normal temperatures with above average precipitation during the study period. **Coverage:** 13.9 h; 10 visits (10 sunrise); 17, 20, 23, 25, 27 May; 1, 3, 8, 10, 14 Jun. **Census:** Chipping Sparrow, 10.0 (33); Pine Siskin, 7.0 (23); Western Wood-Pewee, 6.0 (20); American Robin, 5.0 (17); Broad-tailed Hummingbird, 4.0 (13); Mountain Chickadee, 4.0; Pygmy Nuthatch, 4.0; Solitary Vireo, 4.0; Rufous-sided Towhee, 3.0 (10); Brown-headed Cowbird, 3.0; House Finch, 3.0; Mourning Dove, 2.0; Lesser Goldfinch, 2.0; Common Nighthawk, 1.0; Northern Flicker, 1.0; Steller's Jay, 1.0; Western Bluebird, 1.0; Dark-eyed Junco, 1.0. **Total:** 18 species; 62.0 territories (207/40 ha). **Other Observers:** Jim Kent, John Obringer, Robert Hildreth, Holly Franz, Mike Fatone, Jeff Hays.

**63. CLIMAX HEMLOCK-WHITE PINE FOREST WITH TRANSITION
HARDWOODS****BOSQUE CLIMAX DE PICEA-PINO BLANCO EN TRANSICION A MADERAS DURAS**

ANDREW F. MAGEE

White Memorial Conservation Center, Litchfield CT 06759

Site Number: CT2765008. **Location:** Connecticut; Litchfield Co.; Litchfield; White Memorial Foundation-Catlin Woods; 41°43'N, 73°12'W; Litchfield Quadrangle, USGS. **Continuity:** Es-

tablished 1965; 28 yr. **Size:** 10.5 ha. **Description of Plot:** See *Aud. Field Notes* 19:594-595 (1965). The vegetation was resurveyed in 1990 and again after that, but the results have not been published. **Weather:** Mean start temp., 18.8°C (range 7-29°C). See BBC #5 for summary. **Coverage:** 12.3 h; 8 visits (3 sunrise, 3 sunset); 15, 21, 31 May; 7, 15, 16 Jun; 10 Jul. **Census:** Black-throated Green Warbler, 17.0 (65); Blackburnian Warbler, 16.0 (61); Ovenbird, 11.0 (42); Veery, 9.0 (34); Yellow-rumped Warbler, 7.0 (27); Wood Thrush, 6.0 (23); Red-eyed Vireo, 6.0; Solitary Vireo, 5.0 (19); Blue Jay, 3.0 (11); Black-capped Chickadee, 3.0; Red-breasted Nuthatch, 3.0; Pine Warbler, 3.0; Black-and-white Warbler, 3.0; Scarlet Tanager, 3.0; Downy Woodpecker, 2.0; Eastern Wood-Pewee, 2.0; Great Crested Flycatcher, 2.0; American Crow, 2.0; Brown Creeper, 2.0; Wood Duck, 1.0; Ruffed Grouse, 1.0; Wild Turkey, 1.0; Barred Owl, 1.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; Hermit Thrush, 1.0; American Robin, 1.0; Gray Catbird, 1.0; Yellow-throated Vireo, 1.0; Common Yellowthroat, 1.0; Northern Cardinal, 1.0; Mourning Dove, 0.5; Pileated Woodpecker, 0.5; American Redstart, 0.5; Song Sparrow, 0.5; Common Grackle, 0.5; Brown-headed Cowbird, 0.5; Purple Finch, 0.5; Sharp-shinned Hawk, +; Cooper's Hawk, +; Broad-winged Hawk, +; Great Horned Owl, +; Alder Flycatcher, +; Yellow Warbler, +; Black-throated Blue Warbler, +; Northern Oriole, +. **Total:** 48 species; 122.5 territories (467/40 ha). **Remarks:** The number of species observed was the highest in the 28 years of this census. Included were three new species—Wild Turkey (introduced in CT), Alder Flycatcher, and Black-throated Blue Warbler. The number of territorial males counted tied last year's high. The 7.0 Yellow-rumped Warbler territories were 6.0 more than last year and a new high for this species on any of our census plots. Of the five typically most abundant species, Black-throated Green Warbler and Blackburnian Warbler (both requiring conifers for nesting) continued their recent resurgence while Red-eyed Vireos continued their recent slide by falling to their lowest number since 1981. **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

TOM HARRINGTON

30 South Windham Road, Willimantic CT 06226

Site Number: CT1291035. **Location:** Connecticut; Hartford Co.; Manchester; Oak Grove Nature Center; 41°46'N, 72°30'W; Manchester Quadrangle, USGS. **Continuity:** Established 1991; 4 yr. **Size:** 21.5 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):74 (1992). **Weather:** Mean start temp., 9.3°C (range 3-21°C). Temperatures in May averaged 1°C below normal; in June they were slightly above normal (2°C). Total precipitation in May was exactly normal (10.5 cm); in June it was slightly above normal (0.2 cm above norm of 9.5 cm). There was broken fog during the last visit. **Coverage:** 17.5 h; 8 visits (8 sunrise); 7, 21, 28 May; 4, 9, 11, 15, 16 Jun. **Census:** Tufted Titmouse, 8.0 (15; 9FL); American Robin, 7.0 (13; 2FL); Red-winged Blackbird, 7.0 (4FL); Black-capped Chickadee, 6.0 (11; 13FL); Blue Jay, 5.0 (9; 1N,2FL); Northern Cardinal, 5.0 (2FL); Gray Catbird, 4.0 (7); Common Grackle, 4.0 (2N,12FL); Northern Flicker, 3.0 (6); Eastern Phoebe, 3.0; European Starling, 3.0 (2N,9FL); Common Yellowthroat, 2.0; Song Sparrow, 2.0; House Finch, 2.0; Mallard, 1.0; Mourning Dove, 1.0; Belted Kingfisher, 1.0; Red-bellied Woodpecker, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0 (1N,2FL); Great Crested Flycatcher, 1.0; American Crow, 1.0 (1FL); White-breasted Nuthatch, 1.0; House Wren, 1.0; Wood Thrush, 1.0; Warbling Vireo, 1.0; Brown-headed Cowbird, 1.0; Northern Oriole, 1.0. **Total:** 28 species; 75.0 territories (140/40 ha). **Visitors:** Wood Duck, Chimney Swift, Eastern Wood-Pewee, Rough-winged Swallow, Veery, Northern Mockingbird, Cedar Waxwing, Red-eyed Vireo, Ovenbird, Scarlet Tanager, Rose-breasted Grosbeak, Chipping Sparrow, American Goldfinch.

65. OAK-HEMLOCK FOREST

BOSQUE DE ROBLE-PICEA

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

Dept. of Zoology, Connecticut College, 270 Mohegan Ave., New London CT 06320

Site Number: CT1253099. **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; 23 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 lose needles and die because of an infestation of wooly adelgid (*Adelges tsugae*), creating a much more open canopy in the central section of the plot. The decline of hemlock has been gradual, however. Sassafras saplings have grown in the more open areas. **Weather:** Mean start temp., 14.5°C (range 4-24°C). The weather was drier than normal. There was very little rainfall during the census period. **Coverage:** 24.4 h; 20 visits (20 sunrise); 13, 20, 27 May; 3, 6, 7, 10, 17, 28 Jun; 2, 7 Jul. Each visit covered half of the plot, giving 10 complete coverages. **Census:** Red-eyed Vireo, 10.5 (18); Veery, 10.0 (17); Ovenbird, 8.0 (14); Black-capped Chickadee, 6.5 (11); Rufous-sided Towhee, 6.0 (10); Tufted Titmouse, 5.0 (9); Great Crested Flycatcher, 4.0 (7); Black-and-white Warbler, 4.0; Wood Thrush, 3.5 (6); Gray Catbird, 3.5; Northern Cardinal, 3.5; Scarlet Tanager, 3.0 (5); Brown-headed Cowbird, 2.5; Eastern Wood-Pewee, 2.0; Blue Jay, 2.0; Common Yellowthroat, 2.0; Hooded Warbler, 2.0; Barred Owl, 1.0; Ruby-throated Hummingbird, 1.0; Red-bellied Woodpecker, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; White-breasted Nuthatch, 1.0; House Wren, 1.0; Hermit Thrush, 1.0; American Robin, 1.0; White-eyed Vireo, 1.0; Worm-eating Warbler, 1.0; Northern Waterthrush, 1.0; Louisiana Waterthrush, 1.0; Chestnut-sided Warbler, 0.5; Red-winged Blackbird, +. **Total:** 33 species; 92.5 territories (160/40 ha). **Visitors:** Wood Duck, Broad-winged Hawk, Mourning Dove, Eastern Phoebe, American Crow, Brown Creeper, Cedar Waxwing, Yellow Warbler, Black-throated Green Warbler, Pine Warbler, American Redstart, Rose-breasted Grosbeak, Common Grackle, American Goldfinch. **Remarks:** Carolina Wrens were absent this year, probably as a result of a severe winter. Black-throated Green Warblers, which had territories in 1992 and 1993 for the first time since 1964, were absent this year. This may be due to the decline of hemlock stands, which are their preferred habitat. **Acknowledgments:** Glenn Dreyer and his staff at the Connecticut College Arboretum facilitated this study.

66. UPLAND OAK AND HEMLOCK FOREST

BOSQUE ROBLE Y PICEA DE ALTURAS

ROBERT A. BRAUNFIELD

Box 84, Hadlyme CT 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; 6 yr. **Size:** 10.5 ha. **Description of Plot:** See *J. Field Ornithol.* 61(Suppl.):49-50 (1990). **Weather:** Mean start temp., 11.3°C (range 4-17°C). Mean start temperature was the second coldest since the inception of the census. **Coverage:** 12.8 h; 8 visits (8 sunrise); 27, 30 May; 2, 8, 11, 15, 17, 22 Jun. **Census:** Red-eyed Vireo, 32.0 (122); Ovenbird, 22.0 (84); Wood Thrush, 12.0 (46); Black-throated Green Warbler, 8.0 (30); Black-and-white Warbler, 7.0 (27); Worm-eating Warbler, 6.5 (25); Eastern Wood-Pewee, 6.0 (23); Scarlet Tanager, 5.0 (19); Black-capped Chickadee, 4.0 (15); Tufted Titmouse, 4.0; Blue-gray Gnatcatcher, 3.0 (11); Hermit Thrush, 3.0; Brown-headed Cowbird, 3.0; Downy Woodpecker, 1.0; Blue Jay, 1.0; American Crow, 1.0; Veery, 1.0; Yellow-throated Vireo, 1.0; Northern Cardinal, 1.0. **Total:** 19 species; 121.5 territories (463/40 ha). **Visitors:** Red-tailed Hawk, Yellow-billed Cuckoo, Red-bellied Woodpecker, Acadian Flycatcher, Eastern Phoebe, Great Crested Flycatcher, White-breasted Nuthatch, American Robin, Gray Catbird, Cedar Waxwing, Chestnut-sided Warbler, American Redstart, Rose-breasted Grosbeak, Common Grackle. **Remarks:** Cerulean Warblers, declining steadily since the first census in 1989, were not found for the first time

this year. Acadian Flycatchers were also not recorded as nesting for the first time this year.
Acknowledgments: Dr. Robert Askins, Dr. Richard Goodwin, Jennifer Anne Perry.

67. YOUNG MIXED HARDWOOD-CONIFER STAND

BOSQUE JOVEN-MIXTO DE MADERAS DURAS/RODAL DE CONIFEROS

ANDREW F. MAGEE

White Memorial Conservation Center, Litchfield CT 06759

Site Number: CT2778262. **Location:** Connecticut; Litchfield Co.; Morris; White Memorial Foundation; 41°42'N, 73°10'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1978; 17 yr. **Size:** 8.5 ha. **Description of Plot:** See *Am. Birds* 33:72 (1979). **Weather:** Mean start temp., 21.6°C (range 17–26°C). See BBC #5 for summary. **Coverage:** 12.0 h; 7 visits (1 sunrise, 2 sunset); 15, 21 May; 1, 7, 16, 28 Jun; 11 Jul. **Census:** Ovenbird, 9.0 (42); Red-eyed Vireo, 8.0 (38); Veery, 6.0 (28); Wood Thrush, 6.0; American Redstart, 6.0; Gray Catbird, 5.0 (24); American Robin, 4.0 (19); Blue-gray Gnatcatcher, 3.0 (14); Chestnut-sided Warbler, 3.0; Black-and-white Warbler, 3.0; Common Yellowthroat, 3.0; Scarlet Tanager, 3.0; Downy Woodpecker, 2.0; Northern Flicker, 2.0; Great Crested Flycatcher, 2.0; Blue Jay, 2.0; Black-capped Chickadee, 2.0; Rufous-sided Towhee, 2.0; Ruffed Grouse, 1.0; Wild Turkey, 1.0; American Woodcock, 1.0; Yellow-billed Cuckoo, 1.0; Barred Owl, 1.0; Ruby-throated Hummingbird, 1.0; Yellow-bellied Sapsucker, 1.0; Eastern Wood-Pewee, 1.0; Eastern Phoebe, 1.0; Tufted Titmouse, 1.0; Cedar Waxwing, 1.0; Yellow-throated Vireo, 1.0; Blue-winged Warbler, 1.0; Yellow Warbler, 1.0; Louisiana Waterthrush, 1.0; Canada Warbler, 1.0; Hairy Woodpecker, 0.5; White-breasted Nuthatch, 0.5; Hermit Thrush, 0.5; Black-throated Blue Warbler, 0.5; Yellow-rumped Warbler, 0.5; Blackburnian Warbler, 0.5; Song Sparrow, 0.5; Northern Oriole, 0.5; Broad-winged Hawk, +; Pileated Woodpecker, +; American Crow, +; Black-throated Green Warbler, +. **Total:** 46 species; 91.0 territories (428/40 ha). **Remarks:** The number of species observed was the second highest ever recorded on this plot and above the average for the previous five years. Included was one new species—Wild Turkey (introduced in CT). The number of territorial males counted, however, was below the average for the previous five years. Several woodland species (e.g. Veery, Red-eyed Vireo, Wood Thrush, and American Redstart) whose averages for the last five years exceeded their 1978 pre-red pine-clear-cutting numbers, fell below those averages this year. Ovenbirds, which took longer to recover from the clear-cutting, exceeded their average for the previous five years. For the first time in 17 years, there were no Rose-breasted Grosbeaks. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

68. LOWLAND MIXED FOREST AND FLOODPLAIN

BOSQUE MIXTO DE TIERRAS BAJAS-PLANICIE INUNDABLE

DAVID C. McLAIN

Massachusetts Audubon Society, Arcadia Wildlife Sanctuary, 127 Combs Road, Easthampton MA 01027

Site Number: MA1293107. **Location:** Massachusetts; Hampshire Co.; Northampton; Arcadia Wildlife Sanctuary; 42°17'N, 72°39'W; Easthampton Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):83–84 (1994). **Weather:** No data provided. **Coverage:** 14.1 h; 10 visits (7 sunrise, 3 sunset); 21, 26 May; 1, 9, 18, 23, 28 Jun. Maximum number of observers/visit, 3. **Census:** Ovenbird, 6.5 (26); Black-capped Chickadee, 3.0 (12; 1N); Wood Thrush, 2.5; Scarlet Tanager, 2.0; Hairy Woodpecker, 1.5 (1N); Eastern Wood-Pewee, 1.5; Red-eyed Vireo, 1.5; Blue Jay, 1.0; Tufted Titmouse, 1.0 (1N); White-breasted Nuthatch, 1.0; Veery, 1.0; American Robin, 1.0 (1N); Great Crested Flycatcher, 0.5; Common Yellowthroat, 0.5; Red-bellied Woodpecker, +; Downy Woodpecker, +; Pine Warbler, +; Brown-headed Cowbird, +. **Total:** 18 species; 24.5 territories (97/40 ha). **Visitors:** Red-tailed Hawk, Mourning Dove, Great Horned Owl, Pileated

Woodpecker, Brown Creeper, Hermit Thrush, Gray Catbird, Cedar Waxwing, Solitary Vireo, American Redstart, Louisiana Waterthrush, Northern Cardinal, Northern Oriole, American Goldfinch. **Remarks:** A 61% reduction in the total number of territories since 1991 is alarming. Blue Jay, Veery, Hermit Thrush, Ovenbird, and Scarlet Tanager showed sharp declines since last year, resulting in a combined loss of 19.5 territories. The number of species dropped by seven since last year. Many species were reduced to visitor status. Wood Thrush and Red-eyed Vireo showed small increases in numbers. **Other Observers:** Sarah Neelon, Anne Lombard, Mara Silver.

69. UPLAND FOREST INTERIOR

INTERIOR DE BOSQUE DE ALTURA

DAVID C. McLAIN

Massachusetts Audubon Society, Arcadia Wildlife Sanctuary, 127 Combs Road, Easthampton MA 01027

Site Number: MA1293106. **Location:** Massachusetts; Hampshire Co.; Williamsburg; Graves Farm Wildlife Sanctuary; 42°23'N, 72°42'W; Williamsburg Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 65 (Suppl.):84 (1994). **Weather:** No data provided. **Coverage:** 13.8 h; 8 visits (7 sunrise, 1 sunset); 24, 28 May; 2, 11, 17, 21 Jun; 5 Jul. Maximum number of observers/visit, 3. **Census:** Ovenbird, 11.5 (46; 1N); Red-eyed Vireo, 7.5 (30); Veery, 4.5 (18; 1N); Black-and-white Warbler, 4.0 (16); Wood Thrush, 3.5 (14); Black-capped Chickadee, 3.0 (12); Hermit Thrush, 3.0; Eastern Wood-Pewee, 2.5; Blue Jay, 2.0 (1N); Red-breasted Nuthatch, 2.0 (2FL); Black-throated Blue Warbler, 2.0; Black-throated Green Warbler, 2.0; Scarlet Tanager, 2.0; Brown-headed Cowbird, 2.0 (1FL); Yellow-bellied Sapsucker, 1.0; White-breasted Nuthatch, 1.0; Yellow-rumped Warbler, 1.0; Blackburnian Warbler, 1.0; Louisiana Waterthrush, 1.0; Ruffed Grouse, + (1N); Hairy Woodpecker, +; Northern Flicker, + (1N); Solitary Vireo, +; American Redstart, +. **Total:** 24 species; 56.5 territories (224/40 ha). **Visitors:** Mourning Dove, Barred Owl, Downy Woodpecker, Pileated Woodpecker, Yellow-bellied Flycatcher, Great Crested Flycatcher, Tufted Titmouse, American Goldfinch. **Remarks:** The total number of territories decreased slightly from last year, but the number of species remained the same. The decrease is mainly due to a drop in Ovenbird territories from 18.0 to 11.5. Black-throated Blue Warblers were observed feeding a cowbird fledgling. **Other Observers:** Sarah Neelon, Anne Lombard, Mara Silver.

70. TAMARACK BOG AND HARDWOOD

PANTANO DE TAMARACK-MADERAS DURAS

JAMES MULLINS

2558 Locust Lane, Stevensville MI 49127

Location: Michigan; Berrien Co.; Stevensville; Grand Mere State Park; 42°0'N, 86°33'W; Bridgeman Quadrangle, USGS. **Continuity:** Established 1976; 19 yr. **Size:** 8.5 ha. **Description of Plot:** See *Am. Birds* 30:1049 (1976). **Weather:** Mean start temp., 16.0°C (range 14–20°C). **Coverage:** 8.0 h; 8 visits (8 sunrise); 4, 5, 11, 12, 18, 19, 26, 27 Jun. **Census:** Wood Thrush, 3.0; Red-eyed Vireo, 3.0; Eastern Wood-Pewee, 2.0; Blue Jay, 2.0; Veery, 2.0; Ovenbird, 2.0; Canada Warbler, 2.0; Northern Cardinal, 2.0 (1N); Red-bellied Woodpecker, 1.0; Hairy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Tufted Titmouse, 1.0; American Robin, 1.0; Black-throated Green Warbler, 1.0; Scarlet Tanager, 1.0. **Total:** 15 species; 25.0 territories (118/40 ha). **Visitors:** Red-headed Woodpecker, Downy Woodpecker, Pileated Woodpecker, Acadian Flycatcher, Black-capped Chickadee. **Remarks:** A Northern Cardinal nest was found in grapevines 15 m up in the canopy.

71. ASPEN-PINE WILDERNESS

PARAJE DE ALAMO TEMBLON-PINO

RONALD D. HUFFMAN

6930 West Shore Dr., Weidman MI 48893

Site Number: MN2091070. **Location:** Minnesota; Becker Co.; Rochert; Tamarac National Wildlife Refuge; 47°5'N, 95°35'W; Many Point Lake Quadrangle, USGS. **Continuity:** Established 1991; 2 yr. **Size:** 13.4 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):77-78 (1992). A large area within 40 m of the N boundary was clear-cut by the county in the fall of 1991, reducing the amount of the perimeter that is bordered by the same habitat. **Weather:** Mean start temp., 16.1°C (range 11-23°C). Frequent rains occurred during the breeding season. Mean temperature for June was 18.1°C (normal is 17.8°C). Precipitation for June was 14.5 cm (normal is 10.5 cm). Source: Tamarac NWR 1993 annual report. **Coverage:** 19.9 h; 8 visits (5 sunrise, 2 sunset); 10, 20, 24, 28, 29 Jun; 1, 6, 10 Jul. **Census:** Ovenbird, 32.0 (96; 2N,5FL); Red-eyed Vireo, 23.0 (69); Chestnut-sided Warbler, 16.5 (49); Least Flycatcher, 8.0 (24); Pine Warbler, 8.0; American Redstart, 7.0 (21); Great Crested Flycatcher, 6.0 (18); Veery, 6.0; Eastern Wood-Pewee, 5.0 (15); Scarlet Tanager, 4.0 (12); Black-throated Green Warbler, 3.0 (9); Yellow-bellied Sapsucker, 2.5 (1N); White-breasted Nuthatch, 2.0 (1N); Ruby-throated Hummingbird, 1.0; Downy Woodpecker, 1.0 (1N); Blue Jay, 1.0; Black-capped Chickadee, 1.0; Chipping Sparrow, 1.0; Brown-headed Cowbird, 1.0 (1FL). **Total:** 19 species; 129.0 territories (385/40 ha). **Visitors:** Broad-winged Hawk, Black-billed Cuckoo, Hairy Woodpecker, Northern Flicker, Pileated Woodpecker, American Crow, Brown Creeper, Winter Wren, Gray Catbird, Cedar Waxwing, Rose-breasted Grosbeak, American Goldfinch. **Remarks:** Fifteen species had increases in the number of territories since the first census in 1991. Chestnut-sided Warbler (+15.5 territories), Least Flycatcher (+6.5), Veery (+6.0), and Great Crested Flycatcher (+5.0) had the largest increases in the number of territories. A female American Redstart was observed feeding a juvenile Brown-headed Cowbird.

72. UPLAND MIXED PINE-SPRUCE-HARDWOOD PLANTATION

PLANTACION MIXTA DE PINO-ABETO-MADERAS DURAS EN ALTURAS

ELIZABETH W. BROOKS

1435 Waterwells Road, Alfred Station NY 14803

Site Number: NY2474107. **Location:** New York; Allegany Co.; Ward; Phillips Creek State Re-forestation Tract; 42°8'N, 77°45'W; Andover Quadrangle, USGS. **Continuity:** Established 1974; 21 yr. **Size:** 16.6 ha. **Description of Plot:** See *Am. Birds* 28:699-700 (1974) and *J. Field Ornithol.* 63(Suppl.):79-80 (1992). Some selective thinning of Norway spruce took place prior to the breeding season in one section of the plot. **Weather:** Mean start temp., 19.3°C (range 13-25°C). See BBC #52 for summary. **Coverage:** 15.5 h; 9 visits (1 sunrise, 2 sunset); 27 Apr; 15, 29 May; 5, 12, 19, 26 Jun; 3, 10 Jul. **Census:** Blackburnian Warbler, 12.0 (29); Dark-eyed Junco, 12.0; Black-throated Green Warbler, 10.0 (24); Magnolia Warbler, 9.0 (22); Yellow-rumped Warbler, 7.0 (17); Red-breasted Nuthatch, 4.0 (10); Golden-crowned Kinglet, 4.0; Solitary Vireo, 4.0; Black-capped Chickadee, 3.0 (7; 1N,7FL); American Robin, 3.0 (1N); Ovenbird, 3.0; Blue Jay, 2.0; Brown Creeper, 2.0; Cedar Waxwing, 2.0; Common Yellowthroat, 2.0; Purple Finch, 2.0; Indigo Bunting, 1.5; Chipping Sparrow, 1.5; Wild Turkey, 1.0; Yellow-bellied Sapsucker, 1.0; Winter Wren, 1.0; Mourning Warbler, 1.0; Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Wood Thrush, 0.5; Red-shouldered Hawk, +; Barred Owl, +; Hairy Woodpecker, +; Pileated Woodpecker, +; American Crow, +; House Wren, +; Red-eyed Vireo, +; Chestnut-sided Warbler, +; Scarlet Tanager, +. **Total:** 34 species; 90.5 territories (218/40 ha). **Visitors:** Broad-winged Hawk, Black-billed Cuckoo, Blue-winged Warbler, Nashville Warbler, Pine Warbler, Rose-breasted Grosbeak, White-throated Sparrow. **Remarks:** Veery was missing for only the second time since 1974. Golden-crowned Kinglet continued its cyclical decline from 1988 numbers. Red-breasted Nuthatch, Solitary Vireo, Yellow-rumped Warbler, Blackburnian Warbler, and Dark-eyed Junco numbers were up (junco and Yellow-

rumped Warbler at record highs). **Acknowledgments:** Appreciation to Rick Walker of the Alfred Cooperative Weather Station for weather data.

73. RED OAK-WHITE PINE SAVANNAH

SAVANA DE ROBLE ROJO-PINO BLANCO

MICHAEL J. DRENTH

Long Point Bird Observatory, P.O. Box 160, Port Rowan ON N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°34'N, 80°8'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** Established 1991; 2 yr. **Size:** 11.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):83-84 (1992). Canopy cover measured in 1992 was 29.5%, based on 10 vegetation profile readings above 2 m at each of 20 sampling points. The ground cover estimate was 88%, based on readings below 1 m. Vegetation profile estimates in 1992, based on 10 line intersect readings at each of 20 sampling points were: <0.5 m, 82%; 0.5-1 m, 30.5%; 1-2 m, 5.5%; 2-5 m, 11.5%, >5 m, 23.5%. The number of shrub stems/ha in 1994, based on counts in 10, 1x10 m quadrats was 29,100 compared with 3200 in 1991. Size class distribution: <0.5 m, 22,600; 0.5-1 m, 6300; 1-2 m, 100; >2 m, 100 (compared with 2000; 1200; 0 in 1991). Shrub species in order of total abundance: wild red raspberry 18,900 stems <0.5 m, 5300 stems 0.5-1 m, 0 stems 1-2 m, 0 stems >2 m; riverbank grape 1400, 500, 0, 0; Virginia creeper 1600, 0, 0, 0; sweetbrier 0, 500, 100, 0; basswood 600, 0, 0, 0; eastern red cedar 0, 0, 0, 100; choke cherry 100, 0, 0, 0. Changes from 1991 include the presence of basswood and Virginia creeper and an increase in the number of wild red raspberry stems (from 100 in 1991 to 24,200 in 1994). Changes of 5% or more between 1991 and 1994 in the mean estimated cover for ground layer species, based on 10, 1x1 m quadrats, include a 15% increase in the amount of wild red raspberry, an 8% increase in the amount of switch grass, and a 9% reduction in the amount of jewelweed. **Weather:** Mean start temp., 13.7°C (range 5-21°C). Mainly clear and mild with variable winds. There was light rain during the 13 June visit. **Coverage:** 38.9 h; 11 visits (9 sunrise, 2 sunset); 3, 4, 5, 9, 10, 12, 13, 15, 16, 22, 26 Jun. **Census:** Tree Swallow, 17.0 (62; 17N); Red-winged Blackbird, 16.0 (58; 2N); Song Sparrow, 8.0 (29; 1N); Eastern Wood-Pewee, 6.0 (22; 2N); Yellow Warbler, 5.5 (20); European Starling, 5.0 (18; 3N); Northern Oriole, 5.0 (2N); Common Grackle, 4.0 (15; 2N,2FL); Eastern Kingbird, 3.0 (11; 2N); Common Yellowthroat, 3.0; Northern Flicker, 2.0; Marsh Wren, 1.5; Great Horned Owl, 1.0 (2FL); Red-headed Woodpecker, 1.0; Downy Woodpecker, 1.0 (1N); House Wren, 1.0; American Robin, 1.0; Mourning Dove, 0.5. **Total:** 18 species; 81.5 territories (296/40 ha). **Visitors:** Canada Goose, Wood Duck, Mallard, Bald Eagle, Spotted Sandpiper, American Crow, Gray Catbird, Cedar Waxwing, American Goldfinch. **Remarks:** The coverage includes 5.0 hours that were spent searching for nests. 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 Observer:** Paul Prior. **Acknowledgments:** Thanks to Paul Prior, Sandy Smith, and Nancy Elliot for helping to stake the plot, and to Jon McCracken for proofing the data. I also thank Jane Bowles and Michael Bradstreet for measuring vegetation parameters.

74. HARDWOOD FOREST WITH SCATTERED PINE

BOISQUE DE MADERAS DURAS CON PINOS DISPERSOS

DOUGLAS J. WENTZEL

*Shaver's Creek Environmental Center, The Pennsylvania State University,
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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; 4 yr. **Size:** 19.2 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):84

(1992). **Weather:** Mean start temp., 12.6°C (range 5–18°C). **Coverage:** 15.7 h; 8 visits (7 sunrise); 20, 24, 31 May; 4, 10, 15, 22, 29 Jun. Maximum number of observers/visit, 3. **Census:** Ovenbird, 20.0 (42); Red-eyed Vireo, 14.0 (29); Common Yellowthroat, 9.5 (20); Black-capped Chickadee, 6.0 (13); Wood Thrush, 5.5 (11); Scarlet Tanager, 5.0 (10); Rufous-sided Towhee, 5.0; Gray Catbird, 4.0 (8); Indigo Bunting, 4.0; Eastern Wood-Pewee, 3.0 (6); Great Crested Flycatcher, 3.0; Tufted Titmouse, 3.0; Blue Jay, 2.0; Blue-gray Gnatcatcher, 2.0; Northern Cardinal, 2.0; Brown-headed Cowbird, 2.0; Ruffed Grouse, 1.0; Yellow-billed Cuckoo, 1.0; Downy Woodpecker, 1.0; Red-breasted Nuthatch, 1.0; White-breasted Nuthatch, 1.0; House Wren, 1.0; Worm-eating Warbler, 1.0; Chipping Sparrow, 1.0; Song Sparrow, 1.0; Acadian Flycatcher, 0.5; Veery, 0.5. **Total:** 27 species; 100.0 territories (208/40 ha). **Visitors:** Red-shouldered Hawk, Broad-winged Hawk, Wild Turkey, Black-billed Cuckoo, Red-bellied Woodpecker, Hairy Woodpecker, Northern Flicker, Pileated Woodpecker, American Crow, Brown Creeper, Hermit Thrush, American Robin, Golden-winged Warbler, Black-throated Green Warbler, Cerulean Warbler, Louisiana Waterthrush, Rose-breasted Grosbeak. **Other Observer:** Nick Bolgiano. **Acknowledgments:** Thanks to Greg Grove for establishing the census plot and assisting in preparing the report.

75. MIXED HARDWOOD–HEMLOCK–WHITE PINE FOREST

BOSQUE MIXTO DE MADERAS DURAS, PICEA Y PINO BLANCO

GREGORY W. GROVE

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Site Number: PA1394005. **Location:** Pennsylvania; Huntingdon Co.; McAlevy's Fort; Detweiler's Run; 40°43'N, 77°45'W; McAlevy's Fort and Barrville Quadrangles, USGS. **Continuity:** New. **Size:** 27.0 ha. **Description of Plot:** A rectangular plot (150 x 1400 m) located deep within 40,000+ ha Rothrock State Forest and part of a designated "wild area" to remain undisturbed. A stream (max. width 4 m, max. depth 0.5 m) flows through the plot and is bordered by dense stands of great rhododendron and clusters of very tall eastern hemlock and white pine. Higher on the hillside, mountain laurel predominates in the understory and oaks (especially chestnut oak), maples (sugar and red), black birch, and other trees form a closed canopy. Mean canopy height, 24 m (range 15–30 m). There is relatively little ground cover other than the laurel and rhododendron. A hiking trail parallels the stream and higher there is an abandoned road, gated against motor vehicles. **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. The predominantly hardwood forest of the mountainside is similar to much of the remainder of the state forest; the hemlock–rhododendron assemblage in the ravine is found only in other similar stream bottoms. **Topography and Elevation:** The plot has a SE-facing slope of 11–16% grade; it lies within a deep ravine and on a portion of the mountainside above. Minimum elevation 390 m, maximum 475 m. **Weather:** Mean start temp., 11.0°C (range 2–20°C). **Coverage:** 17.5 h; 8 visits (8 sunrise); 19, 24, 27, 31 May; 9, 16, 23, 30 Jun. **Census:** Ovenbird, 21.0 (31); Red-eyed Vireo, 18.0 (27); Canada Warbler, 12.0 (18); Blackburnian Warbler, 10.0 (15); Acadian Flycatcher, 7.0 (10); Black-throated Blue Warbler, 7.0; Hooded Warbler, 7.0; Black-throated Green Warbler, 6.0 (9); Veery, 4.0 (6); Wood Thrush, 4.0; Solitary Vireo, 4.0; Black-and-white Warbler, 4.0; Scarlet Tanager, 4.0; Brown-headed Cowbird, 4.0; Winter Wren, 3.0 (4); Chipping Sparrow, 3.0; Black-capped Chickadee, 2.0; Worm-eating Warbler, 2.0; Rufous-sided Towhee, 2.0; Downy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; Brown Creeper, 1.0; Chestnut-sided Warbler, 1.0; Louisiana Waterthrush, 1.0; Dark-eyed Junco, 1.0. **Total:** 26 species; 131.0 territories (194/40 ha). **Visitors:** Broad-winged Hawk, Ruffed Grouse, Ruby-throated Hummingbird, Hairy Woodpecker, Northern Flicker, Pileated Woodpecker, Eastern Wood-Pewee, Least Flycatcher, Tufted Titmouse, Hermit Thrush, Cedar Waxwing, Magnolia Warbler, American Redstart, Common Yellowthroat.

76. OLD-GROWTH BEECH-HEMLOCK FOREST I

BOSQUE DE EDAD AVANSADA DE BEECH-PICEA I

J. CHRISTOPHER HANEY

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Site Number: PA2493083. **Location:** Pennsylvania; McKean Co.; Ludlow; Tionesta Tract I; 41°39'N, 78°57'W; Ludlow Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 12.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):88-89 (1994). **Weather:** Mean start temp., 8.5°C (range 2-20°C). See BBC #56 for additional summary data. **Coverage:** 19.6 h; 8 visits (6 sunrise, 2 sunset); 22 Apr; 13, 14, 23, 30 May; 4, 9, 15 Jun. Maximum number of observers/visit, 5. **Census:** Blackburnian Warbler, 67.0 (223); Magnolia Warbler, 19.0 (63); Swainson's Thrush, 11.0 (37); Red-eyed Vireo, 11.0; Black-throated Green Warbler, 10.0 (33); Dark-eyed Junco, 10.0; Solitary Vireo, 8.0 (27); Acadian Flycatcher, 4.0 (13); Scarlet Tanager, 4.0; Brown Creeper, 3.0 (10); Winter Wren, 3.0 (4FL); Chipping Sparrow, 3.0; Purple Finch, 3.0; Red-breasted Nuthatch, 2.0 (1N); Hermit Thrush, 2.0; Hooded Warbler, 2.0; Barred Owl, 1.0; Yellow-bellied Sapsucker, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0 (2FL); Yellow-bellied Flycatcher, 1.0; Blue Jay, 1.0; Common Raven, 1.0 (1N,2FL); Black-capped Chickadee, 1.0 (2FL); Rose-breasted Grosbeak, 1.0; Red-shouldered Hawk, 0.5; Downy Woodpecker, 0.5. **Total:** 27 species; 172.0 territories (573/40 ha). **Visitors:** Sharp-shinned Hawk, Broad-winged Hawk, Yellow-billed Cuckoo, Chimney Swift, White-breasted Nuthatch, Golden-crowned Kinglet, Cedar Waxwing, Black-throated Blue Warbler, American Redstart, Ovenbird, Indigo Bunting, Brown-headed Cowbird, Pine Siskin, American Goldfinch. **Remarks:** A moderately severe infestation of elm spanworm occurred in and near the plot this season, although it did not cause the widespread canopy defoliation of last year. The number of Blackburnian Warbler territories was nearly 50% higher than last year, and Brown Creeper, Winter Wren, Dark-eyed Junco, and Purple Finch territories also increased in number. Mammals or mammal sign observed included: coyote (*Canis latrans*), eastern chipmunk (*Tamias striatus*), gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*), porcupine (*Erethizon dorsatum*), and white-tailed deer (*Odocoileus virginianus*). A probable fisher (*Martes pennanti*), a species presumably extirpated from Pennsylvania, was seen nearby and several porcupine kills were recorded on the plot. **Other Observers:** Robert Williams, Becky Allison, John Cheek, Linda Hepfner, Ray Kaufmann, John Seachrist, Sue Wetzel. **Acknowledgments:** We thank Dave DeCalesta, Susan Stout, and John Palmer of the Allegheny National Forest for access to the Tionesta Scenic and Research Natural areas, and Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania for assistance with logistics. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

77. OLD-GROWTH BEECH-HEMLOCK FOREST II

BOSQUE DE EDAD AVANSADA DE BEECH-PICEA II

J. CHRISTOPHER HANEY & ROBERT R. WILLIAMS

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Site Number: PA2493084. **Location:** Pennsylvania; McKean Co.; Ludlow; Tionesta Tract II; 41°39'N, 78°56'W; Ludlow Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 12.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):89-90 (1994). **Weather:** Mean start temp., 13.0°C (range -1-24°C). See BBC #56 for additional summary data. **Coverage:** 18.7 h; 9 visits (3 sunrise, 2 sunset); 23 Apr; 14, 21, 30 May; 21, 22, 26, 29, 30 Jun. **Census:** Blackburnian Warbler, 39.0 (130); Magnolia Warbler, 18.0 (60); Dark-eyed Junco, 10.0 (33; 2N); Red-eyed Vireo, 9.0 (30); Black-throated Green Warbler, 8.0 (27); Swainson's Thrush, 7.0 (23); Solitary Vireo, 6.0 (20); Scarlet Tanager, 6.0; Winter Wren, 4.0 (13); Hooded Warbler, 4.0; Acadian Flycatcher, 3.0 (10); Brown Creeper, 3.0; Hermit Thrush, 3.0; Ovenbird,

3.0; Purple Finch, 3.0; Yellow-bellied Sapsucker, 2.0; Black-throated Blue Warbler, 2.0; Chipping Sparrow, 2.0; Brown-headed Cowbird, 2.0; Red-shouldered Hawk, 1.0; Black-capped Chickadee, 1.0; Bay-breasted Warbler, 1.0; Ruby-throated Hummingbird, 0.5; Least Flycatcher, 0.5; Common Raven, 0.5; Chestnut-sided Warbler, 0.5; American Redstart, 0.5. **Total:** 27 species; 139.5 territories (465/40 ha). **Visitors:** Red-tailed Hawk, Hairy Woodpecker, Pileated Woodpecker, Blue Jay, Red-breasted Nuthatch, Common Grackle, American Goldfinch. **Remarks:** A moderately severe infestation of elm spanworm occurred in and near the plot this season, although it did not cause the widespread canopy defoliation of last year. A territorial Bay-breasted Warbler male was very unusual as this species breeds only as close as northern New York; whether or not the bird successfully mated is unknown. Mammals or mammal sign observed included: eastern chipmunk (*Tamias striatus*), red squirrel (*Tamiasciurus hudsonicus*), boreal redback vole (*Clethrionomys gapperi*), woodland jumping mouse (*Napaeozapus insignis*), porcupine (*Erethizon dorsatum*), and white-tailed deer (*Odocoileus virginianus*). **Acknowledgments:** We thank Dave DeCalesta, Susan Stout, and John Palmer of the Allegheny National Forest for access to the Tionesta Scenic and Research Natural areas, and Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania for assistance with logistics. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

78. OLD-GROWTH BEECH-HEMLOCK FOREST III

BOSQUE DE EDAD AVANSADA DE BEECH-PICEA III

J. CHRISTOPHER HANEY & ROBERT R. WILLIAMS

*Wildlife Technology Program, School of Forest Resources,
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Site Number: PA2494135. **Location:** Pennsylvania; McKean Co.; Ludlow; Tionesta Tract III; 41°38'N, 78°57'W; Ludlow Quadrangle, USGS. **Continuity:** New. **Size:** 12.0 ha. **Description of Plot:** A rectangular plot (300 x 400 m) with a closed canopy dominated by eastern hemlock and American beech, within the Tionesta Research Natural Area in Allegheny National Forest. The largest tract of old-growth forest between the Adirondacks and Great Smokey Mountains; free from fires and large-scale human disturbance for at least 300 years. 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 12 randomly-placed 0.04-ha circular samples, 615/ha; total basal area 72.5 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m²/ha, relative dominance (%), and frequency (%)]: eastern hemlock, 160, 26, 28.6, 39, 100; black birch, 21, 3, 1.9, 3, 50; yellow birch, 12, 2, 0.3, 0, 33; eastern hop-hornbeam, 2, 0, 0.1, 0, 8; American beech, 223, 36, 24.6, 34, 100; black cherry, 10, 2, 1.8, 2, 8; sugar maple, 40, 6, 2.0, 3, 50; red maple, 77, 13, 7.4, 10, 75; white ash, 19, 3, 2.0, 3, 25; standing dead, 49, 8, 3.9, 5, 83. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%)]: A (7.6-15.2 cm) 158, 26, 1.6, 2; B (15.2-22.9 cm) 142, 23, 4.0, 6; C (22.9-38.1 cm) 108, 18, 7.9, 11; D (38.1-53.3 cm) 90, 15, 14.7, 20; E (53.3-68.6 cm) 79, 13, 23.1, 32; F (68.6-83.8 cm) 21, 3, 9.5, 13; G (83.8-101.6 cm) 15, 2, 9.8, 14; H (> 101.6 cm) 2, 0, 1.8, 2. Shrub stems/ha, 9952, dominated by American beech (80%), striped maple (19%), and red maple and eastern hemlock (1%). Ground cover, 10-15%, dominated by wood-sorrel, goldthread, ferns, true mosses, and regenerating American beech. Canopy cover, 99%; average canopy height, 31.2 m (range 28-35 m). There is one permanent stream and one intermittent stream with a maximum width of 0.8 m and a maximum depth of 0.5 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 a S-facing slope. Minimum elevation 488 m, maximum 555 m. **Weather:** Mean start temp., 13.1°C (range 2-23°C). See BBC #56 for May and June summary. Temperature and precipitation departures, respectively, from the 30-yr means for July, daily high -0.6°C, daily low +0.6°C, -0.2 cm. Source: DuBois-

Jefferson Co. Regional Airport. **Coverage:** 20.1 h; 8 visits (2 sunrise, 1 sunset); 13, 14, 28 May; 3, 18, 26, 30 Jun; 1 Jul. **Census:** Blackburnian Warbler, 37.0 (123); Magnolia Warbler, 11.0 (37); Black-throated Green Warbler, 7.0 (23); American Redstart, 7.0 (1N); Red-eyed Vireo, 5.0 (17); Black-throated Blue Warbler, 5.0; Hooded Warbler, 5.0; Dark-eyed Junco, 5.0; Swainson's Thrush, 4.0 (13); Least Flycatcher, 3.0 (10); Solitary Vireo, 3.0 (1N); Brown Creeper, 2.0; Winter Wren, 2.0; Scarlet Tanager, 2.0; Rose-breasted Grosbeak, 2.0; Chipping Sparrow, 2.0; Hairy Woodpecker, 1.5 (1N); Acadian Flycatcher, 1.5; Yellow-bellied Sapsucker, 1.0; Black-capped Chickadee, 1.0; Hermit Thrush, 1.0; Wood Thrush, 1.0; Purple Finch, 1.0; White-breasted Nuthatch, 0.5; Northern Parula, 0.5; Indigo Bunting, 0.5. **Total:** 26 species; 111.5 territories (372/40 ha). **Visitors:** Turkey Vulture, Ruffed Grouse, Eastern Wood-Pewee, Yellow-bellied Flycatcher, American Crow, Red-breasted Nuthatch, Nashville Warbler, Ovenbird. **Remarks:** A moderately severe infestation of elm spanworm occurred in and near the plot this season. Mammals or mammal sign observed included: eastern chipmunk (*Tamias striatus*), red squirrel (*Tamiasciurus hudsonicus*), boreal redback vole (*Clethrionomys gapperi*), porcupine (*Erethizon dorsatum*), and white-tailed deer (*Odocoileus virginianus*). **Other Observers:** Jim White, Christie Miller. **Acknowledgments:** We thank Dave DeCalesta, Susan Stout, and John Palmer of the Allegheny National Forest for access to the Tionesta Scenic and Research Natural areas, and Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania for assistance with logistics. Jared Jacobini assisted with vegetation analyses. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

79. OLD-GROWTH BEECH–HEMLOCK FOREST IV

BOSQUE DE EDAD AVANSADA DE BEECH–PICEA IV

J. CHRISTOPHER HANEY & ROBERT R. WILLIAMS

*Wildlife Technology Program, School of Forest Resources,
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Site Number: PA2494136. **Location:** Pennsylvania; McKean Co.; Ludlow; Tionesta Tract IV; 41°38'N, 78°57'W; Ludlow Quadrangle, USGS. **Continuity:** New. **Size:** 12.0 ha. **Description of Plot:** A rectangular plot (300 x 400 m) with a closed canopy dominated by eastern hemlock and American beech, within the Tionesta Research Natural Area in Allegheny National Forest. The largest tract of old-growth forest between the Adirondacks and Great Smokey Mountains; free from fires and large-scale human disturbance for at least 300 years. 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 12 randomly-placed 0.04-ha circular samples, 317/ha; total basal area 42.4 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m²/ha, relative dominance (%), and frequency (%): eastern hemlock, 67, 21, 20.3, 48, 92; black birch, 17, 5, 0.8, 2, 50; yellow birch, 2, 1, 0.3, 1, 8; American beech, 140, 44, 12.5, 30, 100; black cherry, 6, 2, 0.6, 2, 17; sugar maple, 8, 3, 1.2, 3, 17; red maple, 48, 15, 3.4, 8, 83; standing dead, 28, 9, 3.2, 8, 83. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6–15.2 cm) 69, 22, 0.7, 2; B (15.2–22.9 cm) 73, 23, 2.1, 5; C (22.9–38.1 cm) 67, 21, 4.9, 11; D (38.1–53.3 cm) 48, 15, 7.9, 19; E (53.3–68.6 cm) 21, 7, 6.1, 14; F (68.6–83.8 cm) 27, 9, 12.4, 29; G (83.8–101.6 cm) 12, 4, 8.4, 20. Shrub stems/ha, 2830, dominated by American beech. Ground cover, 10–15%, dominated by wood-sorrel, gold-thread, ferns, true mosses, and regenerating American beech. Canopy cover, 97%; average canopy height, 28.7 m (range 23–34 m). There is one permanent stream and one intermittent stream with a maximum width of 0.5 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 a SW-facing slope of 6–10% grade. Minimum elevation 536 m, maximum 573 m. **Weather:** Mean start temp., 11.0°C (range 1–22°C). See BBC #56 for May and June summary. Temperature and

precipitation departures, respectively, from the 30-yr means for July, daily high -0.6°C , daily low $+0.6^{\circ}\text{C}$, -0.2 cm. Source: DuBois-Jefferson Co. Regional Airport. **Coverage:** 19.8 h; 8 visits (5 sunrise); 14, 20, 28 May; 3, 18, 26, 30 Jun; 1 Jul. **Census:** Blackburnian Warbler, 41.0 (137); Magnolia Warbler, 18.0 (60); Black-throated Green Warbler, 10.0 (33; 1N); Red-eyed Vireo, 7.0 (23; 1N); Scarlet Tanager, 6.0 (20); Brown Creeper, 5.0 (17); Swainson's Thrush, 5.0; Black-throated Blue Warbler, 5.0; Winter Wren, 4.0 (13); Solitary Vireo, 4.0; Hooded Warbler, 4.0; Dark-eyed Junco, 4.0 (1N); Chipping Sparrow, 3.0 (10); Hairy Woodpecker, 2.0; Black-capped Chickadee, 2.0 (1FL); Blue Jay, 1.5; Rose-breasted Grosbeak, 1.5; Purple Finch, 1.5; White-breasted Nuthatch, 1.0; Hermit Thrush, 1.0 (3FL); Ovenbird, 1.0; American Goldfinch, 1.0; Red-shouldered Hawk, 0.5; Pileated Woodpecker, 0.5; Red-breasted Nuthatch, 0.5. **Total:** 25 species; 130.0 territories (433/40 ha). **Visitors:** Wild Turkey, Chimney Swift, Yellow-bellied Sapsucker, Downy Woodpecker, Eastern Wood-Pewee, Least Flycatcher, American Crow, Cedar Waxwing. **Remarks:** A moderately severe infestation of elm spanworm occurred in and near the plot this season. The last two visits were conducted intermittently due to rain. Mammals or mammal sign observed included: eastern chipmunk (*Tamias striatus*), red squirrel (*Tamiasciurus hudsonicus*), boreal redback vole (*Clethrionomys gapperi*), porcupine (*Erethizon dorsatum*), and white-tailed deer (*Odocoileus virginianus*). **Other Observers:** Jim White, Christie Miller. **Acknowledgments:** We thank Dave DeCalesta, Susan Stout, and John Palmer of the Allegheny National Forest for access to the Tionesta Scenic and Research Natural areas, and Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania for assistance with logistics. John Cheek, Linda Hepfner, John Seachrist, Sandy Weilgosz, and Sue Wetzel assisted with vegetation analyses. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

80. OLD-GROWTH BEECH-HEMLOCK FOREST V

BOSQUE DE EDAD AVANSADA DE BEECH-PICEA V

J. CHRISTOPHER HANEY & ROBERT R. WILLIAMS

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Site Number: PA2494137. **Location:** Pennsylvania; Warren Co.; Sheffield; Heart's Content Tract I; $41^{\circ}42'\text{N}$, $79^{\circ}15'\text{W}$; Cherry Grove Quadrangle, USGS. **Continuity:** New. **Size:** 12.0 ha. **Description of Plot:** A rectangular plot (300 x 400 m) with a closed canopy dominated by virgin eastern hemlock and American beech. The plot is located within the 50-ha Heart's Content Scenic Area in Allegheny National Forest, a registered National Natural Landmark. Stand age is 350+ years. 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-placed 0.04-ha circular samples, 459/ha; total basal area 42.8 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m²/ha, relative dominance (%), and frequency (%): eastern hemlock, 227, 50, 16.5, 39, 90; black birch, 7, 2, 1.2, 3, 20; yellow birch, 13, 3, 0.5, 1, 30; American beech, 162, 35, 15.2, 36, 100; northern red oak, 8, 2, 2.2, 5, 10; black cherry, 10, 2, 1.9, 4, 20; sugar maple, 2, 1, 0.4, 1, 10; red maple, 12, 3, 2.6, 6, 20; white ash, 3, 1, 0.2, 0, 10; standing dead, 14, 3, 2.1, 4, 50. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6-15.2 cm) 210, 46, 2.2, 5; B (15.2-22.9 cm) 84, 18, 2.4, 6; C (22.9-38.1 cm) 66, 14, 4.8, 11; D (38.1-53.3 cm) 35, 8, 5.7, 13; E (53.3-68.6 cm) 30, 7, 8.8, 20; F (68.6-83.8 cm) 20, 4, 9.1, 21; G (83.8-101.6 cm) 15, 3, 9.8, 23. Shrub stems/ha, 1186, dominated by American beech (99%) and black birch (1%). Ground cover, > 70%, dominated by ferns. Canopy cover, 99%; average canopy height, 32.3 m (range 27-37 m). There is one permanent stream and one intermittent stream with a maximum width of 0.8 m and a maximum depth of 0.4 m. **Edge:** Between 26 and 50% 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 has an E-facing slope of 6–10% grade. Minimum elevation 535 m, maximum 578 m. **Weather:** Mean start temp., 17.9°C (range 13–29°C). See BBC #56 for May and June summary. Temperature and precipitation departures, respectively, from the 30-yr means for July, daily high -0.6°C , daily low $+0.6^{\circ}\text{C}$, -0.2 cm. Source: DuBois-Jefferson Co. Regional Airport. **Coverage:** 17.3 h; 8 visits (6 sunrise, 2 sunset); 20 May; 10, 16, 17, 25, 28, 29 Jun; 2 Jul. Maximum number of observers/visit, 3. **Census:** Blackburnian Warbler, 24.0 (80); Magnolia Warbler, 17.0 (57); Dark-eyed Junco, 10.0 (33); Black-throated Green Warbler, 9.0 (30); Red-eyed Vireo, 6.0 (20); Solitary Vireo, 5.0 (17); Winter Wren, 4.0 (13); Swainson's Thrush, 4.0; Scarlet Tanager, 4.0; Black-throated Blue Warbler, 3.0 (10; 1N); Acadian Flycatcher, 2.0 (1N); Black-capped Chickadee, 2.0; White-breasted Nuthatch, 2.0; Brown Creeper, 2.0; Hermit Thrush, 2.0; Barred Owl, 1.0 (1FL); Ruby-throated Hummingbird, 1.0; Hairy Woodpecker, 1.0 (2FL); American Crow, 1.0; Cedar Waxwing, 1.0; Chipping Sparrow, 1.0; Purple Finch, 1.0; Tufted Titmouse, 0.5; American Robin, 0.5. **Total:** 24 species; 104.0 territories (347/40 ha). **Visitors:** Yellow-bellied Sapsucker, Eastern Wood-Pewee, Blue Jay, Red-breasted Nuthatch, Golden-crowned Kinglet, American Redstart, Ovenbird, Canada Warbler, Brown-headed Cowbird. **Remarks:** The plot was frequently disturbed by hikers. Visits #6 and #7 were interrupted by rain. Mammals or mammal sign observed included: bat (*Myotis* sp.), raccoon (*Procyon lotor*), eastern chipmunk (*Tamias striatus*), red squirrel (*Tamiasciurus hudsonicus*), gray squirrel (*Sciurus carolinensis*), and white-tailed deer (*Odocoileus virginianus*). **Other Observers:** Jim White II, Christie Miller. **Acknowledgments:** Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania assisted with logistics. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

81. OLD-GROWTH HEMLOCK-BEECH-WHITE PINE FOREST

BOSQUE DE PICEA MADURA, HAYA Y PINO BLANCO

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Site Number: PA2494138. **Location:** Pennsylvania; Warren Co.; Sheffield; Heart's Content Tract II; 41°42'N, 79°15'W; Cherry Grove Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** A rectangular plot (250 x 400 m) with a closed canopy dominated by virgin eastern hemlock, American beech, and eastern white pine. The plot is located within the 50-ha Heart's Content Scenic Area in Allegheny National Forest, a registered National Natural Landmark. Stand age is 350+ years. 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-placed 0.04-ha circular samples, 352/ha; total basal area 54.7 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), basal area in m²/ha, relative dominance (%), and frequency (%): eastern white pine, 10, 3, 6.6, 12, 40; eastern hemlock, 192, 55, 25.5, 47, 100; yellow birch, 5, 1, 0.1, 0, 10; American beech, 97, 28, 9.0, 16, 90; cucumbertree, 5, 1, 0.1, 0, 10; black cherry, 2, 1, 0.4, 1, 10; red maple, 7, 2, 0.6, 1, 30; standing dead, 32, 10, 12.3, 22, 70. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6–15.2 cm) 125, 35, 1.3, 2; B (15.2–22.9 cm) 65, 18, 1.8, 3; C (22.9–38.1 cm) 37, 10, 2.7, 5; D (38.1–53.3 cm) 54, 15, 8.9, 16; E (53.3–68.6 cm) 12, 3, 3.5, 6; F (68.6–83.8 cm) 26, 7, 11.6, 21; G (83.8–101.6 cm) 28, 8, 18.9, 35; H (> 101.6 cm) 7, 2, 6.0, 11. Shrub stems/ha, 2013, dominated by American beech (54%), eastern hemlock (40%), yellow birch (3%), eastern white pine, alternate-leaf dogwood, and hobblebush (1%). Ground cover, > 70%, dominated by ferns. Canopy cover, 94%; average canopy height, 36.9 m (range 30–45 m). There is one permanent stream and one intermittent stream with a maximum width of 0.6 m and a maximum depth of 0.3 m. **Edge:** Between 26 and 50% 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 has a NE-facing slope of 6–10% grade. Minimum elevation 569 m, maximum 537 m. **Weather:** Mean start temp., 16.9°C (range 7–22°C). See BBC #56 for summary. **Coverage:** 16.7 h; 8 visits (2 sunrise, 2 sunset); 3, 4, 10, 16, 17, 25, 28, 30 Jun. **Census:** Blackburnian Warbler, 21.0 (84); Magnolia Warbler, 11.0 (44); Solitary Vireo, 5.0 (20); Red-eyed Vireo, 5.0; Black-throated Green Warbler, 5.0 (1N); Scarlet Tanager, 5.0; Dark-eyed Junco, 5.0 (2FL); Acadian Flycatcher, 4.0 (16); Winter Wren, 4.0; Brown Creeper, 3.0 (12); Black-throated Blue Warbler, 3.0; Hairy Woodpecker, 2.0; White-breasted Nuthatch, 2.0; Swainson's Thrush, 2.0; Northern Flicker, 1.0; Blue Jay, 1.0; Black-capped Chickadee, 1.0 (3FL); Tufted Titmouse, 1.0; Red-breasted Nuthatch, 1.0; Cedar Waxwing, 1.0; Mourning Warbler, 1.0; Common Yellowthroat, 1.0; Chipping Sparrow, 1.0; American Crow, 0.5; Hermit Thrush, 0.5; Yellow-rumped Warbler, 0.5; Purple Finch, 0.5. **Total:** 27 species; 88.0 territories (352/40 ha). **Visitors:** Downy Woodpecker, Common Raven, American Robin, Pine Warbler, American Redstart, Canada Warbler, Rose-breasted Grosbeak, Indigo Bunting, Brown-headed Cowbird. **Remarks:** The plot was frequently disturbed by hikers. Mammals or mammal sign observed included: bat (*Myotis* sp.), eastern chipmunk (*Tamias striatus*), red squirrel (*Tamiasciurus hudsonicus*), gray squirrel (*Sciurus carolinensis*), flying squirrel (*Glaucomys* sp.), and white-tailed deer (*Odocoileus virginianus*). **Other Observers:** Jim White II, Christie Miller. **Acknowledgments:** Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania assisted with logistics. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

82. OLD-GROWTH HEMLOCK–MIXED HARDWOOD FOREST I

BOSQUE DE EDAD AVANSADA Y MIXTO DE PICEA–MADERAS DURAS I

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Site Number: PA2493079. **Location:** Pennsylvania; Clarion and Forest Cos.; Cooksburg; Cathedral Stand; 41°21'N, 79°13'W; Cooksburg Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 15.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):90–91 (1994). **Weather:** Mean start temp., 13.4°C (range 3–26°C). See BBC #56 for additional summary data. **Coverage:** 19.2 h; 8 visits (4 sunrise, 1 sunset); 27 Apr; 21, 24, 27 May; 6, 7, 10, 12, 17 Jun. Maximum number of observers/visit, 4. **Census:** Blackburnian Warbler, 48.0 (128); Black-throated Green Warbler, 27.0 (72); Magnolia Warbler, 16.0 (43); Red-eyed Vireo, 9.0 (24); Solitary Vireo, 8.0 (21); Dark-eyed Junco, 8.0 (2FL); Hermit Thrush, 4.0 (11); Scarlet Tanager, 4.0; Black-capped Chickadee, 3.0 (8); Brown Creeper, 3.0; Winter Wren, 3.0 (4FL); Hairy Woodpecker, 2.0 (2FL); Acadian Flycatcher, 2.0; Blue Jay, 2.0; Swainson's Thrush, 2.0; Chipping Sparrow, 2.0; Brown-headed Cowbird, 2.0; Purple Finch, 2.0; Pileated Woodpecker, 1.0; Red-breasted Nuthatch, 1.0; White-breasted Nuthatch, 1.0; American Robin, 1.0; Pine Warbler, 1.0; Ovenbird, 1.0; Red-shouldered Hawk, 0.5; Mourning Dove, 0.5; Barred Owl, 0.5 (1N); Downy Woodpecker, 0.5. **Total:** 28 species; 155.0 territories (413/40 ha). **Visitors:** Common Merganser, Chimney Swift, Eastern Wood-Pewee, Great Crested Flycatcher, American Crow, Common Raven, Tufted Titmouse, Golden-crowned Kinglet, Cedar Waxwing, Black-throated Blue Warbler, American Redstart, Common Grackle, Pine Siskin, American Goldfinch. **Remarks:** Light infestations of both gypsy moth and elm spanworm occurred in regional forests this season. Much of the 50% increase in territorial density since last year came from a doubling of Blackburnian Warbler numbers. Winter Wrens made a conspicuous expansion (3.0 territories) into the study plot. The 6 June visit was interrupted by rain and resumed at the same time on the next day. Mammals or mammal sign observed included: eastern chipmunk (*Tamias striatus*), gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*), and white-tailed deer (*Odocoileus virginianus*). **Other Observers:** Becky Allison, John Cheek, Linda Hepfner, Ray Kaufmann, John Seachrist, Sue Wetzel. **Acknowledgments:** We thank Carl Schlentner at Cook Forest State Park and Larry Lentz, Jeffrey Sowl,

and David Wright, all of the Center for Rural Pennsylvania for assistance with logistics and access. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

83. OLD-GROWTH HEMLOCK-MIXED HARDWOOD FOREST II

BOSQUE DE EDAD AVANSADA Y MIXTO DE PICEA-MADERAS DURAS II

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Site Number: PA2493080. **Location:** Pennsylvania; Clarion Co.; Cooksburg; Seneca Stand; 41°20'N, 79°13'W; Cooksburg Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 15.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):91-92 (1994). **Weather:** Mean start temp., 12.4°C (range 4-21°C). See BBC #56 for additional summary data. **Coverage:** 18.0 h; 8 visits (4 sunrise); 18, 27 May; 7, 8, 9, 10, 22, 29 Jun. Maximum number of observers/visit, 5. **Census:** Blackburnian Warbler, 42.0 (112); Black-throated Green Warbler, 35.0 (93); Magnolia Warbler, 22.0 (59); Red-eyed Vireo, 19.0 (51); Solitary Vireo, 15.0 (40); Hermit Thrush, 8.0 (21); Dark-eyed Junco, 7.0 (19; 1N,3FL); Acadian Flycatcher, 5.0 (13); Scarlet Tanager, 4.0 (11); Hairy Woodpecker, 2.0; Black-capped Chickadee, 2.0; Brown Creeper, 2.0; Purple Finch, 2.0; Red-breasted Nuthatch, 1.0; American Robin, 1.0; Pine Warbler, 1.0; Chipping Sparrow, 1.0; Great Crested Flycatcher, 0.5; Rose-breasted Grosbeak, 0.5. **Total:** 19 species; 170.0 territories (453/40 ha). **Visitors:** Turkey Vulture, Red-shouldered Hawk, Yellow-billed Cuckoo, Barred Owl, Downy Woodpecker, Pileated Woodpecker, American Crow, Tufted Titmouse, Golden-crowned Kinglet, Wood Thrush, Cedar Waxwing, Black-throated Blue Warbler, Black-and-white Warbler, Brown-headed Cowbird. **Remarks:** Light infestations of both gypsy moth and elm spanworm occurred in regional forests this season. The overall 27% increase in number of territories since last year arose mainly from increases in Red-eyed Vireo (90%), Magnolia Warbler (29%), Black-throated Green Warbler (106%), Blackburnian Warbler (40%), and Dark-eyed Junco (133%). The 8 June visit was interrupted for three hours by light rain. Mammals or mammal sign observed included: black bear (*Ursus americanus*), eastern chipmunk (*Tamias striatus*), gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*), porcupine (*Erethizon dorsatum*), and white-tailed deer (*Odocoileus virginianus*). **Other Observers:** Jocelyn Smreker, Terry Masters, Becky Allison, John Cheek, Linda Hepfner, Ray Kaufmann, John Seachrist, Sue Wetzel, Jason Lydic. **Acknowledgments:** We thank Carl Schlentner at Cook Forest State Park and Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania for assistance with logistics and access. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

84. REMNANT OLD-GROWTH HEMLOCK-MIXED HARDWOOD FOREST

REMANENTE DE BOSQUE DE EDAD AVANSADA DE PICEA-MADERAS DURAS MIXTAS

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Site Number: PA2493082. **Location:** Pennsylvania; Clarion Co.; Cooksburg; Swamp Tract; 41°24'N, 79°13'W; Marienville West Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 15.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):92-93 (1994). **Weather:** Mean start temp., 12.4°C (range 2-22°C). See BBC #56 for additional summary data. **Cov-**

erage: 18.7 h; 8 visits (5 sunrise, 1 sunset); 18, 27 May; 6, 7, 9, 10, 28 Jun; 5 Jul. Maximum number of observers/visit, 5. **Census:** Blackburnian Warbler, 23.0 (61); Red-eyed Vireo, 21.0 (56); Black-throated Green Warbler, 21.0; Solitary Vireo, 19.0 (51); Magnolia Warbler, 18.0 (48; 1N); Hermit Thrush, 8.0 (21; 1N); Dark-eyed Junco, 8.0 (2FL); Black-capped Chickadee, 5.0 (13); Scarlet Tanager, 4.0 (11); Brown-headed Cowbird, 4.0; Winter Wren, 3.0 (8); Ovenbird, 3.0; Acadian Flycatcher, 2.0; Red-breasted Nuthatch, 2.0; Brown Creeper, 2.0; Barred Owl, 1.0 (1FL); Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; White-breasted Nuthatch, 1.0; Common Yellowthroat, 1.0; Tufted Titmouse, 0.5; Black-and-white Warbler, 0.5. **Total:** 24 species; 151.0 territories (403/40 ha). **Visitors:** Great Blue Heron, Turkey Vulture, Red-shouldered Hawk, Red-bellied Woodpecker, American Crow, American Robin, Cedar Waxwing, American Redstart, Chipping Sparrow, Song Sparrow, Common Grackle, American Goldfinch. **Remarks:** Light infestations of both gypsy moth and elm spanworm occurred in regional forests this season. The overall 36% increase in number of territories since last year arose mainly from increases in Solitary Vireo (90%), Red-eyed Vireo (91%), Magnolia Warbler (38%), Black-throated Green Warbler (31%), and Blackburnian Warbler (53%). Mammals or mammal sign observed included: eastern chipmunk (*Tamias striatus*), gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*), porcupine (*Erethizon dorsatum*), meadow vole (*Microtus pennsylvanicus*), and white-tailed deer (*Odocoileus virginianus*). **Other Observers:** Jocelyn Smreker, Terry Masters, Becky Allison, John Cheek, Linda Hepfner, Ray Kaufmann, John Seachrist, Sue Wetzel, Jason Lydic. **Acknowledgments:** We thank Carl Schlentner at Cook Forest State Park and Larry Lentz, Jeffrey Sowl, and David Wright, all of the Center for Rural Pennsylvania for assistance with logistics and access. This plot is part of a study of old-growth forest supported by The Pennsylvania State University's CES Research and Development program and Fund for Undergraduate Research, the DuBois Educational Foundation, and the Center for Rural Pennsylvania.

85. MATURE UPLAND OAK-BEECH-WHITE PINE FOREST

BOSQUE MADURO DE ROBLE-HAYA-PINO BLANCO EN ALTURAS

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Site Number: RI1291062. **Location:** Rhode Island; Kent Co.; West Greenwich; Escoheag; 41°36'N, 71°46'W; Voluntown Quadrangle, USGS. **Continuity:** Established 1991; 4 yr. **Size:** 10.2 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):84-85 (1992). **Weather:** Mean start temp., 11.8°C (range 1-22°C). Light precipitation fell during one visit. See BBC #57 for April, May, and June weather. July mean temperature (23.9°C) was above normal (21.4°C). July precipitation (4.7 cm) was below normal (8.3 cm). Source: University of Rhode Island weather station, Kingston, RI. **Coverage:** 25.9 h; 11 visits (9 sunrise); 24, 30 Apr; 19, 23, 25, 27 May; 17, 21 Jun; 11, 13, 14 Jul. **Census:** Red-eyed Vireo, 23.0 (90); Ovenbird, 20.5 (80; 1N); Tufted Titmouse, 5.0 (20); Wood Thrush, 5.0 (1N); Acadian Flycatcher, 4.5 (18); Scarlet Tanager, 4.5; Hermit Thrush, 4.0 (16); Downy Woodpecker, 3.5 (14); Veery, 3.0 (12); Black-capped Chickadee, 2.5; White-breasted Nuthatch, 2.5; Black-throated Green Warbler, 2.0; Pine Warbler, 1.5; Broad-winged Hawk, 1.0; Red-bellied Woodpecker, 1.0; Hairy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; Black-and-white Warbler, 1.0; American Redstart, 1.0; Rufous-sided Towhee, 1.0; Carolina Wren, 0.5; Pileated Woodpecker, +; Brown-headed Cowbird, +. **Total:** 24 species; 90.0 territories (353/40 ha). **Visitors:** Eastern Phoebe, American Crow, Gray Catbird, Common Yellowthroat, Northern Cardinal, Northern Oriole. **Other Observers:** Mary Jo Murray, Kimberley Korth. **Acknowledgments:** Thanks to the Rhode Island Department of Environmental Management, Division of Forestry for permitting use of the site. *Present address: *Dept. of Biology, Rhodes Hall 224, SE Missouri State Univ., Cape Girardeau MO 63701-4799*

86. SELECTIVELY-CUT UPLAND OAK-WHITE PINE FOREST

BOSQUE DE ROBLE-PINO BLANCO DE CORTE SELECTIVO EN ALTURAS

BRIAN T. BROWNE & SARA FRENCH STORER

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Site Number: RI1294110. **Location:** Rhode Island; Washington Co.; Exeter; Fisherville Brook; 41°36'N, 71°34'W; Slocum Quadrangle, USGS. **Continuity:** New. **Size:** 10.3 ha. **Description of Plot:** A rectangular plot (320 x 330 m) located in the N portion of the Audubon Society of Rhode Island's Fisherville Brook Wildlife Refuge. The closed canopy is estimated to be between 61 and 100 years of age and is dominated by oak and white pine. There are numerous openings where trees were removed prior to acquisition by Rhode Island Audubon, but they are filling in. Two old logging trails traverse the center of the plot and have become overgrown with small trees and bullbrier. The refuge's red trail system intersects the SE corner and E side of the plot, and the white trail system cuts across the W side. 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, 410/ha; total basal area 18.8 m²/ha. Trees by species [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%)] : red maple, 193, 47, 34, 90; black oak, 70, 17, 12, 50; white oak, 44, 11, 21, 40; eastern white pine, 42, 10, 11, 70; scarlet oak, 24, 6, 11, 40; red oak, 15, 4, 8, 40; eastern red cedar, 12, 3, 2, 20; black cherry, 10, 2, 0.1, 40. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%)] : A (7.6-15.2 cm) 158, 39, 1.4, 8; B (15.2-22.9 cm) 104, 25, 2.9, 15; C (22.9-38.1 cm) 111, 27, 8.3, 44; D (38.1-53.3 cm) 37, 9, 6.2, 33. Shrub stems/ha, 10,060, dominated by bullbrier and red maple. The shrub layer is dominated by mountain laurel on the NW corner of the plot. Ground cover, 69.5%, dominated by bullbrier, lowbush blueberry, and mountain laurel. Canopy cover, 83%; average canopy height, 17 m (range 11-23 m). There is one intermittent stream with maximum width of 3 m and maximum depth of 0.2 m. **Edge:** Similar habitat extends for > 300 m on the E and N sides. A dirt road runs E-W 120 m S of the plot with a buffer of similar habitat between the plot and the road. The forest grades into a red maple swamp marking the riparian zone surrounding Fisherville Brook 150 m W of the plot. **Topography and Elevation:** The plot has a SW-facing slope of 6-10% grade. Minimum elevation 80 m, maximum 102 m. **Weather:** Mean start temp., 19.3°C (range 4-30°C). See BBC #37 and BBC #57 for summary. **Coverage:** 19.9 h; 10 visits (8 sunrise, 2 sunset); 15, 28 May; 1, 14, 17, 22 Jun; 3, 7, 9, 14 Jul. **Census:** Veery, 12.0 (47); Common Yellowthroat, 9.5 (37); Rufous-sided Towhee, 8.0 (31); Ovenbird, 7.5 (29); Gray Catbird, 6.5 (25); Tufted Titmouse, 5.0 (19); Chestnut-sided Warbler, 5.0; Wood Thrush, 4.5 (17); Ruffed Grouse, 4.0 (16); Scarlet Tanager, 3.0 (12); Whip-poor-will, 2.0; Great Crested Flycatcher, 2.0; Black-capped Chickadee, 2.0; Hermit Thrush, 2.0; Red-eyed Vireo, 2.0; Blue-winged Warbler, 2.0; Black-and-white Warbler, 2.0; Northern Cardinal, 2.0; White-breasted Nuthatch, 1.5; Mourning Dove, 1.0; Red-bellied Woodpecker, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Eastern Wood-Pewee, 1.0; Blue Jay, 1.0; Pine Warbler, 1.0; House Wren, 0.5; Brown-headed Cowbird, 0.5. **Total:** 29 species; 91.5 territories (355/40 ha). **Visitors:** Black-billed Cuckoo, Yellow-billed Cuckoo, Eastern Phoebe, Red-breasted Nuthatch, American Robin, Yellow-throated Vireo, Black-throated Green Warbler, Hooded Warbler, Purple Finch. **Remarks:** The numbers of Ruffed Grouse and Whip-poor-will were based on the maximum number of simultaneously drumming and calling individuals, respectively. **Acknowledgments:** Thanks to William R. Eddleman for his guidance and field assistance, and to Bill Tyler and Tara Stefanski-Nelson of the Audubon Society of Rhode Island for helping clear the transects and for allowing us to conduct the census on the site.

87. MATURE DECIDUOUS-CONIFEROUS FOREST WITH STREAM**BOSQUE MADURO DECIDUO-Y-DE CONIFEROS CON ARROYO**

STEPHEN J. & BARBARA H. STEDMAN

2675 Lakeland Dr., Cookeville TN 38506

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; 4 yr. **Size:** 10.2 ha. **Description of Plot:** See *J. Field Ornithol.* 62(Suppl.):17 (1991), 63(Suppl.):18-19 (1992), and 65(Suppl.):95 (1994). **Weather:** Mean start temp., 15.8°C (range 8-21°C). Temperatures for April-July were somewhat above average except for the last half of May, which was cooler than average. Rainfall was slightly below average for the study period. **Coverage:** 17.7 h; 12 visits (12 sunrise); 20, 28 Apr; 21, 24, 29, 30, 31 May; 1, 2, 5, 7 Jun; 12 Jul. **Census:** Northern Cardinal, 9.0 (35; 2N,1FL); Wood Duck, 3.0 (12; 1N,19FL); Tufted Titmouse, 3.0 (3FL); Carolina Wren, 3.0 (3FL); Common Grackle, 3.0 (2FL); Brown-headed Cowbird, 3.0; Rufous-sided Towhee, 2.5 (1N); Blue Jay, 2.0 (5FL); Carolina Chickadee, 2.0 (2FL); Wood Thrush, 2.0 (1N); European Starling, 2.0 (2N,3FL); Red-eyed Vireo, 2.0; Kentucky Warbler, 2.0; Song Sparrow, 2.0 (1FL); Red-winged Blackbird, 2.0; Downy Woodpecker, 1.5 (1FL); Eastern Phoebe, 1.5 (2N,2FL); American Robin, 1.5 (1N,2FL); Mourning Dove, 1.0 (1N,1FL); Northern Flicker, 1.0 (1N); White-breasted Nuthatch, 1.0; Blue-gray Gnatcatcher, 1.0; Gray Catbird, 1.0 (1N); Yellow-throated Warbler, 1.0; Louisiana Waterthrush, 1.0; Broad-winged Hawk, 0.5 (1N); Belted Kingfisher, 0.5; Great Crested Flycatcher, 0.5; Tree Swallow, 0.5; Northern Rough-winged Swallow, 0.5; American Crow, 0.5; Eastern Bluebird, 0.5 (1FL); Yellow-throated Vireo, 0.5; Green Heron, +; Yellow-billed Cuckoo, +; Red-bellied Woodpecker, +; Hairy Woodpecker, + (1FL); Eastern Wood-Pewee, +; Common Yellowthroat, +; Summer Tanager, +; Indigo Bunting, +; Northern Oriole, +. **Total:** 42 species; 58.0 territories (227/40 ha). **Visitors:** Least Bittern, Red-shouldered Hawk, Chimney Swift, Ruby-throated Hummingbird, Eastern Kingbird, Barn Swallow, Brown Thrasher, Cedar Waxwing, White-eyed Vireo, Northern Parula, Yellow Warbler, Pine Warbler, Hooded Warbler, Orchard Oriole. **Remarks:** Raccoon presence (tracks) on the plot was noted for the first time since the census was initiated.

88. SLOPED MIXED DECIDUOUS-CONIFEROUS FOREST**BOSQUE DE PENDIENTE MIXTO DE DECIDUO-CONIFEROS**

FRED MERRILL

Vermont Conservation Biology, RR#1, Box 565, Woodstock VT 05091

Site Number: VT2791010. **Location:** Vermont; Windsor Co.; Pomfret; High Pastures Road, S.A.#1; 43°37'N, 72°30'W; Quechee Quadrangle, USGS. **Continuity:** Established 1991; 3 yr. **Size:** 12.3 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):87-88 (1992). **Weather:** Mean start temp., 11.0°C (range 1-19°C). Temperature and precipitation departures, respectively, from the 30-yr norms: May, -1.5°C, +1.15 cm; June, +1.0°C, +0.69 cm; July, +0.7°C, +1.58 cm. Source: Central Vermont Public Service Co., Cavendish, VT. **Coverage:** 15.0 h; 6 visits (6 sunrise); 11, 30 May; 8 Jun; 3, 6, 21 Jul. **Census:** Ovenbird, 7.0 (23; 2N); Red-eyed Vireo, 6.0 (20); Dark-eyed Junco, 4.5 (15); Black-capped Chickadee, 4.0 (13; 1N,3FL); Hermit Thrush, 3.5 (11; 2N); Wood Thrush, 3.0 (10); Black-throated Green Warbler, 3.0; Rose-breasted Grosbeak, 2.5; Eastern Wood-Pewee, 2.0; Blue Jay, 2.0; White-breasted Nuthatch, 2.0; Veery, 2.0; American Robin, 2.0; Black-throated Blue Warbler, 2.0; Yellow-rumped Warbler, 2.0; Black-and-white Warbler, 2.0; Scarlet Tanager, 2.0 (1N); White-throated Sparrow, 2.0; Chestnut-sided Warbler, 1.5; Brown-headed Cowbird, 1.5; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Brown Creeper, 1.0; Solitary Vireo, 1.0; Broad-winged Hawk, 0.5; Ruffed Grouse, 0.5; Wild Turkey, 0.5; Barred Owl, 0.5; Pileated Woodpecker, 0.5; Common Yellowthroat, 0.5. **Total:** 30 species; 63.5 territories (207/40 ha). **Visitors:** Yellow-bellied Sapsucker, Great Crested Flycatcher, American Crow, Nashville Warbler, Magnolia Warbler, Black-burnian Warbler, Evening Grosbeak.

89. SUBURBAN CEMETERY

CEMENTERIO SUBURBANO

THOMAS A. IMHOF

1036 Pike Road, Birmingham AL 35218

Location: Alabama; Jefferson Co.; Birmingham; Oakland Cemetery; 33°29'N, 86°54'W; Bessemer Quadrangle, USGS. **Continuity:** Established 1978; 15 yr. **Size:** 15.0 ha. **Description of Plot:** See *Am. Birds* 34:18–19 (1980), *J. Field Ornithol.* 63(Suppl.):88–89 (1992), and 65(Suppl.):96 (1994). On 31 July, on or within a few meters of the plot, there were 17 dead or dying elms (both American and winged), one mimosa, one dogwood, and two oaks. The majority of elms and the manner of dying (one big limb at a time) seem to indicate a circulatory disease, possibly Dutch Elm Disease, but the other tree species point to possible air pollution. It is probably both. **Weather:** Mean start temp., 15.5°C (range 4–24°C). The weather averaged a bit warmer and quite a bit wetter than normal. As of 31 July, 108 cm of rain was recorded, normal for Birmingham is 89 cm. Recent years have had summer drought. **Coverage:** 52.0 h; 19 complete visits (12 sunrise); 14, 20, 29 Mar; 4, 11, 18, 24, 30 Apr; 5, 7, 12, 23, 28 May; 2, 23, 27 Jun; 4, 16, 31 Jul. Coverage includes 100 partial visits of about 20 minutes each. **Census:** House Sparrow, 16.0 (43; 5N,20FL); House Finch, 15.0 (40; 2N,10F); American Robin, 13.0 (35; 5N,7FL); Northern Cardinal, 10.0 (27; 3N,6FL); Northern Mockingbird, 9.0 (24; 2N,11FL); European Starling, 6.0 (16; 2N, 10FL); Blue Jay, 5.5 (15; 1N,4FL); Mourning Dove, 4.5 (12; 1N,5FL); Rufous-sided Towhee, 4.0 (11; 1N,4FL); American Crow, 2.0 (1N,3FL); Carolina Wren, 1.5 (1N,5FL); Brown Thrasher, 1.5 (2FL); Red-bellied Woodpecker, 1.0 (1N,2FL); Great Crested Flycatcher, 1.0 (1FL); Tufted Titmouse, 1.0 (1N,3FL); Common Grackle, 1.0; Northern Flicker, 0.5 (1N,1FL); Eastern Wood-Pewee, 0.5; Carolina Chickadee, 0.5 (1N,2FL); Gray Catbird, 0.5. **Total:** 20 species; 94.0 territories (251/40 ha). **Visitors:** Sharp-shinned Hawk, Rock Dove, Common Nighthawk, Chimney Swift, Downy Woodpecker, Barn Swallow, White-eyed Vireo, Brown-headed Cowbird. **Remarks:** Certain species, notably Rock Dove, American Crow, Northern Mockingbird, European Starling, Brown-headed Cowbird, House Finch, and House Sparrow, drive away other species so that some no longer breed locally. Possible victims that were not listed as breeders this year include: American Kestrel, Red-headed Woodpecker, Downy Woodpecker, White-breasted Nuthatch, Wood Thrush, Hooded Warbler, and Red-winged Blackbird. However, habitat destruction is so prevalent that it can hardly be discounted as an additional cause. The coyote is still present and probably feeds at least occasionally on ground fledglings. There was no wild cherry crop, probably the reason why only three pairs of robins remained after 1 June.

90. TRANSITION FOREST AND THICKET

TRANSICION DE BOSQUE-MATORRAL

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

Dept. of Zoology, Connecticut College, 270 Mohegan Ave., New London CT 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; 23 yr. **Size:** 6.5 ha. **Description of Plot:** See *Am. Birds* 37:73–74 (1983). **Weather:** Mean start temp., 14.6°C (range 4–24°C). The weather was drier than normal. There was very little rainfall during the census period. **Coverage:** 7.8 h; 10 visits (10 sunrise); 13, 20, 27 May; 3, 7, 10, 17, 28 Jun; 2, 7 Jul. **Census:** Gray Catbird, 5.0 (31); Blue-winged Warbler, 3.0 (18); Northern Cardinal, 2.5; Rufous-sided Towhee, 2.5; White-eyed Vireo, 2.0; Red-eyed Vireo, 2.0; Downy Woodpecker, 1.5; Wood Thrush, 1.5; Eastern Wood-Pewee, 1.0; Blue Jay, 1.0; Black-capped Chickadee, 1.0; Tufted Titmouse, 1.0; Veery, 1.0; Chestnut-sided Warbler, 1.0; Ovenbird, 1.0; Common Yellowthroat, 1.0; House Wren, 0.5; Hooded Warbler, 0.5; Brown-headed Cowbird, 0.5; Red-bellied Woodpecker, +; Northern Flicker, +; Great Crested Flycatcher, +; White-breasted Nuthatch, +; Northern Mockingbird, +; Yellow Warbler, +; Song Sparrow, +. **Total:** 26 species; 29.5 territories (182/40 ha). **Visitors:** Cedar Waxwing, American Redstart. **Remarks:** Carolina Wrens, which had been common in the study area in

previous years, were absent this year following a severe winter. **Acknowledgments:** Glenn Dreyer and his staff at the Connecticut College Arboretum facilitated our study.

91. BULRUSH AND CATTAIL MARSH IN CONIFER FOREST

CIENAGAS DE ENEAS EN BOSQUE DE CONIFERAS

MARCELLA M. BISHOP

750 Rocky Point Road, Polson MT 59860

Location: Montana; Lake Co.; Polson; Safe Harbor Marsh; 47°35'N, 114°9'W; Wild Horse Island Quadrangle, USGS. **Continuity:** Established 1975; 20 yr. **Size:** 40.5 ha. **Description of Plot:** See *Am. Birds* 31:84–85 (1977). **Weather:** Mean start temp., 18.3°C (range 9–26°C). Moderate spring with normal temperatures followed by a hot, very dry summer. **Coverage:** 33.0 h; 7 visits (6 sunrise, 1 sunset); 22 Apr; 17 May; 5, 8, 11, 17 Jun; 2 Jul. Maximum number of observers/visit, 3. **Census:** Yellow-headed Blackbird, 24.0 (24; 4N,16FL); Marsh Wren, 17.0 (17; 3N,2FL); Red-winged Blackbird, 16.0 (16; 2N,12FL); Common Yellowthroat, 13.0 (13; 1N); Song Sparrow, 13.0 (2N,6FL); Willow Flycatcher, 10.0 (10); Tree Swallow, 10.0 (3N,4FL); Brown-headed Cowbird, 10.0; Black-capped Chickadee, 9.0 (9); Pine Siskin, 9.0; American Robin, 8.0 (8; 2N,2FL); Barn Swallow, 7.0 (7); Red Crossbill, 7.0; Canada Goose, 6.0 (6; 2N,8FL); Redhead, 6.0; Mourning Dove, 6.0; Violet-green Swallow, 5.0 (5); Red-breasted Nuthatch, 5.0; Cedar Waxwing, 5.0 (1N); Pied-billed Grebe, 4.0 (4); Great Blue Heron, 4.0; Mallard, 4.0 (8FL); Northern Flicker, 4.0; Western Wood-Pewee, 4.0; Ruby-crowned Kinglet, 4.0; Swainson's Thrush, 4.0; Yellow Warbler, 4.0; Dark-eyed Junco, 4.0; Ring-necked Duck, 3.0 (3; 3FL); Calliope Hummingbird, 3.0; Hammond's Flycatcher, 3.0; Mountain Chickadee, 3.0; Chipping Sparrow, 3.0; Wood Duck, 2.0 (1N,3FL); Osprey, 2.0 (2N,3FL); Ruffed Grouse, 2.0; Warbling Vireo, 2.0; Orange-crowned Warbler, 2.0; Yellow-rumped Warbler, 2.0; Cassin's Finch, 2.0; American Goldfinch, 2.0; Evening Grosbeak, 2.0; Red-necked Grebe, 1.0; Common Merganser, 1.0; Bald Eagle, 1.0; Red-tailed Hawk, 1.0; Sora, 1.0; American Coot, 1.0; Killdeer, 1.0; Great Horned Owl, 1.0; Northern Pygmy-Owl, 1.0; Northern Saw-whet Owl, 1.0 (2FL); Common Nighthawk, 1.0; Rufous Hummingbird, 1.0; Downy Woodpecker, 1.0; Dusky Flycatcher, 1.0; Northern Rough-winged Swallow, 1.0; Common Raven, 1.0; MacGillivray's Warbler, 1.0; Western Tanager, 1.0; Rufous-sided Towhee, 1.0; Northern Oriole, 1.0; Ring-billed Gull, 0.5. **Total:** 63 species; 275.5 territories (272/40 ha). **Remarks:** Successional changes are apparent on the pond, forest, and meadow. There have been profound changes in the plot and the bird life. Total species numbers have fluctuated from highs of 68 in 1979 and 69 in 1993 to a low of 36 in 1986. Species composition has changed somewhat but the total productivity of this site remains awesome.

92. DECIDUOUS FOREST WITH POND AND BROOK

BOSQUE DECIDUO CON CHARCA Y ARROYO

JOHN BROTHERTON

249 East Crescent Ave., Mahwah NJ 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; 31 yr. **Size:** 16.2 ha. **Description of Plot:** See *Aud. Field Notes* 19:623–624 (1965). **Weather:** Mean start temp., 14.0°C (range 9–19°C). **Coverage:** 10.0 h; 9 visits (9 sunrise); 24, 26, 31 May; 2, 7, 9, 14, 16, 21 Jun. Maximum number of observers/visit, 5. **Census:** Ovenbird, 5.0 (12); Gray Catbird, 4.0 (10); Tufted Titmouse, 3.0 (7); Veery, 3.0; Red-eyed Vireo, 3.0; Black-capped Chickadee, 2.0; Wood Thrush, 2.0; Scarlet Tanager, 2.0; Red-bellied Woodpecker, 1.0; Downy Woodpecker, 1.0; Northern Flicker, 1.0; Eastern Wood-Pewee, 1.0; Great Crested Flycatcher, 1.0; Tree Swallow, 1.0; Blue Jay, 1.0; Louisiana Waterthrush, 1.0; Common Yellowthroat, 1.0; Northern Cardinal, 1.0; Rose-breasted Grosbeak, 1.0; Common Grackle, 1.0. **Total:** 20 species; 36.0 territories (89/40 ha). **Visitors:** Canada Goose, Wood Duck, Mal-

lard, Mourning Dove, Pileated Woodpecker, Eastern Phoebe, American Crow, Eastern Bluebird, American Robin, Cedar Waxwing, American Redstart, Brown-headed Cowbird, House Finch. **Other Observers:** J. Bristow, N. Bristow, D. Schwenker, K. Sjolander, J. White, J. Worrall.

93. SECOND-GROWTH BROADLEAF-CONIFEROUS FOREST WITH WETLAND AREAS

BOSQUE SECUNDARIO DE CONIFEROS DE HOJA ANCHA CON AREAS ANEGADAS

THOMAS H. GREG

415 Campus Dr., Amherst NY 14226

Site Number: NY2494046. **Location:** New York; Wyoming Co.; Java Center; Beaver Meadow Wildlife Refuge; 42°40'N, 78°22'W; Strykersville Quadrangle, USGS. **Continuity:** New. **Size:** 11.0 ha. **Description of Plot:** A rectangular plot (312 x 351 m). Second-growth forest estimated to be between 31 and 60 years of age occupies approximately 67% of the plot. The closed canopy is dominated by sugar maple, red maple, and white pine. The understory is dominated by eastern hemlock, northern arrowwood, and witch-hazel. The ground cover is dominated by ferns, goldenrod, and raspberry. The wetlands (23% of the plot) in order of decreasing area are: forested wetlands dominated by eastern hemlock, shrub wetlands dominated by northern arrowwood and dogwood, a speckled alder swamp, and two small emergent wetlands dominated by reed canary grass and other emergents. There is one stream with a maximum width of 2 m and a maximum depth of 0.5 m. The remaining 10% of the plot is an older hardwood forest dominated by sugar maple, American beech, and black cherry. Overall mean canopy height, 14 m (range 1–35 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. There is 150 m of second-growth forest to the N of the plot. The E edge is as far as 140 m from a railroad bed which intersects the SE corner. The habitat E of the plot is a combination of wet hemlock and second-growth forests. An 8-ha area of large eastern hemlocks lies to the S and 75 m of second-growth forest separates the W border from a marsh at the edge of a beaver pond. **Topography and Elevation:** The plot has an uneven slope facing SW with a grade of 6–10%. Minimum elevation 448 m, maximum 457 m. **Weather:** Mean start temp., 13.2°C (range 1–21°C). Conditions were favorable during all visits. **Coverage:** 18.6 h; 12 visits (6 sunrise); 3, 7, 22, 27 May; 7, 11, 15, 16, 23 Jun; 1, 4, 28 Jul. **Census:** Veery, 7.0 (25); Red-eyed Vireo, 5.0 (18; 1N); Common Yellowthroat, 5.0; Dark-eyed Junco, 5.0; Black-capped Chickadee, 4.0 (15); Blue Jay, 3.0 (11); American Robin, 3.0 (1N); Swamp Sparrow, 3.0; Great Crested Flycatcher, 2.0; Brown Creeper, 2.0; Cedar Waxwing, 2.0; Solitary Vireo, 2.0 (2N); Northern Waterthrush, 2.0; Brown-headed Cowbird, 2.0; Sharp-shinned Hawk, 1.0; Ruffed Grouse, 1.0; Yellow-bellied Sapsucker, 1.0; Downy Woodpecker, 1.0; Northern Flicker, 1.0; Pileated Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; American Crow, 1.0; White-breasted Nuthatch, 1.0; Wood Thrush, 1.0 (1N); Magnolia Warbler, 1.0; Yellow-rumped Warbler, 1.0; Black-throated Green Warbler, 1.0; Blackburnian Warbler, 1.0; Ovenbird, 1.0; Canada Warbler, 1.0; Scarlet Tanager, 1.0; Rose-breasted Grosbeak, 1.0. **Total:** 32 species; 65.0 territories (236/40 ha). **Visitors:** Wood Duck, Ruby-throated Hummingbird, Hairy Woodpecker, Least Flycatcher, Red-breasted Nuthatch, House Wren, Winter Wren, Blue-winged Warbler, Hooded Warbler, Northern Cardinal, Common Grackle. **Remarks:** Brown-headed Cowbirds were observed on seven visits. One or two cowbird eggs were found in each of the four accessible nests (two Solitary Vireo, one Red-eyed Vireo, and one Wood Thrush) indicating a high degree of nest parasitism. **Other Observer:** Gerry Rising. **Acknowledgments:** Thanks to Jim Ochtanski for help in laying out the grid and staking the plot as well as for the collection of the habitat information. Thanks to Dave Junkin and the Beaver Meadow Managers committee for their permission for and support of this study.

94. SUBURBAN BIRD SANCTUARY

SANTUARIO DE AVES SUBURBANO

MARY E. RICHARD

Theodore Roosevelt Sanctuary, Inc., 134 Cove Road, Oyster Bay NY 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; 12 yr. **Size:** 10.8 ha. **Description of Plot:** See *J. Field Ornithol.* 63(Suppl.):91–92 (1992). **Weather:** Mean start temp., 21.5°C (range 18–24°C). **Coverage:** 13.3 h; 8 visits (7 sunrise, 1 sunset); 30 May; 9, 24 Jun; 1, 12, 19 Jul; 4, 6 Aug. **Census:** Gray Catbird, 13.0 (48; 2N,4FL); American Robin, 9.0 (33; 1N,1FL); House Wren, 8.0 (30; 2N); Common Grackle, 8.0 (1N,5FL); House Sparrow, 8.0 (3N); Tufted Titmouse, 6.0 (22); Northern Cardinal, 5.0 (19; 2N,6FL); Black-capped Chickadee, 4.0 (15); European Starling, 4.0 (2N); House Finch, 4.0; Red-bellied Woodpecker, 3.5 (13; 1N); Downy Woodpecker, 3.0 (11); Mourning Dove, 2.0; Hairy Woodpecker, 2.0; Northern Flicker, 2.0 (1N); Blue Jay, 2.0 (6FL); White-breasted Nuthatch, 2.0 (1N); Chipping Sparrow, 2.0; Northern Oriole, 2.0; Eastern Screech-Owl, 1.0 (1N); Eastern Wood-Pewee, 1.0; Carolina Wren, 1.0; Red-eyed Vireo, 1.0; Yellow Warbler, 1.0; Scarlet Tanager, 1.0. **Total:** 25 species; 95.5 territories (354/40 ha). **Visitors:** Red-tailed Hawk, American Crow, Fish Crow. **Other Observer:** Michael Brust.

95. URBAN COASTAL PARK

PARQUE URBANO COSTANERO

ANDREW MAGEE

278 Conway Road, South Deerfield MA 01373

Site Number: NY0993124. **Location:** New York; Queens Co.; Far Rockaway; Bayswater Point State Park; 40°37'N, 73°46'W; Far Rockaway Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):99–100 (1994). **Weather:** Mean start temp., 19.6°C (range 13–29°C). There was light rain during the 17 May visit and rain at the end of the 6 June visit. June was hotter and drier than usual. The average temperature in Central Park for June was 1.7°C above normal. Precipitation for June was 1.2 cm below normal. Source: Northeast Regional Climate Center, Cornell University. **Coverage:** 11.0 h; 7 visits; 7, 15, 17, 18 May; 5, 6, 23 Jun. **Census:** Red-winged Blackbird, 12.0 (48); Gray Catbird, 10.0 (40); American Robin, 8.0 (32); Common Yellowthroat, 7.0 (28); Yellow Warbler, 6.0 (24); Song Sparrow, 6.0; Willow Flycatcher, 5.0 (20); Northern Cardinal, 5.0; House Finch, 5.0; Mourning Dove, 3.0 (12); Carolina Wren, 2.0; Northern Mockingbird, 2.0; Brown Thrasher, 2.0; European Starling, 2.0; White-eyed Vireo, 2.0; American Goldfinch, 2.0; House Sparrow, 2.0; Green Heron, 1.0; Spotted Sandpiper, 1.0; Northern Flicker, 1.0; Eastern Kingbird, 1.0; Blue Jay, 1.0; Cedar Waxwing, 1.0; Red-eyed Vireo, 1.0; Boat-tailed Grackle, 1.0; Common Grackle, 1.0; Brown-headed Cowbird, 1.0; Mallard x American Black Duck hybrid, +; Mallard, +; Barn Owl, +; American Crow, +; Fish Crow, +. **Total:** 32 species; 91.0 territories (364/40 ha). **Remarks:** The New York City Audubon Society manages this site which is owned by the New York State Office of Parks, Recreation, and Historic Preservation. This census is one of a number of long-term monitoring studies being undertaken as part of a coastal restoration and management initiative. **Other Observers:** David L. Burg, Gloria Kuhn, Dennis Galcik, Joseph Van Schaick. **Acknowledgments:** David L. Burg coordinated the project for the New York City Audubon Society with assistance from Marcia Fowle, Executive Director, and Joanne Dittersdorf, Restoration Project Director. Todd Miller prepared the report. Financial support for this census was provided by an action grant from the U.S. Environmental Protection Agency Harbor Estuary Program.

96. URBAN COASTAL WILDLIFE REFUGE

REFUGIO DE VIDA SILVESTRE URBANO COSTANERO

ANDREW MAGEE

278 Conway Road, South Deerfield MA 01373

Site Number: NY0993125. **Location:** New York; Queens Co.; Far Rockaway; Dubos Point Wetlands Preserve; 40°36'N, 73°47'W; Far Rockaway Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 11.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):100-101 (1994). An adjacent parcel is being developed for housing. **Weather:** Mean start temp., 18.7°C (range 14-28°C). There was light rain during the 17 May visit and the 6 June visit was cancelled due to rain after 15 minutes. See BBC #95 for summary. **Coverage:** 12.0 h; 7 visits; 7, 15, 17, 18 May; 5, 6, 23 Jun. **Census:** Red-winged Blackbird, 21.0 (76); Song Sparrow, 14.0 (51); Gray Catbird, 9.0 (33); Willet, 8.0 (29); Seaside Sparrow, 6.0 (22); Common Yellowthroat, 5.0 (18); Sharp-tailed Sparrow, 5.0; American Robin, 4.0 (15); Yellow Warbler, 4.0; Mourning Dove, 3.0 (11); Willow Flycatcher, 3.0; Northern Mockingbird, 2.5; Green Heron, 2.0; American Black Duck, 2.0; Laughing Gull, 2.0; Brown Thrasher, 2.0; Cedar Waxwing, 2.0; European Starling, 2.0; Northern Cardinal, 2.0; House Finch, 2.0; American Goldfinch, 2.0; Mallard x American Black Duck hybrid, 1.0; Mallard, 1.0; Clapper Rail, 1.0; Killdeer, 1.0; American Oystercatcher, 1.0; American Woodcock, 1.0; Downy Woodpecker, 1.0; Carolina Wren, 1.0; House Wren, 1.0; Marsh Wren, 1.0; Great Egret, 0.5; Northern Flicker, 0.5; American Crow, 0.5; Boat-tailed Grackle, 0.5; Herring Gull, +; Fish Crow, +; Common Grackle, +. **Total:** 38 species; 114.5 territories (416/40 ha). **Remarks:** The New York City Audubon Society manages this site which is owned by the City of New York Department of Parks and Recreation. This census is one of a number of long-term monitoring studies being undertaken as part of a coastal restoration and management initiative. **Other Observers:** David L. Burg, Gloria Kuhn, Dennis Galcik, Joseph Van Schaick. **Acknowledgments:** David L. Burg coordinated the project for the New York City Audubon Society with assistance from Marcia Fowle, Executive Director, and Joanne Dittersdorf, Restoration Project Director. Todd Miller prepared the report. Financial support for this census was provided by an action grant from the U.S. Environmental Protection Agency Harbor Estuary Program.

97. DISTURBED OAK-HICKORY, PINE STAND, EDGE, AND POND

FORMACION PERTURBADA DE ROBLE-NOGAL, RODAL DE PINO, BORDE Y CHARCA

A.H. CLAUGUS

228 South Lake Street, Carey OH 43316

Site Number: OH2237200. **Location:** Ohio; Licking Co.; Hickman; Camp Falling Rock; 40°11'N, 82°19'W; Newark Quadrangle, USGS. **Continuity:** Established 1937; 50 yr. **Size:** 14.2 ha. **Description of Plot:** See *Bird Lore* 39:379-380 (1937) and *J. Field Ornithol.* 65(Suppl.):101-102 (1994). Storms during late 1993 and early 1994, brought down several dead trees, a few of which caused some nearby live trees (red maple, bitternut hickory, flowering dogwood) to be uprooted. An ice storm in February left many broken branches on the ground. The target range was enlarged slightly by cutting further into the slope below the cliff, and drainage was managed. The campfire area was enlarged by grading and removal or addition of soil (one 25-cm white oak was lost). Several dead stems (mostly < 20 cm) were removed in the upland pine planting. **Weather:** Mean start temp., 21.6°C (range 10-44°C). The spring was hot and dry. By mid-April, botanists reported "the woods are about a week to ten days behind schedule" (*Columbus Dispatch*). In May, the total rainfall was 4.29 cm below normal. As of 8 June, precipitation at Port Columbus was 7.90 cm below normal for the year. During June there were eight consecutive days with temperatures above 32°C, and record highs were set or tied on 14, 17, 19, and 20 June. Daily temperatures in Columbus during June averaged about 3.6°C above normal. Source: *Columbus Dispatch*. **Coverage:** 49.0 h; 8 visits (1 sunrise); 18, 24, 26, 30 May; 4, 6, 18, 19 Jun. **Census:** Red-eyed Vireo, 6.0 (17); Scarlet Tanager, 5.0 (14); Eastern Wood-Pewee, 3.0 (8); Acadian Flycatcher, 3.0 (1N); Ruby-throated Humming-

bird, 2.0; Red-bellied Woodpecker, 2.0 (1N); Downy Woodpecker, 2.0; Tufted Titmouse, 2.0 (3FL); White-breasted Nuthatch, 2.0; House Wren, 2.0 (1N); Northern Cardinal, 2.0 (1N); Mourning Dove, 1.0 (1N); Eastern Screech-Owl, 1.0; Eastern Phoebe, 1.0 (1N,2FL); Blue Jay, 1.0 (2FL); American Crow, 1.0 (3FL); Carolina Chickadee, 1.0; Blue-gray Gnatcatcher, 1.0 (1N); Wood Thrush, 1.0; American Robin, 1.0 (1N,2FL); Gray Catbird, 1.0; Kentucky Warbler, 1.0; Chipping Sparrow, 1.0 (2FL); Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Northern Oriole, 1.0. **Total:** 26 species; 46.0 territories (130/40 ha). **Visitors:** Turkey Vulture, Sharp-shinned Hawk, Red-tailed Hawk, Wild Turkey, Great Horned Owl, Yellow-throated Warbler, Ovenbird, Common Grackle. **Remarks:** Local weather patterns did not seem to influence bird density or diversity. The influence of regional or continental patterns is not known. The very low bird densities in recent years seem to be phenomenal. In more than 50 years of census work, the annual deviations in the number of species have rarely exceeded five species. The 27 species in 1993 and 26 this year, are much lower than what might be expected. Statistically, the magnitude of these changes from a level of 35–39 species, seems to be phenomenal. The problems to be investigated seem to be: neotropical species declines, increased camper use of the plot, state or federal programs to control insect damage to the eastern hardwood forest, more precise knowledge of wintering grounds for species nesting on the plot, and a closer look at habitat succession. **Other Observers:** Mr. and Mrs. Charles Howard, Sr. **Acknowledgments:** Mr. and Mrs. Howard, Sr.; scouts and leaders of the Central Ohio Boy Scout Council; Council executives and rangers who continued permission to use the census area.

98. FIELD, RIDGE, SHRUBBY TREES, AND WOODS

CAMPOS, COLINAS, ARBUSTOS Y BOSQUES

MICHAEL F.G. CLARK

27 Skyline Dr., Dundas ON L9H 3S3

Location: Ontario; Municipality of Hamilton-Wentworth; Dundas; Dundas Valley Plot #1; 43°15'N, 79°54'W; **Continuity:** New. **Size:** 5.8 ha. **Description of Plot:** see WBPS #39. **Weather:** Mean start temp., 18.4°C (range 9–26°C). Temperatures varied little from the monthly norms and equalled the 30-yr norm overall. Rainfall was 7.3 cm above the norm from April to July and was particularly heavy in April and May. Source: Environment Canada. **Coverage:** 12.5 h; 8 visits (3 sunset); 23, 30 Apr; 7, 28 May; 4, 10, 26 Jun; 1 Jul. **Census:** Yellow Warbler, 36.0 (248); Gray Catbird, 23.0 (159); Song Sparrow, 11.5 (79); American Goldfinch, 8.0 (55); Northern Cardinal, 5.5 (38); Field Sparrow, 5.0 (34); American Robin, 3.0 (21); Black-capped Chickadee, 2.0; Brown Thrasher, 2.0; Golden-winged Warbler, 2.0; Indigo Bunting, 2.0; Red-winged Blackbird, 2.0 (4FL); Common Yellowthroat, 1.5; Northern Flicker, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0 (1FL); Blue-winged Warbler, 1.0; American Redstart, 1.0; Brown-headed Cowbird, 1.0; Northern Oriole, 1.0; House Wren, 0.5. **Total:** 21 species; 111.0 territories (766/40 ha). **Visitors:** Black-billed Cuckoo, Ruby-throated Hummingbird, Cedar Waxwing, Ovenbird, Rufous-sided Towhee. **Remarks:** The altered vegetative configuration and reduced plot size have resulted in a new continuity designation and fewer total breeding territories (5-yr average for old plot, 130.6 territories). The number of species remains stable, however. Warblers (5 species, 37% of territories) continue to dominate the plot. Catbird numbers remain basically unchanged; Song Sparrow territories have declined 44% from last year. Blackbird territories (3 species) are now down to 4.0 (compared to 14.5 in 1989), and flycatchers remain at a low of 1.0 (8.5 in 1989). Eastern Kingbirds were absent for the first time in six years. Golden-winged Warblers, new to the plot, may have exploited ongoing plot succession to supplant the Blue-winged regulars.

99. SCATTERED MIXED CONIFEROUS FOREST IN SUBALPINE MEADOWS AND SPRUCE BOGS

BOSQUE MIXTO Y DISPERSO DE CONIFEROS EN PRADERAS SUBALPINAS Y CIENAGAS DE ABETOS

ROBERT A. HUDSON

P.O. Box 164, Independence CA 93526-0164

Location: Oregon; Grant Co.; Bates; Vinegar Hill–Indian Rock Scenic Area, Malheur National Forest; 44°45'N, 118°45'W; Desolation Butte Quadrangle, USGS. **Continuity:** Established 1973; 22 yr. **Size:** 32.4 ha. **Description of Plot:** See *Am. Birds* 27:1002–1003 (1973). **Weather:** Mean start temp., 8.1°C (range 1–13°C). It was a very dry winter followed by some precipitation in late spring. The summer was very dry in contrast to last year's slight breaking of the 7-yr drought. **Coverage:** 11.9 h; 9 visits (9 sunrise); 21, 23, 25, 27, 29 Jun; 1, 3, 7, 11 Jul. **Census:** Chipping Sparrow, 5.0 (6); Lincoln's Sparrow, 5.0; White-crowned Sparrow, 5.0; Fox Sparrow, 3.0 (4); Steller's Jay, 2.0; Ruby-crowned Kinglet, 2.0; American Robin, 2.0; Yellow-rumped Warbler, 2.0; Mountain Bluebird, 1.0. **Total:** 9 species; 27.0 territories (33/40 ha). **Visitors:** Spotted Sandpiper, Northern Flicker, Mountain Bluebird, Cassin's Finch. **Acknowledgments:** Malheur National Forest staff.

100. COASTAL FRESHWATER MARSH

PANTANO COSTANERO DE AGUA DULCE

JOHN P. KELLY

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

Location: California; Marin Co.; Marshall; Livermore Marsh; 38°10'N, 122°53'W; Tomales Quadrangle, USGS. **Continuity:** Established 1988; 7 yr. **Size:** 10.5 ha. **Description of Plot:** See *J. Field Ornithol.* 60(Suppl.):64 (1989). Detailed quantitative habitat data from 1993 are available from the author. **Weather:** Mean start temp., 11.5°C (range 10–13°C). Generally mild with normal temperatures. Rainfall during the 1993–94 rainy season was 55.4 cm, 23% below the 38-yr average of 71.9 cm. Significant periods of rainfall extended into April. Source: Audubon Canyon Ranch. **Coverage:** 9.8 h; 8 visits (1 sunrise); 19 Apr; 2, 6, 10, 18, 20, 23, 27 May. **Census:** Red-winged Blackbird, 22.0 (84); Marsh Wren, 15.0 (57); Song Sparrow, 14.0 (53); American Coot, 8.0 (30); Mourning Dove, 8.0 (7N); Allen's Hummingbird, 4.0 (15); Pied-billed Grebe, 3.0 (11); Virginia Rail, 3.0; Wrentit, 3.0; Mallard, 2.0; Cinnamon Teal, 2.0 (1N); Bushtit, 2.0; Ruddy Duck, 1.0; Anna's Hummingbird, 1.0; Black Phoebe, 1.0; Chestnut-backed Chickadee, 1.0; Swainson's Thrush, 1.0; Yellow Warbler, 1.0; Common Yellowthroat, 1.0; Wilson's Warbler, 1.0; Black-headed Grosbeak, 1.0; California Towhee, 1.0; Brewer's Blackbird, 1.0; Brown-headed Cowbird, 1.0. **Total:** 24 species; 98.0 territories (373/40 ha). **Visitors:** Great Blue Heron, Great Egret, Green Heron, Black-crowned Night-Heron, Turkey Vulture, White-tailed Kite, Northern Harrier, Red-tailed Hawk, Common Snipe, Great Horned Owl, Belted Kingfisher, Tree Swallow, Northern Rough-winged Swallow, Cliff Swallow, Barn Swallow, Scrub Jay, American Crow, Common Raven, Bewick's Wren, European Starling, Lincoln's Sparrow, Golden-crowned Sparrow, Northern Oriole, Purple Finch, House Finch, American Goldfinch. **Remarks:** The hummingbird territories were all male. Two Northern Harrier territories were located in coastal prairie habitat adjacent to the study site. Mourning Dove, House Finch, and American Goldfinch were common on all visits but inadequately quantified because of non-territorial breeding behaviors. American Coots apparently produced no young this year. At least three of seven Mourning Dove nests failed. One Cinnamon Teal nest with eight eggs was depredated. **Acknowledgments:** This project is supported by Chevron USA and Audubon Canyon Ranch, Stinson Beach, CA, as part of a larger restoration and management program. Sarah Tappen compiled and summarized the results.

101. DESERT RIPARIAN-FRESHWATER MARSH

DESIERTO RIVEREÑO-PANTANO

EUGENE A. CARDIFF

San Bernardino County Museum, 2024 Orange Tree Lane, Redlands CA 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; 18 yr. **Size:** 15.4 ha. **Description of Plot:** See *J. Field Ornithol.* 62(Suppl.):76 (1991), 64(Suppl.):92-93 (1993), and 65(Suppl.):106-107 (1994). **Weather:** Mean start temp., 14.5°C (range 4-18°C). **Coverage:** 23.5 h; 8 visits (8 sunrise); 15, 22, 29 Apr; 6, 13, 20, 27 May; 4 Jun. **Census:** House Wren, 28.0 (73; 4N); Lesser Goldfinch, 27.0 (70); Song Sparrow, 21.0 (55; 1N); European Starling, 16.0 (42; 8N); Costa's Hummingbird, 12.0 (31); Bewick's Wren, 11.0 (29); Common Yellowthroat, 9.0 (23); Bush-tit, 8.0 (21); House Finch, 8.0 (3N); Virginia Rail, 7.0 (18); Yellow-breasted Chat, 7.0; Brown-headed Cowbird, 6.0 (16); Rufous-sided Towhee, 5.0 (13); Gambel's Quail, 3.0 (8); Anna's Hummingbird, 3.0; Nuttall's Woodpecker, 3.0 (1N); Phainopepla, 3.0; Northern Oriole, 3.0; Spotted Dove, 2.0; Mourning Dove, 2.0; Summer Tanager, 2.0; Cooper's Hawk, 1.0 (1N); American Kestrel, 1.0 (1N,2FL); Black Phoebe, 1.0 (1N); Vermilion Flycatcher, 1.0 (1N); Ash-throated Flycatcher, 1.0; Brown-crested Flycatcher, 1.0 (1N); Scrub Jay, 1.0; California Thrasher, 1.0; Hooded Oriole, 1.0 (1N); Red-tailed Hawk, + (1N,2FL); Blue Grosbeak, +; California Towhee, +. **Total:** 33 species; 195.0 territories (506/40 ha). **Visitors:** Greater Roadrunner, Ladder-backed Woodpecker, Western Kingbird, Verdin, Northern Mockingbird, Brewer's Blackbird, Lazuli Bunting, Lawrence's Goldfinch. **Remarks:** As of 1 July 1994, management of Big Morongo Wildlife Preserve was transferred from the Nature Conservancy to the Bureau of Land Management. The number of breeding pairs was up about 20% over last year, with 20 species increasing and 9 species decreasing. The increase in number of breeding pairs in the 6-ha burned area (April 1992) slowed to about a 10% increase over 1993. Yellow Warbler and Bell's Vireo did not breed on the plot this year. Fewer nests and fledglings were detected this year, possibly because of nesting failures caused by late spring cold rain storms. **Other Observer:** Dori Myers. **Acknowledgments:** Special thanks to the San Bernardino Valley Audubon Society and the San Bernardino County Museum for supporting this study.

102. SHRUBBY SWAMP AND SEDGE HUMMOCKS

PANTANO ARBUSTIVO-MOGOTE

ANDREW F. MAGEE

White Memorial Conservation Center, Litchfield CT 06759

Location: Connecticut; Litchfield Co.; Litchfield; White Memorial Foundation-Bantam River Inlet; 41°43'N, 73°13'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 28 yr. **Size:** 8.1 ha. **Description of Plot:** See *Aud. Field Notes* 19:625-627 (1965). **Weather:** Mean start temp., 19.8°C (range 10-29°C). See BBC #5 for summary. **Coverage:** 10.8 h; 8 visits (1 sunrise, 6 sunset); 15, 17, 31 May; 1, 7, 15 Jun; 9, 11 Jul. **Census:** Swamp Sparrow, 36.0 (178); Red-winged Blackbird, 25.0 (123); Yellow Warbler, 22.0 (109); Common Yellowthroat, 17.0 (84); Gray Catbird, 12.0 (59); Song Sparrow, 12.0; American Goldfinch, 8.0 (40); Willow Flycatcher, 7.0 (35); Cedar Waxwing, 4.0 (20); Eastern Kingbird, 3.0 (15); Tree Swallow, 3.0; Black-capped Chickadee, 3.0; Mallard, 2.0; American Robin, 1.5; Mute Swan, 1.0; Canada Goose, 1.0; Veery, 1.0; Wood Duck, 0.5; Alder Flycatcher, 0.5; Great Crested Flycatcher, 0.5; Great Blue Heron, +; Hooded Merganser, +; Spotted Sandpiper, +. **Total:** 23 species; 160.0 territories (790/40 ha). **Remarks:** Both the number of species and the number of individuals were about average for a non-flood year. This was only the third time in 28 years that Marsh Wren and Virginia Rail were both absent from the plot. Common Yellowthroat continued its resurgence of recent years. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

103. SHRUBBY MARSH

CIENAGA ARBUSTIVA

CHRISTOPHER CINK & CALVIN CINK

Biology Dept., Baker University, PO Box 65, Baldwin City KS 66006-0065

Site Number: KS3394113. **Location:** Kansas; Douglas Co.; Lawrence; Baker University Wetlands; 38°55'N, 95°14'W; Lawrence East Quadrangle, USGS. **Continuity:** New. **Size:** 12.2 ha. **Description of Plot:** A rectangular plot (318.5 x 382.2 m). The plot was formerly ditched to drain water away. These shallow ditches run N-S throughout the plot about 30 m apart and retain water and dense stands of sedges, prairie cordgrass, cattail, or coreopsis beggar-tick. The higher ground between them is covered by nearly continuous stands of rough-leaved dogwood. The number of dogwood stems was 1.6/m², based on 10 randomly-placed 1x10 m strips. Ten randomly-placed 0.04-ha circles were sampled for trees. Only 40% contained trees, with American elm in 40%, honey locust in 20%, and green ash in 10%. Average canopy height, 6 m (range 2-15 m). The average density of ground cover was 510 stems/m², based on 20 1-m quadrats. There are three ponds with a maximum width of 10 m and a maximum depth of 0.5 m. There are also ephemeral pools during the breeding season when > 50% of the plot may be covered by standing water. **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 26-50 ha in size. **Topography and Elevation:** The plot is nearly level. Minimum elevation 249 m, maximum 249 m. **Weather:** Mean start temp., 26.0°C (range 23-28°C). Temperatures for the study period were near average. Average daily low temperatures (long-term averages in parentheses): June, 20°C (17.9°C); July, 20°C (20.2°C). Average daily high temperatures: June, 30°C (29.2°C); July, 30°C (32.2°C). Precipitation in June, 28.1 cm (10.3 cm below average); July, 16.0 cm (13.7 cm below average). Despite the low precipitation, water remained in seasonal ponds and depressions throughout the study period. **Source:** Douglas County Soil Survey. **Coverage:** 8.5 h; 8 visits (1 sunrise, 1 sunset); 14, 17, 23, 26, 28, 29, 30 Jun; 10 Jul. **Census:** Red-winged Blackbird, 28.0 (92; 14N); Common Yellowthroat, 11.0 (36; 1N); Sedge Wren, 8.0 (26); Bell's Vireo, 8.0 (1N); Indigo Bunting, 4.5 (15; 1N); Gray Catbird, 4.0 (13; 1N); Northern Cardinal, 4.0 (1N); Mourning Dove, 3.0 (10; 2N,4FL); American Robin, 3.0 (3N,9FL); Yellow-billed Cuckoo, 2.0; American Goldfinch, 2.0; Black-billed Cuckoo, 1.5; Willow Flycatcher, 1.5; Yellow Warbler, 1.0. **Total:** 14 species; 81.5 territories (267/40 ha). **Visitors:** Green Heron, Wood Duck, American Kestrel, Belted Kingfisher, Downy Woodpecker, Northern Rough-winged Swallow, House Wren, Field Sparrow. **Acknowledgments:** Our thanks to Dr. Roger Boyd for providing funds through the Baker Wetlands Fund for fence posts to permanently mark the census grid.

104. WETLAND SEDGE MEADOW I

PANTANO DE JUNCOS I

GARY LINGLE

Platte River Whooping Crane Trust, 2550 N. Diers Ave., Suite H, Grand Island NE 68803-1214

Location: Nebraska; Hall Co.; Doniphan; Mormon Island Crane Meadows (Plot 3); 40°47'N, 98°26'W; Alda Quadrangle, USGS. **Continuity:** Established 1981; 12 yr. **Size:** 16.2 ha. **Description of Plot:** See *Am. Birds* 36:105-106 (1982). **Weather:** Mean start temp., 23°C. Generally hot and dry. Temperature and precipitation departures, respectively, were: May, +1.6°C, -8.5 cm; June, +1.2°C, +0.1 cm. **Source:** National Weather Service, Grand Island, NE. **Coverage:** 5.4 h; 8 visits (8 sunrise); 9, 13, 14, 15, 16, 17, 20, 21 Jun. **Census:** Dickcissel, 17.0 (42); Red-winged Blackbird, 10.0 (25; 2N); Bobolink, 9.0 (22); Brown-headed Cowbird, 3.0 (7); Grasshopper Sparrow, 2.5; Mallard, 1.0 (1N); Upland Sandpiper, 1.0. **Total:** 7 species; 43.5 territories (107/40 ha). **Visitors:** Mourning Dove, Western Meadowlark. **Remarks:** The plot was not grazed prior to or during the census. There was less than 5% standing water. **Other Observers:** Shea Bergman, Jill Liske.

105. WETLAND SEDGE MEADOW II

PANTANO DE JUNCOS II

GARY LINGLE

Platte River Whooping Crane Trust, 2550 N. Diers Ave., Suite H, Grand Island NE 68803-1214

Location: Nebraska; Hall Co.; Doniphan; Mormon Island Crane Meadows (Plot 4); 40°47'N, 98°25'W; Alda Quadrangle, USGS. **Continuity:** Established 1982; 11 yr. **Size:** 16.2 ha. **Description of Plot:** See *Am. Birds* 37:101 (1983). **Weather:** Mean start temp., 23°C. Generally hot and dry. Temperature and precipitation departures, respectively, were: May, +1.6°C, -8.5 cm; June, +1.2°C, +0.1 cm. Source: National Weather Service, Grand Island, NE. **Coverage:** 5.2 h; 8 visits (7 sunrise); 8, 9, 13, 14, 15, 16, 17, 20 Jun. **Census:** Bobolink, 13.0 (32); Red-winged Blackbird, 11.0 (27; 1N); Dickcissel, 4.0 (10); Wilson's Phalarope, 2.0; Western Meadowlark, 2.0; Brown-headed Cowbird, 2.0; Mallard, 1.0; Upland Sandpiper, 1.0; Mourning Dove, 1.0 (1N); Grasshopper Sparrow, 0.5; Sedge Wren, +. **Total:** 11 species; 37.5 territories (93/40 ha). **Remarks:** The plot was not grazed prior to or during the census. There was less than 5% standing water. About one-fourth of the plot was burned in April. **Other Observers:** Shea Bergman, Jill Liske.

106. INTERTIDAL SALT MARSH

ANEGADO SALOBRE INTERMAREAL

CHRISTOPHER D. AQUILA

New York City Dept. of Parks & Recreation, Salt Marsh Restoration Team, Greenbelt Administration, 200 Nevada Ave., Staten Island NY 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:** Established 1992; 3 yr. **Size:** 40.9 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):93-94 (1993). **Weather:** Mean start temp., 21.5°C (range 14-27°C). The weather for this year's census was rather normal with no serious temperature deviations or precipitation during any visit. **Coverage:** 29.0 h; 8 visits (4 sunrise, 2 sunset); 31 May; 9, 14, 21, 30 Jun; 5, 12, 21 Jul. Maximum number of observers/visit, 3. **Census:** Seaside Sparrow, 8.0 (8; 4FL); Swamp Sparrow, 7.0 (7); Marsh Wren, 5.0 (5; 2N,1FL); Sharp-tailed Sparrow, 3.0 (3; 1FL); Song Sparrow, 2.0; American Black Duck, 1.0 (5FL); Mallard, 1.0 (4FL); Ring-necked Pheasant, 1.0; Clapper Rail, 1.0 (5FL); Common Yellowthroat, 1.0; Red-winged Blackbird, 1.0; American Goldfinch, 1.0 (1N,2FL). **Total:** 12 species; 32.0 territories (31/40 ha). **Visitors:** Canada Goose, Northern Harrier, Herring Gull, Belted Kingfisher, Barn Swallow. **Remarks:** The colony of Seaside Sparrows we discovered nesting two years ago, increased by one pair over last year. Sharp-tailed Sparrows decreased by one pair from last year. This is the only known nesting area on Staten Island for Seaside Sparrows, and one of only two known sites for Sharp-tailed Sparrows. **Other Observers:** Ann Purcell, Howard Snyder, Maritza Zuleta, Vivian Schlesinger, Carl Alderson, Kerry Robinson, Andrew Bergen, Robbin Bergfors. **Acknowledgments:** Thanks to everyone for the time and effort they volunteered toward the completion of the census. I could not have finished without your help.

107. INTERTIDAL SALT MARSH II

ANEGADO SALOBRE INTERMAREAL II

CHRISTOPHER D. AQUILA

New York City Dept. of Parks & Recreation, Salt Marsh Restoration Team, Greenbelt Administration, 200 Nevada Ave., Staten Island NY 10306

Site Number: NY0993136. **Location:** New York; Richmond Co.; Staten Island; Old Place Creek Marsh; 40°38'N, 74°11'W; Elizabeth Quadrangle, USGS. **Continuity:** Established 1993; 2 yr.

Size: 57.3 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):109 (1994). **Weather:** Mean start temp., 19.6°C (range 15–25°C). The weather was basically good, with no serious temperature deviations or precipitation during any visit. **Coverage:** 26.4 h; 8 visits (6 sunrise); 2, 10, 15, 24, 28 Jun; 14 Jul; 11, 23 Aug. Maximum number of observers/visit, 3. **Census:** Marsh Wren, 8.0 (6; 3N,2FL); Swamp Sparrow, 6.0 (4); Song Sparrow, 5.0 (3; 2FL); Gray Catbird, 3.0 (2); Canada Goose, 2.0 (1N,4FL); Clapper Rail, 2.0 (8FL); Barn Swallow, 2.0 (2N,5FL); American Black Duck, 1.0 (4FL); Mallard, 1.0 (5FL); Gadwall, 1.0 (3FL); Peregrine Falcon, 1.0 (1N,1FL); Ring-necked Pheasant, 1.0 (2FL); Killdeer, 1.0 (4FL); Spotted Sandpiper, 1.0 (1FL); Willow Flycatcher, 1.0; House Wren, 1.0; European Starling, 1.0 (1N); Common Yellowthroat, 1.0; Rufous-sided Towhee, 1.0; Sharp-tailed Sparrow, 1.0; Red-winged Blackbird, 1.0; American Goldfinch, 1.0 (1N). **Total:** 22 species; 43.0 territories (30/40 ha). **Visitors:** Northern Harrier, American Kestrel, Common Moorhen, American Woodcock, Herring Gull, Rock Dove, Mourning Dove, American Crow, Fish Crow, Northern Mockingbird, Yellow Warbler, Boat-tailed Grackle. **Remarks:** Because of the various microhabitats within and around the actual salt marsh, we recorded a higher diversity of breeding birds than at our other site (see BBC #106). We lost Fish Crow as a breeding bird this year, but we added American Goldfinch, Willow Flycatcher, and Ring-necked Pheasant. **Other Observers:** Howard Snyder, Ann Purcell, Maritza Zuleta, Carl Alderson, Andrew Bergen, Robbin Bergfors, Vivian Schlesinger, Kerry Robinson. **Acknowledgments:** Thanks to everyone for the time and effort they volunteered toward the completion of the census. I could not have finished without your help.

108. COASTAL SCRUB

MATORRAL COSTANERO

DAVID COTHRAN & BRITTA DENISE HARDESTY

Point Reyes Bird Observatory, 4990 Shoreline Highway, Stinson Beach CA 94970

Location: California; Marin Co.; Bolinas; Palomarin Field Station; 37°56'N, 122°45'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1971; 20 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 25:1003–1004 (1971). **Weather:** Mean start temp., 12.5°C (range 5–20°C). The study period was preceded by one of the drier winters recorded in 28 years. Total rainfall for the year (July–June) was 64.2 cm, with most of the rain falling between November and February. Precipitation (8.2 cm) fell on 20% of the census mornings. **Coverage:** 328.8 h; 83 visits (53 sunrise, 9 sunset). **Census:** Wrentit, 17.0 (84; 32N,47FL); Song Sparrow, 6.5 (32; 12N,19FL); White-crowned Sparrow, 6.5 (7N,8FL); Bewick's Wren, 5.5 (27; 3N); Rufous-sided Towhee, 5.5 (2N); Bushtit, 3.0 (15; 2N); Orange-crowned Warbler, 3.0 (1N,3FL); Allen's Hummingbird, 2.5; Scrub Jay, 1.5; California Quail, 1.0; Brown-headed Cowbird, 1.0; Wilson's Warbler, 0.5; Red-tailed Hawk, +; Northern Flicker, +. **Total:** 14 species; 53.5 territories (264/40 ha). **Visitors:** Mourning Dove, California Towhee, Purple Finch, Pine Siskin. **Remarks:** The overall density of breeding birds remained fairly constant this year with the number of territories increasing only 3%. As suggested in last year's remarks, this likely represents a return to more typical numbers after a "boom" year in 1992. Species with increases in density include: Bushtit (+50%), Orange-crowned Warbler (+50%), Wrentit (+36%), Song Sparrow (+44%), and White-crowned Sparrow (+18%). The densities of Wrentit and Bushtit represent the highest ever recorded. Species with decreases in density include: Allen's Hummingbird (–67%), California Quail (–67%), and Scrub Jay (–40%). The decreases in these three species lie within ranges previously recorded, while the considerable increase in the number of breeding Wrentits is 17% higher than ever recorded. This appears to represent an increased occupancy of marginal territories in outlying areas of the plot. No cowbird parasitism was recorded this year. **Other Observers:** Geoffrey R. Geupel, Grant Ballard, Rachel Woodard, Lisa Buttrey. **Acknowledgments:** We thank the Point Reyes National Seashore for their cooperation. This is Point Reyes Bird Observatory contribution No. 684.

109. DIEGAN COASTAL SAGE SCRUB I

MATORRAL DE SALVIA COSTANERO DE DIEGAN I

JOHN C. LOVIO* & EDUARDO GARCIA DEL REY

**Biology Dept., San Diego State Univ., San Diego CA 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:** Established 1992; 2 yr. **Size:** 43.5 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):95-96 (1993). Early in 1993, 60% of the plot was denuded of about 99% of its woody vegetation and most of its herbaceous cover by mechanical means (not related to this study). The remaining vegetation is in six remnant patches of scrub, ranging in size from 0.1-8.5 ha and separated from each other by 10-60 m. Most of the patches are at least narrowly connected to continuous scrub habitat beyond the plot. During the ensuing year, the cleared areas were not disturbed further and recovered mostly as dense herbaceous growth with very little shrub recovery. **Weather:** Mean start temp., 13.6°C (range 10-16°C). Unusually cool, damp weather (fog and rain) persisted through the spring. This was the third normal rainfall year (preceding winter) following several years of drought. **Coverage:** 61.4 h; 9 visits (9 sunrise); 17, 21, 23, 28 Apr; 4, 13, 15, 22, 29 May. **Census:** Rufous-crowned Sparrow, 12.0 (11; 2N); California Towhee, 11.0 (10; 1N); Wrentit, 10.5 (10; 1N); Sage Sparrow, 7.5 (7; 2N); Bushtit, 5.5 (5; 1N); Lazuli Bunting, 5.0 (5); Anna's Hummingbird, 4.5 (4); Costa's Hummingbird, 4.5 (1N); California Gnatcatcher, 4.5 (3N); California Quail, 3.0 (3); Bewick's Wren, 3.0; California Thrasher, 2.5; Rufous-sided Towhee, 2.5; Black-chinned Sparrow, 2.0; Horned Lark, 1.5 (1N); Lark Sparrow, 1.5; Great Horned Owl, 0.5. **Total:** 17 species; 81.5 territories (75/40 ha). **Visitors:** Cooper's Hawk, American Kestrel, Mourning Dove, Greater Roadrunner, Ash-throated Flycatcher, Western Kingbird, Northern Mockingbird, Phainopepla, Yellow Warbler, Common Yellowthroat, Black-headed Grosbeak, Blue Grosbeak, Grasshopper Sparrow, Song Sparrow, Hooded Oriole, Northern Oriole, House Finch, Lesser Goldfinch, American Goldfinch. **Remarks:** The 1994 breeding densities reflect post-disturbance responses of the assemblage. None of the scrub-nesting species were lost. The additions of Horned Lark and Lark Sparrow to the breeding assemblage and Grasshopper Sparrow to the visitor list, are attributable to the formation of large areas of predominantly herbaceous cover. A number of the other visitor species were apparently attracted to the herbaceous areas. The similarities in breeding densities of most scrub-nesting species with 1992 (pre-disturbance) are notable. Despite similar densities, scrub species concentrated their activities in the habitat remnants or edges thereof.

110. DISTURBED COASTAL SCRUB A

MATORRAL PERTURBADO A

AARON L. HOLMES & BRITTA DENISE HARDESTY

Point Reyes Bird Observatory, 4990 Shoreline Highway, Stinson Beach CA 94970

Location: California; Marin Co.; Bolinas; Palomarin Field Station; 37°55'N, 122°45'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1972; 20 yr. **Size:** 4.7 ha. **Description of Plot:** See *Am. Birds* 26:987-988 (1972). **Weather:** See BBC #108 for summary. **Coverage:** 144.0 h; 56 visits (55 sunrise, 1 sunset). **Census:** Wrentit, 7.5 (64; 15N, 22FL); Song Sparrow, 5.0 (43; 14N, 4FL); Bushtit, 3.5 (30; 3N); California Quail, 2.0; Bewick's Wren, 2.0 (1N); Rufous-sided Towhee, 2.0 (3N); Allen's Hummingbird, 1.5; Scrub Jay, 1.5 (1N); Orange-crowned Warbler, 1.5; Wilson's Warbler, 1.5; American Robin, 1.0; White-crowned Sparrow, 1.0 (2N); Purple Finch, 1.0; Northern Flicker, 0.5; Golden-crowned Kinglet, 0.5; Red-tailed Hawk, +; Mourning Dove, +; Western Bluebird, +; California Towhee, +; American Goldfinch, +. **Total:** 20 species; 32.0 territories (272/40 ha). **Visitor:** Pine Siskin. **Remarks:** The breeding bird density increased slightly from the 1993 record high. Several species had increases in density including: Bushtit (+250%), American Robin (+100%), Rufous-sided Towhee (+33%), and Song Sparrow (+11%). Densities of White-crowned Sparrow and Purple Finch each declined 33% from last year. Anna's Hummingbirds were absent for the first time in 13 years. The

number of Allen's Hummingbirds decreased 50% from last year's high to a density consistent with the average of the past 18 years. Golden-crowned Kinglets were present for the first time since the plot was established. This may be related to an increase in growth of Douglas-fir trees which have been encroaching on the N edge of the plot. **Other Observer:** Grant Ballard. **Acknowledgments:** We thank the Point Reyes National Seashore for their cooperation. This is Point Reyes Bird Observatory contribution No. 686.

111. DISTURBED COASTAL SCRUB B

MATORRAL PERTURBADO B

JOHN G. ELLIOTT & BRITTA DENISE HARDESTY

Point Reyes Bird Observatory, 4990 Shoreline Highway, Stinson Beach CA 94970

Location: California; Marin Co.; Bolinas; Palomarin Field Station; 37°55'N, 122°46'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1971; 21 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 25:1002 (1971). The height and abundance of Douglas-fir trees has increased substantially on this successional scrub plot. Several trees have reached heights of 5 m or more and are wide and dense, often outcompeting native shrub species such as coyote bush and monkey-flower. **Weather:** See BBC #108 for summary. **Coverage:** 282.0 h; 92 visits (73 sunrise, 1 sunset). **Census:** Wrentit, 13.0 (64; 16N,36FL); Song Sparrow, 10.5 (52; 17N,23FL); White-crowned Sparrow, 4.0 (20; 6N,5FL); Bewick's Wren, 3.5 (17); Rufous-sided Towhee, 3.0 (15; 2N,3FL); Scrub Jay, 2.0; Allen's Hummingbird, 1.5; Orange-crowned Warbler, 1.5; California Quail, 1.0; Anna's Hummingbird, 1.0; Northern Flicker, 1.0; Bushtit, 1.0 (1N,5FL); American Robin, 1.0; Brown-headed Cowbird, 1.0; American Goldfinch, 1.0; Western Bluebird, 0.5; California Towhee, 0.5; Mourning Dove, +; Wilson's Warbler, +; Purple Finch, +. **Total:** 20 species; 47.0 territories (232/40 ha). **Visitors:** Pacific-slope Flycatcher, Ash-throated Flycatcher, Golden-crowned Kinglet, Swainson's Thrush, Grasshopper Sparrow. **Remarks:** The 1994 breeding season was marked by an increase in the total number of breeding pairs, continuing the upward trend of the last four years. Perhaps this is due to productive breeding seasons coupled with relatively mild winters, leading to increased over-winter survivorship in the past two to three years. Increases in numbers were seen in the following species: Bushtit (+100%), Bewick's Wren (from + to 3.5 territories), White-crowned Sparrow (+14%), and Wrentit (+37%). Wrentit numbers peaked, as on our other plots, continuing a five-year increasing trend to their highest breeding density recorded. Perhaps this is due to an increase in shrub and tree cover (primarily Douglas-firs). Decreases were seen in the numbers of California Quail (-60%), Allen's Hummingbird (-25%), Orange-crowned Warbler (-25%), Song Sparrow (-19%), Scrub Jay (-20%), and Brown-headed Cowbird (-60%). **Other Observers:** Grant Ballard, Aaron Holmes. **Acknowledgments:** We thank the Point Reyes National Seashore for their cooperation. This is Point Reyes Bird Observatory contribution No. 687.

112. MOJAVE YUCCA-STAGHORN CHOLLA DESERT SCRUB

MATORRAL DESERTICO DE "YUCCA DE MOJAVE Y STAGHORN CHOLLA"

LARRY LAPRÉ

541 Prospect Ave., Riverside CA 92507

Location: California; San Bernardino Co.; Goffs; South Lanfair Valley; 35°4'N, 115°10'W; Lanfair Valley Quadrangle, USGS. **Continuity:** Established 1977; 4 yr. **Size:** 20.0 ha. **Description of Plot:** See *Am. Birds* 32:102 (1978). **Weather:** Mean start temp., 12.8°C (range 6-30°C). Temperatures were normal for the study period. Winter and spring rainfall was below average. **Coverage:** 23.8 h; 9 visits (7 sunrise, 2 sunset); 20, 21, 22 Apr; 18, 19, 20, 21 May. **Census:** Black-throated Sparrow, 3.0 (1FL); Greater Roadrunner, 1.0; Costa's Hummingbird, 1.0 (1FL); Ladder-backed Woodpecker, 1.0 (1N); Ash-throated Flycatcher, 1.0 (2FL); Verdin, 1.0; Cactus Wren, 1.0 (1N); Black-tailed Gnatcatcher, 1.0 (1FL); Bendire's Thrasher, 1.0; Gambel's Quail, + (5FL); Northern Mockingbird, +; Scott's Oriole, +. **Total:** 12 species; 11.0 terri-

teries (22/40 ha). **Visitors:** Turkey Vulture, Red-tailed Hawk, American Kestrel, Say's Phoebe, Phainopepla, House Finch. **Remarks:** Cattle were grazing on the plot during two visits.

113. MOJAVE YUCCA-STAGHORN CHOLLA DESERT SCRUB II

MATORRAL DESERTICO DE "YUCCA DE MOJAVE Y STAGHORN CHOLLA" II

LARRY LAPRÉ

541 Prospect Ave., Riverside CA 92507

Site Number: CA8392070. **Location:** California; San Bernardino Co.; Goffs; Watson Wash; 35°2'N, 115°15'W; Mid Hills Quadrangle, USGS. **Continuity:** Established 1992; 3 yr. **Size:** 20.0 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):98 (1993). **Weather:** Mean start temp., 13.0°C (range 2–28°C). Temperatures were normal for the study period. Winter and spring rainfall was below average. **Coverage:** 22.8 h; 9 visits (7 sunrise, 2 sunset); 22, 23, 24, 25 Apr; 22, 23, 24, 25 May. **Census:** Black-throated Sparrow, 4.0 (8); Ash-throated Flycatcher, 2.0 (1N,2FL); Costa's Hummingbird, 1.5; Greater Roadrunner, 1.0; Ladder-backed Woodpecker, 1.0 (1N); Verdin, 1.0 (1FL); Cactus Wren, 1.0 (1N); Bendire's Thrasher, 1.0; Scott's Oriole, 1.0; Blue-gray Gnatcatcher, 0.5; Gambel's Quail, + (3FL); Mourning Dove, +; Black-tailed Gnatcatcher, +; Le Conte's Thrasher, +; Loggerhead Shrike, +. **Total:** 15 species; 14.0 territories (28/40 ha). **Visitors:** Red-tailed Hawk, Lesser Nighthawk, Western Kingbird. **Remarks:** Cattle were grazing on the plot during one visit.

114. BIG SAGEBRUSH EXCLOSURE

FORMACION GRANDE DE ARTEMISA

JOHN DOREMUS

2810 Meadowbrook Dr., Boise ID 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:** Established 1992; 3 yr. **Size:** 25.0 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):99 (1993). **Weather:** Mean start temp., 4.4°C (range –2–12°C). Winter and spring temperatures were above the long-term average; winter and spring precipitation was below normal except for April which had normal precipitation. Drought conditions returned after a break in 1993. Source: Swan Falls, ID weather station. **Coverage:** 26.8 h; 8 visits (8 sunrise); 14, 15, 19 Apr; 30 May; 2, 9, 20, 27 Jun. **Census:** Sage Sparrow, 12.5 (20; 1N,31FL); Western Meadowlark, 12.0 (19; 14FL); Brewer's Sparrow, 5.0 (8; 1N,13FL); Sage Thrasher, 2.0; Lark Sparrow, 1.0 (1N). **Total:** 5 species; 32.5 territories (52/40 ha). **Visitors:** Ring-necked Pheasant, Mourning Dove, Common Nighthawk, Horned Lark, Loggerhead Shrike, Brown-headed Cowbird. **Remarks:** The winter and spring weather allowed native and exotic grasses to produce some biomass. Few black-tailed jackrabbits were seen, and very few Townsend's ground squirrels were seen. Large numbers of fledgling sparrows and meadowlarks were seen, possibly due to the lack of ground squirrels which probably prey on eggs and young. Unidentified moths defoliated much of the big sagebrush on the plot; on some plants every leader was affected by moth larvae.

115. WINTERFAT EXCLOSURE

FORMACION "WINTERFAT"

JOHN DOREMUS

2810 Meadowbrook Dr., Boise ID 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:** Established 1992; 3 yr. **Size:** 16.2 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):99–100. (1993). **Weather:** Mean start

temp., 8.8°C (range 1–27°C). Winter and spring were warmer and drier than the long-term averages. April was the only month with normal precipitation. Drought conditions returned in 1994. Source: Swan Falls, ID weather station. **Coverage:** 14.9 h; 8 visits (7 sunrise, 1 sunset); 29 Mar; 13, 18 Apr; 17, 25, 29, 31 May; 8 Jun. **Census:** Horned Lark, 21.5 (53). **Total:** 1 species; 21.5 territories (53/40 ha). **Visitors:** Sage Thrasher, Brewer's Sparrow, Western Meadowlark. **Remarks:** Low soil moisture limited shrub growth. The precipitation in April allowed native and exotic grasses to produce some biomass. The density of Townsend's ground squirrels remained low.

116. WET COASTAL PLAIN TUNDRA I

PLANICIE CON TUNDRA COSTANERA HUMEDA I

ROBERT SUYDAM, MIA WESSELMANN, STEVE A. MACLEAN & MICHELE JOHNSON

North Slope Borough, Dept. of Wildlife Management, Box 69, Barrow AK 99723

Location: Alaska; North Slope Borough; Barrow; 71°18'N, 156°42'W; Barrow Quadrangle, USGS. **Continuity:** Established 1975; 9 yr. **Size:** 33.0 ha. **Description of Plot:** See *Am. Birds* 29:1135–1136 (1975). Two more homes are under construction approximately 50 m from the N edge of the plot. **Weather:** Mean start temp., 1.1°C (range –1–3°C). Average June temperature, 0.3°C (departure from normal –0.8°C). Average wind speed, 17.9 km/h. Modal wind direction, W. Snow melt-off largely complete by 24 June. Source: National Weather Service, Barrow, AK. **Coverage:** 58.2 h; 10 visits (24 h of daylight); 14, 15, 16, 17, 20, 23, 24, 28, 30 Jun; 2 Jul. **Census:** Lapland Longspur, 15.0 (18; 7N); Semipalmated Sandpiper, 7.0 (8; 5N); Pectoral Sandpiper, 7.0; Red Phalarope, 6.0 (7; 6N); Dunlin, 4.0 (5; 1N); Lesser Golden-Plover, 2.5 (2N); Snow Bunting, 1.0; Baird's Sandpiper, 0.5. **Total:** 8 species; 43.0 territories (52/40 ha). **Visitors:** Red-throated Loon, Yellow-billed Loon, Tundra Swan, Greater White-fronted Goose, Northern Pintail, Oldsquaw, Ruddy Turnstone, Western Sandpiper, Long-billed Dowitcher, Red-necked Phalarope, Pomarine Jaeger, Parasitic Jaeger, Long-tailed Jaeger, Glaucous Gull, Arctic Tern, 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 no Pectoral Sandpiper nests but suspect there was one nest based on consistent sightings of a female. Red Phalarope males incubate and neither the male nor female show much territoriality. Again, the number of incubating birds is considered a better estimate of breeding effort. The reported density of Red Phalaropes is based on the number of nests located. We suspect there were two to three additional Red Phalarope nests based on consistent sightings of birds in areas where nests were not found. The number of breeding Lapland Longspurs was slightly greater than in any other census year (1975–80, 1992–93). Northern Pintails, Steller's Eiders, Ruddy Turnstones, and Long-billed Dowitchers did not nest on the plot as they have in some previous years. Predators observed throughout the study period included: Pomarine, Parasitic, and Long-tailed Jaegers, Glaucous Gulls, and Common Ravens. Low lemming densities precluded nesting by jaegers and Snowy Owls. Late spring melt and persistent snow cover appeared to have delayed or prohibited establishment of territories or initiation of nesting for some species. There was regular disturbance by ATV passage and young boys hunting with BB guns. **Acknowledgments:** This census was made possible through funding from Sandia National Laboratories, Albuquerque, NM and the North Slope Borough Department of Wildlife Management, Barrow, AK.

117. WET COASTAL PLAIN TUNDRA II

PLANICIE CON TUNDRA COSTANERA HUMEDA II

MIA WESSELMANN, ROBERT SUYDAM, MICHELE JOHNSON & STEVE A. MACLEAN

North Slope Borough, Dept. of Wildlife Management, Box 69, Barrow AK 99723

Location: Alaska; North Slope Borough; Barrow; 71°18'N, 156°43'W; Barrow Quadrangle, USGS. **Continuity:** Established 1975; 9 yr. **Size:** 36.0 ha. **Description of Plot:** See *Am. Birds*

29:1136 (1975) and *J. Field Ornithol.* 64(Suppl.):101–102 (1993). **Weather:** Mean start temp., 2.3°C (range –1–6°C). Average June temperature, 0.3°C (departure from normal –0.8°C). Average wind speed, 17.9 km/h. Modal wind direction, W. Snow melt-off largely complete by 24 June. Source: National Weather Service, Barrow, AK. **Coverage:** 51.8 h; 9 visits (24 h of daylight); 14, 15, 16, 17, 18, 24, 26, 30 Jun; 1 Jul. **Census:** Lapland Longspur, 11.5 (13; 4N); Semipalmated Sandpiper, 11.0 (12; 8N); Pectoral Sandpiper, 6.5 (7; 1N); Dunlin, 6.0 (7; 4N); Red Phalarope, 5.0 (6; 5N); Lesser Golden-Plover, 3.0 (3; 2N); Snow Bunting, 2.0; Greater White-fronted Goose, 1.0 (1N); Baird's Sandpiper, 1.0 (1N); Red-necked Phalarope, 1.0 (1N). **Total:** 10 species; 48.0 territories (53/40 ha). **Visitors:** Pacific Loon, Northern Pintail, Steller's Eider, Oldsquaw, Long-billed Dowitcher, Pomarine Jaeger, Parasitic Jaeger, Long-tailed Jaeger, Glaucous Gull, Arctic Tern, Common Raven. **Remarks:** See BBC #116 for comments about the breeding systems of Pectoral Sandpipers and Red Phalaropes. We found one Pectoral Sandpiper nest and suspect there were one or two additional nests based on consistent sightings of females. The reported density of Red Phalaropes is based on the number of nests located. We suspect there were three additional Red Phalarope nests based on consistent sightings of birds in areas where nests were not found. There where two new breeding species on the plot in 1994: Greater White-fronted Goose and Red-necked Phalarope. Steller's Eiders, Western Sandpipers, and Long-billed Dowitchers did not nest on the plot as they have in some previous years. Predators observed throughout the study period included: Pomarine, Parasitic, and Long-tailed Jaegers, Glaucous Gulls, and Common Ravens. Low lemming densities precluded nesting by jaegers and Snowy Owls. Late spring melt and persistent snow cover appeared to have delayed or prohibited establishment of territories or initiation of nesting for some species. There was regular disturbance by ATV passage and young boys hunting with BB guns. **Acknowledgments:** This census was made possible through funding from Sandia National Laboratories, Albuquerque, NM and the North Slope Borough Department of Wildlife Management, Barrow, AK.

118. WET COASTAL PLAIN TUNDRA III

PLANICIE CON TUNDRA COSTANERA HUMEDA III

MICHELE JOHNSON, STEVE A. MACLEAN, ROBERT SUYDAM & MIA
WESSELMANN

North Slope Borough, Dept. of Wildlife Management, Box 69, Barrow AK 99723

Location: Alaska; North Slope Borough; Barrow; 71°18'N, 156°38'W; Barrow Quadrangle, USGS. **Continuity:** Established 1978; 5 yr. **Size:** 36.0 ha. **Description of Plot:** See *Am. Birds* 33:102 (1979). **Weather:** Mean start temp., 1.3°C (range –1–4°C). Average June temperature, 0.3°C (departure from normal –0.8°C). Average wind speed, 17.9 km/h. Modal wind direction, W. Snow melt-off largely complete by 28 June. Source: National Weather Service, Barrow, AK. **Coverage:** 61.1 h; 9 visits (24 h of daylight); 16, 17, 19, 20, 21, 24, 28 Jun; 1, 2 Jul. **Census:** Lapland Longspur, 25.5 (28; 8N); Dunlin, 12.0 (13; 7N); Pectoral Sandpiper, 7.0 (8; 1N); Semipalmated Sandpiper, 5.0 (6; 2N); Lesser Golden-Plover, 3.0 (3; 2N); Red Phalarope, 2.0 (2N); Snow Bunting, 1.0. **Total:** 7 species; 55.5 territories (62/40 ha). **Visitors:** Yellow-billed Loon, Tundra Swan, Greater White-fronted Goose, Northern Pintail, Steller's Eider, Oldsquaw, Western Sandpiper, Baird's Sandpiper, Long-billed Dowitcher, Pomarine Jaeger, Parasitic Jaeger, Long-tailed Jaeger, Glaucous Gull, Arctic Tern, Common Raven. **Remarks:** See BBC #116 for comments about the breeding systems of Pectoral Sandpipers and Red Phalaropes. We found one Pectoral Sandpiper nest and suspect there were three to five additional nests based on sightings of additional females. The reported density of Red Phalaropes is based on the number of nests located. We suspect there were two or three additional Red Phalarope nests based on consistent sightings of birds in areas where nests were not found. Numbers of breeding Semipalmated Sandpipers, Dunlins, and Lapland Longspurs were higher than in any other census year (1978–80, 1993). Northern Pintails, Steller's Eiders, Baird's Sandpipers, and Long-billed Dowitchers did not nest on the plot as they have in some previous years. Predators observed throughout the study period included: arctic foxes, Pomarine, Parasitic, and Long-tailed Jaegers, Glaucous Gulls, and Common Ravens.

Low lemming densities precluded nesting by jaegers and Snowy Owls. Late spring melt and persistent snow cover appeared to have delayed or prohibited establishment of territories or initiation of nesting for some species. **Acknowledgments:** This census was made possible through funding from Sandia National Laboratories, Albuquerque, NM and the North Slope Borough Department of Wildlife Management, Barrow, AK.

119. WET COASTAL PLAIN TUNDRA IV

PLANICIE CON TUNDRA COSTANERA HUMEDA IV

STEVE A. MACLEAN, MICHELE JOHNSON, MIA WESSELMANN & ROBERT SUYDAM

North Slope Borough, Dept. of Wildlife Management, Box 69, Barrow AK 99723

Location: Alaska; North Slope Borough; Barrow; 71°18'N, 156°37'W; Barrow Quadrangle, USGS. **Continuity:** Established 1993; 2 yr. **Size:** 36.0 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):117 (1994). **Weather:** Mean start temp., 1.2°C (range -1-3°C). Average June temperature, 0.3°C (departure from normal -0.8°C). Average wind speed, 17.8 km/h. Modal wind direction, W. Snow melt-off largely complete by 28 June. Source: National Weather Service, Barrow, AK. **Coverage:** 33.3 h; 6 visits (24 h of daylight); 15, 20, 21, 25, 27, 30 Jun. **Census:** Pectoral Sandpiper, 6.5 (7); Red Phalarope, 6.0 (7; 6N); Dunlin, 5.0 (6; 2N); Lapland Longspur, 4.5 (5); Lesser Golden-Plover, 2.5 (1N). **Total:** 5 species; 24.5 territories (27/40 ha). **Visitors:** Pacific Loon, Yellow-billed Loon, Tundra Swan, Greater White-fronted Goose, Brant, Northern Pintail, King Eider, Steller's Eider, Oldsquaw, Sandhill Crane, Black-bellied Plover, Pomarine Jaeger, Parasitic Jaeger, Glaucous Gull, Arctic Tern, Common Raven. **Remarks:** See BBC #116 for comments about the breeding systems of Pectoral Sandpipers and Red Phalaropes. We found no Pectoral Sandpiper nests but suspect there was one nest based on consistent sightings of a female. The reported density of Red Phalaropes is based on the number of nests located. We suspect there were one or two additional Red Phalarope nests based on consistent sightings of birds in areas where nests were not found. Territory densities for all species were lower than last year (the first year the plot was censused). Red-throated Loons, Brant, Semipalmated Sandpipers, and Long-billed Dowitchers did not nest on the plot as they did in 1993. The lower number of breeding birds or absence of some species was most likely due to a late spring melt and persistent snow and water cover. Predators observed throughout the study period included: arctic foxes, Pomarine, Parasitic, and Long-tailed Jaegers, and Glaucous Gulls. Low lemming densities precluded nesting by jaegers and Snowy Owls. **Acknowledgments:** This census was made possible through funding from Sandia National Laboratories, Albuquerque, NM and the North Slope Borough Department of Wildlife Management, Barrow, AK.

120. COASTAL PRAIRIE

PRADERA COSTANERA

JOHN P. KELLY

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

Location: California; Marin Co.; Marshall; Cypress Grove Preserve; 38°10'N, 122°54'W; Tomales Quadrangle, USGS. **Continuity:** Established 1988; 7 yr. **Size:** 31.0 ha. **Description of Plot:** See *J. Field Ornithol.* 60(Suppl.):56-57 (1989). Detailed quantitative habitat data from 1994 are available from the author. **Weather:** Mean start temp., 11.5°C (range 10-13°C). See BBC #100 for summary. **Coverage:** 8.0 h; 8 visits (1 sunrise); 19 Apr; 2, 6, 10, 18, 20, 23, 27 May. **Census:** Song Sparrow, 17.0 (22); Brown-headed Cowbird, 3.0 (4); White-tailed Kite, 2.0 (FL); Northern Harrier, 2.0 (3FL); Mourning Dove, 2.0; American Crow, 2.0; Mallard, 1.0; Anna's Hummingbird, 1.0; California Towhee, 1.0; Western Meadowlark, 1.0. **Total:** 10 species; 32.0 territories (41/40 ha). **Visitors:** Great Egret, Turkey Vulture, Red-tailed Hawk, California Quail, Great Horned Owl, Allen's Hummingbird, Tree Swallow, Northern Rough-

winged Swallow, Cliff Swallow, Barn Swallow, Scrub Jay, Common Raven, Chestnut-backed Chickadee, Bushtit, Bewick's Wren, Marsh Wren, Swainson's Thrush, Wrentit, European Starling, Common Yellowthroat, Black-headed Grosbeak, Golden-crowned Sparrow, White-crowned Sparrow, Red-winged Blackbird, Brewer's Blackbird, Northern Oriole, House Finch, Pine Siskin, American Goldfinch. **Remarks:** Two White-tailed Kite nests successfully fledged young. Abundance estimates of voles (*Microtus californicus*) were the highest recorded since 1989–90. One Northern Harrier territory failed and one produced three fledglings. Mourning Dove, House Finch, and American Goldfinch were common on all visits but inadequately quantified because of non-territorial breeding behaviors. **Acknowledgments:** This work is supported by Audubon Canyon Ranch, Stinson Beach, CA. Sarah Tappen compiled and summarized the results.

121. CANYON BLUEBUNCH GRASSLAND

YERBASAL DE CAÑON "BLUEBUNCH"

CAROL BRADFORD

1561 Bethany Road, Kendrick ID 83537-9705

Site Number: ID6592057. **Location:** Idaho; Idaho Co.; Lucille; China Creek Range; 45°32'N, 116°18'W; Lucille Quadrangle, USGS. **Continuity:** Established 1992; 3 yr. **Size:** 7.5 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):104–105 (1993). **Weather:** Mean start temp., 15.6°C (range 6–28°C). It was very dry; a low water year. **Coverage:** 14.3 h; 7 visits (3 sunrise, 3 sunset); 15, 16, 17, 21, 24, 25, 26 Jun. **Census:** Western Meadowlark, 4.0 (21); Black-billed Magpie, 2.0 (1N); Lazuli Bunting, 2.0; Chukar, 1.5; Say's Phoebe, 1.0; Rock Wren, 1.0; Grasshopper Sparrow, 1.0 (1FL). **Total:** 7 species; 12.5 territories (67/40 ha). **Visitors:** Turkey Vulture, American Kestrel, Common Raven, American Goldfinch. **Remarks:** There was an overall decrease in understory.

122. FLOODPLAIN TALLGRASS PRAIRIE

PRADERA ANEGADA DE YERBAS ALTAS

CHRISTOPHER CINK & CALVIN CINK

Biology Dept., Baker University, PO Box 65, Baldwin City KS 66006-0065

Location: Kansas; Douglas Co.; Lawrence; Baker University Wetlands; 38°55'N, 95°14'W; Lawrence East Quadrangle, USGS. **Continuity:** Established 1974; 11 yr. **Size:** 10.1 ha. **Description of Plot:** See *Am. Birds* 28:1031–1032 (1974). **Weather:** Mean start temp., 26.6°C (range 23–29°C). See BBC #103 for summary. **Coverage:** 7.9 h; 8 visits (2 sunrise, 1 sunset); 20, 24, 28, 29, 30 Jun; 9, 11, 19 Jul. **Census:** Red-winged Blackbird, 9.0 (36; 4N); Dickcissel, 8.0 (32; 2N); Common Yellowthroat, 7.0 (28; 1N); Northern Bobwhite, 1.0; Sedge Wren, 1.0; Brown Thrasher, 1.0 (1N); Bell's Vireo, 1.0; Eastern Meadowlark, 1.0. **Total:** 8 species; 29.0 territories (115/40 ha). **Visitors:** Green Heron, Killdeer, Yellow-billed Cuckoo, Chimney Swift, Gray Catbird, Northern Cardinal, American Goldfinch.

123. KENTUCKY BLUEGRASS PRAIRIE

PRADERA DE "YERBA-AZUL" DE KENTUCKY

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

National Biological Service, Northern Prairie Science Center, 8711 37 St. SE, Jamestown ND 58401-7317

Location: North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°14'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 23 yr. **Size:** 4.8 ha. **Description of Plot:** See *Am. Birds* 26:972 (1972). **Weather:** No data provided. **Coverage:** 3.1 h; 9 visits (3 sunrise); 2, 3, 6, 7, 9,

10 Jun. **Census:** Blue-winged Teal, 3.0; Red-winged Blackbird, 2.0; Mallard, 1.0 (1N); Northern Shoveler, 1.0; Gadwall, 1.0; American Coot, 1.0; Sedge Wren, 1.0; Song Sparrow, 0.5; Brown-headed Cowbird, 0.5; Lesser Scaup, +; Killdeer, +; Black Tern, +; Eastern Kingbird, +; Bobolink, +; Western Meadowlark, +. **Total:** 15 species; 11.0 territories (92/40 ha). **Visitors:** Green-winged Teal, Northern Pintail, American Wigeon, Canvasback, Redhead, Willet, Common Nighthawk, Cliff Swallow, Barn Swallow, Savannah Sparrow, Yellow-headed Blackbird, Common Grackle. **Remarks:** Precipitation in late summer of 1993 reflooded all wetland basins in the plot.

124. MIXED PRAIRIE I

PRADERA MIXTA I

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

*National Biological Service, Northern Prairie Science Center, 8711 37 St. SE, Jamestown ND
58401-7317*

Location: North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°15'W; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 23 yr. **Size:** 10.0 ha. **Description of Plot:** See *Am. Birds* 26:972 (1972). **Weather:** No data provided. **Coverage:** 8.5 h; 9 visits (4 sunrise); 1, 2, 3, 6, 7, 9, 10 Jun. **Census:** Blue-winged Teal, 6.5 (26); Clay-colored Sparrow, 6.5; American Coot, 5.0 (20); Red-winged Blackbird, 4.5 (18); Gadwall, 4.0 (16); Mallard, 3.0 (12; 1N); Northern Shoveler, 3.0; Willow Flycatcher, 2.0; Common Yellowthroat, 2.0; Sedge Wren, 1.5; Redhead, 1.0; Lesser Scaup, 1.0; Sora, 1.0; Eastern Kingbird, 1.0; Song Sparrow, 1.0; Western Meadowlark, 1.0; Northern Pintail, 0.5; Yellow Warbler, 0.5; Yellow-headed Cowbird, 0.5; American Goldfinch, 0.5; Northern Harrier, +; Black Tern, +; Gray Catbird, +; Bobolink, +. **Total:** 24 species; 46.0 territories (184/40 ha). **Visitors:** Ring-necked Duck, Ruddy Duck, Ring-necked Pheasant, Willet, Common Snipe, Savannah Sparrow. **Remarks:** Precipitation in late summer of 1993 reflooded all wetland basins in the plot.

125. MIXED PRAIRIE II

PRADERA MIXTA II

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

*National Biological Service, Northern Prairie Science Center, 8711 37 St. SE, Jamestown ND
58401-7317*

Location: North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°15'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 23 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 26:972-973 (1972). **Weather:** No data provided. **Coverage:** 4.4 h; 10 visits (4 sunrise); 1, 2, 3, 6, 7, 9, 10 Jun. **Census:** Blue-winged Teal, 6.0 (39; 1N); American Coot, 5.5 (36); Red-winged Blackbird, 3.0 (20); Clay-colored Sparrow, 2.5; Mallard, 2.0; Gadwall, 1.5; Northern Shoveler, 1.0; Brown-headed Cowbird, 0.5; Sora, +; Black Tern, +; Western Kingbird, +; Eastern Kingbird, +; Yellow-headed Blackbird, +. **Total:** 13 species; 22.0 territories (144/40 ha). **Visitors:** Green-winged Teal, Northern Pintail, American Wigeon, Redhead, Lesser Scaup, Ruddy Duck, Upland Sandpiper, Common Snipe, Cliff Swallow, Barn Swallow, Song Sparrow, Western Meadowlark. **Remarks:** Precipitation in late summer of 1993 reflooded all wetland basins in the plot.

126. MIXED PRAIRIE III

PRADERA MIXTA III

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

*National Biological Service, Northern Prairie Science Center, 8711 37 St. SE, Jamestown ND
58401-7317*

Location: North Dakota; Stutsman Co.; Woodworth; 47°9'N, 99°14'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 23 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds*

26:973 (1972). **Weather:** No data provided. **Coverage:** 4.3 h; 10 visits (3 sunrise); 1, 2, 3, 6, 7, 9, 10 Jun. **Census:** Clay-colored Sparrow, 2.0; Blue-winged Teal, 1.5; Grasshopper Sparrow, 1.5; Bobolink, 1.5; Northern Shoveler, 1.0; American Coot, 1.0 (1N); Eastern Kingbird, 0.5; Savannah Sparrow, 0.5; Western Meadowlark, 0.5; Mallard, + (1N); Lesser Scaup, +; Black Tern, +. **Total:** 12 species; 10.0 territories (66/40 ha). **Visitors:** American Bittern, Gadwall, Redhead, Sora, Upland Sandpiper, Common Snipe, Common Nighthawk, Western Kingbird, Barn Swallow, Yellow-headed Blackbird, Brown-headed Cowbird. **Remarks:** Precipitation in late summer of 1993 reflooded all wetland basins in the plot.

127. MIXED PRAIRIE IV

PRADERA MIXTA IV

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

*National Biological Service, Northern Prairie Science Center, 8711 37 St. SE, Jamestown ND
58401-7317*

Location: North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°15'W; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 23 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 26:973-974 (1972). **Weather:** No data provided. **Coverage:** 3.2 h; 8 visits (1 sunrise); 1, 3, 6, 7, 10 Jun. **Census:** Blue-winged Teal, 5.0 (33); American Coot, 3.0 (20); Red-winged Blackbird, 3.0; Mallard, 2.0; Clay-colored Sparrow, 1.5; Gadwall, 1.0; Upland Sandpiper, 1.0; Eastern Kingbird, 1.0; Common Yellowthroat, 1.0; Bobolink, 1.0; Brown-headed Cowbird, 1.0; Northern Shoveler, 0.5; Song Sparrow, 0.5; Western Meadowlark, 0.5; Green-Winged Teal, +; Lesser Scaup, +; Black Tern, +. **Total:** 17 species; 22.0 territories (144/40 ha). **Visitors:** Northern Pintail, American Wigeon, Ruddy Duck, Sora, Common Snipe, Cliff Swallow, Barn Swallow, Savannah Sparrow, Grasshopper Sparrow. **Remarks:** Precipitation in late summer of 1993 reflooded all wetland basins in the plot.

128. MIXED PRAIRIE V

PRADERA MIXTA V

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

*National Biological Service, Northern Prairie Science Center, 8711 37 St. SE, Jamestown ND
58401-7317*

Location: North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°14'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 23 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 26:974 (1972). **Weather:** No data provided. **Coverage:** 3.9 h; 10 visits (1 sunrise); 1, 3, 6, 7, 9, 10 Jun. **Census:** Clay-colored Sparrow, 3.0; Blue-winged Teal, 2.5; Northern Shoveler, 1.0; Eastern Kingbird, 1.0; Mallard, 0.5; Gadwall, 0.5; Bobolink, 0.5; Brown-headed Cowbird, 0.5; Northern Harrier, +; American Coot, +; Black Tern, +; Western Meadowlark, +. **Total:** 12 species; 9.5 territories (62/40 ha). **Visitors:** Green-winged Teal, Killdeer, Upland Sandpiper, Common Snipe, Barn Swallow, Gray Catbird, Yellow Warbler, Savannah Sparrow, Grasshopper Sparrow, Song Sparrow, Red-winged Blackbird, American Goldfinch. **Remarks:** Precipitation in late summer of 1993 reflooded all wetland basins in the plot.

129. SUBIRRIGATED GRASSLAND

PRADERA SUBIRRIGADA

GARY LINGLE

*Platte River Whooping Crane Trust, 2550 N. Diers Ave., Suite H, Grand Island NE 68803-
1214*

Location: Nebraska; Hall Co.; Doniphan; Mormon Island Crane Meadows (Plot 1); 40°47'N, 98°26'W; Alda Quadrangle, USGS. **Continuity:** Established 1981; 12 yr. **Size:** 16.2 ha. **Descrip-**

tion of Plot: See *Am. Birds* 36:105 (1982). **Weather:** Mean start temp., 23°C. Generally hot and dry. Temperature and precipitation departures, respectively, were: May, +1.6°C, -8.5 cm; June, +1.2°C, +0.1 cm. Source: National Weather Service, Grand Island, NE. **Coverage:** 4.6 h; 8 visits (6 sunrise); 8, 9, 10, 13, 14, 15, 16, 17 Jun. **Census:** Bobolink, 10.0 (25); Dickcissel, 8.0 (20); Grasshopper Sparrow, 3.0 (7; 1N); Upland Sandpiper, 2.0 (1N); Western Meadowlark, 1.5; Brown-headed Cowbird, 1.0; Red-winged Blackbird, +. **Total:** 7 species; 25.5 territories (63/40 ha). **Visitors:** Mallard, Mourning Dove. **Remarks:** The plot was not grazed prior to or during the census. There was 20% standing water, but it was dry throughout spring. The plot was burned in April. **Other Observers:** Shea Bergman, Jill Liske.

130. SUBIRRIGATED NATIVE HAY

PASTO NATIVO SUBIRRIGADO

GARY LINGLE

Platte River Whooping Crane Trust, 2550 N. Diers Ave., Suite H, Grand Island NE 68803-1214

Location: Nebraska; Hall Co.; Doniphan; Mormon Island Crane Meadows (Plot 2); 40°47'N, 98°27'W; Alda Quadrangle, USGS. **Continuity:** Established 1981; 12 yr. **Size:** 16.2 ha. **Description of Plot:** See *Am. Birds* 36:105 (1982). **Weather:** Mean start temp., 23°C. Generally hot and dry. Temperature and precipitation departures, respectively, were: May, +1.6°C, -8.5 cm; June, +1.2°C, +0.1 cm. Source: National Weather Service, Grand Island, NE. **Coverage:** 4.2 h; 8 visits (5 sunrise); 9, 10, 13, 14, 15, 16, 17, 20 Jun. **Census:** Bobolink, 7.0 (17); Grasshopper Sparrow, 5.0 (12); Western Meadowlark, 2.0; Brown-headed Cowbird, 2.0; Dickcissel, 1.5. **Total:** 5 species; 17.5 territories (43/40 ha). **Visitors:** Upland Sandpiper, Mourning Dove, Eastern Kingbird. **Remarks:** The S half of the plot was grazed during the census. The N half was mowed last summer. There was no residual cover. **Other Observers:** Shea Bergman, Jill Liske.

131. FLOODPLAIN TALLGRASS PRAIRIE-SHRUB SUCCESSION

ESTADIO SUCESIONAL DE PRADERA ANEGADA DE YERBAS ALTAS-ARBUSTOS

CHRISTOPHER CINK & CALVIN CINK

Biology Dept., Baker University, PO Box 65, Baldwin City KS 66006-0065

Site Number: KS3394115. **Location:** Kansas; Douglas Co.; Lawrence; Baker University Wetlands; 38°55'N, 95°14'W; Lawrence East Quadrangle, USGS. **Continuity:** New. **Size:** 49.0 ha. **Description of Plot:** See *Am. Birds* 29:1122-1123 (1975). The original plot was 10.1 ha and is included in the SW corner of this larger plot. The plot is square (700 x 700 m). The original plot had a high density of rough-leaved dogwood which has since been removed. In 1991, there were a large number of sapling elms on the N quarter of the plot. These were removed the following summer, but have started to grow back. The W and S 50 m and E 200 m are dominated by prairie cordgrass. The N eighth of the plot is dominated by tree saplings 1-2 m high. The majority of the plot has scattered trees and saplings. Canopy species include: American elm, honey locust, and green ash. Average canopy height, 6 m (range 2-15 m). Understory species include: rough-leaved dogwood, American elm, and honey locust. The nearly continuous ground cover is dominated by sedges, spikerushes, prairie cordgrass, and coreopsis beggar-tick. There is one pond with a maximum width of 15 m and a maximum depth of 1 m. There are also ephemeral pools during the breeding season when > 50% of the plot may be covered by standing water. **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 51-100 ha in size. **Topography and Elevation:** The plot is nearly level. Minimum elevation 249 m, maximum 249 m. **Weather:** Mean start temp., 26.2°C (range 24-29°C). See BBC #103 for summary. The early summer was wet enough to provide standing water in most of the low areas. By the time the census began, most of this water was gone and the summer was drier than

normal. **Coverage:** 11.0 h; 9 visits (1 sunrise, 1 sunset); 5 Jun; 12, 14, 16, 18, 19, 20, 21, 22 Jul. **Census:** Common Yellowthroat, 25.0 (20); Red-winged Blackbird, 16.5 (13); Dickcissel, 11.0 (9); Eastern Meadowlark, 7.5 (6); American Goldfinch, 7.0 (6); Mourning Dove, 4.0 (3); Northern Bobwhite, 3.0 (2); Bell's Vireo, 3.0; Northern Cardinal, 3.0; Indigo Bunting, 3.0; Downy Woodpecker, 2.0; Eastern Kingbird, 2.0; Brown Thrasher, 2.0; Northern Flicker, 1.5; American Kestrel, 1.0; Great Horned Owl, 1.0; Black-capped Chickadee, 1.0; Loggerhead Shrike, 1.0; Orchard Oriole, 1.0; Northern Oriole, 1.0; Scissor-tailed Flycatcher, 0.5; House Wren, 0.5; Yellow-billed Cuckoo, +; Gray Catbird, +. **Total:** 24 species; 97.5 territories (80/40 ha). **Visitors:** Chimney Swift, Northern Rough-winged Swallow, American Crow, American Robin. **Acknowledgments:** Our thanks to Roger Boyd for providing vegetation data from the summer of 1991.

132. ABANDONED PASTURE OVERGROWN WITH OAK CANOPY AND ARMED SHRUBS

PASTIZAL ABANDONADO CON CRECIMIENTO DE ROBLE Y ARBUSTOS

STUART WAGENIUS

4804 11th Avenue South, Minneapolis MN 55417-1105

Site Number: MN4094129. **Location:** Minnesota; Douglas Co.; Solem; 45°50'N, 95°43'W; Kensington Quadrangle, USGS. **Continuity:** New. **Size:** 16.0 ha. **Description of Plot:** A square plot (400 x 400 m) with an open canopy dominated by bur oak, green ash, and basswood. The NE corner of this abandoned pasture includes approximately half of a 3-ha cattail-sedge marsh, and a 2-ha sphagnum bog is located in the middle of the plot. 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 8 randomly-placed 0.04-ha circular samples, 188/ha; total basal area 18.2 m²/ha. Species comprising 90% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): bur oak, 47, 25, 37, 50; green ash, 44, 23, 27, 63; basswood, 66, 35, 23, 25; standing dead, 22, 12, 12, 50; box elder, 6, 3, 1, 25; elm species, 3, 2, 0, 13. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6-15.2 cm) 53, 28, 0.5, 3; B (15.2-22.9 cm) 28, 15, 0.8, 4; C (22.9-30.5 cm) 16, 8, 0.9, 5; D (30.5-38.1 cm) 34, 18, 3.2, 18; E (38.1-53.3 cm) 41, 22, 6.7, 37; F (53.3-68.6 cm) 6, 3, 1.8, 10; G (> 68.6 cm) 9, 5, 4.3, 24. Shrub stems/ha, 15,800, dominated by prickly ash, common buckthorn, and choke cherry. Ground cover, 83%, dominated by brome grass, grape woodbine, and gooseberry. Canopy cover, 29%; average canopy height, 14 m (range 0.5-25 m). **Edge:** The edge is old field (45%), wooded land (35%), and cattail-sedge marsh (20%). The plot lies within a tract of similar habitat < 25 ha in size. **Topography and Elevation:** The plot has an uneven N-facing slope of < 5% grade. Minimum elevation 402 m, maximum 424 m. **Weather:** Mean start temp., 14.6°C (range 9-18°C). **Coverage:** 32.7 h; 8 visits (8 sunrise); 10, 12, 19, 23, 26, 27, 30 Jun; 10 Jul. **Census:** Song Sparrow, 11.0 (28; 2FL); House Wren, 8.0 (20; 2N); Eastern Wood-Pewee, 6.0 (15; 1N); Gray Catbird, 5.5 (14; 1N); Yellow Warbler, 5.5 (1N,4FL); Red-winged Blackbird, 5.5; Red-eyed Vireo, 4.0 (10); Common Yellowthroat, 4.0; Clay-colored Sparrow, 3.5 (9); Indigo Bunting, 3.0 (8); Marsh Wren, 2.0; Yellow-throated Vireo, 2.0; Rose-breasted Grosbeak, 1.5; Sora, 1.0; Yellow-bellied Sapsucker, 1.0 (1N); Eastern Phoebe, 1.0; Great Crested Flycatcher, 1.0; Black-capped Chickadee, 1.0 (1N,4FL); American Robin, 1.0 (1FL); Scarlet Tanager, 1.0; Northern Oriole, 1.0; American Bittern, +; Red-tailed Hawk, +; Northern Flicker, +; Least Flycatcher, +; Barn Swallow, +; American Crow, + (1FL). **Total:** 27 species; 69.5 territories (174/40 ha). **Visitors:** Wood Duck, Mallard, Blue-winged Teal, Ring-necked Pheasant, American Woodcock, Mourning Dove, Great Horned Owl, Ruby-throated Hummingbird, Downy Woodpecker, Eastern Kingbird, Tree Swallow, Blue Jay, White-breasted Nuthatch, Brown Thrasher, Cedar Waxwing, European Starling, Field Sparrow, Vesper Sparrow, Common Grackle, American Goldfinch. **Remarks:** A Red-eyed Vireo was observed feeding a juvenile Brown-headed Cowbird. **Acknowledgments:** Stephanie Davalos and the Wagenius family.

133. ABANDONED UPLAND PASTURE

PASTIZAL DE ALTURAS ABANDONADO

VIVIAN MILLS PITZRICK

5162 Amity Lake Road, Belmont NY 14813

Location: New York; Allegany Co.; Scio; Saunders Plot; 42°13'N, 77°59'W; Wellsville North Quadrangle, USGS. **Continuity:** Established 1984; 11 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., 14.9°C (range 2-27°C). Deviations from long-term averages: temperature, +0.7°C; precipitation, +28.1 cm with May and June nearly normal and August very wet. Source: Wellsville Water Department. The ice cleared from Amity Lake on 10 April, 10 days late. A cold period in late April and the unusually cold May adversely affected one Eastern Bluebird and several Tree Swallow nestings. Frequent showers provided a reliable water source for the intermittent stream. **Coverage:** 21.3 h; 20 visits (1 sunrise, 1 sunset); 10, 14, 24 Apr; 5, 19, 27 May; 2, 9, 15, 22, 29 Jun; 6, 7, 15, 18, 25 Jul; 3, 10, 17, 24 Aug. The first three visits were in the evening, for a few minutes only, to listen for American Woodcock. **Census:** Song Sparrow, 16.0 (80); Yellow Warbler, 14.0 (70; 1N); Alder Flycatcher, 13.0 (65); Field Sparrow, 13.0 (2N,4FL); Common Yellowthroat, 10.0 (50); American Goldfinch, 10.0 (3N,10FL); Blue-winged Warbler, 9.0 (45); Indigo Bunting, 9.0; Rufous-sided Towhee, 9.0; Cedar Waxwing, 6.0 (30; 3N,10FL); Chestnut-sided Warbler, 6.0; American Woodcock, 5.0 (25); Gray Catbird, 4.0 (20); Tree Swallow, 3.0 (15; 3N,12FL); Northern Cardinal, 3.0; Blue Jay, 2.0; Black-capped Chickadee, 2.0 (2N); American Robin, 2.0 (1N); Prairie Warbler, 2.0; Rose-breasted Grosbeak, 2.0; Eastern Bluebird, 1.0 (2N,5FL); Red-eyed Vireo, 1.0; Chipping Sparrow, 1.0; Purple Finch, 1.0. **Total:** 24 species; 144.0 territories (720/40 ha). **Visitors:** Canada Goose, Black-billed Cuckoo, Northern Flicker, Eastern Kingbird, American Crow, Tufted Titmouse, White-breasted Nuthatch, House Wren, Veery, Wood Thrush, Ovenbird, Scarlet Tanager, Brown-headed Cowbird. **Remarks:** Although the number of territorial males was normal, the number of species was 84% of the 10-yr average. Species increasing in number were: Blue-winged Warbler, Northern Cardinal, Indigo Bunting, and Rufous-sided Towhee. There were fewer Chipping and Song Sparrows. The primary predator was the American Crow. Nest data is low because there was little nest hunting. **Acknowledgments:** Thanks to Dana Harris for weather data and to Victor and Gail Funk for permission to use the property.

134. ABANDONED UPLAND PASTURE II

PASTIZAL DE ALTURAS ABANDONADO II

ROBERT LARSEN, BETSY CORNWALL & LIN FAGAN

Mohonk Preserve, Inc., 1000 Mountain Rest Road, Mohonk Lake, New Paltz NY 12561

Site Number: NY1394089. **Location:** New York; Ulster Co.; Marbletown; Spring Farm; 41°47'N, 74°7'W; Mohonk Lake & Rosendale Quadrangles, USGS. **Continuity:** New. **Size:** 30.0 ha. **Description of Plot:** A rectangular plot (305 x 1525 m) consisting of fields formerly farmed and now part of a nature preserve. The successional fields are maintained by periodic brushhogging (at approximately 3-5 year intervals). The understory is dominated by white ash saplings and multiflora rose. The ground cover is dominated by awnless brome, orchard grass, fragrant bedstraw, goldenrods, asters, wild bergamot, and dewberry. There are a few ephemeral streams with a maximum width of 1 m and a maximum depth of 0.3 m. **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 51-100 ha in size. The fields are bordered by woods and hedgerows. **Topography and Elevation:** The plot has an uneven slope facing NW with a grade of 6-10%. Minimum elevation 168 m, maximum 256 m. **Weather:** Mean start temp., 14.5°C (range 7-24°C). May temperatures were nearly normal with 3.6 cm less rain than usual. June was much warmer than average (+3.9°C) with precipitation 3.0 cm above normal. Source: Mohonk Lake Cooperative Weather Station. **Coverage:** 32.8 h; 13 visits (13 sunrise); 4, 10, 18, 20, 26, 31 May; 3, 7, 9, 14, 16, 21, 28 Jun. Maximum number of observers/visit, 4. **Census:**

Common Yellowthroat, 20.0 (27); Indigo Bunting, 13.0 (17); Prairie Warbler, 12.0 (16); Blue-winged Warbler, 11.0 (15); Rufous-sided Towhee, 9.0 (12); Field Sparrow, 9.0; American Redstart, 8.0 (11); Northern Cardinal, 8.0; American Goldfinch, 8.0; American Robin, 7.0 (9; 3FL); Gray Catbird, 6.0 (8); Brown-headed Cowbird, 6.0; Eastern Phoebe, 5.0 (7; 5FL); Great Crested Flycatcher, 5.0; Black-capped Chickadee, 5.0 (1N); Tufted Titmouse, 5.0; House Wren, 4.0 (5); Wood Thrush, 4.0; Scarlet Tanager, 4.0; Chipping Sparrow, 4.0; Blue Jay, 3.0 (4); Blue-gray Gnatcatcher, 3.0 (2N); Cedar Waxwing, 3.0 (1FL); Red-eyed Vireo, 3.0; Black-and-white Warbler, 3.0; Red-winged Blackbird, 3.0; Ruffed Grouse, 2.0; Wild Turkey, 2.0 (1FL); Red-bellied Woodpecker, 2.0; Barn Swallow, 2.0; Golden-winged Warbler, 2.0; Chestnut-sided Warbler, 2.0; Ovenbird, 2.0; Song Sparrow, 2.0; House Finch, 2.0 (2N,5FL); Downy Woodpecker, 1.0; Northern Flicker, 1.0; Eastern Wood-Pewee, 1.0; American Crow, 1.0; Eastern Bluebird, 1.0 (1N); Yellow Warbler, 1.0; Northern Oriole, 1.0. **Total:** 42 species; 196.0 territories (261/40 ha). **Visitors:** Mourning Dove, Yellow-billed Cuckoo, Whip-poor-will, Hairy Woodpecker, Pileated Woodpecker, Least Flycatcher, Tree Swallow, Northern Rough-winged Swallow, White-breasted Nuthatch, European Starling, Magnolia Warbler, Black-throated Blue Warbler, Yellow-rumped Warbler, Black-throated Green Warbler, Worm-eating Warbler. **Remarks:** On one occasion a Golden-winged Warbler was singing a Blue-winged Warbler song. **Other Observers:** Gail Mihocko, Lynn Bowdery, Sybil Rosen, Jody Schoonover. **Acknowledgments:** Thanks for the cooperation of the Mohonk Preserve including Director of Research, Paul Huth.

135. ABANDONED PASTURE SCRUBLAND

PASTIZAL-MALEZA ABANDONADO

BILL MURPHY

Innis Point Bird Observatory, Kanata North Postal Outlet, Box 72137, Kanata ON K2K 2P4

Location: Ontario; Municipality of Ottawa-Carleton; Kanata; Innis Point; 45°21'N, 75°54'W; Ottawa Quadrangle, NTS. **Continuity:** Established 1982; 13 yr. **Size:** 9.0 ha. **Description of Plot:** See *Am. Birds* 37:76-77 (1983). **Weather:** Mean start temp., 13.9°C (range 4-23°C). The breeding season was both warmer and wetter than the 56-yr averages. Mean temperatures were 19.2°C (normal 18.0°C) in June and 21.4°C (normal 20.8°C) in July. Rainfall was 125% above normal in June (16.5 cm instead of 7.3 cm) and 30% above normal in July (11.5 cm instead of 8.8 cm). **Source:** Ottawa International Airport. There was more standing water than normal on the plot when censusing began, and it lingered longer into the breeding season. **Coverage:** 20.8 h; 8 visits (8 sunrise); 28 May; 4, 11, 18, 24 Jun; 1, 3, 9 Jul. **Census:** Yellow Warbler, 13.0 (58); White-throated Sparrow, 9.0 (40); Black-and-white Warbler, 8.0 (36); Song Sparrow, 8.0; American Robin, 5.5 (24); Black-capped Chickadee, 5.0 (22); Cedar Waxwing, 5.0; Common Yellowthroat, 4.0 (18); Great Crested Flycatcher, 3.0 (13); Nashville Warbler, 3.0; Ovenbird, 3.0; Gray Catbird, 2.5; Eastern Kingbird, 2.0; Blue Jay, 2.0; Brown-headed Cowbird, 2.0; Northern Oriole, 2.0; Veery, 1.5; Ruffed Grouse, 1.0; Spotted Sandpiper, 1.0; Northern Flicker, 1.0; Alder Flycatcher, 1.0; Chestnut-sided Warbler, 1.0; American Redstart, 1.0; Rose-breasted Grosbeak, 1.0; Indigo Bunting, 1.0; Field Sparrow, 1.0; Red-eyed Vireo, 0.5. **Total:** 27 species; 88.0 territories (391/40 ha). **Visitors:** Red-tailed Hawk, American Woodcock, Mourning Dove, Downy Woodpecker, Hairy Woodpecker, Eastern Wood-Pewee, American Crow, White-breasted Nuthatch, Brown Creeper, Golden-winged Warbler, Scarlet Tanager, Red-winged Blackbird, Common Grackle, Purple Finch, American Goldfinch. **Acknowledgments:** Thanks to the Department of National Defence (Lt. Col. C. McCabe) and the Communications Research Centre (Mr. Pierre Lyonnais) for continued access to the site.

136. DRY-MESIC RYE FIELD

CAMPO DE CENTENO MESICO-SECO

MARY E. GARTSHORE* & DAVID J. AGRO

**RR#1, Walsingham ON NOE 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: Established 1992; 2 yr. **Size:** 12.3 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):110 (1993). The entire study site was burned on 11 April 1994 (>80% blackening) under an Ontario Ministry of Natural Resources prescribed burn. All ground cover was completely removed (including rye). Other than a fast regrowth of quack grass, ground cover was sparse through the beginning of the breeding season with scattered vigorous growths of *Aster* and *Solidago* species. Large areas were devoid of vegetation. Twenty percent of the plot was planted with native sand prairie plants which grew vigorously as the breeding season progressed, but may not have affected the numbers of breeding birds. The ground cover consisted of the following: bare ground, 40%; quack grass, 20%; mixed native species, 20% (Indian grass, big bluestem, switch grass, little bluestem, black-eyed Susan, sand dropseed, wild bergamot); coarse weeds, 10% (Canada goldenrod, New England aster, heath aster, many-flowered aster, arrow-leaved aster, evening primrose, yellow goatsbeard). **Weather:** Mean start temp., 22.5°C (range 18–25°C). **Coverage:** 13.3 h; 10 visits (2 sunrise, 1 sunset); 6, 26 Jun; 15, 18, 23, 24, 29 Jul; 1, 4 Aug. **Census:** Savannah Sparrow, 16.5 (54; 2FL); Grasshopper Sparrow, 9.5 (31; 1N); Vesper Sparrow, 6.0 (20; 1N); Song Sparrow, 5.0 (16); Indigo Bunting, 2.0; Horned Lark, 1.0. **Total:** 6 species; 40.0 territories (130/40 ha). **Visitors:** Northern Harrier, American Kestrel, Killdeer, Mourning Dove, Eastern Kingbird, Tree Swallow, Eastern Bluebird, Chipping Sparrow, Bobolink, Red-winged Blackbird, Brown-headed Cowbird, American Goldfinch. **Remarks:** The total number of territories was lower than any year since the census began in 1991 (1991 and 1993 not published). Although previously common, Bobolinks did not breed this year. **Other Observer:** Peter Burke. **Acknowledgments:** Long Point Bird Observatory and The Academy of Natural Sciences of Philadelphia.

137. CLEAR-CUT-LONGLEAF PINE REGENERATION

REGENERACION DE FORMACION TALADA DE PINO DE HOJA-LARGA

CHÉRIE IRBY*, SIDNEY GAUTHREAUX* & WILLIAM JARVIS

*Dept. of Biological Sciences, Clemson University, Clemson SC 29634-1903

Site Number: SC0492032. **Location:** South Carolina; Barnwell Co.; Martin; Savannah River Site; 33°9'N, 81°32'W; Girard NE Quadrangle, USGS. **Continuity:** Established 1992; 3 yr. **Size:** 25.0 ha. **Description of Plot:** See *J. Field Ornithol.* 64(Suppl.):111 (1993). The vegetation demonstrates growth and infilling each year. **Weather:** Mean start temp., 21.2°C (range 11–31°C). See BBC #38 for summary. **Coverage:** 30.8 h; 10 visits (8 sunrise, 2 sunset); 10, 14, 20, 26 May; 3, 7, 10, 14, 16, 20 Jun. Maximum number of observers/visit, 3. **Census:** Yellow-breasted Chat, 13.0 (21); Indigo Bunting, 8.5 (14); Prairie Warbler, 7.5 (12); Mourning Dove, 7.0 (11); Blue Grosbeak, 7.0 (2FL); Northern Bobwhite, 6.0 (10); Eastern Bluebird, 6.0 (2N,4FL); Rufous-sided Towhee, 5.5 (9; 1N); Bachman's Sparrow, 5.0 (8; 1FL); Carolina Wren, 4.0 (6); Common Ground-Dove, 3.0 (5; 1N); Red-headed Woodpecker, 3.0 (2N); Red-bellied Woodpecker, 3.0 (1N); Northern Mockingbird, 3.0; Northern Cardinal, 3.0 (2FL); Orchard Oriole, 3.0; Great Crested Flycatcher, 2.5; Eastern Kingbird, 2.5; Summer Tanager, 2.5; Field Sparrow, 2.5 (4FL); White-eyed Vireo, 2.0; Northern Flicker, 1.5; Brown Thrasher, 1.5. **Total:** 23 species; 102.5 territories (164/40 ha). **Visitors:** Downy Woodpecker, Pileated Woodpecker, Eastern Wood-Pewee, Eastern Phoebe, Carolina Chickadee, Tufted Titmouse, Brown-headed Nuthatch, Blue-gray Gnatcatcher, Gray Catbird, Common Yellowthroat, Eastern Meadowlark, Brown-headed Cowbird, American Goldfinch. **Other Observer:** Jon Plissner. **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.

138. OLD PASTURE SHRUB WITH HEDGEROWS AND SEASONAL WET AREA

PASTIZAL ARBUSTIVO DE EDAD AVANSADA CON SETO VIVO Y AREA HUMEDA ESTACIONAL

FRED MERRILL

Vermont Conservation Biology, RR#1, Box 565, Woodstock VT 05091

Site Number: VT2793060. **Location:** Vermont; Windsor Co.; Taftsville; Austin's Pasture, S.A.#2; 43°36'N, 72°30'W; Quechee Quadrangle, USGS. **Continuity:** Established 1993; 2 yr.

Size: 11.1 ha. **Description of Plot:** See *J. Field Ornithol.* 65(Suppl.):34–35 (1994). **Weather:** Mean start temp., 9.3°C (range 3–14°C). Temperature and precipitation departures, respectively, from the 30-yr norms: May, -1.5°C, +1.15 cm; June, +1.0°C, +0.69 cm; July, +0.7°C, +1.58 cm. Source: Central Vermont Public Service Co., Cavendish, VT. **Coverage:** 14.0 h; 6 visits (6 sunrise); 9, 10, 22, 29 May; 10, 17 Jul. **Census:** Common Yellowthroat, 9.0 (32; 2N); Chestnut-sided Warbler, 5.0 (18; 1N); Song Sparrow, 5.0; Black-capped Chickadee, 4.0 (14); Veery, 4.0; White-throated Sparrow, 4.0; Willow Flycatcher, 3.0 (11; 1N); American Robin, 3.0; Black-and-white Warbler, 3.0; Ruffed Grouse, 2.0 (10FL); American Woodcock, 2.0; Nashville Warbler, 2.0; Yellow-rumped Warbler, 2.0; Rose-breasted Grosbeak, 2.0; Golden-winged Warbler, 1.5 (1N,1FL); Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Eastern Phoebe, 1.0; Blue Jay, 1.0; Brown-headed Cowbird, 1.0; American Goldfinch, 1.0; Evening Grosbeak, 1.0; Wood Thrush, 0.5; Indigo Bunting, 0.5; Barred Owl, +; Ovenbird, +; Dark-eyed Junco, +. **Total:** 27 species; 59.5 territories (214/40 ha). **Visitors:** American Black Duck, American Kestrel, Black-billed Cuckoo, Northern Flicker, Least Flycatcher, Eastern Kingbird, Tree Swallow, American Crow, Tufted Titmouse, Eastern Bluebird, Gray Catbird, Cedar Waxwing, Solitary Vireo, Red-eyed Vireo, Blue-winged Warbler, Black-throated Blue Warbler, Indigo Bunting, Field Sparrow, Bobolink, Northern Oriole. **Remarks:** There was a population eruption of the slug *Deroceras* species. It was a good food year for the Rosaceae group (shadbush, berries, apple, and cherry).

139. CONVENTIONAL DAIRY FARM

GANADERIAS CONVENCIONALES

RUDOLPH C. KELLER

R.D. 4, Box 235, Boyertown PA 19512

Location: Pennsylvania; Berks Co.; Kempton; Terry Kunkel's farm; 40°37'N, 75°53'W; Hamburg Quadrangle, USGS. **Continuity:** Established 1989; 4 yr. **Size:** 23.1 ha. **Description of Plot:** See *J. Field Ornithol.* 61(Suppl.):82–83 (1990). Some shrubs and small trees in the hedgerow on the NE edge of the plot were uprooted to reduce shading and root competition with row crops. Multiflora rose in several other sections of hedgerow was selectively killed with herbicide. These practices reduced woody cover (25–50% in hedges where the rose was abundant). Adjacent fields E of the plot had been kept fallow in grass cut once a year since 1989. This year they were planted with corn and soybeans. **Weather:** Mean start temp., 16.0°C (range 8–20°C). **Coverage:** 20.0 h; 8 visits (8 sunrise); 29 May; 11, 18, 23, 26 Jun; 3, 5, 10 Jul. **Census:** Field Sparrow, 5.0 (9; 10FL); Song Sparrow, 5.0 (6FL); Barn Swallow, 4.0 (7; 4FL); Gray Catbird, 4.0 (3FL); European Starling, 4.0 (10FL); Common Yellowthroat, 4.0 (1FL); Indigo Bunting, 4.0 (3FL); House Sparrow, 4.0 (2N); House Wren, 3.0 (5; 1N,9FL); American Robin, 3.0 (5FL); Red-winged Blackbird, 3.0 (7FL); Northern Mockingbird, 2.0; Chipping Sparrow, 2.0 (1FL); Eastern Kingbird, 1.5; Northern Cardinal, 1.5 (1FL); Ring-necked Pheasant, 1.0; Mourning Dove, 1.0; Eastern Wood-Pewee, 1.0; Willow Flycatcher, 1.0; Eastern Phoebe, 1.0 (2FL); Blue Jay, 1.0; American Crow, 1.0; Brown Thrasher, 1.0 (1FL); Brown-headed Cowbird, 1.0 (1FL); Northern Oriole, 1.0 (4FL); American Goldfinch, 1.0; Downy Woodpecker, 0.5 (1FL); Rufous-sided Towhee, 0.5 (1FL); Vesper Sparrow, 0.5; Red-tailed Hawk, + (1FL); Northern Flicker, + (1FL). **Total:** 31 species; 62.5 territories (108/40 ha). **Visitors:** Cooper's Hawk, Killdeer, Rock Dove, Chimney Swift, Ruby-throated Hummingbird, Red-bellied Woodpecker, Black-capped Chickadee, Tufted Titmouse, Eastern Bluebird, Wood Thrush, Cedar Waxwing, Common Grackle, Orchard Oriole. **Remarks:** The changes in the hedgerows reduced nesting cover and foraging areas for hedgerow-nesting species and probably helped reduce bird numbers, especially Indigo Bunting which dropped from 7.0 territories in 1993 to 4.0 this year. The loss of the adjacent grassland may also have reduced Vesper Sparrow numbers. Though 7–10 Rock Doves and as many Common Grackles were seen foraging on the plot during seven of eight visits, neither species was known to have nested on the plot this year. A Cooper's Hawk flew off with a Song Sparrow on 26 June. [The following correction should be made to last year's report: add Field Sparrow, 5.0 (2FL) to the census. This brings the total to 34 species; 78.5 territories.—Ed.] **Acknowledgments:** I want to thank Terry Kunkel for permission to use his farm for this study.