

BREEDING BIRD CENSUS: 1991

| Habitat | State/ Prov. | Compiler | Plot Size (ha) | Ind. per 40 ha | Num. spp. | Hrs obs. | Yrs study |
|---|-----------------|---------------|----------------------|----------------------|--------------|-------------|--------------|
| Broadleaf Forests | | | | | | | |
| 1. Northern Oak Woodland | CA | J.D. Petersen | 16.0 | 118 | 21 | 9.3 | 2 |
| 2. Riparian Woodland | CA | K.L. Weaver | 11.7 | 619 | 31 | 24.2 | 3 |
| 3. Western Sycamore Woodland With Scattered Oaks | CA | D. Riensch | 15.9 | 228 | 26 | 41.5 | 2 |
| 4. Mixed Hardwood Poletimber | CT | A. Magee | 8.5 | 353 | 30 | 14.8 | 25 |
| 5. Second-growth Hardwood Forest | CT | A. Magee | 10.1 | 374 | 43 | 13.5 | 25 |
| 6. Central Hardwood Forest With Scattered Pine | DC | M. D'Imperio | 26.3 | 90 | 27 | 41.0 | 43 |
| 7. Mixed Upland Broadleaf Forest | DC | S.A. Briggs | 14.2 | 685 | 40 | 7.5 | 33 |
| 8. Mature Beech-Magnolia Forest | FL | R. Brewer | 15.7 | 315 | 28 | 14.0 | 4 |
| 9. White Alder-Black Locust-Hackberry Riparian | ID | C.B. Goble | 5.3 | 385 | 16 | 36.8 | 1 |
| 10. Disturbed Deciduous Forest | KS | K. Mitchell | 16.2 | 104 | 20 | 12.8 | 2 |
| 11. Oak-Hickory Forest I | KS | K. Mitchell | 8.1 | 183 | 17 | 12.4 | 11 |
| 12. Oak-Hickory Forest II | KS | K. Mitchell | 8.1 | 121 | 13 | 11.8 | 11 |
| 13. Oak-Hickory Forest III | KS | K. Mitchell | 8.1 | 210 | 22 | 12.5 | 4 |
| 14. Riparian Deciduous Woodland | KS | K. Mitchell | 10.1 | 101 | 21 | 9.9 | 1 |
| 15. Oak-Hickory Northern Hardwoods Transition Forest | MA | D.C. Morimoto | 28.0 | 232 | 31 | 39.5 | 1 |
| 16. Mature Beech-Maple-Oak Bottomland Forest | MD | C.S. Robbins | 42.0 | 230 | 38 | 41.7 | 2 |
| 17. Mature Deciduous Floodplain Forest | MD | D. Gauthey | 7.6 | 376 | 22 | 55.3 | 41 |
| 18. Upland Tuliptree-Maple-Oak Forest | MD | G.E. Einem | 11.9 | 440 | 30 | 50.5 | 8 |
| 19. Old-Growth Woods & Swamp Forest | MI | L. Knapp | 28.3 | 320 | 47 | 24.5 | 3 |
| 20. Basswood-Black Ash Forest With Dead Timber | MN | M.A. Iverson | 11.5 | 461 | 28 | 29.2 | 5 |
| 21. Maple-Basswood Forest | MN | R. O'Connor | 13.4 | 179 | 19 | 16.4 | 1 |
| 22. Mature Aspen Forest With Young Maple Understory | MN | D. Lambert | 10.0 | 414 | 19 | 23.5 | 2 |

BREEDING BIRD CENSUS: 1991 (Continued)

| Habitat | State/ Prov. | Compiler | Plot Size (ha) | Ind. per 40 ha | Num. spp. | Hrs obs. | Yrs study |
|--|-----------------|----------------|----------------------|----------------------|--------------|-------------|--------------|
| 23. Upland Second-Growth Oak-Hickory Forest | MS | H. Moore | 10.0 | 652 | 36 | 24.5 | 3 |
| 24. Floodplain Forest | NC | H. Mueller | 12.6 | 271 | 30 | 21.8 | 15 |
| 25. Mixed Deciduous Forest | NC | H. Mueller | 12.6 | 249 | 26 | 17.9 | 16 |
| 26. Isolated Beech-Maple Woods | NY | R. Marshall | 13.5 | 107 | 20 | 15.6 | 3 |
| 27. Isolated Maple-Birch-Ash Swamp | NY | R. Marshall | 17.3 | 84 | 23 | 10.5 | 1 |
| 28. Mature Urban Deciduous Forest I | NY | D.S. Künstler | 10.1 | 220 | 22 | 32.3 | 5 |
| 29. Mature Urban Deciduous Forest II | NY | C.A. Jaslowitz | 10.0 | 296 | 24 | 47.3 | 1 |
| 30. Mixed Upland Forest | NY | R.A. Larsen | 42.3 | 127 | 52 | 34.5 | 16 |
| 31. Urban Deciduous Wetland With Stream | NY | C. Dowd | 7.0 | 154 | 15 | 19.3 | 1 |
| 32. White Ash-Red Maple Forest | NY | G.R. Maxwell | 16.2 | 202 | 29 | 10.0 | 6 |
| 33. Mature Broadleaf Forest | OH | C.W. Saunders | 16.0 | 214 | 27 | 24.6 | 1 |
| 34. Mixed Hardwood Swamp | OH | D. Hochadel | 12.1 | 255 | 31 | 28.0 | 2 |
| 35. Riparian Deciduous Forest | OH | E.J. Tramer | 18.0 | 290 | 35 | 21.5 | 3 |
| 36. Dry Cottonwood Sand Dune | ON | H. Smith | 10.0 | 62 | 7 | 23.5 | 3 |
| 37. Red Ash-Red Oak Savannah | ON | P.N. Prior | 10.3 | 470 | 26 | 45.0 | 1 |
| 38. Red Oak-Ironwood Savannah | ON | P.N. Prior | 12.0 | 548 | 27 | 45.0 | 2 |
| 39. Red Oak-Sugar Maple Forest | ON | D. Howlett | 11.0 | 493 | 25 | 49.3 | 3 |
| 40. Red Oak-Sugar Maple Savannah | ON | D. Howlett | 10.5 | 522 | 25 | 45.0 | 2 |
| 41. Red Oak-White Birch Savannah | ON | M.J. Palmer | 10.0 | 278 | 25 | 27.6 | 3 |
| 42. Oak-Maple Ridge-Top Forest | PA | L.J. Goodrich | 19.3 | 81 | 18 | 24.0 | 10 |
| 43. Oak-Maple Slope Forest | PA | L.J. Goodrich | 16.9 | 91 | 16 | 21.3 | 10 |
| 44. Suburban Deciduous Woodlot | PA | K. Maguire | 10.0 | 284 | 23 | 26.2 | 1 |
| 45. Mature Mesic Oak Forest | RI | D. Filippini | 10.6 | 236 | 22 | 25.2 | 1 |
| 46. Upland Oak-Red Maple Forest | RI | W.R. Eddleman | 10.1 | 319 | 27 | 29.6 | 2 |
| 47. Deciduous Clearcut | TN | R.P. Lewis | 20.2 | 132 | 27 | 12.3 | 13 |

BREEDING BIRD CENSUS: 1991 (Continued)

| Habitat | State/ Prov. | Compiler | Plot Size (ha) | Ind. per 40 ha | Num. spp. | Hrs obs. | Yrs study |
|--|-----------------|----------------|----------------------|----------------------|--------------|-------------|--------------|
| 48. Mesophytic Forest I | VA | M.G. Smith | 6.1 | 426 | 18 | 14.1 | 10 |
| 49. Mesophytic Forest II | VA | M.G. Smith | 6.1 | 374 | 18 | 12.2 | 10 |
| Needleleaf Forests | | | | | | | |
| 50. Old-Growth Mixed Coniferous-Red Fir Forest Transition | CA | K.L. Purcell | 42.3 | 189 | 28 | 112.0 | 7 |
| 51. Riparian Forest | ID | S. Weller | 10.3 | 260 | 28 | 18.8 | 1 |
| 52. Heavily Thinned White Spruce Plantation | ME | J.K. Markowsky | 4.1 | 361 | 22 | 21.5 | 7 |
| 53. Mature Red Spruce Forest | ME | T.P. Skaling | 16.0 | 163 | 26 | 24.5 | 3 |
| 54. Jack Pine Forest | MI | M. Derr | 16.0 | 78 | 11 | 21.3 | 7 |
| 55. Upland Christmas Tree Farm | NY | E.W. Brooks | 10.7 | 239 | 19 | 18.3 | 9 |
| 56. Upland Scotch Pine Plantation | NY | E.W. Brooks | 9.3 | 194 | 21 | 13.0 | 23 |
| 57. Tamarack Slough | ON | D. Howlett | 8.8 | 434 | 28 | 39.5 | 4 |
| 58. White Pine-White Cedar Savannah | ON | J.R. Hough | 9.3 | 323 | 24 | 28.0 | 4 |
| 59. Mature White Pine Forest | RI | W.R. Eddleman | 10.1 | 279 | 21 | 22.9 | 2 |
| 60. Pinyon-Juniper Woodland | UT | G.N. Salamacha | 31.3 | 18 | 11 | 20.9 | 9 |
| Broadleaf/Needleleaf Forests | | | | | | | |
| 61. Grazed Oak-Pine Woodland | CA | K.L. Purcell | 29.7 | 188 | 25 | 117.0 | 7 |
| 62. Ungrazed Oak-Pine Woodland | CA | K.L. Purcell | 29.7 | 181 | 29 | 125.0 | 7 |
| 63. Ponderosa Pine-Scrub Oak Forest | CO | P.K. Coomber | 12.0 | 450 | 22 | 23.3 | 11 |
| 64. Climax Hemlock-White Pine Forest With Transition Hardwoods | CT | A. Magee | 10.5 | 349 | 40 | 14.8 | 25 |
| 65. Mature Broadleaf-Coniferous Forested Wetland | CT | T. Harrington | 21.5 | 244 | 35 | 27.0 | 1 |
| 66. Oak-Hemlock Forest | CT | R.A. Askins | 23.1 | 177 | 32 | 24.9 | 21 |

BREEDING BIRD CENSUS: 1991 (Continued)

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|--|-----------------|---------------|----------------------|----------------------|--------------|-------------|--------------|
| 67. Upland Oak & Hemlock Forest | CT | R. Braunfield | 10.5 | 350 | 19 | 8.1 | 3 |
| 68. Young Mixed Hardwood-Conifer Stand | CT | A. Magee | 8.5 | 468 | 42 | 13.8 | 14 |
| 69. Mixed Oak-Virginia Pine Forest | MD | D.K. Dawson | 38.0 | 196 | 43 | 63.4 | 2 |
| 70. Tamarack Bog & Hardwood | MI | J. Mullins | 8.5 | 89 | 13 | 8.0 | 16 |
| 71. Aspen-Pine Wilderness | MN | R. O'Connor | 13.4 | 237 | 15 | 19.0 | 1 |
| 72. Mature Red Pine Forest With Deciduous Understory | MN | K.N. Munson | 10.0 | 514 | 18 | 25.8 | 2 |
| 73. Mixed Pine-Aspen Forest | MN | G. Canterbury | 10.0 | 294 | 15 | 26.5 | 1 |
| 74. Young Aspen Forest With Scattered Mature Pines | MN | J. Sisler | 10.3 | 472 | 28 | 24.5 | 2 |
| 75. Upland Mixed Pine-Spruce-Hardwood Plantation | NY | E.W. Brooks | 16.6 | 212 | 32 | 17.3 | 18 |
| 76. Mature Hemlock-Hardwood Forest | OH | D. Minney | 10.0 | 434 | 31 | 24.5 | 2 |
| 77. Dry Cottonwood-Juniper Savannah | ON | J.R. Hough | 10.5 | 99 | 10 | 19.0 | 1 |
| 78. Intergrading Dune-Swale Savannah | ON | P. Derbyshire | 11.0 | 122 | 10 | 25.0 | 5 |
| 79. Red Oak-White Pine Savannah | ON | P.S. Burke | 11.0 | 218 | 19 | 26.0 | 1 |
| 80. Hardwood Forest With Scattered Pine | PA | G.W. Grove | 19.2 | 191 | 28 | 16.0 | 1 |
| 81. Mature Upland Oak-Beech-White Pine Forest | RI | W.R. Eddleman | 10.2 | 335 | 28 | 39.1 | 1 |
| 82. Mature Deciduous-Coniferous Forest With Stream | TN | S.J. Stedman | 10.2 | 214 | 47 | 19.3 | 1 |
| 83. Hemlock-White Pine-Mixed Hardwood Forest | VA | K.R. Hinkle | 6.1 | 233 | 14 | 11.7 | 6 |
| 84. Mixed Pine & Hardwood Ridge | VA | C. Mellinger | 6.1 | 203 | 15 | 15.9 | 11 |
| 85. Sloped Mixed Deciduous-Coniferous Forest | VT | F. Merrill | 12.3 | 130 | 35 | 32.9 | 1 |

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|--|-----------------|-------------------|----------------------|----------------------|--------------|-------------|--------------|
| Mixed Habitats | | | | | | | |
| 86. Suburban Cemetery | AL | T.A. Imhof | 15.0 | 160 | 20 | 22.0 | 12 |
| 87. Mature Upper Mixed-Coniferous Forest-Montane Chaparral | CA | K.L. Purcell | 42.3 | 268 | 39 | 120.0 | 7 |
| 88. Mountain Meadow & Open Coniferous Forest | CO | Stiles-Wainwright | 13.0 | 185 | 24 | 27.5 | 10 |
| 89. Transition Forest & Thicket | CT | R.A. Askins | 6.5 | 132 | 21 | 8.8 | 21 |
| 90. Bulrush & Cattail Marsh in Conifer Forest | MT | M.M. Bishop | 40.5 | 240 | 55 | 24.0 | 15 |
| 91. Deciduous Forest With Pond & Brook | NJ | J. Brotherton | 16.2 | 89 | 19 | 9.0 | 28 |
| 92. Suburban Bird Sanctuary | NY | M.E. Richard | 10.8 | 176 | 26 | 9.5 | 8 |
| 93. Disturbed Oak-Hickory, Pine Stand, Edge, & Pond | OH | A.H. Claugus | 14.2 | 194 | 32 | 75.5 | 49 |
| 94. Field, Ridge, & Shrubby Trees | ON | M.F. Clark | 6.6 | 739 | 21 | 14.8 | 3 |
| 95. Sedge-Tamarack Dune Pond | ON | K.M. Thomas | 10.0 | 234 | 10 | 24.0 | 2 |
| 96. Shrubby Trees, Ridge, & Woods | ON | M.F. Clark | 7.3 | 329 | 21 | 12.4 | 2 |
| 97. Scattered Mixed Coniferous Forest In Subalpine Meadows & Spruce Bogs | OR | R.A. Hudson | 32.4 | 22 | 8 | 15.8 | 19 |
| Non-forested Wetlands | | | | | | | |
| 98. Coastal Freshwater Marsh | CA | J.P. Kelly | 10.5 | 392 | 19 | 9.1 | 7 |
| 99. Coastal Riparian Marsh | CA | J.G. Evans | 17.5 | 307 | 47 | 24.5 | 2 |
| 100. Desert Riparian-Freshwater Marsh | CA | E.A. Cardiff | 15.4 | 321 | 34 | 30.0 | 15 |
| 101. Restored Coastal Brackish Marsh | CA | D.L. Base | 8.2 | 171 | 6 | 16.5 | 3 |
| 102. Montane Mesc Willow Carr | CO | D. Hallock | 3.8 | 732 | 19 | 12.8 | 4 |
| 103. Shrubby Swamp & Sedge Hummocks | CT | A. Magee | 8.1 | 704 | 21 | 12.5 | 25 |
| 104. Sedge-Rush Swale I | ON | K.M. Thomas | 9.3 | 43 | 5 | 14.0 | 3 |
| 105. Sedge-Rush Swale II | ON | K.M. Thomas | 9.3 | 32 | 6 | 14.0 | 1 |

BREEDING BIRD CENSUS: 1991 (Continued)

| Habitat | State/ Prov. | Compiler | Plot Size (ha) | Ind. per 40 ha | Num. spp. | Hrs obs. | Yrs study |
|--|-----------------|----------------|----------------------|----------------------|--------------|-------------|--------------|
| Shrublands | | | | | | | |
| 106. Mesquite-Hackberry Riparian Association | AZ | J. T. Weitt | 11.2 | 300 | 23 | 12.9 | 3 |
| 107. Coastal Scrub | CA | B. D. Hardesty | 8.1 | 237 | 14 | 58.0 | 17 |
| 108. Disturbed Coastal Scrub A | CA | M. E. Perera | 4.7 | 179 | 20 | 25.0 | 17 |
| 109. Disturbed Coastal Scrub B | CA | M. E. Hart | 8.1 | 168 | 17 | 9.0 | 18 |
| 110. Pinyon-Juniper Scrub | UT | T. W. Graham | 20.0 | 62 | 8 | 20.0 | 1 |
| Grasslands | | | | | | | |
| 111. Coastal Prairie | CA | J. P. Kelly | 31.0 | 38 | 14 | 8.0 | 4 |
| 112. Tallgrass Prairie I | IA | P. E. Lowther | 16.0 | 59 | 13 | 4.8 | 8 |
| 113. Tallgrass Prairie II | IA | P. E. Lowther | 65.7 | 70 | 21 | 9.1 | 8 |
| 114. Tallgrass Prairie III | IA | P. E. Lowther | 44.8 | 85 | 19 | 9.1 | 8 |
| 115. Kentucky Bluegrass Prairie | ND | D. H. Johnson | 4.8 | 33 | 6 | 2.2 | 20 |
| 116. Mixed Prairie I | ND | D. H. Johnson | 10.0 | 56 | 9 | 4.4 | 20 |
| 117. Mixed Prairie II | ND | D. H. Johnson | 6.1 | 20 | 5 | 2.5 | 20 |
| 118. Mixed Prairie III | ND | D. H. Johnson | 6.1 | 30 | 5 | 2.2 | 20 |
| 119. Mixed Prairie IV | ND | D. H. Johnson | 6.1 | 30 | 7 | 3.4 | 20 |
| 120. Mixed Prairie V | ND | D. H. Johnson | 6.1 | 72 | 6 | 4.0 | 20 |
| 121. Tallgrass Prairie Remnant | OH | D. Minney | 44.0 | 157 | 14 | 39.0 | 2 |
| 122. Bluegrass Grassland | ON | H. Smith | 10.5 | 128 | 12 | 31.0 | 3 |
| Successional Fields | | | | | | | |
| 123. Field & Shrubland | CT | T. B. Ford | 24.0 | 116 | 20 | 15.3 | 2 |
| 124. Grassland-Shrub Plot | MN | R. O'Connor | 65.9 | 223 | 33 | 35.3 | 1 |
| 125. Abandoned Upland Pasture | NY | V. M. Pitzrick | 8.0 | 733 | 27 | 23.4 | 8 |
| 126. Abandoned Pasture Scrubland | ON | B. Murphy | 9.0 | 353 | 24 | 19.0 | 10 |

1. NORTHERN OAK WOODLAND

ARBOLADA DE ROBLE NORTENO

JOHN D. PETERSEN

13935 Highway 12

Glen Ellen, California 95442

Location: California; Sonoma Co.; Glen Ellen; Bouverie Ranch; 38°22'N, 122°30'W; Glen Ellen Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):32 (1991). **Weather:** Mean start temp., 7.4°C (range 3–12°C). Northern California has experienced the fifth consecutive yr of drought. **Coverage:** 9.3 h; 8 visits (3 sunrise); 1, 11, 17, 23 April; 2, 10, 21, 28 May. **Census:** Plain Titmouse, 5.0 (13); Warbling Vireo, 4.0 (10); Orange-crowned Warbler, 4.0; Chipping Sparrow, 4.0; Anna's Hummingbird, 3.0 (8); Western Wood-Pewee, 3.0; Black-throated Gray Warbler, 3.0; Dark-eyed Junco, 3.0; Acorn Woodpecker, 2.0; American Robin, 2.0; Solitary Vireo, 2.0; Hutton's Vireo, 2.0; House Finch, 2.0; Pacific-slope Flycatcher, 1.0; Mourning Dove, 1.0; Nuttall's Woodpecker, 1.0; Ash-throated Flycatcher, 1.0; White-breasted Nuthatch, 1.0; Western Bluebird, 1.0; Northern Mockingbird, 1.0; Lesser Goldfinch, 1.0. **Total:** 21 species; 47 territories (118/40 ha). **Visitors:** Western Kingbird, Scrub Jay, California Towhee, Lark Sparrow, Northern Oriole. **Remarks:** Little change in densities despite this being the fifth yr of drought. **Acknowledgments:** This work was supported by Audubon Canyon Ranch, Stinson Beach, CA as part of an oak regeneration project.

2. RIPARIAN WOODLAND

BOSQUE RIVEREÑO

KENNETH L. WEAVER

1113 Senwood Way

Fallbrook, California 92028

Location: California; San Diego Co.; Fallbrook; 33°25'N, 117°14'W; Temecula Quadrangle, USGS. **Continuity:** Established 1989; 3 yr. **Size:** 11.7 ha. **Description of Plot:** See *Am. Birds* 38:105 (1984). Extensive flooding in late February and March eliminated nearly all underbrush, most young willows (< 6 m), and scattered large trees in a band ranging from three to 30 m on either side of the normal river channel (ca 20% of the total woodland). The channel itself was widened from three m to ca eight m, creating sandbars where vegetation had existed. By the end of the census period, herbs and vines had covered the forest floor in most locations. **Weather:** Mean start temp., 14.7°C (range 10–27°C). **Coverage:** 24.2 h; 10 visits (9 sunrise, 1 sunset); 6, 20, 28 April; 11, 18, 25 May; 2, 22 June; 4, 6 July. **Census:** Song Sparrow, 22.0 (75); Yellow Warbler, 21.0 (72); Yellow-breasted Chat, 15.0 (51); Rufous-sided Towhee, 12.0 (41); Lesser Goldfinch, 11.0 (38); Black-chinned Hummingbird, 9.0 (31); Mourning Dove, 8.0 (27); Western Wood-Pewee, 8.0; Bushtit, 7.5 (26); House Wren, 7.0 (24); Orange-crowned Warbler, 5.5 (19); Pacific-slope Flycatcher, 5.0 (17); Plain Titmouse, 5.0; Warbling Vireo, 5.0; Black-headed Grosbeak, 5.0; Downy Woodpecker, 4.0 (14); Common Yellowthroat, 4.0; Band-tailed Pigeon, 3.0 (10); Nuttall's Woodpecker, 3.0; Northern Flicker, 3.0; Northern Rough-winged Swallow, 3.0; Brown-headed Cowbird, 3.0; Wrentit, 2.5; Ash-throated Flycatcher, 2.0; Bewick's Wren, 2.0; House Finch, 2.0; Acorn Woodpecker, 1.0; Swainson's Thrush, 1.0; Hooded Oriole, 1.0; Red-shouldered Hawk, 0.5; Scrub Jay, +. **Total:** 31 species; 181 territories (619/40 ha). **Visitors:** Turkey Vulture, California Quail, Anna's Hummingbird, Black Phoebe, Common Raven, California Thrasher, Phainopepla, European Starling, Hutton's Vireo, California Towhee. **Remarks:** Despite the disturbance to the habitat (see above), the total number of territories

increased slightly over last yr. However, riparian species decreased while those more common to the surrounding chaparral and oak habitats increased. The most notable changes include: Common Yellowthroat decreased by 11 territories; Mourning Dove increased by five; and Rufous-sided Towhee increased by six. **Other Observers:** William Smith. **Acknowledgments:** The Palomar Audubon Society sponsored this census.

3. WESTERN SYCAMORE WOODLAND WITH SCATTERED OAKS

ARBOLADA DE HIGUERA DE SICOMORO CON ROBLES DISPERSOS

DAVE RIENSCHKE

*Coyote Hills Regional Park
8000 Patterson Ranch Road
Fremont, California 94536*

Location: California; Alameda Co.; Livermore; Sycamore Grove Park (Nature Area); 37°38'N, 121°46'W; Livermore Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 15.9 ha, reduced 5.2 ha from last yr. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):33–34 (1991). **Weather:** Mean start temp., 6.5°C (range 4–9°C). **Coverage:** 41.5 h; 10 visits (10 sunrise); 22, 23, 30 March; 9, 13, 25, 27 April; 1, 7, 16 May. **Census:** European Starling, 32.0 (81; 25N); Bewick's Wren, 6.0 (15); Plain Titmouse, 5.0 (13; 2N); Anna's Hummingbird, 4.0 (10; 1N); Bushtit, 4.0 (2N); Nuttall's Woodpecker, 3.5 (9; 1N); Mourning Dove, 3.0 (8); Rufous-sided Towhee, 3.0; California Towhee, 3.0; Acorn Woodpecker, 2.5; Ash-throated Flycatcher, 2.5 (1N); White-breasted Nuthatch, 2.5 (2N); Scrub Jay, 2.0 (2N); Yellow-billed Magpie, 2.0 (2N); Western Bluebird, 2.0; Brown-headed Cowbird, 2.0; Lesser Goldfinch, 2.0; California Quail, 1.5; Dark-eyed Junco, 1.5; Red-shouldered Hawk, 1.0 (1N); American Kestrel, 1.0; Downy Woodpecker, 1.0; Orange-crowned Warbler, 1.0; Wilson's Warbler, 1.0; Red-winged Blackbird, 1.0; American Robin, 0.5. **Total:** 26 species; 90.5 territories (228/40 ha). **Visitors:** Wood Duck, Mallard, Turkey Vulture, Red-tailed Hawk, Wild Turkey, Killdeer, Common Barn Owl, Western Wood-Pewee, Tree Swallow, Violet Green Swallow, Common Raven, House Wren, Northern Mockingbird, California Thrasher, Warbling Vireo, Yellow Warbler, Lark Sparrow, Brewer's Blackbird, Northern Oriole, Purple Finch, House Finch, American Goldfinch. **Remarks:** The fifth yr of drought conditions. Human interference with stream flow may be causing die-off of sycamores. The decline in the numbers of California Quail, Mourning Dove, Anna's Hummingbird, and Bewick's Wren, as compared to last yr, may be the result of a new observer on the plot. **Acknowledgments:** Dr. Howard Cogswell for providing generous advice and encouragement during the study, and Livermore Area Recreation and Park District staff who kindly arranged for access to the park.

4. MIXED HARDWOOD POLETIMBER

BOSQUE MIXTO MADERERO

ANDREW MAGEE

*White Memorial Conservation Center
Litchfield, Connecticut 06759*

Site Number: CT1265009. **Location:** Connecticut; Litchfield Co.; Litchfield; White Memorial Foundation-Wheeler Hill; 41°42'N, 73°13'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 25 yr. **Size:** 8.5 ha. **Description of Plot:** See *Aud. Field Notes* 19:609–610 (1965). **Weather:** Mean start temp., 22.1°C (range 11–28°C). **Coverage:** 14.8 h; 8 visits (1 sunrise, 4 sunset); 17, 31 May; 1, 7, 8, 11, 21, 22 June. **Census:** Red-eyed Vireo, 8.0 (38); Veery, 6.0 (28); Wood Thrush, 6.0; Common Yellowthroat, 6.0; Gray Catbird, 5.0 (24); Black-and-white Warbler, 5.0; Ovenbird, 5.0; Rufous-sided Towhee, 5.0; Blue Jay, 4.0 (19); Black-capped Chickadee, 4.0; American Redstart, 4.0; American Crow,

2.0; Scarlet Tanager, 2.0; Chestnut-sided Warbler, 1.5; Mourning Dove, 1.0; Eastern Wood-pewee, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; Blue-winged Warbler, 1.0; Northern Cardinal, 1.0; Rose-breasted Grosbeak, 1.0; Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Downy Woodpecker, 0.5; Northern Flicker, 0.5; Great Crested Flycatcher, 0.5; Magnolia Warbler, 0.5; Canada Warbler, 0.5; Wood Duck, +; Sharp-shinned Hawk, +. **Total:** 30 species; 75 territories (353/40 ha). **Remarks:** The number of territories was the lowest in 15 yr and appears to be a continuation of the decline which began in 1983 when 120.5 territories were estimated. The decline probably can be attributed to the change in habitat from an abandoned hillside pasture to a second-growth deciduous forest. Catbirds decreased to five from 12 last yr, and a high of 22 in 1980. Blue-winged Warblers, which peaked in 1980 with 10 territories, decreased to one this yr. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

5. SECOND-GROWTH HARDWOOD FOREST

BOSQUE SECUNDARIO DE MADERAS PURAS

ANDREW MAGEE

*White Memorial Conservation Center
Litchfield, Connecticut 06759*

Site Number: CT2765006. **Location:** Connecticut; Litchfield Co.; Morris; White Memorial Foundation; 41°42'N, 73°12'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 25 yr. **Size:** 10.1 ha. **Description of Plot:** See *Aud. Field Notes* 19:590-591 (1965). **Weather:** Mean start temp., 24°C (range 19-27°C). **Coverage:** 13.5 h; 8 visits (1 sunrise, 3 sunset); 17, 31 May; 1, 8, 11, 12, 21, 22 June. **Census:** Red-eyed Vireo, 16.0 (63); Ovenbird, 12.0 (48); Veery, 8.0 (32); Wood Thrush, 6.0 (24); Scarlet Tanager, 5.0 (20); Common Yellowthroat, 3.5 (14); Tufted Titmouse, 3.0 (12); White-breasted Nuthatch, 3.0; American Robin, 3.0; Chestnut-sided Warbler, 3.0; American Redstart, 3.0; Blue Jay, 2.0; Black-capped Chickadee, 2.0; Black-and-white Warbler, 2.0; Northern Cardinal, 2.0; Barred Owl, 1.5; Pileated Woodpecker, 1.5; Great Crested Flycatcher, 1.5; American Crow, 1.5; Song Sparrow, 1.5; Wood Duck, 1.0; Hairy Woodpecker, 1.0; Eastern Phoebe, 1.0; Red-breasted Nuthatch, 1.0; Blue-gray Gnatcatcher, 1.0; Gray Catbird, 1.0; Brewster's Warbler, 1.0; Golden-winged Warbler, 1.0; Louisiana Waterthrush, 1.0; Rufous-sided Towhee, 1.0; Brown-headed Cowbird, 1.0; Yellow-bellied Sapsucker, 0.5; Downy Woodpecker, 0.5; Solitary Vireo, 0.5; Blackburnian Warbler, 0.5; Rose-breasted Grosbeak, 0.5; Sharp-shinned Hawk, +; Northern Goshawk, +; Red-shouldered Hawk, +; Broad-winged Hawk, +; Red-tailed Hawk, +; Black-billed Cuckoo, +; Northern Oriole, +. **Total:** 43 species; 94.5 territories (374/40 ha). **Remarks:** The number of species observed was above average, but the number of territories was below average. The number of Ovenbirds was the lowest since 1980, and the number of Veery the lowest since 1978. The numbers of Red-eyed Vireo and Wood Thrush were the second highest in 25 yr of censusing. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

6. CENTRAL HARDWOOD FOREST WITH SCATTERED PINE

BOSQUE CENTRAL DE MADERAS DURAS CON PINOS DISPERSOS

MARY E. D'IMPERIO & BOB FORD

*4000 Cathedral Avenue NW, #106B
Washington, DC 20016*

Location: District of Columbia; Washington; Rock Creek Park; 38°57'N, 77°3'W; Washington West Quadrangle, USGS. **Continuity:** Established 1948; 43 yr. **Size:** 26.3 ha. **Description of Plot:** See *Aud. Field Notes* 2:153-154 (1948). **Weather:** Mean start temp., 18.2°C (range 7-32°C). **Coverage:** 41 h; 26 visits (24 sunrise, 2 sunset); 17, 24 March; 7, 10, 18, 21, 25, 28 April; 2, 5, 8, 12, 15, 19 May; 9, 16, 20, 22, 25, 27, 28, 29, 30 June; 3,

7 July. **Census:** Tufted Titmouse, 6.5 (10); Red-eyed Vireo, 6.0 (9); Carolina Wren, 5.5 (8); Ovenbird, 5.5; Red-bellied Woodpecker, 4.5 (7); Veery, 4.0 (6); Wood Thrush, 4.0; Scarlet Tanager, 3.5 (5); Acadian Flycatcher, 3.0 (5); Carolina Chickadee, 3.0; Rufous-sided Towhee, 3.0; Northern Flicker, 2.0; White-breasted Nuthatch, 2.0; Downy Woodpecker, 1.5; Northern Cardinal, 1.5; Hairy Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; Yellow-billed Cuckoo, 0.5; Pileated Woodpecker, 0.5; Brown-headed Cowbird, 0.5; Mourning Dove, +; Great Crested Flycatcher, +; Blue Jay, +; American Crow, +; Blue-gray Gnatcatcher, +; Louisiana Waterthrush, +; Indigo Bunting, +. **Total:** 27 species; 59 territories (90/40 ha). **Visitors:** Broad-winged Hawk, Eastern Screech-Owl, House Wren, Gray Catbird, Yellow-throated Vireo, Northern Parula, American Redstart, Common Yellowthroat, House Sparrow. **Remarks:** Migrants are doing well for the most part, increasing or holding at relatively high levels for recent yr. **Other Observers:** Robert Hilton.

7. MIXED UPLAND BROADLEAF FOREST

BOSQUE MIXTO DE HOJA ANCHA DE ALTURAS

SHIRLEY A. BRIGGS

7605 Honeywell Lane
Bethesda, Maryland 20814

Site Number: DC1060009. **Location:** District of Columbia; D.C. Co.; Washington, D.C.; Glover-Archbold Park; 38°55'N, 77°5'W; Washington West Quadrangle, USGS. **Continuity:** Established 1959; 33 yr. **Size:** 14.2 ha. **Description of Plot:** See *Aud. Field Notes* 14:502-503 (1960). **Weather:** Mean start temp., 20.2°C (range 9-29°C). **Coverage:** 107.5 h; 27 visits (24 sunrise); 6, 7, 12, 17, 19, 25, 26, 28 April; 2, 7, 8, 11, 12, 16, 20, 23, 24 May; 5, 6, 7, 8, 14, 15, 22, 24, 26 June. **Census:** Carolina Wren, 26.0 (73; 1N); Northern Cardinal, 25.0 (70); Gray Catbird, 24.0 (68); Carolina Chickadee, 20.0 (56; 1N); Tufted Titmouse, 19.0 (54; 2N); Rufous-sided Towhee, 14.0 (39; 1FL); Red-bellied Woodpecker, 13.0 (37); Red-eyed Vireo, 13.0; Veery, 11.0 (31); Wood Thrush, 8.0 (23); Downy Woodpecker, 7.0 (20); Acadian Flycatcher, 7.0; Northern Flicker, 5.5 (15); Blue Jay, 4.0 (11); American Crow, 4.0 (1N); White-breasted Nuthatch, 4.0; American Redstart, 4.0; Common Yellowthroat, 4.0; Northern Parula, 3.0 (8); Common Grackle, 3.0; European Starling, 2.5 (1FL); Mourning Dove, 2.0; Hairy Woodpecker, 2.0; House Wren, 2.0 (2N); Blue-gray Gnatcatcher, 2.0; American Robin, 2.0 (1FL); House Finch, 2.0; House Sparrow, 2.0; Eastern Screech-Owl, 1.0 (2FL); Ruby-throated Hummingbird, 1.0; Pileated Woodpecker, 1.0; Great Crested Flycatcher, 1.0; White-eyed Vireo, 1.0; Ovenbird, 1.0; Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Chimney Swift, +; Eastern Wood-Pewee, +; Eastern Phoebe, +; Northern Mockingbird, +. **Total:** 40 species; 243 territories (685/40 ha). **Visitors:** Great Blue Heron, Black-crowned Night-Heron, Mallard, Wood Duck, Red-tailed Hawk, Red-shouldered Hawk, Rock Dove, Louisiana Waterthrush, Kentucky Warbler, Hooded Warbler, Scarlet Tanager, American Goldfinch. **Remarks:** This year's total number of species equalled the former high in 1988. The total number of territories is the highest on record. However, since several neotropical migrants disappeared from the area in the late 1960's, the high density is being maintained by increases in residents and short-distant migrants. American Redstarts and Acadian Flycatchers have increased, and Northern Parula was present for the first time since 1973. Hooded and Kentucky Warblers were at least visitors. **Other Observers:** Mary D'Imperio, Ann Feather.

8. MATURE BEECH-MAGNOLIA FOREST

BOSQUE DE HAYA-MAGNOLIA MADURO

RICHARD BREWER

Department of Biological Sciences
Western Michigan University
Kalamazoo, Michigan 49008-3899

Location: Florida; Leon Co.; Tallahassee; Woodyard Hammock; 30°40'N, 84°15'W; Beachton Quadrangle, USGS. **Continuity:** Established 1980; 4 yr. **Size:** 15.7 ha. **Description of**

Plot: See *Am. Birds* 35:58 (1981). As an aftermath of Hurricane Kate (1985), dense subcanopy vegetation occupies the E half of the S third of the plot. A bulldozer track that removed subcanopy and understory vegetation and litter was run (fall 1990) across 175 m of the NW and NE corners of the plot. It had no obvious effect on the distribution of bird territories. **Weather:** No data provided. An unusually wet breeding season. The stream flowed throughout the period, the 0.25 ha gum pond was full of water, and another small pond (0.06 ha) was also full until the second week of May. **Coverage:** 140 h; 28 visits; 9 April–9 June. **Census:** Northern Parula, 26.0 (66; N); Acadian Flycatcher, 12.5 (32; 6N); Red-eyed Vireo, 10.0 (25); Hooded Warbler, 10.0; White-eyed Vireo, 9.0 (23); Northern Cardinal, 7.5 (19); Yellow-billed Cuckoo, 7.0 (18); Tufted Titmouse, 7.0; Great Crested Flycatcher, 5.5 (14; 1N); Kentucky Warbler, 5.5; Red-bellied Woodpecker, 4.0 (10); Carolina Wren, 3.5 (9); Ruby-throated Hummingbird, 2.0; Carolina Chickadee, 2.0; Pine Warbler, 2.0; Louisiana Waterthrush, 2.0 (1FL); Barred Owl, 1.0; Pileated Woodpecker, 1.0; Blue-gray Gnatcatcher, 1.0; Wood Thrush, 1.0; Yellow-throated Vireo, 1.0; Summer Tanager, 1.0; Rufous-sided Towhee, 1.0 (FL); Wood Duck, +; Red-shouldered Hawk, +; Downy Woodpecker, +; White-breasted Nuthatch, +; Brown-headed Cowbird, +. **Total:** 28 species; 123.5 territories (315/40 ha). **Visitors:** Wild Turkey, Mourning Dove, American Crow, Blue Jay, Prothonotary Warbler. **Remarks:** Numbers of Carolina Wrens have decreased to pre-Hurricane Kate levels. Notably abundant compared with earlier censuses were Yellow-billed Cuckoo, Northern Parula, and Hooded and Kentucky Warblers. **Acknowledgments:** Thanks to Todd Engstrom for helpful discussion, Tall Timbers Research Station for permission to conduct the census, and the Dept. of Biological Science, Florida State University, for office space and other facilities.

9. WHITE ALDER–BLACK LOCUST–HACKBERRY RIPARIAN BOSQUE RIVEREÑO DE ALISO BLANCO–ACACIA NEGRA–“HACKBERRY”

C. B. GOBLE

728 Homestead
Moscow, Idaho 83843

Site Number: ID6591059. **Location:** Idaho; Idaho Co.; Lucile; China Creek; 45°33'N, 116°18'W; Lucile Quadrangle, USGS. **Continuity:** New. **Size:** 5.3 ha. **Description of Plot:** A narrow rectangular plot (75 × 525 m) adjacent to China Creek, a third order tributary of the Salmon River situated in a steep canyon. The plot is dominated by riparian and adjacent shrub/tree communities. The dominant riparian overstory is White Alder/Black Cottonwood with adjacent communities of Net Hackberry/Black Hawthorn. An old homestead within the riparian area includes Black Locust and several fruit trees including Sour Cherry and *Malus pumila*. The age of the overstory is estimated to be between 31 and 60 yr. Less than 25% of the plot is covered by standing water during the breeding season. Adjacent grassland outside the plot boundaries includes Bluebunch Wheatgrass–Sandberg's Bluegrass–Arrowleaf Balsamroot communities, and Bluebunch Wheatgrass–annual *Bromus* communities. Historic and current livestock grazing has been the dominant influence on the plot's vegetation. The area is grazed during the fall, winter, and spring. **Edge:** China Creek and grasslands (see above). Less than 25% of the plot's perimeter is surrounded by the same habitat. **Topography and Elevation:** The plot's uneven slope has a grade >16%. Minimum elevation 488 m, maximum 549m. **Weather:** Mean start temp., 10°C (range 5–16°C). **Coverage:** 36.8 h; 12 visits (12 sunrise); 3, 4, 5, 6, 10, 11, 12, 13, 18, 19, 20, 21 June. **Census:** Lazuli Bunting, 10.0 (75; 2N); Yellow Warbler, 7.0 (53; 2N); Warbling Vireo, 6.0 (45; 1N); Red-eyed Vireo, 6.0; American Robin, 4.0 (30; 2N); Western Wood-Pewee, 3.0 (23); Yellow-breasted Chat, 2.0 (1N); Western Tanager, 2.0 (1N); Chipping Sparrow, 2.0; Brown-headed Cowbird, 2.0; Northern Oriole, 2.0 (1N); Mountain Quail, 1.0; Common Barn-Owl, 1.0; Barred Owl, 1.0; Black-chinned Hummingbird, 1.0; Northern Flicker, 1.0. **Total:** 16 species; 51 territories (385/40 ha). **Visitors:** Sharp-shinned Hawk, Mourning Dove, Common Nighthawk, Black-capped Chickadee, Cedar Waxwing, Northern Rough-winged Swallow, Wilson's Warbler, American Goldfinch. **Remarks:** Sixteen species were

either confirmed or assumed nesting on the plot. Eight other species were seen regularly in the riparian area, but probably nested elsewhere. Northern Rough-winged Swallows, which fed over the census plot on a daily basis, were too numerous to count. Vaux's Swift were observed feeding over the riparian zone twice. **Acknowledgments:** The Bureau of Land Management, Coeur d'Alene District, provided funding. Appreciation is extended to Dale Goble and Craig Johnson, BLM Area Biologist, for their help in establishing the plot.

10. DISTURBED DECIDUOUS FOREST

BOSQUE DECIDUO ALTERADO

KRISTEN MITCHELL & ROGER L. BOYD

*Biology Department
Baker University
Baldwin City, Kansas 66006*

Location: Kansas; Douglas Co.; Baldwin City; Ivan Boyd Woods; 38°48'N, 95°10'W; Baldwin City Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 16.2 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):15-16 (1989). Longitude was reported incorrectly in volume 62. **Weather:** Mean start temp., 23.1°C (range 18-26°C). **Coverage:** 12.8 h; 8 visits (7 sunrise); 23, 27, 31 May; 2, 5, 8, 14, 28 June. **Census:** Northern Cardinal, 5.5 (14); Tufted Titmouse, 4.0 (10); Great Crested Flycatcher, 3.5 (9); Yellow-billed Cuckoo, 3.0 (7); Downy Woodpecker, 3.0; Red-eyed Vireo, 3.0; Summer Tanager, 3.0; Red-bellied Woodpecker, 2.0; Eastern Wood-Pewee, 2.0; Carolina Wren, 2.0; Indigo Bunting, 2.0; Field Sparrow, 2.0; Blue Jay, 1.5; Black-capped Chickadee, 1.0; White-breasted Nuthatch, 1.0; Rufous-sided Towhee, 1.0; Brown-headed Cowbird, 1.0; Northern Bobwhite, 0.5 (1N, 1FL); Whip-poor-will, 0.5; Northern Oriole, 0.5. **Total:** 20 species; 42 territories (104/40 ha). **Visitors:** Ruby-throated Hummingbird, Northern Flicker, American Crow, Wood Thrush, Northern Parula, Red-winged Blackbird, Eastern Meadowlark, Northern Oriole. **Acknowledgments:** We would like to thank Tom and Fran Manson for permission to use the area.

11. OAK-HICKORY FOREST I

BOSQUE DE ROBLE-NOGAL I

KRISTEN MITCHELL & ROGER L. BOYD

*Biology Department
Baker University
Baldwin City, Kansas 66006*

Location: Kansas; Douglas Co.; Baldwin City; Wall Woods (Kansas Ecological Reserve); 38°48'N, 95°12'W; Baldwin City Quadrangle, USGS. **Continuity:** Established 1978; 11 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 33:66 (1979). **Weather:** Mean start temp., 22.3°C (range 19-25°C). **Coverage:** 12.4 h; 8 visits (5 sunrise); 22, 28 May; 5, 10, 18, 23, 25, 26 June. **Census:** Tufted Titmouse, 4.0 (20); Wood Thrush, 3.5 (17); Yellow-billed Cuckoo, 3.0 (15); Great Crested Flycatcher, 3.0; Northern Cardinal, 3.0; Red-bellied Woodpecker, 2.5; Eastern Wood-Pewee, 2.5; Downy Woodpecker, 2.0; Blue Jay, 2.0; White-breasted Nuthatch, 2.0; Red-eyed Vireo, 2.0; Summer Tanager, 2.0; Rose-breasted Grosbeak, 2.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Brown-headed Cowbird, 1.0; Red-tailed Hawk, 0.5 (1N). **Total:** 17 species; 37 territories (183/40 ha). **Visitors:** Turkey Vulture, Black-capped Chickadee, American Crow, Blue-gray Gnatcatcher, American Robin, Cedar Waxwing, Ovenbird, Indigo Bunting. **Acknowledgments:** Our thanks to the Field Research Committee, Division of Biological Sciences at the University of Kansas for the permission to use the study area.

12. OAK-HICKORY FOREST II**BOSQUE DE ROBLE-NOGAL II****KRISTEN MITCHELL & ROGER L. BOYD***Biology Department**Baker University**Baldwin City, Kansas 66006*

Location: Kansas; Douglas Co.; Baldwin City; Cliff Woods (Breidenthal Kansas Ecological Reserves); 38°49'N, 95°12'W; Baldwin City Quadrangle, USGS. **Continuity:** Established 1978; 11 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 33:66 (1979). **Weather:** Mean start temp., 22.7°C (range 19–28°C). **Coverage:** 11.8 h; 8 visits (3 sunrise); 22, 28 May; 3, 7, 9, 15, 23, 26 June. **Census:** Tufted Titmouse, 4.0 (20); Red-eyed Vireo, 3.5 (17); Northern Cardinal, 3.5; Red-bellied Woodpecker, 2.0; Eastern Wood-Pewee, 2.0; Yellow-billed Cuckoo, 1.5; Blue Jay, 1.5; White-breasted Nuthatch, 1.5; Chuck-will's-widow, 1.0 (1N); Hairy Woodpecker, 1.0; Black-capped Chickadee, 1.0; Blue-gray Gnatcatcher, 1.0; Summer Tanager, 1.0. **Total:** 13 species; 24.5 territories (121/40 ha). **Visitors:** Mourning Dove, Barred Owl, Great-crested Flycatcher, American Crow, Wood Thrush, Northern Parula, Ovenbird, Rose-breasted Grosbeak, Indigo Bunting. **Acknowledgments:** Our thanks to the Field Research Committee, Division of Biological Sciences at the University of Kansas and Mr. and Mrs. Earl Cutler for the permission to use the study area.

13. OAK-HICKORY FOREST III**BOSQUE DE ROBLE-NOGAL III****KRISTEN MITCHELL & ROGER L. BOYD***Biology Department**Baker University**Baldwin City, Kansas 66006*

Location: Kansas; Douglas Co.; Baldwin City; Breidenthal Woods (Kansas Ecological Reserves); 38°49'N, 95°11'W; Baldwin City Quadrangle, USGS. **Continuity:** Established 1978; 4 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 33:66 (1979). An area of one ha was disturbed by the placement of a road to a future home site. A few trees were cut and the entire area was mowed creating a "park-like" setting. In addition, several serpentine trails have been cleared and mowed through three ha of the plot. **Weather:** Mean start temp., 23.1°C (range 17–30°C). **Coverage:** 12.5 h; 9 visits (4 sunrise, 0 sunset); 27, 29, 31 May; 2, 5, 7, 9, 14, 23 June. **Census:** Northern Cardinal, 5.0 (25); Red-bellied Woodpecker, 3.5 (17); Tufted Titmouse, 3.5; Yellow-billed Cuckoo, 3.0 (15); Great Crested Flycatcher, 3.0; Red-eyed Vireo, 3.0; Eastern Wood-Pewee, 2.5; Downy Woodpecker, 2.0; Northern Parula, 2.0; Summer Tanager, 2.0; Blue Jay, 1.5; Blue-gray Gnatcatcher, 1.5; American Robin, 1.5; Acadian Flycatcher, 1.0; Black-capped Chickadee, 1.0; White-breasted Nuthatch, 1.0; Carolina Wren, 1.0; Wood Thrush, 1.0; Kentucky Warbler, 1.0; Scarlet Tanager, 1.0; Brown-headed Cowbird, 1.0; Louisiana Waterthrush, 0.5. **Total:** 22 species; 42.5 territories (210/40 ha). **Visitors:** Ruby-throated Hummingbird, Barred Owl. **Acknowledgments:** Our thanks to the Field Research Committee, Division of Biological Sciences at the University of Kansas and Mr. and Mrs. Bob Allison for the permission to use the study area.

14. RIPARIAN DECIDUOUS WOODLAND**ARBOLADO DECIDUO RIVEREÑO****KRISTEN MITCHELL & ROGER L. BOYD***Biology Department**Baker University**Baldwin City, Kansas 66006*

Site Number: KS3391021. **Location:** Kansas; Douglas Co.; Lawrence; Baker University Wetlands; 38°55'N, 95°13'W; Lawrence East Quadrangle, USGS. **Continuity:** New. **Size:**

10.1 ha. **Description of Plot:** A rectangular plot, 1330 × 67 m, within the floodplain of a 30 m-wide river. The plot's canopy is dominated by Hackberry, Black Walnut, Silver Maple, and Green Ash; the understory by Hackberry, Pawpaw, Wahoo, and Red Elm; ground cover by Virginia Wild Rye, Stinging Nettle, and Black Snake Root. Age of canopy trees, > 50 yr. **Edge:** Similar vegetation is found on the opposite side of the river. **Topography and Elevation:** Plot is flat. Minimum elevation 251 m, maximum 252 m. **Weather:** Mean start temp., 22.8°C (range 20–26°C). **Coverage:** 9.9 h; 9 visits (4 sunrise); 30 May; 3, 4, 8, 14, 17, 24, 27, 28 June. **Census:** Northern Cardinal, 3.5 (14); Yellow-billed Cuckoo, 2.0; Red-bellied Woodpecker, 2.0; Black-capped Chickadee, 2.0; Tufted Titmouse, 2.0; Indigo Bunting, 2.0; Northern Flicker, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; White-breasted Nuthatch, 1.0; Carolina Wren, 1.0 (1N); Eastern Bluebird, 1.0; Red-eyed Vireo, 1.0; Brown-headed Cowbird, 1.0; Northern Oriole, 1.0; Great Horned Owl, 0.5; Barred Owl, 0.5; Downy Woodpecker, 0.5; Hairy Woodpecker, 0.5; Eastern Wood-Pewee, 0.5; Northern Parula, 0.5. **Total:** 21 species; 25.5 territories (101/40 ha). **Visitors:** Northern Bobwhite, American Crow, House Wren, Louisiana Waterthrush, Kentucky Warbler, Common Yellowthroat, Field Sparrow, Common Grackle.

15. OAK–HICKORY NORTHERN HARDWOODS TRANSITION FOREST

BOSQUE NORTEÑO MADURO DE TRANSICION ROBLE–NOGAL

DAVID C. MORIMOTO

Department of Biology

Regis College

235 Wellesley Street

Weston, Massachusetts 02193

Site Number: MA1291049. **Location:** Massachusetts; Middlesex Co.; Weston; Highland Town Forest; 42°21'N, 71°19'W; Framingham Quadrangle, USGS. **Continuity:** New. **Size:** 28.0 ha. **Description of Plot:** A rectangular plot (700 × 400 m) characterized by patchy occurrences of ledge and small stands (ca 1–2 ha) of Eastern Hemlock, Yellow Birch, and White Pine, amidst the dominant cover of Red Oak and Red Maple. Individual White Pines are also distributed widely throughout the site. Also occurring patchily in smaller numbers are Eastern Hophornbeam, American Hornbeam, and Basswood. White Oak, White Birch, White Ash, and hickories also are present. The understory in swampy areas, primarily on the S portion of the plot, is dominated by Spicebush and Sweet Pepperbush. The age of the canopy trees is estimated to be between 61 and 100 yr. Mean canopy height, 20 m (range 9–25 m). One pond 20 m in diameter, one continuously-flowing stream, and two intermittent streams occur on the plot. The plot is located within a 148 ha woodlot that is part of an extensive, well connected network of municipal and private lands dissected by roads and housing developments. **Edge:** More than 75% of the plot's perimeter is bordered by the same habitat. The E boundary abuts a college campus and lacks a well-developed shrub layer. **Topography and Elevation:** The plot lies on a S-facing slope with a grade of < 5%. Minimum elevation, 78 m, maximum, 105 m. **Weather:** Mean start temp., 16.1°C (range 6–26°C). Temperature and precipitation departures, respectively, from the 30-yr mean, May, +2.7°C, -6.6 cm, June, +1.1°C, -0.08 cm. Data source: National Weather Service, Logan Airport and South Weymouth Naval Air Station. **Coverage:** 39.5 h; 8 visits (8 sunrise); 23, 30 May; 6, 16, 20, 22, 25, 28 June. **Census:** Black-capped Chickadee, 22.5 (32; 2N); Ovenbird, 15.0 (21); Rufous-sided Towhee, 11.5 (16); Blue Jay, 11.0 (16); Tufted Titmouse, 9.5 (14); White-breasted Nuthatch, 9.5; Brown-headed Cowbird, 9.0 (13); American Robin, 8.0 (11); Scarlet Tanager, 7.5 (11; 1N); Downy Woodpecker, 7.0 (10); American Goldfinch, 6.0 (9); Brown Creeper, 5.0 (7); Red-breasted Nuthatch, 4.5 (6); Black-throated Green Warbler, 4.5; Hermit Thrush, 3.5 (5; 3FL); Wood Thrush, 3.5; Northern Flicker, 3.0 (4); Great Crested Flycatcher, 3.0; Veery, 3.0; Eastern Wood-Pewee, 2.5; Gray Catbird, 2.0; Chipping Sparrow, 2.0; Northern Oriole, 2.0; Ruffed Grouse, 1.0 (8FL); Mourning Dove, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0 (1N); Winter Wren, 1.0

(3FL); Pine Warbler, 1.0; Northern Cardinal, 1.0; Red-eyed Vireo, 0.5. **Total:** 31 species; 162.5 territories (232/40 ha). **Visitors:** Red-tailed Hawk, Great Horned Owl, Barred Owl, Eastern Kingbird, House Wren, Cedar Waxwing, European Starling, Solitary Vireo, Black-throated Blue Warbler, Common Yellowthroat, Common Grackle, House Finch, House Sparrow. **Remarks:** The Highland Town Forest is managed for selective cutting, which has left the N half of the plot relatively open and attracted birds such as the Rufous-sided Towhee. Potential nest predators observed include, American Crow, Blue Jay, Common Grackle, Red Squirrel, Gray Squirrel, Eastern Chipmunk, Raccoon, and domestic cats. Brown-headed Cowbirds were sighted consistently throughout the 140 ha forest. **Acknowledgments:** I would like to thank Regis College for financial support, and the Weston Conservation Commission and Land's Sake for permission, cooperation, and logistical support.

16. MATURE BEECH-MAPLE-OAK BOTTOMLAND FOREST

BOSQUE INUNDABLE DE HAYA-ARCE-ROBLE MADURO

CHANDLER S. ROBBINS

*U.S. Fish & Wildlife Service
Patuxent Wildlife Research Center
Laurel, Maryland 20708*

Site Number: MD0490088. **Location:** Maryland; Prince George's Co.; Laurel; Patuxent Floodplain Forest; 39°3'N, 76°49'W; Laurel Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 42.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):37-38 (1991). **Weather:** Mean start temp., 15.9°C (range 11-21°C). This was the hottest summer on record in the Washington, D.C. area. Precipitation for May through August was one-third of normal. **Coverage:** 41.7 h; 10 visits (4 sunrise); 26 April; 8, 13, 16, 20, 23, 29 May; 10, 26 June; 11 July. **Census:** Red-eyed Vireo, 61.5 (59; 1N); Ovenbird, 29.0 (28; 1N); Wood Thrush, 25.5 (24; 16N); Tufted Titmouse, 22.5 (21); Acadian Flycatcher, 22.0 (21; 6N); Red-bellied Woodpecker, 11.5 (11); Scarlet Tanager, 8.0 (8); White-breasted Nuthatch, 4.5 (4); Yellow-throated Vireo, 4.5; Brown-headed Cowbird, 4.0 (4; 1N); Hooded Warbler, 3.5 (3); Yellow-billed Cuckoo, 3.0 (3); Carolina Chickadee, 3.0; Carolina Wren, 3.0; Louisiana Waterthrush, 3.0; Eastern Wood-Pewee, 2.5; Wood Duck, 2.0; Downy Woodpecker, 2.0; Hairy Woodpecker, 2.0; Northern Flicker, 2.0; Pileated Woodpecker, 2.0; Blue-gray Gnatcatcher, 2.0; Gray Catbird, 2.0 (2N); White-eyed Vireo, 2.0; Kentucky Warbler, 2.0; Northern Cardinal, 2.0; Mallard, 1.0; Barred Owl, 1.0; Ruby-throated Hummingbird, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; Northern Parula, 1.0; American Redstart, 1.0; Prothonotary Warbler, 1.0; Common Yellowthroat, 1.0; Red-shouldered Hawk, 0.5; American Crow, 0.5; Cerulean Warbler, +. **Total:** 38 species; 241 territories (230/40 ha). **Visitors:** Belted Kingfisher, Eastern Bluebird, American Robin, Pine Warbler, Common Grackle, American Goldfinch. **Remarks:** For the second consecutive yr the Patuxent Wildlife Research Center, including this study site, was sprayed with BT for Gypsy Moth control; defoliation was limited to one or two ha. There was no major change in breeding populations from 1990. **Acknowledgments:** I thank Deanna Dawson, Fred and Jane Fallon, Peter Osenton, and Susan Klugman for helping with nest searches.

17. MATURE DECIDUOUS FLOODPLAIN FOREST

BOSQUE DECIDUO MADURO INUNDABLE

DICK GAUTHEY

*6603 Reynard Drive
Springfield, Virginia 22152*

Location: Maryland; Montgomery Co.; Glen Echo; Cabin John Island; 38°58'N, 77°8'W; Falls Church Quadrangle, USGS. **Continuity:** Established 1946; 41 yr. **Size:** 7.6 ha.

Description of Plot: See *Aud. Field Notes* 1:212–213 (1947). **Weather:** Mean start temp., 13.6°C (range 7–21°C). **Coverage:** 55.3 h; 18 visits (11 sunrise); 6, 11, 13, 16, 20, 25, 27, 30 April; 3, 4, 5, 12, 13, 18, 19, 25 May; 4 June. **Census:** European Starling, 10.0 (53; 10N); Carolina Chickadee, 7.0 (37; 2N,2FL); Tufted Titmouse, 6.0 (32; 1FL); Northern Parula, 6.0; Northern Cardinal, 6.0 (1N,1FL); Red-eyed Vireo, 5.0 (26); Acadian Flycatcher, 4.0 (21); Carolina Wren, 4.0; Yellow-throated Warbler, 3.5 (18); Blue-gray Gnatcatcher, 3.0 (16; 1N); Wood Duck, 2.0 (1N); Red-bellied Woodpecker, 2.0 (1N); Downy Woodpecker, 2.0 (1N); Northern Flicker, 2.0; Great Crested Flycatcher, 2.0; Mourning Dove, 1.0 (1N); Ruby-throated Hummingbird, 1.0; Pileated Woodpecker, 1.0 (1N); Eastern Wood-Pewee, 1.0; American Crow, 1.0 (1FL); White-breasted Nuthatch, 1.0 (1N); Brown-headed Cowbird, 1.0. **Total:** 22 species; 71.5 territories (376/40 ha). **Visitors:** Mallard, Barred Owl, Prothonotary Warbler, Indigo Bunting, Song Sparrow, Common Grackle, House Finch, American Goldfinch. **Remarks:** The total number of territories was slightly above the previous 12-yr mean. The total number of species was somewhat below average as five species that usually breed occurred as visitors only. The 3.5 Yellow-throated Warbler territories was the highest since this species began breeding on the site in 1977. **Other Observers:** John Eliot, Dick Homan, Letty Limbach, Lisa Preis.

18. UPLAND TULIPTREE–MAPLE–OAK FOREST

BOSQUE DE ALAMO–ARCE–ROBLE DE ALTURAS

GERALD E. EINEM

11442 High Hay Drive
Columbia, Maryland 21044

Location: Maryland; Howard Co.; Columbia; Middle Patuxent Environmental Area; 39°12'N, 76°54'W; Clarksville Quadrangle, USGS. **Continuity:** Established 1971; 8 yr. **Size:** 11.9 ha. **Description of Plot:** See *Am. Birds* 25:971 (1971). **Weather:** Mean start temp., 19.7°C (range 4–30°C). Temperature and precipitation departures, respectively, from the 30-yr mean for: May, +4°C, –5.8 cm; June, +1.4°C, –6.8 cm; July, +1.5°C, –5.4 cm. Source: Baltimore Washington International Airport. **Coverage:** 50.5 h; 25 visits (21 sunrise, 4 sunset); 20, 27 April; 4, 5, 11, 12, 18, 19, 21, 25, 26 May; 1, 2, 8, 11, 15, 16, 22, 26, 29, 30 June; 6, 11, 16, 19 July. **Census:** Wood Thrush, 19.0 (64; 1N); Red-eyed Vireo, 19.0 (1N, 2FL + 1 cowbird); Acadian Flycatcher, 11.0 (37; 2N); Red-bellied Woodpecker, 9.0 (30); Hooded Warbler, 9.0; Scarlet Tanager, 9.0; Ovenbird, 8.0 (27); Northern Cardinal, 7.5 (25); Tufted Titmouse, 4.5 (15); Carolina Chickadee, 4.0 (13); Veery, 4.0; Eastern Wood-Pewee, 3.0 (10); Carolina Wren, 3.0; Kentucky Warbler, 3.0; Rufous-sided Towhee, 3.0; Downy Woodpecker, 2.5; White-breasted Nuthatch, 2.5; Blue Jay, 2.0; Yellow-throated Vireo, 2.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Black-and-white Warbler, 1.0; American Redstart, 1.0; Brown-headed Cowbird, 1.0; Mourning Dove, 0.5; Yellow-billed Cuckoo, 0.5; Red-shouldered Hawk, +; American Crow, +; Gray Catbird, +; Louisiana Waterthrush, +. **Total:** 30 species; 131 territories (440/40 ha). **Visitors:** Red-tailed Hawk, Great Horned Owl, Northern Parula, Common Yellowthroat. **Remarks:** Although many forests in this region show extensive Gypsy Moth damage, the trees on this plot experienced little or no damage. The plot was not sprayed for Gypsy Moth Control. Dogwood trees in the forest interior continue to decline as a result of Anthracnose infection. There has been a marked increase in the number of Ovenbirds from zero in 1975 to the current year's highest count. Gray catbirds have decreased from 5.5 in 1974 to less than one quarter of a territory. **Acknowledgments:** I would like to thank Charlie Fuller for his assistance with field work.

19. OLD GROWTH WOODS AND SWAMP FOREST

BOSQUES VIEJOS Y BOSQUES PANTANOSOS

LEAH KNAPP

435 Ferguson Road
Marshall, Michigan 49068

Location: Michigan; Calhoun Co.; Fredonia Township; Jenney Woods Preserve; 42°14'N, 85°3'W. **Continuity:** Established 1989; 3 yr. **Size:** 28.3 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):36 (1990). Major windstorm in March resulted in the loss of many branches and some entire trees creating more openings in the canopy and covering some areas of ground with large amounts of dead wood. **Weather:** Mean start temp., 21.1°C (range 10–27°C). **Coverage:** 24.5 h; 8 visits (4 sunrise, 1 sunset); 20 April; 16, 23, 27 May; 6, 19, 21, 27 June. **Census:** Song Sparrow, 23.0 (33); Common Yellowthroat, 13.0 (19); Eastern Wood-Pewee, 12.0 (17); Tufted Titmouse, 12.0 (1N; 6FL); Northern Cardinal, 12.0 (2FL); Gray Catbird, 11.0 (16); Veery, 10.0 (14); Blue Jay, 9.0 (13; 4FL); Red-eyed Vireo, 8.0 (11); Rose-breasted Grosbeak, 8.0; Yellow Warbler, 7.0 (10); Indigo Bunting, 7.0; American Goldfinch, 7.0; Great Crested Flycatcher, 6.0 (9); Black-capped Chickadee, 6.0 (3FL); Wood Thrush, 6.0; American Robin, 6.0; Scarlet Tanager, 6.0; Brown-headed Cowbird, 5.0 (7); Downy Woodpecker, 4.0 (6; 2N, 1FL); Acadian Flycatcher, 4.0; White-breasted Nuthatch, 4.0; Cedar Waxwing, 4.0; Willow Flycatcher, 3.0 (4); Blue-gray Gnatcatcher, 3.0; Blue-winged Warbler, 3.0; Red-bellied Woodpecker, 2.0; Hairy Woodpecker, 2.0 (1N); American Crow, 2.0 (4FL); Ovenbird, 2.0; Canada Goose, 1.0 (1N); Wood Duck, 1.0 (1N); Mallard, 1.0 (1N); Cooper's Hawk, 1.0 (1N); Red-tailed Hawk, 1.0 (1N); Yellow-billed Cuckoo, 1.0; Great Horned Owl, 1.0; Barred Owl, 1.0; Ruby-throated Hummingbird, 1.0; Northern Flicker, 1.0; Least Flycatcher, 1.0; House Wren, 1.0; Yellow-throated Vireo, 1.0; Black-and-white Warbler, 1.0; American Redstart, 1.0; Red-winged Blackbird, 1.0; Common Grackle, 1.0 (3FL). **Total:** 47 species; 224 territories (320/40 ha). **Visitors:** Turkey Vulture, Ring-necked Pheasant.

20. BASSWOOD-BLACK ASH FOREST WITH DEAD TIMBER

BOSQUE DE TILO AMERICANO-FRESNO NEGRO CON ARBOLES MUERTOS

MELISSA A. IVERSON & AMY STORBAKKEN

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

Site Number: MN2090022. **Location:** Minnesota; Clearwater Co.; Lake Itasca; Bear Paw Point, Itasca State Park; 47°10'N, 95°12'W; Lake Itasca Quadrangle, USGS. **Continuity:** Established 1979; 5 yr. **Size:** 11.5 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.): 40–41 (1991). **Weather:** Mean start temp., 19.8°C (range 16–27°C). **Coverage:** 29.2 h; 8 visits (6 sunrise, 2 sunset); 23, 25, 27, 28, 30 June; 2, 5, 7 July. **Census:** Red-eyed Vireo, 50.5 (176); Common Yellowthroat, 14.5 (50); White-throated Sparrow, 9.0 (31; 10FL); Song Sparrow, 7.0 (24); Black-throated Green Warbler, 6.5 (23); Mourning Warbler, 5.0 (17); Black-and-white Warbler, 4.0 (14); Downy Woodpecker, 3.0 (10; 1N, 1FL); Great Crested Flycatcher, 3.0; Yellow-rumped Warbler, 3.0; Pine Warbler, 3.0; Least Flycatcher, 2.5; Brown Creeper, 2.5; Blackburnian Warbler, 2.5; Hairy Woodpecker, 2.0; Northern Parula, 2.0; Ovenbird, 2.0; Yellow-bellied Sapsucker, 1.0; Pileated Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; Eastern Kingbird, 1.0 (1N); Eastern Bluebird, 1.0; Nashville Warbler, 1.0; Indigo Bunting, 1.0 (3FL); Chipping Sparrow, 1.0; Northern Oriole, 1.0; Purple Finch, 1.0; Swamp Sparrow, 0.5. **Total:** 28 species; 132.5 territories (461/40 ha). **Visitors:** Broad-winged Hawk, Chimney Swift, Ruby-throated Hummingbird, Northern Flicker, Red-headed Woodpecker, Blue Jay, American Crow, Black-capped Chickadee, White-breasted Nuthatch, American Robin, Cedar Waxwing, Chestnut-sided Warbler, Common Grackle, Brown-headed Cowbird, Scarlet Tanager, Pine Siskin, American Goldfinch. **Remarks:** Brown-

headed Cowbirds probably bred on the plot, but we found no evidence of parasitism. The unmated, male Red-headed Woodpecker established a territory in June, but left the area after ca two weeks. **Other Observers:** Dr. David Blockstein, Grant Canterbury. **Acknowledgments:** University of Minnesota Forestry & Biological Station and Itasca State Park.

21. MAPLE-BASSWOOD FOREST

BOSQUE DE ARCE-TILO AMERICANO

ROBERT O'CONNOR & BETSY BENEKE

1353 4th Street North
Fargo, North Dakota 58102

Site Number: MN2091071. **Location:** Minnesota; Becker Co.; Rochert; Tamarac National Wildlife Refuge; 46°57'N, 95°34'W; Height of Land Lake Quadrangle, USGS. **Continuity:** New. **Size:** 13.4 ha. **Description of Plot:** A square plot (366 × 366 m) located in the SE part of the refuge. Most of the E three-quarters of the plot is dominated by Sugar Maple and American Basswood. The W one-quarter is second-growth Quaking Aspen with a small clear-cut. The canopy is closed, and the stand age is 31–60 yr. The mean canopy height is 9 m (range 3–15 m). The understory is dominated by Sugar Maple, Eastern Hophornbeam, and Quaking Aspen. Ground cover is dominated by Large-leaved Aster, Wood Anemone, and moss. Up to 25% of the plot is covered with standing water during the breeding season. **Edge:** More than 75% of the plot's perimeter is surrounded by the same habitat. The plot lies within a tract of similar habitat that is 100–500 ha in size. **Topography and Elevation:** The plot's slope is < 5%. Minimum elevation 448 m, maximum 457 m. **Weather:** Mean start temp., 21.8°C (range 19–29°C). **Coverage:** 16.4 h; 8 visits (4 sunrise); 23, 25, 26, 28 June; 1, 2, 9, 10 July. **Census:** Red-eyed Vireo, 22.5 (67); Ovenbird, 14.0 (42); Yellow-bellied Sapsucker, 2.5 (1N,1FL); American Redstart, 2.5; Scarlet Tanager, 2.5; Least Flycatcher, 2.0; Great Crested Flycatcher, 2.0; White-breasted Nuthatch, 2.0; Chestnut-sided Warbler, 2.0; Eastern Wood-Pewee, 1.0; Black-capped Chickadee, 1.0; Cedar Waxwing, 1.0; Black-throated Green Warbler, 1.0; Indigo Bunting, 1.0; Song Sparrow, 1.0; Downy Woodpecker, 0.5; Pine Warbler, 0.5; Mourning Warbler, 0.5; Common Yellowthroat, 0.5. **Total:** 19 species; 60 territories (179/40 ha). **Visitors:** Red-tailed Hawk, Ruffed Grouse, Ruby-throated Hummingbird, Eastern Phoebe, Blue Jay, American Crow, Golden-winged Warbler, Red-winged Blackbird, Northern Oriole, Brown-headed Cowbird, Rose-breasted Grosbeak, American Goldfinch.

22. MATURE ASPEN FOREST WITH YOUNG MAPLE UNDERSTORY

BOSQUE MADURO DE ALAMO CON JOVEN SOTOBOSQUE DE ALTURAS

J. DANIEL LAMBERT & RANDY SKIBA

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

Site Number: MN2090021. **Location:** Minnesota; Clearwater Co.; Lake Itasca; Itasca State Park-Ozawindib Woods; 47°10'N, 95°10'W; Lake Itasca Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 10.0 ha. **Description of Plot:** *J. Field Ornithol.* 62 (Suppl.):41–42 (1991). **Weather:** Mean start temp., 17.4°C (range 10–29°C). **Coverage:** 23.5 h; 8 visits (7 sunrise, 1 sunset); 19, 22, 26, 29 June; 3, 5, 7, 10 July. **Census:** Red-eyed Vireo, 31.5 (126); Ovenbird, 19.0 (76; 2N); Pine Warbler, 10.0 (40); Veery, 9.0 (36); Black-throated Green Warbler, 8.0 (32); Common Yellowthroat, 4.5 (18); Eastern Wood-Pewee, 4.0 (16); Yellow-bellied Sapsucker, 2.5; Chestnut-sided Warbler, 2.5; Brown Creeper, 2.0; American Redstart, 2.0; Canada Warbler, 2.0; Nashville Warbler, 1.5; Ruffed Grouse, 1.0; Hairy Woodpecker, 1.0 (1N); Eastern Phoebe, 1.0 (1N); Great Crested Flycatcher, 1.0; Scarlet Tanager, 1.0; Song Sparrow, +. **Total:** 19 species; 103.5 territories

(414/40 ha). **Visitors:** Great Blue Heron, American Woodcock, American Crow, Blue Jay, White-breasted Nuthatch, Red-breasted Nuthatch, Black-capped Chickadee, Brown-headed Cowbird. **Remarks:** Brown-headed Cowbirds may have bred on the plot, but we found no evidence of parasitism. **Other Observers:** Dr. David Blockstein, Grant Canterbury. **Acknowledgments:** University of Minnesota Forestry & Biological Station and Itasca State Park.

23. UPLAND SECOND-GROWTH OAK-HICKORY FOREST

BOSQUE SECUNDARIO ROBLE-NOGAL DE ALTURAS

HAL MOORE

1 Lakeside Drive

Vicksburg, Mississippi 39180

Location: Mississippi; Warren Co.; Vicksburg; Lake Park Area; 32°14'N, 90°49'W; Big Black Quadrangle, USGS. **Continuity:** Established 1989; 3 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):8-9 (1990). **Weather:** Mean start temp., 17.8°C (range 11-23°C). Rainfall very high during period, with > 20 cm in May. **Coverage:** 24.5 h; 12 visits (12 sunrise); 30 April; 1, 2, 6, 7, 10, 11, 15, 20, 24, 25 May; 1 June. **Census:** Northern Cardinal, 16.0 (64); White-eyed Vireo, 14.0 (56); Tufted Titmouse, 13.0 (52); Red-eyed Vireo, 13.0; Red-bellied Woodpecker, 12.0 (48); Acadian Flycatcher, 12.0; Carolina Wren, 9.0 (36); Hooded Warbler, 9.0; Wood Thrush, 7.0 (28); Yellow-billed Cuckoo, 6.0 (24); Kentucky Warbler, 6.0; Summer Tanager, 5.0 (20); Blue-gray Gnatcatcher, 4.0 (16); Swainson's Warbler, 4.0; Great Crested Flycatcher, 3.0 (12); American Crow, 3.0; Carolina Chickadee, 3.0; Blue Jay, 2.0; Yellow-throated Vireo, 2.0; Prothonotary Warbler, 2.0; Brown-headed Cowbird, 2.0; Orchard Oriole, 2.0; Worm-eating Warbler, 1.5; Mississippi Kite, 1.0; Red-shouldered Hawk, 1.0; Broad-winged Hawk, 1.0; Barred Owl, 1.0; Ruby-throated Hummingbird, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Fish Crow, 1.0; Louisiana Waterthrush, 1.0; Rufous-sided Towhee, 1.0; Northern Oriole, 1.0; Brown Thrasher, 0.5. **Total:** 36 species; 163 territories (652/40 ha). **Visitors:** Gray Catbird.

24. FLOODPLAIN FOREST

BOSQUE INUNDABLE

HELMUT & NANCY MUELLER

Department of Biology

3280 Coker Hall

University of North Carolina

Chapel Hill, North Carolina 27599

Location: North Carolina; Orange Co.; Chapel Hill; Big Oak Woods; 35°53'N, 79°0'W; Chapel Hill Quadrangle, USGS. **Continuity:** Established 1977; 15 yr. **Size:** 12.6 ha. **Description of Plot:** See *Am. Birds* 32:63 (1978). As a result of the breaching of the beaver dam, there no longer is permanent water in the S end of the plot. **Weather:** No data provided. **Coverage:** 21.8 h; 10 visits (6 sunrise); 24 April; 1, 8, 12, 22, 27, 28 May; 11, 24, 29 June. **Census:** Red-eyed Vireo, 23.0 (73); Acadian Flycatcher, 10.0 (32); Northern Cardinal, 5.0 (16.0; FL); Tufted Titmouse, 4.5 (14); Carolina Wren, 4.5; Kentucky Warbler, 4.5 (1N, FL); Carolina Chickadee, 4.0 (13; FL); Blue-gray Gnatcatcher, 4.0; Ruby-throated Hummingbird, 3.0 (10); Yellow-throated Vireo, 3.0; Hooded Warbler, 3.0; Red-bellied Woodpecker, 2.0; White-breasted Nuthatch, 2.0; Ovenbird, 2.0; Downy Woodpecker, 1.5 (1N); Summer Tanager, 1.5; Yellow-billed Cuckoo, 1.0; Hairy Woodpecker, 1.0; Eastern Wood-pewee, 1.0; Great Crested Flycatcher, 1.0; Northern Parula, 1.0; American Redstart, 1.0; Louisiana Waterthrush, 1.0; Common Yellowthroat, 1.0; Red-headed Woodpecker, + (FL); Pileated Woodpecker, +; American Crow, +; Eastern Bluebird, +; European Starling, +;

Brown-headed Cowbird, +. **Total:** 30 species; 85.5 territories (271/40 ha). **Visitors:** White-eyed Vireo, Scarlet Tanager, American Goldfinch, Indigo Bunting, Common Grackle. **Remarks:** A Red-shouldered Hawk nest was found 50 m E of the plot. **Other Observers:** R.H. Wiley, W. Lancaster, M. Green.

25. MIXED DECIDUOUS FOREST

BOSQUE MIXTO DECIDUO

HELMUT & NANCY MUELLER

Department of Biology

3280 Coker Hall

University of North Carolina

Chapel Hill, North Carolina 27599

Location: North Carolina; Orange Co.; Chapel Hill; Botanical Garden Research Area; 35°54'N, 79°1'W; Chapel Hill Quadrangle, USGS. **Continuity:** Established 1976; 16 yr. **Size:** 12.6 ha. **Description of Plot:** See *Am. Birds* 31:41 (1977). **Weather:** No data provided. **Coverage:** 17.9 h; 10 visits (7 sunrise); 27, 29 April; 8, 14, 24, 28 May; 11, 14, 24, 26 June. **Census:** Red-eyed Vireo, 12.0 (38); Tufted Titmouse, 6.5 (21.0; FL); Acadian Flycatcher, 6.0 (19); Carolina Chickadee, 5.0 (16; FL); Carolina Wren, 5.0; Wood Thrush, 5.0; Blue-gray Gnatcatcher, 4.0 (13); Northern Cardinal, 4.0; Ovenbird, 3.5 (11; FL); Ruby-throated Hummingbird, 3.0 (10); Hooded Warbler, 3.0; Pine Warbler, 2.5; Mourning Dove, 2.0; Red-bellied Woodpecker, 2.0; Downy Woodpecker, 2.0; Hairy Woodpecker, 2.0 (FL); Great Crested Flycatcher, 2.0; White-breasted Nuthatch, 2.0; Yellow-throated Vireo, 2.0; Summer Tanager, 2.0; Scarlet Tanager, 2.0; Yellow-billed Cuckoo, 1.0; Red-shouldered Hawk, +; Barred Owl, +; Blue Jay, + (1FL); Brown-headed Cowbird, +. **Total:** 26 species; 78.5 territories (249/40 ha). **Visitors:** Northern Flicker, American Goldfinch. **Remarks:** A Red-shouldered Hawk nested 20 m E of the plot. **Other Observers:** R.H. Wiley, W. Lancaster.

26. ISOLATED BEECH-MAPLE WOODS

BOSQUE AISLADO DE HAYA-ARCE

ROBERT M. MARSHALL

Cornell Laboratory of Ornithology

159 Sapsucker Woods Road

Ithaca, New York 14850

Location: New York; Tompkins Co.; Ithaca; Sapsucker Woods (West); 42°29'N, 76°27'W; Ithaca East Quadrangle, USGS. **Continuity:** Established 1989; 3 yr. **Size:** 13.5 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):37-38 (1990). **Weather:** Mean start temp., 14.4°C (range 6-30°C). **Coverage:** 15.6 h; 9 visits (7 sunrise); 24 April; 1 May; 3, 5, 7, 15, 18, 21, 25 June. **Census:** Red-eyed Vireo, 8.0 (24); Ovenbird, 4.0 (12; 2N); Eastern Wood-Pewee, 3.5 (10); Great Crested Flycatcher, 3.0 (9); Brown Creeper, 3.0; Black-capped Chickadee, 2.5; Tufted Titmouse, 2.0; Wood Duck, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0 (1FL); American Crow, 1.0 (1N); White-breasted Nuthatch, 1.0 (1FL); Blue-gray Gnatcatcher, 1.0; Veery, 1.0; American Robin, 1.0; European Starling, 1.0; Wood Thrush, 0.5; Common Grackle, 0.5; Red-bellied Woodpecker, +; Northern Flicker, +. **Total:** 20 species; 36 territories (107/40 ha). **Visitors:** Mallard, American Woodcock, Eastern Phoebe, Least Flycatcher, Blue Jay, Cedar Waxwing, Solitary Vireo, Northern Cardinal, Red-winged Blackbird, Scarlet Tanager. **Remarks:** Both Ovenbird nests were destroyed by predators during the nestling stage. The total number of territories occurring on the plot has fluctuated markedly since the first census in 1989 when 53 territories were found; in 1990, 67 were found, and in 1991 only 37. Scarlet Tanagers did not appear on the plot until 20 June. **Other Observers:** Steven E. Reinert.

27. ISOLATED MAPLE-BIRCH-ASH SWAMP

ANEGADO AISLADO DE ARCE-ABEDUL-FRESNO

ROBERT M. MARSHALL

*Cornell Laboratory of Ornithology
159 Sapsucker Woods Road
Ithaca, New York 14850*

Site Number: NY2491013. **Location:** New York; Tompkins Co.; Dryden; Sapsucker Woods (East); 42°29'N, 76°27'W; Ithaca East Quadrangle, USGS. **Continuity:** New. **Size:** 17.3 ha. **Description of Plot:** See WBPS #7. **Weather:** Mean start temp., 14.1°C (range 8–19°C). **Coverage:** 10.5 h; 7 visits (6 sunrise); 26 April; 4, 6, 17, 20, 24, 28 June. **Census:** Eastern Wood-Pewee, 4.0 (9); Ovenbird, 4.0 (1N,1FL); Red-eyed Vireo, 3.5 (8); Veery, 3.0 (7); Northern Waterthrush, 3.0; Great Crested Flycatcher, 2.0 (1FL); Brown Creeper, 2.0; Common Yellowthroat, 2.0 (1FL); Yellow-bellied Sapsucker, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0 (1FL); Black-capped Chickadee, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; American Robin, 1.0; Scarlet Tanager, 1.0; Northern Cardinal, 1.0 (1FL); Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Red-bellied Woodpecker, 0.5; House Wren, 0.5; Canada Goose, +. **Total:** 23 species; 36.5 territories (84/40 ha). **Visitors:** Green-backed Heron, Wood Duck, Sharp-shinned Hawk, Great Horned Owl, Belted Kingfisher, Northern Flicker, Eastern Phoebe, Blue Jay, American Crow, Blue-gray Gnatcatcher, Hermit Thrush, Rose-breasted Grosbeak, Swamp Sparrow. **Remarks:** This is the same plot censused by Litwin in 1979–80 (see WBPS #7), who compared data for those yr with surveys from 1949–50 conducted by Arthur Allen's graduate student, Oliver Owen. Species composition and densities have changed little since 1980 except for the following: Black-capped Chickadee has declined from 7.5 territories in 1980 to one this yr; Brown-headed Cowbird from 13 observations in 1980 to zero this yr; and Wood Thrush from 3.5 territories in 1980 to zero this yr. Scarlet Tanagers were not observed until 20 June.

28. MATURE URBAN DECIDUOUS FOREST I

BOSQUE DECIDUO MADURO URBANO I

DAVID S. KÜNSTLER

*City of New York Dept. of Parks & Recreation
Van Cortlandt and Pelham Bay Parks Administrator's Office
1 Bronx River Parkway
Bronx, New York 10462*

Site Number: NY0989093. **Location:** New York; Bronx Co.; Hunter Island, Pelham Bay Park; 40°52'N, 73°47'W; Mount Vernon Quadrangle, USGS. **Continuity:** Established 1987; 5 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):38–39 (1990). **Weather:** Mean start temp., 17.3°C (range 9–24°C). **Coverage:** 32.3 h; 8 visits (1 sunrise); 26 April; 3, 7, 15, 23, 31 May; 7, 14 June. **Census:** Common Yellowthroat, 10.0 (40); European Starling, 9.0 (36; 7N); Gray Catbird, 6.0 (24); Tufted Titmouse, 4.0 (16); Downy Woodpecker, 3.5 (14; 1N); Northern Oriole, 3.0 (12.0; 1FL); Rufous-sided Towhee, 2.5; Red-bellied Woodpecker, 2.0; Eastern Wood-Pewee, 2.0; Blue Jay, 2.0; Brown-headed Cowbird, 2.0 (1N); Great Crested Flycatcher, 1.5; House Wren, 1.5; Ring-necked Pheasant, 1.0; Northern Flicker, 1.0; White-breasted Nuthatch, 1.0; American Robin, 1.0 (1N); Northern Cardinal, 1.0; Rose-breasted Grosbeak, 1.0; Hairy Woodpecker, 0.5 (1N); Great Horned Owl, + (1N,3FL); Red-winged Blackbird, +. **Total:** 22 species; 55.5 territories (220/40 ha). **Visitors:** Mourning Dove, American Crow, Black-capped Chickadee, Red-eyed Vireo, Yellow Warbler, Song Sparrow, Common Grackle, House Finch, American Goldfinch. **Remarks:** The Great Horned Owl nested in the same Red Oak as in 1990, and again raised 3 young. A broken House Wren egg was found not far from wren sightings. There was more oriole activity in the middle and E parts of the plot where there is a closed

canopy than in previous yr. **Acknowledgments:** Thanks to Michael Pogue for finding the House Wren egg and to Robert Bealin and Linda L. Dockeray for their support.

29. MATURE URBAN DECIDUOUS FOREST II

BOSQUE DECIDUO MADURO URBANO II

CARL A. JASLOWITZ & DAVID S. KÜNSTLER

124 Gale Place
Bronx, New York 10463

Site Number: NY0991069. **Location:** New York; Bronx Co.; New York City; Northwest Forest, Van Cortlandt Park; 40°54'N, 73°53'W; Yonkers Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** A rectangular plot (250 × 400 m) with a closed-canopy forest (> 100 yr old) dominated by Black Oak, Red Oak, and Tuliptree. The mean canopy height is 24.4 m (range 18.3–30.5 m). The dominant understory vegetation consists of Wild Grape, Asiatic Bittersweet, and Mapleleaf Viburnum. The dominant ground cover includes False Solomon's Seal, Virginia Creeper, and White Wood Aster. The plot is located within a 60 ha forest tract separated from other forested sections to the E and S totalling 276 ha, all of which lie within a 464 ha park. There are two significant "natural" corridors extending N into Westchester County from the park. Areas to the E, S, and W of the park are completely urbanized. The plot is subjected to infrequent fires due to vandalism and recreational use. The last fire burned ca one ha of the N end in October 1987. Since then there have been one to two fires/yr as large as four ha. The plot has 2260 m of trails oriented, mainly, N-S that are used for jogging, running competitions, and horses. **Edge:** More than 75% of the plot's perimeter is surrounded by the same habitat. **Topography and Elevation:** The plot slopes W at a 6–10% grade. Minimum elevation 21 m, maximum 58 m. **Weather:** Mean start temp., 17.9°C (range 10–26°C). **Coverage:** 47.3 h; 14 visits (13 sunrise, 1 sunset); 21, 22, 26, 27, 28, 29 May; 1, 5, 9, 13, 19, 24, 28 June; 5 July. **Census:** American Robin, 16.0 (64; 4N,2FL); Gray Catbird, 7.0 (28); Northern Cardinal, 6.0 (24.0; 2FL); Tufted Titmouse, 5.0 (20; 1N,2FL); Rufous-sided Towhee, 5.0; Blue Jay, 4.5 (18; 1N,1FL); Wood Thrush, 4.5; Brown-headed Cowbird, 3.5 (14); Red-bellied Woodpecker, 3.0 (12); Downy Woodpecker, 3.0 (1N); Black-capped Chickadee, 3.0; Northern Flicker, 2.0; European Starling, 2.0 (1N); Ring-necked Pheasant, 1.5; Hairy Woodpecker, 1.5; Great Crested Flycatcher, 1.0; White-breasted Nuthatch, 1.0; Brown Thrasher, 1.0 (1N); Red-eyed Vireo, 1.0 (3FL); Common Yellowthroat, 1.0; Rose-breasted Grosbeak, 1.0; Eastern Wood-Pewee, 0.5; Common Grackle, + (3FL); House Sparrow, +. **Total:** 24 species; 74 territories (296/40 ha). **Visitors:** Red-tailed Hawk, Mourning Dove, Eastern Kingbird, American Crow, Northern Oriole, Indigo Bunting, American Goldfinch. **Acknowledgments:** Linda Dockeray and Robert Bealin of the park's administration office for their support.

30. MIXED UPLAND FOREST

BOSQUE EN ALTURAS MIXTOS

ROBERT A. LARSEN & BETSY CORNWALL

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

Site Number: NY1383002. **Location:** New York; Ulster Co.; New Paltz; Duck Pond Watershed; 41°46'N, 74°9'W; Mohonk Lake Quadrangle, USGS. **Continuity:** Established 1975; 16 yr. **Size:** 42.3 ha. **Description of Plot:** See *Am. Birds* 29:1083 (1975). No wood cutting or harvesting has been done during the 16-yr period of this census. The size of the plot's trees has increased, as has the number of standing, dead trees. **Weather:** Mean start

temp., 14.7°C (range 7–27°C). **Coverage:** 34.5 h; 15 visits (15 sunrise); 7, 9, 13, 19, 21, 23, 29 May; 2, 3, 5, 8, 10, 16, 18, 25 June. **Census:** Wood Thrush, 9.0 (9); Ovenbird, 9.0; Common Yellowthroat, 7.5 (7); Eastern Wood-Pewee, 7.0 (7); Great Crested Flycatcher, 6.0 (6); Black-and-white Warbler, 6.0; Red-eyed Vireo, 5.0 (5); Worm-eating Warbler, 5.0; Louisiana Waterthrush, 5.0 (2FL); Tufted Titmouse, 4.5 (4; 1N); Song Sparrow, 4.5; American Goldfinch, 4.0 (4); Northern Flicker, 3.5 (3; 1N); Blue Jay, 3.0 (3); White-breasted Nuthatch, 3.0; Gray Catbird, 3.0; Scarlet Tanager, 3.0 (1FL); Black-capped Chickadee, 2.5 (1N); American Redstart, 2.5; Chipping Sparrow, 2.5; Blue-gray Gnatcatcher, 2.0; Blue-winged Warbler, 2.0; Black-throated Green Warbler, 2.0; Brown-headed Cowbird, 2.0; Northern Oriole, 2.0; Red-bellied Woodpecker, 1.5; Hairy Woodpecker, 1.5; Eastern Phoebe, 1.5; Eastern Bluebird, 1.5 (1N); Rufous-sided Towhee, 1.5; Mallard, 1.0; Ruffed Grouse, 1.0; Wild Turkey, 1.0; Mourning Dove, 1.0; Ruby-throated Hummingbird, 1.0 (1N); Downy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Acadian Flycatcher, 1.0; Eastern Kingbird, 1.0 (1N); American Crow, 1.0; Brown Creeper, 1.0; American Robin, 1.0; Cedar Waxwing, 1.0; Solitary Vireo, 1.0; Black-throated Blue Warbler, 1.0; Northern Cardinal, 1.0; Rose-breasted Grosbeak, 1.0; Indigo Bunting, 1.0; Red-winged Blackbird, 1.0; Common Grackle, 1.0; Prairie Warbler, 0.5; Field Sparrow, 0.5. **Total:** 52 species; 134 territories (127/40 ha). **Visitors:** Great Blue Heron, Wood Duck, Belted Kingfisher, Tree Swallow, Barn Swallow, House Wren, European Starling, Brewster's Warbler, Yellow Warbler, Blackburnian Warbler, Dark-eyed Junco. **Remarks:** The Acadian Flycatcher is a recent addition to the Preserve's avifauna. **Other Observers:** Barbara Rubin, Gail Mihocko. **Acknowledgments:** Thanks to the cooperation of the Mohonk Preserve.

31. URBAN DECIDUOUS WETLAND WITH STREAM

ANEGADO DECIDUO URBANO CON ARROYO

CHRISTINA DOWD

Division of Fish and Wildlife

NYS Department of Environmental Conservation

47-40 21 Street

Long Island City, New York 11101

Site Number: NY0991018. **Location:** New York; Richmond Co.; Staten Island; Latourette Park; 40°34'N, 74°8'W; Arthur Kill Quadrangle, USGS. **Continuity:** New. **Size:** 7.0 ha. **Description of Plot:** The study area is located within an 80 ha wooded parcel of the Staten Island Greenbelt, a 1,000 ha natural area managed by the New York City Dept. of Parks and Recreation. The study plot, located in the SW corner of the wooded parcel, is predominantly forested wetland comprised of Red Maple and Spicebush. A stream enters the plot through a 100 m wide wetland corridor along the E boundary. The NE quadrat contains ca 0.15 ha of a five-yr old burn, and 0.85 ha of upland woods is included along the E and N boundaries. The nearest residential development is located 200 m to the NW. **Edge:** A golf course borders on the S and W, and upland woods on the N and E. **Topography and Elevation:** The plot is generally flat, but rises noticeably in the NE corner. Minimum elevation 35 m, maximum 45m. **Weather:** Mean start temp., 15.8°C (range 12–22°C). **Coverage:** 19.3 h; 11 visits (11 sunrise; 21, 24, 28, 31 May; 4, 7, 14, 18, 21, 26, 28 June. **Census:** Gray Catbird, 6.5 (37); House Wren, 4.0 (23); Red-eyed Vireo, 3.5 (20); Wood Thrush, 3.0 (17); Tufted Titmouse, 2.0; Downy Woodpecker, 1.0; Blue Jay, 1.0; Black-capped Chickadee, 1.0; Veery, 1.0; Common Yellowthroat, 1.0; Northern Cardinal, 1.0; Rufous-sided Towhee, 1.0; American Crow, 0.5; Brown Thrasher, 0.5; White-eyed Vireo, +. **Total:** 15 species; 27 territories (154/40 ha). **Visitors:** Red-bellied Woodpecker, Hairy Woodpecker, Eastern Wood-Pewee, Great-crested Flycatcher, Northern Oriole. **Acknowledgments:** The census was conducted with the cooperation of the Office of the Greenbelt, New York City Dept. of Parks and Recreation.

32. WHITE ASH-RED MAPLE FOREST

BOSQUE DE FRESNO BLANCO-ARCE

GEORGE R. MAXWELL

RD1, Box 179C

Red Creek, New York 13143

Location: New York; Wayne Co.; Fair Haven; Metzger Road; 43°20'N, 76°44'W; Oswego Quadrangle, USGS. **Continuity:** Established 1986; 6 yr. **Size:** 16.2 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):29. **Weather:** Mean start temp., 17.7°C (range 12–24°C). **Coverage:** 10 h; 10 visits (6 sunrise, 3 sunset); 22, 27, 29, 30 May; 1, 3, 5, 6, 9, 10 June. **Census:** Yellow Warbler, 12.0 (30); American Robin, 8.0 (20); Wood Thrush, 6.0 (15); Gray Catbird, 5.0 (12); Song Sparrow, 5.0; Common Yellowthroat, 4.0 (10); Northern Oriole, 4.0; Red-eyed Vireo, 3.0 (7); Northern Cardinal, 3.0; Red-winged Blackbird, 3.0; Common Grackle, 3.0; Mourning Dove, 2.0; Eastern Wood-Pewee, 2.0; Black-capped Chickadee, 2.0; House Wren, 2.0; Veery, 2.0; Cedar Waxwing, 2.0; American Redstart, 2.0; Rose-breasted Grosbeak, 2.0; Northern Flicker, 1.0; Willow Flycatcher, 1.0; Least Flycatcher, 1.0; Tree Swallow, 1.0; European Starling, 1.0; Warbling Vireo, 1.0; Ovenbird, 1.0; Chipping Sparrow, 1.0; Brown-headed Cowbird, 1.0; House Finch, 1.0. **Total:** 29 species; 82 territories (202/40 ha). **Visitors:** Ruffed Grouse, Ruby-throated Hummingbird, Red-bellied Woodpecker, Downy Woodpecker, Great-crested Flycatcher, Purple Martin, Blue Jay, Tufted Titmouse, White-breasted Nuthatch, Carolina Wren, Yellow-throated Vireo, Black-and-white Warbler, Scarlet Tanager, American Goldfinch, House Sparrow.

33. MATURE BROADLEAF FOREST

BOSQUE DE HOJA ANCHA MADURO

CHARLES W. SAUNDERS* & DAVID STYER

*5561 Carlsbad Court

Fairfield, Ohio 45014

Site Number: OH1591043. **Location:** Ohio; Hamilton Co.; Harrison; Miami Whitewater Forest; 39°15'N, 84°46'W; Hooven Quadrangle, USGS. **Continuity:** New. **Size:** 16.0 ha. **Description of Plot:** A rectangular plot (440 × 370 m) with a closed canopy dominated by Sugar Maple, White Ash, and White Oak; the understory by Sugar Maple saplings, Flowering Dogwood, and Pawpaw; ground cover by Garlic Mustard, jewelweed, and May Apple. The stand age is > 100 yr. Mean canopy height, 23 m (range 18–30 m). One ephemeral stream crosses the plot. **Edge:** More than 75% of the plot's perimeter is surrounded by the same habitat, and the plot lies within a tract of similar habitat > 100 ha in size. **Topography and Elevation:** Plot consists of an E–W facing slope divided by an ephemeral stream. Plot grade is >16%. Minimum elevation 200 m, maximum 230 m. **Weather:** Mean start temp., 21.6°C (range 16–25°C). **Coverage:** 24.6 h; 10 visits (9 sunrise); 1, 8, 9, 15, 22, 23, 29, 30 June; 4, 6 July. **Census:** Wood Thrush, 11.0 (28; 1N,1FL); Red-eyed Vireo, 6.5 (16); Tufted Titmouse, 6.0 (15); Eastern Wood-Pewee, 5.0 (13); Acadian Flycatcher, 4.5 (11; 1N); White-breasted Nuthatch, 4.5; Downy Woodpecker, 4.0 (10); Scarlet Tanager, 4.0; Red-bellied Woodpecker, 3.5 (9; 2N); Northern Flicker, 3.0 (8); Blue Jay, 3.0; Carolina Chickadee, 3.0; American Robin, 3.0 (1FL); Hooded Warbler, 3.0; Northern Cardinal, 3.0; Brown-headed Cowbird, 3.0; Hairy Woodpecker, 2.0 (2FL); Great Crested Flycatcher, 2.0; Carolina Wren, 2.0; Kentucky Warbler, 2.0; Rose-breasted Grosbeak, 1.5; Yellow-billed Cuckoo, 1.0; Pileated Woodpecker, 1.0; Yellow-throated Vireo, 1.0; Cerulean Warbler, 1.0; Louisiana Waterthrush, 1.0 (1FL); Summer Tanager, 1.0. **Total:** 27 species; 85.5 territories (214/40 ha). **Visitors:** Red-tailed Hawk, Ruby-throated Hummingbird, Ovenbird, Rufous-sided Towhee. **Acknowledgments:** We thank John Klein of the Hamilton County Park District for his advice on site selection, and the Hamilton County Park District for the use of the land.

34. MIXED HARDWOOD SWAMP

BOSQUE PANTANOSO-MIXTO DE MADERAS DURAS

DAVID HOCHADEL

2150 Tibbets-Wick Road
Girard, Ohio 44420-1227

Location: Ohio; Trumbull Co.; North Bloomfield; Mosquito Game Refuge; 41°26'N, 80°46'W; Bristolville Quadrangle, USGS. **Continuity:** Established 1989; 2 yr. **Size:** 12.1 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):78 (1990). **Weather:** Mean start temp., 15.4°C (range 11–18°C). By the end of the nesting season, the area had been declared a federal disaster area due to drought conditions. **Coverage:** 28 h; 8 visits (8 sunrise); 23, 27, 30 May; 3, 6, 10, 13, 17 June. **Census:** Blue-gray Gnatcatcher, 5.5 (18; 1N); House Wren, 5.0 (17; 1N); American Redstart, 5.0; Prothonotary Warbler, 5.0 (3N); Red-eyed Vireo, 4.5 (15); Great Crested Flycatcher, 4.0 (13; 1FL); Brown Creeper, 3.5 (12; 2N); Cerulean Warbler, 3.5; Song Sparrow, 3.5; Eastern Wood-Pewee, 3.0 (10); Acadian Flycatcher, 3.0; American Robin, 3.0 (2FL); Yellow-throated Vireo, 3.0 (1N); Yellow Warbler, 3.0; Red-winged Blackbird, 3.0; Red-bellied Woodpecker, 2.0 (1N); Downy Woodpecker, 2.0; Tufted Titmouse, 2.0; White-breasted Nuthatch, 2.0 (2FL); Tree Swallow, 1.5 (1N); Yellow-billed Cuckoo, 1.0; Hairy Woodpecker, 1.0 (1FL); Northern Flicker, 1.0; Least Flycatcher, 1.0; Black-capped Chickadee, 1.0 (1N); Warbling Vireo, 1.0; Northern Cardinal, 1.0; Rose-breasted Grosbeak, 1.0; Brown-headed Cowbird, 1.0; Gray Catbird, 0.5; Northern Oriole, 0.5 (1N). **Total:** 31 species; 77 territories (255/40 ha). **Visitors:** Great Blue Heron, Canada Goose, Mallard, Blue-winged Teal, Wood Duck, Bald Eagle (imm.), Cooper's Hawk, Mourning Dove, Black-billed Cuckoo, Ruby-throated Hummingbird, Blue Jay, American Crow, Eastern Bluebird, Wood Thrush, Veery, Cedar Waxwing, European Starling, Blue-winged Warbler, Common Grackle, Scarlet Tanager, American Goldfinch. **Remarks:** Only 50% of the plot was covered with standing water as compared to 95% during the most recent count yr, 1989. The severe drought conditions may have affected species abundance. Song Sparrows and Yellow Warblers declined 50% from 1989, while several species showed slight increases. **Acknowledgments:** Thanks to the Ohio Dept. of Natural Resources, Division of Wildlife, for permission to conduct the census.

35. RIPARIAN DECIDUOUS FOREST

BOSQUE RIVEREÑO DECIDUO

ELLIOT J. TRAMER

Department of Biology
The University of Toledo
Toledo, Ohio 43606

Location: Ohio; Lucas Co.; Waterville; Old Canal Lands; 41°28'N, 83°46'W; Grand Rapids Quadrangle, USGS. **Continuity:** Established 1989; 3 yr. **Size:** 18.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):43 (1990). **Weather:** Mean start temp., 20°C (range 12–27°C). Temperatures slightly above average for the period 8 May to 11 July. Precipitation above average in May, below average in June, and normal for first half of July. **Coverage:** 21.5 h; 8 visits (1 sunrise); 8, 29 May; 5, 13, 15, 30 June; 6, 11 July. **Census:** American Robin, 19.5 (43); House Wren, 11.0 (24); Song Sparrow, 9.0 (20); Gray Catbird, 8.0 (18); Northern Cardinal, 7.5 (17); Northern Oriole, 6.0 (13); Eastern Wood-Pewee, 5.0 (11); Wood Thrush, 5.0; Warbling Vireo, 5.0; Common Grackle, 5.0; Mourning Dove, 4.0 (9); Brown-headed Cowbird, 4.0; White-breasted Nuthatch, 3.0 (7); Red-eyed Vireo, 3.0; Rose-breasted Grosbeak, 3.0; Red-winged Blackbird, 3.0; Downy Woodpecker, 2.5; Northern Flicker, 2.5; Blue Jay, 2.5; Tufted Titmouse, 2.5; Indigo Bunting, 2.5; Black-capped Chickadee, 2.0; Carolina Wren, 2.0; Cedar Waxwing, 2.0; European Starling, 2.0; American Goldfinch, 2.0; Ruby-throated Hummingbird, 1.5; Red-headed Woodpecker, 1.0; Red-bellied Woodpecker, 1.0; Hairy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Great

Horned Owl, 0.5; Tree Swallow, 0.5; Yellow Warbler, 0.5; Eastern Kingbird, +. **Total:** 35 species; 130.5 territories (290/40 ha). **Visitors:** Yellow-billed Cuckoo, Blue-gray Gnatcatcher, American Redstart, Scarlet Tanager, Chipping Sparrow, Orchard Oriole, House Finch. **Remarks:** Compared with the 1990 census, Blue Jays, Indigo Buntings, and Warbling Vireos have decreased by at least 50%. The Red-headed Woodpecker was absent during the count period, but began a late nesting attempt on 28 July.

36. DRY COTTONWOOD SAND DUNE

DUNA DE ALAMO SECO

HILLARY SMITH

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°32'N, 80°9'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** Established 1973; 3 yr. **Size:** 10.0 ha. **Description of Plot:** See *Am. Birds* 27:986-987 (1973). This early successional plot is essentially a 1000 × 100 m rectangle, staggered at the eastern end. The dominant canopy tree is Eastern Cottonwood. The understory is open except for scattered plants of Common Juniper, Red Cedar and abundant small individuals of Riverbank Grape. The ground layer is composed of grasses, especially Little Blue-stem and Switch Grass. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 94/ha, total basal area 1.9 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Eastern Cottonwood 90, 96, 98, 100; dead trees and stumps over 2 m tall 4, 4, 2, 10. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5-15 cm) 48, 51, 0.5, 23; B (>15-23 cm) 39, 41, 1.1, 53; C (>23-38 cm) 7, 8, 0.5, 25. Average canopy height 7.3 m (range 3.7-12.8 m, n = 20). Ground cover 43%, canopy cover 18%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 1200. Size class distribution: <0.5 m, 1000; 0.5-1.0 m, 200; >1.0 m, 0. Shrub species in order of total abundance: Riverbank Grape 600 stems <0.5 m, 100 stems 0.5-1.0 m, 0 stems >1.0 m; Eastern Cottonwood 200, 100, 0; Common Juniper 100, 0, 0; Choke Cherry 100, 0, 0. Ground cover species making up 90% of the vegetation, based on cover estimates for 10, 1 × 1 m quadrats or, present in three or more quadrats: Little Blue-stem 39% cover, 7 quadrats; Switch Grass 33, 7; Kentucky Blue Grass 12, 3; Sand Dropseed 7, 6; Beach Grass 5, 3; Canada Blue Grass 2, 5. Other species prominent in the plot, but not recorded in the quadrats or with low total cover: Sweet White Clover, Clammy Ground Cherry, Beach Pea. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: bare sand 43%, litter 42%, wood 6%. **Edge:** Similar habitat to the E and W with open, dry and sparsely vegetated sand dunes to the N. The S edge is bordered by sand beach about 50 m wide and then Lake Erie. **Topography and Elevation:** Minimum elevation 177 m, maximum 180 m. The plot is flat to gently rolling, sloping N and S to a shallow wetland and the waters of Lake Erie, respectively. **Weather:** Mean start temp., 21°C (range 20-22°C). **Coverage:** 23.5 h; 10 visits (8 sunrise, 2 sunset); 6, 13, 16, 17, 20, 21, 25, 26, 30 June; 3 July. **Census:** Red-winged Blackbird, 4.0 (16); Eastern Kingbird, 3.5 (14; 3N); Tree Swallow, 3.5 (3N); Chipping Sparrow, 2.0 (1N); House Wren, 1.0; Field Sparrow, 1.0 (1N); Northern Oriole, 0.5. **Total:** 7 species; 15.5 territories (62/40 ha). **Visitors:** Killdeer, Mourning Dove, Eastern Wood-Pewee, Eastern Bluebird, Brown Thrasher, European Starling, Song Sparrow, Common Grackle. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. This plot is now marginally smaller than when last surveyed in 1973 and 1974 (10.5 ha) due to erosion at the E end. **Other Observers:** Katherine M. Thomas and Peter

S. Burke. **Acknowledgments:** I thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 10 July 1991, and the Canadian Wildlife Service for financial support.

37. RED ASH-RED OAK SAVANNAH

SAVANA DE FRESNO ROJO-ROBLE ROJO

PAUL N. PRIOR

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°14'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** New. **Size:** 10.3 ha. **Description of Plot:** A 700 × 150 m rectangular plot. The dominant canopy trees are Red Ash, Red Oak, and Red Maple. The understory consists of Water Willow and Buttonbush in wet interdune swales and scattered dense patches of Sassafras regeneration and Black Cherry seedlings. The ground layer is a Kentucky Blue Grass grassland with some Canada Blue-joint. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 40/ha, total basal area 7.0 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Red Ash 15, 38, 28, 75; Red Oak 10, 24, 35, 55; Red Maple 7, 18, 14, 65; Ironwood 2, 5, 2, 20; White Oak 1, 3, 7, 10; White Birch 1, 3, 1, 10; Black Oak <1, 1, 4, 5; Black Cherry <1, 1, 3, 5; White Cedar 1, 3, 1, 5; Sassafras <1, 1, 1, 5; Chinquapin Oak <1, 1, 1, 5; dead trees and stumps over 2 m tall 2, 4, 4, 10. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): B (>15–23 cm) 3, 6, <0.1, 1; C (>23–38 cm) 15, 36, 1.1, 15; D (>38–53 cm) 12, 30, 2.0, 28; E (>53–69 cm) 8, 19, 2.2, 31; F (>69–84 cm) 3, 6, 1.1, 16; G (>84–102 cm) 1, 3, 0.7, 9. Average canopy height, 18.3 m (range 9.2–24.9 m, n = 20). Ground cover 84%, canopy cover 51%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 30,300. Size class distribution: <0.5 m, 15,100; 0.5–1.0 m, 7200; >1m, 8000. Shrub species in order of total abundance: Sassafras 11,200 stems <0.5 m, 2600 stems 0.5–1.0 m, 0 stems >1.0 m; Water Willow 1200, 4500, 8000; Black Cherry 1800, 0, 0; Red Maple 300, 0, 0; Red Ash 300, 0, 0; Ironwood 200, 0, 0; Sweetbrier 0, 100, 0; Wild Red Raspberry 100, 0, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Kentucky Blue Grass 56%, 8 quadrats, Canada Blue-joint 15, 8; Clearweed 9, 2; sedge (*Carex pensylvanica*) 5, 2; Common Milkweed 4, 3; Stitchwort 1, 3. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: litter 20%, muck 3%, wood and sticks 2%. **Edge:** Habitat to the E is similar becoming gradually more open. The S merges into a dune swale and the south shore of Long Point. To the N can be found a wide marsh and to the W is a sandy, dry cottonwood habitat. **Topography and Elevation:** Minimum elevation 177 m, maximum 180 m. The plot consists of two dune ridges oriented W to E with small sloughs and swampy areas. **Weather:** Mean start temp., 21°C (range 20–23°C). **Coverage:** 45 h; 11 visits (9 sunrise, 2 sunset); 1, 2, 5, 6, 9, 13, 17, 20, 23, 24 June; 10 July. **Census:** Red-winged Blackbird, 18.0 (70; 3N,4FL); Song Sparrow, 14.0 (54; 5FL); House Wren, 11.5 (45; 2N); Yellow Warbler, 9.5 (37; 2FL); Eastern Wood-pewee, 9.0 (35; 2N); Tree Swallow, 7.0 (27; 6N); Common Yellowthroat, 7.0; Northern Oriole, 6.0 (23; 4N,9FL); European Starling, 5.5 (21; 3N, 10FL); Eastern Kingbird, 5.0 (19; 2N, 1FL); Common Grackle, 4.5 (17; 6FL); Brown-headed Cowbird, 3.5 (14); Red-eyed Vireo, 3.0 (12); Field Sparrow, 2.5; Downy Woodpecker, 2.0; Great Crested Flycatcher, 2.0; American Goldfinch, 2.0; Northern Flicker, 1.5; Black-capped Chickadee, 1.5; American Woodcock, 1.0 (2FL); Hairy Woodpecker, 1.0; Blue Jay, 1.0 (2FL); Gray Catbird, 1.0; Warbling Vireo, 1.0 (1N); Rufous-sided Towhee, 1.0; Great Horned Owl, + (1FL). **Total:**

26 species; 121 territories (470/40 ha). **Visitors:** Common Snipe, Mourning Dove, Black-billed Cuckoo, Alder Flycatcher, Willow Flycatcher, Least Flycatcher, Carolina Wren, Veery, American Robin, Brown Thrasher, Cedar Waxwing, Chestnut-sided Warbler, Blackburnian Warbler, American Redstart, Ovenbird, Mourning Warbler, Canada Warbler, Scarlet Tanager, Northern Cardinal, Rose-breasted Grosbeak, Indigo Bunting, Chipping Sparrow. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** Peter S. Burke. **Acknowledgments:** I thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 29 June 1991, and the Canadian Wildlife Service for financial support.

38. RED OAK-IRONWOOD SAVANNAH

SAVANA DE ROBLE ROJO-PALO DE HIERRO

PAUL N. PRIOR & MARK J. PALMER

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point Company-Courtright Ridge; 42°34'N, 80°17'W; Big Rice Bay Quadrangle, DEMR. **Continuity:** Established 1979; 2 yr. **Size:** 12.0 ha. **Description of Plot:** See *Am. Birds* 34:65 (1980). A rectangular plot measuring 600 × 200 m. The dominant canopy trees are Red Oak, Ironwood, and Basswood. The understory consists of Water Willow and Buttonbush in wet interdune swales, but is absent elsewhere. The ground layer is composed of Kentucky Blue Grass, Canada Blue-joint, and Cut Grass. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 38/ha, total basal area 7.5 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Red Oak 16, 43, 56, 80; Ironwood 6, 15, 5, 40; Basswood 3, 9, 10, 30; White Oak 2, 6, 5, 25; Red Maple 2, 5, 8, 20; Shagbark Hickory 3, 6, 2, 25; Red Ash 1, 4, 4, 15; Hackberry <1, 1, 3, 5; White Pine <1, 1, <1, 5; White Birch <1, 1, <1, 5; dead trees and stumps over 2 m tall 3, 8, 5, 25. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): B (>15–23 cm) 2, 5, <0.1, 1; C (>23–38 cm) 12, 33, 0.9, 12; D (>38–53 cm) 8, 21, 1.2, 17; E (>53–69 cm) 11, 30, 3.2, 43; F (>69–84 cm) 4, 10, 1.7, 23; G (>84–102 cm) <1, 1, 0.3, 4. Average canopy height, 15.3 m (range 5.4–25.3 m, n = 20). Ground cover 84%, canopy cover 26%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 1000. Size class distribution: <0.5 m, 800; 0.5–1.0 m, 100; >1 m, 100. Shrub species in order of total abundance: Basswood 300 stems <0.5 m, 0 stems 0.5–1.0 m, 0 stems >1 m; Sassafras 300, 0, 0; Riverbank Grape 100, 100, 0; Buttonbush 0, 0, 100; Red Maple 100, 0, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Kentucky Blue Grass 35%, 6 quadrats; Canada Blue-joint 11, 7; Cut Grass 9, 2; Touch-me-not 8, 3, sedge (*Carex pensylvanica*) 7, 4; Leafy Spurge 6, 1; Bur-reed 5, 2; sedge (*C. lacustris*) 4, 4; Clearweed 4, 3; Marsh Fern 4, 2; Canada Thistle 1, 4. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: litter 60%, water 9%, sticks and wood 2%. **Edge:** Similar habitat to the NW opening to the N shore of Lake Erie. Wide reed beds on the SE edge. The SW is delineated by a buttonbush swale and the NE by a deep water slough. **Topography and Elevation:** Minimum elevation 177 m, maximum 180 m. A rolling sand dune ridge extends through the center of the plot interspersed with small ponds and marshy areas. **Weather:** Mean start temp., 20°C (range 18–22°C). **Coverage:** 45 h; 11 visits (9 sunrise, 2 sunset); 5, 6, 8, 13, 14, 15, 18, 19, 21 June; 9 July. **Census:** Red-winged Blackbird, 28.0 (93; 3FL); Song Sparrow, 19.5 (65; 4FL); Eastern Wood-Pewee, 14.5 (48; 2N,2FL); House Wren, 12.5 (42; 2N,1FL); Yellow Warbler, 11.5 (38; 1N); Common Yellowthroat, 9.0 (30);

Tree Swallow, 8.0 (27; 8N,4FL); Eastern Kingbird, 7.5 (25; 1N,2FL); European Starling, 7.5 (2N); Warbling Vireo, 5.5 (18); Common Grackle, 5.5 (1N); Northern Oriole, 5.5 (2N,3FL); Least Flycatcher, 4.0 (13; 3FL); American Goldfinch, 4.0; Black-capped Chickadee, 3.0 (10; 1N); American Redstart, 3.0; Brown-headed Cowbird, 3.0; Downy Woodpecker, 2.5; Great Crested Flycatcher, 2.0; Red-eyed Vireo, 2.0; Great Horned Owl, 1.0 (3FL); Carolina Wren, 1.0; American Robin, 1.0 (1N,1FL); Cedar Waxwing, 1.0; Northern Cardinal, 1.0; Swamp Sparrow, 1.0; Northern Flicker, 0.5. **Total:** 27 species; 164.5 territories (548/40 ha). **Visitors:** Wood Duck, Mallard, American Woodcock, Mourning Dove, Purple Martin, Blue Jay, Marsh Wren, Gray Catbird, Brown Thrasher, Rose-breasted Grosbeak. **Remarks:** The coordinates for latitude and longitude were reported incorrectly in previous yr. This study is part of a long-term study designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. This plot was formerly called "Red Oak-Basswood Savannah." 7.5 ha of this plot were censused in 1979. The enlargement of the plot and re-sampling of the vegetation in 1990 resulted in Ironwood being more important (importance value 60) than Basswood (49), a reversal of the 1979 composition (Ironwood 44, Basswood 56). **Other Observers:** Peter S. Burke. **Acknowledgments:** We thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 3 July 1991, and the Canadian Wildlife Service for financial support.

39. RED OAK-SUGAR MAPLE FOREST

BOSQUE DE ROBLE ROJO-ARCE DULCE

DRIA HOWLETT

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°34'N, 80°15'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** Established 1973; 3 yr. **Size:** 11.0 ha. **Description of Plot:** See *Am. Birds* 27:967 (1973). This plot measures 550 × 200 m. The dominant canopy trees are Red Oak and Sugar Maple. The understory consists of shrubs of Water Willow and Buttonbush in wet interdune swales, but is absent elsewhere. The ground layer is composed of Kentucky Blue Grass, Canada Blue-joint and sedge. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 127/ha, total basal area 25.5 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Red Oak 38, 30, 40, 65; Sugar Maple 38, 30, 34, 70; Red Maple 18, 14, 12, 40; Ironwood 6, 5, 1, 20; White Oak 5, 4, 1, 15; Basswood 4, 3, 3, 10; Red Ash 4, 3, 1, 10; Black Cherry 1, 1, 1, 5; dead trees and stumps over 2 m tall 14, 11, 8, 35. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5–15 cm) 6, 5, 0.1, <1; B (>15–23 cm) 8, 6, 0.2, 1; C (>23–38 cm) 25, 20, 1.8, 7; D (>38–53 cm) 46, 36, 7.5, 30; E (>53–69 cm) 24, 19, 7.0, 28; F (>69–84 cm) 14, 11, 6.6, 26; G (>84–102 cm) 3, 3, 2.1, 8. Average canopy height, 21.7 m (range 6.8–35.7 m, n = 20). Ground cover 90%, canopy cover 64%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 8400. Size class distribution: <0.5 m, 8300; 0.5–1.0 m, 100; >1 m, 0. Shrub species in order of total abundance: Sugar Maple 6300 stems <0.5 m, 0 stems 0.5–1.0 m, 0 stems >1.0 m; Red Maple 1000, 0, 0; Black Cherry 300, 0, 0; Common Blackberry 300, 0, 0; Wild Red Raspberry 200, 0, 0; Common Elder 100, 0, 0; White Pine 100, 0, 0; Ironwood 0, 100, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Kentucky Blue Grass 36%, 5 quadrats; Canada Blue-joint 21, 8; sedge (*Carex pensylvanica*) 12, 3; sedge (*C. lacustris*) 8, 1; Clearweed

7, 3; Marsh Fern 5, 1; American Stinging Nettle 4, 3; Stitchwort 1, 3; Common Milkweed <1, 4. Other species prominent in the plot, but not recorded in the quadrats or with low total cover: Hairy Wild Rye and sedge (*C. rosea*). Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: litter 55%, bare soil 4%, wood 2%, muck <1%. **Edge:** The N and S open onto open water, while in the E is a White Spruce plantation and to the W is forested savannah. **Topography and Elevation:** Minimum elevation 177 m, maximum 186 m. Intermittent small ponds and swamps within gently rolling forested hills. **Weather:** Mean start temp., 21°C (range 20–25°C). **Coverage:** 49.3 h; 13 visits (10 sunrise, 2 sunset); 3, 5, 8, 9, 12, 13, 14, 19, 20, 24 June; 10 July. **Census:** Red-winged Blackbird, 15.0 (55); House Wren, 14.0 (51); Song Sparrow, 11.5 (42; 1N); Tree Swallow, 11.0 (40; 3N); Northern Oriole, 11.0 (2N,8FL); Eastern Wood-Pewee, 9.0 (33); Red-eyed Vireo, 9.0; Common Grackle, 7.0 (25; 4FL); Eastern Kingbird, 6.5 (24; 3FL); Yellow Warbler, 5.5 (20); Downy Woodpecker, 4.5 (16); Great Crested Flycatcher, 4.5 (1N); Common Yellowthroat, 4.5; Northern Flicker, 3.0 (11; 1N); Black-capped Chickadee, 2.5; Red-bellied Woodpecker, 2.0; Blue Jay, 2.0; White-breasted Nuthatch, 2.0; American Robin, 2.0; European Starling, 2.0; Northern Cardinal, 2.0; Rufous-sided Towhee, 2.0; American Woodcock, 1.0; Red-headed Woodpecker, 1.0 (1N); Brown-headed Cowbird, 1.0. **Total:** 25 species; 135.5 territories (493/40 ha). **Visitors:** Canada Goose, Mallard, Mourning Dove, Yellow-billed Cuckoo, Acadian Flycatcher, American Crow, Veery, Gray Catbird, Cedar Waxwing, Warbling Vireo, Chestnut-sided Warbler, Black-and-white Warbler, American Redstart, Ovenbird, Indigo Bunting, Swamp Sparrow, American Goldfinch. **Remarks:** The coordinates for latitude and longitude were reported incorrectly in previous yr. This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** Peter S. Burke. **Acknowledgments:** I thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 30 June 1991, and the Canadian Wildlife Service for financial support.

40. RED OAK–SUGAR MAPLE SAVANNAH

SAVANA DE ROBLE ROJO-ARCE DULCE

DRIA HOWLETT

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°34'N, 80°15'W; Big Rice Bay Quadrangle, DEMR. **Continuity:** Established 1979; 2 yr. **Size:** 10.5 ha. **Description of Plot:** See *Am. Birds* 34:51 (1980). This plot measures 300 × 150 m in the SW portion of the plot, and 300 × 200 m in the NE. The dominant canopy trees are Red Oak, Sugar Maple, and Basswood. The understory consists of Water Willow and Buttonbush in wet interdune swales, but is absent elsewhere except for occasional individuals of Sweetbrier. The ground layer is composed of Kentucky Blue Grass, sedge (*Carex pensylvanica*), Canada Blue-joint, and Common Milkweed. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 46/ha, total basal area 11.6 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Red Oak 15, 33, 35, 85; Sugar Maple 6, 13, 22, 40; Basswood 6, 14, 15, 45; Red Maple 5, 10, 7, 35; Red Ash 4, 9, 7, 30; Ironwood 3, 6, 1, 25; White Oak 2, 5, 3, 20; Black Cherry 1, 3, 2, 10; White Pine <1, 1, 1, 5; dead trees and stumps over 2 m tall, 4, 8, 7, 30. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): B (>15–23 cm) 1, 3, <0.1, <1; C (>23–38 cm) 9, 15, 0.6, 4; D (>38–53 cm) 19, 33, 3.0, 21; E (>53–69 cm) 17, 30, 5.0, 35; F (>69–84 cm) 11, 19, 4.8, 11; G (>84–102 cm) 1, 3, 0.9, 7. Average canopy height, 19.3 m (range 13.4–28.6 m, n = 20). Ground cover 89%, canopy cover 42%, each based on

five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 14,400. Size class distribution: <0.5 m, 4100; 0.5–1.0 m, 6900; >1.0 m, 3400. Shrub species in order of total abundance: Water Willow 1200 stems <0.5 m, 6400 stems 0.5–1.0 m, 2100 stems >1.0 m; Sweetbrier 0, 100, 900; Black Cherry 900, 0, 0; Wild Red Raspberry 700, 100, 0; Buttonbush 0, 300, 400; Sugar Maple 400, 0, 0; Ironwood 300, 0, 0; Basswood 300, 0, 0; Red Maple 200, 0, 0; Red Oak 100, 0, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Kentucky Blue Grass 18%, 7 quadrats; Canada Blue-joint 15, 8; sedge (*Carex pensylvanica*) 15, 7; Common Milkweed 11, 6; Common Duckweed 9, 1; Marsh Fern 7, 2; Marsh Pea 4, 2; Field Horsetail 4, 4; American Stinging Nettle 3, 3; sedge (*C. stricta*) 2, 2; grass (*Muhlenbergia tenuiflora*) 2, 3; Bull-bearing Water Hemlock 2, 1; Cut Grass 2, 1; Hairy Rye Grass 2, 1; Nodding Beggerticks 2, 1; Mouse-ear Chickweed 1, 6; Tuberos Water Horehound <1, 3. Other species prominent in the plot, but not recorded in the quadrats or with low total cover: Switchgrass, Bottlebrush Grass. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: litter 59%, bare soil <1%, wood <1%, water <1%. **Edge:** Similar habitat to the E. A reedbed borders the N edge, the S edge borders a wide swale which opens to a pond and the W opens out to a grassy savannah. **Topography and Elevation:** Minimum elevation 177 m, maximum 183 m. Forested dune ridges interspersed with sloughs and swamp. **Weather:** Mean start temp., 20°C (range 18–23°C). **Coverage:** 45 h; 12 visits (9 sunrise, 3 sunset); 3, 6, 7, 8, 10, 12, 17, 18, 21, 23, 24 June; 9 July. **Census:** Red-winged Blackbird, 21.5 (82; 1FL); Song Sparrow, 15.0 (57; 1FL); Yellow Warbler, 13.0 (50); Eastern Wood-Pewee, 11.5 (44; 2N, 1FL); Common Yellowthroat, 8.5 (32); Northern Oriole, 8.0 (30; 1N, 5FL); House Wren, 7.0 (27; 2N); European Starling, 6.5 (25; 1FL); Tree Swallow, 6.0 (23; 5N); Eastern Kingbird, 4.5 (17); Common Grackle, 4.5; Warbling Vireo, 4.0 (15; 1N); Red-eyed Vireo, 4.0; American Redstart, 4.0; Great Crested Flycatcher, 3.0 (11; 1N); American Robin, 3.0; Downy Woodpecker, 2.0 (1N); Northern Flicker, 2.0 (1N); Black-capped Chickadee, 2.0; Brown-headed Cowbird, 2.0; American Woodcock, 1.0; Blue Jay, 1.0; White-breasted Nuthatch, 1.0; Cedar Waxwing, 1.0; Northern Cardinal, 1.0. **Total:** 25 species; 137 territories (522/40 ha). **Visitors:** Wood Duck, Mallard, Mourning Dove, Black-billed Cuckoo, Yellow-billed Cuckoo, Great Horned Owl, Ruby-throated Hummingbird, Least Flycatcher, Wood Thrush, Gray Catbird, Magnolia Warbler, Ovenbird, Scarlet Tanager, Rufous-sided Towhee, Swamp Sparrow, American Goldfinch. **Remarks:** The coordinates for latitude and longitude were reported incorrectly in previous yr. This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** Paul N. Prior, Mark J. Palmer and Peter S. Burke. **Acknowledgments:** I thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 1 July 1991, and the Canadian Wildlife Service for financial support.

41. RED OAK–WHITE BIRCH SAVANNAH

SAVANA DE ROBLE ROJO

MARK J. PALMER

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°10'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** Established 1978; 3 yr. **Size:** 10.0 ha. **Description of Plot:** See *Am. Birds* 33:75–76 (1979). A rectangular plot, 500 × 200 m. The dominant canopy trees are Red Oak, White Birch, and Red Maple. The understory consists of clumped Sassafras saplings and Wild Red Raspberry, with Water Willow and Buttonbush in swampy areas. The ground layer is composed of Canada Blue-joint and Kentucky Blue Grass on dry dunes, sedge (*Carex eburna*)

in shady places, and Clearweed and Climbing Nightshade in wet areas. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 71/ha, total basal area 10.5 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Red Oak 13, 19, 37, 60; White Birch 21, 30, 17, 60; Red Maple 10, 14, 23, 45; Red Ash 6, 8, 7, 20; White Cedar 4, 5, 1, 20; Black Cherry 3, 4, 5, 15; White Pine 2, 3, 2, 10; Sassafras 2, 3, 4, 5; Chinquapin Oak 1, 1, 1, 5; White Ash 1, 1, <1, 5; Summer Grape 1, 1, <1, 5; Buttonbush 1, 1, <1, 5; dead trees and stumps over 2 m tall 8, 11, 5, 35. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5–15 cm) 4, 6, <0.1, <1; B (>15–23 cm) 5, 8, 0.2, 1; C (>23–38 cm) 30, 43, 2.2, 21; D (>38–53 cm) 18, 26, 3.0, 29; E (>53–69 cm) 6, 9, 1.8, 17; F (>69–84 cm) 4, 6, 2.0, 19; G (>84–102 cm) 1, 1, 0.6, 6; H (>102 cm) 1, 1, 0.7, 7. Average canopy height, 16.0 m (range 3.7–26.1 m, n = 20). Ground cover 86%, canopy cover 42%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats 12,000. Size class distribution: <0.5 m, 9100; 0.5–1.0 m, 2300; >1 m, 600. Shrub species in order of total abundance: Sassafras 3500 stems <0.5 m, 1500 stems 0.5–1.0 m, 0 stems >1 m; Wild Red Raspberry 3600, 600, 0; Water Willow 300, 100, 600; White Birch 700, 0, 0; Sweetbrier 500, 0, 0; Summer Grape 200, 100, 0; Riverbank Grape 200, 0, 0; Red Maple 100, 0, 0. Ground cover species making up 90% of the vegetation cover based on estimates in 10, 1 × 1 m quadrats or present in three or more quadrats: Canada Blue-joint 15%, 7 quadrats; sedge (*Carex eburnea*) 15, 2; Kentucky Blue Grass 15, 6; Clearweed 12, 3; Climbing Nightshade 10, 4; Bracken Fern 8, 3; Canada Blue Grass 6, 2; mosses 6, 1; Marsh Fern 5, 4; Common Milkweed <1, 5. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: litter 65%, muck 13%, sticks and wood 8%, bare sand <1%. **Edge:** Similar forest habitat to the S and W. Forested habitat grades to grassland savannah on the E edge. A marsh which borders the N shore of Long Point is found on the N boundary. **Topography and Elevation:** Minimum elevation 177 m, maximum 180 m. The site has a dune ridge on the S and N edges, and a wetland depression within these boundaries. **Weather:** Mean start temp., 22°C (range 19–23°C). **Coverage:** 27.6 h; 10 visits (8 sunrise, 2 sunset); 19, 20, 21, 25, 26 June; 2, 3, 10, 11 July. **Census:** House Wren, 11.0 (44; 2FL); Red-winged Blackbird, 10.0 (40; 1FL); Tree Swallow, 9.0 (36; 10N,1FL); Common Yellowthroat, 4.0 (16); Northern Oriole, 4.0 (1N,3FL); Eastern Wood-Pewee, 3.0 (12; 1FL); Great Crested Flycatcher, 3.0 (1N); Song Sparrow, 3.0 (2FL); American Robin, 2.5; Yellow Warbler, 2.5 (3FL); Red-headed Woodpecker, 2.0 (1N); Northern Flicker, 2.0 (1N); Eastern Kingbird, 2.0 (5FL); Common Grackle, 2.0; Mourning Dove, 1.0; Whip-poor-will, 1.0 (1N); Downy Woodpecker, 1.0 (1FL); Blue Jay, 1.0; Blue-gray Gnatcatcher, 1.0 (1N,4FL); European Starling, 1.0 (4FL); Warbling Vireo, 1.0; Chipping Sparrow, 1.0; Brown-headed Cowbird, 1.0; American Goldfinch, 0.5; Black-throated Green Warbler, +. **Total:** 25 species; 69.5 territories (278/40 ha). **Visitors:** Green-backed Heron, Red-tailed Hawk, Black-billed Cuckoo, Yellow-billed Cuckoo, Ruby-throated Hummingbird, Red-bellied Woodpecker, Hairy Woodpecker, Black-capped Chickadee, Carolina Wren, Marsh Wren, Blue-gray Gnatcatcher, Gray Catbird, Cedar Waxwing, Red-eyed Vireo, American Redstart, Rufous-sided Towhee, Swamp Sparrow. **Remarks:** The coordinates for latitude and longitude were reported incorrectly in previous yr. This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. This plot was formerly called "Birch-Oak Savannah and Wetland." 5.85 ha of this area were censused in 1978 and 1979. In those yr, White Birch and Red Oak were co-dominant, comprising 23% and 21% of the total basal area, respectively. The enlargement of the plot and re-sampling of the vegetation in 1990 resulted in Red Oak being clearly dominant (37% of basal area) over White Birch (17%). **Other Observers:** Peter Burke. **Acknowledgments:** I thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 16 July 1991, and the Canadian Wildlife Service for financial support.

42. OAK-MAPLE RIDGE-TOP FOREST

BOSQUE DE ROBLE-ARCE DE TOPE DE COLINAS

LAURIE J. GOODRICH

Hawk Mountain Sanctuary

Route 2, Box 191

Kempton, Pennsylvania 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; 10 yr. **Size:** 19.3 ha. **Description of Plot:** See *Am. Birds* 37:55 (1983). **Weather:** Mean start temp., 14°C (range 10–22°C). **Coverage:** 24 h; 11 visits (11 sunrise); 2, 4, 8, 11, 13, 18, 20, 25 May; 5, 8, 12 June. **Census:** Ovenbird, 9.5 (20); Common Yellowthroat, 3.5 (7); Blue Jay, 3.0 (6); Scarlet Tanager, 3.0; Wood Thrush, 2.5; Indigo Bunting, 2.5; Great Crested Flycatcher, 2.0; Black-capped Chickadee, 2.0; Rufous-sided Towhee, 2.0; Mourning Dove, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Hermit Thrush, 1.0; American Robin, 1.0; Red-eyed Vireo, 1.0; Black-and-white Warbler, 1.0; Rose-breasted Grosbeak, 1.0; Brown-headed Cowbird, 1.0. **Total:** 18 species; 39 territories (81/40 ha). **Visitors:** American Crow, Northern Oriole, Northern Flicker, American Goldfinch, Tufted Titmouse, White-breasted Nuthatch, Ruffed Grouse, Cedar Waxwing, Black-throated Green Warbler, Worm-eating Warbler. **Remarks:** Gypsy Moth defoliation of trees during 1990 may have opened canopy and influenced bird numbers in 1991. **Other Observers:** Jeanne Tinsman, Cathy Viverette, Rudy Keller, Ed Meitzler. **Acknowledgments:** This report is dedicated to the memory of Ed Meitzler.

43. OAK-MAPLE SLOPE FOREST

BOSQUE DE ROBLE-ARCE DE LADERAS

LAURIE J. GOODRICH

Hawk Mountain Sanctuary

Route 2, Box 191

Kempton, Pennsylvania 19529

Site Number: PA1382313. **Location:** Pennsylvania; Berks Co.; Eckville; River of Rocks; 40°45'N, 75°50'W; New Ringgold Quadrangle, USGS. **Continuity:** Established 1982; 10 yr. **Size:** 16.9 ha. **Description of Plot:** See *Am. Birds* 37:55 (1983). **Weather:** No data provided. **Coverage:** 21.3 h; 10 visits (10 sunrise); 29 April; 15, 21, 22, 25, 27, 29 May; 3, 14, 20 June. **Census:** Ovenbird, 5.5 (13); Wood Thrush, 3.5 (8); Red-eyed Vireo, 3.5; Black-and-white Warbler, 3.5; Great Crested Flycatcher, 3.0 (7); Blue Jay, 3.0; Eastern Wood-Pewee, 2.5; Downy Woodpecker, 2.0; Black-capped Chickadee, 2.0; Tufted Titmouse, 2.0; Scarlet Tanager, 2.0; Brown-headed Cowbird, 2.0; Northern Flicker, 1.0; Pileated Woodpecker, 1.0; White-breasted Nuthatch, 1.0; Rose-breasted Grosbeak, 1.0. **Total:** 16 species; 38.5 territories (91/40 ha). **Visitors:** Sharp-shinned Hawk, Black-billed Cuckoo, Hairy Woodpecker, Brown Creeper, Blue-gray Gnatcatcher, American Crow, Winter Wren, Carolina Wren, Black-throated Green Warbler, Northern Cardinal, American Goldfinch. **Remarks:** Last year's Gypsy Moth defoliation may have affected bird distribution and abundance by partially opening canopy in several spots. **Other Observers:** Jeanne Tinsman, Cathy Viverette, Ed Meitzler, Doug Wood, Mark Blauer. **Acknowledgments:** We dedicate this report to the memory of Ed Meitzler, who typified the spirit of the volunteers conducting BBCs across the country.

44. SUBURBAN DECIDUOUS WOODLOT

RODAL DECIDUO SUBURBANO

KRISTA MAGUIRE & DAVID ROBERTSON

Pennypack Watershed Association

2955 Edge Hill Road

Huntingdon Valley, Pennsylvania 19006

Site Number: PA1091004. **Location:** Pennsylvania; Montgomery Co.; Bryn Athyn; Papermill Road Woods (South); 40°9'N, 75°3'W; Hatboro Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** A suburban woodlot in the midst of abandoned agricultural fields and large estates. Plot is located in the southernmost portion of a 56 ha contiguous, irregularly-shaped woodland interdigitated with agricultural fields. Second-growth forest is dominated by Tuliptree, White Ash, Red Oak, and Black Oak. Understory and shrub layers are dominated by Spicebush and dogwood, with some Japanese Barberry and Multiflora Rose. The plot is heavily infested with Porcelainberry, Oriental Bittersweet, and Japanese Honeysuckle. The plot is bisected by a west-flowing perennial rivulet. **Edge:** Abandoned agricultural fields to the N and E, a gravel road and tree nursery to the S, and a wooded estate to the W. **Topography and Elevation:** Minimum elevation 64 m, maximum 82 m. **Weather:** Mean start temp., 19.2°C (range 13–24°C). **Coverage:** 26.2 h; 12 visits (12 sunrise); 21, 23, 28, 30 May; 4, 6, 11, 13, 18, 20, 25, 27 June. **Census:** Wood Thrush, 9.0 (36); Red-eyed Vireo, 9.0; Rufous-sided Towhee, 8.0 (32); Gray Catbird, 7.0 (28); Northern Cardinal, 6.0 (24); Carolina Chickadee, 4.0 (16); Carolina Wren, 3.0 (12); Hairy Woodpecker, 2.0; Eastern Wood-Pewee, 2.0; Acadian Flycatcher, 2.0; Blue Jay, 2.0; Tufted Titmouse, 2.0; American Redstart, 2.0; Ovenbird, 2.0; Common Yellowthroat, 2.0; Scarlet Tanager, 2.0; Red-bellied Woodpecker, 1.0; Downy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Brown Creeper, 1.0; Veery, 1.0; Hermit Thrush, 1.0; American Robin, 1.0. **Total:** 23 species; 71 territories (284/40 ha). **Other Observers:** Leigh Altadonna, Pat and Ned Eckfeldt.

45. MATURE MESIC OAK FOREST

BOSQUE MESICO MADURO DE ROBLE

DANA FILIPPINI & DIERDRE ROBINSON

*67 Scabbletown Road**North Kingstown, Rhode Island 02852*

Site Number: RI1291065. **Location:** Rhode Island; Kent Co.; Coventry Center; Parker Woodland; 41°44'N, 71°43'W; Coventry Center Quadrangle, USGS. **Continuity:** New. **Size:** 10.6 ha. **Description of Plot:** A nearly square plot (320 × 330 m) containing one continuously-flowing stream and a closed canopy 61 to 100 yr old. 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, 689/ha; total basal area 33.5m². Species comprising 91% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): Northern Red Oak, 136, 20, 27, 90; standing dead, 148, 22, 19, 100; White Oak, 82, 12, 14, 100; Red Maple, 74, 11, 3, 70; American Beech, 59, 9, 8, 40; Pignut Hickory, 32, 5, 4, 30. 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) 264, 38, 2.7, 8; B (15.3–22.9 cm) 156, 23, 4.4, 13; C (30–38.1 cm) 205, 30, 15.0, 45; D (38.2–53.3 cm) 59, 9, 10.1, 30; E (53.4–68.6 cm) 5, 1, 1.3, 4. Shrub stems/ha, 5,750, dominated by Sweet Pepperbush, alder, Bullbrier, and Red Maple. Ground cover, 54%, dominated by Lowbush Blueberry, Hazelnut, White Oak seedlings and *Virburnum* sp. Canopy cover, 71.5%; average canopy height, 16.9 m (range 11.7–20.3 m). **Edge:** More than 75% of the plot's perimeter is bordered by the same habitat and the plot lies within a tract that is between 100 and 500 ha in size. **Topography and Elevation:** The plot faces

S and slopes at a 6–10% grade. Minimum elevation 135 m, maximum 175 m. **Weather:** Mean start temp., 16.7°C (range 7–22°C). **Coverage:** 25.2 h; 11 visits (11 sunrise); 11, 12, 20, 27, 28 May; 28 June. **Census:** Ovenbird, 14.0 (53); Tufted Titmouse, 5.5 (21; 2FL); Eastern Wood-Pewee, 5.0 (19); Wood Thrush, 5.0; Worm-eating Warbler, 5.0 (2FL); Red-eyed Vireo, 4.5 (17); Great Crested Flycatcher, 3.5 (13); Rufous-sided Towhee, 3.5; Downy Woodpecker, 2.0; Black-capped Chickadee, 2.0; White-breasted Nuthatch, 2.0; Scarlet Tanager, 2.0; Northern Cardinal, 2.0; Northern Flicker, 1.5; Red-bellied Woodpecker, 1.0 (1N); Hairy Woodpecker, 1.0; Blue-gray Gnatcatcher, 1.0; American Robin, 1.0; Black-and-white Warbler, 1.0; Blue Jay, +; American Crow, +; Cedar Waxwing, +. **Total:** 22 species; 62.5 territories (236/40 ha). **Visitors:** Common Grackle. **Acknowledgments:** Thanks to David Rodrigues and the Audubon Society of Rhode Island for permission to use the site. William R. Eddleman conducted the quantitative vegetation survey.

46. UPLAND OAK–RED MAPLE FOREST

BOSQUE DE ROBLE–ARCE ROJO DE ALTURAS

WILLIAM R. EDDLEMAN

*Department of Natural Resources Science
210B Woodward Hall
University of Rhode Island
Kingston, Rhode Island 02881*

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; 2 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):47–48 (1991). **Weather:** Mean start temp., 17.5°C (range 5–29°C). Temperature and precipitation departures, respectively, from the 100-yr mean for: May, +3.2°C, –2.7 cm; June, +1.2°C, –4.9 cm; July, –0.5°C, –3.7 cm. Data source: University of Rhode Island weather station, Kingston, RI. **Coverage:** 29.6 h; 13 visits (12 sunrise, 1 sunset); 5, 29 May; 28, 29, 30 June; 2, 4, 6, 7, 9, 11, 16 July. **Census:** Veery, 11.5 (46; 1FL); Rufous-sided Towhee, 10.0 (40; 4FL); Ovenbird, 8.5 (34; 5FL); Tufted Titmouse, 7.0 (28; 8FL); Gray Catbird, 7.0 (5FL); Northern Cardinal, 6.0 (24; 1N); Downy Woodpecker, 3.0 (12; 2N,2FL); Great Crested Flycatcher, 3.0 (1FL); Wood Thrush, 3.0 (2FL); Eastern Wood-Pewee, 2.5; Black-capped Chickadee, 2.5 (2FL); Black-and-white Warbler, 2.5; White-breasted Nuthatch, 2.0; Blue-winged Warbler, 2.0; Carolina Wren, 1.5 (1FL); Scarlet Tanager, 1.5; Red-bellied Woodpecker, 1.0; Acadian Flycatcher, 1.0; Blue Jay, 1.0; Pine Warbler, 1.0; Rose-breasted Grosbeak, 1.0; Great Horned Owl, 0.5; Hairy Woodpecker, 0.5; Northern Flicker, 0.5; Brown-headed Cowbird, 0.5; American Crow, +; Red-eyed Vireo, +. **Total:** 27 species; 80.5 territories (319/40 ha). **Visitors:** American Robin, Common Yellowthroat, Hooded Warbler. **Remarks:** Veery density doubled from last year's count, while Ovenbird and Rufous-sided Towhee densities both declined by 25%. Red-bellied Woodpecker and Acadian Flycatcher were new to the plot, reflecting an expanding breeding range in Rhode Island. This plot was also used as a mist-netting site for the Monitoring Avian Productivity and Survivorship (MAPS) project. This is contribution #2689 of the Rhode Island Agricultural Experiment Station. **Other Observers:** Kristine N. Arruda, Kurt E. Carlson, Andrew B. Cooper, Pamela Walter.

47. DECIDUOUS CLEARCUT

CLARO DECIDUO

RICHARD P. LEWIS

*407 V.I. Ranch Road
Bristol, Tennessee 37620*

Location: Tennessee; Washington Co.; Johnson City; Horse Cove Gap; 36°14'N, 82°22'W; Erwin Quadrangle, USGS. **Continuity:** Established 1975; 13 yr. **Size:** 20.2 ha. **Description**

of Plot: See *Am. Birds* 29:1117–1118. **Weather:** No data provided. **Coverage:** 12.3 h; 8 visits (8 sunrise); 25, 26, 27, 29 May; 5, 8, 9, 16 June. **Census:** Red-eyed Vireo, 15.0 (30); Hooded Warbler, 15.0; Ovenbird, 6.0 (12); Ruby-throated Hummingbird, 4.0 (8); Carolina Wren, 4.0; American Crow, 3.0 (6); Kentucky Warbler, 3.0; Northern Cardinal, 3.0; Blue Jay, 2.0; Tufted Titmouse, 2.0; Wood Thrush, 2.0; Ruffed Grouse, 1.0; Yellow-billed Cuckoo, 1.0; Eastern Screech-Owl, 1.0; Whip-poor-will, 1.0; Swainson's Warbler, 1.0; Indigo Bunting, 1.0; Rufous-sided Towhee, 1.0; Pileated Woodpecker, 0.5; Barred Owl, +; Downy Woodpecker, +; Northern Flicker, +; Acadian Flycatcher, +; Black-throated Green Warbler, +; Black-and-white Warbler, +; Worm-eating Warbler, +; Scarlet Tanager, +. **Total:** 27 species; 66.5 territories (132/40 ha). **Remarks:** An Eastern Screech-Owl with two fledglings was observed on the plot.

48. MESOPHYTIC FOREST I

BOSQUE MESOFÍTICO I

MICHAEL G. SMITH

*Route 3, Box 301
Elkton, Virginia 22827*

Site Number: VA1083031. **Location:** Virginia; Green Co.; Elkton; Pocosin Cabin Plot; 38°24'N, 78°29'W; Fletcher Quadrangle, USGS. **Continuity:** Established 1981; 10 yr. **Size:** 6.1 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):32–33 (1989). **Weather:** Mean start temp., 18.6°C (range 16–20°C). Temperatures were above average, precipitation below average for the census period. **Coverage:** 14.1 h; 12 visits (8 sunrise, 4 sunset); 22, 26, 27, 29, 30 May; 2, 3, 7, 9, 10, 11, 15 June. **Census:** American Redstart, 13.5 (89); Veery, 9.5 (62); Wood Thrush, 7.0 (46); Red-eyed Vireo, 4.5 (30); Indigo Bunting, 4.0 (26); Rufous-sided Towhee, 4.0; Black-throated Blue Warbler, 3.0 (20); Cerulean Warbler, 3.0; Ovenbird, 3.0; Hooded Warbler, 3.0; Eastern Wood-Pewee, 2.0; Chestnut-sided Warbler, 2.0; Scarlet Tanager, 2.0; Acadian Flycatcher, 1.5; Solitary Vireo, 1.5; Downy Woodpecker, 1.0; Rose-breasted Grosbeak, 0.5; Chickadee species, +. **Total:** 18 species; 65 territories (426/40 ha). **Visitors:** Broad-winged Hawk, Yellow-billed Cuckoo, Ruby-throated Hummingbird, Red-bellied Woodpecker, Hairy Woodpecker, Great-crested Flycatcher, Common Raven, Tufted Titmouse, White-breasted Nuthatch, Carolina Wren, Yellow-throated Vireo, Louisiana Waterthrush, Kentucky Warbler. **Remarks:** The Gypsy Moth infestation was minimal compared with last yr. Compared with the five-yr average, the following species have declined: Acadian Flycatcher (–30%), Eastern Wood-Pewee (–50%), and Scarlet Tanager (–20%). **Acknowledgments:** Thanks to Kathleen Finnegan, Diane Holsinger, Betty Rosson, Carrie Stanovick, and Charles Zigenfus for help in plot layout and vegetation survey. Also thanks to the personnel of the Shenandoah National Park for their cooperation.

49. MESOPHYTIC FOREST II

BOSQUE MESOFÍTICO II

MICHAEL G. SMITH

*Route 3, Box 301
Elkton, Virginia 22827*

Site Number: VA1087013. **Location:** Virginia; Green Co.; Elkton; Pocosin Mission Plot; 38°24'N, 78°29'W; Fletcher Quadrangle, USGS. **Continuity:** Established 1981; 10 yr. **Size:** 6.1 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):33 (1990). **Weather:** Mean start temp., 18.4°C (range 16–20°C). Temperatures were above average and precipitation was below average for the census period. **Coverage:** 12.2 h; 12 visits (8 sunrise, 4 sunset); 22, 26, 27, 29, 30 May; 2, 3, 7, 9, 10, 11, 15 June. **Census:** American Redstart, 12.0 (79); Ovenbird, 8.5 (56); Veery, 5.0 (33); Red-eyed Vireo, 4.5 (30); Eastern Wood-Pewee, 4.0

(26); Wood Thrush, 4.0; Cerulean Warbler, 3.0 (20); Indigo Bunting, 3.0; Scarlet Tanager, 2.5; Acadian Flycatcher, 2.0; Yellow-throated Vireo, 2.0; Hooded Warbler, 2.0; Rufous-sided Towhee, 2.0; Wild Turkey, 1.0 (5FL); Canada Warbler, 1.0; Chickadee species, 0.5; Ruffed Grouse, +; Ruby-throated Hummingbird, +. **Total:** 18 species; 57 territories (374/40 ha). **Visitors:** Red-bellied Woodpecker, Downy Woodpecker, Hairy Woodpecker, Pileated Woodpecker, White-breasted Nuthatch, Carolina Wren, Black-throated Green Warbler, Blackburnian Warbler, Worm-eating Warbler, Rose-breasted Grosbeak, American Goldfinch. **Remarks:** The Gypsy Moth infestation was minimal compared with last yr. Compared with the five-yr average, the following species have declined: Acadian Flycatcher (-30%), Veery (-25%), Scarlet Tanager (-25%). **Acknowledgments:** Thanks to Kathleen Finnegan, Diane Holsinger, Betty Rosson, Carrie Stanovick, and Charles Zigenfus for help in plot layout and vegetation survey. Also thanks to the personnel of the Shenandoah National Park for their cooperation.

50. OLD-GROWTH MIXED CONIFEROUS-RED FIR FOREST TRANSITION

BOSQUE MADURO DE TRANSICIÓN MIXTO DE
CONÍFEROS-PINABETE ROJO

KATHRYN L. PURCELL, JENNIFER G. TURNER & DOUGLAS A. DRYNAN

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

Location: California; Fresno Co.; Wishon Village; Teakettle Experimental Forest; 36°57'N, 119°2'W; Patterson Mountain NE Quadrangle, USGS. **Continuity:** Established 1985; 7 yr. **Size:** 42.3 ha. **Description of Plot:** See 1985 BBC report. USGS quadrangle reported incorrectly in previous reports. **Weather:** Mean start temp., 5.3°C (range -1-13°C). Due to heavy snow storms during March, there was a considerable amount of snow covering the plot when censusing began. **Coverage:** 112 h; 24 visits (24 sunrise); 28, 29, 31 May; 3, 5, 6, 10, 11, 13, 14, 18, 19, 21, 24, 26, 28 June. **Census:** Golden-crowned Kinglet, 29.5 (28); Fox Sparrow, 29.0 (27; 8N); Red-breasted Nuthatch, 16.0 (15; 11N); Hermit Warbler, 14.5 (14); Dark-eyed Junco, 14.5 (3N); Dusky Flycatcher, 14.0 (13; 6N); Mountain Chickadee, 12.0 (11; 5N); Hammond's Flycatcher, 11.5 (11; 3N); Yellow-rumped Warbler, 11.0 (10); Western Tanager, 9.0 (9; 3N); MacGillivray's Warbler, 6.5 (6; 2N); Hermit Thrush, 6.0 (6; 1N); Brown Creeper, 4.0 (4; 1N); American Robin, 4.0 (4N); White-headed Woodpecker, 3.0 (3; 5N); Steller's Jay, 3.0; Evening Grosbeak, 2.0 (1N); Red-breasted Sapsucker, 1.5 (2N); Warbling Vireo, 1.5; Mountain Quail, 1.0; Northern Pygmy-Owl, 1.0 (1N); Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Townsend's Solitaire, 1.0 (1N); Swainson's Thrush, 1.0; Pileated Woodpecker, 0.5; Common Raven, 0.5; Nashville Warbler, 0.5. **Total:** 28 species; 200 territories (189/40 ha). **Visitors:** Sharp-shinned Hawk, Red-tailed Hawk, Blue Grouse, Band-tailed Pigeon, Vaux's Swift, White-throated Swift, Calliope Hummingbird, Olive-sided Flycatcher, Western Wood-Pewee, Solitary Vireo, Black-headed Grosbeak, Green-tailed Towhee, Brewer's Blackbird, Brown-headed Cowbird, Purple Finch, Cassin's Finch, Pine Siskin. **Remarks:** This yr the plot was divided into two parts, a complete census taking two visits. **Acknowledgments:** This effort is part of a study of bird monitoring techniques conducted by Dr. Jared Verner, USDA Forest Service.

51. RIPARIAN FOREST

BOSQUE RIVEREÑO

SUSAN WELLER

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

Site Number: ID6491103. **Location:** Idaho; Shoshone Co.; Pinehurst; Pine Creek; 47°26'N, 116°16'W; Twin Crags Quadrangle, USGS. **Continuity:** New. **Size:** 10.3 ha. **Description**

of Plot: A rectangular plot (825 × 125 m) bordering the W side of Pine Creek. The plot's closed canopy is dominated by Western Hemlock, Western Red Cedar, and Grand Fir, and is estimated to be between 61 and 100 yr of age. Mean canopy height, 15 m (range, 3–20 m). The understory is dominated by Rocky Mountain Maple, Common Snowberry, and Western Thimbleberry. Ground cover is dominated by Wild Ginger, Queen Cup Beadlily, and Western Goldthread. The maximum width of Pine Creek is 45 m, maximum depth, 1.5 m. Up to 25% of the plot's surface is covered with standing water during the breeding season. **Edge:** Up to 75% of the plot's perimeter is bordered by the same habitat, and the plot lies within a tract of similar habitat no greater than 50 ha in size. **Topography and Elevation:** The plot is nearly level. Minimum elevation 817 m, maximum 829 m. **Weather:** Mean start temp., 10.1°C (range 4–17°C). **Coverage:** 18.8 h; 10 visits (8 sunrise, 2 sunset); 25, 26, 29, 31 May; 4, 11, 12, 14, 19, 28 June. **Census:** Swainson's Thrush, 5.0 (19); Ruffed Grouse, 4.0 (16); Hammond's Flycatcher, 4.0; Golden-crowned Kinglet, 4.0; American Robin, 4.0; Warbling Vireo, 4.0; Townsend's Warbler, 4.0; MacGillivray's Warbler, 3.0 (12); Yellow Warbler, 3.0; Song Sparrow, 3.0; Dark-eyed Junco, 3.0; Cordilleran Flycatcher, 2.0; Tree Swallow, 2.0; Ruby-crowned Kinglet, 2.0; Solitary Vireo, 2.0; Red-eyed Vireo, 2.0; Orange-crowned Warbler, 2.0; Yellow-rumped Warbler, 2.0; Western Tanager, 2.0; Pine Siskin, 2.0; Willow Flycatcher, 1.0; Common Raven, 1.0; Black-capped Chickadee, 1.0; Mountain Chickadee, 1.0; Chestnut-backed Chickadee, 1.0; Red-breasted Nuthatch, 1.0; Winter Wren, 1.0; Varied Thrush, 1.0. **Total:** 28 species; 67 territories (260/40 ha). **Visitors:** Mallard, Northern Flicker (Red-shafted), Pileated Woodpecker, Olive-sided Flycatcher, Wilson's Warbler, Black-headed Grosbeak, Chipping Sparrow, Red Crossbill, Cassin's Finch. **Other Observers:** Pamela Gontz, Gregory R. Weller.

52. HEAVILY-THINNED WHITE SPRUCE PLANTATION

PLANTACIÓN MADURA DE ABETO BLANCO

JULIET K. MARKOWSKY

1 Edgewood Drive
Orono, Maine 04473

Site Number: ME2785032. **Location:** Maine; Penobscot Co.; Old Town; University Forest, Block C-4; 44°57'N, 68°41'W; Orono Quadrangle, USGS. **Continuity:** Established 1985; 7 yr. **Size:** 4.1 ha. **Description of Plot:** *J. Field Ornithol.* 60 (Suppl.):35 (1989). **Weather:** Mean start temp., 11.1°C (range 7–18°C). Temperature departures from average for May and June, respectively, +1°C and +1.5°C. Precipitation in May was average, in June, 2.3 cm below average. **Data source:** *The Guillemot*, newsletter of the Sorrento Scientific Society, Sorrento, ME. **Coverage:** 21.5 h; 11 visits (8 sunrise; maximum number of observers/trip, 14); 13, 15, 20, 21, 24 May; 13, 14, 20, 22 June; 2, 3 July. **Census:** Northern Parula, 4.0 (39); Black-capped Chickadee, 3.0 (29.0; 4FL); Golden-crowned Kinglet, 3.0; Red-eyed Vireo, 3.0; Black-throated Green Warbler, 3.0; White-throated Sparrow, 3.0; Red-breasted Nuthatch, 2.0; Blackburnian Warbler, 2.0; Black-and-white Warbler, 2.0; Eastern Wood-Pewee, 1.0; Great Crested Flycatcher, 1.0; Winter Wren, 1.0; Cedar Waxwing, 1.0 (1N); Solitary Vireo, 1.0; Nashville Warbler, 1.0; Magnolia Warbler, 1.0; Yellow-rumped Warbler, 1.0; Pine Warbler, 1.0; Ovenbird, 1.0; Common Yellowthroat, 1.0; Canada Warbler, 1.0; Black-throated Blue Warbler, +. **Total:** 22 species; 37 territories (361/40 ha). **Visitors:** Yellow-bellied Sapsucker, Northern Flicker, Hermit Thrush, Swainson's Thrush, Bay-breasted Warbler, Northern Waterthrush, Scarlet Tanager, Purple Finch. **Other Observers:** Sarah Dooling, Norman Famous, Students in WLM 260, University of Maine.

53. MATURE RED SPRUCE FOREST

BOSQUE DE ABETO ROJO MADURO

THOMAS P. SKALING

10 Cumberland Street
Brunswick, Maine 04011

Site Number: ME2889052. **Location:** Maine; Somerset Co.; Upper Enchanted Township; Boise Cascade Tract; 45°25'N, 70°10'W; Enchanted Pond Quadrangle, USGS. **Continuity:**

Established 1989; 3 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.): 57 (1990). **Weather:** Mean start temp., 11.8°C (range 4–18°C). The departure in the mean daily temperature from mid-May through mid-July was -1°C. Total precipitation during the same period was 1 cm below the long-term mean. Data source: Northeast Regional Climate Center, Cornell University, Ithaca, NY. **Coverage:** 24.5 h; 8 visits (8 sunrise); 24, 25 May; 1, 8, 15, 27 June; 6, 12 July. **Census:** Golden-crowned Kinglet, 8.0 (20); Magnolia Warbler, 5.0 (13); Yellow-rumped Warbler, 5.0; Red-breasted Nuthatch, 4.5 (11); Blackburnian Warbler, 4.0 (10); Winter Wren, 3.5 (9); Brown Creeper, 3.0 (8); Swainson's Thrush, 3.0; Solitary Vireo, 3.0; Dark-eyed Junco, 3.0 (1N,4FL); Black-capped Chickadee, 2.0; Boreal Chickadee, 2.0; Hermit Thrush, 2.0; Nashville Warbler, 2.0; Northern Parula, 2.0; Yellow-bellied Flycatcher, 1.5; Black-throated Blue Warbler, 1.5; Bay-breasted Warbler, 1.5; White-throated Sparrow, 1.5; Common Goldeneye, 1.0 (1N,7FL); Yellow-bellied Sapsucker, 1.0; Blue Jay, 1.0; Ruby-crowned Kinglet, 1.0; Common Yellowthroat, 1.0; Canada Warbler, 1.0; Pine Siskin, 1.0. **Total:** 26 species; 65 territories (163/40 ha). **Visitors:** Pileated Woodpecker, Gray Jay, Common Raven, Black-and-white Warbler, Rose-breasted Grosbeak, Evening Grosbeak, American Goldfinch, White-winged Crossbill. **Acknowledgments:** I thank Boise Cascade for their continued assistance and interest in this project.

54. JACK PINE FOREST

BOSQUE DE PINO DE JACK

MARY DERR

Whitefish Point Bird Observatory

H.C. 48, Box 115

Paradise, Michigan 49768

Location: Michigan; Chippewa Co.; Paradise; Whitefish Point; 46°45'N, 85°6'W; Vermilion SE & Shell Quadrangle, USGS. **Continuity:** Established 1985; 7 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):45 (1989). **Weather:** Mean start temp., 13°C (range 10–18°C). **Coverage:** 21.3 h; 11 visits (10 sunrise, 1 sunset); 4, 5, 6, 8, 11, 14, 18, 20, 21, 22, 23 June. **Census:** Black-throated Green Warbler, 7.0 (18); Nashville Warbler, 6.5 (16); Ovenbird, 5.5 (14); Yellow-rumped Warbler, 4.0 (10); Hermit Thrush, 2.0 (1N,1FL); Chipping Sparrow, 2.0; Black-capped Chickadee, 1.0; Brown Creeper, 1.0; Eastern Bluebird, 1.0; Dark-eyed Junco, 1.0 (1FL); Solitary Vireo, +. **Total:** 11 species; 31 territories (78/40 ha). **Visitors:** Eastern Wood-Pewee, Olive-sided Flycatcher, Red-breasted Nuthatch, Blackburnian Warbler, Pine Warbler. **Other Observers:** Dave Evers, Brian Johnson, Craig Limpach, Pete Reaman, Bonnie Stout, Jean Thomson.

55. UPLAND CHRISTMAS TREE FARM

FINCAS DE ARBOLES DE NAVIDAD EN ALTURA

ELIZABETH W. BROOKS

1435 Waterwells Road

Alfred Station, New York 14803

Site Number: NY2483108. **Location:** New York; Allegany Co.; Andover; Kent Christmas Tree Farm; 42°10'N, 77°50'W; Andover Quadrangle, USGS. **Continuity:** Established 1983; 9 yr. **Size:** 10.7 ha. **Description of Plot:** See *Am. Birds* 38:91 (1984). **Weather:** Mean start temp., 20.9°C (range 17–29°C). The average daily temperature in May, 16.1°C, was 7°C above the 57-yr mean; June, 18.3°C, and July, 20.9°C, were slightly above the long-term mean. Precipitation in May, 5.1 cm, and June, 0.9 cm, was well below the average, while July rainfall, 8.3 cm, was normal. **Coverage:** 18.3 h; 9 visits; 26 May; 2, 9, 17, 25 June; 3, 10, 18 July; 13 August. **Census:** Chipping Sparrow, 17.0 (64; 10N,29FL); Song Sparrow, 17.0 (11N,20FL); Cedar Waxwing, 8.0 (30; 15N,44FL); Field Sparrow, 4.0 (15; 3N,3FL); American Robin, 3.0 (11; 1N,0FL); Purple Finch, 3.0 (3N,11FL); Savannah Sparrow, 2.0;

American Goldfinch, 2.0; American Woodcock, 1.0; Eastern Kingbird, 1.0; Yellow-rumped Warbler, 1.0 (1N,4FL); Grasshopper Sparrow, 1.0; Bobolink, 1.0; Red-winged Blackbird, 1.0; Brown-headed Cowbird, 1.0; House Finch, 1.0; Brown Thrasher, +; Common Yellowthroat, +; Rufous-sided Towhee, +. **Total:** 19 species; 64 territories (239/40 ha). **Visitors:** Northern Harrier, Horned Lark, Black-capped Chickadee, Red-eyed Vireo, Yellow Warbler, Indigo Bunting, Vesper Sparrow, Common Grackle. **Remarks:** House Finch was a new species for the plot. Song Sparrow, Chipping Sparrow, and Cedar Waxwing numbers reached an all time high. **Acknowledgments:** Appreciation to Tom and Kathy Kent for permission to conduct study on their land.

56. UPLAND SCOTCH PINE PLANTATION

PLANTACIÓN EN ALTURA DE PINO ESCOCÉS

ELIZABETH W. BROOKS

1435 Waterwells Road
Alfred Station, New York 14803

Site Number: NY2470024. **Location:** New York; Allegany Co.; Alfred; Foster Plantation; 42°7'N, 77°45'W; Andover Quadrangle, USGS. **Continuity:** Established 1969; 23 yr. **Size:** 9.3 ha. **Description of Plot:** See *Am. Birds* 38:38 (1984). **Weather:** Mean start temp., 22.9°C (range 19–28°C). See BBC #55. **Coverage:** 13 h; 11 visits (2 sunset); 9 April; 12, 29 May; 5, 12, 19, 26 June; 4, 11, 19 July; 14 August. **Census:** Chipping Sparrow, 9.0 (39; 2N,6FL); Common Yellowthroat, 7.0 (30); American Robin, 4.0 (17); Magnolia Warbler, 4.0; Indigo Bunting, 3.0 (13); Black-capped Chickadee, 2.0 (1N,0FL); Cedar Waxwing, 2.0; Yellow-rumped Warbler, 2.0; Rufous-sided Towhee, 2.0; Song Sparrow, 2.0 (1N,3FL); Ruffed Grouse, 1.0; American Woodcock, 1.0; Mourning Dove, 1.0 (1N,1FL); Blue Jay, 1.0; House Wren, 1.0; Field Sparrow, 1.0; Dark-eyed Junco, 1.0; Purple Finch, 1.0; Nashville Warbler, +; Ovenbird, +; Northern Cardinal, +. **Total:** 21 species; 45 territories (194/40 ha). **Visitors:** Eastern Kingbird, Common Crow, Blackburnian Warbler, White-throated Sparrow, American Goldfinch. **Remarks:** Damage from the March 1991 ice-storm (see BBC #75) made travel through the plot difficult, but did not cause appreciable habitat loss. **Acknowledgments:** Appreciation to Cynthia Clements and Phil Foster for permission to conduct the study on their land, and to Rick Walker for weather data.

57. TAMARACK SLOUGH

PANTANO DE LARICE AMERICANO

DRIA HOWLETT & PAUL DERBYSHIRE

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

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°5'W; Gravelly Bay Quadrangle, DEMR. **Continuity:** Established 1973; 4 yr. **Size:** 8.8 ha. **Description of Plot:** See *Am. Birds* 28:1017–1018 (1974). A 700 × 100 m rectangle with a 350 × 50 m strip added to the NE end. The dominant canopy trees are Tamarack and White Pine. The understorey is dense and consists of Wild Red Raspberry with Riverbank Grape. Common juniper occurs on drier dunes. The ground layer is composed of mosses, Canada Blue-joint, Nut-rush and Clearweed, with Stonewort in standing water. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 147/ha, total basal area 5.0 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Tamarack 38, 26, 20, 50; White Pine 19, 13, 32, 50; White Birch 7, 5, 11, 20; Red Cedar 7, 5, 4, 15; dead trees and stumps over 2 m tall 75, 51, 34,

85. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%)]: A (7.5–15 cm) 74, 50, 0.7, 13; B (>15–23 cm) 33, 23, 0.9, 17; C (>23–38 cm) 31, 21, 2.3, 40; D (>38–53 cm) 7, 5, 1.2, 21; E (>53–69 cm) 2, 1, 0.5, 9. Average canopy height, 10.7 m (range 3.1–22.0 m, n = 16). Ground cover 83%, canopy cover 27%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 53,500. Size class distribution: <0.5 m, 28,400; 0.5–1.0 m, 22,900; >1 m, 2200. Shrub species in order of total abundance: Wild Red Raspberry 19,700 stems <0.5 m, 19,600 stems 0.5–1.0 m, 1300 stems >1m; Common Juniper 5600, 2000, 200; Riverbank Grape 1100, 500, 200; White Birch 300, 600, 0; Buttonbush 800, 0, 0; Kalm's St. John's-wort 700, 0, 0; Tamarack 0, 0, 500; Swamp Rose 0, 200, 0; Sweetbrier 200, 0, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Common Juniper 15%, 3 quadrats; mosses 14, 3; Stonewort 12, 1; Canada Blue-joint 12, 6; Nut-rush 10, 2; Wild Red Raspberry 9, 3; Clearweed 8, 6; Twig-rush 5, 3; Climbing Nightshade 2, 3; Marsh Fern <1, 3; Marsh Bellflower <1, 3. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: litter 56%, wood and sticks 11%, bare sand 9%, water 9%, muck 8%. **Edge:** Similar habitat to the W and E. Dry juniper-cottonwood vegetation with low rolling dunes to the S and an extensive marshy slough in the N. **Topography and Elevation:** Minimum elevation 174 m, maximum 183 m. The S and N ends of the plot are characterized by rolling dunes while the middle is dominated by an extensive slough. **Weather:** Mean start temp., 24°C (range 23–26°C). **Coverage:** 39.5 h; 12 visits (9 sunrise, 3 sunset); 7, 9, 14, 17, 27, 28, 29, 30 June; 1, 2, 3 July. **Census:** Red-winged Blackbird, 12.0 (55); Common Yellowthroat, 10.5 (48); Song Sparrow, 10.5; House Wren, 10.0 (45); Common Grackle, 6.5 (30; 1FL); Black-capped Chickadee, 4.0 (18; 1N, 2FL); Mourning Dove, 3.5 (16); Eastern Wood-Pewee, 3.0 (14); Eastern Kingbird, 3.0 (1N); Carolina Wren, 3.0; Gray Catbird, 3.0; Brown Thrasher, 3.0; American Goldfinch, 3.0; Tree Swallow, 2.5 (1N); Northern Oriole, 2.5; American Woodcock, 2.0; Great Crested Flycatcher, 2.0; Yellow Warbler, 2.0; Mallard, 1.0 (1N); Black-billed Cuckoo, 1.0; Blue Jay, 1.0; Cedar Waxwing, 1.0; Northern Cardinal, 1.0; Rufous-sided Towhee, 1.0; Chipping Sparrow, 1.0; Field Sparrow, 1.0; Swamp Sparrow, 1.0; Northern Flicker, 0.5. **Total:** 28 species; 95.5 territories (434/40 ha). **Visitors:** Northern Harrier, Killdeer, Common Snipe, Belted Kingfisher, Red-headed Woodpecker, Downy Woodpecker, Purple Martin, Barn Swallow, American Robin, Red-eyed Vireo, American Redstart, Ovenbird, Rose-breasted Grosbeak. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. This plot was formerly called "Tamarack-White Cedar Slough." Originally surveyed in 1973 (4.05 ha), the plot was enlarged to 6.07 ha in 1974 and 1975. Most of the White Cedars that occurred on the plot in the 1970s have died due to flooding from high water levels in Lake Erie. **Other Observers:** Mark J. Palmer and Peter S. Burke. **Acknowledgments:** We thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 15 July 1991, and the Canadian Wildlife Service for financial support.

58. WHITE PINE–WHITE CEDAR SAVANNAH

SAVANA DE PINO BLANCO–CEDRO BLANCO

JULIAN R. HOUGH

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°7'W; Gravelly Bay Quadrangle, DEMR. **Continuity:** Established 1973; 4 yr. **Size:** 9.3 ha. **Description of Plot:** See *Am. Birds* 28:1018–1019 (1974). The E end of the plot is rectangular measuring 400 × 150 m. The W end (3.25 ha) is

irregularly shaped, shifting diagonally to the NW. The dominant canopy trees are White Pine, White Cedar and standing dead trees. The understory is composed of Common Juniper on the dunes, Wild Red Raspberry in the low areas and Snowberry under dense canopy cover. The ground layer is composed of sedges (*Carex eburnea*, *C. lasiocarpa*), Marsh Fern and mosses in addition to the cover of Common Juniper and Snowberry. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 164/ha, total basal area 6.5 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: White Pine 41, 25, 48, 50; White Cedar 31, 19, 13, 45; Tamarack 25, 15, 4, 50; Red Cedar 15, 9, 3, 25; White Birch 5, 3, 5, 10; Riverbank Grape 2, 1, 1, 10; Red Ash 5, 3, 1, 5; dead trees and stumps over 2 m tall 43, 26, 25, 65. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5–15 cm) 69, 43, 0.7, 10; B (>15–23 cm) 43, 26, 1.2, 18; C (>23–38 cm) 39, 24, 2.8, 42; D (>38–53 cm) 12, 8, 2.0, 30. Average canopy height, 8.7 m (range 1.4–22.7 m, n = 18). Ground cover 81%, canopy cover 26%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats 39,000. Size class distribution: <0.5 m, 28,200; 0.5–1.0 m, 10,400; >1.0 m, 400. Shrub species in order of total abundance: Common Juniper 10,500 stems <0.5 m, 5700 stems 0.5–1.0 m, 0 stems >1.0 m; Wild Red Raspberry 7600, 2400, 100; Red Cedar 3800, 1900, 300; Snowberry 4400, 200, 0; Riverbank Grape 800, 200, 0; Sweetbrier 1000, 0, 0; Red Oak 100, 0, 0. Ground cover species making up 90% of the vegetation cover based on cover estimates in 10, 1 × 1 m quadrats or present in three or more quadrats: Common Juniper 36%, 5 quadrats; sedge (*Carex eburnea*) 18, 4; sedge (*C. lasiocarpa*) 12, 2; Marsh Fern 11, 3; mosses 8, 2; Snowberry 6, 2; Canada Blue-joint 5, 3; Common Milkweed <1, 3. Other species prominent in the plot, but not recorded in the quadrats or with low total cover: Little Blue-stem, Switch Grass. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: litter 59%, bare sand 24%, muck 2%, sticks and wood 1%. **Edge:** Similar habitat to the N, W and E. A swamp dominates the S edge. **Topography and Elevation:** Minimum elevation 177 m, maximum 183 m. The plot is composed of forested dunes, interspersed with areas of poor drainage. **Weather:** Mean start temp., 20°C (range 18–22°C). **Coverage:** 28 h; 10 visits (9 sunrise, 1 sunset); 2, 3, 7, 9, 14, 16, 17, 19, 24, 27 June. **Census:** House Wren, 20.5 (88); Common Yellowthroat, 8.0 (34); Rufous-sided Towhee, 5.0 (22); Chipping Sparrow, 5.0 (2FL); Red-winged Blackbird, 4.5 (19); Northern Oriole, 4.5 (2N); Eastern Wood-Pewee, 3.0 (13; 1N); Field Sparrow, 2.5 (1N); Song Sparrow, 2.5; Mourning Dove, 2.0; Great Crested Flycatcher, 2.0; Black-capped Chickadee, 2.0; Gray Catbird, 2.0; Eastern Kingbird, 1.5; Brown Thrasher, 1.5; Chuck-will's-widow, 1.0; Northern Flicker, 1.0; Tree Swallow, 1.0; Blue Jay, 1.0; American Robin, 1.0; Cedar Waxwing, 1.0; Canada Warbler, 1.0; Brown-headed Cowbird, 1.0; Common Grackle, 0.5. **Total:** 24 species; 75 territories (323/40 ha). **Visitors:** Green-backed Heron, Northern Harrier, Sora, Killdeer, Great Horned Owl, Belted Kingfisher, Red-headed Woodpecker, Downy Woodpecker, Barn Swallow, American Crow, Cedar Waxwing, European Starling, Solitary Vireo, Warbling Vireo, Black-throated Green Warbler, Ovenbird, Northern Cardinal, Rose-breasted Grosbeak, Indigo Bunting, American Goldfinch. **Remarks:** The coordinates for latitude and longitude were reported incorrectly in previous yr. This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. This plot was formerly called "White Pine-White Cedar Forest." Originally, this small plot (1.21 ha) had 50% canopy cover but in later expansions to 4.0 ha (1974 and 1975 censuses) and 9.25 ha (present census), canopy cover decreased to 28% and 26%, respectively. **Other Observers:** Hillary Smith, Katherine M. Thomas, Mary Gartshore and Peter S. Burke. **Acknowledgments:** I thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 14 July 1991, and the Canadian Wildlife Service for financial support.

59. MATURE WHITE PINE FOREST

BOSQUE MADURO DE PINO BLANCO

WILLIAM R. EDDLEMAN

*Department of Natural Resources Science
210B Woodward Hall
University of Rhode Island
Kingston, Rhode Island 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; 2 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.): 54–55. **Weather:** Mean start temp., 7.6°C (range 2–16°C). Temperature and precipitation departures, respectively, from the 100-yr mean for: May, +3.2°C, -2.7 cm; June, +1.2°C, -4.9 cm; July, -0.5°C, -3.7 cm. **Data source:** University of Rhode Island weather station, Kingston, RI. **Coverage:** 22.9 h; 12 visits (12 sunrise); 5, 8, 9, 11, 16, 19, 21, 24 May; 1, 2, 6, 7 June. **Census:** Pine Warbler, 12.5 (50); Ovenbird, 11.0 (44); Gray Catbird, 5.0 (20); Rufous-sided Towhee, 5.0; Hermit Thrush, 4.5 (18); Black-throated Green Warbler, 4.5; Common Yellowthroat, 4.0 (16); Chipping Sparrow, 4.0; Veery, 3.0 (12); Black-capped Chickadee, 2.5; Red-breasted Nuthatch, 2.5; Great Crested Flycatcher, 2.0; Tufted Titmouse, 2.0; American Robin, 2.0; White-breasted Nuthatch, 1.5; Brown Creeper, 1.5; Blue Jay, 1.0; Brown-headed Cowbird, 1.0; Scarlet Tanager, 0.5; Northern Cardinal, 0.5; American Crow, +. **Total:** 21 species; 70.5 territories (279/40 ha). **Visitors:** Eastern Wood-pewee, Eastern Phoebe, House Wren, Red-winged Blackbird, Common Grackle. **Remarks:** Swamp Sparrow and Black-and-white Warbler disappeared as breeding birds on the plot. The decline in Black-capped Chickadees resulted from changes in the delineation of territories for this species. This is contribution #2688 of the Rhode Island Agricultural Experiment Station. **Other Observers:** David M., and Nancy W. Clayton. **Acknowledgments:** Thanks to Patrick Dorcas and the Audubon Society of Rhode Island for permission to use the site and for continued support of the census program.

60. PINYON–JUNIPER WOODLAND

BOSQUE DE PIÑÓN–JUNIPERO

GARY N. SALAMACHA

*Arches National Park
P.O. Box 907
Moab, Utah 84532*

Location: Utah; Grand Co.; Moab; Devil's Garden; 38°48'N, 109°35'W; Arches National Park Quadrangle, USGS. **Continuity:** Established 1983; 9 yr. **Size:** 31.3 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):60 (1990). **Weather:** Mean start temp., 5.5°C (range -1–14°C). **Coverage:** 20.9 h; 8 visits (8 sunrise); 8, 15, 22, 29 April; 6, 13, 20, 27 May. **Census:** House Finch, 5.0 (6); Say's Phoebe, 2.0; Gray Vireo, 2.0; Black-throated Gray Warbler, 2.0; White-throated Swift, 1.0; Rock Wren, 1.0; Mountain Bluebird, 1.0; Mourning Dove, +; Bewick's Wren, +; Chipping Sparrow, +; Black-throated Sparrow, +. **Total:** 11 species; 14 territories (18/40 ha). **Visitors:** Red-tailed Hawk, American Kestrel, Ash-throated Flycatcher, Western Kingbird, Violet-green Swallow, Scrub Jay, Pinyon Jay, Common Raven, Plain Titmouse, Bewick's Wren, Ruby-crowned Kinglet, Blue-gray Gnatcatcher, American Robin, Yellow-rumped Warbler, Lark Sparrow, White-crowned Sparrow, Scott's Oriole. **Remarks:** There was a notable drop in numbers of Black-throated Sparrows from previous yr. Mountain Bluebirds had not been observed on the plot since 1983. **Other Observers:** Sonja Paspal, Sharon Brussel, Vicky Webster, Terry Chapman, Linda Fagan.

61. GRAZED OAK-PINE WOODLAND

ARBOLEDA DE ROBLE-PINO PASTADO

KATHRYN L. PURCELL, JENNIFER G. TURNER & DOUGLAS A. DRYNAN

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

Location: California; Madera Co.; Coarsegold; San Joaquin Experimental Range; 37°6'N, 119°44'W; Millerton Lake West Quadrangle, USGS. **Continuity:** Established 1985; 7 yr. **Size:** 29.7 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):35-36 (1989). **Weather:** Mean start temp., 8.4°C (range 5-14°C). See BBC #62. **Coverage:** 117 h; 24 visits (24 sunrise); 25, 28 March; 1, 2, 4, 5, 9, 10, 13, 15, 18, 19, 23, 24, 26, 29 April. **Census:** Plain Titmouse, 32.0 (43; 20N); House Finch, 12.5 (17; 1N); Scrub Jay, 11.0 (15; 8N); Mourning Dove, 10.0 (13; 4N); California Quail, 8.5 (11); Ash-throated Flycatcher, 8.5 (4N); Bushtit, 8.0 (11; 9N); Acorn Woodpecker, 7.5 (10; 5N); Lesser Goldfinch, 7.5; California Towhee, 5.0 (7; 2N); Brown-headed Cowbird, 5.0; Bewick's Wren, 3.5 (5); House Wren, 3.5 (1N); Violet-green Swallow, 3.0 (4); Anna's Hummingbird, 2.0 (3N); White-breasted Nuthatch, 2.0 (2N); Western Bluebird, 2.0 (3N); European Starling, 2.0 (2N); Nuttall's Woodpecker, 1.5; Blue-gray Gnatcatcher, 1.5; American Kestrel, 1.0; Red-tailed Hawk, 0.5; Northern Flicker, 0.5 (1N); Canyon Wren, 0.5; Rufous-crowned Sparrow, 0.5. **Total:** 25 species; 139.5 territories (188/40 ha). **Visitors:** Turkey Vulture, Cooper's Hawk, Golden Eagle, Greater Roadrunner, Great Horned Owl, Northern Pygmy-Owl, Common Poorwill, Western Kingbird, Common Raven, American Robin, Phainopepla, Hutton's Vireo, Lark Sparrow, Brewer's Blackbird, Northern Oriole, Lawrence's Goldfinch. **Remarks:** The plot was divided into two parts, a complete census taking two visits. The plot contained 44 nest boxes, 17 of which were used this yr. **Acknowledgments:** This effort is part of a study of bird monitoring techniques conducted by Dr. Jared Verner, USDA Forest Service.

62. UNGRAZED OAK-PINE WOODLAND

ARBOLEDA DE ROBLE-PINO NO PASTADO

KATHRYN L. PURCELL, JENNIFER G. TURNER & DOUGLAS A. DRYNAN

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

Location: California; Madera Co.; Coarsegold; San Joaquin Experimental Range-Natural Area; 37°05'N, 119°43'W; Millerton Lake West Quadrangle, USGS. **Continuity:** Established 1985; 7 yr. **Size:** 29.7 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):35-36 (1989). Latitude was reported incorrectly in previous reports. **Weather:** Mean start temp., 7.4°C (range 4-13°C). March was unseasonably wet causing intermittent streams, ponds, and wet meadows to contain water during the breeding season. **Coverage:** 125 h; 24 visits (24 sunrise); 25, 28 March; 1, 2, 4, 5, 9, 10, 13, 15, 18, 19, 23, 24, 26, 29 April. **Census:** Plain Titmouse, 23.5 (32; 7N); Mourning Dove, 16.0 (22); Lesser Goldfinch, 14.5 (20; 1N); Scrub Jay, 11.5 (15; 8N); House Finch, 10.5 (14; 1N); California Towhee, 8.5 (11; 1N); Acorn Woodpecker, 7.0 (9; 4N); Ash-throated Flycatcher, 6.0 (8; 1N); Bushtit, 5.5 (7; 6N); Brown-headed Cowbird, 5.0 (7); Anna's Hummingbird, 3.5 (5; 3N); Bewick's Wren, 3.5; California Quail, 3.0 (4; 1N); House Wren, 3.0 (1N); European Starling, 2.0 (1N); Western Kingbird, 1.5; White-breasted Nuthatch, 1.5 (1N); California Thrasher, 1.5 (2N); Northern Oriole, 1.5; Canyon Wren, 1.0 (1N); Cooper's Hawk, 0.5; Red-tailed Hawk, 0.5 (1N); Greater Roadrunner, 0.5; Great Horned Owl, 0.5 (1N); Nuttall's Woodpecker, 0.5; Northern Flicker, 0.5; Common Raven, 0.5 (1N); Western Bluebird, 0.5; American Robin, 0.5. **Total:** 29 species; 134.5 territories (181/40 ha). **Visitors:** Turkey Vulture, Golden Eagle, American Kestrel, Hairy Woodpecker, Black Phoebe, Violet-green Swallow, Blue-gray Gnatcatcher, Hutton's Vireo, Lark Sparrow, Red-winged Blackbird, Brewer's

Blackbird, Lawrence's Goldfinch. **Remarks:** This yr the plot was divided into two parts, a complete census taking two visits. **Acknowledgments:** This effort is part of a study of bird monitoring techniques conducted by Dr. Jared Verner, USDA Forest Service.

63. PONDEROSA PINE-SCRUB OAK FOREST

BOSQUE DE PINO PONDEROSA-MATORRAL DE ROBLE

PATRICIA K. COOMBER, JAMES S. KENT, RUSSELL P. DEFUSCO &
JOHN W. OBRINGER

USAFA/DFB

Colorado Springs, Colorado 80840

Location: Colorado; El Paso Co.; Colorado Springs; USAFA Breeding Bird Survey; 38°57'N, 104°50'W; Pikeview Quadrangle, USGS. **Continuity:** Established 1980; 11 yr. **Size:** 12.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):56-57 (1991). Plot size reduced from 13.8 ha due to road construction on the S end of the plot. **Weather:** Mean start temp., 14.5°C (range 10-20°C). Mean temperature and precipitation, respectively, for: May, 12.2°C, 2.54 cm; June, 15.6°C, 8.08 cm; July, 18.9°C, 11.2 cm. **Coverage:** 23.3 h; 11 visits (10 sunrise, 1 sunset); 10, 14, 16, 22, 30 May; 4, 11, 14, 20, 27 June; 3 July. Maximum number of observers/trip, six. **Census:** Chipping Sparrow, 24.0 (80; 1N,1FL); Pine Siskin, 17.0 (57; 1N); Western Wood-Pewee, 14.0 (47; 2N,1FL); Broad-tailed Hummingbird, 12.0 (40; 1N); Brown-headed Cowbird, 11.0 (37); House Finch, 10.0 (33); Lesser Goldfinch, 9.0 (30; 1N); Mountain Chickadee, 8.0 (27; 1FL); Rufous-sided Towhee, 8.0 (1FL); American Robin, 5.0 (17); Mourning Dove, 3.0 (10); Hairy Woodpecker, 2.0 (2N); Western Bluebird, 2.0 (1N); Solitary Vireo, 2.0 (2N); Northern Flicker, 1.0; Black-capped Chickadee, 1.0; White-breasted Nuthatch, 1.0; Pygmy Nuthatch, 1.0; House Wren, 1.0; Western Tanager, 1.0 (1N); Black-headed Grosbeak, 1.0; Common Grackle, 1.0. **Total:** 22 species; 135 territories (450/40 ha). **Visitors:** Great Horned Owl, Common Nighthawk, Violet-green Swallow, Steller's Jay, Common Raven, American Crow, Townsend's Solitaire, Yellow Warbler, Yellow-rumped Warbler, Purple Finch. **Other Observers:** Carolyn Miller, Jeff Hays, Erick Snellman, Albert Rhodes, Bill Whitman, Tom Marlin, Frank Cassel, Donald Diesel.

64. CLIMAX HEMLOCK-WHITE PINE FOREST WITH TRANSITION HARDWOODS

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

ANDREW MAGEE

White Memorial Conservation Center
Litchfield, Connecticut 06759

Site Number: CT2765008. **Location:** Connecticut; Litchfield Co.; Litchfield; White Memorial Foundation-Catlin Woods; 41°43'N, 73°12'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 25 yr. **Size:** 10.5 ha. **Description of Plot:** See *Aud. Field Notes* 19:594-595 (1965). **Weather:** Mean start temp., 19.8°C (range 8-27°C). **Coverage:** 14.8 h; 8 visits (2 sunrise, 1 sunset); 17, 31 May; 1, 7, 8, 11, 22 June. **Census:** Veery, 10.0 (38); Ovenbird, 9.0 (34); Red-eyed Vireo, 7.0 (27); Wood Thrush, 5.5 (21); Black-throated Green Warbler, 5.0 (19); Solitary Vireo, 3.5 (13); Great Crested Flycatcher, 3.0 (11); Blue Jay, 3.0; Black-capped Chickadee, 3.0; Red-breasted Nuthatch, 3.0; American Robin, 3.0; Blackburnian Warbler, 3.0; Scarlet Tanager, 3.0; Wood Duck, 2.0; Mourning Dove, 2.0; Downy Woodpecker, 2.0; Hairy Woodpecker, 2.0; White-breasted Nuthatch, 2.0; Hermit Thrush, 2.0; Pine Warbler, 2.0; Pileated Woodpecker, 1.5; American Crow, 1.5; Sharp-shinned Hawk, 1.0; Northern Flicker, 1.0; Eastern Wood-Pewee, 1.0; Brown Creeper, 1.0; Gray Catbird, 1.0; Yellow-throated Vireo, 1.0; Common Yellowthroat, 1.0; Song Sparrow, 1.0;

Common Grackle, 1.0; Brown-headed Cowbird, 1.0; Northern Oriole, 1.0; Purple Finch, 1.0; Broad-winged Hawk, 0.5; Eastern Kingbird, 0.5; Northern Waterthrush, 0.5; Great Horned Owl, +; Barred Owl, +; Cedar Waxwing, +. **Total:** 40 species; 91.5 territories (349/40 ha). **Remarks:** All but one of the five most common species – Ovenbird, Blackburnian Warbler, Veery, Red-eyed Vireo, and Black-throated Green Warbler – which have increased over the last 15 yr, were well below average this yr. The one exception, Veery, was the most abundant species for the first time in 25 yr. The Blackburnian Warbler, down to three territories from 11 two yr ago, has experienced the sharpest decline. An apparent increase in Red Squirrels this yr may help explain these declines. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

65. MATURE BROADLEAF-CONIFEROUS FORESTED WETLAND

BOSQUE MADURO DE ARBOLES DE HOJA ANCHA-CONIFEROS

TOM HARRINGTON

30 South Windham Road

Willimantic, Connecticut 06226

Site Number: CT1291035. **Location:** Connecticut; Hartford Co.; Manchester; Oak Grove Nature Center; 41°46'N, 72°30'W; Manchester Quadrangle, USGS. **Continuity:** New. **Size:** 21.5 ha. **Description of Plot:** The plot lies within a nature center and contains one building at the W end used for educational purposes. The plot is irregularly-shaped, 1190 m in length and varying from 30 to 335 m in width. The closed canopy is dominated by Black Oak, Eastern Hemlock, and Sugar Maple; the understory by Sugar Maple saplings, Spicebush, and Red Cedar saplings; ground cover by Virginia Creeper, Prickly Dewberry, and Spicebush. The plot contains three continuously-flowing streams, one ephemeral stream, and a pond with a maximum diameter of 63 m. **Edge:** The N, S, and W boundaries are bordered by town roads and suburban homes surrounded by similar forest; the E boundary, predominantly, by similar forest. **Topography and Elevation:** The plot slopes to the NW at <5% grade. Minimum elevation 84 m, maximum 110 m. **Weather:** Mean start temp., 19.8°C (range 13–26°C). Temperature departure from average for the census period, +2.8°C. Precipitation departure from average for: May, +4.5 cm, June, -1.1 cm. Data source: Bradley Airport, Windsor Locks, CT. **Coverage:** 27 h; 10 visits (10 sunrise); 13, 18, 25, 27, 28 May; 1, 8, 9, 15, 29 June. **Census:** Gray Catbird, 13.0 (24; 3FL); European Starling, 13.0 (13N,20FL); Red-winged Blackbird, 12.0 (22; 4FL); Black-capped Chickadee, 11.0 (20; 24FL); American Robin, 10.0 (19; 9FL); Common Grackle, 8.0 (15; 15FL); Veery, 7.0 (13; 4FL); Tufted Titmouse, 5.0 (9; 7FL); Mourning Dove, 4.0 (7); Northern Flicker, 4.0 (2N,2FL); Blue Jay, 4.0 (2FL); Northern Cardinal, 4.0; Wood Thrush, 3.0 (6; 2N); Red-eyed Vireo, 3.0 (1N); Ovenbird, 3.0; Common Yellowthroat, 3.0; Eastern Wood-Pewee, 2.0; Eastern Phoebe, 2.0 (2N,7FL); White-breasted Nuthatch, 2.0; Northern Oriole, 2.0; House Finch, 2.0 (2FL); Mallard, 1.0; Eastern Screech-Owl, 1.0; Downy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Tree Swallow, 1.0 (1N,3FL); American Crow, 1.0 (1N,3FL); House Wren, 1.0; Blue-winged Warbler, 1.0; Louisiana Waterthrush, 1.0 (1FL); Scarlet Tanager, 1.0; Rufous-sided Towhee, 1.0; Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; American Goldfinch, 1.0. **Total:** 35 species; 131 territories (244/40 ha). **Visitors:** Wood Duck, Spotted Sandpiper, Rock Dove, Belted Kingfisher, Red-bellied Woodpecker, Hairy Woodpecker, Eastern Kingbird, Barn Swallow, Blue-gray Gnatcatcher, Northern Mockingbird, Cedar Waxwing, Chestnut-sided Warbler, Black-and-white Warbler, American Redstart, Northern Waterthrush, Rose-breasted Grosbeak, Chipping Sparrow. **Remarks:** A beaver moved onto the pond shortly after the beginning of this count. The rise in water level may have affected the Mallards nesting on a tussock. An Eastern Screech-Owl was heard on 19 April, and observed (Gray phase) on 20 April with a vole in its beak. While observing the owl, another screech owl was heard calling softly nearby. Other observers have heard screech owls on the plot and also have found pellets. **Acknowledgments:** Special thanks to Sue Craig for companionship and information on the nature center, and to Juan Sanchez for follow-up information on the Eastern Screech-Owl.

66. OAK-HEMLOCK FOREST

BOSQUE DE ROBLE-PICEA

ROBERT A. ASKINS & MARGARETT J. PHILBRICK

*Department of Zoology
Connecticut College
270 Mohegan Avenue
New London, Connecticut 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; 21 yr. **Size:** 23.1 ha. **Description of Plot:** See *Am. Birds* 37:73-74 (1983). Many hemlock are dying from an infestation of Woolly Adelgid (*Adelges tsugae*). Infected trees still retained their needles this yr, but within two yr a large proportion of the study area will probably be defoliated. Latitude was reported incorrectly in previous yr. **Weather:** Mean start temp., 15.2°C (range 10-19°C). **Coverage:** 24.9 h; 20 visits (20 sunrise); 18, 23, 26, 30 May; 2, 6, 8, 16, 19, 23, 24, 30 June; 7 July. **Census:** Veery, 12.0 (21); Red-eyed Vireo, 10.5 (18); Black-capped Chickadee, 8.5 (15); Gray Catbird, 7.5 (13); Ovenbird, 6.0 (10); Tufted Titmouse, 5.5 (10); Great Crested Flycatcher, 4.0 (7); Northern Cardinal, 4.0; Rufous-sided Towhee, 4.0; Blue Jay, 3.5 (6); Carolina Wren, 3.5; White-breasted Nuthatch, 3.0 (5); Wood Thrush, 3.0; Common Yellowthroat, 3.0; Scarlet Tanager, 3.0; Northern Flicker, 2.0; Eastern Wood-Pewee, 2.0; American Crow, 2.0; Chestnut-sided Warbler, 2.0; Black-and-white Warbler, 2.0; Brown-headed Cowbird, 2.0; White-eyed Vireo, 1.5; Hooded Warbler, 1.5; Broad-winged Hawk, 1.0; Barred Owl, 1.0; Downy Woodpecker, 1.0; Eastern Phoebe, 1.0; Louisiana Waterthrush, 1.0; Red-bellied Woodpecker, 0.5; Pine Warbler, 0.5; House Wren, +; Blue-winged Warbler, +. **Total:** 32 species; 102 territories (177/40 ha). **Visitors:** Mourning Dove, Black-billed Cuckoo, Ruby-throated Hummingbird, Hairy Woodpecker, Acadian Flycatcher, American Robin, Cedar Waxwing, American Redstart, Common Grackle, Northern Oriole, American Goldfinch. **Remarks:** The Carolina Wren has shown a steady increase in the study area. Before 1988 it was an occasional visitor. Some long-distance migrants, such as Black-and-white Warbler and Ovenbird, have declined since the early 1980s, but other species (e.g., Veery and Eastern Wood-Pewee) have had relatively stable populations. **Acknowledgments:** Glenn Dreyer and his staff at the Connecticut College Arboretum facilitated our study.

67. UPLAND OAK & HEMLOCK FOREST

BOSQUE ROBLE Y PICEA DE ALTURAS

ROBERT BRAUNFIELD

*Box 84
Hadlyme, Connecticut 06439*

Site Number: CT1289097. **Location:** Connecticut; Middlesex Co.; Salem; Strong Woodland, Burnham Brook Preserve; 41°27'N, 72°19'W; Hamburg Quadrangle, USGS. **Continuity:** Established 1989; 3 yr. **Size:** 10.5 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):59 (1990). **Weather:** Mean start temp., 15.4°C (range 8-21°C). Rainfall of 12.7 cm for May and June was well below the 19.6 cm mean for the same period since 1983. **Coverage:** 8.1 h; 8 visits (8 sunrise); 25, 29, 31 May; 5, 11, 14, 17, 21 June. **Census:** Red-eyed Vireo, 17.0 (65); Ovenbird, 13.0 (50); Black-throated Green Warbler, 7.0 (27); Worm-eating Warbler, 7.0; Black-and-white Warbler, 6.0 (23); Black-capped Chickadee, 5.0 (19); Blue-gray Gnatcatcher, 5.0; Eastern Wood-Pewee, 4.0 (15); Tufted Titmouse, 4.0; Hermit Thrush, 4.0; Yellow-throated Vireo, 4.0; Cerulean Warbler, 4.0; Scarlet Tanager, 3.0 (11); Acadian Flycatcher, 2.0; Eastern Phoebe, 2.0; Wood Thrush, 1.5; American Redstart, 1.5; American Crow, 1.0; Northern Cardinal, 1.0. **Total:** 19 species; 92 territories (350/40 ha). **Visitors:** Northern Flicker, Red-bellied Woodpecker, Brown Creeper, Veery, Solitary Vireo,

Northern Oriole, Common Grackle, Brown-headed Cowbird, Rufous-sided Towhee. **Remarks:** Missing from the plot were yr-round residents such as White-breasted Nuthatch, Downy Woodpecker, and Blue Jay. **Other Observers:** Julie Zickefoose. **Acknowledgments:** Dr. Richard H. Goodwin, Dr. Robert Askins.

68. YOUNG MIXED HARDWOOD-CONIFER STAND

BOSQUE JOVEN-MIXTO DE MADERAS DURAS/RODAL DE CONÍFEROS

ANDREW MAGEE

*White Memorial Conservation Center
Litchfield, Connecticut 06759*

Site Number: CT2778262. **Location:** Connecticut; Litchfield Co.; Morris; White Memorial Foundation; 41°42'N, 73°10'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1978; 14 yr. **Size:** 8.5 ha. **Description of Plot:** See *Am. Birds* 33:72 (1979). **Weather:** Mean start temp., 20°C (range 10–27°C). **Coverage:** 13.8 h; 8 visits (1 sunrise, 4 sunset); 17, 31 May; 1, 6, 7, 11, 21, 22 June. **Census:** Red-eyed Vireo, 15.0 (71); Wood Thrush, 10.0 (47); Veery, 9.0 (42); American Redstart, 8.0 (38); Gray Catbird, 4.5 (21); American Robin, 4.0 (19); Chestnut-sided Warbler, 4.0; Black-and-white Warbler, 4.0; Ruby-throated Hummingbird, 3.0 (14); Yellow-bellied Sapsucker, 3.0; Ovenbird, 3.0; Common Yellowthroat, 3.0; Canada Warbler, 3.0; Scarlet Tanager, 3.0; Blue Jay, 2.0; Black-capped Chickadee, 2.0; Mourning Dove, 1.5; Hermit Thrush, 1.5; Song Sparrow, 1.5; American Woodcock, 1.0; Eastern Wood-Pewee, 1.0; Eastern Phoebe, 1.0; Tufted Titmouse, 1.0; Blue-gray Gnatcatcher, 1.0; Cedar Waxwing, 1.0; Yellow-throated Vireo, 1.0; Blue-winged Warbler, 1.0; Louisiana Waterthrush, 1.0; Rose-breasted Grosbeak, 1.0; Brown-headed Cowbird, 1.0; Downy Woodpecker, 0.5; Hairy Woodpecker, 0.5; Northern Flicker, 0.5; American Crow, 0.5; Solitary Vireo, 0.5; Rufous-sided Towhee, 0.5; Northern Oriole, 0.5; Wood Duck, +; Ruffed Grouse, +; Pileated Woodpecker, +; Yellow-rumped Warbler, +; Black-throated Green Warbler, +. **Total:** 42 species; 99.5 territories (468/40 ha). **Remarks:** The number of forest bird territories has been increasing since the 1978–79 clear-cutting of Red Pine, however, some species numbers have begun to fluctuate. The number of Red-eyed Vireo territories increased from four two yr ago to eight in 1990 and a new high of 15 this yr. Wood Thrush numbers tied their previous high of 10 set in 1988 and 1990. Veery, American Redstart, and Ovenbird numbers were down, however. The number of catbird territories plunged from 14 in 1990 to 4.5, and the number of Blue-winged Warblers dropped from five in 1990 to one. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

69. MIXED OAK-VIRGINIA PINE FOREST

BOSQUE MIXTO DE ROBLE-PINOS DE VIRGINIA

DEANNA K. DAWSON

*U.S. Fish & Wildlife Service
Patuxent Wildlife Research Center
Laurel, Maryland 20708*

Site Number: MD0490088. **Location:** Maryland; Prince George's Co.; Bowie; Tanglewood; 39°0'N, 76°47'W; Laurel & Lanham Quadrangles, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 38.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):60–61. **Weather:** No data provided. Mean daily temperatures were well above average during May. Precipitation during May through August was about one-third below normal. **Coverage:** 63.4 h; 15 visits (14 sunrise); 8, 11, 14, 17, 22, 29 May; 1, 5, 8, 11, 14, 18, 21, 24, 27 June. **Census:** Red-eyed Vireo, 24.0 (25; FL); Ovenbird, 13.0 (14; FL); Northern Cardinal, 11.0 (12; FL); Acadian Flycatcher, 9.0 (9; 7N,FL); Wood Thrush, 9.0 (4N,FL); Hooded Warbler, 8.0 (8; 2N,FL); Rufous-sided Towhee, 8.0 (FL); Carolina Wren, 7.5 (8; FL); Tufted Titmouse,

7.0 (7; 1N,FL); Blue-gray Gnatcatcher, 7.0 (FL); Carolina Chickadee, 6.0 (6; FL); Kentucky Warbler, 6.0 (FL); Scarlet Tanager, 6.0; Red-bellied Woodpecker, 5.0 (5); Eastern Wood-pewee, 5.0; Pine Warbler, 5.0; Black-and-white Warbler, 5.0; Brown-headed Cowbird, 4.0 (4; FL); Yellow-billed Cuckoo, 3.0 (3); Great Crested Flycatcher, 3.0; Blue Jay, 3.0; White-breasted Nuthatch, 3.0; Gray Catbird, 3.0; Northern Parula, 3.0; Downy Woodpecker, 2.0 (FL); Hairy Woodpecker, 2.0; American Crow, 2.0 (FL); White-eyed Vireo, 2.0; Indigo Bunting, 2.0; Northern Flicker, 1.5; Red-shouldered Hawk, 1.0; Mourning Dove, 1.0 (1N); Barred Owl, 1.0; Pileated Woodpecker, 1.0 (FL); Eastern Phoebe, 1.0 (FL); American Robin, 1.0 (FL); Yellow-throated Vireo, 1.0; Worm-eating Warbler, 1.0; Louisiana Waterthrush, 1.0; Common Yellowthroat, 1.0; Summer Tanager, 1.0; Ruby-throated Hummingbird, +; Common Grackle, +. **Total:** 43 species; 186 territories (196/40 ha). **Visitors:** Eastern Bluebird, House Finch, American Goldfinch. **Remarks:** Damage to trees by Gypsy Moth caterpillars was minimal this yr; however, oaks scattered throughout the study plot have died as a result of repeated defoliation in previous yr. A 19 May egg date for the Acadian Flycatcher was the earliest reported for the species in Maryland.

70. TAMARACK BOG AND HARDWOOD

PANTANO DE TAMARAK-MADERAS DURAS

JAMES MULLINS

2558 Locust Lane
Stevensville, Michigan 49127

Location: Michigan; Berrien Co.; Stevensville; Grand Mere State Park; 42°0'N, 86°33'W; Bridgman Quadrangle, USGS. **Continuity:** Established 1976; 16 yr. **Size:** 8.5 ha. **Description of Plot:** See *Am. Birds* 30:1049 (1976). **Weather:** Mean start temp., 16.2°C (range 13–18°C). **Coverage:** 8 h; 8 visits (8 sunrise); 1, 2, 8, 9, 15, 16, 22, 23 June. **Census:** Canada Warbler, 3.0; Eastern Wood-Pewee, 2.0; Veery, 2.0; Wood Thrush, 2.0; Red-eyed Vireo, 2.0; Northern Flicker, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; American Robin, 1.0; Scarlet Tanager, 1.0; Northern Cardinal, 1.0. **Total:** 13 species; 19 territories (89/40 ha). **Visitors:** Hairy Woodpecker.

71. ASPEN-PINE WILDERNESS

PARAJJE DE ALAMO TEMBLON-PINO

ROBERT O'CONNOR & BETSY BENEKE

1353 4th Street North
Fargo, North Dakota 58102

Site Number: MN2091070. **Location:** Minnesota; Becker Co.; Rochert; Tamarac National Wildlife Refuge; 47°5'N, 95°35'W; Many Point Lake Quadrangle, USGS. **Continuity:** New. **Size:** 13.4 ha. **Description of Plot:** A square plot (360 × 360 m) located in a federal wilderness at the NE tip of the refuge. The plot's canopy is dominated by Quaking Aspen, American Basswood, and Red Pine (61–100 yr old) with a mean canopy height of 17.5 m (range 5–30 m). The understory is dominated by American Hazel, Eastern Hophornbeam, and American Basswood. Ground cover includes Large-leaved Aster, Wood Anemone, and ferns. **Edge:** More than 75% of the plot's perimeter is surrounded by the same habitat, and the plot itself lies within a tract of similar habitat between 100 and 500 ha in size. **Topography and Elevation:** The plot lies on a slope with a 6–10% grade. Minimum elevation 460 m, maximum 473 m. **Weather:** Mean start temp., 20.4°C (range 18–24°C). **Coverage:** 19 h; 8 visits (4 sunrise, 1 sunset); 23, 25, 27 June; 1, 2, 3, 9, 11 July. **Census:** Ovenbird, 28.5 (85; 1FL); Red-eyed Vireo, 27.0 (81); Pine Warbler, 5.0 (15); Yellow-bellied Sapsucker, 3.5 (10; 1N,3FL); American Redstart, 3.5; White-breasted Nuthatch, 2.0; Eastern Wood-pewee, 1.5; Least Flycatcher, 1.5; Blue Jay, 1.5; Black-throated Green Warbler, 1.5; Great

Crested Flycatcher, 1.0; Black-capped Chickadee, 1.0; Chestnut-sided Warbler, 1.0; Broad-winged Hawk, 0.5; Scarlet Tanager, 0.5. **Total:** 15 species; 79.5 territories (237/40 ha). **Visitors:** Hairy Woodpecker, Downy Woodpecker, American Crow, Veery, Golden-winged Warbler, Red-winged Blackbird, Rose-breasted Grosbeak, American Goldfinch.

72. MATURE RED PINE FOREST WITH DECIDUOUS UNDERSTORY

BOSQUE MADURO DE PINO ROJO CON SOTOBOSQUE DECIDUO

KELLY MUNSON & CATHERINE N. PODESWA

*University of Minnesota Forestry & Biological Station
Lake Itasca, Minnesota 56460*

Site Number: MN2090023. **Location:** Minnesota; Clearwater Co.; Lake Itasca; Itasca State Park Wilderness Sanctuary; 47°13'N, 95°12'W; Lake Itasca Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):64–65 (1991). **Weather:** Mean start temp., 16.1°C (range 13–22°C). **Coverage:** 25.8 h; 9 visits (7 sunrise, 2 sunset); 18, 21, 23, 25, 28, 30 June; 5, 6, 7 July. **Census:** Ovenbird, 25.0 (100; 1N); Pine Warbler, 24.5 (98); Red-eyed Vireo, 24.0 (96); Black-throated Green Warbler, 13.0 (52); Canada Warbler, 6.0 (24); Chestnut-sided Warbler, 5.5 (22); Hermit Thrush, 5.0 (20); Northern Parula, 5.0; Eastern Wood-Pewee, 4.5 (18); Great Crested Flycatcher, 4.0 (16); Common Yellowthroat, 3.5 (14); Mourning Warbler, 2.0; Brown Creeper, 1.5; Scarlet Tanager, 1.5; Ruffed Grouse, 1.0 (7FL); Pileated Woodpecker, 1.0; Black-capped Chickadee, 1.0; Winter Wren, 0.5. **Total:** 18 species; 128.5 territories (514/40 ha). **Visitors:** Broad-winged Hawk, Yellow-bellied Sapsucker, Hairy Woodpecker, Black-backed Woodpecker, Gray Jay, Blue Jay, Common Raven, Red-breasted Nuthatch, American Redstart, Song Sparrow, Pine Siskin. **Other Observers:** Dr. David Blockstein, Grant Canterbury. **Acknowledgments:** University of Minnesota Forestry & Biological Station and Itasca State Park.

73. MIXED PINE-ASPEN FOREST

BOSQUE MIXTO DE PINOS-ALAMO TEMBLON

GRANT CANTERBURY

*318 Church Street SE
Minneapolis, Minnesota 55455*

Site Number: MN3091044. **Location:** Minnesota; Clearwater Co.; Lake Itasca; Peace Pipe Forest; 47°12'N, 95°10'W; Lake Itasca Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** A roughly triangular plot (longest side 450 m, shortest, 350 m) consisting of trees > 100 yr in 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 30 – 0.04 ha circular samples, 428/ha; total basal area 33.7m². Species comprising 90% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): Sugar Maple, 91.4,21.4, 4.8, 47; Dead, 61, 14.3, 11.9, 87; Quaking Aspen, 52.6, 12.3, 17.8, 60; Paper Birch, 51.1, 12.0, 5.7, 60; Red Oak, 32.9, 7.7, 7.2, 57; White Oak, 32.9, 7.7, 3.2, 47; Ironwood, 32.1, 7.5, 0.9, 53; Red Pine, 24.7, 5.8, 28.5, 43; Black Ash, 22.2, 5.2, 1.5, 43; White Pine, 21.5, 5.0, 19.7, 30; 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) 157.3, 36.8, 1.4, 4.3; B (15.3–22.9 cm) 98.8, 23.1, 2.8, 8.2; C (30–38.1 cm) 93.9, 22.0, 7.0, 20.7; D (38.2–53.3 cm) 37.1, 8.7, 6.2, 18.4; E (53.4–68.6 cm) 24.7, 5.8, 7.1, 21.1; F (68.7–83.8 cm) 9.1, 2.1, 4.1, 12.3; G (83.9–101.6 cm) 4.9, 1.2, 3.3, 9.7; H (>101.6 cm) 2.5, 0.6, 2.3, 6.9. Shrub stems/ha, 14,400; ground cover, 38%; canopy cover, 83%; average canopy height, 22 m (range 10–30 m). **Edge:** More than 75% of the plot's

perimeter is surrounded by the same habitat, and the plot lies within a tract of similar habitat > 500 ha in size. **Topography and Elevation:** The plot's slope is <5%. Minimum elevation 463 m, maximum 470 m. **Weather:** Mean start temp., 19.3°C (range 18–24°C). **Coverage:** 26.5 h; 9 visits (6 sunrise, 1 sunset); 8, 11, 18, 19, 22, 25, 28, 29 June. **Census:** Red-eyed Vireo, 17.5 (70); Ovenbird, 17.0 (68); Least Flycatcher, 12.0 (48); Pine Warbler, 8.5 (34); Veery, 4.0 (16); Eastern Wood-Pewee, 3.0 (12); Black-throated Green Warbler, 3.0; Great Crested Flycatcher, 2.0; American Redstart, 2.0; Winter Wren, 1.5; Yellow-bellied Sapsucker, 1.0; Black-capped Chickadee, 1.0; Scarlet Tanager, 1.0; Common Yellowthroat, +; Canada Warbler, +. **Total:** 15 species; 73.5 territories (294/40 ha). **Visitors:** Broad-winged Hawk, Ruffed Grouse, Pileated Woodpecker, Hairy Woodpecker, Gray Jay, Blue Jay, White-breasted Nuthatch, Red-breasted Nuthatch, American Robin, Hermit Thrush, Chestnut-sided Warbler, Mourning Warbler. **Remarks:** The high density of Least Flycatchers reflects the presence of a local colony, and is not indicative of general population levels throughout the park. **Other Observers:** David Blockstein. **Acknowledgments:** Thanks to Itasca Biological Station.

74. YOUNG ASPEN FOREST WITH SCATTERED MATURE PINES

BOSQUE JOVEN DE ALAMO CON ALGUNOS PINOS MADUROS DISPERSOS

JERRY SISLER, DAVID EBAUGH II & KEVIN NIEMELA

*University of Minnesota Forestry & Biological Station
Lake Itasca, Minnesota 56460*

Site Number: MN2091088. **Location:** Minnesota; Clearwater Co.; Lake Itasca; Sewage Lagoon Woods, Itasca State Park; 47°13'N, 95°10'W; Lake Itasca Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 10.3 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):62–63 (1991). Plot size increased from 9 ha in 1990 and now includes more mature pine and oak forest on the N end of the plot. **Weather:** Mean start temp., 19.7°C (range 16–28°C). **Coverage:** 24.5 h; 8 visits (6 sunrise, 2 sunset); 18, 20, 25, 28, 30 June; 2, 3 July. **Census:** Chestnut-sided Warbler, 19.5 (76; 6FL); Ovenbird, 16.5 (64; 2FL); Red-eyed Vireo, 15.5 (60; 1N,3FL); Pine Warbler, 15.5; American Redstart, 12.5 (49; 10FL); Veery, 4.5 (17; 5FL); Eastern Wood-Pewee, 4.0 (16); Golden-winged Warbler, 4.0 (3FL); Mourning Warbler, 4.0; Least Flycatcher, 3.0 (12; 5FL); Rose-breasted Grosbeak, 3.0; Yellow-bellied Sapsucker, 2.0; Indigo Bunting, 2.0; Chipping Sparrow, 2.0; Black-capped Chickadee, 1.5 (8FL); Common Yellowthroat, 1.5; Ruffed Grouse, 1.0; Black-billed Cuckoo, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Red-breasted Nuthatch, 1.0; White-breasted Nuthatch, 1.0; Nashville Warbler, 1.0; Scarlet Tanager, 1.0; Ruby-throated Hummingbird, 0.5; Gray Catbird, 0.5; Northern Oriole, 0.5. **Total:** 28 species; 121.5 territories (472/40 ha). **Visitors:** Broad-winged Hawk, Northern Flicker, Olive-sided Flycatcher, Eastern Kingbird, Barn Swallow, Rough-winged Swallow, Blue Jay, American Crow, Brown Creeper, American Robin, Yellow-rumped Warbler, Black-throated Green Warbler, Song Sparrow, Red-winged Blackbird, Brown-headed Cowbird, Red Crossbill, American Goldfinch. **Remarks:** A Brown-headed Cowbird fledgling was observed being fed by a Nashville Warbler. **Other Observers:** Dr. David Blockstein, Grant Canterbury. **Acknowledgments:** University of Minnesota Forestry & Biological Station and Itasca State Park.

75. UPLAND MIXED PINE–SPRUCE–HARDWOOD PLANTATION

PLANTACIÓN MIXTAS DE PINO–ABETO MADERAS DURAS DE ALTURAS

ELIZABETH W. BROOKS

*1435 Waterwells Road
Alfred Station, New York 14803*

Site Number: NY2474107. **Location:** New York; Allegany Co.; Ward; Phillips Creek State Reforestation Tract; 42°8'N, 77°45'W; Andover Quadrangle, USGS. **Continuity:** Estab-

lished 1974; 18 yr. **Size:** 16.6 ha. **Description of Plot:** See *Am. Birds* 28:699–700 (1974). Up to 40% of the plot's trees were damaged during the 3–5 March 1991 ice storm. Red Pines were especially hard hit in areas where selective thinning had taken place. The NYS Dept. of Environmental Conservation authorized the removal of >19,000 board ft. of lumber in a 4.9 ha section of Red Pine which had been uprooted or damaged. **Weather:** Mean start temp., 17.6°C (range 9–27°C). See BBC #55. **Coverage:** 17.3 h; 10 visits (3 sunset); 29 March; 29 April; 5, 19, 30 May; 6, 13, 20, 27 June; 5 July. **Census:** Black-throated Green Warbler, 12.0 (29); Magnolia Warbler, 10.0 (24); Dark-eyed Junco, 10.0; Blackburnian Warbler, 9.0 (22); Golden-crowned Kinglet, 7.0 (17); Black-capped Chickadee, 4.0 (10); American Robin, 4.0; Common Yellowthroat, 3.0 (7); Blue Jay, 2.0; Red-breasted Nuthatch, 2.0; Brown Creeper, 2.0; Solitary Vireo, 2.0; Chestnut-sided Warbler, 2.0; Yellow-rumped Warbler, 2.0; Ovenbird, 2.0; Chipping Sparrow, 2.0; Wood Thrush, 1.5; Mourning Warbler, 1.5; Song Sparrow, 1.5; Purple Finch, 1.5; Broad-winged Hawk, 1.0; Winter Wren, 1.0; Veery, 1.0; Cedar Waxwing, 1.0; Rose-breasted Grosbeak, 1.0; Indigo Bunting, 1.0; Brown-headed Cowbird, 1.0; Ruffed Grouse, +; Hairy Woodpecker, +; Pileated Woodpecker, +; American Crow, +; Hermit Thrush, +. **Total:** 32 species; 88 territories (212/40 ha). **Visitors:** Red-shouldered Hawk, Barred Owl, Downy Woodpecker, Eastern Wood-Pewee, Great-crested Flycatcher, Tufted Titmouse, House Wren, Nashville Warbler, Louisiana Waterthrush, Red Crossbill. **Remarks:** The Black-throated Green Warbler reversed its downward trend; the Magnolia Warbler continues to improve, as does the junco. Winter Wren was a new species to the plot. Brush inhabiting species probably benefitted from the storm damage, whereas coniferous canopy breeders lost habitat. **Acknowledgments:** Appreciation to Rick Walker of the Alfred Cooperative Weather Station and to Martin Eddy of the Eddy Lumber Co. for information on ice-storm damage and clean-up.

76. MATURE HEMLOCK-HARDWOOD FOREST

BOSQUE DE MADERAS DURAS-Y PICEA MADURA

DAVE MINNEY

The Nature Conservancy, Ohio
1504 W. First Avenue
Columbus, Ohio 43212

Site Number: OH2291008. **Location:** Ohio; Hocking Co.; Gibsontonville; Hood Hollow Plot; 39°30'N, 82°34'W; South Bloomingville Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):85 (1991). Plot was enlarged 1.5 ha in 1991 to comply with minimum plot size standards for the BBC. **Weather:** Mean start temp., 20°C (range 16–27°C). Mean average temp. for May 4°C above normal, precipitation 0.4 cm above normal. Mean average temp. for June 4.5°C above normal, precipitation 6.6 cm below average. Source: National Weather Service, Mound City. **Coverage:** 24.5 h; 8 visits (7 sunrise, 1 sunset); 20, 30 May; 1, 10, 18, 24, 26 June; 8 July. **Census:** Acadian Flycatcher, 22.0 (88); Worm-eating Warbler, 9.0 (36; 9FL); Ovenbird, 9.0; Red-eyed Vireo, 8.5 (34); Wood Thrush, 7.0 (28; 1N); Black-and-white Warbler, 5.0 (20); Black-throated Green Warbler, 4.5 (18); Louisiana Waterthrush, 4.5; Eastern Phoebe, 4.0 (16; 1N); Carolina Wren, 4.0; Scarlet Tanager, 4.0; Brown-headed Cowbird, 4.0; Northern Parula, 3.0 (12); Ruby-throated Hummingbird, 2.0; Carolina Chickadee, 2.0 (5FL); Tufted Titmouse, 2.0 (4FL); Hermit Thrush, 2.0 (3FL); Kentucky Warbler, 2.0; Hooded Warbler, 2.0 (1N,4FL); Wild Turkey, 1.0; Yellow-billed Cuckoo, 1.0; Red-bellied Woodpecker, 1.0; Hairy Woodpecker, 1.0 (4FL); Pileated Woodpecker, 1.0 (1N); Blue Jay, 1.0; White-breasted Nuthatch, 1.0; Cerulean Warbler, 1.0; Red-tailed Hawk, +; Ruffed Grouse, +; Solitary Vireo, +; Indigo Bunting, +. **Total:** 31 species; 108.5 territories (434/40 ha). **Visitors:** Downy Woodpecker, Rough-winged Swallow, Cedar Waxwing, Magnolia Warbler, Northern Cardinal. **Acknowledgments:** Crane Hollow, Inc.

77. DRY COTTONWOOD–JUNIPER SAVANNAH

SAVANA DE ALAMO SECO–JUNIPERO

JULIAN R. HOUGH & MARK J. PALMER

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

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°7'W; Gravelly Bay Quadrangle, DEMR. **Continuity:** New. **Size:** 10.5 ha. **Description of Plot:** A long rectangular plot measuring 700 × 150 m. The dominant canopy trees are Eastern Cottonwood and Red Cedar. The understorey is composed of scattered shrubs of Red Cedar. The ground layer is composed of Little Blue-stem and Kalm's St. John's-wort. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 14/ha, total basal area 0.3 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Eastern Cottonwood 5, 34, 53, 75; Red Cedar 7, 50, 19, 85; White Pine <1, 1, 1, 5; dead trees and stumps over 2 m tall 2, 15, 27, 50. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5–15 cm) 9, 65, 0.09, 25; B (>15–23 cm) 2, 16, 0.06, 18; C (>23–38 cm) 2, 18, 1.79, 49; D (>38–53 cm) <1, 1, 0.03, 8. Average canopy height, 5.0 m (range 1.4–11.5 m, n = 19). Ground cover 40%, canopy cover 3%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 53,000. Size class distribution: <0.5 m, 53,000; 0.5–1.0 m, 0; >1.0 m, 0. Shrub species in order of total abundance: Kalm's St. John's-wort 52,900 stems <0.5 m, 0 stems 0.5–1.0 m, 0 stems >1.0 m; Common Juniper 100, 0, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Little Blue-stem 36%, 8 quadrats; Kalm's St. John's-wort 35, 3; Cylindric Blazing Star 9, 2; Canada Blue Grass 7, 4; Switch Grass 5, 4; Sand Dropseed <1, 4. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: bare sand 68%, litter 28%. **Edge:** Similar habitat to the E and W, sedge-rush swale to the S and marshland to the N. **Topography and Elevation:** Minimum elevation 177 m, maximum 183 m. Area characterized by high rolling dunes in N half of plot and lower rolling dunes in S half. **Weather:** Mean start temp., 20°C (range 17–22°C). **Coverage:** 19 h; 10 visits (9 sunrise, 1 sunset); 1, 2, 3, 6, 14, 16, 17, 19, 20, 25 June. **Census:** Tree Swallow, 6.0 (23; 6N); Chipping Sparrow, 5.5 (21; 5FL); House Wren, 4.5 (17); Song Sparrow, 3.0 (11); European Starling, 2.0 (10FL); Northern Flicker, 1.0 (1N); American Crow, 1.0 (1N); Northern Mockingbird, 1.0 (1N); Field Sparrow, 1.0; Red-winged Blackbird, 1.0. **Total:** 10 species; 26 territories (99/40 ha). **Visitors:** Northern Harrier, Killdeer, Spotted Sandpiper, Common Snipe, Mourning Dove, Ruby-throated Hummingbird, Eastern Wood-Pewee, Eastern Kingbird, Willow Flycatcher, Black-capped Chickadee, American Robin, Brown Thrasher, Cedar Waxwing, Savannah Sparrow, Bobolink, Brown-headed Cowbird, Northern Oriole, House Finch. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** Paul Derbyshire, Hillary Smith, Katherine M. Thomas and Peter S. Burke. **Acknowledgments:** We thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 13 July 1991, and the Canadian Wildlife Service for financial support.

78. INTERGRADING DUNE-SWALE SAVANNAH

SAVANA CON GRADIENTE DE DUNA A CIENAGA

PAUL DERBYSHIRE

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

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°4'W; Gravelly Bay Quadrangle, DEMR. **Continuity:** Established 1965; 5 yr. **Size:** 11.0 ha. **Description of Plot:** See *Aud. Field Notes* 19:630 (1965). A rectangular plot measuring 550 × 200 m. The dominant canopy trees are Eastern Cottonwood and Red Cedar. The understory consists of scattered individuals of Red Cedar, Riverbank Grape and Common Juniper on the dry dunes and Kalm's St. John's-wort in the wet swales. The ground layer is composed of Little Blue-stem and Canada Blue Grass on the dunes and Nut-rush and spikerush in the wet swales. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 17/ha, total basal area 0.4 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Eastern Cottonwood 10, 59, 77, 100; Red Cedar 4, 25, 14, 70; dead trees and stumps over 2 m tall 3, 16, 9, 45. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5–15 cm) 9, 55, 0.1, 21; B (>15–23 cm) 5, 31, 0.2, 35; C (>23–38 cm) 2, 13, 0.2, 36; D (>38–53 cm) <1, 1, <0.1, 8. Average canopy height, 4.9 m (range 2.1–11.0 m, n = 20). Ground cover 61%, canopy cover 3%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 21,700. Size class distribution: <0.5 m, 20,000; 0.5–1.0 m, 1200; >1.0 m, 500. Shrub species in order of total abundance: Kalm's St. John's-wort 19,200 stems <0.5 m, 700 stems 0.5–1.0 m, 0 stems > 1.0 m; Riverbank Grape 500, 300, 0; Red Cedar 0, 200, 500; Poison Ivy 200, 0, 0; Common Juniper 100, 0, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Nut-rush 22%, 2 quadrats, spikerush 16, 1; Little Blue-stem 14, 4; mosses 11, 5; Canada Blue Grass 8, 5; Canada Blue-joint 7, 2; Kalm's St. John's-wort 4, 3; Marsh Fern 4, 1; Beak-rush 4, 1; Sand Dropseed 2, 4; Switch Grass 1, 4; Panic Grass 1, 4; Twig-rush 1, 3; Bushy Aster 1, 3; Variegated Scouring-rush 1, 3. Other species prominent in the plot, but not recorded in the quadrats or with low total cover: Cylindric Blazing Star, Common St. John's-wort. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: bare sand 58%, litter 23%, wood and sticks <1%. **Edge:** To the N, E and W is similar habitat. A dune to the S separates the plot from the beach and the S shore of Long Point. **Topography and Elevation:** Minimum elevation 177 m, maximum 180 m. An area of rolling sand dunes interspersed with damp and grassy low areas. **Weather:** Mean start temp., 19°C (range 15–22°C). **Coverage:** 25 h; 10 visits (8 sunrise, 2 sunset); 31 May; 1, 2, 3, 6, 15, 19, 27, 30 June. **Census:** Tree Swallow, 6.0 (22; 6N); European Starling, 5.0 (18; 5N,1FL); Chipping Sparrow, 5.0 (2N); Song Sparrow, 5.0 (2N); Killdeer, 3.0 (11); Eastern Kingbird, 3.0; Red-winged Blackbird, 2.5; Northern Mockingbird, 2.0 (1N); Mallard, 1.0 (1N); Bobolink, 1.0 (3FL). **Total:** 10 species; 33.5 territories (122/40 ha). **Visitors:** Canada Goose, Spotted Sandpiper, American Woodcock, Mourning Dove, Willow Flycatcher, House Wren, Eastern Bluebird, Brown Thrasher, Cedar Waxwing, Northern Cardinal, Field Sparrow, Eastern Meadowlark, Common Grackle, Brown-headed Cowbird, American Goldfinch. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. There have been six complete censuses carried out on this plot. The results of the sixth are published in: Fairfield, G.M. 1969. Long Point breeding bird census. *Ontario Bird Banding* 5:1–6. Historically, the plot was called "Sand Dunes With Scattered Cottonwoods." This plot is now considerably smaller than when surveyed in the 1960s (19.5 ha), primarily due to erosion of the southern dunes. **Other Observers:** Mike Dyer, Julian Hough, Mark Palmer,

Hillary Smith, Jon McCracken and Peter S. Burke. **Acknowledgments:** I thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 11 July 1991, and the Canadian Wildlife Service for financial support.

79. RED OAK–WHITE PINE SAVANNAH

SAVANA DE ROBLE ROJO–PINO BLANCO

PETER S. BURKE

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°34'N, 80°8'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** New. **Size:** 11.0 ha. **Description of Plot:** This plot is rectangular measuring 1100 × 100 m. The dominant canopy trees are Red Oak and White Pine. The poorly-developed understory consists of scattered plants of Riverbank Grape and Wild Red Raspberry. A dense thicket of Choke Cherry is present in the N end of the census plot. The ground layer is composed of Kentucky Blue Grass, Canada Blue Grass and Canada Blue-joint. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 45/ha, total basal area 8.5 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Red Oak 20, 44, 63, 80; White Pine 5, 15, 9, 50, Burr Oak 3, 8, 6, 25; Basswood 2, 5, 3, 20; Red Cedar 2, 5, 1, 20; Eastern Cottonwood 1, 3, 6, 10; White Oak <1, 1, 3, 5; Red Ash <1, 1, 3, 5; White Ash <1, 1, 1, 5; Black Cherry <1, 1, 1, 5; Scots Pine <1, 1, 1, 5; Choke Cherry <1, 1, <1, 5; Red Pine <1, 1, <1, 5; White Spruce <1, 1, <1, 5; dead trees and stumps over 2 m tall 5, 11, 6, 35. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5–15 cm) 3, 6, <0.1, <1; B (>15–23 cm) 3, 6, 0.1, 1; C (>23–38 cm) 12, 28, 0.9, 11; D (>38–53 cm) 12, 26, 1.9, 23; E (>53–69 cm) 11, 24, 3.1, 37; F (>69–84 cm) 3, 8, 1.6, 18; G (>84–102 cm) 1, 1, 0.4, 4; H (>102 cm) 1, 1, 0.5, 6. Average canopy height, 16.0 m (range 4.4–24.3 m, n = 20). Ground cover 91%, canopy cover 29%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 3200. Size class distribution: <0.5 m, 2000; 0.5–1.0 m, 1200; >1 m, 0. Shrub species in order of total abundance: Riverbank Grape 1300 stems <0.5 m, 100 stems 0.5–1.0 m, 0 stems >1.0 m; Sweetbrier 200, 1100, 0; Basswood 300, 0, 0; Black Cherry 100, 0, 0; Wild Red Raspberry 100, 0, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Kentucky Blue Grass 30%, 7 quadrats; Canada Blue Grass 25, 8; Canada Blue-joint 12, 6; Touch-me-not 10, 1; Climbing Nightshade 4, 2; sedge (*Carex stricta*) 4, 1; Yarrow 2, 2; Hedge-nettle 2, 3; Mouse-ear Chickweed 2, 2; Canada Thistle <1, 3. Other species prominent in the plot, but not recorded in the quadrats or with low total cover: Indian Hemp and Common Milkweed. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: litter 84%, sticks and wood 2%, bare sand <1%. **Edge:** Surrounded on the SE, NW and SW edges by marshland. The NE edge borders Lake Erie. **Topography and Elevation:** Elevation 177 m. Flat to gently rolling with intermittent sloughs. **Weather:** Mean start temp., 22°C (range 19–23°C). **Coverage:** 26 h; 10 visits (8 sunrise, 2 sunset); 10, 19, 20, 21, 25, 26 June; 2, 11, 12 July. **Census:** Song Sparrow, 16.0 (58; 6FL); Tree Swallow, 8.5 (31; 5N, 30FL); House Wren, 5.0 (18); Marsh Wren, 4.0 (15; 1N); Eastern Wood-Pewee, 3.0 (11.0; 2N); Eastern Kingbird, 3.0 (2N); European Starling, 3.0 (9FL); Northern Oriole, 3.0 (6FL); Yellow Warbler, 2.5; American Robin, 2.0 (6FL); Common Grackle, 2.0 (9FL); American Goldfinch, 2.0; American Black Duck, 1.0 (2FL); Mallard, 1.0 (2FL); Cedar Waxwing, 1.0; Red-eyed Vireo, 1.0; Prothonotary Warbler, 1.0 (1N); Canada Goose, 0.5 (7FL); Common Yellowthroat, 0.5. **Total:**

19 species; 60 territories (218/40 ha). **Visitors:** Great Blue Heron, Wood Duck, Spotted Sandpiper, American Woodcock, Black-billed Cuckoo, Great Horned Owl, Belted Kingfisher, Downy Woodpecker, Northern Flicker, Acadian Flycatcher, Least Flycatcher, Purple Martin, Northern Rough-winged Swallow, Bank Swallow, Barn Swallow, American Crow, Carolina Wren, Gray Catbird, Warbling Vireo, Magnolia Warbler. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** Dawn Brenner, Dria Howlett, Paul Prior, Nancy Hewlett. **Acknowledgments:** I thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 18 July 1991, and the Canadian Wildlife Service for financial support.

80. HARDWOOD FOREST WITH SCATTERED PINE

BOSQUE DE MADERAS DURAS CON PINOS DISPERSOS

GREGORY W. GROVE

*Route 1, Box 483
Petersburg, Pennsylvania 16669*

Site Number: PA1391026. **Location:** Pennsylvania; Huntingdon Co.; McAlevy's Fort; Stone Valley Recreation Area; 40°40'N, 77°55'W; Pine Grove Mills Quadrangle, USGS. **Continuity:** New. **Size:** 19.2 ha. **Description of Plot:** The 660 × 280 m plot is a recreational section of a larger (> 500 ha), primarily forested tract owned by Penn State. Development on the plot is unlikely. The plot lies on a S-facing hillside and is dominated by Black Walnut, Sugar Maple, and White Pine, with a mean canopy height of 15 m. The understory is extremely diverse with no species dominant. Virginia Creeper, the dominant ground cover, occurs extensively. A lightly-traveled access road and hiking trails traverse the plot. **Edge:** More than 75% of the plot's perimeter is bordered by the same habitat. **Topography and Elevation:** The plot slopes to the S at a six to 10% grade. Minimum elevation 260 m, maximum 305 m. **Weather:** Mean start temp., 14.8°C (range 5–21°C). **Coverage:** 16 h; 10 visits (10 sunrise); 22, 24, 25, 29 May; 2, 6, 8, 12, 18, 30 June. **Census:** Ovenbird, 17.0 (35); Red-eyed Vireo, 16.0 (33); Common Yellowthroat, 8.5 (18); Black-capped Chickadee, 5.5 (11); Indigo Bunting, 5.0 (10); Wood Thrush, 4.0 (8); Tufted Titmouse, 3.0 (6); White-breasted Nuthatch, 3.0; Blue-gray Gnatcatcher, 3.0; Gray Catbird, 3.0; Scarlet Tanager, 3.0; Northern Cardinal, 3.0; Eastern Wood-Pewee, 2.0; Great Crested Flycatcher, 2.0; Rufous-sided Towhee, 2.0; Broad-winged Hawk, 1.0; Ruffed Grouse, 1.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Red-breasted Nuthatch, 1.0; House Wren, 1.0; American Robin, 1.0; Chipping Sparrow, 1.0; Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Red-bellied Woodpecker, 0.5; Blue Jay, 0.5; Carolina Wren, 0.5. **Total:** 28 species; 91.5 territories (191/40 ha). **Visitors:** Mourning Dove, Black-billed Cuckoo, Yellow-billed Cuckoo, Downy Woodpecker, Pileated Woodpecker, American Crow, Brown Creeper, Golden-winged Warbler, Black-throated Green Warbler, Blackburnian Warbler, Worm-eating Warbler. **Acknowledgments:** Thanks to Doug Wentzal for help with the habitat description.

81. MATURE UPLAND OAK-BEECH-WHITE PINE FOREST

BOSQUE MADURO EN ALTURAS DE ROBLE-HAYA-PINO BLANCO

WILLIAM R. EDDLEMAN

*Department of Natural Resources Science
210B Woodward Hall
University of Rhode Island
Kingston, Rhode Island 02881*

Site Number: RI1291062. **Location:** Rhode Island; Kent Co.; West Greenwich; Escoheag; 41°36'N, 71°46'W; Voluntown Quadrangle, USGS. **Continuity:** New. **Size:** 10.2 ha. **De-**

scription of Plot: The rectangular plot (310 × 330 m) lies within the Rhode Island Department of Environmental Management's Arcadia Management Area. The forest consists of densely-spaced trees, mainly of larger size. Beech dominates on the lower (E) side of the plot, and oaks and White Pine on the higher elevations to the W. Ground cover and shrubs are rather sparse except on the steeper E side and around canopy openings. Many older oaks on the W half of the plot were killed during the 1983 Gypsy Moth outbreak, resulting in numerous openings. An ephemeral stream arises near the center of the plot and runs NE. The plot receives very light recreational use, mostly confined to the E portion in association with an old campsite, but no trails cross 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 10 0.04 ha circular samples, 1,235/ha; total basal area 51.2m². Species comprising 93% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): American Beech, 283, 23, 11, 90; White Pine, 251, 20, 13, 80; standing dead, 190, 15, 19, 100; Black Oak, 165, 13, 27, 90; Yellow Birch, 140, 11, 7, 60; Red Maple, 102, 9, 9, 60; Northern Red Oak, 25, 2, 4, 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) 598, 48, 6.1, 12; B (15.3-22.9 cm) 262, 21, 7.4, 15; C (30-38.1 cm) 289, 23, 21.0, 41; D (38.2-53.3 cm) 74, 6, 12.8, 25; E (53.4-68.6 cm) 12, 1, 3.7, 7; Shrub stems/ha, 2,750, dominated by Bullbrier, American Beech, Highbush Blueberry, Sweet Pepperbush, and Yellow Birch. Ground cover, 31%, dominated by Creeping Jenny, Highbush Blueberry, Hay-scented Fern, and Prince's Pine. Canopy cover, 86.5%; average canopy height, 18.4 m (range 15.4-21.9 m). **Edge:** Similar habitat extends for 150-200 m on the S and W sides, and for 4 km on the N. A 7-m wide woodland road, usually closed to public access, runs along the E boundary of the plot, but similar habitat extends 400 m E and grades into bottomland forest bordering a river. **Topography and Elevation:** The plot lies on a NE-facing slopes that borders the Wood River, and has a grade of between six and 10%. Minimum elevation 114 m, maximum 146 m. **Weather:** Mean start temp., 15°C (range 3-20°C). Temperature and precipitation departures, respectively, from the 100-yr mean for: May, +3.2°C, -2.7 cm; June, + 1.2°C, -4.9 cm; July, +0.5°C, -3.7 cm. Data source: University of Rhode Island weather station, Kingston, RI. **Coverage:** 39.1 h; 14 visits (11 sunrise, 1 sunset); 17, 20, 22, 25, 29 May; 6, 9, 10, 16, 22, 23 June; 1, 4 July. **Census:** Ovenbird, 19.5 (76; 4N); Red-eyed Vireo, 16.0 (63; 1N); Veery, 5.0 (20); Eastern Wood-Pewee, 4.0 (16); Hermit Thrush, 4.0; Scarlet Tanager, 4.0 (1N); American Redstart, 3.5 (14; 1N); Tufted Titmouse, 3.0 (12); Wood Thrush, 3.0 (1N); Black-throated Green Warbler, 3.0; White-breasted Nuthatch, 2.5; Downy Woodpecker, 2.0 (3FL); Acadian Flycatcher, 2.0; Great Crested Flycatcher, 2.0; Pine Warbler, 2.0; Black-and-white Warbler, 2.0; Black-capped Chickadee, 1.5 (3FL); Red-bellied Woodpecker, 1.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Eastern Phoebe, 1.0 (3FL); Common Yellowthroat, 1.0; Rufous-sided Towhee, 1.0; Blue Jay, 0.5 (1N); Broad-winged Hawk, +; Barred Owl, +; Pileated Woodpecker, +; American Crow, +. **Total:** 28 species; 85.5 territories (335/40 ha). **Visitors:** Red-shouldered Hawk, Black-billed Cuckoo, Brown Creeper, Blue-winged Warbler, Common Grackle, Brown-headed Cowbird. **Remarks:** Red-eyed Vireos were clustered mainly along the E half of the plot, while Pine Warblers and Black-throated Green Warblers were on the W half. The Common Yellowthroat and Rufous-sided Towhee were associated with gaps around dead trees. This is contribution #2687 of the Rhode Island Agricultural Experiment Station. **Other Observers:** Mary Jo Murray, Pam and Randy Comeleo, Jeanne Patric. **Acknowledgments:** Thanks to Thomas E. Armstrong of the Rhode Island Dept. of Environmental Management for permitting use of the site. Dana Filippini and Ai-ling Hsu assisted with the plot survey and Morjorie McAlister assisted with the vegetation survey.

82. MATURE DECIDUOUS-CONIFEROUS FOREST WITH STREAM

BOSQUE MADURO DECIDUO-Y-DE CONIFEROS CON ARROYO

STEPHEN J. & BARBARA H. STEDMAN

2675 Lakeland Drive
Cookeville, Tennessee 38501

Site Number: TN1491015. **Location:** Tennessee; Putnam Co.; Cookeville; Old Cookeville Filtration Plant; 36°8'N, 85°27'W; Cookeville East Quadrangle, USGS. **Continuity:** New. **Size:** 10.2 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):17 (1991). **Weather:** Mean start temp., 18°C (range 8–23°C). **Coverage:** 19.3 h; 12 visits (12 sunrise); 21 April; 8 May; 4, 6, 9, 11, 13, 16, 17, 18 June; 6, 16 July. **Census:** Carolina Wren, 4.5 (18); Northern Cardinal, 4.0 (16); Tufted Titmouse, 3.5 (14); Wood Thrush, 3.5; Rock Dove, 3.0 (12); European Starling, 3.0; Carolina Chickadee, 2.5; Downy Woodpecker, 2.0; Blue Jay, 2.0; American Robin, 2.0 (1N); Red-bellied Woodpecker, 1.5 (1N,1FL); Northern Flicker, 1.5; Eastern Wood-Pewee, 1.5; Eastern Phoebe, 1.5; Song Sparrow, 1.5; Red-winged Blackbird, 1.5; Green-backed Heron, 1.0; Wood Duck, 1.0 (3FL); Mourning Dove, 1.0; Eastern Kingbird, 1.0 (1N); White-breasted Nuthatch, 1.0; Blue-gray Gnatcatcher, 1.0 (1N); Kentucky Warbler, 1.0; Indigo Bunting, 1.0; Rufous-sided Towhee, 1.0; Brown-headed Cowbird, 1.0; Red-shouldered Hawk, 0.5 (2FL); Yellow-billed Cuckoo, 0.5; American Crow, 0.5; Brown Thrasher, 0.5; White-eyed Vireo, 0.5; Yellow-throated Vireo, 0.5; Yellow-throated Warbler, 0.5; Pine Warbler, 0.5; Yellow-breasted Chat, 0.5; Orchard Oriole, 0.5; Northern Oriole, 2.0 (1FL); Broad-winged Hawk, + (3FL); Ruby-throated Hummingbird, +; Belted Kingfisher, +; Hairy Woodpecker, +; Great Crested Flycatcher, +; Eastern Bluebird, +; Gray Catbird, +; Red-eyed Vireo, +; Field Sparrow, +; Common Grackle, +. **Total:** 47 species; 54.5 territories (214/40 ha). **Visitors:** Great Blue Heron, Chimney Swift, Acadian Flycatcher, Cedar Waxwing, Warbling Vireo, Northern Parula, Black-and-white Warbler, Louisiana Waterthrush, Summer Tanager, Scarlet Tanager, American Goldfinch.

83. HEMLOCK-WHITE PINE-MIXED HARDWOOD FOREST

BOSQUE MIXTO DE MADERAS DURAS-PICEA-PINO BLANCO

KENNETH R. HINKLE

Route 2, Box 37
Bridgewater, Virginia 22812

Location: Virginia; Rockingham Co.; Rawley Springs; Kepart Run; 38°33'N, 79°4'W; Rawley Springs Quadrangle, USGS. **Continuity:** Established 1979; 6 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 34:58 (1980). **Weather:** Mean start temp., 16.9°C (range 13–21°C). **Coverage:** 11.7 h; 9 visits (8 sunrise, 1 sunset); 13, 17, 25, 27 May; 1, 4, 9, 13, 29 June. **Census:** Acadian Flycatcher, 8.0 (52); Red-eyed Vireo, 7.5 (49); Wood Thrush, 3.0 (20); Scarlet Tanager, 3.0; Northern Parula, 2.5; Ovenbird, 2.5; Tufted Titmouse, 2.0; Black-throated Green Warbler, 2.0; Worm-eating Warbler, 2.0; Louisiana Waterthrush, 2.0; Blue-gray Gnatcatcher, 1.0; White-breasted Nuthatch, +; Solitary Vireo, +; Black-and-white Warbler, +. **Total:** 14 species; 35.5 territories (233/40 ha). **Visitors:** Mourning Dove, Pileated Woodpecker, Red-bellied Woodpecker, Great-crested Flycatcher, Blue Jay, American Crow, Common Raven, Carolina Chickadee, Black-throated Blue Warbler, Brown-headed Cowbird. **Remarks:** Most species' densities appear stable. Louisiana Waterthrush seemed less vocal. Plot was impacted by Gypsy Moths, but not as severely as nearby areas. **Acknowledgments:** Thanks to Rod Bodkin for help in establishing plot and with species identification.

84. MIXED PINE & HARDWOOD RIDGE

CERRO DE MADERAS DURAS PINOS MIXTOS

CLAIR MELLINGER

*Biology Department
Eastern Mennonite College
Harrisonburg, Virginia 22801*

Site Number: VA1391037. **Location:** Virginia; Augusta Co.; Briery Branch; Reddish Knob (Hunter's Access Road); 38°27'N, 79°15'W; Palo Alto Quadrangle, USGS. **Continuity:** Established 1981; 5 yr. **Size:** 6.1 ha, reduced 2.5 ha since last count in 1989. **Description of Plot:** see *Am. Birds* 36:68 (1982). Original vegetation survey incorrectly listed *Pinus virginiana* as the dominant tree. The correct species is *Pinus pungens*. **Weather:** Mean start temp., 15.5°C (range 9–24°C). **Coverage:** 15.9 h; 10 visits (8 sunrise, 1 sunset); 4, 5, 6, 9, 11, 12, 13, 21, 24, 27 June. **Census:** Veery, 7.0 (46); Rufous-sided Towhee, 6.5 (43); Canada Warbler, 5.0 (33); Gray Catbird, 2.5; Black-throated Blue Warbler, 2.5; Rose-breasted Grosbeak, 2.0; Solitary Vireo, 1.5; Black-capped Chickadee, 1.0; Chestnut-sided Warbler, 1.0; Dark-eyed Junco, 1.0; Blue Jay, 0.5; Scarlet Tanager, 0.5; Ruffed Grouse, + (3FL); Great Crested Flycatcher, +; Hooded Warbler, +. **Total:** 15 species; 31 territories (203/40 ha). **Visitors:** Turkey Vulture, Barred Owl, Pileated Woodpecker, Common Raven. **Acknowledgments:** Thanks to Kathleen and Mike Finnegan for their help in establishing and setting up the plot.

85. SLOPED MIXED DECIDUOUS-CONIFEROUS FOREST

BOSQUE DE PENDIENTE MIXTO DE DECIDUOS-CONIFEROS

FRED MERRILL

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

Site Number: VT2791010. **Location:** Vermont; Windsor Co.; Pomfret; High Pastures Road; 43°37'N, 72°30'W; Quechee Quadrangle, USGS. **Continuity:** New. **Size:** 12.3 ha. **Description of Plot:** A 350 × 350 m plot dominated by a mixed deciduous-coniferous forest (9.5 ha) that slopes E into second-growth. The plot is part of an extensive, mature, mixed hardwood-conifer ridge and hillside forest. A band of exposed ledge (ca 40 m wide) runs N to S creating a deep-soiled streambed and rocky ravine. In the 1940s, the lower two-thirds below the ledge was pasture. Three additional habitat patches occur within the plot: a 0.6 ha stand of Eastern Hemlock; three separate successional areas of Red Maple, Black Cherry, and White Ash saplings, and shrubs totaling 1.25 ha; and two wetland areas comprising 1.0 ha, one containing a 30 × 30 m emergent marsh, the other supporting 35 old-growth hardwoods (DBH 1–1.3 m) including, Sugar Maple, Basswood, White Ash, and American Elm. **Edge:** Eighty percent of plot is surrounded by the same habitat (N, W, and S), 20% of plot borders second-growth containing aspen, birch, and cherry. **Topography and Elevation:** Plot slopes E at >16% grade. Minimum elevation 293 m, maximum 360 m. **Weather:** Mean start temp., 13.6°C (range 9–20°C). Temperature and precipitation departures, respectively, from the 30-yr mean for: May, +1.8°C, -2.3 cm; June, +0.4°C, -1.4 cm; July, -0.6°C, -3.2 cm. Source: Fairbanks Museum, Cavendish reporting station. **Coverage:** 32.9 h; 11 visits (11 sunrise); 23, 27 May; 1, 5, 8, 11, 13, 26 June; 3, 6, 16 July. **Census:** Red-eyed Vireo, 4.5 (15); Ovenbird, 4.0 (13; 1FL); Black-capped Chickadee, 3.0 (10; 1N); Veery, 2.5 (1N); Great Crested Flycatcher, 2.0 (1N); Hermit Thrush, 2.0 (1N); Wood Thrush, 2.0; Blue Jay, 1.5; Dark-eyed Junco, 1.5; American Woodcock, 1.0; Downy Woodpecker, 1.0; White-breasted Nuthatch, 1.0; Winter Wren, 1.0; Nashville Warbler, 1.0; Chestnut-sided Warbler, 1.0; Black-throated Blue Warbler, 1.0; Black-throated Green Warbler, 1.0; Blackburnian Warbler, 1.0; Black-and-white Warbler, 1.0; Common Yellowthroat, 1.0; Scarlet Tanager, 1.0; Rose-breasted Grosbeak, 1.0;

White-throated Sparrow, 1.0 (1N); Brown-headed Cowbird, 1.0; Ruffed Grouse, 0.5 (6FL); Barred Owl, 0.5; Eastern Wood-Pewee, 0.5; Brown Creeper, 0.5; Black-billed Cuckoo, +; Ruby-throated Hummingbird, +; Yellow-bellied Sapsucker, +; Least Flycatcher, +; American Robin, + (1N); Solitary Vireo, +; Indigo Bunting, +. **Total:** 35 species; 40 territories (130/40 ha). **Visitors:** Broad-winged Hawk, Wild Turkey, Pileated Woodpecker, Willow Flycatcher, Raven, Northern Oriole. **Remarks:** Winter mammal survey documented coyote family, fisher pair, possible bobcat, and deer. Excellent fruit yr for cherries. **Other Observers:** Killy Merrill. **Acknowledgments:** Thanks to Tim Armstrong, and Stephen Maleski for weather data.

86. SUBURBAN CEMETERY

CEMENTERIO SUBURBANO

THOMAS A. IMHOF

1036 Pike Road

Birmingham, Alabama 35218

Location: Alabama; Jefferson Co.; Birmingham; Oakland Cemetery; 33°29'N, 86°54'W; Bessemer Quadrangle, USGS. **Continuity:** Established 1978; 12 yr. **Size:** 15.0 ha. **Description of Plot:** See *Am. Birds* 34:18-19 (1980). A 535 × 280 m rectangle with an irregular NE boundary. Comprised of oak hills (56%); shaded lawn (37%); hilly, shrubby woods (5%); flat, shrubby woods with bird feeder (1%); hedgerow on NE (900 × 5 m, 1%). 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, 368/ha; total basal area 18.5 m². Species comprising 95% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): Sugarberry 84, 23, 16, 60; Water Oak, 35, 9, 13, 40; dogwood, 22, 6, 2, 40; Privet, 22, 6, -, 30; Sweetgum, 17, 5, 9, 40; Black Oak, 17, 5, 17, 50; Mockernut Hickory, 17, 5, 1, 20; dead, 17, 5, 2, 30; Winged Elm, 15, 7, 5, 30; Southern Red Oak, 15, 4, 21, 40; Laurel Cherry, 15, 4, -, 20; Slippery Elm, 13, 3, 1, 30; Black Cherry, 13, 3, 4, 40; Haw, 10, 3, -, 10; Pignut Hickory, 7, 2, 4, 20; Blackjack Oak, 5, -, 2, 10; Post Oak, 5, 1, -, 20; Shagbark Hickory, 5, 1, 1, 20; Oriental Magnolia, 5, 1, -, 10; Black Gum, 5, 1, 1, 20; Willow Oak, 3, 2, 1, 20; White Mulberry, 3, 1, 1, 10; Princess Tree, 3, 1, 1, 10; Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): S (saplings, 3-8 cm dbh) 3359, -, 4, -; A (8-15 cm) 17.3, 50, 17.3, 4; B (15-23 cm) 56.8, 15, 170, 4; C (23-38 cm) 44.5, 12, 356, 7; D (38-53 cm) 35, 9, 252, 13; E (53-69 cm) 20, 5, 248, 13; F (69-84 cm) 12, 3, 245, 12; G (84-102 cm) 15, 4, 426, 21; H (>102 cm) 12, 3, 535, 27. Shrub stems/ha, 3359 (shrub and sapling stems were indistinguishable); ground cover, 82%; canopy cover, 58%; mean canopy height, 15 m (range 0-22 m). **Weather:** Mean start temp., 16.9°C (range 7-28°C). **Coverage:** 22 h; 22 visits (16 sunrise); 16, 20, 25 March; 1, 8, 15, 17, 24, 25, 26, 27 April; 3, 7, 11, 20, 27 May; 3, 10, 17, 23, 30 June; 10 July. **Census:** House Sparrow, 10.0 (27; 2N,25FL); American Robin, 8.0 (21; 3N,7FL); House Finch, 7.0 (19; 1N,20FL); Northern Mockingbird, 5.0 (13; 3N,8FL); European Starling, 4.0 (11; 2N,10FL); Northern Cardinal, 4.0 (2N,7FL); Mourning Dove, 3.0 (8; 1N,4FL); Blue Jay, 3.0 (2N,5FL); Rufous-sided Towhee, 3.0 (2FL); Brown-headed Cowbird, 2.0 (1FL); Northern Flicker, 1.5 (1FL); Brown Thrasher, 1.5 (3FL); Red-bellied Woodpecker, 1.0 (1N); Downy Woodpecker, 1.0 (1N,1FL); Eastern Wood-Pewee, 1.0; Great Crested Flycatcher, 1.0; American Crow, 1.0 (1N,2FL); Carolina Chickadee, 1.0 (2FL); Tufted Titmouse, 1.0 (2FL); Carolina Wren, 1.0 (1FL). **Total:** 20 species; 60 territories (160/40 ha). **Visitors:** Cooper's Hawk, Red-shouldered Hawk, Red-tailed Hawk, American Kestrel, Killdeer, Rock Dove, Common Nighthawk, Chimney Swift, Eastern Kingbird, White-breasted Nuthatch, Gray Catbird, White-eyed Vireo, Northern Parula, Red-winged Blackbird, Common Grackle, American Goldfinch. **Remarks:** Some elms, oaks, and sweetgums are dying as a result of a circulatory disease, probably Dutch Elm disease. One Red Oak had a crow's

nest in early March. The nest was left exposed to the sun while other trees were leafing out, but the young were still fledged successfully.

87. MATURE UPPER MIXED-CONIFEROUS FOREST-MONTANE CHAPARRAL

BOSQUE MADURO MIXTO DE CONÍFEROS Y CHAPARRAL MONTANO

KATHRYN L. PURCELL, JENNIFER G. TURNER & DOUGLAS A. DRYNAN

Pacific Southwest Experiment Station

2081 East Sierra Avenue

Fresno, California 93710

Location: California; Fresno Co.; Shaver Lake; 37°5'N, 119°14'W; Huntington Lake SW Quadrangle, USGS. **Continuity:** Established 1985; 7 yr. **Size:** 42.3 ha. **Description of Plot:** See 1985 BBC report. **Weather:** Mean start temp., 7°C (range 1–14°C). Due to heavy snow storms during March, there was a considerable amount of snow covering the plot when censusing began. **Coverage:** 120 h; 24 visits (24 sunrise); 28, 29, 31 May; 3, 5, 6, 10, 11, 13, 14, 18, 19, 21, 24, 26, 28 June. **Census:** Golden-crowned Kinglet, 31.5 (30; 2N); Hermit Warbler, 25.5 (24); Yellow-rumped Warbler, 24.5 (23; 2N); Fox Sparrow, 24.0 (23; 4N); Dark-eyed Junco, 22.5 (21; 13N); Dusky Flycatcher, 19.5 (18; 10N); Hammond's Flycatcher, 15.5 (15; 5N); Red-breasted Nuthatch, 15.0 (14; 10N); MacGillivray's Warbler, 13.5 (13); Brown Creeper, 11.5 (11; 8N); Nashville Warbler, 11.0 (10; 2N); Purple Finch, 11.0; Mountain Chickadee, 10.5 (10; 5N); Warbling Vireo, 7.0 (7; 2N); Solitary Vireo, 5.5 (5; 1N); Hermit Thrush, 5.0 (5; 2N); Western Tanager, 5.0 (3N); Steller's Jay, 3.5 (3; 1N); White-headed Woodpecker, 3.0 (3; 2N); Western Wood-Pewee, 2.0 (2N); Townsend's Solitaire, 2.0 (1N); Rufous-sided Towhee, 2.0; Mountain Quail, 1.5; Hairy Woodpecker, 1.5; American Robin, 1.5 (1N); Evening Grosbeak, 1.0 (1N); Pacific-slope Flycatcher, 0.5; Sharp-shinned Hawk, 0.5; Cooper's Hawk, 0.5 (1N); Band-tailed Pigeon, 0.5; Red-breasted Sapsucker, 0.5 (1N); Northern Flicker, 0.5; Pileated Woodpecker, 0.5; Olive-sided Flycatcher, 0.5; Common Raven, 0.5; Black-headed Grosbeak, 0.5; Green-tailed Towhee, 0.5; Chipping Sparrow, 0.5; Lincoln's Sparrow, 0.5. **Total:** 39 species; 282.5 territories (268/40 ha). **Visitors:** Red-tailed Hawk, Spotted Owl, Calliope Hummingbird, Wilson's Warbler, Brown-headed Cowbird, Cassin's Finch, Pine Siskin. **Remarks:** This yr the plot was divided into two parts, a complete census taking two visits. The coordinates for latitude and longitude have been changed this yr, as they were incorrectly reported in previous yr. **Acknowledgments:** This effort is part of a study of bird monitoring techniques conducted by Dr. Jared Verner, USDA Forest Service.

88. MOUNTAIN MEADOW AND OPEN CONIFEROUS FOREST

PRADERAS MONTANAS Y BOSQUES ABIERTOS DE CONÍFEROS

HELEN J. STILES-WAINWRIGHT & ARTHUR WAINWRIGHT

150 South 36th Street

Boulder, Colorado 80303

Location: Colorado; Boulder Co.; Boulder; Flagstaff-Kossler Lake Area; 39°58'N, 105°20'W; Eldorado Springs Quadrangle, USGS. **Continuity:** Established 1981; 10 yr. **Size:** 13.0 ha. **Description of Plot:** See *Am. Birds* 36:90 (1982). **Weather:** Mean start temp., 14.9°C (range 11–20°C). **Coverage:** 27.5 h; 13 visits; 10, 20 May; 9, 26 June; 3, 5, 6, 18 July; 6, 7, 21, 22, 23 August. **Census:** Mountain Bluebird, 6.0 (18); Vesper Sparrow, 5.0 (15); Mountain Chickadee, 4.0 (12); House Wren, 4.0; Western Bluebird, 4.0; Chipping Sparrow, 4.0; White-breasted Nuthatch, 3.0 (9); American Robin, 3.0; Yellow-rumped Warbler, 3.0; Dark-eyed Junco, 3.0; Broad-tailed Hummingbird, 2.0; Violet-green Swallow, 2.0; Red-breasted Nuthatch, 2.0; Pygmy Nuthatch, 2.0; Western Tanager, 2.0; Brewer's Blackbird, 2.0; Pine Siskin, 2.0; Hairy Woodpecker, 1.0; Cordilleran Flycatcher, 1.0; Tree Swallow,

1.0; Barn Swallow, 1.0; Steller's Jay, 1.0; Townsend's Solitaire, 1.0; Solitary Vireo, 1.0. **Total:** 24 species; 60 territories (185/40 ha). **Visitors:** Clark's Nutcracker, Common Nighthawk, Common Poorwill, Common Raven, Hermit Thrush, Red Crossbill, Williamson's Sapsucker. **Other Observers:** Mary Jane Schock, Ara Yager.

89. TRANSITION FOREST AND THICKET

TRANSICIÓN DE BOSQUE-MATORRAL

ROBERT A. ASKINS & MARGARETT J. PHILBRICK

*Department of Zoology
Connecticut College
270 Mohegan Avenue
New London, Connecticut 06320*

Location: Connecticut; New London Co.; New London; Bolleswood Natural Area, Connecticut College Arboretum; 41°22'N, 72°6'W; Uncasville Quadrangle, USGS. **Continuity:** Established 1953; 21 yr. **Size:** 6.5 ha. **Description of Plot:** See *Am. Birds* 37:73-74 (1983). Latitude was reported incorrectly in previous yr. **Weather:** Mean start temp., 16°C (range 10-19°C). **Coverage:** 8.8 h; 10 visits (10 sunrise); 18, 26, 30 May; 2, 8, 16, 19, 23, 30 June; 7 July. **Census:** House Wren, 3.0; Carolina Wren, 2.5; Gray Catbird, 2.0; White-eyed Vireo, 2.0; Red-eyed Vireo, 1.5; Blue-winged Warbler, 1.5; Tufted Titmouse, 1.0; Veery, 1.0; Wood Thrush, 1.0; Yellow Warbler, 1.0; Ovenbird, 1.0; Common Yellowthroat, 1.0; Rufous-sided Towhee, 1.0; Blue Jay, 0.5; Chestnut-sided Warbler, 0.5; Hooded Warbler, 0.5; Northern Cardinal, 0.5; Barred Owl, +; Eastern Wood-Pewee, +; American Robin, +; Song Sparrow, +. **Total:** 21 species; 21.5 territories (132/40 ha). **Visitors:** Great Horned Owl, Northern Flicker, Downy Woodpecker, American Crow, Black-capped Chickadee, White-breasted Nuthatch, American Redstart, Common Grackle, Northern Oriole. **Remarks:** This study area has become a mosaic of woodland and shrubland, resulting in a mix of forest and thicket bird species. **Acknowledgments:** Glenn Dreyer and his staff at the Connecticut College Arboretum facilitated this study.

90. BULRUSH AND CATTAIL MARSH IN CONIFER FOREST

CIÉNAGAS DE ENEAS EN BOSQUE DE CONÍFERAS

MARCELLA M. BISHOP

*750 Rocky Point Road
Polson, Montana 59860*

Location: Montana; Lake Co.; Polson; Safe Harbor Marsh; 47°35'N, 114°9'W; Wild Horse Island Quadrangle, USGS. **Continuity:** Established 1975; 15 yr. **Size:** 40.5 ha. **Description of Plot:** See *Am. Birds* 31:84-85 (1977). **Weather:** Mean start temp., 16.1°C (range 9-26°C). **Coverage:** 24 h; 8 visits (6 sunrise, 1 sunset); 16 April; 28 May; 1, 2, 8, 9, 21 June; 6 July. **Census:** Yellow-headed Blackbird, 45.0 (44; 6N,10FL); Red-winged Blackbird, 20.0 (20; 2N,3FL); Song Sparrow, 13.0 (13; 1N); Common Yellowthroat, 12.0 (12); Tree Swallow, 11.0 (11.0; 6N); Marsh Wren, 9.0 (9); American Robin, 9.0 (4N,3FL); Canada Goose, 8.0 (8; 2N,10FL); Redhead, 6.0 (6; 7FL); Western Wood-Pewee, 6.0; Pine Siskin, 6.0; Mallard, 5.0 (5; 12FL); Common Merganser, 5.0 (2FL); Black-capped Chickadee, 5.0; Red-breasted Nuthatch, 5.0; Dark-eyed Junco, 5.0; Mourning Dove, 4.0 (4); Willow Flycatcher, 4.0; Violet-green Swallow, 4.0; Barn Swallow, 4.0; Orange-crowned Warbler, 4.0; American Coot, 3.0 (3); Calliope Hummingbird, 3.0; Cedar Waxwing, 3.0; Brown-headed Cowbird, 3.0; Pied-billed Grebe, 2.0; Wood Duck, 2.0 (12FL); Blue-winged Teal, 2.0; Osprey, 2.0 (2N,3FL); Ruffed Grouse, 2.0; Northern Flicker, 2.0; Hammond's Flycatcher, 2.0; Mountain Chickadee, 2.0; Ruby-crowned Kinglet, 2.0; Swainson's Thrush, 2.0; Warbling Vireo, 2.0; Yellow Warbler, 2.0; Yellow-rumped Warbler, 2.0; Northern Shoveler, 1.0; Common Goldeneye, 1.0; Northern Goshawk, 1.0; Sora, 1.0; Spotted Sandpiper, 1.0;

Common Nighthawk, 1.0; Rufous Hummingbird, 1.0; Common Raven, 1.0; Gray Catbird, 1.0; Red-eyed Vireo, 1.0; Wilson's Warbler, 1.0; Western Tanager, 1.0; Chipping Sparrow, 1.0; Northern Oriole, 1.0; Cassin's Finch, 1.0; Great Blue Heron, 0.5; Ring-billed Gull, 0.5. **Total:** 55 species; 244 territories (240/40 ha).

91. DECIDUOUS FOREST WITH POND & BROOK

BOSQUE DECIDUO CON CHARCA Y ARROYO

JOHN BROTHERTON

249 East Crescent Avenue
Mahwah, New Jersey 07430

Site Number: NJ1064032. **Location:** New Jersey; Bergen Co.; Mahwah; Campgaw Mountain Reservation; 41°4'N, 74°11'W; Ramsey NJ-NY + Quadrangle, USGS. **Continuity:** Established 1964; 28 yr. **Size:** 16.2 ha. **Description of Plot:** See *Aud. Field Notes* 19:623–624 (1965). **Weather:** Mean start temp., 13.9°C (range 7–18°C). **Coverage:** 9 h; 9 visits (9 sunrise; maximum number of observers/trip, 8); 14, 16, 21, 23, 28, 30 May; 6, 11, 13 June. **Census:** Veery, 4.0 (10); Red-eyed Vireo, 4.0; Ovenbird, 4.0; Tufted Titmouse, 3.0 (7); Gray Catbird, 3.0; Black-capped Chickadee, 2.0; Wood Thrush, 2.0; Blue-winged Warbler, 2.0; Common Yellowthroat, 2.0; Red-bellied Woodpecker, 1.0; Northern Flicker, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; White-breasted Nuthatch, 1.0; American Robin, 1.0; Louisiana Waterthrush, 1.0; Northern Cardinal, 1.0; Red-winged Blackbird, 1.0; Common Grackle, 1.0. **Total:** 19 species; 36 territories (89/40 ha). **Visitors:** Canada Goose, Wood Duck, Mallard, Yellow-billed Cuckoo, Downy Woodpecker, Pileated Woodpecker, Eastern Wood-Pewee, Eastern Phoebe, Tree Swallow, American Crow, American Redstart, Scarlet Tanager, Rose-breasted Grosbeak, Northern Oriole. **Acknowledgments:** J. and N. Bristow, A. Micich, K. Sjolander, J. White, and J. Worrall.

92. SUBURBAN BIRD SANCTUARY

SANTUARIO DE AVES SUBURBANO

MARY E. RICHARD & KENNETH R. PAGE

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

Location: New York; Nassau Co.; Oyster Bay; Theodore Roosevelt Memorial Bird Sanctuary; 40°52'N, 73°30'W; Hicksville Quadrangle, USGS. **Continuity:** Established 1983; 8 yr. **Size:** 10.8 ha. Plot size increased 4.8 ha since last census. New habitat primarily deciduous forest, but also includes suburban backyard and cemetery. **Description of Plot:** A square plot (400 × 400 m) of upland deciduous woods (6.8 ha), suburban backyards (1.2 ha), cemetery (1.2 ha), landscaped woods (0.6 ha), and mixed shrub and herbaceous areas (1.0 ha). A quantitative vegetation survey conducted during the summer of 1990 based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727–736) yielded the following results for the deciduous forest portion (6.8 ha): Trees, 7.6 cm diameter and over, based on five 0.04 ha circular samples, 277/ha; total basal area 60.2m². Species comprising 89% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): Tulip Tree, 64, 23.2, 55.3, 80; Black Birch, 59, 21.4, 10.6, 60; Norway Maple, 35, 12.5, 4.3, 60; American Beech, 35, 12.5, 4.3, 60; Red Maple, 20, 7.1, 2.8, 40; Sassafras, 15, 5.4, 2.8, 20; Red Oak, 10, 3.6, 17.2, 40; Asiatic Sweetleaf, 10, 3.6, 0.3, 20. 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) 54, 19.6, 1.7, 1.4; B (15.3–22.9 cm) 74, 26.8, 6.8, 5.6; C (30–38.1 cm) 26, 23.2, 13.6, 11.3; D (38.2–53.3 cm) 25, 8.9, 13.6, 11.3; E (53.4–68.6 cm) 30, 10.7, 23.5, 19.5; F (68.7–83.8 cm) 15, 5.4, 22.1, 19.5; G (83.9–101.6 cm) 5, 1.8, 10.7, 8.9; H (>101.6 cm) 10, 3.6, 28.5,

23.7. Shrub stems/ha, 9,880, dominated by Spicebush, Winged Euonymus, and arrowwood; ground cover, 48%, dominated by English Ivy, Periwinkle, and honeysuckle; canopy cover, 94%; average canopy height, 20 m (range 12.2–23.8 m). **Edge:** Up to 75% of the plot's perimeter is surrounded by the same habitat. **Topography and Elevation:** The plot slopes NE at < 5% grade. **Weather:** Mean start temp., 21.1°C (range 18–24°C). **Coverage:** 9.5 h; 8 visits (6 sunrise, 2 sunset); 5, 15, 26 May; 1, 20 June; 5, 11, 15 July. **Census:** American Robin, 5.0 (19); House Wren, 4.0 (15; 4N); Gray Catbird, 4.0 (2FL); Northern Cardinal, 3.0 (11; 3FL); Common Grackle, 3.0; House Sparrow, 3.0 (2N); Black-capped Chickadee, 2.5; Mourning Dove, 2.0; Red-bellied Woodpecker, 2.0; Downy Woodpecker, 2.0; Blue Jay, 2.0; Tufted Titmouse, 2.0; Northern Oriole, 2.0; Eastern Wood-Pewee, 1.0; American Crow, 1.0; White-breasted Nuthatch, 1.0; Carolina Wren, 1.0; Wood Thrush, 1.0; Northern Mockingbird, 1.0; Red-eyed Vireo, 1.0; Yellow Warbler, 1.0; Chipping Sparrow, 1.0; House Finch, 1.0; Northern Flicker, 0.5; Common Yellowthroat, 0.5; Brown Creeper, +. **Total:** 26 species; 47.5 territories (176/40 ha). **Visitors:** Tree Swallow, Fish Crow, Cedar Waxwing, Yellow-rumped Warbler, White-throated Sparrow, Rufous-sided Towhee, American Goldfinch. **Other Observers:** Susan M. Sauer, Michael Brust, Joan Jung, Lilith Jones, Judy Bloom.

93. DISTURBED OAK–HICKORY, PINE STAND, EDGE, AND POND

AREA DE ROBLE–NOGAL

A. H. CLAUGUS

228 South Lake Street
Carey, Ohio 43316

Site Number: OH2237200. **Location:** Ohio; Licking Co.; Hickman; Camp Falling Rock; 40°11'N, 82°19'W; Newark Quadrangle, USGS. **Continuity:** Established 1937; 49 yr. **Size:** 14.2 ha. **Description of Plot:** See *Bird Lore* 39:379–380 (1937). **Weather:** Mean start temp., 25°C (range 21–29°C). **Coverage:** 75.5 h; 8 visits; 1, 14, 15, 28 June; 26 July; 22, 30 August; 11 September. **Census:** Red-eyed Vireo, 8.0 (23); Scarlet Tanager, 6.0 (17); Wood Thrush, 5.0 (14); Acadian Flycatcher, 4.0 (11); Eastern Wood-Pewee, 3.0 (8); American Robin, 3.0; Ruby-throated Hummingbird, 2.0; Red-bellied Woodpecker, 2.0; Downy Woodpecker, 2.0; Eastern Phoebe, 2.0; Great Crested Flycatcher, 2.0; Carolina Chickadee, 2.0; Tufted Titmouse, 2.0; White-breasted Nuthatch, 2.0; Carolina Wren, 2.0; House Wren, 2.0; Cerulean Warbler, 2.0; Ovenbird, 2.0; Kentucky Warbler, 2.0; Northern Cardinal, 2.0; Mourning Dove, 1.0; Eastern Screech-Owl, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Blue Jay, 1.0; American Crow, 1.0; Blue-gray Gnatcatcher, 1.0; Gray Catbird, 1.0; Yellow-throated Vireo, 1.0; Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Northern Oriole, 1.0. **Total:** 32 species; 69 territories (194/40 ha). **Visitors:** Great Blue Heron, Green-backed Heron, Chimney Swift, Turkey Vulture, Red-tailed Hawk, Broad-winged Hawk, Barred Owl, Great Horned Owl, Warbling Vireo, Yellow Warbler. **Remarks:** All evidence suggests that the breeding season started two weeks earlier than normal, and that the majority of field work for this census should have been completed by late May. **Acknowledgments:** Camp ranger, scouts, and leaders.

94. FIELD, RIDGE, AND SHRUBBY TREES

CAMPOS, COLINAS Y ARBUSTOS

MICHAEL F.G. CLARK

27 Skyline Drive
Dundas, Ontario L9H 3S3

Location: Ontario; Municipality of Hamilton-Wentworth; Dundas; Dundas Valley Plot 1; 43°15'N, 79°54'W; **Continuity:** Established 1989; 3 yr. **Size:** 6.6 ha. **Description of Plot:**

See *J. Field Ornithol.* 60 (Suppl.):14 (1989). **Weather:** Mean start temp., 22.8°C (range 17–29°C). **Coverage:** 14.8 h; 8 visits (1 sunrise, 2 sunset); 27 April; 25 May; 1, 8, 14, 28, 29 June; 1 July. **Census:** Yellow Warbler, 40.0 (242); Gray Catbird, 19.5 (118); Song Sparrow, 17.5 (106); Field Sparrow, 6.5 (39); American Goldfinch, 5.0 (30); Northern Cardinal, 4.0 (24); Red-winged Blackbird, 4.0; Brown-headed Cowbird, 4.0; Willow Flycatcher, 3.0 (18); Brown Thrasher, 3.0; Blue-winged Warbler, 3.0; American Robin, 2.5; House Wren, 2.0; Indigo Bunting, 2.0; Northern Flicker, 1.0; Eastern Kingbird, 1.0; European Starling, 1.0; Common Grackle, 1.0; Northern Oriole, 1.0; Black-capped Chickadee, 0.5; Rufous-sided Towhee, 0.5. **Total:** 21 species; 122 territories (739/40 ha). **Visitors:** Mourning Dove, Black-billed Cuckoo, Hairy Woodpecker, Great-crested Flycatcher, Blue Jay, American Crow, Northern Mockingbird, Cedar Waxwing, Common Yellowthroat, Yellow-breasted Chat, Rose-breasted Grosbeak, Chipping Sparrow, Eastern Meadowlark. **Remarks:** The total number of breeding pairs decreased 9.3% compared to last yr. A territorial Yellow-breasted Chat, considerably N of its range, did not stay to breed.

95. SEDGE-TAMARACK DUNE POND

DUNA DE ESPARGANIO-LARICE AMERICANO

KATHERINE M. THOMAS

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°10'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** Established 1978; 2 yr. **Size:** 10.0 ha. **Description of Plot:** See *Am. Birds* 33:103–104 (1979). This long, narrow, rectangular plot encompasses a dune pond and measures 1000 × 100 m. The plot is dominated by a pond 1000 × 50–75 m. Open water covers about 70% of the plot area. The dominant canopy trees are Tamarack and Red Ash. The understory consists of Wild Red Raspberry, Water Willow, and Buttonbush. The ground layer is composed of Marsh Fern, Canada Blue-joint, and sedge (*Carex stricta*). A quantitative survey of the vegetation in that portion of the plot not covered by open water gave the following: Trees 7.5 cm dbh and over based on the point quarter method at 20 sampling points, 6/ha, total basal area 0.4 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of samples), in that sequence]: Tamarack 3, 43, 21, 90; Red Ash 1, 18, 33, 50; White Pine 1, 9, 9, 25; Red Cedar <1, 5, 1, 20; Red Oak <1, 3, 11, 10; White Birch <1, 4, 4, 15; White Cedar <1, 3, 1, 10; Red Maple <1, 1, 7, 5; dead trees and stumps over 2 m tall 1, 16, 12, 55. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5–15 cm) 2, 30, <0.1, 4; B (>15–23 cm) 2, 25, <0.1, 11; C (>23–38 cm) 2, 29, 0.1, 33; D (>38–53 cm) 1, 11, 0.1, 29; E (>53–69 cm) <1, 5, 0.1, 23. Average canopy height, 8.9 m (range 3.7–15.6 m, n = 19). Ground cover 87%, water, 3%, canopy cover 0%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 24,000. Size class distribution: <0.5 m, 10,200; 0.5–1.0 m, 12,600; >1 m, 1100. Shrub species in order of total abundance: Wild Red Raspberry 5700 stems <0.5 m, 5300 stems 0.5–1.0 m, 100 stems >1.0 m; Water Willow 2500, 7200, 500; Buttonbush 900, 100, 200; Riverbank Grape 1100, 0, 0; White Pine 0, 0, 100; Tamarack 0, 0, 100; Sassafras 100, 0, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Marsh Fern 35%, 9 quadrats; Canada Blue-joint 17, 8; sedge (*Carex stricta*) 13, 6; Clearweed 7, 6; Bracken Fern 7, 2; Climbing Nightshade 6, 3; Wild Red Raspberry 4, 1; mosses 3, 3; Canada Goldenrod <1, 5; Marsh Bellflower 1, 4; Common Skullcap <1, 5. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: litter 83%, muck 7%, wood and sticks 5%, bare sand <1%, water <1%. **Edge:** Similar habitat to the W and E. A tamarack-buttonbush swamp is found in the N and the S is bordered by 10+ m sand

dunes and grassland savannah. **Topography and Elevation:** Minimum elevation 177 m, maximum 183 m. The pond forms a depression between two dune ridges on the N and S sides. **Weather:** Mean start temp., 22°C (range 19–24°C). **Coverage:** 24 h; 10 visits (8 sunrise, 2 sunset); 13, 14, 16, 17, 18, 19, 21, 24, 25 June; 1 July. **Census:** Red-winged Blackbird, 30.0 (120; 1N,5FL); Song Sparrow, 9.0 (36; 1N); Yellow Warbler, 4.5 (18); Tree Swallow, 4.0 (16; 3N,1FL); Common Yellowthroat, 4.0; Eastern Kingbird, 3.5 (14; 1FL); Black-capped Chickadee, 1.0; Common Grackle, 1.0; Northern Oriole, 1.0; House Wren, 0.5. **Total:** 10 species; 58.5 territories (234/40 ha). **Visitors:** Canada Goose, Wood Duck, Mallard, Hooded Merganser, Killdeer, Mourning Dove, Black-billed Cuckoo, Belted Kingfisher, Northern Flicker, Blue-gray Gnatcatcher, Cedar Waxwing, Chipping Sparrow, Swamp Sparrow, Bobolink, Eastern Meadowlark, Brown-headed Cowbird, American Goldfinch. **Remarks:** The coordinates for latitude and longitude were reported incorrectly in *Am. Birds* 33:103–104 (1979). This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** Paul Prior, Nadine Litwin and Peter S. Burke. **Acknowledgments:** I thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 19 July 1991, and the Canadian Wildlife Service for financial support.

96. SHRUBBY TREES, RIDGE, AND WOODS

MATORRAL CON BORDES Y BOSQUE

MICHAEL F.G. CLARK

27 Skyline Drive

Dundas, Ontario L9H 3S3

Location: Ontario; Municipality of Hamilton-Wentworth; Dundas; Dundas Valley Plot 2; 43°15'N, 80°01'W; **Continuity:** Established 1990; 2 yr. **Size:** 7.3 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):14–15 (1989). Coordinate for longitude was reported incorrectly in previous volumes. **Weather:** Mean start temp., 22.9°C (range 19–27°C). **Coverage:** 12.4 h; 8 visits (1 sunrise, 1 sunset); 27 April; 25 May; 1, 8, 14, 19, 29 June; 1 July. **Census:** Yellow Warbler, 15.0 (82); Gray Catbird, 8.5 (47); Song Sparrow, 5.0 (27); Blue-winged Warbler, 3.5 (19); Eastern Kingbird, 3.0 (16); Northern Cardinal, 3.0; Indigo Bunting, 3.0; Black-capped Chickadee, 2.5; Great Crested Flycatcher, 2.0; Brown-headed Cowbird, 2.0; Northern Oriole, 2.0; American Goldfinch, 2.0; Field Sparrow, 1.5; Northern Flicker, 1.0; Willow Flycatcher, 1.0; Blue Jay, 1.0; American Robin, 1.0; Cedar Waxwing, 1.0; Rose-breasted Grosbeak, 1.0; Eastern Wood-Pewee, 0.5; Rufous-sided Towhee, 0.5. **Total:** 21 species; 60 territories (329/40 ha). **Visitors:** Wood Duck, Mourning Dove, Yellow-billed Cuckoo, American Crow, Brown Thrasher, Common Grackle, Pine Siskin. **Remarks:** The total number of breeding pairs decreased 26.9% compared to last yr. While three species were new to the plot (Eastern Wood-Pewee, Rufous-sided Towhee, Indigo Bunting), and five species maintained 1990 densities, the Yellow Warbler declined by 29% and the Yellow-billed Cuckoo, of which there were 4 pr. in 1990, did not breed at all.

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

BOSQUE MESOFÍTICO DISPERSO EN PRADERAS SUBALPINAS Y ABETOS

ROBERT A. HUDSON

P.O. Box 81

Bates, Oregon 97817

Location: Oregon; Grant Co.; Bates; Malheur National Forest; 44°45'N, 118°45'W; Desolation Butte Quadrangle, USGS. **Continuity:** Established 1973; 19 yr. **Size:** 32.4 ha.

Description of Plot: See *Am. Birds* 27:1002-1003 (1973). **Weather:** Mean start temp., 26.6°C (range 18-43°C). Heavy snows blanketed the census area in May and June. **Coverage:** 15.8 h; 8 visits (6 sunrise); 3, 4, 9, 10, 15, 16, 17, 21 July. Census was started late in the season due to weather. **Census:** Chipping Sparrow, 4.0 (5); White-crowned Sparrow, 4.0; Lincoln's Sparrow, 3.0 (4); Ruby-crowned Kinglet, 2.0; Fox Sparrow, 2.0; American Robin, 1.0; Yellow-rumped Warbler, 1.0; Cassin's Finch, 1.0. **Total:** 8 species; 18 territories (22/40 ha). **Visitors:** Northern Flicker, Clark's Nutcracker, Mountain Bluebird, Dark-eyed Junco. **Remarks:** The number of territories is the lowest since the census was started in 1974. Heavy precipitation in May and June may have contributed to the observed decreases. **Acknowledgments:** Malheur National Forest.

98. COASTAL FRESHWATER MARSH

PANTANO COSTANERO DE AGUA DULCE

JOHN P. KELLY

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

Location: California; Marin Co.; Marshall; Livermore Marsh; 38°10'N, 122°53'W; Tomales Quadrangle, USGS. **Continuity:** Established 1985; 7 yr. **Size:** 10.5 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):54 (1989). **Weather:** Mean start temp., 8°C (range 6-11°C). Total precipitation for the census period (3.81 cm) was near the 37-yr mean of 4.81 cm (Data source, Audubon Canyon Ranch, unpubl.). 1991 was the fifth consecutive yr of below-average winter rainfall. **Coverage:** 9.1 h; 8 visits (1 sunrise); 4, 10, 18 April; 1, 10, 15, 22, 29 May. **Census:** Red-winged Blackbird, 25.0 (95); Cliff Swallow, 23.0 (88); Song Sparrow, 14.5 (55); Marsh Wren, 12.0 (46); American Coot, 5.0 (19); Mallard, 3.0 (11); Allen's Hummingbird, 3.0; Pied-billed Grebe, 2.0; Cinnamon Teal, 2.0; Ruddy Duck, 2.0; Virginia Rail, 2.0; Mourning Dove, 2.0; Wrentit, 2.0; American Goldfinch, 2.0; California Quail, 1.0; Common Yellowthroat, 1.0; Black-headed Grosbeak, 1.0; Northern Harrier, 0.5 (1N,2FL); Brown-headed Cowbird, +. **Total:** 19 species; 103 territories (392/40 ha). **Visitors:** Great Blue Heron, Snowy Egret, Black-crowned Night-Heron, Red-shouldered Hawk, Cooper's Hawk, Black-shouldered Kite, Anna's Hummingbird, Belted Kingfisher, Northern Flicker, Black Phoebe, Western Wood-Pewee, Northern Rough-winged Swallow, Barn Swallow, Tree Swallow, Violet-green Swallow, Common Bushtit, Swainson's Thrush, Wilson's Warbler, Yellow Warbler, Dark-eyed Junco, White-crowned Sparrow, Brewer's Blackbird, Northern Oriole, Purple Finch, House Finch, California Towhee. **Remarks:** A period of extremely low temperatures in late December 1990 may have caused some winter mortality in resident insectivores. Allen's Hummingbird territories were all males. The Northern Harrier laid a five-egg clutch and fledged two young. **Acknowledgments:** This project is conducted by Audubon Canyon Ranch, Stinson Beach, CA, as part of a restoration and management program. I thank Susan Kelly for help in summarizing the results.

99. COASTAL RIPARIAN MARSH

ANEGADO RIVERENO COSTANERO

JULES G. EVENS & RICHARD W. STALLCUP

P.O. Box 839
Point Reyes, California 94956

Location: California; Marin Co.; Point Reyes Station; Olema Marsh; 38°4'N, 122°49'W; Point Reyes Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 17.5 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):75 (1991). **Weather:** Mean start temp., 12.2°C (range 7-16°C). This was the fifth yr of below-normal rainfall and progressive

drought. See also WBPS #30. **Coverage:** 24.5 h; 8 visits (8 sunrise); 3, 12 April; 2, 15, 22, 23 May; 7, 15 June. **Census:** Red-winged Blackbird, 34.0 (78); Song Sparrow, 16.0 (37); Marsh Wren, 10.0 (23); Wilson's Warbler, 6.5 (15); Virginia Rail, 5.0 (11); Common Yellowthroat, 5.0; American Goldfinch, 5.0; Warbling Vireo, 4.5 (10); Swainson's Thrush, 4.0 (9); Bushy-tit, 3.0 (7); Bewick's Wren, 3.0; Wrentit, 2.5; Orange-crowned Warbler, 2.5; Purple Finch, 2.5; Pacific-slope Flycatcher, 2.0; Downy Woodpecker, 2.0; Black Phoebe, 2.0; Chestnut-backed Chickadee, 2.0; Plain Titmouse, 2.0; Brown-headed Cowbird, 2.0; California Towhee, 1.5; California Quail, 1.5; Western Wood-Pewee, 1.5; Tree Swallow, 1.5; Black-headed Grosbeak, 1.5; Pied-billed Grebe, 1.0; Mallard, 1.0; American Coot, 1.0; Allen's Hummingbird, 1.0; Acorn Woodpecker, 1.0; Nuttall's Woodpecker, 1.0; Ash-throated Flycatcher, 1.0; Yellow Warbler, 1.0; Red-shouldered Hawk, 0.5; Anna's Hummingbird, 0.5; Hairy Woodpecker, 0.5; Scrub Jay, 0.5; Western Bluebird, 0.5; European Starling, 0.5; House Finch, 0.5; Green-backed Heron, +; Black-crowned Night-Heron, +; Cliff Swallow, +; Barn Swallow, +; Steller's Jay, +; American Robin, +; Pine Siskin, +. **Total:** 47 species; 134.5 territories (307/40 ha). **Visitors:** Great Egret, Black-shouldered Kite, Mourning Dove, Northern Flicker, Violet-green Swallow, Steller's Jay, Hutton's Vireo, Rufous-sided Towhee, Brewer's Blackbird. **Remarks:** There has been a progressive increase in vegetative cover on the marsh by willows, which have colonized the spoils around ponds created by dredging in 1984. A period of extended cold in late December 1990 resulted in high mortality of resident, small passerines and insectivores, and explains the decline in Marsh Wrens (-47% since 1990; -77% compared with 1985-89 mean). The number of territories of other marsh-dependent species has also declined compared with the five-yr mean: Virginia Rail (-37.5%), Common Yellowthroat (-36%), and Song Sparrow (-36%). Concurrent with the increase in willows has been an increase (30.8%) in Red-winged Blackbirds. **Acknowledgments:** John Kelly, Skip Schwartz, and Audubon Canyon Ranch, Inc. for consultation, encouragement, and logistical support, and Chevron, USA for financial support.

100. DESERT RIPARIAN-FRESHWATER MARSH

DESIERTO RIVEREÑO-PANTANO

EUGENE A. CARDIFF

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

Location: California; San Bernardino Co.; Morongo Valley; Big Morongo Wildlife Reserve; 34°3'N, 116°35'W; Morongo Valley Quadrangle, USGS. **Continuity:** Established 1977; 15 yr. **Size:** 15.4 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):76 (1991). **Weather:** Mean start temp., 4.3°C (range -1-15°C). The drought in Southern CA has continued into its fifth consecutive yr, with the exception of a wet March. March rainfall produced exceptional vegetation growth in the Morongo Valley area. **Coverage:** 30 h; 9 visits (9 sunrise); 17, 24 April; 1, 6, 13, 15, 22, 29 May; 6 June. **Census:** House Wren, 21.0 (55; 3N); Song Sparrow, 15.0 (39); Lesser Goldfinch, 10.0 (26; 2N); Bewick's Wren, 7.0 (18); Rufous-sided Towhee, 7.0; Costa's Hummingbird, 6.0 (16; 1N); Bushy-tit, 5.0 (13; 5FL); Yellow Warbler, 5.0; Common Yellowthroat, 5.0; Brown-headed Cowbird, 5.0; House Finch, 5.0; Ash-throated Flycatcher, 4.0 (10); Lazuli Bunting, 4.0; Virginia Rail, 3.0 (8); European Starling, 3.0 (3N); Summer Tanager, 3.0; Phainopepla, 2.5; Anna's Hummingbird, 2.0 (1N); Yellow-breasted Chat, 2.0; Mourning Dove, 1.0; Nuttall's Woodpecker, 1.0; Scrub Jay, 1.0 (1N); Plain Titmouse, 1.0; Verdin, 1.0; Hooded Oriole, 1.0; Northern Oriole, 1.0; Cooper's Hawk, 0.5 (1N,2FL); American Kestrel, 0.5; Spotted Dove, 0.5; Brown-crested Flycatcher, 0.5; Red-tailed Hawk, + (2FL); Vermilion Flycatcher, +; Blue Grosbeak, +; California Towhee, +. **Total:** 34 species; 123.5 territories (321/40 ha). **Visitors:** Gambel's Quail, White-winged Dove, Black-chinned Hummingbird, Ladder-backed Woodpecker, Black Phoebe, Cassin's Kingbird, Western Kingbird, Blue-gray Gnatcatcher, Northern Mockingbird, California Thrasher, Black-headed Grosbeak, Brewer's Blackbird, Lawr-

ence's Goldfinch. **Remarks:** Resident birds such as Gambel's Quail, Virginia Rail, Nuttall's Woodpecker, Bewick's Wren, California Thrasher, and Rufous-sided Towhee were down in numbers possibly as a result of the exceptionally cold temperatures in December. Yellow Warblers continue to increase, possibly the result of the on-going cowbird trapping program. Lazuli Buntings were on territories for the first time in 15 yr. **Other Observers:** Fran Crawford, Dori Meyers, and Gjon Hazard. **Acknowledgments:** Special thanks to the San Bernardino Valley Audubon Society and the San Bernardino County Museum for supporting this study.

101. RESTORED COASTAL BRACKISH MARSH

PANTANO SALOBRE COSTANERO RESTAURADO

DANA L. BASE

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

Site Number: CA9391019. **Location:** California; Humboldt Co.; Eureka; Elk River Salt Marsh Wetland Mitigation Site; 40°45'N, 124°11'W; Eureka Quadrangle, USGS. **Continuity:** Established 1980; 3 yr. **Size:** 8.2 ha. **Description of Plot:** See *Am. Birds* 35:101-102 (1981) and 36:103 (1982). The study area was diked off from the Elk River Estuary ca 1880. On 17 September 1980 the California Dept. of Transportation opened the dike in two locations to restore tidal action. As in 1980, the shrub layer is still dominated by *Baccharis pilularis* var. *consanguinea*. The dominant ground vegetation has changed from *Juncus balticus* and *J. leseurii* to *Salicornia virginica* (see Moore, M.R. 1988. Environmental Study: Elk River Mitigation Project. Unpubl. Report, California Dept. of Transportation, Dist. 1, Eureka, CA. 16 pp.). **Edge:** Bordered on NW by US Highway 101, a four-lane divided freeway, and by the Elk River on the NE and S sides. **Topography and Elevation:** Essentially flat except for the dikes. Minimum elevation, mean sea level, maximum, 1.6 m. **Weather:** Mean start temp., 8.9°C (range 8-10°C). **Coverage:** 16.5 h; 8 visits (8 sunrise); 12, 13, 14, 16, 19, 21, 22, 24 May. **Census:** Marsh Wren, 15.0 (73); Song Sparrow, 15.0; American Goldfinch, 2.0; Mallard, 1.0; Savannah Sparrow, 1.0; Brown-headed Cowbird, 1.0. **Total:** 6 species; 35 territories (171/40 ha). **Visitors:** Great Blue Heron, Great Egret, Canada Goose, Black Swift, Vaux's Swift, Allen's Hummingbird, Belted Kingfisher, Northern Flicker, Black Phoebe, Purple Martin, Violet-green Swallow, Cliff Swallow, Barn Swallow, European Starling, Orange-crowned Warbler, Wilson's Warbler, White-crowned Sparrow, Brewer's Blackbird, House Finch. **Remarks:** Except for Wrentits, which were censused only in the first yr, the breeding bird community has changed little. **Acknowledgments:** I wish to thank Mark R. Moore and Richard E. Genelly for logistical support and encouragement, and Paul F. Springer for reviewing a draft of the report.

102. MONTANE MESIC WILLOW CARR

RIVEREÑO DE MESIC MONTANO SAUCE

DAVE HALLOCK

*3065 24th Street
Boulder, Colorado 80304*

Location: Colorado; Boulder Co.; Nederland; Tucker Willow Carr; 39°58'N, 105°32'W; Nederland Quadrangle, USGS. **Continuity:** Established 1983; 4 yr. **Size:** 3.8 ha. **Description of Plot:** See *Am. Birds* 38:112 (1984). Beavers are no longer active on the plot. As a result, most of the standing water has disappeared. **Weather:** Mean start temp., 10.9°C (range 1-18°C). **Coverage:** 12.8 h; 9 visits (8 sunrise); 12, 19, 24 May; 2, 8, 14, 21, 30 June; 6 July. **Census:** Wilson's Warbler, 13.5 (142; 1N); Lincoln's Sparrow, 12.5 (132; 2N); Dusky Flycatcher, 9.0 (95); Warbling Vireo, 6.0 (63); MacGillivray's Warbler, 6.0;

Broad-tailed Hummingbird, 4.0 (42); Song Sparrow, 4.0; American Robin, 3.5 (37; 2N); Fox Sparrow, 3.0 (32); Black-headed Grosbeak, 2.5; Common Snipe, 2.0; Swainson's Thrush, 1.0; Yellow Warbler, 1.0; White-crowned Sparrow, 1.0; Dark-eyed Junco, 0.5; Red-naped Sapsucker, +; Black-capped Chickadee, +; Veery, +; Brown-headed Cowbird, +. **Total:** 19 species; 69.5 territories (732/40 ha). **Visitors:** Belted Kingfisher, Ruby-crowned Kinglet, Yellow-rumped Warbler, Common Yellowthroat, Yellow-breasted Chat, Green-tailed Towhee. **Remarks:** Song Sparrows have dropped significantly since 1986 (from 14 to 4 territories). A decrease in standing water probably accounts for the decrease in waterfowl, Spotted Sandpipers, and Red-winged Blackbirds. **Acknowledgments:** Thanks to the Geick family for access to the site.

103. SHRUBBY SWAMP AND SEDGE HUMMOCKS

PANTANO ARBUSTIVO-MOGOTE

ANDREW MAGEE

*White Memorial Conservation Center
Litchfield, Connecticut 06759*

Location: Connecticut; Litchfield Co.; Litchfield; White Memorial Foundation-Bantam River Inlet; 41°43'N, 73°13'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 25 yr. **Size:** 8.1 ha. **Description of Plot:** See *Aud. Field Notes* 19:625-627 (1965). **Weather:** Mean start temp., 21.5°C (range 16-24°C). **Coverage:** 12.5 h; 8 visits (7 sunset); 16, 17, 31 May; 6, 7, 8, 21, 22 June. **Census:** Swamp Sparrow, 41.0 (202); Red-winged Blackbird, 26.0 (128); Yellow Warbler, 23.0 (114); Common Yellowthroat, 12.0 (59); Gray Catbird, 8.0 (40); Song Sparrow, 7.0 (35); Willow Flycatcher, 4.0 (20); Tree Swallow, 4.0; American Goldfinch, 4.0; Mallard, 3.0 (15); Cedar Waxwing, 3.0; Eastern Kingbird, 2.0; Wood Duck, 1.0; Hooded Merganser, 1.0; Marsh Wren, 1.0; Brown-headed Cowbird, 1.0; Great Blue Heron, 0.5; American Crow, 0.5; Common Grackle, 0.5; Mute Swan, +; Canada Goose, +. **Total:** 21 species; 142.5 territories (704/40 ha). **Remarks:** The number of territories was relatively low for a non-flood yr. Densities of the most common species were the same as for 1990, except Song Sparrows increased from three to seven, and Willow Flycatchers decreased from nine to four. Virginia Rails, which apparently have never recovered from the serious nesting season floods of 1979, 1982, and 1984, were absent. In pre-flood yr as many as 15 were observed on the plot. However, they were found to be abundant in several marshy areas within 2.4 km upstream from the census area. **Acknowledgments:** Gordon Loery of the White Memorial Conservation Center wrote up the report.

104. SEDGE-RUSH SWALE I

ANEGADO DE ESPARGANIO-JUNQUILLOS I

KATHERINE M. THOMAS & MARK J. PALMER

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

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°7'W; Gravelly Bay Quadrangle, DEMR. **Continuity:** Established 1973; 3 yr. **Size:** 9.3 ha. **Description of Plot:** See *Am. Birds* 27:1012 (1973). A narrow rectangular plot, measuring 1300 × 50-100 m. The plot is dominated by a shallow pond, 1000 × 50-100 m. Open water covers about 60% of the plot area. The dominant canopy tree is Eastern Cottonwood. The understory is very open consisting of scattered shrubs of Red Cedar and Common Juniper on the dry dunes and Kalm's St. John's-wort in the swales. The ground layer is composed of Stonewort in standing water, Resupinate Bladderwort on wet sand flats and stands of Twig-rush and spikerushes at the swale margins. Patches of moss are also present. A quantitative survey of the vegetation in that portion of

the plot not covered by open water gave the following: Trees 7.5 cm dbh and over based on complete enumeration in the BBC plot, 9/ha, total basal area 0.11 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of 37, 50 × 50 m sampling units), in that sequence]: Eastern Cottonwood 7, 77, 80, 22; dead trees and stumps over 2 m tall 2, 23, 20, 24. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5–15 cm) 8, 87, 0.1, 71; B (>15–23 cm) 1, 13, <0.1, 29. Average canopy height, 4.6 m (range 1.3–8.1 m, n = 23). Ground cover 57%, canopy cover 0%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 1400. Size class distribution: <0.5 m, 1400; 0.5–1.0 m, 0; >1.0 m, 0. The only shrub recorded in quadrats was Kalm's St. John's-wort. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: spikerush 21%, 2 quadrats; Stonewort 16, 3; mosses 13, 1; Twig-rush 12, 6; spikerush 8, 3; Nut-rush 8, 1; Beak-rush 8, 1; Threesquare Bulrush 4, 5; Panicked Aster 3, 3; Pondweed 3, 4; sedge (*Carex viridula*) 1, 4; Resupinate Bladderwort 1, 3. Other species prominent in the plot, but not recorded in the quadrats or with low total cover include Horned Bladderwort in the swales and Little Blue-stem and Switch Grass on dry ridges. Non-living ground cover based on estimates in 10, 1 × 1 m quadrats: litter 27%, water 26%, bare sand 9%. An algal crust on bare sand areas had a mean cover of 39%. **Edge:** Similar habitat to the E, dry cottonwood-juniper habitat to the N, dry cottonwood sand dune to the S and open, grassy lightly-undulating sand dunes to the W. **Topography and Elevation:** Minimum elevation 174 m, maximum 177 m. Plot is basically level and dominated by a slough running the length of the plot. **Weather:** Mean start temp., 22°C (range 19–24°C). **Coverage:** 14 h; 10 visits (9 sunrise, 1 sunset); 8, 14, 16, 17, 20, 25, 26, 27, 30 June; 3 July. **Census:** Spotted Sandpiper, 3.5 (15; 1N,1FL); Killdeer, 2.5 (2FL); Red-winged Blackbird, 2.5 (2N,5FL); Eastern Kingbird, 1.0 (1FL); Eastern Bluebird, 0.5. **Total:** 5 species; 10 territories (43/40 ha). **Visitors:** American Kestrel, House Wren, Northern Mockingbird, European Starling, Chipping Sparrow, Savannah Sparrow, Common Grackle, Northern Oriole. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** Paul Prior and Peter S. Burke. **Acknowledgments:** We thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 10, 12, and 17 July 1991, and the Canadian Wildlife Service for financial support.

105. SEDGE-RUSH SWALE II

ANEGADO DE ESPARGANIO-JUNQUILLOS I

KATHERINE M. THOMAS & MARK J. PALMER

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°6'W; Gravelly Bay Quadrangle, DEMR. **Continuity:** New. **Size:** 9.3 ha. **Description of Plot:** An irregularly shaped plot, basically a long, narrow strip running W to E, 1200 × 50–100 m. The plot is dominated by a shallow pond 1000 × 50–100 m. Open water covers about 50% of the plot area. The dominant canopy trees are Eastern Cottonwood and Red Cedar. The understory is absent apart from scattered individuals of Red Cedar on the dry dunes and Kalm's St. John's-wort in the swales. The ground layer is composed of Nut-rush, Beak-rush and Twig-rush. A quantitative survey of the vegetation in that portion of the plot not covered by open water gave the following: Trees 7.5 cm dbh and over based on complete enumeration in the BBC plot, 4/ha, total basal area 0.07 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency

(% of 37, 50 × 50 m sampling units), in that sequence]: Eastern Cottonwood 2, 46, 59, 22; Red Cedar 1, 37, 26, 16; dead trees and stumps over 2 m tall 1, 17, 15, 11. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5–15 cm) 3, 66, 0.03, 33; B (>15–23 cm) 1, 26, 0.03, 36; C (>23–38 cm) <1, 9, 0.02, 31. Average canopy height, 5.6 m (range 1.4–13.0 m, n = 30). Ground cover 44%, canopy cover 0%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 38,300. Size class distribution: <0.5 m, 34,200; 0.5–1.0 m, 4100; >1.0 m, 0. Shrub species in order of total abundance: Kalm's St. John's-wort 34,100 stems <0.5 m, 4100 stems 0.5–1.0 m, 0 stems >1.0 m; Eastern Red Cedar 100, 0, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Nut-rush 25%, 4 quadrats, Beak-rush 23, 5; Twig-rush 19, 8; mosses 17, 3; Kalm's St. John's-wort 8, 3; spikerush (*Eleocharis elliptica*) 4, 4; sedge (*Carex viridula*) 1, 5; Panicked Aster 1, 8; Threesquare Bulrush 1, 5; Variegated Scouring-rush <1, 4; Resupinate Bladderwort <1, 3. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: bare sand 43%, litter 30%, water 9%. An algal crust covering bare sand had a mean cover of 4%. **Edge:** Similar habitat to the W and E. North edge typified by a high, dry juniper-cottonwood dune. To the S, dry cottonwood sand dune. **Topography and Elevation:** Minimum elevation 174 m, maximum 177 m. Plot is basically level and dominated by a slough running the length of the plot. **Weather:** Mean start temp., 22°C (range 20–24°C). **Coverage:** 14 h; 10 visits (8 sunrise, 2 sunset); 13, 14, 16, 17, 20, 25, 26, 27, 30 June; 3 July. **Census:** Killdeer, 2.5; Red-winged Blackbird, 2.0 (4FL); Spotted Sandpiper, 1.5; Chipping Sparrow, 1.0 (2FL); Eastern Kingbird, 0.5 (1FL); Brown-headed Cowbird, + (1FL). **Total:** 6 species; 7.5 territories (32/40 ha). **Visitors:** Canada Goose, Common Snipe, Mourning Dove, American Robin, European Starling, Song Sparrow, Common Grackle. **Remarks:** Tree Swallows held 2 territories on the plot. Both nests were in nest boxes and 5FL were observed. This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. **Other Observers:** Paul Prior, Julian Hough, Nadine Litwin and Peter S. Burke. **Acknowledgments:** We thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 17 July 1991, and the Canadian Wildlife Service for financial support.

106. MESQUITE–HACKBERRY RIPARIAN ASSOCIATION

ASSOCIATION RIVERENA DE MEQUITA–HACKBERRY

JOAN & ROBERT TWEIT

3116 N. Willow Creek Drive
Tucson, Arizona 85712

Location: Arizona; Pima Co.; Oro Valley; Sutherland Wash; 32°26'N, 110°54'W; Oro Valley Quadrangle, USGS. **Continuity:** Established 1985; 3 yr. **Size:** 11.2 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):78 (1991). **Weather:** Mean start temp., 15°C (range 5–22°C). The wash within the plot had surface water well into April. **Coverage:** 12.9 h; 12 visits (9 sunrise, 1 sunset); 5, 26 March; 5, 17, 20, 21 April; 5, 11 June. **Census:** Bell's Vireo, 13.0 (46); Verdin, 10.0 (36); Lucy's Warbler, 9.0 (32); White-winged Dove, 7.0 (25); Northern Cardinal, 7.0; Gambel's Quail, 5.0 (18); Gila Woodpecker, 4.0 (1N); Canyon Towhee, 4.0 (14); House Finch, 4.0; Brown-crested Flycatcher, 3.0 (11); Cactus Wren, 3.0; Mourning Dove, 2.0; Ladder-backed Woodpecker, 2.0; Abert's Towhee, 2.0; Northern Flicker, 1.0; Ash-throated Flycatcher, 1.0; Bewick's Wren, 1.0; Black-tailed Gnatcatcher, 1.0; Northern Mockingbird, 1.0; Phainopepla, 1.0; Varied Bunting, 1.0; Black-throated Sparrow, 1.0; Bronzed Cowbird, 1.0. **Total:** 23 species; 84 territories (300/40 ha). **Visitors:** Cooper's Hawk, American Kestrel, Inca Dove, Greater Roadrunner, Western Screech-Owl, Elf Owl, Common Poorwill, Costa's Hummingbird, Northern Beardless Tyrannulet, Say's Phoebe, Curve-billed Thrasher, Blue Grosbeak, Lesser Goldfinch, Brown-headed Cowbird. **Remarks:** Two Western Screech-Owls, four Elf Owls, and two Common Poorwills were heard within the plot during one evening census.

107. COASTAL SCRUB

MATORRAL CASTANERO

BRITTA DENISE HARDESTY, PAUL BREWSTER & GEOFFREY R. GEUPEL

*Point Reyes Bird Observatory**4990 Shoreline Highway**Stinson Beach, California 94970*

Location: California; Marin Co.; Bolinas; Palomarin Field Station; 37°56'N, 122°45'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1971; 17 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 25:1003–1004 (1971). **Weather:** Mean start temp., 13.1°C (range 4–24°C). See BBC #109. **Coverage:** 258 h; 83 visits (14 sunrise, 6 sunset); 1 April–30 June. **Census:** Wrentit, 12.0 (59; 23N, 29FL); White-crowned Sparrow, 7.5 (37; 12N, 25FL); Song Sparrow, 6.5 (32; 13N, 25FL); Allen's Hummingbird, 6.0 (30); Rufous-sided Towhee, 5.0 (25; 3N, 5FL); Bewick's Wren, 3.5 (17); Scrub Jay, 2.0; Orange-crowned Warbler, 2.0; Northern Flicker, 1.0; Bushtit, 1.0; Purple Finch, 1.0; California Towhee, 0.5; Red-tailed Hawk, +; Mourning Dove, +. **Total:** 14 species; 48 territories (237/40 ha). **Remarks:** The number of territories on this mature coastal scrub plot increased by 10.8%, which contrasts with decreases reported on both disturbed plots (BBC #108, 109). Allen's Hummingbird, which continued to decrease dramatically on the disturbed plots, was at the highest levels on record, continuing a steady increase since 1987. White-crowned Sparrows increased by 47% to the highest density since 1981. California Towhees were recorded for the first time in 17 yr, and Bushtits for the first time since 1988. Species decreasing in density include: Purple Finch (60%) and Song Sparrow (33%), the latter returning to more normal numbers after two yr of record numbers. **Other Observers:** Grant Ballard. **Acknowledgments:** We thank Point Reyes National Seashore for their Cooperation. This is Point Reyes Bird Observatory contribution No. 519.

108. DISTURBED COASTAL SCRUB A

MATORRAL PERTURBADO A

MELISSA E. PERERA & GEOFFREY R. GEUPEL

*Point Reyes Bird Observatory**4990 Shoreline Highway**Stinson Beach, California 94970*

Location: California; Marin Co.; Bolinas; Palomarin Field Station; 37°55'N, 122°45'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1972; 17 yr. **Size:** 4.7 ha. **Description of Plot:** See *Am. Birds* 26:987–988 (1972). **Weather:** Mean start temp., 13.1°C (range 4–24°C). See BBC #109. **Coverage:** 125 h; 56 visits (15 sunrise); 1 April–30 June. **Census:** Song Sparrow, 6.0 (51; 10N, 10FL); Wrentit, 4.0 (34; 7N, 18FL); Anna's Hummingbird, 2.0; Bushtit, 1.5; Bewick's Wren, 1.5; Rufous-sided Towhee, 1.5; California Quail, 1.0; White-crowned Sparrow, 1.0 (2N, 3FL); Purple Finch, 1.0; Northern Flicker, 0.5; American Robin, 0.5; California Towhee, 0.5; Red-tailed Hawk, +; Mourning Dove, +; Allen's Hummingbird, +; Scrub Jay, +; Orange-crowned Warbler, +; Wilson's Warbler, +; Black-headed Grosbeak, +; American Goldfinch, +. **Total:** 20 species; 21 territories (179/40 ha). **Remarks:** The total number of territories and species diversity decreased slightly from last yr. This continues a downward trend in the number of territories from the high in 1985, which coincides with the onset of drought conditions. Notable decreases from the previous yr include: White-crowned Sparrow (50%), California Quail (33%), Song Sparrow and Rufous-sided Towhee (25%). Both White-crowned Sparrow and Song Sparrow densities were well below the previous 11-yr mean of 1.95 and 8.82, respectively. Allen's Hummingbird remained low at pre-1977 levels. Species showing an increase include: Wrentit (60%), Common Bushtit (50%), and Anna's Hummingbird (25%). **Acknowledgments:** We thank the Point Reyes National Seashore for their cooperation. This is Point Reyes Bird Observatory contribution No. 520.

109. DISTURBED COASTAL SCRUB B

MATORRAL PERTURBADO B

MARGARET E. HART & GEOFFREY R. GEUPEL

*Point Reyes Bird Observatory
4990 Shoreline Highway
Stinson Beach, California 94970*

Location: California; Marin Co.; Bolinas; Palomarin Field Station; 37°55'N, 122°46'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1971; 18 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 25:1002 (1971). **Weather:** Mean start temp., 13.1°C (range 4–24°C). Drought conditions continue for a fifth straight yr. This year's rainfall (60.4 cm) was the second lowest in 12 yr. Rain fell mostly in March, marking the third wettest March in 24 yr. **Coverage:** 209 h; 65 visits (11 sunrise); 1 April–27 June. **Census:** Wrentit, 8.5 (42; 14N,22FL); Song Sparrow, 8.5 (9N,8FL); Bewick's Wren, 3.5 (17); White-crowned Sparrow, 3.5 (4N,10FL); Rufous-sided Towhee, 3.0 (15); American Goldfinch, 1.5; Anna's Hummingbird, 1.0; Northern Flicker, 1.0; Bushtit, 1.0 (1N,0FL); American Robin, 1.0; Allen's Hummingbird, 0.5; Scrub Jay, 0.5; Brown-headed Cowbird, 0.5; Red-tailed Hawk, +; California Quail, +; Western Bluebird, +; California Towhee, +. **Total:** 17 species; 34 territories (173/40 ha). **Remarks:** The total number of territories (34.0) on this successional plot is down 10.5% from last year's high of 38. Only four of 15 resident species showed an increase. The Wrentit, up 100% from 1971, showed the greatest increase, continuing a 14-yr trend with 1991 marking the highest density. Four resident species declined, most notably the Allen's Hummingbird, decreasing by 50% to pre-1979 level. The Song Sparrow continued a six-yr fluctuating trend. **Acknowledgments:** We thank Point Reyes National Seashore for their cooperation. This is Point Reyes Bird Observatory contribution No. 521.

110. PINYON–JUNIPER SCRUB

MATORRAL DE PIÑON–JUNIPERO

TIM B. GRAHAM & ANDREW W. NETTELL

*Arches and Canyonlands National Parks
and Natural Bridges National Monument
125 West 2nd Street
Moab, Utah 84532*

Site Number: UT8791101. **Location:** Utah; San Juan Co.; Moab; Island in the Sky Mesa; 38°21'N, 109°21'W; Monument Basin Quadrangle, USGS. **Continuity:** New. **Size:** 20.0 ha. **Description of Plot:** A rectangular plot (500 × 400 m) with an open forest canopy dominated by Utah Juniper and Pinyon Pine. Juniper covers ca 0.06% of the plot's ground surface, has an average canopy cover of 5.1 m², and occurs at a mean ht of 3.2 m. Pinyon trees average 3.1 m in height, 8.6 m² average canopy cover, and cover 0.02% of the plot's surface. Pinyon density is 125 trees/ha, juniper density is 475 trees/ha. Shrub cover is dominated by Blackbrush, Mormon Tea, Prickly Pear, Narrow-leaf Yucca, buckwheat, and Bigelow's Sagebrush. Shrub density is estimated to be 138,320 shrubs/ha, mostly Blackbrush. Ground cover, including trees and shrubs encountered along transects, is estimated to be 32%. **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 not larger than 100 ha. The W boundary is near the pinyon-juniper/grassland ecotone, and 100–200 m from the mesa top road. **Topography and Elevation:** The plot drops gradually from NW to SE by way of a series of level benches and small ledgy cliffs. Minimum elevation 1865 m, maximum 1905 m. **Weather:** Mean start temp., 10.1°C (range –1–16°C). **Coverage:** 20 h; 8 visits (8 sunrise); 21, 28 April; 5, 14, 19, 25 May; 2, 17 June. **Census:** Pinyon Jay, 12.0 (24; 1N,2FL); Black-throated Gray Warbler, 9.0 (18); Black-throated Sparrow, 4.0 (8); Ash-throated Flycatcher, 2.0 (1N); Gray Flycatcher, 1.0; Violet-green Swallow, 1.0; Plain Titmouse, 1.0; Lark Sparrow, 1.0

(1N). **Total:** 8 species; 31 territories (62/40 ha). **Visitors:** White-throated Swift, Black-chinned Hummingbird, Broad-tailed Hummingbird, Northern Flicker, Olive-sided Flycatcher, Scrub Jay, Rock Wren, Ruby-crowned Kinglet, Townsend's Solitaire, Yellow-rumped Warbler, Wilson's Warbler, Western Tanager, Chipping Sparrow, House Finch.

111. COASTAL PRAIRIE

PRADERA COSTANERA

JOHN P. KELLY

Audubon Cypress Grove Preserve

P.O. Box 808

Marshall, California 94940

Location: California; Marin Co.; Marshall; Cypress Grove Preserve; 38°10'N, 122°54'W; Tomales Quadrangle, USGS. **Continuity:** Established 1988; 4 yr. **Size:** 31.0 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):56–57 (1989). **Weather:** Mean start temp., 8°C (range 6–11°C). See BBC #98. **Coverage:** 8 h; 8 visits (4 sunrise); 4, 10, 18 April; 1, 10, 15, 22, 29 May. **Census:** Song Sparrow, 15.0 (19); Black-shouldered Kite, 2.0; House Finch, 2.0; American Goldfinch, 2.0; Mallard, 1.0; Northern Harrier, 1.0 (1N,2FL); Mourning Dove, 1.0; Anna's Hummingbird, 1.0; American Crow, 1.0; California Towhee, 1.0; White-crowned Sparrow, 1.0; Red-winged Blackbird, 1.0; Western Meadowlark, 0.5; Brown-headed Cowbird, +. **Total:** 14 species; 29.5 territories (38/40 ha). **Visitors:** Great Blue Heron, Great Egret, Turkey Vulture, Red-shouldered Hawk, Red-tailed Hawk, Cooper's Hawk, American Kestrel, California Quail, Allen's Hummingbird, Northern Flicker, Western Wood-Pewee, Northern Rough-winged Swallow, Cliff Swallow, Barn Swallow, Tree Swallow, Violet-green Swallow, Scrub Jay, Marsh Wren, Savannah Sparrow, Brewer's Blackbird, Pine Siskin. **Remarks:** A period of extremely low temperatures in late December 1990 may have caused increased winter mortality among resident insectivores. Both Black-shouldered Kite nests failed, probably resulting from a dramatic decrease in California Vole populations (Audubon Canyon Ranch, unpubl. data) following prolonged winter freeze and drought. **Acknowledgments:** This work was conducted by Audubon Canyon Ranch, Stinson Beach, CA. I thank Susan Kelly for help in summarizing the results.

112. TALLGRASS PRAIRIE I

PRADERA DE YERBAS ALTAS I

PETER E. LOWTHER

Field Museum of Natural History

Roosevelt Road at Lake Shore Drive

Chicago, Illinois 60605

Location: Iowa; Dickinson Co.; Milford; Iowa Lakeside Laboratory's "North 40"; 43°23'N, 95°11'W; Okoboji Quadrangle, USGS. **Continuity:** Established 1982; 8 yr. **Size:** 16.0 ha. **Description of Plot:** See *Am. Birds* 37:79 (1983). **Weather:** Mean start temp., 23°C (range 18–28°C). Temperatures through June were normal (based on 20-yr mean), precipitation from March through May, 25.3 cm above average. Data source: Iowa Lakeside Laboratory. **Coverage:** 4.8 h; 6 visits (2 sunrise); 9, 10, 11, 12, 13 June. **Census:** Common Yellowthroat, 4.0 (10); Common Grackle, 4.0 (4N); Yellow Warbler, 3.0 (8); Red-winged Blackbird, 3.0 (5N); Gray Catbird, 2.0; Song Sparrow, 2.0; Brown-headed Cowbird, 2.0; American Robin, 1.0; Brown Thrasher, 1.0; American Goldfinch, 1.0; Black-billed Cuckoo, 0.5; Eastern Kingbird, +; Dickcissel, +. **Total:** 13 species; 23.5 territories (59/40 ha). **Visitors:** Sora. **Remarks:** Two cowbird eggs were found in a Red-winged Blackbird nest. Changes in bird populations and vegetation for an area including this study site have been described in, Bernstein, N.P., K.K. Baker and S.R. Wilmot. 1990. Changes in a prairie bird population from 1940 to 1989. *J. Iowa Acad. Sci.* 97:115–120. **Acknowledgments:** R.W. Cruden, M.

and J. Wehrspann at Iowa Lakeside Laboratory for logistic support and permission to use the area.

113. TALLGRASS PRAIRIE II

PRADERA DE YERBAS ALTAS II

PETER E. LOWTHER

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

Location: Iowa; Dickinson Co.; Milford; Cayler Prairie; 43°24'N, 95°15'W; Okoboji Quadrangle, USGS. **Continuity:** Established 1982; 8 yr. **Size:** 65.7 ha. **Description of Plot:** See *Am. Birds* 37:79 (1983). **Weather:** Mean start temp., 23°C (range 18–28°C). See BBC #112. **Coverage:** 9.1 h; 3 visits (3 sunrise); 9, 11, 13 June. **Census:** Red-winged Blackbird, 31.0 (19; 19N); Grasshopper Sparrow, 16.0 (10; 1N); Dickcissel, 13.0 (8); Bobolink, 13.0 (1N); Common Yellowthroat, 11.0 (7); Western Meadowlark, 7.0 (4); Yellow-headed Blackbird, 6.0 (4); Savannah Sparrow, 3.0 (2); Sedge Wren, 2.0; American Robin, 2.0 (2N); Mallard, 1.0 (1N); Blue-winged Teal, 1.0; Ring-necked Pheasant, 1.0; Sora, 1.0; Killdeer, 1.0 (1N); Upland Sandpiper, 1.0; Mourning Dove, 1.0 (1N); Brown Thrasher, 1.0 (1N); Swamp Sparrow, 1.0; Brown-headed Cowbird, 1.0; American Goldfinch, 1.0. **Total:** 21 species; 115 territories (70/40 ha). **Remarks:** Seven cowbird eggs were found in four redwing and one Bobolink nest. A study undertaken by Neil Bernstein (3 June to 5 July) discovered the following additional nests: 23 Red-winged Blackbird, three Mallard, three Blue-winged Teal, one Ring-necked Pheasant, one Sora, one Grasshopper Sparrow, and one Western Meadowlark. **Acknowledgments:** State Preserves Advisory Board, Iowa Dept. of Natural Resources for permission to conduct census. Neil Bernstein shared his observation.

114. TALLGRASS PRAIRIE III

PRADERA DE YERBAS ALTAS III

PETER E. LOWTHER

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

Location: Iowa; Dickinson Co.; Milford; Freda Haffner Kettlehole Preserve; 43°20'N, 95°13'W; Milford Quadrangle, USGS. **Continuity:** Established 1982; 8 yr. **Size:** 44.8 ha. **Description of Plot:** See *Am. Birds* 37:79 (1983). **Weather:** Mean start temp., 23°C (range 17–28°C). See BBC #112. **Coverage:** 9.1 h; 3 visits (3 sunrise); 10, 12, 14 June. **Census:** Red-winged Blackbird, 21.0 (19; 10N); Common Yellowthroat, 15.0 (13); Bobolink, 11.0 (10); Song Sparrow, 7.0 (6); Yellow Warbler, 6.0 (5); Dickcissel, 5.0 (4); Grasshopper Sparrow, 5.0; Western Meadowlark, 4.0 (4); American Goldfinch, 4.0; Mourning Dove, 3.0 (3; 1N); Brown-headed Cowbird, 3.0; Willow Flycatcher, 2.0; Sedge Wren, 2.0; Swamp Sparrow, 2.0; Ring-necked Pheasant, 1.0 (1N); Black-billed Cuckoo, 1.0; Brown Thrasher, 1.0; Yellow-headed Blackbird, 1.0; House Sparrow, 1.0 (1N). **Total:** 19 species; 95 territories (85/40 ha). **Visitors:** Killdeer, American Woodcock, Mallard. **Remarks:** Four cowbird eggs were found in three redwing nests. Additional work by Neil Bernstein discovered eight Red-winged Blackbird nests and one Bobolink nest. **Acknowledgments:** Iowa Field Office, The Nature Conservancy, for permission to conduct census, and Neil Bernstein for his observations.

115. KENTUCKY BLUEGRASS PRAIRIE

PRADERA DE "YERBA-AZUL" DE KENTUCKY

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

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

Location: North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°14'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 20 yr. **Size:** 4.8 ha. **Description of Plot:** See *Am. Birds* 26:972 (1972). **Weather:** No data provided. **Coverage:** 2.2 h; 7 visits (1 sunrise); 26, 29, 31 May; 5 June. **Census:** Bobolink, 1.5; Western Meadowlark, 1.0; Brown-headed Cowbird, 1.0; Eastern Kingbird, 0.5; Gray Partridge, +; Savannah Sparrow, +. **Total:** 6 species; 4 territories (33/40 ha). **Visitors:** Upland Sandpiper, Mourning Dove, Common Yellowthroat, Common Grackle, Clay-colored Sparrow, Grasshopper Sparrow.

116. MIXED PRAIRIE I

PRADERA MIXTA I

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

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

Location: North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°15'W; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 20 yr. **Size:** 10.0 ha. **Description of Plot:** See *Am. Birds* 26:972 (1972). **Weather:** No data provided. **Coverage:** 4.4 h; 6 visits (3 sunrise); 26, 29, 31 May; 4, 5 June. **Census:** Clay-colored Sparrow, 5.5 (22); Brown-headed Cowbird, 2.0; Bobolink, 1.5; Willow Flycatcher, 1.0; Eastern Kingbird, 1.0; Yellow Warbler, 1.0; Western Meadowlark, 1.0; Gadwall, 0.5; Gray Catbird, 0.5. **Total:** 9 species; 14 territories (56/40 ha). **Visitors:** Upland Sandpiper, Ring-necked Pheasant, Mourning Dove, American Goldfinch.

117. MIXED PRAIRIE II

PRADERA MIXTA II

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

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

Location: North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°15'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 20 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 26:972-973 (1972). **Weather:** No data provided. **Coverage:** 2.5 h; 7 visits (4 sunrise); 26, 29, 31 May; 4, 5 June. **Census:** Clay-colored Sparrow, 1.5; Western Meadowlark, 1.0; Brown-headed Cowbird, 0.5; Western Kingbird, +; Eastern Kingbird, +. **Total:** 5 species; 3 territories (20/40 ha). **Visitors:** American Goldfinch, Savannah Sparrow.

118. MIXED PRAIRIE III

PRADERA MIXTA III

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

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

Location: North Dakota; Stutsman Co.; Woodworth; 47°9'N, 99°14'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 20 yr. **Size:** 6.1 ha. **Description of Plot:** See

Am. Birds 26:973 (1972). **Weather:** No data provided. **Coverage:** 2.2 h; 5 visits (1 sunrise); 26, 29, 31 May; 5 June. **Census:** Bobolink, 3.0 (20); Grasshopper Sparrow, 1.0; Western Meadowlark, 0.5; Western Kingbird, +; Eastern Kingbird, +. **Total:** 5 species; 4.5 territories (30/40 ha). **Visitors:** Common Snipe, Upland Sandpiper, Barn Swallow, Clay-colored Sparrow.

119. MIXED PRAIRIE IV

PRADERA MIXTA IV

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

Northern Prairie Wildlife Research Center

Route 1, Box 96C

Jamestown, North Dakota 58401

Location: North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°15'W; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 20 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 26:973-974 (1972). **Weather:** No data provided. **Coverage:** 3.4 h; 9 visits (2 sunrise); 26, 29, 31 May; 4, 5 June. **Census:** Clay-colored Sparrow, 2.0; Grasshopper Sparrow, 1.0; Eastern Kingbird, 0.5; Western Meadowlark, 0.5; Brown-headed Cowbird, 0.5; Upland Sandpiper, +; Red-winged Blackbird, +. **Total:** 7 species; 4.5 territories (30/40 ha). **Visitors:** Gadwall, Northern Harrier, Mourning Dove, Western Kingbird, Tree Swallow, American Goldfinch, Bobolink.

120. MIXED PRAIRIE V

PRADERA MIXTA V

DOUGLAS H. JOHNSON & MICHAEL D. SCHWARTZ

Northern Prairie Wildlife Research Center

Route 1, Box 96C

Jamestown, North Dakota 58401

Location: North Dakota; Stutsman Co.; Woodworth; 47°8'N, 99°14'W; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 20 yr. **Size:** 6.1 ha. **Description of Plot:** See *Am. Birds* 26:974 (1972). **Weather:** No data provided. **Coverage:** 4 h; 9 visits (3 sunrise); 26, 29, 31 May; 4, 5 June. **Census:** Clay-colored Sparrow, 3.5 (23); Bobolink, 3.5; Eastern Kingbird, 1.0; Grasshopper Sparrow, 1.0; Western Meadowlark, 1.0; Brown-headed Cowbird, 1.0. **Total:** 6 species; 11 territories (72/40 ha). **Visitors:** Common Snipe, Marbled Godwit, Upland Sandpiper, Western Kingbird, Yellow Warbler, Common Yellowthroat, Red-winged Blackbird, Common Grackle.

121. TALLGRASS PRAIRIE REMNANT

REMANENTE DE PRADERA CON YERBAS ALTAS

DAVE MINNEY

The Nature Conservancy, Ohio

1504 W. First Avenue

Columbus, Ohio 43212

Location: Ohio; Greene Co.; Fairborn; Huffman Prairie; 39°48'N, 84°4'W; Fairborn Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 44.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):85 (1991). A small building was placed in the W corner of the site in the fall of 1990. Approximately 0.5 ha is now maintained in lawn. Scheduled spring burn was not conducted due to improper conditions. This, combined with warm, wet conditions of early spring, resulted in a heavy, early spring cover of cool season grasses and

forbs, which was maintained throughout most of the count period. Also, there was an increase, both in size and distribution, of woody shrubs. **Weather:** Mean start temp., 22°C (range 16–29°C). Temperature and precipitation departures, respectively, from the 47-yr mean: March, +0.9°C, +2 cm; April, +1.7°C, +0.3 cm; May, +3.9°C, +1.7 cm; June, +1.6°C, -5.6 cm; July, +1.1°C, -3 cm. Source: Wright-Patterson Air Force, Detach. 15, Weather Squadron. **Coverage:** 39 h; 12 visits (8 sunrise, 4 sunset); 21 May; 11, 20, 24, 25 June; 10, 11, 16, 19, 20, 27 July; 12 August. **Census:** Song Sparrow, 34.0 (31); Common Yellowthroat, 31.0 (28); Red-winged Blackbird, 31.0 (3N); Bobolink, 19.5 (18); American Goldfinch, 17.0 (15); Grasshopper Sparrow, 10.5 (10); Willow Flycatcher, 10.0 (9); Eastern Meadowlark, 9.0 (8); Savannah Sparrow, 4.0 (4); Brown-headed Cowbird, 3.0 (3); Indigo Bunting, 2.0; Dickcissel, 1.0; Henslow's Sparrow, 1.0; American Robin, +. **Total:** 14 species; 173 territories (157/40 ha). **Visitors:** Ruby-throated Hummingbird, Eastern Kingbird, Sedge Wren, Eastern Bluebird, Northern Oriole, Common Grackle. **Remarks:** The coordinate for latitude was reported incorrectly in vol. 62. Song Sparrows increased 65% from 1990, while Red-winged Blackbirds and Common Yellowthroats increased ca 25%. Grasshopper Sparrows decreased by 62% from 1990, and Savannah Sparrow by 50%. **Acknowledgments:** Wright-Patterson Air Force Base and U.S. Dept. of Defense.

122. BLUEGRASS GRASSLAND

YERBASAL DE "YERBA-AZUL"

HILLARY SMITH

Long Point Bird Observatory

P.O. Box 160

Port Rowan, Ontario N0E 1M0

Location: Ontario; Municipality of Haldimand-Norfolk; Port Rowan; Long Point National Wildlife Area; 42°33'N, 80°10'W; Little Creek Ridges Quadrangle, DEMR. **Continuity:** Established 1973; 3 yr. **Size:** 10.5 ha. **Description of Plot:** See *Am. Birds* 27:1013 (1973). This rectangular plot measures 700 × 150 m. The dominant canopy trees are Red Ash, Red Oak, and Tamarack. The understory is absent except for scattered shrubs of Wild Red Raspberry. The ground layer is composed of Canada Blue Grass, Kentucky Blue Grass, and Switch Grass on the dunes and sedge (*Carex stricta*) and Marsh Fern in the swales. A quantitative survey of the vegetation gave the following: Trees 7.5 cm dbh and over based on complete enumeration in the BBC plot 6/ha, total basal area 0.7 m²/ha. Species comprising 100% of the trees in order of importance [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (% of 42, 50 × 50 m sampling units), in that sequence]: Red Ash 1, 22, 37, 22; Red Oak 1, 10, 37, 11; Tamarack 2, 37, 5, 4; White Pine <1, 7, 8, 7; Red Maple <1, 3, 2, 4; White Cedar <1, 2, 1, 2; Choke Cherry <1, 2, <1, 2; dead trees and stumps over 2 m tall 1, 15, 10, 18. Trees by diameter size class [figures after each class are number of trees/ha, relative density (%), basal area in m²/ha, relative dominance (%): A (7.5–15 cm) 2, 34, 0.02, 3; B (>15–23 cm) <1, 8, 0.01, 2; C (>23–38 cm) 1, 21, 0.08, 14; D (>38–53 cm) 1, 13, 0.12, 17; E (>53–69 cm) 1, 16, 0.26, 37; F (>69–84 cm) <1, 5, 0.12, 18; G (>84–100 cm) <1, 2, 0.06, 9. Average canopy height, 9.4 m (range 2.5–22.7 m, n = 50). Ground cover 51%, canopy cover 1%, each based on five ocular tube readings at each of 20 sampling points. Number of shrub stems/ha based on counts in 10, 1 × 10 m quadrats, 1000. Size class distribution: <0.5 m, 100; 0.5–1.0 m, 900; >1 m, 0. Shrub species in order of total abundance: Wild Red Raspberry 100 stems <0.5 m, 800 stems 0.5–1.0 m, 0 stems >1.0 m; Riverbank Grape 0, 100, 0. Ground cover species making up 90% of the vegetation cover, based on estimates in 10, 1 × 1 m quadrats, or present in three or more quadrats: Canada Blue Grass 19%, 7 quadrats; Kentucky Blue Grass 17, 2; Switch Grass 15, 2; Marsh Fern 14, 1; mosses 10, 5; sedge (*Carex stricta*) 9, 1; Wild Red Raspberry 3, 1; Climbing Nightshade 3, 1; Common St. John's-wort 3, 1. Non-living percent ground cover based on estimates in 10, 1 × 1 m quadrats: Bare sand 64%, litter 36%, sticks and wood <1%. **Edge:** Similar habitat in the W, E and S. A long weedy pond is found to the N. **Topography and Elevation:** Minimum

elevation 177 m, maximum 189 m. Open rolling dunes, spotted with small, marshy interdunes. **Weather:** Mean start temp., 21°C (range 18–23°C). **Coverage:** 31 h; 10 visits (8 sunrise, 2 sunset); 3, 7, 9, 14, 15, 17, 21, 23, 29 June; 1 July. **Census:** Red-winged Blackbird, 14.0 (53; 5N, 1FL); Bank Swallow, 4.0 (15; 4N); Field Sparrow, 4.0 (1N, 5FL); Song Sparrow, 2.5; Eastern Meadowlark, 2.5; Killdeer, 2.0 (1N); Northern Rough-winged Swallow, 1.0 (1N); Brown Thrasher, 1.0 (1N); European Starling, 1.0 (1N); Chipping Sparrow, 1.0; Eastern Kingbird, 0.5; Tree Swallow, +. **Total:** 12 species; 33.5 territories (128/40 ha). **Visitors:** Mallard, Belted Kingfisher, Mourning Dove, Barn Swallow, Common Grackle, Northern Oriole. **Remarks:** This study is part of a long-term project designed to monitor the response of vegetation and breeding bird communities to a reduction in deer-browsing at Long Point, Lake Erie. This plot was formerly called "Bluegrass-Milkweed Grassland." A fire throughout this area in 1988 seems to have removed most of the Common Milkweed formerly found on the plot. In the 1970s, milkweed was the second dominant in 20, 1 × 1 m sample plots, but it was not recorded in 10 sample plots in 1990, and was rare elsewhere on the plot. **Other Observers:** Peter S. Burke. **Acknowledgments:** I thank Mary Gartshore for helping to stake the grid, Jane Bowles and Michael Bradstreet for measuring vegetation parameters on 13 July 1991, and the Canadian Wildlife Service for financial support.

123. FIELD AND SHRUBLAND

CAMPOS Y ARBUSTOS

THOMAS B. FORD

Connecticut College
270 Mohegan Avenue, Box 3472
New London, Connecticut 06320

Location: Connecticut; New London Co.; Groton; Haley Farm State Park; 41°20'N, 72°2'W; New London Quadrangle, USGS. **Continuity:** Established 1990; 2 yr. **Size:** 24.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):86 (1991). **Weather:** Mean start temp., 18.1°C (range 12–24°C). **Coverage:** 15.3 h; 9 visits (9 sunrise); 29 May; 3, 9, 15, 23, 29 June; 9, 15, 22 July. **Census:** American Goldfinch, 13.0 (22); Red-winged Blackbird, 9.5 (16); Common Yellowthroat, 9.0 (15); American Robin, 7.0 (12); Yellow Warbler, 4.5 (8); House Wren, 3.0 (5); Gray Catbird, 3.0; Northern Mockingbird, 3.0; Rufous-sided Towhee, 3.0; Northern Bobwhite, 2.5; Black-capped Chickadee, 2.0; Song Sparrow, 2.0; Mourning Dove, 1.0; Northern Flicker, 1.0; Willow Flycatcher, 1.0; Eastern Kingbird, 1.0; White-eyed Vireo, 1.0; Northern Cardinal, 1.0; Field Sparrow, 1.0; Northern Oriole, 1.0 (6FL). **Total:** 20 species; 69.5 territories (116/40 ha). **Visitors:** Tree Swallow, Blue Jay, Cedar Waxwing, Blue-winged Warbler, Orchard Oriole, Brown-headed Cowbird.

124. GRASSLAND-SHRUB PLOT

YERBASAL Y ARBUSTOS

ROBERT O'CONNOR & BETSY BENEKE

1353 4th Street North
Fargo, North Dakota 58102

Site Number: MN2091072. **Location:** Minnesota; Becker Co.; Rochert; Tamarac National Wildlife Refuge; 46°58'N, 95°37'W; Height of Land Lake Quadrangle, USGS. **Continuity:** New. **Size:** 65.9 ha. **Description of Plot:** A rectangular plot (686 × 960 m) located within a 405-ha project area intensively managed after the removal of most trees. The plot is scheduled to be burned annually for the next few yr to discourage aspen regeneration and promote grasses and herbaceous vegetation suitable for duck nesting habitat. There are also several seasonal wetlands in the area. Ground cover consists of Quaking Aspen seedlings, American Hazel, and goldenrod. **Edge:** Up to 75% of the plot's perimeter is surrounded by the same habitat. **Topography and Elevation:** The plot is flat. Minimum elevation 445

m, maximum 457 m. **Weather:** Mean start temp., 22.6°C (range 18–29°C). **Coverage:** 35.3 h; 8 visits; 21, 24, 26, 28 June; 3, 8, 10, 11 July. **Census:** Song Sparrow, 86.5 (53); Common Yellowthroat, 61.0 (37); Red-winged Blackbird, 48.5 (29); Yellow Warbler, 37.5 (23; 3FL); Clay-colored Sparrow, 28.5 (17; 5FL); Red-eyed Vireo, 11.0 (7); Gray Catbird, 10.5 (6); Marsh Wren, 9.5 (6); Swamp Sparrow, 8.5 (5); Indigo Bunting, 8.0 (5); Veery, 7.0 (4); Eastern Kingbird, 6.0 (4); House Wren, 6.0 (1N); Eastern Bluebird, 5.5 (3.0; 3N); Mourning Dove, 5.0 (3); American Robin, 4.5 (3); Cedar Waxwing, 4.0 (2); Sora, 3.5 (2); American Redstart, 3.0 (2); Chipping Sparrow, 3.0; Northern Flicker, 2.0; Purple Finch, 2.0; Blue Jay, 1.5; Tree Swallow, 1.0 (1N); White-throated Sparrow, 1.0; Downy Woodpecker, 0.5; Eastern Wood-Pewee, 0.5; Least Flycatcher, 0.5; Black-capped Chickadee, 0.5; White-breasted Nuthatch, 0.5; Chestnut-sided Warbler, 0.5; Rose-breasted Grosbeak, 0.5; Brown-headed Cowbird, +. **Total:** 33 species; 368 territories (223/40 ha). **Visitors:** Mallard, Red-tailed Hawk, Bald Eagle, Northern Harrier, American Kestrel, Common Snipe, Black-billed Cuckoo, Ruby-throated Hummingbird, Yellow-bellied Sapsucker, Hairy Woodpecker, Great-crested Flycatcher, Eastern Phoebe, Alder Flycatcher, Barn Swallow, Sedge Wren, Yellow-throated Vireo, Pine Warbler, Northern Oriole, Scarlet Tanager, Field Sparrow.

125. ABANDONED UPLAND PASTURE

PASTIZAL DE ALTURAS ABANDONADO

VIVIAN MILLS PITZRICK

Amity Lake

Belmont, New York 14813

Location: New York; Allegany Co.; Scio; Saunders Plot; 42°13'N, 77°59'W; Wellsville North Quadrangle, USGS. **Continuity:** Established 1984; 8 yr. **Size:** 8.0 ha. **Description of Plot:** See *Am. Birds* 39:112 (1985). The habitat has changed since the first census in 1984, particularly in peripheral areas where shrubs are more dense and up to 3 m tall and trees have reached 5 m in height. The scattered maple and White Pine saplings are now up to 5 m tall. Hawthorn–Multiflora Rose tangles in peripheral areas are now up to 3 m tall. The central plot area remains open, dotted with small clumps of dogwood and Multiflora Rose. The habitat on the E, S, and W boundaries has developed into dense Hawthorne–dogwood–Multiflora Rose tangles with occasional saplings up to 5 m tall. The open field off part of the E boundary is now harvested for hay. **Weather:** Mean start temp., 12.5°C (range 0–21°C). The warmest spring on record. Temperature and precipitation departures, respectively, from long-term mean for March through 26 August, +4.4°C and –12.9 cm. Precipitation in April was 2.1 cm above average. The hot, dry weather following April resulted in early maturing of grasses and a poor raspberry and blackberry crop. Data source: Wellsville Water and Light Plant. **Coverage:** 23.4 h; 17 visits; 21 March; 9, 20 April; 14, 19, 27 May; 3, 10, 19, 25 June; 5, 11, 18, 24 July; 1, 7, 14 August. **Census:** Song Sparrow, 19.0 (95; 4N,2FL); Field Sparrow, 17.0 (85; 7N,3FL); American Goldfinch, 17.0 (6N,5FL); Yellow Warbler, 10.0 (50); Common Yellowthroat, 10.0; Cedar Waxwing, 9.5 (48; 7N,8FL); Alder Flycatcher, 9.0 (45); Chestnut-sided Warbler, 8.0 (40); Rufous-sided Towhee, 7.0 (35); Blue-winged Warbler, 6.0 (30); Gray Catbird, 5.0 (25; 1N,1FL); Indigo Bunting, 5.0; House Wren, 4.0 (20; 11N,12FL); American Robin, 3.0 (15; 2N); American Woodcock, 2.0; Tree Swallow, 2.0 (2N); Prairie Warbler, 2.0 (2N,0FL); Northern Cardinal, 2.0; Ruffed Grouse, 1.0 (9FL); Eastern Wood-Pewee, 1.0; Least Flycatcher, 1.0; Blue Jay, 1.0; Black-capped Chickadee, 1.0 (1N); Eastern Bluebird, 1.0 (3N,9FL); Red-eyed Vireo, 1.0; Brown-headed Cowbird, 1.0; Purple Finch, 1.0. **Total:** 27 species; 146.5 territories (733/40 ha). **Visitors:** Downy Woodpecker, Pileated Woodpecker, Northern Flicker, Eastern Phoebe, Eastern Kingbird, Tufted Titmouse, Red-breasted Nuthatch, Brown Thrasher, American Redstart, Ovenbird, Scarlet Tanager, Rose-breasted Grosbeak, Chipping Sparrow, Northern Oriole. **Remarks:** The Eastern Wood-Pewee and Least Flycatcher, former visitors, nested on the plot this yr. Numbers of American Robin, Cedar Waxwing, and Chestnut-sided Warbler have increased, but American Woodcock, Brown Thrasher, Rose-breasted Grosbeak, Chipping Sparrow, and Song Sparrow have decreased. The Black-billed

Cuckoo was absent for the first time. The total number of species was lowest since 1986. Raccoon predation was extensive. **Acknowledgments:** Thanks to Michael Pitzrick for help on one evening trip and to Victor and Gail Funk for permission to use the property.

126. ABANDONED PASTURE SCRUBLAND

PASTIZAL-MALEZA ABANDONADO

BILL MURPHY

11-340 Metcalfe Street
Ottawa, Ontario K2P 1S6

Location: Ontario; Municipality of Ottawa-Carleton; Kanata; Innis Point; 45°21'N, 75°54'W; Ottawa Quadrangle, NTS. **Continuity:** Established 1982; 10 yr. **Size:** 9.0 ha. **Description of Plot:** See *Am. Birds* 37:76-77 (1983). **Weather:** Mean start temp., 16.3°C (range 13-20°C). The mean temperature for the count period, 20.8°C, was the highest for the past decade. Precipitation in June was 6 cm below the long-term mean. **Coverage:** 19 h; 8 visits (8 sunrise); 8, 15, 22, 26, 30 June; 4, 7, 9 July. **Census:** White-throated Sparrow, 12.5 (56); Yellow Warbler, 12.0 (53); Song Sparrow, 10.0 (44); American Robin, 7.5 (33); Gray Catbird, 6.0 (27); Black-capped Chickadee, 4.5 (20); Cedar Waxwing, 4.5; Northern Oriole, 3.5 (16); Black-and-white Warbler, 3.0 (13); Blue Jay, 2.0; Brown-headed Cowbird, 2.0; Red-eyed Vireo, 1.5; Field Sparrow, 1.5; Ruffed Grouse, 1.0; Spotted Sandpiper, 1.0; Downy Woodpecker, 1.0; Northern Flicker, 1.0; Great Crested Flycatcher, 1.0; Eastern Kingbird, 1.0; Ovenbird, 1.0; Rose-breasted Grosbeak, 1.0; American Goldfinch, 1.0; Eastern Wood-Pewee, +; Eastern Phoebe, +. **Total:** 24 species; 79.5 territories (353/40 ha). **Visitors:** Mallard, American Woodcock, Mourning Dove, Black-billed Cuckoo, Hairy Woodpecker, Pileated Woodpecker, Veery, Brown Thrasher, American Redstart, Common Yellowthroat, Scarlet Tanager, Red-winged Blackbird, Common Grackle, Purple Finch. **Remarks:** The density of White-throated Sparrows was the highest recorded for any species during the past 10 yr. **Acknowledgments:** Thanks to Jack Romanow for re-marking the plot and helping to assess the count results.