

BREEDING BIRD CENSUS: 1988

<i>HABITAT</i>	<i>STATE/PROV.</i>	<i>COMPILER</i>
Broadleaf Forest		
1. Lowland Hardwood Riparian	California	John Lovio
2. Oak-Hardwood Forest	Connecticut	Miles Wildlife Sanctuary
3. Second-Growth Hardwood Forest	Connecticut	Andrew Magee
4. Upland Brushy Pasture	Connecticut	Andrew Magee
5. Mixed Deciduous Second-Growth Floodplain Forest	Illinois	Victoria Byre
6. Mature Deciduous Floodplain Forest	Maryland	Dick Gauthey
7. Mature Beech-Maple Forest	New York	George R. Maxwell
8. White Ash-Red Maple Forest	New York	George R. Maxwell
9. Beech-Maple Forest	New York	George R. Maxwell
10. Abandoned Orchard	New York	George R. Maxwell
11. Abandoned Apple Orchard	New York	George R. Maxwell
12. Oak-Maple Slope Forest	Pennsylvania	Laurie Goodrich
13. Oak-Maple Ridge-top Forest	Pennsylvania	Laurie Goodrich
14. Tulip Tree-Hickory Forest	Virginia	Bill McShea
15. Mesophytic Forest I	Virginia	Mike Smith
16. Mesophytic Forest II	Virginia	Mike Smith
17. Upland Black Cherry Forest	West Virginia	Brooks Bird Club
18. Maple-Oak-Beech Forest	West Virginia	Brooks Bird Club
Broadleaf/Coniferous Forest		
19. Ungrazed Oak-Pine Woodland	California	William R. Maynard
20. Grazed Oak-Pine Woodland	California	Kathleen Milne
21. Old Growth Mixed Forest	Colorado	Nancy Lederer
22. Oak-Hemlock Forest	Connecticut	Robert A. Askins
23. Climax Hemlock-White Pine Forest with Transition Hardwoods	Connecticut	Andrew Magee
24. Central Hardwood Forest with Scattered Pine	D.C.	Joan Criswell
25. Mature Beech-Magnolia Forest	Florida	W. Wilson Baker
26. Mixed Oak-Pine Forest I	Pennsylvania	Douglas A. Gross
27. Mixed Oak-Pine Forest II	Pennsylvania	Douglas A. Gross
28. Mountaintop Habitat	Virginia	Max Carpenter
29. Hemlock-White Pine-Mixed Hardwood Forest	Virginia	Kenneth R. Hinkle
30. Virgin Spruce-Northern Hardwood Forest	West Virginia	Brooks Bird Club
31. Birch-Spruce-Fir Forest	West Virginia	Brooks Bird Club
Coniferous Forest		
32. Old-Growth Mixed-Coniferous Red Fir Forest Transition	California	Dawn Breese
33. Old-Growth Subalpine Spruce- Fir Forest	Colorado	David Hallock
34. Red Pine Plantation	Connecticut	Andrew Magee

35. Mature White Spruce Plantation	Maine	Juliet K. Markowsky
36. Jack Pine Forest	Michigan	Terry Wiens
37. Upland Scotch Pine Plantation	New York	Elizabeth W. Brooks
38. Upland Mixed Pine-Spruce-Hardwood Plantation	New York	Elizabeth W. Brooks
39. Upland Christmas Tree Farm	New York	Elizabeth W. Brooks
40. Mature Spruce Forest	New York	Kenneth L. Crowell
41. Young Spruce Forest	New York	Kenneth L. Crowell
42. Limber Pine-Juniper Woodland	Wyoming	John P. Kelly
Mixed Habitat (Forest/Non-forest)		
43. Mature Upper Mixed-Coniferous Forest and Montane Chaparral	California	Barbara R. North
44. Mountain Meadow and Open Coniferous Forest	Colorado	Arthur Stiles-Wainwright
45. Transition Forest and Thicket	Connecticut	Robert A. Askins
46. Suburban Wildlife Sanctuary-Mixed Habitat	Connecticut	Ed Hiestand
47. Deciduous Forest with Pond and Brook	New Jersey	John Brotherton
48. Abandoned Upland Pasture	New York	Vivian Pitzrick
49. Abandoned Pasture Scrubland	Ontario	Chris Ellingwood
50. Scattered Mixed-Coniferous Forest in Subalpine Meadows and Spruce Bogs	Oregon	R.A. Hudson
51. Mixed Mesophytic Woods, Fields and Brush	Tennessee	Richard W. Simmers, Jr.
52. Young Black Locust Shrubland	Virginia	Sarah Mabey
Shrubland		
53. Disturbed Coastal Scrub A	California	Geoffrey Geupel
54. Disturbed Coastal Scrub B	California	Eric Wold
55. Coastal Scrub	California	Eric Wold
Grassland		
56. Coastal Prairie	California	John P. Kelly
57. Tall Grass Prairie I	Iowa	Peter E. Lowther
58. Tall Grass Prairie II	Iowa	Peter E. Lowther
59. Tall Grass Prairie III	Iowa	Peter E. Lowther
60. Kentucky Bluegrass Prairie	North Dakota	Douglas H. Johnson
61. Mixed Prairie I	North Dakota	Douglas H. Johnson
62. Mixed Prairie II	North Dakota	Douglas H. Johnson
63. Mixed Prairie III	North Dakota	Douglas H. Johnson
64. Mixed Prairie IV	North Dakota	Douglas H. Johnson
65. Mixed Prairie V	North Dakota	Douglas H. Johnson
66. Subirrigated Native Hay	Nebraska	Gary Lingle
67. Subirrigated Grassland	Nebraska	Gary Lingle
Desert and Dry Scrub		
68. Saguaro Desert	Arizona	Joshua A. Burns
69. Wyoming Big Sagebrush-Bottlebrush Squirreltail	Oregon	William H. Pyle
Wetlands		
70. Desert Riparian-Freshwater Marsh and Ponds	California	Eugene Cardiff
71. Freshwater Marsh	California	John P. Kelly
72. Shrubby Swamp and Sedge Hummocks	Connecticut	Andrew Magee
73. Tamarack Bog and Hardwood	Michigan	James Mullins

74. Wetland Sedge Meadow I	Nebraska	Gary Lingle
75. Wetland Sedge Meadow II	Nebraska	Gary Lingle
76. Cattail Marsh	New York	Kenneth L. Crowell
Residential/Urban		
77. Mixed Habitat	Connecticut	Miles Wildlife Sanctuary
78. Second-Growth Broadleaf- Coniferous	Washington	Dory Smith
79. Suburban Bird Sanctuary	New York	William J. Kolodnicki
Late Reports		
80. Suburban Cemetery	Alabama	Thomas A. Imhof
81. Gulf Coast Salt Marsh	Florida	Mary V. McDonald
82. Longleaf Pine Forest-April Burn	Florida	Richard L. West
83. Longleaf Pine Forest-Unburned Control	Florida	Richard L. West
84. Mature Longleaf Pine Forest	Georgia	W. Wilson Baker
85. Mixed Upland Broadleaf Forest	D.C.	Shirley A. Briggs
86. Selectively Logged Mature Tulip Tree-Oak Forest	Maryland	Chandler S. Robbins
87. Bulrush and Cattail Marsh in Conifer Forest	Montana	Marcella N. Bishop

1. LOWLAND HARDWOOD RIPARIAN BOSQUE BAJO RIVEREÑO

JOHN LOVIO

14 Saint Francis Drive
Vallejo, CA 94590

Location: California; Solano Co.; Cordelia; 38°16'N, 122°10'W. **Continuity:** Established 1937; 3 intermittent yrs. **Size:** 13.7 ha. **Description of Plot:** About 2280 m of generally SE-flowing stream in a steep (mean slope 16°) canyon between 46 and 137 m elevation. Plot extends 30 m to either side of stream. The narrow riparian strip (10–20 m wide) is bordered by residential property for the lower 100 m and by fallow fig/walnut orchard for an additional 250 m. The remaining 1930 m grades away from the stream into mostly undisturbed native bay-oak woodland, which comprises much of the plot. There is one residence and several small water treatment buildings above the orchard and a dirt road follows the creek through about half of the plot. Stream flow is regulated by a 100-year old dam upstream of the plot and some flow is present at all times. A quantitative vegetation survey was conducted following a modified version of the method described by James and Shugart (1970. *Aud. Field Notes* 24:727–736). Tree diameters (≥ 6 cm; $n = 410$) were measured in 30 evenly spaced 0.04 ha (60×6.6 m) rectangles situated perpendicularly to the stream flow. Total tree density 342/ha, total basal area 99 m²/ha. Species comprising 96% of total trees [figures after each give trees/ha, relative density (%), relative dominance (%) and frequency, respectively]: California Bay 117, 34, 26, 18; Coast Live Oak 75, 22, 26, 21; California Buckeye 38, 11, 3, 14; White Alder 27, 8, 16, 13; Bigleaf Maple 20, 6, 17, 13; willow 18, 5, 2.5, 10; walnut 13, 4, 1.5, 2; dead trees 7, 2, 1, 4; Blue Elderberry 7, 2, 0.5, 5; Valley Oak 5, 1, 4, 2; Oregon Ash 5, 1, 1, 3. Trees by diameter class [figures after each give trees/ha, relative density, basal area (m²/ha) and relative dominance, respectively]: A (6–15.5 cm) 144, 42, 5.8, 6; B (16–25.5 cm) 66, 19, 9.2, 9.5; C (26–35.5 cm) 59, 17, 17.8, 18; D (36–45.5 cm) 32, 9, 16.5, 17; E (46–55.5 cm) 16, 5, 12.8, 13; F (56–65.5 cm) 13, 4, 15.4, 15.5; G (66–75.5 cm) 9, 3, 13.1, 13; H (76–85.5 cm) 1, 0.5, 1.7, 1.5; I (86–95.5 cm) 2, 0.5, 6.5, 6.5. Shrub cover was measured by line-intercept along 60 m transects at each of 30 sampling stations. Approximate total shrub cover 30%. Shrubs by species [figures after each give % coverage of total area and frequency, respectively]: White-stemmed Raspberry 8, 28; willow 4, 5; California Wild Grape 3.5, 19; Poison Oak 3, 16; Toyon 2.5, 10; French Broom 2, 6; Common Snowberry 1.5, 7; Winter Currant 1, 1; Chain Fern 1, 10; California Bay 1, 9; Chaparral Broom 1, 7; Bush Monkeyflower 0.5, 5; Bracken 0.5, 7; California Buckeye 0.5, 6; Spice Bush 0.5, 6; others 1.5, -. Canopy cover 74%, mean canopy height, based on absolute heights of 186 randomly selected trees, 11.5 m (SD = 6.5; range 3–42 m). Ground cover (%): litter & soil 40, herbaceous 30, shrub 15.5, rock 7, manmade 5, water 2.5. **Weather:** Temperature range 3–29°C. Persistent rain was avoided and no fog was encountered. Wind was either up or down canyon and would often reach 40 kph in treetops, but was considerably less near the ground. The preceding winter was unusually dry and herbaceous cover began to dry out at least one month early. However, rainfall in April and early May was unusually high, which extended the life of much herbaceous cover. **Coverage:** 15 visits; 221 study-hours; mean length of visits 6.5 h (SD = 1); 17 April to 11 July; 0530–1330 PST; 1–3 observers per visit; three 2-hr nocturnal visits were made. **Census:** Black-headed Grosbeak, 17.0 (124); House Wren, 15.0 (109); Rufous-sided Towhee, 10.0 (72); Brown Towhee, 7.0 (51); Orange-crowned Warbler, 6.0 (43); Lesser Goldfinch, 6.0; Steller's Jay, 5.5 (40); Western Wood-Pewee, 5.0 (36); Bushtit, 5.0; Song Sparrow, 5.0; Purple Finch, 5.0; Dark-eyed Junco, 4.5 (32); Allen's Hummingbird, 4.0 (29); Nuttall's Woodpecker, 4.0; Brown Creeper, 4.0; Solitary Vireo, 4.0; Warbling Vireo, 4.0; Western Flycatcher, 3.5 (25); American Robin, 3.5; California Quail, 3.0 (21); Anna's Hummingbird, 3.0; Northern Flicker, 3.0; Downy Woodpecker, 2.5; Chestnut-backed Chickadee, 2.5; Western Tanager, 2.5; Wilson's Warbler, 2.0; Black Phoebe, 1.5;

Violet-green Swallow, 1.0; Scrub Jay, 1.0; European Starling, 1.0; Hutton's Vireo, 1.0; Cooper's Hawk, 0.5; Acorn Woodpecker, 0.5; Ash-throated Flycatcher, 0.5; Plain Titmouse, 0.5; Bewick's Wren, +. **Total:** 36 species; 144 territorial males (1051/km²). **Nests Found:** Black-headed Grosbeak (10), House Wren (4), Lesser Goldfinch, Nuttall's Woodpecker (3), Western Flycatcher, American Robin, Brown Towhee, California Quail (2), Allen's Hummingbird, Downy Woodpecker, Northern Flicker, Western Wood-Pewee, Bushtit, Brown Creeper, Solitary Vireo, Song Sparrow, Dark-eyed Junco, Cooper's Hawk (1), Anna's Hummingbird, Black Phoebe, Bewick's Wren, European Starling, Warbling Vireo, Orange-crowned Warbler, Wilson's Warbler, Western Tanager, Rufous-sided Towhee. **Visitors:** Green-backed Heron, Turkey Vulture, Red-shouldered Hawk, Red-tailed Hawk, Wild Turkey, Mourning Dove, Western Screech-Owl, Great Horned Owl, Belted Kingfisher, Pileated Woodpecker, Barn Swallow, Common Raven, White-breasted Nuthatch, Winter Wren, Blue-gray Gnatcatcher, Wrentit, Brewer's Blackbird, Brown-headed Cowbird, House Finch, American Goldfinch. **Remarks:** Unusual rainfall patterns affected herbaceous longevity, but effect on insect populations was unknown. Consistent stream flow probably insured normal aquatic-based invertebrate populations. Western Screech-Owls very likely bred on the plot. Turkey Vultures and Common Ravens nested on high cliffs just above upper end of plot. Red-shouldered Hawks and Wild Turkeys very likely nested just beyond plot boundaries. **Acknowledgments:** Many thanks to Joanne Castro, Harold Connor, Marjorie Irwin, Tim Jenkins, Chuck O'Connor, and Karen Rippey for invaluable assistance through all phases of the project. Jake Ruygt's botanical expertise facilitated the vegetation work enormously. We also thank the City of Vallejo, Clyde and Diane Low, Arthur Garben, and the Twin Creeks Condominium Homeowners' Association for permission to use their private land.

2. OAK-HARDWOOD FOREST

BOSQUE DE ROBLE

MILES WILDLIFE SANCTUARY

95 West Cornwall Road

Sharon, CT 06069

Location: Connecticut; Litchfield Co.; Sharon; 41°53'N, 73°25'W; Sharon Quadrangle, USGS. **Continuity:** Established 1987. **Size:** 15.7 ha. **Description of Plot:** Dominant canopy trees: Red Maple, Northern Red Oak, Black Birch; dominant shrubs: Witch Hazel, Striped Maple; ground cover: Wild Sarsaparilla, blueberry. **Water:** No stream present, swamp with standing water 20.0 m across, 0.5 m deep. The swamp dries up in the summer. **Weather:** Mostly clear to partly cloudy; only one census was carried out under rainy conditions; temperatures ranged from 4.5–21°C. **Coverage:** 12 visits; 22 study-hours; 1 June–2 July; 0530–0800 (9 visits), 1700–1930 (3 visits). **Census:** Ovenbird, 15.0 (95); Eastern Wood-Pewee, 9.5 (60); Red-eyed Vireo, 9.0 (57); Wood Thrush, 5.5 (35); Scarlet Tanager, 4.0 (25); Yellow-bellied Sapsucker, 2.5; Rose-breasted Grosbeak, 2.5; Blue Jay, 2.0; Winter Wren, 2.0; Hermit Thrush, 2.0; American Robin, 2.0; Black-and-white Warbler, 2.0; White-breasted Nuthatch, 1.5; Veery, 1.5; Pileated Woodpecker, 1.0; Black-capped Chickadee, 1.0; Black-throated Blue Warbler, 1.0; Common Yellowthroat, 1.0. **Total:** 18 species; 65 territorial males (414/km²). **Visitors:** Ruby-throated Hummingbird, Hairy Woodpecker, Downy Woodpecker, American Crow, Cedar Waxwing, Yellow-throated Vireo, Solitary Vireo, American Redstart, Louisiana Waterthrush, Northern Oriole, Rufous-sided Towhee. **Nests Found:** Veery and Red-eyed Vireo.

3. SECOND-GROWTH HARDWOOD FOREST

BOSQUE SECUNDARIO

ANDREW MAGEE

White Memorial Conservation Center

Litchfield, CT 06759

Location: Connecticut; Litchfield Co.; Morris; 41°42'N, 73°12'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1964; 22 yrs. **Size:** 10.1 ha. **Description of Plot:** See *Aud.*

Field Notes 19:590–591 (1965). **Weather:** During the census period the minimum temperature varied from 4–14°C with an average of 9°. The maximum temperature ranged from 14–29°C with an average of 24°. The total precipitation for the 10-day period was 0.46 cm. **Coverage:** 12 study-hours; 28 May, 1,3,4,6, June; 0700–2200 (7 hrs in the morning, 5 hrs in the evening). **Census:** Red-eyed Vireo, 16.0 (158); Ovenbird, 15.0 (148); Veery, 14.0 (138); Wood Thrush, 9.0 (89); Scarlet Tanager, 5.0 (49); American Robin, 4.0 (39); Common Yellowthroat, 4.0; American Redstart, 3.5 (34); Downy Woodpecker, 3.0 (29); Northern Flicker, 3.0; Eastern Wood-Pewee, 3.0; Northern Oriole, 3.0; Gray Catbird, 2.5; Rufous-sided Towhee, 2.5; Blue Jay, 2.0; Black-capped Chickadee, 2.0; Blue-gray Gnatcatcher, 2.0; Blue-winged Warbler, 2.0; Chestnut-sided Warbler, 2.0; Great Crested Flycatcher, 1.5; Yellow-throated Vireo, 1.5; Black-and-white Warbler, 1.5; Brown-headed Cowbird, 1.5; Ruffed Grouse, 1.0; Ruby-throated Hummingbird, 1.0; Hairy Woodpecker, 1.0; Eastern Phoebe, 1.0; American Crow, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; House Wren, 1.0; Louisiana Waterthrush, 1.0; Hooded Warbler, 1.0; Northern Cardinal, 1.0; Rose-breasted Grosbeak, 1.0; Song Sparrow, 1.0; Barred Owl, 0.5; Yellow-rumped Warbler, 0.5; Turkey Vulture, +; Pileated Woodpecker, +. **Total:** 40 species; 117.5 territorial males (1163/km²). **Remarks:** The number of territorial males was a record high for this census area. In the 21 previous years we have never recorded more than 4 Wood Thrushes; this year there were 9. Downy Woodpecker, American Robin, and Northern Oriole also had peak numbers of territorial males. The Hooded Warbler, at the northern limit of its breeding range, was new to the plot. **Other Observers:** Gordon Loery.

4. UPLAND BRUSHY PASTURE

PASTIZAL BREÑOSO DE ALTURAS (MONTANO)

ANDREW MAGEE

*White Memorial Conservation Center
Litchfield, CT 06759*

Location: Connecticut; Litchfield Co.; Bantam; 41°42'N, 73°13'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 22 intermittent yrs. **Size:** 8.5 ha. **Description of Plot:** See *Aud. Field Notes* 19:609–610 (1965). The name of the plot no longer accurately describes the habitat. We have retained it for the sake of continuity. **Weather:** During the census period the minimum temperature varied from 2.8–13.9°C (average 8.3°); high temperatures ranged from 14.4–28.9°C (average 23.9°). The total precipitation for the 11-day period was 0.5 cm. **Coverage:** 12 study-hrs; 27, 28 May; 1, 4, 6, 7 June; 0700–2400; 6 hrs in morning, 6 hrs in evening. **Census:** Gray Catbird, 11.0 (129); Red-eyed Vireo, 9.0 (105); Wood Thrush, 7.0 (82); Veery, 6.0 (70); Chestnut-sided Warbler, 5.5 (64); Black-capped Chickadee, 5.0 (58); Rufous-sided Towhee, 5.0; Black-and-white Warbler, 4.0 (47); Blue Jay, 3.0 (35); Blue-winged Warbler, 3.0; American Redstart, 3.0; Ovenbird, 3.0; Common Yellowthroat, 3.0; Rose-breasted Grosbeak, 3.0; American Robin, 2.0; Northern Cardinal, 2.0; American Goldfinch, 2.0; Northern Flicker, 1.5; Ruffed Grouse, 1.0; American Woodcock, 1.0; Great Crested Flycatcher, 1.0; Brown Thrasher, 1.0; Yellow-throated Vireo, 1.0; Eastern Wood-Pewee, 0.5; American Crow, 0.5; Tufted Titmouse, 0.5; Northern Oriole, 0.5; Fish Crow, +. **Total:** 28 species; 85 territorial males (1000/km²). **Remarks:** The number of territorial males in this transitional habitat continued its 5-year decline from its 1983 peak of 120.5. For the 11th consecutive year Gray Catbird, although reduced in number, was the most abundant species. Wood Thrushes were also down but still outnumbered their more typically forest-interior relative the Veery. On the four other White Memorial Foundation census areas Veery outnumbered Wood Thrush. Veery and Red-eyed Vireo had peak numbers and Blue-winged Warbler abundance dropped to its lowest point. **Other Observers:** Gordon Loery.

5. MIXED DECIDUOUS SECOND-GROWTH FLOODPLAIN FOREST

BOSQUE SECUNDARIO DECIDUO MIXTO INUNDABLE

VICTORIA J. BYRE

1811 Thatcher

Elmwood Park, IL 60635

Location: Illinois; Cook Co.; Elmwood Park; 41°52'N, 87°52'W; River Forest Quadrangle, USGS. **Continuity:** Established 1983; 6 consecutive yrs. **Size:** 29.1 ha. **Description of Plot:** See *Amer. Birds* 38:85 (1984). **Weather:** June and July extremely hot and dry. Temperatures above average for both months. Rainfall far below normal. **Coverage:** 14 visits; 41 study-hours; 1 June–30 July; 0530–0830 most days. **Census:** American Robin, 18.0 (61); Blue Jay, 17.0 (58); Black-capped Chickadee, 15.0 (51); Northern Cardinal, 14.0 (48); Common Grackle, 12.0 (41); Northern Flicker, 10.0 (34); House Wren, 8.0 (27); Downy Woodpecker, 7.0 (24); European Starling, 4.0 (13); Brown-headed Cowbird, 4.0; Wood Duck, 3.0 (10); Mallard, 3.0; Hairy Woodpecker, 3.0; Great Crested Flycatcher, 3.0; Northern Oriole, 3.0; Wood Thrush, 2.0; Gray Catbird, 2.0; Red-eyed Vireo, 2.0; Broad-winged Hawk, 1.0; Mourning Dove, 1.0; Black-billed Cuckoo, 1.0; Yellow-billed Cuckoo, 1.0; Belted Kingfisher, 1.0; Red-bellied Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; American Crow, 1.0; White-breasted Nuthatch, 1.0; Rose-breasted Grosbeak, 1.0; Indigo Bunting, 1.0. **Total:** 29 species; 141 territorial males (484/km²). **Nests and Fledglings:** Downy Woodpecker, Hairy Woodpecker, Northern Flicker, Blue Jay, Black-capped Chickadee, House Wren, American Robin, European Starling, Northern Cardinal, Common Grackle. Fledglings observed for all of the above. Other fledglings or downy young included: Mallard, Wood Duck, Mourning Dove, American Crow, Rose-breasted Grosbeak, Brown-headed Cowbird, Northern Oriole. **Visitors:** Great Blue Heron, Green-backed Heron, Black-crowned Night-Heron, Red-tailed Hawk, Killdeer, Solitary Sandpiper, Spotted Sandpiper, Rock Dove, Eastern Screech-Owl, Common Nighthawk, Chimney Swift, Red-headed Woodpecker, Eastern Kingbird, Tree Swallow, Barn Swallow, Veery, Cedar Waxwing, Red-winged Blackbird, House Finch, American Goldfinch, House Sparrow. **Remarks:** Number and variety of species was surprisingly consistent with 1987 breeding season, as was the actual location of many of the territories. The extremely dry, hot weather did seem to have a negative effect on frequency of singing. The number of second broods also seemed to be somewhat lower. This study area is becoming more and more abused by people engaged in illegal activities such as motorcycle riding, hunting, and all-night parties. It cannot help but have a negative effect on the bird life in the area.

6. MATURE DECIDUOUS FLOODPLAIN FOREST

BOSQUE DECIDUO MADURO INUNDABLE

DICK GAUTHEY

6603 Reynard Drive

Springfield, VA 22152

Location: Maryland; Montgomery Co.; Glen Echo; Cabin John Island; 38°58'N, 77°08'W; Falls Church Quadrangle, USGS. **Continuity:** Established 1947; 36 intermittent yrs. **Size:** 7.6 ha. **Description of Plot:** See *Aud. Field Notes* 1:212–213 (1947). **Coverage:** 24 visits; 70 study-hours; 9 April–19 June; 0630–0800 (9 visits); 0810–0930 (14 visits), 1345 (1 visit). **Census:** European Starling, 14.0 (184); Carolina Chickadee, 7.0 (92); Red-eyed Vireo, 6.0 (78); Northern Cardinal, 6.0; Downy Woodpecker, 4.0 (52); Acadian Flycatcher, 4.0; Carolina Wren, 4.0; Blue-gray Gnatcatcher, 4.0; Northern Parula, 4.0; Tufted Titmouse, 3.0 (39); Wood Duck, 2.0; Red-bellied Woodpecker, 2.0; Great Crested Flycatcher, 2.0; Yellow-throated Warbler, 2.0; Mallard, 1.0; Northern Flicker, 1.0; Pileated Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; White-breasted Nuthatch, 1.0; Warbling Vireo, 1.0; Prothonotary Warbler, 1.0; Indigo Bunting, 1.0; Song Sparrow, 1.0; Orchard Oriole, 1.0; House

Finch, 1.0; Yellow Warbler, 0.5. **Total:** 26 species; 75.5 territorial males (993/km²). **Nests Found:** European Starling (14), Carolina Chickadee (4), Downy Woodpecker (3), Blue-gray Gnatcatcher (2), Carolina Wren, Mallard (1), Red-bellied Woodpecker, Pileated Woodpecker, Prothonotary Warbler, Northern Cardinal, Orchard Oriole. **Visitors:** Barred Owl, Ruby-throated Hummingbird, Belted Kingfisher, Hairy Woodpecker, Blue Jay, American Crow, Common Grackle, Brown-headed Cowbird, American Goldfinch. **Remarks:** Orchard Oriole and Yellow Warbler bred for the first time. In the last 10 years eight species have bred for the first time, all at the river's edge. The female Orchard Oriole gathered nesting material and foraged on the far shore of the Potomac River—some 300 m distant. Although total number of territorial males has significantly decreased, (from over 100 through 1971 to as low as 50 in 1980 due to decline in neotropical migrants), the number of species has stayed constant, varying from 20 (1961) to 30 (1949 and 1981). **Other Observers:** John Eliot, Dick Homan, and Letty Limbach.

7. MATURE BEECH-MAPLE FOREST

BOSQUE DE HAYA-ARCE MADURO

GEORGE R. MAXWELL

RD 1 Box 179

Red Creek, NY 13143

Location: New York; Wayne Co.; Sodus; 43°16'N, 77°06'W; Salmon Creek Quadrangle, USGS. **Continuity:** Established 1987. **Size:** 16.2 ha. **Description of Plot:** Dominant trees: White Ash, Red Maple, American Beech; dominant shrubs: White Ash, Red Maple; ground cover: ash, maple and beech seedlings, and ferns. Forest bisected by hardtop road with a summer cottage located along the road in the forest. **Edge:** Bounded by similar forest, corn field, and marsh. **Weather:** Nine sunny and one cloudy day; mean temperature 24°C. **Coverage:** 10 visits; 10 study-hours; 14 June–15 July; 6 morning and 4 afternoon visits. **Census:** Wood Thrush, 5.0 (30); American Redstart, 5.0; American Robin, 4.0 (24); Ovenbird, 3.0 (18); Gray Catbird, 2.0; Yellow Warbler, 2.0; Common Yellowthroat, 2.0; Northern Cardinal, 2.0; Northern Flicker, 1.0; Eastern Wood-Pewee, 1.0; Great Crested Flycatcher, 1.0; Black-capped Chickadee, 1.0; Veery, 1.0; Cedar Waxwing, 1.0; Red-eyed Vireo, 1.0; Scarlet Tanager, 1.0; Song Sparrow, 1.0; Red-winged Blackbird, 1.0; Common Grackle, 1.0; Brown-headed Cowbird, 1.0. **Total:** 20 species; 37 territorial males (228/km²).

8. WHITE ASH-RED MAPLE FOREST

BOSQUE DE FRESNO BLANCO-ARCE

GEORGE R. MAXWELL

RD 1 Box 179

Red Creek, NY 13143

Location: New York; Wayne Co.; Fairhaven; 43°20'N, 76°44'W; Fair Haven Quadrangle, USGS. **Continuity:** Established 1986; 3 yrs. **Size:** 16.2 ha. **Description of Plot:** Dominant trees: White Ash, Red Maple, Quaking Aspen; dominant shrubs: Arrowwood and dogwood; ground cover: Sensitive Fern and goldenrod. Dead end road traverses the plot. **Edge:** Bounded by field, similar woods, cottage colony, and Blind Sodus Bay. **Weather:** Seven sunny and 3 cloudy days; mean temperature 19°C. **Coverage:** 10 visits; 10 study-hours; 13–29 June; 0600–0830 (8), 1930–2030 (2). **Census:** Yellow Warbler, 11.0 (67); Gray Catbird, 5.0 (30); House Wren, 4.0 (24); American Robin, 4.0; Song Sparrow, 4.0; Wood Thrush, 3.0 (18); American Redstart, 3.0; Common Yellowthroat, 3.0; Red-winged Blackbird, 2.0; Mourning Dove, 1.0; Eastern Wood-Pewee, 1.0; Willow Flycatcher, 1.0; Least Flycatcher, 1.0; Tree Swallow, 1.0; Blue Jay, 1.0; Black-capped Chickadee, 1.0; Yellow-throated Vireo, 1.0; Warbling Vireo, 1.0; Northern Cardinal, 1.0; Rose-breasted Grosbeak, 1.0; Field Sparrow, 1.0; Common Grackle, 1.0; Brown-headed Cowbird, 1.0; Northern Oriole, 1.0; House Finch, 1.0; American Goldfinch, 1.0. **Total:** 26 species; 56 territorial males (345/km²).

9. BEECH-MAPLE FOREST

BOSQUE DE HAYA-ARCE

GEORGE R. MAXWELL

RD 1 Box 179

Red Creek, NY 13143

Location: New York; Wayne Co.; Ontario; 43°16'N, 77°19'W; Furnaceville Quadrangle, USGS. **Continuity:** Established 1987. **Size:** 16.2 ha. **Description of Plot:** Dominant trees: American Beech, Sugar Maple, White Ash; dominant shrubs: Sugar Maple and American Beech; ground cover: beech and maple seedlings. Mature forest and abandoned estate. **Edge:** Bounded by the Ginna Nuclear Power Station, orchards, similar forest, and Lake Ontario. **Water:** Stream < 3 m wide; a lake 100 m across. **Weather:** Nine sunny days and one cloudy day; mean temperature 25°C. **Coverage:** 10 visits; 10 study-hours; 14 June–15 July; 0900–1045 (6 visits), 1400–1950 (4 visits). **Census:** American Robin, 10.0 (61); Song Sparrow, 6.0 (37); Common Grackle, 4.0 (24); American Redstart, 3.0 (18); Northern Cardinal, 3.0; Northern Flicker, 2.0; Eastern Wood-Pewee, 2.0; Black-capped Chickadee, 2.0; Gray Catbird, 2.0; Red-eyed Vireo, 2.0; House Finch, 2.0; House Sparrow, 2.0; Belted Kingfisher, 1.0; Great Crested Flycatcher, 1.0; Bank Swallow, 1.0; American Crow, 1.0; Wood Thrush, 1.0; Cedar Waxwing, 1.0; European Starling, 1.0. **Total:** 19 species; 47 territorial males (290/km²).

10. ABANDONED ORCHARD

CULTIVO ABANDONADO

GEORGE R. MAXWELL

RD 1 Box 179

Red Creek, NY 13143

Location: New York; Wayne Co.; Wolcott; 43°20'N, 76°43'W; Fairhaven Quadrangle, USGS. **Continuity:** Established 1987. **Size:** 16.2 ha. **Description of Plot:** Abandoned orchard traversed by hardtop town highway and a logging road into a wildlife management area. Dominant trees: White Ash, Red Maple, Staghorn Sumac; dominant shrubs: Red-osier Dogwood and Arrowwood; ground cover: grasses and Poison Ivy. **Weather:** Eight sunny and two cloudy days; mean temperature 25°C. **Coverage:** 10 visits; 10 study-hours; 14 June–9 July; 0815–1130 (7), 1630–1930 (3). **Census:** Yellow Warbler, 9.0 (55); Gray Catbird, 7.0 (43); Common Yellowthroat, 4.0 (24); Northern Cardinal, 4.0; Black-capped Chickadee, 3.0 (18); Veery, 2.0; American Robin, 2.0; Cedar Waxwing, 2.0; Rose-breasted Grosbeak, 2.0; Song Sparrow, 2.0; American Crow, 1.0; Wood Thrush, 1.0; Common Grackle, 1.0; American Goldfinch, 1.0. **Total:** 14 species; 41 territorial males (253/km²).

11. ABANDONED APPLE ORCHARD

CULTIVO DE MANZANAS ABANDONADO

GEORGE R. MAXWELL

RD 1 Box 179

Red Creek, NY 13143

Location: New York; Wayne Co.; Pultneyville; 43°17'N, 77°11'W; Pultneyville Quadrangle, USGS. **Continuity:** Established 1987. **Size:** 16.2 ha. **Description of Plot:** Access road separates abandoned orchard from apple orchard and corn field. Dominant trees: Apple; dominant shrubs: dogwood and White Ash; ground cover: grasses and ash seedlings. **Water:** Marsh with standing water 10 m across and 1 m deep. **Weather:** Nine sunny and one cloudy day; mean temperature 27°C. **Coverage:** 10 visits; 10 study-hours; 14 June–15 July; 0920–1015 (6 visits), 1235–1920 (4 visits). **Census:** Song Sparrow, 8.0 (49); American Robin, 7.0 (43); Yellow Warbler, 4.0 (24); Red-winged Blackbird, 4.0; American Goldfinch,

3.0 (18); Willow Flycatcher, 2.0; Gray Catbird, 2.0; Cedar Waxwing, 2.0; Common Yellowthroat, 2.0; Northern Cardinal, 2.0; Common Grackle, 2.0; Killdeer, 1.0; Eastern Kingbird, 1.0; European Starling, 1.0; Grasshopper Sparrow, 1.0; Brown-headed Cowbird, 1.0. **Total:** 16 species; 43 territorial males (265/km²).

12. OAK-MAPLE SLOPE FOREST

BOSQUE DE ROBLE-ARCE DE LADERAS

Laurie Goodrich

Hawk Mountain Sanctuary

R.D. 2

Kempton, PA 19529

Location: Pennsylvania; Berks Co.; Kempton; Hawk Mountain Sanctuary; River of Rocks; 40°45'N, 75°50'W; New Ringold Quadrangle, USGS. **Continuity:** Established 1982; 7 consecutive yrs. **Size:** 16.9 ha. **Description of Plot:** See *Amer. Birds* 37:55 (1983). **Weather:** Temperatures ranged from 4–20°C during census periods. Skies were overcast for 3 censuses, clear for 3 and hazy or partly cloudy for 4. Wind was strong enough to interfere with hearing on 2 occasions and rain began in the last 15 minutes of one census. **Coverage:** 10 visits; 21 study-hours; 24 May to 22 June; 0552–0830. **Census:** Ovenbird, 7.0 (41); Red-eyed Vireo, 2.0; Black-and-white Warbler, 2.0; Scarlet Tanager, 2.0; Eastern Wood-Pewee, 1.5; Blue Jay, 1.5; Wood Thrush, 1.5; Mourning Dove, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Black-capped Chickadee, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; Hermit Thrush, 1.0; Red-bellied Woodpecker, 0.5; Pileated Woodpecker, 0.5; Yellow-billed Cuckoo, +; Brown Creeper, +. **Total:** 19 species; 26.5 territorial males (156/km²). **Visitors:** Canada Goose, Broad-winged Hawk, American Crow, Common Grackle, Brown-headed Cowbird, American Goldfinch. **Remarks:** During late May the plot flooded as a result of over 18 cm of rain between 19 and 25 May. The southern end of the plot developed new streams and temporary pools of water and much of the litter layer was washed away in places. This may have affected early nests of some birds, particularly the ground nesters. The most significant change this year may be the appearance of Hermit Thrush as a breeder. Hermit Thrush was first sighted in 1986 on the Owl's Head plot, several thousand feet to the south. Here it was sighted on 4 different occasions and at least 2 birds were seen. It is interesting to note that the 3 partial territories of the Wood Thrushes did not overlap that of the Hermit Thrush, and total territories were decreased by one-half for the plot. Although we had no evidence that the Hermit Thrushes nested this season, we hope to follow this in the future. **Other Observers:** John Wallace.

13. OAK-MAPLE RIDGE-TOP FOREST

BOSQUE DE ROBLE-ARCE DE TOPE DE COLINAS

Laurie Goodrich

Hawk Mountain Sanctuary

R.D. 2

Kempton, PA 19529

Location: Pennsylvania; Berks Co.; Kempton; Hawk Mountain Sanctuary; Owl's Head; 40°44'N, 75°50'W; New Ringold Quadrangle, USGS. **Continuity:** Established 1982; 7 consecutive yrs. **Size:** 19.4 ha. **Description of Plot:** See *Amer. Birds* 37:55 (1983). **Coverage:** 11 visits; 21 study-hours; 23 May to 23 June; 0606–0905. **Census:** Ovenbird, 9.0 (46); Rufous-sided Towhee, 3.5 (18); Common Yellowthroat, 3.0 (15); Blue Jay, 2.0; Black-capped Chickadee, 2.0; Great Crested Flycatcher, 1.5; Hermit Thrush, 1.5; Wood Thrush, 1.5; Scarlet Tanager, 1.5; Indigo Bunting, 1.5; Ruffed Grouse, 1.0; Black-and-white Warbler, 0.5; Mourning Dove, +; Yellow-billed Cuckoo, +; Downy Woodpecker, +; Red-eyed Vireo, +; Northern Oriole, +. **Total:** 17 species; 28.5 territorial males (146/km²). **Visitors:** Broad-winged Hawk, Wild Turkey, Eastern Wood-Pewee, Blue Jay, Northern Water-

thrush, Common Grackle, Brown-headed Cowbird. **Other Observers:** John Wallace and Stanley Senner.

14. TULIP TREE-HICKORY FOREST

BOSQUE DE ALAMO-NOGAL

BILL MCSHEA, LISA HARTMAN, JAN BLEW, AND SARAH MABEY

*Conservation and Research Center
Front Royal, VA 22630*

Location: Virginia; Warren Co.; Front Royal; 38°52'N, 78°08'W; Front Royal Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** All trees < 7 cm dbh were counted on a 4-ha sample of the study plot. In total, 2269 individuals of 19 species were counted (567/ha). Species comprising 82% of the total number of trees are: Tulip Tree, 563 (25%); hickory 456 (20%); Flowering Dogwood, 310 (14%); Northern Red Oak, 237 (10%); Chestnut Oak, 103 (5%); Slippery Elm, 81 (4%); White Oak, 76 (3%); Shagbark Hickory. Ground cover was 19% and canopy cover 97% in 10 circles 20 m in diameter. Average canopy height was 26 m. The number of stems (> 7 cm dbh) along twenty 20-m transects: 35,250 stems/ha (estimated). Flowering Dogwood, Pawpaw, and Spicebush are the most common species in the understory. The soil in the plot is rocky. **Edge:** The plot is bordered on all sides by forest of similar composition. **Elevation:** The elevation ranges from 293 m at the W and S edges of the plot to 317 m at the E edge and N corner. **Weather:** It was warm and humid with very little rain during this period. **Coverage:** 10 visits; 30 study-hours; 14 June–14 July; 0510–0905. **Census:** Acadian Flycatcher, 8.0 (80); Red-eyed Vireo, 7.5 (75); Wood Thrush, 6.0 (60); Blue-gray Gnatcatcher, 4.0 (40); Scarlet Tanager, 4.0; Eastern Wood-Pewee, 3.0 (30); White-breasted Nuthatch, 3.0; Red-bellied Woodpecker, 2.0; Downy Woodpecker, 2.0; Carolina Chickadee, 2.0; Tufted Titmouse, 2.0; Yellow-throated Vireo, 2.0; Yellow-billed Cuckoo, 1.0; Hairy Woodpecker, 1.0; Great Crested Flycatcher, 1.0; Cerulean Warbler, 1.0; Northern Cardinal, 1.0; Indigo Bunting, 1.0; Rufous-sided Towhee, 1.0. **Total:** 19 species; 52.5 territorial males (525/km²). **Visitors:** American Woodcock, Ruby-throated Hummingbird, Northern Flicker, American Crow, Blue Jay, Louisiana Waterthrush, Brown-headed Cowbird, Rose-breasted Grosbeak. **Nests Found:** White-breasted Nuthatch (1). **Fledglings:** Hairy Woodpecker, Carolina Chickadee, Wood Thrush, Red-eyed Vireo, and Scarlet Tanager. **Remarks:** The Conservation and Research Center is a protected area and no hunting is allowed. The deer are also confined by electric and high-tension wire fences in order to keep them separate from captive animals and to control study subjects. This causes a highly dense deer population that affects the vegetation and bird populations markedly. **Acknowledgments:** We would like to acknowledge Anemarie McShea and the Earthwatch volunteers for their help with constructing the plot grid and organizing the data.

15. MESOPHYTIC FOREST I

BOSQUE MESOFÍTICO I

MIKE SMITH

*Rt. 3, Box 301
Elkton, VA 22827*

Location: Virginia; Green Co.; Elkton; Cabin Plot; 38°24'N, 78°30'W; Madison Quadrangle, USGS. **Continuity:** Established 1987. **Size:** 6.1 ha. **Description of Plot:** The plot lies on east side of the Blue Ridge Mountains; forest continuum, with gravel fire road passing through middle of plot. **Topography and Elevation:** The area is a rocky 5–22° mountain slope; 838–945 m. **Water:** A spring feeds a small stream > 1 m wide. **Coverage:** 22 visits; 28 study-hours; 21 May–20 June; 0600–0900 and 1800–2100. **Census:** American Redstart, 19.0 (311); Veery, 15.5 (254); Wood Thrush, 8.0 (131); Red-eyed Vireo, 8.0; Eastern Wood-Pewee, 7.0 (114); Black-throated Blue Warbler, 6.0 (98); Ovenbird, 6.0; Scarlet Tanager, 5.0 (81); Rufous-sided Towhee, 5.0; Acadian Flycatcher, 4.0 (65); Cerulean Warbler, 4.0;

Chestnut-sided Warbler, 3.5 (57); Hooded Warbler, 3.5; Black-capped Chickadee, 3.0 (49); Rose-breasted Grosbeak, 3.0; White-breasted Nuthatch, 2.0; Solitary Vireo, 2.0; Tufted Titmouse, 1.0; Gray Catbird, 0.5; Kentucky Warbler, 0.5; Indigo Bunting, 0.5; Yellow-billed Cuckoo, +; Red-bellied Woodpecker, +; Downy Woodpecker, +; Hairy Woodpecker, +; Pileated Woodpecker, +; Great Crested Flycatcher, +; Blue Jay, +; Blue-gray Gnatcatcher, +; Canada Warbler, +; Brown-headed Cowbird, +. **Total:** 31 species; 107 territorial males (1754/km²). **Visitors:** Eastern Phoebe, American Crow, Common Raven, American Robin, Eastern Bluebird, Black-throated Green Warbler, Black-and-white Warbler, Dark-eyed Junco, and American Goldfinch. **Fledglings:** Ruffed Grouse and Wood Thrush. **Remarks:** This plot was covered for more hours in 1988 (28) than in 1987 (19); naturally there was a noticeable increase in territorial males of nearly every species. Numbers of Dark-eyed Junco, Rufous-sided Towhee, and Least Flycatcher, however, decreased from 1987 to 1988. The Kentucky Warbler appears to start breeding in early June. **Other Observers:** Elwood Fisher. **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 in the study.

16. MESOPHYTIC FOREST II

BOSQUE MESOFÍTICO II

MIKE SMITH

Rt. 3, Box 301

Elkton, VA 22827

Location: Virginia; Green Co.; Elkton; Pocosin Mission; 38°24'N, 78°29'W; Madison Quadrangle, USGS. **Continuity:** Established 1983; 3 intermittent yrs. **Size:** 6.1 ha. **Description of Plot:** The plot lies on east side of the Blue Ridge Mountains; forest continuum with gravel fire road passing through middle of plot. **Water:** Stream > 1 m wide. **Topography and Elevation:** The area is a rocky 5–22° mountain slope; 838 m. **Coverage:** 22 visits; 28 study-hours; 21 May–20 June; 0600–0900 and 1800–2100. **Census:** American Redstart, 16.5 (270); Veery, 12.0 (196); Red-eyed Vireo, 9.5 (155); Ovenbird, 9.0 (147); Wood Thrush, 8.5 (139); Acadian Flycatcher, 5.5 (90); Cerulean Warbler, 5.5; Black-throated Blue Warbler, 5.0 (81); Scarlet Tanager, 5.0; Eastern Wood-Pewee, 4.0 (65); Solitary Vireo, 4.0; Hooded Warbler, 3.5 (57); Rose-breasted Grosbeak, 2.5; Tufted Titmouse, 2.0; White-breasted Nuthatch, 1.0; Hairy Woodpecker, 0.5; Ruffed Grouse, +; Yellow-billed Cuckoo, +; Barred Owl, +; Red-bellied Woodpecker, +; Downy Woodpecker, +; Pileated Woodpecker, +; Blue Jay, +; Blue-gray Gnatcatcher, +; Canada Warbler, +; Brown-headed Cowbird, +. **Total:** 26 species; 94 territorial males (1540/km²). **Visitors:** Wild Turkey, Broad-winged Hawk, Black-billed Cuckoo, Black-capped Chickadee, Chestnut-sided Warbler, Kentucky Warbler, Indigo Bunting, and American Goldfinch. **Nests Found:** Wood Thrush (2), American Redstart (1). **Remarks:** As with Mesophytic Forest I, this plot was covered for more hours in 1988 (28 hrs) than in 1987 (17 hrs). Of course, there was a marked increase in the number of territorial males for most species. However, Wood Thrush, Veery, and Ovenbird kept more or less stable breeding densities compared to 1987. **Other Observers:** Elwood Fisher. **Acknowledgments:** See Mesophytic Forest I.

17. UPLAND BLACK CHERRY FOREST

BOSQUE DE CEREZO NEGRO DE ALTURA

BROOKS BIRD CLUB

707 Warwood Avenue

Wheeling, WV 26003

Location: West Virginia; Pocahontas Co.; Durbin; 38°36'N, 79°43'W; Thornwood Quadrangle. **Continuity:** Established 1968; 4 intermittent yrs. **Size:** 6.1 ha. **Description of Plot:** A seeded and seldom used forest access road along the top of a spur of Burner Mt.,

Monongahela Nat. Forest. See *Amer. Birds* 38:75–76 (1984). **Edge:** Similar on all sides. **Topography and Elevation:** Rises from start to 1160 m to 1190 m at midway and ends at 1180 m on a wide, level ridge. **Weather:** Several windy, clear days; cold at beginning of study, then warmer. **Coverage:** 6 study-hours; 4–7 June; dawn–0730 or 1845–1945 EDT. **Census:** Red-eyed Vireo, 7.0 (114); Black-throated Green Warbler, 7.0; Magnolia Warbler, 2.5; Ovenbird, 2.0; Dark-eyed Junco, 2.0; Veery, 0.5; Wood Thrush, 0.5. **Total:** 7 species; 21.5 territorial males (352/km²). **Visitors:** White-breasted Nuthatch, Solitary Vireo, Black-burnian Warbler, Scarlet Tanager, Rose-breasted Grosbeak. **Observers:** Julie Dolensky, Ken Anderson, Anne Eddy, Mel Hooker, George Hurley, Virginia Johnson, Martin Rudy, Cindy Slater, Gordon Vujevic.

18. MAPLE-OAK-BEECH FOREST

BOSQUE DE ARCE-ROBLE-HAYA

BROOKS BIRD CLUB

707 Warwood Avenue
Wheeling, WV 26003

Location: West Virginia; Pocahontas Co.; Durbin; 38°35'N, 79°45'W; Durbin Quadrangle, USGS. **Continuity:** Established 1968; 6 intermittent yrs. **Size:** 6.1 ha. **Description of Plot:** A generally level, broad hogback ridge on top of Burner Mt., Monongahela Nat. Forest.; no stream present. See *Amer. Birds* 38:75 (1984). **Coverage:** 12 study-hours; 4–7, 9 June; dawn–0755, and 1858–2115 EDT. **Census:** Red-eyed Vireo, 15.0 (245); Black-throated Green Warbler, 15.0; Ovenbird, 2.5; Solitary Vireo, 2.0; Dark-eyed Junco, 2.0; Veery, 1.5; Black-capped Chickadee, 1.0; Magnolia Warbler, 1.0; Eastern Wood-Pewee, 0.5; Hermit Thrush, 0.5; Chestnut-sided Warbler, 0.5; Rose-breasted Grosbeak, 0.5. **Total:** 12 species; 42 territorial males (688/km²). **Visitors:** Great Crested Flycatcher, Tufted Titmouse, White-breasted Nuthatch, Brown Creeper, Golden-crowned Kinglet, American Redstart, Mourning Warbler, Brown-headed Cowbird. **Observers:** Pete Harrison, Dennis Dawson, Cheryl Feind, Matt Fox, Jonathan Minnear, Cindy Slater, Andrew Sundelin, Andy Thompson, Bill Thompson, Elsa Thompson, Jade Thompson, Gordon Vujevic, Hester Werner, Jack Werner.

19. UNGRAZED OAK-PINE WOODLAND

ARBOLEDA DE ROBLE-PINO NO PASTADO

WILLIAM R. MAYNARD

Forestry Sciences Laboratory
Pacific Southwest Forest and Range Experiment Station
2081 E. Sierra Ave.
Fresno, CA 93710

Location: California; Madera Co.; Coarsegold; San Joaquin Experimental Range; 37°05'N, 119°43'W; Millerton Lake West Quadrangle, USGS. **Continuity:** Established 1985; 4 consecutive yrs. **Size:** 29.7 ha (450 × 660 m). **Description of Plot:** [From 1985 report by Jeffrey R. Waters.] This is a homogeneous plot that is lightly grazed by cattle. A quantitative habitat description is summarized as follows [density (stems/30 ha), basal area (m²/ha), relative basal area (%), respectively]: Blue Oak, 305, 1.0, 0.15; California Live Oak, 767, 3.0, 0.46; Digger Pine, 471, 2.4, 0.37; California Buckeye, 65, 0.1, 0.02; snag, 9, -, -. The percentage of stem diameters is as follows [8–23 cm, 23–53 cm, and > 53 cm, respectively]: Blue Oak, 53, 38, 9; California Live Oak, 89, 11, 0; Digger Pine, 21, 53, 26; California Buckeye, 100, 0, 0; snag, 100, 0, 0. Canopy cover: 29.5%; average shrub cover: 6.1%; average shrub height: 1.7 m; average shrub cover of 3 dominant shrubs: *Ceanothus cuneatus* - 2.1%,

Arctostaphylos radicans - 1.7%, *Ceanothus leucodermis* - 1.1%. **Edge:** SE edge has a 15-m buffer of similar habitat, but most trees and shrubs have been removed beyond that. NE edge has a buffer of habitat like that on plot extending from 20–100 m beyond the edge. The other two edges have similar habitat at least 100 m beyond edge of plot. **Topography and Elevation:** Rolling hills; 330–350 m. **Weather:** Fair weather prevailed, temperatures from 4.5–32°C. **Coverage:** 12 visits; 85 study-hours; 4 April–4 May; 0600–1343. **Census:** Bewick's Wren, 10.0 (33); Brown Towhee, 9.5 (31); Plain Titmouse, 9.0 (30); California Quail, 8.5 (28); Scrub Jay, 8.0 (26); Acorn Woodpecker, 6.0 (20); Anna's Hummingbird, 5.5 (18); Bush-tit, 5.5; Mourning Dove, 5.0 (16); Ash-throated Flycatcher, 5.0; White-breasted Nuthatch, 5.0; House Finch, 5.0; Lesser Goldfinch, 5.0; Brown-headed Cowbird, 4.0 (13); Western Bluebird, 2.5; Northern Oriole, 2.5; House Wren, 2.0; Blue-gray Gnatcatcher, 2.0; Hutton's Vireo, 2.0; Lawrence's Goldfinch, 2.0; Violet-green Swallow, 1.5; Phainopepla, 1.5; Great Horned Owl, 1.0; Nuttall's Woodpecker, 1.0; Hairy Woodpecker, 1.0; Western Kingbird, 1.0; Wrentit, 1.0; California Thrasher, 1.0; European Starling, 1.0; Black Phoebe, 0.5; Canyon Wren, 0.5; Lark Sparrow, 0.5. **Total:** 32 species; 115.5 territorial males (389/km²). **Visitors:** Turkey Vulture, Cooper's Hawk, Red-tailed Hawk, American Kestrel, Greater Roadrunner, Calliope Hummingbird, Common Raven, Orange-crowned Warbler, Rufous-sided Towhee, Red-winged Blackbird, Western Meadowlark, Brewer's Blackbird. **Nests Found:** Bush-tit (12), Brown Towhee (10), Scrub Jay (9), Plain Titmouse, Acorn Woodpecker (6), California Quail (3), Blue-gray Gnatcatcher, Violet-green Swallow (2), Bewick's Wren, California Thrasher, Western Bluebird, Mourning Dove (1), Great Horned Owl, Anna's Hummingbird, Black Phoebe, White-breasted Nuthatch, Phainopepla, European Starling, Hutton's Vireo, House Finch. **Other Observers:** Kathleen A. Milne, Barbara R. North and Daniel M. Taylor.

20. GRAZED OAK-PINE WOODLAND

ARBOLEDA DE ROBLE-PINO PASTADO

KATHLEEN A. MILNE

Forestry Sciences Laboratory

Pacific Southwest Forest and Range Experiment Station

2081 E. Sierra Ave.

Fresno, CA 93710

Location: California; Madera Co.; Coarsegold; San Joaquin Experimental Range; 37°06'N, 119°44'W; Millerton Lake West Quadrangle, USGS. **Continuity:** Established 1985; 4 consecutive yrs. **Size:** 29.7 ha (450 × 660 m). **Description of Plot:** [From 1985 report by Jeffrey R. Waters.] Two-thirds of the plot (20-ha) has not been grazed or burned for 50 yrs. One-third (10-ha) has been lightly grazed by horses. A storage area for ranch supplies (occupies 4% of the plot area. A quantitative habitat description is summarized as follows [density (stems/30 ha), basal area (m²/ha), relative basal area (%), respectively]: Blue Oak, 222, 0.5, 0.08; California Live Oak, 444, 1.3, 0.21; Digger Pine, 896, 4.4, 0.70; California Buckeye, 46, 0.1, 0.01; snag, 9, -, -. The percentage of stem diameters is as follows [8–23 cm, 23–53 cm, and >53 cm, respectively]: Blue Oak, 61, 39, 90; California Live Oak, 92, 8, 0; Digger Pine, 22, 52, 26; California Buckeye, 78, 22, 0; snag, 100, 0, 0. Canopy cover: 26.9%; average shrub cover: 20.6%; average shrub height: 2.2 m; average shrub cover of 3 dominant shrubs: *Ceanothus cuneatus* - 14.3%, *Rhamnus crocea* - 2.0%, *Toxicodendron radicans* - 1.7%. **Edge:** Similar habitat on all sides. **Elevation:** 360–390 m. **Weather:** Generally fair, temperatures 4.5–32°C. **Coverage:** 12 visits; 85 study-hours; 4 April–3 May; 0600–1400. **Census:** Plain Titmouse, 19.0 (63); Ash-throated Flycatcher, 12.5 (42); Scrub Jay, 8.5 (28); Mourning Dove, 7.5 (25); Acorn Woodpecker, 6.5 (21); Violet-green Swallow, 6.5; Brown Towhee, 6.5; Bewick's Wren, 6.0 (20); European Starling, 6.0; Anna's Hummingbird, 5.0 (16); White-breasted Nuthatch, 5.0; California Quail, 4.5 (15); Brown-headed Cowbird, 4.0 (13); Lesser Goldfinch, 4.0; Bush-tit, 3.5 (11); House Wren, 3.0 (10); Blue-gray Gnatcatcher, 3.0; Nuttall's Woodpecker, 2.5; House Finch, 2.5; Hutton's Vireo, 2.0; Lawrence's Goldfinch, 2.0; Red-tailed Hawk, 1.0; Western Bluebird, 1.0; American Robin, 1.0; North-

ern Flicker, 0.5; Phainopepla, 0.5; Rufous-crowned Sparrow, +. **Total:** 27 species; 124 territorial males (417/km²). **Visitors:** Turkey Vulture, Greater Roadrunner, Great Horned Owl, Hairy Woodpecker, Western Kingbird, Tree Swallow, Common Raven, Rock Wren, Orange-crowned Warbler, Rufous-sided Towhee, Lark Sparrow, Western Meadowlark, Brewer's Blackbird, Northern Oriole, American Goldfinch. **Nests Found:** Plain Titmouse (15), Scrub Jay (12), Brown Towhee (10), Bushtit (8), Acorn Woodpecker (7), European Starling (6), Mourning Dove (5), Violet-green Swallow (?), Blue-gray Gnatcatcher (4), Bewick's Wren (3), Anna's Hummingbird (2), Nuttall's Woodpecker, White-breasted Nuthatch, Hutton's Vireo, Red-tailed Hawk, American Kestrel, California Quail, House Wren, Lesser Goldfinch. **Other Observers:** William R. Maynard, Barbara R. North and Daniel M. Taylor.

21. OLD-GROWTH MIXED FOREST

BOSQUE MIXTO MADURO

NANCY LEDERER

2635 Mapleton #77

Boulder, CO 80302

Location: Colorado; Boulder Co.; Allenspark; Copeland Moraine; 40°13'N, 105°33'W; Allen's Park Quadrangle, USGS. **Continuity:** Established 1987. **Size:** 15.0 ha; 600 × 250 m; laid out with compass and measuring tape. **Description of Plot:** [From 1987 report.] Dry montane old growth mixed coniferous and deciduous forest. Numerous small meadows in forest openings. Several large glacial erratics. A dirt road runs the length of the plot. In 1985 a spruce budworm infestation killed a large proportion of the Douglas-fir leaving many standing dead trees. A quantitative survey of the vegetation gave the following results: trees 7.6-cm diameter and over, based on ten 0.04-ha circular samples: 566/ha living, 331/ha standing dead; total basal area 25 m²/ha living, 20 m²/ha standing dead. Species comprising 100% of the total number of living trees [figures after each give number of trees/ha, relative density (%), relative dominance (%), frequency (%), in that sequence]: Ponderosa Pine 220, 39, 68, 100; Douglas-fir 193, 34, 20, 100; Quaking Aspen 124, 22, 8, 60; Lodgepole Pine 25, 4, 4, 20; Narrow-leaved Cottonwood 5, 1, 0.3, 10. Living trees by diameter size class [number of trees/ha, relative density (%), basal area in m²/ha, relative basal area (%), in that sequence]: A (7.6–15.2 cm) 249, 44, 2.3, 9; B (15.2–22.9 cm) 156, 28, 4.3, 17; C (22.9–38.1 cm) 109, 19, 8.1, 32; D (38.1–53.3 cm) 40, 7, 6.6, 26; E (53.3–68.6 cm) 10, 2, 2.8, 11; F (68.6–83.8 cm) 2, 0.4, 1.1, 4. Snags by diameter size class [number of snags/ha, relative density (%), basal area in m²/ha, relative basal area (%), in that sequence]: A (7.6–15.2 cm) 116, 35, 1.1, 4; B (15.2–22.9 cm) 67, 20, 1.9, 9; C (22.9–38.1 cm) 106, 32, 7.9, 40; D (38.1–53.3 cm) 30, 9, 5.0, 25; E (53.3–68.6 cm) 10, 3, 2.8, 14; F (68.6–83.8 cm) 30, 1, 1.1, 6. Shrub stems/ha 82,750; ground cover 77%; canopy cover 35% (subjective estimate); average canopy height 22 m (range 13–27 m). **Topography and Elevation:** The plot is at the bottom of a moraine and extends onto the valley floor. The plot is partly level and partly a steep south-facing slope. Elevation: 2537–2610 m. **Water:** Stream > 1 m wide; pond 15.0 m across, 1.0 m deep. **Edge:** Edges are the same forest habitat as the study plot, except that much of the S edge is moist aspen forest with some willow, transitional to the willow carr along N. St. Vrain Creek. **Weather:** Generally mild and clear or partly cloudy, except for two trips with light snowfall. Wind usually calm or light breeze; on four visits up to approximately 16–32 kph. **Coverage:** 11 visits; 38 study-hours; 25 April–2 July; 0540–1145. **Census:** House Wren, 16.0 (106); Western Wood-Pewee, 15.0 (100); Hammond's Flycatcher, 11.0 (73); American Robin, 10.0 (66); Warbling Vireo, 10.0; Yellow-rumped Warbler, 10.0; Western Tanager, 9.0 (60); Ruby-crowned Kinglet, 6.0 (40); Dark-eyed Junco, 6.0; Broad-tailed Hummingbird, 5.0 (33); Mountain Chickadee, 5.0; Green-tailed Towhee, 5.0; Pine Siskin, 5.0; Red-naped Sapsucker, 4.0 (26); Tree Swallow, 4.0; Virginia's Warbler, 4.0; Cassin's Finch, 3.0 (20); White-breasted Nuthatch, 2.5; Downy Woodpecker, 1.5; Northern Flicker, 1.5; Steller's Jay, 1.5; Pygmy Nuthatch, 1.5; Hairy Woodpecker,

1.0; Western Flycatcher, 1.0; Brown Creeper, 1.0; Townsend's Solitaire, 1.0; Chipping Sparrow, 1.0; Brown-headed Cowbird, 1.0; Blue Grouse, +; Great Horned Owl, +; Northern Saw-whet Owl, +; Williamson's Sapsucker, +; Three-toed Woodpecker, +; Olive-sided Flycatcher, +. **Total:** 34 species; 142.5 territorial males (950/km²). **Visitors:** Cooper's Hawk, Common Nighthawk, Dusky Flycatcher, Violet-green Swallow, Clark's Nutcracker, American Crow, Common Raven, Black-capped Chickadee, Red-breasted Nuthatch, Mountain Bluebird, Swainson's Thrush, MacGillivray's Warbler, Wilson's Warbler, Black-headed Grosbeak, Song Sparrow, Lincoln's Sparrow, Red Crossbill, Evening Grosbeak. **Nests Found:** Great Horned Owl (1) stick nest in large Ponderosa Pine, Red-naped Sapsucker (2) in aspen, Hairy Woodpecker (1) in aspen, Hammond's Flycatcher (1) on Ponderosa Pine branch, Tree Swallow (2) in aspen, Mountain Chickadee (1) in aspen, White-breasted Nuthatch (1) in Ponderosa Pine, House Wren (1) in aspen, and American Robin (1) on Ponderosa Pine branches. **Remarks:** In 1987 we missed the Virginia's Warblers and mistakenly identified their song as the Yellow-rumped Warbler's. This year the apparent decline in Yellow-rumped Warbler is compensated for by the presence of the Virginia's Warbler. The Northern Saw-whet Owl was detected during a series of nighttime transects conducted from March to May for a small-owl study. **Other Observers:** Michael G. Figgs. **Acknowledgments:** Thanks to the National Park Service for permission to mark the plot and conduct the census.

22. OAK-HEMLOCK FOREST

BOSQUE DE ROBLE-PICEA

ROBERT A. ASKINS

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New London, CT 06320*

Location: Connecticut; New London Co.; New London; Connecticut College Arboretum; 41°22'N, 72°07'W; Uncasville Quadrangle, USGS. **Continuity:** Established 1955; 18 intermittent yrs. **Size:** 23.1 ha. **Description of Plot:** See *Amer. Birds* 31:57-58 (1977) and Hemond, et al. (1983). *Bull. Torrey Bot. Club* 110: 184-194. **Weather:** Dry and cool (7-21°C) during most of the study period. **Coverage:** 11 visits; 33 study-hours; 22 May-8 July; 0530-0830 EDT. **Census:** Red-eyed Vireo, 9.0 (38); Veery, 8.5 (36); Black-and-white Warbler, 7.0 (30); Ovenbird, 7.0; Tufted Titmouse, 6.0 (25); Northern Cardinal, 5.5 (23); Rufous-sided Towhee, 5.5; Black-capped Chickadee, 4.5 (19); Gray Catbird, 4.5; Common Yellowthroat, 4.5; Hooded Warbler, 4.5; Eastern Wood-Pewee, 3.0 (12); Great Crested Flycatcher, 3.0; Blue Jay, 3.0; Worm-eating Warbler, 3.0; Scarlet Tanager, 3.0; Wood Thrush, 2.5; Northern Flicker, 2.0; Eastern Phoebe, 2.0; Carolina Wren, 2.0; American Robin, 2.0; Chestnut-sided Warbler, 2.0; Louisiana Waterthrush, 2.0; Northern Oriole, 2.0; House Wren, 1.5; Brown-headed Cowbird, 1.5; Downy Woodpecker, 1.0; American Crow, 1.0; White-breasted Nuthatch, 1.0; White-eyed Vireo, 1.0; Blue-winged Warbler, 1.0; Hairy Woodpecker, 0.5; Green-backed Heron, +; Broad-winged Hawk, +; Mourning Dove, +; Barred Owl, +; Ruby-throated Hummingbird, +; Red-bellied Woodpecker, +; Acadian Flycatcher, +; Brown Creeper, +; Brown Thrasher, +; American Redstart, +; Rose-breasted Grosbeak, +; Red-winged Blackbird, +; Common Grackle, +. **Total:** 45 species; 106.5 territorial males (461/km²). **Fledglings:** Black-capped Chickadee, Tufted Titmouse, Northern Oriole. **Adults Carrying Food:** American Crow, White-eyed Vireo, Black-and-white Warbler, Worm-eating Warbler, Blue-winged Warbler, Hooded Warbler. **Remarks:** The density of neotropical migrants has fluctuated since 1982. This year several species (Veery, Red-eyed Vireo, and Ovenbird) had lower densities than last year, but other species (Black-and-white Warbler, Worm-eating Warbler, and Scarlet Tanager) had higher densities. Overall populations of forest-interior birds and neotropical migrants have not consistently increased or decreased since 1982. There had been a precipitous decline in both groups in the 1960s and 1970s, followed by a partial recovery between 1976 and 1982. (See

R.A. Askins and M.J. Philbrick. 1987. *Wilson Bulletin* 99:7-21). **Other Observers:** Wendy R. Dreyer and Margaret J. Philbrick.

23. 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, CT 06759*

Location: Connecticut; Litchfield Co.; Litchfield; 41°43'N, 73°12'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 22 intermittent yrs. **Size:** 10.5 ha. **Description of Plot:** See *Aud. Field Notes* 19:594-595 (1965). **Weather:** During the census period the minimum temperature varied from 2.7-13.9°C with an average of 8.3°. High temperatures ranged from 14.4-28.9°C with an average of 23.9°. The total precipitation for the 11-day period was 0.5 cm. **Coverage:** 5 visits; 13 study-hours; 27, 28 May; 2, 5, 6 June; 0500-2200; 10.5 hr in morning, 2.5 hr in evening. **Census:** Red-eyed Vireo, 17.0 (161); Ovenbird, 15.0 (142); Veery, 13.0 (123); Wood Thrush, 8.0 (76); Black-throated Green Warbler, 8.0; Blackburnian Warbler, 7.0 (66); Red-breasted Nuthatch, 6.0 (57); Solitary Vireo, 5.0 (47); Scarlet Tanager, 5.0; Black-capped Chickadee, 3.5 (33); Yellow-rumped Warbler, 3.0 (28); Pine Warbler, 3.0; Purple Finch, 3.0; Blue Jay, 2.5; Northern Flicker, 1.5; Mourning Dove, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; Great Crested Flycatcher, 1.0; American Crow, 1.0; Brown Creeper, 1.0; Yellow-throated Vireo, 1.0; Black-and-white Warbler, 1.0; Song Sparrow, 1.0; Common Grackle, 1.0; Barred Owl, 0.5; Pileated Woodpecker, 0.5; Eastern Kingbird, 0.5; White-breasted Nuthatch, 0.5; Gray Catbird, 0.5; Magnolia Warbler, 0.5; Common Yellowthroat, 0.5; Turkey Vulture, +. **Total:** 34 species; 115 territorial males (1095/km²). **Remarks:** The total number of territorial males was a new high for the 22-year history of this mature forest plot. Two entirely new species were observed in the area this year: Eastern Kingbird and Turkey Vulture. **Other Participants:** Gordon Loery.

24. CENTRAL HARDWOOD FOREST WITH SCATTERED PINE

BOSQUE CENTRAL DE MADERAS DURAS CON PINOS DISPERSOS

JOAN CRISWELL

*1330 Massachusetts Ave. N.W.
Washington, D.C. 20005*

Location: District of Columbia; Washington DC; Rock Creek Park; 38°57'N, 77°02'W; Washington West Quadrangle, USGS. **Continuity:** Established 1947; 29 intermittent yrs. **Size:** 26.3 ha. **Description of Plot:** See *Aud. Field Notes* 2: 153-154 (1948). **Weather:** A major drought and heat spell began in June and continued through August. **Coverage:** 29 visits; 49 study-hours; 31 March-4 July; 0600-1100 EDT. **Census:** Red-eyed Vireo, 6.5 (24); Tufted Titmouse, 6.0 (22); Ovenbird, 6.0; Red-bellied Woodpecker, 3.0 (11); Downy Woodpecker, 3.0; Wood Thrush, 3.0; Rufous-sided Towhee, 3.0; Hairy Woodpecker, 2.0; Northern Flicker, 2.0; Carolina Chickadee, 2.0; White-breasted Nuthatch, 2.0; Scarlet Tanager, 1.5; Broad-winged Hawk, 1.0; Pileated Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; Eastern Phoebe, 1.0; Blue Jay, 1.0; American Crow, 1.0; Northern Cardinal, 1.0; Brown-headed Cowbird, 1.0; Great Crested Flycatcher, 0.5; Carolina Wren, 0.5; Yellow-billed Cuckoo, +; Acadian Flycatcher, +; Veery, +. **Total:** 25 species; 49 territorial males (186/km²). **Visitors:** Brown Creeper, American Robin, Gray Catbird, Northern Mockingbird, European Starling, American Redstart, Louisiana Waterthrush, Common Yellowthroat, Hooded Warbler, Indigo Bunting, House Finch. **Nests Found:** Broad-winged Hawk, Red-bellied Woodpecker, Hairy Woodpecker, Eastern Phoebe, American Crow, Carolina

Chickadee, Red-eyed Vireo. **Remarks:** Two fledgling Broad-winged Hawks were seen July 22. **Other Observers:** Vera DeMarco and Robert Ford.

25. MATURE BEECH-MAGNOLIA FOREST

BOSQUE DE HAYA-MAGNOLIA MADURO

W. WILSON BAKER

Tall Timbers Research Station

Rt. 1 Box 678

Tallahassee, FL 32312

Location: Florida; Leon Co.; Tallahassee; 30°40'N, 84°15'W; Beachton Quadrangle, USGS. **Continuity:** Established 1980; 3 intermittent yrs. **Size:** 15.7 ha. **Description of Plot:** See *Amer.Birds* 35:58 (1981). Hurricane Kate blew down many trees in this study plot in December 1985. The gaps created by the hurricane dramatically altered the structure of the vegetation of the plot. **Weather:** Calm to low wind; clear to partial clouds; light fog once; average starting humidity: 90%; temperatures from 10–27°C. **Coverage:** 10 visits; 32 study-hours; 7 April–13 June; all visits were started within 10 min of sunrise. **Census:** Acadian Flycatcher, 16.5 (105); Northern Parula, 16.0 (101); Carolina Wren, 13.5 (85); Red-eyed Vireo, 13.5; Northern Cardinal, 9.0 (57); Tufted Titmouse, 8.0 (50); Blue-gray Gnatcatcher, 7.0 (44); White-eyed Vireo, 7.0; Hooded Warbler, 7.0; Great Crested Flycatcher, 5.0 (31); Red-bellied Woodpecker, 4.0 (25); Kentucky Warbler, 3.5 (22); Brown-headed Cowbird, 3.0 (19); Yellow-billed Cuckoo, 2.5; Downy Woodpecker, 2.5; Yellow-throated Vireo, 2.5; Ruby-throated Hummingbird, 2.0; Carolina Chickadee, 2.0; Pine Warbler, 2.0; Summer Tanager, 2.0; Rufous-sided Towhee, 2.0; Pileated Woodpecker, 1.5; Louisiana Waterthrush, 1.5; Red-shouldered Hawk, 1.0; Barred Owl, 1.0; White-breasted Nuthatch, 1.0; Green-backed Heron, +; Turkey Vulture, +; Wild Turkey, +; Hairy Woodpecker, +; Northern Flicker, +; Blue Jay, +; American Crow, +; Wood Thrush, +; Indigo Bunting, +. **Total:** 35 species; 136.5 territorial males (869/km²). **Visitors:** Red-winged Blackbird, Fish Crow, Great Blue Heron, Purple Martin. **Nests Found:** White-eyed Vireo (3 eggs, 27 May), and Downy Woodpecker (22 May, young about to fledge). **Remarks:** Indigo Bunting was singing in a "hurricane opening" on 5 May 1988. On 16 May Parula Warblers fed fledglings at 3 different territories. The previous two BBCs (1980, 1981) on this plot didn't record Kentucky Warbler, Pine Warbler, Rufous-sided Towhee or White-breasted Nuthatch breeding territories.

26. MIXED OAK-PINE FOREST I

BOSQUE MIXTO DE ROBLE-PINO I

DOUGLAS A. GROSS

R.D. 1, U.S. Rt. 11

Berwick, PA 18603

Location: Pennsylvania; Luzerne Co.; Wapwallopen; Council Cup Forest; Pennsylvania Power and Light Company; 41°04'N, 76°07'W; Sybertsville Quadrangle, USGS. **Continuity:** Established 1977; 10 consecutive yrs. **Size:** 6.0 ha. **Description of Plot:** See *Amer.Birds* 33:70 (1979). **Weather:** Clear on 6 counts, hazy on 2, partly cloudy on 1, and overcast on 1. During the counts, the average temperature was 19.5°C (range: 8–28°C). Winds were usually calm, but reached 13 kph on 1 count. **Coverage:** 29.5 study-hours; 27 April; 2, 13, 26 May; 6, 16, 28 June; 1, 11 July; 26 August; 0445–0830 EST. **Census:** Black-capped Chickadee, 6.0 (100); Red-eyed Vireo, 6.0; Scarlet Tanager, 5.5 (91); Cedar Waxwing, 4.0 (66); Brown-headed Cowbird, 4.0; Eastern Wood-Pewee, 3.5 (58); Tufted Titmouse, 3.5; White-breasted Nuthatch, 3.5; Ovenbird, 3.0 (50); Downy Woodpecker, 2.5; American Robin, 2.0; Great Crested Flycatcher, 1.5; Yellow-billed Cuckoo, 1.0; Great Horned Owl, 1.0; Hairy Woodpecker, 1.0; Wood Thrush, 1.0; Solitary Vireo, 1.0; Rose-breasted Grosbeak, 1.0; Chipping Sparrow, 1.0; Blue Jay, 0.5; Red-breasted Nuthatch, 0.5; Blue-gray Gnatcatcher, 0.5; Northern Oriole, 0.5; Pileated Woodpecker, +; American Crow, +; Black-

and-white Warbler, +; Worm-eating Warbler, +; Northern Cardinal, +; Indigo Bunting, +. **Total:** 29 species; 54 territorial males (900/km²). **Remarks:** Great Horned Owl fledglings were still near their nest in the plot on 2 May. Yellow-billed Cuckoo and Cedar Waxwing were still actively territorial or tending young on 26 Aug. The gypsy moth damage was slight (less than 10% defoliation), but greater than the last 5 years.

27. MIXED OAK-PINE FOREST II

BOSQUE MIXTO DE ROBLE-PINO II

DOUGLAS A. GROSS

*R.D. 1, U.S. Rt. 11
Berwick, PA 18603*

Location: Pennsylvania; Luzerne Co.; Beach Haven; TR419 Forest; Pennsylvania Power and Light Company; 41°05'N, 76°08'W; Berwick Quadrangle, USGS. **Continuity:** Established 1977; 10 intermittent yrs. **Size:** 11.1 ha. **Description of Plot:** See *Amer.Birds* 33:70 (1979). **Weather:** It was clear on 5 counts and overcast on 4. Fog hindered the start of 4 counts and light rain fell at the end of 2 counts. During the counts, the average temperature was 19.3°C (range 4–32°C). **Coverage:** 39 study-hours; 28 April; 12, 24 May; 1, 15, 23 June; 1, 11 July; 23 August; 0450–0915 EST. **Census:** Red-eyed Vireo, 9.5 (85); Scarlet Tanager, 8.5 (76); Tufted Titmouse, 6.0 (54); Blue-gray Gnatcatcher, 6.0; Black-capped Chickadee, 5.5 (49); American Redstart, 5.0 (45); Brown-headed Cowbird, 5.0; Downy Woodpecker, 4.5 (40); Eastern Wood-Pewee, 4.0 (36); Wood Thrush, 4.0; Cedar Waxwing, 4.0; Ovenbird, 3.5 (31); Northern Cardinal, 2.5; Rose-breasted Grosbeak, 2.5; Northern Flicker, 2.0; Yellow-throated Vireo, 2.0; Worm-eating Warbler, 2.0; Hooded Warbler, 2.0; Rufous-sided Towhee, 2.0; Chipping Sparrow, 2.0; House Wren, 1.5; Hairy Woodpecker, 1.0; Blue Jay, 1.0; White-breasted Nuthatch, 1.0; Pine Warbler, 1.0; Northern Oriole, 1.0; Great Crested Flycatcher, 0.5; American Crow, 0.5; Indigo Bunting, 0.5; American Goldfinch, 0.5; Red-tailed Hawk, +; Ruffed Grouse, +; Ruby-throated Hummingbird, +; Pileated Woodpecker, +; Eastern Kingbird, +; Carolina Wren, +; Gray Catbird, +; Yellow Warbler, +; Black-and-white Warbler, +; Common Yellowthroat, +. **Total:** 40 species; 91 territorial males (819/km²). **Remarks:** Cedar Waxwing and American Goldfinch still actively breeding on 23 August. The pair of Red-tailed Hawk were apparently permanent residents, paired off in early March.

28. MOUNTAINTOP HABITAT

HÁBITAT DE TOPES MONTANOS

MAX CARPENTER

*Rt. 1 Box 396
Dayton, VA 22821*

Location: Virginia; Augusta Co.; Briery Branch; 38°27'N, 79°15'W; Palo Alto Quadrangle, USGS. **Continuity:** Established 1981; 3 intermittent yrs. **Size:** 8.6 ha. **Description of Plot:** See *Amer.Birds* 36:68 (1982). **Coverage:** 12 visits; 18 study-hours; 30 May to 29 June; 0615–0832. **Weather:** 12–26°C; light winds, clear (6 days) to cloudy (6 days). **Census:** Canada Warbler, 4.5 (52); Veery, 4.0 (46); Gray Catbird, 4.0; Rufous-sided Towhee, 3.5 (40); Dark-eyed Junco, 2.5; Black-capped Chickadee, 2.0; Black-throated Blue Warbler, 1.5; Rose-breasted Grosbeak, 1.5; Chestnut-sided Warbler, 1.0; Scarlet Tanager, 1.0. **Total:** 10 species; 25.5 territorial males (296/km²). **Visitors:** Northern Flicker, Blue Jay, Common Raven, Eastern Wood-Pewee, Eastern Phoebe, White-breasted Nuthatch, Cedar Waxwing, Solitary Vireo, Black-and-white Warbler, Common Yellowthroat, Rose-breasted Grosbeak, Indigo Bunting, American Goldfinch.

29. HEMLOCK-WHITE PINE-MIXED HARDWOOD FOREST**BOSQUE MIXTO DE MADERAS DURAS-PICEA-PINO BLANCO****KENNETH R. HINKLE***Rt. 2 Box 32 J**Bridgewater, VA 22812*

Location: Virginia; Rockingham Co.; Rawley Springs; 38°33'N, 79°04'W; Rawley Springs Quadrangle, USGS. **Continuity:** Established 1979; 3 intermittent yrs. **Size:** 6.1 ha. **Description of Plot:** See *Amer. Birds* 34: 58 (1980). **Coverage:** 9 visits; 14 study-hours; 20 May–25 June; 0625–0905 (8 visits), 1855–1958 (1 visit). **Weather:** mild temperatures; clear (6 visits), foggy (2 visits), cloudy (1 visit). **Census:** Acadian Flycatcher, 7.0 (114); Red-eyed Vireo, 6.5 (106); Wood Thrush, 3.5 (57); Northern Parula, 2.5; Louisiana Waterthrush, 2.5; Scarlet Tanager, 2.5; Black-throated Green Warbler, 2.0; Tufted Titmouse, 1.5; Ovenbird, 1.5; Eastern Wood-Pewee, +; Solitary Vireo, +. **Total:** 11 species; 29.5 territorial males (483/km²). **Visitors:** American Woodcock, Wild Turkey, Mourning Dove, Barred Owl, Ruby-throated Hummingbird, Red-bellied Woodpecker, Downy Woodpecker, Hairy Woodpecker, Pileated Woodpecker, Blue Jay, Common Raven, Carolina Wren, Kentucky Warbler, Brown-headed Cowbird, Rose-breasted Grosbeak.

30. VIRGIN SPRUCE-NORTHERN HARDWOOD FOREST**BOSQUE NORTEÑO DE MADERAS DURAS-PICEA****BROOKS BIRD CLUB***707 Warwood Avenue**Wheeling, WV 26003*

Location: West Virginia; Pocahontas Co.; Durbin; 38°37'N, 79°50'W; Wildell Quadrangle USGS. **Continuity:** Established 1948; 7 intermittent yrs. **Size:** 6.1 ha. **Description of Plot:** See *Amer. Birds* 38:90 (1984). Part of a 20-ha tract of virgin forest that was left standing when the region was timbered on Gaudineer Knob, Shaver's Mountain, Monongahela NF. **Edge:** Continuous similar habitat on all sides. **Weather:** Clear to partly cloudy and cool. **Coverage:** 9 study-hours; 4–9 June; dawn–0750 or 1918–2040 EDT. **Census:** Blackburnian Warbler, 9.0 (147); Golden-crowned Kinglet, 6.5 (106); Black-throated Green Warbler, 6.0 (98); Dark-eyed Junco, 5.5 (90); Red-eyed Vireo, 4.5 (73); Black-throated Blue Warbler, 4.5; Brown Creeper, 3.0 (49); Canada Warbler, 3.0; Solitary Vireo, 2.5; Black-capped Chickadee, 2.0; Red-breasted Nuthatch, 2.0; Swainson's Thrush, 2.0; Magnolia Warbler, 2.0; Winter Wren, 1.5; Mourning Warbler, 1.5; Hairy Woodpecker, 1.0; Purple Finch, 1.0; Hooded Warbler, 0.5; Ruffed Grouse, +; Chimney Swift, +; Pileated Woodpecker, +; Eastern Wood-Pewee, +; Veery, +; Hermit Thrush, +. **Total:** 24 species; 58 territorial males (950/km²). **Visitors:** Cedar Waxwing, Scarlet Tanager, Rose-breasted Grosbeak, Brown-headed Cowbird. **Other Observers:** Anne Eddy, Curt Adkisson, Beth Bullard, Mary Ann Dotson, Jay Graffious, George Hurley, Jonathan Minnear, Cindy Slater, Juanita Slater, Gordon Vujevic.

31. BIRCH-SPRUCE-FIR FOREST**BOSQUE DE ABEDUL-ABETO-PINABETE****BROOKS BIRD CLUB***707 Warwood Avenue**Wheeling, WV 26003*

Location: West Virginia; Randolph Co.; Durbin; 38°36'N, 79°51'W; Durbin Quadrangle, USGS. **Continuity:** Established 1968; 4 intermittent yrs. **Size:** 6.1 ha. **Description of Plot:** A nearly flat, spongy area with many fallen and uprooted trees. See *Amer. Birds* 38:89 (1984). **Weather:** Clear and warm with one morning shower. **Coverage:** 12 study-hours; 5–9 June;

dawn–0700 or 1900–2100 EDT. **Census:** Magnolia Warbler, 6.0 (98); Golden-crowned Kinglet, 5.0 (81); Solitary Vireo, 4.0 (65); Black-throated Blue Warbler, 3.5 (57); Brown Creeper, 3.0 (49); Red-breasted Nuthatch, 2.5; Winter Wren, 2.5; Blackburnian Warbler, 2.5; Swainson's Thrush, 2.0; Canada Warbler, 1.5; Hermit Thrush, 1.0; Black-throated Green Warbler, 1.0; Rufous-sided Towhee, 1.0; Red-eyed Vireo, 0.5; Purple Finch, 0.5; Ruffed Grouse, +; Barred Owl, +; Chimney Swift, +; Black-capped Chickadee, +; White-breasted Nuthatch, +; American Robin, +; Scarlet Tanager, +; Swamp Sparrow, +; Brown-headed Cowbird, +. **Total:** 24 species; 36.5 territorial males (598/km²). **Visitors:** American Goldfinch. **Other Observers:** Bill Smith, Lynn Barnhart, Jim and Beth Bullard, Kyle Bush, Tom Fox, Eugene Hutton, Bob Rine, Juanita Slater, Gordon Vujevic, Judy Ward, Jean Worthley.

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

BOISQUE MADURO DE TRANSICIÓN MIXTO DE CONÍFEROS-PINABETE
ROJO

DAWN BREESE

USDA Forest Service

Pacific Southwest Forest and Range Experiment Station

2081 E. Sierra Ave.

Fresno, CA 93710

Location: California; Fresno Co.; Wishon Village; 36°57'N, 119°02'W; Patterson Mountain NE Quadrangle, USGS. **Continuity:** Established 1985; 4 yrs. **Size:** 42.3 ha. **Description of Plot:** See 1985 report. **Edge:** Bordered on 3 sides by old growth forest and on the fourth side by rocky slope and open forest. **Topography and Elevation:** Gradual, south-facing slope; 2043–2134 m. **Weather:** Generally fair, temperatures ranged from approximately 0–11°C on the earlier visits to approximately 11–27°C on the final visit. **Coverage:** 12 visits; 88 study-hours; 23 May–23 June; 0549–1445 PDT. **Census:** Fox Sparrow, 52.0 (122); Golden-crowned Kinglet, 43.5 (102); Hermit Warbler, 35.0 (82); Dark-eyed Junco, 26.0 (61); Hammond's Flycatcher, 25.0 (59); Dusky Flycatcher, 22.5 (53); Red-breasted Nuthatch, 21.0 (49); MacGillivray's Warbler, 18.0 (42); Yellow-rumped Warbler, 17.0 (40); Western Tanager, 16.5 (39); Mountain Chickadee, 10.0 (23); Brown Creeper, 9.0 (21); Steller's Jay, 7.5 (17); Townsend's Solitaire, 4.5 (10); Hermit Thrush, 4.5; Warbling Vireo, 4.5; Mountain Quail, 3.5 (8); White-headed Woodpecker, 3.5; Solitary Vireo, 3.5; Red-breasted Sapsucker, 3.0 (7); Winter Wren, 3.0; American Robin, 3.0; Northern Flicker, 2.0; Pileated Woodpecker, 1.5; Western Flycatcher, 1.5; Nashville Warbler, 1.5; Pine Siskin, 1.5; Hairy Woodpecker, 1.0; Band-tailed Pigeon, 0.5; Northern Pygmy-Owl, 0.5; Calliope Hummingbird, 0.5; Olive-sided Flycatcher, 0.5; Western Wood-Pewee, 0.5; Common Raven, 0.5; Black-headed Grosbeak, 0.5; Purple Finch, 0.5; Cassin's Finch, 0.5; Evening Grosbeak, 0.5; Sharp-shinned Hawk, +; Northern Goshawk, +; Red-tailed Hawk, +; Vaux's Swift, +; Western Bluebird, +; Wilson's Warbler, +; Green-tailed Towhee, +; Red Crossbill, +; Lesser Goldfinch, +. **Total:** 47 species; 350 territorial males (827/km²). **Visitors:** Black Swift, White-throated Swift, Clark's Nutcracker, White-breasted Nuthatch, House Wren, Brown-headed Cowbird and Lawrence's Goldfinch. **Nests Found:** Calliope Hummingbird (2), Red-breasted Sapsucker (3), Hairy Woodpecker (1), White-headed Woodpecker (5), Northern Flicker (1), Hammond's Flycatcher (2), Dusky Flycatcher (1), Mountain Chickadee (5), Red-breasted Nuthatch (12), Brown Creeper (3), Winter Wren (1), Townsend's Solitaire (2), American Robin (2), Golden-crowned Kinglet (1), Western Tanager (2), Dark-eyed Junco (4). **Remarks:** Detailed measurements of the nest cover and surrounding vegetation were made at all nests. **Other Observers:** Paul G. Rodewald and Daniel M. Taylor. **Acknowledgments:** This effort is part of a study of observer variability in spot mapping being conducted by Dr. Jared Verner, USDA Forest Service.

33. OLD-GROWTH SUBALPINE SPRUCE-FIR FOREST

BOSQUE MADURO SUBALPINO ABETO-PINABETE

DAVID HALLOCK

*Eldora Star Route
Nederland, CO 80466*

Location: Colorado; Boulder Co.; Eldora; 39°58'N, 105°38'W; East Portal Quadrangle, USGS. **Continuity:** Established 1987. **Size:** 15.0 ha (500 × 300 m, laid by compass and tape). **Description of Plot:** Stand includes a mixture of size classes. Small openings exist within stand, some seasonally wet and dominated by willows. [From 1987 report.] Trees 10 cm dbh and over, based on fifteen 0.04 ha square samples, 1100/ha living, 253/ha standing dead; total basal area 50.4 m²/ha living, 16.3 m²/ha standing dead. Species comprising 100% of the total number of trees [figures after each give number of trees/ha, relative density (%), relative dominance, frequency in that sequence]: Subalpine Fir, 680, 62, 28, 93; Engelmann Spruce, 420, 38, 72, 100. Living trees by diameter size class [figures after each give number of trees/ha, relative density (%), basal area in m²/ha, relative dominance]: (10–14 cm) 440, 40, 4.5, 9; (30–34 cm) 80, 7, 6.3, 13; (35–39 cm) 67, 6, 6.6, 13; (40–44 cm) 33, 3, 4.6, 9; (45–49 cm) 33, 3, 5.8, 11; (50–54 cm) 7, 1, 1.4, 3; (55–59 cm) 7, 1, 1.7, 3; (≥ 60 cm) 7, 1, 5.4, 11. Shrub stems/ha 2,361; ground cover 57%; canopy cover 38%; average canopy height 19 m (range 13–24 m). **Edge:** E and W edge are the same forest type as the study plot. S edge is old forest burn (1910) that is beginning to show signs of regeneration. N edge is meadow and willow wetland with scattered clusters of conifers. **Topography:** Site has 1–10% N/NE slope. **Elevation:** 3256–3305 m. **Weather:** Clear to cloudy, wind 0–32 kph and temperatures ranged from 8–19°C. The percentage of ground covered by snow was 100% on 23 May, 50% on 19 June, and 0% by 16 July. **Coverage:** 10 visits; 16.5 study-hours; 23 May–16 July; dawn–1100. **Census:** Ruby-crowned Kinglet, 16.0 (106); Yellow-rumped Warbler, 8.0 (53); Dark-eyed Junco, 8.0; Hermit Thrush, 7.0 (46); American Robin, 5.5 (36); Mountain Chickadee, 2.0; Red-breasted Nuthatch, 2.0; Lincoln's Sparrow, 2.0; Pine Grosbeak, 2.0; Pine Siskin, 2.0; Northern Flicker, 1.0; Olive-sided Flycatcher, 1.0; Gray Jay, 1.0; Brown Creeper, 1.0; Wilson's Warbler, 1.0; Cassin's Finch, 1.0; White-breasted Nuthatch, 0.5; Townsend's Solitaire, 0.5; Hairy Woodpecker, +; Three-toed Woodpecker, +; Golden-crowned Kinglet, +; Brown-headed Cowbird, +. **Total:** 22 species; 61.5 territorial males (410/km²). **Nests Found:** Gray Jay, Mountain Chickadee, and American Robin. **Visitors:** Red-tailed Hawk, Broad-tailed Hummingbird, Western Wood-Pewee, Dusky Flycatcher, Western Flycatcher, Violet-green Swallow, Clark's Nutcracker, Mountain Bluebird, Red Crossbill, Evening Grosbeak.

34. RED PINE PLANTATION

PLANTACIÓN DE PINO ROJO

ANDREW MAGEE

*White Memorial Conservation Center
Litchfield, CT 06759*

Location: Connecticut; Litchfield Co.; East Morris; 41°42'N, 73°10'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1978; 11 consecutive yrs. **Size:** 8.5 ha. **Description of Plot:** See *Amer. Birds* 33:72 (1979). The name of the plot no longer describes the habitat. We have retained it, however, for the sake of continuity. **Weather:** During the census period the minimum temperature varied from 1.8–13.9°C (average 8.3°C); high temperatures ranged from 14.4–28.9°C (average 23.9°); total precipitation for the 10-day period was 0.5 cm. **Coverage:** 12 study-hours; 27 May; 2, 4, 5 June; 0700–2130. **Census:** Veery, 12.0 (141); Gray Catbird, 12.0; American Redstart, 11.0 (129); Wood Thrush, 10.0 (117); Chestnut-sided Warbler, 6.0 (70); Rose-breasted Grosbeak, 6.0; Common Yellowthroat, 5.5 (64); Red-eyed Vireo, 5.0 (58); Northern Flicker, 3.0 (35); Blue Jay, 3.0; Black-capped Chickadee, 3.0; American Robin, 3.0; Blue-winged Warbler, 3.0; Black-and-white Warbler, 3.0; Ovenbird, 3.0; Rufous-sided Towhee, 3.0; Northern Oriole, 3.0; Ruby-throated Hummingbird,

2.0; Great Crested Flycatcher, 2.0; Yellow-throated Vireo, 2.0; Black-throated Blue Warbler, 2.0; Song Sparrow, 2.0; Ruffed Grouse, 1.0; Yellow-bellied Sapsucker, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; Eastern Phoebe, 1.0; Blue-gray Gnatcatcher, 1.0; Solitary Vireo, 1.0; Louisiana Waterthrush, 1.0; Canada Warbler, 1.0; Brown-headed Cowbird, 1.0; Purple Finch, 1.0; Barred Owl, 0.5; American Crow, 0.5; White-breasted Nuthatch, 0.5; Scarlet Tanager, 0.5; Northern Cardinal, 0.5; Broad-winged Hawk, +; Pileated Woodpecker, +; Magnolia Warbler, +. **Total:** 42 species; 119 territorial males (1400/km²). **Remarks:** In this, the 10th breeding season since the clear-cutting of the Red Pine in the winter of 1978–79, the number of territorial males on this census area was the second highest we have recorded and the number of species was also above average. Veery, American Redstart, Wood Thrush, and Rose-breasted Grosbeak were all observed in record numbers higher than their pre-cut numbers. Purple Finch and Magnolia Warbler were new to the plot. Three species have never recovered from the cutting: Ovenbird down from 15 in 1978 to 3, Solitary Vireo down from 5 in 1978 to 1, and Blackburnian Warbler down from 5 in 1978 to 0. **Other Participants:** Gordon Loery.

35. MATURE WHITE SPRUCE PLANTATION

PLANTACIÓN MADURA DE ABETO BLANCO

JULIET K. MARKOWSKY

*1 Edgewood Drive
Orono, ME 04473*

Location: Maine; Penobscot Co.; Old Town; 44°57'N, 68°41'W; Orono Quadrangle, USGS. **Continuity:** Established 1985; 4 consecutive yrs. **Size:** 4.05 ha. **Description of Plot:** [From 1985 report.] This plantation was started in the 1920's and has some naturally occurring White Pine in it. It is primarily flat and has a well-developed understory due to an open canopy (the plantation has been thinned twice). Understory consists of Speckled Alder swales, Balsam Fir, Red Maple, Eastern Hemlock, Quaking Aspen. White Spruce and Eastern White Pine trunks are mostly in C (23–38 cm) and D (38–53 cm) size classes as measured with a Biltmore stick. White Spruce 55%, Eastern White Pine 20%, Balsam Fir 5%, Red Maple 5%, Eastern Hemlock 4%, snag 4%, Paper Birch 4%, Quaking Aspen 1%; ground cover, 80% (determined by random sightings through ocular tube); canopy cover 70%; average canopy height 19 m, range 15–20 m. **Water:** Stream > 1 m wide; standing water 1 m across and 3 m deep. **Coverage:** 9 visits; 25 study-hours; 0500–1000. **Weather:** Late May and June were dry and warm compared to average. **Census:** White-throated Sparrow, 4.0 (100); Golden-crowned Kinglet, 3.0 (75); Red-eyed Vireo, 3.0; Northern Parula, 3.0; Blackburnian Warbler, 3.0; Ovenbird, 3.0; Great Crested Flycatcher, 2.0; Black-capped Chickadee, 2.0; Red-breasted Nuthatch, 2.0; American Robin, 2.0; Nashville Warbler, 2.0; Cape May Warbler, 2.0; Black-and-white Warbler, 2.0; American Redstart, 2.0; Canada Warbler, 2.0; Purple Finch, 2.0; Broad-winged Hawk, 1.0; Ruffed Grouse, 1.0; Yellow-bellied Sapsucker, 1.0; Northern Flicker, 1.0; Eastern Wood-Pewee, 1.0; Blue Jay, 1.0; Veery, 1.0; Hermit Thrush, 1.0; Wood Thrush, 1.0; Tennessee Warbler, 1.0; Magnolia Warbler, 1.0; Yellow-rumped Warbler, 1.0; Black-throated Green Warbler, 1.0; Pine Warbler, 1.0; Bay-breasted Warbler, 1.0. **Total:** 31 species; 54 territorial males (1350/km²). **Visitors:** Downy Woodpecker, Hairy Woodpecker, Pileated Woodpecker, Yellow-bellied Flycatcher, American Crow, Common Raven, Brown Creeper, Cedar Waxwing, Solitary Vireo, Blackpoll Warbler, Northern Waterthrush, Scarlet Tanager, Rose-breasted Grosbeak, Pine Siskin, Evening Grosbeak. **Remarks:** Number of species (31) and number of breeding pairs (52) increased since thinning in Jan. 1987. Also, more White-throated Sparrows; more flycatchers in openings; no decline in canopy species such as Golden-crowned Kinglet or Blackburnian Warbler.

36. JACK PINE FOREST BOSQUE DE PINOS DE JACK

TERRY WIENS

*Whitefish Point Bird Observatory
409 West E. Avenue
Kalamazoo, MI 49007*

Location: Michigan; Chippewa Co.; Paradise; 46°45'N, 85°06'W; Vermillion SE and Shell-drake Quadrangles, USGS. **Continuity:** Established 1985; 4 consecutive yrs. **Size:** 16.0 ha. **Description of Plot:** [From 1985 report.] The dominant canopy tree is Jack Pine. Most prominent in the understory are dead trees, Jack Pine, Red Maple, and Red Pine. The ground cover is primarily Bracken Fern, Black Huckleberry, Aromatic Wintergreen, Trailing Arbutus, mosses, and lichens. A quantitative survey of the vegetation gave the following results: Trees 7.6 cm dbh and over, based on ten 0.04-ha circular samples, 1378/ha; total basal area 25.3 m²/ha. Species comprising 90% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): Jack Pine 1120, 81, 82, 100; dead trees 178, 13, 9, 100. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6–15.2 cm) 915, 66, 9.6, 38; B (15.2–22.9 cm) 370, 27, 9.6, 38; C (22.9–38.1 cm) 85, 6, 5.1, 20; D (38.1–53.3 cm) 7, 1, 1.0, 4. Shrub stems 690/ha; ground cover 46%; average canopy height 13 m (range 12–15 m). **Edge:** Bordered on all sides by similar forest. **Topography:** Mostly flat with a few small ridges running SE-NW. **Elevation:** 197 m. **Weather:** Mostly clear, occasionally partly cloudy to overcast; calm with occasional slight to moderate winds; temperatures variable and ranging from 0–20°C. **Coverage:** 11 visits; 26 study-hours; 7–27 June; 0401–0647 or 2042–2237 EST. **Census:** Black-throated Green Warbler, 5.5 (34); Ovenbird, 4.5 (28); Nashville Warbler, 3.0 (18); Hermit Thrush, 2.0; Yellow-rumped Warbler, 1.5; Chipping Sparrow, 1.5; Dark-eyed Junco, 1.0; Black-capped Chickadee, 0.5; Least Flycatcher, +; Solitary Vireo, +. **Total:** 10 species; 19.5 territorial males (121/km²). **Nests Found:** Dark-eyed Junco (5 eggs). **Visitors:** Great Blue Heron, Common Nighthawk, Belted Kingfisher, Eastern Wood-Pewee, Blue Jay, American Crow, Common Raven, Eastern Bluebird, Cedar Waxwing, Pine Warbler, Red Crossbill, Evening Grosbeak.

37. UPLAND SCOTCH PINE PLANTATION PLANTACIÓN EN ALTURA DE PINO ESCOCÉS

ELIZABETH W. BROOKS

*1435 Waterwells Road
Alfred Station, NY 14803*

Location: New York; Allegany Co.; Alfred; 42°07'N, 77°45'W; Andover Quadrangle, USGS. **Continuity:** Established 1969; 20 consecutive yrs. **Size:** 9.3 ha. **Description of Plot:** See *Aud. Field Notes* 23:743–744 (1969) and an updated description in *Amer. Birds* 38:38 (1984). **Coverage:** 11 visits; 14 study-hours; 20 Apr.–16 Aug.; 0850–2030 EDT. **Census:** Chipping Sparrow, 7.0 (75); Common Yellowthroat, 4.0 (43); Song Sparrow, 4.0; American Robin, 3.0 (32); Cedar Waxwing, 3.0; Magnolia Warbler, 3.0; Rufous-sided Towhee, 3.0; Field Sparrow, 3.0; Alder Flycatcher, 2.0; Yellow-rumped Warbler, 2.0; Indigo Bunting, 2.0; Purple Finch, 2.0; Ruffed Grouse, 1.0; American Woodcock, 1.0; Gray Catbird, 1.0; Nashville Warbler, 1.0; Dark-eyed Junco, 1.0; Black-capped Chickadee, +. **Total:** 18 species; 43 territorial males (462/km²). **Visitors:** Black-billed Cuckoo, Eastern Kingbird, Blue Jay, American Crow, Red-breasted Nuthatch, House Wren, Golden-crowned Kinglet, Eastern Bluebird, Solitary Vireo, Blue-winged Warbler, Yellow Warbler, Blackburnian Warbler, Northern Cardinal, American Goldfinch. **Nests Found:** Cedar Waxwing (1), Yellow-rumped Warbler (2), Chipping Sparrow (4), Song Sparrow (2). **Remarks:** Altered habitat was responsible for the continuing downward trend in most species. **Acknowledgments:** Ap-

preciation to Rick Walker for weather data, to Tom and Kathy Kent for permission to use the land to conduct the study, and to Clarence Klingensmith for assistance with field work.

38. UPLAND MIXED PINE-SPRUCE-HARDWOOD PLANTATION

PLANTACIONES MIXTAS DE PINO-ABETO MADERAS DURAS EN ALTURA

ELIZABETH W. BROOKS

1435 Waterwells Road
Alfred Station, NY 14803

Location: New York; Allegany Co.; Alfred; 42°08'N, 77°45'W; Andover Quadrangle, USGS. **Continuity:** Established 1974; 15 consecutive yrs. **Size:** 16.6 ha. **Description of Plot:** See *Amer. Birds* 28:699-700 (1974). **Coverage:** 9 visits; 19 study-hours; 9 May-31 Aug. **Weather:** Data collected at the Alfred Cooperative Weather Station indicated that average daily temperatures in May and July were warmer than normal while June was slightly below normal, with an especially cold period during the second half of the month. Total precipitation in May (0.8 cm) and June (4.6 cm) was less than a third of normal precipitation for the period while the total for July (17.6 cm) was one of the wettest on record. **Census:** Black-throated Green Warbler, 13.0 (78); Golden-crowned Kinglet, 10.0 (60); Blackburnian Warbler, 10.0; Magnolia Warbler, 5.0 (30); Yellow-rumped Warbler, 5.0; Dark-eyed Junco, 5.0; Black-capped Chickadee, 4.0 (24); Blue Jay, 3.0 (18); Chipping Sparrow, 3.0; Red-breasted Nuthatch, 2.0; Brown Creeper, 2.0; American Robin, 2.0; Ovenbird, 2.0; Common Yellowthroat, 2.0; Indigo Bunting, 2.0; Sharp-shinned Hawk, 1.0; Downy Woodpecker, 1.0; House Wren, 1.0; Winter Wren, 1.0; Veery, 1.0; Wood Thrush, 1.0; Solitary Vireo, 1.0; Chestnut-sided Warbler, 1.0; Mourning Warbler, 1.0; Scarlet Tanager, 1.0; Song Sparrow, 1.0; Brown-headed Cowbird, 1.0; Purple Finch, 1.0; Broad-winged Hawk, +; Barred Owl, +; Pileated Woodpecker, +; American Crow, +; White-breasted Nuthatch, +; Gray Catbird, +. **Total:** 34 species; 83 territorial males (500/km²). **Visitors:** Red-shouldered Hawk, Wild Turkey, Yellow-billed Cuckoo, Eastern Wood-Pewee, Great Crested Flycatcher, Common Raven, Hermit Thrush, Cedar Waxwing, Red-eyed Vireo, Canada Warbler, Rose-breasted Grosbeak. **Remarks:** One House Wren nest found. There was no additional logging done in the study area this year. Sharp-shinned Hawk, Winter Wren, and Gray Catbird were new to the plot. The Golden-crowned Kinglet population has increased but not to the level (mean = 11.7) recorded from 1974-76. Magnolia Warbler continues to decline from a mean of 10.6 for 1974-78. **Acknowledgments:** Appreciation to Rick Walker for weather data.

39. UPLAND CHRISTMAS TREE FARM FINCAS DE ARBOLES DE NAVIDAD EN ALTURA

ELIZABETH W. BROOKS

1435 Waterwells Road
Alfred Station, NY 14803

Location: New York; Allegany Co.; Andover; 42°10'N, 77°50'W; Andover Quadrangle, USGS. **Continuity:** Established 1983; 6 consecutive yrs. **Size:** 10.7 ha. **Description of Plot:** See *Amer. Birds* 38:91 (1984). **Coverage:** 13 visits; 19 study-hours; 9 May-31 August. **Census:** Chipping Sparrow, 17.0 (158); Song Sparrow, 13.0 (121); Field Sparrow, 9.0 (84); Savannah Sparrow, 4.0 (37); American Woodcock, 3.0 (28); Eastern Kingbird, 2.0; Cedar Waxwing, 2.0; Grasshopper Sparrow, 2.0; Bobolink, 2.0; Purple Finch, 2.0; American Robin, 1.0; Yellow-rumped Warbler, 1.0; Dickcissel, 1.0; Rufous-sided Towhee, 1.0; Red-winged Blackbird, 1.0; Brown-headed Cowbird, 1.0; American Goldfinch, 1.0; Common Yellowthroat, 0.5; Indigo Bunting, 0.5; Horned Lark, +; Gray Catbird, +; Brown Thrasher, +; Chestnut-sided Warbler, +. **Total:** 23 species; 64 territorial males (598/km²). **Visitors:** Northern Harrier, Black-billed Cuckoo, Yellow-billed Cuckoo, Great Crested Flycatcher,

Common Raven, Hermit Thrush, Cedar Waxwing, Red-eyed Vireo, Canada Warbler, Rose-breasted Grosbeak. **Nests Found:** Eastern Kingbird (2), American Robin (2), Cedar Waxwing (1), Yellow-rumped Warbler (1), Dickcissel (1), Chipping Sparrow (7), Field Sparrow (1), Song Sparrow (6), Purple Finch (1). The Savannah Sparrow nest and a Song Sparrow nest were parasitized by cowbirds. **Remarks:** New species for the plot this year were Chestnut-sided Warbler, Yellow-rumped Warbler and Dickcissel. Prairie Warbler was absent for the first time in 6 years. Total number of territorial males was the highest ever. A Northern Harrier spent over 1 hour hunting in the plantation on 1 visit. Highlight of the season was a nesting Dickcissel, the third post-1875 record in New York State. The nest with 5 eggs, discovered on 29 June, was located 0.6 m up in an Austrian Pine. The nest was abandoned and collected on 12 July. **Acknowledgments:** Thanks to Harold Ward for doing a woodcock survey and to Tom and Kathy Kent for permission to conduct the study on their land.

40. MATURE SPRUCE FOREST

BOSQUE DE ABETOS MADURO

KENNETH L. CROWELL

*Department of Biology
St. Lawrence University
Canton, NY 13617*

Location: Maine; Hancock Co.; Deer Isle; 44°11'N, 68°42'W; Deer Isle Quadrangle, USGS. **Continuity:** Established 1987. **Size:** 4.0 ha. **Description of Plot:** Dominant canopy species: Red Spruce, White Spruce, and Paper Birch; dominant shrubs: Red Spruce, Balsam Fir; ground cover: Red Spruce and mosses. **Weather:** Unusually dry and warm; temperatures ranged from 8–30°C; rain 1.3 cm. **Coverage:** 7 visits; 5 study-hours; 25 June–8 July; 0500–1100 EDT. **Census:** Golden-crowned Kinglet, 2.0; Black-throated Green Warbler, 2.0; Dark-eyed Junco, 2.0; Yellow-rumped Warbler, 1.5; Brown Creeper, 1.0; Hairy Woodpecker, 0.5; Blue Jay, 0.5; Black-capped Chickadee, 0.5; Blackburnian Warbler, 0.5; American Crow, +; Common Raven, +; Red-breasted Nuthatch, +. **Total:** 12 species; 10.5 territorial males (262/km²). **Visitors:** Sharp-shinned Hawk, Boreal Chickadee. **Remarks:** No Northern Parula and low numbers of Blackburnian Warbler are disturbing.

41. YOUNG SPRUCE FOREST

BOSQUE DE ABETOS JOVEN

KENNETH L. CROWELL

*Department of Biology
St. Lawrence University
Canton, NY 13617*

Location: Maine; Hancock Co.; Deer Isle; 44°10'N, 68°43'; Deer Isle Quadrangle, USGS. **Continuity:** Established 1977; 8 intermittent yrs. **Size:** 4.5 ha. **Description of Plot:** See *Amer. Birds* 32:72 (1978). **Weather:** Warm and dry; temperatures 8–30°C; rain 1.3 cm. **Coverage:** 11 visits; 7 study-hours; 24 June–7 July; 0500–2000. **Census:** Magnolia Warbler, 6.0 (133); Black-throated Green Warbler, 4.0 (88); White-throated Sparrow, 4.0; Dark-eyed Junco, 2.5; Blue Jay, 1.5; Black-capped Chickadee, 1.5; Yellow-rumped Warbler, 1.5;

Mourning Dove, 1.0; Hairy Woodpecker, 1.0; Northern Flicker, 1.0; Winter Wren, 1.0; Golden-crowned Kinglet, 1.0; Swainson's Thrush, 1.0; Nashville Warbler, 1.0; Song Sparrow, 1.0; American Crow, +; Common Raven, +; Red-breasted Nuthatch, +. **Total:** 18 species; 29 territorial males (644/km²). **Visitors:** Osprey, Cedar Waxwing. **Remarks:** No American Redstart! Fewer Swainson's Thrush. Kinglets are new which indicates continuing growth of trees.

42. LIMBER PINE-JUNIPER WOODLAND

ARBOLADO DE PINO DE LIMBER-JUNÍPERO

JOHN P. KELLY AND SUSAN S. KELLY

Audubon Cypress Grove Preserve

P.O. Box 753

Marshall, CA 94940

Location: Wyoming; Fremont Co.; Dubois; 43°26'N, 109°34'; Torrey Lake Quadrangle, USGS. **Continuity:** Established 1986; 3 consecutive yrs. **Size:** 40.0 ha. **Description of Plot:** Limber Pine-juniper woodland, bordered below (S) by sagebrush flats and managed grassland. Quantitative vegetation analysis completed. **Edge and Topography:** Bordered on N, E and W by similar Limber Pine-juniper woodland. Gently sloping to steep south-facing slopes. **Elevation:** 2317–2470 m. **Weather:** Generally hot and dry; temperatures ranged from 14–24°C; wind 0–24 kph; cloud cover 0–75%; no precipitation. **Coverage:** 5 visits; 14 study-hours; 17, 20, 30 June, 3, 9 July; 0645–1030. **Census:** Dusky Flycatcher, 8.0 (20); Rock Wren, 7.5 (18); Chipping Sparrow, 6.0 (15); Mountain Chickadee, 5.0; Yellow-rumped Warbler, 5.0 (12); Green-tailed Towhee, 5.0; Mountain Bluebird, 4.0 (10); Townsend's Solitaire, 4.0; Northern Flicker, 3.0 (7); American Kestrel, 1.0; Mourning Dove, 1.0; American Robin, 1.0; Brown-headed Cowbird, 1.0; Cassin's Finch, 1.0. **Total:** 14 species; 52.5 territorial males (131/km²). **Visitors:** Sharp-shinned Hawk, Cooper's Hawk, Common Poorwill, White-throated Swift, Violet-green Swallow, Clark's Nutcracker, Black-billed Magpie, Common Raven, White-breasted Nuthatch, Brewer's Blackbird, Pine Siskin. **Remarks:** Severe drought conditions occurred throughout the Wind River Basin. **Acknowledgments:** This work was supported by the Rocky Mountain Region National Audubon Society.

43. MATURE UPPER MIXED-CONIFEROUS FOREST AND MONTANE CHAPARRAL

BOSQUE MADURO MIXTO DE CONÍFEROS Y CHAPARRAL MONTANO

BARBARA R. NORTH

USDA Forest Service

Pacific Southwest Forest and Range Experiment Station

2081 E. Sierra Ave.

Fresno, CA 93710

Location: California; Fresno Co.; 12 km E of Shaver Lake; 37°06'N, 119°04'; Huntington Lake SW Quadrangle, USGS. **Continuity:** Established 1985; 4 consecutive yrs. **Size:** 42.3 ha. (650 m square, measured with compass and tape). **Description of Plot:** See 1985 report. **Edge:** Bordered on 2 sides by old-growth forest, on another by a rocky slope with open forest and brush, and on another by an open, brushy stream channel. A large grassy meadow is located 20–100 m to the SW past a forest buffer zone. **Topography:** Steep SW-facing slope; 1830–1951 m. **Weather:** Generally fair, with temperatures ranging from freezing or slightly below at the beginning of the earlier visits in May to 11°C at the beginning on 24

June. Temperatures at the end of visits ranged from 10–15°C early in the season and around 30°C later in June. **Coverage:** 12 visits; 103 study-hours; 23 May–24 June; 0600–1600 PDT. **Census:** Fox Sparrow, 66.0 (156); Golden-crowned Kinglet, 51.0 (120); Hermit Warbler, 40.0 (94); Dark-eyed Junco, 28.0 (66); Warbling Vireo, 26.0 (61); Brown Creeper, 22.5 (53); Yellow-rumped Warbler, 20.5 (48); Solitary Vireo, 19.0 (44); MacGillivray's Warbler, 18.5 (43); Dusky Flycatcher, 17.5 (41); Hammond's Flycatcher, 16.5 (39); Purple Finch, 16.0 (37); Nashville Warbler, 15.5 (36); Western Wood-Pewee, 12.5 (29); Mountain Chickadee, 12.0 (28); Western Tanager, 11.5 (27); Red-breasted Nuthatch, 11.0 (26); Hermit Thrush, 8.5 (20); Rufous-sided Towhee, 6.0 (14); Mountain Quail, 5.0 (11); Steller's Jay, 5.0; White-headed Woodpecker, 3.5 (8); American Robin, 3.5; Winter Wren, 3.0 (7); Black-headed Grosbeak, 3.0; Yellow Warbler, 2.5; Band-tailed Pigeon, 1.5; Red-breasted Sapsucker, 1.5; Hairy Woodpecker, 1.5; Pileated Woodpecker, 1.5; Common Raven, 1.5; Northern Flicker, 1.0; Olive-sided Flycatcher, 1.0; Western Flycatcher, 1.0; House Wren, 1.0; Townsend's Solitaire, 1.0; Wilson's Warbler, 1.0; Cassin's Finch, 1.0; Lesser Goldfinch, 1.0; Calliope Hummingbird, 0.5; Green-tailed Towhee, 0.5; Chipping Sparrow, 0.5; Brown-headed Cowbird, 0.5; Pine Siskin, 0.5; Sharp-shinned Hawk, +; Cooper's Hawk, +; Northern Goshawk, +; Red-tailed Hawk, +; Northern Pygmy-Owl, +; Spotted Owl, +; Lincoln's Sparrow, +; Brewer's Blackbird, +. **Total:** 52 species; 462 territorial males (1092/km²). **Visitors:** Vaux's Swift, White-throated Swift, Ruby-crowned Kinglet, Western Bluebird, Red Crossbill, Evening Grosbeak. **Nests Found:** Brown Creeper (8), Hammond's Flycatcher (7), Red-breasted Nuthatch (6), American Robin, Mountain Chickadee (4), Warbling Vireo, Western Tanager, Dusky Flycatcher (3), Red-breasted Sapsucker (2), White-headed Woodpecker, Solitary Vireo, Calliope Hummingbird (1), Pileated Woodpecker, Western Wood-Pewee, Winter Wren, Townsend's Solitaire, Yellow-rumped Warbler. **Remarks:** Detailed measurements of the nest tree/shrub and surrounding vegetation were made at all nests. Data will be added to an accumulating computer file of similar data from previous years. **Other Observers:** Penelope R. Delevoryas, and John D. Gannaway. **Acknowledgments:** This effort is part of a study of observer variability in spot mapping being conducted by Dr. Jared Verner, USDA Forest Service.

44. MOUNTAIN MEADOW AND OPEN CONIFEROUS FOREST

PRADERAS MONTANAS Y BOSQUES ABIERTOS DE CONÍFEROS

ARTHUR AND HELEN STILES-WAINWRIGHT

150 So. 36th St.
Boulder, CO 80303

Location: Colorado; Boulder Co.; Boulder; 39°58'12"N, 105°20'16"W; Eldorado Springs Quadrangle, USGS. **Continuity:** Established 1981; 8 consecutive yrs. **Size:** 13.0 ha. **Description of Plot:** See *Amer. Birds* 36:90 (1982). **Coverage:** 11 visits; 34 study-hours; 25 May–6 Aug.; 0630–0830, 0900–1100, 1500–1800, 2030–2230. **Weather:** Rather dry, warm spring. Summer hot but occasional good rains. **Census:** House Wren, 6.0 (46); Broad-tailed Hummingbird, 5.0 (38); Chipping Sparrow, 5.0; Dark-eyed Junco, 5.0; Mountain Bluebird, 4.0 (30); American Robin, 4.0; Northern Flicker, 3.0 (23); Tree Swallow, 3.0; Violet-green Swallow, 3.0; Mountain Chickadee, 3.0; Yellow-rumped Warbler, 3.0; Vesper Sparrow, 3.0; Pine Siskin, 3.0; Blue Grouse, 2.0; Pygmy Nuthatch, 2.0; Western Bluebird, 2.0; Western Tanager, 2.0; Mallard, 1.0; Common Nighthawk, 1.0; Red-naped Sapsucker, 1.0; Williamson's Sapsucker, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Western Wood-Pewee, 1.0; Western Flycatcher, 1.0; Barn Swallow, 1.0; White-breasted Nuthatch, 1.0; Townsend's Solitaire, 1.0; Green-tailed Towhee, 1.0; Cassin's Finch, 1.0; Steller's Jay, 0.5; Common Raven, 0.5. **Total:** 32 species; 72 territorial males (553/km²). **Remarks:** Fewer birds overall, but more woodpeckers and sapsuckers noted in area of dead timber, perhaps because area is growing up again; more trees, no farming or grazing for last 10–15 years. Western Bluebirds nesting only since 1986.

45. TRANSITION FOREST AND THICKET

TRANSICIÓN DE BOSQUE-MATORRAL

ROBERT A. ASKINS

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New London, CT 06320*

Location: Connecticut; New London Co.; New London; Connecticut College Arboretum; 41°22'N, 72°08'; Uncasville Quadrangle, USGS. **Continuity:** Established 1955 (1953); 18 intermittent yrs. **Size:** 6.5 ha. **Description of Plot:** See *Amer. Birds* 31:57-58 (1977). **Weather:** Dry and cool (7-21°C) during most of the study period. **Coverage:** 11 visits; 9 study-hours; 22 May-8 July; 0530-0830 EDT. **Census:** Gray Catbird, 5.5 (84); Chestnut-sided Warbler, 4.0 (61); Red-eyed Vireo, 3.0 (46); Blue Jay, 2.5; White-eyed Vireo, 2.5; Blue-winged Warbler, 2.0; House Wren, 1.5; Wood Thrush, 1.5; Common Yellowthroat, 1.5; Rufous-sided Towhee, 1.5; Brown-headed Cowbird, 1.5; Eastern Wood-Pewee, 1.0; Black-capped Chickadee, 1.0; Tufted Titmouse, 1.0; American Robin, 1.0; Veery, 0.5; Hooded Warbler, 0.5; Northern Cardinal, 0.5; Downy Woodpecker, +; Hairy Woodpecker, +; Great Crested Flycatcher, +; American Crow, +; White-breasted Nuthatch, +; Carolina Wren, +; Northern Mockingbird, +; Black-and-white Warbler, +; Worm-eating Warbler, +; Ovenbird, +; Scarlet Tanager, +; Song Sparrow, +; Northern Oriole, +; House Finch, +. **Total:** 32 species; 32.5 territorial males (500/km²). **Remarks:** There has been surprisingly little change in the bird populations in this study area since 1982. The area was an old field when censuses began in 1953. From 1953 to 1982 the species composition changed dramatically as old-field and thicket species declined and disappeared, and forest species became established. The number of species and individuals of forest birds has not increased during the last 7 years, however, and the populations of some thicket species (White-eyed Vireo, Blue-winged Warbler, and Chestnut-sided Warbler) have not declined. The growth of trees and closing of the canopy may have been slowed in recent years because of an introduced woody vine, Oriental Bittersweet *Celastrus orbiculatus*. As a result, many sections of the study area are more similar to a thicket than a young forest. **Other Observers:** Wendy R. Dreyer and Margaret J. Philbrick. **Acknowledgments:** This project was supported with funds from the Connecticut College Arboretum. Glenn Dreyer and William Niering helped us in numerous ways.

46. SUBURBAN WILDLIFE SANCTUARY-MIXED HABITAT

HÁBITAT MIXTO-SANTUARIO DE VIDA SILVESTRE SUB-URBANO

ED HIESTAND

*Nature Center for Environmental Activities
P.O. Box 165
Westport, CT 06881*

Location: Connecticut; Fairfield Co.; Westport; 41°08'N, 73°22'; Norwalk North Quadrangle, USGS. **Continuity:** Established 1971; 8 intermittent yrs. **Size:** 24.7 ha. **Description of Plot:** See *Amer. Birds* 25:1010-1011 (1971) and as amended in 1986. **Weather:** Started cold and wet and gave way to hot and humid conditions. This was the second wet spring in a row. **Coverage:** 12 visits; 25 study-hours; 9-26 June; 0530-0800 and 1800-2100 (2 visits). **Census:** House Wren, 8.0 (32); Blue-winged Warbler, 6.0 (24); Black-capped Chickadee, 5.0 (20); Tufted Titmouse, 5.0; Gray Catbird, 5.0; Mourning Dove, 4.0 (16); White-breasted Nuthatch, 4.0; Northern Cardinal, 4.0; Common Grackle, 4.0; Ring-necked Pheasant, 3.0 (12); Northern Flicker, 3.0; Blue Jay, 3.0; American Crow, 3.0; Indigo Bunting, 3.0; Mallard, 2.0; Red-bellied Woodpecker, 2.0; Downy Woodpecker, 2.0; Veery, 2.0; American Robin, 2.0; Brown-headed Cowbird, 2.0; House Finch, 2.0; House Sparrow, 2.0; Wood Duck, 1.0; Broad-winged Hawk, 1.0; Rock Dove, 1.0; Yellow-billed Cuckoo, 1.0; Eastern Screech-Owl, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Eastern Phoebe, 1.0; Great Crested Flycatcher, 1.0; Carolina Wren, 1.0; Wood Thrush, 1.0; Brown

Thrasher, 1.0; Ovenbird, 1.0; Common Yellowthroat, 1.0; Rufous-sided Towhee, 1.0; Chipping Sparrow, 1.0; Song Sparrow, 1.0; Northern Oriole, 1.0. **Total:** 40 species; 94 territorial males (380/km²). **Visitors:** Great Blue Heron, Green-backed Heron, Little Blue Heron, Snowy Egret, Black-crowned Night-Heron, Canada Goose, Ruffed Grouse, Chimney Swift, Belted Kingfisher, Northern Mockingbird, Red-winged Blackbird, Scarlet Tanager. **Nests Found:** Wood Duck, Mallard, Pileated Woodpecker, American Crow, Tufted Titmouse, House Wren (5), Brown Thrasher, Gray Catbird (2), Blue-winged Warbler (2), Indigo Bunting, House Finch (2). **Fledglings Seen:** Mallard, Ring-necked Pheasant, American Crow, House Wren, Brown Thrasher, Common Grackle. **Remarks:** Numbers on the sanctuary rebounded from the previous year's extremely low totals and approached 1986 totals. The number of species showed the most dramatic increase, rising from 26 species in 1987 to 40 species this year. Seven species showed increases, the only notable one being the White-breasted Nuthatch rising from 1 to 4. Nine species showed a decrease, but none by more than 2 territories. A remarkable 5 species were new to the census: Broad-winged Hawk, Yellow-billed Cuckoo, Eastern Screech-Owl, Ovenbird, and Chipping Sparrow. No changes on the sanctuary were noted to account for this, however, several large tracts of deciduous forest near the property have recently been destroyed for suburban housing developments.

47. DECIDUOUS FOREST WITH POND AND BROOK

BOSQUE DECIDUO CON CHARCAS Y ARROYOS

JOHN BROTHERTON

249 E. Crescent Ave.

Mahwah, NJ 07430

Location: New Jersey; Bergen Co.; Mahwah; Campgaw Mountain Reservation; 41°04'N, 74°11'W; Ramsey NJ-NY SW/4 Ramapo 15 Quadrangle, USGS. **Continuity:** Established 1964; 25 consecutive yrs. **Size:** 16.2 ha. **Description of Plot:** See *Aud. Field Notes* 19:623-624 (1965). **Weather:** Normal. **Coverage:** 9 visits; 9 study-hours; 17 May-16 June; 0530-0630. **Census:** Red-eyed Vireo, 4.0 (24); Ovenbird, 4.0; Veery, 3.0 (18); Gray Catbird, 3.0; Northern Flicker, 2.0; Black-capped Chickadee, 2.0; Tufted Titmouse, 2.0; European Starling, 2.0; Common Yellowthroat, 2.0; Northern Cardinal, 2.0; Yellow-billed Cuckoo, 1.0; Red-bellied Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; Great Crested Flycatcher, 1.0; Tree Swallow, 1.0; Blue Jay, 1.0; House Wren, 1.0; Wood Thrush, 1.0; Blue-winged Warbler, 1.0; Louisiana Waterthrush, 1.0; Scarlet Tanager, 1.0; Rufous-sided Towhee, 1.0; Common Grackle, 1.0. **Total:** 23 species; 39 territorial males (240/km²). **Visitors:** Great Blue Heron, Green-backed Heron, Canada Goose, Wood Duck, Mallard, Ruffed Grouse, Spotted Sandpiper, Mourning Dove, Downy Woodpecker, Pileated Woodpecker, Eastern Phoebe, Eastern Kingbird, American Crow, White-breasted Nuthatch, American Robin, Black-and-white Warbler, American Redstart, Rose-breasted Grosbeak, Brown-headed Cowbird, Northern Oriole. **Remarks:** One family of 5 chickadees was seen on 14 June. **Other Observers:** John Bristow, Nancy Bristow, Kathryn Sjolander, and Jane White.

48. ABANDONED UPLAND PASTURE

PASTIZAL DE ALTURAS ABANDONADO

VIVIAN M. PITZRICK

Amity Lake

Belmont, NY 14813

Location: New York; Allegany Co.; Scio; 42°13'N, 77°59'W; Wellsville North Quadrangle, USGS. **Continuity:** Established 1984; 5 consecutive yrs. **Size:** 8.0 ha. **Description of Plot:** See 1984 report. **Weather:** Temperatures for every month of this study were above the normal average. Precipitation for May, June, and August was nearly 2.5 cm below normal, but averaged 3.5 cm above normal for April and July. **Coverage:** 14 visits; 32 study-hours; 4 April-26 August; 0620-1155 and 1955-2020 EDT. **Census:** Song Sparrow, 25.0 (312); Field Sparrow, 19.0 (237); Common Yellowthroat, 11.0 (137); Blue-winged Warbler, 10.0

(125); Rufous-sided Towhee, 9.0 (112); American Goldfinch, 9.0; Alder Flycatcher, 8.0 (100); Yellow Warbler, 8.0; Indigo Bunting, 8.0; Cedar Waxwing, 7.0 (87); Chipping Sparrow, 5.0 (62); American Woodcock, 4.0 (50); Chestnut-sided Warbler, 4.0; Black-billed Cuckoo, 3.0 (37); Tree Swallow, 3.0; Gray Catbird, 3.0; Black-capped Chickadee, 2.0; House Wren, 2.0; Nashville Warbler, 2.0; Red-tailed Hawk, 1.0; Barred Owl, 1.0; Great Crested Flycatcher, 1.0; Eastern Bluebird, 1.0; Brown Thrasher, 1.0; Prairie Warbler, 1.0; Northern Cardinal, 1.0; Brown-headed Cowbird, 1.0; Purple Finch, 1.0; Ruffed Grouse, 0.5; Rose-breasted Grosbeak, 0.5. **Total:** 30 species; 152 territorial males (1900/km²). **Visitors:** Canada Goose, Killdeer, Eastern Phoebe, Eastern Kingbird, Blue Jay, American Crow, Tufted Titmouse, Red-breasted Nuthatch, American Robin, Red-eyed Vireo, Dark-eyed Junco, Red-winged Blackbird. **Nests Found:** Tree Swallow (3), House Wren (3), Eastern Bluebird (2), Cedar Waxwing (4), Blue-winged Warbler (1), Yellow Warbler (4), Prairie Warbler (2; one deserted was later used by American Goldfinch), Rose-breasted Grosbeak (1), Chipping Sparrow (3), Field Sparrow (5), Song Sparrow (7), American Goldfinch (8). **Remarks:** Although Cedar Waxwing numbers were normal, fewer actually nested, probably a reflection of a poor berry and hawthorn fruit crop. A new visitor was Canada Goose which stayed well into the summer. While Blue-winged Warbler numbers increased, Alder Flycatcher, Chestnut-sided Warbler and Common Yellowthroat have decreased for two successive years. The American Goldfinch had the lowest population in the history of this study. Raccoon predation was again very severe, particularly on nest boxes.

49. ABANDONED PASTURE SCRUBLAND

PASTIZAL-MALEZA ABANDONADO

CHRIS ELLINGWOOD

1529 Weyburn St.
Ottawa, ONT K1G 0Y4

Location: Ontario; Ottawa-Carleton Co.; Kanata; 45°21'N, 75°54'. **Continuity:** Established 1982; 6 intermittent yrs. **Size:** 9.0 ha. **Description of Plot:** See *Amer. Birds* 37:76-77 (1983). **Weather:** Average temperatures 12-16°C; partly to mostly cloudy mainly; calm to light winds. **Coverage:** 8 visits; 17 study-hours; 4, 11, 18, 25 June; 2, 3, 16, 18 July; 0500-0730. **Census:** Song Sparrow, 6.0 (66); American Robin, 5.0 (55); White-throated Sparrow, 4.5 (50); Gray Catbird, 4.0 (44); Black-and-white Warbler, 3.5 (38); Yellow Warbler, 2.5; Field Sparrow, 2.5; Eastern Kingbird, 2.0; Black-capped Chickadee, 2.0; Great Crested Flycatcher, 1.5; Cedar Waxwing, 1.5; Yellow-rumped Warbler, 1.5; Northern Oriole, 1.5; Ruffed Grouse, 1.0; Spotted Sandpiper, 1.0; Black-billed Cuckoo, 1.0; Northern Flicker, 1.0; Blue Jay, 1.0; Veery, 1.0; Chestnut-sided Warbler, 1.0; Common Yellowthroat, 1.0; Downy Woodpecker, 0.5; Hairy Woodpecker, 0.5; Brown Thrasher, 0.5; Nashville Warbler, 0.5; Red-winged Blackbird, 0.5; Common Grackle, 0.5; Purple Finch, 0.5; Killdeer, +; Pileated Woodpecker, +; Eastern Wood-Pewee, +; Eastern Phoebe, +; American Crow, +; Red-eyed Vireo, +; American Redstart, +; Ovenbird, +; Rose-breasted Grosbeak, +; Brown-headed Cowbird, +; American Goldfinch, +. **Total:** 39 species; 49.5 territorial males (550/km²). **Visitors:** Great Blue Heron, Green-backed Heron, Mallard, Osprey, Sharp-shinned Hawk, Common Snipe, Purple Martin, Tree Swallow, Red-breasted Nuthatch, Scarlet Tanager. **Remarks:** The extremely low river level and dryness of marshy areas is reflected by the low number of territories for Yellow Warbler, Common Yellowthroat, and Red-winged Blackbird. As the trees and shrubs grow in this former abandoned pasture scrubland, there seems to be an increase in woodland species such as Veery, Yellow-rumped Warbler, Ovenbird, and Eastern Wood-Pewee. As a result, more species were observed on the census this year than ever before.

50. SCATTERED MIXED-CONIFEROUS FOREST IN SUBALPINE MEADOWS AND SPRUCE BOGS

BOSQUE MESOFÍTICO DISPERSO EN PRADERAS SUBALPINAS Y ABETOS

R. A. HUDSON

*P.O. Box 81
Bates, OR 97817*

Location: Oregon; Grant Co.; Bates; 44°45'N, 118°45'; Desolation Butte Quadrangle, USGS. **Continuity:** Established 1973; 16 consecutive yrs. **Size:** 32.38 ha. **Description of Plot:** See *Amer. Birds* 27:1002–1003 (1973). **Weather:** Temperatures 8–23°C; mostly clear on 7 visits, partly cloudy to cloudy on 3 visits; 3 cm precipitation during the study period. **Coverage:** 10 visits; 25 study-hours; 17 June–7 July; 0532–0740. **Census:** Chipping Sparrow, 7.0 (21); White-crowned Sparrow, 7.0; Cassin's Finch, 6.0 (18); Ruby-crowned Kinglet, 5.0 (15); Yellow-rumped Warbler, 4.0 (12); Lincoln's Sparrow, 4.0; American Robin, 3.0 (9); Fox Sparrow, 3.0; Mountain Bluebird, 2.0; Lazuli Bunting, 2.0; Steller's Jay, 1.0; Mountain Chickadee, 1.0. **Total:** 12 species; 45 territorial males (138/km²). **Visitors:** Calliope Hummingbird, Rufous Hummingbird, Northern Flicker, Gray Jay, Clark's Nutcracker, Golden-crowned Kinglet, Varied Thrush, Rock Wren, Brewer's Sparrow, Dark-eyed (Oregon) Junco, Pine Siskin, Evening Grosbeak. **Nests Found:** American Robin. **Remarks:** Like last year, Lazuli Buntings invaded the higher elevations perhaps because of the drought conditions in the lowlands. **Acknowledgments:** I am grateful to the Malheur Forest staff for their cooperation.

51. MIXED MESOPHYTIC WOODS, FIELDS, AND BRUSH

BOSQUE MESOFÍTICO-CAMPOS Y ARBUSTOS MIXTOS

RICHARD W. SIMMERS, JR.

*Rt. 6, Box 170
Cookeville, TN 38501*

Location: Tennessee; Putnam Co.; Macedonia; 36°10'N, 85°22'; Monterey Quadrangle, USGS. **Continuity:** Established 1977; 12 consecutive yrs. **Size:** 27.0 ha. **Description of Plot:** See *Amer. Birds* 32:80 (1978) and *Amer. Birds* 33:79 (1979). **Weather:** Last freeze on April 17. A very dry season with drought conditions by late May. The only substantial rain (2.5 cm) occurred on June 26. May on the cool side; hot weather predominated after 10 June; temperatures ranged from 0–30°C. **Coverage:** 29 visits; 41 study-hours; 6 March–28 June; 0508–1120 CDT. **Census:** Red-eyed Vireo, 23.0 (85); Northern Cardinal, 11.5 (42); Rufous-sided Towhee, 6.0 (22); Carolina Chickadee, 5.5 (20); Tufted Titmouse, 5.0 (18); Blue-gray Gnatcatcher, 4.5 (16); Yellow-breasted Chat, 4.5; Indigo Bunting, 4.5; Field Sparrow, 4.5; White-eyed Vireo, 4.0 (14); Prairie Warbler, 4.0; Kentucky Warbler, 3.5 (12); Scarlet Tanager, 3.5; Mourning Dove, 3.0 (11); Yellow-billed Cuckoo, 3.0; Acadian Flycatcher, 3.0; Black-and-white Warbler, 3.0; Brown-headed Cowbird, 3.0; Wood Thrush, 2.5; Downy Woodpecker, 2.0; Eastern Phoebe, 2.0; Worm-eating Warbler, 2.0; Common Yellowthroat, 2.0; White-breasted Nuthatch, 1.5; Yellow-throated Vireo, 1.5; Hooded Warbler, 1.5; Red-shouldered Hawk, 1.0; Northern Bobwhite, 1.0; Whip-poor-will, 1.0; Ruby-throated Hummingbird, 1.0; Red-bellied Woodpecker, 1.0; Eastern Wood-Pewee, 1.0; Great Crested Flycatcher, 1.0; Blue Jay, 1.0; Carolina Wren, 1.0; Brown Thrasher, 1.0; Ovenbird, 1.0; Summer Tanager, 1.0; Wild Turkey, 0.5; Barred Owl, 0.5; Hairy Woodpecker, 0.5; Pileated Woodpecker, 0.5; Eastern Bluebird, +; Yellow-throated Warbler, +. **Total:** 44 species; 128 territorial males (474/km²). **Visitors:** Turkey Vulture, American Woodcock, Chimney Swift, Puple Martin, American Crow, American Robin, Gray Catbird, Blue-winged Warbler, Pine Warbler, Cerulean Warbler, Blue Grosbeak, House Finch, American Goldfinch. **Nests Found:** Red-shouldered Hawk (?), Mourning Dove, Tufted Titmouse, Northern Cardinal. **Remarks:** The lack of Broad-winged Hawks nesting this year may be due to the centrally located pair of Red-shouldered Hawks. The Wild Turkey was heard

gobbling on the plot several times and seen once near the SE corner. Declines of more than one territory were noted for the Blue-gray Gnatcatcher, Black-and-white Warbler, Ovenbird, and Indigo Bunting. An immature Scarlet Tanager was observed on June 26 with a female. There was almost no mowing this year. Predators observed were House Cats (*Felis domesticus*) and various snakes.

52. YOUNG BLACK LOCUST SHRUBLAND

“Black Locust”-ARBUSTIVO JOVEN

SARAH MABEY, BILL MCSHEA, JAN BLEW, AND LISA HARTMAN

*Conservation and Research Center
Front Royal, VA 22630*

Location: Virginia; Warren Co.; Front Royal; 38°52'N, 78°07'; Front Royal Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** Dominant canopy trees: Black Locust and Flowering Dogwood; dominant shrubs: Flowering Dogwood and Coralberry; ground cover: dense over the entire plot consisting of grasses, wingstem, Coralberry, and wild berries. Canopy height averages 4 to 7 m. **Edge:** The northern edge of plot touches the edge of a young (20 yr old) Black Locust stand and the western edge borders a young forest of mixed composition. The remainder of plot surrounded by young shrubland. **Topography and Elevation:** There is a steady slope to the NW, leveling out for the last 120 m of the NW end of the plot; 384 m to 415 m. **Weather:** It was warm and humid with very little rain during this period. **Coverage:** 10 visits; 29 study-hours; 15 June-15 July; 0515-0920. **Census:** Field Sparrow, 6.5 (65); Gray Catbird, 6.0 (60); Yellow-breasted Chat, 5.0 (50); Rufous-sided Towhee, 4.5 (45); American Goldfinch, 4.0 (40); Common Yellowthroat, 3.5 (35); Prairie Warbler, 3.0 (30); Chipping Sparrow, 3.0; Blue Grosbeak, 2.0; House Wren, 1.0; Eastern Bluebird, 1.0; Northern Cardinal, 1.0; Indigo Bunting, 1.0; Blue-gray Gnatcatcher, 0.5. **Total:** 14 species; 42 territorial males (420/km²). **Visitors:** American Woodcock, Mourning Dove, Northern Flicker, Downy Woodpecker, Eastern Kingbird, Eastern Phoebe, American Crow, Blue Jay, Tufted Titmouse, Wood Thrush, Red-eyed Vireo, Blue-winged Warbler, Eastern Meadowlark, Grasshopper Sparrow, Song Sparrow. **Nests Found:** Gray Catbird, Northern Cardinal, Field Sparrow (2). **Fledglings:** Blue-gray Gnatcatcher, House Wren, Common Yellowthroat, Northern Cardinal, Field Sparrow. **Remarks:** The vegetation surrounding the plot is quite variable. We believe this is the main reason for so many different visitors on the plot and in the general area. Deer are not so dense in this area of the Conservation and Research Center (see 14). **Other Observers:** J'amy Allen. **Acknowledgments:** We would like to acknowledge Annemarie McShea and the Earthwatch volunteers for their help with constructing the plot grid and organizing data.

53. DISTURBED COASTAL SCRUB A

MATORRAL PERTURBADO A

GEOFFREY R. GEUPEL

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

Location: California; Marin Co.; Bolinas; 37°55'N, 122°45'; Bolinas Quadrangle. **Continuity:** Established 1972; 14 intermittent yrs. **Size:** 4.7 ha. **Description of Plot:** See *Amer. Birds* 26:987-988 (1972). **Weather:** See Coastal Scrub. **Coverage:** 191 study-hours; 1 April-30 June; 0600-1500. **Census:** Song Sparrow, 7.5 (159); Wrentit, 5.5 (117); Anna's Hummingbird, 3.0 (63); California Quail, 2.0; American Goldfinch, 2.0; Rufous-sided Towhee,

1.5; White-crowned Sparrow, 1.5; Allen's Hummingbird, 1.0; Bushtit, 0.5; American Robin, 0.5; Purple Finch, 0.5; Red-tailed Hawk, +; Mourning Dove, +; Northern Flicker, +; Scrub Jay, +; Bewick's Wren, +; Orange-crowned Warbler, +; Wilson's Warbler, +; Brown Towhee, +; House Finch, +. **Total:** 20 species; 25.5 territorial males (542/km²). **Nests Found:** Wrentit (13), Song Sparrow (13), White-crowned Sparrow (3). **Remarks:** The breeding bird density of this successional stage plot rebounded this year from a relatively low density in 1987 (479/km²). Over the last several years, the effects of the vegetative succession have become apparent. With the steady increase in shrub cover, especially California Sage-brush, there has been an increase in the density of breeding Wrentits by an average of 14% over the last 5 years. This succession may have simultaneously caused the decline in Song Sparrow densities over the past two years; a decline of 35% since the all-time high in 1986. The 12% increase in the density of breeding birds between 1987-1988 was a partial result of an increase in species from 19 to 20, a value just below the mean of 20.7 for the last 9 years. The species composition was identical to that in 1987, with the addition of Wilson's Warbler. Unlike the Coastal Scrub plot and Disturbed Coastal Scrub B, the breeding bird density of this plot in 1988 does not exceed that of 1986 (574/km²). This is Contribution No. 404, PRBO. **Other Observers:** Eric A. Wold, Helen Owen, Michelle Elekonich, and David F. DeSante.

54. DISTURBED COASTAL SCRUB B

MATORRAL PERTURBADO B

ERIC A. WOLD

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

Location: California; Marin Co.; Bolinas; 37°55'N, 122°46'; Bolinas Quadrangle. **Continuity:** Established 1971; 15 intermittent yrs. **Size:** 8.1 ha. **Description of Plot:** See *Amer. Birds* 25:1002 (1971). **Weather:** See Coastal Scrub. **Coverage:** 238 study-hours; 1 April-30 June; 0600-2130. **Census:** Song Sparrow, 13.5 (166); Wrentit, 7.0 (86); White-crowned Sparrow, 4.5 (55); California Quail, 2.5; Allen's Hummingbird, 2.5; Bewick's Wren, 2.0; American Goldfinch, 2.0; Western Bluebird, 1.0; Rufous-sided Towhee, 1.0; Northern Flicker, 0.5; Brown-headed Cowbird, 0.5; House Finch, 0.5; Red-tailed Hawk, +; Mourning Dove, +; Anna's Hummingbird, +; Scrub Jay, +; Bushtit, +; American Robin, +; Brown Towhee, +; Purple Finch, +; House Sparrow, +. **Total:** 21 species; 37.5 territorial males (463/km²). **Nests Found:** Song Sparrow (26), Wrentit (18), White-crowned Sparrow (6), Rufous-sided Towhee (2). **Remarks:** The 1988 breeding bird density of this successional stage coastal scrub showed an increase for the first time since 1985 (568/km²), and reflects a recovery from the reproductive failure in 1986. The 16% increase in breeding bird density between 1987-88 reflects slight density increases in many species (California Quail, Allen's Hummingbird, Northern Flicker, Bewick's Wren, Brown-headed Cowbird, House Finch, American Goldfinch, and Western Bluebird), as well as a 41% increase in Song Sparrows. After the reproductive failure in 1986, Song Sparrow breeding density dropped 47% to 8 territorial males. The 1988 density of Song Sparrows indicates a nearly complete recovery to pre-1987 densities. Small decreases in the densities of Wrentit and Rufous-sided Towhee are due to small shifts in territories toward the undisturbed habitat which borders the grid. Species richness remained at 18, where it has been for 4 of the last 5 years. The species composition changed only slightly, with House Sparrow utilizing the plot for the first time since the study began, and Brown Towhee returning after a 1-year absence. Orange-crowned Warbler and European Starling, both present in 1987, failed to occur on the grid this year. This is Contribution No. 405, PRBO. **Other Observers:** Geoffrey R. Geupel, Christin Hutchinson, Mary M. Coontz, and David F. DeSante.

55. COASTAL SCRUB

MATORRAL COSTANERO

ERIC A. WOLD

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

Location: California; Marin Co.; Bolinas; 37°56'N, 122°45'; Bolinas Quadrangle. **Continuity:** Established 1971; 14 intermittent yrs. **Size:** 8.1 ha. **Description of Plot:** See *Amer. Birds* 25:1003-1004 (1971). **Weather:** The census period was characterized by clear weather 36% of the time, while the other mornings were either scattered (22%), overcast (24%), broken (13%), or foggy (2%). Rain (10.7 cm) fell on 3.4% of the census days, well above the 21-year average of 7.6 cm and the average of the previous three springs, 3.7 cm. The yearly total was below the 21-year mean and continues the dry conditions which began in the summer of 1986. Winds were primarily out of the W and ranged from calm to 15 knots. Early morning temperatures ranged from 2-13.3°C with an average of 8.6°C, while early afternoon temperatures ranged from 9-28°C with an average of 19.2°C. **Coverage:** 234 study-hours; 1 April-30 June; 0600-2130. **Census:** Wrentit, 14.5 (179); Song Sparrow, 7.5 (92); White-crowned Sparrow, 5.0 (61); Allen's Hummingbird, 4.5 (55); Rufous-sided Towhee, 4.5; Bewick's Wren, 3.5 (43); Northern Flicker, 1.5; Bushtit, 1.0; Orange-crowned Warbler, 1.0; Purple Finch, 1.0; California Quail, 0.5; Scrub Jay, 0.5; Red-tailed Hawk, +; Band-tailed Pigeon, +; American Robin, +; European Starling, +; Wilson's Warbler, +; Brown-headed Cowbird, +. **Total:** 18 species; 45 territorial males (555/km²). **Nests Found:** Wrentit (23), Song Sparrow (10), White-crowned Sparrow (13), Rufous-sided Towhee (4), and Bushtit. **Remarks:** The breeding bird density of 1988 was a significant increase from 1987's 469/km²; the latter being the second lowest density recorded in the 16 years of this study. Small increases among several species (Allen's Hummingbird, Bewick's Wren, and Northern Flicker), coupled with pronounced increases in the number of territorial male Wrentits (24%), and Song Sparrows (40%) from 1987 accounts for much of the increase in the density. The Song Sparrow density equals the highest it has been in the past 10 years. California Quail, Bushtit, and Orange-crowned Warbler decreased in density. The latter decreased the most (25/km²). The breeding bird density for 1988, which is 9% above the 1986 density, suggests that the population has recovered from the reproductive failure in 1986. The number of birds at least three years of age in our our known-age, individually color-banded Wrentit, White-crowned Sparrow, and Song Sparrow breeding population was about 20% higher in 1987 and 1988 than in the 6 years prior to 1987. This increase of older birds appears to be a result of the reproductive failure of 1986 and the subsequent lack of second-year birds recruited to the breeding population in 1987. Although the species diversity remained at 18, identical to the previous 2 years, the species composition changed slightly. For the first time, Band-tailed Pigeon and European Starling utilized this grid for breeding. Brown Towhee and Mourning Dove, irregular breeders on the plot, failed to breed here in 1988. The nesting season for Wrentits began 10 days earlier than normal, and Song Sparrows appeared to terminate breeding two weeks earlier than average. This is Contribution No. 403, PRBO. **Other Observers:** Geoffrey R. Geupel, Dave Fortna, Karlin Koepcke, Elizabeth Reese, and David F. DeSante.

56. COASTAL PRAIRIE

PRADERA COSTANERA

JOHN P. KELLY

*Audubon Cypress Grove Preserve
P.O. Box 753
Marshall, CA 94940*

Location: California; Marin Co.; Marshall; 38°10'N, 122°54'; Tomales Quadrangle, USGS. **Continuity:** New. **Size:** 31.0 ha. **Description of Plot:** Marine terrace grasslands. The study

area is divided by a freshwater marsh not included in the study plot. A quantitative vegetation survey was completed. **Edge:** The plot is bordered on the SW by deep-water coastal bay, on the SE by a horse ranch and pasture, on the NE by State Highway One and dairy pasture, and on the NW by similar marine-terrace, coastal prairie vegetation. **Topography and Elevation:** Approximately half of the study area occurs on flat, gently SW-sloping marine terrace (elevation 1.5–4.5 m). The remaining half occurs on a low SW-sloping hillside (elevation 27 m). **Weather:** Generally mild, temperatures 10–18°C; wind 0–40 kph; cloud cover 0–100% stratus clouds. **Coverage:** 7 visits; 9 study-hours; 12, 15, 22, 27, 28 April; 5, 18 May; 0700–1030. **Census:** Song Sparrow, 13.0 (41); American Goldfinch, 9.0 (29); Mourning Dove, 1.0; White-crowned Sparrow, 1.0; Red-winged Blackbird, 1.0; House Finch, 1.0; Western Meadowlark, 0.5. **Total:** 7 species; 26.5 territorial males (85/km²). **Visitors:** Great Egret, Mallard, Turkey Vulture, Northern Harrier, American Kestrel, Killdeer, Common Barn-Owl, Allen's Hummingbird, Northern (Red-shafted) Flicker, Tree Swallow, Violet-green Swallow, Northern Rough-winged Swallow, Cliff Swallow, Barn Swallow, European Starling, Brown Towhee, Savannah Sparrow, Grasshopper Sparrow, Tricolored Blackbird, Brewer's Blackbird, Brown-headed Cowbird, Pine Siskin. **Acknowledgments:** This work was supported by Audubon Canyon Ranch, Stinson Beach, California.

57. TALL GRASS PRAIRIE I

PRADERA DE YERBAS ALTAS I

PETER E. LOWTHER

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

Location: Iowa; Dickinson Co.; Milford; Iowa Lakeside Laboratory; 43°23'N, 95°11'; NE quarter of NW quarter sect. 23, T99N R37W; Okoboji Quadrangle, USGS. **Continuity:** Established 1982; 5 intermittent yrs. **Size:** 16.0 ha. **Description of Plot:** See *Amer.Birds* 37:79 (1983). Plot under management to restore tall grass prairie vegetation. Vegetation was only 30–40 cm tall at time of censuses. Portions of each site burned annually. **Weather:** For June mean high temperature was 30°C, mean low 16.2°C and total precipitation was 4.5 cm. This year has been very dry with May-June precipitation only 54% of normal (19.6 cm). Standing water was more shallow and areas normally wet and marshy were dry. **Coverage:** 5 study-hours; 12–16 June; 0900–1100. **Census:** Dickcissel, 5.0 (31); Red-winged Blackbird, 5.0; Yellow Warbler, 4.0 (25); Common Yellowthroat, 3.0 (18); American Robin, 2.0; Song Sparrow, 2.0; Brown-headed Cowbird, 2.0; American Goldfinch, 2.0; Ring-necked Pheasant, 1.0; Mourning Dove, 1.0; Willow Flycatcher, 1.0; Gray Catbird, 1.0; House Wren, +. **Total:** 13 species; 29 territorial males (181/km²). **Nests Found:** Gray Catbird (1), American Robin (2), Yellow Warbler (2), Red-winged Blackbird (1), 3 cowbird eggs in 1 redwing nest and 2 eggs in 1 warbler nest. **Visitors:** Black-billed Cuckoo, Northern Flicker, Barn Swallow, Common Grackle.

58. TALL GRASS PRAIRIE II

PRADERA DE YERBAS ALTAS II

PETER E. LOWTHER

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

Location: Iowa; Dickinson Co.; Milford; Cayler Prairie; 43°24'N, 95°15'; NW quarter sect.17, T99N R37W; Okoboji Quadrangle, USGS. **Continuity:** Established 1982; 5 intermittent yrs. **Size:** 65.7 ha. **Description of Plot:** See *Amer.Birds* 37:79 (1983). **Weather:** See 57. **Coverage:** 3 visits; 12 study-hours; 12, 14, 16 June; 0600–1000. **Census:** Dickcissel, 33.0 (50); Red-winged Blackbird, 24.0 (36); Bobolink, 17.0 (25); Grasshopper Sparrow, 13.0 (19); Common Yellowthroat, 10.0 (15); Western Meadowlark, 8.0 (12); Brown-headed

Cowbird, 4.0 (6); Swamp Sparrow, 3.0 (4); American Goldfinch, 3.0; Gray Partridge, 1.0; Mourning Dove, 1.0; Willow Flycatcher, 1.0; Savannah Sparrow, 1.0; Northern Harrier, +; Great Horned Owl, +. **Total:** 15 species; 119 territorial males (181/km²). **Visitors:** Mallard, Killdeer, Northern Flicker, Eastern Kingbird, Cliff Swallow, Barn Swallow, Common Grackle. **Nests Found:** Northern Harrier (1 with 4 eggs), Dickcissel (6), Bobolink, Red-winged Blackbird (7), and Brown-headed Cowbird (2 eggs in 2 Dickcissel nests; 2 attended by Red-winged Blackbirds).

59. TALL GRASS PRAIRIE III

PRADERA DE YERBAS ALTAS III

PETER E. LOWTHER

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

Location: Iowa; Dickinson Co.; Milford; Freda Haffner Kettlehole Preserve; E half of SW quarter and SE quarter of NW quarter sect.33, T99N R37W; 43°20'N, 95°13'; Milford Quadrangle, USGS. **Continuity:** Established 1982; 5 intermittent yrs. **Size:** 44.8 ha. **Description of Plot:** See *Amer.Birds* 37:79 (1983). No standing vegetation in the pond in the kettlehole, only sedges around the shoreline this year. **Weather:** See 57. **Coverage:** 3 visits; 12 study-hours; 13,15,17 June; 0530-0930. **Census:** Dickcissel, 29.0 (64); Red-winged Blackbird, 25.0 (55); Common Yellowthroat, 11.0 (24); Song Sparrow, 7.0 (15); Willow Flycatcher, 5.0 (11); Grasshopper Sparrow, 5.0; Bobolink, 5.0; American Goldfinch, 5.0; Yellow Warbler, 3.0 (6); Western Meadowlark, 3.0; Brown-headed Cowbird, 3.0; Mourning Dove, 2.0; Sedge Wren, 2.0; Swamp Sparrow, 2.0; Eastern Kingbird, 1.0; American Robin, 1.0; Gray Catbird, 1.0; Loggerhead Shrike, 1.0; Savannah Sparrow, 1.0; Orchard Oriole, 1.0; Northern Harrier, +; Red-tailed Hawk, +; Ring-necked Pheasant, +; Black-billed Cuckoo, +; Great Horned Owl, +. **Total:** 25 species; 113 territorial males (252/km²). **Visitors:** Mallard, Hooded Merganser, Killdeer, Northern Flicker, Tree Swallow, Cliff Swallow, Barn Swallow, European Starling, Common Grackle. **Nests Found:** Mourning Dove (2), Eastern Kingbird, American Robin, Brown Thrasher, Yellow Warbler, Dickcissel (2), Red-winged Blackbird (7), Brown-headed Cowbird (4 eggs in 1 Dickcissel nest and 1 egg in each of 4 Red-winged Blackbird nests), and Common Grackle (5). **Remarks:** Northern Harrier seen during this census nested at Cayler Prairie 4.8 km to north (see 58).

60. KENTUCKY BLUEGRASS PRAIRIE

PRADERA DE "YERBA-AZUL" DE KENTUCKY

DOUGLAS H. JOHNSON

*Northern Prairie Wildlife Research Center
P.O. Box 2096
Jamestown, ND 58402*

Location: North Dakota; Stutsman Co.; Woodworth; 47°08'N, 99°14'; Goldwin Quadrangle, USGS. **Continuity:** Established 1972; 15 consecutive yrs. **Size:** 4.8 ha. **Description of Plot:** See *Amer.Birds* 26:972 (1972). **Weather:** Generally warm and calm, with no precipitation. **Coverage:** 8 visits; 3 study-hours; 6 (2 visits), 7, 8, 9, 10 (2), 15 June; 0602-1103. **Census:** Killdeer, 1.0; Bobolink, 1.0; Red-winged Blackbird, 1.0; Brown-headed Cowbird, 1.0; Blue-winged Teal, 0.5; Eastern Kingbird, 0.5; Savannah Sparrow, 0.5; Western Meadowlark, 0.5; Common Yellowthroat, +; Grasshopper Sparrow, +. **Total:** 10 species; 6 territorial males (125/km²). **Visitors:** Mallard, Marbled Godwit, Black Tern, Cliff Swallow, Barn Swallow, Brewer's Blackbird, Common Grackle. **Remarks:** Wetlands in the plot were virtually dry during the census period. **Other Observers:** Michael D. Schwartz.

61. MIXED PRAIRIE I

PRADERA MIXTA I

DOUGLAS H. JOHNSON

*Northern Prairie Wildlife Research Center
P.O. Box 2096
Jamestown, ND 58402*

Location: North Dakota; Stutsman Co.; Woodworth; 47°08'N, 99°15'W; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 15 intermittent yrs. **Size:** 10.0 ha. **Description of Plot:** See *Amer.Birds* 26:972 (1972). **Weather:** Generally warm and calm, with no precipitation. **Coverage:** 9 visits; 6 study-hours; 6, 7, 8, 9 (2 visits), 10 (2), 15 (2) June; 0512-1014. **Census:** Clay-colored Sparrow, 6.5 (65); Bobolink, 3.0 (30); Willow Flycatcher, 2.5; Common Yellowthroat, 2.5; Brown-headed Cowbird, 2.0; Eastern Kingbird, 1.5; Grasshopper Sparrow, 1.5; Yellow Warbler, 1.0; Western Meadowlark, 0.5; Gray Catbird, +; American Goldfinch, +. **Total:** 11 species; 21 territorial males (210/km²). **Nests Found:** Mallard (7 eggs). **Visitors:** Gadwall, Black Tern, Western Kingbird, Cliff Swallow, Barn Swallow, Lark Bunting, Red-winged Blackbird, Common Grackle. **Remarks:** The seasonal wetlands on the plot were dry during the census period. **Other Observers:** Michael D. Schwartz.

62. MIXED PRAIRIE II

PRADERA MIXTA II

DOUGLAS H. JOHNSON

*Northern Prairie Wildlife Research Center
P.O. Box 2096
Jamestown, ND 58402*

Location: North Dakota; Stutsman Co.; Woodworth; 47°09'N, 99°15'W; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 15 intermittent yrs. **Size:** 6.1 ha. **Description of Plot:** See *Amer.Birds* 26:972-973 (1972) and *Amer.Birds* 32:81-82 (1978). **Weather:** Generally warm and calm with no precipitation. **Coverage:** 8 visits; 3 study-hours; 6, 7, 8 (2 visits), 9, 10 (2), 15 June; 0512-1021. **Census:** Bobolink, 2.0; Brown-headed Cowbird, 1.5; Gadwall, 1.0; Common Yellowthroat, 1.0; Clay-colored Sparrow, 1.0; Red-winged Blackbird, 1.0; Sedge Wren, 0.5; Killdeer, +; Eastern Kingbird, +; Western Meadowlark, +. **Total:** 10 species; 8 territorial males (131/km²). **Visitors:** Green-winged Teal, Blue-winged Teal, Common Snipe, Black Tern, Mourning Dove, Yellow Warbler, Grasshopper Sparrow, Common Grackle, American Goldfinch. **Remarks:** The seasonal wetlands in the plot were dry during the census period. **Other Observers:** Michael D. Schwartz.

63. MIXED PRAIRIE III

PRADERA MIXTA III

DOUGLAS H. JOHNSON

*Northern Prairie Wildlife Research Center
P.O. Box 2096
Jamestown, ND 58402*

Location: North Dakota; Stutsman Co.; Woodworth; 47°09'N, 99°14'W; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 15 intermittent yrs. **Size:** 6.1 ha. **Description of Plot:** See *Amer.Birds* 26:973 (1972) and *Amer.Birds* 33:80 (1979). **Weather:** Generally warm and calm, with no precipitation. **Coverage:** 8 visits; 6 study-hours; 6, 7 (2 visits), 8, 9 (2), 10, 15 June; 0624-1051. **Census:** Grasshopper Sparrow, 2.5; Clay-colored Sparrow, 1.5; Bobolink, 0.5; Savannah Sparrow, +; Western Meadowlark, +; Brown-headed Cow-

bird, +. **Total:** 6 species; 4.5 territorial males (73/km²). **Visitors:** Northern Harrier, Killdeer, Upland Sandpiper, Black Tern, Mourning Dove, Western Kingbird, Barn Swallow, Lark Bunting, Red-winged Blackbird, American Goldfinch. **Remarks:** The seasonal wetlands in the plot were dry during the census period. **Other Observers:** Michael D. Schwartz.

64. MIXED PRAIRIE IV

PRADERA MIXTA IV

DOUGLAS H. JOHNSON

*Northern Prairie Wildlife Research Center
P.O. Box 2096
Jamestown, ND 58402*

Location: North Dakota; Stutsman Co.; Woodworth; 47°07'N, 99°15'W; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 15 consecutive yrs. **Size:** 6.1 ha. **Description of Plot:** See *Amer.Birds* 26:973-974 (1972). **Weather:** Generally warm and calm, with no precipitation. **Coverage:** 9 visits; 4 study-hours; 6, 7 (2 visits), 8, 9, 10, 15 (2) June; 0514-1010. **Census:** Clay-colored Sparrow, 2.5; Grasshopper Sparrow, 2.0; Common Yellowthroat, 1.5; Bobolink, 1.5; Red-winged Blackbird, 1.5; Eastern Kingbird, 1.0; Brown-headed Cowbird, 1.0; Blue-winged Teal, 0.5; Sedge Wren, 0.5; Western Meadowlark, 0.5; Upland Sandpiper, +; Common Snipe, +. **Total:** 12 species; 12.5 territorial males (204/km²). **Nests Found:** Marbled Godwit (4 eggs). **Visitors:** Gadwall, Killdeer, Willet, Marbled Godwit, Black Tern, Cliff Swallow, Marsh Wren, Yellow-headed Blackbird, American Goldfinch. **Remarks:** The seasonal wetlands in the plot were dry during the census period. **Other Observers:** Michael D. Schwartz.

65. MIXED PRAIRIE V

PRADERA MIXTA V

DOUGLAS H. JOHNSON

*Northern Prairie Wildlife Research Center
P.O. Box 2096
Jamestown, ND 58402*

Location: North Dakota; Stutsman Co.; Woodworth; 47°07'N, 99°14'W; Woodworth Quadrangle, USGS. **Continuity:** Established 1972; 15 intermittent yrs. **Size:** 6.1 ha. **Description of Plot:** See *Amer.Birds* 26:974 (1972) and *Amer.Birds* 32:82 (1978). **Weather:** Generally warm and calm, with no precipitation. **Coverage:** 8 visits; 4 study-hours; 6 (2 visits), 7, 8 (2), 9, 10, 15 June; 0515-1029. **Census:** Clay-colored Sparrow, 3.5 (57); Eastern Kingbird, 1.0; Grasshopper Sparrow, 1.0; Brown-headed Cowbird, 1.0; Western Meadowlark, 0.5; Western Kingbird, +; Yellow Warbler, +; Bobolink, +; American Goldfinch, +. **Total:** 9 species; 7 territorial males (114/km²). **Nests Found:** Upland Sandpiper (4 eggs). **Visitors:** Mallard, Sharp-tailed Grouse, Killdeer, Upland Sandpiper, Mourning Dove, Barn Swallow, Brown Thrasher, Lark Bunting, Baird's Sparrow, Yellow-headed Blackbird. **Remarks:** Four small wetlands in the plot were dry during the census period. **Other Observers:** Michael D. Schwartz.

66. SUBIRRIGATED NATIVE HAY

PASTO NATIVO SUBIRRIGADO

GARY LINGLE AND PAUL BEDELL

*2550 N. Diers Ave., Suite H
Grand Island, NE 68803*

Location: Nebraska; Hall Co.; Doniphan; 40°47'N, 98°27'W; Alda Quadrangle, USGS. **Continuity:** Established 1981; 5 intermittent yrs. **Size:** 16.2 ha. **Description of Plot:** Native

prairie. See *Amer. Birds* 36:105 (1982). **Edge:** Similar on all sides. A shelterbelt parallels the W side within 30 m. **Topography and Elevation:** Area is flat; elevation 579–581 m. **Coverage:** 8 visits; 4 study-hours; 7–11 and 13–15 June; 0730–1115 CDT. **Census:** Upland Sandpiper, 3.0 (18); Bobolink, 3.0; Grasshopper Sparrow, 2.0; Western Meadowlark, 2.0; Dickcissel, 1.5; Brown-headed Cowbird, 1.0. **Total:** 6 species; 12.5 territorial males (77/km²). **Remarks:** This area was burned in April. The southern third of the plot was grazed down to nothing during the census. No territories were observed in that section. Drought stunted the vegetation in the northern two-thirds of the plot.

67. SUBIRRIGATED GRASSLAND

PRADERA SUBIRRIGADA

GARY LINGLE AND PAUL BEDELL

2550 N. Diers Ave., Suite H
Grand Island, NE 68803

Location: Nebraska; Hall Co.; Doniphan; 40°46'N, 98°26'W; Alda Quadrangle, USGS. **Continuity:** Established 1981; 5 intermittent yrs. **Size:** 16.2 ha. **Description of Plot:** Lies within a 81-ha pasture which was burned in April. Similar on S, W and N sides. East side has a shelterbelt about 20 m from the boundary. See *Amer. Birds* 36:105 (1982). **Topography and Elevation:** Area is flat; elevation 579–581 m. **Coverage:** 8 visits; 5 study-hours; 7–11 and 13–15 June; 0710–1040 CDT. **Census:** Bobolink, 16.0 (98); Dickcissel, 12.0 (74); Upland Sandpiper, 4.0 (24); Brown-headed Cowbird, 4.0; Red-winged Blackbird, 2.0; Grasshopper Sparrow, 2.0; Western Meadowlark, 2.0; Killdeer, 1.0. **Total:** 8 species; 42.7 territorial males (265/km²). **Nests Found:** Dickcissel (1). **Remarks:** Pasture was ungrazed during the census.

68. SAGUARO DESERT

DESIERTO DE SAGUARO

JOSHUA A. BURNS

4045 East Earll Drive
Phoenix, AZ 85018

Location: Arizona; Maricopa Co.; Phoenix; 33°27'N, 111°56'W; **Continuity:** New. **Size:** 12.5 ha. **Description of Plot:** A portion of the grounds of the Desert Botanical Garden which itself comprises several hundred acres of Phoenix's natural Papago Park. Single butte 91 m high, razorback ridge with exposed rock. One closed and several abandoned dirt roads, and several fences. No permanent water. There are no buildings on this plot. Dominant canopy: Saguaro Cactus; dominant shrubs: Creosotebush, Foothill Palo Verde; ground cover: Brittlebush, Bursage. **Edge:** The edge of the plot is complex. To the W and along the W half of the N edge there is untouched habitat of similar nature to that found on the site. The E half of the N edge borders the botanical gardens area and a newly developed Plants and People of the Sonoran Desert interpretative section. The E edge of the site is adjacent to a major irrigation canal, across the canal is a medium density residential area. The S edge is against similar habitat, however, about 400 m S of the plot is a developed day use area of the park beside ponds of an abandoned fish hatchery. **Topography:** From E to W, the site is a minor bajada, a small butte and a broken drainage area. E of the butte, the site slopes toward the Arizona Cross-cut Canal and contains several NW to SE trending drainages each marked by a line of Palo Verde trees. The butte rises steeply from the upper end of this bajada with several exposed rock strata and ends in a razorback rock exposure trending N and S for about one-half the width of the plot. W of this ridge, the butte drops sharply down to a closed road and a N-S trending dry arroyo with a dendritic pattern draining and breaking up the W portion of the study site. The N slope of the butte drops steeply down to the staff parking area of the gardens. To the S the butte continues into another large butte immediately S of the study plot, a ravine separates the buttes. **Elevation:** 384–442 m. **Weather:** Very hot and dry; much above average. Over 38°C daily even in March and

April. **Coverage:** 6 visits; 12 study-hours; 5, 19 March; 4, 16, 29 April; 14 May; 0540-0905. **Census:** European Starling, 6.0 (48); Verdin, 3.5 (28); Cactus Wren, 3.5; Northern Flicker, 3.0 (24); House Finch, 3.0; Black-chinned Hummingbird, 2.5; Anna's Hummingbird, 2.0; Curve-billed Thrasher, 1.5; Gila Woodpecker, 1.0; Rock Wren, 1.0; Gambel's Quail, +; White-throated Swift, +. **Total:** 10 species; 27 territorial males (216/km²). **Visitors:** Harris' Hawk, Killdeer, Rock Dove, White-winged Dove, Mourning Dove, Common Poorwill, Broad-tailed Hummingbird, Ash-throated Flycatcher, Cassin's Kingbird, Violet-green Swallow, Northern Rough-winged Swallow, Bushtit, Black-tailed Gnatcatcher, Northern Mockingbird, Phainopepla, Western Tanager, Rufous-crowned Sparrow, Chipping Sparrow, Brewer's Sparrow, Black-throated Sparrow, White-crowned Sparrow, Dark-eyed Junco, House Sparrow. **Nests Found:** Gila Woodpecker, Northern (Gilded) Flicker (2), Verdin, European Starling (6; all in Saguaro Cactus). **Remarks:** The birds in the study plot suffer relatively little disturbance although they are near to disturbing elements. The high count of European Starlings probably reflects the urban nature of the distant surroundings of the site. **Acknowledgments:** I wish to thank Sandra Mesnick, Gary Nabham and Mark Slater of the Desert Botanical Garden for their assistance in obtaining permission to make this census and for their help in coordinating my erratic schedule with their calendar.

69. WYOMING BIG SAGEBRUSH-BOTTLEBRUSH SQUIRRELTAIL

ARTEMISA DE WYOMING-MATORRAL

WILLIAM H. PYLE

Department of Fisheries and Wildlife

Oregon State University

Corvallis, OR 97330

Location: Oregon; Lake Co.; Frenchglen; 42°37'N, 119°30'W; Bluejoint Lake East Quadrangle, USGS. **Continuity:** Established 1985; 3 intermittent yrs. **Size:** 18.0 ha. **Description of Plot:** [From 1985 report.] A gently sloping plateau situated in the rain shadow of Hart Mountain. The plant community is nearly homogeneous. Sagebrush stature and dispersion varies with soil composition (% cobble/gravel). Similarly, understory plant composition and distribution is slight. There are a few small swards of Indian Ricegrass. Desert pavement is a common feature. Distance from perennial water sources and general xeric conditions bar cattle grazing. American Pronghorn (*Antilocarpa americana*) seasonally use the area. Vegetation analysis (July 1985) yielded the following results [percent canopy cover, if greater than 0.5%, and frequency (%) are listed for shrub, grass, and forb species]: Wyoming Big Sagebrush 24.7, 64.4; Bottlebrush Squirreltail 2.7, 42.8; Cheatgrass 2.6, 50.4; Indian Ricegrass 0.8, 9.1; Sandberg's Bluegrass 0.7, 8.6; mosses 10.0, 50; Blue-eyed Mary 0.6, 22.1; Long-leaved Phlox 0.6, 17.8. Ground surface composition [frequency (%)]: bare soil 44.8; litter 24.4; live plant 18.4; stone (> 5.1 cm) 14.7, stone (< 5.1 cm) 7.0. **Edge:** Shadscale and Bluebunch Wheatgrass frequency increases to south. A tertiary jeep-track passes 50 m from the plot. **Topography:** Two minor drainages, barely evident to the eye, traverse the plot. Slope never exceeds 3%; general slope-aspect is NE. A moderate slope increase occurs within one km S of plot upon a small, locally prominent knoll. **Elevation:** 1591-1604 m. **Weather:** Average cloud cover was 45%; average range of wind speed: 0-6.4 kph; average temperature range: 5-10°C. **Coverage:** 8 visits; 13 study-hours; 26 April; 2, 9, 18, 23, 3 May; 6, 14 June. **Census:** Brewer's Sparrow, 15.0 (83); Sage Sparrow, 8.5 (47); Sage Thrasher, 2.0. **Total:** 3 species; 25.5 territorial males (141/km²). **Visitors:** Short-eared Owl, Loggerhead Shrike, Western Meadowlark, Brown-headed Cowbird. **Nests Found:** Sage Thrasher. **Remarks:** Numbers of Sage Thrasher, Brewer's Sparrow, and total bird density were lower in 1988 than either 1985 or 1986. No cattle grazing occurred on the plot in 1988. **Acknowledgments:** Assistance from personnel at USDI Sheldon-Hart Mountain Refuges was appreciated.

70. DESERT RIPARIAN-FRESHWATER MARSH AND PONDS

DESIERTO RIVEREÑO-PANTANO

EUGENE CARDIFF

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

Location: California; San Bernardino Co.; Morongo Valley; Big Morongo Reserve; 34°03'N, 116°35'W; Morongo Valley Quadrangle, USGS. **Continuity:** Established 1977; 12 consecutive yrs. **Size:** 15.4 ha. **Description of Plot:** See *Amer. Birds* 32:113-114 (1978). **Weather:** Calm on 7 of 8 visits, windy on the other one. Three days were overcast, one of which had light sprinkles, the other 5 were sunny. Starting temperatures ranged from 2-18°C and ending temperatures ranged from 18-27°C. **Coverage:** 8 visits; 30 study-hours; 13, 18, 25 April; 2, 9, 16, 23 May; 3 June; 0625-1200. **Census:** House Wren, 22.0 (142); Rufous-sided Towhee, 15.0 (97); Song Sparrow, 15.0; Bewick's Wren, 14.0 (90); Virginia Rail, 11.0 (71); Lesser Goldfinch, 9.0 (58); Mourning Dove, 7.5 (48); Bushtit, 7.0 (45); European Starling, 7.0; Common Yellowthroat, 7.0; Costa's Hummingbird, 5.0 (32); Nuttall's Woodpecker, 5.0; Gambel's Quail, 4.5 (29); California Thrasher, 4.0 (25); Brown-headed Cowbird, 4.0; House Finch, 4.0; Anna's Hummingbird, 3.0 (19); Ash-throated Flycatcher, 3.0; Plain Titmouse, 3.0; Summer Tanager, 3.0; Northern Oriole, 3.0; Yellow-breasted Chat, 2.5; Verdin, 1.5; American Kestrel, 1.0; Western Screech-Owl, 1.0; Black-chinned Hummingbird, 1.0; Vermilion Flycatcher, 1.0; Brown-crested Flycatcher, 1.0; Yellow Warbler, 1.0; Blue Grosbeak, 1.0; Hooded Oriole, 1.0; Scott's Oriole, 1.0; Red-tailed Hawk, +; Killdeer, +; Spotted Dove, +; Common Barn-Owl, +; Black Phoebe, +; Northern Mockingbird, +; Brown Towhee, +; Brewer's Blackbird, +. **Total:** 40 species; 169 territorial males (1097/km²). **Visitors:** Cassin's Kingbird, Western Kingbird, Northern Rough-winged Swallow, Scrub Jay, Common Raven, Phainopepla, Loggerhead Shrike, Black-headed Grosbeak and Lawrence's Goldfinch. **Nests Found:** Anna's Hummingbird, Costa's Hummingbird (2), Nuttall's Woodpecker (4), Brown-crested Flycatcher, Verdin, Bushtit (3), House Wren (2), California Thrasher, European Starling (7), Blue Grosbeak, Song Sparrow, Hooded Oriole, Scott's Oriole. **Fledglings:** American Kestrel, Virginia Rail, Anna's Hummingbird, Verdin, Bushtit, House Wren, Loggerhead Shrike, Common Yellowthroat, Rufous-sided Towhee, Song Sparrow. **Remarks:** Rainfall in the basin this year was again below normal. The area was beginning to dry out from the above average rainfall several years ago. Total numbers have been down the past two years, but total species are slightly higher. The dryness also caused an influx of birds from surrounding areas, such as Scott's Orioles and Loggerhead Shrikes. The influx of Scrub Jays, as in recent years, affected the success of other nesters (e.g. a Scrub Jay was observed raiding a Bushtit nest). Long-eared Owl and Great Horned Owl did not return this year, but a Western Screech-Owl was detected (it possibly could have been overlooked in previous years). Vermilion Flycatchers nested on the plot for the first time, along with the usual two pairs off the plot in the Covington Park area. Virginia Rails are benefiting from the increased marsh habitat. A cowbird trapping program was continued and was somewhat successful. Yellow Warblers may have nested this year, but Willow Flycatchers and Bell's Vireos have not yet returned. Continuation of this project is necessary. **Other Observers:** Gjon Hazard, Jessie Kniffen, Roy Kniffen, and Anthony Metcalf. **Acknowledgments:** Special thanks to the San Bernardino Valley Audubon Society, San Bernardino County Museum, the contributors, especially Jessie Kniffen and Gjon Hazard.

71. FRESHWATER MARSH

PANTANO DE AGUA DULCE

JOHN P. KELLY

*Audubon Cypress Grove Preserve
P.O. Box 753
Marshall, CA 94940*

Location: California; Marin Co.; Marshall; Livermore Marsh; 38°10'N, 122°53'W; Tomales Quadrangle, USGS. **Continuity:** Established 1985; 2 intermittent yrs. **Size:** 10.5 ha. **Description of Plot:** The lower third (SW) of the study area is covered by approximately 70% open water and 30% aquatic emergent vegetation. The middle third is covered approximately 75% by California Blackberries. The upper third is covered approximately 50% by rushes. Total open water area is about 2.5 ha, decreasing to about 1.5 ha by the end of the breeding season. A quantitative vegetation survey was completed in 1987. **Edge:** The study area is bordered on the NW and SE by coastal prairie grassland, on the NE by State Highway One and dairy pasture and on the SW by salt marsh and a deepwater coastal bay. **Topography and Elevation:** The terrain is flat, sloping to the SW from an elevation of 9 m to about 1 m. A 1-m deep, seasonal creek channel cuts through the upper NE third of the area. The area is insulated from tidal influence by an historic railroad berm on the lower SW edge. **Weather:** Generally mild, temperatures ranged from 10–18°C; wind 0–40 kph; cloud cover 0–100%; stratus clouds. **Coverage:** 8 visits; 12.5 study-hours; 12, 15, 22, 27, 28 April; 5, 18, 25 May; 0700–1030. **Census:** Tricolored Blackbird, 500 (4761); Red-winged Blackbird, 29.0 (276); Cliff Swallow, 15.0 (142); Marsh Wren, 11.0 (104); Song Sparrow, 8.0 (76); American Coot, 4.0 (38); American Goldfinch, 4.0; Mallard, 2.0; Virginia Rail, 2.0; Mourning Dove, 2.0; Wrentit, 2.0; Pied-billed Grebe, 1.0; Cinnamon Teal, 1.0; Gadwall, 1.0; Ruddy Duck, 1.0; Sora, 1.0; Killdeer, 1.0; Anna's Hummingbird, 1.0; Allen's Hummingbird, 1.0; Common Yellowthroat, 1.0. **Total:** 20 species; 588 territorial males (5600/km²). **Visitors:** Great Blue Heron, Great Egret, Black-crowned Night Heron, American Wigeon, Greater Scaup, Common Goldeneye, Bufflehead, Ring-necked Pheasant, Common Moorhen, Belted Kingfisher, Northern (Red-shafted) Flicker, Tree Swallow, Violet-green Swallow, Northern Rough-winged Swallow, Cliff Swallow, Barn Swallow, Brewer's Blackbird, Brown-headed Cowbird, House Finch, Pine Siskin. **Acknowledgments:** This work was supported by Chevron, U.S.A., Inc., San Francisco, California and Audubon Canyon Ranch, Stinson Beach, California.

72. SHRUBBY SWAMP AND SEDGE HUMMOCKS

PANTANO ARBUSTIVO-MOGOTE

ANDREW MAGEE

*White Memorial Conservation Center
Litchfield, CT 06759*

Location: Connecticut; Litchfield Co.; Litchfield; 41°43'N, 73°13'W; Litchfield Quadrangle, USGS. **Continuity:** Established 1965; 22 intermittent yrs. **Size:** 8.1 ha. **Description of Plot:** See *Aud. Field Notes* 19:625–627 (1965). **Weather:** During the census period the minimum temperature varied from 2.8–13.9°C (average 8.3°). High temperatures ranged from 14.4–28.9°C with an average of 23.9°. The total precipitation for the 12-day period was 0.5 cm. **Coverage:** 6 visits; 13 study-hours; 27, 28 May; 1, 3, 5, 7, June; 0445–2400; 8 hrs in morning, 5 hrs after noon. **Census:** Swamp Sparrow, 48.0 (592); Red-winged Blackbird, 24.0 (296); Yellow Warbler, 22.0 (271); Common Yellowthroat, 14.0 (172); Song Sparrow, 7.0 (86); Willow Flycatcher, 6.0 (74); Gray Catbird, 3.0 (37); American Goldfinch, 3.0; Mallard, 2.0; Eastern Kingbird, 2.0; Tree Swallow, 2.0; Cedar Waxwing, 2.0; Canada Goose, 1.0; Wood Duck, 1.0; Brown-headed Cowbird, 1.0; Great Blue Heron, +; Belted Kingfisher, +; Veery, +; Black-and-white Warbler, +; Northern Cardinal, +; Common Grackle, +. **Total:** 21 species; 138 territorial males (1703/km²). **Remarks:** This was the 4th consecutive year without a nesting season flood following three major floods in

1979, 1982, and 1984. However, the breeding bird community does not yet appear to have completely recovered from the above disturbances. Both the number of species and the number of territorial males were low for a non-flood year. No Virginia Rails could be located even with the help of a tape recorder. There were as many as 14 in the same area as recently as 1981. For the second consecutive year there were no Marsh Wrens (as compared to 3 in 1981). Alder Flycatchers were also completely absent this year (as compared to 2 in 1981). **Other Observers:** Gordon Loery.

73. TAMARACK BOG AND HARDWOOD

PANTANO DE TAMARAK-MADERAS DURAS

JAMES MULLINS

2558 Locust Lane
Stevensville, MI 49127

Location: Michigan; Berrien Co.; Stevensville; 41°59'N, 86°33'W; Bridgman Quadrangle, USGS. **Continuity:** Established 1976; 13 consecutive yrs. **Size:** 8.5 ha. **Description of Plot:** See *Amer. Birds* 30:1049 (1976). **Coverage:** 8 study-hours; 4, 5, 11, 12, 18, 19, 26 June; 3 July; 0700–1100. **Weather:** Clear and calm; temperature 15.6–22.2°C. **Census:** Wood Thrush, 3.0; Red-eyed Vireo, 3.0; Eastern Wood-Pewee, 2.0; Great Crested Flycatcher, 2.0; Blue Jay, 2.0; Veery, 2.0; Ovenbird, 2.0; Canada Warbler, 2.0; Black-billed Cuckoo, 1.0; Whip-poor-will, 1.0; Downy Woodpecker, 1.0; Hairy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Tufted Titmouse, 1.0; White-breasted Nuthatch, 1.0; American Robin, 1.0; Gray Catbird, 1.0; Scarlet Tanager, 1.0. **Total:** 18 species; 28 territorial males (329/km²). **Visitors:** Green-backed Heron, Olive-sided Flycatcher, Black-billed Cuckoo, Chestnut-sided Warbler. **Remarks:** The hot and dry weather seemed to have little effect on the bird population.

74. WETLAND SEDGE MEADOW I

PANTANO DE JUNCOS I

GARY LINGLE AND PAUL BEDELL

2550 N. Diers Ave., Suite H
Grand Island, NE 68803

Location: Nebraska; Hall Co.; Doniphan; 40°47'N, 98°26'W; Alda Quadrangle, USGS. **Continuity:** Established 1981; 5 intermittent yrs. **Size:** 16.2 ha. **Description of Plot:** Located in a 364-ha meadow which is grazed on a rotation basis annually. Relic channels meander through the meadow. See *Amer. Birds* 36:105–106 (1982). **Topography and Elevation:** Area is flat; elevation 578–579 m. **Coverage:** 8 visits; 6 study-hours; 7–11 and 13–15 June; 0719–0945 CDT. **Census:** Red-winged Blackbird, 14.0 (86); Dickcissel, 12.0 (74); Bobolink, 12.0; Brown-headed Cowbird, 4.0 (24); Killdeer, 1.0; Upland Sandpiper, 1.0; Western Meadowlark, 1.0; Grasshopper Sparrow, 0.5. **Total:** 8 species; 45.5 territorial males (280/km²). **Nests Found:** Red-winged Blackbird (10). **Remarks:** Burned in April. Plot nearly dry and ungrazed during census. Two Killdeer fledglings seen.

75. WETLAND SEDGE MEADOW II

PANTANO DE JUNCOS II

GARY LINGLE AND PAUL BEDELL

2550 N. Diers Ave., Suite H
Grand Island, NE 68803

Location: Nebraska; Hall Co.; Doniphan; 40°47'N, 98°25'W; Alda Quadrangle, USGS. **Continuity:** Established 1982; 4 intermittent yrs. **Size:** 16.2 ha. **Description of Plot:** Located in a 364-ha meadow which is grazed on a rotation basis annually. Relic channels meander

through the meadow. See *Amer. Birds* 37:101 (1983). **Topography and Elevation:** Area is flat; elevation 576–578 m. **Coverage:** 8 visits; 6 study-hours; 7–11 and 13–15 June; 0700–0940 CDT. **Census:** Dickcissel, 13.0 (80); Bobolink, 8.0 (49); Red-winged Blackbird, 4.5 (27); Brown-headed Cowbird, 4.0 (24); Grasshopper Sparrow, 3.5 (21); Upland Sandpiper, 3.0 (18); Western Meadowlark, 2.0; Killdeer, 1.0. **Nests Found:** Red-winged Blackbird (1). **Total:** 8 species; 39 territorial males (240/km²). **Remarks:** Grazed from 1 May to 4 June. Partially burned in April, 95% dry during census.

76. CATTAIL MARSH

PANTANO DE ENEAS

KENNETH L. CROWELL

*Department of Biology
St. Lawrence University
Canton, NY 13617*

Location: New York; St. Lawrence Co.; Canton; 44°37'N, 75°14'W; Canton 15' Quadrangle, USGS. **Continuity:** Established 1978; 5 intermittent yrs. **Size:** 6.1 ha. **Description of Plot:** See *Amer. Birds* 33:103 (1979) and *Amer. Birds* 36:98 (1982). **Weather:** Usually warm and dry. **Coverage:** 6 visits; 5 study-hours; 25, 26, 30 May; 4, 6, 8 June; 0630–1100 EDT. **Census:** Red-winged Blackbird, 10.0 (163); Yellow Warbler, 5.0 (81); Mallard, 4.5 (73); Canada Goose, 3.0 (49); Swamp Sparrow, 3.0; Blue-winged Teal, 2.5; Common Moorhen, 2.0; Marsh Wren, 2.0; Common Snipe, 1.5; American Bittern, 1.0; Wood Duck, 1.0; Virginia Rail, 1.0; Common Yellowthroat, 1.0; Song Sparrow, 1.0; Pied-billed Grebe, 0.5; Killdeer, 0.5; Black Tern, +; Eastern Kingbird, +; Common Grackle, +; American Goldfinch, +. **Total:** 20 species; 39.5 territorial males (647/km²). **Visitors:** Great Blue Heron, Northern Harrier, Rock Dove, American Crow, Barn Swallow, Tree Swallow, and Eastern Goldfinch. **Remarks:** In order to limit the census to marsh habitat, I have separated 2.8 ha of edge [see *Amer. Birds* 36:98 (1979)] as follows: Yellow Warbler 5; Alder Flycatcher 2, Willow Flycatcher 2; Common Yellowthroat 2; Eastern Phoebe 1; Black-capped Chickadee +. Starting in 1985, the Department of Environmental Conservation has managed the water level at 0.3–0.6 m below previous levels to encourage nesting of marsh ducks. This seems to have been successful, but with loss of most of the cattail, which has been replaced by other herbaceous plants and shrubs. It would seem that these changes have been responsible for absence of Ring-necked Duck, the decline in numbers of Red-winged Blackbird and Marsh Wren and the increase in Common Yellowthroat and Swamp Sparrow.

77. MIXED HABITAT

HABITAT MIXTO

MILES WILDLIFE SANCTUARY

*95 West Cornwall Road
Sharon, CT 06069*

Location: Connecticut; Litchfield Co.; Sharon; 41°53'N, 73°24'W; Sharon Quadrangle, USGS. **Continuity:** Established 1986; 3 consecutive yrs. **Size:** 15.0 ha. **Description of Plot:** Dominant canopy trees: Black Cherry, Red Maple, Red Oak; dominant shrubs: Witch Hazel, Speckled Alder; ground cover: grass and ferns. **Water:** Stream 1–3 m wide, pond and marsh present; standing water 50.0 m across, 2.0 m deep. **Weather:** Temperatures ranged from 4.5–21°C; mostly clear to partly cloudy. Morning ground fog common, only rainy during one census. **Coverage:** 12 visits; 33 study-hours; 27 May–1 July; 0515–0800 (9 visits), 1700–2000 (3 visits). **Census:** Gray Catbird, 22.0 (146); Red-winged Blackbird, 15.0 (100); Yellow Warbler, 13.0 (86); Chestnut-sided Warbler, 13.0; Common Yellowthroat, 12.0 (80); American Robin, 9.0 (60); American Redstart, 9.0; Veery, 8.0 (53); Blue-winged Warbler, 7.5 (50); Tree Swallow, 7.0 (46); Rufous-sided Towhee, 6.5 (43); Song Sparrow, 6.5; Northern Oriole, 6.5; Black-capped Chickadee, 4.5 (30); Eastern Phoebe, 4.0 (26); Great Crested Flycatcher, 4.0; American Goldfinch, 4.0; Wood Thrush, 3.5 (23); Rose-

breasted Grosbeak, 3.5; Barn Swallow, 3.0 (20); Blue Jay, 3.0; Cedar Waxwing, 3.0; European Starling, 3.0; Red-eyed Vireo, 3.0; Chipping Sparrow, 3.0; Brown-headed Cowbird, 3.0; House Finch, 3.0; Red-bellied Woodpecker, 2.0; Tufted Titmouse, 2.0; Black-and-white Warbler, 2.0; Swamp Sparrow, 2.0; White-breasted Nuthatch, 1.5; Scarlet Tanager, 1.5; Canada Goose, 1.0; Hooded Merganser, 1.0; Ruffed Grouse, 1.0; American Woodcock, 1.0; Mourning Dove, 1.0; Ruby-throated Hummingbird, 1.0; Northern Flicker, 1.0; Eastern Wood-Pewee, 1.0; Least Flycatcher, 1.0; Eastern Kingbird, 1.0; Warbling Vireo, 1.0; Golden-winged Warbler, 1.0; Common Grackle, 1.0; Purple Finch, 1.0. **Total:** 47 species; 207.5 territorial males (1383/km²). **Visitors:** Great Blue Heron, Green-backed Heron, Mallard, Wood Duck, Turkey Vulture, Red-tailed Hawk, Osprey, Chimney Swift, Belted Kingfisher, Downy Woodpecker, Willow Flycatcher, American Crow, House Wren, Winter Wren, Eastern Bluebird, Hermit Thrush, Yellow-throated Vireo, Solitary Vireo, Northern Waterthrush, Louisiana Waterthrush, Northern Cardinal, Indigo Bunting, Pine Siskin. **Nests Found:** Canada Goose (1), Hooded Merganser (1), Eastern Phoebe (2), Tree Swallow (7), Barn Swallow (3), Gray Catbird (3), American Robin (4), Cedar Waxwing (3), European Starling (3), Chestnut-sided Warbler (1), Yellow Warbler (1), American Redstart (1), Rose-breasted Grosbeak (1), House Finch (3).

78. SECOND-GROWTH BROADLEAF-CONIFEROUS

HOJA ANCHA-CONÍFERO SECUNDARIO

DORY SMITH

120 Olympic View Ave. So.
Sequim, WA 98382

Location: Washington; Clallam Co.; Sequim; 48°08'N, 123°12'W; Dungeness Quadrangle, USGS. **Continuity:** Established 1987. **Size:** 21.4 ha. **Description of Plot:** See Second Growth Broadleaf-Coniferous Winter Bird Population Study, this issue. **Weather:** May temperatures average, but June significantly colder than average. Rainfall amounts were not excessive, but occurred on enough mornings (or excessive amounts of wind) to make it difficult to census under optimum conditions. **Coverage:** 8 visits; 14 study-hours; 6, 9, 14, 20 May; 1, 6, 15 June; 8 July; 0530-0800. **Census:** Rufous-sided Towhee, 7.5 (35); Song Sparrow, 6.0 (28); Orange-crowned Warbler, 3.5 (16); American Goldfinch, 3.5; Bewick's Wren, 2.5; Wilson's Warbler, 2.5; American Crow, 1.5; Brown-headed Cowbird, 1.5; Mourning Dove, 1.0; Chestnut-backed Chickadee, 1.0; Golden-crowned Kinglet, 1.0; American Robin, 1.0; Hutton's Vireo, 1.0; Rufous Hummingbird, 0.5; Western Flycatcher, 0.5; Swainson's Thrush, 0.5; White-crowned Sparrow, 0.5; Purple Finch, 0.5; California Quail, +; Black-capped Chickadee, +; Bushtit, +; Red-breasted Nuthatch, +; Cedar Waxwing, +; Warbling Vireo, +; Black-throated Gray Warbler, +; Dark-eyed Junco, +; Pine Siskin, +. **Total:** 27 species; 36 territorial males (168/km²). **Visitors:** Mallard, Bald Eagle, Red-tailed Hawk, Band-tailed Pigeon, Violet-green Swallow, Tree Swallow, Barn Swallow, Common Raven, Red-winged Blackbird, House Finch. **Nests Found:** Bushtit. **Fledglings:** Bewick's Wren, American Robin, White-crowned Sparrow. **Remarks:** Windier and colder weather than usual during part of the period may have affected the population of insect-eating birds, such as thrushes and flycatchers, or at least brought them to the areas later than usual.

79. SUBURBAN BIRD SANCTUARY

SANTUARIO DE AVES SUBURBANO

WILLIAM J. KOLODNICKI

Theodore Roosevelt Sanctuary, Inc.
134 Cove Road
Oyster Bay, NY 11771

Location: New York; Nassau Co.; Oyster Bay; 40°52'N, 72°26'W; Hicksville Quadrangle, USGS. **Continuity:** Established 1983; 6 consecutive yrs. **Size:** 4.2 ha. **Description of Plot:**

See *Amer. Birds* 38:125-126 (1984). **Weather:** Cold and heavy rain; temperatures, 9-26°C. **Coverage:** 9 visits; 11 study-hours; 9, 13, 26, 29 May; 3, 10, 19 June; 7, 19 July; 0505-0730 (7 visits), 1916-2022 (2 visits). **Census:** Common Grackle, 5.0 (119); House Wren, 4.0 (95); American Robin, 4.0; Gray Catbird, 3.0 (71); Northern Cardinal, 3.0; Northern Oriole, 3.0; Mourning Dove, 2.5; Red-bellied Woodpecker, 2.0; Red-eyed Vireo, 2.0; House Sparrow, 2.0; Blue Jay, 1.0; Wood Thrush, 1.0; Chipping Sparrow, 1.0; Downy Woodpecker, 0.5; Northern Flicker, 0.5; Eastern Wood-Pewee, 0.5; Song Sparrow, 0.5; White-breasted Nuthatch, +; Rose-breasted Grosbeak, +. **Total:** 19 species; 35.5 territorial males (845/km²). **Nests Found:** Common Grackle (5), House Wren (3), American Robin, (3), Red-bellied Woodpecker, (2), House Sparrow (2), Downy Woodpecker (1). **Visitors:** Red-tailed Hawk, Yellow-billed Cuckoo, Eastern Screech-Owl, Great Horned Owl, Chimney Swift, Hairy Woodpecker, Great Crested Flycatcher, Barn Swallow, American Crow, Fish Crow, Black-capped Chickadee, Tufted Titmouse, Carolina Wren, Veery, Northern Mockingbird, Cedar Waxwing, European Starling, White-eyed Vireo, American Redstart, Ovenbird, Common Yellowthroat, Scarlet Tanager, Red-winged Blackbird, Rusty Blackbird, Brown-headed Cowbird, Rufous-sided Towhee, House Finch, American Goldfinch. **Acknowledgments:** Thanks to Joseph Waldvogel who assisted with field work and compiling.

80. SUBURBAN CEMETERY

CEMENTERIO SUBURBANO

THOMAS A. IMHOF

1036 Pike Road

Birmingham, AL 35218

Location: Alabama; Jefferson Co.; Birmingham; 33°29'N, 86°54'W; Bessemer Quadrangle, USGS. **Continuity:** Established 1978; 8 intermittent yrs. **Size:** 15.0 ha. **Description of Plot:** See *Amer. Birds* 34:18-19 (1980). **Census:** House Sparrow, 15.0 (100); American Robin, 10.0 (66); Northern Cardinal, 9.0 (60); Mourning Dove, 7.0 (46); Northern Mockingbird, 7.0; European Starling, 5.0 (33); Blue Jay, 3.5 (23); Rufous-sided Towhee, 3.0 (20); House Finch, 2.5; Red-bellied Woodpecker, 2.0; Great Crested Flycatcher, 2.0; Brown Thrasher, 2.0; Brown-headed Cowbird, 2.0; Downy Woodpecker, 1.0; Northern Flicker, 1.0; Carolina Chickadee, 1.0; Tufted Titmouse, 1.0; Carolina Wren, 1.0; Red-winged Blackbird, 0.5; Eastern Wood-Pewee, +. **Total:** 20 species; 75.5 territorial males (503/km²).

81. GULF COAST SALT MARSH

PANTANO SALOBRE COSTANERO

MARY VICTORIA McDONALD

Conservation and Research Center

Front Royal, VA 22630

Location: Florida; Levy Co.; Cedar Key; 29°11'N, 83°01'W; Sumner Quadrangle, USGS. **Continuity:** Established 1980; 9 consecutive yrs. **Size:** 20.0 ha. **Description of Plot:** See *Amer. Birds* 35:99,104 (1981). **Coverage:** 115 study-hours. **Census:** Seaside Sparrow, 44.0 (220); Clapper Rail, 12.0 (60); Marsh Wren, 12.0. **Total:** 3 species; 68 territorial males (340/km²).

82. LONGLEAF PINE FOREST-APRIL BURN

BOSQUE DE PINO DE HOJA LARGA-QUEMADO EN ABRIL

RICHARD L. WEST

1101 Old Fort Drive

Tallahassee, FL 32301

Location: Florida; Leon Co.; Tallahassee; 32°21'N, 84°20'W; Lake Munson Quadrangle, USGS. **Continuity:** New, but see Remarks. **Size:** 15.0 ha. **Description of Plot:** Trees 7.6

cm dbh and over, based on nine 0.04-ha circular samples, 200/ha; total basal area, 8.7 m²/ha. Species comprising 90% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): Longleaf Pine 146, 73, 89, 100; Bluejack Oak 52, 26, 10, 78. 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) 101, 50, 0.9, 11; B (15.2–22.9 cm) 30, 15, 0.8, 10; C (22.9–38.1 cm) 49, 25, 3.7, 42; D (38.1–53.3 cm) 20, 10, 3.2, 37. Canopy cover, 32%; average canopy height, 20.6 m (range 19.5–22 m). Wiregrass grew back quickly during the study, and Bracken Fern was evident in May. Shrubs were reduced to burnt stems. The pines were undamaged. **Water:** No water present. **Edge:** The edge on 3 sides is essentially the same for more than 50 m. The 4th edge, 500 m long, is adjacent to a similar unburned control. **Weather:** An intermittent drizzle reduced activity on one visit and fog delayed activity on another. **Coverage:** 11 visits: 21 study-hours; 26 April–10 June. **Census:** Pine Warbler, 7.0 (46); Bachman's Sparrow, 6.0 (40); Common Nighthawk, 4.0 (26); Great Crested Flycatcher, 3.0 (20); Eastern Wood-pewee, 2.5; Summer Tanager, 2.5; Northern Bobwhite, 2.0; Downy Woodpecker, 2.0; Tufted Titmouse, 2.0; Blue Grosbeak, 2.0; Brown-headed Cowbird, 2.0; Mourning Dove, 1.0; Red-headed Woodpecker, 1.0; Northern Flicker, 1.0; Blue Jay, 1.0; Carolina Chickadee, 1.0; Brown-headed Nuthatch, 1.0; Eastern Bluebird, 1.0; Yellow-throated Vireo, 1.0; Northern Cardinal, 1.0; Red-bellied Woodpecker, 0.5; Hairy Woodpecker, 0.5; Blue-gray Gnatcatcher, 0.5; Eastern Meadowlark, 0.5; Red-shouldered Hawk, +; Red-cockaded Woodpecker, +; Rufous-sided Towhee, +. **Total:** 27 species; 46 territorial males (306/km²). **Remarks:** Niemi (1981. *Amer. Birds* 35:69) established a 20-ha plot at this site in 1980. Forty percent of Niemi's original plot (8 ha) was burned on 20 April with a controlled burn. I added 7 ha to the burned 8 ha within Niemi's original area to form a new study plot. I then established a 15-ha plot in the unburned area immediately adjacent to this plot for comparison. (See Longleaf Pine Forest-Unburned Control.) Stumps were still smoking on the first census visit, yet green tips of Wiregrass were emerging. **Other Observers:** Frances C. James. **Acknowledgments:** Thanks to Frances C. James for help and advice and to U.S. Forest Service personnel for providing maps and information as needed.

83. LONGLEAF PINE FOREST-UNBURNED CONTROL

BOSQUE DE PINO DE HOJA LARGA-CONTROLADO SIN QUEMARLO

RICHARD L. WEST

1101 Old Fort Drive
Tallahassee, FL 32301

Location: Florida; Leon Co.; Tallahassee; 32°19'N, 84°20'W; Lake Munson Quadrangle, USGS. **Continuity:** New, but see Remarks for Longleaf Pine Forest-April Burn. **Size:** 15.0 ha. **Description of Plot:** Trees, 7.6 cm dbh and over, based on eight 0.04-ha circular samples, 133/ha; total basal area, 9.2 m²/ha. Species comprising 90% of the total number of trees: [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): Longleaf Pine 119, 88, 95, 100; Bluejack Oak 15, 12, 5, 50. Trees by diameter size class: [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A (7.6–15.2 cm) 49, 37, 0.5, 5; B (15.2–22.9 cm) 10, 7, 0.3, 3; C (22.9–38.1 cm) 47, 35, 3.4, 37; D (38.1–53.3 cm) 25, 19, 4.1, 45; E (53.3–68.6 cm) 3, 2, 0.9, 10. Shrub stems/ha, 2964; ground cover, 55%; canopy cover, 32%; average canopy height, 22.9 m (range 19.5–27 m). **Edge:** Edge on 3 sides is essentially the same for more than 50 m. The 4th edge, 500 m long, is adjacent to a similar plot which was burned with a controlled understory fire 6 days before the study began. **Weather:** See Longleaf Pine Forest-April Burn. **Coverage:** 11 visits: 21 study-hours; 26 April–10 June. **Census:** Pine Warbler, 6.0 (40); Bachman's Sparrow, 5.0 (33); Rufous-sided Towhee, 4.5 (30); Great Crested Flycatcher, 3.0 (20); Carolina Chickadee, 2.0; Tufted Titmouse, 2.0; Brown-headed Nuthatch, 2.0; Summer Tanager, 2.0; Northern Cardinal, 2.0; Blue Grosbeak, 2.0; Mourning Dove, 1.5; Blue-gray Gnatcatcher, 1.5; Northern Bobwhite, 1.0; Eastern Wood-pewee, 1.0; Blue Jay, 1.0; Carolina Wren, 1.0; Yellow-throated Vireo, 1.0; Brown-headed Cowbird, 1.0; Common Nighthawk, 0.5; Red-bellied Woodpecker, 0.5; Downy Woodpecker,

0.5; White-eyed Vireo, 0.5; Red-shouldered Hawk, +; Red-headed Woodpecker, +; Red-cockaded Woodpecker, +; Northern Flicker, +; Eastern Bluebird, +. **Total:** 27 species; 41.5 territorial males (276/km²). **Remarks:** See 82. **Other Observers:** Frances C. James. **Acknowledgments:** Thanks to Frances C. James for help and advice and to US Forest Service personnel for providing maps and information as needed.

84. MATURE LONGLEAF PINE FOREST

BOSQUE DE PINO DE HOJA ANCHA MADURO

W. WILSON BAKER

Tall Timbers Research Station

Rt 1, Box 678

Tallahassee, FL 32312

Location: Georgia; Thomas Co.; Thomasville; 30°45'N, 84°00'W; Pine Park and Thomasville Quadrangles, USGS. **Continuity:** Established 1980; 4 intermittent yrs. **Size:** 20.0 ha. **Description of Plot:** See *Amer. Birds* 35:69 (1981). **Weather:** Average low temperature 13.9°C (range 8.9–16.7); average high temperature 21.7°C (range 16.7–23.9); average starting humidity was 94%; calm to low winds; clear to partly cloudy. **Coverage:** 10 visits (all started within 5 min of sunrise); 21 study-hours; 3 May–12 June. **Census:** Rufous-sided Towhee, 11.0 (55); Indigo Bunting, 9.0 (45); Common Yellowthroat, 8.0 (40); Bachman's Sparrow, 8.0; Red-headed Woodpecker, 6.0 (30); Blue Grosbeak, 6.0; Great Crested Flycatcher, 4.5 (22); Northern Bobwhite, 4.0 (20); Blue Jay, 4.0; Brown-headed Cowbird, 4.0; Red-bellied Woodpecker, 3.5 (17); Carolina Wren, 3.5; Eastern Meadowlark, 3.5; Mourning Dove, 3.0 (15); White-breasted Nuthatch, 3.0; Eastern Wood-Pewee, 2.5; Eastern Bluebird, 2.5; Pine Warbler, 2.5; Yellow-breasted Chat, 2.5; Northern Flicker, 2.0; Brown-headed Nuthatch, 2.0; Brown Thrasher, 2.0; Northern Cardinal, 2.0; Red-cockaded Woodpecker, 1.5; Tufted Titmouse, 1.5; Summer Tanager, 1.5; Wood Duck, 1.0; Common Ground-Dove, 1.0; Hairy Woodpecker, 1.0; Northern Mockingbird, 1.0; Loggerhead Shrike, 1.0; Orchard Oriole, 1.0; Common Nighthawk, +; Pileated Woodpecker, +; Eastern Kingbird, +; Field Sparrow, +. **Total:** 36 species; 109.5 territorial males (547/km²). **Visitors:** Downy Woodpecker, Purple Martin, American Crow, Fish Crow, Carolina Chickadee, Red-winged Blackbird, Common Grackle. **Nests Found:** Red-cockaded Woodpecker, Great Crested Flycatcher, Common Yellowthroat (2). **Fledglings Noted:** Mourning Dove, Loggerhead Shrike, Rufous-sided Towhee, Bachman's Sparrow, Northern Cardinal. **Remarks:** Four Red-cockaded Woodpecker clans foraged in parts of the plot. Yellow-breasted Chats were associated with small thickets in the "open pine woods".

85. MIXED UPLAND BROADLEAF FOREST

BOSQUE MIXTO DE HOJA LARGA EN ALTURAS

SHIRLEY A. BRIGGS

7605 Honeywell Lane

Bethesda, MD 20814

Location: District of Columbia; Washington DC; 38°55'N, 77°05'W; Washington West DC-MD-VA Quadrangle 7.5 minute series, USGS. **Continuity:** Established 1960; 29 consecutive yrs. **Size:** 14.2 ha. **Description of Plot:** See *Aud. Field Notes* 14:502-503 (1960). **Coverage:** 35 visits (33.25 complete coverages); 95 study-hours; 19 March to 28 June; 0600–1630 (32 in morning, 2 in afternoon, 1 over noon); 2.85 hrs per coverage. **Census:** Gray Catbird, 25.0 (176); Northern Cardinal, 25.0; Carolina Wren, 22.0 (154); Tufted Titmouse, 19.0 (133); Carolina Chickadee, 17.5 (123); Veery, 12.0 (84); Wood Thrush, 11.0 (77); Rufous-sided Towhee, 10.0 (70); Red-eyed Vireo, 9.0 (63); Red-bellied Woodpecker, 8.5 (59); Northern Flicker, 6.0 (42); White-breasted Nuthatch, 6.0; Blue Jay, 5.0 (35); Downy Woodpecker, 4.5 (31); American Crow, 4.5; European Starling, 4.0 (28); Acadian Flycatcher, 3.0 (21); American Robin, 3.0; Common Grackle, 3.0; House Finch, 3.0; Common Yellowthroat, 2.5; Hairy Woodpecker, 2.0; Eastern Wood-Pewee, 2.0; Song

Sparrow, 2.0; Mourning Dove, 1.5; Pileated Woodpecker, 1.5; Great Crested Flycatcher, 1.0; House Wren, 1.0; Blue-gray Gnatcatcher, 1.0; Brown-headed Cowbird, 1.0; House Sparrow, 1.0; Eastern Phoebe, 0.5; Northern Mockingbird, 0.5; Indigo Bunting, 0.5; Wood Duck, +; Red-shouldered Hawk, +; Rock Dove, +; Chimney Swift, +; White-eyed Vireo, +; Scarlet Tanager, +. **Total:** 40 species; 219 territorial males (1542/km²). **Visitors:** Turkey Vulture, Black Vulture, Sharp-shinned Hawk, Yellow-billed Cuckoo, Ruby-throated Hummingbird, Brown Thrasher, Yellow-throated Vireo, Northern Parula, Ovenbird, Louisiana Waterthrush, American Redstart, American Goldfinch. **Nests Found:** Downy Woodpecker (2), Northern Flicker (2), Red-bellied Woodpecker (2), European Starling. **Other Nesting Behavior:** Downy Woodpecker young begging, Blue Jay feeding young, American Robin fledglings seen. **Other Observers:** Mary D'Imperio, Ann Feather, Olive Holbrook, and G.T. Hunt.

86. SELECTIVELY LOGGED MATURE TULIP TREE-OAK FOREST

BOSQUE MADURO ENTRESACADO DE ÁLAMO-ROBLE

CHANDLER S. ROBBINS

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Location: Maryland; Prince Georges Co.; Bowie; 38°55'N, 76°46'W; Lanham Quadrangle, USGS. **Continuity:** Established 1975; 4 intermittent yrs. **Size:** 14.5 ha (previously 14.2 ha). **Description of Plot:** See *Amer. Birds* 31:17-23, 92-93 (1977). Selectively logged in 1971 and censused in 1975-77. It was then heavily logged in 1981, at which time nearly all remaining oaks were taken but the tall Tulip Trees were left. Opening the canopy produced a vigorous growth of shrubs and saplings. A quantitative survey of the present vegetation is as follows: Trees 7.6 cm dbh and over, based on seven 0.04-ha circular samples, 440/ha; total basal area, 30.8 m²/ha. Species comprising 91% of the total number of trees [figures after each are trees/ha, relative density (%), relative dominance (%), and frequency (%): Tulip Tree 1383, 33.0, 63.3, 100; Flowering Dogwood 1141, 27.3, 3.9, 86; Black Gum 657, 15.7, 9.4, 71; Ironwood 277, 6.6, 5.3, 29; Green Ash 170, 4.1, 1.5, 29; dead trees 138; White Oak 104, 2.5, 13.7, 43; Red Maple 69, 1.7, 1.2, 29. 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) 274, 62, 2.4, 7.7; B (15.2-22.9 cm) 72, 16, 1.9, 6.0; C (22.9-38.1 cm) 35, 8, 2.6, 8.5; D (38.1-53.3 cm) 10, 2, 1.8, 5.7; E (53.3-68.6 cm) 15, 3, 4.1, 13.1; F (68.6-83.8 cm) 25, 6, 11.2, 36.4; G (83.8-101.6 cm) 10, 2, 7.0, 22.6. Shrub stems/ha, 40,280; ground cover 66%; canopy cover 84%; average canopy height 21 m (range 8.5-29.9). Vegetation profile (% occurrence of green vegetation based on 140 vertical sightings): 0-0.5 m, 36; 0.5-1 m, 26; 1-1.5 m, 17; 1.5-2 m, 8; 2-2.5 m, 18; 2.5-3 m, 19; 3-4 m, 29; 4-6 m, 43; 6-8 m, 26; 8-10 m, 19; 10-15 m, 18; 15-20 m, 14; 20-25 m, 9; 25-30 m, 11; 30-35 m, 4; 35-40 m, 1. **Edge:** The 20.2-ha woodland in which the 14.5-ha plot is located is still bordered on the N by a schoolyard, narrowly on the NW by a seepage forest, on the W and S by cultivated fields, on the E by Church Road, across which is abandoned open pasture overgrown with briars, and on the NE corner by extensive mature woods. **Topography and Elevation:** sloping gradually to the N and E, 49-55 m. **Coverage:** 34 study-hours including time search for nests; complete coverage on 1, 8, 18, 22, 27 June; 3, 7, 21 July. **Census:** Northern Cardinal, 17.0 (117); Red-eyed Vireo, 15.0 (103); Red-bellied Woodpecker, 11.5 (79); Wood Thrush, 11.0 (75); Tufted Titmouse, 8.0 (55); Mourning Dove, 6.0 (41); Acadian Flycatcher, 6.0; Yellow-billed Cuckoo, 5.5 (37); Hooded Warbler, 5.0 (34); Eastern Wood-Pewee, 4.0 (27); White-eyed Vireo, 4.0; Downy Woodpecker, 3.0 (20); Northern Flicker, 3.0; Carolina Wren, 3.0; Kentucky Warbler, 3.0; Hairy Woodpecker, 2.0; Blue Jay, 2.0; American Crow, 2.0; Carolina Chickadee, 2.0; White-breasted Nuthatch, 2.0; Scarlet Tanager, 2.0; Brown-headed Cowbird, 2.0; Red-tailed Hawk, 1.0; American Woodcock, 1.0; American Robin, 1.0; Gray Catbird, 1.0; Ovenbird, 1.0; Indigo Bunting, 1.0; American Goldfinch, 1.0; Black-billed Cuckoo, 0.5; Pileated Woodpecker, 0.5; Northern Bobwhite, +; Northern Mockingbird, +; Yellow-throated Vireo, +; Common Yellowthroat,

+; Yellow-breasted Chat, +; Rufous-sided Towhee, +; Orchard Oriole, +. **Total:** 38 species; 127 territorial males (875/km²). **Nests Found:** Mourning Dove, Acadian Flycatcher, American Crow, Wood Thrush (8), Hooded Warbler (with Brown-headed Cowbird egg), and Northern Cardinal. **Remarks:** The greatest decreases since 1977 (50% or more) were in Downy Woodpecker, Yellow-throated Vireo, Hooded Warbler, Scarlet Tanager, Indigo Bunting, and Rufous-sided Towhee. Red-shouldered Hawk was the only species found in 1977 that was not recorded in the woodlot in 1988; the others that were missed on this years census (Ruby-throated Hummingbird, Brown Thrasher, European Starling, Blue-gray Gnatcatcher) were found in the buffer strip surrounding the census plot, as were Eastern Bluebird, Blue Grosbeak, Chipping, Field, and Song sparrows, and House Finch. Species with notable increases this summer were the Mourning Dove, Yellow-billed Cuckoo, and Carolina Wren. **Acknowledgments:** I thank Robert Whitcomb for loaning me his maps and notes from prior years. I thank Barbara Dowell for help in laying out census lines, and Michael O'Brien for assistance with the vegetation sampling.

87. BULRUSH AND CATTAIL MARSH IN CONIFER FOREST

CIÉNAGAS DE ENEAS EN BOSQUE DE CONÍFERAS

MARCELLA M. BISHOP

750 Rocky Point Road
Polson, MT 59860

Location: Montana; Lake Co.; Polson; 47°35'N, 114°09'W; Wild Horse Island Quadrangle, USGS. **Continuity:** Established 1976; 13 consecutive yrs. **Size:** 40.5 ha. **Description of Plot:** See *Amer. Birds* 31:84-85 (1977). **Coverage:** 48 study-hours. **Census:** Yellow-headed Blackbird, 46.0 (113); Red-winged Blackbird, 29.0 (71); Song Sparrow, 16.0 (39); American Coot, 14.0 (34); Western Wood-Pewee, 8.0 (19); Willow Flycatcher, 8.0; Black-capped Chickadee, 8.0; Common Yellowthroat, 8.0; Pine Siskin, 8.0; Redhead, 6.0 (14); Tree Swallow, 6.0; Marsh Wren, 6.0; Dark-eyed Junco, 6.0; Red-breasted Nuthatch, 5.0 (12); Pied-billed Grebe, 4.0 (9); Canada Goose, 4.0; Mallard, 4.0; Violet-green Swallow, 4.0; Mountain Chickadee, 4.0; American Robin, 4.0; Ruffed Grouse, 3.0 (7); Mourning Dove, 3.0; Northern Flicker, 3.0; Hammond's Flycatcher, 3.0; Swainson's Thrush, 3.0; Warbling Vireo, 3.0; Yellow Warbler, 3.0; Great Blue Heron, 2.0; Wood Duck, 2.0; Common Nighthawk, 2.0; Calliope Hummingbird, 2.0; Western Flycatcher, 2.0; Barn Swallow, 2.0; Common Raven, 2.0; Ruby-crowned Kinglet, 2.0; Cedar Waxwing, 2.0; Orange-crowned Warbler, 2.0; Chipping Sparrow, 2.0; Cassin's Finch, 2.0; Cinnamon Teal, 1.0; Ring-necked Duck, 1.0; Osprey, 1.0; Spotted Sandpiper, 1.0; Downy Woodpecker, 1.0; Pileated Woodpecker, 1.0; Dusky Flycatcher, 1.0; White-breasted Nuthatch, 1.0; Varied Thrush, 1.0; American Redstart, 1.0; MacGillivray's Warbler, 1.0; Western Tanager, 1.0; Brown-headed Cowbird, 1.0. **Total:** 52 species; 256 territorial males (632/km²).