

WINTER BIRD POPULATION STUDY: 1993

<i>Habitat</i>	<i>State/ Prov.</i>	<i>Compiler</i>	<i>Plot Size (ha)</i>	<i>Ind. per 40 ha</i>	<i>Num. spp.</i>	<i>Hrs obs.</i>	<i>Yr Study</i>
Broadleaf Forests							
1. Willow Riparian Woodland and Edge	CA	D. Riensche	8.1	1149	55	19.3	1
2. Mixed Upland Broadleaf Forest	DC	S.A. Briggs	14.2	413	40	83.0	34
3. Oak-Maple Bottomland	MA	L.E. Taylor	6.7	67.3	12	11.2	12
4. Mature Deciduous Floodplain Forest	MD	D. Gauthey	17.8	276	37	42.3	42
5. Disturbed Bottomland Oak-Gum-Cypress Forest	MS	G.E. Alexander, Jr.	11.4	466	35	11.8	18
6. Upland Second-growth Oak-Hickory Forest	MS	H. Moore	10.0	380	30	24.4	5
7. Mature Urban Deciduous Forest I	NY	D.S. Künstler	10.1	155	15	13.2	1
8. Young White Ash-Red Maple Forest on Lake Shore	NY	G.R. Maxwell	16.2	98.8	20	10.0	7
9. Beech-Maple Swamp Forest	OH	N.J. Moore	8.3	278	25	13.5	7
10. Mature Broadleaf Forest	OH	C.W. Saunders	16.0	129	18	19.7	1
11. Riparian Deciduous Forest	OH	E.J. Tramer	18.0	244	28	20.5	5
12. Black Willow-White Ash Forest	ON	M.F.G. Clark	13.0	55.8	17	10.8	10
13. Sugar Maple-Mixed Hardwood Forest	PA	R.A. Ickes	9.7	158	17	24.2	10
Needleleaf Forests							
14. Ponderosa Pine Forest	CO	L. Hering	8.1	160	19	20.3	13
15. Mature Longleaf Pine Forest I	GA	R.T. Engstrom	20.0	162	33	16.4	1
16. Mature Longleaf Pine Forest II	GA	L.D. Carlile	20.0	166	39	16.5	1
17. Mature Red Spruce Forest	ME	T.P. Skaling	16.0	26.8	13	27.3	4
18. Upland Scotch Pine Plantation	NY	E.W. Brooks	9.3	101	14	8.8	9
19. Old-growth White Pine-Hemlock Forest	PA	J.C. Haney	18.2	124	20	25.4	1
20. Mature Eastern Larch Forest	PQ	M.D. Demers	25.0	143	11	15.5	3
21. Mature White Pine Forest	RI	W.R. Eddleman	10.1	79.2	10	10.8	3
Broadleaf/Needleleaf Forests							
22. Ponderosa Pine-Scrub Oak Forest	CO	H.J. Finch	12.0	36.7	11	9.8	3

WINTER BIRD POPULATION STUDY: 1993 (Continued)

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23. Mature Broadleaf-Coniferous Forested Wetland	CT	T. Harrington	21.5	257	31	16.0	2
24. Maple-Pine-Oak Second-growth Forest	MA	W.E. Davis, Jr.	11.8	17.5	13	12.0	17
25. Upland Mixed Pine-Spruce-Hardwood Plantation	NY	E.W. Brooks	16.6	81.0	14	12.5	19
26. Coniferous-Deciduous Forest	ON	M.F.G. Clark	9.2	203	14	11.2	8
27. Old-growth Hemlock-Mixed Hardwood Forest I	PA	J.C. Haney	15.0	299	20	23.8	1
28. Old-growth Hemlock-Mixed Hardwood Forest II	PA	J.C. Haney	15.0	241	16	24.3	1
29. Remnant Old-growth Hemlock-Mixed Hardwood Forest	PA	J.C. Haney	15.0	202	19	22.3	1
30. Mature Deciduous-Coniferous Forest with Stream	TN	S.J. Stedman	10.2	220	34	15.2	4
Mixed Habitats							
31. Suburban Cemetery	AL	T.A. Imhof	15.0	966	40	22.0	14
32. Suburban University Campus	CA	M. Wimer	28.2	419	37	15.0	2
33. Urban Nature Center	CA	F. Parker	7.3	247	33	15.0	3
34. Urban Nature Preserve	CA	L. Beidleman	16.2	406	52	21.8	1
35. Floodplain Forest and Cultivated Bottomland	NY	V.M. Putznick	51.8	45.4	22	14.5	23
36. Field, Ridge, and Shrubby Trees	ON	M.F.G. Clark	6.6	281	13	9.5	8
37. Shrubby Trees, Ridge, and Woods	ON	M.F.G. Clark	7.3	203	12	9.2	5
Non-forested Wetlands							
38. Coastal Freshwater Marsh	CA	J.P. Kelly	10.5	584	48	8.0	8
39. Degraded Urban Marsh	CA	F. Parker	10.2	215	30	7.5	1
40. Man-made Tidal Lagoon	CA	C.T. Collins	5.3	2980	28	6.0	5
41. Tidal Lagoon-Park	CA	R.W. Meade	8.1	1123	31	5.0	4
42. Barrier Beach and Saltwater Estuary	FL	R.W. Loftin	213.0	415	69	19.5	16

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Shrublands							
43. Coastal Sage Scrub-Flood Basin	CA	T.P. Ryan	13.2	596	36	14.0	1
44. Coastal Scrub	CA	M.K. Chase	8.1	459	28	20.0	6
45. Disturbed Coastal Scrub A	CA	G.M. Yanega	4.7	895	33	19.7	4
46. Disturbed Coastal Scrub B	CA	B. Milá	8.1	503	17	17.8	5
Successional Fields							
47. Brushland (Old-field Succession)	IN	J.D. Webster	17.1	83.6	26	23.8	9
48. Abandoned Upland Pasture	NY	V.M. Pitzrick	8.0	38.8	12	5.7	10
49. Old Pasture Shrub with Hedgerows and Seasonal Wet Area	VT	F. Merrill	11.1	44.6	9	12.8	1
50. Clear-cut and Douglas-fir Plantation I	WA	D.L. Base	10.0	101	8	6.8	1
51. Clear-cut and Douglas-fir Plantation II	WA	D.L. Base	10.0	103	8	7.0	1
52. Clear-cut and Douglas-fir Plantation with Wildlife Leave Tree Retention	WA	D.L. Base	10.0	94.0	11	6.7	1
Cultivated							
53. Mixed Croplands	PA	G.P. Schwalbe	40.5	91.4	8	6.0	11

1. WILLOW RIPARIAN WOODLAND AND EDGE

ARBOLADO DE SAUCE RIVEREÑO Y BORDE

DAVE RIENSCHÉ

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

Site Number: CA9292061. **Location:** California; Alameda Co.; Fremont; Coyote Hills Regional Park; 37°34'N, 122°5'W; Newark Quadrangle, USGS. **Continuity:** New. **Size:** 8.1 ha. **Description of Plot:** See *J. Field Ornithol.* 64 (Suppl.):35 (1993). Due to the decline of riparian woodland habitat on the S boundary of the plot, the East Bay Regional Park District enhanced the wetland area by cleaning and dredging the stream to permit a year-round water flow. The depth of the stream which flows through the plot is now 1.0–1.6 m deeper. This restoration activity resulted in the temporary loss of 5% of the riparian woodland canopy. **Weather:** Mean temperature 7.1°C (range 0.6–12.2°C). Thundershowers during one visit. As of 1 Feb., the area had received 109% of its normal rainfall. **Coverage:** 19.3 hrs; 10 visits (9 mornings, 1 afternoon): 15, 22, 28, 30 Dec.; 2, 5, 11, 19, 26 Jan.; 2 Feb. **Count:** Yellow-rumped Warbler, 32.9 ind./visit, (10 visits); Golden-crowned Sparrow, 29.5, (10); Bushtit, 26.7, (10); American Robin, 17.0, (7); Song Sparrow, 13.2, (10); European Starling, 11.8, (9); Lincoln's Sparrow, 11.6, (8); White-crowned Sparrow, 9.3, (8); Northern Flicker, 8.1, (10); Green-Winged Teal, 6.4, (8); Ruby-crowned Kinglet, 5.8, (10); California Towhee, 4.7, (9); Black-crowned Night-Heron, 4.6, (5); Hermit Thrush, 4.5, (10); House Finch, 4.5, (7); Chestnut-backed Chickadee, 4.2, (9); Black-shouldered Kite, 3.4, (9); Common Yellowthroat, 3.2, (10); Scrub Jay, 3.1, (9); Marsh Wren, 3.0, (9); Bewick's Wren, 2.9, (9); Anna's Hummingbird, 2.3, (9); Virginia Rail, 1.7, (9); Nuttall's Woodpecker, 1.6, (9); Fox Sparrow, 1.6, (6); Mallard, 1.4, (4); Barn Owl, 1.4, (7); Black Phoebe, 1.3, (9); Red-shouldered Hawk, 1.0, (8); Red-tailed Hawk, 0.9, (6); Sora, 0.8, (6); Turkey Vulture, 0.7, (4); Cooper's Hawk, 0.7, (7); Loggerhead Shrike, 0.7, (6); Rufous-sided Towhee, 0.7, (4); dowitcher species, 0.6, (1); Northern Mockingbird, 0.6, (5); Sharp-shinned Hawk, 0.5, (5); Downy Woodpecker, 0.5, (3); American Pipit, 0.4, (1); Pied-billed Grebe, 0.4, (3); Greater Yellowlegs, 0.4, (2); Great Blue Heron, 0.3, (3); American Coot, 0.2, (1); Lesser Yellowlegs, 0.2, (2); Mourning Dove, 0.2, (2); Short-eared Owl, 0.2, (2); Brewer's Blackbird, 0.2, (2); Northern Harrier, 0.1, (1); Peregrine Falcon, 0.1, (1); Ring-necked Pheasant, 0.1, (1); Say's Phoebe, 0.1, (1); Common Raven, 0.1, (1); Warbling Vireo, 0.1, (1); Red-winged Blackbird, 0.1, (1). **Total:** 55 species; 233 ind./visit (1149 ind./40 ha). **Acknowledgments:** The East Bay Regional Park District who kindly provided the time to work on the project, Wanda Spittler for typing the original report, and Ranger Rob Reid for helping with the habitat survey.

2. MIXED UPLAND BROADLEAF FOREST

BOSQUE MIXTO DE HOJA ANCHA DE ALTURAS

SHIRLEY A. BRIGGS

*7605 Honeywell Lane
Bethesda, Maryland 20814-1029*

Site Number: DC1060009. **Location:** District of Columbia; Washington; Glover-Archbold Park; 38°55'N, 77°5'W; Washington West Quadrangle, USGS. **Continuity:** Established 1960; 34 yr. **Size:** 14.2 ha. **Description of Plot:** See *Aud. Field Notes* 14:502–503 (1960). **Weather:** Mean temperature 0.8°C. Intermittent snow during one visit. Snow on ground during one visit. Monthly data for DC [temperature for month (difference from last year)]: precipitation for month (difference from last year): Jan. 4.3°C (+2.8°C), 7.4 cm (+0.5 cm); Feb. 1.3°C (–1.8°C), 5.8 cm (–1.1 cm); Mar. 5.7°C (–2.8°C), 17.3 cm (+9.3 cm). **Coverage:** 83.0 hrs; 27 visits (mornings): 4, 10, 16, 18, 19, 20, 24, 25, 27, 28, 30 Jan.; 3, 5, 8, 10, 15, 20, 25, 28

Feb.; 3, 6, 8, 9, 16 Mar. **Count:** Carolina Chickadee, 24.7 ind./visit, (27 visits); Tufted Titmouse, 18.4, (27); House Finch, 16.9, (27); American Crow, 13.5, (27); Carolina Wren, 11.5, (27); Northern Cardinal, 8.8, (25); White-breasted Nuthatch, 8.4, (27); Red-bellied Woodpecker, 7.6, (26); Downy Woodpecker, 5.3, (26); Mourning Dove, 4.4, (26); House Sparrow, 4.0, (18); Dark-eyed Junco, 3.3, (20); European Starling, 2.2, (16); Hairy Woodpecker, 2.0, (20); Ring-billed Gull, 1.6, (15); Common Grackle, 1.4, (11); Pileated Woodpecker, 1.4, (18); Blue Jay, 1.3, (10); Northern Mockingbird, 1.2, (19); Rock Dove, 1.1, (14); Winter Wren, 1.0, (17); American Goldfinch, 1.0, (16); White-throated Sparrow, 1.0, (8); Song Sparrow, 0.9, (14); Northern Flicker, 0.7, (9); Red-shouldered Hawk, 0.6, (10); Ruby-crowned Kinglet, 0.4, (9); Yellow-bellied Sapsucker, 0.3, (8); Rufous-sided Towhee, 0.3, (7); Red-tailed Hawk, 0.3, (7); Brown Creeper, 0.3, (6); American Robin, 0.2, (4); Canada Goose, 0.1, (2); Black Vulture, 0.1, (1); Turkey Vulture, 0.1, (2); Fish Crow, 0.1, (3); Tundra Swan, 0.1, (1); Eastern Screech-Owl, 0.1, (2); Golden-crowned Kinglet, 0.1, (2); Sharp-shinned Hawk, 0.0, (1). **Total:** 40 species; 147 ind./visit (413 ind./40 ha). **Remarks:** Individuals per visit and individuals per 40 ha were well above the 34-yr averages. The coverage was the highest ever (range 11.5–77.0 hrs previously, with recent years higher). One observer spent more time per visit than usual, increasing the chance of detecting more species. Tufted Titmouse equalled its highest count, and White-breasted Nuthatch reached a new high after a steady rise recently. House Finches, first seen occasionally from 1969–1978, have increased steadily to 16.9 ind./visit now. **Other Observers:** Mary D'Imperio, Ann Feather, Kathryn Powers, Lee Lockwood.

3. OAK-MAPLE BOTTOMLAND

BOSQUE DE ROBLE-ARCE EN TIERRAS BAJAS

LEE E. TAYLOR

28 Bellington Street

Arlington, Massachusetts 02174

Location: Massachusetts; Middlesex Co.; Waltham; Metropolitan State Hospital; 42°24'N, 71°12'W; Lexington Quadrangle, USGS. **Continuity:** Established 1982; 12 yr. **Size:** 6.7 ha. **Description of Plot:** See *Am. Birds* 37:31–32 (1983). **Weather:** Mean temperature –7.5°C (range –19–3°C). Mean snow depth 8.2 cm (range 0–20 cm). The ground was bare on two visits. There were snow flurries during one visit and moderate snow during another. **Coverage:** 11.2 hrs; 11 visits (mornings): 2, 3, 9, 10, 16, 17, 18, 23, 24, 31 Jan.; 7 Feb. **Count:** Black-capped Chickadee, 5.9 ind./visit, (7 visits); Downy Woodpecker, 1.3, (8); White-breasted Nuthatch, 1.1, (6); Brown Creeper, 0.9, (6); American Crow, 0.8, (3); Golden-crowned Kinglet, 0.4, (2); American Robin, 0.4, (2); Hairy Woodpecker, 0.2, (1); Great Horned Owl, 0.1, (1); Northern Flicker, 0.1, (1); Blue Jay, 0.1, (1); Tufted Titmouse, 0.1, (1). **Total:** 12 species; 11.3 ind./visit (67.3 ind./40 ha). **Remarks:** One 25-minute pre-dawn trip, to search for Eastern Screech-Owls, was included in the 24 Jan. visit. None were detected.

4. MATURE DECIDUOUS FLOODPLAIN FOREST

BOSQUE DECIDUO MADURO INUNDABLE

DICK GAUTHEY

6603 Reynard Drive

Springfield, Virginia 22152

Location: Maryland; Montgomery Co.; Glen Echo; Cabin John Island; 38°58'N, 77°8'W; Falls Church Quadrangle, USGS. **Continuity:** Established 1947; 42 yr. **Size:** 17.8 ha. **Description of Plot:** See *Aud. Field Notes* 2:155–156 (1948). **Weather:** Mean temperature –0.8°C (range –8–4°C). There was partial snow cover on one visit. Temperatures were about average during Oct.–Dec., but Jan. was considerably warmer than average with no recorded snowfall. All water remained open. Feb. was colder than average with some snow cover during the second week. **Coverage:** 42.3 hrs; 11 visits (mornings): 6, 14, 16, 20, 23, 28 Jan.; 2, 5, 7, 13, 15 Feb. **Count:** Carolina Chickadee, 30.0 ind./visit, (11 visits); American Goldfinch, 21.8, (7); Mal-

lard, 10.8, (9); Carolina Wren, 10.1, (11); Tufted Titmouse, 7.6, (11); Downy Woodpecker, 3.9, (11); Golden-crowned Kinglet, 3.8, (9); White-throated Sparrow, 3.5, (7); American Crow, 3.4, (11); Northern Cardinal, 3.2, (10); Brown Creeper, 2.8, (11); Song Sparrow, 2.3, (8); American Black Duck, 2.1, (5); Winter Wren, 2.1, (9); Red-bellied Woodpecker, 1.8, (11); American Robin, 1.6, (5); Pileated Woodpecker, 1.5, (9); Dark-eyed Junco, 1.5, (3); Hairy Woodpecker, 1.4, (8); White-breasted Nuthatch, 1.4, (7); Mourning Dove, 1.0, (4); Belted Kingfisher, 0.7, (7); Northern Flicker, 0.7, (7); Great Blue Heron, 0.5, (1); Turkey Vulture, 0.5, (1); House Finch, 0.5, (3); Barred Owl, 0.4, (4); Ruby-crowned Kinglet, 0.3, (3); Canada Goose, 0.2, (1); Common Merganser, 0.2, (2); Red-breasted Merganser, 0.2, (2); Black Vulture, 0.2, (1); Red-shouldered Hawk, 0.2, (2); Northern Mockingbird, 0.2, (2); Sharp-shinned Hawk, 0.1, (1); Red-tailed Hawk, 0.1, (1); Yellow-bellied Sapsucker, 0.1, (1). **Total:** 37 species; 123 ind./visit (276 ind./40 ha). **Remarks:** Numbers were similar to last year with higher than usual numbers of waterbirds, kinglets, American Robins, and Carolina Wrens. The high counts were probably related to warm weather, open water, and lack of snow. American Goldfinch numbers were at an all-time maximum. **Other Observers:** Dick Homan and Carol Sattler.

5. DISTURBED BOTTOMLAND OAK-GUM-CYPRESS FOREST

BOSQUE INUNDABLE PERTURBADO DE ROBLE-GOMA-CIPRES

G. EDWARD ALEXANDER, JR.

346 South Gamwyn Drive
Greenville, Mississippi 38701

Location: Mississippi; Washington Co.; Hollandale; LeRoy Percy State Park; 33°10'N, 90°57'W; Swan Lake NW Quadrangle, USGS. **Continuity:** Established 1971; 18 yr. **Size:** 11.4 ha. **Description of Plot:** See *Aud. Field Notes* 25:638-639 (1971) and *J. Field Ornithol.* 63 (Suppl.):9-10 (1992). **Weather:** Mean temperature 6.0°C (range 2-10°C). Weather during the count period was generally mild and dry. **Coverage:** 11.8 hrs; 7 visits (mornings): 9, 16, 17, 30 Jan.; 6, 14, 28 Feb. **Count:** Common Grackle, 44.0 ind./visit, (2 visits); White-throated Sparrow, 13.3, (7); American Robin, 9.4, (7); Dark-eyed Junco, 9.1, (6); Rusty Blackbird, 8.6, (2); House Finch, 7.9, (3); Tufted Titmouse, 4.4, (7); Carolina Chickadee, 3.6, (7); Northern Cardinal, 3.6, (7); Chipping Sparrow, 3.4, (3); Red-bellied Woodpecker, 3.0, (7); Carolina Wren, 3.0, (7); Blue Jay, 2.9, (7); Yellow-rumped Warbler, 2.7, (7); Ruby-crowned Kinglet, 2.1, (5); Downy Woodpecker, 1.7, (6); Red-winged Blackbird, 1.6, (3); Yellow-bellied Sapsucker, 1.1, (6); Golden-crowned Kinglet, 1.1, (5); Song Sparrow, 1.0, (3); Field Sparrow, 0.9, (1); Mourning Dove, 0.4, (1); Hairy Woodpecker, 0.4, (3); Eastern Phoebe, 0.4, (3); Winter Wren, 0.4, (3); Brown Thrasher, 0.4, (3); Swamp Sparrow, 0.4, (3); American Goldfinch, 0.4, (3); Northern Flicker, 0.3, (1); Pileated Woodpecker, 0.3, (1); Red-tailed Hawk, 0.1, (1); Red-headed Woodpecker, 0.1, (1); Brown Creeper, 0.1, (1); Hermit Thrush, 0.1, (1); Rufous-sided Towhee, 0.1, (1). **Total:** 35 species; 133 ind./visit (466 ind./40 ha). **Remarks:** Poison ivy berries were fairly plentiful, as were other sources of food such as insect larvae, weed seeds, etc.

6. UPLAND SECOND-GROWTH OAK-HICKORY FOREST

BOSQUE SECUNDARIO ROBLE-NOGAL DE ALTURAS

HAL MOORE

1 Lakeside Drive
Vicksburg, Mississippi 39180

Location: Mississippi; Warren Co.; Vicksburg; Lake Park Tract; 32°14'N, 90°49'W; Big Black Quadrangle, USGS. **Continuity:** Established 1989; 5 yr. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):8 (1990) and 64 (Suppl.):8 (1993). **Weather:** Mean temperature 5.9°C (range 3-13°C). Slight fog during two visits. **Coverage:** 24.4 hrs; 12 visits (mornings): 18, 26, 27, 31 Dec.; 2, 6, 13, 16, 23, 26, 27, 28 Jan. **Count:** Red-bellied Woodpecker, 14.7

ind./visit, (12 visits); Tufted Titmouse, 13.9, (12); Carolina Wren, 10.9, (12); Carolina Chickadee, 7.3, (12); Hermit Thrush, 5.9, (12); American Crow, 5.0, (12); Yellow-rumped Warbler, 4.7, (10); Ruby-crowned Kinglet, 4.3, (11); American Robin, 4.0, (9); Yellow-bellied Sapsucker, 3.8, (12); Northern Cardinal, 3.1, (12); White-throated Sparrow, 3.1, (8); Downy Woodpecker, 2.8, (10); Northern Flicker, 2.2, (12); Red-shouldered Hawk, 1.6, (10); Pileated Woodpecker, 1.4, (9); Red-headed Woodpecker, 0.9, (7); Cedar Waxwing, 0.8, (1); American Goldfinch, 0.8, (4); Eastern Bluebird, 0.7, (4); Turkey Vulture, 0.6, (5); Eastern Phoebe, 0.6, (5); Blue Jay, 0.4, (4); Golden-crowned Kinglet, 0.4, (3); Mourning Dove, 0.3, (3); Fish Crow, 0.3, (3); Solitary Vireo, 0.3, (2); Black Vulture, 0.2, (2); Hairy Woodpecker, 0.1, (1); Pine Warbler, 0.1, (1). **Total:** 30 species; 95.0 ind./visit (380 ind./40 ha). **Remarks:** The vultures seen were actively searching the plot for food during deer-hunting season.

7. MATURE URBAN DECIDUOUS FOREST I

BOSQUE DECIDUO MADURO URBANO I

DAVID S. KÜNSTLER

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

Site Number: NY0989093. **Location:** New York; Bronx Co.; New York City; Hunter Island, Pelham Bay Park; 40°52'N, 73°47'W; Mount Vernon Quadrangle, USGS. **Continuity:** New. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):38–39 (1990). **Weather:** Mean temperature 2.2°C (range –2–7°C). Mean snow depth 0 cm. **Coverage:** 13.2 hrs; 8 visits (2 mornings, 6 afternoons): 8, 14, 19, 21, 26 Jan.; 4, 19, 25, Feb. **Count:** American Goldfinch, 24.1 ind./visit, (4 visits); American Crow, 4.5, (6); Song Sparrow, 2.0, (5); Blue Jay, 1.8, (7); Tufted Titmouse, 1.4, (4); White-throated Sparrow, 1.1, (3); Great Horned Owl, 0.8, (4); Carolina Wren, 0.8, (4); Red-bellied Woodpecker, 0.6, (4); White-breasted Nuthatch, 0.6, (5); Hairy Woodpecker, 0.5, (4); Downy Woodpecker, 0.4, (3); Northern Cardinal, 0.4, (2); Sharp-shinned Hawk, 0.1, (1); Ring-necked Pheasant, 0.1, (1). **Total:** 15 species; 39.1 ind./visit (155 ind./40 ha). **Remarks:** A pair of Great Horned Owls nested in the hollow where the top broke off of a large red oak, as they have since 1987. They later fledged two young. An adult Sharp-shinned Hawk was apparently attracted to a flock of 132 goldfinches on Jan. 14. Most goldfinches seen on the plot were feeding on black birch seeds, in the trees or on the ground in the N two-fifths of the plot. However, the birches extend somewhat further S. Goldfinches were regularly observed feeding on black birch seeds last winter in nearby Van Cortlandt Park (see *J. Field Ornithol.* 64 (Suppl.):10 (1993)). While goldfinches were common in large flocks, none were sighted after a lone individual on Jan. 26.

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

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

GEORGE R. MAXWELL

*RD1 Box 179C
Red Creek, New York 13143*

Location: New York; Wayne Co.; Fair Haven; Metzger Road, Blind Sodus Bay; 43°20'N, 76°44'W; Oswego Quadrangle, USGS. **Continuity:** Established 1987; 7 yr. **Size:** 16.2 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):17 (1989). **Weather:** Mean temperature –3.2°C (range –10–2°C). Mean snow depth 5.5 cm (range 0–15 cm). The ground was bare on two visits. **Coverage:** 10.0 hrs; 10 visits (6 mornings, 4 afternoons): 10, 11, 12, 13, 14, 15, 19, 20, 28, 30 Jan. **Count:** House Sparrow, 6.2 ind./visit, (9 visits); House Finch, 5.1, (4); Mourning Dove, 4.9, (10); Canada Goose, 4.0, (2); Black-capped Chickadee, 4.0, (10); American Tree Sparrow, 3.1, (9); Blue Jay, 3.0, (10); Dark-eyed Junco, 2.4, (9); White-breasted Nuthatch, 1.4, (10); European Starling, 1.2, (1); Northern Cardinal, 1.1, (7); Common Red-

poll, 1.0, (1); Wild Turkey, 0.7, (1); American Crow, 0.5, (4); Downy Woodpecker, 0.4, (4); Red-bellied Woodpecker, 0.3, (3); Northern Goshawk, 0.2, (1); Snow Bunting, 0.2, (1); American Goldfinch, 0.2, (1); Ruffed Grouse, 0.1, (1). **Total:** 20 species; 40.0 ind./visit (98.8 ind./40 ha). **Acknowledgments:** My thanks to the following students for their assistance with this study: Therese Arliss, Linda Bettis, Wendy Borden, Tracy Debboli, Craig Fosdick, Lance Goselin, Elizabeth Hanlon, Amy Hunt, Lauren Kuan, Monica Sasse, Tracey Shimer, Mojeh Tryniski-Mohtashami.

9. BEECH-MAPLE SWAMP FOREST

BOSQUE PANTANOSO DE HAYA-ARCE

NELSON J. MOORE & BRIAN FLETCHER

*Department of Biological Sciences
Ohio Northern University
Ada, Ohio 45810*

Location: Ohio; Hardin Co.; Ada; Moore-Shadley Woods; 40°43'N, 83°48'W; Alger Quadrangle, USGS. **Continuity:** Established 1975; 7 yr. **Size:** 8.3 ha. **Description of Plot:** See *Am. Birds* 29:760-761 (1975). **Weather:** Mean temperature 0.4°C (range -4-7°C). Mean snow depth 2.4 cm (range 0-12.5 cm). The ground was bare on seven visits. Dec. and Jan. were mild with little precipitation, but Feb. was colder and had more snow. **Coverage:** 13.5 hrs; 12 visits (4 mornings, 8 afternoons): 21, 25 Dec.; 9, 10, 13, 31 Jan.; 5, 6, 10, 13, 14, 20 Feb. **Count:** House Finch, 10.2 ind./visit, (11 visits); Dark-eyed Junco, 7.4, (8); White-breasted Nuthatch, 5.0, (11); Blue Jay, 4.2, (10); European Starling, 4.0, (5); Tufted Titmouse, 3.6, (10); Downy Woodpecker, 3.4, (12); Carolina Chickadee, 3.2, (10); House Sparrow, 2.9, (8); American Goldfinch, 2.8, (7); Northern Cardinal, 2.4, (11); Red-bellied Woodpecker, 1.3, (8); American Tree Sparrow, 1.1, (4); American Crow, 1.0, (5); Mourning Dove, 0.7, (3); Northern Flicker, 0.7, (4); Brown Creeper, 0.7, (6); Song Sparrow, 0.7, (5); Canada Goose, 0.6, (1); Carolina Wren, 0.5, (6); Eastern Bluebird, 0.4, (3); Red-tailed Hawk, 0.3, (4); Hairy Woodpecker, 0.3, (3); Black-capped Chickadee, 0.3, (3); Horned Lark, 0.2, (1). **Total:** 25 species; 57.6 ind./visit (278 ind./40 ha). **Remarks:** Two feeders in the plot contained black-oil sunflower seeds.

10. MATURE BROADLEAF FOREST

BOSQUE DE HOJA ANCHA MADURO

CHARLES W. SAUNDERS*, STEVE PELIKAN & DAVID STYER

**5561 Carlsbad Court
Fairfield, Ohio 45014*

Site Number: OH1591043. **Location:** Ohio; Hamilton Co.; Harrison; Miami Whitewater Forest; 39°15'N, 84°46'W; Hooven Quadrangle, USGS. **Continuity:** New. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):52 (1992). **Weather:** Mean temperature -3.6°C (range -11.5-2.5°C). There was no snow cover, but light snow during two visits. **Coverage:** 19.7 hrs; 10 visits (mornings): 9, 17, 18, 23, 30 Jan.; 4, 5, 6, 7, 14 Feb. **Count:** Tufted Titmouse, 11.2 ind./visit, (10 visits); Red-bellied Woodpecker, 8.1, (10); Carolina Chickadee, 6.9, (10); White-breasted Nuthatch, 6.2, (10); Blue Jay, 4.5, (8); Hairy Woodpecker, 2.7, (10); Golden-crowned Kinglet, 2.5, (9); Carolina Wren, 2.4, (10); Downy Woodpecker, 1.8, (9); Northern Cardinal, 1.3, (6); Pileated Woodpecker, 1.2, (8); Brown Creeper, 1.0, (6); Great Horned Owl, 0.6, (6); American Goldfinch, 0.6, (2); Yellow-rumped Warbler, 0.3, (3); Northern Flicker, 0.1, (1); American Crow, 0.1, (1); Winter Wren, 0.1, (1). **Total:** 18 species; 51.6 ind./visit (129 ind./40 ha). **Acknowledgments:** We thank John Klein and the Hamilton County Park District for the use of the land.

11. RIPARIAN DECIDUOUS FOREST

BOSQUE DECIDUO RIVEREÑO

ELLIOT J. TRAMER

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Toledo, Ohio 43606*

Location: Ohio; Lucas Co.; Waterville; Old Canal Lands; 41°27'N, 83°46'W; Grand Rapids Quadrangle, USGS. **Continuity:** Established 1989; 5 yr. **Size:** 18.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):43 (1990). **Weather:** Mean temperature -0.1°C (range -6 – 4°C). Mean snow depth 3.9 cm (range 0–15 cm). The ground was bare on six visits. It was mild until 16 Feb., then it was cold for the last 12 days of the study period. No record low temperatures were set. Snow cover was infrequent until late in the study period. **Coverage:** 20.5 hrs; 9 visits (8 mornings, 1 afternoon): 2, 6, 17, 23, 28 Jan.; 3, 10, 20, 27 Feb. **Count:** House Finch, 35.2 ind./visit, (9 visits); Dark-eyed Junco, 11.0, (9); American Crow, 7.9, (6); Downy Woodpecker, 5.9, (9); House Sparrow, 5.7, (9); Tufted Titmouse, 5.3, (9); White-breasted Nuthatch, 5.3, (9); Mourning Dove, 4.6, (7); Black-capped Chickadee, 3.9, (9); Blue Jay, 3.6, (9); European Starling, 3.3, (9); Northern Cardinal, 3.2, (9); Cedar Waxwing, 2.4, (2); Carolina Wren, 1.9, (9); Hairy Woodpecker, 1.8, (9); Yellow-rumped Warbler, 1.3, (3); Brown Creeper, 1.2, (8); Red-bellied Woodpecker, 1.1, (9); Song Sparrow, 1.1, (6); Golden-crowned Kinglet, 0.9, (5); American Goldfinch, 0.8, (6); American Robin, 0.7, (3); Northern Flicker, 0.4, (4); Cooper's Hawk, 0.3, (3); Ruby-crowned Kinglet, 0.3, (3); Red-tailed Hawk, 0.2, (2); Red-breasted Nuthatch, 0.2, (2); Great Horned Owl, 0.1, (1). **Total:** 28 species; 110 ind./visit (244 ind./40 ha). **Remarks:** American Crows and Mourning Doves mainly visited the plot when snow cover made nearby corn stubble fields unavailable. Northern Cardinal numbers were down precipitously after increases the last two years. Golden-crowned Kinglet was low for second consecutive winter. American Goldfinch was very low this year. Ruby-crowned Kinglet was new to the count.

12. BLACK WILLOW-WHITE ASH FOREST

BOSQUE DE SAUCE NEGRO-FRESNO BLANCO

MICHAEL F.G. CLARK

*27 Skyline Drive
Dundas, Ontario L9H 3S3*

Location: Ontario; Municipality of Hamilton-Wentworth; Dundas; Cootes Paradise; 43°16'N, 79°56'W. **Continuity:** Established 1984; 10 yr. **Size:** 13.0 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):9 (1989). **Weather:** Mean temperature -2.4°C (range -17 – 8.5°C). Mean snow depth 21.2 cm (range 0–60 cm). The ground was bare on one visit. Winds were very strong on one visit. Water was open during the first two visits and frozen during the other six. Temperatures for Dec. to Mar. were 0.8°C below the 30-yr mean of -2.1°C , and for Feb. to Mar. they were 5.8°C below the mean of 0.4°C . Snowfall for Dec. to Mar. was 45.8% over the 4-month average of 33.4 cm, and for Feb. to Mar. it was 87.1% over the average of 27.2 cm. Source: Environment Canada. **Coverage:** 10.8 hrs; 8 visits (6 mornings, 2 afternoons): 13, 19, 26 Dec.; 23 Jan.; 6, 27 Feb.; 6, 15 Mar. **Count:** Black-capped Chickadee, 6.5 ind./visit, (6 visits); Downy Woodpecker, 2.3, (7); Canada Goose, 1.9, (1); White-breasted Nuthatch, 1.8, (7); Brown Creeper, 1.6, (4); Hairy Woodpecker, 0.9, (6); Northern Cardinal, 0.5, (3); American Goldfinch, 0.5, (1); Red-tailed Hawk, 0.4, (2); Mourning Dove, 0.4, (2); Golden-crowned Kinglet, 0.4, (1); Winter Wren, 0.3, (2); European Starling, 0.3, (2); Dark-eyed Junco, 0.3, (1); Great Blue Heron, 0.1, (1); Pileated Woodpecker, 0.1, (1); Blue Jay, 0.1, (1). **Total:** 17 species; 18.1 ind./visit (55.8 ind./40 ha). **Remarks:** The 145 individuals noted (the third lowest total for the 10 years of the study) was 26.9% below the mean of 198.4 individuals. The species total was average. The seven species of bark foragers once again dominated the plot (108 ind., 74.5% of the total), although the total for this trophic

group was 19.4% below the 10-yr mean of 134. A new species, Dark-eyed Junco, was the 38th detected on this plot.

13. SUGAR MAPLE-MIXED HARDWOOD FOREST

BOSQUE MIXTO DE MADERAS DURAS-ARCE DE ALMIBAR

ROY A. ICKES

*Washington and Jefferson College
Washington, Pennsylvania 15301*

Location: Pennsylvania; Washington Co.; Washington; Abernathy Property; 40°8'N, 80°11'W; Washington East Quadrangle, USGS. **Continuity:** Established 1983; 10 yr. **Size:** 9.7 ha. **Description of Plot:** See *Am. Birds* 37:55-56 (1983). **Weather:** Mean temperature -1.1°C (range -8-6°C). Mean snow depth 0.2 cm (range 0-1.3 cm). The ground was bare on six visits. Mean temperature was slightly above average. Mean snow depth was well below average. **Coverage:** 24.2 hrs; 8 visits (mornings): 22, 23, 28, 29 Dec.; 2, 6, 30, 31 Jan. **Count:** Tufted Titmouse, 7.6 ind./visit, (8 visits); White-breasted Nuthatch, 6.4, (8); Carolina Chickadee, 5.3, (8); Downy Woodpecker, 4.9, (8); Red-bellied Woodpecker, 3.4, (8); Black-capped Chickadee, 2.8, (8); Golden-crowned Kinglet, 1.6, (5); Wild Turkey, 1.3, (1); Brown Creeper, 1.0, (4); Pileated Woodpecker, 0.9, (6); Hairy Woodpecker, 0.8, (4); Mourning Dove, 0.6, (1); Blue Jay, 0.6, (5); Dark-eyed Junco, 0.5, (1); Carolina Wren, 0.4, (3); Northern Cardinal, 0.3, (1); Great Horned Owl, 0.1, (1). **Total:** 17 species; 38.3 ind./visit (158 ind./40 ha). **Remarks:** Third consecutive year for total numbers of Tufted Titmouse and White-breasted Nuthatch to be below the previous 7-yr average. Largest total numbers for Brown Creeper and Golden-crowned Kinglet. Wild Turkey was new to the plot; several flew up and perched 10 m high in trees. **Other Observer:** Scott Ickes. **Acknowledgments:** Thanks to Ernest Abernathy for the use of his property.

14. PONDEROSA PINE FOREST

BOSQUE DE PINO PONDEROSA

LOUISE HERING

*1055 Adams Circle, Apt. 1118
Boulder, Colorado 80303*

Location: Colorado; Boulder Co.; Boulder; Enchanted Mesa; 39°50'N, 105°16'W; Boulder Quadrangle, USGS. **Continuity:** Established 1966; 13 yr. **Size:** 8.1 ha. **Description of Plot:** See *Aud. Field Notes* 8:372 (1954) and *J. Field Ornithol.* 64 (Suppl.):61 (1993). **Weather:** Mean temperature 2.8°C (range -14-11°C). Mean snow depth 5.8 cm (range 0-23 cm). The ground was bare on four visits. Nov. and Dec. were the snowiest months on record. **Coverage:** 20.3 hrs; 16 visits (mornings): 1, 16, 29 Nov.; 14, 23 Dec.; 2, 9, 14, 21 Jan.; 18, 27 Feb.; 6, 16, 22, 31 Mar.; 5 Apr. **Count:** Pygmy Nuthatch, 9.4 ind./visit, (12 visits); Pine Siskin, 5.6, (8); Mountain Chickadee, 4.3, (14); Steller's Jay, 2.9, (15); Dark-eyed Junco, 2.1, (9); Black-billed Magpie, 1.8, (13); White-breasted Nuthatch, 1.4, (9); Black-capped Chickadee, 1.0, (1); Common Raven, 0.8, (5); Hairy Woodpecker, 0.6, (6); Brown Creeper, 0.5, (3); Townsend's Solitaire, 0.5, (6); Northern Flicker, 0.4, (5); House Finch, 0.3, (3); Red-breasted Nuthatch, 0.2, (2); American Robin, 0.2, (2); Downy Woodpecker, 0.1, (2); Golden-crowned Kinglet, 0.1, (1); Red Crossbill, 0.1, (1). **Total:** 19 species; 32.4 ind./visit (160 ind./40 ha). **Other Observers:** Vera Evanson, Susan Ward, Barbara Beall. **Acknowledgments:** Dave Hallock performed and prepared the quantitative vegetation survey in July 1992.

15. MATURE LONGLEAF PINE FOREST I**BOSQUE DE PINO DE HOJA LARGA MADURO I**

R. TODD ENGSTROM

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

Site Number: GA0493114. **Location:** Georgia; Thomas Co.; Thomasville; Wade Tract; 30°45'N, 84°0'W; Pine Park and Thomasville Quadrangles, USGS. **Continuity:** New. **Size:** 20.0 ha. **Description of Plot:** A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727-736) yielded the following results: Trees, 3.8 cm diameter and over, based on 20 0.04-ha circular samples, 116/ha; total basal area 13 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, 106, 91, 93, 95. Additional species include mockernut hickory and bluejack oak. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%): A' (3.8-7.6 cm) 3, 2, 0, 10; A (7.6-15.2 cm) 14, 12, 1, 30; B (15.2-22.9 cm) 11, 10, 2, 20; C (22.9-30.5 cm) 21, 18, 9, 40; D (30.5-38.1 cm) 28, 24, 19, 35; E (38.1-53.3 cm) 23, 19, 28, 65; F (53.3-68.6 cm) 15, 13, 30, 40; G (68.6-83.8 cm) 1, 1, 4, 5; H (> 83.8 cm) 1, 1, 7, 5. Shrub stems/ha, 15, dominated by bluejack oak and turkey oak. Ground cover, 100%, dominated by wiregrass. Canopy cover, 39%; average canopy height, 27 m (range 0-33 m). An intermittent stream bordered by titi bisects a portion of the plot. **Edge:** The plot is bordered on all sides by similar habitat. **Topography and Elevation:** The terrain consists of gently rolling hills typical of the Red Hills physiographic region. Minimum elevation 64 m, maximum 79 m. **Weather:** Mean temperature 7.9°C (range 2-15°C). Light rain during one visit. **Coverage:** 16.4 hrs; 8 visits (mornings): 10, 11, 18, 23, 24, 25, 26, 28 Feb. **Count:** Common Yellowthroat, 12.4 ind./visit, (8 visits); Pine Warbler, 8.0, (8); Wood Duck, 6.5, (8); Blue Jay, 4.6, (8); Red-cockaded Woodpecker, 4.1, (7); White-breasted Nuthatch, 4.1, (8); Rufous-sided Towhee, 4.1, (8); Brown-headed Nuthatch, 3.5, (7); Carolina Wren, 3.5, (7); Red-bellied Woodpecker, 3.3, (8); House Wren, 3.3, (8); Mourning Dove, 3.1, (7); Northern Bobwhite, 3.0, (2); Northern Cardinal, 2.6, (5); American Robin, 2.1, (2); Eastern Bluebird, 2.0, (7); Northern Flicker, 1.9, (7); Swamp Sparrow, 1.4, (7); Yellow-bellied Sapsucker, 1.3, (7); Eastern Meadowlark, 1.3, (6); Tufted Titmouse, 0.9, (3); Loggerhead Shrike, 0.9, (3); Pileated Woodpecker, 0.5, (4); Eastern Phoebe, 0.5, (3); Red-tailed Hawk, 0.4, (2); American Kestrel, 0.4, (3); Northern Mockingbird, 0.4, (3); Bachman's Sparrow, 0.4, (3); Palm Warbler, 0.3, (1); Hairy Woodpecker, 0.1, (1); Ruby-crowned Kinglet, 0.1, (1); Brown Thrasher, 0.1, (1); Common Grackle, 0.1, (1). **Total:** 33 species; 81.0 ind./visit (162 ind./40 ha). **Remarks:** The first WBPS/BBC on this site was conducted on a 58.3-ha study plot (*Am. Birds* 34:29-30). A 20-ha subset of the original study plot was established one year later (*Am. Birds* 35:69). That plot straddled a road that later was used as a fire break for prescribed burns. The prescribed burns were set every other year on alternate sides of the road. Two 20-ha plots, one on each side of the road, were established in 1993 to ensure that each plot would be burned entirely during a given year. **Acknowledgments:** Thanks to Lawrence D. Carlile for conducting the vegetation sampling and to Mr. and Mrs. Jephtha Wade for permission to conduct the study on their property.

16. MATURE LONGLEAF PINE FOREST II**BOSQUE DE PINO DE HOJA LARGA MADURO II**

LAWRENCE D. CARLILE

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

Site Number: GA0493113. **Location:** Georgia; Thomas Co.; Thomasville; Wade Tract; 30°45'N, 84°0'W; Pine Park and Thomasville Quadrangles, USGS. **Continuity:** New. **Size:** 20.0

ha. **Description of Plot:** A quantitative vegetation survey based on the method described by F.C. James & H.H. Shugart, Jr. (1970. *Aud. Field Notes* 24:727-736) yielded the following results: Trees, 3.8 cm diameter and over, based on 20 0.04-ha circular samples, 141/ha; total basal area 12 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, 134, 95, 93, 100. Additional species include pignut hickory and bluejack oak. Trees by diameter size class [figures after each are trees/ha, relative density (%), basal area in m²/ha, and relative dominance (%)] : A' (3.8-7.6 cm) 29, 20, 1, 25; A (7.6-15.2 cm) 25, 18, 2, 25; B (15.2-22.9 cm) 18, 12, 4, 30; C (22.9-30.5 cm) 10, 7, 5, 30; D (30.5-38.1 cm) 11, 8, 9, 35; E (38.1-53.3 cm) 38, 27, 52, 50; F (53.3-68.6 cm) 11, 8, 28, 35. Shrub stems/ha, 58, dominated by bluejack oak and turkey oak. Ground cover, 100%, dominated by wiregrass. Canopy cover, 38%; average canopy height, 26 m (range 7-33 m). An ephemeral pond encroached onto the NE edge of the plot due to an unusually high rainfall total (33 cm) for Jan. **Edge:** The plot is bordered on all sides by similar habitat. **Topography and Elevation:** The terrain consists of gently rolling hills typical of the Red Hills physiographic region. Minimum elevation 64 m, maximum 79 m. **Weather:** Mean Temperature 9.3°C (range 4-18°C). **Coverage:** 16.5 hrs; 8 visits (mornings): 15, 19, 22, 24, 27, 29 Jan.; 1, 9, Feb. **Count:** Wood Duck, 7.6 ind./visit, (8 visits); Brown-headed Nuthatch, 6.9, (8); Blue Jay, 5.4, (8); Red-bellied Woodpecker, 5.0, (8); Pine Warbler, 4.9, (8); Yellow-rumped Warbler, 4.5, (7); White-breasted Nuthatch, 4.3, (8); Palm Warbler, 4.3, (7); Red-cockaded Woodpecker, 3.5, (7); Eastern Meadowlark, 2.8, (6); Northern Flicker, 2.5, (8); House Wren, 2.5, (8); Rufous-sided Towhee, 2.4, (7); Carolina Chickadee, 2.1, (8); Northern Cardinal, 2.1, (6); Tufted Titmouse, 2.0, (6); Carolina Wren, 1.9, (7); Common Yellowthroat, 1.8, (8); Eastern Phoebe, 1.6, (6); Eastern Bluebird, 1.6, (5); Red-winged Blackbird, 1.6, (5); American Crow, 1.5, (7); Loggerhead Shrike, 1.5, (8); Common Grackle, 1.1, (5); Mourning Dove, 1.0, (5); American Robin, 1.0, (4); Yellow-bellied Sapsucker, 0.9, (6); Ruby-crowned Kinglet, 0.9, (4); White-throated Sparrow, 0.9, (5); Red-tailed Hawk, 0.6, (5); Bachman's Sparrow, 0.6, (4); Pileated Woodpecker, 0.4, (2); Northern Mockingbird, 0.4, (3); Common Ground-Dove, 0.3, (1); American Kestrel, 0.1, (1); Red-headed Woodpecker, 0.1, (1); Hairy Woodpecker, 0.1, (1); Swamp Sparrow, 0.1, (1); American Goldfinch, 0.1, (1). **Total:** 39 species; 82.8 ind./visit (166 ind./40 ha). **Remarks:** See WBPS #15 for information on the history of studies on this plot. Wood Ducks were the most abundant birds due to the presence of the ephemeral pond. Up to four clans of Red-cockaded Woodpeckers foraged on the plot. **Acknowledgments:** Thanks to R. Todd Engstrom for advice and assistance with the vegetation survey. Thanks also to the Wade family for allowing access to their property.

17. MATURE RED SPRUCE FOREST

BOSQUE MADURO DE ABETOS ROJOS

THOMAS P. SKALING

10 Cumberland Street
Brunswick, Maine 04011

Location: Maine; Somerset Co.; West Forks; Boise Cascade Tract; 45°25'N, 70°10'W; Enchanted Pond Quadrangle, USGS. **Continuity:** Established 1990; 4 yr. **Size:** 16.0 ha. **Description of Plot:** See *J. Field Ornithol.* 61 (Suppl.):46 (1990). **Weather:** Mean temperature -8.5°C (range -20-10°C). Mean snow depth 23.3 cm (range 5-75 cm). Light snow or flurries during two visits. Weather conditions during the count period exhibited two distinctly different patterns. Temperatures in Dec. and Jan. averaged -9°C (1°C above normal), while in Feb. they averaged -16°C (6°C below normal). Snowfall in Dec. and Jan. totaled 51 cm (50% of normal), while in Feb. it totaled 85 cm (150% of normal). The pond and small stream were frozen throughout the count period. Source: Northeast Regional Climate Center, Cornell University, and on-site instruments. **Coverage:** 27.3 hrs; 10 visits (mornings): 8, 11 Dec.; 6, 9, 21, 29 Jan.; 5, 16, 20 Feb.; 5 Mar. **Count:** Red-breasted Nuthatch, 1.7 ind./visit, (5 visits); Black-capped Chickadee, 1.6, (6); Golden-crowned Kinglet, 1.6, (6); Boreal Chickadee, 1.5, (6); Downy Woodpecker, 1.1, (6); White-winged Crossbill, 0.7, (3); Ruffed Grouse, 0.6, (3); Blue Jay, 0.5,

(5); Hairy Woodpecker, 0.4, (4); Pileated Woodpecker, 0.3, (2); Evening Grosbeak, 0.3, (1); Gray Jay, 0.2, (1); Common Raven, 0.2, (2). **Total:** 13 species; 10.7 ind./visit (26.8 ind./40 ha). **Remarks:** Count totals for most species were significantly lower than averages over the past three years. The major factor contributing to the low counts was a complete absence of bird sightings during visits seven, eight, and nine. Those three visits followed severe weather conditions on 31 Jan. (temperature range -37°C to -24°C with NW winds at Beaufort Scale #8) and 7 Feb. (low temperature of -40°C in calm air). **Acknowledgments:** I thank Boise Cascade for their continued support of this project.

18. UPLAND SCOTCH PINE PLANTATION

PLANTACION DE PINO ESCOCES EN ALTURAS

ELIZABETH W. BROOKS

1435 Waterwells Road

Alfred Station, New York 14803

Location: New York; Allegany Co.; Alfred; Foster Plantation; $42^{\circ}7'\text{N}$, $77^{\circ}45'\text{W}$; Andover Quadrangle, USGS. **Continuity:** Established 1984; 9 yr. **Size:** 9.3 ha. **Description of Plot:** See *Aud. Field Notes* 23:743–744 (1969) and *Am. Birds* 38:38 (1984). **Weather:** Mean temperature 3.1°C (range -4 – 11°C). Mean snow depth 6.9 cm (range 0–24 cm). The ground was bare on three visits. Average temperatures in Dec. (-2.2°C) and Jan. (-3.8°C) were slightly warmer than normal. Snowfall in Dec. (84.5 cm) and Jan. (50.8 cm) was double the 63-yr average, but only the 15 Dec. visit was done after a major snow. Source: Alfred Cooperative Weather Station. **Coverage:** 8.8 hrs; 8 visits (6 mornings, 2 afternoons): 15, 18, 21, 31 Dec.; 4, 7, 13, 19 Jan. **Count:** Black-capped Chickadee, 13.4 ind./visit, (8 visits); Ruffed Grouse, 1.9, (8); Golden-crowned Kinglet, 1.9, (6); Purple Finch, 1.6, (6); Red-breasted Nuthatch, 1.4, (7); Blue Jay, 1.1, (6); American Tree Sparrow, 0.8, (4); Dark-eyed Junco, 0.4, (2); Pine Siskin, 0.3, (1); American Goldfinch, 0.3, (2); Downy Woodpecker, 0.1, (1); Brown Creeper, 0.1, (1); Winter Wren, 0.1, (1); Northern Cardinal, 0.1, (1). **Total:** 14 species; 23.4 ind./visit (101 ind./40 ha). **Remarks:** The number of species observed was second highest since 1984. Purple Finch numbers were the highest ever. The spruce cone crop was the best in years. Winter Wren was new to the study. Only Black-capped Chickadee and Ruffed Grouse were seen on every visit. **Acknowledgments:** Appreciation to Phil Foster and Cynthia Clements for permission to use the study area and to Rick Walker for weather data.

19. OLD-GROWTH WHITE PINE–HEMLOCK FOREST

BOSQUE DE EDAD AVANSADA DE PINO BLANCO–PICEA

J. CHRISTOPHER HANEY

Wildlife Technology Program

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Penn State University, College Place

DuBois, Pennsylvania 15801-3199

Site Number: PA2493081. **Location:** Pennsylvania; Clarion Co.; Cooksburg; Hillside Tract; $41^{\circ}20'\text{N}$, $79^{\circ}13'\text{W}$; Cooksburg Quadrangle, USGS. **Continuity:** New. **Size:** 18.2 ha. **Description of Plot:** See BBC #53. Large numbers of snags provide foraging substrate for woodpeckers. **Weather:** Mean temperature -1.9°C (range -13 – 6°C). Mean snow depth 9.4 cm (range 0–35 cm). The ground was bare on four visits. A single snowfall of nearly 80 cm on 10 and 11 Dec. was the region's highest recorded in several decades. By early Jan. this snowpack had nearly disappeared and the remainder of the study period experienced relatively normal snow cover and temperatures. **Coverage:** 25.4 hrs; 10 visits (mornings): 18, 20, 21 Dec.; 5, 7, 10, 11, 17, 27 Jan.; 7 Feb. **Count:** Golden-crowned Kinglet, 18.6 ind./visit, (10 visits); Black-capped Chickadee, 11.2, (10); Red-breasted Nuthatch, 10.5, (10); Brown Creeper, 2.5, (10); American Goldfinch, 1.9, (4); Blue Jay, 1.8, (3); Dark-eyed Junco, 1.8, (8); Pileated Woodpecker, 1.4, (8); White-breasted Nuthatch, 1.2, (7); Hairy Woodpecker, 1.1, (7); Downy

Woodpecker, 0.9, (6); Great Horned Owl, 0.8, (5); Tufted Titmouse, 0.8, (3); Wild Turkey, 0.6, (2); Winter Wren, 0.4, (4); Common Raven, 0.3, (2); Pine Siskin, 0.3, (1); Red-tailed Hawk, 0.1, (1); Song Sparrow, 0.1, (1); Purple Finch, 0.1, (1). **Total:** 20 species; 56.4 ind./visit (124 ind./40 ha). **Remarks:** There is moderate disturbance to the plot during winter from road traffic 100–200 m away; only foot travel is permitted on the plot, however, and there is no hunting. A windstorm during Nov., and the heavy snowfall of 10–11 Dec. 1992, toppled branches, crowns, and some entire trees (eastern hemlock and white pine). **Acknowledgments:** Robert Williams and Dennis Kurian assisted with surveying and recording data on some of the plot visits. I thank Carl Schlentner, superintendent of Cook Forest State Park, for his help in siting plots. Research in old-growth forests was supported by a Research and Development Grant from The Pennsylvania State University—Commonwealth Education System, and by funds from the DuBois Educational Foundation.

20. MATURE EASTERN LARCH FOREST

BOSQUE MADURO DE ALERCE

MARC D. DEMERS

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Canada G9X 3L6*

Site Number: PQ2891005. **Location:** Quebec; Lavolette/Champlain Co.; La Tuque; Golfwoods; 47°27'N, 72°47'W; La Tuque Quadrangle. **Continuity:** Established 1991; 3 yr. **Size:** 25.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):16 (1992). **Weather:** Mean temperature -19.6°C (range -37–4°C). Records were set in Feb. for coldest month and most snowfall. Snow cover was 38 cm on the first visit and 113 cm on the last visit. It rained during one visit. **Coverage:** 15.5 hrs; 8 visits (4 mornings, 4 afternoons): 9, 17, 24, 30 Jan.; 6, 14, 21, 28 Feb. **Count:** Evening Grosbeak, 47.5 ind./visit, (6 visits); Pine Siskin, 14.1, (8); Black-capped Chickadee, 10.5, (8); American Goldfinch, 6.8, (3); Common Raven, 4.4, (7); Pine Grosbeak, 3.0, (1); Blue Jay, 1.5, (5); Common Merganser, 0.8, (2); Red-breasted Nuthatch, 0.6, (5); Hairy Woodpecker, 0.4, (3); Ruffed Grouse, 0.1, (1). **Total:** 11 species; 89.6 ind./visit (143 ind./40 ha). **Remarks:** Not many birds this year. No redpolls and not as many ravens as past years.

21. MATURE WHITE PINE FOREST

BOSQUE MADURO DE PINO BLANCO

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Site Number: RI1290086. **Location:** Rhode Island; Washington Co.; West Kingston; Marion Eppley Wildlife Sanctuary; 41°30'N, 71°35'W; Slocum Quadrangle, USGS. **Continuity:** Established 1991; 3 yr. **Size:** 10.1 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):54–55 (1991). **Weather:** Mean temperature -5.1°C (range -10–2°C). Mean snow depth 0 cm. Snow flurries fell during one visit. **Coverage:** 10.8 hrs; 8 visits (mornings): 16, 17, 24, 31 Jan.; 3, 5, 10, 11 Feb. **Count:** Black-capped Chickadee, 12.5 ind./visit, (8 visits); Blue Jay, 2.1, (5); Tufted Titmouse, 1.8, (6); Downy Woodpecker, 1.0, (6); White-breasted Nuthatch, 1.0, (6); Red-breasted Nuthatch, 0.9, (4); Ruffed Grouse, 0.3, (2); American Crow, 0.3, (2); Hairy Woodpecker, 0.1, (1); Chipping Sparrow, 0.1, (1). **Total:** 10 species; 20.0 ind./visit (79.2 ind./40 ha). **Remarks:** Contribution #2893 of the College of Resource Development, University of Rhode Island, with support from Rhode Island Agricultural Experiment Station. **Other Observers:** David M. Clayton and Nancy W. Clayton. **Acknowledgments:** Thanks to Patrick Dorcas and the Audubon Society of Rhode Island for permission to use the site.

22. PONDEROSA PINE-SCRUB OAK FOREST

BOSQUE DE PINO PONDEROSA-MATORRAL DE ROBLE

HERBERT J. FINCH, JAMES S. KENT, & JOHN W. OBRINGER

HQ USAFA/DFB

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Location: Colorado; El Paso Co.; Colorado Springs; USAFA Winter Bird Survey; 38°57'N, 104°50'W; Pikeview Quadrangle, USGS. **Continuity:** Established 1991; 3 yr. **Size:** 12.0 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):56-57 (1991). **Weather:** Mean temperature 3.7°C (range -2-8°C). Mean snow depth 0.5 cm (range 0-2.5 cm). The ground was bare on seven visits. Late fall was colder than normal with above average precipitation (snow). Winter temperatures were average with snowfall much below average. Snow cover was 85% at the beginning of the study, and gradually decreased throughout the winter. **Coverage:** 9.8 hrs; 10 visits (3 mornings, 7 afternoons): 8, 10, 15 Dec.; 6, 26, 28 Jan.; 22, 24, 25, 27 Feb. **Count:** Pygmy Nuthatch, 2.6 ind./visit, (6 visits); Dark-eyed Junco, 2.6, (3); Mountain Chickadee, 2.0, (6); White-breasted Nuthatch, 1.9, (7); Pine Siskin, 1.2, (3); Steller's Jay, 0.2, (1); Great Horned Owl, 0.1, (1); Downy Woodpecker, 0.1, (1); Northern Flicker, 0.1, (1); Black-billed Magpie, 0.1, (1); House Finch, 0.1, (1). **Total:** 11 species; 11.0 ind./visit (36.7 ind./40 ha). **Other Observer:** Mace Kant.

23. MATURE BROADLEAF-CONIFEROUS FORESTED WETLAND

BOSQUE MADURO DE ARBOLES DE HOJA ANCHA-CONIFEROS

TOM HARRINGTON

30 South Windham Road

Willimantic, Connecticut 06226

Site Number: CT1291035. **Location:** Connecticut; Hartford Co.; Manchester; Oak Grove Nature Center; 41°46'N, 72°30'W; Manchester Quadrangle, USGS. **Continuity:** Established 1992; 2 yr. **Size:** 21.5 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):74 (1992). A beaver has apparently left the area and water levels are decreasing. **Weather:** Mean temperature -6.0°C (range -19-4°C). Temperatures in late Dec. were slightly above normal, in Jan. they were 1.9°C above normal, in Feb. they were 2.3°C below normal. Precipitation during the count period was below normal (Jan. was 76% of normal, Feb. was 89%). There were 11 days in Jan. and 19 days in Feb. with > 2.5 cm of snow cover. Freezing drizzle during one visit. **Coverage:** 16.0 hrs; 8 visits (mornings): 26 Dec.; 3, 9, 16, 23, 30 Jan.; 7, 13 Feb. **Count:** Black-capped Chickadee, 27.3 ind./visit, (8 visits); Dark-eyed Junco, 16.8, (7); American Crow, 15.5, (8); House Finch, 10.5, (8); Mallard, 9.9, (7); American Goldfinch, 9.0, (8); Tufted Titmouse, 8.1, (8); White-breasted Nuthatch, 6.5, (8); Golden-crowned Kinglet, 6.4, (5); European Starling, 6.4, (7); Mourning Dove, 4.9, (6); White-throated Sparrow, 4.1, (7); Blue Jay, 3.1, (6); Northern Cardinal, 1.8, (6); Downy Woodpecker, 1.5, (6); Brown Creeper, 1.1, (3); Song Sparrow, 1.1, (5); Hairy Woodpecker, 1.0, (8); Carolina Wren, 0.5, (4); American Robin, 0.5, (2); Belted Kingfisher, 0.4, (2); Eastern Bluebird, 0.4, (3); Green-Winged Teal, 0.3, (2); Red-bellied Woodpecker, 0.3, (2); House Sparrow, 0.3, (1); Great Blue Heron, 0.1, (1); Red-tailed Hawk, 0.1, (1); Herring Gull, 0.1, (1); Eastern Screech-Owl, 0.1, (1); Great Horned Owl, 0.1, (1); Common Grackle, 0.1, (1). **Total:** 31 species; 138 ind./visit (257 ind./40 ha). **Remarks:** The Eastern Screech-Owl was found in a cavity generally used as a nest by starlings. Two starlings were about 3 m away and seemed rather agitated. Holly berries were less abundant than in previous years.

24. MAPLE-PINE-OAK SECOND-GROWTH FOREST

BOSQUE SECUNDARIO DE ARCE-PINO-ROBLE

WILLIAM E. DAVIS, JR.

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Location: Massachusetts; Norfolk Co.; Foxboro; Town of Foxboro conservation land, off Wil- low and E. Sts.; 42°4'N, 71°12'W; Mansfield Quadrangle, USGS. **Continuity:** Established 1977; 17 yr. **Size:** 11.8 ha. **Description of Plot:** See *Am. Birds* 31:50-51 (1977). **Weather:** Mean temperature -3.5°C (range -13.3-0.6°C). Mean snow depth 2.8 cm (range 0-15.2 cm). The ground was bare on five visits. For Dec., Jan., and Feb., respectively, temperature departures from normal were 0.6, 2.1, and -1.8°C; equivalent precipitation departures were 9.6, -3.6, and 3.4 cm. Source: U.S. National Weather Service, Boston. **Coverage:** 12.0 hrs; 12 visits (mornings): 15, 21, 26, 28 Dec.; 2, 6, 16, 24 Jan.; 4, 11, 14, 18 Feb. **Count:** Black-capped Chickadee, 2.1 ind./visit, (7 visits); American Crow, 0.7, (3); White-breasted Nuthatch, 0.4, (4); American Robin, 0.3, (1); Northern Cardinal, 0.3, (3); Mourning Dove, 0.3, (1); Eastern Screech-Owl, 0.3, (3); Downy Woodpecker, 0.3, (2); Tufted Titmouse, 0.2, (2); Brown Creeper, 0.2, (2); Red-tailed Hawk, 0.1, (1); Ruffed Grouse, 0.1, (1); Hairy Woodpecker, 0.1, (1). **Total:** 13 species; 5.2 ind./visit (17.5 ind./40 ha). **Remarks:** American Crows were heard calling on six visits in addition to the three when they were observed perched. A Fish Crow was heard calling on the 15 Dec. visit. The largest mixed-species foraging flock contained four chickadees and a creeper. A mink (*Mustela vison*) was observed on the 6 Jan. visit. On 18 Feb., 14 individuals of 8 species were seen and woodpeckers were drumming.

25. UPLAND MIXED PINE-SPRUCE-HARDWOOD PLANTATION

PLANTACION MIXTA DE PINO-ABETO-MADERAS DURAS EN ALTURAS

ELIZABETH W. BROOKS

*1435 Waterwells Road**Alfred Station, New York 14803*

Location: New York; Allegany Co.; Alfred; Philips Creek State Reforestation Tract; 42°8'N, 77°45'W; Andover Quadrangle, USGS. **Continuity:** Established 1974; 19 yr. **Size:** 16.6 ha. **Description of Plot:** See *Am. Birds* 28:699-700 (1974). **Weather:** Mean temperature 0.1°C (range -4-6°C). Mean snow depth 12.3 cm (range 3-32 cm). A portion of the stream remained open during the study period. See WBPS #18 for additional summary data. **Coverage:** 12.5 hrs; 8 visits (4 mornings, 4 afternoons): 13, 16, 20, 29 Dec.; 2, 6, 12, 20 Jan. **Count:** Black-capped Chickadee, 16.1 ind./visit, (8 visits); Red-breasted Nuthatch, 7.8, (8); Purple Finch, 1.9, (5); Golden-crowned Kinglet, 1.8, (6); Blue Jay, 1.5, (6); Brown Creeper, 1.3, (8); Ruffed Grouse, 1.0, (3); Hairy Woodpecker, 0.6, (4); Wild Turkey, 0.5, (2); Red Crossbill, 0.4, (2); Dark-eyed Junco, 0.3, (1); Pine Siskin, 0.3, (1); American Goldfinch, 0.3, (1); Winter Wren, 0.1, (1). **Total:** 14 species; 33.6 ind./visit (81.0 ind./40 ha). **Remarks:** Purple Finch numbers were the highest ever, probably due to the best spruce cone crop in years. Pine Siskin was new to the study. Black-capped Chickadee, Brown Creeper, and Red-breasted Nuthatch were seen on every visit. **Acknowledgments:** Appreciation to Rick Walker for weather data.

26. CONIFEROUS-DECIDUOUS FOREST

BOSQUE DE DECIDUOS Y CONIFEROS

MICHAEL F.G. CLARK

*27 Skyline Drive**Dundas, Ontario L9H 3S3*

Location: Ontario; Municipality of Hamilton-Wentworth; Dundas; Dundas Valley Plot #3; 43°14'N, 80°2'W. **Continuity:** Established 1986; 8 yr. **Size:** 9.2 ha. **Description of Plot:** See *J.*

Field Ornithol. 60 (Suppl.):11 (1989). **Weather:** Mean temperature -2.5°C (range -9.5 – 3.5°C). Mean snow depth 20.0 cm (range 0–40 cm). The ground was bare on one visit. Water was frozen during all visits. Temperatures were 0.8°C below the 30-yr mean. Snowfall was 45.8% over the 30-yr mean of 33.4 cm, and was especially high for Feb. to Mar. (87.1% over the mean of 27.2 cm). Source: Environment Canada. **Coverage:** 11.2 hrs; 8 visits (3 mornings, 5 afternoons): 12, 24 Dec.; 2, 23 Jan.; 7, 20, 27 Feb.; 3 Mar. **Count:** Black-capped Chickadee, 25.4 ind./visit, (8 visits); American Goldfinch, 12.8, (5); White-breasted Nuthatch, 2.4, (8); Northern Cardinal, 2.0, (5); Brown Creeper, 1.3, (6); Downy Woodpecker, 1.1, (4); Dark-eyed Junco, 0.5, (1); American Crow, 0.4, (1); Golden-crowned Kinglet, 0.3, (1); Ruffed Grouse, 0.1, (1); Hairy Woodpecker, 0.1, (1); Pileated Woodpecker, 0.1, (1); Blue Jay, 0.1, (1); American Robin, 0.1, (1). **Total:** 14 species; 46.6 ind./visit (203 ind./40 ha). **Remarks:** The 373 individuals noted was the second highest total for the 8-yr study period, and 63.7% above the mean. The seven species of bark foragers continue to dominate the plot (245 ind., 65.7% of the total). Chickadees, cardinals, juncos, and in particular goldfinches (102 ind., 8-yr mean of 13) were present in record numbers. The goldfinches fed on the very modest eastern hemlock cone crop. The chickadee and goldfinch counts were best estimates at times (likely low) as they fed very high or were hidden in conifers.

27. OLD-GROWTH HEMLOCK–MIXED HARDWOOD FOREST I

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

J. CHRISTOPHER HANEY

Wildlife Technology Program

School of Forest Resources

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Site Number: PA2493079. **Location:** Pennsylvania; Clarion and Forest Cos.; Cooksburg; Cathedral Stand; $41^{\circ}21'N$, $79^{\circ}13'W$; Cooksburg Quadrangle, USGS. **Continuity:** New. **Size:** 15.0 ha. **Description of Plot:** See BBC #79. Large numbers of snags provide foraging substrate for woodpeckers. **Weather:** Mean temperature -1.5°C (range -7 – 5°C). Mean snow depth 8.0 cm (range 0–35 cm). The ground was bare on two visits. A single snowfall of nearly 80 cm on 10 and 11 Dec. was the region's highest recorded in several decades. By early Jan. this snowpack had nearly disappeared and the remainder of the study period experienced relatively normal snow cover and temperatures. **Coverage:** 23.8 hrs; 10 visits (mornings): 18, 19 Dec.; 4, 6, 7, 10, 16, 17, 27 Jan.; 3 Feb. **Count:** Red-breasted Nuthatch, 22.6 ind./visit, (10 visits); Golden-crowned Kinglet, 17.9, (10); Black-capped Chickadee, 16.5, (10); American Goldfinch, 15.1, (9); Dark-eyed Junco, 9.9, (10); White-breasted Nuthatch, 8.1, (10); Tufted Titmouse, 5.0, (10); Brown Creeper, 3.6, (10); Downy Woodpecker, 3.5, (10); Blue Jay, 2.8, (8); Hairy Woodpecker, 2.1, (9); Pileated Woodpecker, 1.4, (8); Pine Siskin, 1.4, (3); Purple Finch, 0.7, (3); Red-bellied Woodpecker, 0.3, (3); Common Raven, 0.3, (2); Red Crossbill, 0.3, (1); Red-tailed Hawk, 0.2, (2); Wild Turkey, 0.2, (2); Sharp-shinned Hawk, 0.1, (1). **Total:** 20 species; 112 ind./visit (299 ind./40 ha). **Remarks:** There is little human disturbance on the plot during winter; only foot travel is permitted and there is no hunting. A windstorm during Nov., and the heavy snowfall of 10–11 Dec. 1992, toppled branches, crowns, and some entire trees (mostly eastern hemlock). These deadfalls were heavily used by juncos as well as bark-foragers and foliage-gleaners. **Acknowledgments:** Robert Williams and Dennis Kurian assisted with surveying and recording data on some of the plot visits. I thank Carl Schlentner, superintendent of Cook Forest State Park, for his help in siting plots. Research in old-growth forests was supported by a Research and Development Grant from The Pennsylvania State University–Commonwealth Education System, and by funds from the DuBois Educational Foundation.

28. OLD-GROWTH HEMLOCK-MIXED HARDWOOD FOREST II

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

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Site Number: PA2493080. **Location:** Pennsylvania; Clarion Co.; Cooksburg; Seneca Stand; 41°20'N, 79°13'W; Cooksburg Quadrangle, USGS. **Continuity:** New. **Size:** 15.0 ha. **Description of Plot:** See BBC #80. **Weather:** Mean temperature -0.5°C (range -5.5 – 8°C). Mean snow depth 9.6 cm (range 0–50 cm). The ground was bare on three visits. A single snowfall of nearly 80 cm on 10 and 11 Dec. was the region's highest recorded in several decades. By early Jan. this snowpack had nearly disappeared and the remainder of the study period experienced relatively normal snow cover and temperatures. **Coverage:** 24.3 hrs; 10 visits (mornings): 13, 20 Dec.; 4, 5, 8, 9, 11, 18, 23 Jan.; 3 Feb. **Count:** American Goldfinch, 21.6 ind./visit, (10 visits); Golden-crowned Kinglet, 20.0, (10); Black-capped Chickadee, 15.1, (10); Red-breasted Nuthatch, 7.8, (10); White-breasted Nuthatch, 7.4, (10); Tufted Titmouse, 7.3, (10); Brown Creeper, 4.7, (10); Downy Woodpecker, 1.4, (9); Hairy Woodpecker, 1.2, (7); Dark-eyed Junco, 1.1, (4); Blue Jay, 1.0, (4); Pileated Woodpecker, 0.8, (5); Red Crossbill, 0.4, (2); Purple Finch, 0.2, (2); Pine Siskin, 0.2, (2); Red-tailed Hawk, 0.1, (1). **Total:** 16 species; 90.3 ind./visit (241 ind./40 ha). **Remarks:** There is little human disturbance on the plot during winter; the dirt access road surrounding the plot is closed to all but foot travel and hunting is prohibited. A windstorm during Nov., and the heavy snowfall of 10–11 Dec. 1992, toppled branches, crowns, and some entire trees (mostly eastern hemlock). **Acknowledgments:** Robert Williams and Dennis Kurian assisted with surveying and recording data on some of the plot visits. I thank Carl Schlentner, superintendent of Cook Forest State Park, for his help in siting plots. Research in old-growth forests was supported by a Research and Development Grant from The Pennsylvania State University–Commonwealth Education System, and by funds from the DuBois Educational Foundation.

29. REMNANT OLD-GROWTH HEMLOCK-MIXED HARDWOOD FOREST

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

J. CHRISTOPHER HANEY

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Site Number: PA2493082. **Location:** Pennsylvania; Clarion Co.; Cooksburg; Swamp Tract; 41°24'N, 79°13'W; Marienville West Quadrangle, USGS. **Continuity:** New. **Size:** 15.0 ha. **Description of Plot:** See BBC #81. **Weather:** Mean temperature -4.1°C (range -15 – 1°C). Mean snow depth 12.6 cm (range 0–50 cm). The ground was bare on two visits. A single snowfall of nearly 80 cm on 10 and 11 Dec. was the region's highest recorded in several decades. By early Jan. this snowpack had nearly disappeared and the remainder of the study period experienced relatively normal snow cover and temperatures. The stream and bog water was mostly frozen. **Coverage:** 22.3 hrs; 10 visits (mornings): 14, 19, 21 Dec.; 6, 8, 9, 16, 20, 23 Jan.; 7 Feb. **Count:** Black-capped Chickadee, 18.7 ind./visit, (10 visits); American Goldfinch, 18.1, (10); Pine Siskin, 8.5, (7); Golden-crowned Kinglet, 8.3, (9); Red-breasted Nuthatch, 6.3, (10); White-breasted Nuthatch, 5.2, (10); Brown Creeper, 3.5, (10); Tufted Titmouse, 1.7, (6); Downy Woodpecker, 1.1, (8); American Crow, 1.1, (1); Dark-eyed Junco, 1.0, (2); Blue Jay, 0.7, (3); Pileated Woodpecker, 0.4, (4); Hairy Woodpecker, 0.3, (3); Barred Owl,

0.2, (2); Common Raven, 0.2, (1); Winter Wren, 0.2, (2); Purple Finch, 0.2, (2); Wild Turkey, 0.1, (1). **Total:** 19 species; 75.8 ind./visit (202 ind./40 ha). **Remarks:** There is little human disturbance on the plot during winter, but this section of the park remains open to hunting. A windstorm during Nov., and the heavy snowfall of 10–11 Dec. 1992, toppled branches, crowns, and some entire trees (mostly eastern hemlock). **Acknowledgments:** Robert Williams and Dennis Kurian assisted with surveying and recording data on some of the plot visits. I thank Carl Schlentner, superintendent of Cook Forest State Park, for his help in siting plots. Research in old-growth forests was supported by a Research and Development Grant from The Pennsylvania State University–Commonwealth Education System, and by funds from the DuBois Educational Foundation.

30. MATURE DECIDUOUS–CONIFEROUS FOREST WITH STREAM

BOSQUE MADURO DECIDUO–Y-DE CONIFEROS CON ARROYO

STEPHEN J. & BARBARA H. STEDMAN

2675 Lakeland Drive
Cookeville, Tennessee 38501

Location: Tennessee; Putnam Co.; Cookeville; City Lake Natural Area (Old Cookeville Filtration Plant); 36°8'N, 85°27'W; Cookeville East Quadrangle, USGS. **Continuity:** Established 1990; 4 yr. **Size:** 10.2 ha. **Description of Plot:** See *J. Field Ornithol.* 62 (Suppl.):17 (1991) and 63 (Suppl.):18–19 (1992). **Weather:** Mean temperature 1.1°C (range –4–7°C). Slightly warmer and slightly drier than normal; the fourth consecutive mild winter. **Coverage:** 15.2 hrs; 10 visits (mornings): 7, 9, 13, 14, 16, 18, 23 Jan.; 3, 6, 7 Feb. **Count:** House Finch, 5.6 ind./visit, (7 visits); European Starling, 4.7, (8); White-throated Sparrow, 4.6, (7); Tufted Titmouse, 3.7, (10); Carolina Chickadee, 3.6, (10); Rock Dove, 3.1, (5); Yellow-rumped Warbler, 3.0, (10); Northern Cardinal, 3.0, (10); Song Sparrow, 2.6, (10); Blue Jay, 2.4, (10); Downy Woodpecker, 2.3, (10); Carolina Wren, 2.2, (10); American Goldfinch, 1.8, (9); White-breasted Nuthatch, 1.7, (10); Golden-crowned Kinglet, 1.4, (9); Mourning Dove, 1.1, (6); Red-bellied Woodpecker, 1.0, (8); Field Sparrow, 1.0, (4); Eastern Phoebe, 0.9, (8); American Crow, 0.8, (5); Rufous-sided Towhee, 0.8, (6); Canada Goose, 0.7, (1); Northern Flicker, 0.7, (4); Winter Wren, 0.6, (6); Swamp Sparrow, 0.6, (4); Belted Kingfisher, 0.5, (5); Hairy Woodpecker, 0.5, (4); Ruby-crowned Kinglet, 0.4, (4); Great Blue Heron, 0.2, (2); Yellow-bellied Sapsucker, 0.2, (2); Great Horned Owl, 0.1, (1); Indigo Bunting, 0.1, (1); Dark-eyed Junco, 0.1, (1); Red-winged Blackbird, 0.1, (1). **Total:** 34 species; 56.1 ind./visit (220 ind./40 ha). **Remarks:** Development of the site by the city of Cookeville was extensive since last year: the boat ramp and parking lot were paved; a 0.6 km trail was paved or covered with mulch; heavy machinery operated at the site before and during the study; 0.1 ha of “brush” was mowed or removed. All these changes seemed to reduce bird numbers and species early in the study, but by the end of the study, numbers and species were at expected levels for a mild winter with less than normal precipitation.

31. SUBURBAN CEMETERY

CEMENTERIO SUBURBANO

THOMAS A. IMHOF

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Birmingham, Alabama 35218

Location: Alabama; Jefferson Co.; Birmingham; Oakland Cemetery; 33°29'N, 86°54'W; Bessemer Quadrangle, USGS. **Continuity:** Established 1978; 14 yr. **Size:** 15.0 ha. **Description of Plot:** See *J. Field Ornithol.* 63 (Suppl.):88 (1992). **Weather:** Mean temperature 8.8°C (range 0–20.6°C). From 1 Dec. through 15 Jan. it was cloudy, wet, and warm with above normal precipitation. From 16 Jan. through 28 Feb. it was clear, damp, and cool with no precipitation during 16 days in late January. On 12 and 13 Mar. there was a severe, unprecedented winter storm with 43 cm of snow, 32–80 km/hr winds, and a low temperature of –16.6°C. **Coverage:**

22.0 hrs; 22 visits (16 mornings, 3 afternoons, 3 evenings): 1, 9, 10, 11, 14, 21, 29 Dec.; 4, 13, 16, 22, 27, 30 Jan.; 1, 7, 9, 17, 21, 23, 27 Feb.; 8, 17 Mar. **Count:** Common Grackle, 235 ind./visit, (14 visits); European Starling, 23.8, (22); House Finch, 13.6, (22); House Sparrow, 13.0, (22); Rock Dove, 12.2, (22); Mourning Dove, 10.3, (22); American Robin, 9.3, (13); Blue Jay, 7.7, (22); Northern Cardinal, 6.5, (22); Northern Mockingbird, 4.9, (22); White-throated Sparrow, 3.6, (21); Rufous-sided Towhee, 3.2, (22); Brown-headed Cowbird, 3.1, (2); American Crow, 2.8, (17); Northern Flicker, 1.8, (15); Carolina Chickadee, 1.7, (20); Tufted Titmouse, 1.6, (20); Red-bellied Woodpecker, 1.4, (22); Red-winged Blackbird, 1.4, (2); Rusty Blackbird, 1.0, (5); Brown Thrasher, 0.9, (12); Ruby-crowned Kinglet, 0.6, (11); Red-tailed Hawk, 0.4, (8); Yellow-bellied Sapsucker, 0.3, (5); Yellow-rumped Warbler, 0.3, (4); Carolina Wren, 0.2, (4); Golden-crowned Kinglet, 0.2, (3); Cedar Waxwing, 0.2, (1); Sharp-shinned Hawk, 0.1, (2); American Kestrel, 0.1, (2); Downy Woodpecker, 0.1, (2); White-breasted Nuthatch, 0.1, (2); Dark-eyed Junco, 0.1, (1); Pine Siskin, 0.1, (1); American Goldfinch, 0.1, (2); Turkey Vulture, 0.0, (1); Cooper's Hawk, 0.0, (1); American Woodcock, 0.0, (1); Loggerhead Shrike, 0.0, (1); Purple Finch, 0.0, (1). **Total:** 40 species; 362 ind./visit (966 ind./40 ha). **Remarks:** The severe storm of 12 and 13 Mar. had a devastating effect on evergreens, especially pine, privet, and juniper. The effect on birds has not yet been determined, but one man found 53 dead bluebirds in 20 nest boxes! Coyote (*Canis latrans*) was seen twice.

32. SUBURBAN UNIVERSITY CAMPUS

CAMPO UNIVERSITARIO SUBURBANO

MARK WIMER

*Department of Biology
California State University
Long Beach, California 90840*

Location: California; Los Angeles Co.; Long Beach; California State University (Upper Campus); 33°47'N, 118°07'W; Los Alamitos Quadrangle, USGS. **Continuity:** Established 1982; 2 yr. **Size:** 28.2 ha. **Description of Plot:** See *Am. Birds* 37:48 (1983). Add sweetgum as a food plant. **Weather:** Mean temperature 9°C (range 7–16°C). Rainfall was heavy before and during the study period. **Coverage:** 15.0 hrs; 10 visits (mornings): 8, 11, 28, 30 Jan.; 1, 3, 4, 5, 6, 10 Feb. **Count:** Cedar Waxwing, 54.6 ind./visit, (9 visits); Yellow-rumped Warbler, 48.4, (10); House Finch, 44.1, (10); House Sparrow, 28.3, (10); European Starling, 18.6, (10); Rock Dove, 14.7, (10); Bush-tit, 14.1, (9); Pine Siskin, 14.1, (6); American Crow, 13.1, (10); Mourning Dove, 7.8, (8); Northern Mockingbird, 6.9, (10); Allen's Hummingbird, 5.0, (10); Anna's Hummingbird, 4.7, (10); Spotted Dove, 4.3, (9); Orange-crowned Warbler, 2.4, (10); Townsend's Warbler, 1.5, (9); Ruby-crowned Kinglet, 1.4, (8); hummingbird species, 1.3, (7); White-crowned Sparrow, 1.3, (3); Mitred Conure, 1.2, (3); Black Phoebe, 1.2, (8); American Goldfinch, 1.2, (5); Western Tanager, 1.0, (6); Scrub Jay, 0.9, (6); Mallard, 0.6, (3); Red-shouldered Hawk, 0.5, (4); Ring-billed Gull, 0.5, (3); Hermit Thrush, 0.4, (4); Chipping Sparrow, 0.4, (2); Red-tailed Hawk, 0.2, (2); American Kestrel, 0.2, (2); Nashville Warbler, 0.2, (2); Lesser Goldfinch, 0.2, (1); Sharp-shinned Hawk, 0.1, (1); *Accipiter* species, 0.1, (1); House Wren, 0.1, (1); American Robin, 0.1, (1). **Total:** 37 species; 296 ind./visit (419 ind./40 ha). **Remarks:** Pine Siskins and Townsend's Warblers were lacking in 1982; otherwise the predominant species were similar. Nashville Warbler is rare in winter. One "Myrtle Warbler" type of Yellow-rumped Warbler was seen. Pine Siskin numbers decreased during the study period, and they were not seen after 4 Feb. The Mallards were either in a fountain or on the lawn. One Anna's Hummingbird was feeding a fledgling on 28 Jan., and an Allen's Hummingbird nest, located seven feet up in a sequoia, fledged two young on 6 Feb. The conures are resident in the neighborhood where up to 26 were seen, but not during the study. There was higher bird diversity on the N edge of the plot, corresponding to more plant cover. The frequent use of gas-powered blowers and trimmers by grounds workers during the visits probably lowered the counts.

33. URBAN NATURE CENTER

CENTRO URBANO NATURAL

FIONA PARKER

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Location: California; Orange Co.; Huntington Beach; Shipley Nature Center; 33°42'N, 118°25'W; Seal Beach Quadrangle, USGS. **Continuity:** Established 1976; 3 yr. **Size:** 7.3 ha. **Description of Plot:** See *Am. Birds* 30:1074 (1976). The white alder and California sycamore planted between 1976 and 1980 have grown to approximately 15 m and the pine forest is now dense. The grass is no longer mowed. Many trees have fallen and are smothered in passion-fruit vine. **Weather:** Mean temperature 14°C (range 6–23°C). The weather was generally mild with extremely heavy rain (28 cm) at the beginning of January. **Coverage:** 15.0 hrs; 10 visits: 31 Dec.; 6, 14, 19–22, 25–27 Jan.; 3 Feb. **Count:** Anna's Hummingbird, 9.1 ind./visit, (10 visits); Mallard, 6.9, (8); Bushtit, 6.4, (7); House Finch, 6.2, (7); Pine Siskin, 2.4, (5); White-crowned Sparrow, 1.8, (5); American Coot, 1.7, (10); American Goldfinch, 1.5, (4); House Sparrow, 1.4, (2); Song Sparrow, 1.3, (8); Cooper's Hawk, 0.7, (5); Mourning Dove, 0.6, (3); Yellow-rumped Warbler, 0.6, (4); Allen's Hummingbird, 0.5, (5); Northern Flicker, 0.5, (3); Lesser Goldfinch, 0.5, (1); Hermit Thrush, 0.4, (4); Black Phoebe, 0.3, (3); Pied-billed Grebe, 0.2, (2); Great Egret, 0.2, (2); Green Heron, 0.2, (2); Sharp-shinned Hawk, 0.2, (2); Red-shouldered Hawk, 0.2, (2); Downy Woodpecker, 0.2, (2); California Thrasher, 0.2, (2); Orange-crowned Warbler, 0.2, (2); American Bittern, 0.1, (1); Great Blue Heron, 0.1, (1); American Kestrel, 0.1, (1); Bewick's Wren, 0.1, (1); Northern Mockingbird, 0.1, (1); Townsend's Warbler, 0.1, (1); Wilson's Warbler, 0.1, (1). **Total:** 33 species; 45.1 ind./visit (247 ind./40 ha). **Remarks:** The number of birds counted this year is considerably fewer than the previous studies of 1976 and 1980. There is only one sugar feeder at the station, and no seed is provided now which might account for the absence of pheasants. Many local children play in the park in the afternoons, pushing paths through the undergrowth and riding bikes on the trails. The heavy rains doubled the size of the pond, extending it into the trees. According to the park ranger, who has been in charge for 17 years, many birds have disappeared from the park because of domestic cats and because of the loss of a nearby mushroom farm which was a source of food.

34. URBAN NATURE PRESERVE

RESERVA NATURAL URBANA

LINDA & RICHARD BEIDLEMAN

*766 Bayview Ave.
Pacific Grove, California 93950*

Location: California; Monterey Co.; Carmel; Mission Trail Park; 36°33'N, 121°56'W; Monterey Quadrangle, USGS. **Continuity:** New. **Size:** 16.2 ha. **Description of Plot:** A rectangular plot. The N, higher, and more natural half is a narrow canyon, with a hillside woodland of tall Monterey pines above smaller coast live oaks, and the incised creek along the W border. As the valley broadens and flattens to the S, it shows more signs of human influence (especially exotic vegetation). Cottonwoods and then tree willows become dominant in the wider creek-bottom, with a dense tangle of understory plants, including German ivy, poison oak, and blackberry. Also, there is a planted redwood grove, some scattered acacias and eucalyptus, a moist meadow, an impenetrable willow copse along the creek branches, and some remaining natural brushland on the slopes. As a result of heavy rainfall this winter, there were intermittent springs, and the creek, branching to the S, often created boggy areas among the willows. **Edge:** The plot is essentially surrounded by landscaped residential development, but with an upslope woodland-brushland buffer to the E which includes a small arboretum. **Topography and Elevation:** The plot occupies a N-S creek canyon; flat and fairly wide to the

S, rising to the N and narrowing somewhat steeply on the sides. Minimum elevation 9 m, maximum 90 m. **Weather:** Mean temperature 15.4°C (range 7–22°C). Although there was no rain during visits, this was the wettest winter in about a decade. There were many rainy days, some with strong winds. **Coverage:** 21.8 hrs; 10 visits (4 mornings, 6 afternoons): 30 Dec.; 2, 11, 14, 24, 26, 30 Jan.; 5, 17, 19 Feb. **Count:** Golden-crowned Sparrow, 22.4 ind./visit, (10 visits); Scrub Jay, 14.2, (10); Chestnut-backed Chickadee, 10.2, (10); American Robin, 9.5, (10); House Finch, 8.8, (9); Acorn Woodpecker, 8.7, (10); Mourning Dove, 7.9, (7); Townsend's Warbler, 7.7, (10); Yellow-rumped Warbler, 7.2, (9); Pygmy Nuthatch, 5.6, (10); California Gull, 5.5, (3); Bushtit, 5.4, (7); Ruby-crowned Kinglet, 5.2, (10); White-throated Swift, 4.9, (1); American Crow, 4.8, (10); Song Sparrow, 3.6, (10); Rock Dove, 3.3, (6); California Towhee, 3.3, (9); Dark-eyed Junco, 2.5, (7); Brewer's Blackbird, 2.4, (5); European Starling, 2.3, (5); White-crowned Sparrow, 2.2, (6); Northern Flicker, 1.9, (9); Rufous-sided Towhee, 1.7, (7); Pine Siskin, 1.7, (6); Bewick's Wren, 1.3, (6); Anna's Hummingbird, 1.1, (6); Steller's Jay, 1.0, (6); Band-tailed Pigeon, 0.9, (3); Turkey Vulture, 0.8, (3); Cassin's Finch, 0.8, (2); Downy Woodpecker, 0.6, (5); Brown Creeper, 0.6, (2); Fox Sparrow, 0.6, (6); Hermit Thrush, 0.5, (4); Red-shouldered Hawk, 0.4, (3); Wrentit, 0.4, (3); Western Gull, 0.3, (2); Orange-crowned Warbler, 0.3, (3); Purple Finch, 0.3, (2); Great Horned Owl, 0.2, (2); Allen's Hummingbird, 0.2, (2); Nuttall's Woodpecker, 0.2, (2); Black Phoebe, 0.2, (2); Great Blue Heron, 0.1, (1); Sharp-shinned Hawk, 0.1, (1); Cooper's Hawk, 0.1, (1); Merlin, 0.1, (1); California Quail, 0.1, (1); White-breasted Nuthatch, 0.1, (1); Wilson's Warbler, 0.1, (1); Lesser Goldfinch, 0.1, (1). **Total:** 52 species; 164 ind./visit (406 ind./40 ha). **Remarks:** With permanent water, a variety of habitats, available food and cover, and a diversity of vegetation, the plot is an ecological oasis surrounded by urban Carmel. The large number of winter bird species is in part a reflection of the area's various ecosystems (Acorn Woodpeckers and Pygmy Nuthatches, for example, are associated with the Monterey pines). There is an extensive trail system, which is well used by people and their dogs, but without detriment to the bird population. **Acknowledgments:** Thanks to Steve Bailey for pertinent information.

35. FLOODPLAIN FOREST AND CULTIVATED BOTTOMLAND

BOISQUE INUNDABLE Y TIERRAS CULTIVADAS

VIVIAN MILLS PITZRICK

Amity Lake

Belmont, New York 14813

Location: New York; Allegany Co.; Scio; Maybee Plot; 42°10'N, 77°59'W; Wellsville North Quadrangle, USGS. **Continuity:** Established 1971; 23 yr. **Size:** 51.8 ha. **Description of Plot:** See *Am. Birds* 25:644–645 (1971). On the S end, the Genesee River has cut into the plot about 23 m, and just N of mid-plot it has also removed some trees. Many trees 5–20 cm in diameter, mostly cottonwoods, have been cut down by beavers. **Weather:** Mean temperature –4.7°C (range –17.8–11.7°C). Mean snow depth 6.7 cm (range 0–15.2 cm). The ground was bare on one visit. Temperatures averaged 4.2°C above normal with Lake Erie freezing on 31 Jan., four weeks late. Precipitation, mostly snow, was 1.3 cm below normal. The Genesee River and spring-fed pool were open on every visit. Other pools were open until the two final visits. **Coverage:** 14.5 hrs; 8 visits (mornings): 18, 21, 28, 31 Dec.; 8, 11, 18, 27 Jan. **Count:** Mourning Dove, 18.1 ind./visit, (8 visits); House Finch, 7.1, (7); American Goldfinch, 6.9, (6); Dark-eyed Junco, 4.4, (5); American Crow, 3.6, (8); Black-capped Chickadee, 3.6, (8); Blue Jay, 3.1, (6); American Tree Sparrow, 2.5, (7); House Sparrow, 2.0, (3); European Starling, 1.5, (1); American Black Duck, 1.4, (3); Herring Gull, 1.0, (5); Mallard, 0.6, (3); Ring-billed Gull, 0.5, (3); Belted Kingfisher, 0.5, (4); Common Merganser, 0.4, (3); Downy Woodpecker, 0.4, (2); White-breasted Nuthatch, 0.4, (2); Great Blue Heron, 0.3, (2); Song Sparrow, 0.3, (2); Winter Wren, 0.1, (1); Northern Cardinal, 0.1, (1). **Total:** 22 species; 58.8 ind./visit (45.4 ind./40 ha). **Remarks:** Comparing 1993 results with the 1971–1992 average (in parentheses): total species, 22 (26); mean ind./visit, 58.8 (150); and excluding American Crow and Snow Bunting, 55.2 (106). The total number of individuals was 52% below the 22-yr average. This was a reflection of scarcity of many foods such as few corn gleanings, mul-

tiflora rose hips, or weed seeds, and no wild grapes or top dressings. Also, there was only one reliable feeder at the plot edge. The supply of sumac, sycamore, and box elder fruits was good, but not enough to attract many birds. Winter Wren was new to the study. **Acknowledgments:** Thanks to Calvin Maybee for permission to use his property.

36. FIELD, RIDGE, AND SHRUBBY TREES

CAMPOS, COLINAS Y ARBUSTOS

MICHAEL F.G. CLARK

27 Skyline Drive

Dundas, Ontario L9H 3S3

Location: Ontario; Municipality of Hamilton-Wentworth; Dundas; Dundas Valley Plot #1; 43°15'N, 79°54'W. **Continuity:** Established 1986; 8 yr. **Size:** 6.6 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):14 (1989). **Weather:** Mean temperature 0.3°C (range -4.5-6°C). Mean snow depth 14.6 cm (range 0.1-33 cm). It snowed during three visits and rained during one. Temperatures for Dec. to Mar. were below average, and for Feb. to Mar. they were 5.8°C below the 30-yr mean of 0.4°C. Snowfall was 45.8% over the 30-yr mean of 33.4 cm, and in Feb. and Mar. it was unusually heavy. Source: Environment Canada. **Coverage:** 9.5 hrs; 8 visits (5 mornings, 3 afternoons): 5, 22, 30 Dec.; 16, 30, 31 Jan.; 17 Feb.; 11 Mar. **Count:** House Finch, 20.3 ind./visit, (6 visits); Black-capped Chickadee, 6.4, (8); Northern Cardinal, 6.4, (8); Dark-eyed Junco, 5.9, (4); American Robin, 2.4, (4); Blue Jay, 1.9, (5); American Goldfinch, 1.1, (1); American Tree Sparrow, 1.0, (3); Downy Woodpecker, 0.4, (2); Red-tailed Hawk, 0.3, (2); American Crow, 0.3, (1); Northern Goshawk, 0.1, (1); Hairy Woodpecker, 0.1, (1). **Total:** 13 species; 46.4 ind./visit (281 ind./40 ha). **Remarks:** Despite genuine winter weather, the total of 371 individuals was the second highest ever (64.9% over the 8-yr mean). Northern Cardinal, House Finch, Blue Jay, and Dark-eyed Junco set record totals; the 162 House Finches were 126 more than the mean of 36.1. Cardinal and House Finch numbers continue to rise, possibly because of easy access to nearby feeders. The once dominant American Tree Sparrow (8 ind. compared to the 8-yr mean of 39.0 ind.), may be being "bullied" from the plot. Northern Goshawk was new to this plot.

37. SHRUBBY TREES, RIDGE, AND WOODS

ARBUSTOS, COLINAS Y BOSQUES

MICHAEL F.G. CLARK

27 Skyline Drive

Dundas, Ontario L9H 3S3

Location: Ontario; Municipality of Hamilton-Wentworth; Dundas; Dundas Valley Plot #2; 43°14'N, 80°0'W. **Continuity:** Established 1986; 5 yr. **Size:** 7.3 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):14-15 (1989). **Weather:** Mean temperature -3.1°C (range -9-3.5°C). Mean snow depth 22.1 cm (range 0-58 cm). The ground was bare on one visit. It snowed during one visit. Temperatures for Dec. to Mar. were below average, and for Feb. to Mar. they were 5.8°C below the 30-yr mean of 0.4°C. Snowfall was 45.8% over the 30-yr mean of 33.4 cm, and in Feb. and Mar. it was unusually heavy. Source: Environment Canada. **Coverage:** 9.2 hrs; 8 visits (4 mornings, 4 afternoons): 5, 22, 24 Dec.; 2, 16 Jan.; 20 Feb.; 6, 15 Mar. **Count:** American Robin, 17.9 ind./visit, (5 visits); Black-capped Chickadee, 12.8, (8); Northern Cardinal, 2.5, (8); White-breasted Nuthatch, 1.8, (7); American Goldfinch, 0.8, (1); American Crow, 0.4, (2); Red-tailed Hawk, 0.3, (1); Downy Woodpecker, 0.3, (2); Brown Creeper, 0.3, (1); Hairy Woodpecker, 0.1, (1); Blue Jay, 0.1, (1); American Tree Sparrow, 0.1, (1). **Total:** 12 species; 37.1 ind./visit (203 ind./40 ha). **Remarks:** Despite the heaviest snows in years, the total of 297 individuals was the highest for the five years of this study (5-yr mean is 190.6). The record number of American Robins produced the highest species total (143 ind., 48.1% of the total). The robins remained on the plot until at least the middle of January. Six other species recorded their highest totals to date, including this area's ever-

increasing cardinals whose total of 20 individuals was 67% higher than their previous high count.

38. COASTAL FRESHWATER MARSH

PANTANO COSTANERO DE AGUA DULCE

JOHN P. KELLY

Cypress Grove Preserve

P.O. Box 808

Marshall, California 94940

Location: California; Marin Co.; Marshall; Livermore Marsh; 38°10'N, 122°54'W; Tomales Quadrangle, USGS. **Continuity:** Established 1986; 8 yr. **Size:** 10.5 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (Suppl.):64 (1989). Arroyo willows continue to increase in number, covering approximately 10% of the middle marsh in patches 2–6 m high. **Weather:** Mean temperature 8.0°C (range 5–13°C). **Coverage:** 8.0 hrs; 7 visits (mornings): 4, 11, 12, 16, 22, 24 Feb.; 1 Mar. **Count:** Canvasback, 25.4 ind./visit, (7 visits); American Coot, 22.7, (7); Song Sparrow, 16.7, (7); Ruddy Duck, 13.7, (7); Black-crowned Night-Heron, 11.9, (7); Marsh Wren, 11.1, (7); Red-winged Blackbird, 8.3, (6); Golden-crowned Sparrow, 6.1, (6); American Robin, 5.4, (6); House Finch, 3.0, (4); Bufflehead, 2.3, (5); Ruby-crowned Kinglet, 2.1, (7); Mallard, 2.0, (2); White-crowned Sparrow, 2.0, (1); Virginia Rail, 1.9, (6); Common Yellowthroat, 1.9, (6); Pine Siskin, 1.9, (2); Pied-billed Grebe, 1.4, (7); Allen's Hummingbird, 1.4, (6); Tree Swallow, 1.4, (5); Wrentit, 1.4, (6); Yellow-rumped Warbler, 1.3, (4); Black Phoebe, 1.0, (6); Northern Flicker, 0.7, (3); Turkey Vulture, 0.6, (1); Anna's Hummingbird, 0.6, (4); Hermit Thrush, 0.6, (3); Belted Kingfisher, 0.4, (3); Bewick's Wren, 0.4, (3); Great Blue Heron, 0.3, (2); Snowy Egret, 0.3, (1); Cinnamon Teal, 0.3, (1); Common Snipe, 0.3, (1); Scrub Jay, 0.3, (2); California Towhee, 0.3, (2); Great Egret, 0.1, (1); American Wigeon, 0.1, (1); Greater Scaup, 0.1, (1); Hooded Merganser, 0.1, (1); Northern Harrier, 0.1, (1); Cooper's Hawk, 0.1, (1); California Quail, 0.1, (1); Sora, 0.1, (1); Glaucous-winged Gull, 0.1, (1); Downy Woodpecker, 0.1, (1); Chestnut-backed Chickadee, 0.1, (1); Winter Wren, 0.1, (1); Fox Sparrow, 0.1, (1). **Total:** 48 species; 153 ind./visit (584 ind./40 ha). **Remarks:** Fifteen Black-crowned Night-Herons (based on one flush count) occupied a winter roost in the lower marsh bulrushes. Two male Allen's Hummingbirds and one male Anna's Hummingbird occupied breeding territories. Canvasback numbers fluctuated as they moved approximately 6 km to and from Abbott's Lagoon; the peak number at Livermore Marsh was 42. Red-winged Blackbirds were males exhibiting early territorial behavior. **Acknowledgments:** Field data were compiled by Susan Kelly. This work was supported by Chevron USA, Inc., San Francisco, CA, and Audubon Canyon Ranch, Stinson Beach, CA.

39. DEGRADED URBAN MARSH

ANEGADO URBANO DEGRADADO

FIONA PARKER

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Location: California; Orange Co.; Huntington Beach; Bolsa Chica Wetlands; 33°42'N, 118°2'W; Seal Beach Quadrangle, USGS. **Continuity:** New. **Size:** 10.2 ha. **Description of Plot:** The plot is roughly triangular. It is dry wetland with two areas of standing water. A ditch that is always filled with water, runs through the plot from SW to NE. The permanent ponds are surrounded by cattails, and the rest of the plot is mostly pickleweed and short grass (< 0.3 m). There are two stunted olives by the S edge. At present, the area is used by bike riders, joggers, horse riders, and dog walkers, plus it is a dumping ground for trash. It may be developed in the near future. **Edge:** The plot is bordered on the N by a housing tract; on the W by the East Garden Grove Wintersburg Channel; and on the S by a fence. **Topog-**

raphy and Elevation: The plot is nearly level with a minimum elevation of 0 m. **Weather:** Mean temperature 14°C (range 6–23°C). Heavy rain (28 cm) fell in early Jan. and formed many more pools of water. **Coverage:** 7.5 hrs; 10 visits (mornings): 6, 14, 20, 22, 25, 27 Jan.; 3, 6, 8, 15 Feb. **Count:** European Starling, 10.4 ind./visit, (10 visits); Western Meadowlark, 7.2, (10); Mallard, 6.0, (8); Savannah Sparrow, 5.2, (8); Black-necked Stilt, 4.6, (7); American Pipit, 2.7, (4); Cinnamon Teal, 2.7, (2); Sanderling, 2.2, (2); White-crowned Sparrow, 2.1, (4); Great Egret, 1.8, (8); Rock Dove, 1.6, (3); Say's Phoebe, 1.4, (9); Great Blue Heron, 1.0, (6); American Crow, 1.0, (4); Anna's Hummingbird, 0.9, (8); Black Phoebe, 0.6, (5); American Kestrel, 0.5, (5); Mourning Dove, 0.5, (4); Greater Yellowlegs, 0.4, (4); Marsh Wren, 0.4, (3); Turkey Vulture, 0.3, (2); Northern Harrier, 0.2, (2); Cooper's Hawk, 0.2, (2); California Gull, 0.2, (2); Common Raven, 0.2, (1); Northern Mockingbird, 0.2, (1); Red-shouldered Hawk, 0.1, (1); Loggerhead Shrike, 0.1, (1); Orange-crowned Warbler, 0.1, (1); House Finch, 0.1, (1). **Total:** 30 species; 54.9 ind./visit (215 ind./40 ha). **Remarks:** The Northern Harrier was only seen twice in the study plot, but it was seen on the other side of the fence (S of the plot) during every visit.

40. MAN-MADE TIDAL LAGOON

LAGUNA ARTIFICIAL CON MAREA

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Location: California; Los Angeles Co.; Long Beach; Shoreline Aquatic Park; 33°46'N, 118°11'W; Long Beach Quadrangle, USGS. **Continuity:** Established 1984; 5 yr. **Size:** 5.3 ha. **Description of Plot:** See *Am. Birds* 39:59 (1985). **Weather:** Seasonally mild with temperatures usually above 21°C. There was a period of heavy rain in mid-January. **Coverage:** 6.0 hrs; 8 visits: 27 Dec.; 3, 16, 26, 29 Jan.; 1, 7, 15 Feb. **Count:** Ring-billed Gull, 148 ind./visit, (8 visits); American Coot, 43.1, (8); Western Gull, 37.6, (8); Sanderling, 36.9, (8); Western Sandpiper, 32.3, (8); California Gull, 28.0, (8); Marbled Godwit, 23.3, (8); Willet, 9.3, (8); Rock Dove, 7.6, (6); Least Sandpiper, 6.0, (7); House Finch, 5.0, (3); Heermann's Gull, 3.1, (4); Double-crested Cormorant, 2.8, (8); Eared Grebe, 2.0, (8); Western Grebe, 1.8, (7); Glaucous-winged Gull, 1.8, (7); Pied-billed Grebe, 1.1, (7); Mew Gull, 1.0, (3); Brown Pelican, 0.8, (3); Mallard, 0.6, (5); Lesser Scaup, 0.6, (3); American Pipit, 0.4, (3); Snowy Egret, 0.4, (3); Semipalmated Plover, 0.4, (1); Herring Gull, 0.4, (3); American Crow, 0.4, (2); Red-throated Loon, 0.1, (1); Long-billed Dowitcher, 0.1, (1). **Total:** 28 species; 395 ind./visit (2980 ind./40 ha). **Remarks:** There was an average of 19 species per visit (range 16–23). The variation in the total number of individuals per visit (range 270–591) was similar to that of previous years, although the average total was the highest ever. There was often a lot of human activity in the surrounding public park, and occasionally along the shore in the plot. A total of 48 species have been recorded during studies on this plot. Only Mallard (a partial domestic-plumaged individual) was added this year. Red-throated Loon and Long-billed Dowitcher were recorded for only the second time.

41. TIDAL LAGOON-PARK

LAGUNA CON MAREA EN PARQUE

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Location: California; Los Angeles Co.; Long Beach; Colorado Lagoon; 33°45'N, 118°7'W; Long Beach Quadrangle, USGS. **Continuity:** Established 1980; 4 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 35:38 (1981). **Weather:** Mean temperature 19°C (range 13–22°C). The

weather was a mixture of clear and rainy during the study period. **Coverage:** 5.0 hrs; 10 visits: 26, 27, 29 Jan.; 4, 5, 12 Feb. **Count:** Ring-billed Gull, 84.0 ind./visit, (10 visits); American Coot, 65.2, (10); Mallard, 17.5, (10); Lesser Scaup, 14.9, (10); Double-crested Cormorant, 11.1; Pied-billed Grebe, 6.8, (10); Least Sandpiper, 5.8; Greater Scaup, 3.2; Marbled Godwit, 3.0; Western Gull, 2.7; Willet, 2.2; California Gull, 2.0; Eared Grebe, 1.2; Snowy Egret, 1.1; Dunlin, 1.1; Brown Pelican, 0.8; Western Grebe, 0.7; Black-bellied Plover, 0.7; Forster's Tern, 0.7; Common Loon, 0.6; Canada Goose, 0.6; Horned Grebe, 0.3; Great Egret, 0.3; American Wigeon, 0.2; Black-necked Stilt, 0.2; Ruddy Duck, 0.1, (1); Greater Yellowlegs, 0.1, (1); Whimbrel, 0.1, (1); Sanderling, 0.1, (1); Heermann's Gull, 0.1, (1); Caspian Tern, 0.1, (1). **Total:** 31 species; 227 ind./visit (1123 ind./40 ha). **Remarks:** There were no apparent differences in numbers or species composition due to time of day or tide.

42. BARRIER BEACH AND SALTWATER ESTUARY

ESTUARIOS DE AGUA SALADA Y PLAYAS DE BARRERA

ROBERT W. LOFTIN

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Location: Florida; Duval Co.; Mayport; North Jetties Area, Huguenot Park; 30°25'N, 81°25'W; Mayport Quadrangle, USGS. **Continuity:** Established 1978; 16 yr. **Size:** 213.0 ha. **Description of Plot:** See *Am. Birds* 33:47-48 (1979). **Weather:** Mean temperature 15.9°C (range 6-28°C). Unusually warm and dry, especially in Jan. when the mean temperature was 3.7°C above normal. **Coverage:** 19.5 hrs; 9 visits (1 morning, 8 afternoons): 1, 17, 25 Dec.; 1, 11, 20, 31 Jan.; 13, 28 Feb. **Count:** Herring Gull, 342 ind./visit, (9 visits); Ring-billed Gull, 213, (9); Dunlin, 206, (9); Laughing Gull, 203, (9); Black Skimmer, 161, (8); Western Sandpiper, 146, (9); Sanderling, 138, (9); Forster's Tern, 131, (9); Brown Pelican, 98.3, (9); Red Knot, 79.9, (7); Yellow-rumped Warbler, 66.3, (9); Double-crested Cormorant, 59.7, (9); Royal Tern, 52.0, (9); Short-billed Dowitcher, 50.7, (9); Ruddy Turnstone, 47.6, (9); Great Black-backed Gull, 27.3, (9); Common Grackle, 25.0, (9); Red-breasted Merganser, 24.4, (8); Northern Gannet, 18.1, (7); Semipalmated Plover, 13.8, (5); Black-bellied Plover, 13.0, (9); Mourning Dove, 12.1, (8); European Starling, 10.8, (6); Savannah Sparrow, 9.7, (6); Piping Plover, 5.7, (9); Song Sparrow, 5.7, (7); Great Egret, 4.4, (9); Red-winged Blackbird, 4.4, (4); Willet, 4.3, (7); Snowy Egret, 3.7, (8); Great Blue Heron, 3.2, (9); Northern Mockingbird, 3.2, (9); Northern Cardinal, 2.9, (9); Rufous-sided Towhee, 2.9, (6); Caspian Tern, 2.6, (5); Osprey, 1.7, (7); Bonaparte's Gull, 1.7, (6); Clapper Rail, 1.4, (3); Boat-tailed Grackle, 1.4, (4); American Oystercatcher, 1.3, (5); American Kestrel, 1.2, (7); Horned Grebe, 1.1, (5); Common Ground-Dove, 1.0, (4); Wilson's Plover, 0.9, (4); House Wren, 0.9, (7); White Ibis, 0.7, (1); Hooded Merganser, 0.7, (2); Lesser Black-backed Gull, 0.7, (3); Belted Kingfisher, 0.7, (6); Little Blue Heron, 0.6, (2); Gray Catbird, 0.6, (4); Field Sparrow, 0.6, (1); Tricolored Heron, 0.4, (3); Killdeer, 0.4, (2); Sandwich Tern, 0.4, (2); Ruby-crowned Kinglet, 0.4, (3); Loggerhead Shrike, 0.4, (3); Vesper Sparrow, 0.4, (1); Common Loon, 0.3, (2); Northern Harrier, 0.3, (3); Long-billed Curlew, 0.3, (3); Palm Warbler, 0.3, (2); Reddish Egret, 0.2, (2); Wood Stork, 0.1, (1); Turkey Vulture, 0.1, (1); Sharp-shinned Hawk, 0.1, (1); Red-tailed Hawk, 0.1, (1); Marbled Godwit, 0.1, (1); White-eyed Vireo, 0.1, (1). **Total:** 69 species; 2212 ind./visit (415 ind./40 ha). **Remarks:** Gulls of all species were below the 15-yr mean while all herons and egrets were above. Royal Tern was at an all-time low (52 ind./visit vs mean of 203 ind./visit), while Forster's Tern was at an all-time high (131 vs 47). Semipalmated Plover was again low (13.8 ind./visit), but up from last year (4.9). The 15-yr mean for Semipalmated Plover is 76. The threatened Piping Plover held steady with a mean of 5.7 ind./visit. The Northern Gannets were mostly offshore. Western Sandpiper (146 ind./visit vs mean of 127 ind./visit) and Sanderling (138 vs 119) were up slightly. **Other Observer:** Robert Richter.

43. COASTAL SAGE SCRUB-FLOOD BASIN

CUENCA INUNDABLE-MATORRAL COSTANERO DE SALVIA

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Location: California; Los Angeles Co.; Claremont; Thompson Creek Wash; 34°9'N, 117°42'W; Mount Baldy Quadrangle, USGS. **Continuity:** New. **Size:** 13.2 ha. **Description of Plot:** An irregular-shaped plot of typical southern California sage scrub. The shrub layer is 1–2 m high and nearly continuous throughout. There are a large number of laurel sumacs in the N end of the plot and there is a large cactus patch in the SW corner. There are 5 large coast live oaks in the W half. Man-made features include: cleared dirt roads, two settling ponds, an exposed water pipe (1 × 30 m), a system of small streambeds, and a large drainage stream. There has been no major disturbance to this area in the last 30 years. A vegetation survey indicated the following: coastal sagebrush, 48.1%; California buckwheat, 20.8%; laurel sumac, 11.9%; bare ground, 6.9%; prickly pear cactus, 3.0%; tree tobacco, 2.3%; white sage, 2.1%; poison oak, 1.9%; chamise, 1.7%; black sage, 1.1%; and agave, 0.3%. Other species occurring in significant numbers are: coast live oak, bladderpod, elderberry, mormon tea, golden current, valley cholla, and mountain mahogany. **Edge:** The plot is bordered by Thompson Creek Dam to the N, more coastal sage scrub to the W and S, and a road and suburban development to the E. Thompson Creek, a concrete flood control channel, forms the S and part of the E boundary. **Topography and Elevation:** The plot is nearly level. Minimum elevation 476 m, maximum 500 m. **Weather:** The temperature ranged from 4–24°C. It was mostly clear and warm during the study period. There was heavy rain (approximately 38 cm) from 4–15 Jan. **Coverage:** 14.0 hrs; 10 visits: 18, 27, 30 Dec.; 13, 19, 28, 29, 30, 31 Jan.; 1 Feb. **Count:** Yellow-rumped Warbler, 53.1 ind./visit, (10 visits); House Finch, 38.9, (10); Bush-tit, 18.8, (10); Anna's Hummingbird, 12.2, (10); White-crowned Sparrow, 9.7, (9); California Towhee, 8.0, (10); Bewick's Wren, 6.1, (10); Wrentit, 5.9, (10); Scrub Jay, 5.1, (10); California Thrasher, 4.6, (10); Lesser Goldfinch, 4.4, (10); Cactus Wren, 3.6, (10); Ruby-crowned Kinglet, 3.1, (9); Cedar Waxwing, 2.5, (1); American Goldfinch, 2.5, (6); Northern Flicker, 2.3, (10); Red-tailed Hawk, 1.9, (9); California Quail, 1.9, (7); Rufous-sided Towhee, 1.9, (9); American Robin, 1.7, (2); Northern Mockingbird, 1.6, (8); Song Sparrow, 1.5, (6); American Crow, 1.0, (5); Mourning Dove, 0.8, (4); American Kestrel, 0.6, (4); Nuttall's Woodpecker, 0.5, (4); Black Phoebe, 0.5, (3); Common Raven, 0.5, (3); Cooper's Hawk, 0.3, (3); Hermit Thrush, 0.3, (3); Purple Finch, 0.3, (2); Sharp-shinned Hawk, 0.1, (1); Band-tailed Pigeon, 0.1, (1); Greater Roadrunner, 0.1, (1); Phainopepla, 0.1, (1); Loggerhead Shrike, 0.1, (1). **Total:** 36 species; 197 ind./visit (596 ind./40 ha). **Remarks:** The plot was subject to flooding during the period of heavy rain, and two small streams developed. At the end, the channel connecting the W corner of the dam to Thompson Creek was flooded and moving quickly. The SW corner (in and near the cactus patches) flooded to a depth of 15–30 cm. Anna's Hummingbird numbers dropped between the third and fifth visits. I suspect females were incubating eggs, because the majority of birds seen were males, and the display flights decreased in frequency over this period of time. The plot has very thick underbrush, and visibility is limited in some areas. Many birds were identified by song alone, therefore, some non-vocalizing, secretive species, such as Bewick's Wren and Hermit Thrush, may have been underrepresented.

44. COASTAL SCRUB

MATORRAL COSTANERO

MARY K. CHASE & GEOFFREY R. GEUPEL

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Stinson Beach, California 94970-9701*

Location: California; Marin Co.; Bolinas; Palomarin Field Station; 37°55'N, 122°45'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1972; 6 yr. **Size:** 8.1 ha. **Description of Plot:** See

Am. Birds 25:1003–1004 (1971). **Weather:** Mean temperature 8.6°C (range 3–15°C). Total precipitation during the study period was 38.0 cm, ending the drought conditions of the past six years. There was light drizzle or rain showers during two visits. **Coverage:** 20.0 hrs; 8 visits (mornings): 18, 23, 28 Jan.; 3, 9, 16, 23, 25 Feb. **Count:** American Robin, 25.5 ind./visit, (8 visits); Wrentit, 14.5, (8); Ruby-crowned Kinglet, 11.1, (8); Song Sparrow, 6.4, (8); Rufous-sided Towhee, 5.6, (8); Bewick's Wren, 5.3, (8); Bushtit, 4.1, (4); White-crowned Sparrow, 3.1, (8); Scrub Jay, 2.4, (8); California Quail, 2.0, (4); Allen's Hummingbird, 1.9, (5); Hermit Thrush, 1.9, (8); Golden-crowned Kinglet, 1.8, (5); Northern Flicker, 1.6, (5); Winter Wren, 0.9, (7); Golden-crowned Sparrow, 0.9, (3); Cedar Waxwing, 0.8, (1); Anna's Hummingbird, 0.6, (4); Chestnut-backed Chickadee, 0.6, (4); Fox Sparrow, 0.6, (2); Pine Siskin, 0.4, (1); Cooper's Hawk, 0.3, (2); Lesser Goldfinch, 0.3, (2); Sharp-shinned Hawk, 0.1, (1); Red-tailed Hawk, 0.1, (1); American Kestrel, 0.1, (1); Steller's Jay, 0.1, (1); Purple Finch, 0.1, (1). **Total:** 28 species; 93.0 ind./visit (459 ind./40 ha). **Remarks:** The number of species recorded was similar to past years, but lower than in 1991. Ruby-crowned Kinglet numbers doubled from last year, and approached the 1982–83 highs. The number of American Robins per visit was six times the number in the next highest year (1991–92). Numbers of regular species present such as Wrentit, Song Sparrow, and Bewick's Wren, decreased compared to last year; possibly this year's cooler temperatures and increased rainfall decreased their detectability or survival. Cedar Waxwing, Lesser Goldfinch, and Cooper's Hawk were detected on the plot for the first time. Yellow-rumped Warbler, Rufous-crowned Sparrow, and Blue-gray Gnatcatcher were absent this year. **Acknowledgments:** We thank the Point Reyes National Seashore for their cooperation. This is PRBO contribution No. 621.

45. DISTURBED COASTAL SCRUB A

MATORRAL COSTANERO PERTURBADO A

GREGOR M. YANEGA & DENISE HARDESTY

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Location: California; Marin Co.; Bolinas; Palomarin Field Station; 37°55'N, 122°45'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1980; 4 yr. **Size:** 4.7 ha. **Description of Plot:** See *Am. Birds* 26:987–988 (1972). **Weather:** Mean temperature 8.4°C (range 5–12°C). Total precipitation during the study period was 38.0 cm, ending the drought conditions of the past six years. There was rain during one visit. **Coverage:** 19.7 hrs; 8 visits (mornings): 8, 18, 22, 29 Jan.; 2, 9, 16, 23 Feb. **Count:** American Robin, 20.8 ind./visit, (8 visits); California Quail, 11.1, (7); Wrentit, 10.5, (8); Song Sparrow, 9.3, (8); Ruby-crowned Kinglet, 6.9, (6); White-crowned Sparrow, 6.1, (7); Chestnut-backed Chickadee, 6.0, (7); Golden-crowned Kinglet, 4.9, (6); Scrub Jay, 3.5, (8); Bushtit, 3.5, (5); Rufous-sided Towhee, 3.4, (7); Anna's Hummingbird, 3.3, (8); Northern Flicker, 2.4, (7); Steller's Jay, 2.0, (8); Pine Siskin, 2.0, (3); Bewick's Wren, 1.9, (7); Lesser Goldfinch, 1.1, (2); California Towhee, 1.0, (5); European Starling, 0.9, (1); Allen's Hummingbird, 0.8, (3); Hermit Thrush, 0.8, (4); Red-tailed Hawk, 0.6, (3); American Kestrel, 0.5, (4); Purple Finch, 0.5, (3); Hutton's Vireo, 0.4, (1); Red-shouldered Hawk, 0.3, (2); Common Raven, 0.3, (1); Sharp-shinned Hawk, 0.1, (1); Cooper's Hawk, 0.1, (1); Mourning Dove, 0.1, (1); Tree Swallow, 0.1, (1); Golden-crowned Sparrow, 0.1, (1); Dark-eyed Junco, 0.1, (1). **Total:** 33 species; 105 ind./visit (895 ind./40 ha). **Remarks:** Rainfall over the study period was appreciably greater (increasing 70%) than in recent years. The number of species observed increased slightly, although the total number of individuals decreased. Species showing a decline in numbers include: Northern Flicker, Wrentit, Ruby-crowned Kinglet, White-crowned Sparrow, and Rufous-sided Towhee. Numbers of Bushtits and Bewick's Wrens declined substantially (50%). American Robins and Golden-crowned Kinglets were present in their highest numbers since 1980, and numbers of Chestnut-backed Chickadees and Steller's Jays more than doubled when compared to last year. The cooler temperatures and heavier rain and snowfall in inland areas could possibly account for the abundance of American Robins seen on all

Palomarin Field Station plots this year. **Acknowledgments:** We thank the Point Reyes National Seashore for their cooperation. This is PRBO contribution No. 620.

46. DISTURBED COASTAL SCRUB B

MATORRAL COSTANERO PERTURBADO B

BORJA MILÁ & DENISE HARDESTY

Point Reyes Bird Observatory

4990 Shoreline Highway

Stinson Beach, California 94970-9701

Location: California; Marin Co.; Bolinas; Palomarin Field Station; 37°55'N, 122°45'W; Bolinas Quadrangle, USGS. **Continuity:** Established 1980; 5 yr. **Size:** 8.1 ha. **Description of Plot:** See *Am. Birds* 25:1002-1003 (1971). **Weather:** Mean temperature 9.6°C (range 7-13°C). Total precipitation during the study period was 38.0 cm, ending the drought conditions of the past six years. **Coverage:** 17.8 hrs; 7 visits (mornings): 8, 18, 22, 30 Jan.; 20 Feb.; 1, 4 Mar. **Count:** Bushtit, 26.7 ind./visit, (6 visits); Song Sparrow, 13.9, (7); California Quail, 10.7, (5); Wrentit, 8.9, (7); White-crowned Sparrow, 7.0, (7); Bewick's Wren, 5.1, (7); Ruby-crowned Kinglet, 5.1, (7); Golden-crowned Sparrow, 4.7, (7); Rufous-sided Towhee, 3.1, (7); California Towhee, 3.0, (6); American Robin, 2.7, (6); Anna's Hummingbird, 2.4, (7); Scrub Jay, 2.1, (5); Pine Siskin, 2.1, (1); Northern Flicker, 2.0, (6); Hermit Thrush, 1.7, (5); Chestnut-backed Chickadee, 0.4, (2). **Total:** 17 species; 102 ind./visit (503 ind./40 ha). **Remarks:** Species richness decreased considerably with respect to last year, dropping from 28 species to 17. The total number of individuals also decreased. The number of Wrentits declined from 15.4 ind./visit last year to 8.9 this year. Numbers of Bushtits, Ruby-crowned Kinglets, Hermit Thrushes, and Anna's Hummingbirds increased. American Robins were present for the second consecutive year, and their numbers increased more than six fold. No warblers were detected on the study plot this year. **Acknowledgments:** We thank the Point Reyes National Seashore for their cooperation. This is PRBO contribution No. 619.

47. BRUSHLAND (OLD-FIELD SUCCESSION)

BREÑAL EN AVANZADA SUCESION

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Location: Indiana; Jefferson Co.; Madison; Clifty Falls State Park; 38°45'N, 85°25'W; Clifty Falls and Madison West Quadrangles, USGS. **Continuity:** Established 1976; 9 yr. **Size:** 17.1 ha. **Description of Plot:** See *Am. Birds* 30:1056-1057 (1976), 31:61-62 (1977), and 36:38 (1982). The plot is very patchy; about 5% grassland, 65% shrubland, and 30% young forest. All or most of the multiflora rose has died in the last four years. A quantitative vegetation survey, conducted in May 1993, based on the method described by F.C. James & H.H. Shurgart, Jr. (1970. *Aud. Field Notes* 24:727-736) yielded the following results: Trees, 7.6 cm diameter and over, based on 1 0.26-ha (6 × 427 m) transect, 457/ha; total basal area 9.1 m²/ha. Species comprising 100% of the total number of trees [figures after each are trees/ha, relative density (%), and basal area in m²/ha]: wild cherry, 92, 20, 1.97; green ash, 69, 15, 1.62; black locust, 62, 13, 1.65; red cedar, 58, 13, 0.59; sassafras, 39, 8, 0.89; osage orange, 34, 8, 0.36; honey locust, 27, 6, 0.59; slippery elm, 23, 5, 0.55; white ash, 15, 3, 0.23; hackberry, 15, 3, 0.16; tree of heaven, 12, 3, 0.19; black walnut, 8, 2, 0.26; apple, 4, 1, 0.04. Trees by diameter size class [figures after each are trees/ha and basal area in m²/ha]: A (7.6-15.3 cm) 304, 3.11; B (15.3-22.9 cm) 96, 2.74; C (22.9-30.6 cm) 57, 3.23. Shrub and vine stems/ha, 5,821, dominated by Japanese honeysuckle (54%), common privet (13%), grape (7%), blackberry (5%), and red cedar (4%). Ground cover dominated by Japanese honeysuckle and garlic mustard. **Weather:** Mean temperature -5.9°C (-17-6°C). Mean snow depth 1.9 cm (range 0-12 cm). The ground was bare on five visits. The creek was open throughout

the study period. Dec. and the second half of Feb. were rather severe for the area, but Jan. and the first half of Feb. were rather mild. **Coverage:** 23.8 hrs; 8 visits (mornings); 26, 29 Dec.; 25, 29 Jan.; 2, 5, 18, 23 Feb. Two additional night visits for owls: 10, 20 Feb. **Count:** White-throated Sparrow, 12.4 ind./visit, (8 visits); Northern Cardinal, 6.8, (8); Golden-crowned Kinglet, 2.5, (6); Carolina Chickadee, 2.4, (7); Carolina Wren, 2.1, (7); American Crow, 1.3, (6); Dark-eyed Junco, 1.1, (4); Northern Bobwhite, 0.9, (2); Song Sparrow, 0.9, (6); Tufted Titmouse, 0.8, (3); Eastern Screech-Owl, 0.7, (3); American Robin, 0.5, (3); Rufous-sided Towhee, 0.5, (4); Blue Jay, 0.4, (2); Northern Mockingbird, 0.4, (3); Red-bellied Woodpecker, 0.3, (2); Downy Woodpecker, 0.3, (2); Eastern Bluebird, 0.3, (1); European Starling, 0.3, (1); American Tree Sparrow, 0.3, (1); White-crowned Sparrow, 0.3, (2); Red-shouldered Hawk, 0.1, (1); American Woodcock, 0.1, (1); Mourning Dove, 0.1, (1); Northern Flicker, 0.1, (1); Cedar Waxwing, 0.1, (1). **Total:** 26 species; 35.8 ind./visit (83.6 ind./40 ha). **Remarks:** Additional birds recorded flying over the plot: Blue Jay, 2 individuals, (1 visit); American Crow, 6 (1); American Robin, 20 (1); European Starling, 4 (1). [The number of ind./visit was calculated using eight visits for all species except Eastern Screech-Owl, which was calculated using all ten visits because the owls were detected during day and night visits.-Ed.] **Other Observers:** Dwight Chamberlain, Richard Davis, Dean Finley, Robert Webster.

48. ABANDONED UPLAND PASTURE

PASTIZAL DE ALTURAS ABANDONADO

VIVIAN MILLS PITZRICK

Amity Lake

Belmont, New York 14813

Location: New York; Allegany Co.; Scio; Saunders Plot; 42°13'N, 77°59'W; Wellsville North Quadrangle, USGS. **Continuity:** Established 1984; 10 yr. **Size:** 8.0 ha. **Description of Plot:** See *Am. Birds* 39:119 (1985) and *J. Field Ornithol.* 63 (Suppl.):109 (1992). **Weather:** Mean temperature -1.2°C (range -5.0-2.8°C). Mean snow depth 11.1 cm (range 0-35.6 cm). The ground was bare on one visit. Temperatures averaged 2.8°C above normal with Lake Erie freezing on 31 Jan., four weeks late. Precipitation, mostly snow, was 5.7 cm below normal. The intermittent stream was open on six visits. **Coverage:** 5.7 hrs; 8 visits (mornings): 2, 21 Dec; 6, 14, 21 Jan.; 3, 13, 22 Feb. **Count:** Black-capped Chickadee, 3.3 ind./visit, (6 visits); American Crow, 1.3, (5); American Goldfinch, 0.9, (3); Blue Jay, 0.8, (5); Northern Cardinal, 0.5, (3); Red-tailed Hawk, 0.3, (2); Ruffed Grouse, 0.3, (2); Pileated Woodpecker, 0.1, (1); Tufted Titmouse, 0.1, (1); Brown Creeper, 0.1, (1); American Robin, 0.1, (1); House Finch, 0.1, (1). **Total:** 12 species; 7.8 ind./visit (38.8 ind./40 ha). **Remarks:** The number of species was the lowest since the first year of the study and the total bird population was down 31% from the 1984-1992 average. The lack of wild food, particularly rose hips and weed seed, and the often-crusting snow contributed to the low count. However, bird numbers were also low at the feeder 0.5 km S of the plot. Tufted Titmouse and Brown Creeper were new to the study. A 2-m long strip of caved-in vole tunnel with wing-brushings at the end was found on the sixth visit. The brushings may have been made by a male Sharp-shinned Hawk, seen a few days earlier near the plot, or by a crow. **Other Observer:** Raymond Pitzrick. **Acknowledgments:** Thanks to Gail and Victor Funk for permission to use their property.

49. OLD PASTURE SHRUB WITH HEDGEROWS AND SEASONAL WET AREA

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

FRED MERRILL

Vermont Conservation Biology

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Woodstock, Vermont 05091

Site Number: VT2793060. **Location:** Vermont; Windsor Co.; Taftsville; Austin's Pasture; 43°36'N, 72°30'W; Quechee Quadrangle, USGS. **Continuity:** New. **Size:** 11.1 ha. **Description**

of Plot: An irregular-shaped plot of abandoned pasture (shortest side 157 m, longest 628 m). An open canopy dominated by quaking aspen, white pine, and speckled alder, estimated to be between 31 and 60 years of age, covers approximately 20% of the plot. Mean canopy height, 11.4 m (range 9–14 m). Shrub areas dominated by hawthorn, meadowsweet, and blackberry, cover approximately 40% of the plot. Open areas dominated by grass, sedge, and goldenrod, cover approximately 40% of the plot. The plot is boulder and rock strewn, has a hedgerow, and there is a large powerline running through the center. There are two ephemeral streams with a maximum width of 1.0 m and a maximum depth of 0.15 m. The entire area is seasonally wet, but there is no standing water after mid-May. **Edge:** Less than 25% of the plot's perimeter is bordered by the same habitat. The plot is bordered on the N by similar habitat, on the W by young deciduous woods, on the S by dense white pines, and on the E by a hedgerow along a dirt road and a hayfield. **Topography and Elevation:** The plot has a S-facing slope of < 5%. Minimum elevation 840 m, maximum 930 m. **Weather:** Mean temperature -3.3°C (range -12 – 8°C). During Dec. the ground and water were frozen and there was < 1.3 cm of snow cover. From 1–15 Jan. it was warm and rainy. From 15 Jan. onward there was at least 30 cm of snow on the ground. During Feb. and Mar. there was heavy snow cover (74 cm on 24 Feb). **Coverage:** 12.8 hrs; 8 visits (4 mornings, 4 afternoons): 20, 27 Dec.; 6, 17, 24, 27 Jan.; 14, 24 Feb. **Count:** Black-capped Chickadee, 7.3 ind./visit, (8 visits); Blue Jay, 2.0, (6); Wild Turkey, 1.3, (1); Hairy Woodpecker, 0.6, (5); Ruffed Grouse, 0.4, (3); White-breasted Nuthatch, 0.4, (2); Pine Grosbeak, 0.3, (1); Barred Owl, 0.1, (1); Downy Woodpecker, 0.1, (1). **Total:** 9 species; 12.4 ind./visit (44.6 ind./40 ha). **Remarks:** Mammals documented were: short-tailed shrew, red fox, coyote, gray squirrel, red squirrel, white-tailed deer, fisher, and porcupine. The cold weather during the first four visits may have affected detectability. The heavy snows during Feb. may have covered some food sources.

50. CLEAR-CUT AND DOUGLAS-FIR PLANTATION I

FORMACION DE TALA Y PLANTACION DE PINABETE DE DOUGLAS I

DANA L. BASE* & DAVID W. BROCK

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

Site Number: WA9392058. **Location:** Washington; Skagit Co.; Mount Vernon; Bryant-Cascade Unit, Washington Department of Natural Resources; $48^{\circ}19'N$, $122^{\circ}11'W$; McMurray Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 64 (Suppl.):111–112 (1993). **Weather:** Mean temperature 4.2°C (range -1.6 – 13.7°C). Mean snow depth 6.6 cm (range 0–30 cm). The ground was bare on four visits. As much as 30 cm of snow was on the ground on the first visit. By the fourth visit, snow cover was virtually gone as temperatures gradually warmed to a high of 13.7°C on the fifth visit. There was a light drizzle during the last visit. **Coverage:** 6.8 hrs; 8 visits (6 mornings, 2 afternoons): 11, 15, 22, 23, 27, 29 Jan.; 2, 9 Feb. **Count:** Song Sparrow, 22.3 ind./visit, (8 visits); Bushtit, 1.5, (1); Bewick's Wren, 0.4, (3); American Robin, 0.3, (1); Rufous-sided Towhee, 0.3, (2); Dark-eyed Junco, 0.3, (1); Winter Wren, 0.1, (1); Northern Shrike, 0.1, (1). **Total:** 8 species; 25.1 ind./visit (101 ind./40 ha). **Remarks:** This plot, recently 100% clear-cut in the conventional manner, is now a third-growth forest plantation. See WBPS #51 and WBPS #52 for the results of 1993 studies on two neighboring plots. **Acknowledgments:** The Washington Department of Natural Resources made this study site available. We wish to thank Phil Fries, Walt Parker, George McFadden, and Ted Muller for logistical and other assistance. Thanks also to Ted Muller, Pete Haug, and Chris Drivdahl for reviewing the draft report. This project was funded by the Washington Department of Wildlife and the Stillaguamish Tribe of Indians.

51. CLEAR-CUT AND DOUGLAS-FIR PLANTATION II

FORMACION DE TALA Y PLANTACION DE PINABETE DE DOUGLAS II

DANA L. BASE* & DAVID W. BROCK

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

Site Number: WA9392059. **Location:** Washington; Skagit Co.; Mount Vernon; Bryant-Cascade Unit, Washington Department of Natural Resources; 48°19'N, 122°11'W; McMurray Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 64 (Suppl.):112-113 (1993). **Weather:** Mean temperature 4.2°C (range -0.5-9.9°C). Mean snow depth 6.6 cm (range 0-30 cm). The ground was bare on five visits. As much as 30 cm of snow was on the ground on the first visit. By the fourth visit, snow cover was gone as temperatures gradually warmed to a high of 9.9°C on the sixth visit. There was a light drizzle during the last visit. **Coverage:** 7.0 hrs; 8 visits (6 mornings, 2 afternoons): 11, 15, 19, 22, 27, 29 Jan.; 2, 9 Feb. **Count:** Song Sparrow, 23.9 ind./visit, (8 visits); Bewick's Wren, 0.6, (5); Northern Flicker, 0.4, (2); Dark-eyed Junco, 0.3, (1); Common Snipe, 0.1, (1); Winter Wren, 0.1, (1); Northern Shrike, 0.1, (1); Rufous-sided Towhee, 0.1, (1). **Total:** 8 species; 25.6 ind./visit (103 ind./40 ha). **Remarks:** This plot, recently 100% clear-cut in the conventional manner, is now a third-growth forest plantation. See WBPS #50 and WBPS #52 for the results of 1993 studies on two neighboring plots. **Acknowledgments:** The Washington Department of Natural Resources made this study site available. We wish to thank Phil Fries, Walt Parker, George McFadden, and Ted Muller for logistical and other assistance. Thanks also to Ted Muller, Pete Haug, and Chris Drivdahl for reviewing the draft report. This project was funded by the Washington Department of Wildlife and the Stillaguamish Tribe of Indians.

**52. CLEAR-CUT AND DOUGLAS-FIR PLANTATION WITH
WILDLIFE LEAVE TREE RETENTION**FORMACION DE TALA Y PLANTACION DE PINABETE DE DOUGLAS CON
RETENCION DE ARBOLES PARA LA VIDA SILVESTRE

DANA L. BASE* & DAVID W. BROCK

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

Site Number: WA9392060. **Location:** Washington; Skagit Co.; Mount Vernon; Bryant-Cascade Unit, Washington Department of Natural Resources; 48°19'N, 122°12'W; McMurray Quadrangle, USGS. **Continuity:** New. **Size:** 10.0 ha. **Description of Plot:** See *J. Field Ornithol.* 64 (Suppl.):113-114 (1993). **Weather:** Mean temperature 4.1°C (range -1.7-9.9°C). Mean snow depth 6.6 cm (range 0-30 cm). The ground was bare on five visits. As much as 30 cm of snow was on the ground on the first visit. By the fourth visit, snow cover was gone as temperatures gradually warmed to a high of 9.9°C on the sixth visit. There was a light drizzle during the last visit. **Coverage:** 6.7 hrs; 8 visits (6 mornings, 2 afternoons): 11, 15, 19, 22, 27, 29 Jan.; 2, 9 Feb. **Count:** Song Sparrow, 16.6 ind./visit, (8 visits); Bewick's Wren, 2.6, (7); Fox Sparrow, 1.8, (4); Rufous-sided Towhee, 1.1, (6); Winter Wren, 0.5, (2); American Robin, 0.3, (2); Northern Pygmy-Owl, 0.1, (1); Hairy Woodpecker, 0.1, (1); Northern Flicker, 0.1, (1); Steller's Jay, 0.1, (1); Black-capped Chickadee, 0.1, (1). **Total:** 11 species; 23.5 ind./visit (94.0 ind./40 ha). **Remarks:** This plot, recently clear-cut except for "wildlife leave trees," is now a third-growth forest plantation. The leave trees seem to have enhanced the species richness of wintering birds within the plot. See WBPS #50 and WBPS #51 for the results of 1993 studies on two neighboring plots. **Acknowledgments:** The Washington Department of Natural Resources made this study site available. We wish to thank Phil Fries, Walt Parker, George McFadden, and Ted Muller for logistical and other assistance. Thanks also to Ted

Muller, Pete Haug, and Chris Drivdahl for reviewing the draft report. This project was funded by the Washington Department of Wildlife and the Sillagumish Tribe of Indians.

53. MIXED CROPLANDS

CULTIVOS MIXTOS

GLENN A. P. & PAUL W. SCHWALBE

546 Wilson Street

Jersey Shore, Pennsylvania 17740

Location: Pennsylvania; Clinton Co.; South Avis; South Avis Fields; 41°10'N, 77°17'W; Jersey Shore Quadrangle, USGS. **Continuity:** Established 1983; 11 yr. **Size:** 40.5 ha. **Description of Plot:** See *Am. Birds* 38:56–57 (1984). This year the fields were composed of corn residue (32.0 ha), soybean residue (7.7 ha), and alfalfa (0.8 ha). **Weather:** Mean temperature -1.3°C (range -7.2 – 2.8°C). The ground was bare on all visits. Jan. had 5.97 cm of rain, and there were two snows of about 1.25 cm. There were no weather extremes during the count period. **Coverage:** 6.0 hrs; 10 visits (mornings): 13, 14, 15, 16, 21, 24, 26, 28 Jan.; 1, 3 Feb. **Count:** Horned Lark, 54.1 ind./visit, (6 visits); Rock Dove, 25.5, (4); American Black Duck, 7.6, (1); American Crow, 1.9, (4); Mourning Dove, 1.7, (1); Snow Bunting, 1.5, (2); Cooper's Hawk, 0.1, (1); Red-tailed Hawk, 0.1, (1). **Total:** 8 species; 92.5 ind./visit (91.4 ind./40 ha). **Remarks:** Four rows of standing corn, about 230 m long, were left during the first four visits. This standing corn had no observed influence on the use of the area by birds. On the first count date, a flock of 30 Canada Geese were in the field but not in the study area.