ISSN: 0034-2165

The REDSTART

VOLUME 62, NUMBER 1 JANUARY, 1995

PUBLISHED BY THE BROOKS BIRD CLUB

1995 - The Brooks Bird Club, Inc.

Founded September 1932
Named in honor of A. B. Brooks, Naturalist

OFFICERS

President	LeJay Graffious, P.O. Box 69, Bruceton Mills, WV 26525	304-379-4492
Pres. Elect	Thomas R. Fox, Rt. 1, Box 420, Millstone, WV 25261	304-354-7686
Vice Pres.	James Bullard, P.O. Box 137, Ashton, MD 20861	301-421-9108
Imm. Past Pres.	Carl Slater, 57290 Mehlman Rd., Bellaire, OH 43906	614-635-9246
Administrator	Carl Slater, 57290 Mehlman Rd., Bellaire, OH 43906	614-635-9246
Treasurer	Gerald A. Devaul, 17 Mozart Road, Wheeling, WV 26003	304-233-4133
Asst. Treas.	Dolores Devaul, 17 Mozart Road, Wheeling, WV 26003	304-233-4133
Recording Sec.	Virginia Cronenberger, Rt. 1, Box 37, Petroleum, WV 26161	304-628-3382
Membership Sec.	Carolyn Conrad, 423 Warwood Ave., Wheeling, WV 26003	304-277-2036
Editor *The Redstart*	A.R. Buckelew Jr., P.O. Box J, Bethany, WV 26032	304-829-4392
Editor *Mail Bag*	William Murray, P.O. Box 944, New Cumberland, WV 26047	304-564-5071

BOARD OF DIRECTORS

Serve Through:		
1995	Reba Hutton, P.O. Box 1305, Elkins, WV 26241	304-636-1598
	Robert M. Rine, 157 Beacon Drive, Weirton, WV 26062	304-723-2205
	Lynn Barnhart, 124 Muskingum Drive, Marietta, OH 45750	614-373-1936
1996	Steven D. Mace, P.O. Box 122, New Haven, WV 25265	304-882-3497
	Polly Matthey, 1241 Penn St., Clarksburg, WV 26301	304-622-7595
	Jane Robbins, 11909 Gordon Ave., Beltsville, MD 20705	
1997	Ivarene Pierce, 211 Evening Lane, Winchester, VA 22601	703-667-3184
	Leon Wilson, Box 105, Ona, WV 25545	304-743-4013
	John Northeimer, P.O. Box 686, Davis, WV 26260	304-259-5377

TRUSTEES

1995	Virginia Johnson, 24 Robinson St., Uniontown, PA 15401	412-438-6038
1996	Greg E. Eddy, 3 Aster Dr., Clinton Hills, Triadelphia, WV 26059	304-242-4774
1997	George Breiding, 540 Elmina Street, Morgantown, WV 26505	304-296-4630

ADVISORS

	Kenneth Anderson, 2042 Weberwood Dr., So. Charleston, WV 25303	304-344-1446
	Ralph K. Bell, R.D. 1, Box 229, Clarksville, PA 15322	412-883-4505
	Elizabeth Chandler, 239 Virginia Ave., Chester, WV 26034	304-387-0117

COMMITTEE CHAIRPERSONS

Budget	James Bullard, P.O. Box 137, Ashton, MD 20861	301-421-9108
Research	James Bullard, P.O. Box 137, Ashton, MD 20861	301-421-9108
Foray	Thomas R. Fox, Rt. 1, Box 420, Millstone, WV 25261	304-354-7686
Foray Directors	Carl Slater, 57290 Mehlman Rd., Bellaire, OH 43906	614-635-9246
	Juanita Slater, 57290 Mehlman Rd., Bellaire, OH 43906	614-635-9246
Foray Sites	William Grafton, 456 West Virginia Ave., Morgantown, WV 26505	304-292-0229
Conservation	William Grafton, 456 West Virginia Ave., Morgantown, WV 26505	304-292-0229
Backyard Sanctuary	Dorothy Conrad, 423 Warwood Ave., Wheeling, WV 26003	304-277-2036
Club Library	Dorothy Broemsen, 15 Mozart Rd., Wheeling, WV 26003	304-232-6694
Publicity	William A. Noonan, 2 Jayson Drive, Wheeling, WV 26003	304-242-3613
Legal Advisor	Hugh I. Troth, 429 N. Woodhill Dr., Ashland, OH 44805	419-289-1640
Nest Card Program	Carolyn Conrad, 423 Warwood Ave., Wheeling, WV 26003	304-277-2036
Christmas Count	Leon P. Wilson, Box 105, Ona, WV 25545	304-743-4013

The REDSTART

VOLUME 62, NUMBER 1 JANUARY, 1995

Contents **Page**

The 1994 Foray
The 1994 Greenbrier County Foray Bird List
—Thomas R. Fox 2

Breeding Bird Records for the 1994 Foray
—Thomas G. Hurley 9

The 1994 Foray Singing Male Census Studies: Greenbrier County, West Virginia
—Greg E. Eddy 13

The 1994 Foray Breeding Bird Surveys: Greenbrier County, West Virginia
—Ralph K. Bell and Ann H. Pyle 23

Reptiles and Amphibians of the 1994 Foray: Greenbrier County, West Virginia
—Jane Whitaker 28

The 1994 Foray Mammal List: Greenbrier County, West Virginia
—Matthew W. Whitaker 30

Aquatic Insects and Other Macroinvertebrates of the 1994 Foray
—Jane Whitaker 32

Shrubs of Greenbrier County, West Virginia
—Maxine Thacker 34

Trees of Greenbrier County, West Virginia
—Maxine Thacker 36

Herbaceous Plants of the 1994 Foray: Greenbrier County, West Virginia
—Steven D. Mace 39

1994 Foray Participants 41

Field Notes
—James D. Phillips 43

Book Reviews 46

Editorial Staff

Editor • Albert R. Buckelew Jr., Biology Department, Bethany College, Bethany, WV 26032
Associate Editor • Marjorie Keatley, Marshall University, Huntington, WV 24755
Field Notes Editor • James D. Phillips, HC 78, Box 42-C, Pipestem, WV 25979
Banding News Editor • Ralph K. Bell, R.D. 1, Box 229, Clarksville, PA 15322
Advisory Editorial Board • Eleanor Bush, Greg E. Eddy, George A. Hall, George F. Hurley, Nevada Laitsch, Patricia Temple

The Redstart is published quarterly in January, April, July, and October at 707 Warwood Ave., Wheeling, WV 26003. The journal of the Brooks Bird Club, it is mailed to all members in good standing. Nonmember subscription price is $17. Individual copies are $4, except the Foray issue, which is $8. Changes of address and requests for back issues should be mailed to 707 Warwood Ave., Wheeling, WV 26003. Articles for publication and books for review should be mailed to the editor. Printed on recycled paper by BookMasters, Inc., Ashland, OH. ISSN: 0034-2165

The 1994 Greenbrier County Foray Bird List

Thomas R. Fox

The 55th annual Foray of the Brooks Bird Club was held at Camp Anthony in Greenbrier County, West Virginia. This was the third foray held at Camp Anthony, the two previous ones being held in 1971 and 1981.

The abundance of each species was determined by using information gleaned from Breeding Bird Surveys (BBS), Singing Male Censuses (SMC), and comments of foray participants who recorded their observations on comment cards. Special thanks is extended to those who took the time to do this.

As you proceed through this list and contemplate the abundance term used, remember that abundance is relative to appropriate habitat. The abundance terms used are:

Very common—Seen in large numbers every day in all appropriate habitats.

Common—Seen in appropriate habitat every day without any special effort.

Uncommon—Seen in appropriate habitat only with a lot of effort.

Rare—One or two only seen in the entire study region during the study period.

I have made an attempt at population trends in some species, but different methods of describing abundance of species have been used for each of the three forays. I have also used *The West Virginia Breeding Bird Atlas* to shed light on species whose status might be of some question.

The Common Nighthawk was not found in spite of a special effort made to locate this species by G. Eddy and A. Buckelew. This bird was found in low numbers in 1971 and 1981 but was not found by Atlas workers (Buckelew & Hall, 1994). The Horned Lark has declined severely since the 1971 Foray and it could not be found in 1994. Several groups looked diligently to no avail.

Great Blue Heron—Rare. Breeding Bird Survey (BBS) reported two at one location, and C. Ellis reported two circling over camp.

Green Heron—Uncommon. None found by BBS. G. Hurley recorded four for the area. Considering the amount of water in the area, one would expect to find more; however, no special effort was made to work the streams for water birds.

Canada Goose—Common. It is interesting to note that this species was not reported in 1971, a testament to the success of the Division of Natural Resources reintroduction program.

Wood Duck—Uncommon. Reported at only two locations; however, the West Virginia Breeding Bird Atlas Project (Buckelew & Hall, 1994) confirmed breeding of this species in several locations in this study area. Also Bell (1972) and Phillips (1982) considered it more abundant than it is now.

Mallard—Uncommon. Found at Renick Bridge by T. Hurley and G. Eddy and on Anthony Creek by A. Buckelew.

Black Vulture—Common.

Turkey Vulture—Common.

Sharp-shinned Hawk—Rare. Reported but there was no comment on location.

Cooper's Hawk—Rare. J. Zickefoose reported an adult female near Trout.

Broad-winged Hawk—Uncommon. D. Buckelew saw an adult carrying prey along Big Draft Road.

Red-tailed Hawk—Uncommon—P. Temple reported five during the Foray. It doesn't appear that they were any more common during the 1971 or 1981 forays (Bell, 1972; Phillips, 1982).

American Kestrel—Uncommon. BBS reported four at four locations. Most commentators reported seeing one or two.

Ruffed Grouse—Uncommon. J. Northeimer reported an adult with five young near Unus.

Wild Turkey—Common.

Northern Bobwhite—Uncommon. There were pen-raised birds on County Road 21 near Frankford, but the BBS reported 14 birds at 10 stops. Buckelew and Hall (1994) confirmed it as a breeder in Greenbrier County.

Killdeer—Uncommon. Most commentators felt there should have been more. It was reported as fairly common in 1971 (Bell, 1972), but it was reported as more than uncommon at the 1981 Foray (Phillips, 1982).

Spotted Sandpiper—Rare. One reported by J. Slater on a pond near Williamsburg, and J. Weimer found one while fishing on the Greenbrier River near Anthony.

American Woodcock—Rare. One found on BBS.

Rock Dove—Common.

Mourning Dove—Very common. Both species of dove appear to have increased substantially since 1971.

Black-billed Cuckoo—Rare. Very few reports. J. Ward reported one eating and carrying away tent caterpillars at the Pearl Buck Museum. J. Zickefoose found a road kill.

Yellow-billed Cuckoo—Uncommon.

Eastern Screech-Owl—Rare. Only two reported. C. Luntz reported a family group on the Greenbrier River Singing Male Census plot (SMC) and the other was reported at camp.

Great Horned Owl—Rare. W. Thompson III heard one singing near camp. This owl was not reported at the 1971 or 1981 forays.

Barred Owl—Common. C. Ellis reported hearing one on her SMC every day. Buckelew and Hall (1994) listed this species as a confirmed breeder, the other owls as possible breeders.

Whip-poor-will—Uncommon. BBS reported five birds. D. Buckelew had them in

opposition on her SMC on Big Draft. M. Keatley had one near her SMC on Peach Orchard Road.

Chimney Swift—Common. W. Thompson III and a group of hikers found a natural nest site in a hollow tree on Gunpowder Ridge.

Natural Chimney Swift Nest Site on Gunpowder Ridge. Photo by A.R. Buckelew Jr.

Ruby-throated Hummingbird—Uncommon. There were as many Red-headed Woodpeckers reported. Low numbers were also reported in 1971 and 1981.

Belted Kingfisher—Rare. All commentators felt it was rare. Only one reported on BBS. Again, no special effort was made to study the streams.

Red-headed Woodpecker—Rare. Found at two locations by BBS. A probable nest site was found near Williamsburg.

Red-bellied Woodpecker—Common.

Downy Woodpecker—Uncommon. Six reported on BBS.

Hairy Woodpecker—Uncommon. Four reported on BBS.

Northern Flicker—Common.

Pileated Woodpecker—Common.

Eastern Wood-Pewee—Common.

Acadian Flycatcher—Common.

Alder Flycatcher—Common. Found at two locations by BBS and at Cranberry Glades.

Willow Flycatcher—Common. Readily found in appropriate habitat.

Least Flycatcher—Uncommon.

Eastern Phoebe—Common.

Great Crested Flycatcher—Common.

Eastern Kingbird—Common. P. Temple found a nest along Savannah Road.

Tree Swallow—Uncommon. Very few reports.

N. Rough-winged Swallow—Uncommon.

Cliff Swallow—Rare. This bird appeared on the list but there is no record of who found it or where.

Barn Swallow—Common.

Blue Jay—Common.

American Crow—Common.

Common Raven—Uncommon. Three were seen by G. Eddy and D. and A. Buckelew on Peach Orchard Road.

Black-capped Chickadee—Common.

Tufted Titmouse—Common.

Red-breasted Nuthatch—Common. Found only at Cranberry Glades.

White-breasted Nuthatch—Common.

Brown Creeper—Rare. A. Buckelew and others found one singing at Sherwood Lake.

Carolina Wren—Common.

House Wren—Common.

Winter Wren—Rare. Cranberry Glades.

Golden-crowned Kinglet—Common. Cranberry Glades, and two were reported at one stop by BBS.

Blue-gray Gnatcatcher—Common.

Eastern Bluebird—Common.

Veery—Common. Hills Creek Falls by F. McCullough.

Hermit Thrush—Common. Hills Creek Falls by J. Graham.

Wood Thrush—Common.

American Robin—Very common.
Gray Catbird—Common.
Northern Mockingbird—Common.
Brown Thrasher—Common.
Cedar Waxwing—Common.
Loggerhead Shrike—Rare. J. Lipton found two adults feeding young in a nest near Maxwelton.
European Starling—Very common.
White-eyed Vireo—Common. G. Hurley found three on Muddy Creek Mountain.
Solitary Vireo—Uncommon.
Yellow-throated Vireo—Uncommon. One on Peach Orchard West SMC.
Warbling Vireo—Rare. This species was listed but no record was made of who or where the bird was found.
Red-eyed Vireo—Very common.
Blue-winged Warbler—Rare. Three reported on BBS.
Golden-winged Warbler—Uncommon. Most reports came from the Williamsburg area.
Northern Parula—Common. Found easily in appropriate habitat, A. Buckelew.
Yellow Warbler—Common. Thirty-three on BBS routes.
Chestnut-sided Warbler—Common. Ten on BBS and one on Peach Orchard West SMC.
Magnolia Warbler—Common. Cranberry Glades.
Black-throated Blue Warbler—Common. In appropriate habitat.
Yellow-rumped Warbler—Rare. Cranberry Glades. This is the first time this species was recorded at a foray in this area.
Black-throated Green Warbler—Common. In appropriate habitat.
Blackburnian Warbler—Uncommon. Bell, Cronenberger, and Wilson reported them at Cranberry Glades.
Yellow-throated Warbler—Rare. One reported on the Greenbrier River near camp, A. Thompson, W. Thompson III, and J. Zickefoose. Buckelew and Hall (1994) reported this species as a probable breeder on two Atlas blocks in Greenbrier County.
Pine Warbler—Common. In appropriate habitat.
Prairie Warbler—Common. In appropriate habitat.
Cerulean Warbler—Common. Four on Peach Orchard East SMC.
Black-and-white Warbler—Common. Twenty-five reported on the 1971 SMC and only 14 in 1994.
American Redstart—Common.
Worm-eating Warbler—Common. P. Temple reported hearing a dozen.
Ovenbird—Common.
Northern Waterthrush—Common. Cranberry Glades.

Louisiana Waterthrush—Common. J. Graham reported them as very vocal at Hills Creek Falls.
Kentucky Warbler—Uncommon. Very few reports, four reported on BBS.
Common Yellowthroat—Common.
Hooded Warbler—Uncommon. Two reported on Peach Orchard West SMC and one on Peach Orchard East.
Canada Warbler—Common. Cranberry Glades and Hills Creek Falls.
Yellow-breasted Chat—Common. Thirty found on BBS.
Scarlet Tanager—Common.
Northern Cardinal—Very common. Found at 36% of all BBS stops.
Rose-breasted Grosbeak—Uncommon. Five on BBS runs.
Indigo Bunting—Very common. Found at 53% of BBS stops.
Rufous-sided Towhee—Very common.
Chipping Sparrow—Common.
Field Sparrow—Common.
Vesper Sparrow—Uncommon. Two on BBS routes. McKeever Road, G. Eddy, Spring Creek Station Road, P. Temple.
Savannah Sparrow—Common. Most commentators felt it to be well distributed in proper habitat; however, only eight were reported on BBS and Bell, Cronenberger, and Wilson felt it was rare.
Grasshopper Sparrow—Common. The comment for Savannah Sparrow also applies to this species.
Song Sparrow—Common.
Dark-eyed Junco—Common. Cranberry Glades.
Bobolink—Uncommon. Very limited number of reports. P. Temple found them at Trout and Hillsboro.
Red-winged Blackbird—Common. Found at 25% of BBS stops.
Eastern Meadowlark—Common.
Common Grackle—Common.
Brown-headed Cowbird—Common. Reported on all SMC plots.
Orchard Oriole—Uncommon. Twelve found on BBS. G. Eddy reported one at Auto.
Northern Oriole—Common. Twenty-seven reported on BBS.
Purple Finch—Common. Cranberry Glades.
House Finch—Uncommon. This species was reported at the 1981 Foray (Phillips, 1982) but not at prior forays. It looks as if it is expanding its population here as in most other areas.
American Goldfinch—Common.
House Sparrow—Common.

References

Bell, R. A. (1972). The 1971 Foray bird list. *The Redstart*, *39*(1), 2-12.

Buckelew, A. R. Jr., & Hall, G. A. (1994). *The West Virginia breeding bird atlas*. University of Pittsburgh Press.

Phillips, G. F. (1982). The 1981 foray bird list. *The Redstart*, *49*(1), 4-13.

Rt. 1, Box 420
Millstone, WV 25261

Breeding Bird Records for the 1994 Foray

Thomas G. Hurley

Four observers—Julie Zickefoose, Josh Lipton, Polly Matthey, and Thomas Hurley—reported two thirds of the 85 breeding records at the 1994 Foray, held at the Greenbrier Youth Camp in June. Twenty observers found evidence of 32 breeding species. Especially interesting nests were those of a Loggerhead Shrike, a Worm-eating Warbler, and a Red-headed Woodpecker.

Statistically, it was a typical Foray: Over the last 10 years the average number of records is 82, of 30 species, by 26 observers. The number of observers is trending downwards, perhaps an indication that there is far more to do at a Foray than just hunt for nests. Most abundant species were Eastern Phoebe, 17 records; and American Robin, 9 records. Only two species of warblers are represented.

Other Forays in Greenbrier County have the following nesting records:

Year	Records	Species	Observers
1966	438		
1971	83	40	24
1981	103	30	29

A complete listing of the records follows:

Species	Obs.	Cont.	Hbt.	Site	Elev.	Location
Canada Goose	TH	out			1,663	Ronceverte
Canada Goose	JW	out	1-03		2,700	Sherwood Lake
Wood Duck	JL	out			1,901	Renick
Wood Duck	JW	out	1-03		2,700	Sherwood Lake
Ruffed Grouse	JW	out	1-02		2,000	Esty
Ruffed Grouse	TH	out	1		2,100	Back Draft Road
Ruffed Grouse	JN	out			2,120	Unus
Chimney Swift	JZ	B	1	8	1,788	Anthony
Belted Kingfisher	TH	Y		13	1,960	Anthony
Northern Flicker	TH	E	4-06	8	2,190	Williamsburg
Northern Flicker	GH	E	4-02	8	2,350	Maxwelton
Red-headed Woodpecker	JB	Y	5-02	8	2,190	Williamsburg
Eastern Kingbird	PT	E	4-06	7	2,351	Maxwelton
Eastern Kingbird	TH	E	4-02	7	2,190	Williamsburg

Species	Obs.	Cont.	Hbt.	Site	Elev.	Location
Eastern Phoebe	JG	out	1		2,120	Peach Orchard
Eastern Phoebe	JZ	4E	8	12	1,960	Anthony
Eastern Phoebe	JA	E	8	12	1,960	Anthony
Eastern Phoebe	TH	4Y	4	12	1,945	Alvon
Eastern Phoebe	PM	E	1-03	12	1,788	Anthony
Eastern Phoebe	JG	B	8	12	2,120	Anthony
Eastern Phoebe	JZ	5E	8	12	1,960	Anthony
Eastern Phoebe	PM	2E	1-03	12	1,788	Anthony
Eastern Phoebe	JZ	4Y	1	8	1,788	Anthony
Eastern Phoebe	PM	B	1-03	12	2,035	Neola
Eastern Phoebe	JW	E	4-03	12	2,035	Neola
Eastern Phoebe	RD	3E	8	12	1,960	Anthony
Eastern Phoebe	JA	Y	1	12	1,960	camp
Eastern Phoebe	PM	E	1-03	12	1,800	Blue Bend
Eastern Phoebe	SH	4E	1-03	12	1,800	Blue Bend
Eastern Phoebe	PM	5E	1-03	12	1,788	Anthony
Eastern Phoebe	TH	E	1-03	13	3,200	Beartown SP
N. Rough-winged Swallow	RB	5E		13	1,800	Blue Bend
Barn Swallow	TH	Y	park	sill	2,700	Sherwood Lake
Barn Swallow	PM	Y	1-03	12	2,700	Sherwood Lake
Barn Swallow	PM	Y	1-03	12	2,700	Sherwood Lake
Barn Swallow	TH	E	1-03	12	3,600	Hillsboro
Cliff Swallow	TH	Y		12	1,901	Renick
Black-capped Chickadee	LM	4Y		12	2,071	Renick
Black-capped Chickadee	TH	Y	4-02	7	1,945	Alvon
Tufted Titmouse	JK	Y	1-02	8	1,930	Droop
House Wren	TH	Y	4	12	1,945	Alvon
House Wren	TH	B	4-02	12	1,945	Alvon
House Wren	VC	Y		12	1,800	Lewisburg
Gray Catbird	TH	4E	4-08	5	1,972	Richlands
American Robin	TH	E	1-03	7	1,788	Anthony
American Robin	PM	E	1-03	7	1,788	Anthony
American Robin	JL	B	2-03	9	3,350	Cranberry Glades
American Robin	TH	E	4-02	7	2,351	Maxwelton
American Robin	TH	E	1-02	7	2,250	Organ Cave
American Robin	PT	E	1-02	7	1,788	Anthony
American Robin	PM	B	1-03	9	1,788	Anthony
American Robin	GH	B	8	7	1,650	Ronceverte
American Robin	PM	3Y	1-03	12	2,190	Williamsburg

Species	Obs.	Cont.	Hbt.	Site	Elev.	Location
Wood Thrush	JL	out	1		2,352	Friars Hill
Eastern Bluebird	VC	3Y	farm	12	1,800	Lewisburg
Eastern Bluebird	TH	E	4	8	1,972	Richlands
Blue-gray Gnatcatcher	RB	B	1-02	7	2,050	Asbury
Blue-gray Gnatcatcher	GH	E	4-02	7	2,180	Frankford
Blue-gray Gnatcatcher	LM	Y	1-03	7	2,071	Renick
Cedar Waxwing	PM	B	1-03	9	2,700	Sherwood Lake
Cedar Waxwing	TH	Y	1-02	7	2,250	Organ Cave
Cedar Waxwing	PM	B	1-03	9	2,700	Sherwood Lake
Cedar Waxwing	JL	B	1-02	7	2,179	Frankford
Cedar Waxwing	RB	B	4-02	4	1,950	Richlands
Cedar Waxwing	JAW	B	2-03	9	3,350	Cranberry Glades
Loggerhead Shrike	JL	Y	4-06	7	2,351	Maxwelton
Solitary Vireo	TH	Y	1-02	7	1,960	Anthony
Worm-eating Warbler	JL	out	1		2,179	Frankford
Worm-eating Warbler	TH	Y	1-02	2	2,400	Anthony
Ovenbird	JZ	out	1		1,788	Anthony
Ovenbird	JG	out	1		2,120	Peach Orchard
Red-winged Blackbird	PM	Y	1-03	5	2,700	Sherwood Lake
Northern Oriole	TH	Y	1-02	7	2,250	Organ Cave
Northern Oriole	LW	Y	5-02	7	1,800	Lewisburg
Northern Oriole	GH	Y	8	7	1,650	Ronceverte
Northern Oriole	JL	E		7	2,179	Frankford
Northern Oriole	TH	E	1-02	7	1,855	Spring Creek St.
Common Grackle	RB	Y	8	9	2,100	Asbury
Cardinal	JL	3E	4-08	5	2,179	Frankford
Indigo Bunting	JL	4E		4	1,901	Renick
Rufous-sided Towhee	JZ	E	1-02	2	1,788	Anthony
Chipping Sparrow	PM	E	1-03	5	1,788	Anthony
Chipping Sparrow	WT	Y	1-01	9	1,788	Anthony
Chipping Sparrow	PM	E	1-03	9	1,788	Anthony
Chipping Sparrow	TH	4E	1-02	7	3,600	Hillsboro

LEGEND

OBSERVER (Obs.): JA = John Azelvandre, RB = Ralph Bell, JB = James Bullard, VC = Virginia Cronenberger, RD = Richard Diener, JG = JoAnn Graham, SH = Seth Hill, GH = George Hurley, TH = Thomas Hurley, JK = Judith Knorr, JL = Josh Lipton, PM = Polly Matthey, LM = Loretta Mullens, JN = John Northeimer, PT =

Patricia Temple, WT = William Thompson III, JAW = Judith Ward, JW = Jane Whitaker, LW = Leon Wilson, JZ = Julie Zickefoose.

CONTENT (Cont.): B = building, E = eggs, out = young out of nest, Y = young.

HABITAT (Hbt.): 1 = woods, 1-01 = coniferous woods, 1-02 = deciduous woods, 1-03 = mixed woods, 2-03 = mixed swamp, 4 = field, 4-02, deciduous field, 4-03 = mixed field, 4-06 = fallow field, 4-08 = field hedgerow, 8 = suburban.

SITE: 2 = on ground, 4 = low vegetation, 5 = shrub, 7 = deciduous tree branch, 8 = deciduous tree cavity, 9 = conifer branch, 12 = other structure, 13 = cliff or bank.

ELEVATION (Elev.): = elevations of site, feet about sea level.

LOCATION: nearest town or name place.

2606 Capital Drive
Parkersburg, WV 26101

The 1994 Foray Singing Male Census Studies: Greenbrier County, West Virginia

Greg E. Eddy

Five established study plots last run in 1981 were again studied in 1994. Four of these plots were run in 1966, 1971, and 1981, and the Peach Orchard East plot was run for the third time. Also a new plot, the River Bottom plot, was established along the Greenbrier River this year. Except for farm land these plots include most of the habitats common to the Foray territory.

Although every effort was made to locate the plots in the same places as in the past, the Peach Orchard West plot was unintentionally started a few hundred feet further east than in 1971 and 1981. This placed the start closer to where it was in 1966. Starting it at that point made it include a small cleared spot on the old timber access road that serves as the centerline of the plot. The small clearing explains the occurrence of the edge and brush species, such as American Redstart, Hooded Warbler, Chestnut-sided Warbler, Rufous-sided Towhee, and Indigo Bunting. The Peach Orchard East plot was similarly affected, but to a lesser extent, by a new timber access road that was cut through the northwest corner of the plot.

On the five repeated plots, the average number of species and the average number of males has dropped each time they were run. Two species that greatly affected these averages are Black-and-white Warbler and Wood Thrush. Both of these species have greatly decreased. Often such changes are due to changes in habitat, but on these plots no such habitat change can be detected that can explain decreases in these species. Therefore, they may be suffering decreases as reported for many neotropical species.

The Hopkins Mountain plot continues to demonstrate recovery from being timbered in 1962. The increase in canopy height from 67 feet in 1981 to 76 feet in 1994, decrease in ground cover from 68% to 42%, increase in canopy cover from 77% to 82.5%, decrease in stems/acre from 3,733 to 680, and increase in total basal area from 68.2 to 96 sq. ft./acre all show that the area has matured considerably since 1981. An increase in Least Flycatchers and Red-eyed Vireos and a decrease in Chestnut-sided and Hooded warblers are a result of the change in the area as the forest matures.

Big Draft North plot also demonstrates change in species as the area matures after timbering. Gray Catbird; Golden-winged, Chestnut-sided, and Hooded warblers; and Indigo Buntings have disappeared since 1981.

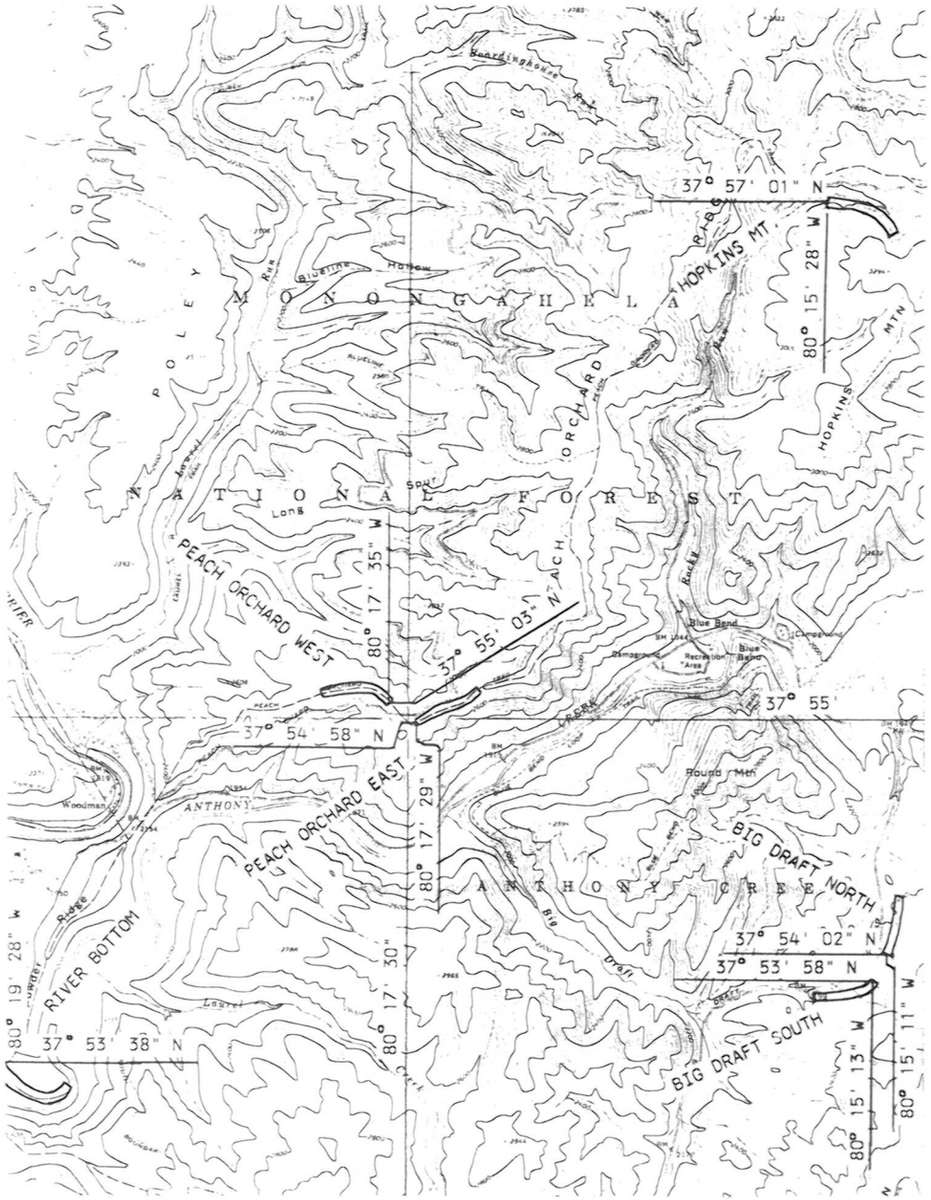
The weather during the census period should have had little effect on the census results as it was warm and humid, with only two days of light rain. Dawn temperatures ranged from 46 to 63.

The tables show the total species, total singing males, Black-and-white Warblers, and Wood Thrushes counted on five study plots.

	1966	1971	1981	1994
Total Species				
Hopkins	31	30	26	16
Peach Orchard West	23	13	13	16
Peach Orchard East		25	20	22
Big Draft North	19	22	24	12
Big Draft South	15	17	10	7
Average/Plot	22	21.4	18.6	14.6
Total Singing Males				
Hopkins	67	67	27	31.5
Peach Orchard West	37	32.5	25.5	22
Peach Orchard East		38	30	29.5
Big Draft North	45	20	30.5	12.5
Big Draft South	20	25	19	17.5
Average/Plot	42.25	36.5	26.4	22.6
Black-and-white Warbler				
Hopkins	5	3	2	+
Peach Orchard West	2.5	0.5	2	0
Peach Orchard East		0.5	0.5	0
Big Draft North	5	1	1.5	Visitor
Big Draft South	1.5	3	1	
Total	14	8	7	+
Wood Thrush				
Hopkins	2	4	1	0.5
Peach Orchard West	4	2	4	0.5
Peach Orchard East		2	2	Visitor
Big Draft North	2.5	1	1.5	1
Big Draft South	2	3	+	1
Total	10.5	12	8.5	3

HOPKINS MOUNTAIN (Oak-Maple-Birch)—Location: West Virginia; Greenbrier County; 3.25 miles north of Blue Bend Recreation Area; 37° 57' 01" N, 80° 15' 28" W, Anthony Quadrangle, USGS, extends ESE. Continuity: Established 1966 and repeated in 1971 as Cut-Over Oak-Hickory Forest; see *The Redstart*, *34*(1), 7; and *39*(1), 31. Repeated in 1981 as Red Oak-Red Maple; see *The Redstart*, *49*(1), 15;

Size: 6.07 ha. = 15 acres (rectangular, 110 x 660 yards, measured longitudinally and estimated laterally). Description of plot: A vegetative survey in 1994 gave the following results. The dominant canopy trees are Oaks (*Quercus* spp.), Red Maple (*Acer rubrum*), and Black Birch (*Betula lenta*). Most prominent in the understory are seedlings of the canopy trees. The ground cover is primarily ferns and Black Cohosh (*Cimicifuga racemosa*). Trees 3-inches diameter and over, based on five 0.1 acre circular samples: 274/acre; total basal area 96 sq. ft./acre. Species comprising 92% of the total number of trees: Red Oak (*Q. rubra*), 16, 5.8, 18.9, 60; White Oak (*Q. alba*), 10, 3.6, 14.5, 40; Scarlet Oak (*Q. coccinia*), 4, 1.5, 7.5, 40; Chestnut Oak (*Q. prinus*), 6, 2.2, 2.5, 60; Yellow Oak (*Q. muehlenbergii*), 2, 0.7, 1.6, 20; Red Maple, 88, 32.1, 23.9, 100; Black Birch, 48, 17.5, 10.4, 60; Cucumber Magnolia (*Magnolia acuminata*), 34, 12.4, 8.3, 60; Black Locust (*Robinia psuedo-acacia*), 14, 5.1, 3.3, 60; Hickory (*Carya* sp.), 10, 3.6, 2.2, 40; White Ash (*Fraxinus americana*), 8, 2.9, 1.6, 20; Dead, 12, 4.4, 1.2, 80. Trees by diameter class: A (3-6 in.) 144, 52.6, 14.4, 14.8; B (6-9 in.) 86, 31.4, 25.8, 26.9; C (9-15 in.) 26, 9.5, 20.8, 21.6; D (15-21 in.) 16, 5.8, 28.8, 30; E (21-27 in.) 2, 0.7, 6.2, 6.5. Shrub stems/acre 680; ground cover 42%; canopy cover 82.5%; average canopy height 75.6 ft. (range 42-91). Edge: Similar forest continues in all directions for at least 167 feet but a large clear-cut south of the plot accounted for some of the visitors. Topography: The centerline follows an overgrown timber road along a north to northeast facing slope. Elevation: 3,150-2,950 feet. Coverage: June 4-June 13, 1994. All trips between dawn and 0730 hours. Total party hours: 17.4. Census: Least Flycatcher, 11 (181, 73); Red-eyed Vireo, 11 (181, 73); Acadian Flycatcher, 4 (66, 27); Scarlet Tanager, 1.5; Solitary Vireo, 1; Worm-eating Warbler, 1; Ovenbird, 1; Wood Thrush, 0.5; American Redstart, 0.5; Tufted Titmouse, +; Veery, +; Chestnut-sided Warbler, +; Black-throated Blue Warbler, +; Black-and-white Warbler, +; Hooded Warbler, +; Rose-breasted Grosbeak, +. Total: 16 species; 31.5 territorial males (518/sq. km., 210/100 acre). Visitors: Yellow-billed Cuckoo, Downy Woodpecker, Hairy Woodpecker, Great-crested Flycatcher, Blue Jay, White-breasted Nuthatch, Blue-gray Gnatcatcher, Yellow-throated Vireo, Black-throated Green Warbler, Cerulean Warbler. Remarks: It is quite interesting to compare the vegetation and birds on this study area over the past 28 years. Slight changes in habitat due to slope, moisture, and vegetation created niches for each species. Particularly interesting was how the Least and Acadian flycatchers meshed together. There were 11 Red-eyed Vireos present on this area, but they were not evenly distributed. They were concentrated in an area that contained a concentration of the largest trees on the study area. A Wood Thrush was observed sitting on its nest several times. Participants: Census–A. R. Buckelew Jr., Elizabeth Bullard, Thomas R. Fox (compiler), Marjorie Keatley, Josh Lipton, Steven Mace, John Northeimer, and Judith Ward. Vegetation–John Azelvandre, Dana Buckelew, James Bullard, Richard Diener, Dawn Fox, Thomas Fox, JoAnn Graham, Marjorie Keatley, Frederick McCullough, John Northeimer, Robert Richardson, Zachary Steenstra, Ellen Voss, and Judith Ward.



PEACH ORCHARD WEST (Oak-Maple-Hickory)—Location: West Virginia; Greenbrier County; 3 miles NE from Anthony; 37° 55' 03" N, 80° 17' 35" W; Anthony Quadrangle, USGS, extends W. Continuity: Established 1966 and repeated in 1971 and published as mature Oak-Hickory Forest; see *The Redstart*, *34*(1), 5 and *39*(1), 27. Repeated in 1981 and published as Oak-Maple Hickory Forest; see *The Redstart*, *49*(1), 17. Size: 6.07 ha. = 15 acres (rectangular, 110 x 660 yards, measured longitudinally and estimated laterally). Description of plot: The dominant canopy trees are Oaks (*Quercus* spp.), Maples (*Acer* spp.), and Hickory (*C.* sp.). Most prominent in the understory are seedlings of canopy trees. The ground cover is primarily ferns (*Dryopteris* sp. and *Dennstaedtia* sp.) and *Vaccinium* sp. A quantitative survey of the vegetation gave the following results: Trees 3-inches diameter and over, based on five 0.1 acre circular samples: 148/acre; total basal area 81.6 sq. ft./acre. Species comprising 94% of the total number of trees: Chestnut Oak (*Q. prinus*), 14, 18.9, 36.5, 80; Red Oak (*Q. rubra*), 6, 8.1, 11.3, 60; White Oak (*Q. alba*), 6, 8.1, 14.9, 60; Black Oak (*Q. velutina*), 4, 5.4, 12.2, 40; Scarlet Oak (*Q. coccinia*), 1, 1.3, 1.9, 20; Red Maple (*A. rubrum*), 16, 21.6, 8, 60; Striped Maple (*A. pensylvanicum*), 1, 1.3, 0.2, 20; Hickory (*C.* sp.), 8, 10.8, 7.1, 80; Flowering Dogwood (*Cornus florida*), 9, 12.1, 2.7, 60; Dead, 5, 6.7, 3.9, 40. Trees by diameter class: A (3-6 in.) 68, 45.9, 6.8, 8.3; B (6-9 in.) 34, 22.9, 10.2, 12.5; C (9-15 in.) 26, 17.5, 20.8, 25.4; D (15-21 in.) 14, 9.4, 25.2, 30.8; E (21-27 in.) 6, 4, 18.6, 22.7. Shrub stems/acre 2,890; ground cover 53%; canopy cover 76.5%; average canopy height 83.8 ft. (range 65.6 - 103). Edge: Similar forest continues in all directions. Topography: The centerline is a grown-over logging road that closely follows the ridge crest. Elevation: 2,700 feet. Coverage: June 3-June 9, 1994. All trips between dawn and 0815 hours or 1940 and 2010 hours EDT. Total party hours: 13.75. Census: Red-eyed Vireo, 5 (82, 33); Indigo Bunting, 5 (82, 33); Hooded Warbler, 2; American Redstart, 2; Scarlet Tanager, 2; Rufous-sided Towhee, 2; Eastern Wood-Pewee, 1.5; Yellow-throated Vireo, 1; Chestnut-sided Warbler, 1; Wood Thrush, 0.5; Downy Woodpecker, +; Hairy Woodpecker, +; Tufted Titmouse, +; Blue-gray Gnatcatcher, +; Cerulean Warbler, +; Northern Cardinal, +. Total: 16 species; 22 territorial males (363/sq. km., 147/100 acres). Visitors: Wild Turkey, Chimney Swift, Great Crested Flycatcher, Blue Jay, American Goldfinch. Remarks: A Rufous-sided Towhee nest was observed with four eggs; by the end of the study period fledglings were observed in the nest. On two occasions a Wild Turkey was seen, one with at least three fledglings that were able to fly and one with several down-covered chicks. The logging road appears to have been used since the plot was last run in 1981. A small clearing is now open in the middle of the plot. This explains some of the increase in edge birds. Participants: Census–A. R. Buckelew Jr., Elizabeth Bullard, Cynthia Ellis, Scott Emrick, Marjorie Keatley (compiler), Cynthia Luntz, John Northeimer, Carl Slater, Michael Smith, Andrew Thompson, William Thompson III, Ellen Voss, and Julie Zickefoose. Vegetation–John Azelvandre,

Richard Diener, Dawn Fox, Thomas Fox, JoAnn Graham, Marjorie Keatley, Steven Mace, Frederick McCullough, John Northeimer, and Robert Richardson.

PEACH ORCHARD EAST (Red Oak-Hickory)—Location: West Virginia; Greenbrier County; 3 miles NE from Anthony; 37° 54' 58" N, 80° 17' 29" W, Anthony Quadrangle, USGS, extends ENE. Continuity: Established 1971 as Maturing Oak-Hickory Forest; see *The Redstart*, *39*(1), 30, and repeated in 1981 as Red Oak-Hickory Forest; see *The Redstart*, *40*(1), 19. Size: 6.07 ha. = 15 acres (rectangular, 110 x 660 yards, measured longitudinally and estimated laterally). Description of plot: A vegetation survey gave the following results. The dominant canopy trees are Oaks (*Quercus* spp.) and Red Maple (*Acer rubrum*). Most prominent in the understory are seedlings of canopy trees Cucumber magnolia (*Magnolia acuminata*), and Chestnut (*Castanea dentata*). The ground cover is primarily Black Cohosh (*Cimicifuga racemosa*) and Sarsaparilla (*Aralia* sp.). Trees 3-inches diameter and over, based on five circular samples: 248/acre; total basal area, 121 sq. ft./acre. Species comprising 91% of the total number of trees: Red Oak (*Q. rubra*), 24, 9.7, 15.4, 80; Black Oak (*Q. velutina*), 16, 6.4, 14, 40; White Oak (*Q. alba*), 6, 2.4, 10.7, 60; Chestnut Oak (*Q. prinus*), 6, 2.4, 6.1, 20; Red Maple, 86, 34.7, 19.8, 80; Hickory (*Carya* sp.), 46, 18.5, 16, 100; Flowering Dogwood (*Cornus florida*), 14, 5.6, 1.2, 80; Dead, 30, 12, 3.1, 80. Trees by diameter class: A (3-6 in.) 59, 47.6, 11.8, 9.8; B (6-9 in.) 37, 29.8, 22.2, 18.3; C (9-15 in.) 17, 13.7, 27.2, 22.5; D (15-21 in.) 6, 4.8, 21.6, 17.8; E (21-27 in.) 3, 2.4, 18.6, 15.4; F (27-33 in.) 2, 1.6, 19.6, 16.2. Shrub stems/acre 1,490; ground cover 30%; canopy cover 84.5%; average canopy height 86.7 ft. (range 68-106). Edge: Similar forest continues in all directions except for a gravel road that parallels the west side of the plot. Topography: The centerline is a trail that follows a ridge crest in an east-north easterly direction. Elevation: 2,700 feet. Coverage: June 3 - June 9, 1994. All trips between dawn and 0800 hours or 1745 and 2000 EDT. Total party hours; 10.5. Census: Red-eyed Vireo, 9 (148, 60); Indigo Bunting, 5 (82, 33); Ovenbird, 4.5 (74, 30); Cerulean Warbler, 4 (66, 27); Eastern Wood-Pewee, 1; Blue-gray Gnatcatcher, 1; American Redstart, 1; Hooded Warbler, 1; Scarlet Tanager, 1; Rufous-sided Towhee, 1; Tufted Titmouse, 0.5; Solitary Vireo, 0.5; Yellow-billed Cuckoo, +; Barred Owl, +; Red-bellied Woodpecker, +; Downy Woodpecker, +; Hairy Woodpecker, +; Pileated Woodpecker, +; Great Crested Flycatcher, +; White-breasted Nuthatch, +; Chestnut-sided Warbler, +; Brown-headed Cowbird, +. Total: 22 species; 29.5 territorial males (485/sq. km., 196/100 acres). Visitors: Blue Jay, Black-capped Chickadee, Wood Thrush, Yellow Warbler, Cardinal, American Goldfinch. Remarks: A timber access road was cut through the northwest corner of the plot since it was last run in 1981. Edge effect due to the road is responsible for the appearance of the Chestnut-sided Warbler but not the Indigo Buntings. They were found throughout most of the plot and may be due to a timber cut east of the plot. Participants: Census–Scott Albaugh, Dana Buckelew,

James Bullard, Greg Eddy, JoAnn Graham (compiler), John Northeimer, Juanita Slater, Fred Temple, Patricia Temple, Julie Zickefoose. Vegetation–John Azelvandre, Richard Diener, Dawn Fox, Thomas Fox, JoAnn Graham, Marjorie Keatley, Steven Mace, Frederick McCullough, John Northeimer, and Robert Richardson.

BIG DRAFT NORTH (White Pine-Oak)—Location: West Virginia; Greenbrier County; 1 mile south of the intersection of Anthony Creek Road and Big Draft Road; 37° 54' 05" N, 80° 15' 11" W, Anthony Quadrangle, USGS, extends north. Continuity: Established in 1966 as Relatively Mature Pine-Oak Forest; see *The Redstart*, *34*(1), 6, repeated in 1971 as Partially Cut-Over Pine-Oak Forest; see *The Redstart*, *39*(1), 33, and in 1981 as White Pine-Oak Forest; see *The Redstart*, *49*(1), 21. Size: 6.07 ha. = 15 acres (rectangular, 110 x 660 yards, measured longitudinally and estimated laterally). Description of plot: A vegetative survey in 1994 gave the following results. The dominant canopy trees are White Pine (*Pinus strobus*) and Oak (*Quercus* spp.). Most prominent in the understory are Yellow Birch (*Betula alleghaniensis*) and Witch Hazel (*Hamamelis virginiana*). The ground cover is New York Fern (*Thelypteris noveboracensis*) and seedlings of the canopy trees. Trees 3-inches diameter and over, based on five 0.1 acre circular samples: 228/acre; total basal area 124 sq. ft./acre. Species comprising 93% of the total number of trees: White Pine, 68, 29.8, 53, 80; White Oak (*Quercus alba*), 38, 16.6, 14.7, 60; Red Oak (*Q. rubra*), 14, 6.1, 6.3, 60; Black Oak (*Q. velutina*), 4, 1.8, 2.6, 20; Tuliptree (*Liriodendron tulipifera*), 20, 8.7, 5.2, 80; White Ash (*Fraxinus americana*), 10, 4.4, 4.8, 20; Mockernut Hickory (*Carya tomentosa*), 8, 3.5, 4, 40; Red Maple (*Acer rubrum*), 22, 9.6, 2.4, 80; Eastern Hemlock (*Tsuga canadensis*), 4, 1.8, 1.4, 20; Pignut Hickory (*C. glabra*), 6, 2.6, 1.1, 20; Black Gum (*Nyssa sylvatica*) 4, 1.8, 1, 20; Sugar Maple (*A. saccharum*) 6, 2.6, 0.8, 40; Black Locust (*Robinia pseudo-acacia*) 8, 3.5, 0.6, 20. Trees by diameter class: A (3-6 in.) 96, 42.1, 9.6, 7.7; B (6-9 in.) 60, 26.3, 18, 14.5; C (9-15 in.) 56, 24.5, 44.8, 36.1; D (15-21 in.) 4, 1.8, 7.2, 5.8; E (21- 27 in.) 8, 3.5, 24.8, 20; F (27-33 in.) 4, 1.8, 19.6, 15.8. Shrub stems/acre 3,200; ground cover 34%; canopy cover 94%; average canopy height 79 ft. (range 56-101). Edge: A paved road intersects the plot at one point, and one end borders on a large clearing. Topography: The gently north sloping plot is located in a saddle approximately 700 feet below mountains to the east and west. Elevation: 2,160 to 2,320 ft. Coverage: June 4-June 10, 1994. All trips between dawn and 0700 or 1900 and 2030 hours EDT. Total party hours: 11.3. Census: Ovenbird, 4.5 (74, 30); Red-eyed Vireo, 4 (66, 27); Scarlet Tanager 1.5; Wood Thrush, 1; Great-crested Flycatcher, 0.5; Black-capped Chickadee, 0.5; Worm-eating Warbler, 0.5; Ruffed Grouse, +; Hairy Woodpecker, +; Tufted Titmouse, +; Pine Warbler, +; Northern Cardinal, +. Total: 12 species; 12.5 territorial males (206 /sq. km., 83/100 acres). Visitors: Yellow-billed Cuckoo, Blue Jay, American Crow, Black-and-white Warbler, Indigo Bunting. Remarks: No nests were found on the plot, but an agitated

Ovenbird was seen with food and an agitated pair of Hairy Woodpeckers was seen just outside the plot. The only mammals observed on the plot were chipmunks and squirrels. Barred Owls were frequently heard nearby. Participants: Census–William Beatty, A. R. Buckelew Jr., Dana Buckelew (compiler), Greg Eddy, Jason Friggens, Mary Groome, Ike Ingraham, Bert Rhoad, and Judith Ward. Vegetation–Scott Albaugh, A. R. Buckelew Jr., Dana Buckelew, Greg Eddy, Nancy Eddy, Cynthia Ellis, Ike Ingraham, Josh Lipton, William Murray, Joseph Rieffenberger, and Jane Whitaker.

BIG DRAFT SOUTH (White Oak-Hickory)—Location: West Virginia; Greenbrier County; 0.5 mile south of the intersection of Anthony Creek Road and Big Draft Road; 37° 53' 58" N, 80° 15' 13" W, Anthony Quadrangle, USGS, extends north. Continuity: Established 1966 and repeated in 1971 as Pole Sized Oak Woods; see *The Redstart*, *34*(1), 9 and *39*(1), 29. Repeated in 1981 as White Oak-Hickory Forest; see *The Redstart*, *49*(1), 24. Size: 6.07 ha. = 15 acres (rectangular, 110 x 660 yards, measured longitudinally and estimated laterally). Description of plot: A vegetative survey in 1994 gave the following results. The dominant canopy trees are Oak (*Quercus* spp.) and Hickory (*Carya* spp.). Most prominent in the understory are seedlings of the canopy trees and Witch Hazel (*Hamamelis virginiana*). The ground cover is primarily Twisted Stalk (*Streptopus roseus*) and Black Cohosh (*Cimicifuga racemosa*). Trees 3-inches diameter and over, based on five 0.1 acre circular samples: 260/acre; total basal area 100.8 sq. ft./acre. Species comprising 90% of the total number of trees: White Oak (*Q. alba*), 80, 30.7, 33.1, 100; Scarlet Oak (*Q. coccinia*), 10, 3.8, 6.9, 60; Red Oak (*Q. rubra*), 10, 3.8, 4.9, 40; Black Oak (*Q. velutina*), 8, 3, 4.3, 40; Chestnut Oak (*Q. prinus*), 6, 2.3, 2.7, 40; Mockernut Hickory (*C. tomentosa*), 30, 11.5, 19.2, 80; Pignut Hickory (*C. glabra*), 18, 6.9, 7.7, 60; Tuliptree (*Liriodendron tulipifera*), 12, 9.2, 12.3, 80; Red Maple (*Acer rubrum*), 24, 9.2, 2.3, 80; White Pine (*Pinus strobus*), 12, 4.6, 1.5, 60. Trees by diameter class: A (3-6 in.) 116, 44.6, 11.6, 11.5; B (6-9 in.) 72, 27.7, 21.6, 21.4; C (9-15 in.) 62, 23.8, 49.6, 49.2; D (15-21 in.) 10, 3.8, 18, 17.8. Shrub stems/acre 7,200; ground cover 41%; canopy cover 89.5%; average canopy height 88 ft. (range 75-113). Edge: Nearly the same throughout, but its southern area lies diagonally near a paved county road. Topography: Center line follows an old forest road with a slight rise, then fall in elevation. Elevation: 2,200 to 2,330 feet. Coverage: June 4-June 10, 1994. All trips between dawn and 0720 hours or 1700 and 1805 hours. Total party hours: 9. Census: Ovenbird, 9 (148, 60); Red-eyed Vireo, 3.5 (58, 23); Worm-eating Warbler, 2; Scarlet Tanager, 2; Wood Thrush, 1; Pileated Woodpecker, +; Hairy Woodpecker, +. Total: 7 species; 17.5 territorial males (288/sq. km., 117/100 acres). Visitors: Northern Flicker, Red-bellied Woodpecker, Blue Jay, Black-capped Chickadee, White-breasted Nuthatch, Black-and-white Warbler, and Indigo Bunting. Remarks: A group of Black-capped Chickadees was noted one morning, and a

Barred Owl was sometimes heard. Participants: Census– Gay Brown, A. R. Buckelew Jr., Elizabeth Bullard, James Bullard, Greg Eddy, Cynthia Ellis (compiler), Scott Emrick, Karen McClure, and Judith Ward. Vegetation–Scott Albaugh, A. R. Buckelew Jr., Dana Buckelew, Greg Eddy, Nancy Eddy, Cynthia Ellis, Ike Ingraham, Josh Lipton, William Murray, Joseph Rieffenberger, and Jane Whitaker.

RIVER BOTTOM (Oak-Tuliptree-White Pine)—Location: West Virginia; Greenbrier County; 1/4 mile SE of Anthony; 37° 53' 38" N, 80° 19' 28" W, Anthony Quadrangle, USGS, extends southeast and parallel to Anthony Creek. Continuity: New. Size: 6.07 ha. = 15 acres (rectangular, 110 x 660 yards, measured longitudinally and estimated laterally). Description of plot: A vegetative survey gave the following results. The dominant canopy trees are Oaks (*Quercus* spp.), Tuliptree (*Liriodendron tulipifera*), and White Pine (*Pinus strobus*). Most prominent in the understory are saplings of the canopy trees. The ground cover is mostly ferns. Trees 3-inches diameter and over, based on five 0.1 acre circular samples: 332/acre; total basal area, 213 sq. ft./acre. Species comprising 91.8% of the total number of trees: Red Oak (*Q rubra*), 22, 6.6, 23.4, 100; White Oak (*Q. alba*), 50, 15, 14.7, 60; Tuliptree, 26, 7.8, 19.6, 80; White Pine, 14, 4.2, 11, 80; Eastern Hemlock (*Tsuga canadensis*), 36, 10.8, 7.6, 80; Red Maple (*Acer rubrum*), 40, 12, 6.3, 100; American Beech (*Fagus grandifolia*), 44, 13.2, 5.6, 40; Mockernut Hickory (*Carya tomentosa*), 24, 7.2, 2.7, 60; Pitch Pine (*Pinus rigida*), 4, 1.2, 2.4, 20; Sugar Maple (*A. saccharum*), 16, 4.8, 1.4, 40; Black Gum (*Nyssa sylvatica*), 16, 4.8, 1.4, 60; Hickory sp. (*Carya* sp.), 8, 2.4, 0.9, 60; Black Locust (*Robinia pseudo-acacia*), 6, 1.8, 0.9, 20. Trees by diameter class: A (3-6 in.) 154, 46.3, 15.4, 7.2; B (6-9 in.) 72, 21.6, 21.6, 10.1; C (9-15 in.) 70, 21, 56, 26.2; D (15-21 in.) 16, 4.8, 28.8, 13.5; E (21-27 in.) 12, 3.6, 37.2, 17.4; F (27-33 in.) 2, 0.6, 9.8, 4.6; G (33-40 in.) 4, 1.2, 28.4, 13.3; H (40+) 2, 0.6, 16, 7.5. Shrub stems/acre 3,440; ground cover 55.5%; canopy cover 99%; average canopy height 94 ft. (range 80-102). Edge: Similar forest continues in all directions. Topography: very slight slope to south. Elevation: 1,800 feet. Coverage: June 4-June 10, 1994. All trips between 5:30 and 7:30 hours except two between 18:40 and 19:30. Total party hours: 13.75. Census: Red-eyed Vireo, 5.5 (91, 37); Acadian Flycatcher, 5 (82, 33); Ovenbird 3.5 (58, 23); Wood Thrush, 2; Solitary Vireo, 1; Northern Parula, 1; Worm-eating Warbler, 1; Scarlet Tanager, 1; Tufted Titmouse, 0.5; Black-and-white Warbler, 0.5; Louisiana Waterthrush, 0.5; Yellow-billed Cuckoo, +; Red-bellied Woodpecker, +; Downy Woodpecker, +; Pileated Woodpecker, +; Eastern Wood-Pewee, +; Great Crested Flycatcher, +; Blue Jay, +. Total: 18 species; 21.5 territorial males (337/sq. km., 136/100 acres). Visitors: Indigo Bunting, Rufous-sided Towhee. Participants: Census–Scott Albaugh, William Beatty, Richard Diener, Scott Emrick, Dawn Fox, Jason Friggens, Mary Groome, Patty Hogan, Josh Lipton, Cynthia Luntz (compiler), Juanita Slater, Carl Slater, Andrew Thompson, Elsa Thompson, and Judith Ward. Vegetation–Scott

Albaugh, Greg Eddy, Scott Emrick, Jason Friggens, Ike Ingraham, Josh Lipton, Cynthia Luntz, William Murray, Juanita Slater, Marta Steenstra, Jane Whitaker, and Catherine Wilson.

3 Aster Dr., Clinton Hills
Triadelphia, WV 26059

The 1994 Foray Breeding Bird Surveys: Greenbrier County, West Virginia

Ralph K. Bell and Ann H. Pyle

During the 1994 Foray, 15 complete 10-mile Breeding Bird Surveys (BBS) were made. Three teams participated and many of the passable roads within easy driving distance from the Greenbrier Youth Camp in Greenbrier County, West Virginia were covered. Each team traveled by automobile and each route was started at approximately one half hour before sunrise. Three minute stops were made every half mile, and any bird seen or heard was counted at each of the 300 stops made. Of the 100 species recorded, 4,937 individual birds were counted.

During the 1981 Foray at the same location, 390 stops were made and 6,747 individual birds of 96 species were counted. The individuals recorded at each stop were down slightly with the average in 1994 being 16.4 individuals per stop compared with 17.7 per stop in 1981. Table 1 shows the birds recorded in 1994 on the surveys.

Table 1

Birds Recorded By Species

Species	Number	Stops Present
Great Blue Heron	2	1
Canada Goose	32	4
Wood Duck	4	1
Black Vulture	14	3
Turkey Vulture	21	10
American Kestrel	4	4
Ruffed Grouse	3	3
Wild Turkey	5	5
Northern Bobwhite	14	10
Killdeer	9	9
American Woodcock	1	1
Rock Dove	39	7
Mourning Dove	165	96
Black-billed Cuckoo	1	1
Yellow-billed Cuckoo	11	11
Whip-poor-will	5	3
Chimney Swift	40	20
Ruby-throated Hummingbird	3	3
Belted Kingfisher	1	1
Red-headed Woodpecker	3	2
Red-bellied Woodpecker	27	24

Species	Number	Stops Present
Downy Woodpecker	6	6
Hairy Woodpecker	4	4
Pileated Woodpecker	16	14
Northern Flicker	18	18
Eastern Wood-Pewee	38	36
Acadian Flycatcher	53	36
Alder Flycatcher	2	2
Willow Flycatcher	13	12
Least Flycatcher	3	3
Great Crested Flycatcher	60	54
Eastern Phoebe	59	50
Eastern Kingbird	40	34
Tree Swallow	12	11
N. Rough-winged Swallow	12	7
Barn Swallow	86	35
Blue Jay	54	36
American Crow	289	161
Common Raven	11	9
Black-capped Chickadee	39	35
Tufted Titmouse	102	91
White-breasted Nuthatch	19	17
Carolina Wren	38	33
House Wren	101	74
Golden-crowned Kinglet	2	1
Blue-Gray Gnatcatcher	71	55
Eastern Bluebird	68	41
Wood Thrush	165	102
American Robin	274	132
Gray Catbird	57	51
Northern Mockingbird	42	34
Brown Thrasher	51	40
Cedar Waxwing	49	29
European Starling	331	51
White-eyed Vireo	37	29
Solitary Vireo	6	5
Yellow-throated Vireo	10	9
Red-eyed Vireo	151	93
Blue-winged Warbler	3	3
Golden-winged Warbler	11	10
Northern Parula	13	13
Yellow Warbler	33	29
Chestnut-sided Warbler	10	7
Magnolia Warbler	1	1
Black-throated Blue Warbler	9	5
Black-throated Green Warbler	1	1
Blackburnian Warbler	4	2
Pine Warbler	7	6
Prairie Warbler	8	7

Species	Number	Stops Present
Cerulean Warbler	6	4
Black-and-white Warbler	14	13
Worm-eating Warbler	13	13
Kentucky Warbler	4	4
Hooded Warbler	3	3
American Redstart	12	8
Ovenbird	59	41
Louisiana Waterthrush	10	10
Common Yellowthroat	56	51
Yellow-breasted Chat	30	26
Scarlet Tanager	67	56
Northern Cardinal	140	108
Rose-breasted Grosbeak	5	3
Indigo Bunting	249	160
Rufous-sided Towhee	170	141
Chipping Sparrow	108	83
Field Sparrow	116	84
Vesper Sparrow	2	2
Savannah Sparrow	8	8
Grasshopper Sparrow	7	6
Song Sparrow	90	72
Bobolink	2	2
Red-winged Blackbird	304	76
Eastern Meadowlark	178	91
Common Grackle	224	58
Brown-headed Cowbird	30	24
Orchard Oriole	12	12
Northern Oriole	27	24
House Finch	8	7
American Goldfinch	59	40
House Sparrow	34	16

Table 2 lists the 20 most abundant species recorded during the 1994 Foray compared with the routes run during the 1981 Foray in the same area. The table also lists the order of abundance and the percent of total birds tallied during the two Forays. These percentages, in relation to the total stops, may indicate whether a species has increased or decreased in the area during the past 13 years. Evidently the House Wren and Mourning Dove had the greatest increase in numbers and the European Starling and Song Sparrow had the greatest decrease. The 20 species listed accounted for 68.5% of all recorded birds on the routes.

Table 2

Most Abundant Species

Species	Order of Abundance 1994	Order of Abundance 1981	Percent of Total 1994	Percent of Total 1981
European Starling	1	1	6.7	16.8
Red-winged Blackbird	2	5	6.1	4.2
American Crow	3	3	5.8	5.4
American Robin	4	6	5.5	4.0
Indigo Bunting	5	4	5.0	4.7
Common Grackle	6	2	4.5	5.8
Eastern Meadowlark	7	10	3.6	2.7
Rufous-sided Towhee	8	9	3.4	2.9
Wood Thrush	9	12	3.3	2.4
Mourning Dove	10	17	3.3	1.8
Red-eyed Vireo	11	8	3.0	3.0
Northern Cardinal	12	13	2.8	2.4
Field Sparrow	13	11	2.3	2.5
Chipping Sparrow	14	14	2.1	2.3
Tufted Titmouse	15	19	2.0	1.6
House Wren	16	29	2.0	0.9
Song Sparrow	17	7	1.8	3.2
Barn Swallow	18	15	1.7	2.0
Blue-gray Gnatcatcher	19	24	1.4	1.3
Eastern Bluebird	20	26	1.3	1.0

Table 3 indicates the 18 most widely distributed species in the Foray area and gives the number of stops at which each species was noted. The percentage of stops where found is given for both 1981 and 1994.

Table 3

Most Widely Distributed Species

Species	Stops Present	% of Total 1994	% of Total 1981
American Crow	161	53.6	48.9
Indigo Bunting	160	53.3	61.3
Rufous-sided Towhee	141	47.0	43.9
American Robin	132	44.0	36.7
Northern Cardinal	108	36.0	31.1
Wood Thrush	102	34.0	29.5
Mourning Dove	96	32.0	21.3

Species	Stops Present	% of Total 1994	% of Total 1981
Red-eyed Vireo	93	31.0	40.3
Eastern Meadowlark	91	30.3	28.2
Tufted Titmouse	91	30.3	27.8
Field Sparrow	84	28.0	38.4
Chipping Sparrow	83	27.6	34.7
Red-winged Blackbird	76	25.3	28.9
House Wren	74	24.6	16.0
Song Sparrow	72	24.0	41.8
Common Grackle	58	19.3	24.7
Scarlet Tanager	56	18.6	13.9
Blue-gray Gnatcatcher	55	18.3	21.3

The following people participated in one or more of the surveys: Scott Albaugh, Kenneth Anderson, John Azelvandre, Ralph Bell, Gay Brown, James Bullard, Kyle Bush, Elizabeth Chandler, Virginia Cronenberger, JoAnn Diener, Richard Diener, Nancy Eddy, Dawn Fox, John Fox, Jason Friggens, Emily Grafton, Seth Hill, Eugene Hutton, Jr., Reba Hutton, Ike Ingraham, Judith Knorr, Jack Linehan, Frederick McCullough, Loretta Mullens, John Northeimer, Ann Pyle, Marta Steenstra, Zachary Steenstra, Ellen Voss, Elizabeth Weimer, Judith Ward, Jane Whitaker, Matthew Whitaker, Catherine Wilson, and Leon Wilson.

R.D. 1, Box 229
Clarksville, PA 15322

1111 Lakeview Drive
Parkersburg, WV 26101

Reptiles and Amphibians of the 1994 Foray: Greenbrier County, West Virginia

Jane Whitaker

The annual Foray of the Brooks Bird Club was held from June 3 to June 11, 1994 at Greenbrier Youth Camp near Anthony, West Virginia. Forays have been held at Anthony in 1966, 1971, and 1981. The 1981 foray recorded a list of 27 herptiles. Twenty-eight species were identified this year; however, the species identified this year were not all the same as in 1981. In the list that follows, an asterisk (*) denotes species that were found in 1981 and two asterisks (**) indicate species found in both 1971 and 1981.

The following individuals either collected or identified specimens and their initials will be used to indicate their respective contributions: Matthew Whitaker (MW), John Azelvandre (JA), Ike Ingraham (II), Fred Temple (FT), Nancy Eddy (NE), James Bullard (JB), Seth Hill (SH), Marta Steenstra (MS), Zachary Steenstra (ZS), and Jane Whitaker (JW). Where no credit is given the species were reported by more than one observer.

Conditions were very dry and most species were observed only once or twice. Snapping turtles were observed on two occasions preparing nests for egg laying, once at Sherwood Lake and again on the banks of the Greenbrier River at the Youth Camp.

The painted turtles were observed but not captured, thus no subspecies is indicated. *Amphibians and Reptiles in West Virginia* by T.K. Pauley and B. Green indicates that a zone of intergration occurs for the Northern and Kentucky Spring Salamanders in the Greenbrier County area. A specimen collected near Auto, West Virginia resembled the Northern Spring Salamander, *Gyrinophilus porphyriticus porphyriticus*, and one collected at the David Cowan farm near Esty more nearly resembled the Kentucky Spring Salamander, *Gyrinophilus porphyriticus duryi.* These were the only specimens collected and are listed as *Gyrinophilus porphyriticus* subsp?. The list of herptiles follows:

CLASS AMPHIBIA

Order Caudata—Salamanders

- Red-spotted Newt (*Notophthalmus viridescens v.*) (JB)**
- Northern Dusky Salamander (*Desmognathus fuscus f.*) common.
- Mountain Dusky Salamander (*Desmognathus ochrophaeus*) common.**
- Appalachian Seal Salamander (*Desmognathus monticola m.*) (NE).
- Blackbelly Salamander (*Desmognathus quadramaculatus*) (II).
- Redback Salamander (*Plethodon glutinosus g.*) (SH).
- Slimy Salamander (*Plethodon glutinosus g.*) (SH).**
- Spring Salamander (*Gyrinophilus porphyriticus* subsp.?)
- Longtail Salamander (*Eurycea longicauda l.*) (SH).
- Cave Salamander (*Eurycea lucifuga*)(NE)*

Order Salienta—Toads and Frogs

- Eastern American Toad (*Bufo americanus a.*) (MW).**
- Northern Spring Peeper (*Hyla crucifer c.*).**
- Gray Tree Frog (*Hyla versicolor*) (SH).**
- Mountain Chorus Frog (*Pseudacris brachyphona*) (SH).
- Bullfrog (*Rana catesbeiana*)**
- Green Frog (*Rana clamitans melanota*) (SH).**
- Wood Frog (*Rana sylvatica*) (JA).**
- Pickerel Frog (*Rana palustris*) (JA).

CLASS REPTILIA

Order Testudines—Turtles

- Common Snapping Turtle (*Chelydra serpentina* .) common.*
- Eastern Box Turtle (*Terrapenecarolina c.*) common.**
- Painted Turtle (*Chrysemys picta* subsp.?) common.**

Order Squmata—Lizards and Snakes

- Northern Fence Lizard (*Sceloporus undulatus u.*) (JW).*
- Five-lined Skink (*Eumeces fasciatus*) (II).
- Northern Water Snake (*Nerodia sipedon s.*) common.**
- Northern Ringnecked Snake (*Diadophis punctatus edwardsii*) (SH).**
- Northern Black Racer (*Coluber constrictor c.*) (SH).
- Black Rat Snake (*Elaphe obsoleta ob.*) (MW) common.**
- Timber Rattlesnake (*Crotalus horridus*)—one seen dead on road.**

3817 Windom Pl., N.W.
Washington, DC 20016

The 1994 Foray Mammal List: Greenbrier County, West Virginia

Matthew W. Whitaker

The following is a list of the mammal species observed at the 1994 Foray at Anthony, West Virginia.

Order Marsupialia

Opossum (*Didelphis marsupialis*)—Numerous specimens were seen road killed throughout the week.

Order Insectivora

Shorttail Shrew (*Blarina brevicauda*)—Bill Hurly's scavenger hunt group found a specimen.

Hairytail Mole (*Parascalops breweri*)—Found on a morning bird walk.

Order Chiroptera

Bats were observed nightly.

Order Carnivora

Black Bear (*Ursus americanus*)—Observed the first day of camp crossing the Greenbriar Trail across the river from the camp.

Raccoon (*Procyon lotor*)—Numerous specimens were observed road killed.

Striped Skunk (*Mephitis mephitis*)—The litter being raised by hand at camp was observed by most campers.

Red Fox (*Vulpes fulva*)—Seen on a BBS run.

Gray Fox (*Urocyon Cinaereoargentus*)—Observed by Fred and Patricia Temple on June 5.

Order Rodentia

Woodchuck (*Marmota monax*)—Observed throughout the week by numerous campers

Eastern Chipmunk (*Tamias striatus*)—Observed around camp daily

Eastern Gray Squirrel (*Sciurus carolinensis*)—Observed near the Greenbriar River outside camp.

Eastern Fox Squirrel (*Sciurus niger*)—Observed on June 5 near Blue Bend Recreation Area

Red Squirrel (*Tamiassciurus hudsonicus*)—Observed by Jane Whitaker at Sherwood Lake.

Beaver (*Castor canadensis*)—Observed on a BBS run.

House Mouse (*Mus musculus*)—Observed by Seth Hill near the kitchen in camp.

Woodland Jumping Mouse (*Napaeozopus insignis*)—Observed by Seth Hill near camp.

Order Lagomorpha

Eastern cottontail (*Sylvilagus floridanus*)—Observed by a number of campers during the week.

Order Artiodactyla

White-tailed Deer (*Odocoileus virginianus*)—Observed by a number of campers during the week.

15006 Courtland Pl.
Laurel, MD 20707

Aquatic Insects and Other Macroinvertebrates of the 1994 Foray

Jane Whitaker

The class in stream monitoring techniques collected macroinvertebrates by hand and with fine mesh nets in the Greenbrier River near the Foray camp at Anthony, Greenbrier County, West Virginia. The following is a list of the specimens collected.

Phylum Mollusca
- Bivalve—Two species
- Snail—One species very abundant.

Phylum Arthropoda
- Class Crustaceae
  - Order Decapoda—Crayfish. Common.
  - Order Isopoda—One specimen.
  - Order Amphipoda—One specimen.
- Class Insecta—Unless stated otherwise, specimens collected were immature forms.
  - Order Ephemeroptera—All families were common.
    - Family Ephemerellidae: Genera—Caudatella, Drunella, and Ephemerella
    - Family Heptageniidae: Genera—Epeorus, Heptagenia
    - Family Oligoneuriidae
  - Order Odonota
    - Suborder Zygoptera (Damselflies)—Adults were common. Two nymphs were captured.
    - Suborder Anisoptera (Dragonflies)—Adults were common. Two nymphs were captured.
  - Order Plecoptera (Stone flies)—Adults were common.
    - Family Perlidae—One specimen
  - Order Trichoptera (Caddisflies)—Common.
    - Family Glossomatidae
    - Family Hydropsychidae
    - Family Philopotamidae
  - Order Diptera
    - Family Tipulidae (Craneflies)—One specimen.
  - Order Megaloptera
    - Family Corydalidae—Hellgramites—Common.
  - Order Coleoptera
    - Family Elmidae—Riffle Beetles—Adults and larvae.
    - Family Psephenidae—Water-penny Beetles—Common.

3817 Windom Pl., N.W.
Washington, DC 20016

Shrubs of Greenbrier County, West Virginia

Maxine Thacker

As with the trees of Greenbrier County, Steven Mace was a great help in reporting plants and providing scientific names.

ROSACEAE	ROSE FAMILY
Physocarpus opulifolius	Ninebark
Pyrus americana	Mountain Ash
ANACARDIACEAE	CASHEW FAMILY
Rhus typhina	Staghorn Sumac
Rhus glabra	Smooth Sumac
Rhus copallina	Dwarf Sumac
Rhus aromatica	Fragrant Sumac
Rhus radicans	Poison Ivy
STAPHYLEACEAE	BLADDERNUT FAMILY
Staphylea trifolia	Bladdernut
VITACEA	*VINE FAMILY*
Vitis sp.	Wild Grape
Parthenocissus quinquefolia	Virginia Creeper
THYMELACEAE	MEZEREUM FAMILY
Dirca palustris	Leatherwood
CORNACEAE	DOGWOOD FAMILY
Cornus alternifolia	Alternate-leaved Dogwood
Cornus ammomum	Silky Dogwood
ERICACEAE	HEATH FAMILY
Rhododendron maximum	Rhododendron
Azalea calendulaceum	Flame Azalea
Kalmia latifolia	Mountain Laurel
Andromeda glaucophylla	Bog Rosemary
Gaultheria procumbens	Teaberry
Vacinium oxycoccos	Small Cranberry

RUBIACEAE	MADDER FAMILY
Mitchalla repens	Partridge Berry
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY
Viburnum cassinoides	Wild Raisin
Viburnum prunifolium	Black Haw
Viburnum acerifolium	Maple-leaved Viburnum
Sambucus canadensis	Common Elderberry
Sambucus pubens	Red Elderberry
MYRICACEAE	BAYBERRY FAMILY
Comptonia peregrina	Sweet Fern
CORYLACEAE	HAZEL FAMILY
Corylus americana	Common Hazelnut
Almus serrulata	Smooth Alder
ARISTOLOCHIACEAE	BIRTHWORT FAMILY
Aristolochia durior	Pipevine
LAURACEAE	LAUREL FAMILY
Lindera benzoin	Spicebush
Sassafras albidum	Sassafras
SAXIFRACACEAE	SAXIFRAGE FAMILY
Hydrangea arborescens	Wild Hydrangea
HAMAMELIDACEAE	WITCH HAZEL FAMILY
Hamamelis virginiana	Witch Hazel

5 Victoria St.
Buckhannon, WV 26201

Trees of Greenbrier County, West Virginia

Maxine Thacker

This list includes the trees seen and reported during the Brooks Bird Club Foray (June 3-11, 1994) at Camp Anthony in Greenbrier County. It could not have been so complete without the assistance of Steven Mace, especially for the scientific names.

PINACEAE	PINE FAMILY
Pinus strobus	White Pine
Pinus virginiana	Scrub Pine
Tsuga canadensis	Hemlock
Picea rubra	Red Spruce
Juniperus virginiana	Red Cedar
SALICACEAE	WILLOW FAMILY
Salix nigra	Black Willow
Populus grandidentata	Large-toothed Aspen
Salix alba	White Willow
Populus alba	White Poplar (escapee)
JUGLANDACEAE	WALNUT FAMILY
Juglans nigra	Black Walnut
Juglans cinerea	White Walnut (Butternut)
Carya ovata	Shagbark Hickory
Carya cordiformis	Bitternut Hickory
Carya lacinosa	Shellbark Hickory
BETULACEAE	BIRCH FAMILY
Ostrya virginiana	Hop Hornbeam
Carpinus americana	American Hornbeam
Betula lenta	Black Birch
Betula lutea	Yellow Birch
FAGACEAE	BEECH FAMILY
Fagus grandiflora	Beech
Castanea dentata	Chestnut
Quercus alba	White Oak
Quercus prinus	Chestnut Oak

Quercus palustris	Pin Oak
Quercus coccinea	Scarlet Oak
Quercus ilicifolia	Scrub Oak
Quercus muehlenbergii	Yellow Oak
Quercus imbricaria	Shingle Oak
URTICACEAE	NETTLE FAMILY
Ulmus fulva	Slippery Elm
Celtis occidentalis	Hackberry
MAGNOLIACEAE	MAGNOLIA FAMILY
Magnolia acuminata	Cucumber Tree
Liriodendron tulipifera	Tulip (Yellow) Poplar
Magnolia fraseri	Fraser's Magnolia
PLATANACEAE	PLANE TREE FAMILY
Planus occidentalis	Sycamore
ROSACEAE	ROSE FAMILY
Amelanchier canadensis	Service
Prunus serotina	Black Cherry
Pyrus coronaria	Wild Crab Apple
Pyrus malus	Apple
Prunus americana	Wild Plum
Crataegus sp.	Hawthorns
LEGUNINOSAE	PULSE FAMILY
Robinia pseudo-acacia	Black Locust
Cercis canadensis	Redbud
Gleditsia triacanthos	Honey Locust
HIPPOCASTANEAE	HORSECHESTNUT FAMILY
Aesculus octandra	Sweet Buckeye (Yellow)
ACERACEAE	MAPLE FAMILY
Acer saccarum	Sugar maple
Acer pensylvanacum	Striped Maple
Acer saccarum niger	Black Sugar Maple
Acer rubrum	Red Maple
Acer negundo	Box Elder
Acer saccharinum	Silver Maple

TILIACEAE	LINDEN FAMILY
Tilia americana	American Basswood
NYSSACEAE	SOUR GUM FAMILY
Nyssa sylvatica	Black Gum
CORNACEAE	DOGWOOD FAMILY
Cornus florida	Flowering Dogwood
Cornus alternifolia	Alternate-leaved Dogwood
ERICACEAE	HEATH FAMILY
Oxydendrum sylvatica	Sourwood
OLEACEAE	OLIVE FAMILY
Fraxinus americana	White Ash
Chionathus virginica	Fringe Tree

5 Victoria St.
Buckhannon, WV 26201

Herbaceous Plants of the 1994 Foray: Greenbrier County, West Virginia

Steven D. Mace

The following is a list of the herbaceous plants seen during the 1994 Foray that were not seen on the 1966, 1971, and 1981 forays in Greenbrier County. (For lists of plants found in this county on previous forays see *The Redstart, 34*(1), 18-25; *39*(1), 16-18; and *49*(1), 37-38.

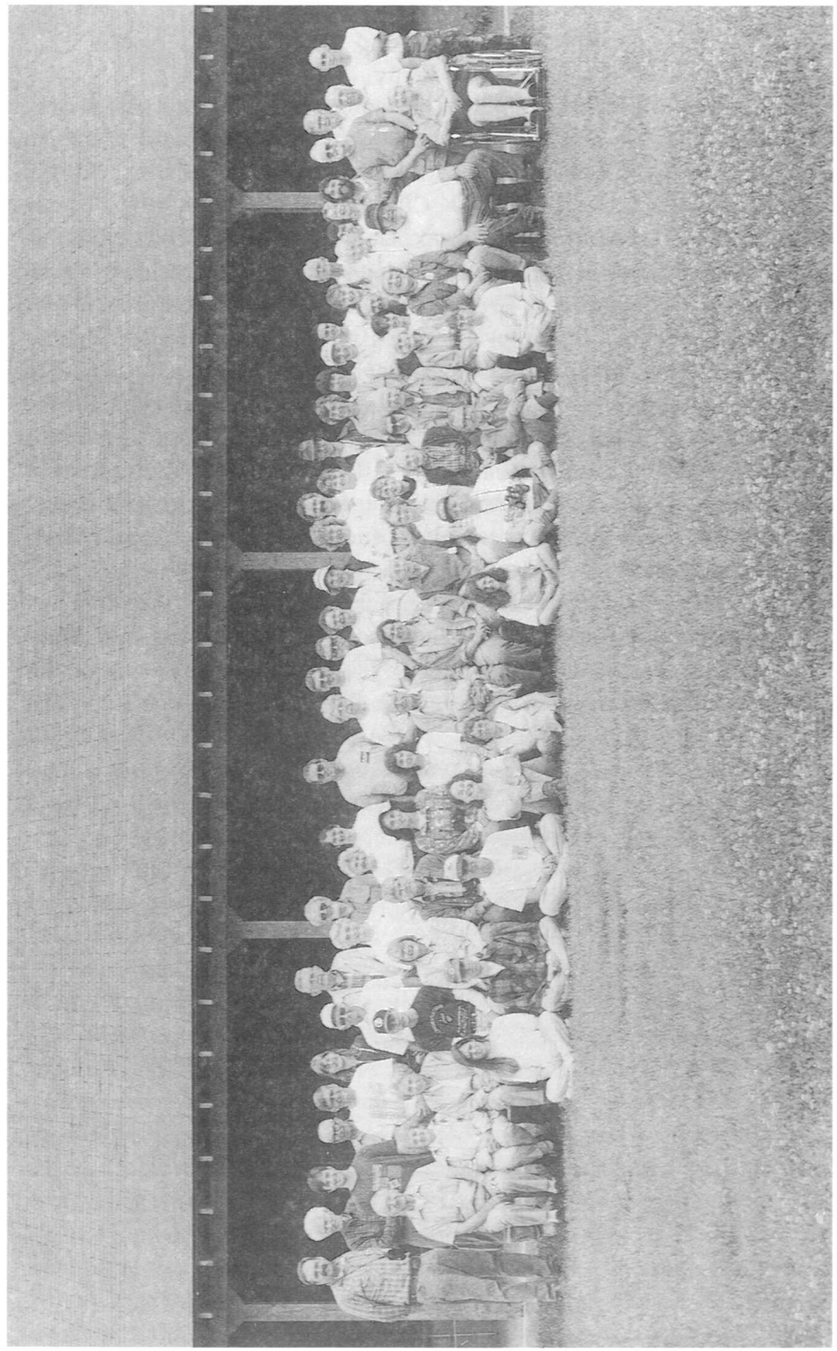
Many people contributed to this list. Especially helpful were Eugene E. Hutton, Jr., and Reba Hutton who were curators of the plant museum.

The list is in phylogenetic order as listed in the *Flora of West Virginia* by Strausbaugh and Core.

LILIAEAE	LILY FAMILY
Veratrum viride	White Hellebore
ORCHIDACEAE	ORCHID FAMILY
Cypripedium reginae	Showy Lady's Slipper
Goodyera repens	Lesser Rattlesnake Plantain
Corallorhiza maculata	Spotted Coralroot
RANUNCULACEAE	CROWFOOT FAMILY
Thalictrum polygamum	Tall Meadowrue
SARRACENIACEAE	PITCHER PLANT FAMILY
Sarracenia purpurea	Pitcher Plant
SAXIFRAGACEAE	SAXIFRAGE FAMILY
Saxifraga pensylvanica	Swamp Saxifrage
LEGUMINOSAE	PULSE FAMILY
Tephrosia virginiana	Goat's Rue
VIOLACEAE	VIOLET FAMILY
Viola pallens v. *macloskeyi*	Northern White Violet
LYTHRACEAE	LOOSESTRIFE FAMILY
Cuphea petiolata	Tarweed

PYROLACEAE	WINTERGREEN FAMILY
Pyrola rotundifolia	Round-leaved American Wintergreen
LABIATAE	MINT FAMILY
Salvia reflexa	Lanceleaf Sage
SCROPHULARIACEAE	FIGWORT FAMILY
Scrophularia marilandica	Giant Figwort
Penstemon digitalis	Foxglove Beardtongue
RUBIACEAE	MADDER FAMILY
Houstonia longifolia	Long-leaved Summer Bluets
LOBELIACEAE	LOBELIA FAMILY
Lobelia cardinalis	Cardinal Flower

P.O. Box 122
New Haven, WV 25265



1994 Foray Participants. Photo by A. R. Buckelew Jr.

1994 Foray Participants

Scott Albaugh,* Kenneth Anderson, John Azelvandre,* William Beatty, Ralph Bell, Frank Berisford, Gay Brown, A. R. Buckelew Jr., Dana Buckelew, Elizabeth Bullard, James Bullard, Eleanor Bush, Kyle Bush, Elizabeth Chandler, Carolyn Conrad, Dorothy Conrad, Marie Converse, Clifford Coon, Linnie Coon, Virginia Cronenberger, JoAnn Diener, Richard Diener, Greg Eddy, Nancy Eddy,* Cynthia Ellis, Scott Emrick, Dawn Fox, John Fox, Matthew Fox, Thomas Fox, Jason Friggens,* Jocelyn Godwin, Emily Grafton, JoAnn Graham, Mary Groome, Seth Hill, Patty Hogan, Virginia Bly Hoover, Anne Hurley, George Hurley, Thomas Hurley, Eugene Hutton, Jr., Reba Hutton, Ike Ingraham,* Marjorie Keatley, Ben Kiff, Maxine Kiff, Judith Knorr, Cynthia Luntz, Jack Linehan, Josh Lipton, Steven Mace, Martha Manuel, Oran Matthey, Polly Matthey, Karen McClure, Frederick McCullough, Loretta Mullens, Norma Murray, William Murray, John Northeimer, Benjamin Poscover, Ruth Poscover, Ann Pyle, Bertha Rhoad, Robert Richardson, Wilma Richardson, Joseph Rieffenberger, Mary Moore Rieffenberger, Robert Rine, Mike Smith, Marta Steenstra, Zachary Steenstra,* Fred Temple, Patricia Temple, Maxine Thacker, Carl Slater, Juanita Slater, Annalea Thompson, Andrew Thompson, Elsa Thompson, Jade Thompson, Nat Thompson, William Thompson III, Ellen Voss,* Judith Ward, Elizabeth Weimer, John Weimer, Jane Whitaker, Matthew Whitaker, Catherine Wilson,* Leon Wilson, Julie Zickefoose.

Speakers:

William Beatty, John Hall, and Michael Irwin

Field Notes
Summer Season
June-August, 1994

James D. Phillips, Editor

Most areas reported normal weather patterns for the season. The days seemed to be hot and hazy and the nights cooler than they have been in recent years. Precipitation was low to normal. High water in the southern part of the state was the result of North Carolina rain via the New River. A few reporters noted the conditions of nesting species while the majority covered unusual sightings or the August migration. Noteworthy reports included several species of tern across the region, **Northern Goshawk** in Randolph County, **Bald Eagles** in Wood and Pocahontas counties, **Hermit Thrush** in Kanawha County, an unconfirmed report of **Pine Grosbeaks** at Cranberry Glades, and **Red Crossbills,** also at Cranberry Glades, in Pocahontas County, **Dickcissel** in Gilmer County, and **Henslow's Sparrows** in Ohio and Wood Counties.

Waterbirds and raptors—The White Pelican that appeared in Belpre, Ohio in March was reported to be a nuisance to the fishermen in a June 26 newspaper article and could not be located by the end of the week. It was not known whether it left on its own or not(MBC). **Great Blue Herons** were noted along the Elk and Kanawha rivers during the season(HG). Forty-three nests were located in the Brooke County colony(JB). **Great Egrets** were found in Cabell(WA) and Mercer(AM) counties during August. **Green Herons** seemed to be in pretty good shape. **Black-crowned Night-Herons** were found in Wood County in early August(MB) and an immature **Yellow-crowned Night-Heron** was seen in Cabell County in late July(WA). **Canada Geese, Wood Ducks,** and **Mallards** seemed to do well but there were no other waterfowl reported.

Black and **Turkey vultures** seemed to be in their usual haunts and in normal numbers. **Osprey** were seen reported along the Ohio River in June(JB) and the Kanawha River in August(HG). According to the Mountwood Bird Club this was the sixth and final year for Ospreys to be released on Blennerhassett Island, Wood County. Twelve birds were released (One later was found dead.), and some nest building was noted but no eggs were laid. An immature **Bald Eagle** was reported during the season in Pocahontas County(GB) and an adult was seen in Wood County during August(MBC). According to "Peregrine Reintroduction Project 1994 Monitoring Program New River Gorge National River" prepared by Heidi Tiefke, an adult Bald Eagle was observed on the New River at the Raleigh/Fayette county line on June 28, and a juvenile was observed over the Gauley River, Nicholas County on July 12. An unidentified eagle was also listed in the Tiefke report on the New River at Hinton,

Summers County, on August 17. A female **Northern Harrier** was observed in August in Ritchie County(JW). Wendell Argabrite found a **Northern Goshawk** on Cheat Mountain, Randolph County, on July 24. Little mention was made of **Sharp-shinned** and **Cooper's hawks**. The Cooper's Hawk is listed as a species of special concern by the West Virginia Department of Natural Resources publication "Vertebrate Species of Concern in West Virginia." Summer reports for Cooper's Hawks came from Fayette, Raleigh, Summers(HT), and Kanawha(HG) counties. A few **Broad-winged Hawks** were reported.

Gamebirds through swallows—**Ruffed Grouse** were pretty scarce, while **Wild Turkeys** continue to flourish. Shorebirds were on the move by early August. **Semipalmated Plovers**(WA); **Lesser Yellowlegs**(MBC); **Solitary**(MBC,HG), **Upland**, **Western**, **Baird's,** and **Stilt sandpipers; Short-billed Dowitchers;** and **Wilson's Phalarope**(WA) were all found in the Ohio Valley during the month. Three **Caspian Terns**, 15 **Common Terns** and 50 **Forsters Terns** were seen in Mason County(WA) on August 21 and Nicholas County on July 10(MBC). Common Terns were reported for Wood County(MBC) on June 9. **Black Terns** were present in Mercer County(JP) at this same time.

A few reporters found both cuckoos. A. Buckelew thought **Eastern Screech-Owls** to be down about 50% in the north possibly due to the winter. **Great Horned Owls** were reported for Kanawha(HG), Summers, and Mercer(JP) counties. **Barred Owls** were found in Brooke(JB), Kanawha(HG), Mercer and Summers(JP), and Hampshire(JW) counties. **Common Nighthawks** were only found in Kanawha(HG), Cabell(MK), and Mercer(JP) counties during the summer. **Whip-poor-wills** were plentiful along Rt. 55 in Hampshire County in July(JW). The only other reports for this species came from Lewis(AV) and Mercer(JP) counties. Elsewhere they were scarce to non-existent. **Ruby-throated Hummingbirds** seemed to be in good numbers. It is hard to judge the impact of last winter on **Belted Kingfishers** since no one mentioned them at all. Perhaps that was the impact.

Most of the woodpeckers seemed in normal numbers. Flycatchers seemed in normal to low numbers. **Alder Flycatchers** were noted at Cranberry Glades, Pocahontas County(WA), and **Least Flycatchers** were widespread at medium and higher elevations in Randolph, Pocahontas, and Webster(AV,WA) counties. Little mention was made of **Purple Martins**. **Tree Swallows** and **Barn Swallows** seemed to be holding their own. A few people noted **Northern Rough-winged Swallows**. Approximately 40 **Bank Swallow** nests were noted in Wood County(MBC). **Cliff Swallows** were located in Lewis and Pocahontas counties(AV).

Thrushes through finches—Unusual was a **Hermit Thrush** in Kanawha State Forest, Kanawha County, on June 18(HG). Other thrushes were considered in normal to low numbers. Most of the vireos and warblers were found in their usual haunts but some concern was expressed about low numbers. **Prothonotary Warblers** seemed to be doing well along the Ohio River. A **Swainson's Warbler** was heard at

Russelville, Nicholas County(GB).

A **Dickcissel** was located in Gilmer county in early June(AV). **Chipping, Field, Vesper, Savannah,** and **Grasshopper sparrows** were all found where they were expected. **Henslow's Sparrows** were found in Wood(MBC) and Ohio(WB) counties. A group of experienced Pennsylvania birdwatchers reported male and female **Pine Grosbeaks** at the Cranberry Glades Visitors Center, Pocahontas County, July 15-16(JB). Other observers could locate only **Red Crossbills** in the area. The Red Crossbills were found in several locations and in pretty good numbers in Pocahontas County. There was one June sighting of a **Pine Siskin** in Mercer County(JM).

Contributors—Wendell Argabrite(WA), William Beatty(WB), George Breiding(GB), A. R. Buckelew Jr.(JB), Hullett Good(HG), Mary Groome(MG), Virginia Bly Hoover(VH), Marjorie Keatley(MK), Polly Matthey(PM), Ann McRae(AM), Jim Meyer(JM), Mountwood Bird Club(MBC), Heidi Teifke(HT), Allegheny Vistas(AV), and Jane Whitaker(JW).

HC 78, Box 42-C
Pipestem, WV 25979

Book Reviews

Upland Forests of West Virginia edited by Steven L. Stephenson. 1993. McClain Printing Co., Parsons, West Virginia. 295 pp. $28.50 hardcover.

This comprehensive review of the natural history of West Virginia's mountain biota is the result of a symposium held at the 1989 meeting of the West Virginia Academy of Science. Contributing authors and their topics are as follows: Steven L. Stephenson, "An Introduction to the Upland Forest Region and Upland Forest Vegetation"; Roy B. Clarkson, "Destruction of the Upland Forests by Lumbering and Fire"; Ronald H. Fortney, "Canaan Valley—An Area of Special Interest in the Upland Forest Region"; Brian R. McDonald, "Rare Plants of the Upland Forests"; Kenneth L. Carvell, "Bryophytes and Their Ecological Role in the Upland Forests"; Jonathan P. Dey, "Observations on the Fruticose and Foliose Lichens of the Upland Forest Region"; Walter Sturgeon, "Mushrooms and Other Fungi of the Upland Forests"; Robert E. Acciavatti (coordinating editor), "Insects and Spiders of the Upland Forests"; Thomas K. Pauley, "Amphibians and Reptiles of the Upland Forests"; George A. Hall, "Birds of the Upland Forests"; Robert Leo Smith, "Wildlife of the Upland Forests"; W. Hunter Lesser, "Prehistoric Human Settlement in the Upland Forest Region"; Steven L. Stephenson and Harold S. Adams, "Threats to the Upland Forests."

Stephenson's "Upland Forest Vegetation" and Clarkson's chapter on turn-of-the-century lumbering overlap somewhat, but the overall discussion of the early accounts of the forests, destruction by lumbering and fire, effects of the chestnut blight, and Stephenson's descriptions of important forest communities set the stage for the other authors.

The chapters on various kinds of organisms give excellent introductions to these topics with detailed discussions of important species and their ecology in specific upland habitats. Each chapter is provided with a very valuable list of literature cited. Most chapters would serve as an excellent introduction for a student wishing to begin research on the topic in West Virginia. Hall's chapter on upland forest birds should be of special interest to BBC members, as it provides an excellent discussion of the distribution of birds in the uplands, the population decline of some species, and characteristic species of different forest types.

Fortney's treatment of the history and present-day vegetation of Canaan Valley will serve as an excellent introduction to the newest National Wildlife Refuge. There is an excellent discussion of the paleo-environment in Lesser's chapter on prehistoric human settlement; and Stephenson and Adams' discussion of threats to the upland forests includes interesting consideration of Red Spruce mortalitiy and acid rain, the Gypsy Moth invasion, and beech bark disease.

Upland Forests of West Virginia is an essential source for anyone interested in the study of West Virginia natural history.

The Return of the Bald Eagle by Priscilla Tucker. 1994. Stackpole Books, Mechanicsburg, Pennsylvania. 115 pp. $14.95 paperback.

About 3,000 Bald Eagles, with some 721 nesting pairs, remained in the lower 48 states in 1974. One estimate suggested that there were 250,000 Bald Eagles in North America before 1800. There are now more than 4,000 nesting Bald Eagles in the lower 48 states. Although this is certainly not a comfortable recovery, the species has been removed from the endangered species list and remains in the threatened category.

According to author Priscilla Tucker's account, many factors are responsible for the recovery. These include banning of the cholorinated hydrocarbon pesticides, habitat preservation, reintroduction of eagles by hacking techniques, improved education, penalties for shooting eagles, and improved winter habitat. The construction of large reservoirs, such as the Quabbin in Massachusetts, provides new winter foraging habitat in inland states. Some threats remain. Shooting of eagles is still a problem. For example, Tucker reports 5 out of 23 young Bald Eagles released in 1990 in Indiana were shot.

This book is mainly a popular account of the natural history of the Bald Eagle and the story of its decline and recent protection and recovery. A chapter on where to find Bald Eagles in most states within its range and in Canada may be useful to bird watchers, although there are no specific locations for Ohio or West Virginia. The book is easy to read, designed for a general audience. The bibliography is not cited in the text and there is no index. Black-and-white photographs illustrate the text. It is pleasant to read some good news about an endangered species. Although still considered threatened, the recovery of the Bald Eagle is one of the conservation movement's success stories.

A. R. Buckelew Jr.

PATRONIZE YOUR CLUB STORE

ORNITHOLOGICAL BOOKS FOR SALE

The West Virginia Breeding Bird Atlas by A.R. Buckelew Jr and George A. Hall $23.75
A Field Guide to Bird's Nests by Hal H. Harrison Autographed $14.75
Field Guide to Western Bird's Nests by Hal H. Harrison $11.00
Birds of North America by Robbins, Bruun and Zimm. illus. by Arthur Singer. Popular field guide, excellent color illus., range maps, field marks. Autographed. ..... Hardback $11.85 Softback $ 9.00
West Virginia Birds by George Hall $20.00
The Backyard Birdwatcher by George Harrison. Autographed (Softback). $10.35
Amphibians and Reptiles in West Virginia by N. Bayard Green and Thomas K. Pauley $12.00

SPECIAL BBC PUBLICATIONS

No. 1, 1986 Birds of the Lower Ohio River Valley in West Virginia by Kiff, Igou, Slack, and Wilson $1.00
No. 2, 1990 Endangered and Threatened Species in West Virginia ..... $1.00 edited by A.R. Buckelew Jr.

OTHER STORE ITEMS

Bumper Tag - Beware of sudden stops bird watcher's car $1.00
Bumper Tag - BBC $1.00
BBC Shoulder Patch $1.50
BBC License Plate $2.00

Add $2 for postage per order.

REDSTART EDITORIAL POLICY

Original papers in the field of natural history are published in *The Redstart*. Papers are judged on the basis of their contributions to original data, ideas, or interpretations. Scientific accuracy is most important and to this end an advisory board, selected by the editorial staff, will review submitted papers. Papers should be typewritten, double spaced on one side of the paper only. Clarity and conciseness of presentation are very important.

BROOKS BIRD CLUB MEMBERSHIIP

The Brooks Bird Club is a nonprofit organization whose objective is to encourage the study and conservation of birds and other phases of natural history. Membership includes subscriptions to *The Redstart* and *Mail Bag* and entitles one to all the privileges offered by the Club. Classes of membership are Student, $5; Individual, $17; Family, $20; Sustaining, $30; Life, $300. Checks should be written payable to The Brooks Bird Club and mailed to 707 Warwood Avenue, Wheeling, West Virginia 26003.

1995 Calendar of Events
The Brooks Bird Club, Inc.

Date	Activity	Place
January	BBC Membership Month	Wheeling, WV
February	Write an article for the *Mail Bag* or *The Redstart*	mail to editor
February 24-26	Mid-Winter Meeting - Jackson's Mill	Weston, WV
March 12	Waterfowl Field Trip	Seneca Lake, OH
April 28-30	Old Hemlock Weekend - Preston Co. 4-H Camp	Brandonville,WV
May 10-21	Holland Trip	The Netherlands
May 13	Century Day Counts	local groups
May 12-14	Ottawa Wildlife Refuge Warbler Trip	Oak Harbor, OH
May 13	Migration Bird Counts	local groups
June 1-25	25-Mile Breeding Bird Surveys	local groups
June 2-10	Annual Foray - Wetzel Co. 4-H Camp	New Martinsville, WV
June 12-18	Sortie	Watoga State Park
July 27-30	Terra Alta Weekend	Terra Alta, WV
August 12-Oct. 1	Operation Bird Banding - Dolly Sods	Red Creek, WV
September 1-4	Annual Labor Day Outing - Canaan Valley	Davis, WV
September 15-17	Hawk Counts	WV mountains
October 13-15	Annual Meeting - Cedar Lakes	Ripley, WV
November 4	BBC Board of Directors Meeting - BBC Clubroom	Wheeling, WV
November 9-12	Eastern Shore Waterfowl Trip - contact Carl Slater	Eastern Shore
December 16-Jan. 2	Christmas Bird Counts - Mail to Leon Wilson	local groups

BBC FORAYS

1995 Wetzel County 4-H Camp ..... New Martinsville, WV
1996 Camp Kidd ..... Parsons, WV
1997 To be announced

SEASONAL FIELD AND BANDING NOTES DUE

March 15 June 15 September 15 December 15

MAIL: Field Notes to: James D. Phillips, HC 78, Box 42-C, Pipestem, WV 25979
Banding Notes to: Ralph K. Bell, R.D. 1, Box 229, Clarksville, PA 15322

The dates for the 1995 BBC program may be changed if necessary. Changes in the program will be announced in the *Mail Bag*.