

## Turkey Point Fall Migration Count: 2023 Season Report

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**Abstract:** The Maryland Biodiversity Project conducted its third consecutive year of the Turkey Point Fall Migration Count from 1 August through 30 November 2023. Located at the southernmost tip of the Elk Neck Peninsula between the Chesapeake Bay and the Elk Neck River in Cecil County, Turkey Point is a narrow strip of land surrounded by water. Its unique geography naturally funnels southbound migrating birds to the Point in high concentrations. During this season's count, 91,762 birds of 202 species were counted. Notable fall trends included unusually high numbers of Red-headed Woodpeckers and Lesser Black-backed Gulls, as well as notably low numbers of Cooper's Hawks, Double-crested Cormorants, and Cape May Warblers. When considered in conjunction with the Cape May Bird Observatory Morning Flight Count, the Dans Rock Fall Migration Count, and other morning flight counts, this count provides invaluable insight into the nature of migrations of regional bird populations.

Fall 2023 was the third consecutive season of the Maryland Biodiversity Project's (MBP) Turkey Point Fall Migration Count. Turkey Point is located at the southernmost tip of the Elk Neck Peninsula in the upper Chesapeake Bay. Positioned between the Chesapeake Bay and the Elk River, the Elk Neck Peninsula funnels southbound migrants to Turkey Point. The Susquehanna River also drains into the Chesapeake 8 mi (13 km) northwest of Turkey Point. Apparently, it serves as a viable flight path for water-oriented birds from the Great Lakes or otherwise inland migrating to the Atlantic Coast. This high volume and diversity of birds makes Turkey Point an ideal site for long-term efforts to document population and diversity trends and identify data correlations between these trends and variables such as weather and other environmental factors. Over time, these data will help to detect shifts in the arrival and departure of these migratory birds and other essential metrics about their migratory behaviors. Turkey Point is one of only three counts established in the Mid-Atlantic region dedicated to tracking Morning Flight during fall migration. Protocols are aligned with Cape May Bird Observatory's Morning Flight Count and Maryland Biodiversity Project's Dans Rock Morning Flight count. Following the same guidelines, data collected from these three sites can

be analyzed to reveal species status and trends of migratory bird populations annually and over time.

## METHODS

Methods related to data collection and alternate counters were consistent with those reported by D.J. Irons (2023). The season was extended in the 2022 season to run through the end of November instead of ending on 15 Nov to continue monitoring the movement of late-season migrants (Irons, J.D. 2023). The 2023 count window remained the same: 1 August through 30 November 2023 with a single day being missed (23 SEP) due to heavy rain throughout the count period.

## RESULTS

During the count season of 1 August through 30 November 2023, the Turkey Point Fall Migration Count tallied 91,762 migrating birds of 202 species. The count ran for 121 days of the 122-day count period with 404 hours of observation. No count occurred on 23 September due to poor weather conditions. August tallied 5,993 individuals, which was the lowest number for the season. In September, 8,812 individuals were counted, and the uptick continued in October when 20,060 individuals were counted (Table 1). November held the highest tally of individuals, with 56,897 birds counted. Monthly species totals were 111 in August, 129 in September, 133 in October, and 101 in November.

**Table 1. 2023 Bird Count Data at Turkey Point, Cecil County, Maryland.**

Species	AUG	SEP	OCT	NOV	Total	Max Count (Date)	First Observed	Last Observed
Snow Goose	0	0	2	25	27	21 (21 Nov)	8 Oct	21 Nov
Brant (Atlantic)	0	0	0	2	2	2 (10 Nov)	10 Nov	10 Nov
Cackling Goose	0	0	1	2	3	2 (29 Nov)	24 Oct	29 Nov
Canada Goose	0	312	1,467	1,479	3,258	428 (29 Oct)	1 Sep	30 Nov
Mute Swan	0	0	16	3	19	7 (24 Oct)	5 Oct	23 Nov
Tundra Swan	0	0	0	663	663	128 (22 Nov)	4 Nov	30 Nov
Wood Duck	4	0	14	0	18	9 (29 Oct)	14 Aug	29 Oct
Blue-winged Teal	0	13	14	0	27	14 (7 Oct)	3 Sep	7 Oct
Northern Shoveler	0	0	27	0	27	22 (7 Oct)	4 Oct	7 Oct
Gadwall	2	0	23	39	64	14 (11 Nov)	23 Aug	28 Nov
American Wigeon	0	0	5	58	63	35 (11 Nov)	16 Oct	28 Nov
Mallard	9	17	52	175	253	27 (21 Nov)	11 Aug	28 Nov
American Black Duck	0	0	137	190	327	49 (31 Oct)	8 Oct	30 Nov
Mallard/American Black Duck	6	0	0	6	12	6 (25 Aug)	25 Aug	23 Nov
Northern Pintail	0	11	104	38	153	50 (23 Oct)	24 Sep	30 Nov
Green-winged Teal (American) dabbling duck sp.	0	5	292	0	297	275 (7 Oct)	25 Sep	29 Oct
Canvasback	0	12	7	12	31	12 (10 Sep)	10 Sep	21 Nov
Redhead	0	0	3	17	20	14 (10 Nov)	9 Oct	15 Nov
Ring-necked Duck	0	0	1	5	6	3 (13 Nov)	9 Oct	25 Nov
Greater Scaup	0	0	89	135	224	42 (31 Oct)	16 Oct	22 Nov
	0	0	0	34	34	13 (14 Nov)	3 Nov	29 Nov

Species	AUG	SEP	OCT	NOV	Total	Max Count (Date)	First Observed	Last Observed
Lesser Scaup	0	0	1	27	28	16 (4 Nov)	8 Oct	26 Nov
Greater/Lesser Scaup	0	0	0	79	79	22 (28 Nov)	6 Nov	28 Nov
<i>Aythya</i> sp.	0	0	0	35	35	16 (19 Nov)	12 Nov	29 Nov
White-winged Scoter	0	0	6	0	6	6 (16 Oct)	16 Oct	16 Oct
Black Scoter	0	0	0	2	2	2 (21 Nov)	21 Nov	21 Nov
scoter sp.	0	0	0	6	6	6 (24 Nov)	24 Nov	24 Nov
Long-tailed Duck	0	0	0	9	9	5 (25 Nov)	13 Nov	26 Nov
Bufflehead	0	0	0	82	82	28 (10 Nov)	1 Nov	24 Nov
Hooded Merganser	0	0	0	14	14	4 (20 Nov)	1 Nov	29 Nov
Red-breasted Merganser	0	1	0	17	18	7 (25 Nov)	6 Sep	25 Nov
Ruddy Duck	0	0	0	1	1	1 (11 Nov)	11 Nov	11 Nov
duck sp.	0	0	0	22	22	14 (20 Nov)	1 Nov	28 Nov
Rock Pigeon	2	0	2	0	4	1 (3 Aug)	3 Aug	29 Oct
Mourning Dove	0	3	8	0	11	5 (5 Oct)	4 Sep	24 Oct
Yellow-billed Cuckoo	1	3	0	0	4	1 (27 Aug)	27 Aug	20 Sep
Common Nighthawk	1	1	0	0	2	1 (22 Aug)	22 Aug	22 Sep
Chimney Swift	406	1,019	88	0	1,513	327 (12 Sep)	1 Aug	27 Oct
Ruby-throated Hummingbird	17	45	5	0	67	11 (19 Sep)	5 Aug	14 Oct
Sandhill Crane	0	0	0	6	6	4 (25 Nov)	13 Nov	25 Nov
Black-bellied Plover	3	0	1	0	4	2 (10 Aug)	10 Aug	26 Oct
American Golden Plover	0	1	0	0	1	1 (8 Sep)	8 Sep	8 Sep
Killdeer	5	0	1	0	6	5 (13 Aug)	13 Aug	19 Oct
Semipalmated Plover	4	4	0	0	8	4 (8 Sep)	3 Aug	8 Sep
Upland Sandpiper	1	0	0	0	1	1 (3 Aug)	3 Aug	3 Aug
Hudsonian Godwit	0	0	2	0	2	2 (26 Oct)	26 Oct	26 Oct
Sanderling	1	0	0	0	1	1 (27 Aug)	27 Aug	27 Aug
Dunlin	0	0	9	12	21	6 (26 Oct)	26 Oct	19 Nov
Least Sandpiper	8	2	0	0	10	6 (27 Aug)	9 Aug	8 Sep
White-rumped Sandpiper	0	1	0	0	1	1 (8 Sep)	8 Sep	8 Sep
Pectoral Sandpiper	0	15	0	0	15	12 (8 Sep)	8 Sep	10 Sep
Semipalmated Sandpiper	1	0	0	0	1	1 (19 Aug)	19 Aug	19 Aug
<i>Calidris</i> sp.	0	0	4	0	4	4 (21 Oct)	21 Oct	21 Oct
Short-billed Dowitcher	0	1	0	0	1	1 (8 Sep)	8 Sep	8 Sep
American Woodcock	0	0	3	2	5	1 (24 Oct)	24 Oct	12 Nov
Spotted Sandpiper	1	0	0	0	1	1 (22 Aug)	22 Aug	22 Aug
Solitary Sandpiper	1	0	0	0	1	1 (3 Aug)	3 Aug	3 Aug
Lesser Yellowlegs	29	19	0	0	48	29 (7 Aug)	7 Aug	28 Sep
Greater Yellowlegs	0	2	15	0	17	14 (26 Oct)	10 Sep	26 Oct
Sabine's Gull	0	1	0	0	1	1 (25 Sep)	25 Sep	25 Sep
Bonaparte's Gull	0	29	24	197	250	97 (28 Nov)	9 Sep	28 Nov
Laughing Gull	9	178	366	200	753	181 (29 Oct)	19 Aug	28 Nov
Ring-billed Gull	13	43	160	136	352	44 (31 Oct)	5 Aug	30 Nov
Herring Gull	7	53	69	88	217	44 (23 Oct)	12 Aug	28 Nov
Lesser Black-backed Gull	2	2	1	0	5	1 (7 Aug)	7 Aug	22 Oct
Glaucous Gull	0	0	0	1	1	1 (21 Nov)	21 Nov	21 Nov
Great Black-backed Gull	6	1	31	10	48	12 (12 Oct)	12 Aug	29 Nov
Least Tern	4	0	0	0	4	4 (3 Aug)	3 Aug	3 Aug
Caspian Tern	18	35	12	0	65	8 (27 Sep)	1 Aug	25 Oct
Black Tern	1	0	0	0	1	1 (15 Aug)	15 Aug	15 Aug
Common Tern	2	3	4	0	9	3 (27 Sep)	2 Aug	8 Oct
Forster's Tern	54	470	758	103	1,385	115 (12 Oct)	5 Aug	16 Nov
Red-throated Loon	0	0	4	3	7	4 (29 Oct)	29 Oct	24 Nov
Common Loon	1	0	5	11	17	2 (16 Oct)	6 Aug	30 Nov
Brown Booby	0	2	2	0	4	2 (4 Sep)	4 Sep	8 Oct
Double-crested Cormorant	91	155	944	1,485	2,675	658 (6 Nov)	1 Aug	30 Nov
Great Blue Heron	5	4	9	3	21	5 (23 Oct)	1 Aug	12 Nov
Great Egret	6	0	0	0	6	1 (3 Aug)	3 Aug	28 Aug
Snowy Egret	1	0	0	0	1	1 (1 Aug)	1 Aug	1 Aug
Little Blue Heron	2	2	0	0	4	2 (2 Sep)	1 Aug	2 Sep
Green Heron	9	3	0	0	12	1 (1 Aug)	1 Aug	17 Sep

Species	AUG	SEP	OCT	NOV	Total	Max Count (Date)	First Observed	Last Observed
Glossy Ibis	0	5	0	0	5	5 (1 Sep)	1 Sep	1 Sep
Black Vulture	0	0	4	21	25	10 (1 Nov)	16 Oct	20 Nov
Turkey Vulture	1	42	247	491	781	176 (6 Nov)	27 Aug	30 Nov
Osprey	5	29	7	0	41	4 (26 Sep)	5 Aug	29 Oct
Golden Eagle	0	0	0	3	3	2 (6 Nov)	6 Nov	13 Nov
Northern Harrier	0	3	8	12	23	2 (28 Sep)	22 Sep	25 Nov
Sharp-shinned Hawk	0	258	208	48	514	69 (28 Sep)	6 Sep	30 Nov
Cooper's Hawk	2	9	78	29	118	16 (16 Oct)	4 Aug	25 Nov
Bald Eagle	0	17	23	48	88	10 (12 Nov)	12 Sep	28 Nov
Red-shouldered Hawk	0	1	13	90	104	44 (6 Nov)	28 Sep	29 Nov
Broad-winged Hawk	0	98	2	0	100	77 (28 Sep)	15 Sep	17 Oct
Red-tailed Hawk	0	4	11	98	113	35 (6 Nov)	22 Sep	28 Nov
<i>Buteo</i> sp.	0	0	0	1	1	1 (1 Nov)	1 Nov	1 Nov
Belted Kingfisher	2	6	3	2	13	1 (1 Aug)	1 Aug	5 Nov
Red-headed Woodpecker	0	57	61	2	120	13 (28 Oct)	1 Sep	13 Nov
Red-bellied Woodpecker	0	27	130	13	170	62 (28 Oct)	2 Sep	25 Nov
Yellow-bellied Sapsucker	0	0	19	7	26	3 (16 Oct)	2 Oct	24 Nov
Downy Woodpecker	0	11	21	5	37	4 (20 Sep)	2 Sep	27 Nov
Hairy Woodpecker	1	8	2	0	11	2 (15 Sep)	6 Aug	3 Oct
Northern Flicker (Yellow-shafted)	6	201	211	35	453	52 (28 Sep)	9 Aug	25 Nov
Pileated Woodpecker	2	3	2	3	10	2 (15 Nov)	1 Aug	15 Nov
American Kestrel	3	22	19	1	45	4 (19 Sep)	7 Aug	1 Nov
Merlin	0	51	27	20	98	6 (17 Sep)	4 Sep	30 Nov
Peregrine Falcon	3	3	22	10	38	4 (25 Oct)	17 Aug	20 Nov
Ash-throated Flycatcher	0	0	0	1	1	1 (8 Nov)	8 Nov	8 Nov
Great Crested Flycatcher	1	4	0	0	5	1 (2 Aug)	2 Aug	13 Sep
Eastern Kingbird	116	18	0	0	134	31 (12 Aug)	1 Aug	16 Sep
Eastern Wood-Pewee	5	36	3	0	44	4 (6 Sep)	1 Aug	12 Oct
Yellow-bellied Flycatcher	0	1	0	0	1	1 (6 Sep)	6 Sep	6 Sep
Acadian Flycatcher	0	1	0	0	1	1 (6 Sep)	6 Sep	6 Sep
Alder Flycatcher	0	1	0	0	1	1 (13 Sep)	13 Sep	13 Sep
Trail's Flycatcher	1	1	0	0	2	1 (21 Aug)	21 Aug	18 Sep
Least Flycatcher	1	4	0	0	5	1 (31 Aug)	31 Aug	24 Sep
<i>Empidonax</i> sp.	2	4	0	0	6	2 (9 Sep)	12 Aug	21 Sep
Eastern Phoebe	4	11	12	4	31	2 (20 Sep)	3 Aug	27 Nov
flycatcher sp.	0	1	0	0	1	1 (9 Sep)	9 Sep	9 Sep
White-eyed Vireo	0	5	0	0	5	3 (12 Sep)	6 Sep	12 Sep
Yellow-throated Vireo	1	1	0	0	2	1 (31 Aug)	31 Aug	13 Sep
Blue-headed Vireo	0	0	5	3	8	2 (3 Nov)	12 Oct	6 Nov
Warbling Vireo	1	3	0	0	4	1 (14 Aug)	14 Aug	15 Sep
Red-eyed Vireo	15	49	3	0	67	9 (12 Sep)	5 Aug	26 Oct
Blue Jay	0	980	4,471	13	5,464	739 (7 Oct)	6 Sep	5 Nov
American Crow	0	0	16	24	40	6 (12 Nov)	5 Oct	29 Nov
Fish Crow	31	2	11	25	69	22 (14 Nov)	1 Aug	14 Nov
Common Raven	0	2	17	1	20	13 (16 Oct)	20 Sep	1 Nov
Horned Lark	2	0	5	18	25	6 (26 Nov)	9 Aug	27 Nov
Bank Swallow	1,221	164	1	0	1,386	181 (30 Aug)	1 Aug	6 Oct
Tree Swallow	81	747	523	67	1,418	197 (14 Oct)	2 Aug	21 Nov
Northern Rough-winged Swallow	27	36	21	2	86	8 (1 Aug)	1 Aug	2 Nov
Purple Martin	1,050	131	0	0	1,181	635 (22 Aug)	1 Aug	30 Sep
Barn Swallow	362	131	0	0	493	81 (22 Aug)	1 Aug	30 Sep
Cliff Swallow	2	0	0	0	2	1 (16 Aug)	16 Aug	18 Aug
swallow sp.	51	0	0	0	51	38 (16 Aug)	7 Aug	18 Aug
Ruby-crowned Kinglet	0	1	29	6	36	4 (12 Oct)	26 Sep	17 Nov
Golden-crowned Kinglet	0	2	36	3	41	9 (12 Oct)	27 Sep	2 Nov
Cedar Waxwing	335	653	828	5,034	6,850	1,229 (4 Nov)	1 Aug	30 Nov
Red-breasted Nuthatch	0	1	2	0	3	1 (13 Sep)	13 Sep	28 Oct
White-breasted Nuthatch	1	0	4	1	6	1 (6 Aug)	6 Aug	5 Nov
Brown Creeper	0	1	0	0	1	1 (24 Sep)	24 Sep	24 Sep
Blue-grey Gnatcatcher	620	343	8	0	971	261 (19 Aug)	1 Aug	31 Oct

Species	AUG	SEP	OCT	NOV	Total	Max Count (Date)	First Observed	Last Observed
House Wren	1	3	0	0	4	1 (12 Aug)	12 Aug	16 Sep
Winter Wren	0	0	1	0	1	1 (24 Oct)	24 Oct	24 Oct
Gray Catbird	3	2	0	0	5	1 (9 Aug)	9 Aug	20 Sep
Brown Thrasher	1	0	0	0	1	1 (14 Aug)	14 Aug	14 Aug
Northern Mockingbird	11	5	2	0	18	3 (9 Aug)	9 Aug	9 Oct
European Starling	33	41	707	220	1,001	243 (28 Oct)	1 Aug	27 Nov
Eastern Bluebird	31	6	252	244	533	83 (28 Oct)	1 Aug	25 Nov
Veery	0	3	0	0	3	2 (8 Sep)	8 Sep	13 Sep
Hermit Thrush	0	0	1	1	2	1 (25 Oct)	25 Oct	20 Nov
American Robin	17	13	1,546	3,897	5,473	839 (4 Nov)	1 Aug	30 Nov
House Sparrow	10	25	27	12	74	12 (21 Sep)	1 Aug	30 Nov
American Pipit	0	0	34	62	96	15 (31 Oct)	12 Oct	30 Nov
House Finch	7	7	315	118	447	92 (28 Oct)	6 Aug	30 Nov
Purple Finch	0	0	51	429	480	148 (4 Nov)	10 Oct	30 Nov
Pine Siskin	0	0	55	200	255	42 (5 Nov)	13 Oct	30 Nov
American Goldfinch	11	45	97	953	1,106	160 (10 Nov)	5 Aug	30 Nov
Lapland Longspur	0	0	0	2	2	1 (24 Nov)	24 Nov	26 Nov
Chipping Sparrow	1	3	54	43	101	34 (24 Oct)	21 Aug	22 Nov
Clay-colored Sparrow	0	1	0	0	1	1 (5 Sep)	5 Sep	5 Sep
Field Sparrow	1	0	3	0	4	2 (18 Oct)	6 Aug	24 Oct
Fox Sparrow (Red)	0	0	0	1	1	1 (12 Nov)	12 Nov	12 Nov
Dark-eyed Junco	0	1	10	29	40	18 (17 Nov)	28 Sep	17 Nov
Dark-eyed Junco (Slate-colored)	0	0	2	5	7	4 (4 Nov)	21 Oct	18 Nov
White-crowned Sparrow	0	0	1	0	1	1 (2 Oct)	2 Oct	2 Oct
White-throated Sparrow	0	0	12	0	12	6 (24 Oct)	7 Oct	28 Oct
Savannah Sparrow	0	10	7	3	20	4 (17 Sep)	2 Sep	16 Nov
Song Sparrow	0	0	11	1	12	3 (24 Oct)	2 Oct	4 Nov
Lincoln's Sparrow	0	1	2	0	3	2 (2 Oct)	24 Sep	2 Oct
Swamp Sparrow	0	0	3	0	3	1 (17 Oct)	17 Oct	24 Oct
Bobolink	174	144	8	0	326	49 (30 Aug)	5 Aug	7 Oct
Eastern Meadowlark	0	0	59	5	64	15 (28 Oct)	1 Oct	17 Nov
Orchard Oriole	80	9	0	0	89	14 (5 Aug)	1 Aug	7 Sep
Baltimore Oriole	35	14	4	3	56	7 (17 Aug)	6 Aug	26 Nov
Red-winged Blackbird	272	290	1,378	2,636	4,576	636 (10 Nov)	1 Aug	30 Nov
Brown-headed Cowbird	3	10	204	183	400	121 (4 Nov)	1 Aug	25 Nov
Rusty Blackbird	0	0	58	71	129	25 (23 Oct)	3 Oct	30 Nov
Common Grackle	1	100	1,656	35,950	37,707	6,627 (4 Nov)	12 Aug	27 Nov
Ovenbird	12	1	0	0	13	3 (23 Aug)	2 Aug	8 Sep
Worm-eating Warbler	7	0	0	0	7	4 (12 Aug)	8 Aug	17 Aug
Louisiana Waterthrush	4	0	0	0	4	1 (1 Aug)	1 Aug	22 Aug
Northern Waterthrush	50	36	0	0	86	9 (1 Sep)	1 Aug	21 Sep
Louisiana/Northern Waterthrush	12	2	0	0	14	3 (7 Aug)	6 Aug	14 Sep
Blue-winged Warbler	3	0	0	0	3	1 (13 Aug)	13 Aug	24 Aug
Black-and-white Warbler	22	58	2	0	82	26 (2 Sep)	6 Aug	17 Oct
Prothonotary Warbler	4	1	0	0	5	1 (7 Aug)	7 Aug	2 Sep
Tennessee Warbler	10	25	18	2	55	5 (17 Sep)	2 Aug	6 Nov
Orange-crowned Warbler	0	0	1	4	5	2 (9 Nov)	31 Oct	18 Nov
Nashville Warbler	0	10	14	3	27	4 (21 Sep)	17 Sep	18 Nov
Connecticut Warbler	0	0	1	0	1	1 (7 Oct)	7 Oct	7 Oct
Common Yellowthroat	1	10	0	0	11	2 (4 Sep)	23 Aug	24 Sep
American Redstart	82	147	6	0	235	42 (2 Sep)	2 Aug	9 Oct
Cape May Warbler	108	415	86	3	612	68 (17 Sep)	1 Aug	17 Nov
Cerulean Warbler	1	0	0	0	1	1 (2 Aug)	2 Aug	2 Aug
Northern Parula	19	124	43	0	186	25 (14 Sep)	8 Aug	18 Oct
Magnolia Warbler	4	62	4	0	70	9 (9 Sep)	6 Aug	26 Oct
Bay-breasted Warbler	2	15	4	0	21	4 (14 Sep)	29 Aug	8 Oct
Blackburnian Warbler	19	20	1	0	40	4 (31 Aug)	6 Aug	6 Oct
Yellow Warbler	78	31	0	0	109	15 (2 Sep)	1 Aug	26 Sep
Chestnut-sided Warbler	9	10	1	0	20	2 (17 Aug)	13 Aug	7 Oct
Blackpoll Warbler	0	20	89	1	110	13 (10 Oct)	14 Sep	7 Nov

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Bay-breasted/Blackpoll Warbler	0	18	4	0	22	4 (17 Sep)	11 Sep	14 Oct
Black-throated Blue Warbler	0	13	2	0	15	4 (2 Sep)	2 Sep	26 Oct
Palm Warbler	0	32	200	16	248	50 (17 Oct)	13 Sep	18 Nov
Palm Warbler (Yellow)	0	0	13	22	35	22 (4 Nov)	7 Oct	4 Nov
Palm Warbler (Western)	0	4	0	0	4	3 (14 Sep)	9 Sep	14 Sep
Pine Warbler	9	6	23	3	41	4 (7 Oct)	3 Aug	18 Nov
Yellow-rumped Warbler (Myrtle)	10	15	974	193	1,192	216 (14 Oct)	6 Aug	26 Nov
Yellow-throated Warbler	2	0	0	0	2	1 (17 Aug)	17 Aug	18 Aug
Prairie Warbler	10	17	0	0	27	5 (2 Sep)	6 Aug	28 Sep
Black-throated Green Warbler	5	38	17	0	60	6 (21 Sep)	14 Aug	26 Oct
Canada Warbler	2	0	0	0	2	1 (17 Aug)	17 Aug	31 Aug
Wilson's Warbler	0	2	1	0	3	1 (7 Sep)	7 Sep	6 Oct
warbler sp.	95	212	47	2	356	104 (16 Sep)	1 Aug	7 Nov
Summer Tanager	1	0	0	0	1	1 (14 Aug)	14 Aug	14 Aug
Scarlet Tanager	11	31	7	0	49	6 (17 Sep)	6 Aug	11 Oct
Rose-breasted Grosbeak	1	16	15	0	32	4 (20 Sep)	1 Aug	11 Oct
Blue Grosbeak	7	10	1	0	18	2 (14 Aug)	13 Aug	7 Oct
Indigo Bunting	12	17	17	2	48	6 (7 Oct)	3 Aug	23 Nov
Dickcissel	1	4	4	2	11	2 (11 Oct)	20 Aug	4 Nov
passerine sp.	0	0	4	1	5	2 (21 Oct)	6 Oct	12 Nov
<b>Total</b>	<b>5,993</b>	<b>8,812</b>	<b>20,060</b>	<b>56,897</b>	<b>91,762</b>			

## MONTHLY SUMMARIES

### August

The season's first day started with cool NNW winds and an excellent showing of early migrants arriving at the Point, including a first-year male Rose-breasted Grosbeak and a Cape May Warbler. This is the earliest fall migration record of Cape May Warbler in Maryland (eBird 2024b). Early August continued to produce warblers moving ahead of schedule, with the first Tennessee Warbler of the season arriving on 3 AUG and the first Blackburnian, Magnolia, and Yellow-rumped Warblers on 6 AUG. A Cerulean Warbler was seen in flight late in the morning of 2 AUG and is a new species for this count. On 3 AUG, an Upland Sandpiper was heard overhead, and later, a group of four Least Terns were observed flying down the Bay. On 6 AUG, a Common Loon emerged from the Elk River and flew south down the Chesapeake Bay. This is the third year a Common Loon was recorded in early August, with no sightings again until October. The first Black-bellied Plovers of the season were heard on 10 AUG. The first notable movement of Chimney Swifts was on 13 AUG, with 68 individuals counted that morning. Swallow numbers were down in August compared to 2022 but on par with August 2021. A single Black Tern traveled down the Bay on 15 AUG, and the last Worm-eating Warbler was seen on 17 AUG. There was an uptick in warbler diversity following favorable winds in late August. On 31 AUG we observed two Northern Waterthrush, two Black-and-white Warblers, two Tennessee Warblers, two American Redstarts, seven Cape May Warblers, one Northern Parula, one Magnolia Warbler, one Bay-breasted Warbler, four Blackburnian Warblers, one Yellow Warbler, two Chestnut-sided Warblers, one Yellow-rumped Warbler, one Prairie Warbler, one Black-throated

Green Warbler, and one Canada Warbler. There were no notable or unexpected weather patterns or extreme temperature changes during August, and the month concluded with 5,993 birds of 111 species (Table 1).

## **September**

September started cool, with NE winds and the first Red-headed Woodpeckers of the season. On 5 SEP, a Clay-colored Sparrow dropped in following a light northeastern breeze. Two Brown Boobies were seen at the end of the count on 4 SEP, coming from the south, turning around, and heading south again. 6 SEP brought the first Sharp-shinned Hawk of the season. At month's end, 258 total Sharp-shinned Hawks were observed. This notably contrasted with September's total of only 9 Cooper's Hawks. On 8 SEP, the season's only American Golden-Plover, White-rumped Sandpiper, and Short-billed Dowitcher flew over. Semipalmated Plovers, Least Sandpipers, and Pectoral Sandpipers were also seen that morning. Arriving 9 SEP were the first Bonaparte's Gulls of the season. Despite SSE winds, another small push of shorebirds occurred on 10 SEP, including three Pectoral Sandpipers, two Lesser Yellowlegs, and the season's first Greater Yellowlegs. Cloudy, with a light northwest wind, 13 SEP brought an Alder Flycatcher to Turkey Point. Also arriving that day was the season's first Red-breasted Nuthatch—one of only three seen all season. The first Broad-winged Hawks of the season were detected on 15 SEP with six southbound individuals that morning. Two Northern Pintails were documented on 24 SEP, the first of the season. The 2023 Broad-winged high count was on 28 SEP with 77 individuals. September brought some last observations of the season as well. The last Green Heron on 17 SEP, the last Least Flycatcher on 24 SEP, and on 28 SEP, two flocks totaling 12 individuals were the last Lesser Yellowlegs seen for 2023. September's totals were 8,812 birds of 129 species.

## **October**

October was often foggy, with temperatures ranging from 6 °C (43 °F) to 19 °C (66 °F) each morning. The first week of October was mostly clear skies with a light breeze. The first Yellow-bellied Sapsucker and the first three Rusty Blackbirds were seen on 2 OCT and 3 OCT, respectively. A Mute Swan exited the Elk River and continued moving down the Bay on 5 OCT. Daily Blue Jay totals peaked in early October with 739 being the season's highest count on 7 OCT. By mid-month, these numbers began to wane; after 13 OCT, no remaining days exceeded 100 individuals. A Common Tern on 8 OCT was the last of the season and was observed following a southwestern trajectory from the Elk River into the Bay. The next few days brought more firsts for the season, including a flock of three Canvasbacks and a Redhead on 9 OCT, a Purple Finch on 10 OCT, and a Blue-headed Vireo on 12 OCT. The last Ruby-throated Hummingbird and the first Ring-necked Duck of the season were recorded on 16 OCT. The first Dunlin of the season was seen on 26 OCT, along with the last Magnolia Warbler. Additionally, the first Cecil County record of Hudsonian

Godwit was documented when two individuals flew over with 14 Greater Yellowlegs that day. An unseasonable heatwave with light wind out of the south lasted several days in late October and caused several species to linger. This included Magnolia Warbler, Blue-gray Gnatcatchers, and Chimney Swifts. The latter was seen until 18 OCT, when a final group of three flew over the Point on 27 OCT. October was the most diverse and second busiest month of the 2023 season, with 20,060 birds of 133 species counted.

### **November**

The beginning of the month brought several first-of-season waterfowl, including 5 Buffleheads and 2 Hooded Mergansers on 1 NOV, 9 Greater Scaup on 3 NOV, and the first Tundra Swans on 4 NOV. With northeast winds, 6 NOV proved to be a good day for raptors. Among them were 44 Red-shouldered Hawks, 35 Red-tailed Hawks, 176 Turkey Vultures, and the first 2 Golden Eagles. Also observed the same day were the last Tennessee Warbler and a late Nashville Warbler. The first Cecil County record of Ash-throated Flycatcher appeared on 8 NOV, favoring the shrubs on the exposed cliffside. It flew north over the tree line and was not seen again until the following day. On 9 NOV, it was seen again briefly on the cliffside, but not after that. Another distant Golden Eagle was also observed soaring over Wroth Point late morning on 13 NOV. More arrivals on the 13 NOV were the first Long-tailed Duck and Sandhill Cranes for the count. After seeing only one Orange-crowned Warbler on 31 OCT, two individuals appeared on 9 NOV. Additionally, one was seen each day on 17 NOV and 18 NOV. 28 NOV brought the last Laughing Gull of the season. With 56,897 individual birds, November was the count's busiest month. However, of the four months, November had the lowest number of species, tallying 101 total.

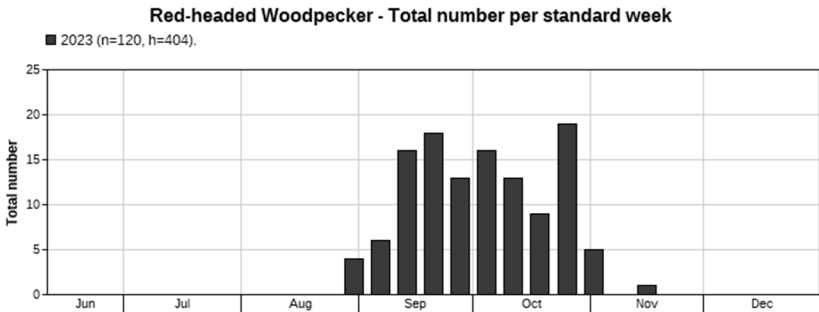
## **Species Accounts - The Season's Notable Five**

### **Red-headed Woodpecker**

The number of Red-headed Woodpeckers has increased each of the three years of this count (79 in 2021, 91 in 2022, and 120 in 2023). The totals at Turkey Point have also been far higher than at other morning flight count sites in the region, including Cape May and Dans Rock (Trekzellen 2024e, Trekzellen 2024g). Their arrival has been remarkably consistent for three consecutive years, with the first migrants appearing on 31 AUG 2021, 1 SEP 2022, and 1 SEP 2023. Departure dates were also similar, with the last sightings on 13 NOV 2021, 9 NOV 2022, and 13 NOV 2023 (Trekzellen 2024a). The high count for this season was on 28 OCT, with 13 observed. The previous years' high counts were 10 on 10 SEP 2022 and 7 on 25 SEP 2021 (Trekzellen 2024b). They are also seen quite regularly within their window of movement. They were detected 40 out of 75 days in 2021, 39 out of 69 in 2022, and 36 out of 74 in 2023. Monthly totals for this season were none in August, 57 in September, 61 in October, and 2 in November.



While they are known to be migratory, studies show inconsistency between years and populations. A study in South Carolina showed that in 2005, 100% (15 out of 15) of radio-tagged individuals left their breeding grounds, none (0 of 23) migrated in 2006, and 54.2% (13 of 24) migrated in 2007 (Vukovich and Kilgo 2013). Their erratic and unpredictable movements complicate understanding of their numbers at migration counts. More data are needed to understand the high numbers at Turkey Point.



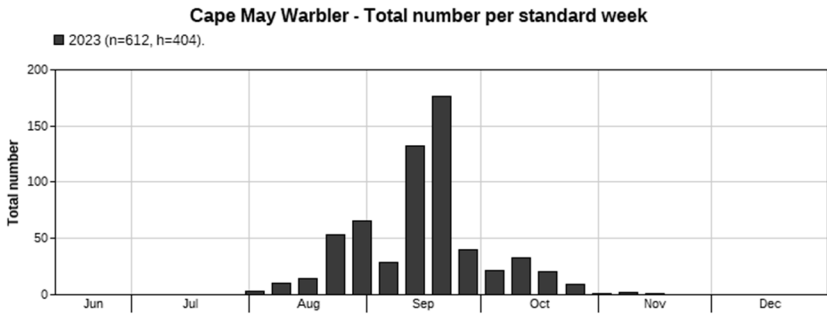
**Figure 1. Timing of Red-headed Woodpecker migration at Turkey Point in Cecil County, Maryland, 2023.**

### Cape May Warbler

Over the past three years, Turkey Point has proven to be an excellent location to observe large flights of Cape May Warblers, with flights of over 200 noted in 2021 and 2022 (Irons, D.J. 2023; Irons, J.D. 2023). Although the second most abundant warbler this season behind Yellow-rumped, Cape May Warbler numbers came in lower than in previous seasons. In 2021, 1,151 were counted, 2022 counted 1,558, while in 2023, only 612 were counted (Irons, D.J. 2023; Irons, J.D. 2023). However, Cape May Warblers were a staple in morning flights throughout the fall, especially in September, when they were the most common warblers most mornings. They were also present through most of the season, with the first migrant noted on 1 AUG and the last seen on 17 NOV. Monthly totals for this year included 108 in August, 415 in September, 86 in October, and 3 in November.

Although a decrease was noted this fall compared with previous seasons, D.J. Irons (2023) noted that numbers fluctuate significantly from year to year and coincide with outbreaks of Spruce Budworm, *Choristoneura fumiferana* (Lepidoptera: Tortricidae), on the breeding grounds. In extreme cases, densities on the breeding grounds can fluctuate from several hundred pairs per square kilometer (0.4 square mile) to zero pairs in several years (Baltz and Latta 2020).

Interestingly, numbers for Cape May Warbler at Dans Rock in Western Maryland increased significantly during the fall of 2023 compared with the previous year, from 1,138 in 2022 to 4,484 in 2023 (Engstrom 2023, Heiser 2024). This spike in numbers at Dans Rock could mean that populations of Spruce Budworm are not the driver in the decrease observed at Turkey Point during the fall of 2023.



**Figure 2. Timing of Cape May Warbler migration at Turkey Point, Cecil County, Maryland, 2023.**

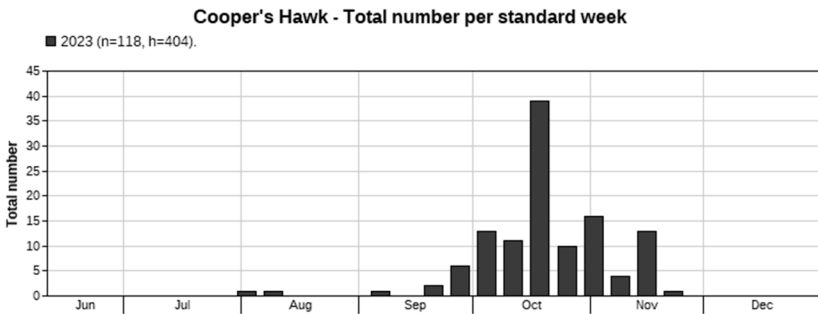
### **Lesser Black-backed Gull**

This species has increased rapidly in North America in recent decades, mainly since 1980, and is now observed regularly as a non-breeder on the Atlantic seaboard (Burger et al. 2020). Fall movement begins in mid- to late August but is pronounced by late October (Howell and Dunn 2007), although they are observed on Maryland's coast throughout the year (eBird 2024a). This season, two individuals were spotted in August, two in September, and one in October, bringing the season total to 5 birds. During the 2021 and 2022 seasons, Lesser Black-backed Gulls were only observed in October and November. Numbers in 2021 totaled 4 (3 in October and 1 in November), and only a single bird was counted in 2022 (November) (Irons, D.J. 2023; Irons, J.D. 2023). Although noticeable, this variation in timing and abundance documented over the past three seasons needs further monitoring as our sample size is small. However, because this species just arrived in North America in 1934, any trends we discover might help illustrate their wandering tendency and ability to adapt to their newfound territory (Burger et al. 2020).

### **Cooper's Hawk**

A species generally makes the season's notable five list because of high or increasing numbers. Cooper's Hawk is included in this case due to a considerable drop in numbers at Turkey Point during the fall of 2023. The first

of the season was a juvenile seen on 4 AUG, followed by another juvenile on 11 AUG. Juveniles are known to migrate before adults by roughly a week, and adult females are less likely to migrate away from nesting territories than other individuals (Rosenfield et al. 2020). So, observing young birds first and the dominance of juveniles throughout the season is expected. Totals for September were meager, with only 9 Cooper’s Hawks observed migrating past Turkey Point. In contrast, previous September totals were 52 in 2021, and 71 in 2022 (Irons, D.J. 2023; Irons, J.D. 2023). Six Cooper’s Hawks were seen on 28 SEP, and prior to this date, only single individuals were observed. A possible factor affecting totals in September was a period of Northeast winds and heavy cloud cover in the last half of the month. There were also no major cold fronts in that period either. Rosenfield et al. (2020) noted that most raptors prefer a northwest wind and generally clear skies while migrating, so the weather may have played a role in numbers for September. Also, during the fall 2022 season, strong cold fronts were plentiful, and large raptor flights took place on such days (Irons, J.D. 2023). Totals did increase in October, with 78 counted by the month’s end. The highest day count was on 16 OCT, with 16 Cooper’s Hawks migrating past the Point just after a moderate cold front. Numbers reduced in November with a tally of 29 for the month. The last of the season was seen on 25 NOV. Overall season totals include 292 observed in 2021, 263 in 2022, and only 118 during 2023. They were observed on 36 days of the 121 days monitored at Turkey Point this season. Although a decrease of 55% was noted between 2022 and 2023, uncontrollable factors like weather could be responsible, and more data are needed before population trends can be inferred.



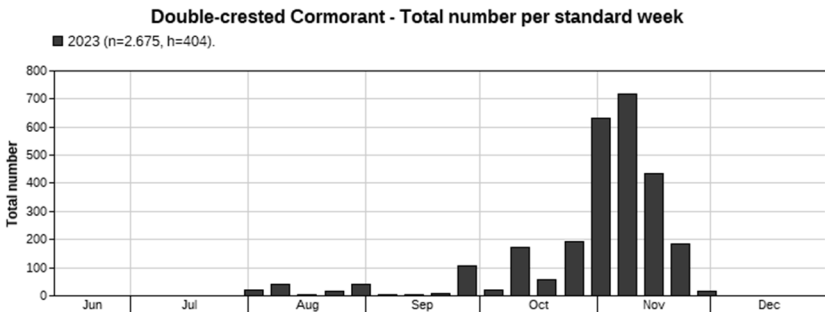
**Figure 3. Timing of Cooper’s Hawk migration at Turkey Point, Cecil County, Maryland, 2023.**

### Double-crested Cormorant

Like Cooper’s Hawk, Double-crested Cormorant is a notable species this season due to a marked decrease in numbers. The season totals of Double-crested

Cormorants have dropped each of the past three seasons at Turkey Point by approximately 50% per year, starting from a high of 8,928 in 2021, to 4,024 in 2022, to 2,675 in 2023 (Irons, D.J. 2023; Irons, J.D. 2023). Monthly totals were 91 in August, 155 in September, 944 in October, and 1,485 in November. The season’s high count was on 6 NOV, with 658 Double-crested Cormorants counted that day. To avoid recounting locals, this species was only counted when seen in sustained flight, which was observed on 74 of the 121 days of monitoring. Data from the Avalon Seawatch on the New Jersey Shore show a peak in 1996, and although they have declined since then, numbers have leveled off in the past six years from a low in 2017 (CMBO 2024). Similarly, numbers from the Springwatch at Cape May Point have been consistent since 2019 (Trekellen 2024f).

Like most migrating birds observed at Turkey Point, Double-crested Cormorants favor certain weather conditions for migration. Over the past three seasons, light to moderate northeast winds produced the best flights of this species at Turkey Point (Trekellen 2024c). A possible explanation for this preference is that flocks of cormorants migrating along the coast are blown inland by onshore winds and reroute south down the Chesapeake Bay. Very few large flights occur at Turkey Point on any wind besides northeast. Every season (2021–2023), there were numerous days with favorable conditions in late October and early November for cormorant migration, but totals have declined yearly. This noticeable decrease is likely not caused by varying weather patterns as with the Cooper’s Hawk but rather a snapshot of their population status in the Mid-Atlantic. Although several more years of data are needed and other alternatives should be reviewed, statistics like these are valuable for assessing short-term trends.



**Figure 4. Timing of Double-crested Cormorant migration at Turkey Point, Cecil County, Maryland, 2023.**

## DISCUSSION

Several unique and consistent tendencies were observed and documented throughout the four-month season at Turkey Point, and many variables affect bird migration. In this section, we will examine those in detail. We will discuss the effect of weather patterns and geography on behaviors among different species and taxonomic groups. The availability of resources on the breeding grounds also influences the numbers we observed in migration, so we will examine pertinent questions in that field. Lastly, the practical side of counting Morning Flight must be discussed, such as how circling birds should be treated, and so on.

### **Weather patterns and geography**

The weather on a given morning significantly impacts totals and species diversity at Turkey Point. The change of weather adds flavor to any seasonal count and keeps an exciting flow of birds moving by. It is common knowledge that during the fall on the East Coast, songbird migration will increase following a cold front and northerly winds. However, after three seasons of data, it is evident that more than just songbirds are taking advantage of northerly winds for migration at Turkey Point

Since this count began in 2021, various unexpected waterbirds have been documented in active migration at Turkey Point following strong and prolonged northwest winds. Species like Black-legged Kittiwake, Red-necked Grebe, Sabine's Gull, and White-winged Scoter have all been observed migrating past the Point in such conditions. None of these species are expected, even during migration, in the upper Chesapeake. However, they winter on the Atlantic Seaboard or, in the case of Sabine's Gull, the Pacific Coast of the Americas and the Atlantic Coast of Europe and Africa (Brown and Fredrickson 2020, Day et al. 2020, Hatch et al. 2020, Stout and Nuechterlein 2020). These observations make us question how they arrived and where they came from. One hypothesis is that these species take an overland route during migration and are attracted to large bodies of water, such as large rivers and lakes. The Susquehanna River, one of the largest rivers east of the Mississippi River, may attract these birds. The Susquehanna River drains into the Chesapeake Bay ~13 km (8 mi) north of Turkey Point. If these species migrate over the continental United States or stop in the Great Lakes, a northwest wind might bring them directly to Turkey Point via the Susquehanna River. All these unexpected species observed at Turkey Point came from the direction of the Susquehanna River, supporting this hypothesis.

Another example is that the three observations of White-winged Scoters at Turkey Point in the past three seasons (2 NOV 2021, 23 NOV 2022, and 16 OCT 2023) occurred during or soon after northwest winds (Trekellen 2024d). A study on tagged White-winged Scoters has shown three distinct spring migration

routes of individuals on the Atlantic Coast: “a) a direct overland path to staging areas in the St. Lawrence Estuary and Gulf, James Bay, or northern breeding areas; b) a coastal route north along the Atlantic United States and Canada seaboard with key stopover locations including Northumberland Strait, Chaleur Bay, and the St. Lawrence Estuary and Gulf; and c) an overland path through the Great Lakes” (Sea Duck Joint Venture 2022). This study also documented that the same three migration routes were used during fall migration, except birds stopping in the Great Lakes were not found to continue to the coast (Sea Duck Joint Venture 2022). Taken together, these observations suggest that prolonged weather events may affect flight paths in the short-term and contribute to the observation of unexpected species.

### **Behaviors observed in Morning Flight**

It is intriguing to note the behaviors of active migrants when they arrive at the Point on a given morning. Their behavior varies significantly depending on the weather conditions and by species. This subsection will examine these behaviors and how different species react to Turkey Point’s geography.

Passerines: Most small songbirds avoid crossing the Elk River or Chesapeake Bay, which separates Turkey Point from the mainland. Once arriving at the Point, passerines loop northeast or northwest around the Point depending on the wind direction. Small passerines like warblers in morning flight prefer heading into the wind once reaching the Point. For example, on a northwest wind, passerines move past the Point clockwise before heading northwest into the wind. Winds from the east or northeast caused birds to loop counterclockwise around the Point before heading northeast into the wind. On mornings with wind directions other than northerly, small passerines usually favored heading northwest but moved in other directions.

Sometimes flocks of American Robins or Blue Jays attempted to cross the Elk River and reached up to about 50% of the way before turning back. The Elk River is approximately 2.4 km (1.5 mi) wide at the nearest point. This behavior raises many questions. At what size is the water too large to cross safely? Does this change based on a bird’s relative size? Is it weather-dependent? Do they judge the distance visually, or is the time it takes to cross a more important factor? The observer did not see any raptors when these turnarounds took place, suggesting that the fright of raptors is not the cause of passerines turning back. It seems a certain amount of time of exposure might be triggering this behavior, but this does not satisfactorily explain why they do not finish crossing once they reach that distance. This behavior was most visible in Blue Jays, where large flocks would gain altitude after lifting off from the Point and travel a reasonable distance out over the water before turning back. Smith et al. (2020) noted similar behavior in Blue Jays, where flocks would attempt to traverse bodies of water several times before a successful crossing.

**Raptors:** Although the focus of a morning flight count is on migrant passerines, other species observed moving throughout the morning are equally fascinating. Because of its geography, Turkey Point is an excellent place to observe hawk migration in the fall. As one might expect, raptors tended to circle and soar over Turkey Point while gaining altitude with thermals before continuing their migration. Most flew southeast across the Elk River to the Delmarva Peninsula, while some head southwest towards Aberdeen and the mainland. Also, some would loop back north after reaching the Point and presumably continue south after crossing further up the peninsula or circumventing the water altogether. To prevent the double-counting of kettling birds on days with strong migration, we found it optimal to observe their departure across the Chesapeake Bay or Elk River before counting. However, this method is subjective, and with some individuals never observed crossing, it is open for discussion whether this is the ideal technique.

**Waterfowl:** Most waterfowl observed at Turkey Point in 2023 were southbound and preferred moving on cold mornings with light to moderate northwest winds. Flight paths were dispersed throughout the counter's field of view, with birds moving over the Chesapeake Bay, Elk River, or high above the Point. Because of their simple trajectories, it was clear the open water of the Chesapeake Bay and Elk River did not present an obstacle to their migration.

### **Availability of resources**

The abundance of food on the breeding grounds directly affects the number of migrants moving south through a given area. When food is scarce farther north, Purple Finches and other irruptive species move south to find food, often biennially (Wootton 2020). Following a banner year for acorn-associated species such as Red-bellied Woodpecker and White-breasted Nuthatch in 2022 as well as Purple Finches and Red-breasted Nuthatches (Irons, J.D. 2023), totals for these species were much lower. In three seasons of monitoring at Turkey Point, the species listed above have followed a biennial pattern of high and low numbers with low numbers recorded in 2021 and 2023, and an incredible spike in 2022. As outlined in last season's report, a season with lower numbers at Turkey Point suggests that most individuals are wintering closer to their breeding grounds because of abundant food supplies.

Finches and other species irrupting based on masting of evergreen cone crops showed mostly low numbers. Purple Finch and Red-breasted Nuthatches were lower, and Evening Grosbeaks and Red Crossbills were absent this season. This was expected as the fall of 2023 was not predicted to be an irruption year for these species (Hoar 2023). The outlier this season was Pine Siskin, which were on the move in considerable numbers and exceeded the season totals for 2021 and 2022. House Finches and American Goldfinches were lower compared with 2022 numbers. Again, the fall of 2022 was an excellent flight for these species,

and with plentiful food further north this season, a notable decrease was expected.

One pattern that stood out this season was the arrival of some passerines much earlier than in previous seasons. For example, a Cape May Warbler and a Rose-breasted Grosbeak were observed on 1 AUG. The 2021 and 2022 arrival dates for Cape May Warbler were 13 AUG and 17 AUG (Irons, D.J. 2023; Irons, J.D. 2023). The first of the season for Rose-breasted Grosbeak in the past two seasons was the 3 SEP in 2021 and the 25 AUG in 2022 (Irons, D.J. 2023; Irons, J.D. 2023). By 8 AUG, many warblers had arrived, including Blackburnian, Black-throated Green, Magnolia, and Yellow-rumped, which were earlier than in previous seasons. Nearly all of these early arrivals appeared to be adult birds.

A convincing explanation for these migrant warblers arriving much earlier than in previous seasons is the prevalence of wildfires in the boreal forests where these species breed. “The spring and summer of 2023 have been characterized by extensive and record-breaking wildfires in Canada. Over 15 million hectares [~58,000 sq mi] have been burned as of the end of August, compared to a 10-yr average of 2.5 million hectares [~10,000 sq mi] per season” (Illinois Ornithological Society 2023). Because of this spike in wildfires, it is thought that the early arrivals at Turkey Point could have been breeders whose nests failed and were forced to flee the wildfires. Although minimal publications discuss the avian impacts of this phenomenon, ornithologists and bird conservation organizations have suggested that changes in behavior and migration phenology may be due to the high number of wildfires.

### **Counting methods**

Over the three seasons at Turkey Point, every counter has noted the chance for some passerines to loop around the Point more than once. Blue Jays, Cedar Waxwings, American Robins, and blackbirds are species that have been observed circling. Although it makes sense not to count individuals or flocks clearly observed circling more than once around the Point, it is impossible to know how many flocks circle back but are out of sight to the counter. It may be ideal to count every individual or flock that comes to the Point, even if there is a chance of double-counting, as long as the bird was not seen doubling back. Although this method may lead to slightly higher counts, we believe it is the best way to achieve consistent data year after year. For a migration count like Turkey Point, having consistent methodology less affected by the skill and preferences of the counter is ideal for tracking subtle trends in avian populations and phenology.

The fall of 2023 marked the third consecutive season of monitoring bird migration at Turkey Point in Cecil County, Maryland. This year’s count added even more depth to our understanding of Morning Flight and the abundance,



phenology, and composition of the species observed this fall. The Maryland Biodiversity Project hopes to continue efforts at Turkey Point and Dans Rock in the future. Our effort, along with other sites across the Mid-Atlantic, will continue to build an understanding of Morning Flight and migratory birds in the region.

### ACKNOWLEDGMENTS

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