

The Bodie-Pea Island Christmas Bird Count: a 25-year Summary

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The Early Years—1939–1953

The first Christmas Bird Count (CBC) to be taken on the Outer Banks of Dare County, North Carolina, was at Pea Island on 28 December 1939, by John H. Grey, Jr. (compiler), Katharine (Mrs. A. C.) Reed, and Sam A. Walker. They recorded 58 species and 6,300 individuals (Grey 1940). Subsequent counts were taken in 1942, 1946, 1947, 1948, 1950, 1951, and 1953 (Grey 1943; Shaftesbury 1947, 1948, 1949, 1951; Chamberlain 1952, 1954). These first eight counts covered only the Pea Island National Wildlife Refuge and Oregon Inlet areas except for the 1946 CBC, which also included Bodie Island. No CBCs were taken in the area for the next 11 years. These earlier counts were taken prior to construction of the bridge across Oregon Inlet, and during that period a ferry was the only access to Pea Island with a vehicle. The present standardized Bodie-Pea Island CBC, from 1965 onward, has been published annually in Audubon Field Notes (vols. 20–24), American Birds (vols. 25–44) and The Chat (vols. 30–42; CBCs last published in vol. 42). Names of species and species totals have been adjusted to conform to the latest taxonomy (AOU 1983 plus supplements). Results from earlier counts are not comparable with the CBCs taken 1965–1989 because the earlier efforts covered about half or less of the count circle and the intensity of coverage and time afield were less. For these reasons, data presented are from those counts taken 1965 and later.

A few comments on results of the earlier counts are in order. The mean number of species was 51 (range 39 in 1950 to 61 in 1953), and mean number of individuals was 16,878 (range 6,300–25,204) [Note: These figures do not include the 1951 CBC; the full results were not published and efforts to locate the missing data have been unsuccessful]. Two significant finds were a Barnacle Goose (1950) and two Snowy Owls (1946). These two species have not been recorded on the series of recent CBCs. Two additional species were reported, an immature Golden Eagle (1951) and a Solitary Sandpiper (1947), but there is some question regarding correct identification of these two birds. Turkey Vultures were apparently somewhat more regular earlier, as three of seven counts reported them (high of 15 in 1942), whereas in the past 25 years only one individual (1970) was recorded. Early on, Bald Eagles were also more common. Six out of seven counts recorded them (range 4–18 individuals), with 18 birds reported in 1946 and 1947. Only one eagle has been recorded between 1965–1989. There has been an increase in the number of Ring-billed Gulls since the earlier period. The 1939–1953 counts had a high, twice, of 200 Ring-bills, two other counts reported only three individuals, and two counts had none. In contrast, from 1965 to 1989, the number of Ring-bills ranged from 419 to 76,600 with a count mean of 13,459.

The current Bodie-Pea Island CBC was started on 28 December 1965, and the count circle has remained the same since its inception. The center of the 15-mile diameter count circle (latitude 35°47'N, Longitude 75°32'W) is 2.7 miles SSE of the Bodie Island Lighthouse and includes the southern part of Bodie Island from a point 1.8 miles south of Whalebone Junction south to New Inlet on Pea Island NWR and the Wanchese sector of Roanoke Island. Habitats within the count consist of the Atlantic Ocean and Pamlico Sound 80% (most of which is not covered since access to boats has been limited), salt and brackish marsh and freshwater ponds 10%, herb-shrub thicket 5%, sand beach, vegetated sand dunes, and tidal flats 3%, and loblolly pine and mixed woodland 2%. Since the circle lies on the north-south axis of a narrow barrier island system, less than 10% of the count circle is upland habitat. Because of the restricted amount of upland habitat, a number of the common land birds of the region have been absent or infrequent in their occurrence (i.e. Turkey and Black Vultures, Hairy Woodpecker, Horned Lark, Tufted Titmouse, White-breasted Nuthatch, Eastern Bluebird, Loggerhead Shrike, Rusty Blackbird, etc.), while those species associated with saline and freshwater habitats have been diverse and abundant.

The count has had a loyal following. A total of 184 different people participated over the 25-year period, and of these, 30 took part on more than 25% of the counts, and 10 participated on more than 50% (Table 1). The author has been the compiler for the 25-year period. Of those that participated on the count since 1965, only 13 (7%) lived within 50 miles or less of the count circle. The mean number of observers per count was 26 (range 5–41) and the mean number of party hours was 99 (range 21–184).

From 1965 to 1989, 228 species of birds were recorded on the count. The mean number of species per count was 139 (range 107 to 159). These figures are interesting when one considers the extremely limited number and area of upland habitats within the count circle. On the other hand, the small "islands" of upland habitat have a concentration effect on some land birds and can be more easily covered by a few observers with a coordinated effort. Barrier islands are typically narrow in width, and the various habitats are usually linear and patchy creating an array of ecotones. These extensive ecotonal conditions support a rich species diversity. This diversity was represented on the 25 counts by 46 families or subfamily groups.

The mean number of individual birds per count was 65,145 (range 15,100–185,664). The wide fluctuation in numbers of individuals from year to year was primarily due to the presence or absence of large aggregations of Snow and Canada Geese, dabbling and diving ducks (Red-breasted Mergansers in particular), Sanderlings, Ring-billed and Herring Gulls, and Yellow-rumped Warblers. The greatest fluctuations occurred with the two species of gulls. For instance, in 1978 there were an estimated 74,600 Ring-billed Gulls and 44,300 Herring Gulls on the count, which accounted for 64% of the 185,664 individuals reported. These two species together with an estimated 1,000 Laughing Gulls, 1,100 Bonaparte's Gulls, and 3,259 Great Black-backed Gulls were attracted to the area by a massive fish kill. Such a phenomenon on this scale was

Table 1. Participants that have taken part on more than 25% of the Bodie-Pea Island, North Carolina CBCs, 1965–1989.

	<u>% Counts</u>	<u>State of Residence 1989</u>
Bob Anderson	52	VA
Ned Brinkley	32	VA
Mike Browne	28	NC
Allen Bryan	44	NC
Ricky Davis	28	NC
John Fussell	52	NC
Charles Gibson	36	VA
Bob Hader	32	NC
David Hughes	52	VA
Kent Ihrman	52	VA
Wayne Irvin	32	NC
Ken Knapp	56	NC
Edmund LeGrand	40	NJ
Harry LeGrand	92	NC
Bob Lewis	40	NY
Paul McQuarry	28	VA
Merrill Lynch	40	NC
Dwight Peake	28	GA
Richard Peake	36	VA
Butch Pearce	32	VA
Bob Pilch	32	VA
Bill Portlock	52	VA
Don Schwab	32	VA
Paul Sykes	100	GA
Mike Tove	40	NC
Bob Tripician	52	VA
Gary Williamson	64	VA
John Williamson	32	SC
Townley Wolfe	28	VA
John Wright	32	NC

very infrequent. Unlike many counts, there have never been large concentrations of blackbirds and European Starlings on the Bodie-Pea Island CBC.

A total of 71 species were common to all 25 CBCs (Table 2). This was 31% of all species recorded on this count through 1989. As one might expect, 62% of these species were associated with wetland habitats and these same species also constituted the majority of the total individuals. The number of individuals for the 71 species varied from year to year. Sixty-five percent of the lowest number of individuals were recorded during the first five years (1965–1969) of the count. This was in part the result of less intense coverage as party hours were 78, 70, 52, 30, and 39% for the five years, respectively, below the mean of 99 party hours for the count. The 12 most abundant species on the counts listed in descending order, based on cumulative totals of individuals over the past 25 years, were: Ring-billed Gull, Herring Gull, Yellow-rumped

Warbler, Snow Goose, Green-winged Teal, Northern Pintail, American Robin, Canada Goose, Tundra Swan, Red-breasted Merganser, Northern Gannet, and American Black Duck. The two passerines among this group were interesting in view of the limited upland available. The relatively mild maritime climate and seasonally abundant food resources [invertebrates and fruits of red cedar (*Juniperus virginiana*), bayberry (*Myrica pensylvanica*), wax myrtle (*Myrica cerifera*), greenbriar (*Smilax* spp.), and yaupon (*Ilex vomitoria*)] may account for the abundance of these two passerines as well as others.

Table 2. Birds observed on 100% of the Bodie-Pea Island, North Carolina CBCs, 1965–1989 (N = 71 species).

Species	Number of Individuals				
	Mean	Low	Years	High	Years
Red-throated Loon	129	7	65	795	89
Common Loon	59	1	65,66	169	74
Pied-billed Grebe	94	23	69	258	84
Northern Gannet	1305	83	67	6300	79
American Bittern	7	1	86,87	19	71
Great Blue Heron	45	3	65	96	75
Great Egret	30	1	69	127	85
Tricolored Heron	21	1	65	46	75,85
Black-crowned Night-Heron	51	3	82	132	75
Tundra Swan	1612	52	65	12,800	84
Snow Goose	5842	1396	65	16,125	75
blue morph	17	1	78	59	81
Canada Goose	2306	285	83	8650	75
Green-winged Teal	2997	105	83	13,050	78
American Black Duck	1303	222	65	8800	68
Mallard	165	54	66	460	85
Northern Pintail	2960	330	83	8080	80
Northern Shoveler	744	120	67	1480	85
Gadwall	430	77	67	2000	85
American Wigeon	736	34	65	3945	89
Canvasback	176	1	80	1042	78
Ring-necked Duck	71	1	80,82,86	345	71
Bufflehead	259	9	87	1500	72
Hooded Merganser	84	11	69	265	89
Red-breasted Merganser	1400	20	88	13,600	74
Northern Harrier	30	9	65	53	74
American Kestrel	23	6	65	48	74,75
Merlin	5	1	67,83	11	89
American Coot	840	75	65	3645	89
Black-bellied Plover	185	25	66	600	74
Greater Yellowlegs	36	5	68	152	88
Sanderling	766	63	82	4500	71
Western Sandpiper	63	1	88	358	67
Dunlin	1102	95	68	3900	74

Table 2. (cont.) Birds observed on 100% of the Bodie-Pea Island, North Carolina CBCs, 1965–1989 (N = 71 species).

Species	Number of Individuals				
	Mean	Low	Years	High	Years
Common Snipe	32	3	65,66,82	158	74
Bonaparte's Gull	439	5	65	2610	88
Ring-billed Gull	13,459	419	66	74,600	78
Herring Gull	9503	974	67	44,300	78
Great Black-backed Gull	984	178	69	3259	78
Mourning Dove	69	2	65	173	88
Belted Kingfisher	23	2	65	79	75
Red-bellied Woodpecker	11	5	65,87	21	76
Downy Woodpecker	8	1	83	16	89
Northern Flicker	120	40	65,66	236	74
American Crow	67	5	65	865	83
Carolina Chickadee	27	12	65,66	57	89
Brown Creeper	4	1	77,79,87	11	75,78
Carolina Wren	77	14	65	154	89
House Wren	16	1	65,66,89	40	74
Sedge Wren	43	1	65	248	74
Marsh Wren	34	4	65	213	84
Ruby-crowned Kinglet	14	4	65,66,77,80	38	86
American Robin	2600	81	87	20,500	85
Gray Catbird	75	10	65	168	85
Northern Mockingbird	45	13	82	95	89
Brown Thrasher	12	1	65	26	89
Cedar Waxwing	92	2	75	377	82
European Starling	422	135	65	921	78
Yellow-rumped Warbler	7089	439	66	19,582	75
Northern Cardinal	59	12	65	112	87
Rufous-sided Towhee	91	18	65	165	89
Field Sparrow	24	1	65	75	74
Savannah Sparrow	164	36	65	365	74
Fox Sparrow	17	3	74	68	77
Song Sparrow	171	27	65	322	68
Swamp Sparrow	179	7	65	483	74
White-throated Sparrow	82	9	65	175	72
Red-winged Blackbird	579	22	66	1275	81
Eastern Meadowlark	213	46	86	1409	66
Boat-tailed Grackle	413	128	70	1073	82
American Goldfinch	75	4	84	408	69
House Sparrow	35	6	85	89	68

Birds observed on 75% or more of the counts but less than 100% totalled 45 species (Table 3). Of these, 73% when present, were represented by one individual for the lowest number of individuals recorded. Fourteen species were missed on only one count in 25. These species were: Double-crested Cormorant, Snowy Egret, Ruddy Duck, Sharp-shinned Hawk, Virginia Rail, Killdeer,

Table 3. Birds observed on 75% or more but less than 100% of the Bodie-Pea Island, NC CBCs, 1965–1989 (N = 45 full species).

<u>Species</u>	<u>Frequency (%)</u>	<u>No. Individuals</u>	
		<u>Low</u>	<u>High</u>
Horned Grebe	92	1	450
Double-crested Cormorant	96	3	6210
Snowy Egret	96	3	42
Little Blue Heron	88	1	30
Redhead	80	1	4000
Lesser Scaup	92	1	1200
Oldsquaw	76	1	279
Black Scoter	92	7	911
Surf Scoter	92	1	980
Ruddy Duck	96	9	722
Sharp-shinned Hawk	96	1	25
Red-tailed Hawk	76	1	10
Peregrine Falcon	76	1	3
Ring-necked Pheasant	92	1	62
Clapper Rail	88	1	26
King Rail	84	1	21
Virginia Rail	96	1	38
Semipalmated Plover	84	1	32
Piping Plover	88	1	41
Killdeer	96	1	51
American Avocet	88	1	125
Lesser Yellowlegs	92	2	91
Short-billed Dowitcher	80	1	113
American Woodcock	76	1	9
Laughing Gull	96	2	5770
Royal Tern	92	2	98
Forster's Tern	96	10	1329
Barn Owl	84	1	8
Eastern Screech-Owl	80	1	8
Yellow-bellied Sapsucker	96	1	18
Blue Jay	88	1	66
Fish Crow	96	1	2000
Brown-headed Nuthatch	96	2	25
Winter Wren	92	1	14
Golden-crowned Kinglet	88	2	43
Hermit Thrush	96	2	20
Orange-crowned Warbler	80	1	7
Pine Warbler	88	1	25
Palm Warbler	92	1	15
Common Yellowthroat	92	3	36
Savannah (Ipswich race) Sparrow	84	1	14
Sharp-tailed Sparrow	96	2	81
Seaside Sparrow	96	1	20
Dark-eyed Junco	88	1	41
Common Grackle	92	1	372
Purple Finch	80	1	147

Laughing Gull, Forster's Tern, Yellow-bellied Sapsucker, Fish Crow, Brown-headed Nuthatch, Hermit Thrush, and Sharp-tailed and Seaside Sparrows. An

absence of any of these species from a single count was probably not significant, but more likely represents a deficiency in sampling (i.e. coverage).

Forty-seven species were observed on the counts 21 to 74% of the time (Table 4), and 65 species were recorded on 20% or less of the counts in the past 25 years (Table 5). About 33% of those in this latter category were considered true accidentals on this CBC. Several species expected on the nearby mainland of North Carolina occurred infrequently on the count. These species included Wood Duck, Turkey Vulture, Bald Eagle, Horned Lark, White-breasted Nuthatch, Eastern Bluebird, Loggerhead Shrike, Vesper Sparrow, Lincoln's Sparrow, and Rusty Blackbird. For most of these 10 species there simply was not sufficient habitat within the count circle. For this same reason, some species have not been recorded on the count (i.e. Black Vulture, Barred Owl, Red-headed Woodpecker, and Red-cockaded Woodpecker).

Status, Trends, and Impressions

A number of trends have become apparent in the course of 25 years on the Bodie-Pea Island CBC. Red-throated and Common Loons, Pied-billed Grebe, and Northern Gannet have been common, but their numbers have varied year to year. Brown Pelicans were very infrequent on the counts in the 1960s (recorded on one CBC) and the 1970s (recorded on two CBCs). Starting in 1980 they have been regular, appearing on every count since that year. Over the last 10 years, there was an average of 154 pelicans per count (range 40 to 325). Great Cormorants were not reported on the counts in the 1960s, were infrequent in the 1970s (recorded on four CBCs, all single birds), and were recorded on one count (one bird) during the first half of the 1980s. Since 1986, they have been regular each year, often several birds being observed (mean 2.5, range 1–6). Double-crested Cormorant also has increased. This increase was evident in the mean number of birds at 10-year intervals; 13 birds per count (range 0–51) in 1960s, 115 birds per count in 1970s (range 3–638), and 874 birds per count in 1980s (range 24–6,210). Thus, these three species of inshore fish eaters have increased substantially in recent years, a trend that has been reflected continent-wide.

White Ibises were not recorded on the Bodie-Pea Island CBC until 1973, but have been regular each year since (except 1980) with a mean of 35 birds per count over the last 17 years (range 1–127). There was a significant increase of White Ibis, with a mean of 63 birds per count (range 18–127) between 1981–1989. Glossy Ibis has been fairly regular with a 25-year mean of six birds per count (range 0–38). There were no apparent trends for the more common waterfowl other than the fact there were often large differences in the number of individuals from year to year. A single Ross' Goose was recorded for two years in a row with 5- to 8-year intervals of absence (i.e. present 1971–1972, 1981–1982, and 1989). Since 1985 both Common and King Eiders have been more frequent and the number of individuals has increased (prior to 1985 all observations were of lone birds).

Northern Harrier, Sharp-shinned Hawk, and American Kestrel have been the most common and widespread raptors on the count; the Merlin has been regular but in much lower numbers than these three species. Buteos have tended to avoid the North Carolina barrier islands and have been found in fairly

Table 4. Birds observed on 21 to 74% of the Bodie-Pea Island, NC CBCs, 1965–1989 (N = 47 species).

<u>Species</u>	<u>Frequency (%)</u>	<u>No. Individuals</u>	
		<u>Low</u>	<u>High</u>
Brown Pelican	52	1	325
Great Cormorant	36	1	6
White Ibis	64	1	127
Glossy Ibis	72	1	38
Brant	44	3	591
Blue-winged Teal	72	1	39
Greater Scaup	68	2	43
Common Eider	32	1	7
White-winged Scoter	68	3	298
Common Goldeneye	68	1	239
Common Merganser	32	1	31
Cooper's Hawk	64	1	3
Red-shouldered Hawk	68	1	3
Northern Bobwhite	72	1	38
Black Rail	24	1	2
Sora	60	1	5
Common Moorhen	44	1	6
American Oystercatcher	32	1	22
Willet	68	1	136
Marbled Godwit	36	1	24
Ruddy Turnstone	64	1	15
Red Knot	48	2	95
Least Sandpiper	64	1	161
Long-billed Dowitcher	68	2	101
Parasitic Jaeger	52	1	2
Lesser Black-backed Gull	28	1	4
Black-legged Kittiwake	48	1	43
Common Tern	32	1	9
Black Skimmer	40	1	90
Rock Dove	36	1	8
Great Horned Owl	56	1	4
Short-eared Owl	64	1	6
Hairy Woodpecker	44	1	2
Pileated Woodpecker	52	1	4
Eastern Phoebe	56	1	6
Tree Swallow	52	1	1850
Tufted Titmouse	24	1	2
Red-breasted Nuthatch	68	1	25
American Pipit	52	1	15
Yellow-breasted Chat	28	1	3
Chipping Sparrow	56	1	20
White-crowned Sparrow	24	1	11
Snow Bunting	24	1	19
Brown-headed Cowbird	60	1	64
House Finch	28	1	61
Pine Siskin	68	1	393
Evening Grosbeak	52	1	152

Table 5. Birds observed on 20% or fewer of the Bodie-Pea Island, NC CBCs, 1965–1989 (N = 65 species).

<u>Species</u>	<u>Highest Number</u>	<u>Year(s) Recorded</u>
Red-necked Grebe	4	71
Eared Grebe	1	67
Shearwater sp.	1	70
Least Bittern	1	75
Great Blue Heron (white form)	1	75
Cattle Egret	1	73,75,79
Green-backed Heron	1	72,74,83,86
Yellow-crowned Night-Heron	2	70,71,81
Greater Flamingo	1	78
Greater White-fronted Goose	1	72,81
Ross' Goose	1	71,72,81,82,89
Wood Duck	10	69,72,81,83,89
Green-winged Teal (Eurasian)	1	69,70,72
Eurasian Wigeon	2	81,89
King Eider	3	75,83,85,87,89
Harlequin Duck	2	77,89
Turkey Vulture	1	70
Bald Eagle	1	89
Rough-legged Hawk	2	74,75,76
Yellow Rail	1	70,72
Lesser Golden Plover	1	72
Whimbrel	1	87
Long-billed Curlew	1	74
Black-tailed Godwit	1	9
Hudsonian Godwit	1	80
Purple Sandpiper	5	67,87,89
Stilt Sandpiper	5	75
Red-necked Phalarope	1	87
Red Phalarope	1	78
Pomarine Jaeger	4	71,72,81,82,86
Little Gull	1	71,83,88,89
Common Black-headed Gull	1	85
Iceland Gull	1	75,88
Glaucous Gull	1	73,76,82,88,89
Caspian Tern	3	73,74
Dovekie	2	70,75,78,87
Razorbill	1	82,85
Northern Saw-whet Owl	1	71
Chuck-will's widow	1	84
Whip-poor-will	1	72,78
Great Crested Flycatcher	1	73
Western Kingbird	2	84
Horned Lark	2	71,87,89
White-breasted Nuthatch	1	65,73,78
Blue-gray Gnatcatcher	2	70,73,84,85
Eastern Bluebird	1	69,70,75
Loggerhead Shrike	1	69
White-eyed Vireo	1	76
Solitary Vireo	3	70,73,85,87,88

Table 5. (cont.) Birds observed on 20% or fewer of the Bodie-Pea Island, NC CBCs, 1965–1989 (N = 65 species).

<u>Species</u>	<u>Highest Number</u>	<u>Year(s) Recorded</u>
Nashville Warbler	1	79,84
Black-throated Blue Warbler	1	73
Prairie Warbler	1	85
Northern Waterthrush	1	79
Connecticut Warbler	1	73
Western Tanager	1	77
American Tree Sparrow	4	75,76,78,89
Clay-colored Sparrow	1	80
Vesper Sparrow	7	74,75,77,79
Grasshopper Sparrow	1	69,70,78
LeConte's Sparrow	2	74
Lincoln's Sparrow	2	65,66,68,69,79
Lapland Longspur	1	71,75
Yellow-headed Blackbird	1	73,85
Rusty Blackbird	4	69,75,85
Northern (Baltimore) Oriole	2	75,78,81,82
Red Crossbill	14	69,71,74,76
Common Redpoll	2	69

low densities within the count circle and have been absent in some years. Peregrine Falcon was irregular until the late 1970s but has become regular since that time (range 1–3 birds per count). The introduced Ring-necked Pheasant was regular through 1983 (Pea Island only) but has been absent on the count since then. The presence of feral house cats (*Felis catus*) and the relatively recent appearance of gray foxes (*Urocyon cinereoargenteus*) on Pea Island may have decimated the pheasant population in that area during the past several years. All the Rallidae, except American Coot and perhaps Common Moorhen, have been grossly undercounted on this count (as is probably the case on the vast majority of CBCs where these birds occur) because of their secretive nature in dense cover.

Black-bellied, Semipalmated, and Piping Plovers, Killdeer, American Avocet, Greater and Lesser Yellowlegs, Sanderling, Western Sandpiper, Dunlin, and Common Snipe have been regular on the count over the past 25 years. The American Oystercatcher was not recorded until 1982, but has been on every count since (mean 11.5, range 1–22), with an increase in numbers since 1987. Willets have been regular for periods followed by years when absent (i.e. present 1969–1974, 1976–1979, 1983–1989). Ruddy Turnstones have shown a pattern of occurrence similar to the Willet. Red Knots became regular starting in 1982 and since that time have averaged 41 birds per count (range 2–95). Least Sandpipers were regular 1966–1976 but have been sporadic since then. Generally when cold temperatures occur in December prior to the count, the more cold sensitive shorebirds (i.e. Lesser Yellowlegs, Least Sandpiper, the two dowitchers) have tended to move out of the area or they have been observed in smaller numbers. The Purple Sandpiper was recorded only three times in 25 years, but with the newly constructed jetty of granite boulders at Oregon Inlet this species will probably become regular in the area. This jetty will prob-

ably attract Ruddy Turnstones, two species of eiders, and Harlequin Ducks also. The American Woodcock has been fairly regular in small numbers, but has been missed in some years.

Laughing, Bonaparte's, Ring-billed, Herring, and Great Black-backed Gulls have been of regular occurrence. The Lesser Black-backed Gull has been sporadic on the Bodie-Pea Island CBC but has become more frequent since the mid 1970s. The Black-legged Kittiwake has been common offshore but sightings from land have been relatively few on the count. Royal and Forster's Terns have been regular, but the Royal Tern's presence appears to be related to mild temperatures through December. The Black Skimmer has been erratic in occurrence.

Barn Owls and Eastern Screech-Owls have been regularly observed while Great Horned and Short-eared Owls have been somewhat erratic. Red-bellied Woodpeckers, Yellow-bellied Sapsuckers, Downy Woodpeckers, and Northern Flickers have been quite regular on the counts, while the Hairy Woodpecker has been sporadic and, since the late 1970s difficult to find in the area. The Eastern Phoebe also has been sporadic, being found regularly from 1970–1977 and 1984–1989 but absent during the intervening periods. Surprisingly, Tree Swallows have been erratic in their occurrence throughout the 25-year period. The Blue Jay had been spotty for the first five years, but since that time has been regular, with numbers generally increasing since the early 1980s. The two crows have been regular with the Fish Crow becoming the more abundant in the 1980s. Carolina Chickadee, Brown-headed Nuthatch, Brown Creeper, five species of wrens, the two kinglets, Hermit Thrush, American Robin, Gray Catbird, Northern Mockingbird, and Brown Thrasher all occurred regularly during the 25-year period. Cedar Waxwings and European Starlings were recorded on all the counts. The Orange-crowned Warbler was regular in small numbers for the periods 1968–1976 and 1984–1989 but erratic during the other periods. The Palm Warbler has been regular in small numbers in all years, except for 1982 and 1983 when it was missed. The Common Yellowthroat has been regular but was missed in 1965 and 1980.

Northern Cardinal and Rufous-sided Towhee were regular and common on all counts. Field, Savannah, Sharp-tailed, Seaside, Fox, Song, Swamp, and White-throated Sparrows were regular on all counts, except Sharp-tails and Seaside which were missed in 1966. Dark-eyed Juncos were observed on all counts, except 1971, 1986, and 1987. It was surprising that Snow Buntings were observed on only six counts in 25 years as there was extensive habitat for them within the count circle. Red-winged Blackbirds, Eastern Meadowlarks, and Boat-tailed Grackles were regular on all counts. While the Common Grackle is abundant in the count area during warmer months, it is much less common during the winter and was missed on the CBCs in 1979 and 1986. Brown-headed Cowbirds were erratic on the counts from 1965–1983, but were regular in 1984–1989. As expected, the irruptive Purple Finches, Pine Siskins, and Evening Grosbeaks have been erratic in their occurrence over the 25-year period. The first House Finch was found on the 1976 count and was not recorded again until 1984. It has been regular since then with increasing numbers. American Goldfinches and House Sparrows have been recorded on all counts.

The past 25 years of the Bodie-Pea Island CBC have produced some interesting results. The 228 species of birds recorded is impressive and birders find a

certain fascination with this section of the Outer Banks. Since about 85% of the land mass within the count circle is in public ownership (Pea Island NWR and Cape Hatteras National Seashore), the habitats within these areas should change relatively little other than those changes imposed by natural forces. The narrow strip of private property along the ocean and to the east of NC Route 12 on the north half of Bodie Island has been developed (with beach cottages) for many years, so the initial disturbance has already taken place. The small quiet village of Wanchese on the southern tip of Roanoke Island has changed very little over the years, but the north end of Roanoke Island is developing rapidly, and, with time, this may reach the Wanchese area. Intensive development at Wanchese would make a serious impact on the CBC results as many of the land birds are found only in this sector of the count. It will be interesting to see what the next 25 years will reveal for this CBC.

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