1SUPPORTING STATEMENT B FOR
PAPERWORK REDUCTION ACT SUBMISSION

Migratory Bird Surveys, 50 CFR 20.20
OMB Control Number 1018-0023

August 20, 2019

1.   Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g., establishments, State and local government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved.

Migratory Bird Harvest Information Program and Migratory Bird Hunter Survey: The potential respondent universe is all licensed migratory bird hunters in the 49 States that have migratory bird hunting seasons, approximately 3,800,000 individuals. The universe is stratified by: (1) State, and (2) hunters' hunting activity and success the previous season. A systematic sample is selected within each stratum from the names and addresses in the order in which they are received. Stratum-specific universe and sampling data for forms 3-2056J, 3-2056K, 3-2056L, 3-2056M and 3-2056N are given in Tables 1-4. Sampling rates vary by State, form, and success strata, and range from <1% to 100%. Because sampling rates vary by by State, form, and success strata, weighted and unweighted response rates were calculated to each survey form for 2017. Unweighted and weighted response rates for all six form types average 38% and 39% nationally, respectively. Response rates for the 4 HIP survey forms in 2017 were as follows:

Survey form	Unweighted response rate	Weighted response rate
Waterfowl (3-2056J)	0.31	0.33
Dove (3-2056K)	0.38	0.39
Woodcock (3-2056L)	0.43	0.46
Snipe/Coot/Rail/Gallinule (3-2056M)	0.41	0.42
Sandhill Cranes (3-2056N)	0.45	0.46

About 6% of the non-response rate is due to undeliverable mail.

Parts Collection Survey: Approximately 86,000 duck wings and 19,000 goose tails are collected and examined by biologists out of a universe of 12,100,000 ducks and 3,600,000 geese harvested. These parts are obtained from approximately 4,700 successful waterfowl hunters who return form 3-165 out of a universe of 1,065,000 active waterfowl hunters. Sample sizes for waterfowl are given in Table 5.

The sample of hunters who will be sent form 3-165E consists of approximately 1,500 successful mourning dove hunters from a sample universe of about 709,000 active dove hunters. We solicit wings from the first week of the hunting season only. We collect and examine about

15,000 wings from the first week of the hunting season out of a universe of about 11,600,000 birds that are harvested during the first week of the mourning dove hunting season. Sampling rates vary by state, and range from 20% to 87% of successful mourning dove hunters responding to Form 3-2056K in the previous year. Less than 1% of the harvest during the first week is sampled. Sample sizes for mourning doves are listed in Table 6.

The sample of hunters who are sent form 3-165C consists of approximately 2,000 successful hunters from a sample universe of approximately 114,000 active woodcock (≈103,000 hunters), rail (≈2,600 hunters), gallinule (≈5,400 hunters), and band-tailed pigeon hunters (≈3,000 hunters). We no longer request snipe wings from hunters because the number of wings received in the past has been low, and this information has not been used in any decision making in harvest management. We continue to monitor the harvest of snipe through our hunter diary survey. Approximately 10,000 wings are collected and examined out of a universe of approximately 236,000 birds harvested. The percent of harvest sampled ranges from <1% - 5% for the species or species groups, with the highest sampling rate applied to woodcock harvest. Sample sizes for woodcock, rail species, and band-tailed pigeons are listed in Table 7.

Sandhill Crane Harvest Survey: The universe for sampling is approximately 36,000 individuals who obtain an annual permit to hunt sandhill cranes. Sampling rates are set by State, with 20% of the permittees randomly selected to receive questionnaires in Texas and North Dakota, 10% in Alaska and South Dakota, 50% of the permittees selected in Minnesota and Oklahoma, 60% of the permittees selected in Kansas and Colorado, and 100% of the permittees contacted in all other States with a sandhill crane season. Pertinent sampling characteristics by State are listed in Table 8. In 2017, the unweighted response rate for the crane survey was 45%, and the weighted response rate was 46%.

2. **Describe the procedures for the collection of information including:**
    - **Statistical methodology for stratification and sample selection,**
    - **Estimation procedure,**
    - **Degree of accuracy needed for the purpose described in the justification,**
    - **Unusual problems requiring specialized sampling procedures, and**
    - **Any use of periodic (less frequent than annual) data collection cycles to reduce burden.**

Migratory Bird Harvest Information Program: Each State requires all migratory bird hunters to identify themselves as such, and to provide their name, address, and date of birth, as a condition for obtaining authorization to hunt migratory game birds in the State. All of the name, address, and date of birth information collection is done by the State's hunting license vendors (agents) or by a State contractor. State license agents or contractors ask each migratory game bird hunter to answer a series of questions that allows us to stratify our sampling procedure. Each State collects the information in a way that is most appropriate for that state, but all states ask some variation of the following questions:

1) Will you hunt migratory birds this year?
2) How many ducks did you bag last year?
3) How many geese did you bag last year?
4) How many doves did you bag last year?
5) How many woodcock did you bag last year?
6) Did you hunt coots or snipe last year?
7) Did you hunt rails or gallinules last year?
8) Will you hunt sandhill cranes this year?

9) Will you hunt band-tailed pigeons this year?
10) Will you hunt brant this year?
11) Did you hunt sea ducks last year?

States are responsible for development of adequate control procedures to ensure that agents (1) account for all validated licenses; (2) promptly provide the State with names, addresses, and other information; (3) have a low proportion of incomplete or illegible information; and (4) return information from all migratory game bird hunters. We conducted a study in 2010 to track the collection and receipt of HIP name and address data from each state. Results from the 29 states participating showed that most MBHIP data are being sent to the FWS and being processed properly by the FWS (Appendix A).

Migratory Bird Hunter Survey Procedures: Survey procedures are based on Dillman's Total Design Method (Dillman, 1978, Mail and Telephone Surveys, the Total Design Method, Wiley). This method has been shown to substantially reduce non-response in many situations.

a. States provide the Service with migratory game bird hunters' names, addresses, birth dates, and their answers to the above questions in an acceptable form (electronic data or machine-scannable paper form). We receive the first list of hunter names and address in August prior to the migratory bird hunting seasons in each state. The States then send the Service updated lists every 2 weeks until the end of the migratory bird hunting seasons within each respective state. This information is needed in timely fashion for the Service to contact survey participants and ask them to keep records of their migratory game bird hunting throughout the hunting season. This also allows the Service to get survey forms to selected hunters before the hunting season starts or shortly after the hunter purchased his or her hunting license.

b. To protect hunters' privacy, it is the policy of the Service to use the names and addresses only for conducting hunter surveys and for no other purpose. All records of hunters' names and addresses are deleted after each year's survey results are finalized and no permanent record of names and addresses is maintained by the Service.

c. We use the answers to these questions to assign each hunter to one of three activity strata for duck, goose, dove, and woodcock hunting; and one of 2 hunting activity strata for coots and snipe, rails and gallinules, band-tailed pigeons, brant, and sea duck hunting. The 3 hunting activity strata for hunters of duck, goose, and dove hunters are (1) no harvest; (2) low harvest; and (3) high harvest. Low harvest of ducks and geese is defined as harvest of 1-10 birds the previous year; low harvest of doves is defined as harvest of 1-30 birds the previous year. The 2 hunting activity strata for hunters of woodcock, coots or snipe, rails or gallinules, band-tailed pigeons, brant, sea ducks are: (1) will (did) hunt or (2) will (did) not hunt.

d. The Service selects samples of hunters for receipt of one of four Migratory Bird Harvest Survey forms: waterfowl (duck, goose, sea duck, and brant; form 3-2056J), dove and band-tailed pigeon (form 3-2056K), woodcock (form 3-2056L), and snipe, rail, gallinule, and coot (form 3-2056M). Similar species are grouped together on the same form to control survey costs. Higher sampling rates are needed for successful hunters and for those who hunt less-frequently hunted species. Hunters are not asked to participate in more than one survey per State per year to minimize the burden on individual respondents.

e. Samples are stratified by survey form, state, and hunting activity. Stratification by state is relevant because: (1) hunters must register for the Migratory Bird Harvest Information Program in each state in which he/she hunts; (2) harvest regulations and species distributions vary by state; (3) response rates vary by state. Theoretically, there could be up to (3)(3)(3)(2)(2)(2)(2)(2)(2) = 1,728 activity strata in each State, defined by (number of duck hunting activity strata) X (number of goose hunting activity strata) X (number of dove hunting activity strata) X (number of woodcock hunting activity strata) X (number of coots/snipe success strata) X (number of rail/gallinule success strata) X (number of band-tailed pigeon success strata) X (number of sea duck hunting success strata) X (number of brant hunting success strata). However, individual States do not allow hunting of all the species listed; therefore most States have fewer strata. For example only 40 states have mourning dove seasons, only 36 states have woodcock seasons, and only 7 states have band-tailed pigeon seasons. We also consider the stratification of each species/species group independently. Thus, there are a total of 705 strata in the 49 states, with the number of activity strata in individual states ranging from 10 to 17.

f. Samples are selected as the names are received so that migratory bird hunters can be contacted and asked to keep records as soon as possible after the hunting season starts. The first, eligible hunter in a file is selected, and then every n^{th} hunter in each stratum is selected thereafter, with (potentially) different sampling rates for each stratum. Sampling without replacement is used, with high priority strata being sampled before lower priority strata. Stratum priority is determined by: (1) biological need, and (2) desired precision levels for the estimates.

g. Double sampling estimates (Hansen and Hurwitz, 1958, JASA) are used to account for non-response (see Groves, 1989, *Survey Errors and Survey Costs,* Wiley, pages 165-169; and Hansen, Hurwitz and Madow, 1953 *Sample Survey Methods and Theory*, Wiley, vol. 1, pages 468-475). Two response strata are defined by the respondents and non-respondents to the first wave of reminder letters. A second wave of reminders and survey replacement forms is sent to all non-respondents to the first wave of reminder letters. Additionally, a third wave of reminder letters and survey replacement forms is sent to all non-respondents to the second wave of reminder letters.

For each species (e.g., mourning dove) or species-group (e.g., geese), the number of active hunters, number of hunting days, and number of birds harvested are estimated from the questionnaire responses using a ratio estimator with the harvest per hunter and the number of migratory bird hunters reported, by stratum, by State. Species-, age- and sex-specific harvests are estimated using ratios estimated from the Parts Collection Survey.

Target 95% confidence intervals for harvest estimates at the management unit level (e.g., Flyway) are as follows: ducks, ± 5%; geese, ± 5%; mourning doves, ± 5%; brant, woodcock, band-tailed pigeons, and white-winged doves, ± 10%; sea ducks, ± 25%; snipe, rails, gallinules, and coots, ± 50%. These target precision levels were deemed appropriate by the Federal and State biologists who are charged with managing those migratory bird species.

Surveys must be conducted annually because migratory bird harvests can change substantially between years depending on the size of the fall flight and hunting pressure. Estimates are required for annually promulgating hunting regulations.

Parts Collection Survey Procedures: Samples of successful hunters from the previous year's Migratory Bird Hunter Survey are asked to complete and return a postcard (forms 3-165A, C,

and E), volunteering to contribute wings and tails during the following hunting season. The samples are randomly selected in proportion to the estimated harvest in each State, and sampling rates vary from 30 to 100% of successful hunters. In addition, in some years due to the small number of successful waterfowl hunters in some states, we sample an additional amount from the list of hunters who were not sampled for the diary survey the previous year in order to reach our target number of parts. Because it is difficult to find enough hunters to participate in the Parts Collection Survey each year, hunters can remain in the survey for 3 (waterfowl)-10 (all others) years. Those who volunteer are sent a cover letter with instructions and a supply of pre-addressed, postage-paid return envelopes (forms 3-165, 3-165B, and 3-165E) for mailing in the wings and tails. Inner envelopes to protect other mail from stains and seepage are enclosed with the instructions and return envelopes. These packages are sent to survey volunteers before the hunting season opens in their state. Throughout the hunting season, survey participants mail in parts to four collection points (one in each flyway), where they are stored until they are examined. At the end of the hunting season, biologists examine each part to determine species, age, and sex composition of the sample; hunters cannot reliably determine this information. After those data have been compiled, respondents are sent a personalized thank you letter detailing the species, age, and sex of each bird from which they contributed a wing or a tail. The proportions of species, age, and sex in the Parts Collection Survey are then applied to the total harvest estimates from the Migratory Bird Hunter Survey, to allocate harvest estimates among groups. The allocation is proportional to the state, because of different hunting regulations in states and different sampling rates.

Sandhill Crane Harvest Survey: Sampling is stratified according to State of permit issuance; sampling rates vary from 10% in States with many crane permittees (e.g., Texas) to 100% in States with few crane permittees (e.g., Wyoming). No specialized sampling procedures are required, and we use the standard estimation methods for stratified random samples. Stratum-specific (State-specific) estimates of the proportion of permittees that actually hunted cranes, the mean number of days hunted, and the mean number of cranes harvested are derived from the responses. Those estimates are expanded by N (number of permits issued) for each State to obtain State totals, which are then combined to provide estimates of the number of active crane hunters, days of hunting, and cranes harvested for all mid-continent sandhill crane hunting in the U.S. The 95% confidence interval for the annual harvest estimate is about $\pm 5\%$, which is a precision level that is adequate to ensure responsible harvest management (i.e., hunting regulations) decisions.

3. Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling, a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.

Response to the Migratory Bird Harvest Information Program is mandatory. We monitor participation by reviewing trends in data transmission from each state, for which we have direct information from 1999-present and indirect information from 1961-present. We also spot-check compliance by following the registrations of individual hunters (Appx. A). We use standard methods to encourage response to the Migratory Bird Harvest Survey, Parts Collection Survey, and Sandhill Crane Survey. These include a cover letter that is addressed to the individual hunter and signed by the Chief of the Division of Migratory Bird Management or the Chief of the Branch of Monitoring and Information Management. The letter explains why the information is important and includes a toll-free number to call and ask questions. The cover letters attempt to motivate the respondent and stress the importance of participation. Forms are sent as early in

the hunting season as possible, to encourage participation. The forms are one page long and have been designed to be as attractive and as easy to use as possible. All forms are sent to hunters with pre-addressed, postage paid return envelopes. The Migratory Bird Hunter Survey and Sandhill Crane Survey requests daily diary records, to minimize response bias. The forms also includes space to record season totals, for hunters who do not wish to record daily hunting activity. The Migratory Bird Hunter Survey uses three waves of reminder mailings to contact non-respondents and encourage participation. The first wave includes a postcard and a letter sent by first class mail. Second and third waves of reminders and replacement forms are sent to all non-respondents, also by first class mail. The Sandhill Crane Survey uses 1 wave of reminders, because most sample frame information are not available until late winter and early spring, and we have a limited time frame in which to analyze data and publish reports. The Parts Collection Survey maximizes response rates by using forms 3-165A, C, and D to solicit volunteer participants from a randomly selected sample of successful hunters. Solicitation forms are mailed out well in advance of the opening of the hunting season, so that survey envelopes can be mailed to them before the start of the hunting season. In these solicitation forms, we tell hunters that we will send a report that contains all of the biological data on the specimens they send in each year, as incentive to participate in the survey for the duration of the hunting season. This report is sent in June of each year.   As described in item B. 2.g. above, double sampling estimates are used to detect and, if necessary, account for non-response.

Investigations of non-response bias and attempts to increase response rates. As requested by OMB in 2004 we conducted several investigations of non-response bias in our surveys. Based on these analyses, we do not believe that the following aspects of our surveys impart significant bias that requires adjustment via weighting:

> (1) non-response bias and Parts Collection Survey – waterfowl;
> (2) response wave bias and Migratory Bird Harvest Survey;
> (3) non-response bias and Sandhill Crane Harvest Survey.

Summaries of those investigations were included with previous Information Collection Request packets and can be provided upon request.

4.   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

No additional testing of procedures is planned.

5.   Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.

The individual directly responsible for information collection and analysis is: Dr. Kathleen Fleming, Chief, Branch of Monitoring and Information Management, Division of Migratory Bird Management, Laurel, MD 20708-4028 (301/497-5902).

The following statisticians have reviewed the statistical design and analysis of these surveys:

Dr. Christine M. Bunck, Deputy Center Director, USGS National Wildlife Health Center, Madison, WI 53711 (608-270-2407)

Mr. Grey W. Pendleton, Statistician (Biology), Alaska Department of Fish and Game, Douglas, AK 99824 (907-465-4353)

Dr. Robert E. Trost, Division of Migratory Bird Management, U.S. Fish and Wildlife Service, 911 N.E. 11th Avenue, Portland, OR 97232-4181 (503-231-6162)

Dr. Paul H. Geissler, Biometrician, National Ecological Surveys Team, USGS Fort Collins Science Center, Fort Collins, CO 80526 (970-226-9482)

Table 1. Potential respondent universe (N) and number of waterfowl hunters sampled (n) by stratum for Form 3-2056J, based on 2015 counts. Each hunter is assigned a duck, sea duck, goose, and brant stratum

Duck hunters in stratum (N) and sample (n)

state	Bagged none N	n	Bagged 1-10 N	n	Bagged > 10 N	n
AK	5490	181	1308	74	922	76
AL	120355	5473	6520	760	5957	1381
AR	75671	1576	17574	1266	28888	4059
AZ	34093	10069	1386	782	892	891
CA	99820	2079	12529	1449	21594	2989
CO	48703	1886	7011	806	4304	955
CT	3018	501	1343	362	365	150
DE	4449	746	1839	588	1696	862
FL	82125	2166	6455	869	6105	1751
GA	140535	3162	15347	1823	6940	1506
IA	65482	4998	6133	911	5991	1286
ID	26097	735	4595	386	4690	776
IL	59330	1206	12462	755	9876	980
IN	9072	586	5635	665	3099	656
KS	43785	1451	6826	483	8695	986
KY	20949	728	4478	1142	4442	2090
LA	130000	3077	13939	2026	18291	3391
MA	8308	995	2221	573	611	236
MD	27301	1914	11049	2260	6417	1695
ME	20085	1726	1449	596	488	277
MI	124998	2306	17891	1099	12043	1272
MN	87871	1408	35065	1588	23635	1456
MO	51972	1687	8281	845	9999	1325
MS	63491	1839	7562	1057	7523	1428
MT	54140	1911	3846	664	2854	667
NC	274252	3524	18600	1488	12473	1559
ND	35305	1281	14007	1802	16279	2505
NE	15613	705	5438	741	4403	891
NH	5988	781	1566	569	395	281
NJ	6821	713	2755	545	1701	424
NM	25274	1756	1416	180	841	177
NV	5989	505	1208	318	917	399
NY	23419	1604	9924	1377	5079	1163
OH	26459	641	7864	440	3035	307
OK	37044	2016	4228	567	6418	1460
OR	28204	985	6139	626	8257	2389
PA	81738	2169	11669	1178	4945	831
RI	1068	348	422	241	243	148
SC	83854	1993	7082	1340	5758	1691
SD	33830	5985	86	20	74	24
TN	56374	571	5492	281	6137	629

Seaduck hunters in stratum (N) and sample (n)

state	Do not hunt N	n	Do hunt N	n
AK	7179	267	541	64
AL	0	0	0	0
AR	0	0	0	0
AZ	0	0	0	0
CA	133552	6295	391	222
CO	0	0	0	0
CT	4726	1013	0	0
DE	7328	1773	656	423
FL	0	0	0	0
GA	0	0	0	0
IA	0	0	0	0
ID	0	0	0	0
IL	0	0	0	0
IN	0	0	0	0
KS	0	0	0	0
KY	0	0	0	0
LA	0	0	0	0
MA	10201	1378	939	426
MD	33638	3425	11129	2444
ME	18264	1040	3758	1559
MI	0		0	0
MN	0	0	0	0
MO	0	0	0	0
MS	0	0	0	0
MT	0	0	0	0
NC	0	0	0	0
ND	0	0	0	0
NE	0	0	0	0
NH	7756	1480	193	151
NJ	10443	1393	834	289
NM	0	0	0	0
NV	0	0	0	0
NY	32367	2665	6055	1479
OH	0	0	0	0
OK	0	0	0	0
OR	42293	3693	307	307
PA	0	0	0	0
RI	1224	407	509	330
SC	0	0	0	0
SD	0	0	0	0
TN	0	0	0	0

Goose hunters in stratum (N) and sample (n)

state	Bagged none N	n	Bagged 1-10 N	n	Bagged > 10 N	n
AK	6631	239	831	59	258	33
AL	128899	6568	2388	516	1545	530
AR	98247	3668	12601	1302	11285	1931
AZ	35811	11270	418	332	142	140
CA	114273	3646	11825	1531	7845	1340
CO	49481	2084	6801	720	3736	843
CT	3392	592	1017	295	317	126
DE	4570	792	2039	687	1375	717
FL	94685	4786	0	0	0	0
GA	162822	6491	11455	1179	11455	1179
IA	68388	5497	5910	945	3308	753
ID	30241	1168	3980	470	1161	259
IL	63914	1489	12162	844	5592	608
IN	10668	833	5235	655	1903	419
KS	46940	1670	6453	506	5913	744
KY	24547	1809	4238	1602	1084	549
LA	152294	6404	6812	1245	3124	845
MA	9182	1186	1580	484	378	134
MD	23677	1852	13744	2388	7346	1629
ME	21107	2099	762	394	153	106
MI	131222	2833	16465	1068	7245	776
MN	105872	2097	29532	1529	11167	826
MO	59827	2413	6111	731	4314	713
MS	73615	3265	3632	718	1329	341
MT	53339	1938	4899	746	2602	558
NC	290881	4827	11270	1201	3174	543
ND	42508	2287	15352	1935	7731	1366
NE	16640	973	5745	764	3069	600
NH	6677	1015	1061	462	211	154
NJ	7871	905	2112	473	1294	304
NM	26700	1942	667	116	164	55
NV	7135	799	779	330	200	93
NY	25589	2123	8280	1055	4553	966
OH	27363	725	7708	433	2287	230
OK	42037	2737	3476	705	2177	601
OR	33525	1880	5320	899	3755	1221
PA	82039	2401	11166	989	5147	788
RI	1178	382	379	238	176	117
SC	93844	3994	2353	715	497	315
SD	33890	6005	91	20	9	4
TN	61986	838	3666	287	2352	356

Brant hunters in stratum (N) and sample (n)

state	Do not hunt N	n	Do hunt N	n
AK	5943	152	1777	179
AL	0	0	0	0
AR	0	0	0	0
AZ	0	0	0	0
CA	133367	6137	576	380
CO	0	0	0	0
CT	3392	1013	1334	0
DE	6866	1663	1118	533
FL	0	0	0	0
GA	0	0	0	0
IA	0	0	0	0
ID	0	0	0	0
IL	0	0	0	0
IN	0	0	0	0
KS	0	0	0	0
KY	0	0	0	0
LA	0	0	0	0
MA	10791	1583	349	221
MD	41325	4939	3442	930
ME	0	0	0	0
MI	0	0	0	0
MN	0	0	0	0
MO	0	0	0	0
MS	0	0	0	0
MT	0	0	0	0
NC	239562	4917	65763	1654
ND	0	0	0	0
NE	0	0	0	0
NH	7916	1604	33	27
NJ	9238	1128	2039	554
NM	0	0	0	0
NV	0	0	0	0
NY	31909	2646	6513	1498
OH	0	0	0	0
OK	0	0	0	0
OR	42481	3881	119	119
PA	0	0	0	0
RI	977	254	756	483
SC	0	0	0	0
SD	0	0	0	0
TN	0	0	0	0

TX	700142	5370	28537	2703	32180	3962
UT	17316	827	6843	909	5270	1130
VA	32370	1904	6984	987	4032	932
VT	5633	683	1489	444	710	306
WA	24769	2357	7424	1686	9878	3386
WI	92336	1985	28512	1809	14793	1575
WV	4310	1476	764	522	327	327
WY	4981	732	1858	659	1021	583
Total	3030229	95317	393051	45261	341483	60220

TX	0	0	0	0
UT	0	0	0	0
VA	41814	3297	1572	526
VT	0	0	0	0
WA	41841	7273	230	156
WI	0	0	0	0
WV	0	0	0	0
WY	0	0	0	0
Total	392626	35399	27114	8376

TX	745002	10076	10958	1206	4899	753
UT	24900	1892	3701	737	828	237
VA	35084	2213	6110	1038	2192	572
VT	6274	848	1187	421	371	164
WA	32399	4463	6657	1915	3015	1051
WI	113367	3446	19072	1528	3202	395
WV	4507	1604	658	494	236	227
WY	5234	916	1897	681	729	377
Total	3340274	135980	300555	39588	146845	27588

TX	0	0	0	0
UT	0	0	0	0
VA	41574	3343	1812	480
VT	0	0	0	0
WA	41147	7004	924	425
WI	0	0	0	0
WV	0	0	0	0
WY	0	0	0	0
Total	616488	40264	86555	7483

Table 2. Potential respondent universe (N) and number of mourning dove and band-tailed pigeon hunters sampled (n) by stratum for Form 3-2056K, based on 2015 counts.

State	Mourning dove hunters in stratum (N) and sample (n) Bagged none N	n	Sampling rate	Bagged 1-10 N	n	Sampling rate	Bagged >10 N	n	Sampling rate	Band-tailed pigeon hunters in stratum (N) and sample (n) Do not hunt N	n	Sampling rate	Do hunt N	n	Sampling rate
AL	105461	5245	0.049734025	20522	1301	0.063395381	6849	1068	0.155935173	0	0		0	0	
AR	94883	3776	0.039796381	17663	1592	0.090131914	9587	1533	0.159904037	0	0		0	0	
AZ	20146	6592	0.327211357	12815	3796	0.296215373	3410	1354	0.397067449	29632	8104	0.273488121	6739	3638	0.539842707
CA	94576	3373	0.035664439	30471	1997	0.065537724	8896	1147	0.128934353	132078	5887	0.044572147	1865	630	0.337801609
CO	47252	1873	0.039638534	6654	625	0.093928464	6112	1149	0.187990838	59019	3325	0.05633779	999	322	0.322322322
DE	5834	1270	0.217689407	1573	602	0.382708201	577	324	0.56152513		0		0	0	
FL	81581	3053	0.037422929	10293	1102	0.107063053	2811	631	0.224475276	0	0		0	0	
GA	116708	3037	0.026022209	37327	2318	0.062099821	8787	1136	0.129281894	0	0		0	0	
IA	69672	5582	0.080118268	6395	1145	0.17904613	1539	468	0.304093567	0	0		0	0	
ID	30286	1138	0.037575117	4480	583	0.130133929	616	176	0.285714286	0	0		0	0	
IL	64241	1810	0.028175153	14704	836	0.056855277	2723	295	0.108336394	0	0		0	0	
IN	10489	857	0.081704643	6025	732	0.121493776	1292	275	0.212848297	0	0		0	0	
KS	35916	1219	0.033940305	15211	893	0.058707514	8179	808	0.098789583	0	0		0	0	
KY	13484	1053	0.078092554	12051	1813	0.150443947	4334	1094	0.252422704	0	0		0	0	
LA	143886	5406	0.037571411	14405	2224	0.154390837	3939	864	0.219345011	0	0		0	0	
MD	36202	3810	0.105242804	7663	1748	0.228109096	902	311	0.344789357	0	0		0	0	
MN	136636	3314	0.024254223	6196	577	0.093124597	3739	561	0.150040118	0	0		0	0	
MO	55152	2047	0.037115608	11149	1236	0.110861961	3951	574	0.145279676	0	0		0	0	
MS	61013	2288	0.037500205	13250	1285	0.096981132	4313	751	0.174124739	0	0		0	0	
MT	59954	2912	0.048570571	727	243	0.334250344	159	87	0.547169811	0	0		0	0	
NC	253741	3349	0.013198498	45406	2543	0.056005814	6178	679	0.109906118	0	0		0	0	
ND	58566	4094	0.06990404	5552	1039	0.187139769	1473	455	0.308893415	0	0		0	0	
NE	16159	1017	0.062937063	7306	956	0.130851355	1989	364	0.183006536	0	0		0	0	
NM	21143	1210	0.057229343	4801	541	0.112684857	1587	362	0.22810334	23867	861	0.036074915	3664	1252	0.341703057
NV	5972	636	0.106496986	1900	433	0.227894737	242	153	0.632231405	0	0		0	0	
OH	26867	766	0.028510813	8938	431	0.048221079	1553	190	0.122343851	0	0		0	0	
OK	33919	2100	0.061912203	10079	1174	0.11647981	3692	769	0.208288191	0	0		0	0	
OR	37973	2891	0.076133042	3502	687	0.196173615	1125	422	0.375111111	42091	3811	0.090541921	509	189	0.371316306
PA	80814	2507	0.031021853	15248	1277	0.083748688	2290	394	0.172052402	0	0		0	0	
RI	1542	596	0.386511025	175	127	0.725714286	16	14	0.875	0	0		0	0	
SC	78941	2415	0.030592468	13589	1707	0.125616307	4164	902	0.216618636	0	0		0	0	
SD	33986	6027	0.177337727	4	2	0.5	0	0		0	0		0	0	
TN	52909	540	0.010206203	9735	429	0.044067797	5361	512	0.09550457	0	0		0	0	
TX	537863	3753	0.006977613	138736	3989	0.028752451	84260	4293	0.050949442	0	0		0	0	
UT	24759	1966	0.079405469	4202	756	0.179914327	468	144	0.307692308	28178	2592	0.091986656	1251	274	0.21902478
VA	28852	1805	0.062560654	9172	998	0.10880942	5362	1020	0.190227527	0	0		0	0	
WA	39108	6123	0.156566431	2746	1111	0.404588492	217	77	0.35483871	0	0		0	0	
WI	127354	4392	0.034486549	7598	851	0.112003159	689	126	0.18287373	41865	7292	0.174178908	206	137	0.665048544
WV	4128	1539	0.372819767	1273	786	0.61743912	0	0		0	0		0	0	
WY	6556	1420	0.216595485	1102	420	0.381125227	202	134	0.663366337	0	0		0	0	
Total	2754524	108801	0.086111084	540638	46905	0.181567719	203583	25616	0.264870403	356730	31872	0.109597208	15233	6442	0.399579904

Table 3. Potential respondent universe (N) and number of woodcock hunters (n) sampled by stratum, for Form 3-2056L, based on 2015 counts.

| | Woodcock hunters in stratum (N) and sample (n) | | | | |
| | Do not hunt | | | Do hunt | |
State	N	n		N	n
AL	132,178	7,278		654	336
AR	116,912	5,983		5,221	918
CT	4,245	797		481	216
DE	7,859	2,110		125	78
FL	93,384	4,474		1,301	312
GA	160,132	5,970		2,690	521
IA	74,289	5,249		3,317	1,946
IL	80,433	2,711		1,235	230
IN	17,577	1,776		229	131
KS	59,028	2,715		278	205
KY	29,517	3,794		352	166
LA	158,711	7,681		3,519	813
MA	10,375	1,489		765	315
MD	43,960	5,368		807	501
ME	21,102	2,015		920	584
MI	142,920	3,814		12,012	863
MN	138,207	3,514		8,364	938
MO	69,409	3,500		843	357
MS	77,454	3,921		1,122	403
NC	300,477	6,056		4,848	515
NE	25,451	2,336		3	1
NH	6,668	1,174		1,281	457
NJ	10,664	1,382		613	300
NY	36,907	3,557		1,515	587
OH	36,792	1,308		566	80
OK	47,595	3,986		95	57
PA	94,404	3,532		3,948	646
RI	1,639	663		94	74
SC	0	4,725		0	299
SD	96,110	6,029		584	0
TN	66,272	1,209		1,732	272
TX	760,580	11,970		279	65
VA	42,731	3,508		655	315
VT	7,233	1,218		599	215
WI	127,391	4,465		8,250	904
WV	5,174	2,099		227	226
Total	3,103,780	133,376		69,524	14,846

Table 4. Potential respondent universe (N) and number of snipe/coot and rail/gallinule hunters sampled (n) by stratum for Form 3-2056M, based on 2015 counts. Each hunter is assigned to both a coot/snipe and rail/gallinule stratum.

| State | Coot/snipe hunters in stratum (N) and sample (n) | | | | Rail/gallinule hunters in stratum (N) and sample (n) | | | |
| | Do not hunt | | Do hunt | | Do not hunt | | Do hunt | |
	N	n	N	n	N	n	N	n
AK	7517	308	203	23	0	0	0	0
AL	131945	7314	887	300	132447	264	385	59
AR	117773	6516	4360	385	119492	124	2641	31
AZ	35314	11252	1057	489	35668	480	703	35
CA	131674	5863	2269	654	133403	270	540	105
CO	58009	3376	2009	271	59706	199	312	11
CT	4703	994	23	19	4678	101	48	27
DE	7789	2073	195	123	7910	128	74	23
FL	89784	3908	4901	878	93232	191	1453	63
GA	159789	5934	3033	557	160882	147	1940	177
IA	74120	5180	3486	2015	74418	191	3188	800
ID	35230	1870	152	27	35382	73	0	0
IL	80761	2870	907	71	81363	82	305	16
IN	17375	1645	431	262	17692	38	114	58
KS	59053	2728	253	192	59087	150	219	109
KY	29204	3725	665	235	29811	31	58	8
LA	156962	7340	5268	1154	158753	399	3477	92
MA	10908	1629	232	175	11021	218	119	45
MD	43646	5430	1121	439	43832	88	935	169
ME	18399	1103	3623	1496	18392	42	3630	148
MI	152826	4518	2106	159	152826	156	2106	26
MN	137257	3966	9314	486	138577	141	7994	163
MO	68804	3687	1448	170	69591	137	661	13
MS	64325	2750	14251	1574	64142	135	14434	37
MT	60149	3035	691	207	60840	124	0	0
NC	259207	5263	46118	1308	261810	193	43515	140
ND	64581	5013	1010	575	0	0	0	0
NE	24526	2210	928	127	24799	64	655	16
NH	7879	1585	70	46	0	0	0	0
NJ	11009	1551	268	131	11016	142	261	76
NM	26074	1631	1457	482	26200	34	1331	216
NV	7863	1043	251	179	8014	85	100	53
NY	34533	3056	3889	1088	34839	139	3583	201
OH	36368	1304	990	84	37011	43	347	13
OK	47414	3920	276	123	47623	101	67	19
OR	39482	3324	3118	676	0	0	0	0
PA	96457	3880	1895	298	96990	102	1362	33
RI	1507	583	226	154	1528	36	205	23
SC	96055	4741	639	283	96172	248	522	70
SD	33987	6026	3	3	0	0	0	0
TN	66479	1251	1525	230	66721	15	1283	18
TX	760053	11887	806	148	760693	381	166	13
UT	23032	2006	6397	860	0	0	0	0
VA	42589	3452	797	371	42642	215	744	225
VT	7775	1394	57	39	0	0	0	0
WA	31378	2977	10693	4452	0	0	0	0
WI	128421	4700	7220	669	129822	109	5819	197
WV	5227	2179	174	145	5257	214	144	49
WY	7414	1665	446	309	7668	103	192	97
Total	3,612,626	175,655	152,138	25,141	3,421,950	6,133	105,632	3,674

Table 5. Potential sample universe for the Waterfowl Parts Survey Form 3-165, based on 2015 data.

State	Ducks Harvest	Ducks Number of wings	Geese Harvest	Geese Number of wings
AK	20,300	525	5,400	89
AL	106,800	488	12,500	21
AR	945,400	3685	86,900	222
AZ	21,700	505	2,500	20
CA	1,266,100	7511	167,700	755
CO	111,900	472	80,200	270
CT	7,700	186	5,700	190
DE	26,700	315	13,700	136
FL	183,500	1750	900	15
GA	135,800	568	56,600	109
IA	167,900	1055	54,900	139
ID	173,700	1659	44,100	355
IL	263,200	1657	90,200	380
IN	75,400	424	37,400	149
KS	236,200	1565	109,000	303
KY	129,400	369	29,000	55
LA	846,400	5497	54,300	62
MA	17,900	474	9,800	185
MD	71,400	970	106,100	869
ME	12,200	412	7,300	184
MI	317,500	1061	159,700	458
MN	573,400	1670	143,700	296
MO	408,700	2099	45,700	237
MS	222,900	924	14,600	44
MT	183,700	1154	73,400	486
NC	309,200	1717	37,400	88
ND	509,300	4727	162,400	1400
NE	167,000	1555	91,000	282
NH	9,700	256	4,100	77
NJ	37,500	742	16,100	257
NM	24,300	598	2,300	18
NV	27,200	563	4,500	86
NY	129,200	2015	102,900	995
OH	120,600	676	65,100	165
OK	261,600	1673	42,200	84
OR	238,900	4388	52,000	692
PA	69,500	721	76,400	783
RI	5,400	237	3,700	219
SC	139,500	983	19,300	11
SD	180,800	1977	73,200	313
TN	196,500	761	20,300	35
TX	733,700	6641	92,600	188
UT	193,000	1722	21,100	147
VA	112,700	1277	40,500	355
VT	14,800	253	6,800	143
WA	444,400	4106	63,300	553
WI	449,400	1627	99,600	307
WV	5,900	84	3,700	90
WY	31,100	750	18,400	295
Total	10,937,000	77,044	2,530,200	13,612

Table 6. Potential sample universe for the Mourning Dove Parts Collection Survey for Form 3-165D, based on 2015 data.

ST	Doves harvested	Dove wings collected
AL	428,000	503
AR	252,500	300
AZ	401,500	1046
CA	686,900	621
CO	204,500	641
DE	24,900	91
FL	142,000	466
GA	725,800	341
IA	111,500	266
ID	100,800	356
IL	283,700	575
IN	93,700	721
KS	558,200	268
KY	286,600	26
LA	214,200	151
MD	63,100	105
MN	96,800	310
MO	307,400	348
MS	257,100	246
MT	18,100	25
NC	734,300	591
ND	73,600	545
NE	160,700	391
NM	111,900	133
NV	22,400	204
OH	131,300	397
OK	294,000	312
OR	22,600	127
PA	119,300	153
RI	1,100	15
SC	548,700	362
SD	84,600	405
TN	288,400	294
TX	4,892,200	572
UT	54,800	240
VA	229,500	274
WA	43,600	258
WI	60,400	133
WV	13,700	32
WY	15,000	401
Total	13,159,400	13,245

Table 7. Potential sample universe for the Other Migratory Game Bird Survey for Form 3-165B, based on 2015 data.

State	Woodcock Harvest	Woodcock Number of wings	Rail species Harvest	Rail species Number of wings	Band-tailed pigeon Harvest	Band-tailed pigeon Number of wings
AL	6,200		0	0	.	.
AR	7,300	2	0	2	.	.
AZ	0	. [1]	.	.	500	0
CA	0	.	.	.	6,700	32
CO	0	.	0	0	200	0
CT	800	171	200	0	.	.
DE	100	7	0	0	.	.
FL	0	0	3,600	0	.	.
GA	1,800	51	3,500	15	.	.
IA	400	19	0	5	.	.
IL	200	3	0	0	.	.
IN	600	68	100	0	.	.
KS	400	0	0	0	.	.
KY	600	1	0	0	.	.
LA	3,600	195	200	2	.	.
MA	1,800	434	100	3	.	.
MD	1,100	119	8,200	0	.	.
ME	4,800	936	0	0	.	.
MI	63,200	2,781	1,000	0	.	.
MN	25,700	1,232	0	19	.	.
MO	400	53	0	11	.	.
MS	3,600	23	0	0	.	.
NC	7,200	114	0	76	.	.
NE	0	0	0	0	.	.
NH	9,200	691	.	.	.	.
NJ	4,800	205	1,700	26	.	.
NM	0	.	0	0	100	6
NY	8,700	623	0	2	.	.
OH	2,200	105	100	2	.	.
OK	0	0	500	0	.	.
OR	0	.	.	.	600	36
PA	5,400	353	0	0	.	.
RI	200	4	100	0	.	.
SC	2,000	201	3,500	25	.	.
TN	0	3	0	0	.	.
TX	1,000	.	0	0	.	.
UT	0	.	.	.	20	0
VA	3,300	213	4,200	105	.	.
VT	3,400	393	.	.	.	.
WA	0	.	.	.	100	15
WI	31,000	2,281	0	0	.	.
WV	800	62	0	0	.	.
WY	0	.	600	0	.	.
Total	201,800	11,343	27,600	293	8,220	89

[1] "." indicates no season available in the state.

Table 8. Potential respondant universe, number of sandhill crane hunters, and response rates for Form 3-2056N, based on 2015 counts.

state	Number of hunters	Number sampled	Number of responses	Response rate
AK	2,186	206	77	37%
CO	787	459	178	39%
KS	1,040	662	307	46%
MN	1,199	600	342	57%
MT	404	404	316	78%
ND	4,543	909	609	67%
NM	365	365	284	78%
OK	510	257	141	55%
SD	4,876	605	392	65%
TX	22,033	4,407	1,807	41%
WY	454	454	313	69%
Total	38,397	9,328	4,766	55%