

MISSISSIPPI MAIL SURVEY OF GAME
HARVEST AND HUNTER EFFORT FOR 1990-91

by

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INTRODUCTION

The purpose of game harvest surveys is to establish yearly indices of harvest and hunter effort for each game species. These indices provide trend data which allows staff to monitor changes in harvest and effort through time. When interpreting these data, it is important to consider habitat changes, species abundance, the current socio-economic climate of the state as well as changes in management strategies.

The Mississippi Department of Wildlife Fisheries and Parks (MDWFP) uses a mail survey to obtain trend data on total harvest, average daily kill, average seasonal harvest, and total man-days hunted for each game species. The estimates obtained for each of these categories contain serious sampling, response and nonresponse biases, therefore the accuracy of these estimates is unknown. Filion (1980) provided a good review of these biases and their effect on the estimates. Recognizing that these biases exist and assuming all biases remain constant, the estimates obtained from the survey provide adequate indices for monitoring trends in hunter harvest and effort.

The primary objective of the mail survey for the 1990-91 hunting season was to obtain a reliable set of statewide indices for each game species in Mississippi. The secondary objective was to provide regional indices for these species. The survey is also used to monitor hunter attitudes and perceptions on specific issues. The results of the survey are used to help guide management decisions.

METHODS

The sampling frame for the survey consisted of resident holders of a Type 00 - Sportsman, Type 01 - All Game Hunting and Fishing, Type 02 - Small Game Hunting or Type 05 - Small Game Hunting and Fishing license purchased during the 1990-91 license year.

A 2.5 percent sample of these hunting license buyers was selected from the 157,200 licenses processed from July 1, 1990 -January 31, 1991. An approximate random sample was achieved by selecting license sales stubs whose license number ended in predetermined but randomly selected sets of terminal digits between 000 and 999. A different set of digits was selected for each of Types 01, 02, and 05. An optical scanning device (S6000 Burroughs Document Processor) was used to mechanically make the stub selections. Sampling was discontinued at the end of January to expedite mailing the survey immediately after the close of the February hunting season.

An initial sample of 3,378 of Type 01, 02, and 05 license holders was selected. Since approximately (8.3) percent of the selected license stubs lacked complete names and/or addresses, the (2.5) percent sample of stubs resulted in a (1.97) percent or 3,095 usable licenses. Names and addresses were keypunched for each usable stub sampled.

A sample of Sportsman license holders comparable to the other types was achieved as follows. Based on an average of 10 years 90.5 percent of the predicted sales had been accounted for by the end of January of each year. Therefore the 1.97 percent sample of

license holders in January would be about a 1.78 percent ($0.905 \times 0.0197 \times 100$) sample of total expected through June 1991.

Because of the computerized and renewable aspects of Sportsman's licenses (Type 00), virtually all 90-91 Sportsman's license holders are accounted for by the end of January. Sales were 35,850 by February 1991. To achieve a sample of Sportsman license holders comparable to the other types, a computer generated random sample of 609 hunters or 1.7 percent of the total sales was selected. Both stub and Sportsman's license samples were combined into a single computer file for mailing purposes.

The initial mailing consisting of the questionnaire (Figure 1), a cover letter (Figure 2) and a No. 9 postage-paid business reply envelope was mailed in a No. 10 window envelope on March 14, 1991 to the 3,704 sampled hunters. Three weeks after the initial mailing, reminder post cards (Figure 3) were mailed to 2,369 sampled hunters who had not returned their questionnaire. The final mailing composed of the identical questionnaire, cover letter (Figure 4) and business reply envelope was mailed three weeks after the reminder post card mailing to the 2,022 nonrespondents. First mailing questionnaires were given identification numbers from 100,001 to 103,704 while the final mailing was given a 200,000 numbering sequence to differentiate responses between mailings. Questionnaires returned four weeks after the final mailing were not considered in the analyses.

Questionnaire design and mailing procedures were outlined by Steffen (1981). Procedures for editing and data entry of returned questionnaires were also identical to Steffen (1981).

Estimates and their standard errors for each species were calculated for the following

indices; total kill, average seasonal kill per hunter, proportion of licensed hunters, total licensed hunters, proportion of hunters who were successful, total man-days spent hunting, average days afield per hunter and the average daily kill. These indices were calculated both on a statewide and regional (Figure 5) basis.

The 1990-91 survey obtained information about two license years. Turkey harvest indices were partially calculated from hunters who hunted during the spring 1990 turkey season which was the 89/90 license year. Indices for other species were determined for the 90-91 season alone. Because of prior irregularities in the license sales structure, only surveys beginning with the 1982 - 83 season had well defined sampling frames with a known number of license buyers (Steffen 1981, 1983 a, b). Therefore spring 1990 turkey hunting indices were calculated based on the respondents who also purchased a big game license during the previous July 1, 1989 - June 30, 1990 fiscal year (Questionnaire Part B, question #12).

Estimates and standard errors of total turkey and man-days of effort were calculated as a linear combination of the spring 1990 estimates plus the fall 1990 estimates. The computer programs were altered to reflect these changes. All other calculations follow Steffen (1981).

RESULTS

Based on all three mailings, 435 (11.7%) of the 3,703 questionnaires were returned as non-deliverable by the post office. Therefore 3,268 individuals were assumed to have been

contacted to participate in the survey. Of these, 2,104 (64.3%) returned their questionnaires for possible analysis and 1,213 (37.1%) were nonresponses. Based on those questionnaires returned, 2,055 were answered and usable to some extent, 49 were returned after the acceptance deadline (4 weeks after the final mailing).

Statewide expansions were calculated based on the total hunting licenses sold and accounted for by the end of June 1991. There existed 228,685 individuals licensed to hunt small game and 213,030 (Types 00 + 01) of these license holders also were eligible to pursue big game (deer and turkey) during the 1990-91 hunting seasons. The spring, 1990 turkey hunting estimates were based on the 215,703 big game license holders recorded in the 1989-90 license sales totals.

Based on the 2,055 usable responses, 91.5 ± 0.6 (SE) percent of all resident license holders actually participated in a hunting activity during the 1990-91 hunting season. Therefore an estimated $209,740 \pm 1,375$ (SE) licenses actually utilized their license for hunting purposes.

The expanded statewide summaries of total harvest, average daily kill, average seasonal kill, the percent of hunters and the percent of total licenses that hunted are provided in Table 1 for all game species included in the survey. Table 2 provides the expanded statewide estimates of total harvest and the variability of these (standard errors and 95 percent confidence limits) for all game species surveyed.

Tables 3-8 summarize small game hunting on a statewide and regional basis. Waterfowl hunting is summarized in Tables 9-11. Tables 12-15 summarize fox (red and gray), bobcat and coyote hunting. Statewide and regional summaries of deer (buck and doe

data from the archery, primitive weapon and gun seasons) and turkey hunting are provided in Tables 16-24. Statewide totals will not necessarily equal the sum of the regional totals. All figures were calculated independently and were the best statistical estimates available.

DISCUSSION

For management purposes, it should be reemphasized that the hunting data provided in this publication are only indices to harvest and effort and are to be used in conjunction with past and future mail surveys to determine trends. The current survey was conducted similarly to all past surveys and is therefore useful for comparison purposes.

Response and nonresponse biases continue to exist with the survey as previously noted by Steffen (1981). Therefore discretion must be used when considering these data as absolute estimates. Assuming the biases remain consistent over time, the best uses of these data are as indices for trend determinations.

As previously recommended by Steffen (1981), the annual survey should be continued with a sample of 3,000 - 4,000 sportsmen. Periodically (e.g., every 5 years) a survey of 11,000 - 12,000 hunters should be conducted to provide more precise estimates on a regional basis. To avoid changes in biases, attention to the consistency of survey methodology should be continued in future surveys.

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REFERENCES CITED

- Filion, F. L. 1980. Human surveys in wildlife management. Pages 441-453 in S. D. Schemnitz, ed. Wildlife management techniques manual. 4th ed. rev. The Wildl. Soc., Washington, D. C. 686 pp.
- Steffen, D. E. 1981. Mississippi mail survey if game harvest and hunter effort for 1980-81. Miss. Dept. Wildl. Cons., Fed. Aid Proj. No. W-48-28, Job VI-1. 87 pp.
- Steffen, D. E. 1983a. Mississippi mail survey of game harvest and hunter effort for 1982-83. Miss. Dept. wildl. Cons., Fed. Aid Proj. No. W-48-28, Job VI-1. 40 pp.
- Steffen, D. E. 1983b. Trends in Mississippi game harvest and hunter effort: a summary of mail survey information. Miss. Dept. Wildl. Cons. 29 pp.

TABLE 1. EXPANDED STATEWIDE SUMMARY OF THE 1990-91 MISSISSIPPI MAIL SURVEY OF GAME HARVEST BASED ON 228,885 SMALL GAME LICENSE HOLDERS AND 213,030 BIG GAME LICENSE HOLDERS.

SPECIES	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MAN-DAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT OF TOTAL LICENSEES(A)
DOVE	2,490,442	6.15	25.72	92.3	401,688	4.19	99,709	43.6
QUAIL	429,882	2.77	20.82	87.9	152,762	7.71	25,706	11.2
WOODCOCK	18,986	0.86	5.14	88.3	23,165	7.81	8,569	3.7
RABBIT	657,655	1.57	9.65	87.3	405,412	6.10	72,000	31.5
SQUIRREL	1,500,096	2.39	13.48	91.4	607,593	5.53	114,287	50.0
RACCOON	135,547	0.77	7.82	90.8	157,615	9.75	22,368	9.8
ALL DUCKS	230,625	1.57	11.04	88.6	145,891	7.24	26,040	11.4
MALLARD	111,434	0.76	5.31	60.5				
WOOD DUCK	77,484	0.51	3.70	68.1				
OTHER DUCKS	42,294	0.28	2.01	37.8				
GEESE	2,280	0.46	1.33	73.3	4,224	3.08	7,122	3.1
RED FOX	3,422	0.20	1.36	72.7	14,157	6.53	7,801	3.5
GRAY FOX	5,361	0.41	2.47	89.5	6,394	3.50	7,567	3.3
BOBCAT	6,156	0.46	1.10	89.6	10,857	2.21	10,794	4.7
COYOTE	42,565	0.10	2.31	84.7	291,106	20.40	23,035	10.1
TOTAL DEER	249,572	0.081	1.50	58.7	2,867,243	17.48	168,925	78.4
BUCK	175,304	0.057	1.05	51.8				
DOE	72,439	0.024	0.44	26.9				
ARCHERY DEER	29,982	0.061	0.63	36.7	448,820	9.71	51,717	24.3
BUCK	13,631	0.028	0.28	20.9				
DOE	18,682	0.034	0.35	25.2				
PRIMITIVE DEER	34,716	0.114	0.60	41.9	279,374	4.99	61,180	28.7
BUCK	14,089	0.045	0.24	20.5				
DOE	20,616	0.069	0.36	29.5				
GUN DEER	183,631	0.081	1.15	55.2	2,126,329	13.58	159,883	75.1
BUCK	149,437	0.065	0.93	50.3				
DOE	38,088	0.016	0.22	16.4				
TOTAL TURKEY	44,503	0.036	0.97	52.4	409,324	26.99	55,235	21.7
SPRING 1990	42,443	0.103	0.94	52.5	402,903	9.14	47,750	22.1
FALL 1990	2,059	0.286	0.82	54.5	6,421	3.11	7,485	3.5

(A) DEER AND TURKEY PERCENTAGES BASED ON BIG GAME LICENSE HOLDERS; ALL OTHERS BASED ON SMALL GAME LICENSE HOLDERS.

TABLE 2. EXPANDED STATEWIDE ESTIMATES OF TOTAL HARVEST (AND THE VARIABILITY OF THE ESTIMATES) FOR ALL GAME SPECIES IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

SPECIES	TOTAL HARVEST	STANDARD ERROR		95% CONFIDENCE INTERVAL	
		SE	AS % OF TOTAL (A)	LOWER LIMIT	UPPER LIMIT
DOVE	2,490,442	137,102	5.5	2,216,238	2,784,646
QUAIL	429,882	73,113	17.0	283,656	576,108
WOODCOCK	16,986	4,939	29.1	7,108	26,864
RABBIT	657,655	56,546	8.6	544,563	770,747
SQUIRREL	1,500,096	75,101	5.0	1,349,894	1,650,298
RACCOON	135,547	25,018	18.5	85,511	185,583
ALL DUCKS	230,625	27,693	12.0	175,239	286,011
MALLARD	111,434	17,739	15.9	75,956	146,912
WOOD DUCK	77,484	8,866	11.4	59,752	95,216
OTHER DUCKS	42,294	6,895	16.3	28,504	58,084
GEESE	2,280	867	38.0	546	4,014
RED FOX	3,422	1,338	39.1	746	6,098
GRAY FOX	5,361	2,530	47.2	301	10,421
BOBCAT	6,156	1,061	17.2	4,034	8,278
COYOTE	42,565	5,130	12.1	32,305	52,825
TOTAL DEER	249,572	9,041	3.6	231,490	267,654
BUCK	175,304	6,581	3.8	162,142	188,466
DOE	72,439	3,835	5.4	64,569	80,309
ARCHERY DEER	29,982	2,862	9.5	24,258	35,706
BUCK	13,631	1,630	12.0	10,371	16,891
DOE	16,682	1,719	10.3	13,244	20,120
PRIMITIVE DEER	34,716	2,566	7.4	29,584	39,848
BUCK	14,089	1,411	10.0	11,267	16,911
DOE	20,616	1,743	8.5	17,130	24,102
GUN DEER	183,631	6,815	3.7	170,001	197,261
BUCK	149,437	5,815	3.9	137,807	161,067
DOE	36,088	2,702	7.5	30,684	41,492
TOTAL TURKEY	44,503	3,286	7.4	37,931	51,075
SPRING 1990	42,443	3,222	7.6	35,999	48,887
FALL 1990	2,059	646	31.4	767	3,351

(A) % = 100 (SE/TOTAL HARVEST)

TABLE 3. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF DOVE HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	690,081 (85,650) 1,988	6.14 (0.88) 184	32.22 (3.34) 184	95.7 (1.5) 184	111,458 (19,428) 1,982	5.25 (0.84) 184	21,155 (1,486) 830	22.2 (1.4) 830
2	ESTIMATE (SE) N	1,088,669 (80,383) 1,988	6.40 (0.32) 377	24.77 (1.43) 382	94.0 (1.2) 383	169,033 (11,627) 1,982	3.88 (0.20) 378	44,035 (2,022) 830	46.1 (1.7) 830
3	ESTIMATE (SE) N	99,963 (22,856) 1,988	4.99 (0.98) 50	17.38 (3.20) 50	80.0 (5.7) 50	20,076 (4,776) 1,982	3.48 (0.68) 50	5,749 (803) 830	6.0 (0.8) 830
4	ESTIMATE (SE) N	423,665 (63,317) 1,988	6.29 (0.56) 156	23.46 (3.02) 157	91.7 (2.2) 157	67,382 (7,851) 1,982	3.74 (0.33) 156	18,051 (1,383) 830	18.9 (1.4) 830
5	ESTIMATE (SE) N	178,416 (53,173) 1,988	6.13 (1.49) 55	27.70 (7.47) 56	85.7 (4.7) 56	28,268 (5,244) 1,982	4.45 (0.58) 55	6,439 (848) 830	6.7 (0.9) 830
-----									PERCENT OF TOTAL LICENSEES
STATEWIDE	ESTIMATE (SE) N	2,490,442 (137,102) 2,005	6.15 (0.32) 836	25.72 (1.25) 846	92.3 (0.9) 847	401,688 (23,833) 1,996	4.19 (0.22) 837	99,709 (2,502) 2,055	43.6 (1.1) 2,055

TABLE 6. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF RABBIT HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	171,829 (32,121) 1,980	1.78 (0.24) 113	12.92 (2.13) 115	86.1 (3.2) 115	94,733 (16,152) 1,965	7.20 (1.04) 113	13,282 (1,202) 572	20.1 (1.7) 572
2	ESTIMATE (SE) N	227,646 (28,584) 1,980	1.55 (0.13) 203	9.43 (1.01) 209	88.5 (2.2) 209	144,427 (15,751) 1,965	6.11 (0.53) 203	24,139 (1,580) 572	36.5 (2.0) 572
3	ESTIMATE (SE) N	77,845 (32,628) 1,980	2.31 (0.71) 55	12.04 (4.83) 56	92.9 (3.5) 56	33,634 (8,679) 1,965	5.25 (1.17) 55	6,468 (852) 572	9.8 (1.2) 572
4	ESTIMATE (SE) N	111,802 (15,623) 1,980	1.30 (0.10) 130	7.15 (0.81) 135	85.9 (3.0) 135	80,418 (10,555) 1,965	5.32 (0.53) 130	15,592 (1,296) 572	23.6 (1.8) 572
5	ESTIMATE (SE) N	42,503 (9,835) 1,980	1.06 (0.21) 56	6.46 (1.24) 57	84.2 (4.9) 57	34,914 (6,440) 1,965	5.36 (0.70) 56	6,583 (860) 572	10.0 (1.3) 572
-----									PERCENT OF TOTAL LICENSEES
STATEWIDE	ESTIMATE (SE) N	657,855 (56,546) 2,005	1.57 (0.10) 576	9.65 (0.76) 597	87.3 (1.4) 598	405,412 (26,428) 1,985	6.10 (0.34) 577	72,000 (2,344) 2,055	31.5 (1.0) 2,055

TABLE 7. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF SQUIRREL HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	348,401 (39,765) 1,979	2.56 (0.22) 199	14.85 (1.38) 203	92.8 (1.8) 203	135,953 (17,000) 1,963	5.86 (0.62) 199	23,422 (1,556) 954	21.3 (1.3) 954
2	ESTIMATE (SE) N	608,553 (56,958) 1,979	2.35 (0.15) 362	14.22 (1.16) 369	91.1 (1.5) 370	245,577 (20,072) 1,963	5.79 (0.38) 364	42,806 (2,004) 954	38.9 (1.6) 954
3	ESTIMATE (SE) N	104,808 (16,262) 1,979	2.65 (0.23) 79	11.20 (1.25) 81	92.7 (2.9) 82	38,794 (5,628) 1,963	4.16 (0.40) 80	9,461 (1,023) 954	8.6 (0.9) 954
4	ESTIMATE (SE) N	325,636 (34,328) 1,979	2.35 (0.19) 212	13.11 (1.10) 215	91.2 (1.9) 215	135,487 (14,807) 1,963	5.49 (0.48) 212	24,807 (1,598) 954	22.5 (1.4) 954
5	ESTIMATE (SE) N	106,427 (17,176) 1,979	2.23 (0.28) 80	11.10 (1.34) 83	90.4 (3.3) 83	45,201 (7,797) 1,963	4.85 (0.65) 80	9,577 (1,029) 954	8.7 (0.9) 954
-----									PERCENT OF TOTAL LICENSEES
STATEWIDE	ESTIMATE (SE) N	1,500,096 (75,101) 2,003	2.39 (0.09) 948	13.48 (0.60) 975	91.4 (0.9) 977	607,593 (29,455) 1,979	5.53 (0.23) 951	114,287 (2,523) 2,055	50.0 (1.1) 2,055

TABLE 8. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF RACCOON HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	54,651 (18,687) 1,996	1.01 (0.23) 39	12.23 (3.75) 39	100.0 (0.0) 39	54,011 (14,604) 1,990	12.05 (2.67) 39	4,468 (709) 142	27.5 (3.8) 142
2	ESTIMATE (SE) N	32,882 (8,118) 1,996	0.67 (0.08) 45	6.11 (1.24) 47	91.5 (4.1) 47	44,473 (11,995) 1,990	8.60 (1.96) 45	5,385 (776) 142	33.1 (4.0) 142
3	ESTIMATE (SE) N	10,998 (5,854) 1,996	0.51 (0.12) 16	5.65 (2.82) 17	88.2 (8.1) 17	10,343 (3,777) 1,990	5.63 (1.55) 16	1,948 (470) 142	12.0 (2.7) 142
4	ESTIMATE (SE) N	20,852 (11,770) 1,996	0.51 (0.20) 28	6.07 (3.30) 30	80.0 (7.4) 30	37,923 (14,275) 1,890	11.79 (3.92) 28	3,437 (623) 142	21.1 (3.4) 142
5	ESTIMATE (SE) N	12,832 (6,883) 1,996	1.17 (0.06) 8	12.44 (5.55) 9	88.9 (11.1) 9	9,423 (5,620) 1,990	10.25 (5.27) 8	1,031 (343) 142	6.3 (2.1) 142
-----									PERCENT OF TOTAL LICENSEES
STATEWIDE	ESTIMATE (SE) N	135,547 (25,018) 2,006	0.77 (0.10) 141	7.82 (1.31) 152	90.8 (2.4) 152	157,615 (24,407) 1,995	9.75 (1.29) 141	22,368 (1,499) 2,055	9.8 (0.7) 2,055

TABLE 9. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF ALL DUCK HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	129,043 (24,280) 1,999	1.97 (0.13) 69	15.89 (2.36) 71	88.7 (3.8) 71	65,437 (10,602) 1,992	8.26 (0.92) 69	8,118 (946) 179	39.7 (3.7) 179
2	ESTIMATE (SE) N	63,835 (11,890) 1,999	1.15 (0.11) 55	9.60 (1.20) 58	93.1 (3.4) 58	52,464 (9,718) 1,992	8.31 (1.08) 55	6,632 (858) 179	32.4 (3.5) 179
3	ESTIMATE (SE) N	2,974 (1,262) 1,999	1.44 (0.32) 7	3.25 (0.82) 8	87.5 (12.5) 8	2,066 (858) 1,992	2.57 (0.48) 7	915 (323) 179	4.5 (1.5) 179
4	ESTIMATE (SE) N	16,245 (3,636) 1,999	0.99 (0.10) 30	4.44 (0.63) 32	81.3 (7.0) 32	14,580 (3,424) 1,992	4.23 (0.64) 30	3,659 (642) 179	17.9 (2.9) 179
5	ESTIMATE (SE) N	11,211 (4,700) 1,999	1.66 (0.24) 9	10.89 (2.95) 9	80.0 (13.3) 10	9,069 (3,580) 1,992	7.90 (1.97) 10	1,143 (361) 179	5.6 (1.7) 179
-----									PERCENT OF TOTAL LICENSEES
STATEWIDE	ESTIMATE (SE) N	230,825 (27,693) 2,004	1.57 (0.10) 174	11.04 (1.08) 183	88.8 (2.3) 185	145,891 (15,065) 1,997	7.24 (0.54) 176	26,040 (1,603) 2,055	11.4 (0.7) 2,055

TABLE 10. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF MALLARD, WOOD DUCK, AND OTHER DUCK HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION(1)	STATISTIC	MALLARDS				WOOD DUCKS				OTHER DUCKS			
		TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS
1	ESTIMATE (SE) N	82,898 (17,078) 2,000	1.27 (0.12) 69	10.21 (1.75) 71	78.8 (4.9) 71	22,880 (5,019) 1,999	0.35 (0.05) 69	2.82 (0.53) 71	53.5 (6.0) 71	23,212 (5,284) 2,000	0.36 (0.06) 69	2.86 (0.56) 71	56.3 (5.9) 71
2	ESTIMATE (SE) N	22,840 (4,885) 2,000	0.42 (0.06) 55	3.41 (0.59) 58	65.5 (6.3) 58	27,227 (5,021) 1,999	0.49 (0.06) 55	4.09 (0.58) 58	79.3 (5.4) 58	13,950 (3,960) 2,000	0.24 (0.05) 55	2.10 (0.54) 58	36.2 (6.4) 58
3	ESTIMATE (SE) N	1,029 (714) 2,000	0.50 (0.29) 7	1.13 (0.72) 8	50.0 (18.9) 8	1,830 (824) 1,999	0.89 (0.30) 7	2.00 (0.60) 8	87.5 (12.5) 8	114 (114) 2,000	0.06 (0.05) 7	0.13 (0.13) 8	12.5 (12.5) 8
4	ESTIMATE (SE) N	2,859 (1,256) 2,000	0.20 (0.07) 30	0.78 (0.32) 32	21.9 (7.4) 32	13,156 (3,156) 1,999	0.78 (0.12) 30	3.59 (0.32) 32	71.9 (8.1) 32	229 (229) 2,000	0.02 (0.02) 30	0.06 (0.06) 32	3.1 (3.1) 32
5	ESTIMATE (SE) N	1,029 (732) 2,000	0.11 (0.07) 10	0.90 (0.60) 10	30.0 (15.3) 10	7,665 (3,645) 1,999	1.14 (0.38) 9	2.44 (2.68) 9	70.0 (15.3) 10	2,918 (1,788) 2,000	0.28 (0.18) 10	2.20 (1.10) 10	20.0 (13.3) 10
STATEWIDE	ESTIMATE (SE) N	111,434 (17,739) 2,005	0.76 (0.08) 175	5.31 (0.76) 184	60.5 (3.6) 185	77,484 (8,866) 2,004	0.51 (0.04) 174	3.70 (0.34) 183	68.1 (3.4) 185	42,284 (6,185) 2,005	0.28 (0.18) 175	2.01 (0.99) 185	37.8 (3.6) 185

TABLE 11. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF GOOSE HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	884 (360) 2,005	0.75 (0.22) 5	1.20 (0.37) 5	80.0 (20.0) 5	913 (456) 2,003	1.60 (0.40) 5	570 (255) 14	35.7 (13.3) 14
2	ESTIMATE (SE) N	1,027 (712) 2,005	0.67 (0.42) 5	1.50 (0.92) 6	68.7 (21.1) 6	1,370 (625) 2,003	2.40 (0.24) 5	684 (279) 14	42.9 (13.7) 14
3	ESTIMATE (SE) N	0 (0) 2,005	(.) (.) 1	(.) (.) 1	(.) (.) 1	0 (0) 2,003	(.) (.) 1	0 (0) 14	0.0 (0.0) 14
4	ESTIMATE (SE) N	114 (114) 2,005	0.50 (.) 1	0.50 (0.50) 2	50.0 (50.0) 2	228 (228) 2,003	2.00 (.) 1	228 (161) 14	14.3 (9.7) 14
5	ESTIMATE (SE) N	228 (228) 2,005	0.13 (.) 1	2.00 (.) 1	100.0 (.) 1	1,713 (1,713) 2,003	15.00 (.) 1	114 (114) 14	7.1 (7.1) 14
-----									PERCENT OF TOTAL LICENSEES
STATEWIDE	ESTIMATE (SE) N	2,280 (867) 2,006	0.46 (0.20) 12	1.33 (0.39) 15	73.3 (11.9) 15	4,224 (1,891) 2,003	3.08 (1.10) 12	7,122 (876) 2,055	3.1 (0.4) 2,055

TABLE 12. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF RED FOX HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	1,483 (1,158) 2,004	1.50 (0.73) 4	2.60 (1.86) 5	80.0 (20.0) 5	913 (535) 2,003	2.00 (0.71) 4	570 (255) 21	23.8 (9.5) 21
2	ESTIMATE (SE) N	799 (497) 2,004	0.13 (0.12) 5	1.40 (0.68) 5	80.0 (20.0) 5	6,394 (4,731) 2,003	11.20 (7.39) 5	570 (255) 21	23.8 (9.5) 21
3	ESTIMATE (SE) N	228 (161) 2,004	1.00 (0.00) 2	1.00 (0.00) 2	100.0 (0.0) 2	228 (161) 2,003	1.00 (0.00) 2	228 (161) 21	9.5 (6.6) 21
4	ESTIMATE (SE) N	456 (228) 2,004	0.05 (0.04) 7	0.50 (0.19) 8	50.0 (18.9) 8	6,394 (3,381) 2,003	8.00 (3.16) 7	912 (322) 21	38.1 (10.9) 21
5	ESTIMATE (SE) N	114 (114) 2,004	0.50 (.) 1	1.00 (.) 1	100.0 (.) 1	228 (228) 2,003	2.00 (.) 1	114 (114) 21	4.8 (4.8) 21
-----									PERCENT OF TOTAL LICENSEES
STATEWIDE	ESTIMATE (SE) N	3,422 (1,338) 2,005	0.20 (0.12) 19	1.36 (0.46) 22	72.7 (9.7) 22	14,157 (5,830) 2,003	6.53 (2.30) 19	7,901 (322) 2,055	3.5 (0.4) 2,055

TABLE 13. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF GRAY FOX HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	913 (913) 2,003	4.00 (.1) 1	8.00 (.1) 1	100.0 (.1) 1	228 (228) 2,003	2.00 (.1) 1	114 (114) 17	5.9 (5.9) 17
2	ESTIMATE (SE) N	1,142 (395) 2,003	0.50 (0.26) 8	1.11 (0.11) 9	100.0 (0.0) 9	2,055 (1,197) 2,003	2.25 (1.11) 8	1,027 (342) 17	52.9 (12.5) 17
3	ESTIMATE (SE) N	114 (114) 2,003	1.00 (.1) 1	1.00 (.1) 1	100.0 (.1) 1	114 (114) 2,003	1.00 (.1) 1	114 (114) 17	5.9 (5.9) 17
4	ESTIMATE (SE) N	457 (280) 2,003	0.13 (0.11) 5	0.80 (0.37) 5	60.0 (24.5) 5	3,653 (2,410) 2,003	6.40 (3.47) 5	571 (255) 17	29.4 (11.4) 17
5	ESTIMATE (SE) N	114 (114) 2,003	0.33 (.1) 1	1.00 (.1) 1	100.0 (.1) 1	343 (343) 2,003	3.00 (.1) 1	114 (114) 17	5.9 (5.9) 17
									PERCENT OF TOTAL LICENSEES
STATEWIDE	ESTIMATE (SE) N	5,361 (2,330) 2,005	0.41 (0.22) 16	2.47 (1.05) 19	89.5 (7.2) 19	6,394 (2,723) 2,003	3.50 (1.25) 16	7,567 (303) 2,055	3.3 (0.4) 2,055

TABLE 14. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF BOBCAT HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	1,598 (509) 2,003	0.38 (0.26) 11	1.17 (0.17) 12	100.0 (0.0) 12	3,888 (2,661) 2,000	3.08 (1.99) 11	1,370 (394) 45	28.7 (6.7) 45
2	ESTIMATE (SE) N	1,142 (360) 2,003	0.78 (0.11) 7	1.00 (0.00) 9	100.0 (0.0) 9	1,029 (412) 2,000	1.29 (0.18) 7	1,028 (342) 45	20.0 (6.0) 45
3	ESTIMATE (SE) N	1,142 (559) 2,003	0.77 (0.14) 7	1.43 (0.48) 7	85.7 (14.3) 7	1,486 (1,787) 2,000	1.86 (0.70) 7	799 (302) 45	15.6 (5.5) 45
4	ESTIMATE (SE) N	1,370 (394) 2,003	0.34 (0.11) 15	0.80 (0.11) 15	80.0 (10.7) 15	4,002 (1,374) 2,000	2.33 (0.55) 15	1,713 (441) 45	33.3 (7.1) 45
5	ESTIMATE (SE) N	114 (114) 2,003	0.33 (0.22) 2	0.50 (0.50) 2	50.0 (50.0) 2	343 (256) 2,000	1.50 (0.50) 2	228 (161) 45	4.4 (3.1) 45
									PERCENT OF TOTAL LICENSEES
STATEWIDE	ESTIMATE (SE) N	6,156 (1,061) 2,006	0.46 (0.12) 43	1.10 (0.11) 48	89.6 (4.5) 48	10,857 (3,123) 2,001	2.21 (0.55) 43	10,794 (1,070) 2,055	4.7 (0.5) 2,055

TABLE 15. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF COYOTE HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	11,572 (2,442) 1,996	0.12 (0.08) 0.33	2.33 (0.38) 40	90.0 (4.8) 40	57,000 (43,360) 1,966	17.45 (11.05) 33	4,581 (717) 149	26.8 (3.6) 149
2	ESTIMATE (SE) N	18,957 (3,382) 1,996	0.09 (0.04) 45	2.83 (0.40) 56	85.7 (4.7) 56	183,662 (74,332) 1,966	31.27 (13.58) 45	6,413 (845) 149	37.6 (4.0) 149
3	ESTIMATE (SE) N	2,291 (871) 1,996	0.65 (0.14) 9	1.54 (0.42) 13	84.8 (10.4) 13	2,326 (1,013) 1,966	2.22 (0.66) 9	1,489 (412) 149	8.7 (2.3) 149
4	ESTIMATE (SE) N	7,218 (1,823) 1,996	0.07 (0.06) 21	2.07 (0.39) 29	83.3 (6.9) 30	49,901 (35,224) 1,966	19.50 (13.43) 22	3,435 (623) 149	20.1 (3.3) 149
5	ESTIMATE (SE) N	2,291 (1,628) 1,996	0.37 (0.04) 9	2.00 (1.34) 10	70.0 (15.3) 10	5,932 (4,680) 1,966	5.67 (4.30) 9	1,145 (361) 149	6.7 (2.1) 149
-----									PERCENT OF TOTAL LICENSEES
STATEWIDE	ESTIMATE (SE) N	42,565 (5,130) 2,004	0.10 (0.03) 122	2.31 (0.22) 156	84.7 (2.9) 157	291,106 (92,761) 1,971	20.40 (6.28) 123	23,035 (1,519) 2,055	10.1 (0.7) 2,055

TABLE 16. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF ARCHERY DEER HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	4,762 (1,184) 1,879	0.043 (0.010) 87	0.46 (0.10) 92	26.1 (4.6) 92	92,507 (13,510) 1,863	9.30 (0.95) 87	10,430 (1,061) 414	22.2 (2.0) 414
2	ESTIMATE (SE) N	9,297 (1,573) 1,879	0.054 (0.008) 140	0.57 (0.09) 144	33.3 (3.9) 144	161,002 (17,435) 1,863	10.06 (0.72) 140	16,326 (1,308) 414	34.8 (2.3) 414
3	ESTIMATE (SE) N	6,122 (1,334) 1,879	0.094 (0.016) 56	0.92 (0.16) 59	49.2 (8.6) 59	65,636 (9,775) 1,863	10.25 (0.72) 56	6,689 (857) 414	14.3 (1.7) 414
4	ESTIMATE (SE) N	6,576 (1,408) 1,879	0.058 (0.011) 94	0.59 (0.11) 98	37.8 (4.9) 98	104,057 (14,458) 1,863	9.68 (0.93) 94	11,111 (1,093) 414	23.7 (2.1) 414
5	ESTIMATE (SE) N	1,701 (630) 1,879	0.077 (0.024) 21	0.71 (0.22) 21	47.6 (11.2) 21	22,183 (5,691) 1,863	9.24 (1.29) 21	2,381 (517) 414	5.1 (1.1) 414
-----									PERCENT OF TOTAL LICENSEES (A)
STATEWIDE	ESTIMATE (SE) N	29,982 (2,862) 1,890	0.061 (0.005) 405	0.63 (0.05) 424	36.7 (2.3) 425	448,820 (27,239) 1,872	9.71 (0.41) 406	51,717 (2,076) 1,936	24.3 (1.0) 1,936

(A) CALCULATED AS A PERCENT OF BIG GAME LICENSE HOLDERS ONLY.

TABLE 17. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF ARCHERY BUCK AND DOE HUNTING IN MISSISSIPPI DURING THE 1980-91 HUNTING SEASON.

REGION	STATISTIC	BUCKS				DOES			
		TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS
1	ESTIMATE (SE) N	1 701 (542) 1,879	0.016 (0.005) 87	0.16 (0.05) 92	12.0 (3.4) 92	3 061 (791) 1,879	0.027 (0.007) 87	0.29 (0.07) 92	19.6 (4.2) 92
		4 195 (937) 1,879	0.025 (0.006) 140	0.26 (0.05) 144	19.4 (3.3) 144	5 102 (988) 1,879	0.029 (0.005) 140	0.31 (0.06) 144	20.8 (3.4) 144
3	ESTIMATE (SE) N	2 494 (697) 1,879	0.038 (0.009) 56	0.37 (0.09) 59	27.1 (5.8) 59	3 628 (751) 1,879	0.056 (0.010) 56	0.54 (0.09) 59	40.7 (6.5) 59
		3 061 (838) 1,879	0.027 (0.007) 94	0.28 (0.07) 98	19.4 (4.0) 98	3 515 (806) 1,879	0.031 (0.007) 94	0.32 (0.07) 98	25.5 (4.4) 98
5	ESTIMATE (SE) N	1 020 (375) 1,879	0.046 (0.014) 21	0.43 (0.13) 21	38.1 (10.9) 21	680 (320) 1,879	0.031 (0.014) 21	0.29 (0.12) 21	23.8 (9.5) 21
		13 631 (1,630) 1,891	0.028 (0.003) 406	0.28 (0.03) 425	20.8 (2.0) 425	16 682 (1,718) 1,890	0.034 (0.003) 405	0.35 (0.03) 424	25.2 (2.1) 424

TABLE 18. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF PRIMITIVE WEAPON DEER HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	7,405 (1,166) 1,870	0.114 (0.016) 110	0.57 (0.07) 115	40.0 (4.6) 115	61,325 (6,831) 1,855	4.85 (0.30) 110	13,094 (1,183) 1,492	23.4 (1.9) 492
2	ESTIMATE (SE) N	9,883 (1,419) 1,870	0.105 (0.014) 153	0.54 (0.07) 155	38.1 (3.9) 155	88,313 (8,786) 1,855	5.03 (0.31) 153	17,648 (1,358) 1,492	31.5 (2.1) 492
3	ESTIMATE (SE) N	5,240 (973) 1,870	0.129 (0.022) 70	0.64 (0.09) 72	47.2 (5.9) 72	39,276 (5,740) 1,855	4.89 (0.43) 70	8,198 (948) 492	14.6 (1.6) 492
4	ESTIMATE (SE) N	8,658 (1,333) 1,870	0.126 (0.013) 107	0.67 (0.08) 114	47.4 (4.7) 114	61,784 (7,038) 1,855	5.03 (0.33) 107	12,980 (1,178) 1,492	23.2 (1.9) 492
5	ESTIMATE (SE) N	1,709 (545) 1,870	0.072 (0.018) 36	0.42 (0.12) 36	30.6 (7.8) 36	24,002 (4,608) 1,855	5.81 (0.58) 36	4,099 (677) 492	7.3 (1.2) 492
-----									PERCENT OF TOTAL LICENSEES(A)
STATEWIDE	ESTIMATE (SE) N	34,716 (2,566) 1,890	0.114 (0.007) 492	0.60 (0.04) 511	41.9 (2.2) 511	279,374 (13,976) 1,872	4.98 (0.16) 492	61,180 (2,191) 1,936	28.7 (1.0) 1,936

(A) CALCULATED AS A PERCENT OF BIG GAME LICENSE HOLDERS ONLY.

TABLE 19. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF PRIMITIVE WEAPON BUCK AND DOE HUNTING IN MISSISSIPPI DURING THE 1980-91 HUNTING SEASON.

REGION	STATISTIC	BUCKS				DOES			
		TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS
1	ESTIMATE (SE) N	2,962 (661) 1,870	0.047 (0.010) 110	0.23 (0.05) 115	19.1 (3.7) 115	4,440 (757) 1,871	0.067 (0.010) 110	0.34 (0.05) 115	31.3 (4.3) 115
2	ESTIMATE (SE) N	3,645 (716) 1,870	0.036 (0.007) 153	0.19 (0.04) 155	16.8 (3.0) 155	6,035 (976) 1,871	0.069 (0.010) 153	0.34 (0.05) 155	27.7 (3.6) 155
3	ESTIMATE (SE) N	2,506 (600) 1,870	0.058 (0.013) 70	0.31 (0.06) 72	26.4 (5.2) 72	2,733 (621) 1,871	0.070 (0.015) 70	0.33 (0.07) 72	29.2 (5.4) 72
4	ESTIMATE (SE) N	3,873 (768) 1,870	0.058 (0.010) 107	0.30 (0.05) 114	25.4 (4.1) 114	4,782 (890) 1,871	0.069 (0.010) 107	0.37 (0.06) 114	28.9 (4.3) 114
5	ESTIMATE (SE) N	570 (254) 1,870	0.024 (0.008) 36	0.14 (0.06) 36	13.8 (5.8) 36	1,139 (394) 1,871	0.048 (0.015) 36	0.28 (0.08) 36	25.0 (7.3) 36
STATEWIDE	ESTIMATE (SE) N	14,088 (1,411) 1,890	0.045 (0.004) 492	0.24 (0.02) 511	20.5 (1.8) 511	20,616 (1,743) 1,891	0.069 (0.005) 492	0.36 (0.03) 511	29.5 (2.0) 511

TABLE 20. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF REGULAR GUN DEER HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	40,284 (3,765) 1,835	0.097 (0.007) 252	1.31 (0.10) 264	59.8 (3.0) 264	400,463 (29,150) 1,781	13.23 (0.58) 253	30,664 (1,743) 1,358	19.5 (1.1) 1,358
2	ESTIMATE (SE) N	59,091 (4,062) 1,835	0.068 (0.004) 497	0.96 (0.06) 522	50.9 (2.2) 523	800,089 (41,586) 1,781	13.43 (0.48) 498	60,518 (2,240) 1,358	38.5 (1.3) 1,358
3	ESTIMATE (SE) N	27,282 (3,061) 1,835	0.104 (0.008) 151	1.46 (0.12) 157	69.8 (3.7) 159	254,296 (24,208) 1,781	13.90 (0.77) 153	18,399 (1,395) 1,358	11.7 (0.9) 1,358
4	ESTIMATE (SE) N	43,535 (3,691) 1,835	0.080 (0.005) 297	1.19 (0.08) 313	56.2 (2.8) 313	511,942 (33,974) 1,781	14.41 (0.58) 297	36,219 (1,866) 1,358	23.0 (1.1) 1,358
5	ESTIMATE (SE) N	9,287 (2,079) 1,835	0.054 (0.011) 96	0.82 (0.17) 97	39.2 (5.0) 97	172,122 (20,346) 1,781	14.99 (0.97) 96	11,224 (1,110) 1,358	7.1 (0.7) 1,358
-----									PERCENT OF TOTAL LICENSEES(A)
STATEWIDE	ESTIMATE (SE) N	183,631 (6,815) 1,884	0.081 (0.003) 1,336	1.15 (0.04) 1,403	55.2 (1.3) 1,407	2,126,329 (52,081) 1,824	13.58 (0.27) 1,341	159,883 (2,096) 1,936	75.1 (1.0) 1,936

(A) CALCULATED AS A PERCENT OF BIG GAME LICENSE HOLDERS ONLY.

TABLE 21. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF REGULAR GUN BUCK AND DOE HUNTING IN MISSISSIPPI DURING THE 1980-91 HUNTING SEASON.

REGION	STATISTIC	BUCKS				DOES			
		TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS
1	ESTIMATE (SE) N	28,760 (2,824) 1,837	0.069 (0.005) 253	0.94 (0.08) 265	50.2 (3.1) 265	11,488 (1,596) 1,839	0.028 (0.004) 252	0.38 (0.05) 264	26.5 (2.7) 264
2	ESTIMATE (SE) N	50,445 (3,499) 1,837	0.058 (0.003) 497	0.82 (0.05) 522	47.2 (2.2) 523	8,572 (1,221) 1,839	0.010 (0.001) 498	0.14 (0.02) 523	11.9 (1.4) 523
3	ESTIMATE (SE) N	21,222 (2,374) 1,837	0.080 (0.006) 151	1.13 (0.10) 157	63.5 (3.8) 159	6,024 (1,090) 1,839	0.024 (0.004) 153	0.32 (0.05) 159	22.6 (3.3) 159
4	ESTIMATE (SE) N	38,385 (3,483) 1,837	0.070 (0.005) 297	1.05 (0.08) 313	53.0 (2.8) 313	6,487 (1,012) 1,839	0.012 (0.002) 297	0.18 (0.03) 313	15.0 (2.0) 313
5	ESTIMATE (SE) N	8,582 (1,979) 1,837	0.050 (0.010) 96	0.76 (0.16) 97	38.1 (5.0) 97	685 (283) 1,839	0.004 (0.002) 96	0.08 (0.02) 97	6.2 (2.5) 97
STATEWIDE	ESTIMATE (SE) N	148,437 (5,815) 1,886	0.065 (0.002) 1,337	0.93 (0.03) 1,404	50.3 (1.3) 1,408	36,088 (2,702) 1,886	0.016 (0.001) 1,340	0.22 (0.02) 1,407	16.4 (1.0) 1,407

TABLE 22. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF SPRING TURKEY HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON.

REGION	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	6,631 (1,371) 1,789	0.114 (0.015) 59	0.90 (0.15) 61	49.2 (6.5) 61	56,407 (10,021) 1,782	7.90 (0.98) 59	7,355 (926) 368	16.6 (1.9) 368
2	ESTIMATE (SE) N	10,007 (1,587) 1,789	0.082 (0.010) 108	0.76 (0.10) 109	45.0 (4.8) 109	121,166 (15,315) 1,782	9.27 (0.79) 108	13,142 (1,220) 368	29.6 (2.4) 368
3	ESTIMATE (SE) N	6,873 (1,189) 1,789	0.122 (0.015) 57	0.97 (0.11) 59	64.4 (6.3) 59	54,470 (8,517) 1,782	7.89 (0.69) 57	7,114 (911) 368	16.0 (1.9) 368
4	ESTIMATE (SE) N	16,398 (2,156) 1,789	0.117 (0.012) 114	1.16 (0.11) 116	56.9 (4.8) 116	138,113 (18,117) 1,782	10.01 (0.95) 114	13,986 (1,256) 368	31.5 (2.4) 368
5	ESTIMATE (SE) N	2,050 (691) 1,789	0.078 (0.022) 23	0.74 (0.20) 23	47.8 (10.6) 23	26,267 (6,751) 1,782	9.43 (1.47) 23	2,773 (575) 368	6.3 (1.3) 368
-----									PERCENT OF TOTAL LICENSEES (A)
STATEWIDE	ESTIMATE (SE) N	42,443 (3,222) 1,794	0.103 (0.006) 365	0.84 (0.06) 373	52.5 (2.6) 373	402,903 (26,991) 1,786	8.14 (0.44) 365	47,750 (2,097) 1,825	22.1 (1.0) 1,825

(A) CALCULATED AS A PERCENT OF BIG GAME LICENSE HOLDERS ONLY.

TABLE 23. EXPANDED STATEWIDE AND REGIONAL SUMMARIES OF FALL TURKEY HUNTING IN MISSISSIPPI DURING THE 1990 HUNTING SEASON.

REGION(A)	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT HUNTERS PER REGION
1	ESTIMATE (SE) N	1,604 (583) 1,859	0.333 (0.087) 11	1.08 (0.26) 13	68.2 (13.3) 13	4,821 (1,738) 1,856	3.82 (0.80) 11	1,490 (412) 19	88.4 (11.0) 19
3	ESTIMATE (SE) N	0 (0) 1,859	0.000 (0.000) 5	0.00 (0.00) 6	0.0 (0.0) 6	1,033 (500) 1,856	1.80 (0.37) 5	888 (280) 19	31.6 (11.0) 19
STATEWIDE	ESTIMATE (SE) N	2,059 (646) 1,862	0.286 (0.067) 18	0.82 (0.19) 22	54.5 (10.9) 22	6,421 (1,865) 1,858	3.11 (0.55) 18	7,485 (898) 1,907	3.5 (0.4) 1,907

(A) FALL TURKEY HUNTING WAS LEGAL ONLY IN REGIONS 1 AND 3.
(B) CALCULATED AS A PERCENT OF BIG GAME LICENSE HOLDERS ONLY.

TABLE 24 . EXPANDED STATEWIDE SUMMARIES OF ALL DEER, BUCK, AND DOE HUNTING IN MISSISSIPPI DURING THE 1990-91 HUNTING SEASON AND ALL TURKEY HUNTING (COMBINING SPRING AND FALL DATA) DURING THE 1990 CALENDAR YEAR IN MISSISSIPPI.

SPECIES	STATISTIC	TOTAL HARVEST	AVERAGE DAILY KILL	AVERAGE SEASONAL HARVEST	PERCENT SUCCESSFUL HUNTERS	TOTAL MANDAYS	AVERAGE SEASONAL DAYS HUNTING	TOTAL HUNTERS	PERCENT OF TOTAL LICENSEES (A)
DEER	ESTIMATE (SE) N	249,572 (9,041) 1,883	0.081 (0.003) 1,395	1.50 (0.05) 1,466	58.7 (1.3) 1,471	2,867,243 (72,557) 1,820	17.48 (0.38) 1,401	166,925 (1,994) 1,936	78.4 (0.9) 1,936
BUCK	ESTIMATE (SE) N	175,304 (6,581) 1,886	0.057 (0.002) 1,397	1.05 (0.04) 1,468	51.8 (1.3) 1,472				
DOE	ESTIMATE (SE) N	72,439 (3,935) 1,888	0.024 (0.001) 1,399	0.44 (0.02) 1,470	26.9 (1.2) 1,470				
TURKEY	ESTIMATE (SE) N	44,503 (3,286) 1,888	0.036 (0.012) 389	0.97 (0.06) 395	52.4 (2.5) 395	409,324 (27,055) 389	26.99 (9.19) 389	55,235 (2,281) 2,041	21.7 (0.9) 2,041

(A) CALCULATED AS A PERCENT OF BIG GAME LICENSE HOLDERS ONLY.



1990-91 MISSISSIPPI HUNTER QUESTIONNAIRE

A. Please fill in the blocks below for each game species you hunted during the 1990-91 hunting season (even if you were unsuccessful). If you hunted more than one kind of game on a particular day, count a day for each type of game you hunted. Report only game taken by you. Your answers will be kept confidential. Please answer the questions in part B., whether you hunted or not.

SPECIES	TOTAL KILL	TOTAL DAYS HUNTED	REGION HUNTED MOST
1 Dove			
2 Quail			
3 Woodcock			
4 Rabbit			
5 Squirrel			
6 Raccoon			
Bucks Does			
7 Deer (archery)			
8 Deer (prim. weapon)			
9 Deer (gun)			
10 Turkey (Spring '90)			
11 Turkey (Fall '90)			
Mallard Wood Other			
12 Ducks			
13 Geese			
14 Red Fox			
15 Gray Fox			
16 Bobcat			
17 Coyote			

Determine REGION HUNTED MOST from map.

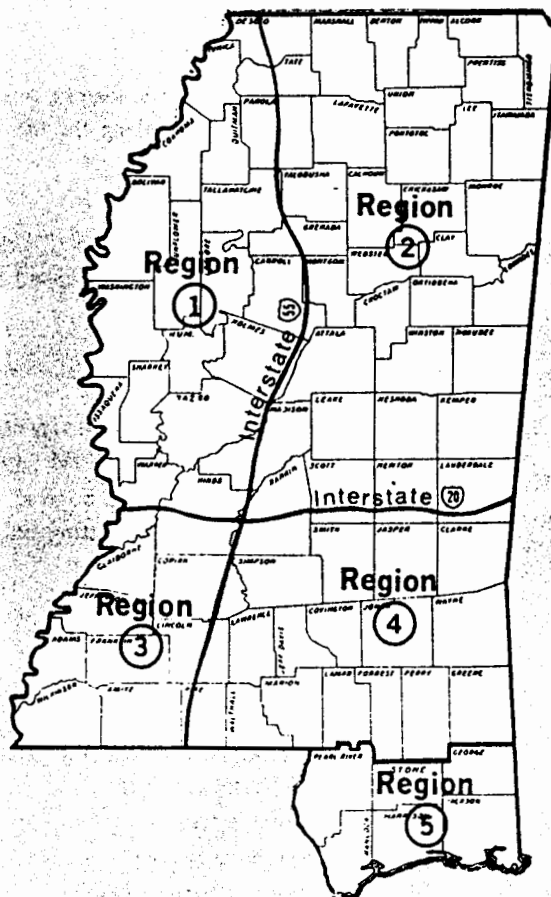


Fig. 1 Questionnaire used for the 1990-91 mail survey of game harvest and hunter effort in Mississippi.

B. Please answer the following:

1. When did you hunt doves opening weekend (September 1, 2, or 3)?

- ☐ Morning only
☐ Afternoon only
☐ Both morning and afternoon
☐ Did not hunt

2. Did you hunt doves during the rest of the first season (September 4 - 23)?

- ☐ Yes
☐ No

3. Did you hunt doves during the second season (October 13 - 27)?

- ☐ Yes
☐ No

4. Did you hunt doves during the third season (December 22 - January 9)?

- ☐ Yes
☐ No

5. If dove hunting were only allowed mornings or afternoons, which would you prefer?

- ☐ Mornings only
☐ Afternoon only
☐ Not sure

6. Would you support a dove hunting schedule where Saturday and Sunday of opening weekend was afternoon hunting only followed by full day hunting after opening weekend?

- ☐ Yes
☐ No
☐ Not sure

7. Would you support a deer bag limit of 4 bucks and 4 does rather than the current limit of 5 bucks and 3 does?

- ☐ Strongly agree
☐ Moderately agree
☐ Moderately disagree
☐ Strongly disagree
☐ No opinion

8. Have you seen a black bear in Mississippi- 1990)?

- ☐ Yes
☐ No

If yes, in what county did the sight

County _____ N

9. Would you be willing to give more details

- ☐ Yes
☐ No

If yes,

Name (Please Print) _____

Daytime phone number _____

10. Have you or anyone in your home watched "Mississippi Outdoors"?

- ☐ No
☐ Yes

If yes, which would you like to see

- ☐ More outdoor filming
☐ More studio interviews
☐ OK as it is

11. Would you be willing to pay a \$5-9 fee for on-ship Department of Wildlife, Fisheries and Parks' Map?

- ☐ Yes
☐ No

12. The 1990-91 hunting seasons have ended. Deer or turkey in the 1989-90 (last year) hunting seasons

- ☐ Yes
☐ No

13. Your age: _____ years



**STATE OF MISSISSIPPI
Department of Wildlife,
Fisheries and Parks**

RAY MABUS
Governor

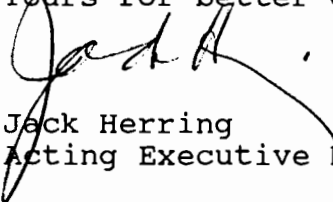
Dear Sportsman:

The Department of Wildlife, Fisheries and Parks is conducting a study to obtain reasonable estimates of game harvest, hunter effort and hunter opinions. Information supplied by you and other hunters will assist us in managing our game resources for the greatest public benefit.

For meaningful results, information is needed from everyone receiving a questionnaire since only a limited number of sportsmen can be contacted. Please complete the enclosed questionnaire as accurately as possible (even if you did not hunt) and return it in the addressed, stamped envelope.

Your answers will be kept confidential. The questionnaire has an identification number for mailing purposes only. Your name will never be placed on the questionnaire or used in association with any of the information you provide. A prompt reply will be sincerely appreciated.

Yours for better conservation,


Jack Herring
Acting Executive Director

JH:ccs

Enclosure

Fig. 2 Cover letter mailed with the initial mailing of the 1990-91 survey of game harvest and hunter effort in Mississippi.

Survey Section
DEPARTMENT OF WILDLIFE, FISHERIES & PARKS
P. O. Box 451
JACKSON, MISSISSIPPI 39205



PRESORTED
FIRST CLASS MAIL
U.S. POSTAGE PAID
PERMIT NO. 141

Dear Sportsman:

Recently we mailed you a questionnaire on your hunting experiences. If you have not yet answered the questionnaire, will you please do so today? If you have already returned the questionnaire, disregard this notice and we thank you very much for your cooperation.

Your response is important. It is the only way we have of estimating the harvest, efforts and opinions of hunters for management purposes.

Sincerely,

Jack Herring
Jack Herring
Acting Executive Director

Fig. 3 Post card used as the first reminder mailing to nonrespondents during the 1990-91 survey of game harvest and hunter effort in Mississippi.



**STATE OF MISSISSIPPI
Department of Wildlife,
Fisheries and Parks**

RAY MABUS
Governor

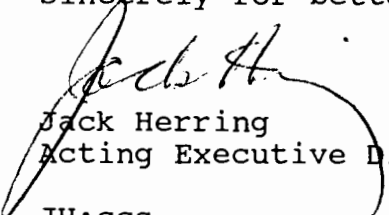
Dear Sportsman:

About six weeks ago I wrote to you seeking information about your hunting activities during the past season. As of today we have not received your completed questionnaire.

Our research unit has undertaken this project because of the belief that citizen participation should be taken into account in the formation of efforts which will provide the best hunting opportunities for Mississippi Sportsmen.

I am writing to you again because of the significance each questionnaire has to the usefulness of this project. Your name was drawn through a scientific sampling process. In order for the results of this survey to be as complete as possible it is essential that each person in the sample return his questionnaire. Even if you had little success or if you did not hunt at all, your answers are important to us. Please return the survey in the enclosed addressed, stamped envelope so that your response can be included in the results.

Sincerely for better conservation,


Jack Herring
Acting Executive Director

JH:ccs

Enclosure

Fig. 4 Cover letter mailed with the second (and final) reminder mailing to non respondents during the 1990-91 survey of game harvest and hunter effort in Mississippi.

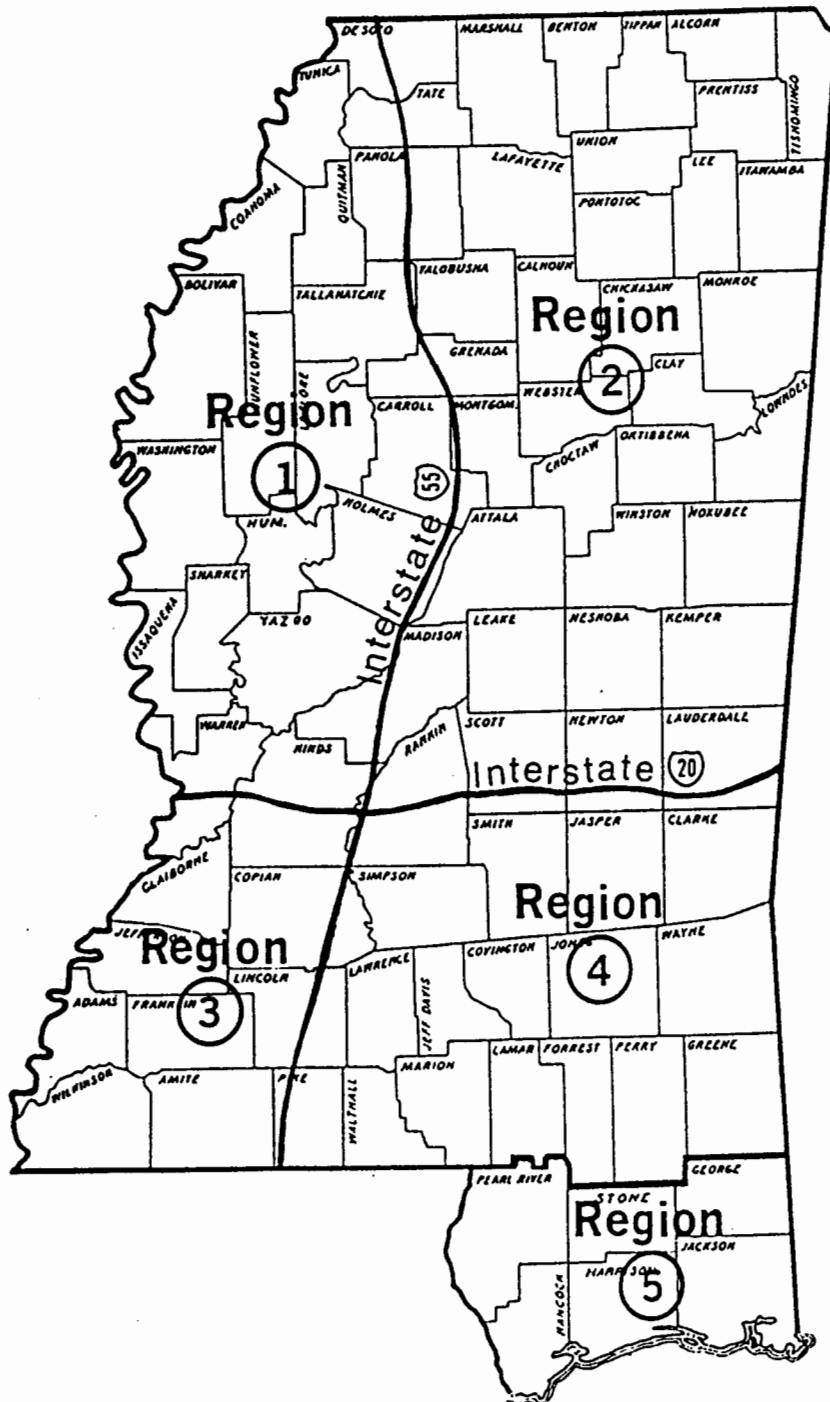


Fig. 5 Regional partitions utilized for region hunter most.