



2013 EVALUATION OF SPINNING-WING DUCK DECOY BAN AT HARSENS ISLAND UNIT

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ABSTRACT

A survey of duck hunters at Harsens Island Unit in 2013 was completed to determine their opinions about the use of spinning-wing decoys (SWDs) and the ban on SWDs. Among ducks hunters that had hunted at Harsens Island during both 2012 and 2013, 74% of these hunters had used SWDs at Harsens Island Unit in 2012 prior to the ban of SWDs. About 41% of duck hunters in 2013 approved of the use of SWDs to hunt ducks at Harsens Island Unit, but 41% of hunters disapproved of using SWDs. Among the duck hunters in 2013, 75% indicated the ban had not changed how frequently they hunted at Harsens Island Unit. Nearly equal proportions of hunters reported the ban reduced their duck harvest as hunters that reported an increase in harvest. Duck hunters using SWDs at Harsens Island Unit in 2012 were not significantly more efficient at harvesting ducks than hunters that did not use SWDs. Compared to 2013, the net effect of the ban of SWDs on hunting effort and duck harvest in the next two years is predicted to be negligible. Although harvest was not affected by the ban of SWDs, the ban improved the quality of hunts at Harsens Island Unit (i.e., 38% of hunters reported improved hunt quality while 21% of hunters reported decreased hunt quality).

INTRODUCTION

The Michigan Natural Resources Commission (NRC) and Department of Natural Resources (DNR) have the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. Beginning in 2013, the NRC banned spinning-wing decoys (SWDs) from the managed waterfowl hunts coordinated by the DNR at the Harsens Island Unit of the St. Clair



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Flats State Wildlife Area. This ban was enacted at the request of Harsens Island Waterfowl Hunters Association (HIWHA).

Although research has shown no conclusive biological impacts from the use of SWDs, HIWHA proposed the ban because the use of these decoys could negatively impact the hunting experience of other hunters sharing the same area. Some hunters reported SWDs sometimes spooked ducks from an entire area during certain periods of the season.

Opinion surveys are one of the management tools used by the NRC and DNR to accomplish their statutory responsibility. The main objectives of this study were to determine the opinions of hunters about the use of SWDs on the Harsens Island Unit and the ban of SWDs in 2013.

METHODS

Harsens Island Unit is part of the St. Clairs Flats State Wildlife Area and is located in St. Clair County in southeast Michigan. DNR personnel at the Harsens Island Unit conducted random drawings for waterfowl hunting opportunities on the property during 2012 and 2013 (Table 1). Hunting parties (≥ 1 hunters) chosen to hunt ducks were required to report the number of ducks harvested at the conclusion of their hunt.

Following the duck hunting season, a questionnaire (Appendix A) was sent to 2,492 people that had been selected to hunt ducks at Harsens Island Unit in 2013. Hunters receiving the questionnaire were asked to report if they hunted ducks, number of days spent afield, and number of ducks they harvested with and without the aid of SWDs in 2012 and 2013. Hunters also were asked to indicate their opinion about the use of SWDs and the ban of SWDs at Harsens Island Unit.

Estimates were calculated among all duck hunters participating in waterfowl hunts at Harsens Island in 2013. Furthermore, estimates were calculated for five subgroups. These subgroups included: (1) 2013 hunters that also hunted in 2012, (2) 2013 hunters that had hunted in 2012 and had hunted both with and without SWDs in 2012, (3) 2013 hunters that had hunted in 2012 and had always used SWDs in 2012, (4), 2013 hunters that had hunted in 2012 and had never used SWDs in 2012, and (5) 2013 hunters that had not hunted in 2012.

Estimates were calculated using a simple random sampling design (Cochran 1977) and were presented along with their 95% confidence limit (CL). This confidence limit can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval is a measure of the precision associated with the estimate and implies that the true value would be within this interval 95 times out of 100. Estimates were not adjusted for possible response or nonresponse bias because no adjustment factors were available.

Statistical tests are used routinely to determine the likelihood that the differences among estimates are larger than expected by chance alone. The overlap of 95% confidence intervals was used to determine whether estimates differed. Non-overlapping 95% confidence intervals was equivalent to stating that the difference between the means was larger than would be expected 995 out of 1,000 times, if the study had been repeated (Payton et al. 2003).

Questionnaires were mailed initially during late March 2014, and up to two follow-up

questionnaires were mailed to nonrespondents. Although 2,492 people were sent the questionnaire, 863 surveys were undeliverable resulting in an adjusted sample size of 1,629. Questionnaires were returned by 926 people, yielding a 57% response rate excluding undeliverables.

RESULTS

During 2013, 2,492 people were selected to hunt ducks at Harsens Island Unit, and an estimated 2,417 people actually hunted ducks at Harsens Island Unit in 2013 (Table 2). About $76 \pm 2\%$ of the hunters hunting ducks in 2013 also hunted in 2012 (1,884 hunters). Furthermore, $74 \pm 3\%$ of hunters reported using SWDs in 2012 (1,426 hunters) and $54 \pm 3\%$ of hunters reported hunting without SWDs in 2012 (1,033 hunters). The sum of hunters using SWDs and hunters not using SWDs does not equal the overall number of hunters because some hunters used both hunting methods.

Based on mail survey responses, duck hunters took an estimated 36,271 ducks in 2013; however, harvest estimates were calculated without any adjustments for biases (Table 2). Because hunters were asked to report their harvest at Harsens Island Unit, harvest estimates could be compared between data collection methods (i.e., mail survey responses versus check station tally). The check station tally indicated that duck hunters took 9,198 ducks in 2013. Thus, the survey harvest estimate was 294% greater than the number of ducks tallied check station reports of hunter kill.

The number of days of hunting required to harvest a duck in 2012 was 0.51 days among hunters that used SWDs and 0.48 days among hunters that did not use SWDs (Table 2). In 2013, after the SWDs were banned, it took hunters 0.47 days of hunting effort to harvest a duck. None of these estimates of hunting efficiency were significantly different; however, these comparisons were confounded by different hunters participating between years and because some hunters used both hunting methods during the same day. Thus, estimates of hunting efficiency were also calculated separately among the hunters that hunted both years. Furthermore, comparisons between years were restricted to hunters that only hunted using one hunting method in 2012 (i.e., hunted only with a SWD or without SWDs). Among hunters that hunted both years and did not use SWDs, they devoted 0.51 ± 0.05 days of effort per duck harvested in 2012 and 0.47 ± 0.04 days of effort per duck in 2013 (Figure 1). These estimates were not significantly different between years. Among hunters that hunted ducks both years but had used SWDs in 2012, they devoted 0.51 ± 0.03 days of effort per duck harvested in 2012 and 0.45 ± 0.03 days of effort per duck in 2013 (Figure 2). Estimates of efficiency were not significantly different between years.

Among all duck hunters at Harsens Island Unit in 2013, 41% approved of the use of SWDs to hunt ducks and 41% disapproved of using SWDs (Table 3). The highest level of approval was reported among 2013 hunters that had always hunted with SWDs in 2012 (51% approval), and the highest level of disapproval was reported among hunters that had never hunted with SWDs in 2012 (56% disapproval).

Among the people hunting ducks in 2013, $92 \pm 1\%$ indicated they were aware of the ban before they had arrived at Harsens Island Unit to hunt ducks. Among the people hunting ducks in 2013, 38% indicated the SWD ban improved the quality of their hunt, 21% reported

decreased hunt quality, and 41% were not sure whether the ban had changed the quality of their hunt (Table 4). Among 2013 hunters that had always used SWDs in 2012, 35% reported the ban had improved the quality of their hunt and 33% reported the ban lowered the quality of their hunt. In contrast, among 2013 hunters that had never used SWDs in 2012, 47% reported the ban had improved the quality of their hunt and 6% reported the ban lowered the quality of their hunt.

Among 2013 duck hunters, 38% indicated the SWD ban resulted in ducks decoying better and closer shots, 30% reported the ban did not improve their hunt, and 32% were not sure whether the ban had caused ducks to respond better to decoys (Table 5). Among 2013 hunters that had always used SWDs in 2012, 34% reported the ban had led to ducks decoying better and 42% reported the ban had not led to ducks decoying better. In contrast, among 2013 hunters that had never used SWDs in 2012, 49% reported the ban had led to ducks decoying better and 19% reported the ban did not cause ducks to respond better to decoys.

Among the people hunting ducks in 2013, 42% indicated the SWD ban resulted in a better distribution of duck harvest among hunting zones at Harsens Island Unit, 23% reported the ban did not cause a better distribution of duck harvest, and 34% were not sure whether the ban had redistributed harvest (Table 6). Among 2013 hunters that had always used SWDs in 2012, 36% reported the ban had led to better distribution of harvest and 34% reported the ban had not led to better distribution of harvest. In contrast, among 2013 hunters that had never used SWDs in 2012, 52% reported the ban had led to better distribution of harvest and 13% reported the ban did not cause a better distribution of duck harvest.

Among 2013 duck hunters, 75% indicated the ban had not changed how frequently they hunted at Harsens Island Unit (Table 7). About 8% of hunters reported they hunted ducks more frequently at Harsens Island Unit because of the ban, and 11% indicated they hunted less frequently because of the ban.

Among the duck hunters in 2013 that had also hunted in 2012, 41% indicated the ban had not changed how many ducks they had taken at Harsens Island Unit (Table 8). About 20% of these hunters reported they had taken more ducks at Harsens Island Unit because of the ban, and 19% indicated they took fewer ducks. The proportion of hunters that indicated they took fewer ducks because of the SWD ban was not significantly different from the proportion of hunters that reported taking more ducks (19% versus 20%). Among the 2013 duck hunters that had always used SWDs in 2012, 38% reported no change in the number of ducks harvested because of the ban; however, 30% reported taking fewer ducks and 17% took more ducks because of the ban. Among the 2013 duck hunters that had never hunted with SWDs in 2012, 46% reported no change in the number of ducks harvested because of the ban; however, 7% reported taking fewer ducks and 25% took more ducks because of the ban.

Among 2013 duck hunters, 60% indicated they would not change how frequently they hunted ducks at Harsens Island Unit in future years (Table 9). A slightly higher proportion of 2013 hunters indicated they planned to hunt more often (19%) than hunters that planned to hunt less often (12%) in the future.

DISCUSSION

Mail surveys are a cost-efficient method of obtaining information about hunting activity, but there are many possible sources of error in surveys such as the failure of participants to provide answers (nonresponse bias), question wording, and question order (Cochran 1977, Lohr 1999, Dillman 2000). The survey estimate of duck harvest at Harsens Island Unit in 2013 was 294% higher than the check station tally (Table 2). Similar to this study, Wright (1978) and Frawley (2012, 2013) compared estimates of hunting activity and harvest of waterfowl hunters derived from a mail survey to information reported at a mandatory check station. The estimate of waterfowl harvest was overestimated by 100-120% in these previous studies. Wright attributed the largest source of bias associated with the harvest estimate to hunters reporting the take of hunting partners, rather than only reporting their harvest. However, estimates could also be biased if hunters failed to remember their activities (recall bias), exaggerated their success to appear more successful (prestige bias), or reported harvest of birds shot but not recovered.

The proportion of duck hunters statewide that normally used SWDs increased from 13% to 24% between 2001 and 2005 (Frawley 2007). About 74% of 2013 duck hunters at Harsens Island Unit used SWDs in 2012 (Table 2), which was similar to usage of SWDs at Shiawassee River State Game Area in 2009 (78%, Frawley 2012). Thus, it appears SWDs have become more popular since 2005. Use of SWDs appears to have increased because these decoys can attract ducks and can sometimes increase harvest of ducks over traditional hunting methods (Caswell and Caswell 2004, Szymanski and Afton 2005).

The number of ducks reported at the check station at Harsens Island Unit increased 10% between 2012 and 2013 (check station tally was 8,345 ducks in 2012 and 9,198 ducks in 2013); however, this change could not be attributed to the ban of SWDs. Hunter efficiency was not significantly different among hunters using SWDs and hunters not using SWDs (Figure 1). Furthermore, 41% of duck hunters in 2013 (982 hunters) reported that the ban of SWDs did not affect how many ducks they harvested at Harsens Island Unit (Table 8). In contrast, 19% (455 hunters) indicated their harvest of ducks decreased because of the ban, but 20% (484 hunters) reported their harvest increased. Thus, overall duck harvest at Harsens Island Unit was not affected by the ban of SWDs.

Among all duck hunters at Harsens Island Unit in 2013, 75% (1,817 hunters) reported that the ban of SWDs did not affect how frequently they hunted ducks (Table 7). In contrast, 11% (269 hunters) indicated that they duck hunted less frequently because of the ban, and 8% (186 hunters) reported they hunted more frequently. Thus, the ban of SWDs did not affect how frequently most people hunted ducks at Harsens Island Unit in 2013. Among the 2013 duck hunters, 19% (452) of these hunters indicated they would increase how often they hunted ducks at Harsens Island Unit in the future because of the ban of SWDs, while 12% (293) expected to hunt ducks less frequently (Table 9).

Among the duck hunters that hunted at Harsens Island Unit in 2013, 38% (907 hunters) reported that the quality of their hunt improved because of the ban of SWDs, while 21% (501 hunters) reported the ban decreased the quality of their hunt (Table 4). Thus, the ban of SWDs produced a net gain of 406 hunters experiencing improved hunt quality in 2013.

The improved quality of hunts likely occurred because increased numbers of hunters indicated the ban of SWDs resulted in ducks decoying better and closer shots (Table 5) and led to a better distribution of harvest among hunting areas (Table 6).

The net effect of the ban of SWDs on duck hunting effort and harvest in the next two years appears to be negligible. These results are similar to the evaluation of the ban of SWDs on duck harvest at Shiawassee River State Game Area (2012, 2013). Although harvest may not be affected by the ban of SWDs, the ban improved the quality of hunts at Harsens Island Unit.

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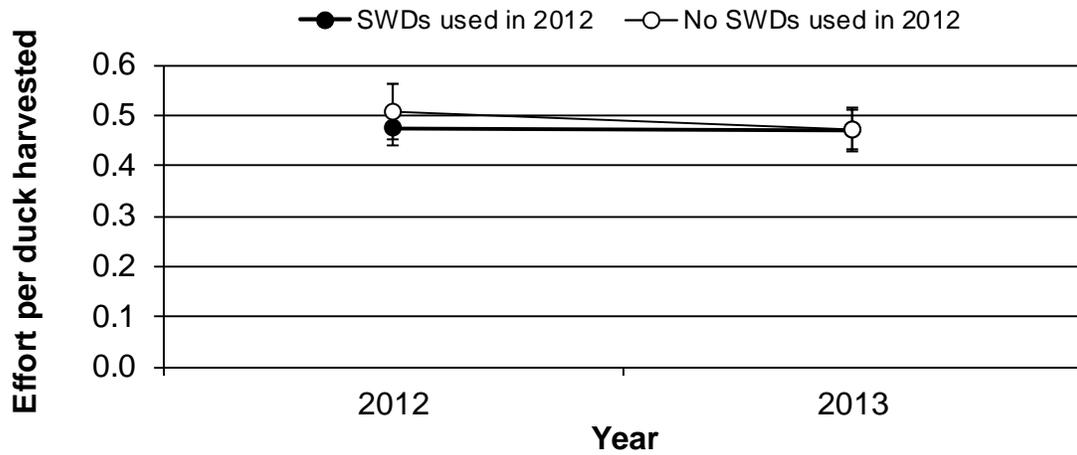


Figure 1. Estimated number of days of effort required to take a duck at Harsens Island Unit by hunting method during 2012 and 2013. Vertical bars represent the 95% confidence interval. Hunters that did not hunt both years and hunters that used more than one hunting method in 2012 were excluded from sample of hunters used to derive estimates.

Table 1. Duck hunting seasons at Harsens Island Unit in Michigan, 2012-2013.

Year and season	Season dates	Daily bag limit ^a
2012		
Youth	September 15 – 16, 2012	6
Regular season	October 6 – November 30, 2012	6
Late split	December 29, 2012 – January 1, 2013	6
2013		
Youth	September 14 – 15, 2013	6
Regular season	October 12 – December 8, 2013	6
Late split	December 28 – 29, 2013	6

^aPossession limit was twice the daily limit in 2012 and three times the daily limit in 2013. In 2012, the daily limit of 6 ducks could include no more than 4 mallards (no more than 1 of which could be a hen), 3 wood ducks, 2 redheads, 4 scaup, 2 pintails, 1 black duck, and 1 canvasbacks. In 2013, the daily limit of 6 ducks could include no more than 4 mallards (no more than 1 of which could be a hen), 3 wood ducks, 2 redheads, 3 scaup, 2 pintails, 1 black duck, and 2 canvasbacks.

Table 2. Estimates of the number of duck hunters, days of hunting effort, duck harvest, and hunting effort per duck harvested at Harsens Island Unit, summarized by year and hunting method used (i.e., used SWDs or did not use SWDs).

Year and hunting method	Hunters		Effort		Harvest		Effort/kill	
	No.	95% CL	No.	95% CL	No.	95% CL	Mean	95% CL
Hunted 2013 and 2012								
Used SWDs in 2012	1,426	63	12,554	1,011	24,691	2,444	0.51	0.09
Did not use SWDs in 2012	1,033	63	5,441	574	11,273	1,430	0.48	0.33
Hunted 2013 ^a								
Did not use SWDs	2,417	22	16,933	1,051	36,271	2,862	0.47	0.09

^aSWDs banned in 2013.

Table 3. Proportion of duck hunters that approved or disapproved of hunting ducks with SWDs at Harsens Island Unit.^a

Duck hunter group	Hunters in group		Opinion of hunters							
	No.	95% CL	Approved		Not sure		Disapproved		No answer	
			%	95% CL	%	95% CL	%	95% CL	%	95% CL
Hunted 2013	2,417	22	41	3	18	2	41	3	<1	<1
Hunted 2013 and 2012	1,884	55	41	3	14	2	44	3	<1	<1
Hunted 2013 and 2012, hunted with and without SWDs in 2012	538	52	36	5	14	4	50	6	1	1
Hunted 2013 and 2012, always used SWDs in 2012	869	61	51	4	14	3	34	4	<1	<1
Hunted 2013 and 2012, never used SWDs in 2012	476	50	29	5	14	4	56	6	1	1
Hunted 2013 but not in 2012	533	52	37	5	34	5	28	5	1	1

^aEstimates among active hunters (i.e., excluded people that did not hunt ducks).

Table 4. Proportion of duck hunters that reported the ban of SWDs increased or decreased the quality of duck hunting at Harsens Island Unit in 2013.^a

Duck hunter group	Hunters in group		Hunt quality							
	No.	95% CL	Improved		Not sure		Decreased		No answer	
			%	95% CL	%	95% CL	%	95% CL	%	95% CL
Hunted 2013	2,417	22	38	3	41	3	21	2	1	<1
Hunted 2013 and 2012	1,884	55	44	3	34	3	22	2	1	<1
Hunted 2013 and 2012, hunted with and without SWDs in 2012	538	52	55	5	27	5	18	4	1	1
Hunted 2013 and 2012, always used SWDs in 2012	869	61	35	4	31	4	33	4	1	1
Hunted 2013 and 2012, never used SWDs in 2012	476	50	47	6	46	6	6	3	1	1
Hunted 2013 but not in 2012	533	52	15	4	67	5	18	4	1	1

^aEstimates among active 2013 hunters (i.e., excluded people that did not hunt ducks in 2013).

Table 5. Proportion of duck hunters that reported the ban of SWDs resulted in ducks decoying better and closer shots at Harsens Island Unit in 2013.^a

Duck hunter group	Hunters in group		Opinion of hunters							
	No.	95% CL	Agree		Not sure		Disagree		No answer	
			%	95% CL	%	95% CL	%	95% CL	%	95% CL
Hunted 2013	2,417	22	38	3	32	2	30	2	<1	<1
Hunted 2013 and 2012	1,884	55	43	3	25	3	32	3	<1	<1
Hunted 2013 and 2012, hunted with and without SWDs in 2012	538	52	52	6	20	4	28	5	1	1
Hunted 2013 and 2012, always used SWDs in 2012	869	61	34	4	24	4	42	4	<1	<1
Hunted 2013 and 2012, never used SWDs in 2012	476	50	49	6	32	5	19	5	<1	<1
Hunted 2013 but not in 2012	533	52	19	4	56	6	24	5	1	1

^aEstimates among active hunters (i.e., excluded people that did not hunt ducks).

Table 6. Proportion of duck hunters that reported the ban of SWDs led to a better distribution of duck harvest among hunting zones at Harsens Island Unit in 2013.^a

Duck hunter group	Hunters in group		Opinion of hunters							
	No.	95% CL	Agree		Not sure		Disagree		No answer	
			%	95% CL	%	95% CL	%	95% CL	%	95% CL
Hunted 2013	2,417	22	42	3	34	2	23	2	1	<1
Hunted 2013 and 2012	1,884	55	45	3	29	3	25	3	1	1
Hunted 2013 and 2012, hunted with and without SWDs in 2012	538	52	54	5	26	5	20	4	1	1
Hunted 2013 and 2012, always used SWDs in 2012	869	61	36	4	28	4	34	4	2	1
Hunted 2013 and 2012, never used SWDs in 2012	476	50	52	6	35	6	13	4	<1	<1
Hunted 2013 but not in 2012	533	52	30	5	52	6	17	4	1	1

^aEstimates among active hunters (i.e., excluded people that did not hunt ducks).

Table 7. Proportion of duck hunters that increased or decreased how often they hunted at Harsens Island Unit in 2013 because of the ban of SWDs.^a

Duck hunter group	Hunters in group		Opinion of hunters									
	No.	Increased		Decreased		No change		Not sure		No answer		
		95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL
Hunted 2013	2,417	22	8	1	11	2	75	2	6	1	<1	<1
Hunted 2013 and 2012	1,884	55	7	2	12	2	77	2	3	1	<1	<1
Hunted 2013 and 2012, hunted with and without SWDs in 2012	538	52	11	3	13	4	75	5	2	2	1	1
Hunted 2013 and 2012, always used SWDs in 2012	869	61	5	2	16	3	76	4	2	1	<1	<1
Hunted 2013 and 2012, never used SWDs in 2012	476	50	8	3	5	2	81	5	7	3	<1	<1
Hunted 2013 but not in 2012	533	52	9	3	8	3	69	5	15	4	<1	<1

^aEstimates among active hunters (i.e., excluded people that did not hunt ducks).

Table 8. Proportion of duck hunters that reported increased or decreased harvest of ducks at Harsens Island Unit in 2013 following the ban of SWDs.^a

Duck hunter group	Hunters in group		Opinion of hunters									
	No.	95% CL	Increased		Decreased		No change		Not sure		No answer	
			%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL
Hunted 2013	2,417	22	20	2	19	2	41	3	20	2	<1	<1
Hunted 2013 and 2012	1,884	55	23	2	22	2	40	3	15	2	<1	<1
Hunted 2013 and 2012, hunted with and without SWDs in 2012	538	52	31	5	21	4	37	5	10	3	1	1
Hunted 2013 and 2012, always used SWDs in 2012	869	61	17	3	30	4	38	4	15	3	<1	<1
Hunted 2013 and 2012, never used SWDs in 2012	476	50	25	5	7	3	46	6	21	5	<1	<1
Hunted 2013 but not in 2012	533	52	10	3	9	3	44	5	37	5	<1	<1

^aEstimates among active hunters (i.e., excluded people that did not hunt ducks).

Table 9. Proportion of duck hunters that reported they would increase or decrease how often they hunted ducks at Harsens Island Unit in future years because of the ban of SWDs.^a

Duck hunter group	Hunters in group		Opinion of hunters									
	No.	95% CL	Increase		Decrease		No change		Not sure		No answer	
			%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL
Hunted 2013	2,417	22	19	2	12	2	60	3	9	1	<1	<1
Hunted 2013 and 2012	1,884	55	19	2	13	2	62	3	6	1	<1	<1
Hunted 2013 and 2012, hunted with and without SWDs in 2012	538	52	24	5	12	4	60	5	4	2	<1	<1
Hunted 2013 and 2012, always used SWDs in 2012	869	61	14	3	18	3	60	4	7	2	<1	<1
Hunted 2013 and 2012, never used SWDs in 2012	476	50	22	5	4	2	67	5	6	3	1	1
Hunted 2013 but not in 2012	533	52	18	4	10	3	55	6	18	4	<1	<1

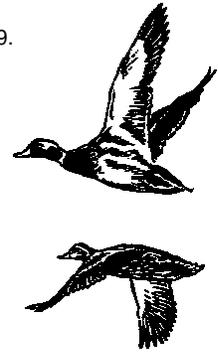
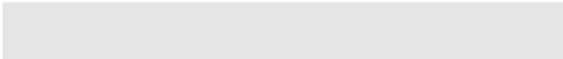
^aEstimates among active hunters (i.e., excluded people that did not hunt ducks).

Appendix A. The questionnaire sent to duck hunters in this study.



DUCK HARVEST REPORT FOR THE HARSENS ISLAND MANAGEMENT UNIT

This information is requested under authority of Part 435, 1994 PA 451, M.C.L. 324.43539.



It is important that you complete this questionnaire even if you did not harvest any ducks. Report only your hunting activities and the birds that you harvested. The first section of this questionnaire deals with hunting activities last season (2012) and the second section deals with the most current season (2013).

Section 1: Duck Hunting at Harsens Island Management Unit in 2012

1. In 2012, did you hunt ducks at Harsens Island Unit? ¹ Yes ² No (If "No", skip to question number 6.)

2. How many days did you hunt ducks with the aid of a spinning-wing decoy at Harsens Island Unit in 2012? _____ days
3. How many ducks did you harvest on these days you hunted with the aid of a spinning-wing decoy at Harsens Island Unit in 2012? _____ ducks
4. How many days did you hunt ducks without the aid of a spinning-wing decoy at Harsens Island Unit in 2012? _____ days
5. How many ducks did you harvest on these days you hunted without the aid of a spinning-wing decoy at Harsens Island Unit in 2012? _____ ducks

Section 2: Duck Hunting at Harsens Island Management Unit in 2013

Starting in 2013, no spinning-wing decoys were allowed in the Harsens Island Unit.

6. Prior to 2013, how many years have you hunted ducks at Harsens Island Unit? _____ years

7. In 2013, did you hunt ducks at Harsens Island Unit? ¹ Yes ² No (If "No", skip to question number 13.)
8. How many days did you hunt ducks at Harsens Island Unit in 2013? _____ days
9. How many ducks did you harvest at Harsens Island Unit in 2013? _____ ducks
10. Were you aware of the ban on spinning wing decoys before you arrived at Harsens Island Unit? ¹ Yes ² No
11. How did the ban on spinning-wing decoys affect the quality of your duck hunting experience at Harsens Island Unit?
- ¹ Greatly Improved quality of hunt ² Improved quality of hunt ³ Not Sure ⁴ Decreased quality of hunt ⁵ Greatly decreased quality of hunt
12. How much do you agree or disagree with the following statements about the effects of the ban of spinning-wing decoys on duck hunting at Harsens Island Unit.
- | | Strongly Agree | Agree | Not Sure | Disagree | Strongly Disagree |
|----------------------------------------------------------------------------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| a. The ban of spinning-wing decoys resulted in ducks decoying better and closer shots. | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> | 5 <input type="checkbox"/> |
| b. The ban of spinning-wing decoys has led to a better distribution of duck harvest among hunting zones. | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> | 5 <input type="checkbox"/> |
13. How much do you approve or disapprove of hunting ducks at Harsens Island Unit with the aid of spinning-wing decoys?
- ¹ Strongly Approve ² Approve ³ Not Sure ⁴ Disapprove ⁵ Strongly Disapprove
14. Since spinning-wing decoys were banned in 2013, how did this ban affect how often you hunted ducks at Harsens Island Unit? (Select one choice)
- ¹ Increased ² Decreased ³ No change ⁴ Not sure
15. Since spinning-wing decoys were banned in 2013, how did this ban affect how many ducks you harvested at Harsens Island Unit? (Select one choice)
- ¹ Increased ² Decreased ³ No change ⁴ Not sure
16. How do you believe the ban on spinning wing decoys will affect how often you will hunt ducks at Harsens Island Unit in future years? (Select one choice)
- ¹ Increase ² Decrease ³ No change ⁴ Not sure

Please return questionnaire in the enclosed postage-paid envelope.
Thank you for your help.