



MICHIGAN DEPARTMENT OF NATURAL RESOURCES
Wildlife Division Report No. 3606
June 2015

2011 Waterfowl Hunter Opinion Survey

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Abstract

A random sample of waterfowl hunters in 2011 was contacted to determine the preferred duck hunting season structure (e.g., season dates and hunting zones) for the next five years in Michigan. An estimated 32,201 people hunted both ducks and geese in 2011; 8,484 people hunted ducks only; and 4,950 people hunted geese only. Among duck hunters (40,685), 17% reported duck hunting was their most important recreational activity, and 58% reported duck hunting was among their most important recreational activities. Most (67%) duck hunters preferred to hunt in the South Zone, while 21% of duck hunters preferred to hunt in the Middle Zone and 10% preferred to hunt in the North Zone. In addition, the preferred hunt area for 29% of the duck hunters included the Saginaw Bay area, and 15% of duck hunters reported their preferred hunt area included counties in southwest Michigan. Duck hunters were presented 15 statements about the timing and structure of the duck hunting season and were asked whether they agreed or disagreed with these statements. There were only three statements for which more than 50% of duck hunters agreed: (1) they preferred waterfowl hunting season dates that allowed more opportunities to hunt ducks and geese together [83%], (2) they liked the duck hunting season dates used in 2011 [57%], and (3) they preferred a continuous duck hunting season without segments [53%]. Duck hunters were asked to indicate whether they supported four different duck hunting zone and split season options. The only option supported by at least 50% of the duck hunters was maintaining the three zones and the season splits as they existed in 2011. Duck hunters were asked to indicate whether they supported five possible options for the location of duck hunting zones. The only option supported by at least 50% of the duck hunters was maintaining three zones as they existed in 2011.



A contribution of Federal Aid in Wildlife Restoration, Michigan Project W-147-R

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Introduction

The Michigan Natural Resources Commission and Department of Natural Resources (DNR) have authority and responsibility to protect and manage wildlife resources in the state of Michigan. This responsibility is shared with the U.S. Fish and Wildlife Service (USFWS) and other state and provincial wildlife management agencies for the management of migratory birds such as ducks (*Anatinae*) and geese (*Branta* and *Anser* spp.).

The USFWS annually establishes frameworks for migratory bird hunting seasons and states must establish hunting seasons within these frameworks. This framework includes duck hunting zones and season splits. The hunting regulations adopted by states can be more restrictive, but never more liberal, than the federal regulations.

Every five years, states have the opportunity to make changes to their duck hunting zones; however, any changes must be maintained for the next five years. The main objective of this survey was to determine the preferred duck hunting season structure (season dates and hunting zones) for the next five years in Michigan.

Methods

Waterfowl could be harvested during Michigan's 2011 hunting seasons that occurred September 1, 2011, through January 29, 2012, (Table 1) by a person possessing both a waterfowl and a small game hunting license (includes resident, nonresident, 3-day nonresident, resident junior, and senior small game hunting licenses). Waterfowl hunters also had to obtain a federal waterfowl stamp and register with the National Migratory Bird Harvest Information Program (HIP). Hunters younger than 16 years of age could hunt waterfowl without a waterfowl hunting license or a federal waterfowl stamp; however, they still were required to purchase a small game license and register with the HIP.

Following the 2011 hunting seasons, a questionnaire (Appendix A) was sent to 5,980 randomly selected people at least 16 years old that had purchased a waterfowl hunting license. Questionnaires were mailed initially in late December 2011. Up to two follow-up questionnaires were sent to non-respondents. Hunters were asked to report whether they hunted and report their preferred hunt area (management zone). Hunters were also asked to indicate support for proposed hunting regulations (e.g., season dates and hunting zones). Questionnaires were undeliverable to 98 people, primarily because of changes in residence. Questionnaires were returned by 3,468 of 5,882 people receiving the questionnaire (59% response rate).

Estimates and their 95% confidence limit (CL) were calculated using a simple random sampling design (Cochran 1977). Estimates were derived separately for the Upper Peninsula (UP), northern Lower Peninsula (NLP), southern Lower Peninsula (SLP) management units (Figure 1). Estimates were also calculated separately among duck hunters that preferred to hunt in the Saginaw Bay area (Arenac, Bay, Huron, Midland, Saginaw, Sanilac, or Tuscola counties) and in southwest Michigan (Allegan, Barry, Berrien, Cass, Kalamazoo, St. Joseph,

or Van Buren counties). In addition, estimates were calculated separately among hunters indicating duck hunting was among their most important recreational activities (i.e., avid duck hunters).

The 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 the true value would be within this interval 95 times out of 100. Unfortunately, there are several other possible sources of error in surveys that are probably more serious than theoretical calculations of sampling error. They include failure of participants to provide answers (nonresponse bias), question wording, and question order. It is difficult to measure these biases. Thus, estimates were not adjusted for possible bias.

Statistical tests are used routinely to determine the likelihood that 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 the difference between the means was larger than would be expected 995 out of 1,000 times ($P < 0.005$), if the study had been repeated (Payton et al. 2003).

Results and Discussion

In 2011, 55,202 people at least 16 years old had purchased a Michigan waterfowl hunting license. An estimated $32,201 \pm 877$ people hunted both ducks and geese; $8,484 \pm 642$ people hunted ducks only; and $4,950 \pm 508$ people hunted geese only.

Among duck hunters ($40,685 \pm 783$), $17 \pm 1\%$ reported duck hunting was their most important recreational activities, and $58 \pm 2\%$ reported duck hunting was among their most important recreational activity. In contrast, $20 \pm 2\%$ of duck hunters indicated duck hunting was no more important than their other activities. In addition, $1 \pm 1\%$ of duck hunters indicated duck hunting was not an important activity, and $3 \pm 1\%$ of duck hunters indicated duck hunting was less important than their other activities. About $1 \pm 1\%$ of duck hunters did not indicate the importance of duck hunting.

Most ($67 \pm 2\%$) duck hunters preferred to hunt in the South Zone, while $21 \pm 2\%$ of duck hunters preferred to hunt in the Middle Zone and $10 \pm 1\%$ preferred to hunt in the North Zone. About $2 \pm 1\%$ of the duck hunters did not indicate a preferred hunt zone. In addition, the preferred hunt area for $29 \pm 2\%$ of the duck hunters included Arenac, Bay, Huron, Midland, Saginaw, Sanilac, or Tuscola counties (i.e., Saginaw Bay area). About $15 \pm 1\%$ of duck hunters reported their preferred hunt area included Allegan, Barry, Berrien, Cass, Kalamazoo, St. Joseph, or Van Buren counties in southwest Michigan.

Duck hunters were presented 15 statements about the timing and structure of the duck hunting season and were asked whether they agreed or disagreed with these statements (Tables 2-6 and Figures 2-3). Generally, less than 50% of duck hunters indicated they agreed with most statements. There were only three statements for which more than 50% of duck hunters agreed: (1) they preferred season dates that allowed more opportunities to hunt ducks and geese together [83%], (2) they liked the duck hunting season dates used in

2011 [57%], and (3) they preferred a continuous duck hunting season without segments [53%].

Most waterfowl hunters indicated having an opportunity to hunt ducks and geese at the same time was an important consideration when setting hunting season dates. This opinion was consistent with preferences reported previously among Michigan waterfowl hunters (Frawley and Soulliere 2005, Frawley 2012, Frawley 2013).

The DNR had the opportunity to adopt one of four duck hunting zone and split season options for the next 5 years (Tables 7-11 and Figures 4-5). Duck hunters were asked to indicate whether they supported each option. The only option supported by at least 50% of the duck hunters was maintaining the three zones and the season splits as they existed in 2011.

The DNR had the opportunity to adopt one of five possible options for the location of duck hunting zones in Michigan for the next 5 years (Tables 12-18 and Figures 6-8). Duck hunters were asked to indicate whether they supported each option. The only option supported by at least 50% of the duck hunters was maintaining the three zones as they existed in 2011.

Overall, most duck hunters statewide supported maintaining the season structure and zones used in 2011 for the next five years. Furthermore, most hunters in all management areas supported maintaining the existing zones.

Acknowledgements

I thank all the hunters that provided information. Sheree Kershaw and Theresa Riebow completed data entry. Marshall Strong created Figure 1. Barb Avers, Dave Luukkonen, Russ Mason, and Doug Reeves reviewed a draft version of this report.

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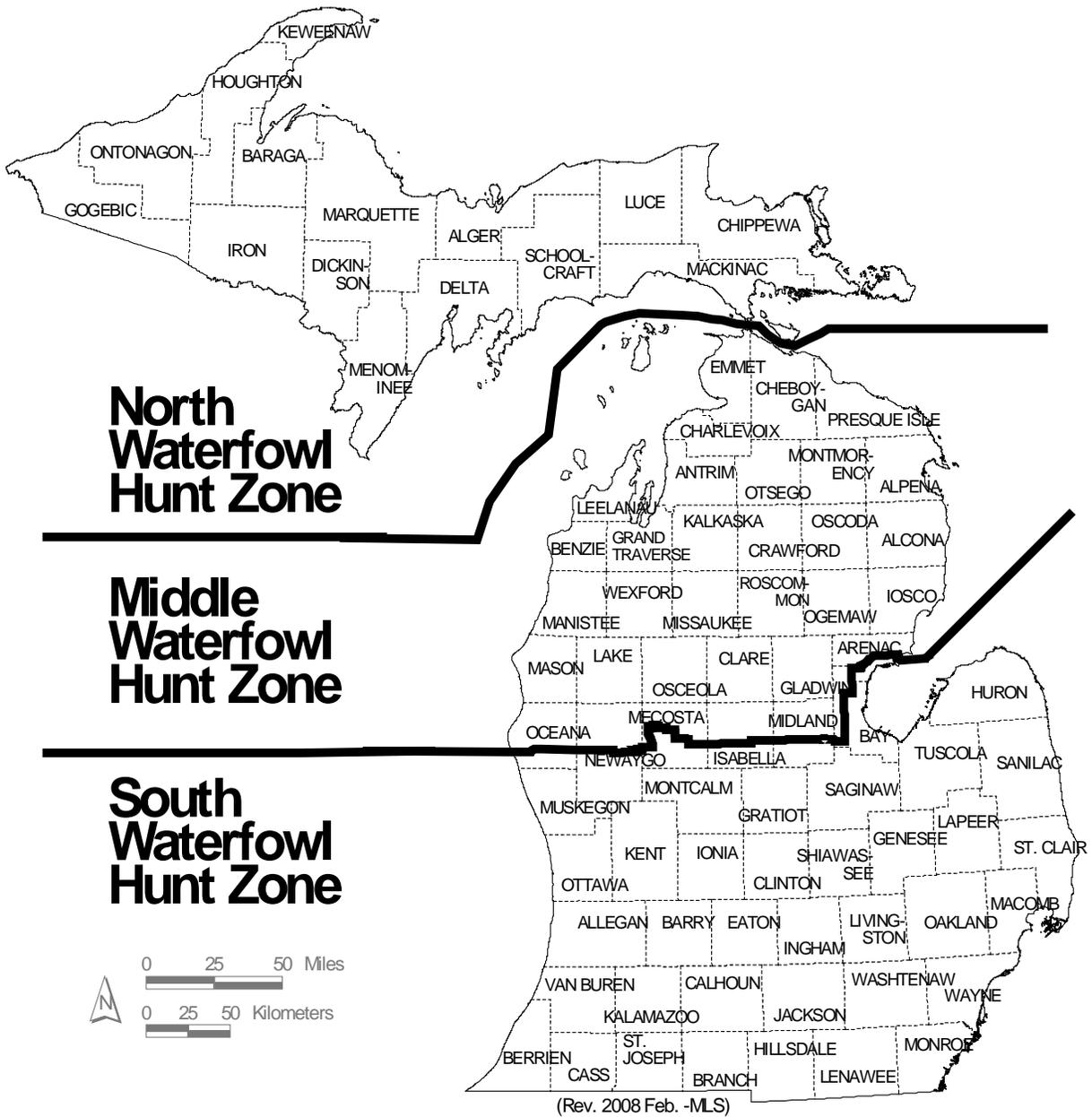


Figure 1. Michigan waterfowl management zones in 2011.

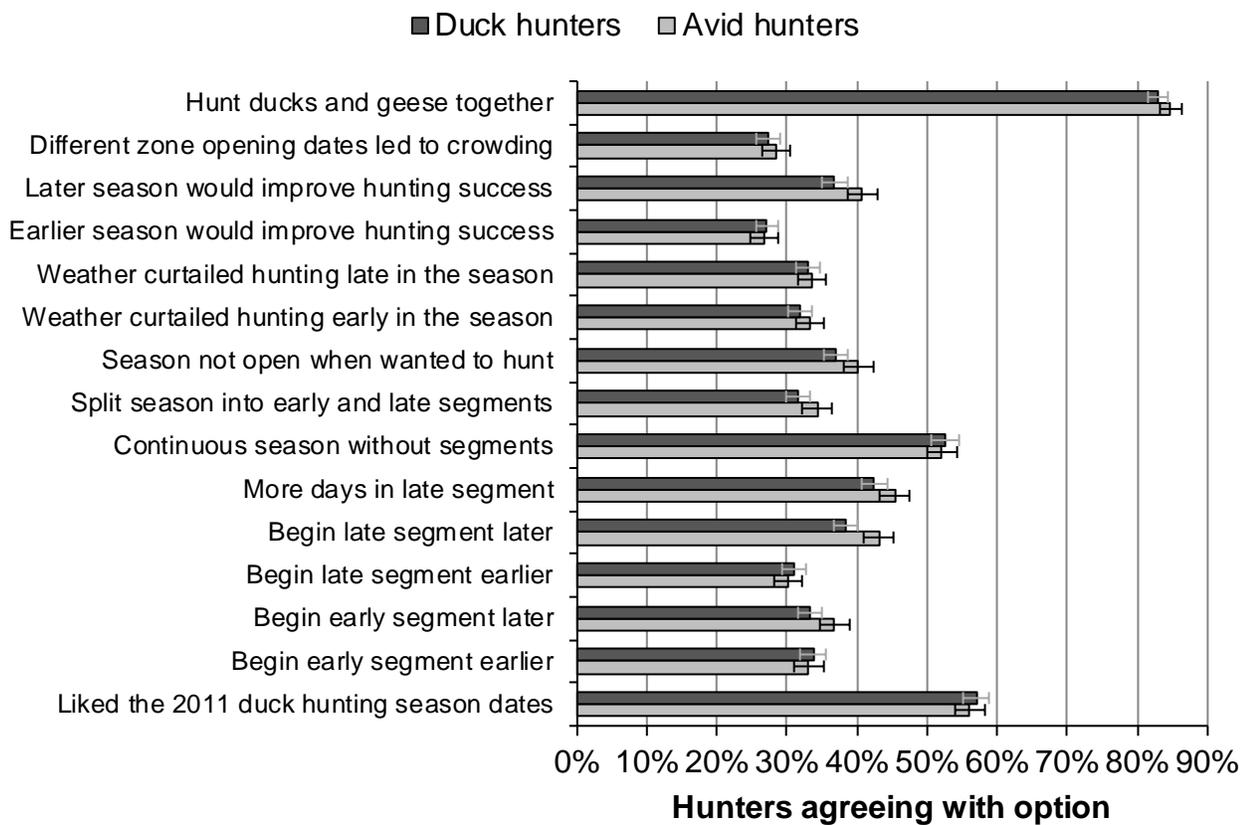


Figure 2. The estimated proportion of duck hunters that agreed with various statements about the dates of the 2011 duck hunting season. Avid hunters indicated duck hunting was either their most important recreational activity or was among their most important recreational activity.

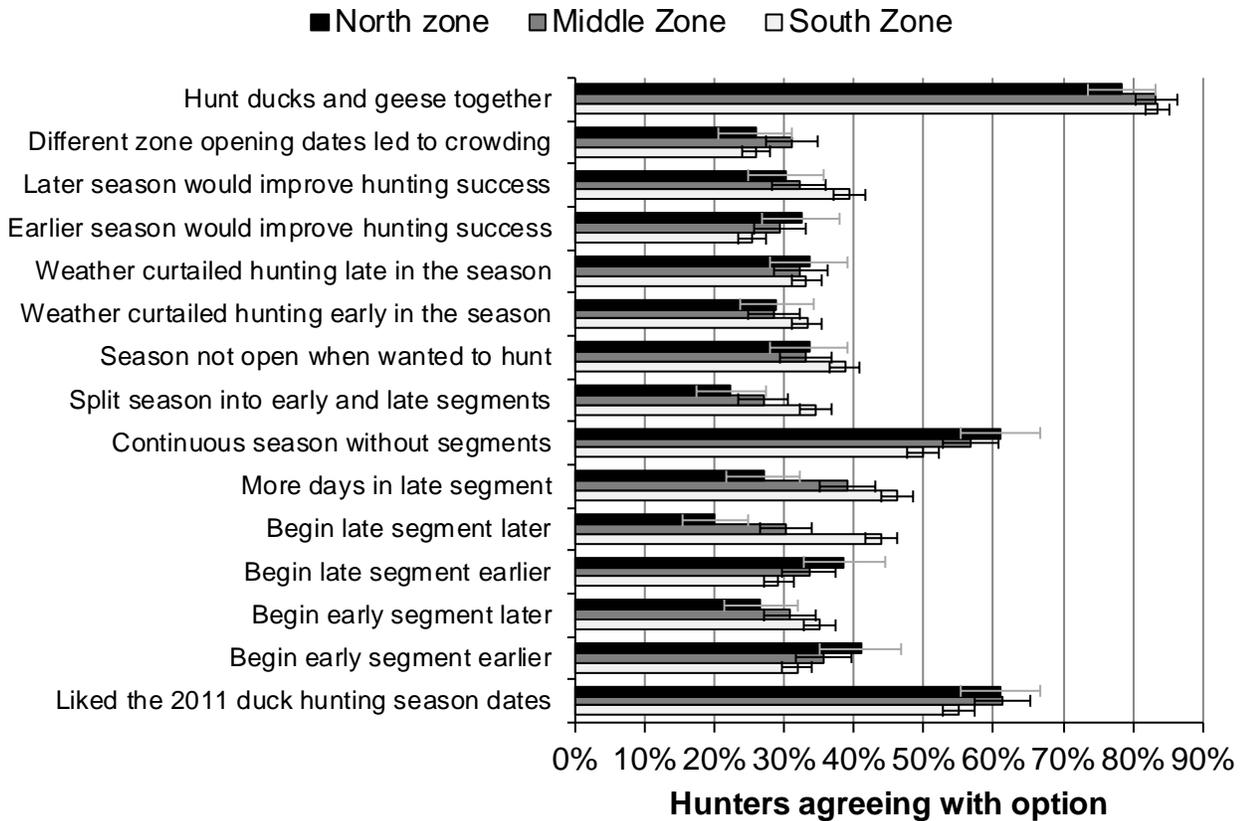


Figure 3. The estimated proportion of duck hunters that agreed with various statements about the dates of the 2011 duck hunting season.

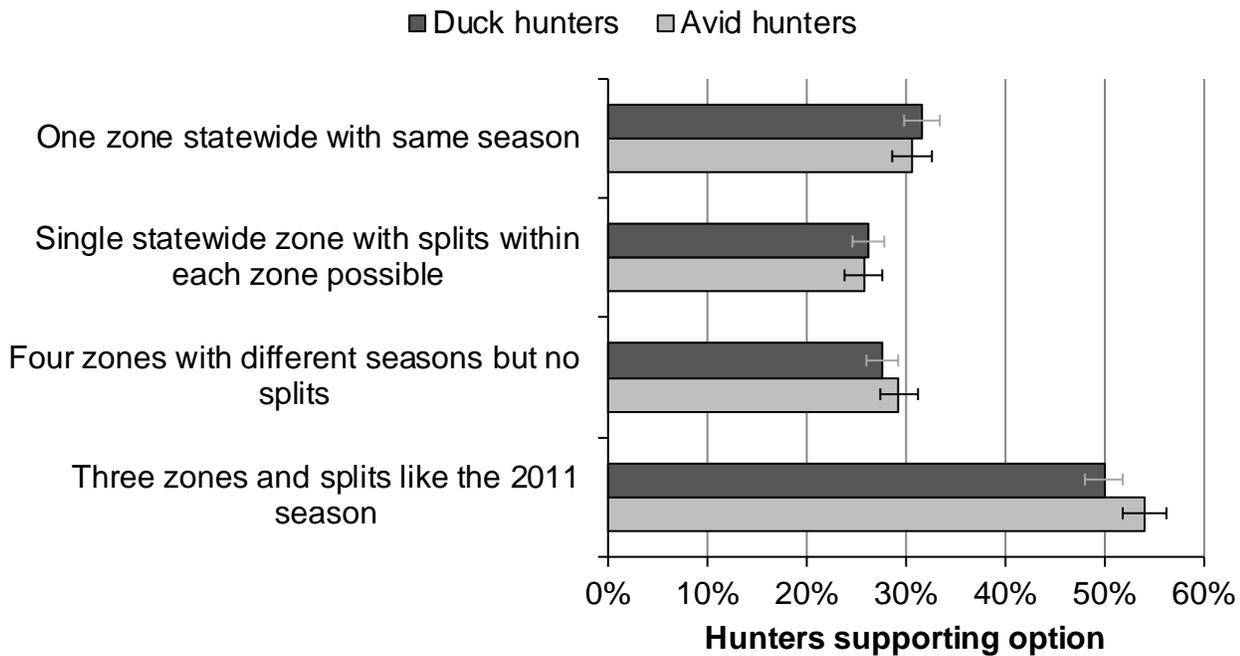


Figure 4. The estimated proportion of duck hunters (and avid duck hunters) that supported or opposed various options for the duck hunting zones and season splits in Michigan for the next five years. Avid hunters indicated duck hunting was either their most important recreational activity or was among their most important recreational activity.

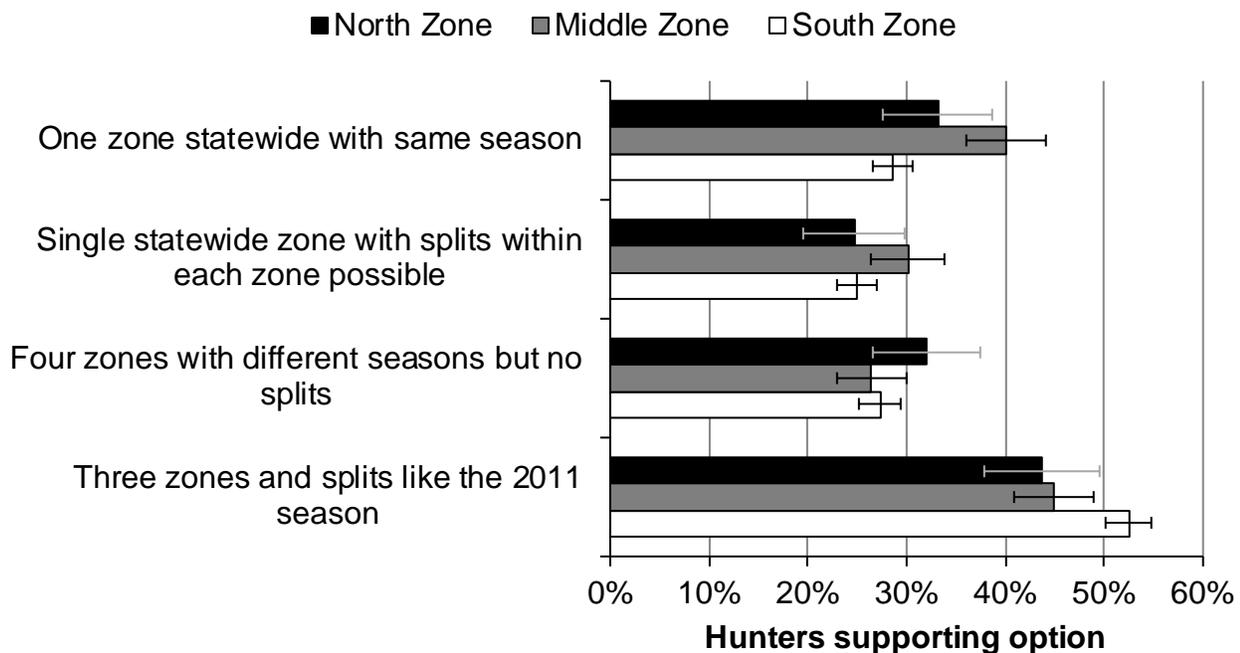


Figure 5. The estimated proportion of duck hunters that supported or opposed various options for the duck hunting zones and season splits in Michigan for the next five years, summarized by hunters' preferred management zone.

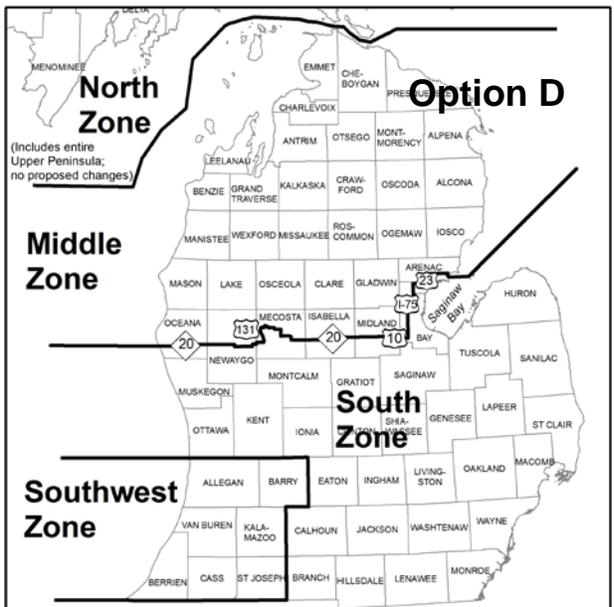
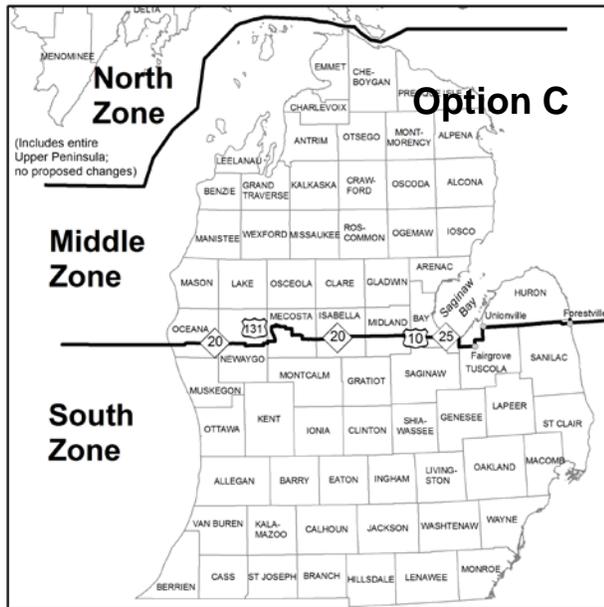
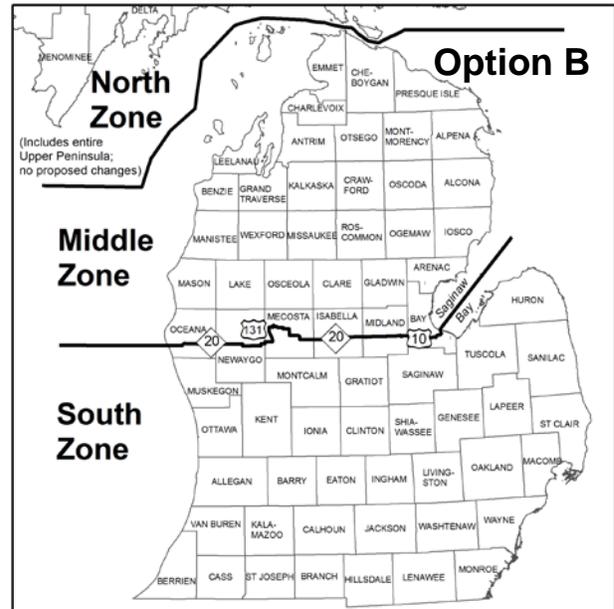
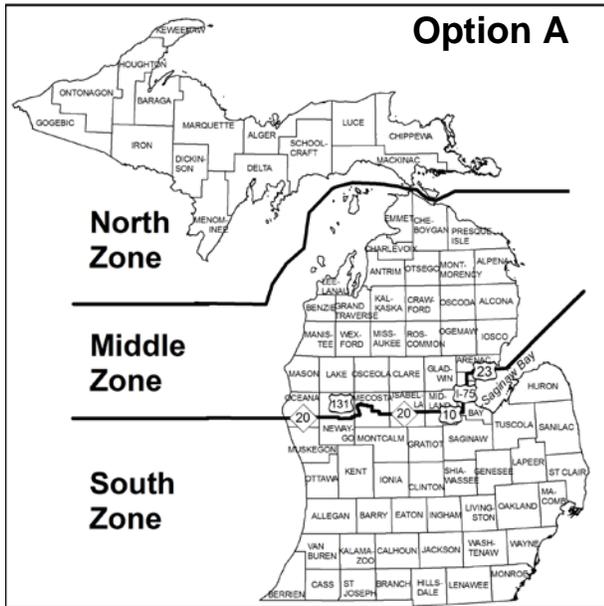


Figure 6. Four of the five options evaluated in 2011 for the location of duck hunting zones in Michigan for the next five years. Options evaluated included (A) maintain 2011 zones, (B) split Saginaw Bay between Middle and South zones, (C) make Saginaw Bay area part of Middle Zone, (D) create new Southwest Zone, and (not shown) make entire state one zone.

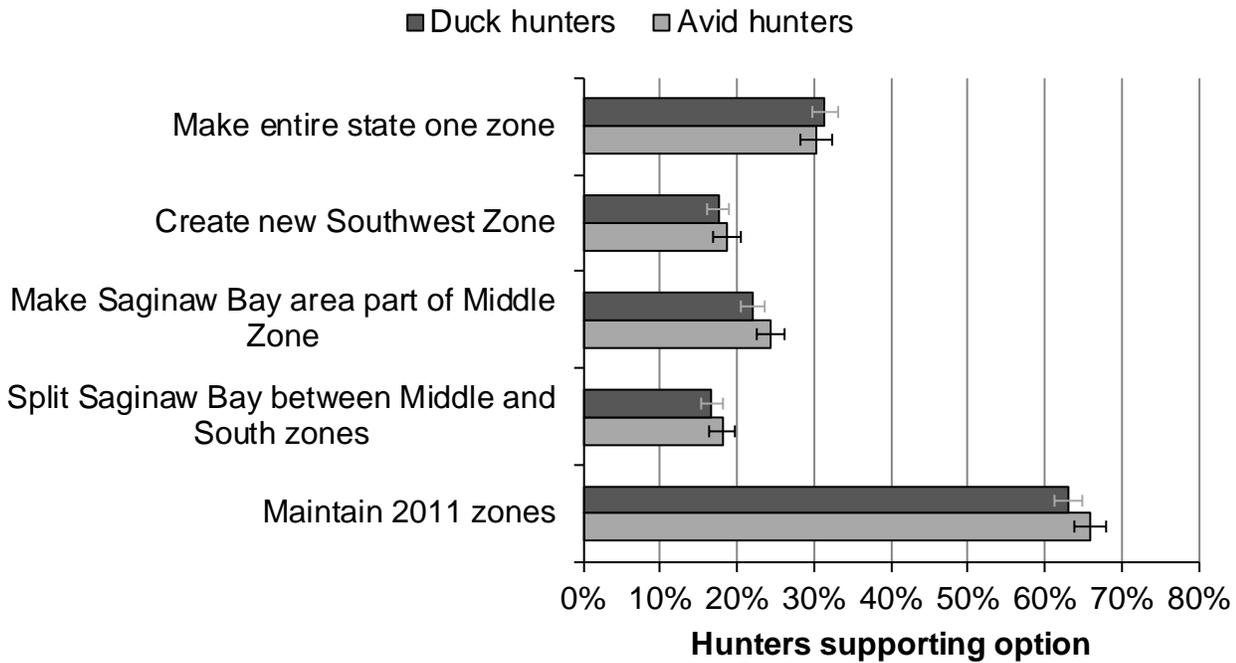


Figure 7. The estimated proportion of duck hunters (and avid duck hunters) that supported or opposed various options for the duck hunting zones in Michigan for the next five years. Avid hunters indicated duck hunting was either their most important recreational activity or was among their most important recreational activity.

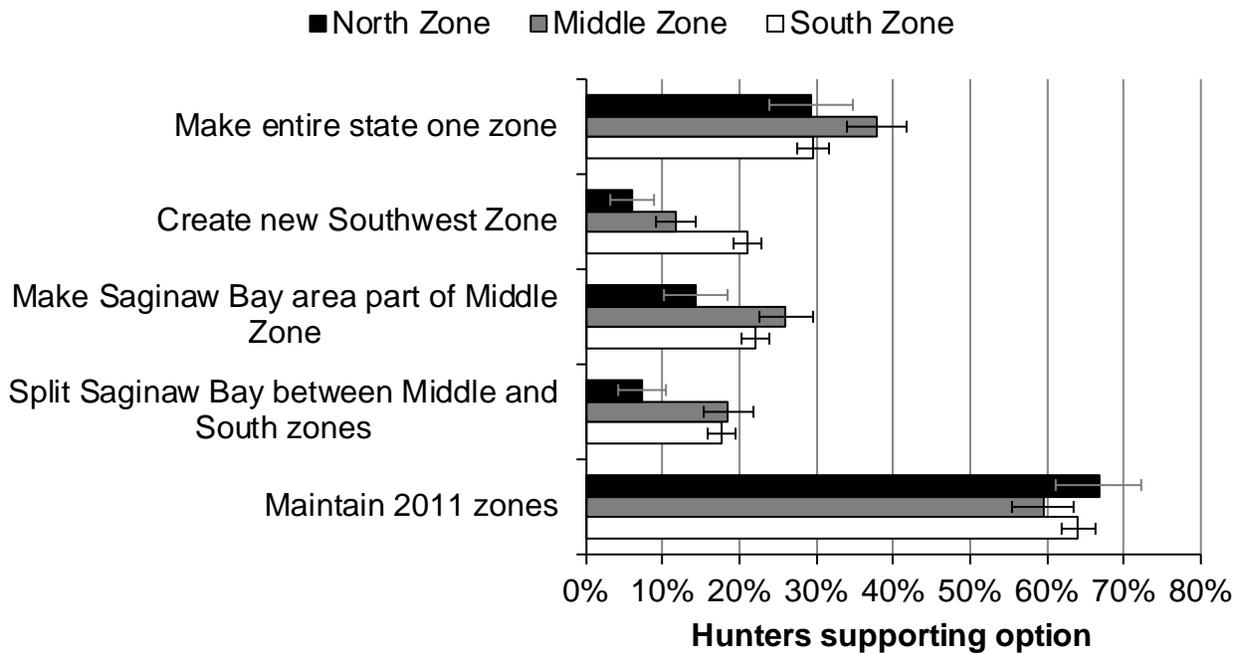


Figure 8. The estimated proportion of duck hunters that supported or opposed various options for the duck hunting zones in Michigan for the next five years, summarized by the hunters' preferred management zone.

Table 1. Waterfowl hunting seasons in Michigan, 2011-2012.

Species, season, and area ^a	Season dates
Ducks^b	
North Zone (UP)	Sept. 24 – Nov. 18 and Nov. 24 – Nov. 27
Middle Zone	Oct. 1 – Nov. 27 and Dec. 3 – 4
South Zone	Oct. 8 – Dec. 4 and Dec. 10 – 11
Canada geese^{b,c}	
Early seasons	
North Zone (UP)	Sept. 1 – 10
Middle and South zones (LP)	Sept. 1 – 15
Regular seasons	
North Zone (UP)	Sept. 17 – Oct. 31
Middle Zone	Oct. 1 – Nov. 8, Nov. 24 – 27, and Dec. 3 – 4
South Zone	Oct. 8 – Nov. 10 and Nov. 24 – Dec. 4
Late season	
South Zone	Dec. 31 – Jan. 29

^aSee Figure 1 for boundaries of hunt areas.

^bDucks and geese could also be taken during a special 2-day Youth Season (September 17-18).

^cSpecial goose hunting seasons also occurred on Goose Management Units, but these seasons affected a relatively small area.

Table 2. The estimated proportion of duck hunters that agreed or disagree with various statements about the dates of the 2011 duck hunting season.

Statement	Strongly agree		Somewhat agree		Not sure		Somewhat disagree		Strongly disagree		Unknown	
	%	95%	%	95%	%	95%	%	95%	%	95%	%	95%
		CL		CL		CL		CL		CL		CL
Liked the 2011 duck hunting season dates	21	2	36	2	11	1	18	1	13	1	2	<1
Begin early segment earlier	19	1	15	1	19	1	18	1	26	2	2	1
Begin early segment later	18	1	16	1	21	2	17	1	25	2	3	1
Begin late segment earlier	15	1	16	1	25	2	15	1	26	2	3	1
Begin late segment later	25	2	13	1	24	2	15	1	19	1	3	1
More days in late segment	22	2	21	2	23	2	15	1	18	1	3	1
Continuous season without segments	35	2	18	1	21	2	12	1	12	1	2	1
Split season into early and late segments	14	1	18	1	25	2	19	1	22	2	2	1
Season not open when wanted to hunt	15	1	22	2	24	2	21	2	16	1	2	1
Weather curtailed hunting early in the season	13	1	19	1	22	2	23	2	21	2	2	1
Weather curtailed hunting late in the season	13	1	20	2	21	2	25	2	19	1	2	1
Earlier season would improve hunting success	12	1	15	1	25	2	23	2	24	2	2	<1
Later season would improve hunting success	18	1	18	1	27	2	18	1	15	1	2	1
Different zone opening dates led to crowding	11	1	17	1	31	2	24	2	16	1	2	1
Hunt ducks and geese together	52	2	31	2	11	1	3	1	1	<1	1	<1

Table 3. The estimated proportion of avid duck hunters that agreed or disagree with various statements about the dates of the 2011 duck hunting season.^a

Statement	Strongly agree		Somewhat agree		Not sure		Somewhat disagree		Strongly disagree		Unknown	
	%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL
Liked the 2011 duck hunting season dates	20	2	36	2	8	1	19	2	15	2	1	<1
Begin early segment earlier	19	2	14	1	15	2	20	2	30	2	2	1
Begin early segment later	20	2	17	2	17	2	17	2	27	2	3	1
Begin late segment earlier	16	2	14	2	20	2	16	2	31	2	3	1
Begin late segment later	30	2	13	1	19	2	15	2	20	2	3	1
More days in late segment	25	2	21	2	19	2	14	2	20	2	2	1
Continuous season without segments	36	2	16	2	20	2	13	1	14	2	1	1
Split season into early and late segments	15	2	19	2	22	2	18	2	24	2	2	1
Season not open when wanted to hunt	18	2	22	2	20	2	20	2	17	2	2	1
Weather curtailed hunting early in the season	15	2	19	2	18	2	23	2	23	2	2	1
Weather curtailed hunting late in the season	14	2	20	2	18	2	25	2	21	2	2	1
Earlier season would improve hunting success	13	1	14	1	20	2	24	2	27	2	1	<1
Later season would improve hunting success	22	2	19	2	23	2	18	2	17	2	2	1
Different zone opening dates led to crowding	12	1	16	2	29	2	23	2	18	2	1	1
Hunt ducks and geese together	56	2	29	2	9	1	3	1	2	1	1	<1

^aAvid hunters indicated duck hunting was either their most important recreational activity or was among their most important recreational activity.

Table 4. The estimated proportion of duck hunters in the North Zone that agreed or disagree with various statements about the dates of the 2011 duck hunting season.

Statement	Strongly agree		Somewhat agree		Not sure		Somewhat disagree		Strongly disagree		Unknown	
	%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL
Liked the 2011 duck hunting season dates	29	5	32	6	12	4	15	4	10	3	2	2
Begin early segment earlier	22	5	19	5	19	5	18	5	20	5	2	2
Begin early segment later	15	4	11	4	21	5	23	5	27	5	2	2
Begin late segment earlier	19	5	20	5	29	5	14	4	15	4	3	2
Begin late segment later	12	4	8	3	29	5	21	5	25	5	4	2
More days in late segment	13	4	14	4	25	5	21	5	24	5	3	2
Continuous season without segments	42	6	19	5	17	4	11	4	8	3	3	2
Split season into early and late segments	8	3	15	4	21	5	24	5	30	5	3	2
Season not open when wanted to hunt	13	4	20	5	23	5	21	5	18	5	4	2
Weather curtailed hunting early in the season	10	3	19	5	23	5	21	5	24	5	4	2
Weather curtailed hunting late in the season	14	4	19	5	27	5	21	5	15	4	3	2
Earlier season would improve hunting success	17	4	15	4	22	5	24	5	18	5	3	2
Later season would improve hunting success	14	4	17	4	24	5	21	5	22	5	4	2
Different zone opening dates led to crowding	10	4	15	4	25	5	27	5	19	5	3	2
Hunt ducks and geese together	42	6	36	6	14	4	5	3	<1	1	2	2

Table 5. The estimated proportion of duck hunters in the Middle Zone that agreed or disagree with various statements about the dates of the 2011 duck hunting season.

Statement	Strongly agree		Somewhat agree		Not sure		Somewhat disagree		Strongly disagree		Unknown	
	%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL
Liked the 2011 duck hunting season dates	22	3	40	4	14	3	15	3	8	2	2	1
Begin early segment earlier	21	3	15	3	22	3	19	3	21	3	2	1
Begin early segment later	15	3	16	3	22	3	19	3	25	4	3	1
Begin late segment earlier	15	3	18	3	31	4	16	3	17	3	3	1
Begin late segment later	17	3	13	3	31	4	17	3	20	3	2	1
More days in late segment	18	3	21	3	26	4	15	3	17	3	3	1
Continuous season without segments	39	4	18	3	21	3	11	3	9	2	2	1
Split season into early and late segments	11	3	16	3	27	4	20	3	23	3	2	1
Season not open when wanted to hunt	13	3	20	3	26	4	23	3	17	3	2	1
Weather curtailed hunting early in the season	12	3	17	3	23	3	26	4	20	3	2	1
Weather curtailed hunting late in the season	11	3	21	3	23	3	27	4	16	3	2	1
Earlier season would improve hunting success	13	3	17	3	29	4	19	3	21	3	1	1
Later season would improve hunting success	15	3	17	3	32	4	19	3	15	3	2	1
Different zone opening dates led to crowding	13	3	18	3	30	4	22	3	16	3	2	1
Hunt ducks and geese together	51	4	32	4	11	3	4	2	1	1	1	1

Table 6. The estimated proportion of duck hunters in the South Zone that agreed or disagree with various statements about the dates of the 2011 duck hunting season.

Statement	Strongly agree		Somewhat agree		Not sure		Somewhat disagree		Strongly disagree		Unknown	
	%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL
Liked the 2011 duck hunting season dates	19	2	36	2	10	1	19	2	15	2	1	1
Begin early segment earlier	17	2	15	2	18	2	19	2	29	2	2	1
Begin early segment later	19	2	16	2	21	2	16	2	25	2	3	1
Begin late segment earlier	14	2	15	2	22	2	15	2	31	2	3	1
Begin late segment later	30	2	14	2	21	2	14	2	18	2	3	1
More days in late segment	24	2	22	2	21	2	13	2	17	2	2	1
Continuous season without segments	33	2	17	2	22	2	12	2	14	2	2	1
Split season into early and late segments	15	2	19	2	25	2	18	2	21	2	2	1
Season not open when wanted to hunt	16	2	22	2	23	2	21	2	15	2	2	1
Weather curtailed hunting early in the season	14	2	19	2	21	2	22	2	21	2	2	1
Weather curtailed hunting late in the season	13	2	21	2	20	2	25	2	20	2	2	1
Earlier season would improve hunting success	11	1	14	2	24	2	24	2	25	2	2	1
Later season would improve hunting success	20	2	19	2	27	2	18	2	14	2	2	1
Different zone opening dates led to crowding	10	1	16	2	32	2	24	2	16	2	2	1
Hunt ducks and geese together	54	2	30	2	11	1	3	1	2	1	1	<1

Table 7. The estimated proportion of duck hunters that supported or opposed various options for the duck hunting zones and season splits in Michigan for the next five years.

Option	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Three zones and splits like the 2011 season	19	2	36	2	10	1	19	2	15	2	1	1
Four zones with different seasons but no splits	17	2	15	2	18	2	19	2	29	2	2	1
Single statewide zone with splits in each zone	19	2	16	2	21	2	16	2	25	2	3	1
One zone statewide with same season	14	2	15	2	22	2	15	2	31	2	3	1

Table 8. The estimated proportion of avid duck hunters that supported or opposed various options for the duck hunting zones and season splits in Michigan for the next five years.^a

Option	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Three zones and splits like the 2011 season	27	2	27	2	18	2	11	1	13	1	4	1
Four zones with different seasons but no splits	12	1	18	2	23	2	16	2	26	2	6	1
Single statewide zone with splits in each zone	11	1	15	2	15	2	17	2	36	2	6	1
One zone statewide with same season	20	2	11	1	13	1	14	1	38	2	5	1

^aAvid hunters indicated duck hunting was either their most important recreational activity or was among their most important recreational activity.

Table 9. The estimated proportion of duck hunters in the North Zone that supported or opposed various options for the duck hunting zones and season splits in Michigan for the next five years.

Option	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Three zones and splits like the 2011 season	22	5	21	5	21	5	11	4	18	5	6	3
Four zones with different seasons but no splits	12	4	20	5	25	5	15	4	20	5	7	3
Single statewide zone with splits in each zone	9	3	16	4	19	5	16	4	34	6	7	3
One zone statewide with same season	22	5	11	4	17	4	14	4	31	5	5	3

Table 10. The estimated proportion of duck hunters in the Middle Zone that supported or opposed various options for the duck hunting zones and season splits in Michigan for the next five years.

Option	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Three zones and splits like the 2011 season	19	3	26	4	25	4	13	3	13	3	5	2
Four zones with different seasons but no splits	11	3	15	3	28	4	17	3	23	3	6	2
Single statewide zone with splits in each zone	13	3	17	3	19	3	19	3	26	4	6	2
One zone statewide with same season	25	4	15	3	16	3	13	3	27	4	3	1

Table 11. The estimated proportion of duck hunters in the South Zone that supported or opposed various options for the duck hunting zones and season splits in Michigan for the next five years.

Option	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Three zones and splits like the 2011 season	27	2	26	2	21	2	11	1	11	1	4	1
Four zones with different seasons but no splits	11	1	17	2	27	2	16	2	24	2	6	1
Single statewide zone with splits in each zone	10	1	15	2	18	2	17	2	33	2	6	1
One zone statewide with same season	19	2	9	1	16	2	14	2	36	2	5	1

Table 12. The estimated proportion of duck hunters that supported or opposed various options for the duck hunting zones in Michigan for the next five years.

Option ^a	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Maintain 2011 zones	35	2	29	2	17	1	8	1	7	1	5	1
Split Saginaw Bay in Middle & South zones	7	1	10	1	39	2	15	1	23	2	7	1
Make Saginaw Bay area part of Middle Zone	9	1	13	1	39	2	12	1	20	2	6	1
Create new Southwest Zone	7	1	11	1	38	2	14	1	24	2	7	1
Make entire state one zone	21	2	10	1	16	1	10	1	37	2	5	1

^aSee Figure b for boundaries of hunt zones.

Table 13. The estimated proportion of avid duck hunters that supported or opposed various options for the duck hunting zones in Michigan for the next five years.^a

Option ^b	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Maintain 2011 zones	38	2	28	2	14	1	8	1	7	1	4	1
Split Saginaw Bay in Middle & South zones	7	1	11	1	36	2	15	2	25	2	6	1
Make Saginaw Bay area part of Middle Zone	10	1	14	1	35	2	12	1	22	2	6	1
Create new Southwest Zone	7	1	11	1	36	2	13	1	26	2	6	1
Make entire state one zone	21	2	10	1	13	1	10	1	42	2	5	1

^aAvid hunters indicated duck hunting was either their most important recreational activity or was among their most important recreational activity.

^bSee Figure b for boundaries of hunt zones.

Table 14. The estimated proportion of duck hunters in North Zone that supported or opposed various options for the duck hunting zones in Michigan for the next five years.

Option ^a	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Maintain 2011 zones	41	6	26	5	15	4	7	3	7	3	5	3
Split Saginaw Bay in Middle & South zones	4	2	3	2	58	6	11	4	15	4	9	3
Make Saginaw Bay area part of Middle Zone	3	2	11	4	58	6	9	3	10	3	9	3
Create new Southwest Zone	2	2	4	2	54	6	14	4	17	4	9	3
Make entire state one zone	20	5	9	3	20	5	9	3	34	6	7	3

^aSee Figure b for boundaries of hunt zones.

Table 15. The estimated proportion of duck hunters in Middle Zone that supported or opposed various options for the duck hunting zones in Michigan for the next five years.

Option ^a	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Maintain 2011 zones	22	3	40	4	14	3	15	3	8	2	2	1
Split Saginaw Bay in Middle & South zones	21	3	15	3	22	3	19	3	21	3	2	1
Make Saginaw Bay area part of Middle Zone	15	3	16	3	22	3	19	3	25	4	3	1
Create new Southwest Zone	15	3	18	3	31	4	16	3	17	3	3	1
Make entire state one zone	17	3	13	3	31	4	17	3	20	3	2	1

^aSee Figure b for boundaries of hunt zones.

Table 16. The estimated proportion of duck hunters in South Zone that supported or opposed various options for the duck hunting zones in Michigan for the next five years.

Option ^a	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Maintain 2011 zones	35	2	29	2	17	2	8	1	7	1	5	1
Split Saginaw Bay in Middle & South zones	7	1	11	1	36	2	15	2	25	2	6	1
Make Saginaw Bay area part of Middle Zone	10	1	13	2	35	2	14	2	23	2	6	1
Create new Southwest Zone	8	1	13	2	34	2	13	2	26	2	6	1
Make entire state one zone	20	2	9	1	15	2	10	1	40	2	5	1

^aSee Figure b for boundaries of hunt zones.

Table 17. The estimated proportion of duck hunters in Saginaw Bay area that supported or opposed various options for the duck hunting zones in Michigan for the next five years.

Option ^a	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Maintain 2011 zones	35	3	27	3	16	3	9	2	8	2	4	1
Split Saginaw Bay in Middle & South zones	11	2	14	2	23	3	15	3	32	3	5	1
Make Saginaw Bay area part of Middle Zone	16	3	14	2	20	3	14	2	30	3	5	2
Create new Southwest Zone	6	2	12	2	33	3	14	2	29	3	5	2
Make entire state one zone	21	3	11	2	14	2	10	2	40	3	4	1

^aSee Figure b for boundaries of hunt zones.

Table 18. The estimated proportion of duck hunters in southwestern Michigan that supported or opposed various options for the duck hunting zones in Michigan for the next five years.

Option ^a	Strongly support		Somewhat support		Not sure		Somewhat oppose		Strongly oppose		Unknown	
	95%		95%		95%		95%		95%		95%	
	%	CL	%	CL	%	CL	%	CL	%	CL	%	CL
Maintain 2011 zones	28	4	31	4	19	4	10	3	7	2	4	2
Split Saginaw Bay in Middle & South zones	5	2	10	3	48	5	14	3	18	4	5	2
Make Saginaw Bay area part of Middle Zone	8	3	13	3	47	5	13	3	14	3	6	2
Create new Southwest Zone	18	4	18	4	27	4	13	3	19	4	5	2
Make entire state one zone	19	4	9	3	14	3	9	3	44	5	4	2

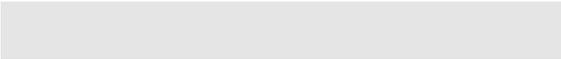
^aSee Figure b for boundaries of hunt zones.

Appendix A. The questionnaire sent to people included in the 2011 waterfowl hunter opinion survey in Michigan.



WATERFOWL HUNTER OPINION SURVEY

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 or geese during 2011.

The United States Fish and Wildlife Service establishes frameworks for migratory bird hunting seasons and states must establish hunting seasons within those frameworks. This framework includes duck hunting zones and season splits. Every five years, states have the opportunity to make changes to their duck hunting zones; however, any changes must be maintained for the next 5 years. This questionnaire is designed to assist with establishing future waterfowl hunting regulations.

1. Did you attempt to hunt ducks or geese in Michigan during 2011? (Select one.)

- 1 Hunted ducks only
- 2 Hunted geese only
- 3 Hunted both ducks and geese
- 4 Did not hunt ducks or geese

2. As a recreational activity, how important is duck hunting for you compared to your other recreational activities? (Select one.)

- 1 My most important recreational activity.
- 2 One of my more important recreational activities.
- 3 No more important than other recreational activities.
- 4 Not at all important as a recreational activity.
- 5 Less important than most of my recreational activities.

3. What is your preferred zone to hunt ducks in Michigan (See Figure 1 on page 4)? (Select one.)

- 1 North Zone (Upper Peninsula)
- 2 Middle Zone (Northern Lower Peninsula)
- 3 South Zone (Southern Lower Peninsula)

4. Does your preferred hunt area include Arenac, Bay, Huron, Midland, Saginaw, Sanilac, or Tuscola counties (i.e., Saginaw Bay area)?

- 1 Yes
- 2 No

5. Does your preferred hunt area include Allegan, Barry, Berrien, Cass, Kalamazoo, St. Joseph, or Van Buren counties in southwest Michigan?

- 1 Yes
- 2 No

For the following question #6, you will be asked about the timing of the duck hunting season in the zone where you prefer to hunt. The 2011 dates of the duck hunting seasons are listed below to assist you in answering these questions.

Zone	2011 duck hunting season dates	
	Early segment	Late segment
North Zone	September 24 – November 18	November 24 – 27
Middle Zone	October 1 – November 27	December 3 – 4
South Zone	October 8 – December 4	December 10 – 11

6. For the zone where you prefer to hunt, how much do you agree or disagree with the following statements about the dates of the duck season (see Table for season dates):

(Select one choice per item.)

	Strongly Agree	Somewhat Agree	Not Sure	Somewhat Disagree	Strongly Disagree
a. Overall, I liked the duck hunting season dates used this year.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
b. I prefer the <u>early</u> segment of the duck season to begin <u>earlier</u> .	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
c. I prefer the <u>early</u> segment of the duck season to begin <u>later</u> .	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
d. I prefer the <u>late</u> segment of the duck season to begin <u>earlier</u> .	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
e. I prefer the <u>late</u> segment of the duck season to begin <u>later</u> .	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
f. I prefer that the late segment have more days with a shorter early segment.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
g. I prefer a continuous duck hunting season without segments.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
h. I prefer a duck hunting season divided into early and late segments.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
i. Season dates did not cover the time I wanted to hunt most.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
j. Because of weather, I lose hunting opportunity early in the season during most seasons.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
k. Because of weather, I lose hunting opportunity late in the season during most seasons.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
l. I would be more successful harvesting my preferred duck species if the season opened earlier.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
m. I would be more successful harvesting my preferred duck species if the season opened later.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
n. Different opening dates among the zones created crowding in the area where I hunt	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
o. I prefer season dates that allow more opportunity to hunt ducks and geese together.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
p. The season is split in my preferred zone, but the late segment does not provide enough days late in the season.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
q. The season is split in my preferred zone, but the late segment is not late enough.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
r. The season is split in my preferred zone, but the late segment is too late.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

7. The state of Michigan has the opportunity to adopt one of four duck hunting zone and split season options for the next 5 years. Please indicate whether you would support or oppose the following options.

(Select one choice per option.)

	Strongly Support	Somewhat Support	Not Sure	Somewhat Oppose	Strongly Oppose
a. Have 3 zones, with the opportunity to have different duck season dates in each zone and to split seasons within each zone into early and late segments with a break between segments.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
b. Have 4 zones, with the opportunity to have different duck season dates in each zone but no opportunity to split seasons into early and late segments with a break between segments (continuous duck season dates).	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
c. Make the entire state one zone, with the same duck season dates statewide and the opportunity to split the duck season into early and late segments with a break between segments.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
d. Make the entire state one zone with the same continuous duck season dates statewide (no season split into early and late segments with a break between segments).	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

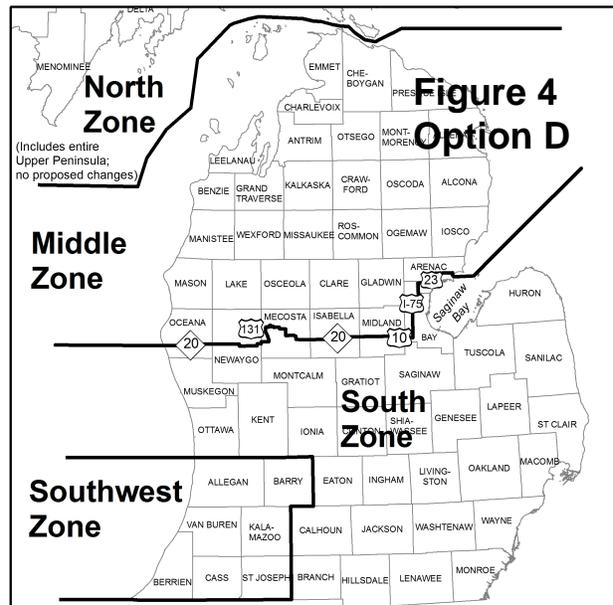
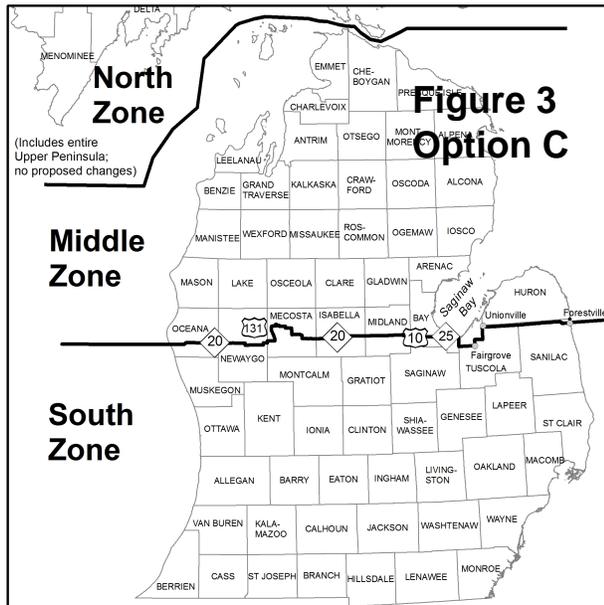
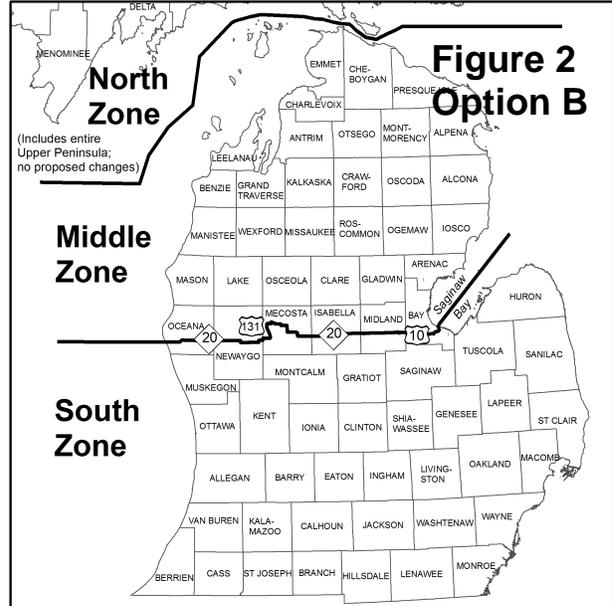
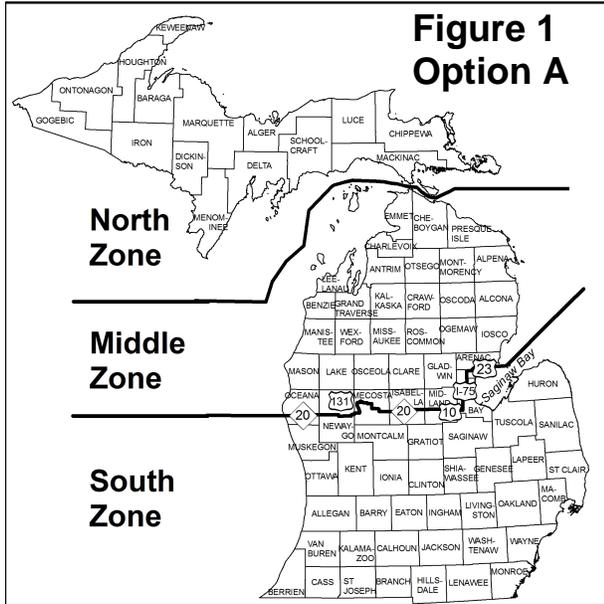
For the following question #8, you will be asked about five possible options for the location of duck hunting zones in Michigan. Figures showing these zone options are shown on the following page and should be reviewed before answering these questions.

8. Please indicate whether you would support or oppose the following options for future duck waterfowl hunting zones in Michigan for the next 5 years.

(Select one choice per option.)

	Strongly Support	Somewhat Support	Not Sure	Somewhat Oppose	Strongly Oppose
Option A: Maintain current zones (see Figure 1 on next page) as used in 2011.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
Option B: Change the boundary between the Middle and South zones so that Saginaw Bay is split between the Middle and South Zones (see Figure 2).	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
Option C: Change the boundary between the Middle and South zones so Saginaw Bay and portions of counties surrounding Saginaw Bay become part of the Middle Zone (see Figure 3).	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
Option D: Create a new Southwest Zone within the South Zone, and maintain the existing boundary between Middle and South zones (see Figure 4).	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
Option E: Make the entire state one zone.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

Figures of the Options for Michigan Waterfowl Hunting Zones



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