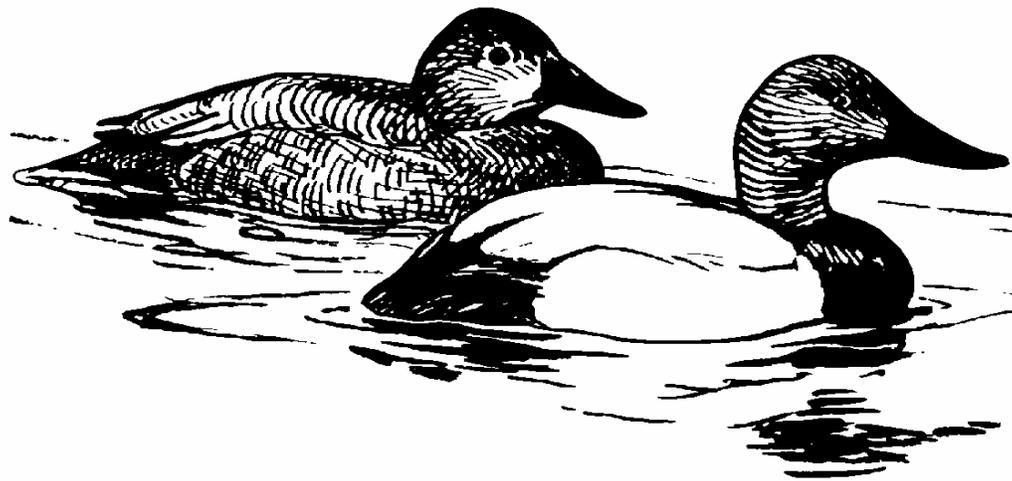


The Future of Waterfowl Hunting Summary Report–2008

HD-8-09.AMS

Larry M. Gigliotti, Ph.D.

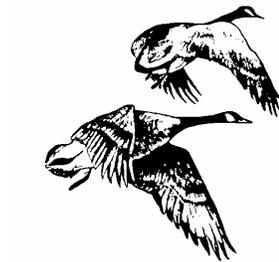
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Larry M. Gigliotti, Ph.D.

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South Dakota Game, Fish and Parks conducted two separate surveys designed to evaluate the problem of declining waterfowl hunters in South Dakota and the potential to reverse the trend. One survey was sent to resident, adult small game hunters (purchased a 2008 Small Game License or a 2008 Combination License) who had purchased a 2008 Migratory Bird Certification (referred to as the waterfowl hunter sample). The other survey was sent to a sample of resident, adult hunters who purchased either a 2008 Resident Small Game License or a Combination License but NOT the 2008 Migratory Bird Certification, which is a requirement for residents to hunt waterfowl in South Dakota (referred to as the bird hunter sample).

The purpose of the waterfowl hunter survey (HD-6-09.AMS) was to describe the current adult, resident South Dakota hunters licensed to hunt waterfowl to evaluate the future of waterfowl hunting in South Dakota and factors that may contribute to a further decline in waterfowl hunting. The bird hunter survey report (HD-7-09.AMS) evaluates the potential to attract bird hunters to participate in waterfowl hunting by exploring the concept of lapsed hunters. This study of lapsed hunters tries to identify the major reasons for not consistently hunting every year with the hope that an agency may be able to address some of the constraints on hunting participation faced by lapsed hunters.

Lapsed Waterfowl Hunters – Methodological Considerations. The term ‘lapsed’ participant is a relatively new topic of interest to wildlife agencies as the ability to detect, measure and study the concept developed due to advancements in data collection from license sales. Point-of-sale processes provided instantaneous collection of participant’s

information and the ability to track individuals' participation over time. However, the topic has been explored in the past under terms such as dissociated or sporadic participants¹

A simple definition of 'lapsed' participant is individuals who have participated in hunting or fishing but do not participate every year. A key component of the concept relative to wildlife agencies is participation in a sport that requires purchase of an annual license. Because this definition is relatively vague, research on lapsed participants must include how it was defined and measured in the study. For this study lapsed hunters were defined as individuals who were licensed to hunt in 2008 and/or have hunted in the past but did not participate in hunting every year (measured by hunting frequency for the past five years). This measure also permits some evaluation of the degree of lapsed participation. To address the issue of declining participation the assumption is it would be easier to attract lapsed participants back into the sport than attracting new participants.

It was a surprise to many to learn that a significant number of hunters and anglers did not participate in the sport every year. Information on lapsed waterfowl and pheasant hunters from South Dakota show that lapsed hunters are fairly common (Figures 1 and 2). Measured on frequency of hunting over the past five years over half of the duck and geese hunters licensed to hunt waterfowl in 2008 were classified as lapsed hunters (measured over a longer period two-thirds of these hunters were lapsed duck hunters) (Figure 1). Over half of the hunters licensed to hunt small game in 2008 but without the 2008 Migratory Bird Certification were lapsed waterfowl hunters (Figure 2). This information is important because wildlife agencies are funded via license sales and in some cases are facing declining participation. Measures of lapsed hunters provide some indication of the potential market size for targeting projects/programs designed to attract hunters back to the sport.

Methodologies and detailed survey results for the two surveys are described in their respective reports. This report will summarize the most important findings from the two surveys and provide further discussion on the topic of declining waterfowl hunting, using a question/answer format.

¹ Enck, J.W., B.L. Swift, and D.J. Decker. 1993. Reasons for decline in duck hunting: insights from New York. *Wildlife Society Bulletin* (21(1)):10–21.

Waterfowl Hunter Survey

South Dakota resident, adult hunters licensed to hunt waterfowl (2008 Migratory Bird Certification)	
NEVER hunted ducks or geese	12.5%
Hunted GEESE , but NOT ducks	12.6%
Hunted DUCKS , but NOT geese	4.1%
Hunted BOTH	70.8%

**Frequency of waterfowl hunting (compared with pheasant hunting)
 over the past five years (2004-2008):**

Number of Years		Duck Hunting	Goose Hunting	Pheasant Hunting
0	Lapsed Hunters	9.0%	7.7%	2.4%
1		16.9%	16.1%	3.1%
2		11.8%	13.5%	6.4%
3		9.0%	10.1%	6.0%
4		7.9%	8.9%	10.0%
5		45.4%	43.7%	72.1%

An alternate measure of lapsed duck hunters:

General yearly frequency of duck hunting: <i>“About how frequently (based on years that you hunted) did you hunt since you first started duck hunting?”</i>	
Every year	35.2%
Most years (more the 3/4 , but not every year)	27.6%
A little more than half of the years	5.8%
About half of the years	5.4%
A little less than half, but more than 1/4 of the years	5.5%
Not very often (less than 1/4 of the years)	8.0%
Blank – most of these responses were from hunters that reported that duck hunting was ‘not important ‘	12.5%

Figure 1. Selected summary data on lapsed waterfowl hunters from the 2008 waterfowl hunter survey.

Bird Hunter Survey.

Summary waterfowl hunting experience of 2008 resident Small Game and Combination License holders	
Hunting Experience	
Never Hunted Waterfowl (Ducks or Geese)	42.7%
Have Hunted Waterfowl (Ducks and/or Geese)	57.3%
Hunting Experience	
Never Hunted Waterfowl (Ducks or Geese)	42.7%
Have Hunted Waterfowl (Ducks and/or Geese) in Past	53.7%
Hunted Waterfowl (Ducks and/or Geese) in 2008	4.2%
Hunting Experience	
Never Hunted Waterfowl (Ducks or Geese)	42.7%
Hunted Ducks Only (past and/or 2008)	10.5%
Hunted Geese Only (Past and/or 2008)	6.7%
Hunted Both Ducks and Geese (Past and/or 2008)	40.1%

Lapsed waterfowl hunters' (did not hunt in 2008) frequency of waterfowl hunting over the previous five years (2003–2007):

Number of Years	Duck Hunting	Goose Hunting
0	68.8%	60.5%
1	11.3%	14.5%
2	8.4%	11.2%
3	5.4%	5.4%
4	2.0%	3.1%
5	4.0%	5.4%

Figure 2. Selected summary data on lapsed waterfowl hunters from the 2008 bird hunter survey.

How much of a decline in waterfowl hunting has occurred in South Dakota?

Declining waterfowl hunter numbers has been noted nationwide to varying degrees and has spawned a fair number of studies. The South Dakota Game, Fish, and Parks Department has maintained a long record of hunter participation and waterfowl hunting by South Dakota residents is registering a sharp decline over the past decade. The best way to communicate this decline is visually (Figure 3). However, the more difficult question to answer is, “How serious is this decline?” How an agency answers this question will help define the level and type of appropriate actions taken by the agency. South Dakota Game, Fish and Parks has initially determined that this issue was important enough to conduct these surveys to further evaluate the problem and help guide future actions.

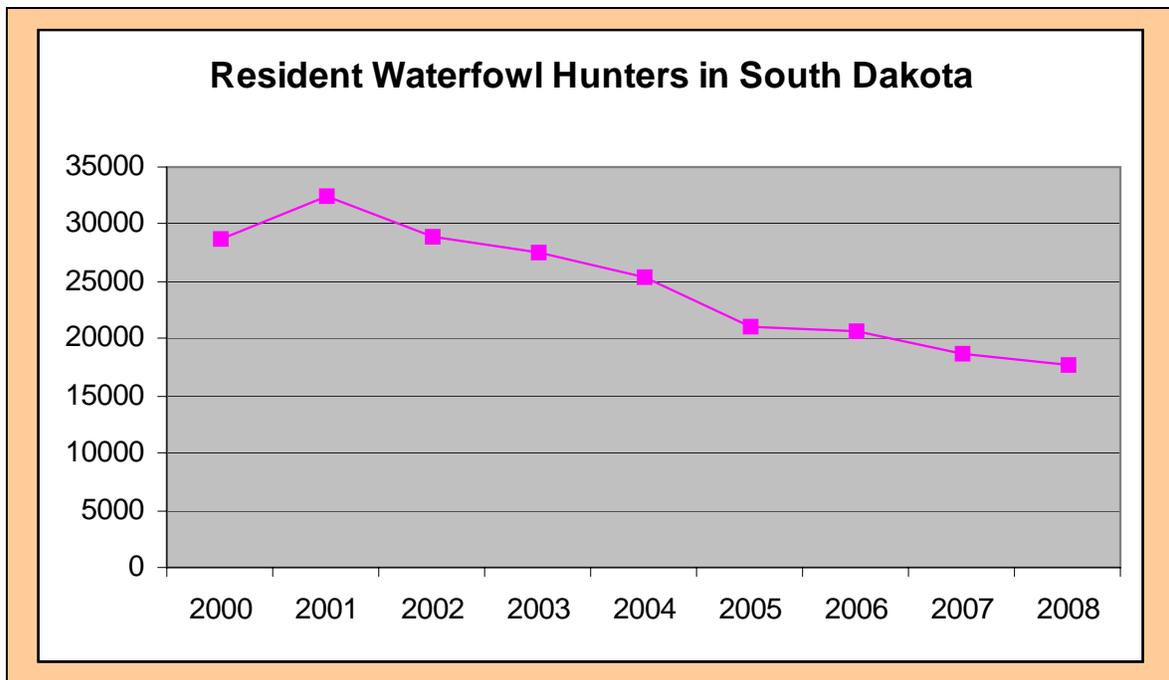


Figure 3. Participation in waterfowl hunting by South Dakota residents, 2000 – 2008.

Should a wildlife agency be concerned about declining waterfowl hunter numbers?

A decline in duck hunter numbers is a concern from both an economic and social perspective. The extra license fees that waterfowl hunters pay has paid for considerable acres set aside for hunting and conservation efforts benefiting many species in the U.S. In addition, duck hunters have been in the foreground when it comes to raising money and lending support for conservation projects, defending hunting against its critics and influencing Congress on important conservation issues. In rural states such as South Dakota, hunting makes a significant contribution to bringing money into rural communities.

While the economic contributions of hunting are often touted in a way that seems to make it the most important benefit, the social benefits of hunting in general and duck hunting in particular probably outweigh economics. Unfortunately, the social benefits are difficult to measure and thus are difficult to communicate, especially to non-hunters. Social aspects of hunting include psychological and cultural components. Writings by Randall L. Eaton and Edward O. Wilson talk about the innate connection between humans and nature and the important role experiences in nature play in our psychological, physical and spiritual health. And Dr. Eaton strongly hints at hunting providing one of the strongest, intense connections that humans can have with nature and the positive benefits from maintaining a hunting culture.

The waterfowl hunting culture is richer and more diverse than most other types of hunting.² The very aspect of duck hunting that some would consider as barriers to the sport are what contributes most to waterfowl hunting culture; e.g., getting up early in the morning, often in harsh weather, facing the difficult task of reaching your hunting site to set up a number of decoys and with a large part of the hunt dependent upon having the ‘right’ weather for the day’s hunt. In addition, duck hunting requires some special equipment and much skill, such as how to set up the decoys in a pattern that will attract ducks, calling, identifying ducks in flight and shooting skills. As such, duck hunting represents an advanced level of hunting.

² Nelson, D. and T.J. McCormick. 2008. It’s the culture, stupid. Delta Waterfowl. (Winter):62-71, 90.

Will numbers continue to decline?

It is difficult to make an actual numbers prediction of future trends based on a single set of hunter survey data; however, some general potential changes in trends may be identified. There does not seem to be a major single factor contributing to the decline in waterfowl hunting participation but rather a mix of factors, which makes it difficult to predict future trends. Two variables measured by the surveys in this study were instrumental in making predictions about future waterfowl hunting participation: hunters' rating of the importance of waterfowl hunting and their future intentions to continue hunting waterfowl. Overall, these variables indicated that we have a wide range of duck and goose hunters ranging from very dedicated and committed to very sporadic hunters with very low commitment to the sport. One of the assumptions made in this study was that the sporadic waterfowl hunters with low commitment to the sport are the ones most likely to drop out of (and have been the hunters dropping out of) waterfowl hunting.³

About 15% of duck hunters and 13% of goose hunters reported that duck and goose hunting was not an important activity. Based on the low interest in and low involvement with waterfowl hunting of this group and given the right set of contributing factors the potential exists to lose 13–15% of our current numbers of waterfowl hunters over the next decade. A second variable that lends support to this prediction is hunters' intention to hunt ducks in the future, which shows that 15% were 'not sure' if they would continue to hunt ducks.

Predicting Future Waterfowl (Duck) Hunter Numbers from Survey Data. The simple question of asking hunters if they intend to waterfowl hunt in the future produces a 'fuzzy' result. Future participation is strongly related to hunters' evaluation of the importance of that activity (Figure 4). The 3.7% of hunters that reported that they do not intend to hunt ducks in the future is probably a relatively accurate prediction; however, unforeseen events could easily affect the future behavior of some of the 81.5% of hunters currently intending to hunt ducks in the future. That still leaves almost 15% of the hunters that are undecided, many of which are sporadic duck hunters. Many factors can be involved

³ Enck, J.W., B.L. Swift, and D.J. Decker. 1993. Reasons for decline in duck hunting: insights from New York. *Wildlife Society Bulletin* (21(1)):10–21.

in these hunters’ future decisions to hunt ducks, making predictions a little uncertain. Stemming the tide of declining duck hunting will depend on how effective an agency is at reaching these hunters with programs that will keep them actively participating in duck hunting.

Estimated Importance of Duck Hunting	Intention to Hunt Ducks in Future	Percent	Estimated Intention to Hunt Ducks in Future	
Most 6.4%	Yes	96.1%	Yes 81.5%	Not Sure? 14.8%
	Not Sure?	2.9%		
	No	1.0%		
Very 21.0%	Yes	95.1%		
	Not Sure?	3.7%		
	No	1.2%		
Moderately 32.8%	Yes	89.3%		
	Not Sure?	8.8%		
	No	1.9%		
Slightly 25.0%	Yes	81.0%		
	Not Sure?	16.9%		
	No	2.1%		
Not Important 14.8%	Yes	39.4%		
	Not Sure?	45.7%		
	No	14.9%		
			No	3.7%

Figure 4. Relationship between hunters’ evaluation of the importance of duck hunting and their intention to hunt ducks in the future.

What is causing the decline?

One factor that may affect waterfowl hunter participation is waterfowl populations. In spite of local annual fluctuations in waterfowl production South Dakota has been under ‘liberal’ waterfowl regulation guidelines during the time period depicted in Figure 3 indicating relatively good waterfowl numbers and liberal hunting opportunities, yet has seen declining numbers of waterfowl hunters. Therefore limited waterfowl hunting opportunities

are probably not the main contributing factor in the recent declines in numbers of waterfowl hunters.

Duck hunters that have not consistently hunted ducks in the past five years (essentially duck hunters that have quit duck hunting, at least temporarily) or do not intend to hunt ducks in the future provided some clues to the specific reasons for declining duck hunter numbers (Table 1). While no one specific reason was listed as a major reason for not duck hunting by a large majority of hunters, one general theme was evident—**‘too busy’**. Five of the top six reasons for not duck hunting were related to being too busy (with family, work or doing other specific types of outdoor recreation). Difficulty in finding places to hunt was the other reason.

One predictor of declining annual participation in waterfowl hunting would be a decline in the number of days per year of waterfowl hunting. Overall half (56%) of the duck hunters reported a decrease in the number of days of duck hunting since they first started duck hunting compared to 16% hunting about the same number of days and only 11% reporting an increase in the number of days of duck hunting. Three of the top six reasons given for a decrease in the number of days per year of duck hunting were related to being too busy (with work, family or hunting other game) (Table 2). Difficulty in finding good places to hunt, crowding problems (which is related to the problem of finding good places to hunt), and age were the other three reasons.

One predictor of the number of days of duck hunting would be duck hunters’ enjoyment of duck hunting. About 32% of the duck hunters reported a decrease in enjoyment of duck hunting since they first started duck hunting. About 41% reported that their enjoyment level has been about the same and about 22% reported an increase in enjoyment of duck hunting since they first started duck hunting. The top six reasons (although in different order) given were the same top six reasons given for a decrease in the number of days per year of duck hunting (Table 3).

Table 1. Reasons why duck hunters did not hunt ducks the past five years (2004 – 2008) or do not intend to hunt ducks in the future (SD Waterfowl Hunter Participation Survey – 2008).

Reason	Mean	Major Reason (2)	Minor Reason (1)	Not A Reason (0)
Not enough time–too busy w/ family or work	0.41	14.1%	12.6%	73.3%
Hunted pheasants instead of duck hunting	0.37	13.3%	10.3%	76.4%
Hunted big game instead of duck hunting	0.32	12.0%	7.7%	80.3%
Too hard to find a place to hunt	0.29	9.2%	10.6%	80.2%
Did other forms of outdoor recreation	0.23	5.8%	11.7%	82.5%
Fished instead of duck hunting	0.20	6.2%	7.2%	86.6%
Places I hunt were too crowded	0.17	4.4%	8.3%	87.3%
Don't like to eat ducks	0.16	4.3%	7.0%	88.7%
Did not always live where I could easily hunt ducks	0.15	5.7%	3.8%	90.6%
Did other forms of indoor recreation	0.14	3.2%	7.7%	89.1%
Duck numbers were too low	0.13	2.9%	6.9%	90.2%
Licenses too expensive	0.13	2.8%	7.1%	90.1%
Bag limit regulations were too complicated	0.13	2.7%	7.4%	89.9%
Hunted geese instead of duck hunting	0.12	3.6%	4.6%	91.7%
In general, regulations too complicated	0.12	2.9%	6.1%	91.0%
No dog to hunt with	0.12	2.4%	6.8%	90.8%
Too difficult to identify ducks on-the-wing	0.12	2.2%	7.5%	90.3%
Season was too short	0.10	2.4%	4.9%	92.7%
Boundaries of units too complicated	0.10	2.2%	5.2%	92.6%
Companions could not hunt	0.10	1.4%	6.9%	91.7%
Started hunting ducks less than 5 years ago	0.09	3.6%	1.7%	94.7%
Season dates in different units too complicated	0.09	2.1%	4.5%	93.4%
Sickness or health problems	0.06	1.7%	2.7%	95.7%
Bag limits were too small	0.05	1.0%	3.3%	95.7%
Concerned about diseases in birds (ducks)	0.05	1.0%	3.3%	95.7%
Military commitments	0.03	1.0%	0.8%	98.2%
Other Major Reasons ¹		8.6%		
Total		1,429		

¹see Appendix C in the S.D. Waterfowl Hunter Survey–2008 (HD-6-09.AMS)

Table 2. Reasons why duck hunters have decreased in frequency (days) of duck hunting since they first started duck hunting (SD Waterfowl Hunter Participation Survey – 2008).

Reason	Mean	Major Reason (2)	Minor Reason (1)	Not A Reason (0)
Work obligations	1.09	39.8%	29.2%	31.0%
Family obligations	0.91	30.1%	30.7%	39.2%
Hard to find good places to hunt	0.86	27.2%	32.1%	40.7%
I'm more interested in hunting other game	0.85	23.8%	37.3%	38.9%
Age	0.50	11.8%	26.0%	62.2%
Too crowded where I like to hunt	0.50	11.6%	26.3%	62.1%
No one to hunt ducks with	0.50	9.4%	31.2%	59.4%
Low duck populations	0.43	10.4%	22.1%	67.5%
More interested in other forms of recreation	0.43	6.7%	29.6%	63.7%
Equipment too expensive	0.36	7.5%	20.6%	71.9%
Steel shot regulations	0.35	8.1%	18.3%	73.6%
Poor behavior by other hunters	0.35	6.6%	21.6%	71.8%
Licenses too expensive	0.34	7.3%	19.7%	72.9%
I'm more interested in fishing	0.34	7.0%	20.1%	72.9%
Bag limit too complicated	0.34	6.4%	20.6%	72.9%
Regulations in general too complicated	0.32	6.8%	18.5%	74.7%
Season too short	0.31	7.2%	16.3%	76.5%
I don't like to eat ducks	0.29	5.8%	17.7%	76.5%
Moved to where it is harder to go duck hunting	0.28	8.6%	11.3%	80.2%
In general, duck hunting is too difficult	0.21	3.3%	14.9%	81.8%
Health problems	0.19	3.5%	12.0%	84.5%
Bag Limit too small	0.18	3.2%	12.1%	84.7%
Too much law enforcement	0.17	2.9%	10.9%	86.2%
Concerned about diseases in birds (ducks)	0.11	1.3%	8.8%	89.9%
Other Major Reasons ¹		17.3%		
Total	971 (6 duck hunters did not answer this question)			

¹see Appendix E in the S.D. Waterfowl Hunter Survey–2008 (HD-6-09.AMS)

Table 3. Reasons why duck hunters’ enjoyment of duck hunting has decreased since they first started duck hunting (SD Waterfowl Hunter Participation Survey – 2008).

Reason	Mean	Major Reason (2)	Minor Reason (1)	Not A Reason (0)
Hard to find good places to hunt	0.96	34.1%	28.3%	37.6%
Work obligations	0.79	24.3%	30.8%	44.9%
I’m more interested in hunting other game	0.79	23.6%	32.1%	44.4%
Family obligations	0.64	16.8%	30.8%	52.4%
Age	0.58	15.5%	27.1%	57.4%
Too crowded where I like to hunt	0.58	15.3%	27.3%	57.4%
Low duck populations	0.51	14.5%	21.8%	63.7%
No one to hunt ducks with	0.48	9.5%	29.1%	61.4%
Equipment too expensive	0.47	9.5%	27.6%	62.7%
Steel shot regulations	0.45	12.5%	19.8%	67.7%
Poor behavior by other hunters	0.45	10.0%	25.1%	64.9%
Licenses too expensive	0.45	9.3%	26.6%	64.2%
Regulations in general too complicated	0.43	12.5%	17.5%	69.9%
Bag limits too complicated	0.42	10.8%	20.8%	68.4%
I’m more interested in other forms of recreation	0.40	8.3%	23.6%	68.2%
Season too short	0.35	10.0%	15.3%	74.7%
I’m more interested in fishing	0.35	8.0%	19.0%	72.9%
In general, duck hunting is too difficult	0.35	6.8%	21.1%	72.2%
I don’t like to eat ducks	0.32	8.0%	16.3%	75.7%
Health problems	0.26	5.5%	15.0%	79.4%
Too much law enforcement	0.23	5.3%	12.3%	82.5%
Bag limit too small	0.23	4.0%	15.0%	81.0%
Moved to where it is harder to go duck hunting	0.19	5.8%	7.8%	86.5%
Concerned about diseases in birds (ducks)	0.11	1.5%	8.3%	90.2%
Other Major Reasons ¹		18.0%		
Total		399		

¹see Appendix F in the S.D. Waterfowl Hunter Survey–2008 (HD-6-09.AMS)

A Model of Declining Duck Hunting (Figure 5). This model shows that there are a number of pathways leading to dropping out of duck hunting. One pathway suggests that for various reasons some hunters experience a decline in enjoyment of duck hunting (Table 3). A decrease in enjoyment can lead to hunters hunting fewer days per year as can other factors (Table 2). Hunters that hunt infrequently in a year may get to the point that they are not doing any hunting some years, including not purchasing needed licenses some years as well as other reasons for not duck hunting some years (Table 1). In addition to this pathway there can be a number of other factors that can lead directly to duck hunters dropping out of duck hunting, such as age, illness, change in family or work status, developing interest in other activities, etc.

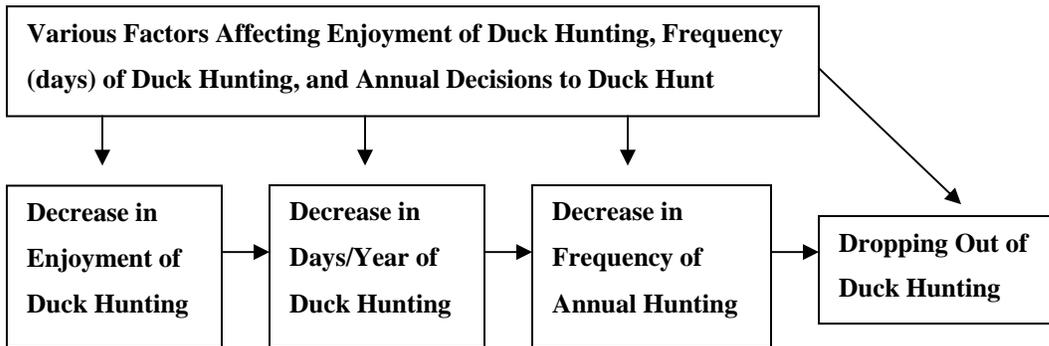


Figure 5. A model of declining duck (waterfowl) hunting participation.

Can the decline be stopped or reversed?

First let's explore the potential for maintaining and actually increasing the number of licensed waterfowl hunters that continue to participate in waterfowl hunting most years using the model and data from the waterfowl hunter survey. Based on the data from 2008 licensed waterfowl hunters, in any one year we have about 30% of these duck hunters (hunters that have hunted ducks in the past) that do not hunt ducks every year (based on hunting frequency over the past five years). Of this group only about 4% said they will not be hunting ducks in the future, 12% indicated they plan to hunt ducks in the future and 14% were undecided about participation in duck hunting in the future. The easiest way to increase waterfowl hunter participation would be to increase the frequency of participation by infrequent duck hunters. The potential to reverse the decline in waterfowl hunting participation is relatively large—most of the infrequent duck hunters have not made the final decision to quit duck hunting and about half are undecided.

Unfortunately, a wildlife agency has little control over many of the factors affecting waterfowl hunting participation. However, one factor that placed relatively high on the list was difficulty in finding places to duck hunt. An agency could place more effort in identifying good waterfowl hunting areas and make it easier for hunters to access the water. Another factor placing relatively high on the list was problems with crowding. An agency could provide more areas with controlled hunting access. Although lower in importance, classes on waterfowl hunting were of interest to a significant number of hunters and could contribute to maintaining waterfowl hunter participation. Of particular importance in waterfowl hunting was the influence of family and friends. Activities that had a family focus would probably have the greatest long term impact.

The survey results were not all doom and gloom for the future of waterfowl hunting in South Dakota. The predictions of further declines in waterfowl participation are what could happen, not what will happen. Also, the survey results suggests that there are lapsed waterfowl hunters (hunters that have hunted waterfowl in the past but are not currently active in the activity) not counted in this sample (because they did not purchase a Migratory Bird Certification for 2008) that in varying degrees of frequency will hunt waterfowl in the future. It will be a far easier and fruitful effort to bring lapsed waterfowl hunters back into active participation than to recruit new adult waterfowl hunters.

The bird hunter survey (hunters without a 2008 Migratory Bird Certification) identified about half of the 2008 pheasant hunters as lapsed duck and/or goose hunters. The lapsed participant concept is especially interesting in relation to the purpose of this study—estimating the potential to recruit waterfowl hunters from the pheasant hunter population. The potential to increase waterfowl hunting among pheasant hunters is much greater for lapsed waterfowl hunters than for pheasant hunters that have no previous waterfowl hunting experience (Table 4).

Table 4. Pheasant hunters’ intentions to hunt ducks and geese in the future analyzed by hunter type (based on past waterfowl hunting participation).

Pheasant Hunters					
Will you hunt ducks in the future?					
Never Duck Hunted (46.5%)		Past Duck Hunters (50.7%)		Current Duck Hunters (2.8%)	
Definitely will	1.7%	Yes	28.3%	Yes	83.3%
Probably will	9.0%	Undecided	49.6%	Undecided	16.7%
Not Sure	29.5%	No	22.1%	No	0.0%
Probably not	39.2%				
Definitely not	20.6%				
Number	767	Number	863	Number	48
Pheasant Hunters					
Will you hunt geese in the future?					
Never Goose Hunted (49.7%)		Past Goose Hunters (46.8%)		Current Goose Hunters (3.5%)	
Definitely will	1.9%	Yes	37.1%	Yes	85.0%
Probably will	14.8%	Undecided	46.6%	Undecided	11.7%
Not Sure	32.4%	No	16.3%	No	3.3%
Probably not	34.7%				
Definitely not	16.2%				
Number	796	Number	790	Number	60

2008 Licensed Small Game Hunters that Have Never Hunted Ducks. On the positive side, almost half (47%) of the resident small game hunters that have never hunted ducks think that they would enjoy duck hunting and most have not formed a negative opinion about duck hunting (Table 5). However, few of these hunters think it likely that they will hunt ducks in the future (2% definitely and 9% probably); about 30% were not sure and most felt that they would not duck hunt in the future (30% probably not, 21% definitely not). Also, interest in attending a free, 1-day workshop to learn about duck hunting was relatively low with 50% not interested, 22% slightly interested, 12% moderately interested, and only 7% very interested and another 9% had no opinion.

Table 5. Summary of hunters' (that have never duck hunted) impressions/opinions of duck hunting in South Dakota.

Statement About Duck Hunting	Attitude Position – Non-Duck Hunters		
	Disagree	Neutral / No Opinion	Agree
I think that I would enjoy duck hunting.			
N = 734	14.9%	38.7%	46.5%
It is too difficult to find places to go duck hunting			
N = 731	18.1%	51.6%	30.4%
I think it would be too difficult to learn how to identify ducks in flight.			
N = 733	24.1%	46.1%	29.7%
I don't think that I would ever find the time to go duck hunting.			
N = 733	22.6%	51.2%	25.2%
Duck hunting regulations are too complex.			
N = 731	9.6%	70.2%	20.2%
Duck hunting is too expensive.			
N = 735	14.7%	68.2%	17.1%
Duck hunting sounds too difficult.			
N = 731	26.8%	60.6%	12.6%

2008 Licensed Small Game Hunters–Past and Current Duck Hunters. Past and current duck hunters tended to be very different on many of the parameters measured in this survey; however, in this sample (due to the selection criteria) the group of current duck hunters is very small (2.8%). Current duck hunters rated duck hunting much higher in importance than did past duck hunters. Most (56%) of the past duck hunters said that duck hunting was not an important activity and 28% said it was only slightly important. Although only a small group in this sample, the current duck hunters tended to have more positive attitudes towards duck hunting compared to the past duck hunters (Tables 6 and 7). On the positive side, most of the past (51%) and current (85%) duck hunters reported that they enjoy duck hunting, however, many felt it was difficult to find places to hunt ducks and about one-third felt regulations were too complex and duck hunting too expensive, with about one-fourth rating duck hunting as difficult.

Only 28% of the past duck hunters plan to hunt ducks in the future compared to 83% of the current duck hunters. This corresponds to the findings of the waterfowl hunter survey that about 30% of the ‘active’ duck hunters (duck hunters that intend to continue duck hunting) did not hunt every year. However, interest in a free, one-day duck hunting workshop was relatively low (only 6% of past duck hunters and 17% of current duck hunters were very interested).

Table 6. Summary of hunters’ (past duck hunters) impressions/opinions of duck hunting in South Dakota.

Statement About Duck Hunting	Attitude Position – Past Duck Hunters		
	Disagree	Neutral / No Opinion	Agree
I enjoy duck hunting.			
N = 849	9.2%	40.2%	50.6%
It is difficult to find places to go duck hunting			
N = 847	25.3%	34.4%	40.4%
Duck hunting regulations are too complex.			
N = 844	17.7%	46.4%	35.9%
Duck hunting is too expensive.			
N = 846	18.6%	51.8%	29.7%
Duck hunting is difficult.			
N = 843	28.8%	45.1%	26.1%

Table 7. Summary of hunters’ (current duck hunters) impressions/opinions of duck hunting in South Dakota.

Statement About Duck Hunting	Attitude Position – Current Duck Hunters		
	Disagree	Neutral / No Opinion	Agree
I enjoy duck hunting.			
N = 48	2.1%	12.5%	85.4%
It is difficult to find places to go duck hunting			
N = 48	37.5%	25.0%	37.5%
Duck hunting regulations are too complex.			
N = 48	12.5%	41.7%	45.8%
Duck hunting is too expensive.			
N = 48	18.8%	43.8%	37.5%
Duck hunting is difficult.			
N = 48	39.6%	39.6%	20.8%

This survey also identified another possible issue—unlicensed waterfowl hunters. Probably some of the 4.2% of licensed small game hunters in the sample of hunters without a state waterfowl license (Migratory Bird Certification) mistakenly reported duck and/or goose hunting in 2008, but based on the profile of hunters in the group it is likely that many of them did indeed waterfowl hunt in 2008. If just 2.5% of the 2008 resident small game hunters participated in waterfowl hunting without the state waterfowl license that would amount to about 1,900 un-counted waterfowl hunters in GFP’s projections. Since there were 17,751 projected resident waterfowl hunters in South Dakota for 2008, 1,900 un-counted waterfowl hunters would represent about an 11% increase.

What are the major influences on duck hunting participation?

The two top rated influences on getting hunters started in duck hunting were family/relatives followed by friends (Table 8). Although of much lower overall importance, having lots of places to hunt ducks and no crowding were the next two most important influences. Also, having high duck populations can be an important influence for some hunters. However, note that education efforts (measured by the importance of watching programs or reading about duck hunting) do not seem to have much influence on getting hunters started in duck hunting.

Looking at just the top two influences listed by duck hunters (family/relatives and friends), the influence by family members appears to have a more significant impact on the importance of duck hunting to the hunter (Table 9). In other words, while both influences were important in getting hunters started in duck hunting, only family influences seemed to also have a strong positive attitudinal influence on hunters.

Table 8. Important influences for getting started in duck hunting (SD Waterfowl Hunter Participation Survey – 2008).

Influence	Mean	Major Influence (2)	Minor Influence (1)	Not An Influence (0)
Influence of family member(s) or relatives	1.42	62.6%	17.0%	20.4%
Influence of friends	1.36	52.4%	31.0%	16.6%
Lots of places to hunt ducks	1.04	36.3%	31.0%	32.7%
No crowding	0.82	26.5%	28.5%	45.0%
Had lots of time to hunt ducks	0.81	22.4%	36.1%	41.5%
High duck populations	0.69	18.6%	31.7%	49.7%
Like to eat ducks	0.66	15.7%	34.7%	49.6%
I just wanted to try something new	0.63	17.2%	28.8%	54.0%
Not much else to hunt during the duck season	0.39	6.3%	26.6%	67.1%
Watched programs about duck hunting	0.37	5.6%	26.3%	68.1%
Read about duck hunting	0.32	4.8%	22.3%	72.9%
Other ¹		23.5%		
Total	1,292 (137 duck hunters did not answer this question)			

¹see Appendix D in the S.D. Waterfowl Hunter Survey–2008 (HD-6-09.AMS)

Table 9. Mean importance of duck hunting analyzed by influence of ‘family member(s) or relatives’ vs. influence of ‘friends’.

Influence of Family Member(s) or Relatives	Importance of Duck Hunting¹	95% C.I.	Number
Not An Influence	1.79	1.67 – 1.92	259
Minor Influence	1.89	1.77 – 2.02	217
Major Influence	2.19	2.12 – 2.26	800
Average/Total	2.05	2.00 – 2.11	1,276
ANOVA: F=18.579; df=2/1,273; p<0.001			
Influence of Friends	Importance of Duck Hunting¹	95% C.I.	Number
Not An Influence	2.12	1.97 – 2.27	212
Minor Influence	2.04	1.93 – 2.14	394
Major Influence	2.05	1.97 – 2.12	670
Average/Total	2.05	2.00 – 2.11	1,276
ANOVA: F=0.498; df=2/1,273; p=0.608			

¹Importance of Duck Hunting: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important; 4=Most Important

Pheasant Hunting Description of Waterfowl Hunters. Waterfowl hunters tended to be more involved in pheasant hunting than hunters that have not hunted waterfowl. Past and current waterfowl hunters had more years of pheasant hunting experience, rated the importance of pheasant hunting higher, rated most motivations for pheasant hunting higher in importance, was more involved with hunting with dogs, hunted more days of pheasant hunting in 2008 and was slightly more satisfied with their 2008 pheasant hunting season compared to non-waterfowl hunters. Interest and participation in waterfowl hunting appears to be an extension of overall interest and involvement in hunting in general.

Some Additional Findings from the Waterfowl Hunter Survey:

- Waterfowl hunting experiences of South Dakota adult, resident hunters who have purchased a 2008 Migratory Bird Certification:

NEVER hunted ducks or geese	12.5%
Hunted GEESE, but NOT ducks	12.6%
Hunted DUCKS, but NOT geese	4.1%
Hunted BOTH	70.8%

Duck Hunters:

- South Dakota adult, resident duck hunters' satisfaction with their most recent year of duck hunting:

Satisfied	66.4%
Neutral / No Opinion	18.3%
Dissatisfied	15.3%

- South Dakota adult, resident duck hunters' attitude towards duck season management strategies (2008):

Hunter's Choice	52.9%
Season w/in Season	12.2%
Undecided	34.9%

- How big a role does the COST of licenses (S.D. hunting licenses plus Federal Duck Stamp) play in your decision to hunt ducks in a particular year?

Major Role	11.3%
Minor Role	42.7%
Not Important	45.9%

- Type of land duck hunters did the majority of their duck hunting:

Private Land	55.1%
Public Land	38.4%
Walk-In-Areas	5.7%
Don't Know	0.9%

- Duck hunters' rating of difficulty in finding places to hunt ducks:

Very Difficult	12.1%
Moderately Difficult	28.2%
Slightly Difficult	26.9%
Not A Problem	32.9%

- Is crowding (too many duck hunters – disturbances from other hunters) ever a problem at places you like to hunt ducks?

NO	52.1%
YES	47.9%

<u>If YES, how big of a problem?</u>	
Always Crowded	3.3%
Often Crowded	28.3%
Sometimes Crowded	53.6%
Seldom Crowded	14.9%

- South Dakota adult, resident duck hunters’ interest in a free waterfowl hunting knowledge and skills class:

Very Interested	17.7%
Moderately Interested	22.4%
Slightly Interested	27.6%
Not Interested / No Opinion	32.3%

Goose Hunters:

- South Dakota adult, resident goose hunters’ satisfaction with their most recent year of goose hunting:

Satisfied	69.2%
Neutral / No Opinion	16.2%
Dissatisfied	14.6%

- South Dakota adult, resident goose hunters’ usual type of goose hunting:

Pass Shooting	30.5%
Over Field Decoys	50.9%
Over Floating Decoys	7.3%
Incidental while Hunting Other Game	11.2%

Importance of Duck/Goose Hunting & Satisfaction:

- We have a wide range of duck and goose hunters in South Dakota ranging from very dedicated and committed to very sporadic hunters with very low commitment to the sport (Figure 6).
- Hunters’ satisfaction with duck/goose hunting increased as their rating of the importance of duck/goose hunting increased (Figure 7).

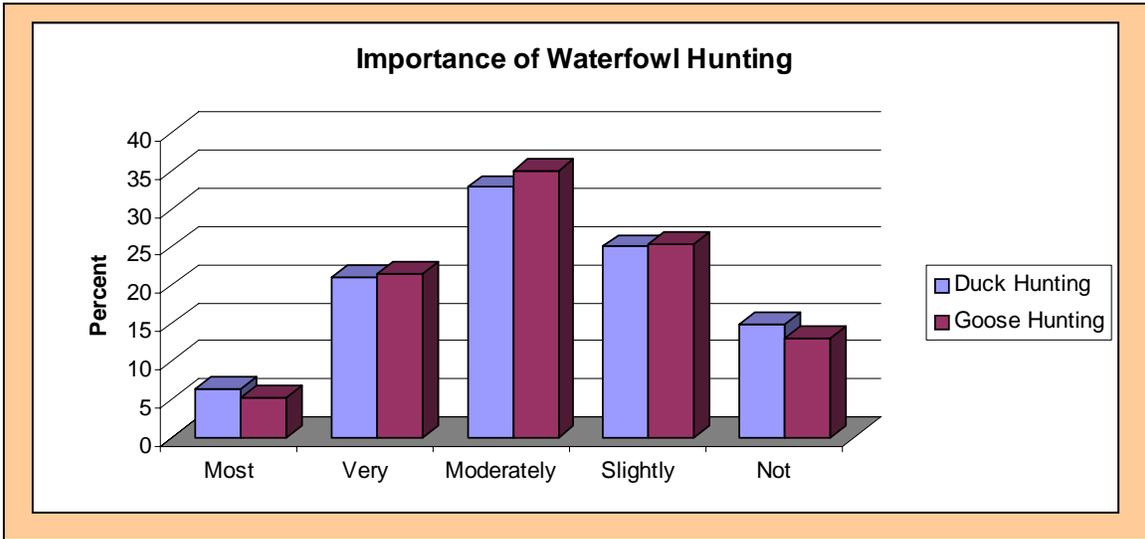


Figure 6. Duck and goose hunters' rating of the importance of duck and goose hunting.

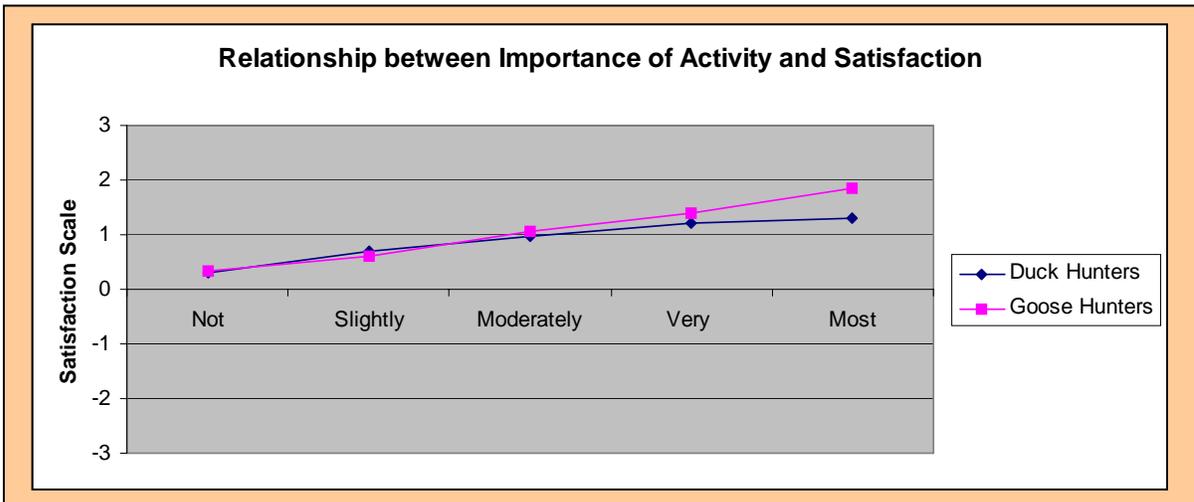


Figure 7. Relationship between hunters' evaluation of the importance of duck/goose hunting and their satisfaction with their duck/goose hunting.

What Next?

Before taking the next steps some initial, philosophical questions must first be addressed. Is the issue of declining waterfowl hunter numbers negatively affecting agency revenue? In other words, is the objective to get more hunters to purchase a license or is it focused on getting more hunters actually out hunting waterfowl? The distinction is important because it can guide the selection of appropriate corrective actions. For example, if the only concern is to increase agency and business revenues, one action could be to simply increase the cap on nonresident waterfowl hunting opportunities. The demand for nonresident waterfowl licenses exceeds the current limit allotted to nonresidents.

Is the focus specifically on duck hunting or waterfowl hunting in general? This study collected data from duck hunters and goose hunters separately, with most of the data collected from duck hunters, yet most hunters participate in both and likely had similar influences and attitudes. However, there may be some important differences between duck hunting and goose hunting, such as difficulty and opportunity. Because of the importance of being able to identify ducks on the wing, some may consider duck hunting to be more difficult than goose hunting. Also, goose hunting opportunities may be more widespread (both area and longer season) than duck hunting. Goose hunting may be one vehicle to maintain waterfowl hunter participation as well as introducing hunters to a waterfowl/duck hunting culture.

Is the focus on annual duck/waterfowl hunting, i.e., getting hunters to participate every year, or is there also a concern for increasing number of days and/or enjoyment of waterfowl/duck hunters? The concept of lapsed participants focuses mainly on annual participation and associated purchase of a license; however the data in this study and the model proposed in this report suggests the number of days and enjoyment of participation are important factors in maintaining current waterfowl/duck hunting participants.

While the numbers of potential waterfowl hunter participants discussed in this report are encouraging, they probably represent an unrealistic estimate of what can be achieved. An agency has little control over many of the more important constraints to waterfowl hunting participation listed by hunters. However, there are some things that an agency can do that will move waterfowl hunting participation in the right direction. Below is a short list of

some basic guidelines generated from this study for developing projects and programs designed to increase waterfowl hunting participation:

1. Increased information on places to waterfowl hunt.
2. Improve access to water (e.g., trails, roads, boat ramps) as well as buying/leasing wetlands suitable for waterfowl hunting.
3. Emphasize family hunting opportunities.
4. Offer free waterfowl hunting workshops.
5. Emphasize the “challenge” aspect of waterfowl hunting.
6. Increased reminders and information about waterfowl hunting opportunities in South Dakota (GFP has just started doing this via e-mail reminders and notices).
7. Focus efforts on highly involved pheasant hunters, especially hunting dog owners. Focus on past (lapsed) waterfowl hunters.
8. Use an adaptive management process for developing projects and programs, based on these basic guidelines, to address the issue of declining waterfowl hunter numbers.

Adaptive Management Process. The next step will be to develop projects and programs based on these basic guidelines. The best way to get this step started would be a brain-storming session(s) with GFP staff. Once a list of potential projects and programs are identified they can be evaluated on which ones GFP will implement. An important step in adaptive management processes is to include an evaluation step. It will be especially important to evaluate the effectiveness (how much impact did each project/program have on increasing waterfowl hunting participation) and efficiency (cost vs. benefit) of each project/program.

Youth Recruitment. This study focused on resident adult hunters, however, the long-term future of waterfowl hunting will depend on the numbers and type of youth that get involved in the waterfowl hunting culture. This study identified the top two influences on current hunters’ involvement in waterfowl hunting as family and friends, with the family influence having a stronger effect on hunters’ rating of the personal importance of waterfowl hunting. The next research step will be to develop a study of young hunters exploring potential recruitment and possible constraints to youth waterfowl recruitment into the waterfowl hunting culture.

