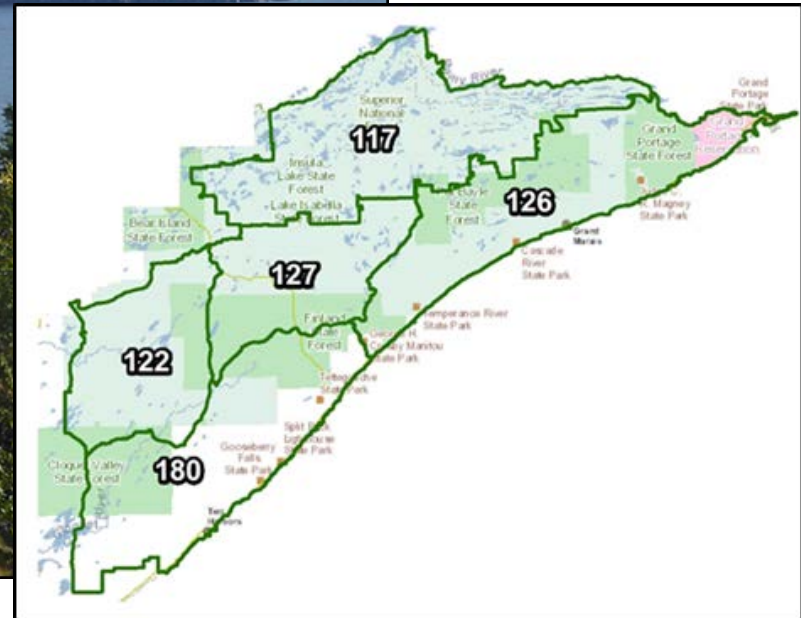




Minnesota Deer Population Goals

Superior Uplands Arrowhead Goal Block



Minnesota DNR – Section of Wildlife, 2015

Final Deer Population Goals – Block 1: Superior Uplands Arrowhead

The following pages provide a description of the 2015 deer population goals, factors considered during goal setting, and management implications for each permit area in Block 1: Superior Uplands Arrowhead (permit areas 117, 122, 126, 127 & 180).

Final population goals were developed through a public engagement process, including collecting public comment (via public meetings, online and written questionnaires, mail and email) and convening citizen advisory teams to review information and make recommendations on population goals to DNR. Goals are anticipated to be revisited in 3-5 years (2018-2020). Information incorporated into the final decision includes¹:

- [Block 1 Hunter and Landowner Survey Report](#)
- [Block 1 Team Information Packet and Addendum](#)
- [2014 Harvest Report](#)
- Public comment received during comment periods in winter and spring 2015
- [Block 1 Advisory Team Recommendations](#)
- Input from Area and Regional staff

¹ Goal setting materials are linked for convenience; source materials with additional detail are cited on the last page.

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Deer Permit Area 117

This permit area is almost entirely within the Boundary Waters Canoe Area Wilderness; access is restricted to foot or watercraft only in most of the area. There is private land along the Gunflint Trail, but most of the area is public land. The permit area is in the heart of prime moose habitat and deer numbers are very low because of the severe winters. Deer populations are not modeled due to low harvest numbers.

2015 Deer Population Goal:

Stabilize at 2014 population levels over the next 3-5 years

Summary of decision

A majority (94%) of hunters surveyed in this permit area preferred a population increase, with the greatest number (44%) preferring an increase of 50%. Landowners surveyed in this permit area were split between preferring a population decrease, no change, or a population increase, with the greatest number (36%) preferring no change. Public comment collected via online and written questionnaires in winter 2015 showed that questionnaire respondents were split between preferring a population decrease (35%), no change (19%), or a population increase (46%). After reviewing biological and social data for this permit area, the deer advisory team recommended no change in the population; factors considered included moose management in primary moose range, available deer habitat, historic deer range, the likelihood that deer populations and potential habitat may already be increasing, and more. Public comment collected in spring 2015 showed that approximately 75% of commenters supported or were ok with the team's recommendation. While there is clear divergence in stakeholder preferences, the Department decided to manage for a stable deer population at the current level in recognition of the advisory team recommendation, interest in moose management, the number of impacted deer hunters, the influence of winter severity on deer management opportunities, and public support for team recommendations.

Management implications

- The deer population and harvest is quite low in this area. Deer population fluctuations are closely tied to winter severity in this area.
- Because the population is not modeled (due to low harvests), a target density is not available. Trends in harvest, WSI, and field observations will be used to assess population status.
- This recommendation will result in management for populations lower than directed by previous goals. The Department will aim for a buck harvest of approximately 30 legal bucks per year.
- Population levels associated with this goal are consistent with the 2011 Minnesota Moose Research and Management Plan. Results of current research on moose mortality may influence future deer density thresholds in moose range.

Deer Permit Area: 117

Size of Deer Permit Area: 1134 square miles total; 927 square miles of land.

2015 Population Goal: Stabilize at 2014 population levels over the next 3-5 years.

Comments: Deer Permit Area (DPA) 117 was called DPA 116 until 2010 when it underwent a western boundary change. DPA 116's southern border extended west to the intersection of State Hwy. 1 and County Rd. 424. It then followed State Hwy. 1 north to the junction with County Hwy. 18, which it followed east until County Hwy 116, which it followed north to the junction with the Range River. The boundary then followed the Range River north to the state line. This permit area is not modeled due to low harvest.

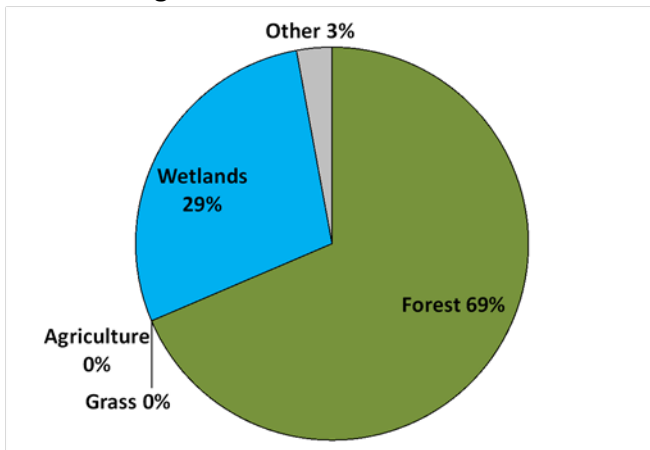
| Year | Mgmt. Designation | No. Firearm Hunters | Firearm Success (%) | Reported Total Deer Harvest (All seasons) | | |
|-------|-------------------|---------------------|---------------------|---|-------|------------|
| | | | | Total | Bucks | Antlerless |
| 2005 | Lottery (50) | 728 | 36% | 261 | 230 | 31 |
| 2006 | Lottery (175) | 651 | 42% | 276 | 188 | 88 |
| 2007 | Lottery (650) | 902 | 39% | 350 | 261 | 89 |
| 2008 | Managed | 901 | 44% | 394 | 219 | 175 |
| 2009 | Lottery (100) | 781 | 22% | 170 | 132 | 38 |
| 2010* | Managed | 158 | 26% | 41 | 28 | 13 |
| 2011 | Hunter's Choice | 219 | 18% | 40 | 22 | 18 |
| 2012 | Hunter's Choice | 218 | 30% | 65 | 49 | 16 |
| 2013 | Hunter's Choice | 174 | 33% | 57 | 37 | 20 |
| 2014 | Bucks Only | 163 | 18% | 29 | 29 | 0 |

* Boundary change. Please see comments above.

Deer Permit Area: 117
Size of Deer Permit Area: 1134 square miles total;
927 square miles of land



Habitat Categories:



2014 Model Output

This permit area is not modeled due to low harvest.

Deer Permit Area 122

This permit area is primarily public land and mostly within the Superior National Forest. Snow depths limit deer populations, but deer occur in low densities. Moose occupy portions of the area.

2015 Deer Population Goal:

Increase the population 25%, relative to 2014 population, over the next 3-5 years

Summary of decision

A majority (87%) of hunters surveyed in this permit area preferred a population increase, with the greatest number (38%) preferring an increase of 50%. A majority (70%) of landowners surveyed in this permit area preferred a population increase, with the greatest number (31%) preferring an increase of 50%. Public comment collected via online and written questionnaires in winter 2015 showed that a majority (62%) of questionnaire respondents preferred a population increase. After reviewing biological and social data for this permit area, the deer advisory team recommended increasing the population 25%; factors considered included hunter satisfaction, forest regeneration, moose management in primary moose range, the impact of winter weather and other factors. Public comment collected in spring 2015 showed that approximately 70% of commenters supported or were ok with the team's recommendation. The Department decided to manage for an increased deer population in recognition of the advisory team recommendation, broader stakeholder desires, and public support for team recommendations. The more moderate population increase in the deer population reflects a balance between stakeholder desires for more deer and interest in moose management/forest regeneration.

Management implications

- This recommendation will result in management for populations similar to those directed by previous goals.
- The Department will aim for a target density of 4-6 deer per square mile (dpsm) of land area (pre-fawn) based on the 2014 model estimate of 3-5 dpsm². In addition to trends indicated by the population model estimates, trends in harvest indices, WSI, and field observations will be used to assess population status.
- Deer population fluctuations are closely tied to winter severity in this area and have been significantly impacted by above-average winter severity in five of the last eight winters. As a result, the population has been reduced to a level at or below those experienced

² Note that, similar to a weather forecast or budget forecast, model estimates may change over time as new information is incorporated into the model. For example, DNR deer population modeling occurs each spring prior to setting deer seasons. If the winter persists beyond the date when population estimates are developed, the estimate for that year may be different in the following year once the final data on winter severity can be included. In that case, DNR will assess the trend in the population based on the most up-to-date estimate of the 2014 population and best available data, along with other population indices.

after the severe winter of 1996 and conservative management strategies are anticipated for the next few years to move the population toward goal.

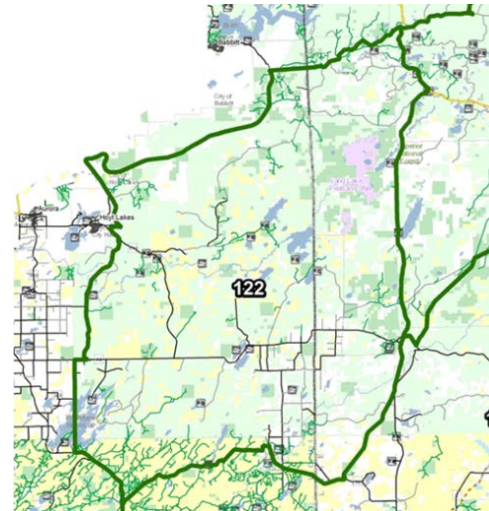
- Population levels associated with this goal are consistent with the 2011 Minnesota Moose Research and Management Plan. Results of current research on moose mortality may influence future deer density thresholds in moose range.

Deer Permit Area: 122
Size of Deer Permit Area: 622 square miles total; 603 square miles of land.
2015 Population Goal: Increase the population 25%, relative to 2014 population, over the next 3-5 years.
Comments: Deer Permit Area (DPA) 122 underwent a boundary change in 2010. Previously, the western boundary followed County Hwy. 4 north to the junction with County Hwy. 16. The boundary then followed County Hwy. 16 east until County Rd. 346, which it followed north to the unchanged northern boundary of the DPA.

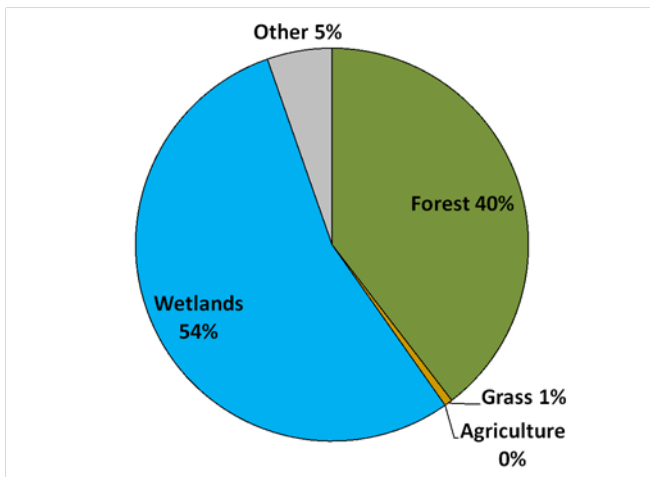
| Year | Mgmt. Designation | No. Firearm Hunters | Firearm Success (%) | Reported Deer Harvest (All seasons) | | |
|-------|-------------------|---------------------|---------------------|-------------------------------------|-------|------------|
| | | | | Total | Bucks | Antlerless |
| 2005 | Lottery (250) | 1741 | 38% | 657 | 534 | 123 |
| 2006 | Managed | 1991 | 54% | 1067 | 565 | 502 |
| 2007 | Managed | 2086 | 54% | 1118 | 658 | 460 |
| 2008 | Intensive | 1990 | 51% | 1013 | 589 | 424 |
| 2009 | Lottery (1000) | 2186 | 34% | 753 | 553 | 200 |
| 2010* | Managed | 2107 | 47% | 990 | 570 | 420 |
| 2011 | Managed | 2336 | 37% | 873 | 479 | 394 |
| 2012 | Lottery (500) | 2083 | 27% | 560 | 400 | 160 |
| 2013 | Lottery (250) | 1984 | 22% | 439 | 339 | 100 |
| 2014 | Bucks Only | 1755 | 13% | 234 | 234 | 0 |

* Boundary change. Please see comments above.

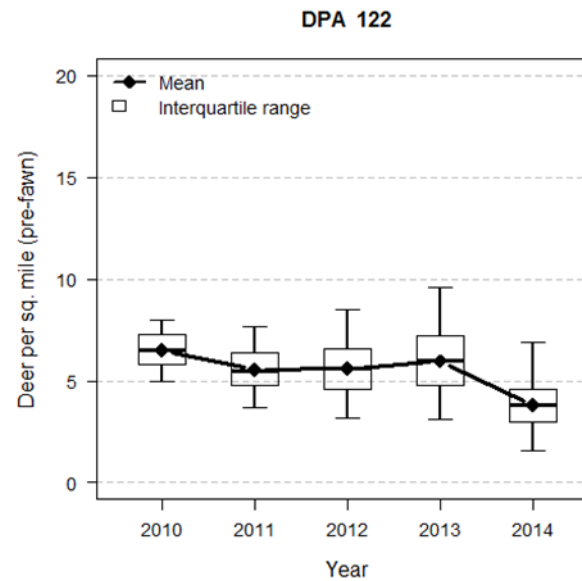
Deer Permit Area: 122
Size of Deer Permit Area: 622 square miles total;
 603 square miles of land



Habitat Categories:



2014 Model Output:



Deer Permit Area 126

This permit area has low deer densities because winter severity is usually high. The area has a mix of public and private land, the private land concentrated on the shore of Lake Superior. In winter, deer can be found concentrated in yards along the shore where they impact vegetation, but in other seasons deer are somewhat more distributed. All of the permit area away from the shore is good moose habitat.

2015 Deer Population Goal:

Increase the population 25%, relative to 2014 population, over the next 3-5 years

Summary of decision

A majority (78%) of hunters surveyed in this permit area preferred a population increase, with the greatest number (56%) tied between preferring an increase of 25% or an increase of 50%. Landowners surveyed in this permit area were split between a preference for a population decrease, no change, or a population increase, with the greatest number (33%) preferring no change. Public comment collected via online and written questionnaires in winter 2015 showed questionnaire respondents were split between a preference for a population decrease (32%), no change (14%), or a population increase (54%). After reviewing biological and social data for this permit area, the deer advisory team did not reach consensus on a recommendation; however, the majority preferred management for no change in the population. Factors considered included moose management in primary moose range, forest regeneration, hunting opportunities, harvest levels, winter weather, deer migratory behavior and associated permit area boundaries and more. Public comment collected in spring 2015 showed a diversity of preferences, with the majority preferring either no change or a population increase of 25%. While there is clear divergence in stakeholder preferences, the Department decided to manage for a moderate increase in the deer population in recognition of current deer densities and to balance stakeholder desires, continued maintenance of lower deer densities for moose management, and forest regeneration concerns.

Management implications

- This recommendation will result in management for populations similar to those directed by previous goals.
- The Department will aim for a target density of 3-5 deer per square mile (dpsm) of land area (pre-fawn) based on the 2014 model estimate of 2-4 dpsm³. In addition to trends indicated by the population model estimates, trends in harvest indices, WSI, and field observations will be used to assess population status.

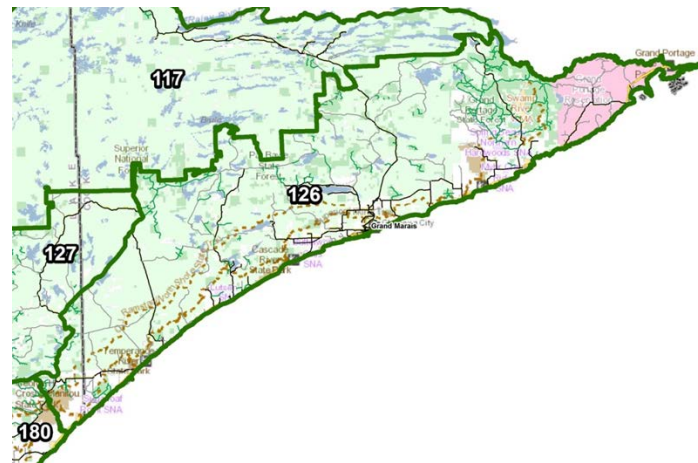
³ Note that, similar to a weather forecast or budget forecast, model estimates may change over time as new information is incorporated into the model. For example, DNR deer population modeling occurs each spring prior to setting deer seasons. If the winter persists beyond the date when population estimates are developed, the estimate for that year may be different in the following year once the final data on winter severity can be included. In that case, DNR will assess the trend in the population based on the most up-to-date estimate of the 2014 population and best available data, along with other population indices.

- Deer population fluctuations are closely tied to winter severity in this area. The population slowly decreased under more liberal bag limits during the past decade. If winter conditions are not severe, moderate-to-conservative management strategies are anticipated for the next few years to move the population toward goal.
- Population levels associated with this goal are consistent with the 2011 Minnesota Moose Research and Management Plan. Results of current research on moose mortality may influence future deer density thresholds in moose range. A change in permit area boundaries will also be considered to better align with primary moose range.

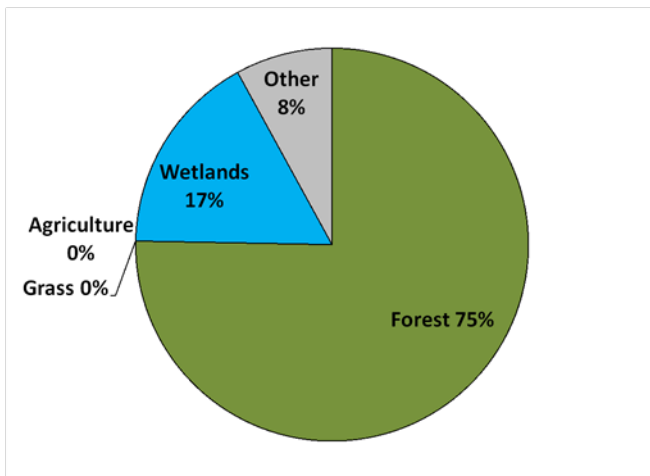
Deer Permit Area: 126
Size of Deer Permit Area: 978 square miles total; 942 square miles of land.
2015 Population Goal: Increase the population 25%, relative to 2014 population, over the next 3-5 years.

| Year | Mgmt. Designation | No. Firearm Hunters | Firearm Success (%) | Reported Deer Harvest (All seasons) | | |
|------|-------------------|---------------------|---------------------|-------------------------------------|-------|------------|
| | | | | Total | Bucks | Antlerless |
| 2005 | Managed | 1926 | 47% | 901 | 594 | 307 |
| 2006 | Managed | 1899 | 51% | 977 | 606 | 371 |
| 2007 | Intensive | 1936 | 59% | 1150 | 686 | 464 |
| 2008 | Intensive | 2022 | 50% | 1005 | 523 | 482 |
| 2009 | Managed | 1977 | 44% | 861 | 495 | 366 |
| 2010 | Managed | 1984 | 46% | 908 | 529 | 379 |
| 2011 | Managed | 2034 | 38% | 766 | 384 | 382 |
| 2012 | Managed | 2058 | 36% | 746 | 428 | 318 |
| 2013 | Managed | 2088 | 35% | 724 | 403 | 321 |
| 2014 | Bucks Only | 1696 | 17% | 296 | 295 | 1 |

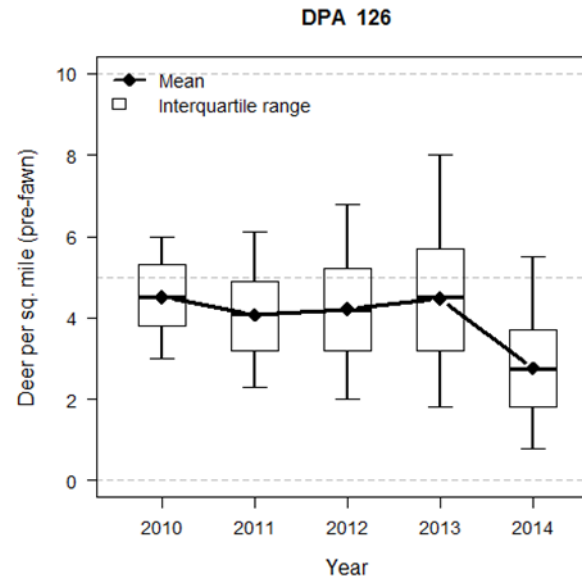
Deer Permit Area: 126
Size of Deer Permit Area: 978 square miles total;
 942 square miles of land



Habitat Categories:



2014 Model Output:



Deer Permit Area 127

This permit area is entirely within the Superior National Forest, but there are some private inholdings. The entire area is good moose habitat. Some deer winter within the permit area but migrant deer also frequent the area in other seasons. The deer population is quite low and not enough deer are harvested to adequately model the population.

2015 Deer Population Goal:

Stabilize at 2014 population levels over the next 3-5 years

Summary of decision

A majority (84%) of hunters surveyed in this permit area preferred a population increase, with the greatest number (37%) preferring an increase of 50%. Landowners surveyed in this permit area were split between a preference for a population decrease, no change, or a population increase, with the greatest number (32%) preferring no change. Public comment collected via online and written questionnaires in winter 2015 showed questionnaire respondents were split between a preference for a population decrease (27%), no change (20%), or a population increase (53%). After reviewing biological and social data for this permit area, the deer advisory team recommended no change in the population; factors considered included hunting pressure, moose management in primary moose range, forest regeneration, permit area boundaries and more. Public comment collected in spring 2015 showed that approximately 57% of commenters supported or were ok with the team's recommendation. The Department decided to manage for a stable deer population at the current level in recognition of the advisory team recommendation, interest in moose management, the influence of winter severity on deer management opportunities, and public support for team recommendations.

Management implications

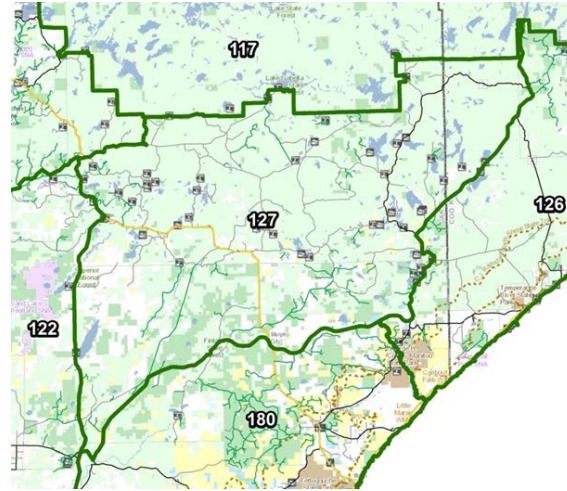
- The deer population and harvest is quite low in this area. Deer population fluctuations are closely tied to winter severity in this area.
- This recommendation will result in management for populations below those directed by previous goals.
- Because the population is not modeled (due to low harvest), a target density is not available. Trends in harvest, WSI, and field observations will be used to assess population status. The Department will aim for a buck harvest of approximately 70 legal bucks per year.
- Deer population fluctuations are closely tied to winter severity in this area. The population slowly decreased under more liberal bag limits during the past decade. If winter conditions are not severe, moderate-to-conservative management strategies are anticipated for the next few years to maintain the population at 2014 levels.

- Population levels associated with this goal are consistent with the 2011 Minnesota Moose Research and Management Plan. Results of current research on moose mortality may influence future deer density thresholds in moose range.

Deer Permit Area: 127
Size of Deer Permit Area: 622 square miles total; 603 square miles of land.
2015 Population Goal: Stabilize at 2014 population levels over the next 3-5 years.
Comments: This area is not modeled due to low harvest.

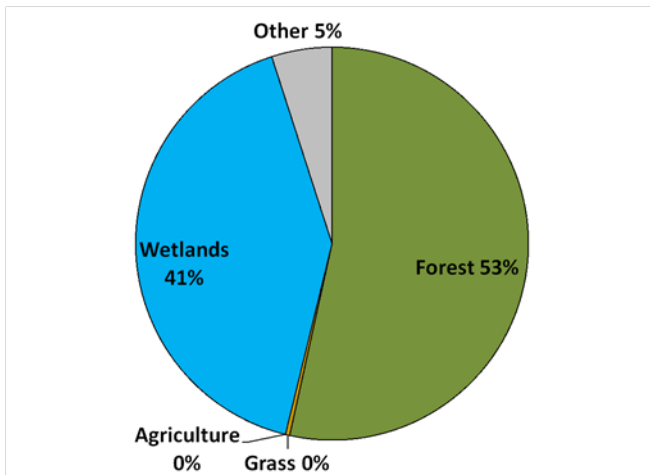
| Year | Mgmt. Designation | No. Firearm Hunters | Firearm Success (%) | Reported Deer Harvest (All seasons) | | |
|------|-------------------|---------------------|---------------------|-------------------------------------|-------|------------|
| | | | | Total | Bucks | Antlerless |
| 2005 | Lottery (50) | 517 | 29% | 148 | 126 | 22 |
| 2006 | Lottery (150) | 514 | 37% | 188 | 147 | 41 |
| 2007 | Managed | 568 | 38% | 215 | 148 | 67 |
| 2008 | Intensive | 570 | 32% | 183 | 105 | 78 |
| 2009 | Lottery (150) | 538 | 24% | 131 | 106 | 25 |
| 2010 | Lottery (150) | 583 | 27% | 157 | 115 | 42 |
| 2011 | Hunter's Choice | 564 | 22% | 126 | 81 | 45 |
| 2012 | Hunter's Choice | 644 | 23% | 151 | 100 | 51 |
| 2013 | Hunter's Choice | 637 | 23% | 149 | 87 | 62 |
| 2014 | Bucks Only | 472 | 10% | 47 | 47 | 0 |

Deer Permit Area: 127
Size of Deer Permit Area: 622 square miles total;
603 square miles of land



Habitat Categories:

2014 Model Output:
This area is not modeled due to low harvest.



Deer Permit Area 180

This permit area contains a diverse mix of public and private land, as well as deer and moose habitat. In some portions, fair-to-good deer populations exist but in other portions deer populations can be low. Severe winters concentrate deer along the shore (impacting vegetation regeneration) and limit deer densities inland from Lake Superior.

2015 Deer Population Goal:

Increase the population 25%, relative to 2014 population, over the next 3-5 years

Summary of decision

A majority (83%) of hunters surveyed in this permit area preferred a population increase, with the greatest number (37%) preferring an increase of 25%. Landowners surveyed in this permit area were split between a preference for a population decrease, no change, or a population increase, with the greatest number (31%) preferring no change. Public comment collected via online and written questionnaires in winter 2015 showed that a majority (62%) of questionnaire respondents preferred a population increase. After reviewing biological and social data for this permit area, the deer advisory team did not reach consensus on a recommendation. More than half of all team members indicated they would like to see the boundaries of the permit area altered so that population goals could be set at different levels inside vs. outside of the moose range. Other factors considered in the team's discussion included harvest levels, impacts to forests, hunting opportunities and more. Public comment collected in spring 2015 showed a diversity of preferences, with a majority of commenters split between those that preferred no change and those that preferred a population increase of 50%. The Department decided to manage for a moderate increase in the deer population in recognition of current deer densities and to balance stakeholder desires, continued maintenance of lower deer densities for moose management and forest regeneration concerns. In addition, the Department will re-consider the permit area boundary and opportunities for better alignment with primary moose range. In 2010, a number of permit areas were adjusted in response to objectives listed in the Minnesota Moose Research and Management Plan; however, the boundaries for DPA 180 were not altered. If moose range is separated from non-moose range through a boundary adjustment, a portion of this area will likely be managed for lower deer densities than will be associated with the current goal.

Management implications

- This recommendation will result in management for populations below those directed by previous goals.

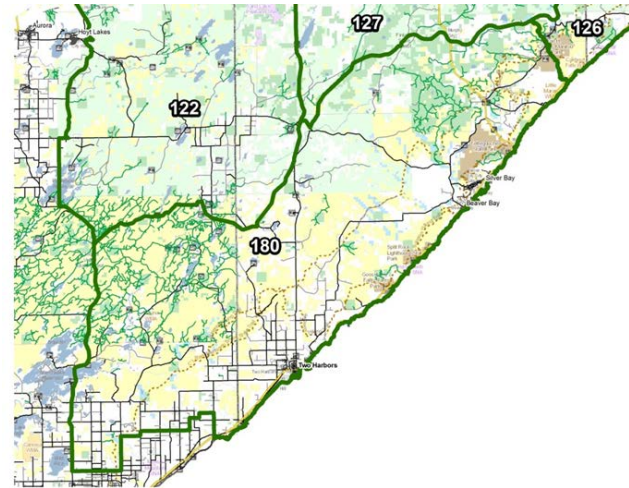
- The Department will aim for a target density of 5-7 deer per square mile (dpsm) of land area (pre-fawn) based on the 2014 model estimate of 4-6 dpsm⁴. In addition to trends indicated by the population model estimates, trends in harvest indices, WSI, and field observations will be used to assess population status.
- The deer population in this area has decreased substantially over the past decade through a combination of liberal seasons and severe winters. If winter conditions are not severe, moderate-to-conservative management strategies are anticipated for the next few years to move the population toward goal.
- Population levels associated with this goal are consistent with the 2011 Minnesota Moose Research and Management Plan. Results of current research on moose mortality may influence future deer density thresholds in moose range.
- A change in permit area boundaries will also be considered to better align with primary moose range. If boundaries are adjusted, more moderate-to-liberal management strategies will be implemented in primary moose range.

⁴ Note that, similar to a weather forecast or budget forecast, model estimates may change over time as new information is incorporated into the model. For example, DNR deer population modeling occurs each spring prior to setting deer seasons. If the winter persists beyond the date when population estimates are developed, the estimate for that year may be different in the following year once the final data on winter severity can be included. In that case, DNR will assess the trend in the population based on the most up-to-date estimate of the 2014 population and best available data, along with other population indices.

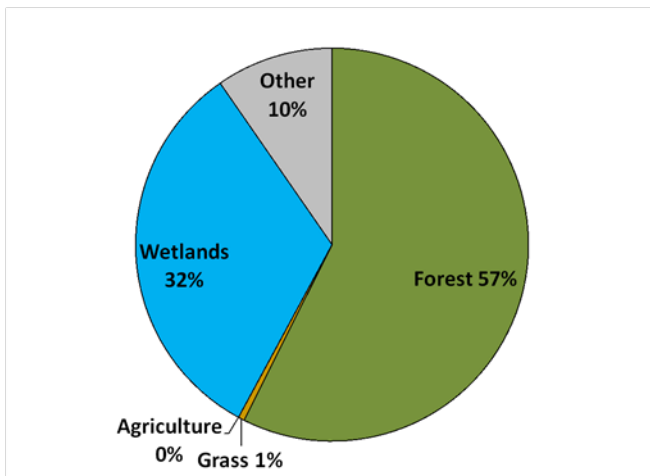
Deer Permit Area: 180
Size of Deer Permit Area: 993 square miles total; 977 square miles of land.
2015 Population Goal: Increase the population 25%, relative to 2014 population, over the next 3-5 years.

| Year | Mgmt. Designation | No. Firearm Hunters | Firearm Success (%) | Reported Deer Harvest | | |
|------|-------------------|---------------------|---------------------|-----------------------|-------|------------|
| | | | | Total | Bucks | Antlerless |
| 2005 | Managed | 6018 | 47% | 2802 | 1664 | 1138 |
| 2006 | Intensive | 6032 | 58% | 3495 | 1799 | 1696 |
| 2007 | Intensive | 6013 | 62% | 3719 | 1866 | 1853 |
| 2008 | Intensive | 6231 | 54% | 3380 | 1584 | 1796 |
| 2009 | Managed | 5913 | 44% | 2599 | 1538 | 1061 |
| 2010 | Intensive | 6156 | 52% | 3207 | 1423 | 1784 |
| 2011 | Intensive | 6131 | 41% | 2528 | 1224 | 1304 |
| 2012 | Managed | 6573 | 36% | 2348 | 1145 | 1203 |
| 2013 | Hunter's Choice | 5922 | 23% | 1380 | 849 | 531 |
| 2014 | Bucks Only | 4394 | 13% | 552 | 545 | 7 |

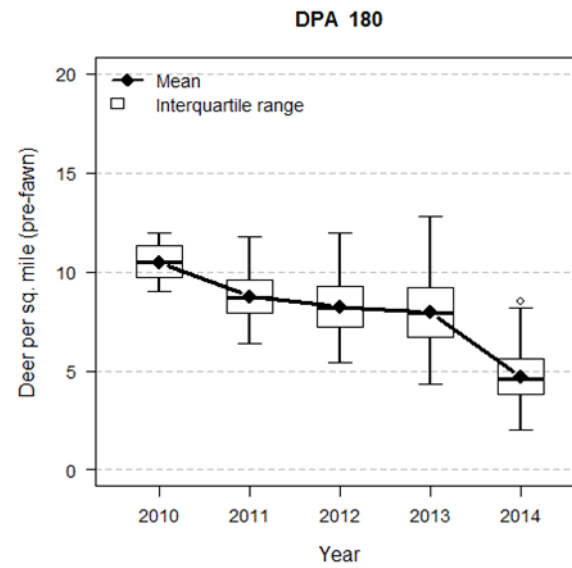
Deer Permit Area: 180
Size of Deer Permit Area: 993 square miles total;
 977 square miles of land



Habitat Categories:



2014 Model Output:



References

MNDNR. 2011. *Minnesota Moose Research and Management Plan*. St. Paul, Minnesota. 52pp.

MNDNR. 2014. *2014 Minnesota Deer Harvest Report*. St. Paul, Minnesota. 44pp.

MNDNR. 2015. *Minnesota Deer Population Goal Setting Packet: Superior Uplands Arrowhead Goal Block 2015*. St. Paul, Minnesota. 66pp.
with addendum.

MNDNR. 2015. *Superior Uplands Arrowhead :Deer Goal Setting – Block 1 Landowner and Hunter Survey Results*. St. Paul, Minnesota. 32pp.