U.S. DEPARTMENT OF THE INTERIOR

U.S. FISH AND WILDLIFE SERVICE

ENVIRONMENTAL ASSESSMENT

For
Proposed Amendments to the 2011 Hunting Chapter
Of The
Visitor Service Plan
Minnesota Valley National Wildlife Refuge,
Bloomington, Minnesota

Regional Director
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TABLE OF CONTENTS

1.0 PURPOSE OF THE PROPOSED ACTION ................................................................. 1

2.0 NEED FOR THE ACTION ......................................................................................... 1

3.0 SCOPING AND PUBLIC PARTICIPATION ................................................................ 5

4.0 PROPOSED ACTION AND THE ALTERNATIVES ................................................. 6
   4.1 Alternatives Considered but not Developed
      4.1.1 No Hunting
   4.2 Alternatives Developed for Detailed Analysis
      4.2.1 Elements Common to Developed Alternatives
      4.2.2 Alternative A: Maintain Current Hunting Programs on Refuge Lands
                      Previously Opened to Hunting and Not Open Recently Acquired Lands to
                      Hunting (No Action)
      4.2.3 Alternative B: Maintain Current Hunting Programs on Refuge Lands
                      Previously Opened to Hunting and Open Recently Acquired Lands to Hunting
                      (Preferred Alternative)
      4.2.4 Comparison of Developed Alternatives

5.0 AFFECTED ENVIRONMENT .................................................................................. 19
   5.1 Landscape Setting
   5.2 Natural Resources
      5.2.1 Habitats
      5.2.2 Wildlife
   5.3 Threatened and Endangered Species
   5.4 Cultural Resources
   5.5 Economic Resources
   5.6 Recreational Opportunities

6.0 ENVIRONMENTAL CONSEQUENCES ....................................................................30
   6.1 Environmental Consequences Common to Developed Alternatives
      6.1.1 Infrastructure
      6.1.2 Natural Resources
      6.1.2.1 Habitats
      6.1.2.2 Wildlife
      6.1.3 Threatened and Endangered Species
      6.1.4 Cultural Resources
      6.1.5 Social and Economic Resources
      6.1.6 Recreational Opportunities
      6.1.7 Cumulative Impacts
      6.1.7.1 Infrastructure
      6.1.7.2 Natural Resources
      6.1.7.3 Threatened and Endangered Species
6.1.7.4 Cultural Resources
6.1.7.5 Social and Economic Resources
6.1.7.6 Recreational Opportunities

6.2 Environmental Consequences of Alternative A: Maintain Current Hunting Programs on Refuge Lands Previously Opened to Hunting and Not Open Recently Acquired Lands to Hunting (No Action)
   6.2.1 Natural Resources
      6.2.1.1 Wildlife
   6.2.2 Recreational Opportunities
   6.2.3 Cumulative Impacts

6.3 Environmental Consequences of Alternative B: Maintain Current Hunting Programs on Refuge Lands Previously Opened to Hunting and Open Recently Acquired Lands to Hunting (Preferred Alternative)
   6.3.1 Natural Resources
      6.3.1.1 Wildlife
   6.3.2 Recreational Opportunities
   6.3.3 Cumulative Impacts

6.4 Summary of Environmental Consequences by Alternative

7.0 PREPARERS......................................................................................................................47

8.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS CONTACTED........47

9.0 APPROVALS..................................................................................................................49

APPENDIX A – REFERENCES..............................................................................................50

APPENDIX B – ADDITIONAL FIGURES...........................................................................53

APPENDIX C – CONSULTATION AND COORDINATION WITH OTHERS.............55

APPENDIX D – RESPONSE TO COMMENTS ON THE HUNTING CHAPTER AND ENVIRONMENTAL ASSESSMENT.........................................................57

APPENDIX E – POLICY COMPLIANCE AND SUPPORTING DOCUMENTATION........64
ENVIRONMENTAL ASSESSMENT
FOR
PROPOSED AMENDMENTS TO 2011 HUNTING CHAPTER
OF THE
VISITOR SERVICE PLAN
MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE

1.0 PURPOSE OF THE PROPOSED ACTION

The Minnesota Valley National Wildlife Refuge (Refuge) was established by Congress in 1976 through the Minnesota Valley National Wildlife Refuge Act (Public Law 94-466; October 8, 1976) (Refuge Act). In general, its purposes are to (1) provide habitat for a large number of migratory waterfowl, fish, and other wildlife species; (2) provide environmental education, wildlife recreational opportunities, and interpretive programs for hundreds of thousands of Twin Cities residents; (3) protect important natural resource areas from degradation; and (4) protect the valley’s unique social, educational, and environmental assets.

The purpose of this Environmental Assessment (EA) is to evaluate alternatives for the purpose of updating the Hunting Chapter of the Refuge’s Visitor Service Plan. The Service’s Regional Director will review the recommendations assessed in this EA and select one of the Alternatives presented. In doing so the Regional Director also will determine whether this EA is adequate to support a Finding of No Significant Impact or whether an Environmental Impact Statement (EIS) will need to be prepared.

2.0 NEED FOR THE ACTION

The National Wildlife Refuge Improvement Act of 1997 (Improvement Act) directs refuges to provide six priority public uses when compatible with the purposes of the Refuge and the mission of the National Wildlife Refuge System (System). These priority uses include hunting, fishing, wildlife photography, wildlife observation, environmental education, and interpretation. The need for action, therefore, revolves around hunting as a priority use. The U.S. Fish and Wildlife Service (Service) guidance for implementing the Improvement Act encourages Refuge Managers to promote use of the Refuge for special hunts for youth, persons with disabilities, or other underserved hunting populations (605 FW 1.9C, 2.7M, 2.7N, USFWS, undated). Because hunting is one of six priority uses for the Refuge, the 2011 Hunting Chapter seeks to balance all of these uses over time and space.

The Service prepared its first hunting chapter for the Refuge shortly after the Refuge was established. That chapter included an EA that evaluated the possibilities and effects of a hunting program on all lands within the Refuge’s congressionally authorized acquisition boundaries. The Refuge’s Hunting Chapter and supporting documents were reviewed and updated in 1981, 1984, 1987, 1989, 1991, 2004 and 2010. Changes to the Refuge’s hunting program were published in the Federal Register and the Code of Federal Regulations (50 CFR 32.42) as needed.
Since the first authorization in 1976 to establish a 9,500-acre Refuge, the approved acquisition boundary has been revised twice to total 24,700 acres. To date the Refuge has purchased about 13,000 acres (Figure 1). As the Refuge expands, lands are purchased from willing sellers. This has created a patchwork of ownerships in some areas within the authorized acquisition boundary. In many instances the Service has been able to incorporate these private lands into Refuge programs via easements or other agreements.

In 2000, the Service reached a compensation agreement with the Metropolitan Airport Commission (MAC) for damages to the Refuge resulting from expansion of the Minneapolis/St. Paul International Airport. The MAC paid the Service approximately $26 million in mitigation funds to compensate the Refuge for damages associated to Refuge facilities and programs, to be administered by the Minnesota Valley National Wildlife Refuge Trust, Inc. (Trust). These monies are being used to replace the public use and wildlife values affected by aircraft overflights by developing facilities, programs, and new Refuge units outside the impact zone of the airport. Consequently, the Trust is actively purchasing new lands within the authorized Refuge boundary. The Trust holds these lands until they can be officially transferred to Service ownership. In 2011, the Service is taking ownership of 1,174 acres of Trust lands located in the St. Lawrence and Blakely Units of the Refuge (Figure 2).

The 2011 Hunting Chapter seeks to open these recently acquired lands to hunting under Service ownership. As directed by Service Policy (605 FW 2.7 USFWS, undated) we plan, manage, conduct, and evaluate refuge hunting programs in coordination with State fish and wildlife agencies on a consistent basis, in ways that conserve fish and wildlife and their habitats, ensure hunter and visitor safety, comply with applicable State and Federal laws and regulations, and promote respect for the resource. In addition, our regulations are consistent, to the extent practicable, with State regulations.

To initiate or expand hunting programs, the Service must publish in the Federal Register any proposed and final Refuge-specific regulations pertaining to hunting prior to implementing them (605 FW 2.9, USFWS, undated). The regulations are only one element of a complete opening package, which is comprised of the following documents: Refuge Hunting Chapter; compatibility determination; documentation pursuant to compliance with the National Environmental Policy Act of 1969, as amended (NEPA), and appropriate NEPA decision document; Endangered Species Act Section 7 evaluation; copies of letters requesting State involvement and the results of the request; draft news release; outreach plan; and the draft Refuge-specific regulations.

This environmental assessment serves as the NEPA document which analyzes the impacts of the proposed changes to the hunting program at Minnesota Valley National Wildlife Refuge for 2011 and beyond. The Preferred Alternative, as presented in this EA, outlines proposed changes to the 2011 Hunting Chapter. Proposed uses within the 2011 Hunting Chapter have been determined to be appropriate and compatible with the mission of the Refuge System and purposes for which the Refuge was established.
Figure 1. Minnesota Valley National Wildlife Refuge Units.
Figure 2. Recently Acquired Lands by Unit, Minnesota Valley National Wildlife Refuge.
3.0 SCOPING AND PUBLIC PARTICIPATION

Previous to this 2011 Hunting Chapter, the Refuge's hunting program had been developed in coordination with Minnesota Department of Natural Resources (MNDNR) regional and area managers, as well as with other metropolitan area public land managers. The general public also was included in some activities. Scoping and public participation included formal and informal meetings as well as through the Refuge soliciting comments on written hunting plans and supporting documents.

The Refuge's consultation with MNDNR and other land managers for the development of this 2011 Hunting Chapter dates back to 1999 when the Refuge began a series of meetings to develop a vision for Refuge programs via the Comprehensive Conservation Plan (CCP) (USFWS 2004) process. Since then, the Refuge has continued informally consulting and coordinating with the State regarding Refuge hunting activities until a more formal effort was renewed in 2009 and 2010. A detailed description of the Refuge's scoping efforts with agencies and the public is provided in Appendix C.

Topics of most concern to consulting agencies and the public that came out of scoping and coordination activities were as follows:

- Modifying waterfowl hunting on the Rice Lake area of the Wilkie Unit. In recent years the Service has increased both law enforcement and public information and assistance activities at the Rice Lake area during the waterfowl season.
- Opening urban units of the Refuge to ‘over-water’ early goose season as a mechanism to reduce urban Canada goose populations and provide more hunting opportunities. Early goose season has been opened statewide, including all Refuge units that are open to waterfowl hunting.
- Expanding firearms and archery hunting for white-tailed deer on urban units. The Service continues to allow deer hunting on urban units where municipalities allow the possession and discharge of weapons (firearms and archery) within corporate limits.
- Expanding opportunities for ‘youth mentor hunts’ on the Refuge. The Service continues to increase youth hunting opportunities on the Refuge related to pheasant, white-tailed deer, and spring and fall turkey hunting and has included such proposals into the 2011 Hunting Chapter.
- In recent years, people with disabilities have requested more facilities and sites for hunting waterfowl, turkey and white-tailed deer on the Refuge. The Service continues to increase opportunities for hunters with disabilities and has included such proposals into the 2011 Hunting Chapter.

In addition to these topics raised during scoping, another issue in the forefront is the inclusion of recently acquired lands on two Refuge Units (Figure 2) in the Refuge hunting program. These lands have been open to hunting while under private ownership. According to Service policy, these lands must be included in an updated Hunting Chapter before they can be hunted under Service ownership.

The Refuge solicited public comments on the Draft 2011 Hunting Chapter and EA. The drafts were made available for a 30 day review and comment period which extended from December 3, 2010, through January 4, 2011. The availability of these documents was announced via a public
notice to 10 print media organizations whose coverage extends beyond the geographic limits of the Refuge. The notice also was sent directly to legislators, municipal officials, agency contacts, and non-governmental organizations (see Section 8.0). The availability of the draft Hunting Chapter and EA were announced on the Refuge, Regional, and National websites. During the comment period, the Refuge hosted a "listening station" event at the Rapids Lake Education and Visitors Center on December 16, 2010, where Refuge staff were available to discuss the proposed Hunting Chapter and EA with any interested persons.

Following the Regional Director’s review of the Hunting Chapter, this EA, and approval of the Finding of No Significant Impact, and other supporting documentation for opening hunting on the Refuge as described as the preferred alternative here, the Service will publish in the Federal Register a Proposed Rule that updates the hunting program on the Refuge. After the comment period closes for the Proposed Rule, a determination will be made whether to implement Refuge hunting as outlined in this Hunting Plan. Subsequently, a Final Rule will be published outlining hunting on the Refuge. The Refuge is officially open for the hunting opportunities described here only after the effective date of the final rule. Following these approvals, the Refuge manager will annually review refuge-specific hunting regulations and the Hunting Chapter to ensure continued compatibility and consistency of the visitor services program with existing laws and regulations.

4.0 PROPOSED ACTION AND THE ALTERNATIVES

One of the main purposes of the Refuge is to provide wildlife-dependent recreation and environmental education (Public Law 94-466; October 8, 1976). Hunting is a valuable means to meet this purpose. Toward that end, the Refuge has drafted an updated Hunting Chapter of its Visitor Services Plan. The 2011 Hunting Chapter seeks to open recently acquired Service lands to hunting. Proposed uses within this Chapter are appropriate and compatible with mission and goals of the Refuge System and the purposes for which the Refuge was established (Appendix E).

The Service evaluated possible hunting program changes through three alternatives: (1) No Hunting, (2) Maintain Current Hunting Programs on Refuge Lands Previously Opened to Hunting and Not Open Recently Acquired Lands to Hunting and (3) Maintain Current Hunting Programs on Refuge Lands Previously Opened to Hunting and Open Recently Acquired Lands to Hunting.

4.1 Alternatives Considered But Not Developed

A potential alternative was considered but not carried forward for detailed analysis because it would not enable the Refuge to fulfill the purposes for which it was established.

4.1.1 No Hunting

A No Hunting alternative would require existing hunting activities to cease on the Refuge. Most lands presently managed as part of the Refuge were hunted upon prior to being included in the Refuge. With few exceptions those lands continued to be hunted upon after becoming part of the Refuge.
Numerous comments supporting the continuation of hunting were received during the scoping for the original EA supporting the establishment of the Refuge and the EIS (USFWS 1982) which was completed immediately after establishing legislation was passed in 1976 and which evaluated the proposed master plan for Refuge development.

The Improvement Act identifies hunting as one of six priority uses of lands within the Refuge System. To eliminate hunting on Refuge lands where it already has been determined to be compatible with Refuge purposes and the mission of the System would not meet the intent of the Improvement Act. The selected alternative in the Refuge's 2004 CCP (USFWS 2004) identified a hunting program that was expanded yet compatible and balanced with other priority Refuge uses.

4.2 Alternatives Developed For Detailed Analysis
Two alternatives were carried forward for detailed analysis.

4.2.1 Elements Common to Developed Alternatives
Under both alternatives, hunting on the Refuge will be consistent with State regulations such as: (1) hunting hours, (2) license requirements, (3) seasons, (4) possession rules and bag limits, (5) hunting firearms and bow requirements, and (6) blaze orange requirements.

With both alternatives, the Refuge is open to hunting for migratory birds (geese, ducks, coots, rails, woodcock, common snipe, and mourning dove), upland game (ruffed grouse, ring-necked pheasant, gray partridge, gray squirrel, fox squirrel, snowshoe hare, cottontail rabbit, jackrabbit, and turkey), and big game (white-tailed deer). The Refuge is closed to hunting for species not listed as open. These species include swans, American crow, furbearers (raccoon, red fox, gray fox, badger, opossum, striped skunk, coyote), and unprotected species as defined by the State of Minnesota.

Regulations pertaining to hunting on all National Wildlife Refuge System Lands would remain in effect with both alternatives. These regulations are identified in Title 50 of the Code of Federal Regulations Section 32.2 and in the Refuge Hunting Chapter associated with this document. Topics covered by these regulations include, but are not limited to, baiting, possession of alcohol, and use of nontoxic shot.

Refuge-specific regulations also would apply to both alternatives. These regulations are identified in Title 50 of the Code of Federal Regulations Section 32.42 and in the Refuge Hunting Chapter associated with this document. Refuge-specific regulations include, but are not limited to, wildlife species that are open to hunting, hunting access hours, use of stands and boats, use of hunting dogs, and types of weapons and ammunition allowed for hunting.

Under both alternatives, parts of certain Refuge Units may be open only to special hunts. A special hunt is an activity focused on certain populations of hunters to provide them with additional opportunities or methods of hunting through a Refuge approved program. The populations targeted for these hunts are youth hunters, hunters with disabilities, or other underserved hunter populations. Special hunts will be open for migratory birds, upland game and big game with Refuge specific authorization only. They are conducted within the
framework of the State seasons and regulations for the species proposed to be hunted. Special hunts for people with disabilities and youth hunters will be administered on designated areas of the Refuge. Some of these designated areas would be closed to hunting by the general public during the time of the special hunt. In administering special hunts, the Refuge Manager will consider the biological effects of proposed hunting activities as well as the hunt’s potential to conflict with concurrent non-hunting recreational activities.

4.2.2 Alternative A: Maintain Current Hunting Programs on Refuge Lands Previously Opened to Hunting and Not Open Recently Acquired Lands to Hunting (No Action)

Most units of the Refuge support huntable populations of migratory birds, big game, and upland game. All units of the Refuge are open to the public for some type of recreational use; portions of 10 of the 12 Refuge Units have been previously opened to some type of hunting. Portions of some Units have areas that are closed to hunting to accommodate other recreational, biological, or administrative uses.

In 2011, the Service takes full management responsibility for 1,174 acres of recently acquired land on two Refuge Units (St. Lawrence and Blakely). These lands were open to hunting under private ownership. Under Alternative A (No Action), these lands would become closed to hunting per Service policy that requires an opening package be submitted and approved before newly acquired Refuge land can be open to hunting.

The current hunting program allows specific hunting activities on designated units or portions of units. This enables the Refuge to balance species needs and other recreational uses with hunting activities. Hunting is not allowed on the Round Lake Unit. The Long Meadow Lake, Black Dog, Bloomington Ferry, Upgrala, and Chaska Units are closed to general public hunting but are sometimes used for special hunts by groups such as youth hunters and hunters with disabilities. Portions of the Wilkie, Louisville Swamp, and Rapids Lake, St. Lawrence, and Jessenland Units of the Refuge are open to hunting by the general public.

Hunting activities currently allowed on specific Refuge Units follows. Maps identifying pertinent landmarks and Refuge unit hunting areas are provided in Appendix B, as noted.

**Round Lake Unit**
Closed to hunting.

**Long Meadow Lake Unit**
Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.

**Black Dog Unit**
Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.

**Bloomington Ferry Unit**
Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.
Wilkie Unit (Appendix B)
Continental Grain Marsh (i.e., East of Eagle Creek)
• Closed to hunting.

Rice Lake (i.e., From Eagle Creek west to the Highway 169 Bridge)
• Migratory Birds
  o Open to hunting.
• Upland Game including turkey
  o Open to archery hunting only.
• Big Game
  o White-tailed deer
    • Open to archery hunting only.

West of Highway 169 Bridge (including Fisher and Blue Lakes)
• Migratory Birds
  o Open to special hunts with Refuge specific authorization only.
• Upland Game including turkey
  o Open to archery hunting only.
• Big Game
  o White-tailed deer
    • Open to archery hunting only.

Upgrala Unit
Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.

Chaska Unit
Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.

Louisville Swamp Unit (Appendix B)
South of Middle Road
• Migratory Birds
  o Open to hunting.
• Upland Game including turkey
  o Open to archery and firearms hunting.
• Big Game
  o White-tailed deer
    • Open to archery and firearms hunting.
North of Middle Road
• Migratory Birds
  o Closed to hunting.
• Upland Game including turkey
  o Open to archery hunting only.
  o Open to special hunts with Refuge specific authorization only.
• Big Game
  o White-tailed deer
    • Open to archery hunting only.

Rapids Lake (Appendix B)
• Migratory Birds
  o Open to hunting.
  o Open to special hunts with Refuge specific authorization only.
• Upland Game
  o Upland game other than turkey.
    • Open to archery and firearms hunting.
    • Open to special hunts with Refuge specific authorization only.
  o Turkey
    • Open to archery and firearms hunting during spring and fall seasons.
    • Open to special hunts with Refuge specific authorization only.
• Big Game
  o White-tailed deer
    • Open to archery and firearms hunting.
    • Open to special hunts with Refuge specific authorization only.

St. Lawrence Unit
• Migratory Birds
  o Open to hunting.
  o Open to special hunts with Refuge specific authorization only.
• Upland Game
  o Upland game other than turkey
    • Open to archery and firearms hunting.
    • Open to special hunts with Refuge specific authorization only.
  o Turkey
    • Open to archery and firearms hunting during spring and fall seasons.
    • Open to special hunts with Refuge specific authorization only.
• Big Game
  o White-tailed deer
    • Open to archery hunting only.
    • Open to special hunts with Refuge specific authorization only.
Jessenland Unit

- Migratory Birds
  - Open to hunting.
  - Open to special hunts with Refuge specific authorization only.

- Upland Game
  - Upland game other than turkey
    - Open to archery and firearms hunting.
    - Open to special hunts with Refuge specific authorization only.
  - Turkey
    - Open to archery and firearms hunting during spring and fall seasons.
    - Open to special hunts with Refuge specific authorization only.

- Big Game
  - White-tailed deer
    - Open to archery and firearms hunting.
    - Open to special hunts with Refuge specific authorization only.

Importantly, under this Alternative recently acquired lands that were previously hunted while privately owned will be owned by the Service in 2011. These lands would become closed to hunting per Service policy that requires an opening package be submitted and approved in order for lands to be open to hunting. On the St. Lawrence Unit, 104 acres open to hunting will be closed in 2011 and beyond. On the Blakely Unit, 1,070 acres open to hunting will be closed in 2011 and beyond.

4.2.3 Alternative B: Maintain Current Hunting Programs on Refuge Lands Previously Opened to Hunting and Open Recently Acquired Lands to Hunting (Preferred Alternative)

In this Alternative the Service is proposing to maintain current hunting programs on Refuge lands previously opened to hunting for current species and methods of hunting. In addition, the Service proposes to opening recently acquired lands to hunting. This Alternative would open 1,174 acres of recently acquired lands on two units to Refuge hunting programs. These units are the St. Lawrence and Blakely Units (Figure 2). All of the recently acquired lands proposed to be opened for hunting have been hunted prior to Service ownership.

Hunting activities proposed to be allowed on specific Refuge units:

**Round Lake Unit**
Closed to hunting.

**Long Meadow Lake Unit**
Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.

**Black Dog Unit**
Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.
Bloomington Ferry Unit
Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.

Wilkie Unit (Appendix B)
Continental Grain Marsh (i.e., East of Eagle Creek)
• Closed to all hunting.

Rice Lake (i.e., From Eagle Creek west to the Highway 169 Bridge)
• Migratory Birds
  o Open to hunting.
• Upland Game including turkey
  o Open to archery hunting only.
• Big Game
  o White-tailed deer
    ▪ Open to archery hunting only.

West of Highway 169 Bridge (including Fisher and Blue Lakes)
• Migratory Birds
  o Open to special hunts with Refuge specific authorization only.
• Upland Game including turkey
  o Open to archery hunting only.
• Big Game
  o White-tailed deer
    ▪ Open to archery hunting only.

Upgrala Unit
Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.

Chaska Unit
Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.

Louisville Swamp Unit (Appendix B)
South of Middle Road
• Migratory Birds
  o Open to hunting.
• Upland Game including turkey
  o Open to archery and firearms hunting.
• Big Game
  o White-tailed deer
    ▪ Open to archery and firearms hunting.
North of Middle Road
- **Migratory Birds**
  - Closed to hunting.
- **Upland Game**
  - Upland game other than turkey
    - Open to archery hunting only.
  - Turkey
    - Open to archery hunting during spring and fall seasons.
    - Open to special hunts with Refuge specific authorization only.
- **Big Game**
  - White-tailed deer
    - Open to archery hunting only.

Rapids Lake Unit (Appendix B)
- **Migratory Birds**
  - Open to hunting.
  - Open to special hunts with Refuge specific authorization only.
- **Upland Game**
  - Upland game other than turkey
    - Open to archery and firearms hunting.
    - Open to special hunts with Refuge specific authorization only.
  - Turkey
    - Open to archery and firearms hunting during spring and fall seasons.
    - Open to special hunts with Refuge specific authorization only.
- **Big Game**
  - White-tailed deer
    - Open to archery and firearms hunting.
    - Open to special hunts with Refuge specific authorization only.

St. Lawrence Unit
In 2011, Service lands on the St. Lawrence Unit will be expanded by 104 acres, increasing its size from 198 acres to 302 acres. The recently acquired 104 acres were hunted as private lands prior to Service ownership. Hunting activities proposed for these recently acquired lands will be the same as on the other Refuge lands in this Unit.
- **Migratory Birds**
  - Open to hunting.
  - Open to special hunts with Refuge specific authorization only.
- **Upland Game**
  - Upland game other than turkey
    - Open to archery and firearms hunting.
    - Open to special hunts with Refuge specific authorization only.
  - Turkey
    - Open to archery and firearms hunting during spring and fall seasons.
    - Open to special hunts with Refuge specific authorization only.
• Big Game
  o White-tailed deer
    • Open to archery hunting only.
    • Open to special hunts with Refuge specific authorization only.

Jessenland Unit
• Migratory Birds
  o Open to hunting.
  o Open to special hunts with Refuge specific authorization only.
• Upland Game
  o Upland game other than turkey
    • Open to archery and firearms hunting.
    • Open to special hunts with Refuge specific authorization only.
  o Turkey
    • Open to archery and firearms hunting during spring and fall seasons.
    • Open to special hunts with Refuge specific authorization only.
• Big Game
  o White-tailed deer
    • Open to archery and firearms hunting.
    • Open to special hunts with Refuge specific authorization only.

Blakely Unit.
This 1,070 acre Unit has been recently acquired by the Service. All of the lands in this Unit were hunted as private lands prior to Service ownership. No portion of this Unit has been previously opened to hunting by the Service. Hunting activities proposed for these recently acquired lands will be the same as on nearby Refuge Units.
• Migratory Birds
  o Open to hunting.
• Upland Game
  o Upland game other than turkey
    • Open to archery and firearms hunting.
  o Turkey
    • Open to archery and firearms hunting during spring and fall seasons.
    • Open to special hunts with Refuge specific authorization only.
• Big Game
  o White-tailed deer
    • Open to archery and firearms hunting.
    • Open to special hunts with Refuge specific authorization only.

4.2.4 Comparison of Developed Alternatives
Table 4.2.4.1 presents a general comparison of the Alternatives. Table 4.2.4.2 presents a unit by unit comparison of hunting activities allowed for the Alternatives.
Table 4.2.4.1 – General Comparison of Alternatives.

<table>
<thead>
<tr>
<th>Action</th>
<th>Alternative A (No action)</th>
<th>Alternative B (Preferred)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species to be hunted</td>
<td>Migratory Birds: goose, duck, coot, moorhen, rails, woodcock, common snipe, mourning dove</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>Upland Game: ruffed grouse, gray partridge, ring-necked pheasant, gray squirrel, fox squirrel, cottontail rabbit, snowshoe hare, jackrabbit, wild turkey</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>Big Game: white-tailed deer</td>
<td>No change</td>
</tr>
<tr>
<td>Locations of hunts</td>
<td>Units closed to hunting: Round Lake, Wilkie – Continental Grain Marsh, Parts of St. Lawrence, Blakely. (1,596 ac.)</td>
<td>Units closed to hunting: Round Lake, Wilkie – Continental Grain Marsh. (422 ac.)</td>
</tr>
<tr>
<td></td>
<td>Units open to special hunts only: Long Meadow Lake, Black Dog, Bloomington Ferry, Upgrala, Chaska Lake. (3,464 ac.)</td>
<td>74% decrease in acreage closed</td>
</tr>
<tr>
<td></td>
<td>Units open to general hunts only: Wilkie – Rice Lake. (577 ac.)</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>Units open to special and general hunts: Parts of Wilkie, Louisville Swamp, Rapids Lake, Parts of St. Lawrence, Jessenland. (6,863 ac.)</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Units open to special and general hunts: Parts of Wilkie, Louisville Swamp, Rapids Lake, St. Lawrence, Jessenland, Blakely. (8,037 ac.)</td>
</tr>
<tr>
<td>Huntable land base</td>
<td>10,904 ac. open to general or special hunts out of 12,500 ac. of Refuge lands</td>
<td>12,078 ac. open to general or special hunts out of 12,500 ac. of Refuge lands</td>
</tr>
<tr>
<td></td>
<td>Decrease by 1,174 acres compared to pre-Service ownership levels.</td>
<td>Maintain huntable acres at pre-Service ownership levels.</td>
</tr>
<tr>
<td></td>
<td>Hunting within 100 ft. of marked trails or parking lots prohibited.</td>
<td>No change</td>
</tr>
<tr>
<td>Conflict between hunting and non-hunting activities</td>
<td>No conflict with biological, non-hunting public use, and administrative activities.</td>
<td>No change</td>
</tr>
</tbody>
</table>
Table 4.2.4.2 - Unit by unit comparison of hunting activities allowed for Alternatives.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Alternative A</th>
<th>Alternative B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round Lake Unit</td>
<td>Closed to hunting.</td>
<td>No change</td>
</tr>
<tr>
<td>Long Meadow Lake Unit</td>
<td>Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.</td>
<td>No change</td>
</tr>
<tr>
<td>Blackdog Unit</td>
<td>Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.</td>
<td>No change</td>
</tr>
<tr>
<td>Bloomington Ferry Unit</td>
<td>Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.</td>
<td>No change</td>
</tr>
<tr>
<td>Wilkie Unit</td>
<td><strong>Continental Grain Marsh (i.e., East of Eagle Creek)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Closed to hunting.</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td><strong>Rice Lake (i.e., From Eagle Creek west to the Highway 169 Bridge)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Migratory Birds</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>o Open to hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Upland Game including turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Open to archery hunting only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Big Game</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>o White-tailed deer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery hunting only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>West of Highway 169 Bridge (including Fisher and Blue Lakes)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Migratory Birds</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>o Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Upland Game including turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery hunting only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Big Game</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>o White-tailed deer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery hunting only.</td>
<td></td>
</tr>
<tr>
<td>Upgraia Unit</td>
<td>Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.</td>
<td>No change</td>
</tr>
</tbody>
</table>
Table 4.2.4.2 - Unit by unit comparison of hunting activities allowed for Alternatives (Continued).

<table>
<thead>
<tr>
<th>Unit</th>
<th>Alternative A (No action)</th>
<th>Alternative B (Preferred)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chaska Unit</td>
<td>Open to special hunts for migratory birds, upland game, and big game with Refuge specific authorization only.</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louisville Swamp Unit</td>
<td>South of Middle Road</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Migratory Birds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Upland Game including turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery and firearms hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Big Game</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• White-tailed deer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery and firearms hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>North of Middle Road</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Migratory Birds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Closed to hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Upland Game</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Upland game other than turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery hunting only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery hunting during spring and fall seasons.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Big Game</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• White-tailed deer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery hunting only.</td>
<td></td>
</tr>
<tr>
<td>Rapids Lake Unit</td>
<td>Migratory Birds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Upland Game</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Upland game other than turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery and firearms hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery and firearms hunting during spring and fall seasons.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Big Game</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• White-tailed deer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery and firearms hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Unit</th>
<th>Alternative A (No action)</th>
<th>Alternative B (Preferred)</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Lawrence Unit</td>
<td>• 104 ac. of Unit’s 302 ac.(34%) closed to hunting</td>
<td>• Entire Unit open to hunting</td>
</tr>
<tr>
<td></td>
<td>• Migratory Birds</td>
<td>• No change to species hunted, types of hunts, or methods of hunting</td>
</tr>
<tr>
<td></td>
<td>o Open to hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Upland Game</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Upland game other than turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery and firearms hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery and firearms hunting during spring and fall seasons.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Big Game</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o White-tailed deer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery hunting only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
<tr>
<td>Jessenland Unit</td>
<td>• Migratory Birds</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>o Open to hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Upland Game</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Upland game other than turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery and firearms hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery and firearms hunting during spring and fall seasons.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Big Game</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o White-tailed deer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Open to archery and firearms hunting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Open to special hunts with Refuge specific authorization only.</td>
<td></td>
</tr>
</tbody>
</table>
Table 4.2.4.2 - Unit by unit comparison of hunting activities allowed for Alternatives (Continued).

<table>
<thead>
<tr>
<th>Unit</th>
<th>Alternative A (No action)</th>
<th>Alternative B (Preferred)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blakely Unit</td>
<td>• Entire Unit hunted prior to Service ownership  &lt;br&gt;○ Open to hunting of all species and seasons as allowed by State of Minnesota  &lt;br&gt;• Entire Unit (1,070 ac. of Service lands) closed to all hunting activity</td>
<td>• Entire Unit opened to public hunting activities  &lt;br&gt;• Migratory Birds  &lt;br&gt;○ Open to hunting  &lt;br&gt;○ Open to special hunts with Refuge specific authorization only  &lt;br&gt;• Upland Game  &lt;br&gt;○ Upland game other than turkey  &lt;br&gt;• Open to archery and firearms hunting  &lt;br&gt;○ Turkey  &lt;br&gt;• Open to archery and firearms hunting during spring and fall seasons  &lt;br&gt;• Open to special hunts with Refuge specific authorization only  &lt;br&gt;• Big Game  &lt;br&gt;○ White-tailed deer  &lt;br&gt;• Open to archery and firearms hunting  &lt;br&gt;• Open to special hunts with Refuge specific authorization only</td>
</tr>
</tbody>
</table>

5.0 AFFECTED ENVIRONMENT
The Service administers the Refuge as a unit of the National Wildlife Refuge System. The Refuge was established in 1976 by Congress through the Minnesota Valley National Wildlife Refuge Act to (1) provide habitat for a large number of migratory waterfowl, fish, and other wildlife species; (2) provide environmental education, wildlife recreational opportunities, and interpretive programs for Twin Cities residents; (3) protect important natural resource areas from degradation; and (4) protect the valley's unique social, educational, and environmental assets.

The Refuge is one of more than 555 refuges in the National Wildlife Refuge System (System). The mission of the System is “to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish and wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (USFWS 1997). National Wildlife Refuges provide important habitat for native plants and many mammals, birds, fish, insects, amphibians, and reptiles. Refuges offer a wide variety of wildlife-dependent recreational opportunities and many have visitor centers, wildlife trails, and environmental education programs. Nationwide, about 40 million visitors annually hunt, fish, observe and photograph wildlife, or participate in educational and interpretive activities on refuges. The System is the most comprehensive system in the world of lands and waters managed specifically for the protection of wildlife and wildlife habitat.

The authorized boundary of the Refuge encompasses 24,700 acres. Nearly 13,000 acres presently are owned or managed as part of the Refuge. Some areas are not owned by the Service but are administered through management agreements. Presently, the Refuge consists of 12 Units; 11 of these Units are along a 70 mile stretch of the Minnesota River located between
historic Fort Snelling and the City of Henderson. The Refuge’s Land Protection Plan (USFWS 2004) identifies goals for additional lands to be purchased or administered as part of the Refuge within this area. The Round Lake Unit, a 152-acre tract containing a large permanent wetland located in the City of Arden Hills, is administered as a remote part of the Refuge.

Refuge lands are interspersed among lands owned by state agencies, local governments, and private corporations and citizens. The Refuge strives to enter management agreements with neighboring landowners to ensure that adjacent lands are managed in a way that complements the Refuge’s activities.

During the early 1990’s, the focus of habitat management on the Refuge changed dramatically from optimizing habitat edges aimed at a narrow group of game species to ecosystem management using native species and natural processes. This approach is based on restoring and maintaining naturally occurring, pre-settlement native plant communities to the extent possible. Presently, animal populations and habitats are not being manipulated to maximize any particular species or group of species, but are allowed to vary over time within the capacity of the biotic and abiotic resources.

A detailed historical background and description of natural and cultural resources on the Refuge can be found in the CCP and Environmental Assessment for the Minnesota Valley National Wildlife Refuge and Wetland Management District (USFWS 2004). A summary of those resources follows.

5.1 Landscape Setting
The landscape encompassing the Refuge was formed 11,000 years ago. During the Pleistocene Epoch, an inland sea named Glacial Lake Agassiz formed from the meltwaters of the retreating eastern edge of the Des Moines Lobe of the Laurentide Ice Sheet. Lake Agassiz was 700 feet deep and covered over 100,000 square miles in Minnesota, North Dakota, and Manitoba. Torrential meltwater drainage from Lake Agassiz created the River Warren, which varied from one to seven miles wide and from 75 to 200 feet deep. In most of the lower river valley, the river carved out a very wide and deep channel. As the Ice Age diminished, the northern outlet to Hudson Bay developed and the levels of both Lake Agassiz and River Warren receded. The resulting underfit stream meandered through an extremely wide floodplain bordered by broad terraces of rock sand, and gravel. The higher terraces were rounded-off and dissected by erosion. These terraces form the bluffs of what is now the Minnesota River Valley. Today, the Minnesota River Valley is a corridor of floodplain, forest, and wetlands that extend across some of Minnesota’s most productive and intensively cultivated agricultural lands. The Valley is classified as a northern floodplain forest ecosystem that extends through the Big Woods, Mississippi Sand Plains, and the Southern Oak Barrens landscape regions of the State.

Over 90 percent of the current Refuge lands are located within the urban and suburban areas of the seven county Minneapolis-St. Paul (Twin Cities) Metropolitan Area. The Metropolitan Area had a population of nearly three million people in 2007 and is the country's 16th-largest metropolitan area. The Refuge is a green belt of marsh and woodland areas bordered by office buildings, highways, residential areas, and grain terminals. The Metropolitan Council, which has
jurisdiction for the seven county Metropolitan Area, developed land use data for this area that encompasses most of the Refuge. Table 5.1 identifies the proportion of lands within the 1.9 million acre Metropolitan Area that fall within different land use categories (Metropolitan Council 2010).

Table 5.1. Proportion of Lands within the Twin Cities Metropolitan Area by Use Type (2005 Data).

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Percent</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>21</td>
<td>399,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>2</td>
<td>38,000</td>
</tr>
<tr>
<td>Industrial</td>
<td>3</td>
<td>57,000</td>
</tr>
<tr>
<td>Institutional</td>
<td>2</td>
<td>38,000</td>
</tr>
<tr>
<td>Parks and Recreational</td>
<td>9</td>
<td>171,000</td>
</tr>
<tr>
<td>Major Highways</td>
<td>1</td>
<td>19,000</td>
</tr>
<tr>
<td>Wetlands</td>
<td>9</td>
<td>171,000</td>
</tr>
<tr>
<td>Lands with greater than 18% slope</td>
<td>1</td>
<td>19,000</td>
</tr>
<tr>
<td>Undeveloped</td>
<td>17</td>
<td>323,000</td>
</tr>
<tr>
<td>Agricultural</td>
<td>28</td>
<td>532,000</td>
</tr>
<tr>
<td>Open Water</td>
<td>7</td>
<td>133,000</td>
</tr>
</tbody>
</table>

The Refuge is comprised of 12 units currently totaling about 13,000 acres, spanning 70 miles of the Minnesota River. Of the Refuge's 13,000 acres, about 12,000 lie within the seven county Twin Cities Metropolitan Area. These Refuge lands comprise less than 1% of the Twin Cities Metropolitan Area.

5.2 Natural Resources

5.2.1 Habitats
The Refuge is located within the transition zone between the Eastern Broadleaf Forest and the Prairie Parkland ecoregions as defined by Bailey (1983). Plant communities within this transition contain a mixture of hardwood forest, oak savanna, and mesic prairie. The many lakes, wetlands, streams, and springs of these ecoregions exhibit diverse emergent and submergent aquatic vegetation. The specific community types and their quality are dependent upon a number of factors including climate, soils, historical vegetation, previous disturbance, and habitat restoration and management activities.

The 11 river units of the Refuge lie along the lower portion of the Minnesota River between historic Fort Snelling and the City of Henderson. Approximately 90 percent of the Refuge is located within the 100-year floodplain. The surrounding bluffs have slopes of 12-25 percent and at their crest average 100 feet elevation above the river valley. A natural levee along the river channel in several portions of the Refuge has created many natural wetlands and shallow lakes in the floodplain. These wetlands are very productive and of considerable importance to waterfowl and waterbirds. A significant portion of these floodplain wetlands are recharged from emerging groundwater seeps and springs along the toe of the bluff. Small feeder creeks and streams are
also common in the floodplain on or near several Refuge units. Consequently, the water quality of these wetlands is high where the natural flows and recharge areas have not been altered by development.

The Minnesota River is the largest tributary of the Upper Mississippi River. From its source near Big Stone Lake in western Minnesota, the Minnesota flows southeast for 224 miles to Mankato, then northeast for 106 miles to its confluence with the Mississippi River at Fort Snelling. The downstream boundary of the Refuge is about six river miles above the confluence. The Minnesota River transects the Minneapolis-St. Paul metropolitan area in a northeast direction and surrounding land uses are typical of a rural to urban continuum. The river itself meanders very slowly through the valley and averages a grade of 0.8 foot per mile from Mankato to Carver. Its gradient is nearly level from Carver to its confluence with the Mississippi River.

Refuge units contain a variety of wetlands ranging from shallow wet meadows and calcareous fens to permanently flooded mixed emergent marshes. The river units are dominated by the latter where water is continuously present. Nearly all of these wetlands are spring fed and most of these large riverine basins are surrounded by mature cottonwood, willow, silver maple, and boxelder. Water control structures have been installed on several basins and water levels are managed to control rough fish and improve the productivity of the aquatic communities. Many of these wetlands provide good quality production, brood rearing, feeding, or migration habitats for a host of resident and migratory species. They also provide good quality spawning and nursery habitat for fish that inhabit the Minnesota River.

Floodplain forests historically dominated much of the floodplain along the Minnesota River and its tributaries. Today, this plant community remains on several of the Refuge river units. Typical tree species found in these seasonally flooded areas include silver maple, cottonwood, American elm, green ash, box elder, and occasionally, bur oak. The understory of these forests is generally open and in places the groundcover consists of wood nettle. In the past several years, former Refuge croplands that were historical floodplain forest have been replanted with species typical of this community with limited success.

Oak forests dominated by northern pin and white oaks are the most common upland forest community on the Refuge. These stands occur on nutrient-poor hillsides and well-drained sandy soils along the Minnesota River Valley. They also contain overstory trees such as ash, elm, and maple. The shrub layer in these communities is frequently dense where American hazel, dogwood, and black raspberries are commonly found. The control of European buckthorn, a prolific exotic in some of these plant communities, is a considerable challenge.

Oak savanna is critically imperiled throughout the Midwest. This plant community is characterized by scattered individuals and clumps of oaks growing with an understory dominated by prairie grasses and forbs. Many of today’s oak forests were oak savanna prior to European settlement and the subsequent control of fires. Natural regeneration of this plant community without a natural fire regime is rare due to the inability of oak to reproduce under forest canopies. Many other historic savannas have been lost due to conversion to production agriculture or urbanization. Since 1994, several oak savanna restoration sites have been
identified on the Refuge. Restoration has been initiated on these sites through a combination of mechanical treatment and prescribed burning. Initial results are encouraging as evidenced by the return of an understory of native grasses and forbs.

Remnant native prairie is some of the most diverse and important plant communities that exist in the Midwest. These rare and unique grasslands on Refuge units include both mesic and dry prairie and they are frequently interspersed with woodland areas, especially those forested sites protected from periodic fires. Mesic prairie is dominated by tall grasses including big bluestem and Indian grass. Medium-height grasses such as little bluestem and sideoats grama dominate dry prairies. Both mesic and dry prairies found on the Refuge contain shrubs such as leadplant and wild rose. Pasque flower and purple prairie clover are commonly found in both plant communities.

Native grassland restoration has occurred on upland sites of Refuge units, easements, and associated private lands for many years. Former croplands are typically planted to native grass mixtures consisting of big bluestem, little bluestem, switch grass, sideoats grama, and Canada wildrye. A mixture of forbs is also planted to enhance the biological diversity of many of these sites.

Several small streams exist on the Refuge and some of these streams historically supported native brook trout. Some streams originate from springs within the bluff and bluff-floodplain transition zone of the Minnesota River. Several of the streams have a continual supply of cool, well-oxygenated ground water and support a variety of aquatic organisms. The streams also serve as a water source for many of the Refuge wetlands. The origins of the larger streams, such as Sand Creek, are in the watershed above the river valley, and are impacted by the dominance of agriculture throughout the watershed.

Horseshoe Lake on the Rapids Lake Unit is one of two deep water habitats on the Refuge. Historically, this lake was an oxbow of the Minnesota River, but it has since become disconnected from the main channel. The depth of this lake is unknown, as is the composition of its fishery. The Refuge shares ownership with private parties on Long Lake, the other deep water habitat on the Rapids Lake Unit. A 1998 fishery survey showed that 18 species of fish, and many large snapping turtles, occupied Long Lake. The most numerous species were black crappie, gizzard shad, black and brown bullhead, and carp. Aquatic exchange with these lakes and the Minnesota River does occur nearly every year during spring flooding. The open water pools serve as a loafing area for waterfowl, marsh birds, and occasional seasonal habitat for shorebirds. The trees surrounding the lakes provide good perch sites for a number of species including herons, bitterns, and raptors such as the Bald Eagle and Red-tailed Hawk.

5.2.2 Wildlife
More than 260 species of birds use the area during migration and 100-150 of these species nest in the Minnesota River Watershed. Bald Eagles use the area for nesting and feeding throughout the year. Every year, 30,000-40,000 waterfowl congregate in the lower portion of the Minnesota River Valley prior to fall migration. This avian diversity is complemented by approximately 50
species of mammals and 30 species of reptiles and amphibians. At least 10 game fish species are found in the river and tributaries including walleye, northern pike, largemouth bass, and channel catfish.

5.2.2.1 Migratory Birds
Migratory birds on the Refuge include both game and nongame species. The Minnesota River and adjacent bottomlands and uplands serve as a major migratory corridor for these birds as they travel between their breeding and wintering grounds.

Waterfowl
The estimated Minnesota breeding duck population (excluding Greater and Lesser scaup) in Minnesota in 2009 was 507,000 (Dexter 2009). This estimate decreased 31% compared to 2008 and was 19% below the long-term average (626,000). Canada goose numbers decreased 4% compared to 2008, but remained 56% above the long-term average. The estimated American coot population was 9,000 in 2009 compared to 56,000 in 2008, and 6,000 in 2007.

Currently over 25,000 Canada geese spend the summer in the Twin Cities Metropolitan Area (MNDNR 2009). Local goose populations have grown to socially unacceptable levels in many areas. Problems include excessive fecal deposits on land and in water, overgrazing of lawns, aggressive behavior by geese towards people and pets, and aircraft hazards at airports (MNDNR 1995). Without hunting and seasonal efforts to trap and remove geese, the goose population would likely number 100,000 or more, and the habitat in the seven county metropolitan area could support an estimated 250,000 geese (MNDNR 2009). Controlled hunting can be successful in populated areas, and local governments are encouraged to keep goose hunting open where possible. Many cities and parks adjacent to the Refuge have plans to manage geese in their local area. Citizens concerned with growing goose populations support local government efforts to reduce restrictions on hunting urban goose populations.

Common waterfowl on the Refuge include Canada Goose, Mallard, Wood Duck, Blue-winged Teal, Gadwall, and American Wigeon. Waterfowl concentrate on Refuge wetlands during spring and fall migration. Canada Goose, Mallard, Wood Duck, and Blue-winged Teal commonly nest on the Refuge.

Other Migratory Game Birds
The American woodcock is a popular game bird throughout eastern North America. The management objective of the Service is to increase populations of woodcock to levels consistent with the demands of consumptive and non-consumptive users (USFWS 1990). In order to accomplish this, annual population estimates and harvest estimates are needed. The Singing-ground survey (SGS) was developed to provide indices to changes in abundance. The Wing-collect Survey provides annual indices of woodcock recruitment. The Harvest Information Program (HIP) utilizes a sampling of woodcock hunters to estimate harvest and days spent afield. SGS data for 2010 indicated that indices for singing American woodcock males in the Central Management Region (which includes Minnesota) are not statistically significantly different from 2009 (Cooper and Parker 2010). Although there were significant long-term
(1968-2010) declines in the breeding population throughout most of the states in the Central Region (Cooper and Parker 2010) data indicate that the long-term population trend of woodcock in Minnesota has remained stable.

The mourning dove is one of the most abundant species in urban and rural areas of North America, and is familiar to millions of people. Mourning doves are included in the treaties with Great Britain (for Canada) and Mexico (U.S. Department of Interior 1988). These treaties recognize sport hunting as a legitimate use of a renewable migratory bird resource. The annual dove harvest is estimated to be between 5% and 10% of the population (Otis et al. 2008). Population assessments such as counts of doves seen and heard are conducted to monitor mourning dove populations. The resulting information is used by wildlife administrators in setting annual hunting regulations (Sanders 2009). Although the Call-count survey showed a decline in doves heard, there were no significant changes in the number of birds seen. Also, according to the Breeding Bird Survey there was a decline in the number of mourning doves heard per route by state in the Central Management Unit (which includes Minnesota) over a ten year time period (2000-2009), however the decline was not statistically significant (Sanders 2009).

The natural histories of rails, gallinules, and snipe make it difficult to estimate their populations. Breeding season data for rails and snipe in Minnesota and the Mississippi Flyway indicate that long term populations are more or less stable (USGS 2010).

Non-Game Migratory Birds
Marsh and waterbirds frequently observed in the valley and surrounding areas include Great Egrets, Double-crested Cormorants, Great Blue Herons, Green Herons, and Black-crowned Night-Herons. A colonial bird rookery consisting of an estimated 750 nests exists on the Wilkie Unit along Blue Lake. The most prolific species of this colony are Great Blue Herons and Great Egrets. Exposed mudflats on Refuge riverbanks and wetlands attract shorebirds including Greater and Lesser Yellowlegs and Spotted Sandpipers. Both Common Snipe and American Woodcock are commonly found on these lands as well.

Neo-tropical migrants attracted to forested habitats include thrushes, vireos and warblers. Several species of grassland birds, including bobolinks, field sparrows, song sparrows, and Eastern bluebirds also use the Refuge. Year-round residents include Downy, Hairy, Pileated and Red-bellied Woodpeckers; Wild Turkeys; and Ring-necked Pheasants. Birds of prey inhabiting Refuge lands include Red-tailed Hawks, American Kestrels, Sharp-shinned Hawks and Cooper's Hawks.

5.2.2.2 Upland Game

Turkey
Minnesota's wild turkey population has continued to expand since the first successful reintroduction in southeastern Minnesota in the 1960's. The 2006 statewide turkey population was estimated at 60,000 birds. The MNDNR's 2011 management goal is to establish and maintain the spring wild turkey population at or above 75,000 in suitable habitats to maximize hunting and viewing opportunities. To meet this goal, the 2006 plan outlined actions for habitat
management, hunting season management, population management, and information and education to ensure a successful management program. Following the 2008 Fall Wild Turkey Population Survey, the MNDNR's data suggest that turkey populations have increased since 2006. A comparison of the distribution of turkeys sighted by deer hunters during the fall 2006 versus 2008 suggest that the range of wild turkeys continues to expand in Minnesota (Dexter 2009).

**Ring-necked Pheasant**
The ring-necked pheasant competes with the ruffed grouse as the most popular upland game bird in Minnesota. A native of Asia, pheasants were introduced to Minnesota after native prairie grouse declined in the late 1800s. According to a MNDNR plan developed in cooperation with Pheasants Forever and others (MNDNR 2005), Minnesota is capable of sustaining high densities of pheasants. Using harvest as an indicator, Minnesota consistently ranks in the top 8 states that have huntable populations of wild ring-necked pheasants. Since 1987, statewide fall population estimates have varied from 1.0 to 2.3 million birds. Most Refuge units with typical pheasant habitat are in the MNDNR's Central Region. This Region contains 5% of the state's grasslands habitat with about 311,000 acres. The Region's population index is down 27% compared to 2008, 27% lower than the 10 year average, and down 43% from the long term (30+ year) average (Dexter 2009). A moderately severe winter throughout the pheasant range in 2008, the first since 2001, resulted in reduced hen counts. In addition, habitat loss reduced nesting opportunities and one period of cool and wet weather at the normal peak of pheasant hatch appeared to reduce early brood survival. Thus, a decrease in the range-wide pheasant index was not surprising. Overall, the size of the fall population will be close to that in 2004. The highest pheasant populations appear to be in the Southwest region, although high numbers also occur in the West Central, Central, and South Central regions (Dexter 2009).

**Other Upland Game**
Data for other upland game bird and small game species is collected by the MNDNR August roadside surveys (Dexter 2009). This data is used to determine annual population indices, 10-year averages, and is compared to historical information. Gray partridge population indices are similar to 2008 but down 71% and 81%, respectively, compared to the 10 year and long term trends (Dexter 2009). There were no significant regional changes from 2008. The number of mourning doves in 2009 increased 26% from last year, and was similar to the 10-year average. Ruffed grouse rarely occur in the vicinity of the Refuge. Eastern cottontail indices are down 46% and 39 % compared to the 10-year and long term average whereas white tailed jackrabbit indices did not change significantly (Dexter 2009). No snowshoe hares are reported in the vicinity of the Refuge. The MNDNR has no published estimates or trends for fox and gray squirrels; however, Refuge staff has observed that they are abundant in suitable Refuge habitat. Conditions for overwinter survival of wildlife in 2009 were probably below average, but reproductive conditions were generally favorable (Dexter 2009).

5.2.2.3 Big Game
White-tailed deer are the only big game species in the vicinity of the Refuge. White-tailed deer represent one of the most important big game mammals in Minnesota. Viewed as being important by both hunters and non-hunters, deer pose serious socioeconomic and ecological challenges for wildlife managers, such as deer-vehicle collisions, crop depredation, and forest
regeneration concerns (Dexter 2009). The MNDNR monitors the status of deer populations. In
2009, deer densities increased 30% since 2008 and were 31% above the 10-year average, and
104% above the long term average (Dexter 2009). According to the 2008 Monitoring
Population Trends Of White-Tailed Deer in Minnesota's Farmland/Transition Zone (Dexter
2008), deer densities were highest in the Big Woods Deer Management Unit which encompasses the Refuge. In addition, simulated deer densities continue to increase. This rate of increase is
most rapid in the Southeast and Metro areas, despite efforts to reduce populations.

White-tailed deer are extremely abundant on the Refuge. Resource agencies cooperatively
monitor the deer population in the Minnesota River valley. In 1989 Federal, state, and local
resource agencies formed a Minnesota Valley Deer Management Task Force to address deer
overpopulation on their interspersed lands. The Task force set a population goal for the deer
herd in the Minnesota River valley at 15-25 deer per square mile (Minnesota Valley Deer
Management Task Force 1990). This is a realistic goal due to the urban nature of this area and
the magnitude of annual harvest that would be required to maintain populations at levels lower
than this density goal. In 2004, the population estimate for deer on the Refuge was 20-25 deer
per square mile (U.S. Fish and Wildlife Service 2004). Excess deer cause habitat damage and
decrease public safety due to a high incidence of deer-vehicle collisions.

Other Mammals
Mammals attracted to aquatic habitats include mink, muskrat, raccoon and beaver. The Refuge
supports relatively high populations of beaver. River otter, once nearly eliminated in this area,
now frequently are seen using Refuge wetlands and river banks. Small mammals typical of this
area include short-tail shrew, white-footed mouse, thirteen-lined ground squirrel, and plains
pocket gopher. Eastern chipmunks and red squirrels are commonly found in forested habitats.
Both big and little brown bats use the Refuge and its associated lands. Red fox are the most
common carnivores of the area followed by coyote and gray fox.

Reptiles and Amphibians
Thirty species of reptiles and amphibians have been reported on the Refuge but little is known
about their populations or their limiting factors. Many of these, such as the snapping and painted
turtles, are associated with marsh and open waters while others, such as the common garter snake
and the western hognose snake, occur in oak savanna and prairie. The singing of chorus frogs is
prevalent throughout the Minnesota River Valley during the spring, and prairie skinks are
observed in the savanna and grassland habitats.

Fish
The Minnesota River is inhabited by an array of fish including game species such as northern
pike, largemouth bass, walleye, bluegill, and crappie. Other species include shovelnose sturgeon
and catfish. Like most other fresh water systems in the United States, high populations of carp
inhabit the Minnesota River and adjacent wetlands. Carp are very abundant and threaten native
species by competing for food and increasing the turbidity of the water they inhabit. Due to
regular spring flooding, many of the Refuge wetlands contain a diversity of fish that originate in
the river. For some species, such as the northern pike these wetlands offer spawning and nursery
habitat.
5.3 Threatened and Endangered Species
There are no Federally listed as threatened, endangered, proposed or candidate species in the areas of the Refuge proposed for hunting. According to the Twin Cities Ecological Services Field Office there are no federally listed or candidate species in Carver, Scott, Sibley and Le Sueur counties. Higgins eye pearlymussel (*Lampsilis higginisi*) is a federally Endangered species that exists in Dakota, Hennepin and Ramsey counties. However, this species range is limited to the Mississippi and St. Croix Rivers, neither of which are within the Refuge boundary. Prairie bush-clover (*Lespedeza leptostachya*), found on native prairie with well drained soils, is a federally threatened species whose range includes Dakota County. The Black Dog Unit is the only Refuge unit in Dakota County and does not include habitat appropriate for prairie bush-clover.

5.4 Cultural Resources
Archeological records show evidence of all cultural periods spanning from the retreat of the glaciers to the present day on the Refuge. Known and potential sites include prehistoric isolated finds, camps, villages, subsistence and procurement stations, quarries, and mounds and human burials. Post Western culture contact Indian villages, trading posts, homesteads, farmsteads (buildings and land), other rural buildings and structures, cemeteries, trails, roads, and railroads, ferries, conservation projects, drainage ditches, open pit mines (e.g., gravel), sacred sites, cultural hunting and gathering areas, and battlefields also occur in the Refuge vicinity. Although American Indian peoples currently live in the vicinity of the Refuge, the Service does not own or manage any American Indian ceded lands.

5.5 Economic Resources
The Refuge lies within a heavily populated urban-suburban area. Recent Refuge expansion activities are moving into exurban-rural areas. Socioeconomic conditions are wide ranging and reflect the dynamic nature of development occurring within the Twin Cities Metropolitan Area and surrounding areas. A resilient economy is spread among agriculture, food processing, computing, printing and publishing, large and small-scale manufacturing, health care, arts and entertainment as well as medical instruments, education and finance. The Metropolitan area is home to about 3.3 million people, and is the 16th largest metropolitan area in the country (Metropolitan Council 2010). The area population increased by 11.8 percent from 1995 to 2005, compared with a 10.0 percent increase for the state of Minnesota and a 11.4 percent increase for the U.S. as a whole. Per capita income in the area is about $42,500 per year. Income increased by 16.4 percent over the 1995-2005 period, while the state of Minnesota and the U.S. increased by 17.3 and 13.2 percent respectively (Metropolitan Council 2010).

The Refuge itself has an annual budget of about $1.7 million and currently provides jobs for 25 full-time and part-time staff. This returns about 2.7 million dollars to the local economy (Carver and Caudill 2007). Based upon 2006 data (Carver and Caudill 2007) updated to reflect 2009 visitation levels and rates of inflation (U.S. Department of Labor 2010), resident and nonresident Refuge visitors annually spend about $8.4 million dollars on Minnesota Valley National Wildlife Refuge based recreational activities. These expenditures include food, drink, lodging, transportation, and equipment.
5.6 Recreational Opportunities
The Twin Cities Metropolitan Area hosts a rich natural environment. Each season offers ample opportunity to explore the natural world in a variety of contexts. Twin Cities parks and lakes are extensive with about 160,000 acres of parkland and 950 lakes in the metro area alone. The Twin Cities region is home to one of the country's largest urban park systems, including 35 regional parks, 11 large regional park reserves, and 22 regional trails. Four state parks are within the region: William O'Brien, Fort Snelling, Afton and the Minnesota Valley Trail (Metropolitan Council 2010). Hiking, fishing, swimming, golfing, snow shoeing, boating, and bike riding are all popular and accessible recreational activities offered at some or all of these parks.

The focal points of the Refuge are its two Education and Visitor Centers. The Bloomington Visitor Center, located in the most downstream and urban portion of the Refuge in Bloomington, Minnesota, features 8,000 square feet of exhibit space, a 125-seat auditorium, two multi-purpose classrooms, a bookstore, an art gallery, and an observation deck. The Rapids Lake Education and Visitor Center, located about 34 river miles upstream in Carver, Minnesota, hosts an interpretive exhibit area, two multi-purpose classrooms, and a bookstore. Environmental education and interpretation are conducted from these facilities. Additional interpretive programs conducted by Park Rangers and volunteer naturalists are offered on numerous Refuge Units. With the exception of closures around administrative buildings and near nesting sites, the Refuge is open for wildlife-dependent uses including wildlife photography, environmental education, interpretation, hunting, fishing and wildlife observation. About 275,000 visitors participate in these activities each year. Hunting is the second most popular wildlife-dependent use of the Refuge (7% of visits). It follows wildlife observation (74% of visits), and precedes interpretation (3%), environmental education (3%), photography (2%) and fishing (1%). Miscellaneous non-wildlife dependent activities comprise 9% of Refuge visits (USFWS 2009).

Non-Service lands are interspersed with Refuge lands throughout the Minnesota River Valley. Many are public lands that support outdoor recreation activities similar to the Refuge, as well as activities not allowed on the Refuge, such as mountain biking, horseback riding, and snowmobiling. Developed and proposed sections of the Minnesota Valley State Recreational Trail crosses several Refuge units.

Hunting, fishing, and related outdoor activities are popular pastimes throughout the state, even within the Twin Cities Metropolitan Area. Migratory bird hunting is in high demand on the Refuge because of it's proximity to the urban population (MNDNR 2006b), allowing hunters to easily access these areas to hunt in the morning or after work. Portions of five Refuge Units are open to the general public for waterfowl hunting. Pheasant and dove are very popular upland hunting pursuits. Turkey hunting continues to grow in popularity among Minnesotans. White-tailed deer are extremely abundant on the Refuge. Deer hunting is the most prevalent hunting activity on the Refuge in terms of hunter visits. Deer hunting by all methods accounted for 53% of Refuge hunting visits. Archery deer hunters comprise 39% of all Refuge hunting visits. Waterfowl hunters account for 33% and small game hunters account for 14%. Turkey hunters account for two percent of Refuge hunting visits.
6.0 ENVIRONMENTAL CONSEQUENCES
This section evaluates the foreseeable environmental consequences of the alternatives described in Section 4.

6.1 Environmental Consequences Common to Developed Alternatives

6.1.1 Infrastructure
Providing hunting opportunities under either alternative will not adversely affect, temporarily or permanently, the Services ability to meet land use goals on any of the units open to hunting. Any additional refuge facility development, such as trailheads or parking lots, will not be for the sole use of hunters and would be developed under either alternative. Parking areas and trailheads will be used by all users of the Refuge, including staff conducting day-to-day operations critical to the mission of the Refuge. There will be a change in wildlife habitat where parking lots and trails are developed as those areas are converted to short grass, gravel, or bare soil but wildlife will still use these areas.

6.1.2 Natural Resources

6.1.2.1 Habitats
The selection of either alternative would not have significant adverse effects on the quality of wildlife habitat or the natural environment. In either instance, the amount of habitat by type would not change from the current situation. With either alternative, some minor trampling of vegetation from hunters using areas other than established trails is expected. We estimate that any specific acre of Refuge land open to hunting is likely to receive two visits total from hunters per year.

Access throughout Refuge units for hunting is typically by foot. Occasionally hunters access some Refuge units via boat from the Minnesota River. This method of access presents no significant adverse impacts to Refuge lands. Some hunters ride bikes along authorized bike routes to access hunting areas. This does not cause significant adverse impacts. On occasion the Refuge allows vehicles beyond parking lots or trailheads to facilitate accessible or youth hunts and is strictly regulated by Special Use Permit (SUP). These permits restrict vehicles to existing trails, service roads, or designated routes and cause no additional impacts.

Impacts to Refuge soils and vegetation by hunters are minimal. Hunting is conducted on foot mostly by individuals or small groups. Typically hunter groups travel in dispersed patterns so soil compaction and vegetation trampling will be minimal.

Boating activity on the Refuge may occur with waterfowl hunting. When waterfowl hunting by boat, hunters would have limited dispersion and in most cases would stay in close proximity to the watercraft. Because Refuge users, including hunters are not allowed to use motorized boats there will be no impacts to air quality or solitude from hunting from boats.

Other potential types of habitat damage specifically attributed to hunting activities, such as littering, are not significant. Refuge specific regulations limit the adverse impact of activities such as cutting of vegetation and the use of screw in steps, through their prohibition.
With the exception of resident Canada geese and white-tailed deer, populations of hunted species are not at levels that could cause habitat damage. The Service has not observed goose damage to habitats on the Refuge. Geese grazing off the Refuge may cause minor problems in isolated areas; however, the Service has not linked Refuge flocks to specific damage or nuisance complaints. Neither Alternative includes actions to significantly change the number of geese taken via hunting.

When populations are high, deer may damage habitat on the Refuge or on nearby public and private lands. Habitat damage on the Refuge and adjacent public lands appears to be localized. The Service receives few complaints of deer damage from suburban landowners adjacent to the Refuge. Although deer densities are above the desired level set by the Minnesota Valley Deer Management Task Force, the implementation of either Alternative would only slightly change overall amounts of adverse impacts on habitat due to deer.

6.1.2.2 Wildlife
With either alternative, no new species would be added to those previously open to hunting.

Hunting may have minor temporary impacts to the general population of animals, both game and non-game species. Some animals will be disturbed as hunters move through occupied habitat or discharge firearms. Disturbed animals will relocate to avoid hunters or flush and expend more energy than if they had remained at rest. Disturbance is not a long term threat to the population because the relocation is temporary and wildlife food is not a limiting factor on the Refuge so animals should be able to readily replace energy reserves. Individuals of game species will be removed from the population by hunter harvest. The impact of harvesting game animals is restricted through bag limits and season length.

Hunting is a highly regulated activity compared to non-hunting activities and generally takes place at specific locations, times, and seasons. These regulations reduce the impact to non-hunted species. Non-hunted areas also are common on the Refuge and provide non-hunted species habitat undisturbed by hunters during the hunt season. Hunting is an appropriate wildlife management tool that can be used to manage harvestable game populations on a Refuge. Some wildlife disturbance will occur during the hunting season. However, when hunting is implemented with proper zoning, regulations, and seasons, hunting impacts will be minimized to non-hunted wildlife populations using the Refuge.

In Minnesota, species to be hunted, hunting seasons, and the number of animals one is allowed to take are set by the MNDNR. In developing annual hunting regulations the MNDNR considers species population trends, the number of hunters pursuing species, and hunter success rate. Overall, wildlife residing on the Refuge exhibits the same population trends and responds to hunting pressure in the same manner as wildlife elsewhere throughout the State. Because Refuge lands are interspersed with lands where hunting is regulated by others and individual wildlife range freely across jurisdictions, the effect of hunting species on Refuge lands will follow statewide trends. For general hunting activities, the Refuge has not required, and is not proposing to require, hunters to register to hunt refuge lands or to report wildlife taken on the Refuge. Our best estimate of hunter activity comes from law enforcement or staff contacts with
hunters in the field. This enables us to approximate hunter visits by general hunting categories but not actual number of hunters because not all hunters contacted and some hunters are contacted multiple times over several visits.

6.1.2.2.1 Hunted Migratory Birds

The Harvest Information Program (HIP) is an annual program in which hunters provide information that helps biologists manage North America’s migratory game bird populations, including woodcock, ducks, geese, rails, snipe, and coots. Hunters’ reports on the kind and number of migratory birds they harvest are used to develop reliable estimates of the total harvest of all migratory birds throughout the country. The information gathered for the harvest surveys assists state and federal biologists make decisions on setting sustainable bag limits for future hunting seasons. Harvest information gathered through HIP helps ensure hunting on the Refuge under either alternative will not significantly impact hunted migratory bird populations.

The harvest estimate during the 2008-2009 season indicated that 658,000 ducks, 288,000 Canada geese, and 24,000 American coots were harvested by approximately 81,000 duck hunters, 59,000 Canada goose hunters, and 4,000 American coot hunters in the State of Minnesota (Dexter 2009). About 95% of Refuge migratory bird hunters pursue waterfowl and account for about 5,981 hunter visits over a 60 day season. In Minnesota, duck hunters on average harvest 8 ducks per season (Raftovich et al. 2010). Season lengths and species limits for waterfowl are set at a flyway level to assist in preventing the overharvest of these species. The hunting framework for waterfowl is developed based on information collected by biologists across the country (in addition to HIP) for the purpose of estimating population levels of waterfowl. Hunting waterfowl on the Refuge under either alternative are subject to the framework set by the flyways and therefore will not significantly effect waterfowl populations.

Estimates from the HIP indicated that U.S. woodcock hunters in the Central Region spent 322,300 days afield and harvested 175,100 woodcock during 2009. Hunters in Minnesota spent 38,300 days afield and harvested 16,000 woodcock during the same season. Approximately 2,000 hunters harvested 2,000 common snipe in Minnesota. Statewide, snipe and woodcock hunters have a 70 – 80% success rate and take on the average of 2 - 3 birds per season. (Dexter 2009). Woodcock and snipe are minor species for Refuge hunters and few birds are taken on the Refuge. Including woodcock and snipe as huntable species in the Refuge’s hunting program will have an insignificant effect on flyway populations.

Mourning dove hunting was added in Minnesota in 2004. During the 2008-2009 season approximately 12,000 hunters harvested about 133,000 mourning doves (Dexter 2009) throughout the state. The statewide dove hunter success rate is about 87% and the successful dove hunter harvests an average of 13 birds per season. Dove seasons and limits are set under the national migratory bird hunting and adaptive management frameworks, so opening the Refuge to hunting will not have an adverse effect on the local, flyway, or national populations.

Rails and snipe are also hunted in the State of Minnesota although large numbers of either species are not taken. During the 2008-2009 season less than 1,000 hunters harvested less than 1,000 rails and gallinules. Rail and gallinule hunters report a 40% success rate and take one bird
on average (Dexter 2009). The Service estimates that less than 10 hunter visits are devoted to rails, snipe and woodcock. As with all migratory birds, the Service and MNDNR monitor populations at local and flyway levels and adjust bag limits to prevent adverse effects to the species due to hunting.

### 6.1.2.2.2 Small Game

The harvest management of small game which includes huntible small mammals (squirrel, rabbit, and hare) and upland game birds (pheasant, grouse, gray partridge) is based on the understanding that small game populations produce a large number of young each year, most of which are available for harvest because they would naturally not survive the winter and add to the next season’s breeding population. Hunting these species is considered a compensatory form of mortality. It allows that a large portion of a small game population could be harvested each fall because, if not taken by hunters, they would likely die prior to the next breeding season from other causes. Compensatory mortality does not reduce subsequent spring breeding population size below what it would have been due to natural mortality. It follows that hunting mortality is compensated by a reduction in natural mortality. This concept of animal surplus relates especially well to r-selected species (i.e., small game animals having high potential for population increase with high annual mortality rates). For example, the annual mortality rate for squirrels can be upwards of 0.40, and cottontail rabbits are known to have up to 0.80 annual mortality rates. Based on this, MNDNR, which administers small game hunting in Minnesota, does not set limits on the harvest of huntible small mammals and resident birds, except turkey.

### Turkeys

Turkey hunting is allowed in the State of Minnesota by permit only in both the spring and fall seasons. In the spring of 2010, 46,548 permits were issued with hunters harvesting 13,467 birds statewide. In the fall 6,607 permits were issued with 1,353 turkeys being harvested statewide.

Most of the Refuge lies within one Turkey Permit Area that includes the entire Twin Cities Metropolitan Area, except for the St. Lawrence Unit which is area 338 and the Jessenland Unit which is in permit area 442. The MNDNR has been increasing the number of permits in recent years as turkey populations have increased. They expect the turkey population to continue to increase in the Refuge vicinity because of the abundance of suitable habitat. In some areas, the MNDNR has started to receive complaints about too many turkeys (MNDNR 2006a). The MNDNR bases the number of permits allotted to the Permit Areas that encompass the Refuge based upon the turkey and hunter populations (Dunton 2010a, Dunton 2010b), not the availability of Refuge lands open to hunting.

In spring 2010, 2,571 turkey permits were issued for the Permit Areas encompassing the St. Lawrence and Jessenland Units of the Refuge. The success rate for spring turkey hunters in this Area is between 29-32% (Dunton 2010b). In fall 2010, 362 permits were issued. Hunters report between a 21-27 % long term success rate for fall turkey hunting (Dutton 2010a). The Refuge provided about 90 turkey hunter visits in the fall 2010; with a 30 day season, these visits may have represented as few as 5 – 10 hunters and 1 – 3 turkeys harvested.
Considering that turkeys are a closely managed species, the number of permits issued for the Permit Area, and the relatively small proportion of the permit area that Refuge lands comprise, it is reasonable to conclude that hunting turkeys on the Refuge under either alternative has no significant adverse impact on local, or regional turkey populations.

**Hunted Small Mammals**

In 2008-2009 in Minnesota, 22,000 hunters harvested 122,000 gray squirrels, 13,000 hunters harvested 51,000 fox squirrels, 5,000 hunters harvested 11,000 snowshoe hares, 18,000 hunters harvested 80,000 Eastern cottontail rabbits, and 2,000 hunters harvested 2,000 white-tailed jackrabbits (Dexter 2009). Hunters pursuing squirrels and rabbits account for about 100 hunter visits to the Refuge which comprise about 15% of small game hunting on the Refuge. In Minnesota, squirrel hunters have about an 85% success rate and take less than 6 squirrels per season. Rabbit hunters have about an 84% success rate, and take about 5 rabbits per season. The season for squirrel and rabbit is about 5 ½ months. Hunters rarely take hares or jackrabbits on the Refuge. Based on this information and the understanding that small game hunting is considered compensatory mortality, hunters of rabbits and squirrels are not substantially adversely affecting those populations on the Refuge.

**Hunted Resident Birds**

Most Refuge small game hunters are pursuing resident game birds, primarily pheasant and gray partridge. These hunters account for 80% of small game hunting visits and 23% of all hunting visits. The Long Range Plan for the Ring-necked Pheasant in Minnesota (MNDNR 2005) calls for increasing the pheasant harvest from its 2005 level of 360,000 roosters to 750,000 by 2025. This increase is linked to the MNDNR’s goal to also increase new grassland habitat acres. In 2008-2009, 107,000 Minnesota hunters harvested 522,000 roosters. Pheasant hunters statewide have about a 77% success rate and successful hunters take about 7 pheasants per year (Dexter 2009). Four thousand hunters harvested 10,000 gray partridge statewide. Partridge hunters statewide have about a 65% success rate and successful hunters take about 3 partridge per year (Dexter 2009). Refuge pheasant and partridge hunters most likely are not as successful as the state average because pheasant densities and hunting prospects are ranked “poor or very poor (MNDNR 2005). Statewide in 2008-2009, 87,000 hunters harvested 318,000 ruffed grouse. We do not anticipate many ruffed grouse being taken by hunters on the Refuge because we are out of the primary range of this species. Based on this information and the understanding that small game hunting, which includes these upland game birds, is considered compensatory mortality; the hunting of pheasants, gray partridge, and ruffed grouse on the Refuge will not have an appreciable adverse effect on the species locally, regionally, or statewide.

**Non-hunted Resident Wildlife and Migratory Birds**

Non-hunted wildlife include non-hunted migratory birds such as songbirds, wading birds, raptors, and woodpeckers; small mammals such as voles, moles, mice, and shrew; reptiles and amphibians such as snakes, skinks, turtles, lizards, salamanders, frogs, and toads; and invertebrates such as butterflies, moths, other insects and spiders. Except for migratory birds and some species of migratory butterflies and moths, these species have very limited home ranges and hunting does not effectively impact their populations regionally.
Disturbance to non-hunted wildlife under either alternative is minimal. Small mammals such as voles and mice are generally nocturnal or secretive. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor of cold-blooded reptiles and amphibians also limits their activity during most of the hunting season when temperatures are low. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Some species of butterflies and moths are migratory and will not be present for most of the Refuge's hunting season. Resident invertebrates are not active during cold weather and would have few interactions with hunters during the hunting season. Impacts to these species due to habitat disturbance related to hunting are negligible at the local and flyway levels.

Direct impacts to non-hunted non-migratory birds such as most woodpeckers and some songbirds including nuthatches, finches, and chickadees are negligible. Secondary impacts to this group of species are also minimal and do not appreciably reduce their numbers at the population level. Shorebirds would not be impacted by hunting since, in most cases, they have already migrated through the area prior to the fall hunting season. Disturbance by hunting to non-hunted migratory birds would not have substantial negative secondary impacts because the majority of hunting does not coincide with the nesting season except in the case of spring turkey hunting. Because turkey hunting is strictly apportioned by quotas within a lottery system and of relatively short duration (30 days) any disturbance to non-hunted species would be minimal. Other disturbance to these species by hunters afield would be temporary in nature. The Refuge has identified important resting and feeding areas for migratory birds and has designated them as no hunting zones.

Migratory birds of prey (eagles, hawks, etc.) are on the Refuge during hunting season but disturbance is minimal. Disturbance to the daily wintering activities, such as feeding and resting, of residential birds might occur but are insignificant because such interactions are infrequent and of short duration when they do occur. Areas around eagle nests are closed to all refuge users, including hunters, during the spring turkey season so there would be negligible adverse impact.

Overall, hunting impacts to non-hunted species and their habitats and impacts to the biological diversity of the Refuge will be insignificant.

6.1.2.3 Big Game
The 2008 data from deer hunting zones that include the Refuge (zones 291, 338, and 601) shows that 5,385 deer were harvested by hunters (Dexter 2009). Deer hunters comprise about 53% of Refuge hunting visits; this amounted to about 9,600 hunter visits in 2009. These deer hunter visits were spread across the 104 days for which the portions of Refuge are open to deer hunting, and is inclusive of the 23 day regular firearms season, the additional 16 days outside this season for special firearms seasons (i.e., 2 days early antlerless season and 14 days for muzzleloader season), and the 104 day archery season, which overlaps the aforementioned firearms seasons. Archers represent about 7,000 (73%) of deer hunting visits. Having the Refuge open to deer hunting does not result in a change in the number of antlerless permits issued by MNDNR because these permits are administered on a much larger scale.
The desire of the Minnesota Valley Deer Management Task Force is to reach a population goal for the deer herd in the Minnesota River valley at 15-25 deer per square mile (Minnesota Valley Deer Management Task Force 1990). Currently the Metro Deer Management Area (MNDNR Permit Area 601) has no limit on the number of antlerless deer that can be harvested. The majority of the Refuge is located in this Permit Area and due to the urban nature of this Permit Area, which limits hunter access to the deer, even this level of regulation has not been able to reduce the deer population to a point where this species no longer negatively impacts the existing natural habitat. It is unlikely that any proposed additional hunting opportunities on the Refuge would appreciably increase the harvest.

6.1.3 Threatened and Endangered Species
It is the policy of the Service to protect and preserve all native species of fish, amphibians, reptiles, birds, mammals, invertebrates, and plants, including their habitats, which are designated threatened or endangered. There are no Federally listed as threatened, endangered, proposed or candidate species in the areas of the Refuge proposed for hunting. According to the Twin Cities Ecological Services Field Office there are no federally listed or candidate species in Carver, Scott, Sibley and Le Sueur counties. Higgins eye pearlymussel (*Lampsilis higginsi*) is a federally Endangered species that exists in Dakota, Hennepin and Ramsey counties. However, this species range is limited to the Mississippi and St. Croix Rivers, neither of which are within the Refuge boundary. Prairie bush-clover (*Lespedeza leptostachya*), found on native prairie with well drained soils, is a federally threatened species whose range includes Dakota County. The Black Dog Unit is the only Refuge unit in Dakota County and does not include habitat appropriate for prairie bush-clover.

No Federally-listed, proposed, or candidate species would be affected by either alternative. The Refuge completed an Intra-Service Section 7 evaluation as required by Service policy for compliance with the Endangered Species Act (Appendix E).

6.1.4 Cultural Resources
Impacts to historical or cultural resources would not be significantly different under either Alternative. While historical or cultural resources occur throughout the Refuge units open to hunting, the Refuge has not documented any adverse effect attributed to hunting activities. While most hunters are focused on the hunt itself, it is likely that some hunters come across historical foundations and buildings located on some of the Refuge units while hunting and may pause at signs or features that interpret these resources. Past vandalism at these sites has not been ascribed to hunters. The cultural resources that occur on the Refuge are below ground and not readily identified. Since hunting activities do not include ground disturbing actions, these resources will remain intact.

6.1.5 Social and Economic Impacts
Hunting activities on the Refuge can affect the local or regional economy in two ways. First, the Refuge expends funds for staff and resources to implement the hunting program. Second, visitors engaging in hunting activities provided by the Refuge generate economic activity for local businesses.
It is estimated that the Refuge spends about $66,000 per year for staff and operations related to the hunting program. These monies mostly are spent in the region and produce a multiplier effect for local businesses valued at about $103,600 (Carver and Caudill 2007, U.S. Department of Labor 2010).

The 2006 report, “Banking on Nature: The Economic Benefits to Local Communities of National Wildlife Refuge Visitation” (Carver and Caudill 2007) identified average daily expenditures for different types of hunting in the USFWS Midwest Region. The expenditures included food, drinks, lodging, transportation, equipment, and other expenses. Based upon expenditures updated to reflect 2009 values (U.S. Department of Labor 2010) and visitation rates (USFWS 2008), Refuge hunters accounted for 18,125 visitor days and spent about $430,000.

Deer-vehicle accidents may be an important economic consideration related to the Refuge’s hunting program. Although deer population density is only one factor in deer vehicle accident rates, a 1992 - 1994 deer reduction program in the vicinity of the Refuge reduced deer vehicle accidents by 30 percent; i.e., 22 incidents (Doerr et al. 2001). The average cost of repair following a deer vehicle collision is about $2,100 (Conover 1995, U.S. Department of Labor 2010). Because neither Alternative evaluated by this EA is expected to significantly reduce deer numbers, deer vehicle accidents and their associated costs would continue.

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” was signed by President Clinton on February 11, 1994, to focus federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The Order directed federal agencies to develop environmental justice strategies to aid in identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in federal programs substantially affecting human health and the environment, and to provide minority and low-income communities’ access to public information and participation in matters relating to human health or the environment. None of the management alternatives described in this EA will disproportionately place any adverse environmental, economic, social or health impacts on minority and low income populations. Actually, implementation of the proposed action alternative will provide a benefit to urban residents living in the Twin Cities Metropolitan Area.

6.1.6 Recreational Opportunities

The implementation of either hunting program alternative will have minimal adverse effect on the non-hunting priority public uses for the Refuge (i.e., fishing, wildlife observation and photography, environmental education and interpretation). Non-hunting recreational activities are separated from hunting activities over time for the seven months of the year when hunting is not offered. In addition, hunting activities are separated through space on certain areas of the Refuge. Hunting is not allowed on all Refuge units or on all areas of units that are open to hunting. Hunting is not allowed near parking lots, trails, or areas designated for outdoor education or interpretation. Further, Refuge specific regulations have been established with the intent of reducing conflicts between these user groups and emphasizing safety for all visitors. Brochures and interpretive signs allow visitors to know where and when hunting is taking place.
on the Refuge to allow visitors to make informed choices for their recreational activities. Some visitors may decide to change where they pursue their non-hunting recreational activities or decide to come back outside the hunting season.

Secondary adverse effects to non-hunting recreational activities are insignificant because neither alternative will significantly reduce the numbers of wildlife available for priority public use. The cumulative effects of either alternative are not significant because of the large amounts of parks and other non-hunted public lands available for non-hunting wildlife-dependent recreation.

6.1.7 Cumulative Impacts
The implementation of either alternative has no significant cumulative impacts on the wildlife populations, either hunted or non-hunted species; the natural environment; cultural resources; social and economic resources; or recreational opportunities. This determination is based on an analysis of potential environmental impacts of hunting on the Refuge together with other projects and actions.

6.1.7.1 Infrastructure
No infrastructure, on the Refuge or off the Refuge, will be modified solely to accommodate the Refuge’s hunting program. Implementing a hunting program as described in either Alternative A or Alternative B will have minimal direct or indirect impacts on public or private infrastructure. Therefore, there will be negligible cumulative impacts to infrastructure at the local, regional, or national level due to administering the hunting program at the Minnesota Valley National Wildlife Refuge as described in either alternative.

6.1.7.2 Natural Resources

Habitats
The Refuge Act identified the purposes for which the Refuge was established (Section 1.0). The Refuge’s CCP (USFWS 2004) further refines those purposes and identifies goals and strategies that would enable the Refuge to fulfill its mission. In implementing the CCP the Service conducts habitat management actions that favor healthy and functional ecological communities on Refuge lands. This approach benefits all wildlife species, including species traditionally hunted. Because habitats are not managed to favor hunted species over other species and are managed to maintain healthy populations of all species, the implementation of either alternative does not result in significant direct, indirect, or cumulative effects to habitats at any scale due to hunting activities.

There are only a few localities on the Refuge or in the vicinity of the Refuge where densities of wildlife populations are at a level that could result in habitat damage. These areas potentially damaged by geese or deer, for example, are not significant on the local scale or in the regional or national context. With such minor impacts based on few animals, any change in animal populations on the Refuge will be inconsequential in a larger context. If nuisance populations of geese or deer become managed by a coordinated effort of organizations at all levels of government in the area, then there may be some improvement in habitat conditions at specific targeted locales. It is not likely that such actions, while positive from a habitat perspective, will result in a significant cumulative impact on any area.
Wildlife
Refuges, including Minnesota Valley National Wildlife Refuge, conduct hunting programs within the framework of State and Federal regulations. The proposed Refuge hunting program rules will be the same as, or more restrictive than, hunting regulations throughout the State of Minnesota. By maintaining hunting regulations that are the same as or more restrictive than the State, individual Refuges ensure that they are maintaining seasons which are supportive of management on a more regional basis. The Refuge consistently coordinates with the State about the hunting program. As a result, changes or additions to hunting on the Refuge will have minor effects on wildlife species in Minnesota. Although the Preferred Alternative will increase hunting opportunities slightly compared to the No Action Alternative, the slight increase in hunter activity will not rise to a significant cumulative effect locally, regionally, or nationally.

Migratory Birds
The Migratory Bird Treaty Act stipulates that all hunting seasons for migratory game birds are closed unless specifically opened by the Secretary of the Interior. The Service annually promulgates regulations (50 CFR Part 20) establishing the Migratory Bird Hunting Frameworks from which States may select season dates, bag limits, shooting hours, and other options for the each migratory bird hunting season. The Frameworks are permissive in that hunting of migratory birds would not be permitted without them. Thus, Federal regulations both allow and limit the hunting of migratory birds.

National Environmental Policy Act (NEPA) (Council on Environmental Quality 1969) considerations by the Service for hunted migratory game bird species are addressed by the programmatic document, "Final Supplemental Environmental Impact Statement: Issuance of Annual Regulations Permitting the Sport Hunting of Migratory Birds (FSES 88-14)," filed with the Environmental Protection Agency on June 9, 1988. The Service published Notice of Availability in the Federal Register on June 16, 1988 (53 FR 22582), and Record of Decision on August 18, 1988 (53 FR 31341). Annual NEPA considerations for waterfowl hunting frameworks are covered under a separate Environmental Assessment and Finding of No Significant Impact. Further, in a notice published in the September 8, 2005, Federal Register (70 FR 53776); the Service announced its intent to develop a new Supplemental Environmental Impact Statement for the migratory bird hunting program. Public scoping meetings were held in the spring of 2006 as announced in a March 9, 2006, Federal Register notice (71 FR 12216).

Waterfowl populations throughout the United States are managed through an administrative process known as flyways. The Refuge is located in the Mississippi Flyway. In North America, the process for establishing waterfowl hunting regulations is conducted annually. In the United States, the process involves a number of scheduled meetings (Flyway Study Committees, Flyway Councils, Service Regulations Committee, etc) in which information regarding the status of waterfowl populations and their habitats is presented to individuals within the agencies responsible for setting hunting regulations. In addition, public hearings are held and the proposed regulations are published in the Federal Register to allow public comment.
Annual waterfowl assessments are based upon the distribution, abundance, and flight corridors of migratory birds. An Annual Waterfowl Population Status Report is produced each year and includes the most current breeding population and production information available for waterfowl in North America (USFWS 2010a). The Report is a cooperative effort by the Service, the Canadian Wildlife Service, various state and provincial conservation agencies, and private conservation organizations. An Annual Adaptive Harvest Management Report (AHM) provides the most current data, analyses, and decision making protocols (USFWS 2010b). These reports are intended to aid the development of waterfowl harvest regulations in the United States for each hunting season. In Minnesota, the MNDNR selects season dates, bag limits, shooting hours, and other options using guidance in these reports. Their selections can be more restrictive, but cannot be more liberal than the AHM allows. Thus, the level of hunting opportunity afforded each State increases or decreases each year in accordance with the annual status of waterfowl populations.

Hunting of migratory birds other than waterfowl is assessed in a similar manner in that species population trends are monitored throughout their range. Via cooperative efforts of public and private partners, populations are monitored when birds are most effectively surveyed. Depending on the species, this may be while they are in their wintering areas, breeding areas, or while migrating. These data are combined with harvest information, such as a HIP, and evaluated to ensure an appropriate annual hunting framework throughout the species range.

Each National Wildlife Refuge considers the cumulative impacts to hunted migratory species through the Migratory Bird Frameworks published annually in the Service’s regulations on Migratory Bird Hunting. Season dates and bag limits for National Wildlife Refuges open to hunting are never longer or larger than the State regulations.

Small Game
Harvest management of small game except turkey is based on the compensatory mortality model. In this model the concept is that these hunted species will not suffer adverse impacts under typical hunting frameworks. Population impacts may become additive, and adverse, if some mortality factor significantly increases. There is no natural or human-induced mortality factor rising to the additive level for upland game to be hunted at the Refuge that would result in significant cumulative impacts in the local or regional context.

Turkey populations are increasing locally and throughout the state. There is no adverse impact to turkeys due to either hunting or non-hunting factors. Hunting turkeys on Refuge lands will not result in any factors changing in a manner that results in cumulative impacts.

White-tailed Deer
White-tailed deer in the vicinity of the Refuge move freely across property boundaries. In the vicinity of rural Refuge units deer population densities are relatively close to target densities compared to the more urban Refuge units where deer hunting is limited. Hunting on rural units may be contributing to overall population management goals -- a desirable cumulative effect. On urban Refuge units deer hunting effects generally are insignificant and thus do not contribute to a cumulative effect. Under either Alternative, it is likely that deer densities will continue to
rise with the low level of hunting on urban Refuge units. Although it does not appear at this time that deer on urban Refuge units are significantly stressed due to overpopulation, an adverse density-dependent population response is possible in the future.

Nongame
Non-hunted species of vertebrate or invertebrate wildlife are not affected by hunting directly or indirectly. With no direct or indirect adverse impacts to non-hunted species there will be no cumulative impacts resulting from the implementation of either hunting Alternative on the Refuge.

6.1.7.3 Threatened and Endangered Species
No threatened or endangered species occur in areas where Refuge hunting would take place so no cumulative impacts will occur.

6.1.7.4 Cultural Resources
Refuge hunting activities do not affect cultural resources under either alternative so there will be no cumulative impacts to such resources.

6.1.7.5 Social and Economic Resources
Economic activity estimated at about $450,000 annually is associated under either alternative. This economic activity, while important to the communities near Refuge units (Section 6.1.5), is minor in the larger context of the Twin Cities Metropolitan Area with it's billions of dollars of economic activity. The economic activity related to deer-vehicle accidents due to high deer densities in the vicinity of urban Refuge units is uncertain, but again, in the larger context of the local or regional economy it would be minor.

The Refuge’s presence in the Metropolitan Area increases the quality of life for some area residents. Even though hunting accounts for the second most user visits, it accounts for less than 10% of use activity. There are no other hunting-specific activities undertaken by the Service on the Refuge that have significant beneficial or adverse effects when compared to or combined with other socially important activities in the area. Refuge hunting activities under either Alternative do not produced significant cumulative effects.

6.1.7.6 Recreational Opportunities
A hunting program implemented under either Alternative evaluated by this EA will provide recreational opportunities for Refuge visitors. These opportunities, while fully appreciated by refuge users wishing to hunt, are important in the urban context where hunting opportunities are limited. In a regional or statewide context, hunting on the Refuge units provides only a small percentage of hunting opportunities.

Hunting is not allowed near or around the Bloomington Visitor Center or the Rapids Lake Education & Visitor Center. Other “no hunting” areas have been established. There is no hunting allowed on, across, or within 100 feet of any road, parking lot or marked trail to minimize conflicts between users. Areas on several Refuge units are closed to hunting and provide space for non-hunting visitors to explore and enjoy the Refuge year round. This helps to reduce or eliminate conflicts between hunters and other user groups.
Non-hunting wildlife-dependent recreational opportunities are available on a variety of other public or private lands locally. There are 14 National Wildlife Refuges in Minnesota and thousands of other public spaces in the state that provide a variety of wildlife habitat suitable for fishing, wildlife observation, photography, environmental education, and interpretation activities. Some non-hunting recreational activities may increase slightly with the transfer of the lands from private ownership to public ownership. However, the increase is not expected to be significant due to the absence of trails and other facilities on those lands. On lands currently under Service ownership, conflicts between recreational user groups are minimal and are expected to remain so. Hunting programs at the Refuge under either Alternative will not result in significant adverse effects at any scale, either by themselves or when combined with non-service actions.

6.2 Environmental Consequences of Alternative A: Maintain Current Hunting Programs on Refuge Lands Previously Opened to Hunting and Not Open Recently Acquired Lands to Hunting (No Action)

Hunting Program to remain as it currently exists on Service lands previously opened to hunting. No recently acquired lands would be open to hunting under Service ownership. Because they have been previously hunted under private ownership, 1,174 acres of Refuge, in effect, will be closed to hunting. No additional special hunts would be provided.

6.2.1 Natural Resources

6.2.1.1 Wildlife

With this alternative, hunting mortality would not affect population sizes for any species because there would be zero hunting mortality. These lands have been hunted under private ownership for decades. Therefore, “zero mortality” is, in effect, a decrease in hunting mortality compared to the lands being hunted under private ownership.

Migratory Birds

Under this alternative migratory bird populations will not change appreciably. Without hunting mortality, populations will experience fluctuations from naturally occurring environmental conditions.

Small Game

Resident birds and mammals such as pheasant, rabbit and squirrel populations are not expected to change appreciably. Populations would experience fluctuations from naturally occurring environmental conditions. Populations may increase slightly on lands closed to hunting; however, some individuals not taken by hunting would die from other compensatory mortality factors.

Big Game

The white-tailed deer populations would experience population fluctuations based on weather and other naturally occurring environmental factors.
6.2.2 Recreational Opportunities
All lands proposed to be opened with the Preferred Alternative presently are open to hunting under private ownership. With the lands being recently acquired and transferred to Service ownership, they are closed to hunting. This results in the loss of hunting opportunities on 1,174 acres of land under Refuge management.

6.2.3 Cumulative impacts
A hunting program implemented under the No Action Alternative will have minor positive and negative direct effects overall. None the less, such effects are insignificant beyond the local area and immediate timeframe. As presented earlier, the effects will not be significant when added to other expected activities. With the recently acquired lands being closed to hunting, there would be no secondary or cumulative impacts accruing offsite to adjacent lands, or larger landscape units.

6.3 Environmental Consequences of Alternative B: Maintain Current Hunting Programs on Refuge Lands Previously Opened to Hunting and Open Recently Acquired Lands to Hunting (Preferred Alternative)
With this Alternative the hunting program would be modified to open 1,174 acres of recently acquired lands on the St. Lawrence and Blakely Units to hunting while not changing the hunting activities on previously opened Refuge lands.

6.3.1 Natural Resources
6.3.1.1 Wildlife
In this section we present estimates of hunting mortality (i.e., take) for several species. These estimates assume that the opened lands have average numbers of huntble individuals, receive average hunting pressure, and hunters experience average success rates. For some species, such as pheasant and dove, we know that these assumptions likely are not reasonable because the lands support less than average habitat quality. For the waterfowl species, it is likely that using averages overestimates the number of animals taken because of the relatively inaccessibility of some waterfowl habitats.

These lands have been hunted under private ownership for decades. The estimates provided below should be evaluated in the context of hunting under private ownership. We estimate that hunting mortality under private ownership could have been as little as 15 – 20 %, or as much as 50%, of our estimates for mortality under public ownership, depending on the species being hunted.

Migratory Birds
Waterfowl populations would not experience a significant increase in hunting mortality because lands currently hunted under management agreement would remain opened to waterfowl hunting. We estimate that opening these lands under Service ownership would result in the taking of about 900 ducks and about 450 geese. Large areas closed to public hunting are immediately adjacent to the lands to be opened so waterfowl could easily move to areas with less hunter pressure.
With this Preferred Alternative about 700 - 800 acres of habitat where moorhen, mourning dove, rails, woodcock, and snipe currently receive relatively low hunting pressure are likely to receive slightly more hunting pressure. That amount of acres is insignificant in the local landscape context because a much larger amount of acres will not be open to public hunting. Based upon statewide averages for hunting pressure and success, opening these lands may result in up to about 800 dove, 2 rails, and 12 woodcock or snipe being taken per year. Considering that context, the effect of opening these areas to hunting will have an insignificant effect on flyway and national populations of these migratory species.

**Small Game**
The harvest of small upland game (all species excluding turkey) would increase very slightly over the Refuge as a whole. As with waterfowl and big game, small upland game is likely to receive slightly more hunting pressure. However, the size of areas likely subject to increased hunting pressure is small relative to areas already open so the increase in hunting mortality will not be significant. We estimate that 100-200 squirrels and rabbits may be taken. Small game populations would continue to experience fluctuations from naturally occurring environmental conditions. The removal of certain individuals from the populations due to hunting will have minor effects.

The number of turkeys harvested on the Refuge will probably increase slightly from an estimated harvest of 1 to about 6. However, this is not expected to appreciably affect the overall number of turkeys harvested in the MNDNR turkey management zones that encompass the Refuge or the overall population of turkeys in these areas. This is because the number of permits issued is strictly regulated by a lottery system administered by MNDNR based on sustainability of the harvest by the local turkey population. Additionally, due to the small area we are proposing to open, any increase in hunting mortality from Refuge hunting activities will be not be significant at the zone, regional, or state levels.

**Big Game**
White-tailed deer harvest likely would not change significantly because lands being opened to hunting under Service ownership are already open to deer hunting under private ownership. We estimate that about 30 deer will be taken annually from the lands opened under this Alternative. The number of additional deer taken would be an insignificant proportion of the local population.

**6.3.2 Recreational Opportunities**
Opening these lands to hunting would increase the Refuge’s hunting land base by about 17%. However, due to the types, quality, and accessibility of the habitats, we do not expect all hunting activities to increase by that amount. Opening these lands would likely increase the number of waterfowl hunting visits by about 5%, upland game hunting visits by about 10%, and big game hunting visits by about 10%.

Under this alternative, impacts to other wildlife-dependant priority recreational uses on the Refuge are expected to be minimal. Non-consumptive uses are generally highest in spring, summer and early fall. The majority of hunting opportunities take place in fall and winter. However, some impacts to other uses may occur. Visitors using the Refuge during hunting seasons and residents in housing developments around Refuge lands may experience an increase
in firearms noise disturbance. Non-hunting visitors that snowshoe and/or cross country ski may come across hunters in the field. Some visitors may plan their visits to avoid coinciding with hunting activities. The quality of the visitor experience, including hunter's experiences, would not be significantly altered under this alternative.

6.3.3 Cumulative impacts
A hunting program implemented under the Preferred Alternative will have minor positive and negative direct effects. None the less, such effects are insignificant beyond the local area and immediate timeframe. As presented earlier, the effects will not be significant when added to other expected activities

6.4 Summary of Environmental Consequences by Alternative
A summary of environmental consequences by alternative are presented in Table 6.4

Table 6.4 – Comparison of Environmental Impact by Alternative

<table>
<thead>
<tr>
<th>Resource Impact</th>
<th>Alternative A (No Action)</th>
<th>Alternative B (Preferred)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatible with the goals of the Refuge</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Habitat</td>
<td>Minor impacts such as trampling of vegetation in off-trail areas would be unchanged. Amounts of undisturbed, resting and feeding areas for waterfowl and other wetland wildlife would remain the same.</td>
<td>Impacts such as trampling of vegetation in off-trail areas, although minor, would occur over a larger area. No change.</td>
</tr>
<tr>
<td>Migratory Birds</td>
<td>Populations fluctuate primarily in response to natural cycles not hunting.</td>
<td>No significant change.</td>
</tr>
<tr>
<td>Upland Game</td>
<td>Populations fluctuate in response to natural cycles not hunting.</td>
<td>No significant change.</td>
</tr>
<tr>
<td>Big Game</td>
<td>Populations fluctuate in response to natural cycles, including habitat damage and disease, not hunting. Does not meet need to reduce deer herd population.</td>
<td>No significant change.</td>
</tr>
</tbody>
</table>

45
Table 6.4 – Comparison of Environmental Impact by Alternative (Continued)

<table>
<thead>
<tr>
<th>Resource Impact</th>
<th>Alternative A (No Action)</th>
<th>Alternative B (Preferred)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threatened and Endangered Species</td>
<td>No impact.</td>
<td>No change.</td>
</tr>
<tr>
<td>Historic and Cultural Resources</td>
<td>No impact.</td>
<td>No change.</td>
</tr>
<tr>
<td>Provides for priority public uses</td>
<td>Yes, satisfies the mandates of the 1997 Refuge Improvement Act.</td>
<td>Yes, satisfies the mandates of the 1997 Refuge Improvement Act.</td>
</tr>
<tr>
<td>Provides for simultaneous hunting and non-hunting activities</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Recreational Use</td>
<td>User conflicts are uncommon.</td>
<td>No change.</td>
</tr>
<tr>
<td></td>
<td>Non-hunting recreational use will remain the same.</td>
<td>No change.</td>
</tr>
<tr>
<td></td>
<td>Hunting recreational use will remain the same or decrease.</td>
<td>No change.</td>
</tr>
<tr>
<td></td>
<td>Does not meet public desire for increase in overall hunting opportunities.</td>
<td>No change.</td>
</tr>
<tr>
<td></td>
<td>Opportunities for special hunts remain the same.</td>
<td>No change.</td>
</tr>
<tr>
<td>Meets the needs of partners and desires of the public</td>
<td>Would not meet the preference of the state and hunting public to increase hunting opportunities.</td>
<td>Would meet the preference of the state and hunting public to increase hunting opportunities.</td>
</tr>
<tr>
<td></td>
<td>Would not reduce the deer population in urban portions of the Refuge via sport hunting.</td>
<td>No change.</td>
</tr>
<tr>
<td></td>
<td>Does not increase opportunities for youth and hunters with disabilities.</td>
<td>Increases opportunities for youth and hunters with disabilities.</td>
</tr>
</tbody>
</table>
7.0 PREPARERS
The following individuals cooperated in the preparation of this document:

Charles Blair, Refuge Manager, U.S. Fish and Wildlife Service, Minnesota Valley National Wildlife Refuge, Bloomington, Minnesota.

Jeanne Holler, Deputy Manager, U.S. Fish and Wildlife Service, Minnesota Valley National Wildlife Refuge, Bloomington, Minnesota.


Rebecca Horton, Biological Technician, U.S. Fish and Wildlife Service, Bloomington, Minnesota.


8.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS CONTACTED

Communities, Conservation Groups and Partner Organizations
Audubon Minnesota
Capable Partners
Carver County Administrator
Carver County Parks
City of Bloomington Parks and Recreation
City of Bloomington Planning
City of Carver Administrator
City of Carver Parks and Recreation Supervisor
City of Chaska Administrator
City of Chaska, Parks and Recreation Supervisor
City of Henderson Administrator
City of Jordan Administrator
City of Shakopee Administrator
City of Shakopee Director of Parks and Recreation
Ducks Unlimited
Friends of the Minnesota Valley
Friends of the Mississippi River
Metro Bowhunters Resource Base
Minnesota Deer Hunters Association
Minnesota Land Trust
Minnesota Department of Natural Resources
   Central Region Headquarters
   Division of Wildlife
   Division of Parks and Trails
   Ecological Services
Minnesota Valley National Wildlife Refuge Trust, Inc.
Minnesota Waterfowl Association
National Wild Turkey Federation
Refuge Friends, Inc.
Scott County Administrator
Scott County Natural Resources Director
Sibley County Commission
The Nature Conservancy
Three Rivers Park District
Trust for Public Land

Print Media
Carver County News
Chaska Herald
Henderson Independent
Jordan Independent
Minnesota Outdoor News
Saint Paul Pioneer Press
Shakopee Valley News
Star Tribune
The Belle Plaine Herald

Federal, State, and Local Elected Officials
U.S. Representative Collin Peterson
U.S. Representative Tim Waltz
U.S. Senator Amy Klobuchar
U.S. Senator Al Frankin
Representative Michael Beard, District 35
Representative Mark Buesgens, District 35
Representative Joe Hoppe, District 34
Representative Terry Morrow, District 23
Senator Julianne Ortman, District 34
Senator Claire Robling, District 25
Senator Kathy Sheran, District 23
9.0 APPROVALS

Submitted by:

Charles W. Blair, Project Leader

Date

Concur:

James T. Leach, Refuge Supervisor Area 3

Date

Richard D. Schultz, Regional Chief
National Wildlife Refuge System

Date

Approved:

Charles M. Wooley
Acting Regional Director

Date

Thomas O. Melius, Regional Director
Region 3, U.S. Fish & Wildlife Service

Date
APPENDIX A – REFERENCES


Minnesota Department of Natural Resources. 1995. Feasibility study on processing nuisance Canada geese for human consumption. 7 pp.


Minnesota Department of Natural Resources. 2009. Homeowners guide to goose problems. 6 pp.


APPENDIX B – ADDITIONAL FIGURES
The following maps show landmarks, parking lots, and current hunting activities for the Wilkie, Louisville Swamp, and Rapids Lake Units.

Figure B-1 Wilkie Unit Current Hunting Opportunities
Figure B-2. Louisville Swamp and Rapids Lake Units Current Hunting Opportunities

Rapids Lake Map Legend
- Rapids Lake Unit: Deer, Waterfowl, Small Game and Turkey Hunting
- No Hunting

Louisville Swamp Map Legend
- Louisville Swamp Unit
- Archery Deer Hunt Only
- Archery Deer, Small Game, Waterfowl and Turkey Hunting

N
Louisville Swamp
Unit
Archery Deer
Only
Archery Deer, Small Game, Waterfowl and Turkey Hunting

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54
APPENDIX C - CONSULTATION AND COORDINATION WITH OTHERS

The following consultation and coordination efforts were conducted in the preparation of this document:

In preparation for the Refuge’s CCP, issue-based focus groups were established to discuss specific Refuge issues. One of these groups, the Recreational Users Focus Group, was made up of individuals representing neighboring counties and cities, State agencies, and other groups such as the Minnesota Wildlife Federation, Minnesota Waterfowl Association, Minnesota River Valley Audubon Chapter, and several public user groups. This group discussed all recreational uses including hunting on the Refuge. Seven open houses were also conducted during 1999 with the primary purpose of obtaining public input into the future direction of the Refuge and the District. Both the focus groups and public meetings led to the development of goals for the draft CCP. A public review period followed the release of the draft plan. In September 2004, the final CCP for the Refuge was approved. A goal of the CCP for the Refuge and District is to provide no less than 14,000 quality hunting experiences for a variety of populations per year. Seventy-five percent of the hunters will report no conflicts with other users, a reasonable harvest opportunity and satisfaction with the overall experience.

In 2004, Refuge staff proposed changes to the current Hunting Plan. In March 2004, Hunting Chapter scoping was conducted with staff from the MNDNR Parks and Wildlife offices to get input on the proposed alternatives for hunting programs on the Refuge and the Refuge began to develop a new Hunting Plan. Since then, the Refuge continued consulting and coordinating with the State regarding Refuge hunting activities on an informal basis.

On March 3, 2005, Refuge staff met with their counterparts from the MNDNR to gather input on the proposed changes to the hunt program. The following staff was in attendance: Diana Regenscheid and Tim Bremicker (Wildlife), Chuck Kartak, Mark Cleveland, and Frank Knoke (Parks), and Scott Carlson (Law Enforcement). Several concerns were raised. A second meeting was held in November and a comment letter was received during March, 2006.

During June of 2005, Londell Pease, Planner for the City of Bloomington, was contacted and provided information on proposed deer hunting in the Bloomington Ferry and Long Meadow Lake Units. He had no concerns with the proposal but asked a proposal be submitted to the City Council for their review and comment.

In November, 2005, the Service again met with staff from MNDNR Parks and Wildlife offices to discuss and gather input on the proposed alternatives for the hunting programs of the Refuge.

During December, 2005, the Service contacted staff from the City of Bloomington concerning the proposed alternatives for hunting on the Refuge within the city.

During May, 2006, the Service contacted staff from the City of Carver concerning the proposed alternatives for hunting on the Refuge.
During July, 2006, a letter was sent to the Administrator of the City of Carver, Jim Elmquist, asking if a variance could be granted to the Service to exempt Refuge lands within the city limits from permit requirements and use of single projectiles for hunting.

On October 16, 2006, the Refuge Manager met with the Carver City Council and City Administrator concerning a request to grant an exemption to the Service to specific City ordinances concerning hunting on Refuge lands that fall within City limits.

In July 2006, Refuge staff met with Dave Guzzi, from Capable Partners Inc, on the Bloomington Ferry Unit where hunting for persons with disabilities is proposed. He said the site would work fine for their program and recommended we move ahead with the proposal to open the area to hunting for turkey, deer and small game for hunters with disabilities.

In the fall of 2007 and 2008, the Refuge met with the City of Bloomington, MNDNR, and Three Rivers Park District to coordinate collection of deer population data. The four agencies also developed plans for a deer culling program focused on natural areas within the City of Bloomington. The culling program was implemented by agency staff without the participation of the general public.

As in previous years, in 2008 and 2009, the Refuge coordinated a Young Waterfowlers program in partnership with the Minnesota Waterfowl Association.

In 2009 the Refuge renewed its efforts to develop a new Hunting Chapter and moved forward with a 2010 Hunting Chapter based upon earlier formal coordination with the MNDNR as well as the intervening informal discussions. The Refuge solicited comments regarding this Hunting Chapter from the MNDNR, as well as resource managers from local units of government. Favorable comments were received on the 2010 Hunting Chapter.

In 2010, the Draft 2011 Hunting Chapter and supporting Draft EA were sent to MNDNR Area and Regional Managers in the Divisions of Fish and Wildlife and in the Division of Parks and Trails.

Following the adoption of this Hunting Plan, consultation and coordination with the MNDNR and others regarding its annual implementation will be a combination of formal and informal activities based upon the nature of the issues to be addressed.
APPENDIX D – RESPONSE TO COMMENTS ON THE HUNTING CHAPTER AND ENVIRONMENTAL ASSESSMENT

The Service solicited public comments for the draft 2011 Hunting Chapter of the Visitor Services Plan for Minnesota Valley National Wildlife Refuge and the supporting draft Environmental Assessment (EA). A 30-day review period began December 3, 2010 and ended on January 4, 2011. Copies of the document were posted on the Refuge website and were available upon request from both the Bloomington Visitor Center and Rapids Lake Education and Visitor Center (EVC). A listening station also was held at the Rapids lake EVC from 8 a.m. till 8 p.m. on Thursday, December 16, 2010, where Refuge staff was available to discuss the proposed Hunting Plan or Environmental Assessment with any interested persons. News releases announcing the availability of the document for review were sent to numerous local media outlets, conservation organizations, and State and local officials.

Three written comments and one verbal comment were received.

**Minnesota Department of Natural Resources – Section of Wildlife (2 responses)**

**Comments**

- Region 3 Wildlife supported the acquisition of the 1,174 acres that make up the Blakely Unit and the St. Lawrence Unit. They also support the identified uses on these properties that are noted in Alternative B – Preferred Action: Maintain Current Hunting Programs on Refuge Lands Previously Opened to Hunting and Open Recently Acquired Lands to Hunting.
- Support providing additional high quality hunting opportunity in the vicinity where 70 percent of Minnesotans live.
- Look forward to continued flexibility and concerted efforts to open more lands for general and special hunts even beyond those necessary for population control.
- Endorse opening lands to public hunting. It will provide much needed outdoor recreation opportunities for citizens that live and work in the metropolitan area.
- May also want to consider additional harvest options by offering public trapping of furbearers as well.

**Response**

We appreciate the comments of the MNDNR, Section of Wildlife on our 2011 Hunt Chapter and EA. We look forward to continuing to work with the MNDNR staff and local municipalities in managing wildlife populations, especially where adequate data documents the need to control populations. The Refuge’s trapping program is not within the scope of the Hunting Chapter of the Visitor Services Plan. However, we will consider the need to trap these units for population and habitat management purposes during our annual review of our trapping proposals for the Refuge.
Minnesota Department of Natural Resources – Parks and Trails Division

Comments

- Support the concept of retaining hunting opportunities on recently acquired lands.
- Would like to insert information on DNR’s Carver Rapids Unit. It is encompassed by the Louisville Swamp Unit of the Refuge, but has different hunting regulations. Would like to work with Refuge to communicate hunting differences on Refuge and SRA units to reduce confusion by the public.
- Like the idea of increasing visibility of LE and hunter adherence to state and federal regulations.
- Like the idea of simplifying things for the hunting public. Have Refuge and DNR regulations be the same where possible.
- Division of Parks and Trails is working on rule revisions, and would like to continue working with Refuge as these rules are established to reduce confusion by the public.

Response

We appreciate the comments from the MNDNR, Division of Parks and Trails and agree that coordinating Refuge seasons and bag limits with those for adjacent non-Refuge public lands is beneficial. We also believe that, where possible, keeping consistency throughout the Refuge Units eliminates confusion for hunters. We will continue discussions with the State to determine how we can make our hunting policies more clear to the public. We also will continue to explore the potential for more consistency between Refuge and State land hunting activities.

General Public

Comment

- Concerned about hunting on the Jessenland and Blakely Units. I live nearby and during waterfowl and deer season it sounds like a war zone.
- Concerned about hunters coming onto our land. Many problems over the years with illegal trespass and poaching.
- Have heard stories about the DNR land near the Blakely Unit about people shooting songbirds, poaching deer and leaving remains in woods, shooting every squirrel, etc.
- Unless you have a full time game warden for this area, I don’t think it should be a free for all, open to hunting.

Response

Thank you for your comments. Providing opportunities for hunting is consistent with the Refuge mission and the National Wildlife Refuge System Improvement Act of 1997, which established hunting as one of the “Big Six” recreational uses that can be offered on Refuges. According to the Refuge’s Comprehensive Conservation Plan that was adopted in 2004, “Service owned lands in the Refuge will be open to hunting, subject to state and local regulations and public safety
concerns, where conflicts with other users will not occur, and where biologically feasible (USFWS 2004).”

Hunting is allowed on several units of the Refuge. We have had a very limited number of complaints of trespassing or poaching occurring on or adjacent to the Refuge. In each instance we have tried to address concerns related to Refuge public use or management activities. To safely accommodate concurrent non-hunting recreational activities, we enforce Refuge-specific hunting regulations, as well as Federal laws that protect nongame species of wildlife. The boundaries of land managed by the Service are posted clearly, identifying for Refuge users when they are leaving Refuge lands. The Refuge staff does include a Law Enforcement Officer who patrols all Refuge Units throughout the year. During hunting seasons, he coordinates his patrols with other Federal, State, and local Law Enforcement officers. If a private landowner encounters trespass, poaching, or other illegal activities, the landowner should report the activity to the Refuge Law Enforcement Officer, the State Conservation Officer for the Area, or local law enforcement agencies.
January 5, 2011

Charles Blair  
Refuge Manager  
Minnesota Valley National Wildlife Refuge  
8515 American Blvd E.  
Bloomington MN 55425

Dear Mr. Blair,

Region 3 Wildlife supported the acquisition of an additional 1174 acres that were added to the Minnesota Valley National Wildlife Refuge and identified as the Blakley Unit and the St. Lawrence Unit additions.

We also support the identified uses on these properties (the Blakley Unit, St. Lawrence Unit) that are noted in the Alternative B - Preferred Action on page three or Table 1 of the attachments to your letter that was dated December 8.

Thank you for providing an opportunity to comment, and in particular providing additional high quality hunting opportunity in the vicinity of where 70 percent of Minnesotans live. The current economic situation continues to stress Minnesota households to the extent that outdoor recreation is sought more often closer to home. Also fewer trips are taken to hunt and fish. Thus ensuring the viability of hunting requires that land managers in the urbanizing landscapes find ways to open lands to legitimate and necessary forms of hunting. We look forward to your continued flexibility and concerted efforts to open more lands for general and special hunts even beyond those necessary for population control.

Sincerely,

Tim Bremicker  
Regional Wildlife Manager

cc: Diana Regenschied, Area Wildlife Manager
January 3, 2011

Charles W. Blair
Refuge Manager
Minnesota Valley National Wildlife Refuge
3815 American Boulevard E.
Bloomington, MN 55425

Dear Mr. Blair:

I have reviewed the "Hunting Chapter of Visitor Services Plan" as per your recent request. The 1174 acres of recently acquired Refuge lands and plans to open public hunting on these lands is something that I endorse. Hunting will provide much needed outdoor recreation opportunities for citizens that live and work in this major metropolitan area. Maximizing compatible outdoor activities like hunting will add greatly to the Refuge experience for visitors and will be welcomed by many of your constituents. You may want to consider additional harvest options by offering public trapping of furbearers as well.

I wish you success in this effort.

Sincerely,

Ken Varland
Regional Wildlife Manager

cc: Joe Stangel
    Dennis Simon
    Tim Bremicker
Mark is recommending the following comments to Joel Stedman for formal comment to Charlie Blair, MN Valley NWR Refuge Manager.

- Good that we are trying to retain hunting opportunities on recently acquired lands.
- Would like to insert information regarding DNR's Carver Rapids Unit – wholly encompassed by Refuge (Louisville Swamp) – Differences between CR & Refuge
  - Goal is to have everything the same between Refuge & Carver Rapids; try to get Carver Rapids open to all other activities (species & hunts?) to make things simpler.
- (Pg 6) Increasing visibility of law enforcement & hunter adherence to state & federal regulations.
- Wants to simplify things for hunting public.

Thank you for your comments!

Please send comments to:
Mr. Gerry Shimek
Minnesota Valley NWR
3815 American Blvd East
Bloomington, MN 55425
Gerry Shimek

I'm writing to comment on the draft hunting plan. My concern is the Jessenland and Blakeley units. I live directly across the river from the Jessenland Unit and part of our land adjoins it. It sounds like a war zone during waterfowl and deer hunting season. Is there going to be a full time warden monitoring the Jessenland and Blakeley Units? To keep hunters off of our land? There have been many problems over the years with illegal trespass and poaching in this area. I've heard from neighbors about the DNR land near your Blakeley unit, people shooting songbirds by the bucket full, poaching deer, butchering them in the woods and carrying the meat out in backpacks, shooting every squirrel, leaving no survivors. Hunters asking permission to hunt on private land, being told no and parking further down the road and trespassing anyway. It's not safe for us to walk on our own property during hunting season.

Unless you have a full time game warden for this area, I don't think it should be a free for all, open to hunting. Most of my neighbors agree.

Lynn Albrecht
The Refuge completed an Intra-Service Section 7 evaluation as required by Service policy for compliance with the Endangered Species Act. No Federally listed as threatened or endangered species occur in the areas the Refuge is proposing to hunt.

The Refuge informally consulted with the Regional Archeologist (Kluth 2009) regarding the need to initiate a cultural resources consultation with the State Historic Preservation Officer. Because there are no ground disturbing or construction activities resulting from any alternatives proposed in the 2011 Hunt Plan, no consultation is required.
Intra-Service Section 7 Biological Evaluation Form
Region 3

Originating Person: Vicki Sherry, Wildlife Biologist Date: December 1, 2010

Telephone Number: 952-858-0723

I. Service Program and Geographic Area or Station Name: Minnesota Valley National Wildlife Refuge.

II. Location: Refuge Units within Carver, Dakota, Hennepin, Le Sueur, Scott, and Sibley Counties.

III. Species/Critical Habitat: There are no Federally listed, proposed or candidate species in the areas of the Refuge proposed for hunting. According to the Twin Cities Ecological Services Field Office there are no federally listed or candidate species in Carver, Le Sueur, Scott, and Sibley counties. Higgins eye pearlymussel (Lampsilis higginii) is a federally Endangered species that exists in Dakota and Hennepin counties. However, this species is limited to the Mississippi River and is not located in the Refuge boundary. Prairie bush-clover (Lespedeza leptostachya), found on native prairie with well drained soils, is a Federally threatened species whose range includes Dakota County. The Black Dog Unit is the only Refuge unit in Dakota County and does not include habitat appropriate for prairie bush-clover.

IV. Project Description: The proposed action would include expanding hunting opportunities for migratory birds: geese, ducks, coots, rails, woodcock, common snipe, and mourning dove; upland game: ruffed grouse, ring-necked pheasant, gray partridge, gray squirrel, fox squirrel, snowshoe hare, cottontail rabbit, jackrabbit, and turkey; and big game: white-tailed deer, to existing and newly acquired Refuge units within Carver, Dakota, Hennepin, Le Sueur; Scott, and Sibley Counties, Minnesota.

V. Determination of Effects: There are no federally-listed, proposed, and candidate species or designated or proposed critical habitat in the project areas of Carver, Dakota, Hennepin, Le Sueur, Scott, or Sibley Counties, Minnesota and therefore there are no beneficial or adverse affects.

VI. Determination:

No Effect: This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed/proposed/candidate species or designated/proposed critical habitat of such species. No concurrence from ESFO required.
May Affect but Not Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to cause insignificant, discountable, or wholly beneficial effects to individuals and designated critical habitat. Concurrence from ESFO required.

May Affect and Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to adversely impact individuals of listed species or designated critical habitat of such species. Concurrence from ESFO required.

Not Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. Concurrence from ESFO required.

Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. Concurrence from ESFO required.

Signature (Handwritten)
Date 12-2-2010
Refuge Manager, Minnesota Valley NWR

Signature (Handwritten)
Date 12-3-2010
Field Supervisor, Twin Cities ES Office