

**DEPARTMENT OF THE INTERIOR**

**U.S. FISH & WILDLIFE SERVICE**

**Environmental Assessment  
For  
Proposed Ring-necked Pheasant and Wild Turkey Hunting  
On DeSoto National Wildlife Refuge  
Washington County, Nebraska  
Harrison County, Iowa  
Pottawattamie County, Iowa**

**Regional Director  
Region 3, U.S. Fish & Wildlife Service  
Bishop Henry Whipple Federal Building  
Fort Snelling, Minnesota 55111**

**Project:** DeSoto Refuge proposes to conduct ring-necked pheasant and wild turkey hunts on DeSoto National Wildlife Refuge.

For additional information about this project and this environmental assessment, contact Larry Klimek at DeSoto National Wildlife Refuge, 1434 316th Lane, Missouri Valley, Iowa 51555, telephone (712)642-4121. E-mail [Larry\\_Klimek@fws.gov](mailto:Larry_Klimek@fws.gov)

## 1. PURPOSE AND NEED FOR ACTION

DeSoto National Wildlife Refuge (NWR) was established on March 12, 1958 as authorized by the Migratory Bird Conservation Act of 1929 for "*...use as an inviolate sanctuary or for other management purposes, for migratory birds.*" Later, the refuge Recreation Act of 1962 identified additional purposes for which the refuge was suitable: "*...(1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...*"

The National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd et seq.) provides authority for the Service to manage the Refuge and its wildlife populations. In addition it declares that compatible wildlife-dependent public uses are legitimate and appropriate uses of the Refuge System that are to receive priority consideration in planning and management. There are six wildlife-dependent public uses: hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation. It directs managers to increase recreational opportunities including hunting on National Wildlife Refuges when compatible with the purposes for which the Refuge was established and the mission of the National Wildlife Refuge System.

The purpose of this Environmental Assessment is to evaluate the feasibility of opening DeSoto NWR to upland game hunting. A youth and disabled two day turkey hunt and a public archery turkey hunt would be held in the spring. A youth two day pheasant hunt would also be held. The spring archery turkey hunt would be held on the portion of the refuge where fall archery deer hunting currently is held. The other hunts would be held throughout most of the refuge except for high public use areas.

## 2. PROPOSED ACTION AND THE ALTERNATIVES

This section discusses the alternatives. The alternatives are; 1) no action, which would continue the current hunt programs but no added upland game hunting, or 2) add limited, controlled, upland game hunting at DeSoto NWR.

### 2.1 No Action – Current Management

Under this alternative, hunting would be limited to species currently allowed to be hunted, including deer, ducks and geese. No upland game hunting on DeSoto Refuge.

### 2.2 Proposed Action - Conduct Limited, Controlled, Upland Game Hunting

The proposed action would allow for a two day youth and disabled turkey hunt, and an archery turkey hunt, but would administratively limit the archery hunt to those areas

specified in the refuge-specific regulations. This action would also allow a two day youth pheasant hunt. All or parts of the refuge may be closed to hunting at any time if necessary for public safety, to provide wildlife sanctuary, or for administrative reasons.

### **3. Affected Environment**

The refuge straddles the Missouri River about 25 miles north of Omaha, Nebraska, in Harrison and Pottawattamie Counties, Iowa, and Washington County, Nebraska (Lat 41° 30' N Lon -96° 1' W). The refuge encompasses 8,361 acres within the acquisition boundary, of which 3,861 acres are in Iowa and 4,500 acres in Nebraska. DeSoto Lake is a seven-mile long oxbow lake created in 1960 when the Corps of Engineers excavated a shorter channel and constructed a levee to separate the new lake from the river.

#### **3.1 Vegetation**

Habitat types on the refuge at the end of 2006 included:

- 3,266 acres of forested land that includes mature cottonwood bottomland forest, areas planted to seedling trees and dogwood thickets
- 1,911 acres of grasslands both native warm-season and introduced cool-season grasses
- 1,475 acres of cropland managed in a three-year rotation of corn, soybeans, and wheat/clover
- 1,539 acres of aquatic habitat that includes DeSoto Lake, the Missouri River, moist soil management units, and other managed, ephemeral or semi-permanent wetlands
- 40 acres of sand bars and 127 acres of facilities such as roads, buildings and grounds

#### **3.2 Wildlife Resources**

Approximately 240 species of birds have been recorded on the refuge, 13 of which are considered accidental and 97 known breeding. Waterfowl have been the primary focus of the refuge for many years, with populations of more than 500,000 snow geese and as many as 80,000 dabbling ducks using the refuge, primarily in the fall and winter. Over the past decade these numbers have been steadily declining. Creation of new wetlands and adjustments to management of those units has significantly improved habitat for migratory shorebirds, and conversion of cropland back to tallgrass prairie has improved the area for grassland-dependant birds.

Prior to the release of 16 wild turkeys on the refuge in 1986, turkeys were rare or absent from the refuge. Pheasants were considered abundant on the refuge at that same time (Birds-DeSoto National Wildlife Refuge, checklist 1985). Turkeys are now considered abundant and can be seen throughout the year in flocks of as many as 500 or more birds. In contrast, pheasants have gone from abundant to common and seeing groups of more than 10 pheasants in a field is now an uncommon occurrence.

The list of mammals includes 41 species, 32 of which have been recorded on the refuge and nine species that could potentially occur since the refuge falls within their known range. Reptiles and amphibians include 42 species, 24 of which are known to occur on the refuge and 18 species that could potentially occur since the refuge falls within their known range. Invertebrates have not been inventoried and would probably comprise several thousand species.

### **3.3 Threatened and Endangered Species**

The only federally listed threatened or endangered species that regularly occurs within the affected area of the refuge is the Bald Eagle (threatened). One pair of bald eagles has nested on the refuge since 2002, and up to 120 eagles spend the winter on or adjacent to the refuge. Wintering eagles typically do not arrive in the area until late November. In late February and March, eagle numbers increase during the northward migration.

### **3.4 Cultural Resources**

The body of federal historic preservation laws has grown dramatically since the enactment of the Antiquities Act of 1906. Several themes recur in these laws, their promulgating regulations, and more recent Executive Orders. They include: 1) each agency is to systematically inventory the “historic properties” on their holdings and to scientifically assess each property’s eligibility for the National Register of Historic Places; 2) federal agencies are to consider the impacts to cultural resources during the agencies’ management activities and seek to avoid or mitigate adverse impacts; 3) the protection of cultural resources from looting and vandalism are to be accomplished through a mix of informed management, law enforcement efforts, and public education; and 4) the increasing role of consultation with groups, such as Native American tribes, in addressing how a project or management activity may impact specific archaeological sites and landscapes deemed important to those groups. The U.S. Fish and Wildlife Service, like other federal agencies, are legally mandated to inventory, assess, and protect cultural resources located on those lands that the agency owns, manages, or controls. The Service’s cultural resource policy is delineated in 614 FW 1-5 and 126 FW 1-3. In the FWS’s Midwest Region, the cultural resource review and compliance process is initiated by contacting the Regional Historic Preservation Officer/Regional Archaeologist (RHPO/RA). The RHPO/RA will determine whether the proposed undertaking has the potential to impact cultural resources, identify the “area of potential effect,” determine the appropriate level of scientific investigation necessary to ensure legal compliance, and

initiates consultation with the pertinent State Historic Preservation Office (SHPO) and federally recognized Tribes.

DeSoto NWR currently has two recorded properties. They are the wreck site of the steamboat *Bertrand* and the Cinninnatti Township ferry landing.

### **3.5 Socio Economic**

DeSoto Refuge lies between the communities of Blair, NE and Missouri Valley, IA. These communities are rural in character and have an agriculture base. Agriculture is dominated by corn, and soy beans. There is some cattle, chicken and hog production in the area. There is a strong hunting and fishing tradition in the surrounding area.

## **4. ENVIRONMENTAL CONSEQUENCES**

This chapter describes the foreseeable environmental consequences of implementing the two management alternatives in Section 2. When detailed information is available, a scientific and analytic comparison between alternatives and their anticipated consequences is presented, which is described as “impacts” or “effects.” When detailed information is not available, those comparisons are based on the professional judgment and experience of refuge staff and Service and State biologists

### **4.1 Effects Common to all Alternatives**

#### **4.1.1 Environmental Justice**

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” was signed by President Bill 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. This assessment has not identified any adverse or beneficial effects for either alternative unique to minority or low-income populations in the affected area. Neither alternative will disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low-income populations.

#### **4.1.2 Public Health and Safety**

Each alternative would have similar effects or minimal to negligible effects on human health and safety.

#### **4.1.3 Refuge Physical Environment**

Impacts of each alternative on the refuge physical environment would have similar minimal to negligible effects. Some disturbance to surface soils, and vegetation would occur in areas selected for hunting; however effects would be minimal. Hunting would benefit vegetation as it is used to keep many resident wildlife populations in balance with the habitat's carrying capacity. The refuge would also control access to minimize habitat degradation.

Impacts to the natural hydrology would have negligible effects. The refuge expects impacts to air and water quality to be minimal and only due to refuge visitors' automobile emissions. The effect of these refuge-related activities on overall air and water quality in the region are anticipated to be relatively negligible. Implementation of the proposed action would not impact adjacent landowners or users.

Impacts associated with solitude are expected to be minimal given time and space zone management techniques, such as seasonal access and area closures, used to avoid conflicts among user groups.

#### **4.1.4 Cultural Resources**

Under each alternative, hunting, regardless of method or species targeted, is a consumptive activity that does not pose any threat to historic properties on and/or near the Refuge.

#### **4.1.5 Facilities**

Maintenance of existing facilities (i.e. parking areas, roads, and trails) will cause minimal short term impacts to localized soils and waters and may cause some wildlife disturbances and damage to vegetation.

## **4.2 Summary of Effects**

### **4.2.1 Impacts to Habitat**

#### *No Action Alternative*

Under this alternative, no upland game hunting would be allowed on the refuge. The current hunt programs would continue. Upland game hunters would not be trampling vegetation, however, other hunters and non-consumptive users would still be able to walk the same area.

#### *Proposed Action Alternative*

The upland game hunters would trample some vegetation; however, this would be minimal when compared to other uses of the refuge. The refuge has an annual average visitation of 250,000 people. Thousands of these visitors experience the refuge by walking trails, bicycling, wildlife photography, etc. Hunter density, for example during the turkey hunt, would be an average of one hunter to over 220 acres over two days time. Refuge regulations do not permit the use of ATV's. All vehicles would be confined to existing roads and parking lots.

### **4.2.2 Impacts to Hunted Wildlife**

#### *No Action Alternative*

Additional mortality of individual hunted pheasants and turkey would not occur. Disturbance by hunters to hunted wildlife would not occur; however, other public uses that cause disturbance, such as wildlife observation and photography, would still be permitted.

The pheasants are common on the refuge. Northern bobwhite quail are observed regularly but in very low numbers. Sharp-tailed grouse have been observed in isolated incidents. These two native species are in competition for food with the exotic pheasants.

#### *Proposed Action Alternative*

Additional mortality of individual hunted animals would occur under this alternative. A high estimate of 50 pheasants and 30 turkeys would be taken per year in the hunts.

Hunter disturbance would occur; however, the proposed hunts would be limited primarily to short-term disturbance and displacement.

### **4.2.3 Impacts to Non-hunted Wildlife**

#### *No Action Alternative*

No disturbance from upland game hunters would occur under this alternative. Direct competition of quail and grouse with the non-native pheasants would continue or escalate and the pheasant numbers could climb.

#### *Proposed Action Alternative*

Indirect impacts to non-hunted resident wildlife during the proposed hunts would be limited primarily to short-term disturbance and displacement due to the activity of hunters moving into and out of the hunting area. Pheasant hunters would be mainly in the grassland and croplands during the fall while turkey hunters would be in forested areas in the spring thus separating these minor disturbances in time and space. The number of hunters will be kept low; for example the turkey hunt would have a hunter density of one hunter per 220 acres.

### **4.2.4 Impacts to Endangered and Threatened Species**

#### *No Action Alternative*

No additional, beyond the current public use levels, disturbance to threatened and endangered species would occur.

#### *Proposed Action Alternative*

The bald eagle pair that nests on the refuge may be disturbed by spring turkey hunters. The nest area would be off limits to the hunters and this combined with a limited number of hunters during a short time would greatly minimize any disturbance. The fall pheasant hunt would have little disturbance to the eagles due to the fact that by November the eagles are using the river and lake to hunt waterfowl.

The Section 7 Evaluation associated with this assessment was conducted, and it was determined that the proposed action is not likely to adversely affect any threatened or endangered species.

### **4.2.5 Impacts to Refuge Facilities**

#### *No Action Alternative*

There would not be any impacts to facilities under this alternative

### *Proposed Action Alternative*

There would be some addition damage to roads. However, the limited amount of hunter use would be very minimal compared with the large number of visitors that come to DeSoto each year.

No ATV's, snowmobiles, camping, etc., is allowed on the refuge.

### **4.2.6 Impacts to Wildlife Dependant Recreation**

#### *No Action Alternative*

Under this alternative the public would not have the opportunity to harvest a renewable resource, participate in wildlife-dependant recreation that is compatible with the purposes for which the refuge was established, and have an increased awareness of DeSoto NWR and the National Wildlife Refuge System. The refuge would also be missing an opportunity to promote hunter education and ethics to youth hunters. The Refuge would also not have the chance to partnership with the National Wild Turkey Federation and Wheelin' Sportsmen.

#### *Proposed Action Alternative*

With the high levels of visitation on DeSoto Refuge, conflicts between user groups have arisen. Experience has proven that time and space zoning (e.g., establishment of separate use areas, use periods, and restrictions on the number of users) is an effective tool in eliminating conflicts between user groups. The youth, disabled and archery turkey hunts; and the youth pheasant hunt coincide with no other hunt season. These hunts are also very limited in the number of hunters. They are also held in areas where the general public is not actively participating in other wildlife-dependant recreation activities.

The public would be allowed to harvest a renewable resource, and the refuge would be promoting a wildlife-dependant recreational opportunity that is compatible with the purpose for which the refuge was established. The public would have an increased awareness of DeSoto NWR and the National Wildlife Refuge System and public demand for more hunting would be met. The public would also have the opportunity to harvest a renewable resource in a historically traditional manner, which is culturally important to the local community. This alternative would also allow the public to enjoy hunting at no or little cost in a region where private land is leased or not available for hunting. This alternative would allow youth the opportunity to experience a wildlife-dependant recreation, instill an appreciation for and understanding of wildlife, the natural world and the environment and promote a land ethic and environmental awareness.

## **4.3 Cumulative Impacts Analysis**

### **4.3.1 Anticipated direct and Indirect Impacts of Proposed Action on Wildlife Species**

#### **4.3.1.1 Resident Game**

##### **4.3.1.1.1 Wild Turkey**

Turkeys are non-migratory and therefore hunting only impacts the local population. Proposed turkey hunting on the refuge would be limited to a two day hunt for 35 youths and 12 disabled hunters and archery hunters during the spring. Each hunter would be allowed to harvest only one bearded or male turkey. The youth and disabled hunters would use land that is closed to other public uses, and other blocks of timber that the general public does not access.

State biologists with the Nebraska Game and Parks Commission (NGPC) state that “Turkey populations in Nebraska have been increasing, so much so that this year’s spring turkey hunt will allow hunters 3 permits instead of the usual 2.” Iowa Department of Natural Resources (IADNR) upland game biologist states that “Wild turkey populations in Iowa are doing excellent, with nearly 60,000 turkey hunters taking to the woods during the 2006 spring season. Spring harvest in 2006 topped 22,000,…” This indicates that the local turkey population has withstood hunting on surrounding private lands for years without negative cumulative effects on turkey. Therefore the Refuge should not cumulatively adversely impact the population by providing a two day hunt for 35 youths and 12 disabled hunters, along with approximately 20 archery hunters that could harvest a maximum total of 67 turkeys.

##### **4.3.1.1.2 Ring-necked Pheasants**

Pheasants are non-migratory and therefore hunting only impacts the local population. Proposed pheasant hunting on the Refuge would be limited to a two day fall hunt for 25 youths. The hunting area would consist of agricultural fields and grasslands on the Refuge. These areas are not open to the public in November when the hunt would be taking place, so conflicts between user groups would be negligible.

State biologist with the Nebraska Game and Parks Commission state that “Nebraska pheasant hunters reported the highest rates of success since the mid-1990’s last year . Our two main summer population surveys suggest hunters should find similar numbers of roosters this year in most regions.” Iowa Department of Natural Resources upland game biologist states that data from their survey “...routes in 2006 were 17 percent below Iowa’s 10 year average...” This was “...attributable to weather conditions.” The report goes on to state that “...Iowa pheasant hunters should harvest between 700,000 and 750,000 roosters this fall.” This indicates that the local ring-necked pheasant population has withstood hunting on surrounding private lands for years without negative cumulative effects on pheasants. Therefore the Refuge should not cumulatively adversely impact the population by providing a two day hunt of 25 youth hunters that could harvest a maximum of 75 pheasants.

#### **4.3.1.1.3 White-tailed Deer**

During the upland game hunts the cumulative effects of disturbance to deer would be negligible. The hunter density and short duration of the hunts would limit encounters between the hunters and deer. The Refuge has estimated that peak hunter density would be one hunter per 220 acres during the upland game hunts. Refuge regulations further mitigate possible disturbance by hunters to deer. Vehicles are restricted to roads and the harassment or taking of any wildlife other than the game species legal for the season is not permitted. Also, no ATV or snowmobiles are allowed.

#### **4.3.1.2 Non-hunted Wildlife**

Non-hunted wildlife would include non-hunted migratory birds such as songbirds, wading birds, raptors, and woodpeckers; small mammals such as voles, moles, mice, shrews, and bats; 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 bats, butterflies and moths, these species have very limited home ranges and hunting could not affect their populations regionally; thus, only local effects will be discussed.

Disturbance to non-hunted migratory birds could have regional, local, and flyway effects. Regional and flyway effects would not be applicable to

species that do not migrate such as most woodpeckers, and some songbirds including cardinals, titmice, wrens, chickadees, etc. The cumulative effects of disturbance to non-hunted migratory birds under the proposed action are expected to be negligible for the following reasons. Some disturbance to the daily wintering activities, such as feeding and resting, and minor disturbances during nesting of birds might occur. Disturbance to birds by hunters would be less due to the low hunter numbers in the archery hunt and short duration of the gun hunts than that caused by non-consumptive users.

The cumulative effects of disturbance to non-hunted non-migratory small mammals under the proposed action for the fall pheasant hunt are expected to be negligible for the following reasons. Small mammals, including bats, are inactive during early winter when the pheasant hunting season occurs. These species are also nocturnal. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor by cold-blood reptiles and amphibians also limits their activity during the hunting season when temperatures are low. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Encounters with reptiles and amphibians in the early fall are few and should not have cumulative negative effects on reptile and amphibian populations. Invertebrates are also not active during cold weather and would have few interactions with hunters during the hunting season.

During the spring turkey hunts the cumulative effects of disturbance to non-hunted small mammals would be negligible. The hunter density and short duration of the hunts would limit encounters between the hunters and non-hunted mammals. The Refuge has estimated that peak hunter density would be one hunter per 220 acres. Vehicles are restricted to roads and the harassment or taking of any wildlife other than the game species legal for the season is not permitted. Also, no ATV or snowmobiles are allowed.

Although ingestion of lead-shot by non-hunted wildlife could be a cumulative impact, it is not relevant to DeSoto NWR because the use of lead shot would not be permitted on the Refuge for all upland game hunting.

Some species of bats, butterflies and moths are migratory. Cumulative effects to these species at the “flyway” level should be negligible. These species are in torpor or have completely passed through western Iowa by the time the pheasant hunt in November would take place. During the spring hunting when these species might be migrating hunter interaction would be much less than that of non-consumptive users.

### **4.3.1.3 Endangered Species**

The only federally listed threatened or endangered species that regularly occurs within the affected area of the refuge is the Bald Eagle (Threatened). One pair of bald eagles has nested on the refuge since 2002, and up to 120 eagles spend the winter on or adjacent to the refuge. Wintering eagles typically do not arrive in the area until late November which is after the fall pheasant hunt. In late February and March, eagle numbers increase during the northward migration. Because the proposed pheasant hunt is during early November, impacts to nesting or wintering eagles would be limited to possible temporary disturbance. The turkey gun hunt is typically in mid-late April, during the late incubation and early nestling stages, however the eagle nesting area is posted as closed and hunting is not allowed in the area around the nest. The archery turkey hunt is over a mile away from the nest. The majority of the eagles that use the refuge during the winter or on migration would have left the area before the turkey hunt.

Refer to the Section 7 Evaluation for the Upland Game Hunting on DeSoto NWR for more information.

## **4.3.2 Anticipated Direct and Indirect Impacts on Refuge Programs, Facilities, and Cultural Resources.**

### **4.3.2.1 Wildlife-Dependant Recreation**

With the high levels of visitation on DeSoto Refuge, conflicts between user groups have arisen. Experience has proven that time and space zoning (e.g., establishment of separate use areas, use periods, and restrictions on the number of users) is an effective tool in eliminating conflicts between user groups. The youth and disabled turkey hunt, archery turkey hunt, and the youth pheasant hunt coincide with no other hunt season. These hunts are also very limited in the number of hunters. They are also held in areas where the general public is not actively doing another consumptive or non-consumptive activity. Therefore, other wildlife-dependant recreation would continue with no significant changes.

### **4.3.2.2 Refuge Facilities**

The Service defines facilities as: “Real property that serves a particular function(s) such as buildings, roads, utilities, water

control structures, raceways, etc.” Under the proposed action those facilities most utilized by hunters are: roads, parking lots, and trails. These facilities are open to the public to accommodate Refuge management operations and general public uses such as wildlife observation and photography. The addition of these limited hunts will have very negligible effects on Refuge facilities.

#### **4.3.2.3 Cultural Resources**

Hunting, regardless of method or species targeted, is a consumptive activity that does not pose any threat to historic properties on and/or near the Refuge. In fact, hunting meets only one of the two criteria used to identify an “undertaking” that triggers a federal agency’s need to comply with Section 106 of the National Historic Preservation Act. These criteria, which are delineated in 36 CFR Part 800, state:

1. an undertaking is any project, activity, or program that can alter the character or use of an archaeological or historic site located within the “area of potential effect;” and
2. the project, activity, or program must also be either funded, sponsored, performed, licensed, or have received assistance from the agency.

Consultation with the pertinent State Historic Preservation Office and federally recognized Tribes is, therefore, not required.

#### **4.3.3 Anticipated Impacts of Proposed Hunt on Refuge Environment and Community**

It is expected that some minor disturbance to soils and vegetation will occur as a result of people engaging in the proposed hunting activities. Air quality will also experience minor impacts due to increased fossil fuel emissions as people travel to and from hunting areas. The refuge is not known for its ability to provide solitude due to the proximity of highway traffic, freight trains, farming equipment, boat traffic on the river, and other such disturbance so the temporary increase in public use during the proposed hunts would not significantly affect this character of the refuge environs.

Lands adjacent to the refuge are predominantly agricultural and sparsely populated, and hunting is a common past-time in the area, so the brief increase in activity on the refuge would have little effect on the public,

refuge visitors, and nearby residents. The economic impact of the proposed hunting would be a relatively minor increase in sales of hunting licenses and ammunition to the limited number of people participating in these hunts.

The new hunts would result in a net gain of public hunting opportunities positively impacting the general public.

#### **4.3.4 Other Past, Present, Proposed, and Reasonable Foreseeable Hunts and Anticipated Impacts**

Cumulative effects on the environment result from incremental effects of a proposed action when these are added to other past, present, and reasonably foreseeable future actions. While cumulative effects may result from individually minor actions, they may, viewed as a whole, become substantial over time. The hunting program at DeSoto NWR has been designed so as to be sustainable through time given relatively stable conditions. Changes in refuge conditions, such as dramatic changes in habitat or public use, are likely to change the anticipated impacts of the current plan and would trigger a new hunt planning and assessment process.

At DeSoto Refuge hunting for white-tailed deer has occurred on the refuge since 1968, and a controlled waterfowl hunt, primarily for snow geese, was initiated in 1974 and discontinued in 2003. Current deer hunts consist of four gun hunts; two antlerless-only hunts in October, one either sex hunt in December, and one antlerless-only hunt in January; and an archery hunt. In addition to providing wildlife dependant recreational opportunities, these hunts are a management tool to maintain a healthy deer population.

The current population of wild turkeys on the refuge has expanded from 14 turkeys released on the refuge in 1986 to an estimated population of 900-1,300 turkeys. There has been quite a bit of public interest in turkey hunting on the refuge. Numerous inquiries about expanding the number of hunting opportunities are received each year. It is conceivable that additional turkey hunting opportunities could be added in the future. These would probably be in the form of short-duration hunts with limited numbers of hunters, similar to the existing hunts on the refuge. Pheasant populations on the refuge appear to be stable so expanding the hunting opportunities is probably not warranted.

Impacts of increasing the number of turkey hunts would be dependant on the timing and duration of the hunts and the number of hunters permitted. If conducted in the same manner as the existing hunts, only minor, temporary disturbance to other wildlife would be expected. Other wildlife-dependant recreational activities would likely be unaffected.

#### **4.3.5 Anticipate Impacts of Individual Hunts are Allowed to Accumulate**

National Wildlife Refuges, including DeSoto NWR, conduct hunting programs within the framework of State and Federal regulations. DeSoto NWR is at least as restrictive as the States of Nebraska and Iowa and in many cases more restrictive. By maintaining hunting regulations that are as, or more, restrictive than the two states, individual refuges ensure that they are maintaining seasons which are supportive of management on a more regional basis. The proposed upland game hunting is supported by the Nebraska Game and Parks Commission and the Iowa Department of Natural Resources. Additionally, refuges coordinate with both agencies annually to maintain regulations and programs that are consistent with the State management program.

## REFERENCES

Nebraska Game and Parks Commission. Dr. Jeffrey Lusk, Upland Game Program Manager. E-Mail correspondence; Subject Turkey & Pheasant Status. Dated 02/23/2007.

Iowa Department of Natural Resources. Internet website. "Wild Turkey Hunting Outlook for Iowa, Spring 2007".

Nebraska Game and Park Commission. Internet website. "Nebraska 2206 Upland Game Hunting Outlook".

Iowa Department of Natural Resources. Todd Bogenschutz, Upland Game Research Biologist. E-Mail correspondence; Subject Pheasant Trend Data for Pheasant in Iowa. Dated 02/27/2007

## APPENDIX A

### Response to Comments

We received two comments on our draft Environmental Assessment titled Proposed Ring-neck Pheasant and Wildlife Turkey Hunting On DeSoto National Wildlife Refuge, that was available for public comment from March 17, 2007 through April 17, 2007. One of these comments was in support of the Service's preferred Alternative in the draft EA.

The other comment was from the Humane Society of the United States that contained comments related to hunting on the National Wildlife Refuge System as a whole and containing elements related to litigation filed in 2003 by the Fund for Animals against the Service. These comments were not specific to this draft EA and are noted but not responded to here.