

# **Appendix J: Response to Comments on the Draft CCP**



## Response to Comments

Initial drafts of Muscatatuck National Wildlife Refuge's CCP and EA were released to stakeholders and the public on April 6, 2009. After 33 days of public comment, including an open house held at the Refuge visitor center on April 23, 2009, 40 written comment submissions were made containing more than 150 individual comments. Most comments were received from members of the general public, but comments were also submitted by representatives of the Indiana Department of Natural Resources, the Sierra Club's Winding Waters Group, The Nature Conservancy, Earlham College, and Groundsmith Consulting.

The comments were well distributed across all subject areas, including wildlife, habitat, water resources, hunting, fishing, education, other public uses, facilities and infrastructure, and planning. In general, the public expressed an appreciation for the excellent outdoor recreation and wildlife viewing opportunities at the Refuge, and wants to see these opportunities balanced with the preservation of quality habitat and healthy wildlife populations.

Comments both supported and opposed a number of management actions proposed in the environmental assessment's range of alternatives, including closure of the west entrance, paving the auto tour route, charging an entrance fee, restoring man-made wetland areas to native forest, allowing boats and electric trolling motors on fishing lakes, and decreasing farming acreage. Additionally, there seemed to be universal approval for extending Refuge hours, protecting the unique Acid Seep Springs Research Natural Area, increasing outreach and education to children, and more aggressively controlling invasive species.

Each comment was carefully considered and, where appropriate, changes were made to the CCP in response to the thoughts and concerns expressed. The full range of comment submissions is represented in the sections below, but similar or duplicate comments were grouped or eliminated to reduce redundancy. Comments are grouped by subject, and a response has been provided to each by Refuge staff.

The Refuge thanks all of the individuals who submitted comments and feedback during this CCP process.

### Wildlife

#### Comment 1: Non-game Wildlife

*There should be a greater emphasis on managing for non-game wildlife, such as upland ponds for amphibians.*

**Response:** Non-game wildlife comprises a substantial part of the biodiversity of Muscatatuck NWR. Refuge staff and visiting scientists working under special use permits conduct extensive monitoring of herpetofauna (reptiles and amphibians) and insect fauna annually. Most management actions convey direct benefits to non-game fauna including moist soil and forest management practices.

For example, the Refuge is well known for its' thriving population of the state-listed endangered copperbelly watersnake, which preys primarily on amphibians. The Refuge has more than 80 ponds and marshes with many of the former associated with house and farm sites that were built by private land owners before the Refuge was acquired, and they support a wide diversity and abundance of amphibians. Additionally, more than 60 percent of the Refuge is classified as wetland, much of which is bottomland hardwood forest that is excellent amphibian habitat.

The CCP will promote expansion of the bottomland hardwood forest and improved management of moist soil units, which should increase the abundance of amphibians, non-game birds, bats, and some other mammal species.

### **Comment 2: Invasive Plants**

*Invasive plants are a real problem on the Refuge and controlling them should be a priority in the CCP.*

**Response:** Muscatatuck NWR staff, along with staff at our Regional Office, recognize the grave threat posed by invasive plants at the Refuge and throughout the region and country. One of our high priority staffing needs identified in this CCP and in agency staffing reviews is the addition of an invasive species biologist along with biological science technicians to conduct invasive plant removal work, and filling a vacant equipment operator position.

We have also identified the need to thoroughly map the presence and distribution of all invasive species on the Refuge so that we can prioritize our control activities on those invasive plants that pose the greatest threat to the Refuge.

Every summer, using our best available information, Refuge staff have been locating and controlling Japanese stiltgrass, a recent invader that threatens forest communities. We also monitor for and control high-risk invasive plants such as purple loosestrife, kudzu, oriental bittersweet, and others as outbreaks are discovered. We depend on auxiliary staff such as STEP student employees and interns to do the majority of our on-the-ground invasives fieldwork, and a percentage of the money spent on the station's biology program goes into controlling invasive species. See "Objective 1.5: Invasive Plant Species" on page 56 of the CCP for additional information on proposed management of invasive plant species.

### **Comment 3: Controlling Invasive Plants – Fire**

*Fire is not an effective way to control invasive plants, mechanical or chemical treatments are more effective.*

**Response:** The Refuge has not used fire to control invasive plants, and has not used fire as a part of prescribed management since 2000. We use both established chemical and mechanical treatments on invasive plants with good success at Muscatatuck NWR.

If reinstated, prescribed fire would be used for general improvement of the condition of forests, grasslands, and moist soil units. Although there are no current plans to use fire for invasive plant

control, the Refuge maintains this treatment as an adaptive management option if identified by the scientific literature as the most effective strategy to eradicate a species of invasive plant.

### **Comment 4: Feral Hogs**

*Feral hogs are now found in areas adjacent to the Refuge and should be added to the invasive or nuisance animal lists.*

**Response:** To date, no evidence of feral hogs has been found on the Refuge. However, the range of feral hogs in Indiana is expanding, and Muscatatuck NWR staff are on the look-out for signs and reports from visitors of sightings.

### **Comment 5: Beavers, Mink, Muskrats, Otters**

*The Refuge should allow trappers to remove the problematic beavers and mink.*

*Don't remove too many beavers, muskrats, and otters.*

**Response:** Most predators on beaver, mink, river otter, and muskrat are either extirpated from Indiana or occur in such low numbers as to have little effect on the populations of these species. As a result, beaver and muskrat are not only abundant throughout Indiana and on the Refuge, but these two animals damage Refuge infrastructure and disrupt habitat management activities.

Beaver build dams that flood sensitive habitats, killing trees and rare plants, and disrupt water management that is timed to produce the maximum amount of food for migrating waterfowl. Muskrat burrow into dikes and dams causing damage and the risk of failure of the structures. Populations of both species need to be reduced for the benefit of most other species that use the Refuge. To this end, control of beavers under a permit from the Indiana DNR began in the fall of 2008, and control of muskrat will begin in late 2009 or 2010.

River otters were reintroduced into Indiana in 1995, and the Refuge was one of the reintroductions sites. Since then, their population has increased throughout the state, and they were removed from the state's endangered species list in 2005. River otters are not causing any known damage at Muscatatuck NWR, and no specific management activities are currently planned. They may be reducing numbers of sport

fish to the detriment of recreational fishing, but this effect may benefit local amphibian populations.

Mink numbers on the Refuge are unknown. They are an active predator and an integral part of the Refuge ecosystem, and no specific monitoring or control activities are planned.

#### **Comment 6: Deer Control**

*You should have a 10-foot fence to keep deer inside the Refuge.*

**Response:** Deer at Muscatatuck NWR are part of the larger population of the area, and immigration and emigration helps keep the herd healthy from a genetic and disease resistance perspective. An active and expanding hunt program in partnership with Indiana DNR provides population management and valuable recreational and harvest opportunities for participants. A fence would be extremely costly to build and maintain, would negatively impact a number of other species, and likely be ineffective due to failures and vandalism.

## **Habitat**

#### **Comment 7: Forest Management**

*Don't passively allow areas to revert back to forest, but actively manage the transition by planting with desired trees and using timber stand improvement practices to increase value and decrease invasives.*

**Response:** Refuge staff recognizes the desirability of returning former farm fields to upland and bottomland hardwood forest supporting the maximum diversity of plant and animal life as quickly as possible. To this end, Refuge management has secured funding for planting trees.

From 1966-2000, approximately 82 acres were planted. Since 2000, an additional 30 acres were planted in 2004, 15 acres in 2007, 19 acres in 2008, and 28 acres in 2009. Over the course of the CCP, 970 acres of former farmland will revert to forest through a combination of natural succession and tree planting. Tree planting is relatively expensive, and acquiring the necessary funding for planting 970 acres in 15 years will require extensive staff efforts and collaboration with other conservation partners.

Timber stand improvement practices were recommended to Refuge staff during the Biological Review of Muscatatuck NWR Management in 2007. Forest management is proposed in the CCP as a part of the Habitat Management Plan, and pending the availability of funding, will be completed within 5 years of completing this CCP. This plan will provide a prescription for active forest management that is expected to call for application of timber stand improvement where needed.

#### **Comment 8: Converting Wetlands to Forest**

*No wetland areas should be allowed to revert back to forest. This is not a national forest, and too few wetlands remain on the landscape.*

*Increased forest cover does not meet the establishment purpose of the Refuge – promoting waterfowl, deep woods habitat requires 20,000 acres of forest, and continuous forest cover reduces edge habitat needed by birds.*

**Response:** Muscatatuck NWR presents numerous competing priorities for habitat management. The CCP eliminates some moist soil units in order to return areas of the Refuge to habitats resembling pre-settlement conditions and benefit specific species, but other moist soil units will be retained for waterfowl, migratory birds, and other species.

Prior to settlement and land clearing for agriculture by Europeans, southern Indiana and the location of the Refuge was a combination of bottomland and upland hardwood forests dominated by beech-maple communities with significant oak-hickory community elements also present. There were relatively few standing bodies of water such as lakes and ponds, and most open water existed as ephemeral marshes and wetland created by seasonal rains and floods, and the damming of creeks and streams by beaver.

The moist soil units proposed for conversion to forest are very difficult to maintain and keep in prime condition due to their location in the floodplain of the Vernon Fork of the Muscatatuck River. The forest expansions planned may serve the deep forest requirements of species such as the Cerulean Warbler, but will primarily benefit the endangered Indiana bat that breeds on the Refuge and cavity nesting waterfowl such as Wood Ducks and Hooded Mergansers.

Muscatatuck NWR's constructed moist soil units provide the opportunity to create feeding areas for migratory waterfowl and shorebirds, brood rearing areas for resident breeding waterfowl such as Wood Ducks and resident geese, and habitat for herpetofauna (reptiles and amphibians). However, increases in bottomland hardwood forests, which are also classified as wetland habitats, will also serve herpetofauna, provide a return to a more natural cycle of flooding and drainage to the Refuge's waterfowl sanctuary area, and ultimately provide more trees for cavity nesting species such as Wood Ducks, a species of waterfowl the Refuge is directed to support by the Refuge purposes.

Furthermore, conversion of moist soil units 8-10 to bottomland forest, while taking away some impounded wetlands, will convert most of the existing wetland area into a more diverse mosaic of wetland habitats that will have sloughs, channels, and ephemeral ponds. These new wetlands will either be actively restored or allowed to form naturally from habitat succession to the benefit of native herpetofauna and other wildlife and native plants.

Finally, the loss of brood rearing habitat for cavity nesting species is considered to be insignificant, as a large reservoir of brood rearing habitat will persist within the Moss Lake summer pool footprint, estimated to be more than adequate for the anticipated demand.

**Comment 9: Cooperative Farming**

*Farming provides a valuable food source for wildlife, discourages the spread of invasives, and it should be continued at the Refuge.*

*I would like to see areas in the southeast section of the Refuge planted to crops.*

*Actively convert some cropland into forest, but plant additional acreage to crops.*

*There should be more cropland on the Refuge, and in large enough patches to attract good farmers.*

*I am concerned about the loss of farmland and feel the Refuge should continue this use. It could be used to generate revenue for Refuge maintenance and operations.*

**Response:** Reducing cropland acreage is not unique to Muscatatuck NWR. The Service has been reducing its use of cropland as a

management strategy on national wildlife refuges for several years. The U.S. Fish and Wildlife Service Biological Integrity, Diversity and Environmental Health Policy developed in response to the National Wildlife Refuge System Improvement Act of 1997 calls for refuges to restore their lands to natural conditions and historic vegetative communities.

Muscatatuck NWR has been gradually reducing the number of acres in its Cooperative Farming program since shortly after establishment in 1966. The primary reasons for this reduction are to reduce fragmentation of forest habitats and to restore more acreage to natural habitats. The remaining acres in the Cooperative Farming program are slated to be restored to diverse native grassland areas to promote species diversity and continue to provide the wildlife viewing opportunities they currently support. Conversion of these acres out of farming will only take place when proper restoration activities can be planned and implemented so as to protect these acres from being overrun by invasive species.

The Service portion (25 percent) of the annual Cooperative Farming harvest is left on the Refuge for wildlife consumption. However, the use of this resource by migratory waterfowl is low, and most of the harvest is eaten by resident species such as deer, turkey, and resident geese, none of which require food supplementation. In the case of deer and resident geese, supporting higher populations of these animals can be detrimental to habitat restoration efforts elsewhere on the Refuge, and to neighboring private property.

The southeast section of the Refuge is converting through natural succession to a mixture of upland and bottomland hardwood forest to provide for larger continuous blocks of forest habitats. Additional farming acres in this location would only create more fragmentation of habitat, smaller continuous blocks of forest, and decreased vegetative diversity on the Refuge.

The Service portion of yields from Cooperative Farming is left in the fields for wildlife use. If the Refuge share of crops is harvested, it is only available for later retrieval from commercial elevators and storage facilities for use as food for wildlife on a national wildlife refuge. If crops grown on refuges are sold, proceeds go into the

Service's general fund and are not directly available to the Refuge where the harvest originated.

## Water Resources

### Comment 10: Creek Water Levels

*Keep the water levels in Storm and Mutton Creeks low so upstream landowners don't get inundated.*

**Response:** Refuge staff recognize the problems caused by flooding in the low lying areas of Jackson and Jennings Counties.

Mutton and Storm Creeks were ditched and straightened in the 19th century, and pass through the Refuge en route to the Vernon Fork of the Muscatatuck River. Drainage can be slowed by many factors including log jams, beaver dams, siltation, and discharge through the Moss Lake water control structure. The construction of the latter was completed after an extensive Environmental Impact Statement that included calculations associated with the watershed and land use in the area. Also, land use in the area has continued to change dramatically since Refuge establishment with urban development resulting in more frequent flooding, increases in flood duration, and greater pressures on drainage systems.

In response to high water levels in Refuge creeks, we are taking the following steps:

- Refuge staff began controlling the beaver population in the fall of 2008.
- Refuge staff are regularly patrolling both Storm and Mutton Creeks to map the locations of dams and log jams and record water level staging caused by these obstructions.
- Dams and log jams are regularly broken with hand tools, and Refuge staff are investigating the potential for more effective solutions using construction equipment such as backhoes and excavators.
- Two of the six bays in the Moss Lake Water Control Structure (MLWCS) will be converted from top draining stop-log type dams to bottom draining screw-gate type control structures in the summer of 2009. The bottom draining structures will allow for faster drainage of water, removal of more of the silt load,

and easier, more responsive water level manipulation. If the results obtained from these changes in the MLWCS result in positive outcomes and more screw-gates would further improve conditions, additional stop log bays will be replaced with screw-gate structures in 2010-12.

Additionally, past management caused the winter pool level in Moss Lake to be 3 feet higher (543.0 msl) than the summer pool level (540.0 msl) by adding stop logs in the water control structure each October. In the fall of 2007, the Refuge changed its management approach and no longer actively impounds water above 540 msl, resulting in levels in Mutton and Storm Creeks that are generally 3 feet lower than previous conditions – barring additional restrictions in flow due to beaver dams and log jams.

### Comment 11: Seep Springs RNA

*Restore the natural hydrology of the acid seep springs area and the adjacent floodplain forest by replacing the culvert on the south end of the area and by eliminating a portion of the M6 pond.*

**Response:** Comments from our state partners and the public on the Seep Springs Research Natural Area have prompted us to revise the objective in the CCP.

Extensive efforts are under way and are described in this CCP to restore the natural hydrology of the Seep Springs RNA through a diagnosis of the problems and an evaluation of the impacts of potential corrective measures. "Objective 1.6: Seep Springs Research Natural Area" on page 57 and strategies for management of the RNA have been updated from the draft version of this document to provide more detailed information on the problems associated with the hydrology in this area, and the short- and long-term responses planned by Refuge staff to restore the area to historic conditions.

## Hunting

### Comment 12: Refuge Hunting Program

*Not only should there be no expansion of hunting as called for in the preferred alternative, but this place should be a 'Refuge' for wildlife where no hunting at all is allowed.*

*Duck hunting should not be allowed.*

*Close hunting in the area extending from just south of the west entrance road to Stanfield Lake.*

**Response:** Hunting is one of the six priority public uses on national wildlife refuges as identified in the National Wildlife Refuge System Improvement Act of 1997. The other five priority public uses are: fishing, interpretation, environmental education, wildlife observation and photography.

Refuges are required to permit hunting when it is compatible with the purposes for which the Refuge was established, and not otherwise in conflict with requirements of applicable laws and regulations such as the Endangered Species Act, or refuge management plans.

Waterfowl hunting is not allowed at Muscatatuck NWR because of the Refuge's relatively small size, the fact that most bodies of water on the Refuge are managed to produce food for migrating waterfowl, and because of the disruption hunting would cause to migrant waterbirds that use the Refuge.

The area from just south of the west entrance road to Stanfield Lake includes areas open to hunting species in the Refuge's hunt program. Much of the western portion of this area is part of the waterfowl sanctuary area and is closed to all public uses except during National Wildlife Refuge Week, when day-hiking is allowed.

East of the waterfowl sanctuary, hunting occurs in the area south of Stanfield Lake and east of County Line Road for rabbit, quail, squirrel, turkey, and deer. Hunting also takes place in the area between County Line Road and the waterfowl sanctuary for deer and turkey, which is considered by hunters to be one of the better hunting areas on the Refuge. The East and West River Trails occur in this area, and under the CCP will not be maintained but rather will be allowed to revert back to natural habitat conditions. Otherwise, all Refuge trails occur in the northeast portion of the Refuge in a no-hunting area so that other visitors are able to avoid hunting areas during hunting seasons. Please refer to "Public Use, Hunting, at Muscatatuck NWR" on page 38 of the CCP for further clarification of hunting areas on the Refuge.

### **Comment 13: Population Monitoring**

*Monitor rabbit, quail, squirrel, turkey, and deer before and after the hunting season.*

**Response:** Rabbit, quail, squirrel, turkey and deer are resident wildlife species that are abundant and widespread in Indiana and are not state or federally listed threatened or endangered species. Refuge staffing levels do not permit direct monitoring of these species because of the higher priority work needed to manage listed species, control invasive species, and manage and restore habitat.

The Refuge generally follows the Indiana DNR's management actions by allowing hunting of these species during state seasons within state limits. Where exceptions occur, they are generally more restrictive and call for shorter hunting periods on limited sections of the Refuge to limit conflicts with other Refuge management activities or public uses, and also provide sanctuary for these animals. Deer and turkey hunts are managed in consultation with the Indiana DNR, and the permit draws are conducted by the DNR for the Refuge. Hunter reports and interviews are used to determine the effect and quality of the hunts.

The number of hunters participating in rabbit, quail, and squirrel hunts is unknown because no permit system or check-in is required for these hunts. All evidence suggests that hunter numbers for these animals are low, and their impacts on respective populations negligible.

### **Comment 14: Hunter Orange**

*There is no need for hunter orange during the turkey, archery, or squirrel seasons.*

**Response:** The Refuge hunting programs follows Indiana DNR regulations to the extent that they meet Refuge needs, and exceeds the regulations as necessary to promote safe use of the Refuge by the hunting and non-hunting user groups. Hunter orange will be required for all Refuge hunts except the turkey hunt.

Hunter orange clothing and accessories do not disturb most game species or negatively affect hunts. Muscatatuck NWR is a multiple-use facility with the non-hunting public allowed onto the property and within hunting areas during hunts. Hunter orange greatly improves the visibility of hunters to both non-hunters and

hunters alike. This step is being taken to improve overall safety and reduce conflicts during Refuge hunts.

## Fishing

### Comment 15: Fishing Lakes

*Fishing should not be allowed at Mallard and Display Ponds.*

**Response:** We agree. Mallard and Display Ponds will be removed from the Refuge fishing program. Under the CCP they will be allowed to revert to bottomland hardwood forest. Because of this, their small dams will not be repaired if they fail following implementation of the CCP.

### Comment 16: Seasonal Fishing

*Fishing disrupts birds during the late fall, winter, and early spring. It should only be allowed between May and October.*

**Response:** Muscatatuck NWR hosts mostly shallow water use by dabbling ducks and courting Wood Ducks and Wood Ducks with their broods. Fishing at Muscatatuck NWR occurs only on some of our relatively deep lakes and ponds, and along the north bank of the Vernon Fork of the Muscatatuck River. These deeper water habitats are not preferred or routinely used by these species. The disruption to waterfowl use by fishing is minimal, and fishing of these areas has been determined to be compatible with Refuge purposes, and is therefore allowed.

Additionally, fishing is one of the six priority public uses on national wildlife refuges as identified in the National Wildlife Refuge System Improvement Act of 1997. The other five priority public uses are: hunting, interpretation, environmental education, wildlife observation and photography.

### Comment 17: Stocking

*All fishing ponds and lakes should be stocked annually.*

**Response:** The stocking of fish solely for the purpose of enhancing recreational fisheries is not allowed under the U.S. Fish and Wildlife Service's Biological Integrity Policy, which was developed as a result of the National Wildlife

Refuge System Improvement Act of 1997. Stocking is a management practice used on refuges only to rebuild populations of native and rare fish species that are depleted.

### Comment 18: Motor Use

*The use of electric motors for fishing should be allowed as soon as possible.*

*No motors of any kind should be allowed on fishing lakes, they aren't big enough.*

*The use of trolling motors could ruin the fisheries on Stanfield Lake.*

**Response:** Historically, boating has only been allowed on Stanfield Lake using oars and paddles for propulsion, and no motors. However, this makes boating difficult or impossible for persons physically unable to paddle or row a boat. The management decision to allow the use of electric trolling motors is intended to make boat fishing accessible to a wider range of Refuge visitors. However, gasoline powered motors attached to boats will still be prohibited.

Because Stanfield Lake is a relatively small lake (125 acres), monitoring of fish populations to determine baseline population levels will be conducted before allowing the use of electric trolling motors, and will continue thereafter in an effort to assess the impact of electric trolling motor use on the fish population and on the quality of the fishing opportunity. Should the use of motors lead to a decline in fish abundance or changes in community assemblages, Refuge staff will adapt management to include a limited number of boat launches per day, implement slot limits or aggregate creel limits, or use implement other management actions to protect Refuge fish populations.

### Comment 19: Lakes with Boat Use

*Lakes in addition to Stanfield should be opened to boat use, including Richart and Linda.*

*Allow canoes and kayaks on other fishing lakes.*

**Response:** In the interest of maintaining high-quality recreational fishing, small boats including canoes and kayaks are not allowed on the small lakes (Linda and Sheryl) and ponds (Persimmon and Sand Hill) that are in the Refuge Fishing Program. Float tubes and waders are currently allowed and will continue to be allowed on these

bodies of water under the CCP. Richart Lake does not have a launching facility. Extensive use by canoe and kayaks would lead to bank and shoreline erosion and damage the few launch areas available near Refuge roads, and is therefore not allowed.

Float tubes and waders are currently allowed on Richart Lake and will continue to be allowed there under the CCP.

#### **Comment 20: Boat Length Restrictions**

*Review watercraft boat restrictions.*

**Response:** The Refuge does not currently restrict watercraft size or allow motors of any kind. Under the CCP, electric trolling motors will be allowed on Stanfield Lake. A small concrete launching ramp is available to facilitate launching of small, shallow draft boats. Large or deep draft boats are not recommended due to the small size of the ramp and shallowness of waters adjacent to the ramp, and gasoline powered motors cannot be used or attached to boats launched at Stanfield Lake.

#### **Comment 21: Stanfield Lake Boat Dock Channel**

*The dock channel on Stanfield Lake should be extended, and the area around it deepened and regularly cleaned of vegetation and moss.*

**Response:** Stanfield Lake does not have a boat dock but rather a concrete boat launching ramp. Silt that accumulates on the ramp is periodically removed to facilitate boat launching and recovery. Stanfield Lake is a relatively shallow constructed lake, and there is no boating channel into the lake from the ramp. Small, shallow draft boats are recommended, and the Refuge does not plan to dredge a channel to permit access to larger boats than those that have historically used the lake despite the new allowance of electric trolling motors. However, due to overall siltation in the lake, the area in front of the ramp may also become shallower. Refuge staff will monitor the depth near the ramp to determine conditions and post advisories. Removal of sediment may be considered if the facility becomes unusable in the future. All water bodies at the Refuge become heavily covered with algae seasonally, and it is not possible to control this growth with available resources or within the limits of policy regarding

the application of chemicals. Although inconvenient, algae and aquatic weed growth does not prohibit boat access to the lake.

## **Outreach and Education**

#### **Comment 22: Youth Education**

*I strongly encourage the Refuge to increase their programming for children.*

*I support working with additional schools for environmental education.*

**Response:** Refuge staff strongly support this recommendation. At present the Refuge supports environmental education through a number of on- and off-site programs every year, the largest of which is the on-site annual “Conservation Field Days Programs” that provides environmental education opportunities to third grade students in Jackson and Jennings Counties. Current staffing levels do not support additional growth in our environmental education or outreach programs. Refuge staff have made the addition of an Environmental Educator position a priority in regional and national Service staffing plans and exercises.

#### **Comment 23: Website**

*Provide additional web updates and bird viewing updates.*

**Response:** We are working on improving our website by adding local events and information of interest. Development of our improved site will begin in 2009.

## **Other Public Use**

#### **Comment 24: Entrance Fees**

*The public should not have to pay entrance fees to use the Refuge. Use collection boxes instead.*

*An entrance fee is a good idea. You should also offer annual passes and honor NPS passes.*

*Instate an entrance fee between April and October, with fee exceptions for days with Refuge programs and for members of the Muscatatuck Wildlife Society.*

*Don't add an entrance fee, this tactic did not work in the past.*

**Response:** Several times during development of the Draft CCP, Refuge and Regional Office staff discussed the possibility of charging an entrance fee to provide funding for Refuge operations. An entrance fee was proposed in two of the four alternatives evaluated in the Environmental Assessment, however neither of those alternatives were selected as the preferred alternative. The CCP does not propose an entrance fee.

An entrance fee was charged in 1988 and 1989 with collections being made with the use of an "iron ranger" or collection box system. Recently, Regional policy regarding the amount of operational funding provided to each refuge changed, resulting in an increase to each station. As a result of this increase, staff determined that the benefits of additional funding raised through a fee program would not outweigh the negative impact on visitors and support from the neighboring community.

#### **Comment 25: Refuge Hours**

*I strongly support extended Refuge hours for additional wildlife viewing and photography. Sunrise and sunset are the best times of the day for these activities.*

**Response:** Under the CCP, Refuge hours will be extended to one hour before sunrise to one hour after sunset daily. This action will not only provide improved wildlife viewing and photography opportunities, but will increase the time available for hunting and fishing on the Refuge.

#### **Comment 26: Law Enforcement**

*More patrolling needs to occur after normal business hours.*

**Response:** We agree. Criminal activity on public land, which ranges from poaching to producing illicit drugs, often occurs after hours. It is also important that law enforcement occurs during peak hours, however, which makes scheduling a challenge.

Refuge law enforcement staff are shared between all three of the national wildlife refuges located in the state of Indiana, further reducing the time available for patrols on any one refuge, including Muscatatuck NWR.

Refuge Officers and managers recognize the unique scheduling needs for law enforcement and do everything possible, including partnering and coordinating with Indiana DNR Conservation Officers, to promote the presence of law enforcement during prime public use time as well as during off-peak hours.

#### **Comment 27: Sanctuary Area Access**

*The sanctuary area of the Refuge should be opened to the public for wildlife viewing during the non-nesting periods of the year, or on some periodic basis.*

**Response:** Waterfowl sanctuary is very important to fulfilling the purpose of the Refuge "...as an inviolate sanctuary...for migrating birds" and it requires significant limitations on public access.

Currently, the waterfowl sanctuary area is open to walk-in traffic one week a year during National Wildlife Refuge Week, and for vehicle tours during certain special events. The CCP retains this limited access.

Approximately 70 percent of all waterfowl use at the Refuge in 2008 occurred in the waterfowl sanctuary, and we believe that it is imperative that we protect this area from disturbance during the migration period that runs from late October through April. Additionally, other waterbird species such as Great Blue Herons, King Rails, and shorebirds utilize this area during the breeding season, as do Wood Ducks and Hooded Mergansers for brood rearing and feeding habitat.

#### **Comment 28: Seasonal Wildlife Viewing Access**

*Please do not limit visitor access during peak migration periods, these are the best time of the year to view wildlife.*

**Response:** Above all else, the National Wildlife Refuge System Improvement Act states that wildlife comes first on national wildlife refuges (Fish and Wildlife Service Manual 602 FW 1). In

keeping with this direction, the Refuge will limit access to some areas to reduce disturbance of migratory birds and other wildlife.

The Refuge's "upper" moist soil units (M1-6), as well as McDonald Marsh North and Sue Pond, are being rehabilitated and managed to provide more food for waterfowl than in the past. Waterfowl use of these units will be reduced if foot traffic is permitted along all sides of the levees that border the units. The Refuge plans to seasonally close these levees to foot traffic to attract waterfowl to the area and reduce disturbance of these birds during migration, when it's important that they consume as much food as possible and conserve their energy.

Reducing foot traffic will not eliminate the opportunity to view waterfowl and other wildlife during these times of the year. People can still use Refuge public roads that border these units, including the auto tour route. More food and less disturbance may result in increased use of Refuge by birds, which may in turn lead to better wildlife viewing opportunities overall.

#### **Comment 29: Water Drip for Bird Viewing**

*Water drips are a great way to increase bird activity, and additional drips should be placed near the visitor center.*

**Response:** Refuge staff will look into the possibility of implementing this recommendation with the application of hose lines and solar powered pumps.

## **Facilities and Infrastructure**

#### **Comment 30: West Entrance**

*The west entrance should be closed to reduce traffic cutting through the Refuge and reduce associated dust.*

*I do not support the closure of the west entrance. It is necessary in emergencies, when primary roads are closed, and allows quick access to/from the Refuge maintenance shop.*

**Response:** Refuge and Regional Office staff have been concerned about traffic cutting through the Refuge between Highways 50 and 31 for many years. The Service wants to encourage quality visits by individuals who have the Refuge as a

destination, encourage driving within speed limits to reduce dust and noise that disturb wildlife and other visitors, and discourage passage through the Refuge when Refuge roads are used only to reach another destination. We believe that closing the west entrance will achieve these results.

In addition, the closure may discourage heavy vehicle traffic, which contributes to higher annual road maintenance costs. Finally, all Refuge informational facilities – kiosks, the visitor center, and offices – are located just inside the gates along the entrance off of Highway 50. Promoting the use of this entrance enhances the Refuge's ability to provide visitors with orientation materials, advisories, and information on activities, events, road conditions, and other Refuge-related information.

Refuge staff recognize that closing the West Entrance Road will inconvenience some visitors. We think that benefits resulting from reduced pass-through use will significantly increase the quality of Refuge visits and reduce disturbance to wildlife.

We understand and appreciate the concern about emergency access. A gate will be installed at the West Entrance Road that could be opened during emergencies or under other special conditions.

#### **Comment 31: Paving Refuge Roads**

*In addition to the prohibitive cost, paving Refuge roads will encourage people to drive faster and create additional hazards for other visitors, will create unnatural barriers for wildlife, and will increase vehicle/animal collisions.*

*The Refuge roads should be paved to keep down the dust for both people and wildlife, and reduce maintenance.*

*The roads on the Refuge need more maintenance.*

*Closing any Refuge roads is a bad idea because it could limit access to the elderly and disabled.*

**Response:** Refuge staff recognize that paving Refuge roads would be costly and have both positive and negative implications and effects.

Refuge staff do not believe paving the roads will create a barrier to wildlife movement or increase the risk of wildlife being killed by cars. Paved surfaces may effectively reduce the number of animals struck on the road because drivers will

be able to come to a controlled stop faster on pavement than on gravel. Refuge staff members are unaware of any reports indicating that narrow paved roads are any more of a barrier to wildlife movement than gravel roads.

While paved roads have the potential to increase the occurrence of speeding, closing the Refuge west entrance and eliminating through traffic should counteract this trend. Furthermore, law enforcement patrols will be adjusted to address any increase in speeding. Speed limiting features such as speed humps may be included in paved road design to further reduce speed on straight stretches, or in areas where people or wildlife congregate.

Gravel roads, while less expensive to install and maintain overall, have higher annual costs in both materials and labor. Refuge road sections are periodically overtopped by flood waters that sweep away gravel and generally damage the road bed, necessitating frequent repairs. Gravel must be replaced annually due to flooding events and a general degeneration of conditions from vehicle use. Dust is a significant problem in the summer and fall. It reduces the quality of visitor experiences and makes hiking and biking along Refuge roads undesirable. Vehicle traffic on gravel roads is also louder than on pavement, increasing wildlife disturbance and decreasing visitor enjoyment of the Refuge.

Muscatatuck NWR has only one maintenance staff member to handle all maintenance tasks. A second equipment operator position is authorized but has not been filled due to budget shortfalls. Filling this position is listed as the top staffing priority for the Refuge when funding becomes available.

No Refuge roads are proposed for closure in the CCP, only the west entrance.

### **Comment 32: Road Drainage**

*Maintain water drainage on and adjacent to Refuge roads.*

**Response:** Efforts are made to keep roads and their drainage ditches open, safe, and in as good a condition as resources permit.

Maintaining drainage ditches and roads is challenging at Muscatatuck NWR. Many reaches of Refuge roads are in floodplain areas and are regularly overtopped and eroded during heavy

rain and flooding. Drainage ditches routinely fill with road gravel and eroded sediment, and are damaged by fast moving drainage during rain and flooding events. Trees and limbs that fall during high winds associated with storms clog drainages and redirect water flow onto roads, causing further damage.

Keeping up with these demands will require additional maintenance personnel including a second equipment operator and, when the budget allows, filling that position will be a high priority.

### **Comment 33: East and West River Trails**

*I use the East and West River Trails regularly and would be disappointed if they were let go.*

*Provide more parking for the River Trails.*

**Response:** We understand that some visitors will be disappointed, but the Refuge does not have the resources to maintain the river trails. The East and West River Trails are located in the southern part of the Refuge near the Vernon Fork of the Muscatatuck River and are 3 and 4 miles long, respectively. Objective 3.3 in the CCP calls for discontinuing maintenance of the trails and allowing them to revert back to natural habitat conditions.

This change will eventually add approximately 8.5 acres of bottomland forest habitat to the Refuge. The area of the River Trails will still be open to public use, but will become more primitive as the vegetation grows back. Unlike parks, national wildlife refuges do not usually have extensive trail networks but rather allow public uses across the landscape and provide a small number of trails to accommodate users who do not wish to walk through undeveloped areas.

Because they are in the floodplain of the river, the East and West River Trails are periodically inundated with water and impacted by debris from flooding. Refuge staff do not have the time to properly clear and mow these trails, and current mowing and clearing has been taken on by the Refuge Friends Group, the Muscatatuck Wildlife Society, through a contract with a private vendor. Conditions have deteriorated in recent years and more maintenance is required in the form of mowing, log removal and grading.

### **Comment 34: Renaming Trails**

*One of the trails in the area of the old Hunt family farm should be re-named to honor the family.*

**Response:** The process to rename the Richart trail to the Hunt-Richart Trail in honor of the Hunt family and their long history on the site of the Richart Trail is under way.

### **Comment 35: Overlooks**

*Modify or rebuild the structure if necessary, but don't remove Hackman Overlook because it memorializes a family from the area.*

*Remove the Richart Lake gazebo and the North Endicott handicapped viewing platform.*

*Remove the Hackman overlook because it attracts vandals, or remove everything except the floor and handrails.*

*I like the addition of a Sandhill Crane overlook area.*

**Response:** Overlooks provide improved viewing access and draw the public to areas with good wildlife viewing opportunities. Objective 3.3 of the CCP describes plans to maintain the Endicott Overlook, build a new overlook near the Maintenance Shop where migrating cranes often congregate and deer and turkey are commonly seen, and modify or remove the Hackman Overlook off the Richart Trail on the shore of Richart Lake.

The Hackman Overlook was built with funds donated by the Hackman family, and every effort will be made to retain it in a modified state. However, it requires repair and modification to discourage vandalism and to reduce safety risks to visitors because of its isolated location. Refuge staff are investigating the feasibility of removing the roof, windows, and sidewalls to leave an open platform with railings. Without cover from rain or sun, people will be less inclined to loiter and vandalize the facility, but it will still provide a good view out over the lake for wildlife observation and photography.

### **Comment 36: Mowing**

*There should be more mowing around the main entrance, the entry road, the visitor center, and the parking lots.*

**Response:** Mowing is a big undertaking at Muscatatuck NWR, and is only part of the Refuge's maintenance responsibilities. Yet, it is vital to public safety and access, and is sometimes necessary for wildlife management activities.

When the budget allows, it is our intention to increase our maintenance staff in order to address all maintenance needs, including mowing.

## **Refuge Planning**

### **Comment 37: Planning Frequency**

*Plans should be re-visited more frequently than every 15 years.*

**Response:** We agree. Chapter 5 of the CCP states that the plan will be reviewed periodically. Service policy is more specific. It directs us to review the CCP at least once annually to decide if revisions are necessary (FWS 602 FW 3).

The same policy goes on to direct refuges to:

“Revise the CCP when significant new information becomes available, ecological conditions change, major refuge expansion occurs, or when we identify the need to do so during plan review. This should occur every 15 years or sooner, if necessary.”

In addition to the CCP, Refuge staff prepare a number of topic-specific management plans and step-down plans on a regular basis. Step-down management plans take general or broad goals and objectives and flesh out the fine details, such as strategies, tactics, and other direct management actions.

Six step-down plans focused on habitat, water management, pest management, visitor services, fishery management, and habitat and wildlife monitoring are scheduled to be completed within the next 5 years. See Chapter 5 of the CCP for details.