

Appendix B

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Variegated fritillary

Findings of Appropriateness and Compatibility Determinations

Appropriate Use and Compatibility Determinations

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Finding of Appropriateness of a Refuge Use

Refuge Name: Montezuma National Wildlife Refuge

Use: Bicycle Travel

This exhibit is not required for wildlife-dependent recreational uses, forms of take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

Decision criteria:	YES	NO
(a) Do we have jurisdiction over the use?	X	
(b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)?	X	
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	X	
(d) Is the use consistent with public safety?	X	
(e) Is the use consistent with goals and objectives in an approved management plan or other document?	X	
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?		X
(g) Is the use manageable within available budget and staff?	X	
(h) Will this be manageable in the future within existing resources?	X	
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	X	
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D. for description), compatible, wildlife-dependent recreation into the future?	X	

Where we do not have jurisdiction over the use ("no" to (a)), there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ("no" to (b), (c), or (d)) may not be found appropriate. If the answer is "no" to any of the other questions above, we will generally not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes X No _____

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

Not Appropriate _____ Appropriate X

Refuge Manager: _____ Date: _____

If found to be Not Appropriate, the refuge supervisor does not need to sign concurrence if the use is a new use.
If an existing use is found Not Appropriate outside the CCP process, the refuge supervisor must sign concurrence.
If found to be Appropriate, the refuge supervisor must sign concurrence:

Refuge Supervisor: _____ Date: _____

A compatibility determination is required before the use may be allowed.

Justification for a Finding of Appropriateness of a Refuge Use

Refuge Name: Montezuma National Wildlife Refuge

Use: Bicycle Travel

Narrative

Bicycling will be permitted only along the refuge's Wildlife Drive during low wildlife-use periods (Memorial Day to mid-August each year).

In 1994, a Compatibility Determination (CD) authorizing the continued use of a "Motorized Trail (Wildlife Drive)" was approved. This use was limited to the Main Pool Dike, known as the Wildlife Drive. This use has been allowed on designated roads since refuge establishment in 1938.

Montezuma's Wildlife Drive supports wildlife-dependent public uses including wildlife photography, wildlife observation, environmental education, and interpretation. The Wildlife Drive is interpreted and provides an opportunity to reach visitors for the purpose of wildlife education. Designated roads for vehicular and bicycle travel will provide the public with an opportunity to experience the diversity of habitats and wildlife that characterize the refuge without significant environmental consequences at current levels of use. The Wildlife Drive enhances public access and provides increased opportunity to participate in priority public uses.

The Wildlife Drive is linear in fashion, creating disturbance within a narrow band and for relatively short periods as vehicles move through an area. Refuge experience exhibits that birds do become habituated to the continued disturbance. Potential short-term impacts include wildlife disturbance resulting from increasing human activities facilitated by vehicular and bicycle access into wildlife habitat. It is anticipated that there will be temporal disturbances to wildlife species using habitat on or directly adjacent to the designated vehicular route.

Finding of Appropriateness of a Refuge Use

Refuge Name: Montezuma National Wildlife Refuge

Use: Dog Walking

This exhibit is not required for wildlife-dependent recreational uses, forms of take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

Decision criteria:	YES	NO
(a) Do we have jurisdiction over the use?	X	
(b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)?	X	
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	X	
(d) Is the use consistent with public safety?	X	
(e) Is the use consistent with goals and objectives in an approved management plan or other document?	X	
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	X	
(g) Is the use manageable within available budget and staff?	X	
(h) Will this be manageable in the future within existing resources?	X	
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	X	
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D. for description), compatible, wildlife-dependent recreation into the future?	X	

When we do not have jurisdiction over the use ("no" to (a)), there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ("no" to (b), (c), or (d)) may not be found appropriate. If the answer is "no" to any of the other questions above, we will generally not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes X No _____

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

Not Appropriate _____ Appropriate X

Refuge Manager: _____ Date: _____

If found to be Not Appropriate, the refuge supervisor does not need to sign concurrence if the use is a new use. If an existing use is found Not Appropriate outside the CCP process, the refuge supervisor must sign concurrence. If found to be Appropriate, the refuge supervisor must sign concurrence:

Refuge Supervisor: _____ Date: _____

A compatibility determination is required before the use may be allowed.

Justification for a Finding of Appropriateness of a Refuge Use

Refuge Name: Montezuma National Wildlife Refuge

Use: Dog Walking

Narrative

Dog walking on the refuge has been allowed for several years, as long as dogs were leashed and under the owner's control. However, since issues with unleashed dogs in more remote areas of the refuge have led to increased wildlife disturbance, we are proposing to limit dog walking to the refuge headquarters area and 1-mile Seneca Trail, where staff presence is more pronounced and visitor behavior is more effectively monitored and enforced. Because the refuge headquarters area and Seneca Trail are located in already highly disturbed areas, the potential impacts to wildlife and their habitats are minimal.

We would require that dogs be kept on a 6-foot leash and under the owner's control at all times to ensure visitor safety and resource protection in these areas. In addition, the Seneca Trail would be closed seasonally to accommodate osprey (*Pandion haliaetus*), nesting season, which coincides with cerulean warbler activity in that area. Total trail closure during that time would offer resource protection, while still allowing visitors to have their dogs in the headquarters area to enjoy wildlife observation, photography, and interpretation.

Limiting leashed dog walking to the headquarters area and Seneca Trail would not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the refuge was established, and would not place undue burden on the refuge's available resources.

Justification for a Finding of Appropriateness of a Refuge Use

Refuge Name: *Montezuma National Wildlife Refuge*

Use: *Cross-country Skiing and Snowshoeing*

Narrative

Cross-country skiing and snowshoeing are historic uses of the refuge. They provide visitors engaged in priority public uses, such as wildlife photography, wildlife observation, environmental education, and interpretation, access to the refuge in winter. Designated routes for cross-country skiing and snowshoeing provide the public with an opportunity to experience the diversity of habitats and wildlife that characterize the refuge without significant environmental consequences at current and projected levels of use.

It is anticipated that under current and projected conditions and use levels, cross-country skiing and snowshoeing on the refuge will not cause any significant direct or indirect impacts to threatened or endangered species. Routes designated for this use are preexisting roads and trails, some of which have been in existence for many years. No new habitat clearing will be required to accommodate these activities; however, some vegetation clearing will be required within the trail corridor. Routes designated for these uses are considered safe under current and projected conditions and levels of use. Cross-country skiing and snowshoeing are viewed as effective and justifiable methods of access that enable the public to discover, experience, and enjoy the refuge and participate in priority public uses.

A CD for pedestrian travel on the refuge was also approved in 1994, but did not include allowing cross-country skiing and snowshoeing on the Wildlife Drive. We propose to allow these two uses on the Wildlife Drive when conditions allow and outside of the State deer hunting season. The Wildlife Drive would be closed to cross-country skiing and snowshoeing from December 1 through the end of the State deer hunting season.

Finding of Appropriateness of a Refuge Use

Refuge Name: Montezuma National Wildlife Refuge

Use: Vehicular Travel

This exhibit is not required for wildlife-dependent recreational uses, forms of take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

Decision criteria:	YES	NO
(a) Do we have jurisdiction over the use?	X	
(b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)?	X	
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	X	
(d) Is the use consistent with public safety?	X	
(e) Is the use consistent with goals and objectives in an approved management plan or other document?	X	
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	X	
(g) Is the use manageable within available budget and staff?	X	
(h) Will this be manageable in the future within existing resources?	X	
(i) Does the use contribute to the public’s understanding and appreciation of the refuge’s natural or cultural resources, or is the use beneficial to the refuge’s natural or cultural resources?	X	
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D. for description), compatible, wildlife-dependent recreation into the future?	X	

Where we do not have jurisdiction over the use (“no” to (a)), there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe (“no” to (b), (c), or (d)) may not be found appropriate. If the answer is “no” to any of the other questions above, we will generally not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes X No _____

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor’s concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

Not Appropriate _____ Appropriate X

Refuge Manager: _____ Date: _____

If found to be Not Appropriate, the refuge supervisor does not need to sign concurrence if the use is a new use. If an existing use is found Not Appropriate outside the CCP process, the refuge supervisor must sign concurrence. If found to be Appropriate, the refuge supervisor must sign concurrence:

Refuge Supervisor: _____ Date: _____

A compatibility determination is required before the use may be allowed.

Justification for a Finding of Appropriateness of a Refuge Use

Refuge Name: Montezuma National Wildlife Refuge

Use: Vehicular Travel

Narrative

In 1994, a Compatibility Determination (CD) authorizing the continued use of a “Motorized Trail (Wildlife Drive)” was approved. This use was limited to the Main Pool Dike, known as the Wildlife Drive. This use has been allowed on designated roads since refuge establishment in 1938.

The refuge’s Wildlife Drive supports wildlife-dependent public uses including wildlife photography, wildlife observation, environmental education, and interpretation. The Wildlife Drive is interpreted and provides an opportunity to reach multiple vehicle occupants for the purpose of wildlife education. Designated roads for vehicular travel will provide the public with an opportunity to experience the diversity of habitats and wildlife that characterize the refuge without significant environmental consequences at current levels of use. The Wildlife Drive enhances public access and provides increased opportunity to participate in priority public uses, including mobility-impaired persons.

The Wildlife Drive is linear, creating disturbance within a narrow band and for relatively short periods as vehicles move through an area. Refuge staff experience is that birds do become habituated to the continued disturbance. Potential short-term impacts include wildlife disturbance resulting from increasing human activities facilitated by vehicular access into wildlife habitat. It is anticipated that there will be temporal disturbances to wildlife species using habitat on or directly adjacent to the designated vehicular route.

COMPATIBILITY DETERMINATION

Use: Bicycle Travel

Refuge Name: Montezuma National Wildlife Refuge

Date Established: September 12, 1938

Establishing and Acquisition Authorities:

The U.S. Fish and Wildlife Service acquired lands to be established as the Montezuma National Wildlife Refuge (Montezuma Refuge, refuge) under Executive Order 7971 and established the refuge in 1938 under the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. §715).

Purpose(s) for which Established:

“...as a refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7971).

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. §715d).

National Wildlife Refuge System Mission:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. (16 U.S.C. 668dd-668ee) (National Wildlife Refuge System Administration Act of 1966, as amended)

Description of Use:

(a) What is the use? Is the use a priority public use?

The use is bicycle travel on Montezuma Refuge. This is not a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57). Bicycling will provide increased access for visitors to engage in priority public uses. Also, the refuge believes that by allowing this use, persons engaged in bicycling for its own sake will be exposed to the refuge and the Refuge System, which will foster an understanding of the mission of the refuge and the National Wildlife Refuge System (Lyons 1982).

(b) Where would the use be conducted?

The use would be allowed on the access road to the visitor center and along the Wildlife Drive only. Since the establishment of the refuge in 1938, the public has been allowed to operate vehicles on the Main Impoundment Dike (3.5 miles). This route has long been known as the Wildlife Drive and provides access to the refuge for all, including those with disabilities. This road currently provides vehicular access from State Route 5 and U.S. Route 20 to State Route 89. Access on the subject road provides the public with an opportunity to experience refuge wildlife

and plant communities in a diversity of habitats but the main focus is the 1,657-acre Main Pool, which provides emergent marsh habitat for a variety of waterbirds. The road has existing hard-packed surfaces.

(c) When would the use be conducted?

Klein (1993) supports previous reports (Vaske et al. 1983, Vos et al. 1985, Freddy et al. 1986) that indicate out-of-vehicle activity is more disruptive to wildlife, particularly waterbirds, than vehicular traffic, and that photographers are most likely to approach wildlife and are, therefore, causing the most disturbance. The Wildlife Drive is open annually to vehicular access until closed November 30. Daily hours of use are between ½ hour before sunrise and ½ hour after sunset when the refuge is open to the public. The general pattern of vehicle travel shows visitation is higher on weekends than weekdays. Most vehicular access occurs during the peak of spring and fall waterfowl migration (mid-March through mid-May and mid-September through mid-November, figures B.1-B.3). Opportunities exist year-round for environmental education and interpretation. Due to the potential for higher disturbance to wildlife by out-of-vehicle activity, bicycling will only be permitted during low wildlife-use periods of the year, namely, summer (Memorial Day to mid-August) (figures B.1-B.3). Opening and closing dates will be determined by the refuge manager depending on migration timing and habitat conditions. During the summer, as opposed to migration periods, it is less important for birds to build up their fat reserves and conserve energy. Summer is also the period of time when vegetation along the Wildlife Drive and in the Main Pool offer optimum cover, so that if wildlife should flee due to human disturbance, they would have to travel less distance to find cover than they would in spring or fall.

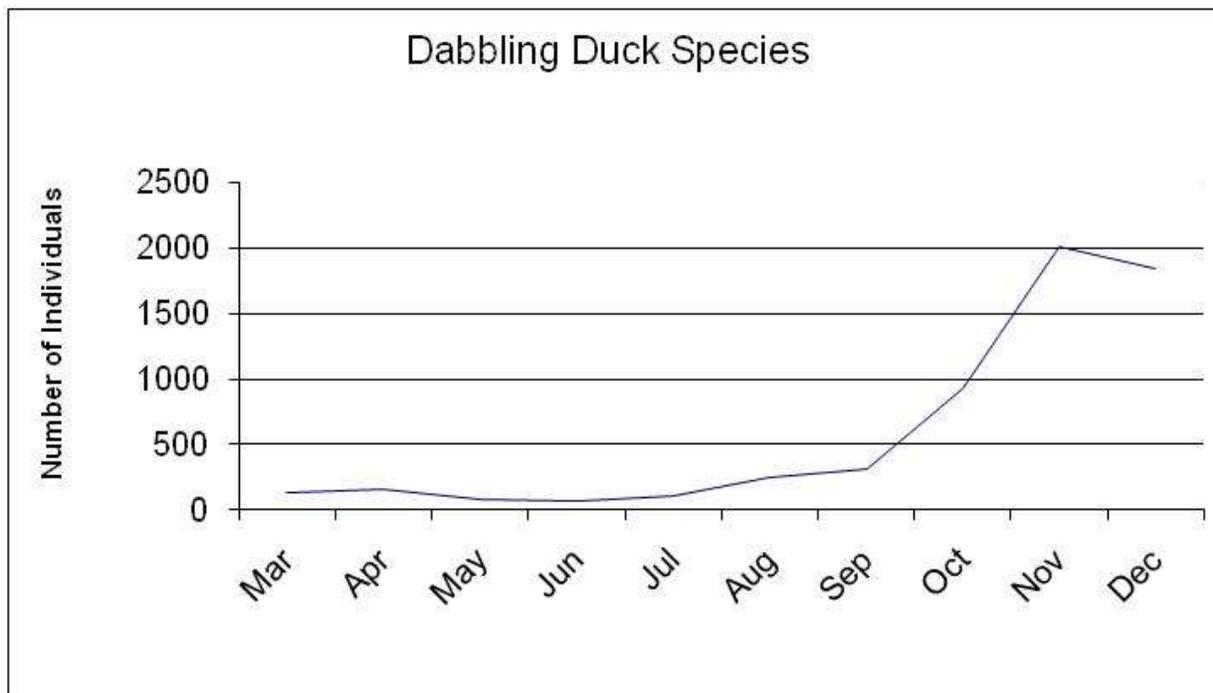


Figure B.1. Average Number of Individuals for all Dabbling Duck Species per Month Observed on the Montezuma NWR, 1997 to 1999 (Sleggs et al. 2000).

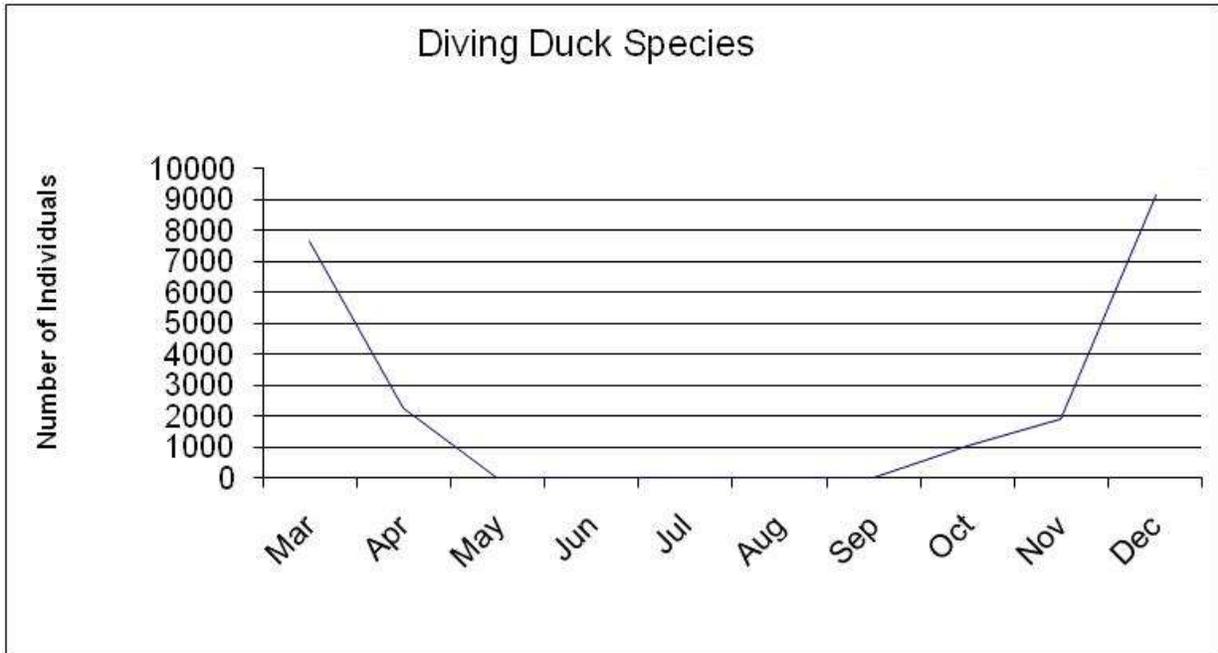


Figure B.2. Average Number of Individuals for all Diving Duck Species per Month Observed on the Montezuma NWR, 1997 to 1999 (Sleggs et al. 2000).

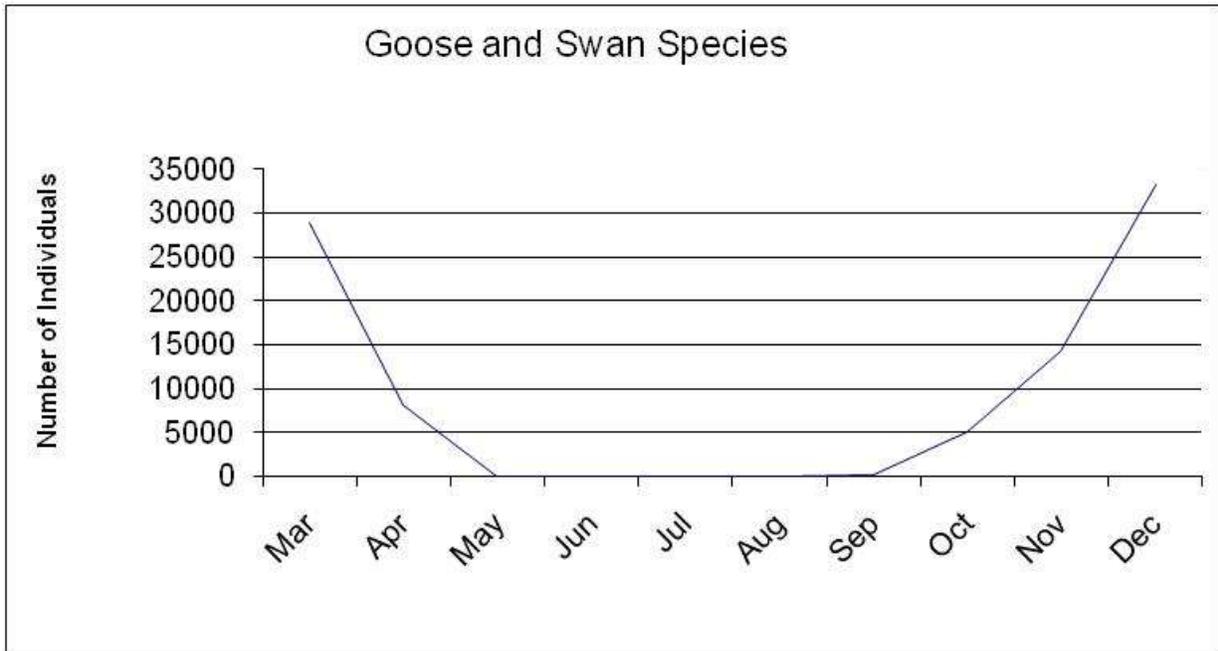


Figure B.3. Average Number of Individuals for all Goose and Swan Species per Month Observed on the Montezuma NWR, 1997 to 1999 (Sleggs et al. 2000).

(d) How would the use be conducted?

Cyclists will either travel to the refuge by bicycle and enter at public entry points or transport bicycles by vehicle or boat if traveling along the adjacent canals and depart from designated

parking and boat landing areas. Travel is limited to designated roads and parking areas, where road width can accommodate the safe passage of other users. The Wildlife Drive is typically designated as one-way traffic and has sufficient viewing distance for bicyclists and automobile drivers, alike, to detect other users and maneuver to accommodate them.

Posted information and maps will identify the routes open for bicycle and vehicular travel and explain permitted public uses. Current designated wildlife observation trails on the refuge are described in the refuge's "Wildlife Watching Guide."

Bicycling will occur on individual and group bases. To accommodate other users and promote a positive wildlife observation experience, we will encourage smaller group sizes (e.g., 10 people or less). Groups larger than 10 persons will be required to contact the refuge office prior to visiting the Wildlife Drive so the refuge can determine whether the group will require a special use permit.

Vehicular access on the refuge is conducted according to applicable provisions of 50 CFR §27.31 General Provisions Regarding Vehicles and New York State law. To promote safe vehicle operation, to reduce the risk of vehicular collisions with other users and wildlife, and to enhance opportunities for wildlife observation, vehicle travel is subject to a maximum speed of 15 miles per hour. The Wildlife Drive accommodates one-way traffic only, unless a portion of the roadway is closed for maintenance.

Refuge staff will continue to record visitor numbers, types of access, user interactions, and potential safety concerns. Safety and information signs will be installed and maintained as necessary. The Wildlife Drive is maintained in such a manner as is practical to minimize environmental effects such as erosion and sedimentation and to provide safe conditions for public access.

(e) Why is this use being proposed?

One of the secondary goals of the Refuge System is to provide opportunities for the public to develop an understanding for wildlife wherever those opportunities are compatible. Many visitors participating in this activity will be directly engaged in the priority public uses which are identified in the National Wildlife Refuge Improvement Act of 1997.

Public demand for bicycling along the Wildlife Drive has existed for 10 years or more. The use of bicycles can provide increased opportunity for public participation in and access to priority public uses such as fishing, wildlife observation and photography, and environmental education and interpretation. Bicycling provides visitors without an automobile a way to view the refuge's diverse biological assets. This exposure may lead to a better understanding of the importance and value of the Refuge System to the environment and the American people.

Availability of Resources:

The resources necessary to provide and administer this use are available within current and anticipated refuge budgets. Staff time associated with administration of this use is related to assessing the need for road maintenance and repair, conducting such repairs or overseeing such repairs by contractors, maintaining associated road infrastructure, maintaining traffic counters

and recording related data, analyzing use patterns, monitoring potential impacts of the use on refuge resources and visitors, and providing information to the public about the use. Aside from providing safe and quality priority public uses, road maintenance would be necessary to facilitate refuge management activities by staff.

Refuge vehicles are needed to effectively administer the use. Personnel of the maintenance staff perform the maintenance and repair of refuge roads and associated structures. The refuge has heavy equipment including a motor grader, dump truck, bulldozer, backhoe, 4×4 farm tractor, skid steer loader, and front-end loader. A maintenance facility exists and is needed to repair refuge vehicles and equipment and to construct necessary signs, kiosks, gates, and other maintenance operations.

These activities will be conducted in conjunction with and are not additive to the activities outlined in the refuge’s “Vehicular Travel to Facilitate Priority Public Uses” compatibility determination. Based on a review of the budget allocated for recreational use management, funding is adequate to ensure compatibility and to administer and manage the recreational use listed.

Anticipated Impacts of the Use:

The presence of vehicles and people biking on refuge roads can lead to displacement of animals from the road, although disturbance usually is a negligible influence on large mammal distributions and movements (Purdy et al. 1987, Boyle and Samson 1985). The effects on other forms of wildlife appear to be short term with the exception of breeding bird communities. A study by Miller et al. (1998) indicates that species composition and nest predation was altered adjacent to trails in both forested and grassland habitats. It appears that species composition changes are due to the presence of humans and not the trail or roadway itself. On the other hand, nest predation does appear to be a function of the trail which allows access to mammalian nest predators. Several studies showed that in areas where human activity was common and frequent [as is true on the refuge’s Wildlife Drive], birds were less disturbed than those in areas where humans were uncommon (Miller et al. 2001). The refuge will continue its proven management strategies of educating trail and roadway users regarding how their activities affect wildlife and how to modify their use to minimize impacts on wildlife (Miller et al. 1998, Klein 1993).

The use of trails and gravel roads could lead to soil compaction, exposure of tree roots, and the modification of plant species 3 to 6 feet on either side of the trail which is a function of soil compaction, invasive species, and direct trampling of plants (Kuss 1986). The refuge will continue its road maintenance and erosion control, and user education to protect plant species and habitats along trails and roadways. Use of the Wildlife Drive could pose a threat to endangered or threatened species if such were found utilizing habitat near the road location. In this case, the road use would be monitored and evaluated for such threats and management action would be taken to ensure habitat protection. There are no federally listed species along the Wildlife Drive at this time. Potential conflict with priority public uses will be minimized by using information and orientation signs, other media, and personal communication with visitors to inform the various users about current public uses. Roadway use will be restricted when the area is open to hunting.

The refuge believes that with proper management bicycling will not result in any short or long term impacts that will adversely affect the purpose of the refuge or the mission of the National Wildlife Refuge System.

Public Review and Comment:

As part of the comprehensive conservation planning process (CCP) for the Montezuma National Wildlife Refuge, this compatibility determination will undergo a comment period of 30 days concurrent with the release of our draft CCP/Environmental Assessment.

Determination (check one below):

<input type="checkbox"/>	Use is Not Compatible
<input checked="" type="checkbox"/>	Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

1. Bicycle travel along the Wildlife Drive is limited to refuge public use hours—½ hour before sunrise to ½ hour after sunset.
2. Bicycling will only be permitted during summer when fewer migratory birds are present. Dates will be determined seasonally by the refuge manager depending on migration timing and habitat conditions.
3. Signs necessary for visitor information, safety, and traffic control will be installed and maintained as necessary.
4. The refuge will continue with its outreach program to promote public awareness and compliance with refuge public use regulations.
5. In order to provide for visitor safety and maintain a high quality setting for wildlife observation, a speed limit of 15 miles per hour will be imposed for all traffic.
6. The provisions for vehicle travel on national wildlife refuges as contained in applicable provisions of 50 CFR §27.31, General Provisions Regarding Vehicles, will be implemented including: establishing designated routes of travel that are conveyed to the public through signs and/or maps, assimilation of state laws and regulations governing the operation and use of vehicles, no operation of vehicles while under the influence of intoxicating beverages or controlled substances, reasonable and prudent operation, maximum speed limit, prohibition of vehicles producing excessive noise or visible pollutants, requirements for properly operating muffler, brakes, brake lights, headlight and tail lights, vehicle operators must be properly licensed, vehicles must be properly registered, licensed, and inspected, and vehicle operators must not obstruct the free movement of other vehicles.
7. Conditions that risk or will likely risk public safety and/or resource protection will be identified and appropriate action will be promptly taken to correct such conditions.

7. The refuge’s step-down plan for Public Use will be developed to include a section on the management and administration of bicycling on the refuge’s roadway system.

Justification:

Bicycling was determined to not be compatible in a 1994 CD. We propose to allow bicycling now because it has become a popular mode of alternate transportation, because we now have a seasonal boat landing dock to serve visitors from the canal (most boaters traveling the canal get around by bicycle when they come ashore), and because bicycling promotes a healthy lifestyle in the outdoors and allows us to connect with a new audience. There has been a demand from individuals and biking groups (namely, Erie Canal bike tours), to use the Wildlife Drive. The U.S. Fish and Wildlife Service and the National Wildlife Refuge System maintain goals of providing opportunities for wildlife viewing and photography, as well as environmental interpretation. Allowing the use of the Wildlife Drive by persons bicycling for its own sake will have the secondary benefit of providing these visitors a chance to view wildlife and their habitats, which would further the mission of the Service. These users may take the time to learn more about the refuge while they pursue their activity and become more avid supporters of wildlife and the National Wildlife Refuge System.

The impacts of this use during the interim period, and subject to the stipulations above, are not expected to materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the refuge was established. This use does not pose significant adverse effects on trust species or other refuge resources and will not interfere with other uses being conducted on the refuge, or cause an undue administrative burden for the interim period identified.

Signature: Refuge Manager: _____
(Signature and Date)

Concurrence: Regional Chief: _____
(Signature and Date)

Mandatory 10-year Reevaluation Date: _____

Literature Cited:

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COMPATIBILITY DETERMINATION

Use: Dog Walking

Refuge Name: Montezuma National Wildlife Refuge

Date Established: September 12, 1938

Establishing and Acquisition Authorities:

The U.S. Fish and Wildlife Service acquired lands to be established as the Montezuma National Wildlife Refuge under Executive Order 7971 and established the refuge in 1938 under the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. §715).

Purpose(s) for which Established:

“...as a refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7971).

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. §715d).

National Wildlife Refuge System Mission:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

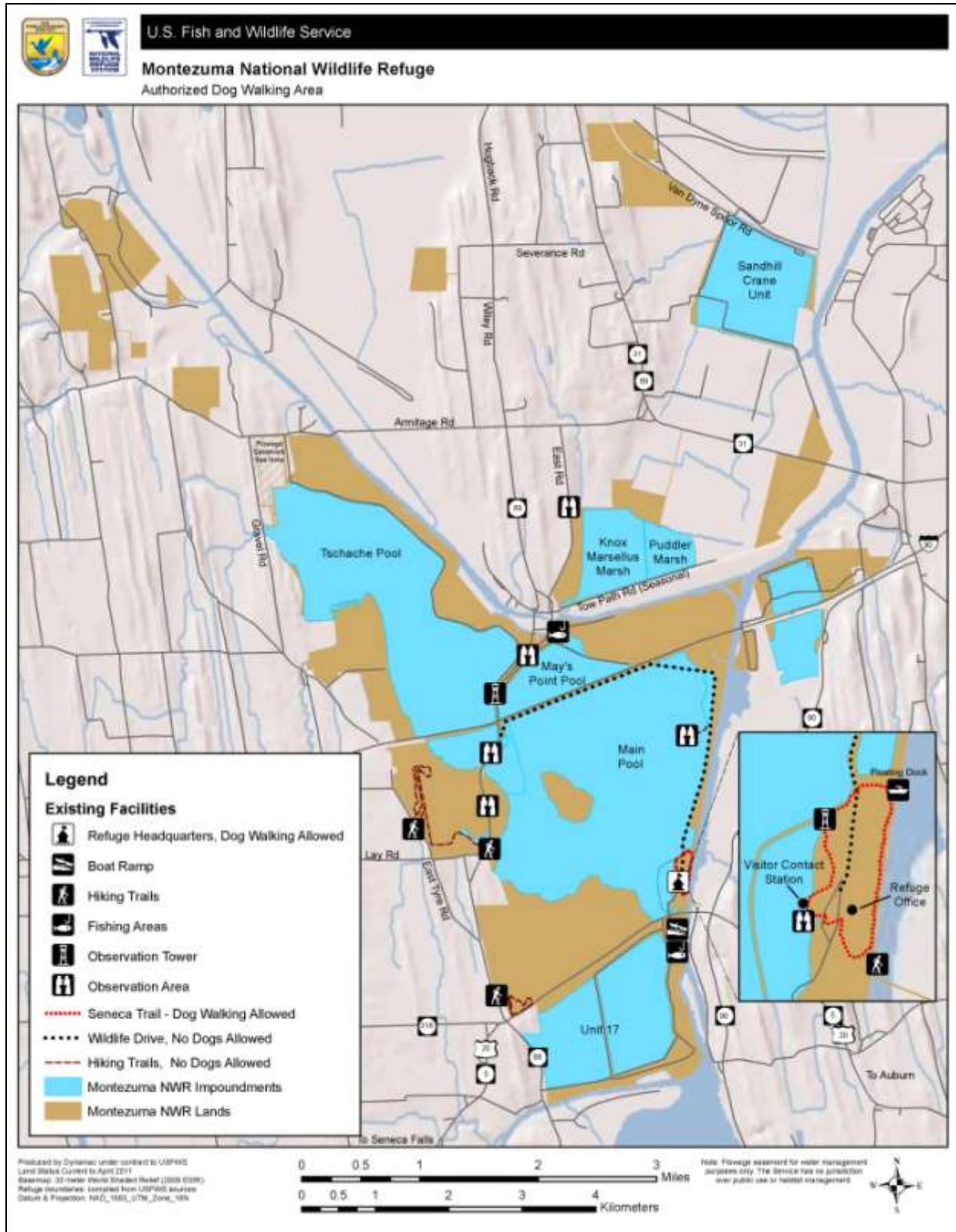
Description of Use:

(a) What is the use? Is the use a priority public use?

The use is dog walking. Dog walking is not a priority public use of National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

(b) Where would the use be conducted?

Dog walking would be conducted around the refuge headquarters area and on the 1-mile Seneca Trail only (map B.1). Dog walking on the refuge has been allowed for several years, as long as dogs were leashed and under the owner’s control. However, since issues with unleashed dogs in more remote areas of the refuge have led to increased wildlife and visitor disturbance, we are proposing to limit dog walking to the refuge headquarters area and Seneca Trail, where staff presence is more pronounced and visitor behavior is more effectively monitored and enforced. Because the refuge headquarters area and Seneca Trail are located in already highly-disturbed areas, the potential impacts to wildlife and their habitats are minimal.



Map B.1. Montezuma NWR Authorized Dog Walking Area (see inset map).

(c) When would the use be conducted?

Dog walking would be permitted year-round around the refuge headquarters area. A portion of the Seneca Trail is closed to all visitor use during osprey (*Pandion haliaetus*) nesting season (typically June into August, depending when eggs are laid); this time of trail closure also coincides with high cerulean warbler activity along the Seneca Trail). The Seneca Trail is also closed to dog walking and other public uses when open to deer hunting (i.e., in winter months when other public use is not in high demand). Dog walking would be restricted to when the refuge is open, one-half hour before sunrise to ½ hour after sunset.

(d) How would the use be conducted?

Dog walkers would be allowed to walk their dogs only when the dog is attached to a 6-foot (or less) lead and the dog walker is in control of the lead and dog. All dog walkers with properly leashed dogs would be restricted to the refuge headquarters area and the Seneca Trail. Dog owners would be required to pick up after their dogs.

(e) Why is this use being proposed?

Dog walking has historically been allowed on the refuge, as long as the dog was on a 10-foot lead and under the owner’s control. In recent years, increased disturbance to wildlife and other visitors has occurred in more remote areas of the refuge due to off-leash dogs. It is difficult for the current staff to monitor dog walking in remote areas of the refuge. Limiting dog walking to an already-disturbed area with a higher concentration of staff and volunteers would accommodate both resource protection and visitor satisfaction.

Availability of Resources:

The resources necessary to provide and administer this use are available within current and anticipated refuge budgets. Staff time associated with administration of this use is related to assessing the need for parking area and trail maintenance and repair, conducting such repairs or overseeing such repairs by contracted work, analyzing use patterns, monitoring potential impacts of the use on refuge resources and visitors, and providing information to the public about the use.

These activities would be conducted in conjunction with and are not in addition to the activities outlined in the refuge’s “Cross-country Skiing and Snowshoeing” and “Wildlife Observation, Photography, Environmental Education, and Interpretation” compatibility determinations. Based on a review of the budget allocated for recreational use management, funding is adequate to ensure compatibility and to administer and manage the recreational use listed.

Anticipated Impacts of the Use:

Because the refuge headquarters area and Seneca Trail are already highly disturbed areas (with buildings, parking areas, lawn, boat traffic along the adjacent canal), dogs would be restrained by a leash and under the control of their owners, owners would be required to pick up after their dogs, and there is a higher level of staff presence as compared to more remote areas on the refuge, the potential impacts to wildlife and their habitats are minimized. In addition, the Seneca Trail has been and will continue to be at least partially closed to all visitors during the osprey nesting season, which coincides with cerulean warbler nesting season. This trail is also closed to dog walking and other public uses during part of the deer hunting season.

The presence of dogs may displace foraging birds (Lafferty 2001), disrupt their nesting behavior (Langston et al. 2007, Lord et al. 2001, Taylor et al. 2007), or destroy nests (Nol and Brooks 1982). These affects appear to be most pronounced for species that nest or feed on the ground. The presence of dogs may also reduce both bird diversity and abundance (Banks and Bryant 2007). The visual presence of dogs may alter the physiology and behavior of mammals (Miller et al. 2001) and their persistent scent may displace mammalian predators (George and Crooks 2006, Lenth et al. 2008, Reed and Merenlender 2008).

Miller et al. (2001) showed that the presence of a pedestrian is the additive factor in disturbing wildlife when comparing wildlife response to dog-alone, pedestrian-alone, and dog-on-leash treatments. Flush distance and distance moved were almost always greater when activities occurred off trail versus when the same activities occurred on trail, suggesting that where recreational activities occurring on-trail are frequent and spatially predictable, animals would likely habituate to activity in these locations.

Studies have shown that when visitors speak to refuge or wildlife area personnel and understand how restrictions would help wildlife, they are more likely to support restrictions (Purdy et al. 1987, Harris et al. 1995, Klein 1993). The emphasis on how human activities affect wildlife can lead people to associate their actions with either benefitting or harming wildlife, and they would thus develop a conservation ethic. Such an ethic can minimize the number of wildlife-human conflicts occurring in natural areas (Knight and Temple 1995). While staff presence occurs sporadically on more remote public use areas on the refuge (e.g., Esker Brook and South Spring Pool Trails), staff and volunteers are regularly in the headquarters and Seneca Trail area. Regular contact with visitors occurs daily, leading to increased support of restrictions in these areas, as studied by Purdy et al. (1987), Harris et al. (1995), and Klein (1993). An initial increase in staff presence at more remote public use areas on the refuge may be necessary upon the restriction of dog walking in those areas in order to inform visitors of new rules and reasons for those rules, thereby gaining support for the restrictions.

The role of dogs in wildlife diseases is poorly understood. However, dogs host endo- and ectoparasites, and can contract diseases from or transmit diseases to wild animals. In addition, dog waste is known to transmit diseases that may threaten the health of some wildlife and other domesticated animals. Domestic dogs potentially can introduce various diseases and transport parasites into wildlife habitats (Sime 1999). To mitigate these potential issues, visitors with dogs would not only be restricted to the trail or developed area, but would also be required to pick up after their dogs, alleviating some risk of dogs transmitting disease to wildlife.

The refuge believes that with the proper management, dog walking in this limited area of the refuge would not result in any short or long term impacts that would adversely affect the purpose of the refuge or the mission of the National Wildlife Refuge System.

Public Review and Comment:

As part of the comprehensive conservation planning process (CCP) for the Montezuma National Wildlife Refuge, this compatibility determination will undergo a comment period of 30 days concurrent with the release of our draft CCP/Environmental Assessment.

Determination (check one below):

	Use is Not Compatible
X	Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

1. Dog walking is limited to the refuge headquarters area and Seneca Trail, during refuge public use hours—½ hour before sunrise to ½ hour after sunset—year-round around the headquarters area and subject to seasonal closure along the Seneca Trail.
2. Dogs must be on a maximum 6-foot lead and under control of their owners at all times.
3. Visitors with dogs would be required to clean up after their dogs during each visit (i.e., pick up and dispose of feces).
4. Signs necessary for visitor information would be installed and maintained as necessary.
5. The refuge would continue with its outreach program to promote public awareness and compliance with refuge public use regulations.
6. Conditions that are or would risk public safety or resource protection would be identified and appropriate action would be promptly taken to correct such conditions.
7. The refuge’s step-down plan for public use would be developed to include a section on the management and administration of dog walking.

Justification:

Dog walking on the refuge has been allowed for several years, as long as dogs were leashed and under the owner’s control. However, since issues with unleashed dogs in more remote areas of the refuge have led to increased wildlife disturbance, we are proposing to limit dog walking to the refuge headquarters area and 1-mile Seneca Trail, where staff presence is more pronounced and visitor behavior is more effectively monitored and enforced. Because the refuge headquarters area and Seneca Trail are located in already highly-disturbed areas and offer more of a park-like setting, the potential impacts to wildlife and their habitats are minimized.

We would require that dogs be leashed on a 6-foot lead and under the owner’s control at all times in order to provide for the visitor safety and resource protection warranted in these areas. In addition, some or all of the Seneca Trail would be closed annually to accommodate osprey nesting season, which coincides with cerulean warbler activity in that area, and during part of the deer hunting season (as described above). Total trail closure during that time would offer resource protection, while still allowing visitors to have their dogs in the headquarters area to enjoy wildlife observation, photography, and interpretation.

Limiting leashed dog walking to the headquarters area and Seneca Trail, and employing the stipulations listed above, would not materially interfere with or detract from the mission of the

National Wildlife Refuge System or the purposes for which the refuge was established, and would not place undue burden on the refuge's available resources.

Signature: Refuge Manager: _____
(Signature and Date)

Concurrence: Regional Chief: _____
(Signature and Date)

Mandatory 10-year Reevaluation Date: _____

Literature Cited:

Banks, P. B., and J. V. Bryant. 2007. Four-legged friend or foe? Dog walking displaces native birds from natural areas. *Biology Letters* 3: 611-613.

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- Sime, C. A. 1999. Domestic Dogs in Wildlife Habitats. Pp. 8.1-8.17 in G. Joslin and H. Youmans, coordinators. *Effects of recreation on Rocky Mountain wildlife: A Review for Montana*. Committee on Effects of Recreation on Wildlife, Montana Chapter of The Wildlife Society.
- Taylor, E. C., R. E. Green, and J. Perrins. 2007. Stone curlews (*Burhinus oedicanus*) and recreational disturbance: developing a management tool for access. *Ibis* 149(Supplement): 37-44.

COMPATIBILITY DETERMINATION

Use: Cross-country Skiing and Snowshoeing

Refuge Name: Montezuma National Wildlife Refuge

Date Established: September 12, 1938

Establishing and Acquisition Authorities:

The U.S. Fish and Wildlife Service acquired lands to be established as the Montezuma National Wildlife Refuge under Executive Order 7971 and established the refuge in 1938 under the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. §715).

Purpose(s) for which Established:

“...as a refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7971).

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. §715d).

National Wildlife Refuge System Mission:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

(a) What is the use? Is the use a priority public use?

The uses are cross-country skiing and snowshoeing. These are not priority public uses of National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57). However, they can facilitate visitor participation in priority public uses including wildlife observation and photography and interpretation.

(b) Where would the use be conducted?

Since the establishment of the refuge in 1938, cross-country skiing and snowshoeing have been allowed on the refuge’s system of roads and trails. We anticipate offering about 8.5 miles of roads and trails for these uses.

Esker Brook Trails	2.5 miles
Orchard Trail	0.75 miles
Brook Trail	0.5 miles
Ridge Trail	0.5 miles
Esker Pond Loop	0.33 miles
South Spring Pool Trail	1 mile
Seneca Trail	1 mile

Swampside Trail	1 mile
Wildlife Drive (winter)	3.75 miles
Photography Blind Trail (closed during waterfowl banding season)	0.1 mile
Entrance Road (paved headquarters area)	0.33 miles
Oxbow Trail (proposed)	0.75 miles

These trails and roads provide the public with an opportunity to experience refuge wildlife and plant communities in a diversity of habitats and facilitate priority public uses such as wildlife observation, wildlife photography, environmental education, and interpretation.

(c) When would the use be conducted?

Cross-country skiing and snowshoeing would be allowed on designated trails and roads when there is sufficient snow to support these activities. Daily use hours are between ½ hour before sunrise and ½ hour after sunset when the refuge is open to the public. Most cross-country skiing and snowshoeing would occur in mid-December through mid-March.

To minimize potential conflicts and ensure public safety, the Wildlife Drive and some trails are closed to the public, except for hunters, during the white-tailed deer (*Odocoileus virginianus*) hunting season. The Wildlife Drive would be closed to cross-country skiing and snowshoeing when it is open for hunting (December 1 to the end of the State deer hunting season).

Although cross-country skiing and snowshoeing generally occur during times of year when wildlife use is low on the refuge, occasionally the refuge manager may adjust opening and closing depending on habitat conditions and potential wildlife impacts, particularly on wintering waterfowl (see figures B.4 through B.6). Information about public use openings and closures will be posted at the refuge visitor contact station and on the refuge Web site, www.fws.gov/r5mnwr.

(d) How would the use be conducted?

Cross-country skiing and snowshoeing is currently allowed on the refuge. Visitors engaged in these activities typically park vehicles at refuge parking areas. These uses will be conducted in accordance with the stipulations necessary to ensure compatibility. In some cases, cross-country skiers and visitors snowshoeing may share trails and roads with other users.

Information kiosks, refuge publications and Web site, and refuge and visitor contact station staff will identify the roads and trails open for cross-country skiing and snowshoeing. The refuge recently published a “Wildlife Watching Guide” brochure which describes the refuge’s trails and opportunities. Parking lots have been constructed at all existing trailheads. An average of 67 inches of snow falls at Montezuma. No snow removal is conducted on refuge trails, the Wildlife Drive, or parking areas, with the exception of the visitor contact station parking area and Esker Brook trailhead, where snow is removed periodically, when feasible.

Safety and information signs will be installed and maintained as necessary. Designated roads and trails will be maintained in such a manner as is practical to minimize environmental effects such as erosion and sedimentation and to provide safe conditions for public access.

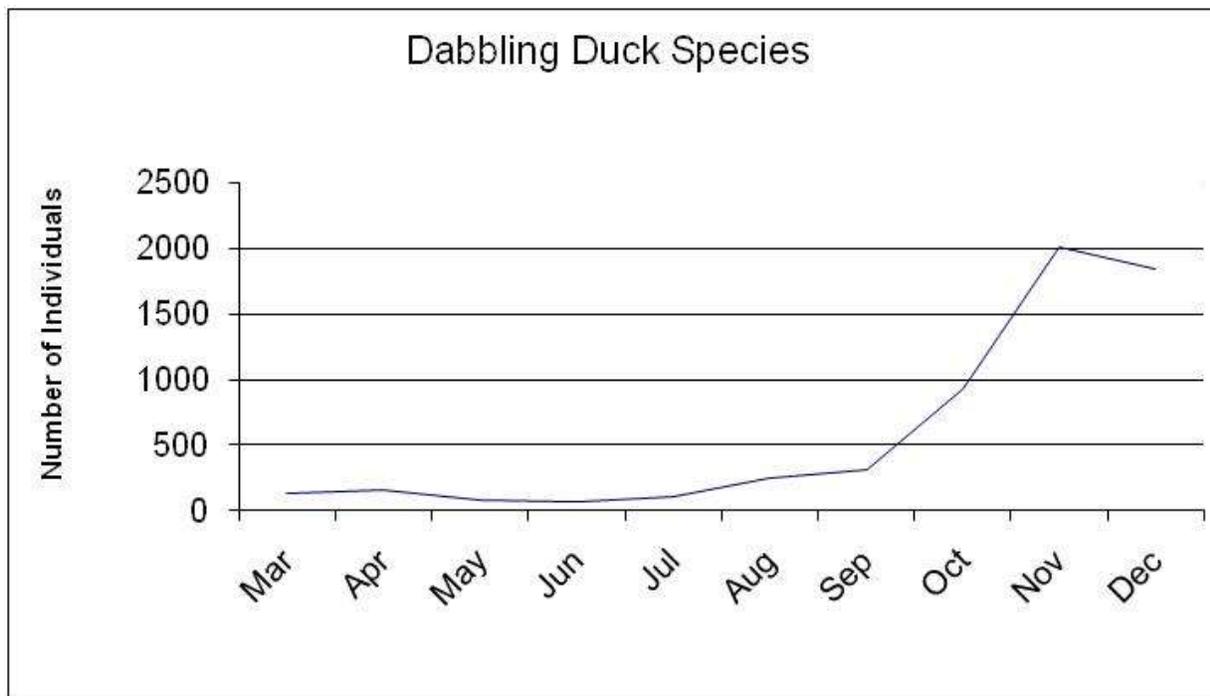


Figure B.4. Average Number of Individuals for all Dabbling Duck Species per Month Observed on the Montezuma National Wildlife Refuge, 1997 to 1999 (Sleggs et al. 2000).

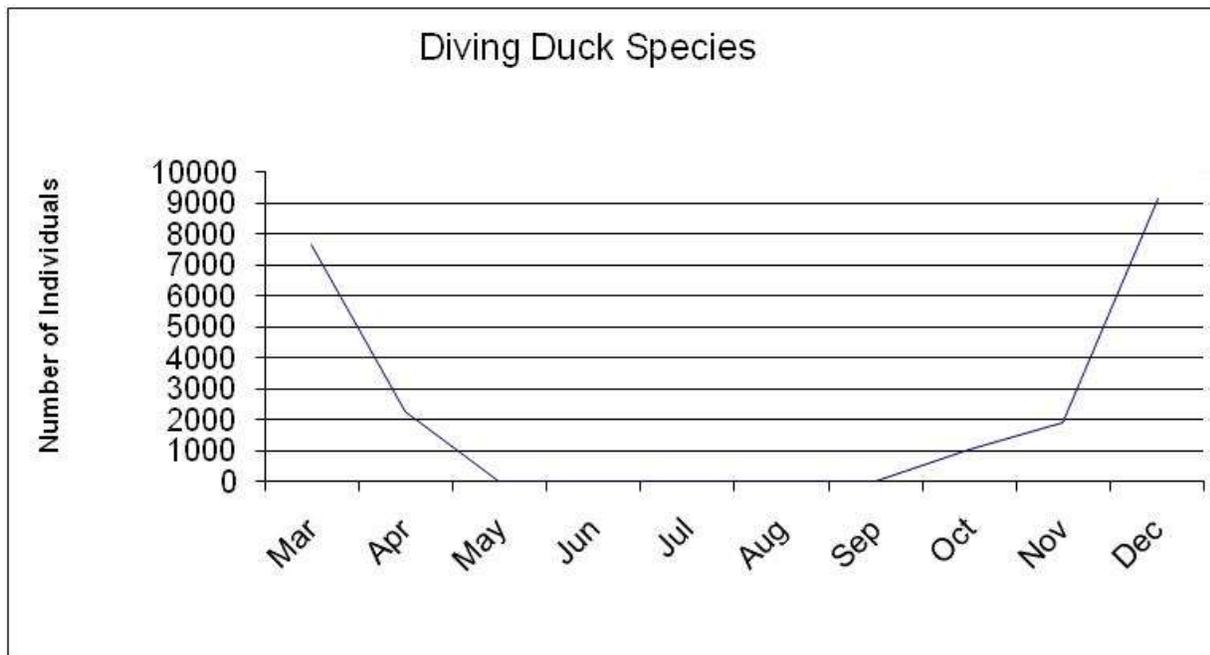


Figure B.5. Average Number of Individuals for all Diving Duck Species per Month Observed on the Montezuma National Wildlife Refuge, 1997 to 1999 (Sleggs et al. 2000).

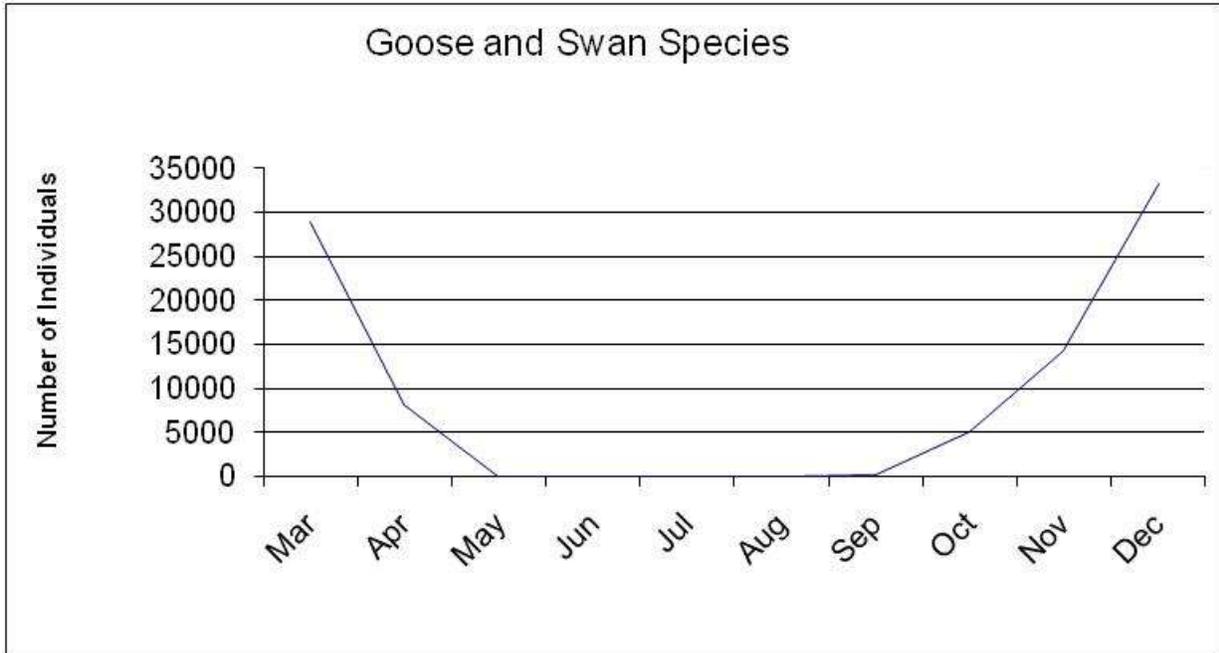


Figure B.6. Average Number of Individuals for all Goose and Swan Species per Month Observed on the Montezuma National Wildlife Refuge, 1997 to 1999 (Sleggs et al. 2000).

(e) Why is this use being proposed?

Cross-country skiing and snowshoeing are existing public uses on the refuge. When confined to designated routes, they are relatively unobtrusive means for visitors to participate in priority public uses during the wintertime, including wildlife observation and photography, interpretation, and environmental education. The existing routes for these uses provide the public with an opportunity to view the diversity of habitats and wildlife that characterize the refuge without significant environmental consequences at current and projected levels of use. Refuge trails are designed to support opportunities for wildlife and wildlands observation, photography, walking and hiking, cross-country skiing and snowshoeing, and sightseeing.

Availability of Resources:

With the exception of staff time necessary to administer and maintain it, the trail system is self-sustaining. Staff hours to manage the trail system in FY 2006 totaled 2,160 hours or the equivalent of approximately 1 full-time employee at the GS-11 salary level.

Welcome and Orient Visitors.....	280 hours
Wildlife Observation.....	120 hours
Wildlife Photography.....	80 hours
Environmental Education.....	120 hours
Interpretation Program.....	360 hours
Maintenance of the above facilities.....	1,200 hours

Based on existing refuge expenditures for managing visitor use, funding is adequate at the current level of use and to administer and manage the subject use.

Anticipated Impacts of the Use:

Potential and anticipated impacts of cross-country skiing and snowshoeing as reported in the literature and through field investigations are described below.

Impacts to Plants: Public use, such as cross-country skiing, and snowshoeing, can have indirect impacts to plants by compacting soils and diminishing soil porosity, aeration and nutrient availability that affect plant growth and survival (Kuss 1986). Hammitt and Cole (1998) note that compaction limits the ability of plants to re-vegetate affected areas. Repeated public use can directly impact plants by crushing the plants themselves. Rare plants with limited site occurrence are particularly susceptible to such impacts. Plants growing in wet or moist soils are the most sensitive to disturbance from trampling effects (Kuss 1986). Foot travel may increase root exposure and trampling effects, however it is anticipated that under current levels of use the incidence of these problems will be minor. Designated routes for these consist of existing trails, many with hardened surfaces or are existing trails that have been used for many years. Designated routes do not have any known occurrences of rare plant species on their surface that would be impacted by this use. Continuing to allow cross-country skiing and snowshoeing on these routes is not likely to cause any significant impacts to plants or plant communities because these uses generally occur during the winter (i.e., outside of plant growing season) and when the ground is covered in several inches of snow.

Impacts to Soils: Soils can be compacted and eroded as a result of continued use of trails. It is anticipated that some very minor soil erosion could occur as a result of continuing to allow cross-country skiing and snowshoeing on designated routes. Under current levels of use and because these activities occur during the winter when refuge soils are covered by several inches of snow, impacts to soils (e.g., erosion and compaction) are not likely to be significant.

Hydrologic Impacts: Roads and trails can affect the hydrology of an area, primarily through alteration of drainage patterns. It is anticipated that the designated existing roads and trails will continue to influence hydrology regardless of cross-country skiing and snowshoeing. Maintenance will be required to create adequate and proper drainage to avoid a hydrologic impact. Based on the current level of use, these uses are not likely to significantly increase erosion, incision, or stream alteration. Therefore, no significant hydrologic impacts are anticipated from this use.

Wildlife Impacts: Disturbances vary with the wildlife species involved and the type, level, frequency, duration, and the time of year such activities occur. Whittaker and Knight (1998) noted that wildlife response can include attraction, habituation, and avoidance. These responses can have negative impacts to wildlife such as mammals becoming habituated to humans making them easier targets for hunters. Human induced avoidance by wildlife can prevent animals from using otherwise suitable habitat.

Trails, including cross-country skiing and snowshoeing trails, can disturb wildlife outside the immediate trail corridor (Trails and Wildlife Task Force 1998, Miller et al. 2001). Miller et al. (1998) found bird abundance and nesting activities (including nest success) increased as distance from a recreational trail increased in both grassland and forested habitats. Bird communities in this study were apparently affected by the presence of recreational trails, where “generalists”

(e.g., American robins (*Turdus migratorius*)) were found near trails and “specialist” species (e.g., grasshopper sparrows (*Ammodramus savannarum*)) were found farther from trails. Nest predation was also found to be greater near trails (Miller et al. 1998).

Disturbance can cause shifts in habitat use, abandonment of habitat, and increased energy demands on affected wildlife (Knight and Cole 1991). Flight in response to disturbance can lower nesting productivity and cause disease and death. Knight and Cole (1991) suggest recreational activities occurring simultaneously may have a combined negative impact on wildlife. Hammitt and Cole (1998) conclude that the frequent presence of humans in wildland areas can dramatically change the normal behavior of wildlife mostly through “unintentional harassment.”

Seasonal sensitivities can compound the effect of disturbance on wildlife. For example, cross-country skiing can displace large mammals and other wildlife from their wintering areas, thereby consuming large amounts of stored fat reserves (Cassier et al. 1992). Hammitt and Cole (1998) noted that females with young (such as white-tailed deer) are more likely to flee from a disturbance than those without young. Cross-country skiing and snowshoeing can also lead wildlife species to avoid certain areas (Gaines et al. 2002). Some uses, such as snowshoeing in order to observe wildlife, are directly focused on viewing certain wildlife species and can cause more significant impacts during the breeding season and winter months.

Cross-country skiing and snowshoeing also cause snow compaction. Compacted snow can alter predator-prey relationships by providing predators with packed snow routes which allow them to access areas they are usually excluded from (Gaines et al. 2002). Compacted snow can also negatively impact small mammal species that travel through or live in tunnels under the snow. This can either indirectly impact species, by altering travel routes, or directly impact species, by crushing or suffocating individuals (Gaines et al. 2002).

It is anticipated that there will be temporal disturbances to wildlife species using habitat on or directly adjacent to the designated cross-country skiing and snowshoeing routes. These disturbances are likely to be short term and infrequent based on current levels of use. Long-term impacts may include certain wildlife species avoiding trail corridors as a result of these uses over time. These impacts are not likely to significantly affect wildlife populations along these routes based on the current use pattern.

Threatened and Endangered Species Impacts:

It is anticipated that under current conditions and use levels, cross-country skiing and snowshoeing will not cause any significant direct or indirect impacts to threatened or endangered species. Routes designated for this use are preexisting roads and trails, some of which have been in existence for many years. No new habitat clearing will be required to accommodate pedestrian activities; however some vegetation clearing will be required within the trail corridor.

User Conflicts:

Conflicts between trail users range from concerns over personal safety to certain user groups feeling that they should be given priority over other groups based on past history or other reasons. Conflicts between groups are not significant at Montezuma refuge. This is likely due to

the relatively low number of users in the area, as compared with heavy use and conflict sites reported in the literature. To minimize conflicts between trail users and hunters, some of the trails are closed during the deer hunting season, and some of the areas with trails are closed to hunting. The refuge manager reserves the right to close the Wildlife Drive to cross-country skiing and snowshoeing at any time if necessary to ensure public safety or to minimize user conflicts.

Providing safe routes for wildlife-dependent activities is an important consideration for wildlife observation trails on the refuge. Safety considerations include ability to maintain a trail to allow safe use and timing of various uses such as wildlife observation and hunting activities. Routes designated for these uses are considered safe under current conditions and levels of use. Further monitoring of these uses will help the refuge manager determine if changes are necessary to improve visitor safety. The uses are viewed as an effective and justifiable method of access that enables the public to discover, experience, and enjoy the refuge and participate in priority public uses.

Public Review and Comment:

As part of the comprehensive conservation planning process (CCP) for the Montezuma National Wildlife Refuge, this compatibility determination will undergo a comment period of 30 days concurrent with the release of our draft CCP/Environmental Assessment.

Determination (check one below):

<input type="checkbox"/>	Use is Not Compatible
<input checked="" type="checkbox"/>	Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

1. Cross-country skiing and snowshoeing are restricted to refuge open hours from ½ hour before sunrise to ½ hour after sunset.
2. Cross-country skiing and snowshoeing are allowed on designated trails when there is sufficient snow to support these uses. Cross-country skiing and snowshoeing are allowed along the Wildlife Drive, when conditions allow, except from December 1 to the end of the State’s hunting season.
3. Cross-country skiing and snowshoeing on roads open to vehicular travel will be permitted subject to vehicles having the right-of-way.
4. Signs necessary for visitor information, safety, and traffic control will be installed and maintained.
5. The refuge will continue its outreach program to promote public awareness and compliance with refuge public use regulations.

All routes designated for these uses will be annually inspected for maintenance needs. Road and trail conditions that require immediate maintenance will be identified and appropriate action will be taken to correct such conditions.

Justification:

Cross-country skiing and snowshoeing have been determined to be compatible provided the stipulations necessary to ensure compatibility are implemented, and the use does not negatively impact visitor safety and resource protection. Under such conditions, the use is not expected to materially interfere with or detract from the mission of the National Wildlife Refuge System nor diminish the purposes for which the refuge was established, will not pose significant adverse effects on refuge resources, will not interfere with public use of the refuge, nor cause an undue administrative burden.

Signature: Refuge Manager:

(Signature and Date)

Concurrence: Regional Chief:

(Signature and Date)

Mandatory 10-year Reevaluation Date:

Literature Cited:

Cassier, E. F., D. J. Freddy, and E. D. Ables. 1992. Elk responses to disturbance by cross-country skiers in Yellowstone National Park. *Wildlife Society Bulletin*, 20(4): 375-381.

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Whittaker, D. and R. Knight. 1998. Understanding wildlife responses to humans. *Wildlife Society Bulletin* 26(3): 312-317.

COMPATIBILITY DETERMINATION

Use: Vehicular Travel to Facilitate Priority Public Use

Refuge Name: Montezuma National Wildlife Refuge

Date Established: September 12, 1938

Establishing and Acquisition Authorities:

The U.S. Fish and Wildlife Service acquired lands to be established as the Montezuma National Wildlife Refuge (Montezuma Refuge, refuge) under Executive Order 7971 and established the refuge in 1938 under the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. §715).

Purpose(s) for which Established:

“...as a refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7971).

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. §715d).

National Wildlife Refuge System Mission:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

(a) What is the use? Is the use a priority public use?

The use is vehicular travel to facilitate priority public uses of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57), on the Montezuma National Wildlife Refuge (refuge). Priority public uses of the National Wildlife Refuge System are hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation. Vehicles are legally licensed cars, trucks, and road-legal motorcycles and do not include all-terrain vehicles and snowmobiles, which are prohibited on the refuge. Vehicular travel supports a variety of priority public uses such as wildlife observation, wildlife photography, environmental education, and interpretation.

(b) Where would the use be conducted?

Since the establishment of the refuge in 1938, the public has been allowed to operate vehicles on the Main Impoundment Dike (3.5 miles). This route has long been known as the Wildlife Drive and provides access to the refuge, including those with disabilities. This road provides vehicular access from State Route 5 and U.S. Route 20 to State Route 89. Vehicular access on the Wildlife Drive also provides the public with an opportunity to experience refuge wildlife and plant communities in a diversity of habitats. The road has existing hard-packed surfaces.

(c) When would the use be conducted?

The Wildlife Drive is open annually to vehicular access until closed November 30. An average of 67 inches of snow falls annually at Montezuma Refuge. No snow removal is conducted on the Wildlife Drive. Daily hours of use are between ½ hour before sunrise and ½ hour after sunset, when the refuge is open to the public. The general pattern of vehicle travel shows visitation is higher on weekends than weekdays. Most vehicular access occurs during the peak of spring and fall waterfowl migration (mid-March through mid-May and mid-September through mid-November). A photography blind overlooking the Main Pool is accessible only from the Wildlife Drive. Additionally, the Wildlife Drive is self-interpreted and a proposed hiking trail (Oxbow Trail) will also be accessible from the drive. Opportunities exist year-round for environmental education and interpretation.

(d) How would the use be conducted?

Vehicular access on the refuge will be conducted according to applicable provisions of 50 CFR §27.31 General Provisions Regarding Vehicles and New York State law. Vehicle travel will be subject to a maximum speed of 15 miles per hour to promote safe vehicle operation, to reduce the risk of vehicular collisions with other users and wildlife, and to enhance opportunities for wildlife observation. The Wildlife Drive accommodates one-way traffic only, unless a portion of the roadway is closed for maintenance.

Vehicles must be properly licensed and registered, properly equipped, and legal for street travel by New York State law. Parking is available at the visitor contact station, and along the Wildlife Drive at the photography blind and the planned Oxbow Trail trailheads. At current levels of use, these facilities are adequate to handle parking in an efficient and safe manner. We are proposing to construct up to three new pulloffs along the Wildlife Drive, one along Route 31, and one along Van Dyne Spoor Road within 10 years of CCP approval to accommodate an expected increase in visitor (and vehicle) use. Safety and information signs have been installed and are maintained as necessary. The Wildlife Drive and pulloffs would be maintained in such a manner as is practical to minimize environmental effects such as erosion and sedimentation and to provide safe conditions for public access.

(e) Why is this use being proposed?

Vehicular use of designated roads on the refuge has been allowed since refuge establishment and enhances public access and provides increased opportunity to participate in priority public uses. Vehicular use of refuge roads allows enhanced opportunities for mobility-impaired persons to engage in priority public uses. Designated roads for vehicular travel will provide the public with an opportunity to experience the diversity of habitats and wildlife that characterize the refuge without significant environmental consequences at current levels of use.

Availability of Resources:

The resources necessary to provide and administer this use are available within current and anticipated refuge budgets. Staff time associated with administration of this use is related to assessing the need for road maintenance and repair, conducting such repairs or overseeing such repairs by contracted work, maintaining associated road infrastructure, maintaining traffic

counters and recording related data, analyzing use patterns, monitoring potential impacts of the use on refuge resources and visitors, and providing information to the public about the use. Aside from providing safe and quality priority public uses, road maintenance would be necessary to facilitate refuge management activities by staff.

Refuge vehicles are needed to effectively administer the use. Personnel of the maintenance and biological staff perform the maintenance and repair of refuge roads and associated structures. The refuge has heavy equipment including a motor grader, dump truck, bulldozer, backhoe, 4×4 farm tractor, skid steer loader, and front-end loader. A maintenance facility exists and is needed to repair refuge vehicles and equipment and to construct necessary signs, kiosks, gates, and other maintenance operations.

Based on a review of the budget allocated for recreational use management, funding is adequate to ensure compatibility and to administer and manage the recreational use listed.

Anticipated Impacts of the Use:

Potential long-term direct impacts of vehicle access include pollution, sedimentation, wildlife disturbance due to vehicular traffic, and wildlife mortality (road kills). Potential short-term direct impacts include noise and minor downstream sedimentation from dust and erosion. Indirect impacts include wildlife disturbance resulting from increasing human activities facilitated by vehicular access into wildlife habitat. A positive indirect impact of this use is increased public support for the refuge. Due to the fact that the Wildlife Drive has been in existence for many years and that the habitat loss is narrow and linear rather than in one large section, impacts to wildlife and plant species are not expected to be significant.

Soil Impacts: Roads promote soil erosion, primarily from sediment runoff following rains and during snowmelt. Although, the subject road is gravel and thus allows some direct penetration of precipitation into the soil, it is anticipated that some soil erosion will occur as a result of the continued use of the designated vehicle route. Maintenance operations to reduce soil erosion and sedimentation will be performed by the refuge as necessary. Based on current conditions and use, the designated vehicle route is not likely to cause significant increases in erosion and sedimentation.

Invasive Species Impacts: Roads can facilitate the introduction and spread of invasive and exotic plant species. These invasions result from the use of foreign material to construct and maintain roads, and from transport via motor vehicles traveling on roads. Based on current levels of use it is anticipated that no significant increases in invasive plant species will occur as a result of this use.

Pollution and Noise Impacts: Motor vehicles emit pollutants, create noise, and their use can disturb wildlife and humans. Pollutants from vehicle exhausts include hydrocarbons, nitrous oxide, and carbon monoxide. Such pollutants can negatively impact air and water quality that can have negative effects on plants, wildlife, and aquatic resources. The emission level of pollutants from automobiles on the Wildlife Drive is unknown. Noise levels from motor vehicles on the refuge have not been documented. Several major thorough-fares run through the refuge, such as Interstate 90, that the refuge has no control over.

Noise from motor vehicles primarily results from the sound of tires on the gravel road surface and from metallic sounds of body and chassis vibration. It is anticipated that pollution and noise impacts from vehicle travel under current levels will not significantly impact refuge resources or visitor experiences.

Wildlife Impacts: Roads facilitate human access into wildlife habitat. Vehicular traffic and associated human activity can cause disturbances to wildlife. Those disturbances vary with the wildlife species involved and the type, level, frequency, duration and the time of year those activities occur. Van der Zande et al. (1980) found that roads could cause disturbance to bird species up to 600 meters from “quiet rural roads.” Birds and mammals are commonly observed within sight of refuge roads.

Vehicle travel will be limited to daylight hours following refuge regulations therefore disturbances during the evening when mammalian species are most active will be minimal. Based on observations since the opening of the Wildlife Drive in 1938, road kills and disturbance to wildlife are negligible. Public support for refuge programs resulting from viewing opportunities provided by the Wildlife Drive is significant.

Public Review and Comment:

This is an existing use of the refuge, and a compatibility determination (CD) was submitted for public review and comment in February 2007. We have updated this CD as part of the comprehensive conservation planning process (CCP) for the Montezuma National Wildlife Refuge. This updated compatibility determination will undergo a comment period of at least 30 days concurrent with the release of our draft CCP/Environmental Assessment.

Determination (check one below):

<input type="checkbox"/>	Use is Not Compatible
<input checked="" type="checkbox"/>	Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

1. Vehicle travel along the Wildlife Drive is limited to refuge public hours (½ hour before sunrise to ½ hour after sunset).
2. Signs necessary for visitor information, safety, and traffic control will be installed and maintained as necessary.
3. The refuge will continue with its outreach program to promote public awareness and compliance with refuge public use regulations.
4. In order to provide for visitor safety and maintain a high quality setting for wildlife observation, a speed limit of 15 miles per hour will be imposed.
5. The provisions for vehicle travel on national wildlife refuges as contained in applicable provisions of 50 CFR §27.31, General Provisions Regarding Vehicles, will be implemented including: establishing designated routes of travel that are conveyed to the public through signs and/or maps, assimilation of state laws and regulations governing the operation and use of vehicles, no operation of vehicles while under the influence of intoxicating beverages or controlled substances, reasonable and prudent operation,

maximum speed limit, prohibition of vehicles producing excessive noise or visible pollutants, requirements for properly operating muffler, brakes, brake lights, headlight and tail lights, vehicle operators must be properly licensed, vehicles must be properly registered, licensed, and inspected, and vehicle operators must not obstruct the free movement of other vehicles.

6. Conditions that are or will risk public safety will be identified and appropriate action will be promptly taken to correct such conditions.

Justification:

Vehicle access to facilitate priority public use has been determined to be compatible provided the provisions of 50 CFR §27.31 are implemented, and the use does not exceed thresholds necessary for visitor safety and resource protection. This use has been determined to be compatible at existing levels of use if managed in a manner that does not result in hazards to visitors, cause significant degradation to plant communities and wildlife habitats, or significantly disturb wildlife.

The impacts of this use, subject to the stipulations above, are not expected to materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the refuge was established. This use does not pose significant adverse effects on trust species or other refuge resources and will not interfere with other uses being conducted on the refuge or cause an undue administrative burden for the interim period identified.

Signature: Refuge Manager:

(Signature and Date)

Concurrence: Regional Chief:

(Signature and Date)

Mandatory 10-year Reevaluation Date:

Literature Cited:

Van der Zande, A., Keurs, W. J., and Van Der Weijden. 1980. The impact of roads on the densities of four bird species in an open field habitat-evidence of a long-distance effect. *Biological Conservation* 18: 299-321.

Compatibility Determination

Use: Furbearer Management—Economic Use

Refuge Name: Montezuma National Wildlife Refuge

Date Established: September 12, 1938

Establishing and Acquisition Authorities:

The U.S. Fish and Wildlife Service acquired lands to be established as the Montezuma National Wildlife Refuge under Executive Order 7971 and established the refuge in 1938 under the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. §715).

Purposes for which Established:

“...as a refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7971).

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. §715d).

National Wildlife Refuge System Mission:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

(a) What is the use? Is the use a priority public use?

The use is furbearer management. Furbearers are considered a renewable natural resource with cultural and economic values. Furbearer management through trapping is considered to have economic value since the furs can be sold, and is an existing economic use of a renewable natural resource. Pursuant to refuge regulations at 50 C.F.R. 29.1, since this activity is considered to have economic value, we must determine if it is compatible with and contributes to the refuge purposes or the mission of the National Wildlife Refuge System. Trapping is used on the refuge as a management tool and therefore a description of the annual program is included as an appendix to the Annual Habitat Work Plan. The trapping program is an integral part of the refuge biological program, but it is not a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

(b) Where would the use be conducted?

Furbearer management is conducted in most areas of the refuge. Occasionally, trapping is not permitted in certain areas to allow furbearer populations to increase. Trapping is not permitted within 100 feet of open nature trails to reduce the potential for conflicts. A description of authorized trapping areas is provided to trappers annually.

(c) When would the use be conducted?

Furbearer management is conducted in accordance with New York State trapping seasons. At this time, trapping for upland species, including raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), gray fox (*Urocyon cinereoargenteus*), skunk (*Mephitis mephitis*), coyote (*Canis latrans*), opossum (*Didelphis virginiana*), and weasel (*Mustela* spp.), is from late October through mid-February, and trapping for beavers (*Castor canadensis*), muskrats (*Ondatra zibethicus*), and mink (*Neovison vison*) is from late-November through mid-February. The refuge is a State registered marsh so the muskrat season may be extended on an annual basis to facilitate habitat management or resource protection as needed. The annual occurrence of furbearer management within the Montezuma National Wildlife Refuge is at the discretion of the refuge manager and depends on the population size of the targeted species and management objectives.

(d) How would the use be conducted?

Furbearer management is conducted in accordance with New York State (NYS) trapping regulations. Each refuge trapper is issued a special use permit (SUP) requiring him or her to follow State and refuge regulations. The refuge is divided into trapping units, which are awarded to licensed trappers via a closed bid system. Only one trapper with a helper is allowed in each unit. Identifying trapping units allows the refuge to modify furbearer management according to the conditions specific to each unit. For example, trapping may be prohibited in certain areas to allow populations to increase. Zoning also provides higher quality trapping experiences by preventing overlap between trappers. By identifying locations where specific trappers are permitted on the refuge, enforcement of refuge and State regulations is facilitated.

The refuge requires a harvest report from each trapper following the close of the trapping season. The report includes data about the trapping effort, the time span of trapping by species, the number of target and nontarget species harvested, the refuge areas trapped, and remarks on observations of wildlife or other noteworthy ecological information. These data can provide a basis for catch-per-unit effort and population trend analyses.

Trappers must follow State regulations regarding legal traps including river otter avoidance techniques. At this time, they may utilize foothold, body-gripping, and box or cage traps. Snares are prohibited for trapping. Each method is qualified under State regulation as to trap size and types of allowable sets in order to protect nontarget species.

Access for trapping on the refuge is by highway vehicle, by foot (primarily walking and snowshoeing), and by nonmotorized boat. Travel on the refuge by ATVs and snowmobiles is prohibited at all times.

(e) Why is this use being proposed?

Furbearer management is a tool primarily used to maintain habitat for priority wildlife species. Removal of harvestable furbearers has a beneficial effect by protecting refuge infrastructure such as dikes and water control structures from damage, thus ensuring management capabilities over wetlands. These benefits minimize the need to commit refuge resources to achieve quality habitat conditions.

A regulated upland and wetland furbearer management program on the refuge also affords a mechanism to collect survey and monitoring information or contribute to research on furbearer (and other wildlife) occurrence, activity, movement, population status, and ecology. By maintaining a trained, experienced group of trappers, the Service can use their skills and local knowledge to perform or assist in valuable management or research functions, for example controlling predator populations or disease outbreaks if needed. Trappers who participate in the refuge program assist refuge staff in achieving habitat management objectives, such as maintaining emergent vegetation in marshes to provide habitat for breeding marshbirds and migrating waterfowl. Refuge trappers typically have a stake in proper habitat and wildlife conservation and protection of the ecological integrity of the refuge so they can continue trapping from year to year. Accordingly, they are valuable assets for the refuge manager in providing onsite reports concerning the fundamental status of habitat, wildlife, and refuge conditions.

Availability of Resources:

Resources are available under current staffing and budgets to administer the program (table B.1). Additionally, maintaining appropriate levels of furbearers on an annual basis assists in ensuring that major failures in refuge infrastructure do not occur (e.g., dike collapse), thus reducing large expenditures of funds to repair infrastructure.

Table B.1. Annual Cost of Furbearer Management Program.

Identifier	Cost
Prepare and submit annual trapping program to include in annual habitat work plan including an evaluation of the previous year’s program. ¹	\$700
Maintain trapper mailing list. Develop and mail trapping information to potential bidders.	\$350
Open bids, assign units, notify trappers, and issues permits.	\$700
Enforce furbearer trapping laws and regulations.	\$700
Total Annual Cost	\$2,450

¹Wildlife and habitat monitoring costs are not included here.

Anticipated Impacts of the Use:

The impacts of furbearer management on the purposes of the refuge and the mission of the Refuge System can be either direct or indirect, and may have negative, neutral, or positive impacts on refuge resources.

Migratory Birds:

Because of the temporal separation of furbearer management activities and migratory birds using the refuge, direct negative impacts on those resources by trappers are negligible (i.e., large concentration of migratory birds are not here during trapping season). Indirect positive impacts on migratory birds result from habitat modifications resulting from the furbearer management program.

Refuge Habitats:

Through careful management of the furbearer management program, trapping activities positively impact high priority wildlife species by improving habitat quality. For example,

muskrat trapping is conducted where a hemi-marsh is the desired habitat condition for waterfowl and breeding marshbirds. If muskrats were not trapped from these units, they would decrease the vegetative cover so that the unit would no longer be as high of quality for these breeding marshbirds or migrating waterfowl. Muskrat trapping is prohibited in areas where vegetation needs to be removed to provide open water or mudflats for priority wildlife species such as migrating shorebirds. Beaver trapping is conducted to reduce damage to water control structures. It is imperative that water control structures are in working order to provide appropriate water levels for target wildlife.

Furbearers:

Trapping furbearers removes individuals from the population. New York State Department of Environmental Conservation (NYSDEC) annually sets trapping regulations to maintain healthy furbearer population levels and to sustain this renewable resource. Statewide harvest of these species is carefully monitored to help understand population trends. On the refuge, the furbearer management program aims to maintain furbearer populations at levels compatible with refuge habitat objectives.

Very few individuals of nontarget species are taken through this trapping program (an average of 1.5 individuals per year for the past four seasons). Traps are set specifically around areas of targeted species activity to reduce the risk of taking species other than targeted species. The experience of the trappers and the selection of the appropriate trap size reduce nontarget captures (Northeast Furbearer Resources Technical Committee 1996, Boggess et al. 1990).

Cumulative Effects:

Several studies have examined the effects of recreationists on birds using shallow water habitats adjacent to trails and roads through wildlife refuges and coastal habitats in the eastern United States (Burger 1981, 1986, Klein 1993, Burger et al. 1995, Klein et al. 1995, Rodgers and Smith 1995, 1997, Burger and Gochfeld 1998). Overall, the existing research clearly demonstrates that disturbance from recreational activities always have at least temporary effects on the behavior and movement of birds within a habitat or localized area (Burger 1981, 1986, Klein 1993, Burger et al. 1995, Klein et al. 1995, Rodgers and Smith 1997, Burger and Gochfeld 1998). The findings that were reported in these studies are summarized as follows in terms of visitor activity and avian response to disturbance.

Presence: Birds avoided places where people were present and when visitor activity was high (Burger 1981, Klein et al. 1995, Burger and Gochfeld 1998).

Distance: Disturbance increased with decreased distance between visitors and birds (Burger 1986), though exact measurements were not reported.

Approach Angle: Visitors directly approaching birds on foot caused more disturbance than visitors driving by in vehicles, stopping vehicles near birds, and stopping vehicles and getting out without approaching birds (Klein 1993). Direct approaches may also cause greater disturbance than tangential approaches to birds (Burger and Gochfeld 1981, Burger et al. 1995, Knight and Cole 1995, Rodgers and Smith 1995, 1997).

Type and Speed of Activity: Joggers and landscapers caused birds to flush more than fishermen, clammers, sunbathers, and some pedestrians, possibly because the former groups move quickly (joggers) or create more noise (landscapers). The latter groups tend to move more slowly or stay in one place for longer periods, and thus birds likely perceive these activities as less threatening (Burger 1981, 1986, Burger et al. 1995, Knight and Cole 1995). Alternatively, birds may tolerate passing by with unabated speed whereas if the activity stops or slacks birds may flush (Burger et al. 1995).

Noise: Noise caused by visitors resulted in increased levels of disturbance (Burger 1986, Klein 1993, Burger and Gochfeld 1998), though noise was not correlated with visitor group size (Burger and Gochfeld 1998).

In determining compatibility, the cumulative effects of all public uses are considered. Primarily due to the season of use, disturbance from trappers is not expected to significantly increase the disturbance to wildlife. Trappers are afield during a period of the year when nearly all wildlife breeding activity has ceased. Additionally, much of the marsh trapping activity occurs when refuge wetlands are iced over and minimal wildlife is present in the area.

Public Review and Comment:

As part of the comprehensive conservation planning (CCP) process for the Montezuma National Wildlife Refuge, this compatibility determination will undergo a comment period of 30 days concurrent with the release of our draft CCP/Environmental Assessment.

Determination (check one below):

<input type="checkbox"/>	Use is Not Compatible
<input checked="" type="checkbox"/>	Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

The furbearer management program will be reviewed annually to assess its effectiveness and to ensure and that wildlife populations and habitat quality are managed appropriately. In addition, the following conditions will apply:

- 1) Permittees must comply with all conditions of the SUP and all NYS trapping regulations.
- 2) Trappers, when requested by law enforcement officers, must display for inspection their State trapping license, SUP, trapping equipment, and all animals in their possession.
- 3) No traps shall be placed in muskrat houses or push-ups. No traps should be placed on floating logs or other floating material.
- 4) Ingress to and egress from the refuge shall only be by routes of travel designated by the refuge manager or his or her designee.
- 5) Permittees shall, no later than 10 days after the last day of the refuge trapping season, submit to the refuge manager a completed trapping report form provided with the SUP. This

form documents the number of each species of animals taken and the location where the animals were taken, including nontarget species.

6) No chunk bait may be used (i.e., only liquid or paste baits). Vegetable matter is permitted as bait on muskrat traps under the ice only. No terrestrial trapping is permitted on mowed areas of dikes. Trapping along the dikes may be further restricted if the need arises.

7) Unless otherwise stated by the refuge manager, the refuge trapping season will run concurrently with the State season.

8) Traps must be checked at least once every 24 hours.

9) Every effort must be made to prevent the capture of nontarget species.

Justification:

Regulated trapping is recognized by the Service as an effective, legitimate, and ecologically sound wildlife population and habitat management method on national wildlife refuges. Trapping seasons and limits are established by the State and adopted by the refuge to protect wildlife populations from over harvest.

Maintaining furbearer populations at levels conducive to management of the refuge’s habitats for waterfowl and other high priority wildlife species benefits the mission of the refuge and the National Wildlife Refuge System. The right population size and distribution of muskrats and beavers allows for effective management of refuge marshes to create and maintain a hemi-marsh condition favored by many priority wildlife species. Excessive numbers of muskrats and beavers can compromise refuge infrastructure because of burrowing into dike systems by muskrats and damaging water control structures by beavers.

As stated previously, a regulated upland and wetland furbearer management program on the refuge also affords a mechanism to collect survey and monitoring information or contribute to research on furbearer (and other wildlife) occurrence, activity, movement, population status, and ecology. The Service can also use trappers and their local knowledge to perform or assist in valuable management or research functions.

Furbearers are a renewable natural resource with cultural and economic values (Andelt et al. 1999, Boggess et al. 1990, Northeast Furbearer Resources Technical Committee 1996, Payne 1980). Several human dimensions studies have documented trapper profiles, cultural aspects of trapping, and the socioeconomic role of trapping in the United States (Andelt et al. 1999, Boggess et al. 1990, Daigle et al. 1998). A regulated trapping program on the refuge fosters the appreciation of wildlife and nature, a greater understanding of ecological relationships, stewardship of natural resources, and intergenerational passage of the methodologies of renewable resource use.

Furbearer management is not a priority public use; however it facilitates priority public uses on the refuge as well as helping to contribute to the purpose of the refuge. Trapping is an activity in which family members and friends often participate and share joint experiences that broaden

appreciation of natural resources and ecological awareness and can be used to help educate the public about the refuge. This use would not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission and the purpose(s) for which the refuge was established.

Signature: Refuge Manager: _____
(Signature and Date)

Concurrence: Regional Chief: _____
(Signature and Date)

Mandatory 10-year Reevaluation Date: _____

Literature Cited:

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COMPATIBILITY DETERMINATION

Use: Fishing

Refuge Name: Montezuma National Wildlife Refuge

Date Established: September 12, 1938

Establishing and Acquisition Authorities:

The U.S. Fish and Wildlife Service acquired lands to be established as the Montezuma National Wildlife Refuge under Executive Order 7971 and established the refuge in 1938 under the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. §715).

Purpose(s) for which Established:

“...as a refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7971).

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. §715d).

National Wildlife Refuge System Mission:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

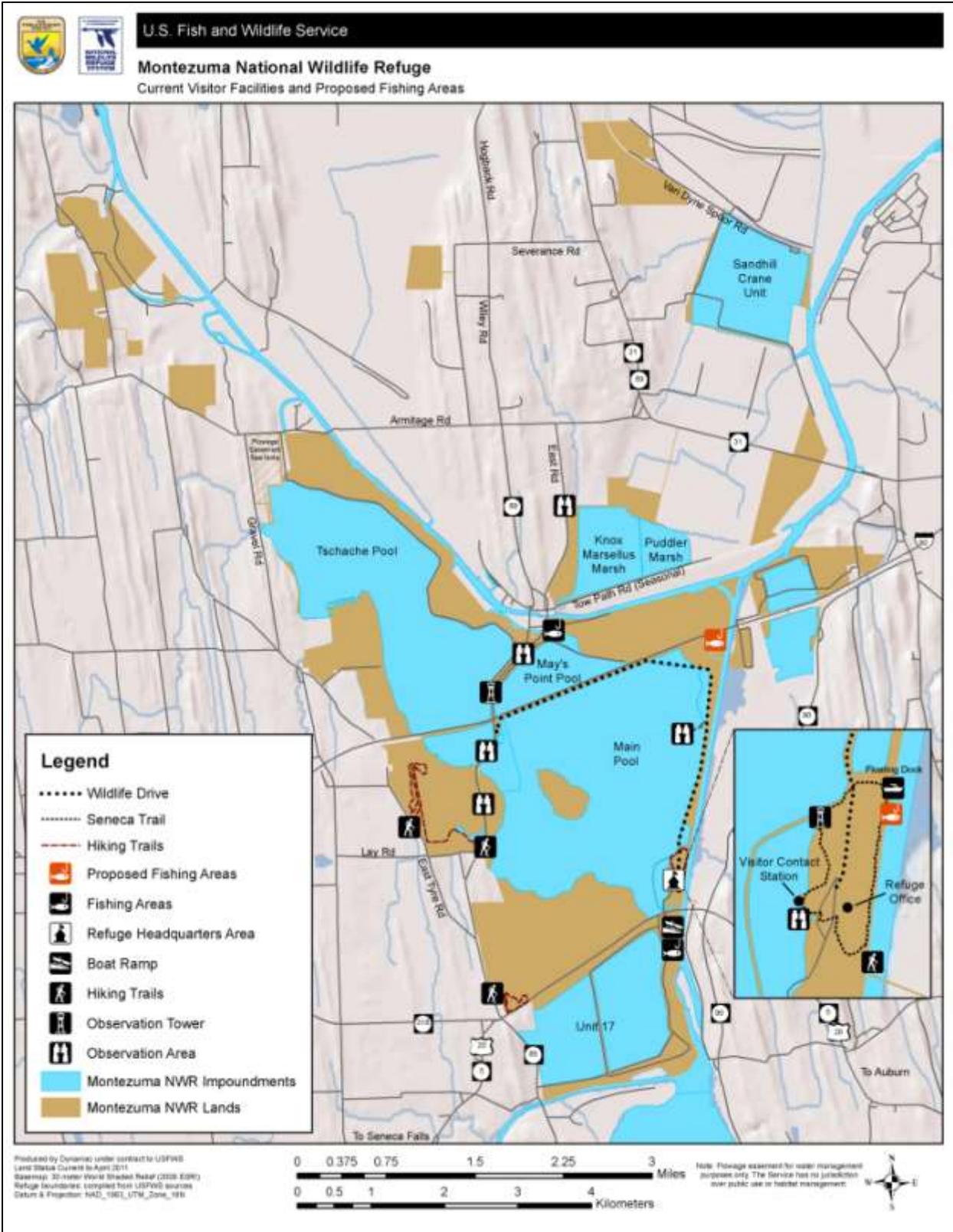
Description of Use:

(a) What is the use? Is the use a priority public use?

The use is fishing, which is the act or sport of catching fish. There is no fishing allowed directly in waters within the refuge boundary proper, however recreational fishing and fishing access is allowed from the shoreline and the banks of refuge lands adjacent to waters owned and regulated by New York State. As such, fishing is allowed from designated areas along refuge shorelines in New York State waters. Fishing is a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997.

(b) Where would the use be conducted?

Fishing is not authorized in refuge impoundments; however we provide fishing access to New York State Canal System waters. Fishing access for recreational fishing would be permitted at specific areas on the refuge designated as public fishing sites (refer to map B.2). These sites include the following: (1) the boat launch site south of U.S. Highway 20, across from the refuge entrance, with fishing access to the Seneca-Cayuga Canal. This site has been open as a fishing access point for many years and is operated by the refuge under a cooperative agreement with New York State Department of Environmental Conservation (NYSDEC); (2) May’s Point Fishing Access Site at the end of South May’s Point Road with access to the New York State Canal System; (3) along the banks of the Seneca Trail and from the floating dock in the refuge



Map B.2. Montezuma NWR Current Visitor Facilities and Proposed Fishing Areas.

headquarters area, with fishing access to the Seneca-Cayuga Canal; and (4) along the banks of the proposed Oxbow Trail on the Wildlife Drive, with access to both the Clyde River Oxbow and the Seneca-Cayuga Canal.

(c) When would the use be conducted?

Fishing would be conducted during New York State open fishing seasons in accordance with Federal regulations and State fresh water fishing guidelines. Anglers fishing from refuge fishing access sites must check the NYS fishing regulations and guidelines for when open season occurs for each species being fished and caught. Visitor access hours on the refuge are ½ hour before sunrise to ½ hour after sunset.

(d) How would the use be conducted?

We would continue to conduct the use according to State and Federal regulations. Federal regulations in 50 CFR pertaining to the National Wildlife Refuge System Administration Act, as well as existing, refuge specific regulations would apply. However, the refuge manager may, upon annual review of the fishing program, impose further restrictions on fishing or recommend that some or all fishing access sites on the refuge be closed. We would restrict fishing if it becomes inconsistent with other, higher priority refuge programs or endangers refuge resources or public safety.

We would continue to maintain the existing fishing areas at Mays Point Pool and on Unit 17 (see map B.2). In addition, we would maintain a fishing area near the proposed Oxbow Trail and would maintain the boat dock near the Seneca Trail.

(e) Why is the use being proposed?

Fishing is one of the priority uses outlined in the Refuge System Improvement Act of 1997. The Service supports and encourages priority uses when they are appropriate and compatible on national wildlife refuge lands. Fishing is also a traditional form of wildlife-oriented recreation that many national wildlife refuges can accommodate. Montezuma NWR has the opportunity to provide public fishing opportunities in a manner and location that would offer high quality, wildlife-dependent recreation and maintain the level of current fish and wildlife values.

Availability of Resources:

The following breakdown shows the estimated amount of funds needed to administer the Recreational Fishing Program:

News releases, publications, fishing regulations, fact sheets	\$ 250
Signs (purchase and annual installation)	\$ 250
Staff time	\$ 250
Law Enforcement	\$1,000
Total Annual Cost	\$1,750

Anticipated Impacts of the Use:

Some potential impacts of fishing include:

- **Accidental or deliberate introductions of nonnative fish** that may negatively impact native fish, wildlife, or vegetation. The refuge would continue to provide educational

outreach and signage on this subject, and try to minimize impacts associated with nonnative species introductions, if they occur. Artificial lures are preferred.

- **Negative impacts to waterfowl and other wildlife from lost fishing gear may include ingestion of lead sinkers, hooks, lures, litter, or entanglement in fishing line or hooks.** Lost fishing tackle may harm waterfowl, eagles, and other birds externally by catching on, and tearing skin. Fishing line may also become wrapped around body parts and hinder movement (legs, wings), impair feeding (bill), or cause a constriction with subsequent reduction of blood flow and tissue damage. Entangled animals may become snagged by an object above or below the water surface, from which they are unable to escape. Birds may also ingest sinkers, hooks, floats, lures, and fishing line. Ingested tackle may be toxic or cause damage or penetration of the mouth or other parts of the digestive tract that may result in impaired functioning or death. There have not been any documented cases of this occurring on the refuge. However, the refuge would continue to provide education and outreach on the hazards of fishing tackle.
- **Disturbance of wildlife** (particularly osprey (*Pandion haliaetus*) and breeding waterfowl) due to fishing, although disturbance is expected to be minimal. Fishing seasons in New York coincide, in part, with spring and early summer nesting and brood-rearing periods for many species of aquatic-dependent birds. Anglers may disturb resting and foraging birds by approaching too closely. Flushing may expose eggs to predation or cooling, resulting in egg mortality. The refuge would continue to seasonally close areas around sensitive sites to fishing. Public outreach and placement of warning signs would also be continued.
- **Negative impacts to water quality** from human waste and litter. Public outreach and education on littering and proper waste disposal would lessen potential negative water quality impacts. Litter barrels provided by the refuge maintenance staff are checked and emptied regularly during the fishing season.
- **Bank and trail erosion** from human activity and foot traffic may increase aquatic sediment loads in the canals and rivers, or alter riparian or lakeshore habitat/vegetation in ways harmful to fish or other wildlife. Trails would be monitored and may be modified, restored, or closed, if conditions warrant. Since all refuge fishing occurs from the shoreline, trails adjacent to canals and rivers would be monitored in order to reduce trail erosion due to fishing-related foot traffic.
- **Illegal fishing** resulting in overharvest. Law enforcement presence would reduce this type of activity.
- **Conflicts between anglers and other user groups.** There may be some conflicts between anglers and birders. If other conflicts should arise, the refuge may need to place additional constraints on public uses to minimize conflicts. Management actions may include but are not limited to: education and outreach, zoning (in space and/or time), and separating user groups.

Public Review and Comment:

As part of the comprehensive conservation planning process (CCP) for the Montezuma National Wildlife Refuge, this compatibility determination will undergo a comment period of 30 days concurrent with the release of our draft CCP/Environmental Assessment.

Determination (check one below):

<u> </u>	Use is Not Compatible
<u> X </u>	Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

1. We would manage the public fishing program in accordance with Federal and State regulations and review it annually to ensure that wildlife and habitat management goals are achieved and that the program is providing a safe, high quality outdoor experience for participants. Therefore, adherence to the regulations stated herein would ensure compatibility with the purpose for which the refuge was established.
2. Access to refuge lands is permitted only between ½ hour before sunrise and ½ hour after sunset.
3. All anglers 16 years of age or older (unless exempt per State regulations) and fishing on the refuge must hold a valid New York State fishing license. All anglers must comply with all State fishing regulations (<http://www.dec.ny.gov/outdoor/7917.html>). Individuals fishing on the refuge are subject to the inspection of licenses, fishing equipment, fish creels and containers, vehicles, and their contents by Federal or State officers.
4. Neither fishing nor the use of canoes, motorized boats, or other nonmotorized boats for fishing are allowed on refuge impoundments.
5. Prohibited Activities:
 - a. Fishing by means of chumming with fish eggs.
 - b. The use of unlawful baitfish, gaffs, grappling hooks and spears.
 - c. Fishing while under the influence or possession of alcoholic beverages.
 - d. Commercial fishing on the refuge.
 - e. Camping, overnight parking, open fires, littering, and the willful destruction of vegetation.

Justification:

Montezuma NWR is located in a rural area between Syracuse and Rochester, NY. Fishing is a traditional and well established activity on the refuge that satisfies a public demand. It has minimal conflicts with other types of public uses that may occur on the refuge. Fishing is a wildlife-dependent priority public use with minimal impact on refuge resources. It is consistent with the purposes for which the refuge was established, the Service policy on fishing, the National Wildlife Refuge System Improvement Act of 1997, and the broad management objectives of the National Wildlife Refuge System.

This use would not materially interfere with or detract from the mission of the Refuge System or diminish the purposes for which the refuge was established. It would not cause an undue administrative burden. Annual adjustments can be made in the fishing program to ensure its continued compatibility.

Consultation with Refuge Supervisor:

Signature: Refuge Manager: _____
(Signature and Date)

Concurrence: Regional Chief: _____
(Signature and Date)

Mandatory 15-year Reevaluation Date: _____

COMPATIBILITY DETERMINATION

Use: Big Game Hunting (white-tailed deer)

Refuge Name: Montezuma National Wildlife Refuge

Date Established: September 12, 1938

Establishing and Acquisition Authority:

The U.S. Fish and Wildlife Service (USFWS) acquired lands to be established as the Montezuma National Wildlife Refuge under Executive Order 7971 and established the refuge in 1938 under the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. §715).

Purpose(s) for which Established:

“...as a refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7971).

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. §715d).

National Wildlife Refuge System Mission:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

(a) What is the use? Is the use a priority public use?

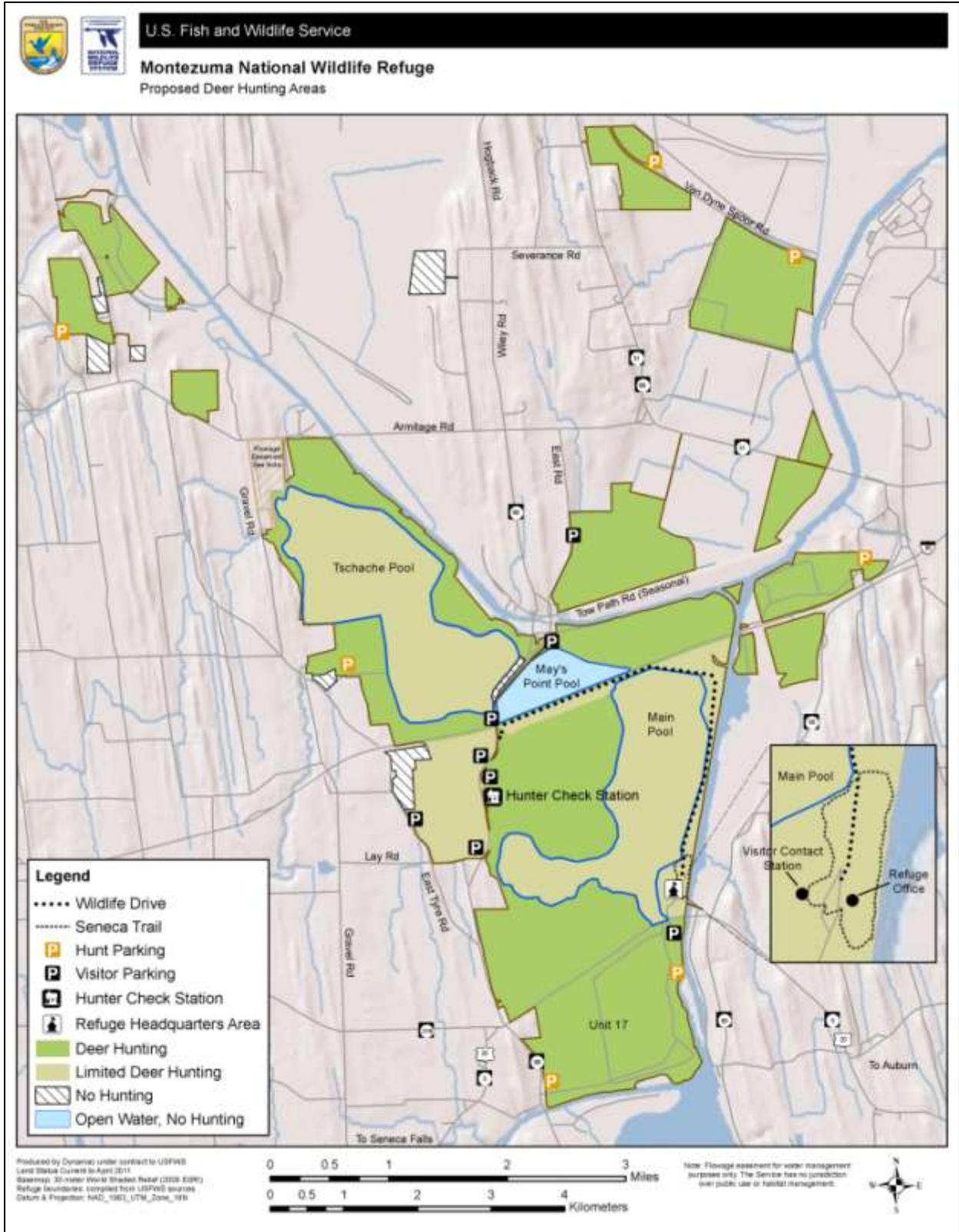
The use is big game hunting for white-tailed deer (*Odocoileus virginianus*). Hunting is a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997.

(b) Where would the use be conducted?

Deer hunting would be permitted throughout the entire refuge, except areas closed to hunting to protect facilities and structures, certain habitats, and select public use areas (see map B.3).

(c) When would the use be conducted?

Hunting would be conducted during New York State big game seasons in accordance with Federal and State regulations. We would allow hunting during all State deer seasons (i.e., archery, regular, and muzzleloader). Typically bow-hunting is open from mid-October to mid-November and then again for a week in December (after the regular season closes). The regular (i.e., shotgun) season is typically mid-November to mid-December. Muzzleloader season is typically during the same time as the late bow-hunting season, one week in December.



Map B.3. Montezuma NWR Proposed Deer Hunting Areas.

Currently hunting does not occur on the refuge before November 1, regardless of the start of the State seasons. This was done to avoid conflict between hunters and other visitors at the Esker Brook Trails. We propose to open the refuge to hunting with the New York State opener (typically mid-October), but keep the Esker Brook Trail area closed to hunting until November 1. Hunting hours are sunrise to sunset. We may adjust hunt season dates and bag limits in the future as needed to achieve balanced wildlife population levels within habitat carrying capacities.

(d) How would the use be conducted?

We would continue to conduct the use according to State and Federal regulations. Federal regulations in 50 CFR pertaining to the National Wildlife Refuge System Administration Act, as well as existing, refuge specific regulations would apply. However, the refuge manager may, upon annual review of the hunting program, impose further restrictions on hunting, recommend that the refuge be closed to hunting, or further liberalize hunting regulations up to the limits of state regulations. We would restrict hunting if it endangers refuge resources or public safety.

During the 2009 and 2010 opening day of the regular deer season, the refuge filled its maximum allowable amount of 150 individuals registered for hunting on opening day. Quality of hunting experience as well as providing ample hunting room per hunter would continue to be achieved by regulating, via the permit system, the number of hunters on a given day.

The total huntable area has increased over the years as new lands have been acquired by the refuge (table B.2). The refuge currently limits the daily number of archery permits to 300 and firearms to 150. This limit in firearms permits was implemented in 2000 and has not increased, despite an increase in refuge acreage (table B.2).

Table B.2. History of Land Acquisition at the Montezuma NWR Through 2012.

Acquisition Date	Acreage
1937	2,564
1938	2,354
1939	544
1940	444
1941	279
1942	34
1945	6
1959	176
1963	27
1965	16
1993	53
1995	397
1996	186
1997	54
1998	608
1999	142
2000	87
2001	387

Acquisition Date	Acreage
2002	75
2004	80
2005	106
2006	64
2007	381
2008	26
2009	63
2012	31
Total	9,184

The refuge would continue to use the following formula to determine the total number of permits to safely issue during firearms season:

White-tailed deer hunting permits would vary year to year for the refuge. For firearms season, permits would be calculated based on the following equation:

TPI = (TRA)/50 where,
 TPI = Total Permits Issued
 TRA = Total Refuge Acreage
 50 = constant (50 acres per hunter for firearms season)

The need to calculate TPI is a result of the refuge acquiring new properties. More huntable acreage means more deer, which should result in more permits issued. The constant is based on the formula the refuge has used from the beginning of its firearms hunt.

All persons hunting on the refuge must first hold a valid State hunting license, and must then obtain a daily refuge hunting permit. One general refuge hunting permit would be used for all refuge deer hunt programs. Individuals hunting on the refuge are subject to the inspection of permits, licenses, hunting equipment, game bagged, and vehicles and their contents by enforcement officers.

All areas of the refuge are open during the hunting season except safety zones and areas specifically closed to hunting. Currently, no hunting zones include but are not limited to: the immediate areas around the refuge office headquarters area, refuge impoundments, along the Wildlife Drive, and adjacent to Wood Marsh Road. Permission must be obtained from refuge personnel to enter a no hunting zone for the purpose of tracking, and/or retrieving legally taken game animals.

We propose to open the Seneca Trail area to late season archery hunting, as deer tend to congregate around the office area. We would close the Wildlife Drive to other public uses beginning December 1 and would allow hunting in this area. Once impoundments are frozen over, including the Main Pool, these areas would be open to deer hunting.

While many hunters use the refuge to hunt deer, more do so during the regular firearm season than any other season. The heaviest usage is during the first full week of the regular firearm season and on Saturdays (there is no Sunday hunting currently on the refuge).

Hunters with disabilities who possess, a New York State disabled hunting license, Golden Access, or America the Beautiful Access Pass may qualify for special accommodations. They must apply in person and show proof of permanent disability.

(e) Why is the use being proposed?

Hunting is one of the priority uses outlined in the Refuge System Improvement Act of 1997. The Service supports and encourages priority uses when they are appropriate and compatible on national wildlife refuge lands. Hunting is used in some instances to manage wildlife populations. It is also a traditional form of wildlife-oriented recreation that many national wildlife refuges can accommodate.

Availability of Resources:

The following breakdown shows the estimated amount of funds needed to administer the Deer Hunt Program:

News releases, publications, hunt regulations, permits	\$1,400
Signs (purchase and annual installation)	\$ 250
Staff time (check station staffing, maintenance)	\$1,250
Law Enforcement	\$1,500
Total Annual Cost	\$4,400

Anticipated Impacts of the Use:

The following anticipated impacts are expected, for more specific impacts including a cumulative impact analysis please refer to the Hunt Program Environmental Assessment (USFWS 2012).

In much of the Northeast, deer populations continue to increase and have reached densities in some areas that are above the carrying capacity of the habitat. A deer harvest is essential in helping to maintain the herd at or below the carrying capacity of its habitat. When deer overpopulate, they overbrowse their habitat, and can completely change the species composition of a forest, in addition to reducing its overall biodiversity (Côté et al. 2004). Tree seedlings can be killed by overbrowsing, limiting recruitment. The failure of forests to regenerate due to overbrowsing by deer would have negative impacts on future resident and migratory populations of native wildlife

Overbrowsing by deer can also affect nesting songbirds in upland areas. A study conducted in Pennsylvania showed that both species diversity and abundance declined in areas with high densities of deer as a result of reduced nesting habitat (deCalesta 1994). Additionally, deer overpopulation can lead to outbreaks of devastating diseases such as hemorrhagic disease, bluetongue, and chronic wasting disease. Furthermore, overpopulation leads to starvation, more numerous car-deer collisions, and poorer herd health overall. Regulated hunting has proven to be an effective deer population management tool and has been shown to be the most efficient and

least expensive technique for removing deer and maintaining deer at desired levels (Northeast Deer Technical Committee 2009).

Deer have restricted home ranges and continued local hunting efforts would not affect regional populations. The New York State Department of Environmental Conservation (NYSDEC) has divided the state into geographical units, called Wildlife Management Units (WMUs) to set hunting seasons and regulations. The refuge is in WMUs 8J, 8F, and 7F. The total number of deer harvested in these WMUs in the last 55 years (1954 to 2010) has been increasing steadily, indicating a likely increase in the overall deer population (figure B.7). State deer density estimates for this region are approximately 20 per square mile and have been increasing across New York State in the last few years, based on harvest data (<http://www.dec.ny.gov/>). Based on the refuge’s total acreage (9,184 acres), there are nearly 300 deer inhabiting the refuge lands.

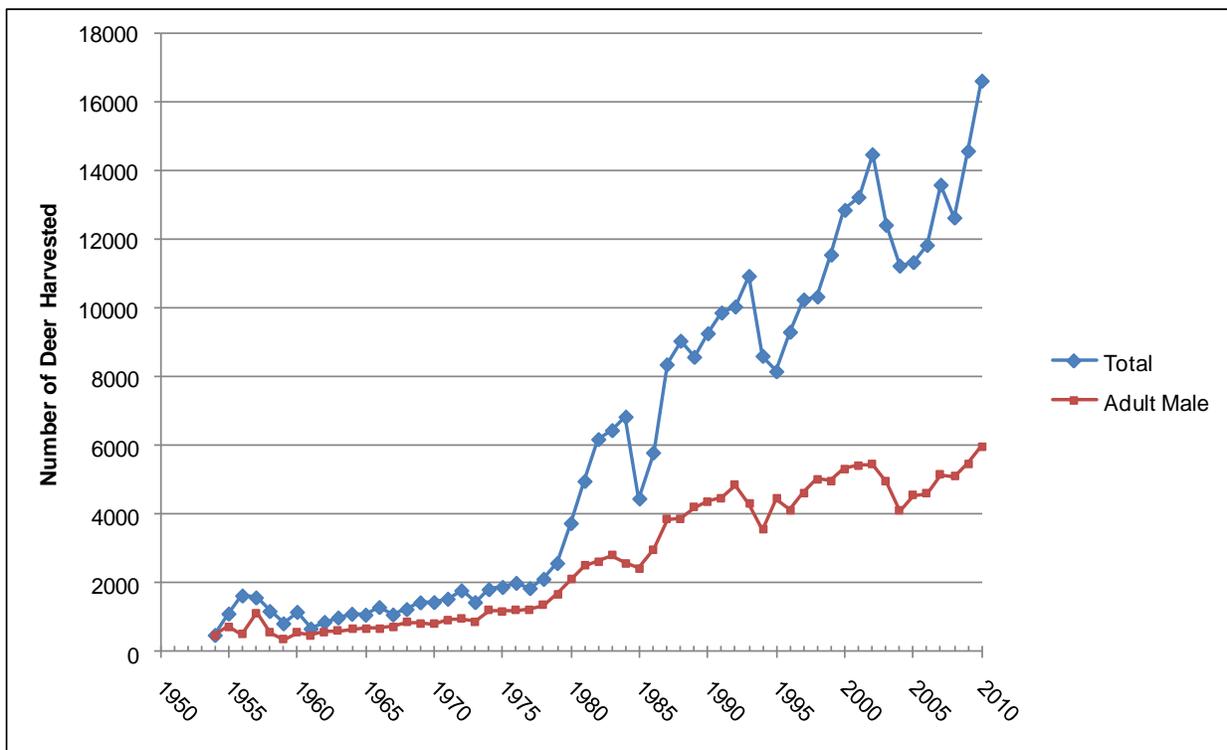


Figure B.7. Total Number of Deer Harvested in WMUs 7F, 8F, and 8J Between 1954 and 2010.

However, the refuge’s population is likely higher than that range due to the amount of dense cover available to deer. Refuge and NYSDEC staff initiated deer population surveys on the refuge in 2011. Preliminary data indicate there are approximately 32 deer per square mile (Kautz, 2012). The two most important factors affecting refuge deer numbers and movements are farming practices on adjacent agricultural lands and the severity of winter weather. The refuge’s large tracts of hardwood bottomlands and cattail swales provide cover for many deer, as evidence by overbrowsing (Rawinski 2010).

The total number of deer harvested on the refuge from 2000 through 2009 is 777. This averages out to approximately 78 deer harvested annually. The deer population in the vicinity of the refuge is still considered higher than optimal, indicating that current hunting levels are not

affecting the population substantially (NYSDEC 2009). This information confirms that decades of deer hunting on the refuge and surrounding private lands has not had a local cumulative adverse effect on the deer population. Therefore, continuing to allow hunting on the refuge should not have negative cumulative impacts on the deer herd; but instead, should support better overall herd health and maintain or increase habitat biodiversity.

Because the refuge has been open to hunting for many years and because hunting has occurred on parcels for many years before their purchase by the Service, we expect no additional impacts. There may be temporary impacts on other species of wildlife during the deer season. However, in the case of migratory waterfowl, deer hunters would cause little disturbance to them in the marshes where the birds feed and rest since most deer hunting takes place in upland habitats. Additionally, shotgun deer hunting would only occur on the refuge for a couple of weeks which would give the birds an opportunity to feed and rest undisturbed in those areas before and after the season.

Some disturbance of nontarget wildlife species and impacts on vegetation may occur. However, those impacts should be minimal, because big game hunting is regulated by the refuge, occurs outside the breeding season, and specific refuge regulations prohibit the use of ATVs, off-road vehicle travel, permanent stands and blinds, camping, and fires, which are most likely to significantly damage vegetation. Hunting and the associated hunter activity likely would cause the direct disturbance of nontarget birds, but only for the short term. Many of refuge impoundments are either closed to hunting, or impractical to hunt because of the difficulty of access. There is no anticipated impact on endangered or threatened species on the refuge either.

Although conflicts between user groups can arise, that does not appear to be a significant issue at the present levels of use. The Esker Brook trails are closed to nonhunters beginning November 1 to prevent disturbance amongst user groups. In other areas, some users may be impacted by the presence and noise associated with shotgun and muzzleloader hunting which occurs on the entire refuge.

In the future, we may need to further manage public use to minimize conflicts and ensure public safety, should significant conflicts become evident. That may include public outreach or further zoning to separate user groups.

Public Review and Comment:

As part of the comprehensive conservation planning process (CCP) for the Montezuma National Wildlife Refuge, this compatibility determination will undergo a comment period of 30 days concurrent with the release of our draft CCP/Environmental Assessment.

Determination (check one below):

<input type="checkbox"/>	Use is Not Compatible
<input checked="" type="checkbox"/>	Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

We would manage the hunt program in accordance with Federal and State regulations and review it annually to ensure that wildlife and habitat management goals are achieved and that the program is providing a safe, high quality hunting experience for participants. Therefore, adherence to the regulations highlighted above for each hunting program would ensure compatibility with the purpose for which the refuge was established.

1. During the regular deer season (firearms), all big game hunters must wear in a conspicuous manner on head, chest and back a minimum of 400 square inches of solid-colored hunter orange clothing or material and must be visible from 360 degrees.
2. Vehicles must be parked off the lane of travel and clear of gates.
3. ATVs and snowmobiles are not allowed.
4. Canoes and other nonmotorized boats are not allowed on refuge impoundments. Boats are permitted in the Clyde and Seneca Rivers; however, much of the river has a “No discharge of firearms” restriction. Guns that are to be transported within this zone must be unloaded. Deer hunting from canoes and boats is not permitted anywhere on the river.
5. Temporary, portable tree stands and ground blinds are acceptable and must be removed daily. Permanent tree stands and ground blinds are prohibited. Hunters cannot use screw-in steps, nails, spikes, wire, or bolts as climbing or hanging devices to attach a stand to a tree.
6. Prohibited Activities:
 - a. Using illuminating devices, including automobile headlights, for the purpose of spotlighting game species.
 - b. Being under the influence or possessing alcoholic beverages while hunting.
 - c. Possessing axes, hatchets, saws, nails, tacks, paint or flagging for the marking of trees and shrubs.
 - d. Commercial guiding on the refuge.
 - e. Camping, overnight parking, open fires, and littering.

Justification:

Montezuma NWR is located in a rural area between Syracuse and Rochester, NY. Hunting is a traditional and well established activity on the refuge. It has minimal conflicts with other types of public uses that may occur on the refuge. Hunting satisfies a recreational need, but hunting on national wildlife refuges is also an important, proactive management action that can prevent over population and the deterioration of habitat. It helps to keep deer populations within the carrying capacity of the habitat, thus reducing excessive damage to vegetation caused by overbrowsing.

Hunting is a wildlife-dependent priority public use with minimal impact on refuge resources. It is consistent with the purposes for which the refuge was established, the Service policy on hunting, the National Wildlife Refuge System Improvement Act of 1997, and the broad management objectives of the National Wildlife Refuge System.

This use would not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the refuge was established. It will not cause an undue administrative burden. Annual adjustments can be made in the hunting program to ensure its continued compatibility.

Signature: Refuge Manager: _____
(Signature and Date)

Concurrence: Regional Chief: _____
(Signature and Date)

Mandatory 15-year Reevaluation Date: _____

Literature Cited:

Côté, S. D., T. P. Rooney, J. Tremblay, C. Dussault, and D. M. Wallter. 2004. Ecological impacts of deer overabundance. *Annual Review of Ecology, Evolution, and Systematics* 35: 113-147.

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New York State Department of Environmental Conservation (NYSDEC). 2009. Wildlife Management Unit 8 Summary for 2009. <http://www.dec.ny.gov/outdoor/8329.html>; accessed January 2010.

Rawinski, T. J. 2010. White Trillium (*Trillium grandiflorum*) Monitoring at Northern Montezuma Wildlife Management Area, Cayuga County, New York: Results from 2010, USDA Forest Service, Durham, NH.

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COMPATIBILITY DETERMINATION

Use: Waterfowl Hunting

Refuge Name: Montezuma National Wildlife Refuge

Date Established: September 12, 1938

Establishing and Acquisition Authorities:

The U.S. Fish and Wildlife Service acquired lands to be established as the Montezuma National Wildlife Refuge under Executive Order 7971 and established the refuge in 1938 under the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. §715).

Purpose(s) for which Established:

“...as a refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7971).

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. §715d).

National Wildlife Refuge System Mission:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

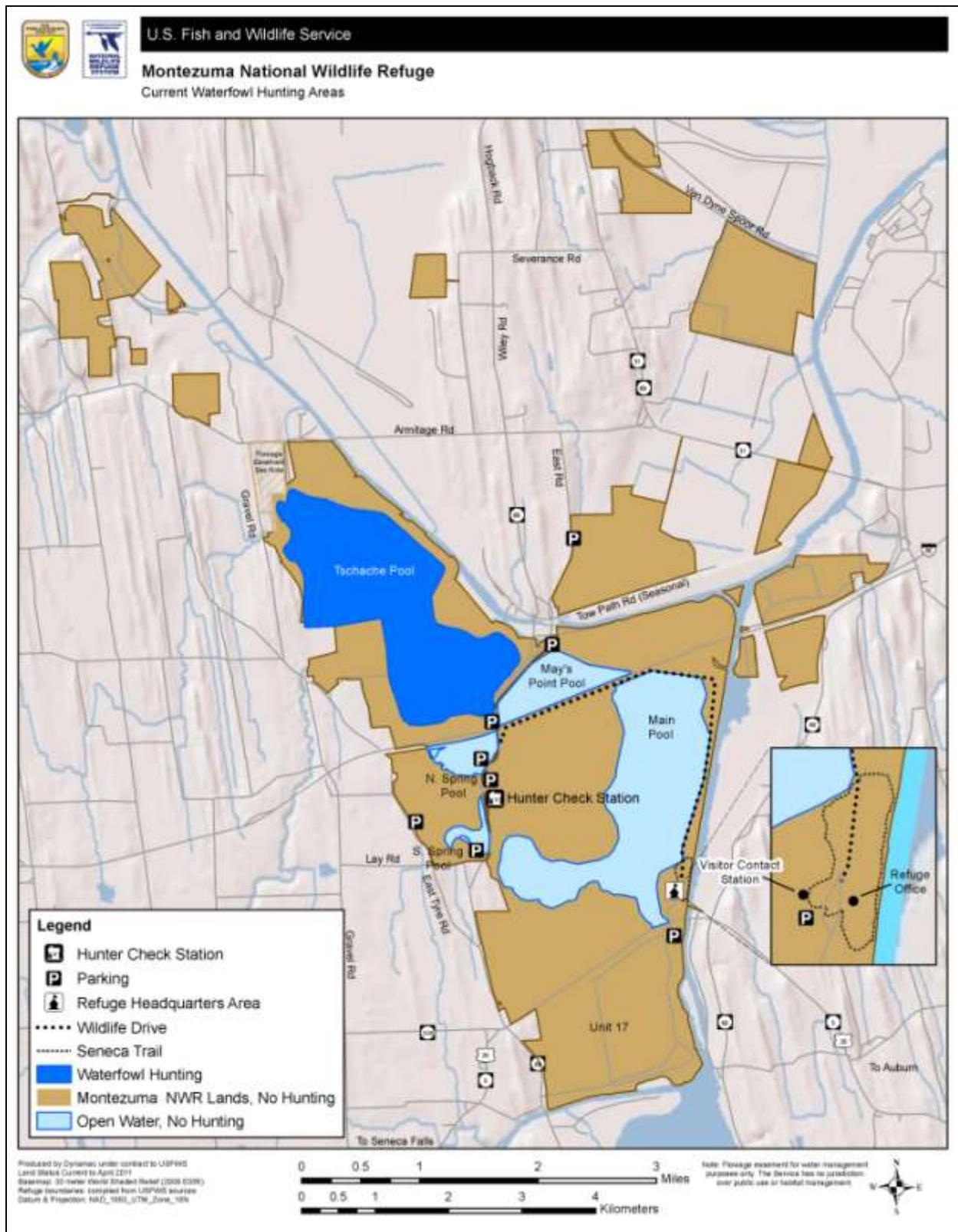
(a) What is the use? Is the use a priority public use?

The use is waterfowl hunting. Hunting is a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997.

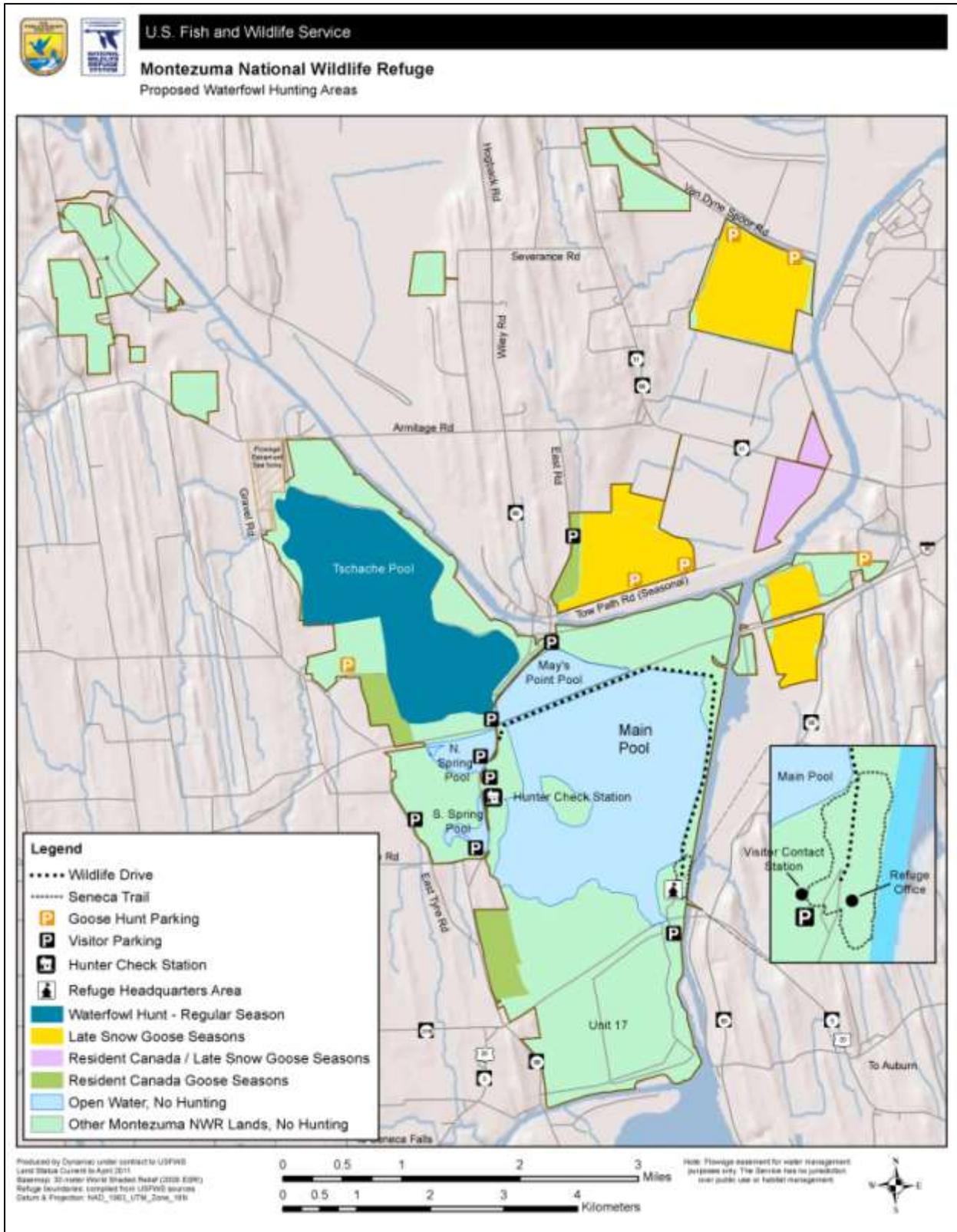
(b) Where would the use be conducted?

For the New York State migratory game bird season, waterfowl hunting would be permitted in Tschache Pool and potentially in designated units in the northeast portion of the refuge (i.e., the Main Muck) or the Jackson Property (see map B.4).

Goose hunting would be permitted during the New York State seasons for Canada geese (*Branta canadensis*) and snow geese (*Chen caerulescens*). Both species would be able to be hunted on regular waterfowl hunting areas (i.e., Tschache Pool and possibly portions of the Main Muck or the Jackson Property) during the New York State migratory game bird season. Refuge agricultural lands and grasslands may be open to Canada goose hunting during the September season, and snow geese would be able to be hunted in the refuge’s “main muck” during the late snow goose hunting season (generally late January to the beginning of March) and the expanded Light Goose Conservation Order (generally the beginning of March through mid-April (see map B.5).



Map B.4. Montezuma NWR Current Waterfowl Hunting Areas.



Map B.5. Montezuma NWR Proposed Waterfowl Hunting Areas.

Youth Hunt:

The refuge hosts a Youth Waterfowl Identification Course and refuge orientation for junior hunters between 12 to 15 years of age. A New York State Youth Waterfowl Hunt is held annually, typically during the second weekend of October; the refuge opens Tschache Pool to youth hunting on the Saturday of that weekend. Other areas may be open for the New York State Youth Waterfowl Hunt each year, at the refuge manager's discretion. The number of participants in the Youth Waterfowl Hunt would be limited. Otherwise, youth may hunt waterfowl in the same areas of the refuge open to and during the regular waterfowl hunt.

(c) When would the use be conducted?

As long as the migratory game bird season dates for the Western Zone remain the same (i.e., late October through the beginning of December for the first split, and late December through the beginning of January for the late split), waterfowl hunting would be permitted on the refuge during the first split on Tuesdays, Thursdays and Saturdays only. If the Western Zone season dates change dramatically, then the refuge manager will determine when the refuge will be open in accordance with Federal and State regulations. Hunting hours on the refuge would be from ½ hour before sunrise to noon, and hunters must check out of the hunting areas by 1 p.m.

Goose hunting would be permitted daily during New York State designated goose seasons for the Western Zone. New York State seasons are listed at: <http://www.dec.ny.gov/outdoor/28503.html>. Hunting hours would be ½ hour before sunrise to sunset for the Canada and snow goose seasons.

Youth Hunt:

The youth waterfowl identification course and hunt orientation would be held in late September or early October, before the youth waterfowl hunt. A youth waterfowl hunt would be held on the Saturday of the New York State designated Youth Days, usually two weeks prior to the regular waterfowl season. Hunting would occur from ½ hour before legal sunrise until noon. Check out would be no later than 1 p.m.

(d) How would the use be conducted?

We would continue to conduct the use according to State and Federal regulations. Federal regulations in 50 CFR pertaining to the National Wildlife Refuge System Administration Act, as well as existing, specific refuge regulations would apply. However, the refuge manager may, upon annual review of the hunting program, impose further restrictions on hunting, recommend that the refuge be closed to hunting, or further liberalize hunting regulations up to the limits of state regulations. We would restrict hunting if it becomes inconsistent with other, higher priority refuge programs or endangers refuge resources or public safety.

All persons hunting on the refuge must hold a valid New York State hunting license and also obtain a refuge hunting permit. Permits are obtained during check-in on the day of the hunt.

For the regular season, a telephone reservation system is set up to reserve a hunting area and permit for the waterfowl hunt days. Hunters must check-in with refuge staff at the hunter check station on the day of their hunt, show their hunting license, signed duck stamp and proof of passing a New York State or special refuge out-of-state Waterfowl Identification Course.

During the Resident Canada Goose season, the Late Snow Goose season, and the Light Goose Conservation Order, hunters would obtain their permits at the hunter check station daily, on a first-come, first-served self-serve basis. There would not be a reservation system for the goose hunts.

Individuals hunting on the refuge are subject to the inspection of permits, licenses, hunting equipment, game bagged, boats, vehicles and their contents by Federal or State officers.

Only State-permitted firearms would be permitted to hunt waterfowl. Hunters may use only approved nontoxic shot. During the regular season, waterfowl hunters would be limited to 15 shells per hunter per day.

Canoes and other nonmotorized boats are required for the regular waterfowl season hunt and may be permitted for designated goose hunting areas, to be determined by the refuge manager via the annual hunt program.

Dogs are allowed for hunting of migratory birds during designated seasons only, and strongly suggested for hunting on Tschache and other pools.

Hunters with disabilities possessing, or who qualify for, a New York State disabled hunting license, Golden Access, or America the Beautiful Access Pass may qualify for special accommodations. We issue a nonambulatory or youth hunt permit for waterfowl hunting in partnership with the New York State Department of Environmental Conservation Northern Montezuma Management Area for the Tim Noga Memorial Blind. Hunters may contact the refuge office for more information. They must show proof of disability upon check-in.

No hunting zones would be posted around the refuge areas closed to hunting. Permission must be obtained from refuge personnel to enter a “no hunting” zone or closed area for the purpose of tracking and/or retrieving legally taken game animals. Designated waterfowl hunting areas would be published in the annual hunt program and on refuge hunting regulation sheets at the beginning of each season.

Hunters would be required to check out and turn in a refuge harvest report at the end of each hunt day.

Vehicles are only allowed on established roads marked open for vehicular travel. Vehicles must be parked off the lane of travel and clear of gates.

Fee:

There would be a \$10 fee per waterfowl hunt reservation for the regular season, which is administered by a Cooperative Agreement with the Friends of the Montezuma Wetlands Complex.

Youth Hunt:

Youth that would like to participate in the youth waterfowl hunt must pre-register via the refuge’s telephone reservation system; reservations are taken on a first-come, first-served basis.

The program is free but space is limited, allowing two youth hunters per reservation. Youth must hold a valid New York State hunting license and proof of passing the New York State or refuge-issued out-of-state Waterfowl Identification Course, and must be accompanied by a parent/guardian who possesses a valid New York State hunting license, proof of passing a New York State or refuge-issued Waterfowl Identification Course, and a signed duck stamp.

(e) Why is the use being proposed?

Hunting is one of the priority uses outlined in the Refuge System Improvement Act of 1997. The Service supports and encourages priority uses when they are appropriate and compatible on national wildlife refuge lands. Hunting is used in some instances to manage wildlife populations. It is also a traditional form of wildlife-oriented recreation that many national wildlife refuges can accommodate.

Availability of Resources:

The refuge has adequate funds to administer the waterfowl hunt program. The Cooperative Agreement with the Friends of the Montezuma Wetlands Complex generates funds to put directly back into the hunting program. The following breakdown shows the estimated amount of funds needed to administer the program.

Table B.3. Annual Cost of Administering the Waterfowl Hunt.

	Staff Hours	Hunt Costs	Fee Money Collected
Check-in/Check Station	60	\$ 1,500.00	\$ 1,920.00
Law Enforcement	10	\$ 350.00	
Planning	20	\$ 500.00	
Public Information	10	\$ 250.00	
Postage	--	\$ 40.00	
Supplies	--	\$ 735.00	
Data Collection	10	\$ 250.00	
Maintenance-Facilities	5	\$ 125.00	
Maintenance-Vehicles	2	\$ 50.00	
Utilities		\$ 25.00	
TOTALS	136	\$ 3,825.00	\$ 1,920.00

Anticipated Impacts of the Use:

Anticipated impacts from hunting migratory birds on the refuge follow; for more specific impacts including a cumulative impact analysis please refer to the Montezuma NWR Hunt Program Environmental Assessment (EA) and the EA for the Montezuma NWR Comprehensive Conservation Plan (CCP).

The U.S. Fish and Wildlife Service (Service) manages migratory birds on a flyway basis and states establish hunting regulations in each state based on flyway data and the regulations framework provided by the Service. The Atlantic Flyway and the State of New York regulations apply to the waterfowl hunting program at the Montezuma National Wildlife Refuge. The refuge hunting regulations, which are more restrictive than state and other federal regulations, limit hunt days and hunting hours, and include shot shell restrictions, etc. These refuge-specific restrictions

are in place to help provide a quality hunting experience for refuge hunters. Hunting would reduce the number of birds in the flyway, within allowable limits, as determined by state and federal agencies. Hunting and the associated hunter activities likely would cause the direct disturbance of nontarget birds, but only for the short term. There is no anticipated impact on endangered or threatened species on the refuge.

Waterfowl hunting is a very popular, longstanding public use on the refuge. Most areas of the refuge are open to some form of hunting (waterfowl or deer) during hunting season except areas posted with safety zone or “no hunting” zone signage. Although conflicts between user groups can arise, that does not appear to be a significant issue at the present levels of use. In the future, we may need to manage public use to minimize conflicts and insure public safety, should significant conflicts become evident. That may include public outreach or zoning to separate user groups. Conflicts between hunters can also occur. Competition among hunters for choice sites is keen, and can lead to unsafe or unethical behavior. Thus far, this has been addressed through outreach and law enforcement to ensure quality, safe hunting conditions for all hunters.

Because the refuge has been open to hunting for many years, and hunting occurred in the area for many years before the establishment of the refuge, we expect no additional impacts. Some disturbance of nontarget wildlife species and impacts on vegetation may occur. However, those impacts should be minimal, because migratory game bird hunting is regulated by the refuge, occurs outside the breeding season and specific refuge regulations prohibit the use of ATVs, off-road travel, permanent stands and blinds, camping and fires, which are most likely to significantly damage vegetation.

Human disturbance to migrating birds and other wildlife using the open waters and marshes on the Montezuma NWR would occur as a result of hunting activity. Migratory waterfowl generally minimize time in flight and maximize foraging time because flight requires considerably more energy than any other activity, except egg laying. Human disturbance associated with hunting includes loud noises and rapid movements such as those produced by shotguns and other human activity. This disturbance, especially when repeated over a period of time, can cause waterfowl to change food habits, feed only at night, lose weight, or desert feeding areas. These impacts from disturbance can be reduced by the presence of adjacent sanctuary areas allowing birds to feed and rest relatively undisturbed. Sanctuaries or nonhunt areas have been identified as the most common strategy to reduce disturbance caused by hunting. Prolonged and extensive disturbances may cause large numbers of waterfowl to temporarily or permanently leave disturbed areas (Madsen 1995, Paulus 1984). Thus, sanctuary areas are very important to minimize disturbance to waterfowl populations to ensure their continued use of the refuge. The temporary impacts of waterfowl hunting are mitigated by the presence of adjacent refuge habitat where hunting does not occur, where birds can feed and rest undisturbed. Refuge regulations ensure that areas of inviolate sanctuary remain free of disturbance throughout the season.

Additionally, waterfowl hunting (except for geese during goose only seasons) occurs 3 days per week on the refuge which gives the birds an opportunity to feed and rest undisturbed on nonhunting days in hunting locations. Intermittent hunting (nonhunt days) can minimize disturbance (Fox and Madsen 1997). It is common for NWRs to manage hunt programs with nonhunt days. The proposed waterfowl hunt would be intermittent.

Boating activity associated with hunting during the fall and winter can alter distribution, reduce use of particular habitats or entire areas by waterfowl and other birds, alter feeding behavior and nutritional status, and cause premature departure from areas (Knight and Cole 1995). Boating and hunter activity would also cause some level of soil disturbance, erosion, foot traffic in sensitive marsh habitats, among other physical effects. Nonmotorized boats (virtually no wake) and limiting the number of hunters would serve to help reduce these impacts.

The long-term average of the number of waterfowl harvested per hunter per day since 1990 on the refuge is 2.3. This equates to just over 800 birds being harvested per year on the refuge. The waterfowl most often harvested by hunters on the refuge are mallard (*Anas platyrhynchos*), wigeon (*A. americana*), and green-wing teal (*A. crecca*).

An increased take of snow geese would contribute to the beneficial impacts to other waterfowl species that are expected as a result of a decrease in the snow goose population (USFWS 2007).

The activity of waterfowl hunters has little impact on other refuge visitors. Some users may be impacted by the presence and noise associated with waterfowl hunting.

Public Review and Comment:

As part of the comprehensive conservation planning process for the Montezuma National Wildlife Refuge, this compatibility determination will undergo a comment period of 30 days concurrent with the release of our draft CCP/Environmental Assessment.

Determination (check one below):

<input type="checkbox"/>	Use is Not Compatible
<input checked="" type="checkbox"/>	Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

We would manage the hunt program in accordance with Federal and State regulations, and review it annually to ensure that wildlife and habitat management goals are achieved and that the program is providing a safe, high quality hunting experience for participants. Therefore, adherence to the regulations highlighted above would ensure compatibility with the purpose for which the refuge was established.

1. All persons hunting on the refuge must hold a valid New York State hunting license and must obtain a refuge hunting permit. Permits are obtained during check-in on the day of the hunt. A telephone reservation system is set up to reserve a hunting area and permit for the waterfowl hunt days. Hunters during the regular migratory bird season must check-in with refuge staff at the hunter check station on the day of their hunt, show their hunting license, signed duck stamp and proof of passing a New York State or special refuge out-of-state Waterfowl Identification Course. Hunters during the Resident Canada Goose season, the Late Snow Goose season, and the Light Goose Conservation Order, would obtain their permits at the hunter check station daily, on a first-come, first-served self-serve basis. There would not be a reservation system for these hunts.

2. Individuals hunting on the refuge are subject to the inspection of permits, licenses, hunting equipment, game bagged, boats, vehicles and their contents by Federal or State officers.
3. Only State-permitted firearms would be permitted to hunt waterfowl. Hunters may use only approved nontoxic shot. Waterfowl hunters would be limited to 15 shells per hunter per day during the regular season.
4. Canoes and other nonmotorized boats are required for the regular waterfowl season hunt and may be permitted for designated goose hunting areas, to be determined by the refuge manager via the annual hunt program.
5. Dogs are allowed for hunting of migratory birds during designated seasons only, and strongly suggested for hunting on Tschache and other pools.
6. Hunters with disabilities possessing, or who qualify for, a New York State disabled hunting license, Golden Access, or America the Beautiful Access Pass may qualify for special accommodations. We issue a nonambulatory or youth hunt permit for waterfowl hunting in partnership with the New York State Department of Environmental Conservation Northern Montezuma Management Area for the Tim Noga Memorial Blind. Hunters may contact the refuge office for more information. They must show proof of disability upon check-in.
7. No hunting zones would be posted around the refuge areas closed to hunting. Permission must be obtained from refuge personnel to enter a “no hunting” zone or closed area for the purpose of tracking and/or retrieving legally taken game animals. Designated waterfowl and goose hunting areas would be published in the annual hunt program and on refuge hunting regulation sheets at the beginning of each season.
8. Hunters would be required to check out and turn in a refuge harvest report at the end of each hunt day.
9. Vehicles are only allowed on established roads marked open for vehicular travel. Vehicles must be parked off the lane of travel and clear of gates.
10. Prohibited Activities:
 - a. Using illuminating devices, including automobile headlights, for the purpose of spotlighting game species.
 - b. Use or possession of alcoholic beverages or illegal drugs while hunting; hunting while under the influence of alcoholic beverages or illegal drugs is not permitted.
 - c. Possession of axes, hatchets, saws, nails, tacks, paint, or flagging for the marking of trees and shrubs.
 - d. Use of tree stands.
 - e. Commercial guiding on the refuge.
 - f. Use of ATVs and snowmobiles.

- g. Camping, overnight parking, open fires, and littering.
- 11. There would be a \$10 fee per waterfowl hunt reservation during the regular season, which is administered by a Cooperative Agreement with the Friends of the Montezuma Wetlands Complex.
- 12. Youth that would like to participate in the youth waterfowl hunt must pre-register via the refuge’s telephone reservation system; reservations are taken on a first-come, first-served basis. The program is free but space is limited, allowing two youth hunters per reservation. Youth must hold a valid New York State hunting license and proof of passing the New York State or refuge-issued out-of-state Waterfowl Identification Course, and must be accompanied by a parent/guardian who possesses a valid New York State hunting license, proof of passing a New York State or refuge-issued Waterfowl Identification Course, and a signed duck stamp.

Justification:

Montezuma NWR is located in a rural area between Rochester and Syracuse, NY. Hunting is a traditional and well established activity on the refuge. It does not conflict with other types of public uses that may occur on the refuge. Hunting satisfies a recreational need, but hunting on national wildlife refuges is also an important, proactive management action that can prevent over population and the deterioration of habitat.

Hunting is a wildlife-dependent priority public use with minimal impact on refuge resources. It is consistent with the purposes for which the refuge was established, the Service policy on hunting, the National Wildlife Refuge System Improvement Act of 1997, and the broad management objectives of the National Wildlife Refuge System.

This use would not materially interfere with or detract from the mission of the refuge System nor diminish the purposes for which the refuge was established. It would not cause an undue administrative burden. Annual adjustments can be made in the hunting program to ensure its continued compatibility.

Signature: Refuge Manager: _____
(Signature and Date)

Concurrence: Regional Chief: _____
(Signature and Date)

Mandatory 15-year Reevaluation Date: _____

Literature Cited:

- Fox, A. D. and J. Madsen. 1997. Behavioral and distributional effects of hunting disturbance on waterbirds in Europe: implications for refuge design. *Journal of Applied Ecology* 34: 1-13.
- Knight, R. L. and D. N. Cole. 1995. Wildlife responses to recreationists. *In Wildlife and Recreationists* (R. L. Knight and K. J. Gutzwiller, eds.). Island Press, Covelo, California.
- Madsen, J. 1995. Impacts of disturbance on migratory waterfowl. *Ibis* 137: S67-S74.
- Paulus, S. L. 1984. Activity budgets of nonbreeding gadwalls in Louisiana. *Journal of Wildlife Management* 48: 371-380.
- USFWS. 2007. Final environmental impact statement: light goose management. U.S. Fish and Wildlife Service, Washington, D.C.

COMPATIBILITY DETERMINATION

Use: Turkey Hunting

Refuge Name: Montezuma National Wildlife Refuge

Date Established: September 12, 1938

Establishing and Acquisition Authorities:

The U.S. Fish and Wildlife Service (USFWS) acquired lands to be established as the Montezuma National Wildlife Refuge (NWR) under Executive Order 7971 and established the refuge in 1938 under the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. §715).

Purpose(s) for which Established:

“...as a refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7971).

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. §715d).

National Wildlife Refuge System Mission:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

(a) What is the use? Is the use a priority public use?

The use is turkey hunting. Hunting is a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997. The use being proposed includes a youth turkey hunt and fall turkey hunt.

(b) Where would the use be conducted?

Turkey hunting would be permitted in designated areas throughout the entire refuge, except areas closed to hunting to protect facilities and structures, certain habitats, and select public use areas. See map B.7 for designated hunting areas.

(c) When would the use be conducted?

Hunting would be conducted during New York State (NYS) turkey seasons in accordance with Federal and State regulations. The youth turkey hunt would be held during the NYS youth hunting season, which is typically the third or fourth weekend in April. Hunting hours are ½ hour before sunrise to noon. The fall turkey hunt would be held during the NYS fall turkey hunting season which is generally during the months of October and November. Hunting hours are sunrise to sunset.

Season dates, hunting hours, weapon restrictions and all regulations would match those set by NYS. However, the refuge manager reserves the right to adjust hunt season dates and bag limits in the future, as needed, to achieve various refuge management goals.

(d) How would the use be conducted?

The youth turkey hunt is open to youths ages 12 to 15 and would be dependent on a commitment from partners to mentor youth hunters. Youth hunters and their mentors may be required to attend an orientation program conducted by the refuge, in cooperation with partners. The orientation would review hunter safety, turkey calling, equipment, ethics, and sportsmanship, as well as conservation and messages about the refuge system. All junior hunters must be accompanied by an adult both at the orientation and during the day of the hunt. Adult mentors are required to have a valid NYS hunting license for turkey, but may not hunt.

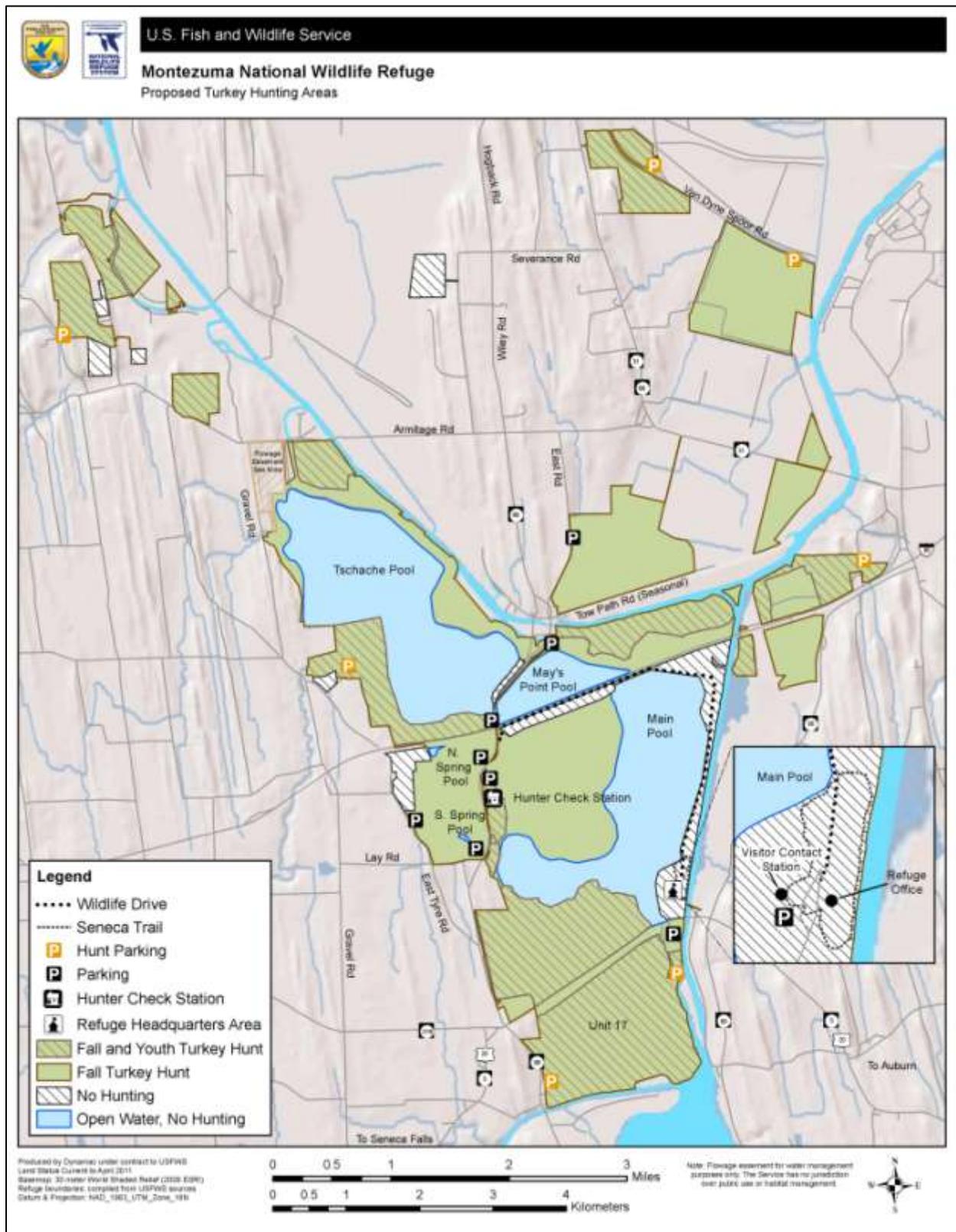
Designated areas would be open to youth hunters and their mentors during the NYS youth turkey hunt. The areas open and the number of groups permitted would be designated annually by the refuge manager, but would not exceed 14 groups during the youth hunt (see map B.6) and 40 permits during the fall season (see map B.6). These numbers are based on maximizing hunt opportunities, providing for a quality hunt experience, demand, minimizing disturbance to sensitive wildlife and plant species, and balancing other public use demands and the administrative work load. In addition to NYS requirements, youth hunters would be required to turn in a refuge harvest report.

Designated areas open for fall turkey hunting would include those areas open for deer hunting. The Wildlife Drive would not be open to turkey hunting because fall turkey season usually ends in November, before the Wildlife Drive opens to deer hunting. The Wildlife Drive would be open to fall turkey hunting if the State extends the turkey season into December. The refuge manager would also set the annual number of hunt permits annually. Turkey hunters would be required to possess a daily refuge hunt permit and turn in a refuge harvest report each time they hunt.

Prior to opening the refuge to turkey hunting, an information meeting, website articles, handouts, and press releases would be developed to inform the public about the turkey hunt, special refuge regulations, and hunting on NWRs. Refuge turkey hunting maps and regulations would be posted on the refuges website, and mailed or emailed upon request. All information related to hunting on the refuge would be posted at the refuge's hunter check station prior to the seasons' openings.

(e) Why is the use being proposed?

Hunting is one of the priority uses outlined in the Refuge System Improvement Act of 1997. The Service supports and encourages priority uses when they are appropriate and compatible on NWR lands. Hunting is a traditional form of wildlife-oriented recreation that many NWRs can accommodate. Hunting can instill a unique understanding and appreciation of wildlife, their behavior, and their habitat needs.



Map B.6. Proposed Turkey Hunting Areas on Montezuma NWR.

Availability of Resources:

The resources necessary to provide and administer this use are available within current and anticipated refuge budgets. The following breakdown shows the estimated amount of funds needed to administer the turkey hunt program:

News releases, publications, hunt regulations, permits	\$1,000
Signs (purchase and annual installation)	\$ 500
Staff time (check station staffing, maintenance)	\$1,500
Law Enforcement	\$1,500
Total Annual Cost	\$4,500

Anticipated Impacts of the Use:

The following anticipated impacts are expected; for more specific impacts including a cumulative impact analysis please refer to the “Montezuma NWR Hunt Program Environmental Assessment” (USFWS 2012).

Turkeys have restricted home ranges and continued local hunting efforts would not affect regional populations. Turkey hunters would cause little disturbance to migratory waterfowl since most turkey hunting occurs in upland habitats and waterfowl inhabit marshes and wetlands. Many refuge impoundments are either closed to hunting, or impractical to hunt because of the difficulty of access.

The impacts of youth turkey hunting on nontarget species on the refuge in the spring would be minimal due to the small number of permits issued and the secretive nature of this hunting activity. Further, these impacts would be minimal, because hunting is regulated by the refuge, occurs outside the breeding season, and specific refuge regulations prohibit the use of ATVs, off-road vehicle travel, permanent stands and blinds, camping, and fires, which are most likely to significantly damage vegetation.

There would be little anticipated impact on endangered or threatened species on the refuge as these sensitive areas would not be open to turkey hunting. Annual surveys would occur to identify sensitive areas, such as bald eagle nesting sites and heron rookeries. The refuge manager would ensure little disturbance to these areas by closing them to hunting.

The youth turkey hunt would only occur for a few days in the early spring and the areas hunting would be limited based on sensitive wildlife and plant species, demand, and suitable turkey habitat. Fall turkey hunting would occur on the refuge simultaneously with deer hunting, which is also outside of the breeding season.

Although conflicts between user groups can arise, this does not appear to be a significant issue at the present levels of use. To minimize conflicts, the Esker Brook trails will remain closed to hunting in the spring and a portion of the fall, but would be opened to hunting beginning November 1 until the close of deer season, generally mid-December.

In other areas, some users may be impacted by the presence and noise associated with shotgun hunting which occurs on the entire refuge. Turkey and deer hunting would occur in the fall

simultaneously, but hunters would likely spread themselves out, with no major impacts on one another.

In the future, we may need to further manage public use to minimize conflicts and ensure public safety, should significant conflicts become evident. That may include public outreach or further zoning to separate user groups.

Public Review and Comment:

As part of the comprehensive conservation planning process (CCP) for the Montezuma NWR, this compatibility determination would undergo a comment period of 30 days concurrent with the release of our draft CCP/Environmental Assessment.

Determination (check one below):

- Use is Not Compatible
- Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

1. The use would be conducted according to State and Federal regulations. Federal regulations in 50 CFR pertaining to the National Wildlife Refuge System Administration Act as well as existing refuge specific regulations would apply. However, the refuge manager may, upon annual review of the hunting program, impose further restrictions on hunting, recommend that the refuge be closed to hunting, or further liberalize hunting regulations up to the limits of state regulations. We would restrict hunting if it endangers refuge resources or public safety; we may restrict hunting if it poses significant user conflicts.
2. All persons hunting on the refuge must possess a valid state hunting license, obtain a daily refuge hunt permit, and turn in a refuge harvest report at the end of each hunt day. Individuals hunting on the refuge are subject to the inspection of permits, licenses, hunting equipment, game bagged, and vehicles and their contents by law enforcement officers.
3. Temporary, portable tree stands and ground blinds are acceptable and must be removed daily. Permanent tree stands and ground blinds are prohibited. Hunters cannot use screw-in steps, nails, spikes, wire, or bolts as climbing or hanging devices to attach a stand to a tree.
4. Hunters with disabilities who possess a NYS disabled hunting license, Golden Access, or America the Beautiful Access Pass may qualify for special accommodations. They must apply in person and show proof of permanent disability.
5. Permission must be obtained from refuge personnel to enter a no hunting zone or closed area for the purpose of tracking and/or retrieving legally taken game animals. Weapons may not be discharged within, into, or across a no hunting zone or closed area; or from on

or across any refuge road. Hunting from within 500 feet of any open hiking trail or from within 500 feet of any resident or refuge building is prohibited.

6. We would review this use annually to ensure that wildlife and habitat management goals are achieved and that the program is providing a safe, high quality hunting experience for participants. Therefore, adherence to the regulations highlighted above for each hunting program would ensure compatibility with the purpose for which the refuge was established.

Justification:

Montezuma NWR is located in a rural area between Syracuse and Rochester, NY. Hunting is a traditional and well established activity on the refuge. It has minimal conflicts with other types of public uses that may occur on the refuge. Hunting satisfies a recreational need and promotes understanding and appreciation of natural resources.

Hunting is a wildlife-dependent priority public use with minimal impact on refuge resources. It is consistent with the purposes for which the refuge was established, the Service policy on hunting, the National Wildlife Refuge System Improvement Act of 1997, and the broad management objectives of the National Wildlife Refuge System.

We do not expect this use to materially interfere with or detract from the mission of the Refuge System nor diminish the purposes for which the refuge was established. It would not cause an undue administrative burden. Annual adjustments can be made in the hunting program to ensure its continued compatibility.

Signature: Refuge Manager: _____
(Signature/Date)

Concurrence: Regional Chief: _____
(Signature/Date)

Mandatory 10-year Reevaluation Date: _____

Literature Cited:

United States Fish and Wildlife Service. 2012. Montezuma National Wildlife Refuge Hunt Program Environmental Assessment. Montezuma National Wildlife Refuge, 3395 US Route 20 East Seneca Falls, New York. 54 pp.

COMPATIBILITY DETERMINATION

Use: Wildlife Observation, Photography, Environmental Education, and Interpretation

Refuge Name: Montezuma National Wildlife Refuge

Date Established: September 12, 1938

Establishing and Acquisition Authorities:

The U.S. Fish and Wildlife Service acquired lands to be established as the Montezuma National Wildlife Refuge under Executive Order 7971 and established the refuge in 1938 under the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. §715).

Purpose(s) for which Established:

“...as a refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7971).

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. §715d).

National Wildlife Refuge System Mission:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

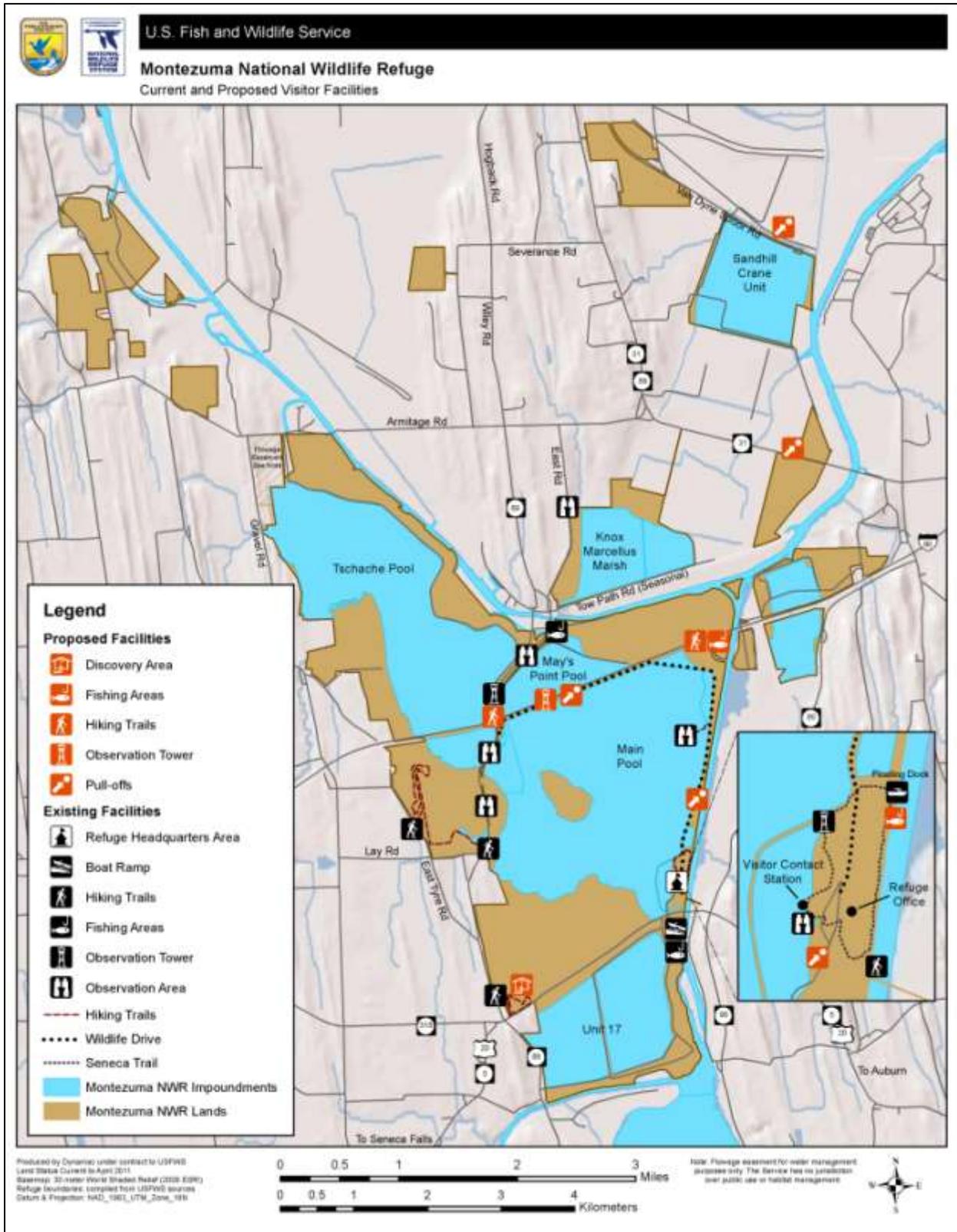
Description of Use:

(a) What is the use? Is the use a priority public use?

The uses are wildlife observation, photography, environmental interpretation, and environmental education. Wildlife observation, photography, environmental interpretation, and environmental education are priority public uses of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), and the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

(b) Where would the use be conducted?

Wildlife observation, photography, environmental interpretation, and environmental education would be allowed to occur on designated roads, trails, overlooks, and visitor contact facilities throughout the refuge (see map B.7 for current and proposed facilities). Self-conducted activities should take place at the visitor contact station, Seneca Trail and associated viewing tower and platform, Wildlife Drive, and about 8.5 miles of trails and roads (see below). We also propose to open the Wildlife Drive to pedestrians and bicyclists (see separate compatibility determination for “Bicycle Travel”) in the summer.



Map B.7. Montezuma NWR Current and Proposed Visitor Facilities.

The refuge offers about 8.5 miles of roads and trails open to these and other public uses.

Esker Brook Trails	2.5 miles
Orchard Trail	0.75 miles
Brook Trail	0.5 miles
Ridge Trail	0.5 miles
Esker Pond Loop	0.33 miles
South Spring Pool Trail	1 mile
Seneca Trail	1 mile
Swampside Trail	1 mile
Wildlife Drive (winter)	3.75 miles
Photography Blind Trail (closed during waterfowl banding season)	0.1 mile
Entrance Road (paved headquarters area)	0.33 miles
Oxbow Trail (proposed)	0.75 miles

Wildlife observation would take place incidentally in other areas, such as along State routes bisecting the refuge. Staff and volunteer-led presentations, program introductions, and exhibits would be conducted at the refuge visitor contact station. Guided interpretive programs would mainly take place in areas generally open to public visitation; special guided programs may take place in otherwise closed areas at the refuge manager’s discretion, such as, but not limited to, Unit 17, or the field adjacent to the Montezuma Winery.

A photography blind exists along the Wildlife Drive and is open year-round, except when the Wildlife Drive is closed during the hunting season. Additional photography blinds would be placed and managed at the refuge manager’s discretion, in coordination with refuge photographers.

Two annual refuge events include a June Wildflowers and Wine celebration in partnership with the Montezuma Winery, and the October National Wildlife Refuge Week celebration. Guided bus tours of the refuge, as well as guided walking tours are part of each celebration.

Bus tours typically follow the Wildlife Drive, while walking tours utilize South Spring Pool Trail or the Tschache Pool dike road. Interpretive programs for the public are offered throughout the year, in conjunction with the Friends of the Montezuma Wetlands Complex (Friends) and the Montezuma Audubon Center, in the refuge visitor contact station and at trails and overlooks. Other programs held at the refuge include waterfowl identification classes and youth hunt orientations, which are in cooperation with the New York State Department of Environmental Conservation.

The new dry marsh restoration along the Wildlife Drive would offer not only increased opportunities for wildlife observation and photography, but would also lend itself to environmental interpretation and education as a way to illustrate current management projects, as well as refuge habitats and inhabitants.

The refuge’s “Guide by Cell” cellphone tour offers guided interpretation not only within the Montezuma NWR, but throughout the Montezuma Wetlands Complex (MWC). Funded by the

Friends, the cell phone tour offers visitors a chance to hear messages at certain points within the MWC, as well as opportunities to give feedback.

(c) When would the use be conducted?

Self-directed wildlife observation, photography, environmental education, and interpretation would be allowed on the refuge daily, year-round, from ½ hour before sunrise to ½ hour after sunset, unless a conflict with a management activity or an extenuating circumstance necessitates deviating from these procedures. Refuge conducted programs, like conducting night interpretive programs, may take place outside of the regular refuge hours. These activities would be led by refuge staff or in cooperation with a refuge partner. As mentioned above, we propose to open Wildlife Drive to pedestrians (hiking and walking) during the summer.

The refuge manager reserves the right to close trails and roads during events affecting human safety (e.g., severe weather or during hunting season) or to minimize negative impacts to wildlife and fish species or rare plants (nesting season and other sensitive times of the year). Currently, the Seneca Trail is partially closed during osprey (*Pandion haliaetus*) nesting season and during the late archery hunting season (which lasts for approximately 9 days in mid to late December); Esker Brook and South Spring Pool trails are closed during the refuge’s white-tailed deer (*Odocoileus virginianus*) hunting season.

(d) How would the use be conducted?

Visitors engaged in wildlife observation, photography, environmental education, and interpretation will generally travel by foot, either by walking or hiking, in designated areas and along designated refuge trails and roads. Visitors to the refuge will typically park at refuge parking areas. Other visitors engaged in these uses may also travel by car and bicycle (see separate compatibility determinations for “Vehicular Travel to Facilitate Priority Public Use” and “Bicycle Travel”) or by cross-country skis and snowshoes (see separate compatibility determination for “Cross-country Skiing and Snowshoeing”). We would incorporate the objectives and strategies found in goal 4 of the proposed action of the final Comprehensive Conservation Plan (CCP) for Montezuma National Wildlife Refuge (NWR).

Information kiosks, refuge publications and Web site, and refuge and visitor contact station staff will identify the roads and trails open for pedestrian travel and explain the public uses that are allowed on the refuge. The refuge recently published a “Wildlife Watching Guide” brochure which describes the refuge’s trails and opportunities. Parking lots have been constructed at all existing trailheads. An estimated 35,000 pedestrian visits are made to the refuge annually. Safety and information signs will be installed and maintained as necessary. Designated roads and trails will be maintained in such a manner as is practical to minimize environmental effects such as erosion and sedimentation and to provide safe conditions for public access.

Refuge staff would be responsible for onsite evaluations to resolve public use issues and conflicts; monitor and evaluate impacts; maintain boundaries and signs; meet with adjacent landowners and interested public; recruit volunteers and special guest presenters; prepare and present interpretive programs; maintain existing trails and overlooks; revise leaflets and develop new ones; install kiosks and continually update kiosk information; develop needed signage; organize and conduct refuge events; conduct regularly scheduled programs for the public;

display offsite exhibits at local events; develop relationships with media; provide law enforcement and respond immediately to public inquiries.

Constructing a new facility would provide more space for conducting onsite interpretive and education programs, exhibits, Friends' nature store, and a meeting room. Possible facilities are discussed under chapter 3, alternative B, goal 4 of the draft Montezuma NWR Comprehensive Conservation Plan and Environmental Assessment (USFWS 2012). Adding access to new areas for observation, photography, interpretation, and education would require development of trails and trailheads, viewing areas (i.e., blinds, parking space, platforms), and/or programs. Areas newly interpreted may require the construction of a kiosk, or may simply require a post to hold the appropriate cell phone tour sign. Proposed discovery areas would allow visitors to have off-trail access during certain times of the year in designated areas. Additional information can be found within the Montezuma NWR CCP.

Access to the New York State Canal System allows visitors an off-refuge opportunity to view refuge wildlife and habitats, especially from the launch area on Route 20, across from the refuge headquarters entrance, and along Route 89 just north of the Tschache Pool parking area. Canal waters open to the public run adjacent to refuge properties.

(e) Why is this use being proposed?

Wildlife observation, wildlife photography, environmental education, and interpretation are priority public uses as defined by The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57), and, if compatible, are to receive enhanced consideration over other general public uses. These uses would be conducted to provide compatible educational and recreational opportunities for visitors to enjoy the resource and to gain understanding and appreciation for fish and wildlife, wildland ecology and the relationships of plant and animal populations within the ecosystem, and wildlife management. They would enhance the public's knowledge of natural resource management programs and ecological concepts for better understanding the problems facing our natural resources, what effect the public has on wildlife resources, and to learn about the Service's role in conservation. Additionally, the public would be aware of biological facts upon which Service management programs are based, and to foster an appreciation as to why wildlife and wildlands are important to them. The authorization of these uses would produce a more informed public and advocates for Service programs. Likewise, these uses would provide opportunities for visitors to observe and learn about wildlife and wildlands at their own pace, in an unstructured environment, and to observe wildlife habitats firsthand.

Professional and amateur photographers would also be provided opportunities to photograph wildlife in their natural habitats. Photographic opportunities would result in increased publicity and advocacy for Service programs. These uses would also provide wildlife-dependent, wholesome, safe, outdoor recreation in a scenic setting, with the realization that those who come strictly for recreational enjoyment would be enticed to participate in the more educational facets of the public use program, and can then become advocates for the refuge and the Service.

Availability of Resources:

The refuge has a maintained trail system in place to support priority public uses. Allowing wildlife observation, wildlife photography, environmental education, and interpretation on these trails would not increase the maintenance or operational needs. The Wildlife Drive is the main refuge road used by visitors for a variety of public uses, thus maintenance of this facility is ongoing and no additional needs would be required.

The following breakdown shows the estimated amount of funds needed to administer the program.

Table B.4. Annual Costs to Administer These Four Activities.

Identifier	Cost
Trail/Road Maintenance*	\$10,000
Maintain Kiosks	\$5,000
News releases, brochures, fact sheets	\$10,000
Program development and implementation	\$5,000
Routine Maintenance and Staff Days	\$10,000
Hosting Special Events	\$10,000
Law Enforcement	\$5,000
Total Cost	\$55,000

*Refuge trails and roads are maintained for a variety of activities. Costs shown are a percentage of total costs for trail/road maintenance on the refuge and are reflective of the percentage of trail/road use for this activity. Volunteers account for some maintenance hours and help to reduce overall cost of the program.

Additional funding would be needed to expand the visitor contact station. This funding would be obtained through Service and regional procedures. The development of additional wildlife viewing facilities/areas and trails would also require funding. The refuge’s annual public use budget, supplemented by grant funding, would address this need. Facilities and/or trails would be developed as funding allows.

Anticipated Impacts of the Use:

Wildlife observation and photography, environmental education, and interpretation can produce positive or negative impacts to the refuge’s wildlife and habitats. In general, visitors engaged in these uses will be traveling by foot, either by walking or hiking, in designated areas and along designated trails and roads. The positive effects include providing visitors with a better appreciation and more complete understanding of the wildlife and habitats associated with the Montezuma NWR. This can translate into more widespread and stronger support for the refuge, the National Wildlife Refuge System, and the Service, as well as wildlife conservation in general.

The negative effects of these uses include impacts to plants, soils, hydrology and wildlife from both visitors walking and hiking on the refuge and from building and maintaining public use facilities. The expansion of the visitor contact station would impact more ground area. However, the new facility is expected to stay within previously disturbed ground. Developing new trail/trailhead and observation/photography areas would increase traffic to specific parts of the

refuge. Outside of the removal of vegetation, soil, and temporary impacts during construction, the remaining annual disturbance associated with these facilities are described below.

Impacts to Plants: Pedestrian travel can have indirect impacts to plants by compacting soils and diminishing soil porosity, aeration and nutrient availability that affect plant growth and survival (Kuss 1986). Hammitt and Cole (1998) note that compaction limits the ability of plants to re-vegetate affected areas. Repeated foot travel can directly impact plants by crushing the plants themselves. Rare plants with limited site occurrence are particularly susceptible to such impacts. Plants growing in wet or moist soils are the most sensitive to disturbance from trampling effects (Kuss 1986). Moist and wet soil conditions are present at Montezuma NWR, particularly during spring and early summer.

It is anticipated that allowing this use will cause vegetation loss on designated routes. Foot travel may increase root exposure and trampling effects, however it is anticipated that under current levels of use the incidence of these problems will be minor. Designated routes for pedestrian travel consist of existing trails, many with hardened surfaces or are existing trails that have been used for many years. Designated routes do not have any known occurrences of rare plant species on their surface that would be impacted by this use. Continuing pedestrian travel on these routes is not likely to cause any significant impacts to plants or plant communities.

Impacts to Soils: Soils can be compacted and eroded as a result of continued use of pedestrian routes (Cole and Landres 1995). It is anticipated that some soil erosion will occur as a result of continuing pedestrian access on designated routes. Under current levels of use, impacts to soils (erosion, compaction) are not likely to be significant.

Hydrologic Impacts: Roads and trails can affect the hydrology of an area, primarily through alteration of drainage patterns. It is anticipated that the designated existing roads and trails will continue to influence hydrology regardless of pedestrian travel. Maintenance will be required to create adequate and proper drainage to avoid a hydrologic impact. Based on the current level of use, pedestrian travel is not likely to significantly increase erosion, incision, or stream alteration. Therefore, no significant hydrologic impacts are anticipated from this use.

Wildlife Impacts: Disturbances vary with the wildlife species involved and the type, level, frequency, duration and the time of year such activities occur. Disturbance can cause shifts in habitat use, abandonment of habitat, and increased energy demands on affected wildlife (Knight and Cole 1991). Flight in response to disturbance can lower nesting productivity and cause disease and death. Knight and Cole (1991) suggest recreational activities occurring simultaneously may have a combined negative impact on wildlife. Hammitt and Cole (1998) conclude that the frequent presence of humans in wildland areas can dramatically change the normal behavior of wildlife mostly through “unintentional harassment.” Whittaker and Knight (1998) noted that wildlife response can include attraction, habituation, and avoidance. These responses can have negative impacts to wildlife such as mammals becoming habituated to humans making them easier targets for hunters. Human induced avoidance by wildlife can prevent animals from using otherwise suitable habitat.

Trails can disturb wildlife outside the immediate trail corridor (Trails and Wildlife Task Force 1998, Miller et al. 2001). Miller et al. (1998) found bird abundance and nesting activities (including nest success) increased as distance from a recreational trail increased in both grassland and forested habitats. Bird communities in this study were apparently affected by the presence of recreational trails, where “generalists” (e.g., American robins (*Turdus migratorius*)) were found near trails and “specialist” species (e.g., grasshopper sparrows (*Ammodramus savannarum*)) were found farther from trails. Nest predation was also found to be greater near trails (Miller et al. 1998).

On the refuge, it is anticipated that there will be temporal disturbances to wildlife species using habitat on or directly adjacent to the designated pedestrian routes. These disturbances are likely to be short term and infrequent based on current levels of use. Sedimentation impacts will likely be minor as a result of foot travel. Long-term impacts may include certain wildlife species avoiding trail corridors as a result of this use over time. These impacts are not likely to significantly affect wildlife populations along these routes based on the current use pattern.

Seasonal sensitivities can compound the effect of disturbance on wildlife. Examples include regularly flushing birds during nesting or causing mammals to flee during winter months, thereby consuming large amounts of stored fat reserves. Hammitt and Cole (1998) noted that females with young (such as white-tailed deer) are more likely to flee from a disturbance than those without young. Some uses, such as bird observation, are directly focused on viewing certain wildlife species and can cause more significant impacts during the breeding season and winter months. Pedestrian use along the Wildlife Drive during the summer months is not anticipated to significantly increase disturbance to wildlife. The Wildlife Drive is already a well-traveled route via motor-vehicle. Waterfowl use of the refuge significantly drops during the summer months, when pedestrian use would be expected to be highest, according to visitor trends.

Visitors engaged in wildlife observation and photography, environmental education, and interpretation have the potential to impact shorebird, waterfowl, and other migratory bird populations feeding and resting near the trails during certain times of the year. Human disturbance to migratory birds has been documented in many studies in different locations. Conflicts arise when migratory birds and humans are present in the same areas (Boyle and Samson 1985). Response of wildlife to human activities includes: departure from site (Owen 1973, Burger 1981, Kaiser and Fritzell 1984, Korschen et al. 1985, Henson and Grant 1991, Kahl 1991, Klein 1993), use of sub-optimal habitat (Erwin 1980, Williams and Forbes 1980), altered behavior (Burger 1981, Korschen et al. 1985, Morton et al. 1989, Ward and Stehn 1989, Havera et al. 1992, Klein 1993), and increase in energy expenditure (Morton et al. 1989, Belanger and Bedard 1990). McNeil et al. (1992) found that many waterfowl species avoid disturbance by feeding at night instead of during the day.

Studying the effects of human visitation on waterbirds at J. N. “Ding” Darling NWR, Klein (1989) found resident waterbirds to be less sensitive to disturbance than migrants; she also found that sensitivity varied according to species and individuals within species. Ardeids were quite tolerant of people but were disturbed as they took terrestrial prey; great blue herons (*Ardea herodias*), tricolored herons (*Egretta tricolor*), great egrets (*Casmerodius albus*), and little blue herons (*Egretta caerulea*) were observed to be disturbed to the point of flight more than other

birds. Kushlan (1978) found that the need of these birds to move frequently while feeding may disrupt interspecific and intraspecific relationships. In addition, Batten (1977) and Burger (1981) found that wading birds were extremely sensitive to disturbance in the northeastern United States.

Klein (1993), in studying waterbird response to human disturbance, found that as intensity of disturbance increased, avoidance response by the birds increased and that out-of-vehicle activity to be more disruptive than vehicular traffic; Freddy et al. (1986) and Vaske et al. (1983) also found the latter to be true. In regards to waterfowl, Klein (1989) found migratory dabbling ducks to be the most sensitive to disturbance and migrant ducks to be more sensitive when they first arrived in the late fall, than later in winter. She also found gulls and sandpipers to be apparently insensitive to human disturbance, with Burger (1981) finding the same to be true for various gull species.

For songbirds, Gutzwiller et al. (1994) found that singing behavior of some species was altered by low levels of human intrusion. Some studies have found that some bird species habituate to repeated intrusion; frequently disturbed individuals of some species have been found to vocalize more aggressively, have higher body masses, or tend to remain in place longer (Cairns and McLaren 1980). Disturbance may affect the reproductive fitness of males by hampering territory defense, male attraction, and other reproductive functions of song (Arcese 1987). Disturbance, which leads to reduced singing activity, will make males rely more heavily on physical deterrents in defending territories which are time and energy consuming (Ewald and Carpenter 1978).

Several studies have examined the effects of recreationists on birds using shallow-water habitats adjacent to trails and roads in the eastern United States (Burger 1981, Burger 1986, Klein 1993, Burger et al. 1995, Klein et al. 1995, Rodgers and Smith 1995, 1997, Burger and Gochfeld 1998). Overall, the existing research clearly demonstrates that disturbance from recreation activities always have at least temporary effects on the behavior and movement of birds within a habitat or localized area (Burger 1981, 1986, Klein 1993, Burger et al. 1995, Klein et al. 1995, Rodgers and Smith 1997, Burger and Gochfeld 1998). The findings that were reported in these studies are summarized as follows in terms of visitor activity and avian response to disturbance.

Presence: Birds avoided places where people were present and when visitor activity was high (Burger 1981, Klein et al. 1995, Burger and Gochfeld 1998).

Distance: Disturbance increased with decreased distance between visitors and species (Burger 1986), though exact measurements were not reported.

Approach Angle: Visitors directly approaching birds on foot caused more disturbance than visitors driving by in vehicles, stopping vehicles near birds, and stopping vehicles and getting out without approaching birds (Klein 1993). Direct approaches may also cause greater disturbance than tangential approaches to birds (Burger and Gochfeld 1981, Burger et al. 1995, Knight and Cole 1995, Rodgers and Smith 1995, 1997).

Type and Speed of Activity: Joggers and landscapers caused birds to flush more than fishermen, clammers, sunbathers, and some pedestrians, possibly because the former groups move quickly (joggers) or create more noise (landscapers). The latter groups tend to move more slowly or stay in one place for longer periods, and thus birds likely perceive these activities as less threatening (Burger 1981, 1986, Burger et al. 1995, Knight and Cole 1995). Alternatively, birds may tolerate passing by with unabated speed whereas if the activity stops or slacks birds may flush (Burger et al. 1995).

Noise: Noise caused by visitors resulted in increased levels of disturbance (Burger 1986, Klein 1993, Burger and Gochfeld 1998), though noise was not correlated with visitor group size (Burger and Gochfeld 1998).

In determining compatibility, the cumulative effects of all public use on trails are considered. Due to the spatial and seasonal limitations put on these activities and that historical records show both increasing wildlife (Note: management projects such as dry marsh restoration in the Main Pool affected wildlife survey numbers in 2010) and visitor use, disturbance from wildlife observers, photographers and those partaking in environmental education and interpretation is not expected to greatly increase the disturbance to wildlife.

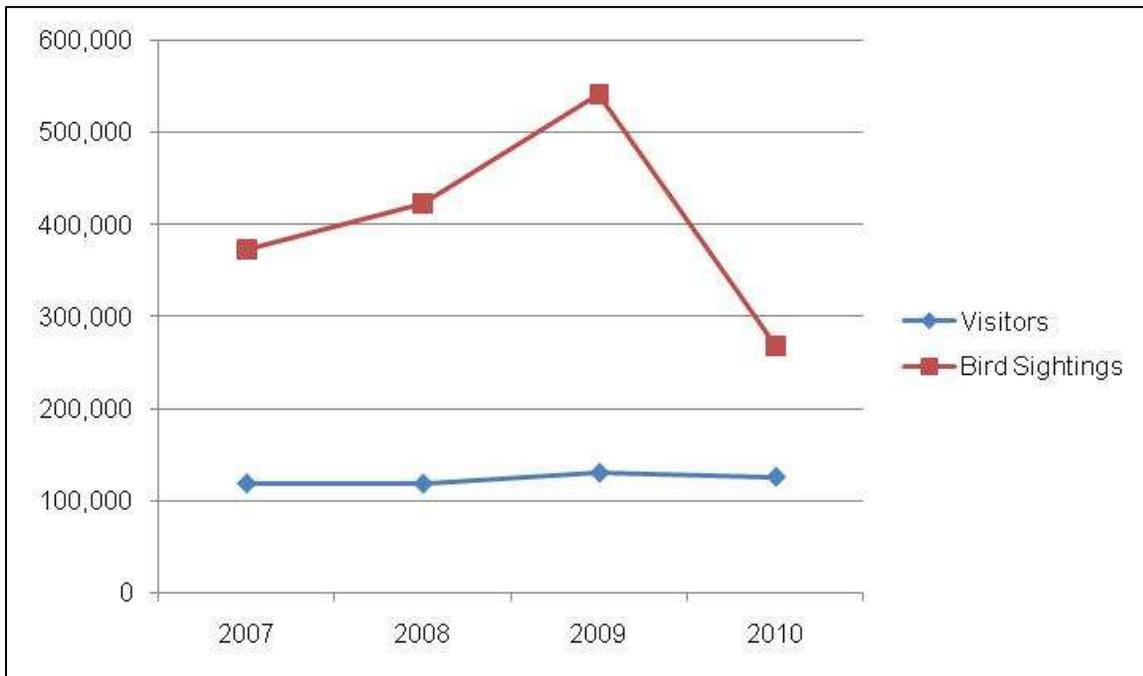


Figure B.8. Visitor Use and Waterbird Survey Count from 2007 to 2010.

Public Review and Comment:

As part of the comprehensive conservation plan process for the Montezuma National Wildlife Refuge, this compatibility determination underwent a comment period of 30 days concurrent with the release of our draft CCP/Environmental Assessment.

Determination (check one below):

<u> </u>	Use is Not Compatible
<u> X </u>	Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

1. Signs necessary for visitor information, safety, and traffic control will be installed and maintained.
2. Access from the Wildlife Drive to trails and facilities along the drive (Seneca Trail crossing, photography blind access, and the planned Oxbow Trail) is permitted from designated areas (parking areas, or directly from the Wildlife Drive in the summer months).
3. These uses are restricted to refuge open hours from ½ hour before sunrise to ½ hour after sunset.
4. Areas may be closed to the public permanently, temporarily, or seasonally for reasons such as resource protection and visitor safety, or to conduct management actions.
5. The refuge will continue its outreach program to promote public awareness and compliance with refuge public use regulations.
6. Pedestrian travel on roads open to vehicular travel (i.e., the Wildlife Drive) will be permitted subject to vehicles having the right-of-way.
7. Pedestrian travel along the Wildlife Drive is permitted during the summer months based on the refuge manager’s discretion (the refuge manager will take into consideration visitor safety, user conflict, and resource protection).
8. Almost all nonstaff environmental education and interpretative activities would be limited to the headquarters area or designated nature trails to minimize habitat destruction or disturbance to wildlife.
9. Special use permits would be issued for nonstaff environmental education and interpretation programs, and for wildlife photography, that the refuge staff have determined to not be effective in designated nature trails areas and still in-line with minimal wildlife disturbance.

All routes designated for public access will be annually inspected for maintenance needs. Road and trail conditions that require immediate maintenance will be identified and appropriate action will be taken to correct such conditions.

Justification:

Wildlife observation and photography, environmental education, and interpretation are priority wildlife-dependent uses for the National Wildlife Refuge System through which the public can

develop an appreciation for fish and wildlife (Executive Order 12996, March 25, 1996 and The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57)).

The Service’s policy is to provide expanded opportunities for these uses when compatible and consistent with sound fish and wildlife management and ensure that they receive enhanced attention during planning and management. Allowing wildlife observation, photography, environmental education, and interpretation at Montezuma NWR would not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the refuge was established as evidenced by the impact analysis that shows this use would not compromise our ability to achieve the goals and objectives set forth under the Montezuma NWR CCP. In fact, allowing these uses supports those goals and objectives and the Service’s Mission.

Signature: Refuge Manager: _____
(Signature and Date)

Concurrence: Regional Chief: _____
(Signature and Date)

Mandatory 10-year Reevaluation Date: _____

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